

# **ANNUAL COMPLIANCE REPORT EPBC 2013/6810 Bango Wind Farm**



**14 August 2023 to 13 August 2024**



**Version No.: 1  
9 October 2024**

Revision Control

Revision	Date	Issue	Author	Reviewed	Approved
1	9/10/2024	Final	S Kidziak	C Somerville	C Somerville

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## Declaration of Accuracy

In making this declaration, I am aware that sections 490 and 491 of the Environment Protection and Biodiversity Conservation Act 1999 (Cwth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed:



Full name (please print):

Candice Somerville

Position (please print):

Environment Manager

Organisation:

Squadron Energy

Date:

11 November 2024

Contents

1 Project Description..... 1

2 Description of Activities ..... 1

3 Compliance Report..... 2

4 New Environmental Risks ..... 14

5 Report Summary..... 14

Appendix A BBAMP Monitoring Results

Tables

Table 1 Compliance report as per the conditions of the EPBC Act Approval 2013/6810 ..... 2



# 1 Project Description

The Bango Wind Farm (BWF) is located in the Hilltops and Yass Valley Local Government Areas, approximately 8km southwest of Rye Park and 20km north of Yass. The nearest township is Boorowa, which is located approximately 12 km to the north along Lachlan Valley Way. The site is characterised by a mix of native woodland and open-forest, native pasture, exotic pasture and cleared land.

BWF was granted State Significant Development Approval (SSD 6686) by the Independent Planning Commission on 1 May 2018. On 25 May 2018, a third-party appeal was made to the Court by several landowners challenging the granting of the IPC consent. On 6 December 2018, an agreement was reached during a conciliation conference ordered pursuant to s 34 of the *Land and Environment Court Act 1979* (LEC Act).

A Modification (SSD 6686 MOD 1) was granted on 7 June 2019 to approve the subdivision of land (to create one freehold lot for the construction of the collector substation) and amend the description of the Land to include two additional parcels of land to accommodate the oversail of three wind turbine blades onto these two lots.

The Minister for Environment and Energy granted approval on 9 August 2018 with conditions covered by the Commonwealth EPBC Approval (EPBC 2013/6810). The Approval holder is BWF Nominees Pty Ltd (ACN 633 105 405). Variations to the EPBC Approval were granted on 4 April 2019, 19 November 2020, 27 July 2021, and 13 September 2022.

BWF involves construction, operation and decommissioning of the wind farm. Construction on the site commenced on 14 August 2019 (commencement of the action). Practical completion of the Wind Farm was reached on the 14 December, and the project is currently in the Operational Phase.

This report has been prepared to meet the requirements of condition 17 of EPBC 2013/6810, for the reporting period of 14 August 2023 to 13 August 2024.

# 2 Description of Activities

Activities undertaken at BWF during the reporting period included:

- Operation of 46 WTGs;
- Regular maintenance of the WTGs; and access track
- Land management including weed control, bird and bat monitoring, and biodiversity offset management.

### 3 Compliance Report

**Table 1 Compliance report as per the conditions of the EPBC Act Approval 2013/6810**

Condition number	Condition	Compliance status	Status / comments
<b>1</b>	The <b>approval holder</b> must:		
<b>1a</b>	Implement conditions 8, 9, 11 and 12 of Schedule 2 and conditions 16, 17, 18, 19 (a) and (c), 20 and 21 of Schedule 3 of the <b>NSW Development Consent</b> as they relate to impacts on <b>protected matters</b>	Compliant	Measures for managing impacts to protected matters are contained within the approved Biodiversity Management Plan (BMP), Environmental Management Strategy (EMS) and Pollution Incident Response Management Plan (PIRMP). BWF has implemented and complied with all referenced conditions from the NSW development consent.
<b>1b</b>	Notify the <b>Department</b> in writing of any proposed change to the conditions of the <b>NSW development consent</b> for which Condition 1a applies no later than 5 <b>business days</b> after proposing a change or becoming aware of the NSW Government proposing a change.	Compliant	During this reporting period, there have been no changes proposed to the NSW development consent. Previously, on 28/11/2018, changes were proposed to the conditions of the NSW Development consent. Subsequently, a written notification was provided to the Department on 02/12/2018 (2 business days after the changes were proposed. The written notification outlined the proposed changes against each relevant condition.
<b>1c</b>	Notify the <b>Department</b> in writing of any change to the <b>NSW development consent</b> for which <b>EPBC</b> sub-condition 1a applies within 5 <b>business days</b> of a change being finalised.	Compliant	During this reporting period, there have been no changes to the NSW development consent for which EPBC sub-condition 1a applies. Previously, on 6/12/2018, an agreement was reached during the s34 conciliation conference. The updated Conditions of development consent then became available on 12/12/2018. Two business days later, on 14/12/2018, CWP issued an email to the Department advising of the updated Conditions of the development consent.
<b>2</b>	The <b>approval holder</b> must not clear more than:		
<b>2a</b>	39.54 ha of <b>Golden Sun Moth</b> habitat (as marked in pink and purple on the map at Annexure B)	Compliant	Minimal clearing occurred during this reporting period due to practical completion of the wind farm and the commencement of operations. No more than 39.54 ha of Golden Sun Moth habitat has been cleared.
<b>2b</b>	9.54 ha of <b>Superb Parrot</b> habitat (as marked in brown on the map at Annexure C)	Compliant	Minimal clearing occurred during this reporting period due to practical completion of the wind farm and the commencement of operations. No more than 9.54 ha of Superb Parrot habitat has been cleared.

Condition number	Condition	Compliance status	Status / comments
2c	0.32 ha of <b>Box Gum Woodland</b> (as marked in red on the map at Annexure D)	Compliant	Minimal clearing occurred during this reporting period due to practical completion of the wind farm and the commencement of operations. No more than 0.32 ha of Box Gum Woodland (Cth listed) has been cleared.
2d	8 <b>primary hollow bearing trees</b> (as marked on the map at Annexure C)	Compliant	No primary hollow bearing trees were removed during the current reporting period. Overall, 5 primary hollow bearing trees have been removed to date. BWF anticipates that no more primary hollow bearing trees will be removed.
3	The <b>approval holder</b> must protect <b>known and potential Superb Parrot nest trees</b> by:		
3a	Only conducting blasting within 50 m and clearing within 30 m of <b>known and potential Superb Parrot nest trees</b> between 1 February and 31 August (outside the breeding season).	Not applicable	No blasting was conducted at the Project site during the reporting period.
3b	Locating wind turbines at least 50 m away from <b>known and potential Superb Parrot nest trees</b> .	Compliant	<p>All wind turbines have been located at least 50m away from known and potential Superb Parrot nest trees.</p> <p>Distances between turbines and known and potential Superb Parrot nest trees was verified during detailed design to ensure that the turbines would not be located within 50m of a known or potential Superb Parrot nest tree (except for the known or potential Superb Parrot nest trees that have been, or will be cleared, in accordance with condition 2d of the approval).</p> <p>The closest wind turbine is located 85m horizontal distance to a known or potential Superb Parrot nest tree.</p>
3c	<p>Locating onsite infrastructure, with the exception of wind turbines, at least 30m away from <b>known and potential Superb Parrot nest trees</b>.</p> <p><i>Note: for the purposes of this section, crane hardstands and turbine foundations are not considered turbines.</i></p>	Compliant	Onsite infrastructure is located at least 30m away from known and potential Superb Parrot nest trees.

Condition number	Condition	Compliance status	Status / comments
4	The <b>approval holder</b> must submit plans for site layout required by condition 11 and 12 of Schedule 2 of the <b>NSW development consent</b> to the <b>Minister</b> at the same time as it is submitted to the Secretary of the Department of Planning and Environment for approval.	Compliant	<p>The site layout plan was submitted to the Secretary of the NSW Department of Planning and Environment (DPE) (per Condition 11 of the NSW Development consent) on 17/05/2019. The same Site layout plan was also submitted to the Minister on 10/06/2019. That site layout plan was subsequently approved by DPE on 15/07/2019.</p> <p>The Site layout plan was revised and submitted to the Secretary of the NSW Department of Planning, Industry and Environment (DPE), per Condition 12 of the NSW development consent, on 06/05/2020. This plan was also submitted to the Minister on 07/05/2020.</p> <p>During consultation with the DPE, a further revision and update was made to the Site layout plan on 16/07/2020. Approval from the Secretary was subsequently received on 25/08/2020 and this plan was submitted to the Minister on 27/08/2020.</p> <p>The site layout plan dated 16/07/2020 is the current site layout plan.</p>
5	<p>The <b>approval holder</b> must submit a Biodiversity Management Plan (BMP) to the <b>Minister</b> for approval. Commencement of the action must not occur unless the Minister has approved the BMP. The approval holder must implement the approved BMP.</p> <p>The BMP must include:</p>	Compliant	<p>A draft BMP was first submitted to the Minister on 07/05/2019.</p> <p>Following rounds of reviews and updates, the Minister approved the BMP on 17/06/2019, prior to the commencement of the action.</p> <p>The BMP has been implemented by the approval holder and its contractors.</p> <p>Implementation by the Contractors has been through the development and implementation of specific designs, plans and procedures in accordance with the requirements of the BMP, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Detailed design with consideration to all conditions of the EPBC Approval 2013/6810.</li> <li>• Construction Environmental Management Plan</li> <li>• Biodiversity Management Sub-Plan, containing: <ul style="list-style-type: none"> <li>– Pre-clearance survey procedure</li> <li>– Vegetation clearing procedures</li> <li>– Vegetation clearing tracking register</li> <li>– Fauna management protocols</li> <li>– Habitat salvage requirements</li> </ul> </li> <li>• Biosecurity Management Sub-plan</li> </ul> <p>BWF have undertaken inspections and monitoring to verify the implementation of the BMP by the construction Contractors. The project is compliant with this condition.</p>

Condition number	Condition	Compliance status	Status / comments
5a	Spatial maps, description and quantification of the final disturbance footprint in relation to proposed impacts to <b>protected matters</b> , including the number, type of <b>hollow bearing trees</b> and size of hollows to be removed.	Compliant	The approved BMP addresses this requirement in Section 2 and Appendix A.
5b	Management measures to ensure the protection and maintenance of habitat for <b>protected matters</b> during the construction and operational phases of the approved action.	Compliant	The approved BMP addresses this requirement in Section 4.
6	The <b>approval holder</b> must submit a Bird and Bat Adaptive Management Plan (BBAMP) to the Minister for approval. The approval holder must not export electricity for sale from more than 23 wind turbines simultaneously, other than for the purposes of hold point testing and commissioning, unless the <b>Minister</b> has approved the BBAMP. The BBAMP must include, but is not limited to:	Compliant	The BBAMP was approved by the Minister on 16/04/2021. At that time, electricity was not being exported from more than 23 wind turbines simultaneously.
6a	An on-going monitoring program, which must include a description of the methodology and frequency of monitoring.	Compliant	The approved BBAMP addresses this condition within Section 3 and Appendix 4.
6b	Trigger levels to shut down any turbines when there is a high risk of collision based on monitoring data and the results of research conducted as part of EPBC condition 13 on <b>Superb Parrot</b> habitat use and breeding ecology.	Compliant	The approved BBAMP addresses this condition within Section 4.
6	The results of the monitoring program from each year must be submitted as part of the annual report required under EPBC condition 17.	Compliant	During the reporting period the Project transitioned from construction-phase monitoring to the operation-phase monitoring program in accordance with the BBAMP.  Attachment 1 provides the BWF BBAMP Implementation Report Year 1, as per the requirements of the BBAMP.
7	If the <b>Minister</b> considers, based on monitoring taken under EPBC condition 6, compliance reporting required by EPBC condition 17 and the risk assessment and mitigation measures included in the BBAMP, the operation of the action is having a detrimental impact on protected matters, then the <b>Minister</b> may notify the <b>approval holder</b> in writing that specified wind turbines must not be operated for a specified period of time. If the <b>Minister</b> makes a written notice under this condition, the <b>approval holder</b> must implement that written notice.	Not applicable	The Minister has not issued any notice to BWF in accordance with this condition.

Condition number	Condition	Compliance status	Status / comments
8	Prior to the <b>commencement of the action</b> , the <b>approval holder</b> must submit to the <b>Minister</b> , the calculation of biodiversity impacts consistent with Condition 18 of Schedule 3 of the <b>NSW development consent</b> as it relates to <b>protected matters</b> .	Compliant	BWF, as the approval holder, commenced the action on 14/08/2019. Calculations of biodiversity impacts were submitted to the Minister on 16/06/2019.
9	By 4 November 2022, the approval holder must submit evidence of credit retirement consistent with condition 19 (a) or (c) of Schedule 3 of the <b>NSW development consent</b> to the <b>Minister</b> .	Compliant	BWF, as the approval holder, commenced the action on 14/08/2019. On 8 July 2020, BWF submitted evidence to the Minister via email regarding the retirement of Biobanking credits consistent with Condition 19 (a) of Schedule 3 of the NSW development consent. On 22/06/2021, the NSW DPE granted a 12-month extension of time to retire additional biodiversity credits under Condition 19 of Schedule 3 of the NSW development consent (to 14/08/2022). Evidence of that extension granted by the NSW DPE was provided to the Minister via email on 8/07/2021. On 9/06/2022, the NSW DPE granted a further extension of time to retire additional biodiversity offset credits (to 4/11/2022). Evidence of that extension granted by the NSW DPE was provided to the Minister via email on 24/06/2022. On 3 November 2023, the NSW DPE granted a further extension of time to retire additional biodiversity credits (to 28 February 2023). Evidence of that extension granted by the NSW DPE was provided to the Minister via email on 4 November 2022. On 21 February 2023, the approval holder submitted evidence to the Minister of biodiversity credit retirement completed consistent with Conditions 19a and 19b of the NSW development consent.

Condition number	Condition	Compliance status	Status / comments
10	<p>In the case that the <b>approval holder</b> is establishing <b>BioBanking site(s)</b>, they must ensure that the BioBanking Agreement(s) for the BioBanking site(s) include measures for the long-term management of protected matters including but not limited to:</p> <ul style="list-style-type: none"> <li>a) Specific reference to Superb Parrot, Golden Sun Moth and hollow bearing trees providing habitat to Superb Parrot.</li> <li>b) A textual description of the offset sites, including offset attributes, shapefiles, and a map clearly defining the location and boundaries of the proposed offset sites.</li> <li>c) Site survey and baseline data and documentation of key biodiversity threats and opportunities at each site.</li> <li>d) A detailed description of management actions and responsibilities designed to protect and improve the ecological quality of habitat of Superb Parrot and Golden Sun Moth on the offset sites.</li> <li>e) Key milestones, performance indicators and timeframes for each management action.</li> <li>f) A monitoring program to determine the effectiveness of the management actions.</li> <li>g) Corrective actions and contingency measures to be implemented where monitoring of the offset site shows that management actions are not effectively achieving key milestones or prescribed performance indicators are not being met or are unlikely to be met.</li> </ul>	Compliant	<p>As the Successor Mechanism to BioBanking Agreements, the approval holder has established a Biodiversity Stewardship Agreement (BSA) under the Biodiversity Conservation Act 2016 (as agreed to by the Department via email 24/04/2019).</p> <p>The BSA includes measures for the long-term management of protected matters including those listed in Conditions 10a to 10g.</p>
10	Where appropriate offsets credits are acquired from the market, it is accepted that the credit provider has made suitable and appropriate measures to meet the above intent.	Not applicable	Offset credits for protected matters have not been acquired from the market.
11	In the case that the <b>approval holder</b> is establishing <b>BioBanking site(s)</b> , they must submit a copy of the <b>BioBanking Agreement(s)</b> to the <b>Minister</b> by 4 November 2022.	Compliant	<p>The approval holder has established a Biodiversity Stewardship Agreement (BSA) (as the successor mechanism to BioBanking Agreements).</p> <p>A copy of the executed BSA (BS0059) (dated 27/09/2022) was sent to the Minister via email on 25/10/2022. Minor amendments to the BSA were later made by the NSW Biodiversity Credit Supply Taskforce in November 2022. A copy of the amended and final BSA was issued to the Minister via email on 15/11/2023.</p>



Condition number	Condition	Compliance status	Status / comments
12	For each <b>primary hollow bearing tree</b> (as marked in the map at Annexure C) removed within 50 m of each turbine (as confirmed through quantification of <b>hollow bearing trees</b> impacts through EPBC condition 5), the <b>approval holder</b> must legally protect and secure 10 <b>hollow bearing trees</b> from the same vegetation formation within the <b>South-west Slopes of NSW Important Bird Area</b> .	Compliant	The approval holder has legally secured and protected the required number of hollow bearing trees in accordance with the evidence that was provided to the Minister on 31/05/2021 (refer to Condition 12a below).
12a	Within two years of the <b>commencement of the action</b> , the <b>approval holder</b> must submit evidence to the <b>Minister's</b> satisfaction of the final number of <b>hollow bearing trees</b> to be legally protected and secured.	Compliant	The date of commencement of the action was 14/08/2019. On 31/05/2021, evidence of the final number of hollow bearing trees to be legally protected and secured was submitted to the Minister. On 27/07/2021, a delegate of the Minister wrote to BWF confirming that they were satisfied with the evidence provided in relation to the final number of hollow bearing trees to be legally protected and secured.
13	To compensate for potential cumulative impacts on <b>Superb Parrot</b> , the <b>approval holder</b> must prepare and implement a Superb Parrot Conservation Research Plan (SPCRP).	Compliant	The Superb Parrot Conservation Research Plan (SPCRP) has been prepared and is available at the following web location: <a href="https://squadron-assets.spicyweb.net.au/main/Bango/PDF/Plans%2C%20Strategies%20and%20Programs/Superb%20Parrot%20Conservation%20Research%20Plan.pdf">https://squadron-assets.spicyweb.net.au/main/Bango/PDF/Plans%2C%20Strategies%20and%20Programs/Superb%20Parrot%20Conservation%20Research%20Plan.pdf</a> The Superb Parrot Conservation Research Team implemented the SPCR during the 2023 – 2024 period.
13	The SPCR must be submitted to the <b>Minister</b> for approval prior to <b>commencement of the action</b> . The action must not commence unless the <b>Minister</b> has approved the SPCR. The approved SPCR must be implemented.	Compliant	The SPCR v1 (dated 3/06/2019) was approved by the Minister on 2 July 2019. The SPCR was revised on 29/07/2020, and a copy of the revised SPCR (v2) was submitted to the Department on 31/07/2020.
13	The SPCR must contribute to better understanding <b>Superb Parrot</b> habitat use and breeding ecology within the <b>South-west Slopes of NSW Important Bird Area</b> , with a focus on identification of key breeding sites, better understanding local movement patterns during the breeding season and landscape scale movements between the key breeding areas and the winter foraging grounds.	Compliant	The SPCR addresses this requirement. Refer to the SPCR (v2) available at the weblink provided above.
13	The SPCR must contain, but is not limited to, the following:		

Condition number	Condition	Compliance status	Status / comments
13a	Conservation research activities consistent with the National Recovery Plan for the Superb Parrot ( <i>Polytelis swainsonii</i> ) (2011) and reflect input and advice from the <b>National Superb Parrot Recovery Team</b> .	Compliant	The SPCRP is consistent with the National Recovery Plan and has been prepared with input from the National Superb Parrot Recovery Team. Refer to the SPCRP (v2) available at the weblink provided above.
13b	Specific project objectives, indicative timetable for activities, nomination of persons or organisations responsible for carrying out the activities, and outline commitments to the provision and timing of funding.	Compliant	The SPCRP addresses this requirement. Refer to the SPCRP (v2) available at the weblink provided above.
14	The <b>approval holder</b> must provide at least \$100,000 each year for five years to fund the conservation research activities outlined in the SPCRP. The first year's contribution must be made within 20 business days from the <b>commencement of the action</b> .	Compliant	The date of commencement of the action was 14/08/2019. The \$100,000 payment for Year 1 was made on 03/09/2019 (14 business days after commencement of the action). The \$100,000 payment for Year 2 was made in Sept 2020. The \$100,000 payment for Year 3 was made in Sept 2021. The \$100,000 payment for Year 4 was made in Aug 2022. The \$100,000 payment for Year 5 was made in Oct 2023.
15	Within <b>14 business days</b> after the <b>commencement of the action</b> , the approval holder must advise the <b>Department</b> in writing of the actual date of <b>commencement</b> .	Compliant	On 16/08/2019, BWF, as the approval holder, notified the Department in writing that the commencement of the action occurred on 14/08/2019. Notification of the commencement of the action was provided to the Department by email on 16/08/2019, two business days after the date of commencement.
16	The <b>approval holder</b> must maintain accurate records substantiating all activities associated with or relevant to these conditions of approval, including measures taken to implement the management plans, and make them available upon request to the <b>Department</b> . Such records may be subject to audit by the <b>Department</b> or an <b>independent auditor</b> in accordance with section 458 of the <b>EPBC Act</b> or used to verify compliance with the conditions of approval. Summaries of audits will be published on the <b>Department's</b> website. The results of audits may also be publicised through the general media.	Compliant	BWF, as the approval holder, maintains accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans.

Condition number	Condition	Compliance status	Status / comments
17	<p>Within three months of every 12-month anniversary of the <b>commencement of the action</b>, the <b>approval holder</b> must publish a report on its <b>website</b> addressing compliance with each of the conditions of this approval including implementation of the management plans. Documentary evidence providing proof of the date of publication must be provided to the <b>Department</b> at the same time as the compliance report is published. The report must remain published on the website for the duration of the approval. Reports must continue to be published until such time as advised by the <b>Minister</b> in writing.</p> <p><i>Note: Compliance reports may be published on the Department's website. The first compliance report may report a period less than 12 months so that it and subsequent compliance reports align with the similar requirement under state approval.</i></p>	Compliant	<p>The 2021 – 2022 Annual Compliance Report was published online on 24 October 2022. An email was sent to the Department on the same day advising of compliance. On 8 June 2023 the Department acknowledged via email that the reporting requirements have been met under condition 17.</p> <p>The 2022 – 2023 Annual Compliance Report was published online on 26 October 2023. An email was sent to the Department on the 26 October advising of compliance. On 4 April 2024 the Department acknowledged via email that the reporting requirements have been met under condition 17. This annual compliance report details the activities undertaken by BWF as the person undertaking the action, pursuant to the reporting period 14/08/2023 to 13/08/2024.</p> <p>This annual compliance report will be published on the project website by 14/11/2024, and evidence of the date of publication will be provided to the <b>Department</b> at the same time.</p>
18	Potential or actual contraventions of the conditions of the approval must be reported to the <b>Department</b> in writing within <b>two business days</b> of the <b>approval holder</b> becoming aware of the actual or potential contravention.	Compliant	No potential or actual contraventions of the conditions of approval occurred during the reporting period 14/08/2023 – 13/08/2024.
19	Upon the direction of the <b>Minister</b> , the <b>approval holder</b> must ensure that an independent audit of compliance with the conditions of approval is conducted, and a report submitted to the <b>Minister</b> . The <b>independent auditor</b> must be approved by the <b>Minister</b> prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the <b>Minister</b> .	Not applicable	The Minister did not direct an independent audit of compliance during the reporting period 14/08/2023 – 13/08/2024.
20	If, at any time after five years from the date of this approval, the <b>approval holder</b> has not <b>commenced</b> the action, then the <b>approval holder</b> must not commence the action without the written agreement of the <b>Minister</b> .	Not applicable	This condition is no longer applicable as the action commenced on 14/08/2019.

Condition number	Condition	Compliance status	Status / comments
21	<b>Revision of action management plans</b> The <b>approval holder</b> may, at any time, apply to the <b>Minister</b> for a variation to an action management plan approved by the <b>Minister</b> under conditions 5 and 6, or as subsequently revised in accordance with these conditions, by submitting an application in accordance with the requirements of section 143A of the <b>EPBC Act</b> . If the <b>Minister</b> approves a revised action management plan (RAMP) then, from the date specified, the <b>approval holder</b> must implement the RAMP in place of the previous action management plan.	Compliant	No Action Management Plans have been revised in accordance with this condition during the reporting period 14/08/2023 – 13/08/2024.
21A	The <b>approval holder</b> may choose to revise an action management plan approved by the <b>Minister</b> under conditions 5 and 6, or as subsequently revised in accordance with these conditions, without submitting it for approval under section 143A of the <b>EPBC Act</b> , if the taking of the action in accordance with the RAMP would not be likely to have a <b>new or increased impact</b> .	Compliant	No Action Management Plans have been revised in accordance with this condition during the reporting period 14/08/2023 – 13/08/2024.

Condition number	Condition	Compliance status	Status / comments
21B	<p>If the <b>approval holder</b> makes the choice under condition 21 A to revise an action management plan without submitting it for approval, the <b>approval holder</b> must:</p> <ul style="list-style-type: none"> <li>a. notify the <b>Department</b> in writing that the approved action management plan has been revised and provide the <b>Department</b> with: <ul style="list-style-type: none"> <li>i. an electronic copy of the RAMP;</li> <li>ii. an electronic copy of the RAMP marked up with track changes to show the differences between the approved action management plan and the RAMP;</li> <li>iii. an explanation of the differences between the approved action management plan and the RAMP;</li> <li>iv. the reasons the <b>approval holder</b> considers that taking the action in accordance with the RAMP would not be likely to have a <b>new or increased impact</b>; and</li> <li>v. written notice of the date on which the <b>approval holder</b> will implement the RAMP (RAMP implementation date), being at least 20 <b>business days</b> after the date of providing notice of the revision of the action management plan, or a date agreed to in writing with the <b>Department</b>.</li> </ul> </li> </ul> <p>subject to condition 21 D, implement the RAMP from the RAMP implementation date.</p>	Compliant	No Action Management Plans have been revised in accordance with this condition during the reporting period 14/08/2023 – 13/08/2024.
21C	<p>The <b>approval holder</b> may revoke its choice to implement a RAMP under condition 21 A at any time by giving written notice to the <b>Department</b>. If the <b>approval holder</b> revokes the choice under condition 21A, the approval holder must implement the action management plan in force immediately prior to that RAMP.</p>	Not applicable	This condition was not triggered during the reporting period 14/08/2023 – 13/08/2024.

Condition number	Condition	Compliance status	Status / comments
21D	<p>If the <b>Minister</b> gives a notice to the <b>approval holder</b> that the <b>Minister</b> is satisfied that the taking of the action in accordance with the RAMP would be likely to have a <b>new or increased impact</b>, then:</p> <p>a. a. condition 21 A does not apply, or ceases to apply, in relation to the RAMP; and</p> <p>the <b>approval holder</b> must implement the action management plan specified by the <b>Minister</b> in the notice.</p>	Not applicable	This condition was not triggered during the reporting period 14/08/2023 – 13/08/2024.
21E	<p>At the time of giving the notice under condition 21 D, the <b>Minister</b> may also notify that, for a specified period of time, condition 21 A does not apply for one or more specified action management plans.</p> <p><i>Note: Conditions 21A, 21B, 21C and 21D are not intended to limit the operation of Section 143A of the <b>EPBC Act</b> which allows the <b>approval holder</b> to submit a revised action management plan, at any time, to the <b>Minister</b> for approval.</i></p>	Not applicable	This condition was not triggered during the reporting period 14/08/2023 – 13/08/2024.
22	<p>Unless otherwise agreed to in writing by the <b>Minister</b>, the <b>approval holder</b> must publish all management and research plans referred to in these conditions of approval on its website. Each plan must be published on the website within one month of being approved and remain published on the website for the duration of the approval.</p>	Compliant	<p>Management and research plans referred to in the conditions are published on the <a href="#">Bango Wind Farm Project website</a>, including:</p> <ul style="list-style-type: none"> <li>• Site layout plan (Condition 4)</li> <li>• Biodiversity Management Plan (Condition 5)</li> <li>• Bird and Bat Adaptive Management Plan (Condition 6)</li> <li>• Superb Parrot Conservation Research Plan (Condition 13).</li> </ul>

## 4 New Environmental Risks

During this reporting period, BWF was in the final phase of construction, reaching practical completion on the 14 December 2023, transitioning to the operational phase of the Project for the remainder of the reporting period.

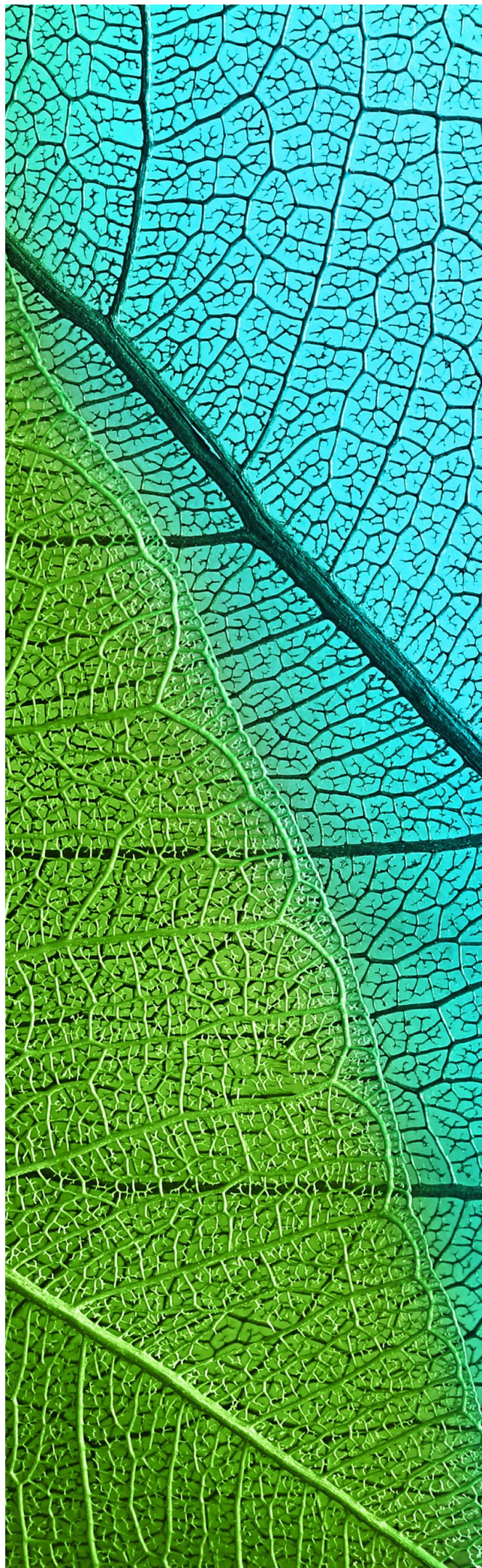
The operational phase is considered to present reduced environmental risks to protected matters as construction and vegetation clearing activities have ceased. As such, no new risks have been identified.

## 5 Report Summary

During the reporting period 14 August 2023 – 13 August 2024, the Project has complied with all applicable conditions of the EPBC Approval 2013/6810



## **Appendix A   BWF - BBAMP Implementation Report Year 1**



# Bango Wind Farm

## Annual Report on the Implementation of the Bird and Bat Adaptive Management Program – Year One

**Prepared for Bango Wind Farm Pty  
Ltd**

October 2024  
Report No. 18173.7 (1.1)



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*Nature Advisory acknowledges the traditional owners and sovereign custodians of the land on which we work from – the Wurundjeri people of the Woi Wurrung language group. We extend our respect to their Ancestors and all First Peoples and Elders past, present, and future.*

## Contents

1.	Introduction.....	1
1.1.	Project background .....	1
1.2.	Project approval conditions .....	1
1.3.	Objectives of the BBAMP .....	3
1.4.	Objectives of the Annual Report.....	3
2.	Carcass search program .....	5
2.1.	Methodology .....	5
2.1.1.	Monthly Carcass searches.....	5
2.1.2.	Methodology: dog-based carcass searches.....	5
2.1.3.	Methodology: humans-only carcass searches.....	6
2.1.4.	Mortality data and search limitations .....	7
2.1.5.	Additional carcass searches (Superb Parrot; September 2023 – December 2023) 8	
2.2.	Targeted Superb Parrot surveys .....	8
2.3.	Impact Trigger searches.....	9
2.4.	Operational bird utilisation surveys (BUS) .....	10
2.5.	Bat surveys .....	10
2.6.	Scavenger Rate Trials .....	14
2.7.	Detectability (Observer) trials .....	14
2.8.	Raptor monitoring.....	15
2.9.	Carrion removal and pest control.....	16
3.	Results.....	18
3.1.	Monthly Carcass searches.....	18
3.2.	Additional Carcass Searches (Superb Parrot; September 2023 – December 2023) .....	21
3.3.	Targeted Superb Parrot surveys .....	22
3.4.	Impact Triggers .....	30
3.5.	Operational Bird Utilisation Surveys (BUS) .....	32
3.5.1.	Abundance and Diversity .....	32
3.5.2.	Flight Heights .....	34
3.5.3.	Threatened species.....	36
3.5.4.	Raptor and Threatened Species Flight Path.....	38
3.6.	Bat Surveys.....	43
3.7.	Scavenger Trials .....	43
3.8.	Detectability trials.....	45



3.9. Raptor Monitoring.....	45
3.10. Carrion removal and pest control.....	50
4. Discussion.....	51
4.1. Monthly Carcass Searches .....	51
4.2. Additional carcass searches and Targeted Superb Parrot surveys.....	52
4.3. Impact Triggers .....	53
4.4. BUS.....	53
4.5. Bat Surveys.....	55
4.6. Raptors.....	55
5. Recommendations .....	56
6. References.....	58

## Tables

Table 1: Turbines selected for monthly carcass searches from three different strata.....	5
Table 2: Scavenger trial schedule .....	14
Table 3: Scavenger trial carcasses used .....	14
Table 4: Number of carcasses deployed in detectability trails specifying vegetation condition.....	15
Table 5: Mortalities across the survey period August 2023 – July 2024.....	18
Table 6: Mortalities across the Superb parrot carcass search period September 2023 – January 2024.....	21
Table 7: Summary of raptor and threatened species flights at BWF from targeted Superb Parrot surveys (Year 1) .....	23
Table 8: Mortalities across the Intensive carcass search period for January 2024 and February 2024.....	30
Table 9: Summary of raptor and threatened species flights at BWF from BUS (Year 1).....	39
Table 10: Scavenging trial results for BWF.....	43
Table 11: Detectability trials undertaken at BWF in May 2024 indicating the percentage of birds and bats detected.....	45
Table 12: Summary of raptor and threatened species flights at BWF August 2023-July 2024 .....	46

## Figures

Figure 1: Bango Wind Farm turbine locations .....	4
Figure 2: Diagram of search zone, transect width and search pattern at turbines .....	6
Figure 3: Inner and outer carcass search zones underneath the turbines. ....	6
Figure 4: Songmeter locations at BWF .....	11

Figure 5: Turbine specific mortalities.....	20
Figure 6: Turbine specific mortalities (Superb Parrot Carcas Searches).....	22
Figure 7: Locations of hollow-bearing trees.....	24
Figure 8: Flight paths from Targeted Superb Parrot Survey .....	27
Figure 9: Turbine specific mortalities (Trigger searches).....	31
Figure 10: Relative abundance of ten most common species observed at impact points at BWF over four seasonal surveys between August 2023 and July 2024. Value above each bar represents the relative abundance of each species .....	33
Figure 11: Relative abundance of ten most common species observed at impact points at BWF over four seasonal surveys between August 2023 and July 2024. Value above each bar represents the relative abundance of each species .....	33
Figure 12: The distribution of bird flight heights as recorded during BUS at the proposed BWF during four seasonal surveys between August 2023 and July 2024. ....	34
Figure 13: Flight height categories between at impact and reference points and post construction at BWF during four seasonal surveys between August 2023 and July 2024.....	35
Figure 14: Percentages of abundance of species recorded at RSA height at the impact point of proposed BWF over four seasonal surveys between August 2023 and July 2024. Values on each bar show the number of individuals recorded of each species.....	35
Figure 15: Percentages of abundance of threatened species recorded BWF over four post-construction surveys over four seasonal surveys between August 2023 and July 2024. Values on each bar show the number of individuals recorded of each species. ....	37
Figure 16: Flight paths from bird utilisation surveys (August 2023 - July 2024).....	40
Figure 17: Incidental flight paths at BWF .....	47

## Appendices

Appendix 1: Incidental Raptor and Threatened Species Flight Paths August 2023 – July 2024 ...	59
Appendix 2: Flight Paths from BUS (Year 1) .....	64
Appendix 3: Flight Paths from Targeted Superb Parrot Survey .....	66
Appendix 4: Detailed mortality data August 2023 – July 2024 .....	67

# 1. Introduction

## 1.1. Project background

Bango Wind Farm (BWF) comprises 46 wind turbine generators (turbines) and is located 20 kilometres North of Yass and is bordered by Boorowa and Rye Park in the southern tablelands of New South Wales. These 46 turbines have been selected and installed from a selection of 49 approved positions in the wind farm and have a maximum height (turbine tip height) of 200 metres above the ground (Figure 1). The rotor swept area (RSA) of the turbine blades is between 40m and 200m above ground level. The site features, biodiversity attributes and full project description are provided in the Environmental Impact Statement (EIS) for BWF (CWP 2016) and associated documentation (refer to <https://bangowindfarm.com.au/>). The individual turbines are generally located on ridge lines with elevations of between 600 and 760 metres above the Australian Height Datum (AHD). Approximately 91% of the site has been cleared or has had its tree cover heavily reduced. Patches of woodland and open forest remain in some areas ranging from intact, to treed areas with substantially modified understorey and ground cover. Areas of woodland regeneration also occur. The area comprises primarily of private farming properties used for grazing and cropping, many with an extensive history in these practices. Some areas have not been cultivated and areas with exposed rock remain and support grassland. In areas of heavy grazing, native flora cover is minimal and dominated by introduced pasture. Derived native grassland occurs in less extensively grazed areas. Intact woodlands are generally restricted to ridge tops and roadsides with lower elevation areas mostly cleared (ERM 2013).

The avifauna of the site is typical of this part of NSW, with birds of open country, farmland and fragmented woodlands dominating. Knowledge of the bat fauna in the region is developing as more survey work is done as part of assessments for proposed wind farms in the area. Some woodland remnants at the BWF site support a relatively intact tree canopy that provides foraging and roosting habitat for insectivorous bats

## 1.2. Project approval conditions

Approval of BWF was granted in 2018 by the Land and Environment Court of NSW under the *Environmental Planning & Assessment Act 1979* (EPA Act) and by the Australian Commonwealth Government (Department of Agriculture, Water and Environment - DAWE) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In accordance with State Significant Development Approval (SSD 6686) condition 21, Schedule 3 requires the preparation of a Bird and Bat Adaptive Management Plan (BBAMP) in consultation with the NSW Office of Environment and Heritage (OEH) (now the Biodiversity Conservation Division (BCD) within the NSW Department of Climate Change, Energy, the Environment and Water–DCCEEW) and approved by the Secretary of the NSW Department of Planning (formerly Department of Planning, Industry and Environment, DPIE, now Department of Planning, Housing and Infrastructure–DPHI). Similarly, EPBC Act approval (EPBC 2013/6810) condition 6 requires the preparation of a BBAMP for approval by the Australian Minister for the Environment.

SSD6686 condition	BBAMP section
<b>21.</b> Prior to the commissioning of any wind turbines, the Applicant must prepare a Bird and Bat Adaptive Management Plan for the development in consultation with OEH and to the satisfaction of the Secretary. This plan must include:	

(a) at least 12 months' worth of baseline data on threatened and 'at risk' bird and bat species and populations in the locality that could be affected by the development;	Appendix 1, Section 4
(b) A detailed description of the measures that would be implemented on site for minimising bird and bat strike during operation of the development, including: <ul style="list-style-type: none"> <li>• minimising the availability of raptor perches on wind turbines;</li> <li>• prompt carcass removal;</li> <li>• controlling pests; and</li> <li>• using best practice methods for bat deterrence, including managing potential lighting impacts;</li> </ul>	Section 3
(c) trigger levels for further investigation of the potential impacts of the projects on particular bird and bat species or populations;	Section 4
(d) an adaptive management program that would be implemented if the development is having an adverse impact on a particular threatened or 'at risk' bird and/or bat species or populations; including the implementation of measures to: <ul style="list-style-type: none"> <li>• reduce the mortality of these species or populations; or</li> <li>• enhance and propagate these species or populations in the locality; and</li> </ul>	Sections 4
(e) a detailed program to monitor and report on: <ul style="list-style-type: none"> <li>• the effectiveness of these measures; and</li> <li>• any bird or bat strikes on the site;</li> </ul>	Section 3, Appendix 4
(f) provisions for a copy of all raw data collected as part of the monitoring program to be submitted to OEH and the Secretary.	Section 2.10
Following the Secretary's approval, the Applicant must implement the Bird and Bat Adaptive Management Plan.	

EPBC 2013/6810 condition	BBAMP section
6. The <b>approval holder</b> must submit a Bird and Bat Adaptive Management Plan (BBAMP) to the <b>Minister</b> for approval. The <b>approval holder</b> must not export electricity for sale from more than 23 wind turbines simultaneously, other than for the purposes of hold point testing and commissioning, unless the <b>Minister</b> has approved the BBAMP. The <b>approval holder</b> must implement the approved BBAMP. The BBAMP must include, but is not limited to:	
a. An on-going monitoring program, which must include a description of the methodology and frequency of monitoring.	Section 3, Appendix 4
b. Trigger levels to shut down any turbines when there is a high risk of collision based on monitoring data and results of research conducted as part of the EPBC condition 13 on <b>Superb Parrot</b> habitat use and breeding ecology.	Section 4
The results of the monitoring program from each year must be submitted as part of the annual report required under EPBC condition 17.	Section 4, Appendix 4



### 1.3. Objectives of the BBAMP

Bango Wind Farm Pty Ltd engaged Nature Advisory (formerly Brett Lane and Associates) to implement the approved BWF BBAMP. The specific objectives of this BBAMP, derived from the conditions of approval, are set out below:

- To implement a monitoring program to estimate the impact of the project on at-risk birds and/or bats that can reasonably be attributed to the operation of the project, as an indicator of population impact;
- To directly record impacts on birds and bats through carcass searches;
- To document an agreed decision-making framework that identifies impact triggers requiring a management response to reduce impacts and identifies the management activities that will be considered; and
- To identify matters to be addressed in periodic reports on the outcomes of monitoring, the application of the decision-making framework, mitigation measures and their success.

Overall, it is intended to maximise the chances that populations of each threatened species remain at similar or higher levels after 25 years of BWF operation, unless factors unrelated to the wind farm prevent this.

The strategies to be employed to ensure that any impact triggers are detected includes the following:

- Baseline and operational phases bird and bat utilisation surveys;
- Carcass searches under erected and commissioned turbines;
- Statistical analysis of the results of carcass searches to derive estimates of mortality levels and rates; and
- Reporting.

### 1.4. Objectives of the Annual Report

According to the BBAMP, this annual report will focus on presenting the results of the mortality searches, identification of any high-risk turbines, Bird Utilisation Surveys (BUS), any management measures implemented and recommended refinements to monitoring activities. It will include an evaluation of the triggering and implementation of mitigation measures and recommendations for their refinement.

This annual report includes the following sections:

**Section 2** provides the survey methods of the carcass search program for the survey period August 2023 to July 2024.

**Section 3** provides results of the carcass search program.

**Section 4** discusses the first year of carcass search program at BWF and;

**Section 5** provides the recommendations for BWF

This investigation was undertaken by a team from Nature Advisory comprising Philip Allen (Zoologist), Joshua Brown (Zoologist), Jess Johnson (Zoologist), Divyang Rathod (Zoologist), Ahmad Barati (Senior Zoologist), Michael Cunningham Senior Zoologist and NSW Team Leader), Jackson Clerke (Zoologist and Project Manager) and Bernard O'Callaghan (Managing Director).




**Figure 1: Turbine stratification**


**Project:** Bango Wind Farm Pty Ltd.

**Date:** 25/09/2024

**Legend**

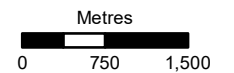
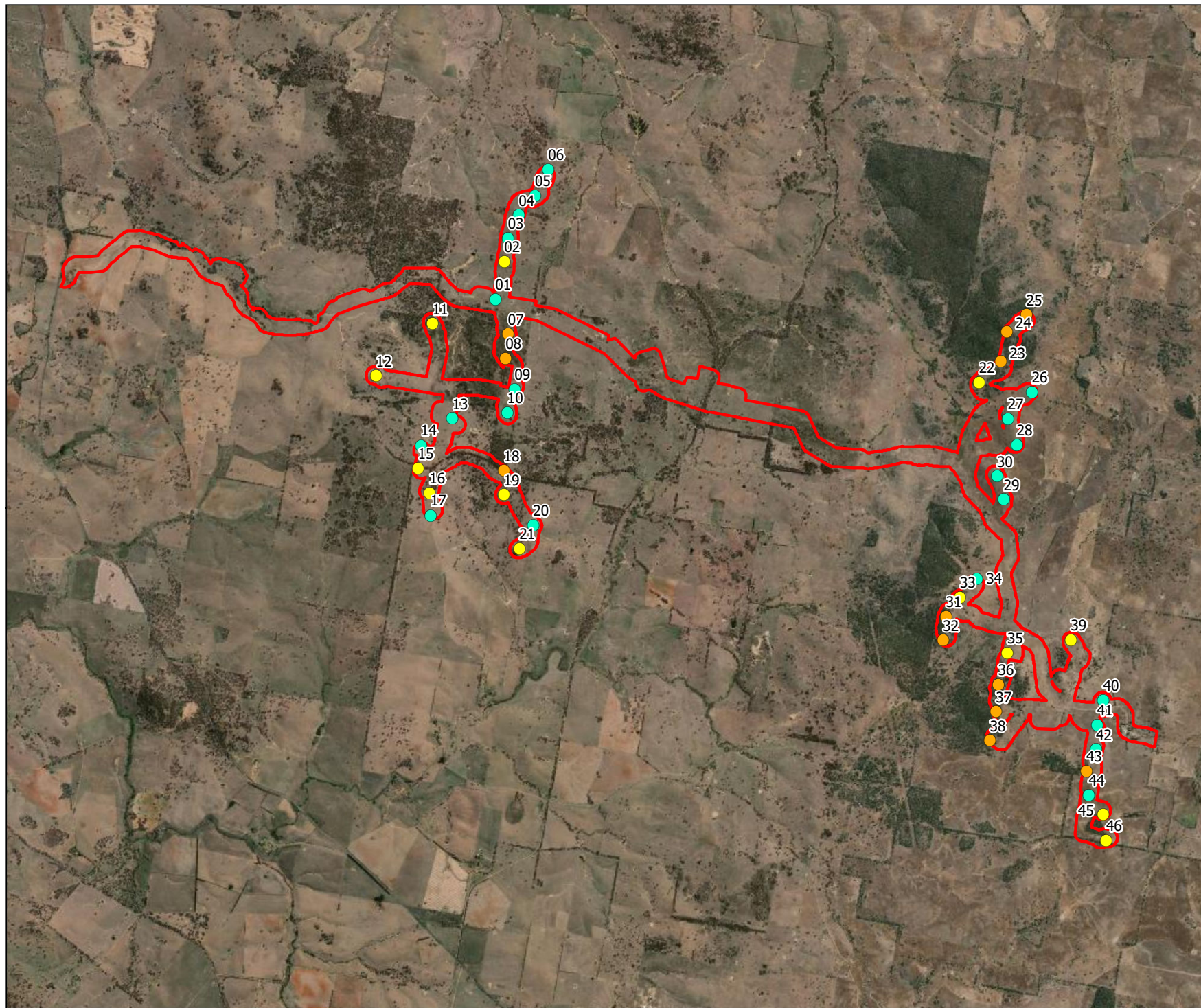
 Development corridor

**Turbine class - dominant surrounding vegetation**

 Closed

 Open

 Pasture



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## 2. Carcass search program

### 2.1. Methodology

#### 2.1.1. Monthly Carcass searches

Monthly searches for bird or bat mortality were carried out over a 12-month period. A total of 16 turbines were selected at random from three different habitat strata (Table 1). Searches covered the area around each turbine out to 120 m radius from the turbine tower base.

Table 1: Turbines selected for monthly carcass searches from three different strata

Habitat strata	Randomly selected turbines	
Cleared pasture	26	13
	6	30
	9	10
	41	
Open Woodland		22
		16
		45
		2
		11
Closed Woodland		37
		24
		31
		18

A follow-up ‘pulse search’ out to 60 metres was made around the same 16 turbines during the warmer months (September 2023 to April 2024) when microbats are more active and when Superb Parrot are in the area. This pulse search for bird and bat carcasses was conducted once a month within several days of the initial search. Pulse searches allow estimates of daily mortality rates over a short period, which reduces the opportunity for carcass removal by scavengers between searches of a turbine.

All carcass searches were conducted by trained and experienced zoologists from Nature Advisory using either a scent-detection dog or a humans-only search methodology.

#### 2.1.2. Methodology: dog-based carcass searches

A scent-detection dog and zoologist-handler team conducted most carcass searches, using the following methodology. In each search the handler walked parallel transects, 20 m apart, into or across the wind direction (depending on terrain), covering the search radius and controlling the trained and experienced scent detection dog to find any bird or bat carcasses on either side of each transect. This search method is represented in Figure 2.



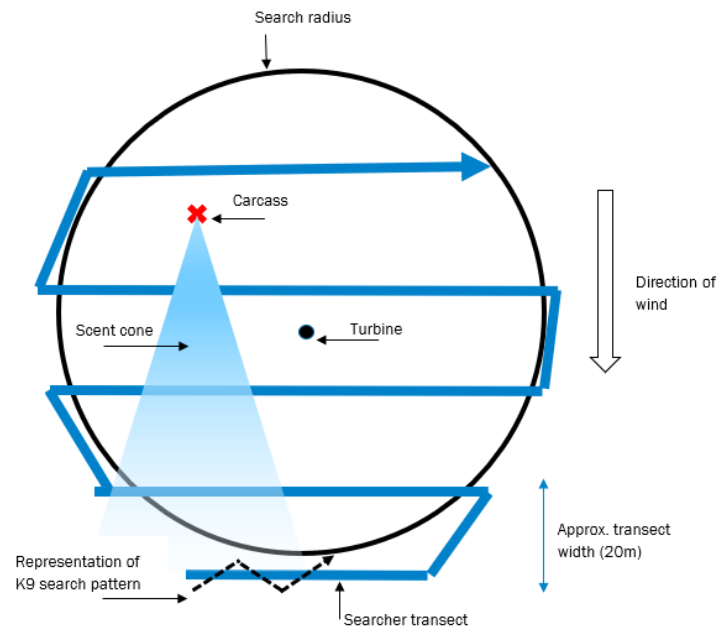


Figure 2: Diagram of search zone, transect width and search pattern at turbines

The handler tracks the dog's position in real time via a hand-held GPS unit linked to a GPS tracking collar. The searches were undertaken by one experienced zoologist and dog handler from Nature Advisory. All search tracks of the handler and dog were recorded via GPS, which can be made available on request.

### 2.1.3. Methodology: humans-only carcass searches

Occasionally, due to weather conditions, access constraints, 1080 poison baits or limits on available resources, carcass searches were made by zoologists alone, rather than a scent-detection dog team. These zoologists used the following search method:

- Inner zone (up to 60 m from the turbine tower base) - walking transects are spaced six meters apart. Nearly all microbats and the majority of small to medium birds are expected to be found in this inner zone (Hull and Muir 2010); and
- Outer zone (between 60 and 120 m from the turbine tower base) - walking transects are spaced twelve meters apart to detect medium and larger birds (Figure 3).

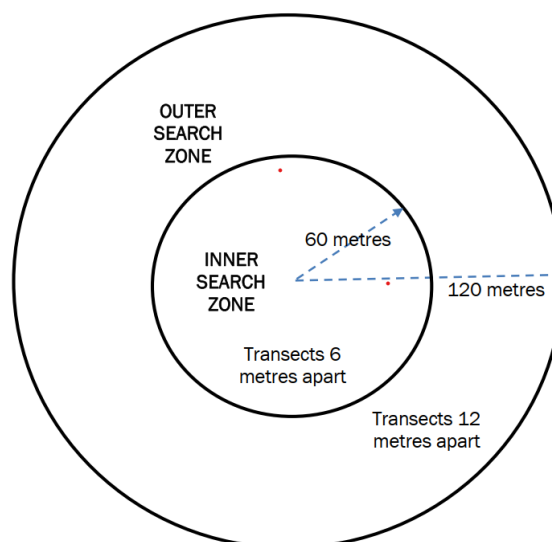


Figure 3: Inner and outer carcass search zones underneath the turbines.

#### 2.1.4. *Mortality data and search limitations*

In all searches a mortality report (BBAMP Appendix 2) was completed when a dead bird or bat was detected under a turbine. In each case, the zoologist photographed the carcass and digitally recorded the date, time, team, detection location and other details. Any cluster of feathers without associated bony or keratinous body parts, was recorded as a 'feather spot'. It is likely that feather spots represent a bird that collided with a turbine and was later scavenged. Single feathers or groups of fewer than five detached feathers, were not recorded as feather spots: birds regularly lose feathers in moult (feather renewal) or for other reasons (illness, agonistic interactions, predation, damage), therefore small, scattered groups of feathers do not necessarily indicate mortality. All carcasses detected were removed and stored in a freezer on site to avoid recounting in subsequent searches and to allow further post-mortem investigations (verification of identification, age, sex and other details). These stored carcasses were also available for later use in observer efficiency and scavenging rate trials (see below).

An incidental record is a carcass found under a turbine outside of the formal mortality detection program (e.g. by wind farm personnel during routine inspections of infrastructure or turbine searches under a turbine not selected for monthly searches). These records are included in annual reporting but are excluded from data used in statistical estimation of mortality, which will take place at the completion of the 24-month monitoring program.

Irrespective of the search team (i.e. dog based or zoologist alone), partial searches were made of some turbines due to barbed fencing, steep terrain, rock outcrops, timber piles and long grass, which pose a risk to search teams or otherwise impact search efficacy. Limitations to the area covered were recorded in search data, which can be provided upon request.

### 2.1.5. Additional carcass searches (Superb Parrot; September 2023 – December 2023)

Superb Parrot is a threatened bird species, listed as Vulnerable under both the EPBC Act and the NSW *Biodiversity Conservation Act 2016* (BC Act), which is known to breed in the vicinity of BWF.

An additional 30 turbines (i.e. all turbines at BWF, excluding the 16 covered under the monthly mortality monitoring addressed in section 2.1.1) were searched during the Superb Parrot breeding season (September – December). These 30 turbines were searched monthly during this period to a radius of 100 metres, which is considered sufficient to detect a medium sized bird carcass with weight: 132-157g (Symbolix 2020).

The results from these targeted Superb Parrot carcass searches will be analysed in the second year to ascertain if there is any evidence for variation in risk across turbines, and whether any turbines should be targeted for further monitoring (separate from the stratified random set used for whole-of-project mortality estimates) to assist in understanding and developing mitigation measures for any ongoing impacts on the Superb Parrot. Results of ongoing monitoring of potential Superb Parrot mortality will also be analysed in conjunction with the BUS and targeted survey results at year three and at ongoing five yearly review intervals. This ongoing monitoring will determine the scope and frequency of additional Superb Parrot carcass searches in coming years.

## 2.2. Targeted Superb Parrot surveys

Superb Parrot is an uncommon species that inhabits riverine woodland and open semi-cleared woodlands of the NSW inland slopes and plains, extending to a small area of northern Victoria. This is a gregarious bird, which often moves and forages in flocks, although pairs are more common during the spring breeding season. The species migrates from the southern end of its range in spring and summer, spending winter further north.

An investigation was made to determine the presence of Superb Parrot at BWF and whether any trees in the development footprint (within 200 metres of any turbines) have hollows being used by Superb Parrots for nesting.

Roaming surveys were undertaken at BWF during September to December of 2023, with the intention of observing and recording potential breeding and resource use of Superb Parrot within 250m of wind turbines and infrastructure. During the surveys in October, observations also included searches for larger nesting hollows and for the presence of Powerful Owl.

The following methodology was implemented during the targeted surveys:

- Daytime surveys were undertaken across a total of seven days, between 25<sup>th</sup> - 27<sup>th</sup> September 2023, 25<sup>th</sup> - 26<sup>th</sup> October 2023, 6<sup>th</sup> - 8<sup>th</sup> November 2023 and 17<sup>th</sup> - 19<sup>th</sup> January 2024.
- All trees with hollows previously identified within 200 metres of infrastructure were surveyed for evidence of Superb Parrot breeding;
- Surveys were undertaken using line transects through wooded areas where the vegetation structure would allow, and multiple smaller transects where it did not, within 250 metres of infrastructure;
- In cleared areas such as paddocks, individual trees were surveyed if they were within 200 metres of a wind turbine;
- The observer walked at a rate of up to two km/hour;
- Any hollows above 10cm in diameter were recorded; and

- GPS location, numbers and other relevant details were recorded for Superb Parrot and any other threatened species observations.

### 2.3. Impact Trigger searches

#### *Impact Trigger for Threatened Species*

The BBAMP for BWF (Nature Advisory 2021) sets a framework for identifying and managing the impacts of the wind farm on birds and bats. Section 4 of the BBAMP outlines the decision-making framework and mitigation responses in the event of an impact trigger. The BBAMP defines an impact trigger for a threatened species as follows:

*“Impact Trigger for Threatened Species occurs if a threatened bird or bat species (or recognisable parts thereof) listed under the EPBC Act or NSW Biodiversity Conservation Act 2016 (BC Act) is found dead or injured within the search area under a turbine, or within 100 metres of it incidentally, either during any formal mortality search or incidentally by BWF personnel.”*

On the 15<sup>th</sup> January 2024, a carcass was located and subsequently identified as a White-throated Needletail (WTNT) (*Hirundapus caudacutus*). This species is listed as Vulnerable and Migratory under the EPBC Act and as such, meets the criteria for a threatened species trigger. As per the Section 4.1.2 Decision Making Framework, the following actions have been undertaken:

- An immediate trigger investigation report was submitted to the New South Wales Department of Climate Change, Energy and the Environment and Water (DCCEEW) on the 1<sup>st</sup> of February 2024 pertaining to one initial carcass identification of a WTNT on the 15<sup>th</sup> January 2024. This investigation resulted in the reassessment of two previously detected feather spots. Additionally, this initial report also included two further carcasses found during ongoing BBAMP implementation monitoring on 23<sup>rd</sup> January 2024.

The subsequent expanded carcass search effort, required under the Section 4.1.2 decision-making framework concluded on March 1<sup>st</sup>, 2024, within the required six-week time frame. During that period an additional three WTNT carcasses were detected either in trigger-initiated searches or in ongoing BBAMP implementation monitoring (Nature Advisory 2024a).

WTNT carcasses found were generally severely damaged and in various states of decomposition. A data sheet was completed for each record, carcasses were photographed, bagged, tagged and stored in a freezer on site. Images of these carcasses are available on request.

#### *Impact Trigger for Non-Threatened Species*

The approved BBAMP for BWF (Nature Advisory 2021) sets a framework for identifying and managing the impacts of the wind farm on birds and bats.

Under Section 4.2.1 of the BWF BBAMP; an Impact Trigger for a non-threatened species is defined as:

*“a total of four or more bird or bat carcasses, or parts thereof, of the same species in two successive searches at the same or adjacent turbine(s) of a non-threatened species, excluding sulphur-crested cockatoo, galah, magpies, crows, ravens, pipits and introduced species (i.e., a total of four or more carcasses of the same species in two successive searches)”*

During the December 2023 and January 2024 surveys at BWF; 29 White-striped Free-tailed Bat mortalities were detected in total with four mortalities detected under Turbine 1 and 2 combined, four mortalities detected under Turbine 16 and 17 combined and six mortalities detected under turbine 36, 37 and 38 combined (Appendix 4). The carcasses were identified by a zoologist from Nature Advisory during monthly monitoring as part of the implementation of the BWF BBAMP.



This represents a non-threatened species trigger under the above description and as such; the decision-making framework under Section 4.2.2 and Figure 5 of the BBAMP must be implemented. The framework was provided and a notification was submitted to BWF on 12<sup>th</sup> of February 2024 and was submitted to the regulator on the 13<sup>th</sup> of February 2024. As per the decision-making framework, a desktop investigation evaluating the impacts on the species at a 'bioregional population' level was provided to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) and recommendations given on whether the impact is likely to be a regular occurrence, and if species specific monitoring is required (Nature Advisory 2024b).

These carcasses were in various states of decomposition and condition. A data sheet was completed for each, photographs taken and the carcasses bagged, tagged and stored in the freezer on site. These images have not been included given the number of carcasses found, but are available on request.

#### 2.4. Operational bird utilisation surveys (BUS)

Four operational phase BUS were made during the first year of operation at BWF – in September 2023, January 2024, April 2024 and July 2024 – covering four seasons over the survey period as per the BBAMP. These operational phase BUS surveys used methods outlined in Appendix 1 of BWF BBAMP (Nature Advisory 2021).

#### 2.5. Bat surveys

Bat surveys were carried out during operational phase as per the BBAMP requirements. This survey was intended to capture the annual post-breeding migration of the Eastern (Large) Bent-wing Bat, which occurs in late-summer-autumn. As such, bat surveys were undertaken in September 2023, February 2024 and April 2024, where survey methods included a repeat of pre-construction survey methods (Nature Advisory 2021).

Automated bat audio detectors (Songmeters) recorded the species-specific echolocation calls of free-flying bats at survey sites that were representative of the habitat types of the wind farm site and located near proposed wind turbine locations (Figure 2). Songmeters were secured to trees or fence posts approximately 1.5 - 2 metres above ground. The detectors were programmed to commence operation approximately 30 minutes before dusk (AEST), and to cease approximately 30 minutes after dawn, when bat activity is expected to be highest. Each Songmeter unit used an 64GB SDHC card that recorded bat echolocation calls, along with the date and time of each call.



**Figure 4: Songmeter Locations at BWF**

Project No: 18173\_07

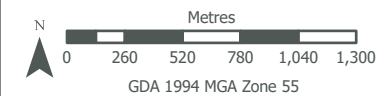
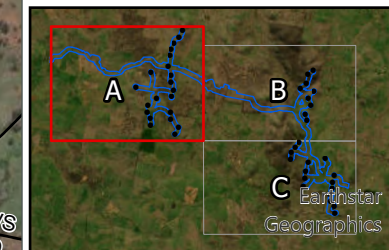
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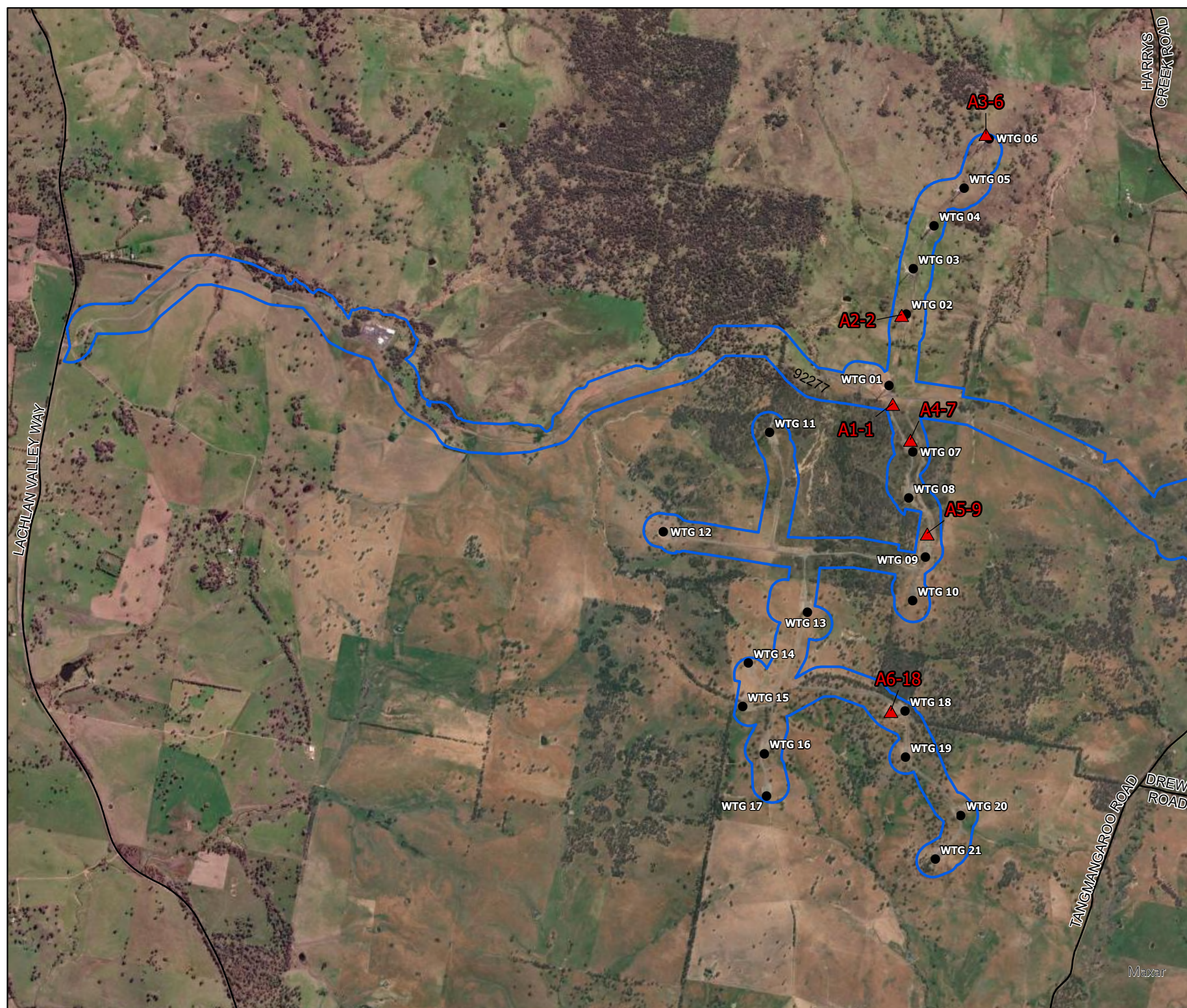
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**Figure 4: Songmeter Locations at BWF**

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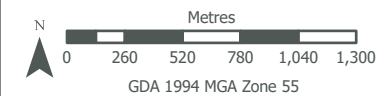
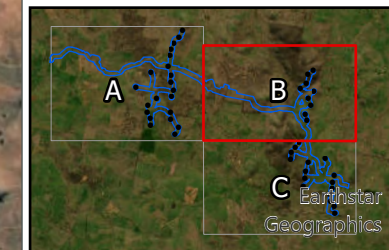
Project: Bango Wind Farm

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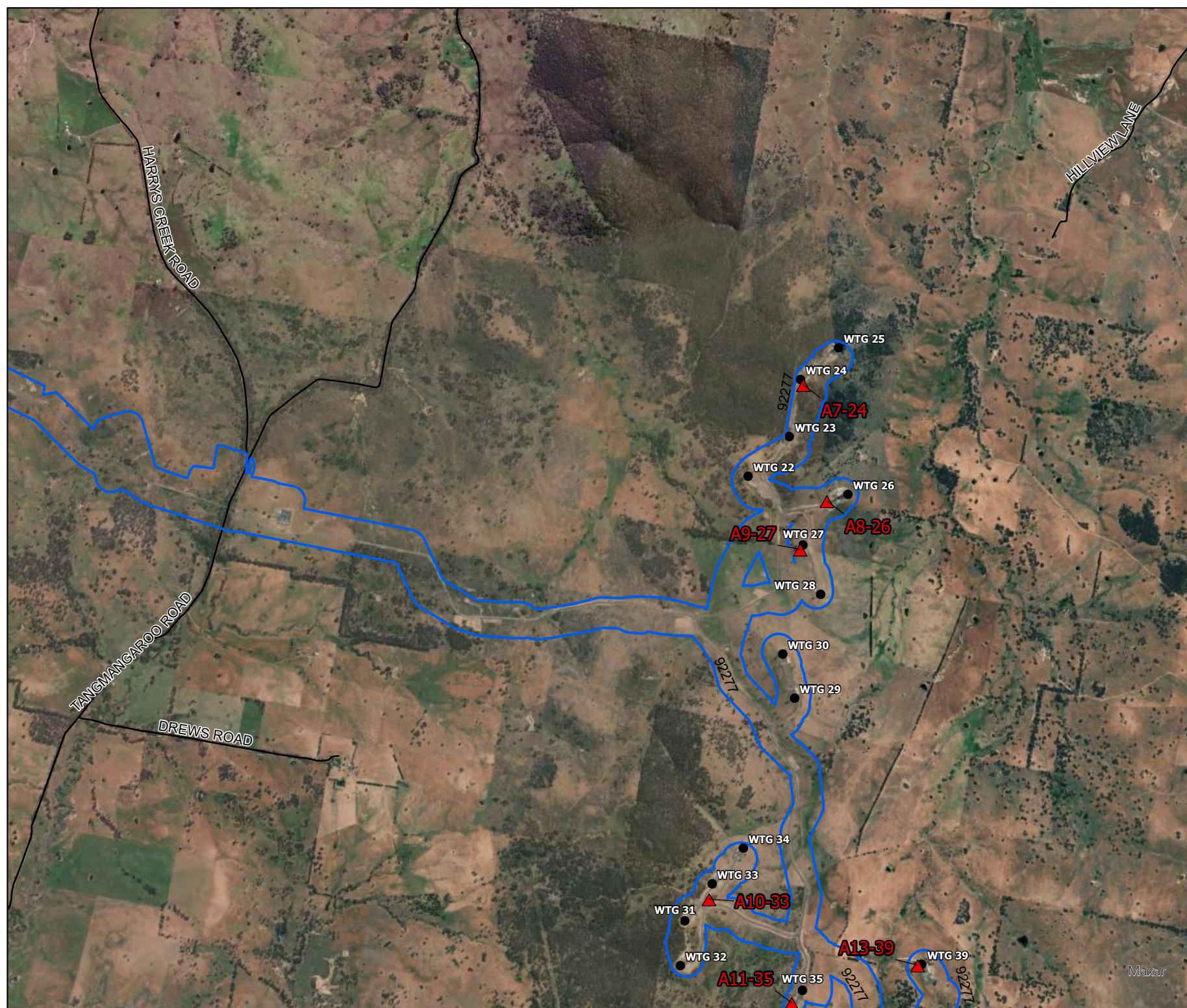
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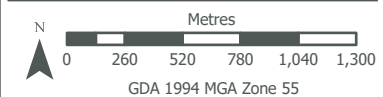
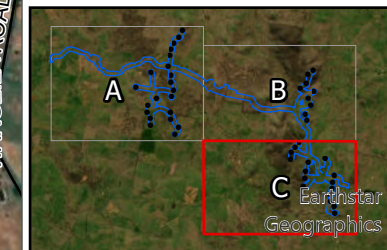
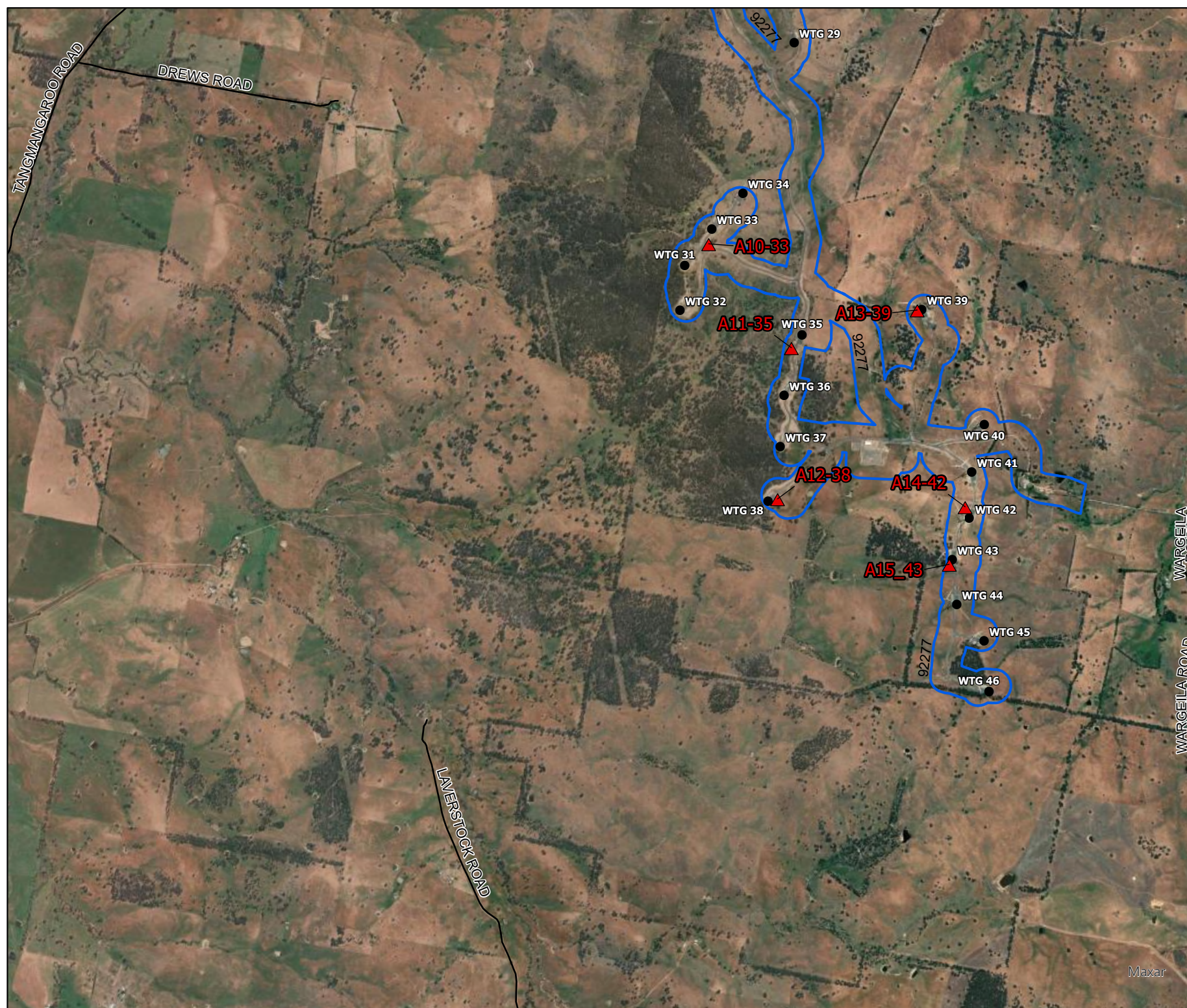




**Figure 4: Songmeter Locations at BWF**

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## 2.6. Scavenger Rate Trials

Scavenger trials are designed to ascertain the rate at which scavengers remove carcasses from under turbines at BWF. The result is used to develop a correction factor to account for the number of birds and bats carcasses that may potentially be removed by scavengers before the monthly search around a turbine. Scavengers can include ground-dwelling animals, such as foxes and rats (more likely to detect carcasses by scent), and aerial scavengers such as birds of prey and ravens (more likely to notice carcasses visually).

Appendix 4 of the BBAMP details the methods for scavenger trials. The approach described in the BBAMP places the carcass in the search area, and then an observer comes back regularly to check on whether the carcass has been scavenged. A modified and improved methodology has been adopted for the scavenger trials where a motion sensor camera is used to monitor scavenger activity. A motion sensor camera is attached to a tree, fence post or star picket approximately three to four metres away from each randomly placed carcass. The camera recorded any scavenging activity in detail.

In each trial, seven birds and seven bats were deployed across each of three different habitat strata (cleared pasture, open woodland and closed woodland). This method was conducted twice across the period of September 2023 – February 2024 (Table 2 and Table 3). A study by Symbolix (2020) showed that at operating wind farms there was not a significant difference between seasons when conducting scavenger trials for either birds or bats.

The carcass is left for 30 days, after which the camera was collected, and scavenging activity reviewed. If the carcass remains on day 30, it was recorded as not scavenged. This approach extends the method detailed in the BBAMP and will provide better quality information for statistical analyses of mortality.

Table 2: Scavenger trial schedule

Strata	Sep-23	Oct-23	Nov-23	Feb-24	Total
Cleared Pasture	5	2	5	2	14
Closed Woodland	3	5	4	2	14
Open Woodland	5	4	5	0	14
<b>Total</b>	<b>13</b>	<b>11</b>	<b>14</b>	<b>4</b>	<b>42</b>

Table 3: Scavenger trial carcasses used

Carcass type	Sep-23	Oct-23	Nov-23	Feb-23	Total
Bird	6	5	7	3	21
Bat	7	6	7	1	21
<b>Total</b>	<b>13</b>	<b>11</b>	<b>14</b>	<b>4</b>	<b>42</b>

## 2.7. Detectability (Observer) trials

Detectability trials are conducted to test the average rate that the trained searchers detect carcasses under wind turbines. It is not expected that searchers will find every carcass under turbines each monthly survey, given the difficulties of varying terrain and vegetation. As such, the results of the trial enable a

correction factor to be applied to mortality estimates that accounts for carcasses that were potentially missed.

Detectability trials were supervised by a qualified ecologist ‘carcass controller’. To account for observer variability in detecting carcasses, only personnel conducting monthly searches at BWF participated in detectability trials. Detection efficiency (percentage of carcasses detected) will be incorporated into later statistical estimates of mortality.

One detectability trial was undertaken during the 12 months of the monitoring. A second trial will be completed during September/October 2024 of the second 12 months of monitoring. The staggered timing of these trials is not expected to have any effect on estimates of detection efficiency or mortality estimates.

During each trial, ecologists who regularly undertake carcass searching at BWF had 14 carcasses (seven bird including medium and large carcasses, and seven bats or bat substitutes) each placed under turbines they searched without knowledge of locations. The detection of each carcass was recorded along with the carcass type, turbine number, and searcher.

Table 4: Number of carcasses deployed in detectability trails specifying vegetation condition

Searcher	Date	Turbine	No. of Birds	No. of Bats	Vegetation Condition
Searcher 1	30/05/2024	2	3	3	Mostly short grass
		10	2	2	Short to long grass, high dense shrubs
		16	2	2	Short to medium grass, scattered trees

## 2.8. Raptor monitoring

Incidental monthly monitoring of raptor flights and breeding activity has been undertaken as raptors, particularly Wedge-tailed Eagle, have been identified in Section 4.1 of the BBAMP as ‘at risk’ at BWF.

The raptor monitoring was incorporated into the monthly mortality detection monitoring and aims to inform the ongoing level of risk to the local population to potential impacts.

Incidental reporting of all raptors observed is conducted across each field visit. Documentation of all raptor flights observed was plotted on a map. The following data was documented for each flight recorded during the monitoring program.

- Species
- Number of birds
- Time first observed
- Time the bird/s flew out of sight or landed
- The location of the bird (air, perched or ground)
- Height of the bird when first observed
- The height range of the bird (minimum and maximum heights)
- The landscape the bird was observed in (valley, slope or ridge)

- Flight behaviour (soaring, gliding, hovering, flapping, displaying, resting, mobbing, or foraging).

Any nesting activity was also recorded.

## 2.9. Carrion removal and pest control

Section 3.1 of the BBAMP outlines required reporting on livestock and carrion removal for the purposes of predator reduction and any landowner feral animal control programs.

Experience at other wind farms indicates that Wedge-tailed Eagles and other raptors make up a substantial proportion of birds that collide with wind turbines in Australia. The eagle and other raptors forage for carrion (and the fresh or decaying flesh of a dead animal) and also on small mammals and rabbits. To reduce the risk of raptors colliding with turbines, a regular carrion removal program was implemented during operations, to reduce the attractiveness of the site to raptors and therefore reduce the potential for fatal collisions by this group of birds. The procedures below were to be adopted:

- A designated suitable person will be appointed (such as a BWF employee or landowner) to perform the function of Carrion Removal Coordinator who will ensure the activities described below will occur:
  - Monthly inspections of the BWF site to search for any stock, introduced or native mammal and bird carcasses (to be recorded as incidental finds) that may attract raptors (e.g. kangaroos, pigs, goats, foxes, rabbits, dead stock). This search will be undertaken via vehicle and visual checks in addition to using binoculars to look for larger carcasses within 200 metres of each turbine;
  - During lambing season, the carrion searches will be increased to fortnightly where lambing is occurring within 200 metres of a turbine.
  - Additional, opportunistic observations by operators during normal inspections and work routines and by landowners as they travel around their properties will provide further opportunity to identify and report carcasses of stock or feral animals so that timely collection can be undertaken to remove them. This can be addressed by operator and landowner protocols within the operational phase environmental management plan and associated procedures;
  - Any carcasses and/or remains found that are within 200 metres of turbines, will be collected and disposed of within 2 days, in a manner that will avoid attracting raptors close to turbines;
  - Consult with the landowner or BWF manager in relation to the appropriate disposal of collected carrion, to be located at least 200 metres away from the closest turbine;
  - Wind energy facility maintenance staff and landowners will be required to notify the Carrion Removal Coordinator immediately following identification of carrion on site in between monthly searches;
  - Carcass occurrence and removal will be recorded in a “management log book” maintained by BWF asset manager or delegated representative.
- During lambing season (usually late autumn / winter) young lambs are susceptible to death. Subject to the agreement of landowners, lambing will be located in paddocks at least 200 metres away from turbines to reduce the risk that raptors (Wedge-tailed Eagles in particular) are attracted to dead lamb carcasses under turbines;
- In order to reduce collision risks to birds, with landowner agreement the practice of grain feeding of stock within 200 metres of turbines will be minimised as it could attract parrots, such as the listed Superb Parrot, cockatoos or other birds to turbines, increasing collision risk;
- Any feral animal control on the BWF site should involve the timely removal and appropriate disposal of resulting carcasses;



- If a large active rabbit presence is observed during monitoring surveys, it will be necessary to conduct an integrated rabbit control program (to reduce site attractiveness to Wedge-tailed Eagles and other raptors). Methods to control rabbits include borrow destruction, poisoning and shooting. Any rabbit control program will require cooperation and agreement from the landowners;
- An annual summary of carcass removal, based on the 'management log' will be provided in the annual monitoring reports; and
  - The need for continuation of the carcass removal program and effort required will be assessed after one year of operation. In general, the criteria for continuation will be based on the frequency of carcass finds. For example, if carcass frequency is particularly low (e.g. one or two per quarter) outside of turbine search zones (i.e. not beneath turbines) the intense program may be discontinued or reduced considerably. Alternatively, if peaks occur at specific times or locations where there are turbines with intervening periods of low numbers, the effort may be focussed on the peak periods and/or locations.

## 3. Results

### 3.1. Monthly Carcass searches

Mortality detection was scheduled at each turbine once every month following the methods described above. However, turbines that were not active during the survey month were not searched. Gaps in survey data do not bias mortality estimates and are accounted for during analysis (Symbolix 2022).

A total of 188 bat and bird carcasses, including feather spots, were recorded between August 2023 and July 2024. The highest number of carcasses occurred in January 2024, with 37 records, followed by December 2023 with 27 records.

#### Bird Species

The most frequently recorded bird species in mortality searches were Crimson Rosella and Eastern Rosella, each with 14 carcasses spread over the year. Other bird species commonly recorded in mortality searches included the Australian Magpie (7 carcasses), Grey Fantail (6 carcasses), Wedge-tailed Eagle (5 carcasses) and White-throated Needletail (5 carcasses). Eighteen bird carcasses could not be identified to species due to decomposition or a lack of identifying features. White-throated Needletail was the only threatened species detected in these mortality searches: no Superb Parrot carcasses were detected.

#### Bat Species

Bats were the most frequently observed group in mortality searches, accounting for a large portion of the total sightings. White-striped Free-tailed Bat was the most frequently detected species with 27 carcasses detected, all between December 2023 and May 2024. Forest Bat spp. (*Vespadelus*) was the second most observed bat species category, with 19 carcasses recorded. This is a difficult genus to identify to species level on morphology of decomposing carcasses, however, an additional eleven carcasses were identified as Little Forest Bat (*V. vulturnus*) and one carcass was identified as Large Forest Bat (*V. darlingtoni*). All Forest Bat mortality was recorded between October 2023 and April 2024. Other notable bat species mortality detected include Gould's Wattled Bat with six carcasses and Free-tailed Bat sp. (*Ozimops*), nine carcasses, with additional single carcasses identified as Ride's Free-tailed Bat (*O. ridei*) and Southern Free-tailed Bat (*O. planiceps*). Nineteen (19) bat carcasses (Unknown Bat sp.) could not be identified to species or genus level due to decomposition or lack of identifying features. These unknown bats may include threatened species which may potentially be identified through DNA based analyses. Mortalities were most abundant in the summer months, particularly from December to January, corresponding with seasonal factors influencing bat activity.

Table 5: Mortalities across the survey period August 2023 – July 2024

Species	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Total
White-striped Free-tailed Bat					4	12	4	2	4	1			27
Forest Bat sp.			5	1		4	2	2	5				19
Unknown Bat sp.				2	5	7	2		2		1		19
Unknown Bird sp.		3	3	6	2				2		1		17
Crimson Rosella		3	1		1	2		1		3	1	2	14
Eastern Rosella	3	5	2			1			1	1	1		14
Little Forest Bat					2	5	1		3				11
Free-tailed Bat Spp.					8	1							9

Species	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Total
Australian Magpie	1	1	1	1					1		2	1	8
Gould's Wattled Bat					1	1	2	1	1				6
Wedge-tailed Eagle	1	1								3			5
White-throated needletail					2	2	1						5
Nankeen Kestrel				2	1								3
Spotted Pardalote						1		1	1				3
Sulphur-crested Cockatoo				1				1			1		3
Australian Wood duck												2	2
Grey Fantail			2						3	1			6
Rock Pigeon										1		1	2
Striated Pardalote									1		1		2
Australian King Parrot	1												1
Black-faced cuckoo-shrike							1						1
Chocolate Wattled Bat									1				1
Common Myna			1										1
Eastern Barn Owl		1											1
Fan-tailed cuckoo												1	1
Honeyeater sp.			1										1
Large Forest Bat						1							1
Magpie-lark							1						1
Ride's Free-tailed Bat					1								1
Silvereye										1			1
Southern Free-tailed Bat				1									1
Stubble Quail							1						1
<b>Total</b>	<b>6</b>	<b>14</b>	<b>16</b>	<b>14</b>	<b>27</b>	<b>37</b>	<b>15</b>	<b>8</b>	<b>25</b>	<b>11</b>	<b>8</b>	<b>7</b>	<b>188</b>

### *Turbine specific mortalities*

The 12-month monitoring period consists of 188 bat and bird mortalities recorded across various turbines. Bird mortalities, including feather spots, totalled 93 occurrences. The highest bird mortality was recorded at turbine 16 (17 mortalities) followed by turbine 10 (16 mortalities). Both turbines showed regular mortality throughout the monitoring period, with most carcasses found in September to April, consistent with the overall pattern of mortality across the monitored turbines.

Bats accounted for a large portion of the observations, with 95 recorded mortalities. The highest number of bat mortalities occurred at turbine 37 (17), followed by turbine 45 (13) and turbine 16 (10). Consistent

with the overall seasonal pattern, peak mortality at individual turbines occurred in December (7 carcasses at turbine 37) and January (6 carcasses at turbine 45).

#### Overall Patterns and Peaks:

- January had the highest overall bat and bird mortality count (37), with several carcasses detected around turbines 45 (6), 22 (5), 6, 10, 13 and 37 (all 4 carcasses).
- High activity levels were recorded in December, with 27 mortalities, particularly around turbines 37 (9) and 16 (5).
- High activity levels were also recorded in April with 25 mortalities, including turbine 41 (6) and turbine 16 (4).
- At least 14 mortalities occurred in each month from September 2023 through to February 2024.

These results indicate that turbines 10, 16, 37, and 45 were hotspots for wildlife mortalities, potentially due to location-specific environmental factors.

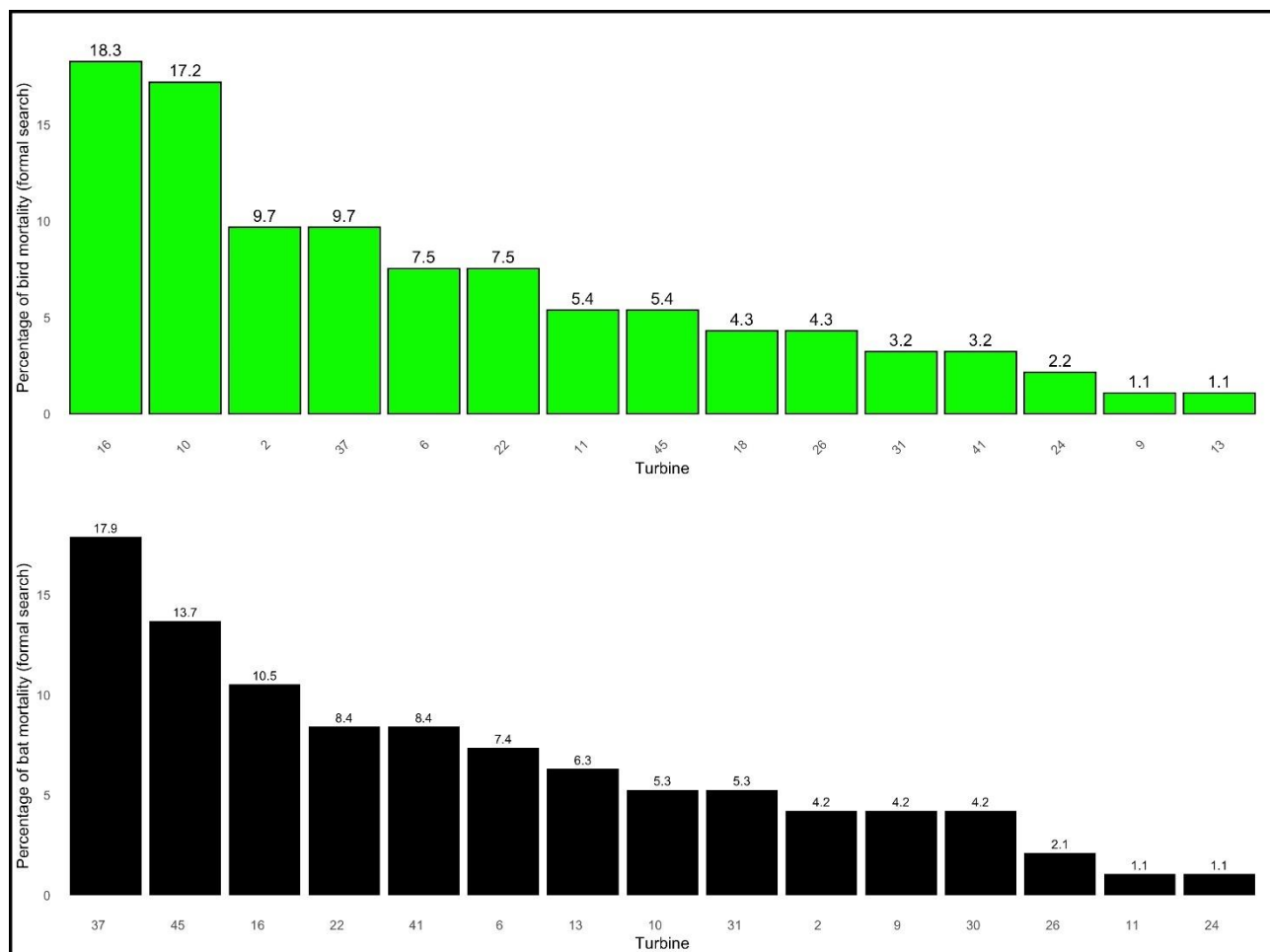


Figure 5: Turbine specific mortalities

### 3.2. Additional Carcass Searches (Superb Parrot; September 2023 – December 2023)

The Superb Parrot targeted carcass searches captured 35 bird and bat mortalities spanning from. Carcass searches could not be conducted in December 2023 due to resourcing issues and were covered in the first week of January 2024. The majority of mortalities detected were concentrated in January 2024, in particular bat mortality.

#### Bird Mortalities

- No Superb Parrot mortality was detected in these searches
- One White-throated Needletail mortality was detected in January 2024
- Four Wedge-tailed Eagle mortalities were detected across four months, from September 2023 to January 2024.
- Three Nankeen Kestrel mortalities were recorded, one each in October, November 2023 and January 2024.
- One Brown Falcon mortality was recorded in October 2023
- Low numbers of other bird species were detected in these mortality searches

#### Bat Mortalities

- The White-striped Free-tailed Bat was the most commonly detected mortality, with a total of 11 carcasses, nine of which were found in January 2024.
- Low numbers were detected of other bats

#### Temporal Patterns

- January 2024 saw the highest overall bird and bat mortalities, with 22 incidents, of which 15 were bat deaths.
- Relatively low mortality was detected in other survey months with 3 mortalities in September, 4 in October, and 6 in November.

#### Species Diversity

- The dataset highlights a wide range of species, with bats accounting for the largest proportion of mortalities, particularly in January.
- Bird mortalities were more evenly spread across the observation period, with no spikes in any specific month.

Table 6: Mortalities across the Superb parrot carcass search period September 2023 – January 2024

Species	Sep-23	Oct-23	Nov-23	Jan-24	Total
White-striped Free-tailed Bat			2	9	<b>11</b>
Wedge-tailed Eagle	1	1	1	1	<b>4</b>
Nankeen Kestrel		1	1	1	<b>3</b>
Unknown Bat sp.			1	2	<b>3</b>
Australian Magpie		1		1	<b>2</b>
Gould's Wattled Bat				2	<b>2</b>
Black-faced cuckoo-shrike				1	<b>1</b>
Brown Falcon		1			<b>1</b>

Species	Sep-23	Oct-23	Nov-23	Jan-24	Total
Crimson Rosella				1	1
Eastern Rosella	1				1
Forest Bat sp.				1	1
Free-tailed Bat				1	1
Noisy Friarbird	1				1
Noisy Miner			1		1
Unknown Bird Spp.				1	1
White-throated needletail				1	1
<b>Total</b>	<b>3</b>	<b>4</b>	<b>6</b>	<b>22</b>	<b>35</b>

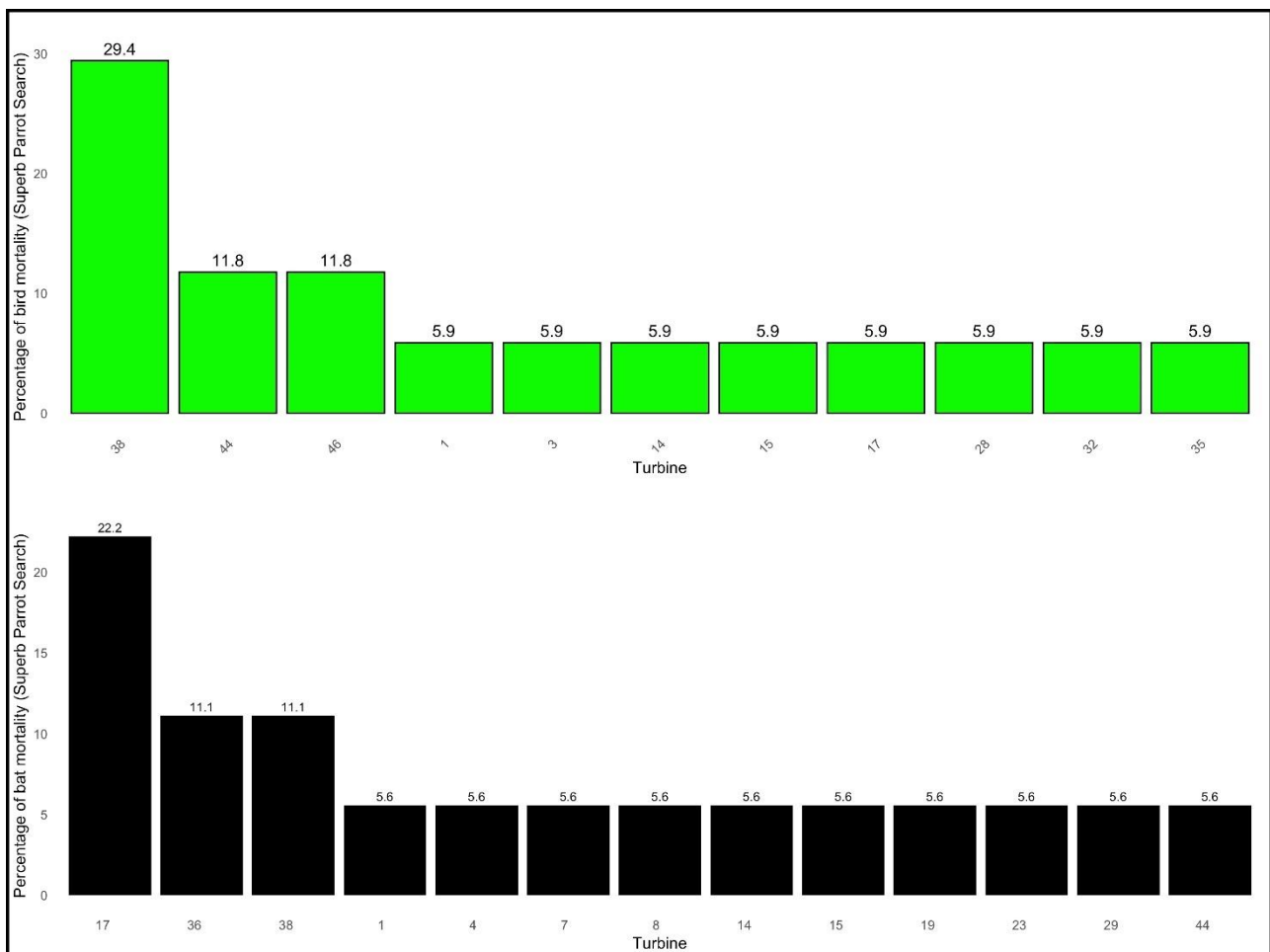


Figure 6: Turbine specific mortalities (Superb Parrot Carcas Searches)

### 3.3. Targeted Superb Parrot surveys

No observations of Superb Parrot breeding activity were recorded during the surveys. Areas containing nesting hollows that would support breeding of Superb Parrot or Powerful Owl were recorded.

A total of 73 hollows were detected, no nesting behaviour or other evidence (owl pellets or whitewash) for either target species was observed (Figure 7). A number of incidental observations were also recorded of other species. The most common parrot species observed near hollows were Sulphur-Crested Cockatoo and Crimson Rosella. Other parrots such as Galah and Australian King Parrots were observed

infrequently. No Eastern Rosella were seen on site during summer surveys. As in previous surveys, common passerine species were observed such as Australian Magpie, Australian Raven, Pied Currawong and Red Wattlebird.

Three raptor species and one threatened species were observed during the targeted Superb Parrot surveys. Table 7 summarizes the number of individuals seen during this monitoring period, and detailed information on flight paths are in Appendix 3.

Table 7: Summary of raptor and threatened species flights at BWF from targeted Superb Parrot surveys (Year 1)

Species	Scientific name	Number of individuals	Percentage
Nankeen Kestrel	<i>Falco cenchroides</i>	15	60%
Wedge-tailed Eagle	<i>Aquila audax</i>	6	24%
Black-shouldered Kite	<i>Elanus axillaris</i>	2	8%
Superb Parrot	<i>Polytelis swainsonii</i>	2	8%



**Figure 7: Location of hollow bearing trees**

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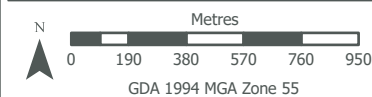
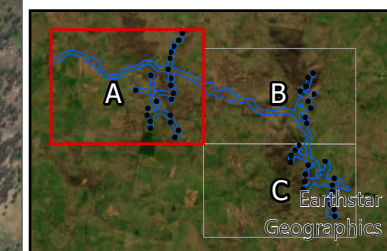
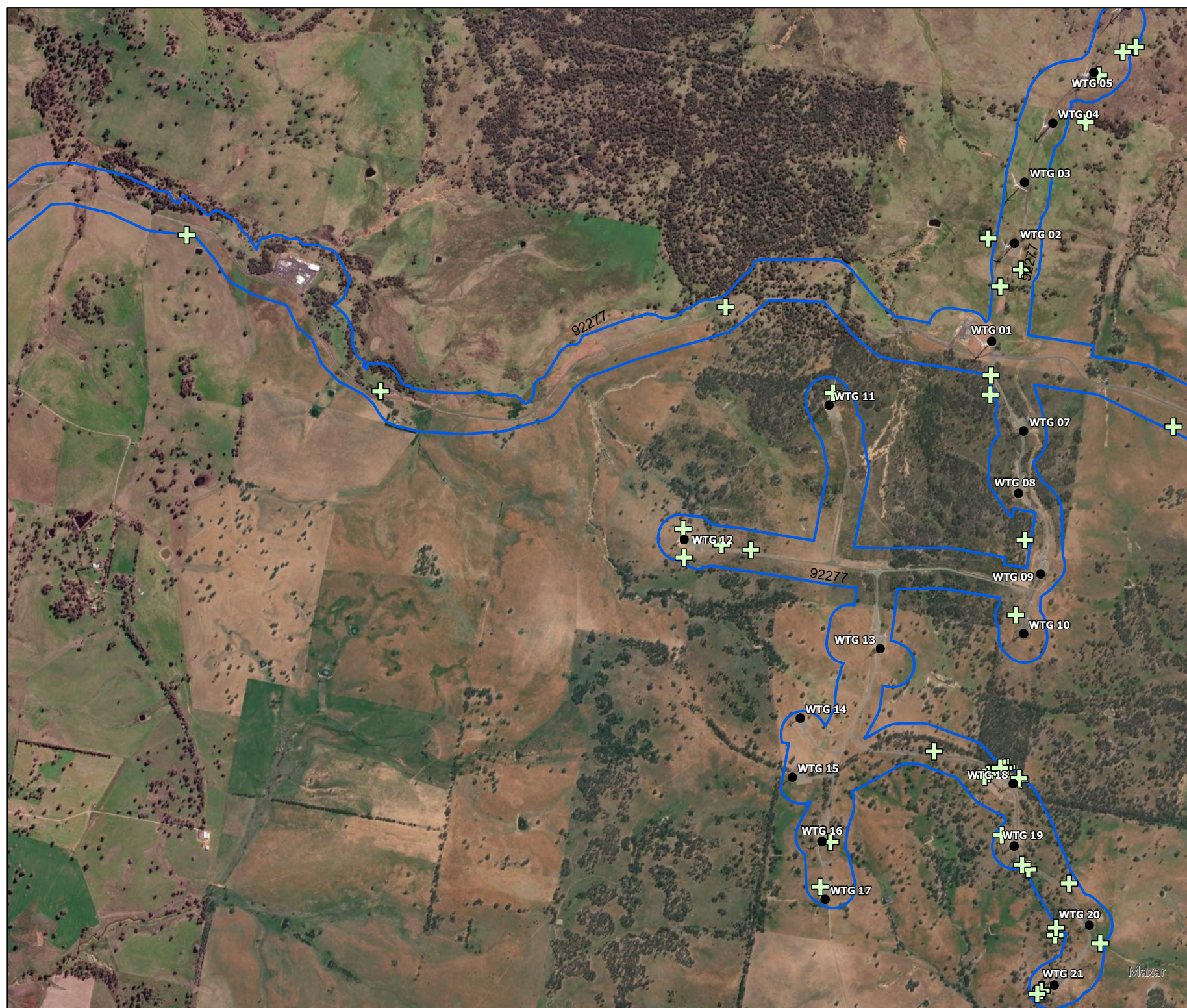
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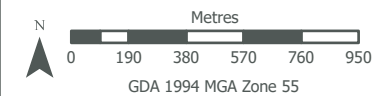
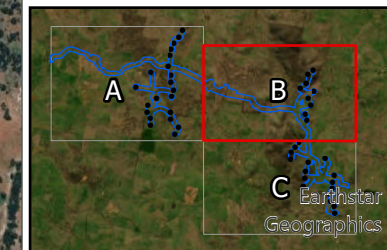
**Figure 7: Location of hollow bearing trees**

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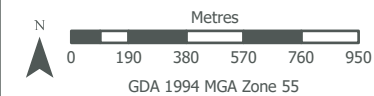
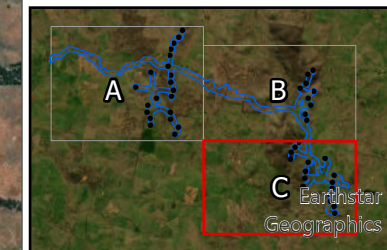
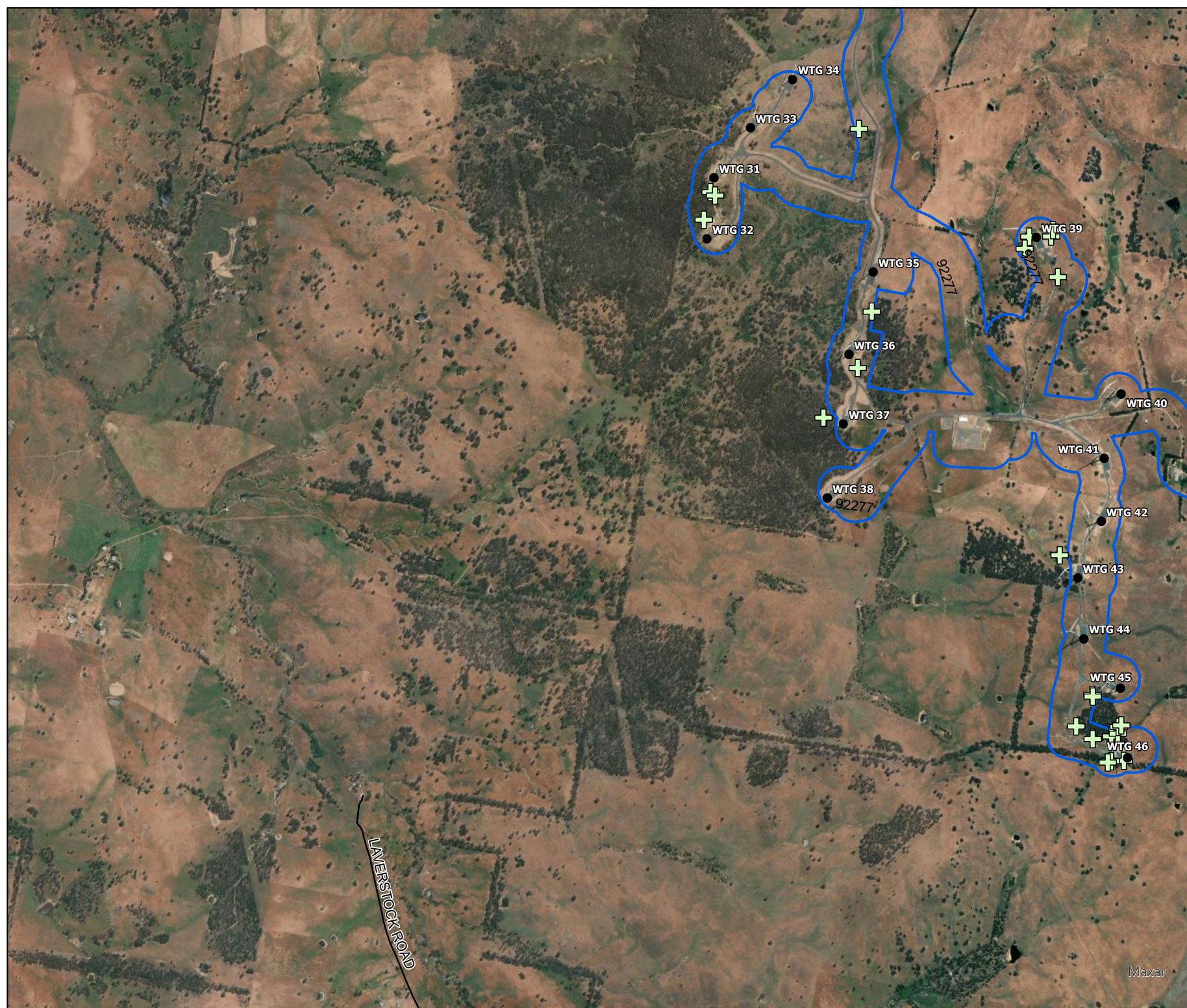
**Figure 7: Location of hollow bearing trees**

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**Figure 8: Flight Paths from Targeted Superb Parrot Survey**

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**BUS Point**

■ Impact

■ Reference

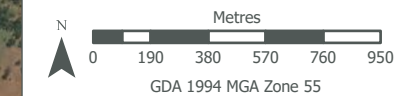
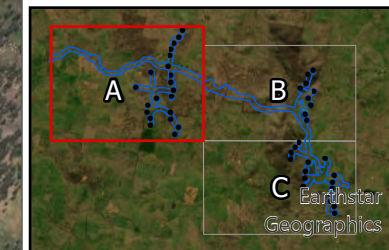
**Species**

→ Black-shouldered Kite

→ Nankeen Kestrel

→ Superb Parrot

→ Wedge-tailed Eagle



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# Figure 8: Flight Paths from Targeted Superb Parrot Survey

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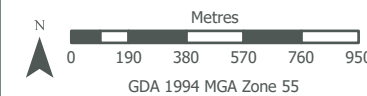
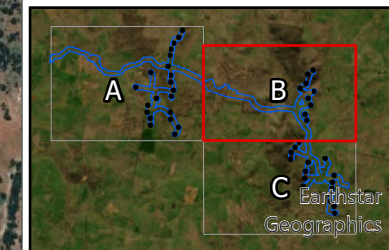
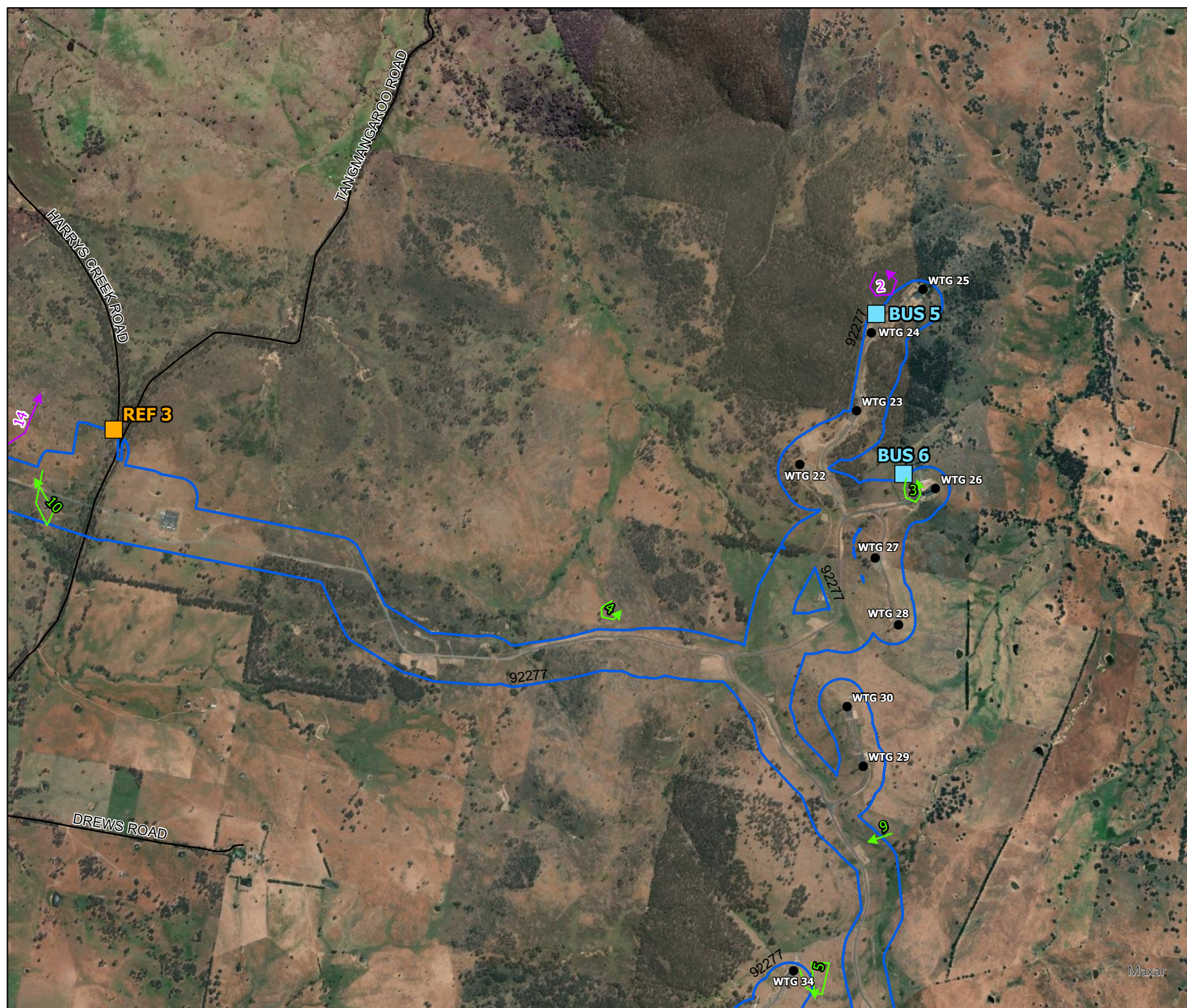
## Species

➔ Black-shouldered Kite

➔ Nankeen Kestrel

➔ Superb Parrot

➔ Wedge-tailed Eagle



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**Figure 8: Flight Paths from Targeted Superb Parrot Survey**

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■ Impact

■ Reference

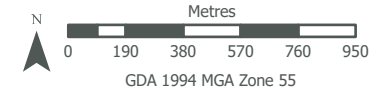
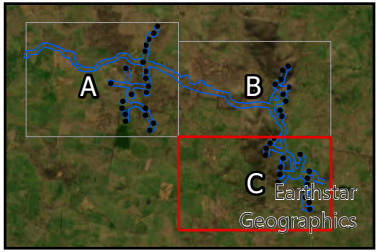
**Species**

→ Black-shouldered Kite

→ Nankeen Kestrel

→ Superb Parrot

→ Wedge-tailed Eagle



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### 3.4. Impact Triggers

The intensive carcass searches of bat and bird species mortalities for January and February 2024 yielded the following results. A total of 39 mortalities were recorded, with the majority occurring in February.

#### Bird Mortalities

- White-throated Needletail appeared in both months, resulting in two mortalities in total.
- Wedge-tailed Eagle and Nankeen Kestrel mortalities were recorded in February with two and one mortalities, respectively.

#### Bat Mortalities

- The White-striped Free-tailed Bat experienced the highest mortality, with 14 recorded overall—three in January and eleven in February.
- The Unknown Bat Species category accounted for six mortalities (three in both January and February).
- The Forest Bat Species group was only recorded in February, with four mortalities.
- Free-tailed Bat Species group were also exclusively recorded in February, with three mortalities.
- Gould's Wattled Bat had two mortalities in February.
- Other bat species, including the Large Forest Bat, Little Forest Bat, Southern Forest Bat, and Southern Free-tailed Bat, were recorded with one or two mortalities spread across January and February.

In conclusion, February 2024 accounted for 30 of the total 39 mortalities, with higher diversity and frequency of bat species mortalities compared to January 2024's nine mortalities. The White-striped Free-tailed Bat was the most frequently affected species overall.

The target species, White-throated Needletail, was detected in both months. White-throated Needletail collisions at BWF represent a notable event due to conservation status of the species and the absence of prior observations of this species at the site. BWF is situated within the broadly defined migratory path and foraging areas of this species during its north-south seasonal movement through eastern Australia. White-throated Needletail is a large species of swift which flies with incredible speed and aerial agility, and frequently flies at height making it potentially susceptible to collision with man-made structures. These swifts forage in windy areas where they might be caught off guard by unexpected obstacles such as towers and spinning turbine blades.

Eight recorded White-throated Needletail collisions were recorded at BWF between December 2023 to February 2024: five mortalities detected in regular monthly monitoring of 16 turbines, one in Superb Parrot breeding season monitoring of the remaining 30 turbines and two in trigger-initiated searches. These collisions may indicate important flyways or habitats for the species. These incidents indicate a need for further information on White-throated Needletail activity at BWF and investigation of possible mitigation strategies.

Table 8: Mortalities across the Intensive carcass search period for January 2024 and February 2024

Species	Jan-24	Feb-24	Total
White-striped Free-tailed Bat	3	11	14
Unknown Bat Spp.	3	3	6
Forest Bat Spp.		4	4



Species	Jan-24	Feb-24	Total
Free-tailed Bat		3	3
Gould's Wattled Bat		2	2
Wedge-tailed Eagle		2	2
White-throated needletail	1	1	2
Large Forest Bat		1	1
Little Forest Bat	1		1
Nankeen Kestrel		1	1
Southern Forest Bat		1	1
Southern Free-tailed Bat	1		1
Unknown Bird Spp.		1	1
<b>Grand Total</b>	<b>9</b>	<b>30</b>	<b>39</b>

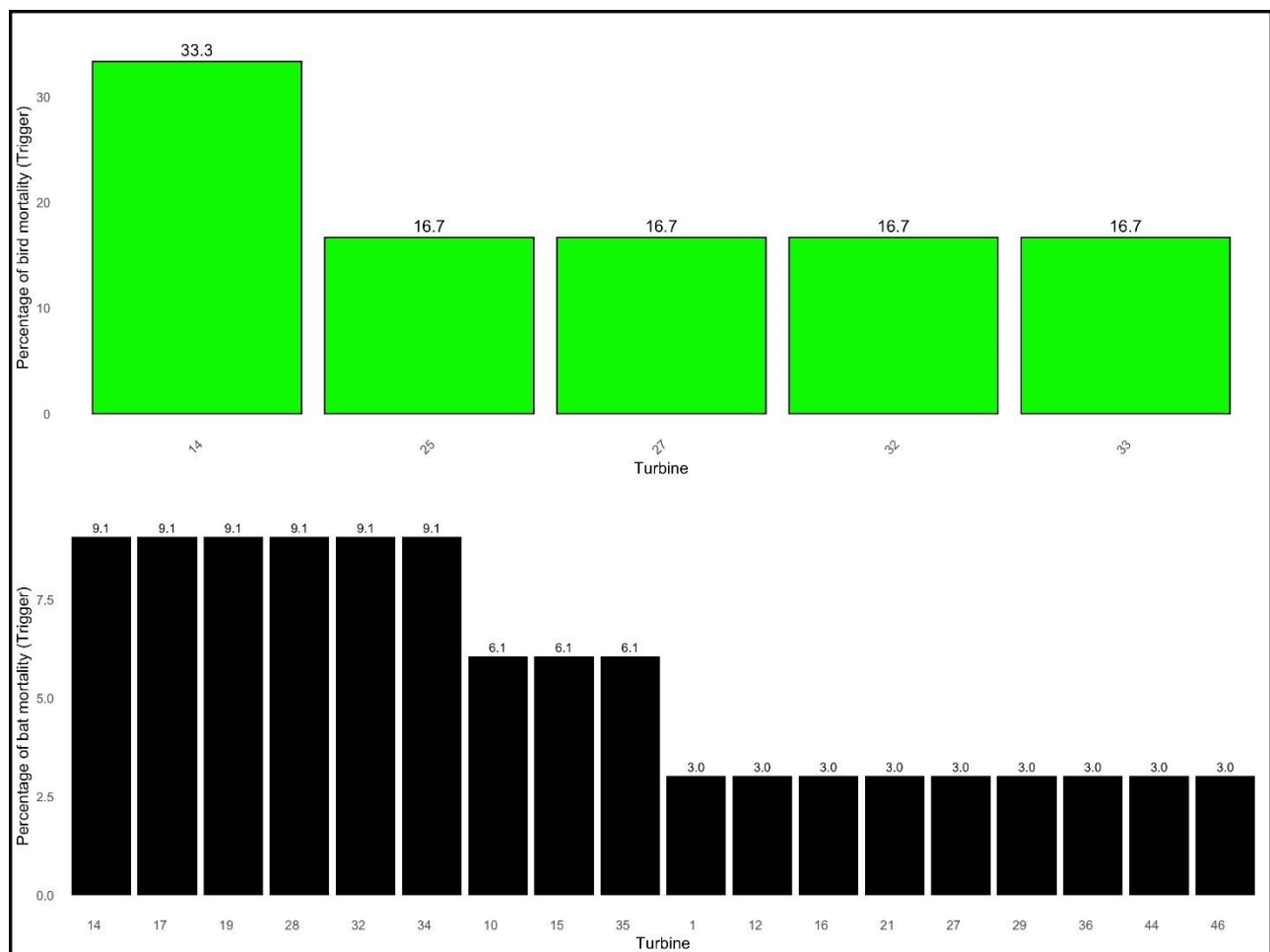


Figure 9: Turbine specific mortalities (Trigger searches)

### 3.5. Operational Bird Utilisation Surveys (BUS)

#### 3.5.1. *Abundance and Diversity*

71 species were recorded during the combined two survey phases. A total of 51 species were recorded at the impact survey points and 62 species at the reference survey points. Species recorded were predominantly farmland and bushland species with some records of raptors and waterbirds. The raw data will be displayed as an appendix to the BUS report. The five most common species observed at each stage of construction are shown in Figure 10 below. In total 318 surveys were carried out.

A total of 4216 birds were counted over the survey periods including 2487 impact and 1720 at reference points. The five most abundant species accounted for ~ 33 % of birds counted at all points. Five most common species observed were as below:

- Australian Magpie (815 observations, 19.3% of all birds)
- Common Starling (426 observations, 10.1 % of all birds)
- Superb Fairy-wren (308 observations, 7.3 % of all birds)
- Crimson Rosella (248 observations, 5.8 % of all birds)
- Sulphur-crested Cockatoo (200 observations, 4.7 % of all birds)
- Galah (185 observations, 4.3% of all birds)
- Australian Raven (183 observations, 4.3% of all birds)
- Yellow-rumped Thornbill (182 observations, 4.3% of all birds)
- Eastern Rosella (176 observations, 4.1% of all birds)
- Buff-rumped Thornbill (138 observations, 3.2% of all birds)

Figure 10 and Figure 11 illustrate the relative abundance of various bird species at Impact and Reference points, providing insights into the differences in species distribution between these two locations.

Australian Magpie has the highest relative abundance at impact points (Figure 10) accounting for 18.5% of observations. This is followed by Common Starling at 9.1% and the Superb Fairy-wren at 7.0%. Other species, such as Crimson Rosella and Eastern Rosella, are also notable with relative abundances of 6.1% and 6.0%, respectively. The remaining species, including Yellow-rumped Thornbill, Sulphur-crested Cockatoo, Galah, Australian Raven, and Buff-rumped Thornbill, have relative abundances ranging from 5.3% down to 3.7%.

At the Reference points, a similar distribution was observed. Australian Magpie remained the most abundant species, with a relative abundance of 20.4%. Common Starling follows with 11.3%, Superb Fairy-wren with 7.9%, Crimson Rosella with 5.6%, and Australian Raven and Sulphur-crested Cockatoo have relative abundances of 4.6% and 4.2%, respectively. Other species, such as Galah, Red-browed Finch, Yellow-rumped Thornbill, and Silvereye, are also observed but at relative abundances, ranging from 4.1% to 2.8% (Figure 11).

Overall, the relative abundance of species is similar at Impact and Reference points, with no clear differences between these categories. The Australian Magpie, Common Starling, and Superb Fairy-wren are consistently among the most common species, but the exact percentages differ, reflecting random sampling variation in environmental conditions and bird occurrence across the two types of sites during the surveys.

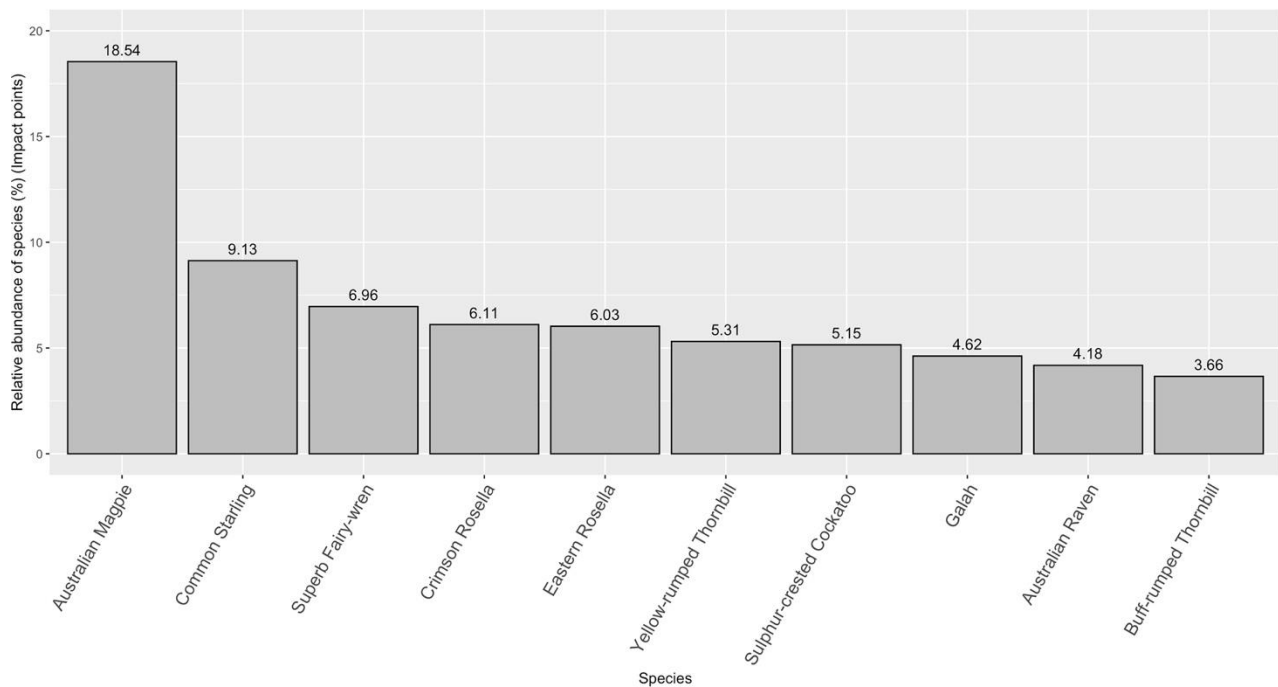


Figure 10: Relative abundance of ten most common species observed at impact points at BWF over four seasonal surveys between August 2023 and July 2024. Value above each bar represents the relative abundance of each species

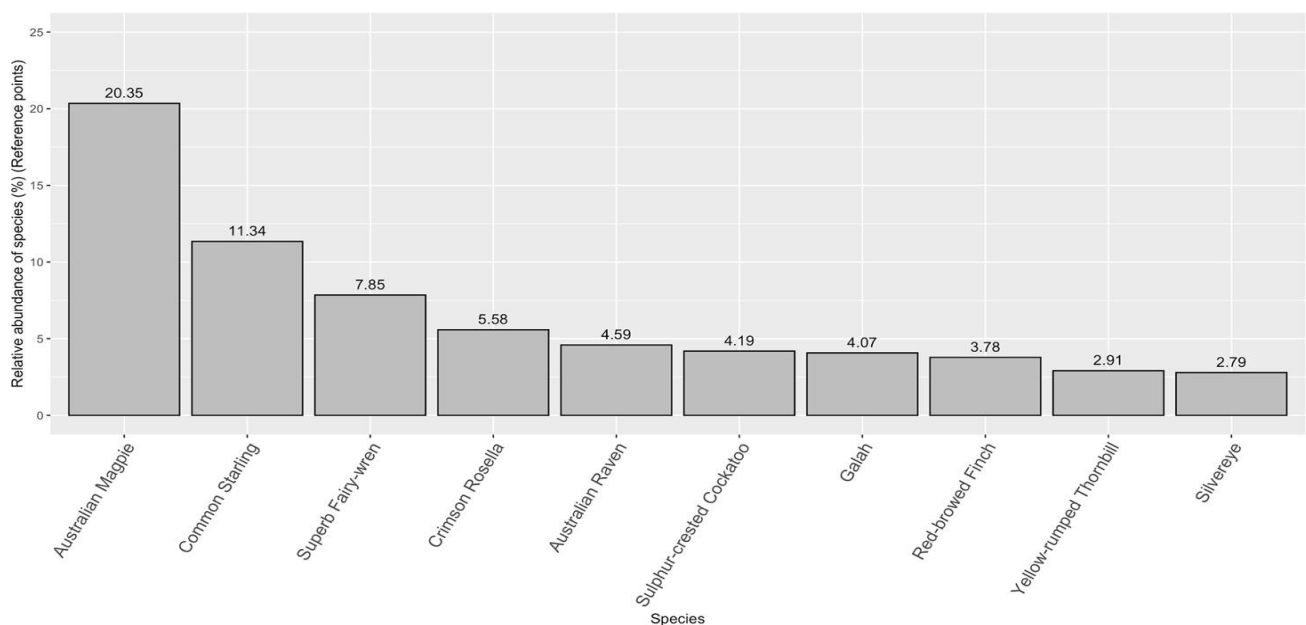


Figure 11: Relative abundance of ten most common species observed at impact points at BWF over four seasonal surveys between August 2023 and July 2024. Value above each bar represents the relative abundance of each species

### 3.5.2. Flight Heights

Figure 12 represents the percentage of bird observations across different height classes during surveys. The Rotor Swept Area (RSA) height, which ranges from 40 to 240 meters, is of particular interest because it is where the rotor blades of wind turbines operate, posing a potential collision risk for birds.

The majority of bird observations were made at lower heights, with 49.4% of birds observed in the 10–19 meter height class and 29.5% observed in the 0–9 meter height class. These two height classes together account for almost 79% of all observations. Observations within the RSA height range (40–240 meters) were sparse. For example, the 40–49 meter height class accounted for only 0.9% of the total observations, while other RSA-related height classes, such as 100–109 meters and 200–209 meters, accounted for even smaller percentages, ranging from less than 0.1% to 0.2%. Observations above the RSA height, such as those in the 250–259 meter and 400–409 meter classes, were extremely rare, each accounting for less than 0.1% of the total observations.

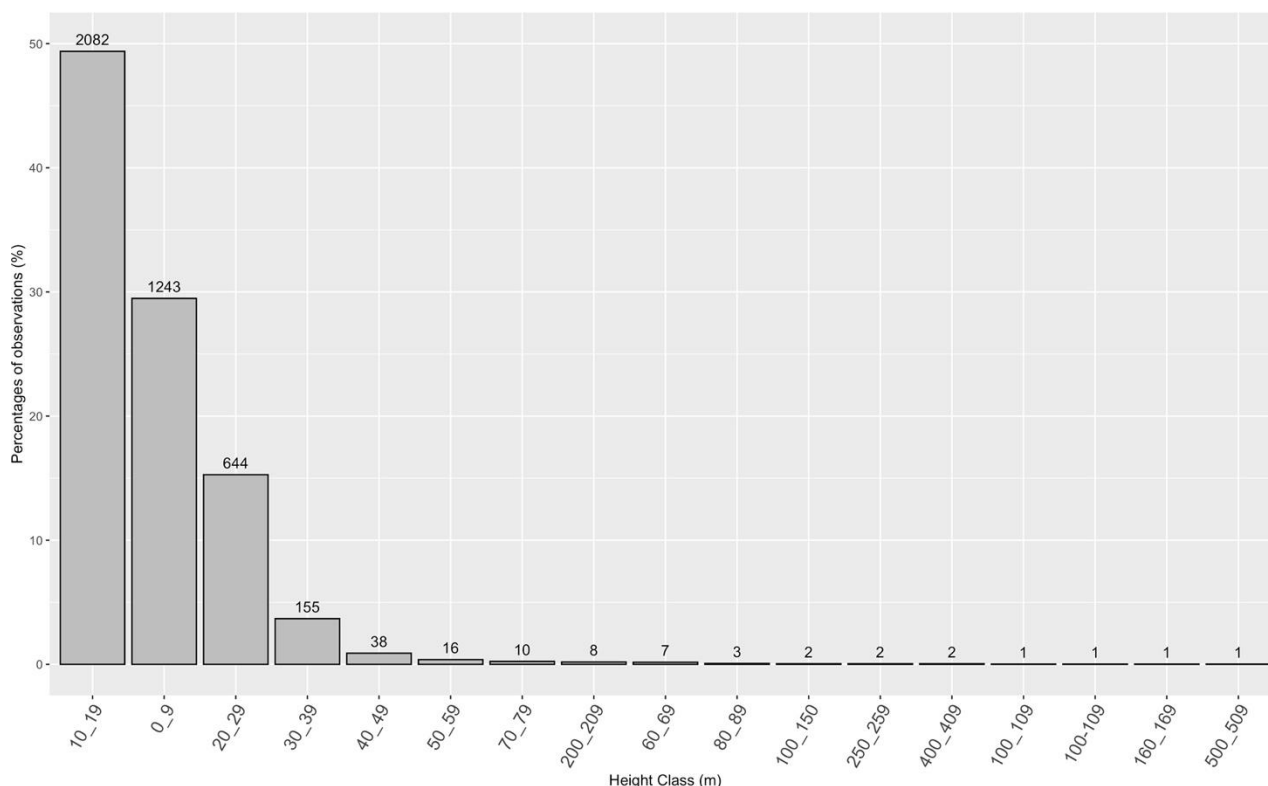


Figure 12: The distribution of bird flight heights as recorded during BUS at the proposed BWF during four seasonal surveys between August 2023 and July 2024.

The data were analyzed to assess the percentage of birds observed at different height categories relative to the Rotor Swept Area (RSA) at both impact and reference sites (Figure 12). At impact sites, the majority of birds (97.5%) were observed below the RSA (Category A), with a small proportion (2.3%) observed within the RSA (Category B), and an even smaller fraction (0.2%) observed above the RSA (Category C). Similarly, at reference sites, 98.3% of birds were observed below the RSA, 1.7% within the RSA, and no observations were made above the RSA. This suggests that at both impact and reference sites, the vast majority of bird activity occurs below the RSA, with minimal activity within or above it.

Overall, the data suggests that most bird activity occurs well below the RSA height, with only a small fraction of observations recorded within or above this critical zone. This distribution highlights that while the potential for bird collisions with wind turbines exists, the majority of birds fly at lower altitudes, reducing their collision risk with turbine blades.

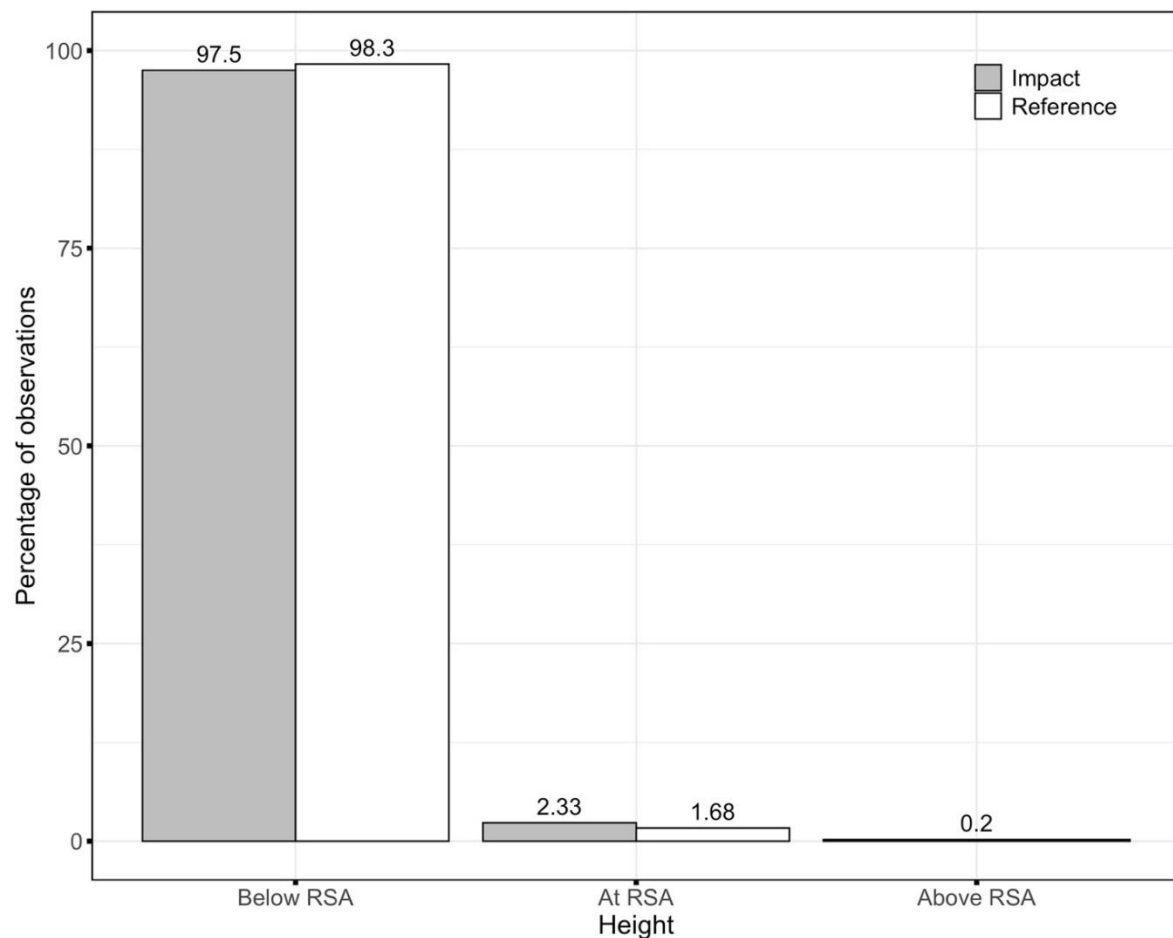


Figure 13: Flight height categories between at impact and reference points and post construction at BWF during four seasonal surveys between August 2023 and July 2024.

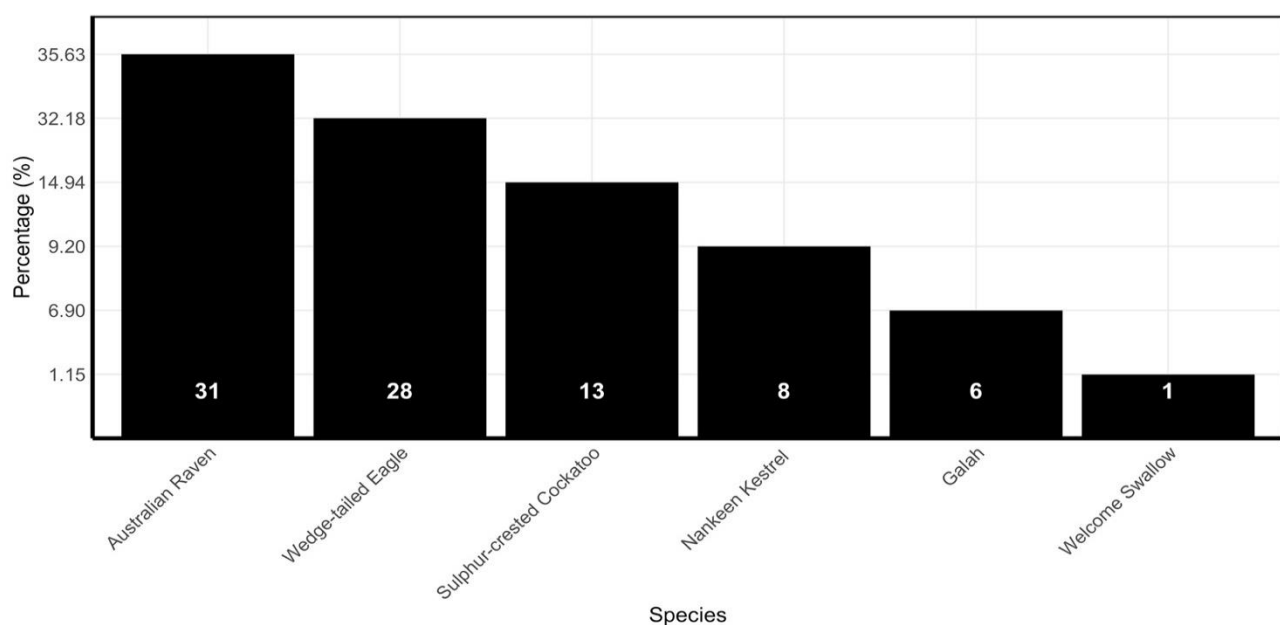


Figure 14: Percentages of abundance of species recorded at RSA height at the impact point of proposed BWF over four seasonal surveys between August 2023 and July 2024. Values on each bar show the number of individuals recorded of each species.

The data reveals that only 6 species were observed at RSA height (Figure 14), despite a total of 71 species being recorded overall. This indicates that just 8.5% of the recorded species were observed at RSA height. Overall, only 87 observations were made at RSA height during four seasonal surveys between August 2023 and July 2024. Among these observations, Australian Raven was the most frequently observed species, accounting for 35.6% of the detections. Wedge-tailed Eagle followed with 32.2%, while the Sulphur-crested Cockatoo made up 14.9% of the observations. Nankeen Kestrel and Galah represented 9.2% and 6.9% of the detections, respectively, with Welcome Swallow being the least frequently observed at RSA height, comprising just 1.2% of the detections. This distribution suggests that a small subset of species is responsible for the majority of bird activity at RSA height.

### 3.5.3. Threatened species

Twenty-eight observations of four threatened species (including one genus) were made over the four seasonal surveys between August 2023 and July 2024. . Species abundance and richness varied among seasons. In Autumn, only one species, Scarlet Robin, was recorded, with a total count of two individuals. This suggests that the presence of threatened species is relatively low in Autumn, or that Scarlet Robin is one of the few threatened species active or observable during this time.

In Spring, three species were recorded. An unidentified (juvenile or female plumage) Robin sp. and Superb Parrot each had two individuals recorded, while Varied Sittella had the highest count in this season with four individuals. The total count for Spring was seven individuals, indicating a higher diversity and abundance of threatened species compared to Autumn.

Winter showed the highest overall abundance of threatened species, with a total of nineteen individuals recorded. Specked Warbler was the most common species, with fifteen individuals, making it the most frequently observed species across all seasons. Scarlet Robin had three individuals recorded, and Varied Sittella had one individual recorded. This suggests that Winter is a particularly active season for Specked Warbler, contributing significantly to the overall count.

When comparing the seasons, Spring had the highest species richness, with three different species recorded, while Autumn had only one species recorded, indicating lower species richness in that season. Winter had the highest total abundance of individuals, largely due to the high number of Specked Warblers observed, accounting for approximately 67% of the total observations across all seasons (nineteen out of twenty-eight total individuals). Specked Warbler was the most common species overall, particularly in Winter, where it constituted 79% of the total winter observations (fifteen out of nineteen individuals).

Figure 15 summarises the percentages and number of these threatened species. In summary, the data suggests that Winter is the most significant season in terms of the abundance of threatened species, particularly for Specked Warbler. Spring shows the highest diversity with three different species observed, while Autumn shows the least activity with only Scarlet Robin recorded. The presence and abundance of species vary significantly between seasons, highlighting the importance of seasonal monitoring to understand the distribution and behaviour of threatened species.



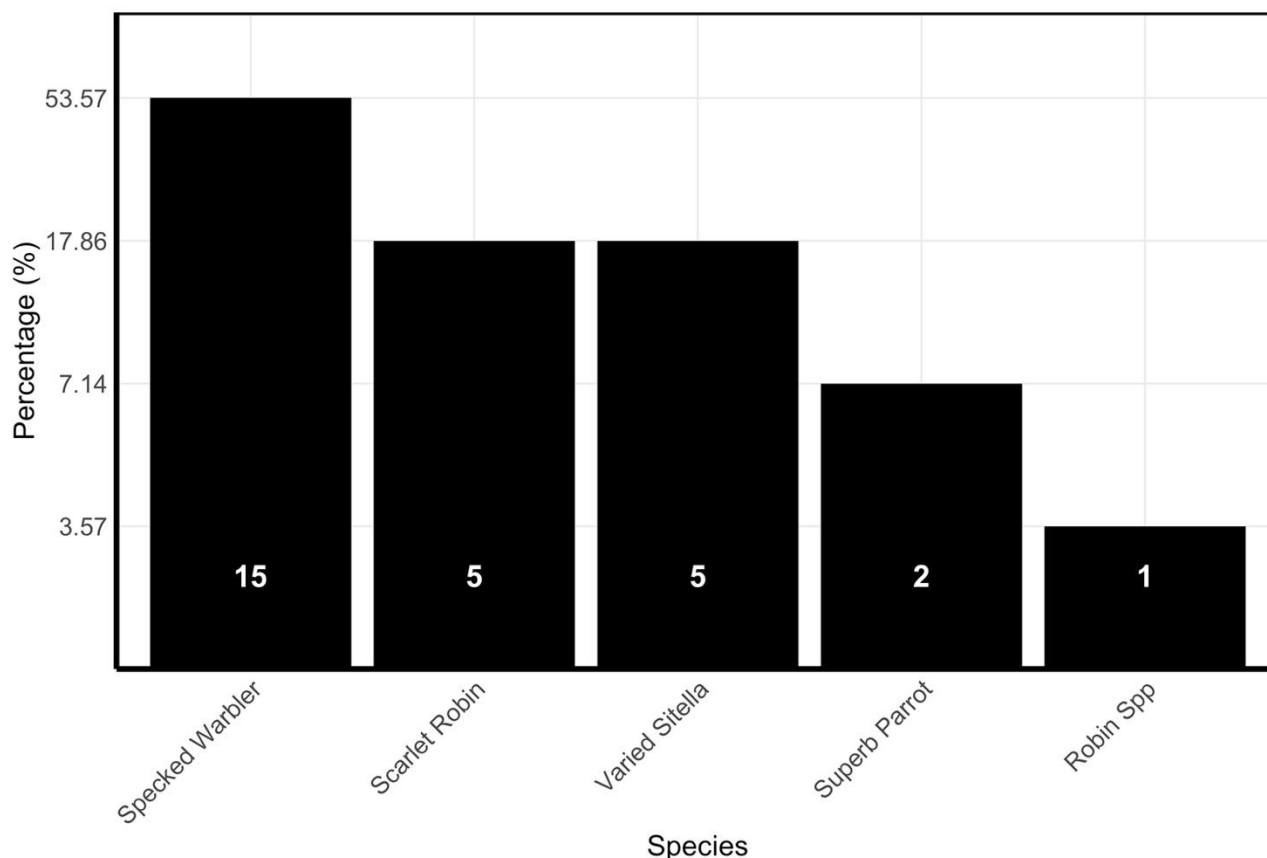


Figure 15: Percentages of abundance of threatened species recorded BWF over four post-construction surveys over four seasonal surveys between August 2023 and July 2024. Values on each bar show the number of individuals recorded of each species.

#### **Speckled Warbler** *Chthonicola sagittata* (Vulnerable BC Act)

The range of Speckled Warblers extends through much of eastern NSW, central VIC and south-eastern Queensland (QLD), typically inhabiting sclerophyll forests and open woodlands with scattered shrubs and tussock grasses, typically foraging at ground level (Menkhorst, 2021). Foraging behaviour and ecology of this species places it as a negligible risk of turbine collision and not expected to experience barrier effects from operating turbines. No flights at proposed RSA height were recorded. The species may be susceptible to other impact pathways such as removal of native vegetation and changes in habitat structure.

#### **Scarlet Robin** *Petroica boodang* (Vulnerable BC Act)

The species inhabits sclerophyll woodland and forest with open understorey within eastern NSW, throughout Victoria, south-eastern SA, south-western Western Australia (WA) and TAS. The species disperses to open habitats like grasslands and farmlands in autumn-winter when it is not breeding (Menkhorst, 2021). It typically occupies low perches and pounces on vertebrate prey at ground and low levels (Menkhorst, 2021). Foraging behaviour and ecology of this species places it as a negligible risk of turbine collision and not expected to experience barrier effects from operating turbines. This species was found to be most common during winter surveys at sites such as BUS2 and BUS8. No flights at proposed RSA height were recorded.

### **Varied Sittella** *Daphoenositta chrysoptera* (Vulnerable BC Act)

Varied Sittella inhabit eucalypt forests and woodland throughout much of the mainland (Menkhorst, 2021). They forage among the branches of eucalypts in mallee, farm shelter belts and trees on roadsides for arthropods under tree bark. They do so with their distinctive, up-turned beak (Menkhorst, 2021; Morcombe, 2000). Foraging behaviour and ecology of this species places it as a negligible risk of turbine collision and not expected to experience barrier effects from operating turbines. This species was not observed at RSA height during the first year of survey.

### **Superb Parrot** *Polytelis swainsonii* (Vulnerable BC Act)

Superb Parrot is found in woodlands, open forests, and riverine environments across southeastern Australia, particularly in the Riverina region (Menkhorst, 2021). This species primarily forages on the ground and in the lower to mid-canopy for seeds, fruits, and flowers. It is often seen in pairs or small flocks, especially during the breeding season when it nests in tree hollows. The foraging and flight behaviour of Superb Parrot suggests a low risk of turbine collision, as they typically do not fly at the heights where turbine blades operate. This species was not observed at RSA height during the first year of survey.

#### **3.5.4. Raptor and Threatened Species Flight Path**

Five species, including raptors and a threatened species, were recorded during the BUS. The observations are categorized as either incidental (YES) or non-incidental (NO).

- Nankeen Kestrel (*Falco cenchroides*):
  - Incidental: 24 individuals
  - Non-incidental: 35 individuals
  - Summary: Nankeen Kestrels were one of the most frequently observed species. Many individuals were seen engaging in typical hunting behaviour, such as hovering and gliding.
- Wedge-tailed Eagle (*Aquila audax*):
  - Incidental: 3 individuals
  - Non-incidental: 36 individuals
  - Summary: Wedge-tailed Eagles were primarily seen soaring and resting in non-incidental observations, with a few incidental sightings noted.
- Brown Falcon (*Falco berigora*):
  - Incidental: 7 individuals
  - Non-incidental: 1 individual
  - Summary: Brown Falcons were predominantly observed as incidental sightings, often perched or foraging.
- Black-shouldered Kite (*Elanus axillaris*):
  - Incidental: 0 individuals
  - Non-incidental: 1 individual
  - Summary: A single non-incidental sighting of a Black-shouldered Kite was recorded, with the bird observed hovering and foraging.
- Diamond Firetail (*Stagonopleura guttata*) [Threatened Species]:

- Incidental: 13 individuals
- Non-incidental: 0 individuals
- Summary: This threatened species was recorded only as incidental sightings, with several individuals observed.

The survey identified key raptor species, with Nankeen Kestrel and Wedge-tailed Eagle being the most prevalent. Diamond Firetail, a threatened species, was observed incidentally but not in formal surveys.

Table 9 summarises the number of individuals seen during this monitoring period, and detailed information on flight paths are in Appendix 2.

Table 9: Summary of raptor and threatened species flights at BWF from BUS (Year 1)

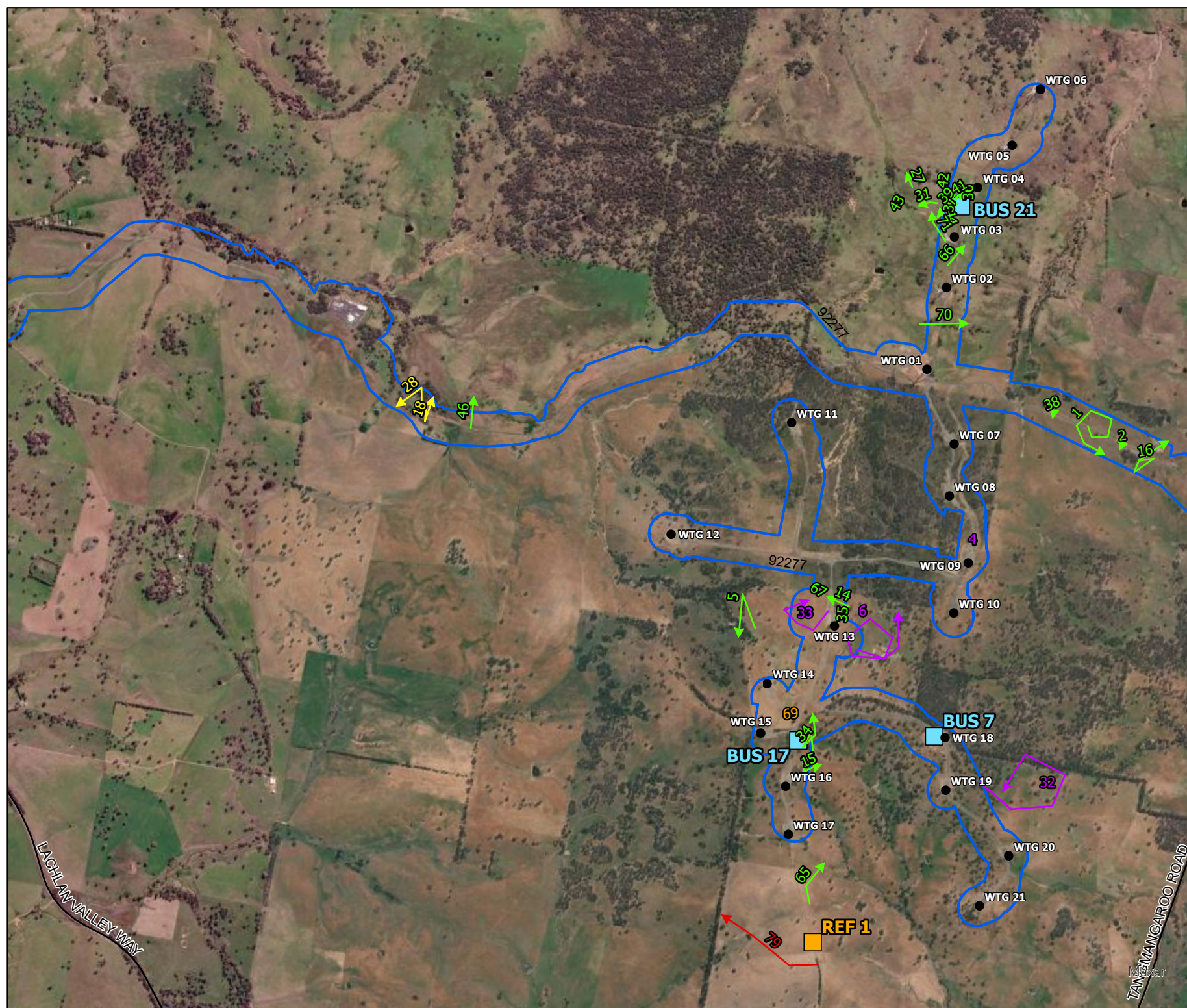
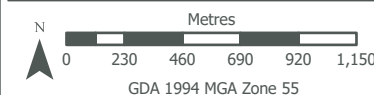
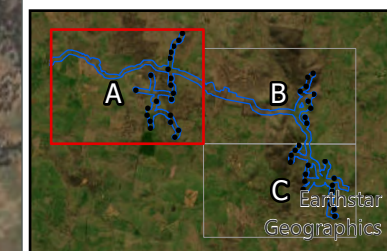
Species	Scientific name	Number of individuals	Percentage of Total
Nankeen Kestrel	<i>Falco cenchroides</i>	59	49%
Wedge-tailed Eagle	<i>Aquila audax</i>	39	33%
Diamond Firetail	<i>Stagonopleura guttata</i>	13	11%
Brown Falcon	<i>Falco berigora</i>	8	7%
Black-shouldered Kite	<i>Elanus axillaris</i>	1	1%



**Figure 16: Flight paths from bird utilisation surveys**

**Project No:** 18173\_07  
**Project:** Bango Wind Farm  
**Date:** 25/09/2024

- Development corridor
- Turbines
- BUS Point**
  - Impact
  - Reference
- Species**
  - Black-shouldered Kite
  - Brown Falcon
  - Diamond Firetails
  - Nankeen Kestrel
  - Wedge-tailed Eagle

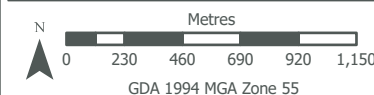
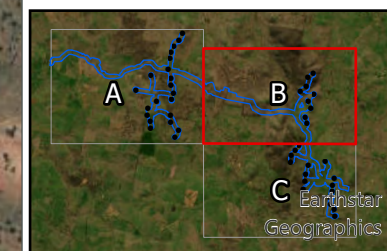
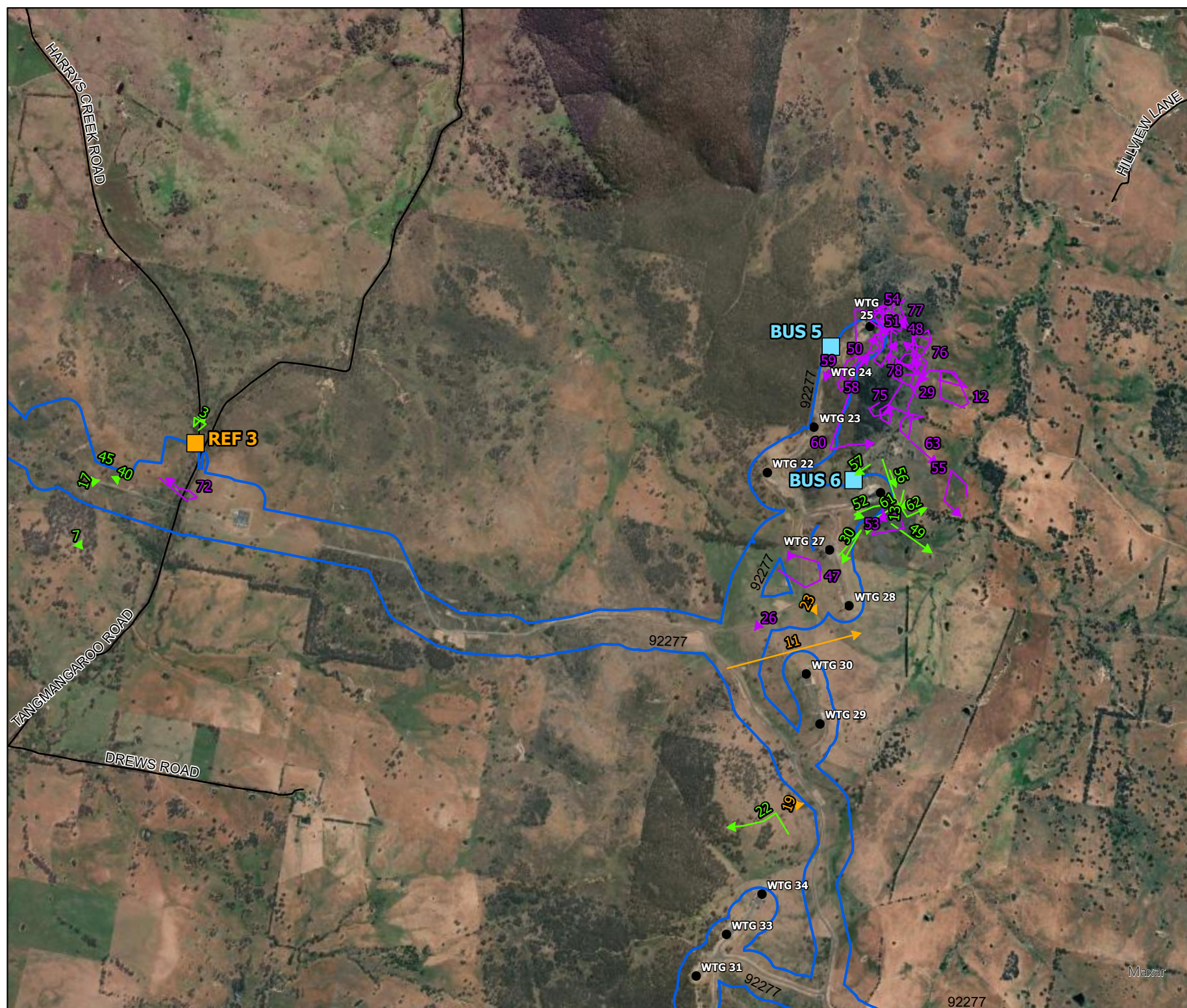




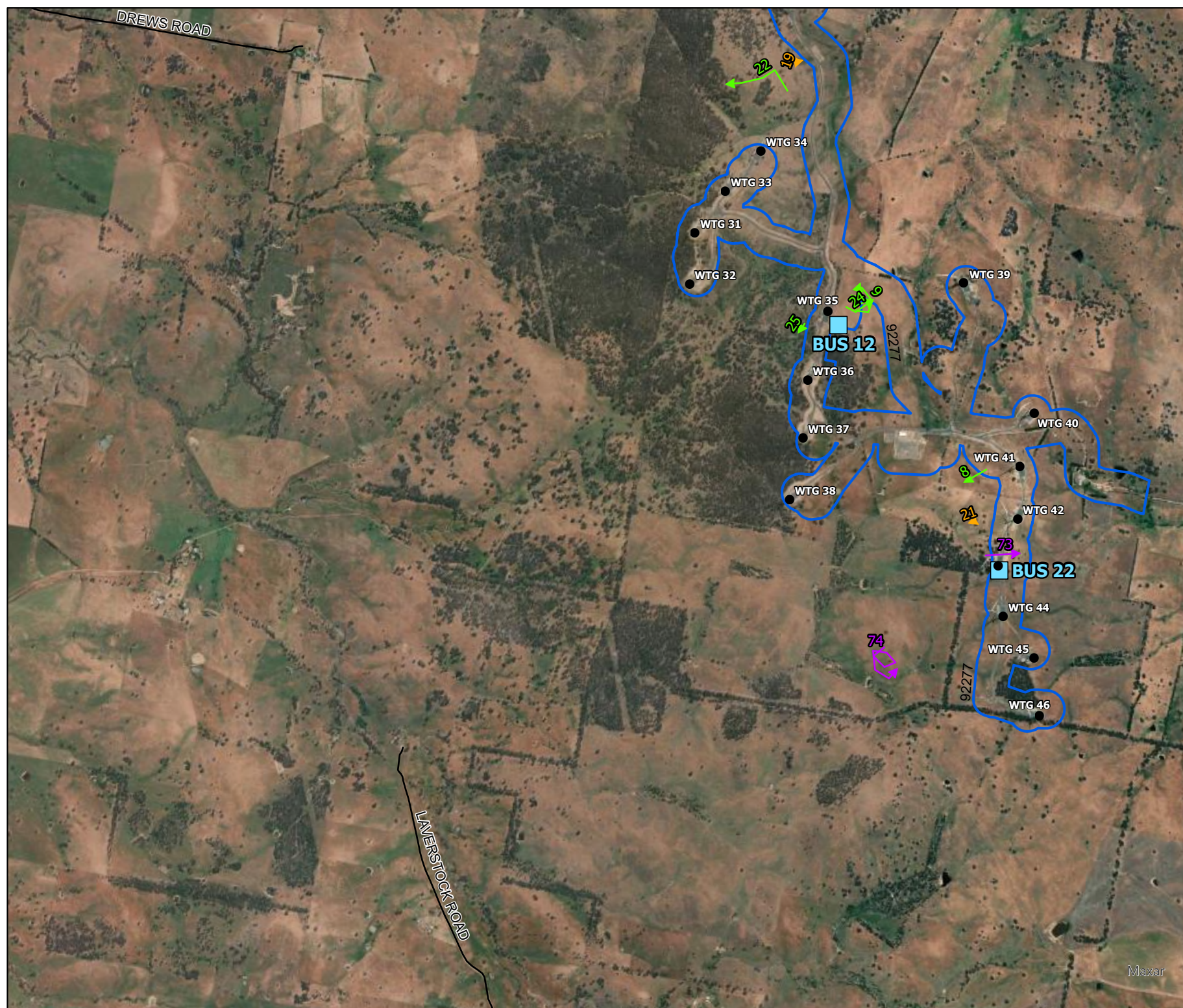
**Figure 16: Flight paths from bird utilisation surveys**

**Project No:** 18173\_07  
**Project:** Bango Wind Farm  
**Date:** 25/09/2024

- Development corridor
- Turbines
- BUS Point**
  - Impact
  - Reference
- Species**
  - Black-shouldered Kite
  - Brown Falcon
  - Diamond Firetails
  - Nankeen Kestrel
  - Wedge-tailed Eagle







**Figure 16: Flight paths from bird utilisation surveys**

**Project No:** 18173\_07  
**Project:** Bango Wind Farm  
**Date:** 25/09/2024

Development corridor

Turbines

**BUS Point**

Impact

Reference

**Species**

Black-shouldered Kite

Brown Falcon

Diamond Firetails

Nankeen Kestrel

Wedge-tailed Eagle

A

B

C

Earthstar Geographics

N

0 230 460 690 920 1,150

Metres

GDA 1994 MGA Zone 55

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18173\_07 Figure 16: Flight paths from bird utilisation surveys 240925 - Created by: mayaz - E:\GIS\2018 Jobs\18173\18173\_07\_BBAMP\_FIGS.aprx



### 3.6. Bat Surveys

Our team conducted structured surveys using advanced acoustic monitoring techniques and field assessments to capture bat activity patterns and species presence across the study area. Due to unforeseen delays in retrieving the ultrasound recorder deployed within a turbine nacelle, and constraints on availability of bat acoustic data analysts, data from bat activity surveys is still being analyzed. Results from these acoustic surveys will be included in the Year 2 report upon completion of data analysis.

### 3.7. Scavenger Trials

The scavenger trial data was collected between September 2023 to February 2024. A total of 21 bats or bat proxies were deployed (sufficient bat carcasses could not be sourced early in the trials) and 21 bird carcasses (Table 10). Of the bird carcasses, two were classed as large and the remainder as medium. This is due to insufficient carcass available to undertake the trials. Most carcasses collected during mortality searches were not suitable for scavenging trials due to decomposition and as such, the bulk of bird carcasses used were sourced from Myna and Starling control groups.

Two failed attempts to capture data also occurred between 9-13 November 2023, due to equipment failure, resulting in lost carcasses. It is likely that bird data will be aggregated, and it is not expected that this equipment failure will affect mortality estimates in a significant way.

Table 10: Scavenging trial results for BWF

Date Deployed	Turbine No.	Carcass type	Species	Date scavenged	Scavenger species	# days
28/09/2023	41	Bat	Gould's Wattled Bat	29/09/2023	Red Fox	1
28/09/2023	37	Bat	Southern Free-tailed Bat	30/09/2023	Rodent	2
28/09/2023	26	Bird	Common Myna	28/09/2023	Unknown	0.5
28/09/2023	24	Bird	Common Myna	29/09/2023	Unknown	1
28/09/2023	22	Bird	Common Myna	28/09/2023	Australian Raven	0.5
28/09/2023	18	Bird	Common Myna	3/10/2023	Unknown - possibly fox	5
28/09/2023	16	Bird	Common Myna	1/10/2023	Australian Raven	3
28/09/2023	13	Bird	Common Myna	30/09/2023	Shingleback Lizard	2
28/09/2023	11	Bat Proxy	Mouse	1/10/2023	Eastern Brown Snake	3
28/09/2023	9	Bat Proxy	Mouse	1/10/2023	Red Fox	2
28/09/2023	2	Bat Proxy	Mouse	30/09/2023	Shingleback Lizard	2
28/09/2023	6	Bat Proxy	Mouse	6/10/2023	Unknown	8
28/09/2023	45	Bat	Little Forest Bat	4/10/2023	Australian Magpie	6
26/10/2023	37	Bird	Common Starling	27/10/2023	Red Fox	<1
26/10/2023	31	Bird	Common Starling	27/10/2023	Australian Raven	<1
26/10/2023	24	Bird	Common Starling	29/10/2023	Unknown	2.5

Date Deployed	Turbine No.	Carcass type	Species	Date scavenged	Scavenger species	# days
26/10/2023	22	Bird	Common Starling	27/10/2023	Australian Raven	<1
25/10/2023	18	Bat Proxy	Mouse	26/10/2023	Laughing Kookaburra	1
25/10/2023	16	Bat Proxy	Mouse	26/10/2023	Australian Raven	1
25/10/2023	13	Bat Proxy	Mouse	28/10/2023	Unknown	3
25/10/2023	11	Bat Proxy	Mouse	25/10/2023	Australian Raven	<0.5
25/10/2023	9	Bat Proxy	Mouse	29/10/2023	Shingleback Lizard	4
25/10/2023	2	Bat	Southern Free-tailed Bat	29/10/2023	Red Fox	3.5
26/10/2023	32	Bird	Common Starling	28/10/2023	Unknown	2
9/11/2023	45	Bird	Nankeen Kestrel		Not seen	30
9/11/2023	41	Bat	Unknown Bat Spp.	9/11/2023	Red Fox	<1
9/11/2023	37	Bird	Common Myna	13/11/2023	Shingleback Lizard	<1
13/11/2023	31	Bat	Forest Bat spp.		Not seen	30
13/11/2023	26	Bird	Common Myna	14/11/2023	Australian Raven	1
13/11/2023	24	Bat	Southern Free-tailed Bat	13/11/2023	Rodent	<1
13/11/2023	22	Bird	Common Myna	14/11/2023	Australian Raven	1
13/11/2023	18	Bat	Southern Free-tailed Bat	13/11/2023	Laughing Kookaburra	<1
13/11/2023	16	Bird	Common Myna	15/11/2023	Australian Raven	2
13/11/2023	13	Bat	Forest Bat spp.	17/11/2023	Australian Magpie	4
13/11/2023	11	Bird	Common Starling	13/11/2023	Australian Raven	<1
13/11/2023	9	Bat	Forest Bat spp.	15/11/2023	Shingleback Lizard	2
13/11/2023	2	Bird	Common Myna	14/11/2023	Australian Raven	1
13/11/2023	4	Bat	Forest Bat spp.	14/11/2023	Shingleback Lizard	1
16/02/2024	4	Bat	Mouse	16/02/2024	Australian Magpie	0.5
16/02/2024	3	Bird	Grey Fantail	16/02/2024	Red Fox	0.5
16/02/2024	8	Bird	Laughing Kookaburra		Not seen	
16/02/2024	7	Bird	Australian Magpie	17/02/2024	Shingleback Lizard	1

### 3.8. Detectability trials

The detectability trials, yielded the following results, with searchers (consisting of a dog handler and a dog) covering turbines 2, 10, and 16. The purpose of the trials was to assess the ability to detect both bird and bat carcasses.

For turbine 2, the searchers detected 3 out of 3 birds and 3 out of 3 bats, resulting in a total of 6 out of 6 carcasses found. Similarly, at turbine 10, 2 out of 2 birds and 2 out of 2 bats were found, giving a total of 4 out of 4. At turbine 16, the searchers successfully detected 2 out of 2 birds and 2 out of 2 bats, for a total of 4 out of 4.

In summary, the overall number of carcasses detected across all turbines was 7 out of 7 for birds and 7 out of 7 for bats, achieving a total of 14 out of 14 carcasses found. This represents a 100% detection rate for both bird and bat species across the turbines surveyed.

Table 11: Detectability trials undertaken at BWF in May 2024 indicating the percentage of birds and bats detected

Searcher	Date	Turbine	No. of Birds found	No. of Bats found	Total
Jess & Kitty	30/05/2024	2	3/3	3/3	6/6
		10	2/2	2/2	4/4
		16	2/2	2/2	4/4
<b>Total</b>	-	-	7/7	7/7	14/14
<b>Percentage</b>	-	-	100%	100%	100%

### 3.9. Raptor Monitoring

During the monitoring period, 293 individuals from nine different raptor species were recorded. These records are both from monthly carcass monitoring and impact trigger monitoring. The most abundant species observed were the Nankeen Kestrel (*Falco cenchroides*) and the Wedge-tailed Eagle (*Aquila audax*), which dominated the landscape.

- Nankeen Kestrel (*Falco cenchroides*)
  - Count: 134 records
  - Observations: Nankeen Kestrels were frequently observed hovering in place while scanning for prey, a behaviour characteristic of their hunting strategy. They were seen actively diving towards the ground and hovering over grasslands. Additionally, many kestrels were noted perching on dead trees or posts, resting between foraging attempts. Multiple sightings involved individuals working in pairs, potentially indicative of breeding or cooperative hunting.
- Wedge-tailed Eagle (*Aquila audax*)
  - Count: 119 records
  - Observations: Wedge-tailed Eagles were commonly seen soaring and gliding over large areas, often taking advantage of thermals to gain altitude and conserve energy. Several individuals were observed circling near wind turbines, and others were seen resting on trees or the ground. Some eagles engaged in interactions with smaller birds, including being mobbed by magpies or ravens.
- Brown Falcon (*Falco berigora*)

- Count: 21 records
- Observations: Brown Falcons were frequently observed perching on dead trees or fence posts, likely scanning the ground for prey. They were also noted flapping and gliding at low altitudes over open paddocks. Many individuals were seen alone, though pairs of Brown Falcons were occasionally observed resting together, suggesting potential territorial or breeding activity.
- Black-shouldered Kite (*Elanus axillaris*)
  - Count: 9 records
  - Observations: This species was observed hovering in place while hunting, a behaviour similar to the Nankeen Kestrel. They were often seen resting on high branches of dead trees. The kites primarily hovered over open grasslands, indicating active foraging behaviour.
- Black Falcon (*Falco subniger*)
  - Count: 2 records
  - Observations: Black Falcons were observed resting on trees and soaring over open areas. Their appearance was less frequent compared to other raptor species.
- Unidentified Large Raptors
  - Count: 5 records
  - Observations: Several large raptors were noted but could not be positively identified. They displayed behaviors such as gliding and soaring at higher altitudes, similar to eagles and kites.
- Little Eagle (*Hieraaetus morphnoides*): 1 individual, observed gliding near the wind farm boundary.
- Whistling Kite (*Haliastur sphenurus*): 1 individual, observed circling over woodlands and briefly engaging in an aerial interaction with a Wedge-tailed Eagle.

One threatened species was recorded incidentally, namely, the Superb Parrot (*Polytelis swainsonii*): 1 individual, observed flying through the area.

Table 12 summarizes the number of individuals seen during this monitoring period, and detailed information on flight paths are in Appendix 1.

Table 12: Summary of raptor and threatened species flights at BWF August 2023-July 2024

Species	Scientific name	Number of individuals	Percentage of Total
Nankeen Kestrel	<i>Falco cenchroides</i>	134	46%
Wedge-tailed Eagle	<i>Aquila audax</i>	119	41%
Brown Falcon	<i>Falco berigora</i>	21	7%
Black-shouldered Kite	<i>Elanus axillaris</i>	9	3%
Unidentified large raptor		5	2%
Black Falcon	<i>Falco subniger</i>	2	1%
Little Eagle	<i>Hieraaetus morphnoides</i>	1	<1%
Superb Parrot	<i>Polytelis swainsonii</i>	1	<1%
Whistling Kite	<i>Haliastur sphenurus</i>	1	<1%



**Figure 17: Incidental Flight Paths at BWF August 2023 – July 2024**

Project No: 18173\_07

Project: Bango Wind Farm

Date: 25/09/2024

— Development corridor

● Turbines

#### BUS Point

■ Impact

■ Reference

#### Species

→ Black Falcon

→ Black-shouldered Kite

→ Brown Falcon

→ Diamond Firetails

→ Little Eagle

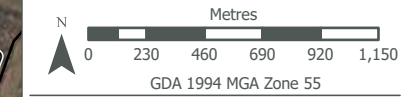
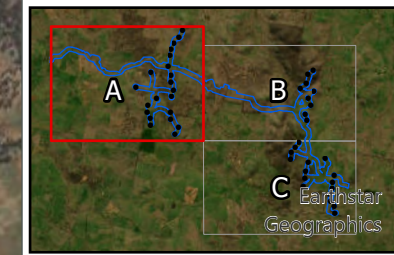
→ Nankeen Kestrel

→ Superb Parrot

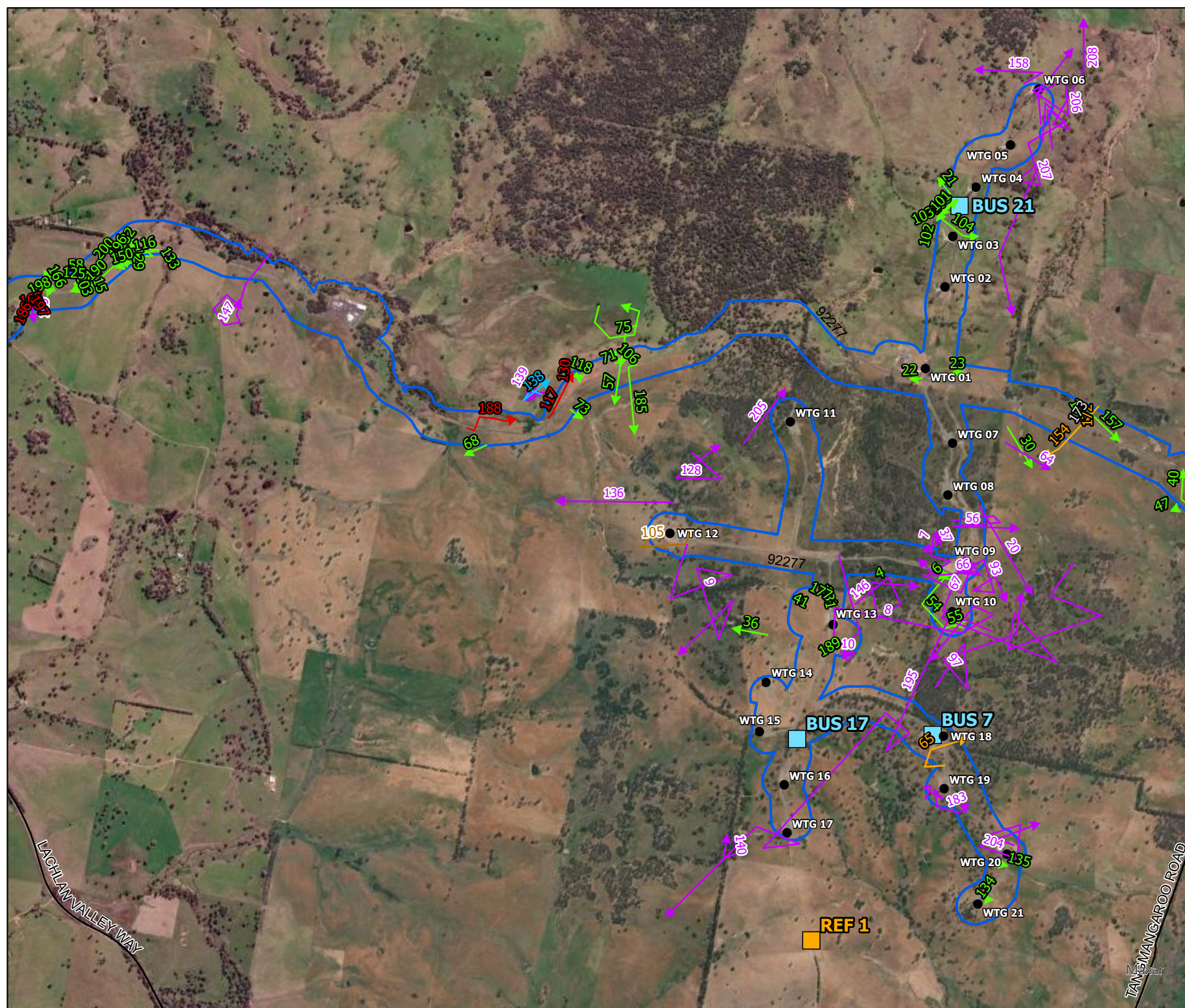
→ Unidentified large raptor

→ Wedge-tailed Eagle

→ Whistling Kite



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**Figure 17: Incidental Flight Paths at BWF August 2023 – July 2024**

Project No: 18173\_07

Project: Bango Wind Farm

Date: 25/09/2024

— Development corridor

● Turbines

**BUS Point**

■ Impact

■ Reference

**Species**

→ Black Falcon

→ Black-shouldered Kite

→ Brown Falcon

→ Diamond Firetails

→ Little Eagle

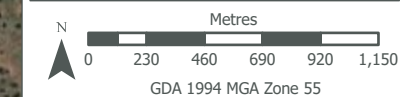
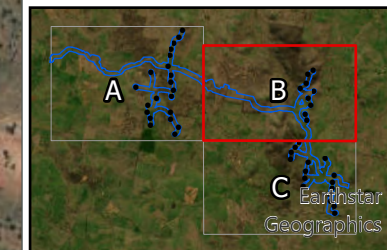
→ Nankeen Kestrel

→ Superb Parrot

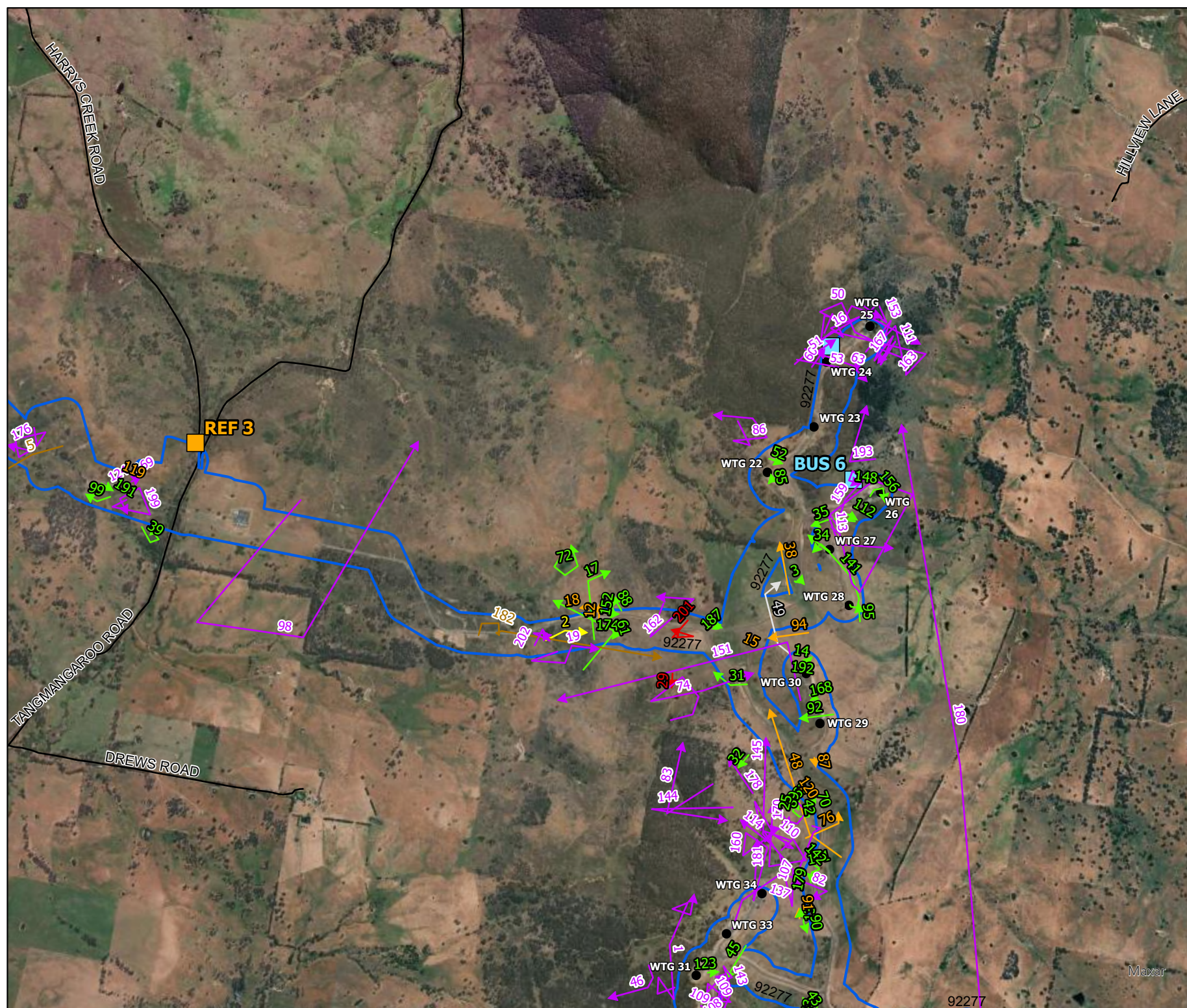
→ Unidentified large raptor

→ Wedge-tailed Eagle

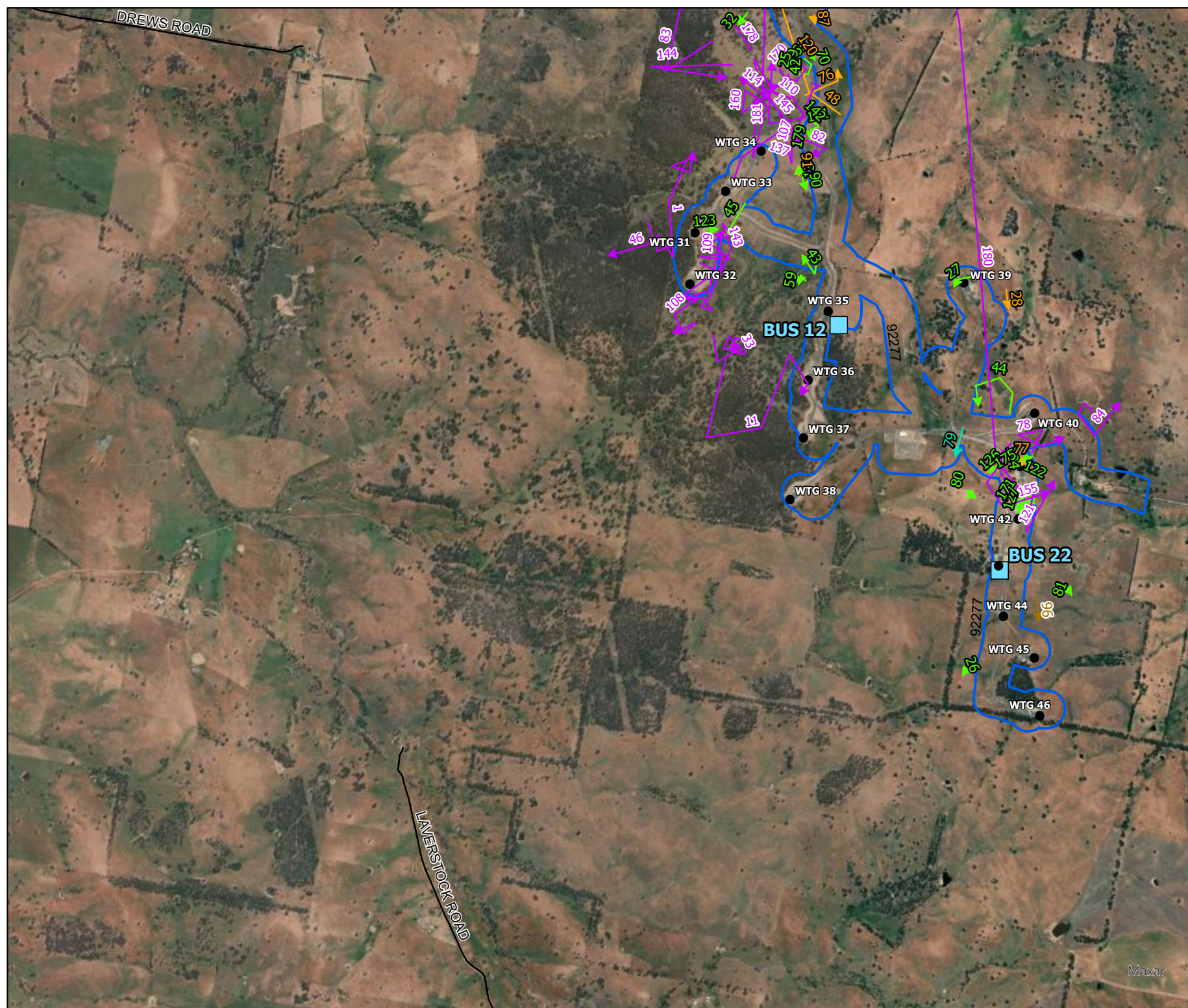
→ Whistling Kite



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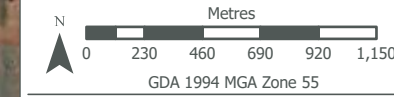
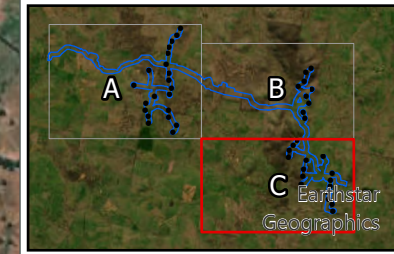




**Figure 17: Incidental Flight Paths at BWF August 2023 – July 2024**

**Project No:** 18173\_07  
**Project:** Bango Wind Farm  
**Date:** 25/09/2024

- Development corridor
- Turbines
- BUS Point**
  - Impact
  - Reference
- Species**
  - Black Falcon
  - Black-shouldered Kite
  - Brown Falcon
  - Diamond Firetails
  - Little Eagle
  - Nankeen Kestrel
  - Superb Parrot
  - Unidentified large raptor
  - Wedge-tailed Eagle
  - Whistling Kite



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### 3.10. Carrion removal and pest control

BWF indicated that landholders on site undertake fox baiting during winter or shoot on site if possible/safe to do so. No rabbit control has been implemented.

A record of carrion removal has not been kept for specific carrion removal events. BWF indicated that site management will inform landholders who will attempt to remove carrion from within 200m of turbines within 24 hours. Based on initial observations, it is recommended that a formal log book be implemented for the upcoming year to systematically record relevant data and operational insights

## 4. Discussion

### 4.1. Monthly Carcass Searches

The monthly carcass searches conducted from August 2023 to July 2024 yielded important insights into wildlife mortalities associated with wind turbine operations. Despite some limitations in the consistency of surveys due to irregular turbine operation and restricted access during turbine maintenance, the data provides a clear picture of patterns in bird and bat mortalities. These findings are critical for assessing the impacts of turbine operations on local wildlife and guiding mitigation measures.

Section 2.11 of the BBAMP states that the annual report will identify any high-risk turbines. However, data from the first year of monitoring is insufficient to determine consistent differences in risk among turbines as it is subject to the unique conditions of that year and may include unusual mortality events. Consequently, this assessment of variation in risk across turbines will be conducted following completion of the second year of monitoring. Our intended analysis approach seeks to establish a reliable dataset by observing and analysing trends across at least two years, which will help to mitigate the influence of unique or irregular events from one season. By comparing data from multiple years, we aim to identify genuine patterns in turbine risk rather than anomalies that do not reflect consistent turbine-specific hazards. This two-year minimum allows us to determine if certain turbines consistently pose higher risks, thereby ensuring that any mitigation efforts are both targeted and effective. After the second year of monitoring, we'll apply a robust statistical analysis to assess variation in mortality rates across turbines. This will include factors such as turbine location, environmental conditions, and any recurring seasonal patterns that may influence bird and bat interactions with specific turbines.

#### Bat Mortalities

Bats represented the largest proportion of wildlife mortalities, with 97 recorded over the monitoring period. The White-striped Free-tailed Bat was the most frequently detected species, with 27 mortalities, peaking in January and continuing into the warmer months of spring and early summer. This species, along with other commonly recorded bats such as the Forest Bat sp. (19 mortalities) and the Little Forest Bat (11 mortalities), exhibited a seasonal trend, with the majority of mortalities occurring between December and May. These findings suggest that bats may be more vulnerable during this period, likely due to increased activity associated with foraging and migration patterns in warmer months.

The spatial distribution of bat mortalities also highlighted key turbine-specific trends. Turbine 45 recorded the highest concentration of bat mortalities, with 13 overall, peaking in January (6 mortalities). Turbine 37 had the highest year-round bat mortality rate, with notable peaks in January (4 mortalities) and October (7 mortalities). The persistent activity around these turbines indicates potential site-specific factors, such as proximity to foraging habitat or migratory routes, which may contribute to higher bat mortality rates.

#### Bird Mortalities

Bird mortalities were also significant, with 91 records across the survey period. Crimson Rosella and Eastern Rosella were the most commonly affected species, each with 14 mortalities spread throughout the year. Unidentified bird species, grouped under "Unknown Bird sp." due to decomposition or damage, accounted for 17 carcasses. Carcasses of Wedge-tailed Eagle were recorded 5 times, indicating that larger bird species are also susceptible to turbine collisions, though less frequently than smaller birds or bats.

Turbine-specific patterns showed that Turbine 16 had the highest bird mortality rate, with 27 mortalities over the 12-month period. Turbine 10 followed with 21 bird mortalities, peaking in January and October.

These trends suggest possible seasonal variations in bird activity, with peaks in the warmer months, potentially related to increased movement during breeding or foraging periods.

During the monthly carcass search program, 5 White-throated Needletail mortalities were recorded. Specifically, 2 mortalities were detected in December 2023, 2 in January 2024, and 1 in February 2024. Additionally, 3 further mortalities were identified through the Super Parrot carcass search program, while 2 were recorded as part of the impact trigger carcass search program.

### Temporal Trends

The temporal distribution of mortalities shows clear seasonal peaks, with January 2024 recording the highest number of wildlife mortalities (37 in total), followed by December 2023 (27 mortalities). This trend aligns with the period of increased bat activity, as warmer temperatures may lead to more frequent foraging flights and migration, increasing the likelihood of turbine interactions. October 2023 also saw elevated mortality rates (16), particularly for bats, which may coincide with late spring bat activity.

In contrast, the colder months of May and June 2024 saw fewer mortalities, particularly for bats, likely due to reduced activity during these months. However, notable bird mortalities still occurred in May 2024, particularly around turbines 10 and 16, suggesting some bird species may remain vulnerable during these months despite lower overall activity levels.

### Turbine-Specific Hotspots

Certain turbines emerged as hotspots for bird and bat mortalities. Turbine 16, in particular, recorded high numbers of both bird and bat mortalities throughout the year, peaking in June 2024 and October 2023. The consistent activity at this turbine may suggest its location in a key area of bird and bat movement, such as near foraging habitats or migratory routes.

Similarly, Turbine 45 and Turbine 37 recorded consistently high bat mortalities, particularly during January 2024 and October 2023, indicating that these turbines may pose higher risks to bats during these peak activity months.

The results provide a detailed understanding of wildlife mortality patterns at the wind farm, with clear seasonal trends and turbine-specific hotspots. Bats, particularly the White-striped Free-tailed Bat, were the most vulnerable group, with mortalities peaking in warmer months when foraging and migratory activity is high. Birds, while less frequently affected, also showed significant mortality, particularly at turbines 10 and 16.

## 4.2. Additional carcass searches and Targeted Superb Parrot surveys

The targeted carcass searches from September 2023 to January 2024, conducted in the context of monitoring Superb Parrot (*Polytelis swainsonii*), yielded no direct evidence of Superb Parrot mortalities or breeding activity. This outcome, while positive in the sense that no mortalities were observed, nonetheless underscores the importance of continued monitoring in areas where Superb Parrots are known to breed or migrate. The discovery of potential nesting hollows, combined with incidental observations of other bird species, provides important ecological context for understanding Superb Parrot habitat use and potential risks from wind farms in the region.

No Superb Parrot mortality was recorded during operational monitoring at BWF. Live Superb Parrots were observed during operational BUS or incidentally during carcasses searches. This supports preconstruction data indicating very low utilisation of the site.

Although no observations of Superb Parrots were recorded during the surveys, the identification of 125 hollows, including 36 larger than 20 cm, is a critical finding. These hollows could provide suitable nesting sites for Superb Parrots, especially during the breeding season. Superb Parrots depend on large tree

hollows for nesting, and the presence of suitable habitat within the wind farm area highlights the potential risk wind turbines pose to this vulnerable species, even though no direct interactions were observed during the survey period.

Although no Superb Parrot mortalities or breeding behaviours were observed during the monitoring period, the presence of suitable habitat and the mortality patterns of other bird species suggest that ongoing vigilance is essential. The identification of large hollows suitable for nesting indicates that the area remains ecologically valuable for avian species, including potential future use by Superb Parrots. Continued monitoring, combined with strategic mitigation efforts, will be critical to ensuring that wind farm operations do not negatively impact this vulnerable species or other wildlife in the area.

#### 4.3. Impact Triggers

The eight recorded mortalities of White-throated Needletails (*Hirundapus caudacutus*) at BWF during December 2023, January and February 2024 present significant findings in the context of bird-wind farm interactions. These events highlight the unique vulnerabilities of this species, which, despite its remarkable speed and agility, is still vulnerable to collisions with wind turbines.

The White-throated Needletail is a migratory species, known for flying at very high altitudes during its journeys between breeding grounds in Asia and its non-breeding range in Australia. It flies at lower heights, including RSA heights, when foraging and moving through this non-breeding range. The fact that eight fatalities were recorded over a three-month period suggests that BWF may intersect with regular flyways, roosting or foraging zones.

The aerial acrobatics of the White-throated Needletail may make this fast-flying species less prone to collisions with static structures, however, wind turbines present a more dynamic threat. In windy conditions, which are frequent at sites such as BWF, the birds' rapid manoeuvres may be hindered or miscalculated, increasing the likelihood of impact. Turbine blades, rotating at high speeds, pose a particular risk during conditions when the birds are flying at RSA height whether due to hunting for prey or navigating through weather variations.

Given the significance of these findings, it becomes imperative to consider mitigation strategies that could reduce bird fatalities at BWF and similar wind energy facilities. Possible measures include, noting detailed migratory pattern assessments of the White-throated Needletail and other sensitive species, could provide valuable insights to prevent future fatalities.

#### 4.4. BUS

The operational BUS conducted during the construction and operational phases of the wind farm provided valuable insights into the abundance, diversity, and behaviour of bird species in both impact and reference areas. A total of 71 species were recorded over 318 surveys, with 51 species observed at impact points and 62 species at reference points. The surveyed species were predominantly farmland and bushland birds, with some records of raptors and waterbirds. The five most abundant species accounted for approximately 33% of all birds recorded, indicating a relatively small number of species dominate the overall avian community at both impact and reference sites.

##### *Abundance and Diversity*

The Australian Magpie was the most abundant species, accounting for 19.3% of all birds observed across both impact and reference points. This species, along with the Common Starling (10.1%) and the Superb Fairy-wren (7.3%), represented the bulk of the bird community. The presence of these species reflects the agricultural and bushland nature of the surveyed areas, as they are commonly associated with these habitats. Species abundance and habitat use was similar at impact and reference points, suggesting no obvious barrier effects or avoidance of operational turbines.



### *Flight Heights*

The survey data on bird flight heights revealed that most bird activity occurred well below the rotor-swept area (RSA) of the wind turbines, reducing the potential collision risk for the majority of species. Nearly 79% of all birds were observed flying at heights below 19 meters, far below the RSA, which ranges from 40 to 240 meters. Only a small percentage (approximately 0.9%) of bird activity occurred within the RSA, further suggesting that collision risk is low for most species.

Among the species observed at RSA height, the Australian Raven and Wedge-tailed Eagle were the most frequently recorded, accounting for over 60% of the observations within the RSA. Raptors like the Wedge-tailed Eagle, which are known to fly at higher altitudes, may be more susceptible to collision risks than other species. However, these observations were rare, and overall, the data suggests that the majority of species fly below or above the turbine rotor heights, minimizing their exposure to turbine blades.

### *Threatened Species*

The presence of threatened species was limited, with only 28 observations of four species over the survey period. Scarlet Robin, Speckled Warbler, Varied Sittella, and Superb Parrot were the threatened species recorded, with their presence varying across seasons. Winter was the most significant season for threatened species, particularly Speckled Warbler, which accounted for 79% of the threatened species observations in that season. The seasonal variation in the presence of these species highlights the importance of continued monitoring throughout the year to better understand their behaviour and habitat use in the wind farm area.

Notably, none of the threatened species were observed flying at RSA height, which suggests that their risk of collision with turbine blades is minimal. The foraging and flight behaviour of these species, particularly Speckled Warbler and Scarlet Robin, indicate that they typically occupy lower strata of the habitat, reducing the likelihood of interaction with wind turbines.

### *Implications for Wind Farm Operation*

The findings from the BUS suggest that while bird activity is prevalent at both impact and reference points, the risk of collision with turbine blades is relatively low for the majority of species. Most birds were observed flying below the RSA, and only a small number of species, such as raptors, were recorded within the critical height range. Furthermore, the presence of threatened species, although limited, indicates that these species are not frequent flyers at RSA height, further mitigating their risk of collision.

The data also underscores the importance of habitat conditions in influencing bird abundance and diversity. Reference points, which may experience fewer disturbances, generally showed higher abundances of common species like Australian Magpie and Common Starling. This highlights the potential impact of wind farm operations on bird communities, with disturbance possibly influencing species distributions.

Overall, the results of the BUS provide a comprehensive overview of the bird community in the wind farm area, including both common and threatened species. The findings suggest that while bird activity is significant, particularly at lower altitudes, the risk of collision with turbines is minimal for most species. Continued monitoring, particularly of threatened species, will be essential to ensure that the wind farm operation does not adversely affect bird populations, particularly as turbines become operational and environmental conditions change.

In comparison to the mortality results; operational BUS indicated that the most common species utilising site were Sulphur-crested Cockatoo, Little Raven, Australian Magpie, Common Starling and Crimson Rosella. Meanwhile, the most commonly observed species flying at RSA height were Sulphur-crested

Cockatoo, Wedge-tailed Eagle, Australian Raven, Galah and Rainbow Bee-eater (the latter being due to a large flock passing through the site on a single occasion).

Sulphur-crested Cockatoo, Australian Magpie and Crimson Rosella were abundant and also formed the highest proportion of mortalities. However, Wedge-tailed Eagle, Australian Raven and Galah were observed exhibiting risky behaviour most commonly (excluding Cockatoo) and had very low mortality. This is surprising as Wedge-tailed Eagle is frequently a high mortality species at wind farms in south-eastern Australia. Nankeen Kestrel also suffered several collisions but was not among the most frequently observed species or those exhibiting risky behaviour.

These findings support the utility of carcass searches to support risk assessments and inform species impacts on site, as it may be the case that some species behaviour may change in the presence of operating turbines. Species typically flying at RSA, such as Galah, for example may avoid turbines and not present as frequent mortality. And other risks to groups such as raptors may not be reflected by their abundance on site given their propensity to fly at RSA.

The BUS does indicate that a significant majority of species and individuals in general at BWF fly below RSA, and this is reflected in mortality results where most woodland species for example, had very little or no mortality.

Detected threatened species in the BUS continue to utilise the site with far more observations occurring during post construction than in surveys prior to construction. These consisted of Dusky Woodswallow, Scarlet Robin and White-fronted Chat. These are woodland and shrubland species would be unlikely to fly at RSA. No Superb Parrots were observed during BUS.

Operational BUS indicates that diversity of species remains the largely same in comparison with preconstruction, however, it also indicates that abundance of species is significantly lower during post construction. The reasons for this are not clear, as both operational BUS were undertaken during the first year of operation, it is highly unlikely that mortality impacts would be evident after a few months of operation, or to this extent. It is possible that the operation in general of BWF has impacted species utilisation of the site.

#### 4.5. Bat Surveys

Refer to Section 3.6, results from these acoustic surveys will be included in the Year 2 report upon completion of data analysis.

#### 4.6. Raptors

There were 20 raptor collisions recorded across the monitoring period. The most frequently detected species was Wedge-tailed Eagle (12), followed by Nankeen Kestrel (7), and Brown Falcon (1). The number of collisions when compared to the flight path data, show that while there is at-risk behaviour being exhibited in some raptor species, the frequency of collision with turbines is relatively low. 134 Nankeen Kestrel sightings were recorded in across the survey period and recorded as a mortality 7 times. Similarly, Wedge-tailed Eagle, which is known to exhibit at-risk behaviour on wind farms across NSW were recorded 119 times and had 12 mortalities. The risk to raptor species appears to be low to populations at BWF, however mitigation measures outlined in Section 3 of the BBAMP should continue.

## 5. Recommendations

This report summarizes data from the first year of operational monitoring at BWF, including direct mortality monitoring and bird and bat activity tracking at impact and reference sites. Bird and bat activity data were gathered using a before-after-control-impact (BACI) design to enable statistical comparison of activity before and after construction. While initial results provide insights into potential ongoing activity patterns, the data from this first year alone are insufficient to fully assess impacts due to potential variability unique to this year. To build a robust understanding of impacts, a second year of monitoring is necessary.

### *Main Recommendations:*

To gather sufficient data for a comprehensive assessment, we recommend continuing the monitoring actions specified in the approved BBAMP for a second year, including:

- Monthly mortality monitoring for 16 designated turbines, covering an initial 120 m radius and pulse checks within 60 m.
- Expanded mortality monitoring within 100 m for an additional 30 turbines during the Superb Parrot breeding season (September to December).
- Completion of a second year of seasonal bird usage surveys (BUS) and Spring, Summer, and Autumn bat activity surveys.
- Targeted surveys of Superb Parrot breeding activity from September to December.
- Timely removal of carrion from turbine vicinities to reduce scavenger attraction and a log-book to be maintained.

While no Superb Parrot mortalities were detected this year, additional mortality searches during the breeding season identified impacts on other species, including the threatened White-throated Needletail, raptors, and non-threatened species. As data accumulate, trends will clarify risk variations across turbines, potentially enabling more targeted mitigation efforts.

### *Additional Recommendations for Year-Two Focus:*

1. Risk Variation Analysis:
  - Analysis of inter-turbine mortality variation is recommended after two full years of data to identify turbines with consistently higher bird and bat impacts, thereby guiding focused mitigation strategies.
2. DNA Analysis for Bat Mortality:

A substantial number of bat mortalities were unidentifiable due to environmental degradation. To ascertain species affected, including potential threatened species, we recommend:

  - Conducting DNA analysis on unidentified bat remains stored at BWF.
3. White-throated Needletail Surveys:

Eight White-throated Needletail mortalities were detected during year one of operational monitoring at BWF (Dec 2023 – Feb 2024). This threatened migratory swift species has not been detected during bird surveys, suggesting that it occurs at BWF in conditions or locations that differ from previous bird surveys. This species is known to fly in the dark, with opportunistic roosting in trees. It is also known to follow major weather fronts accompanied by high winds and a drop in air-pressure. The species flies fast and at height and may be difficult to detect when present at low density, and difficult to identify in mortality searches due to impact damage and

decomposition of carcasses. Consequently, we recommend investigating the possibility to implement some of the below additional surveys:

- Targeted weather contingent vantage point surveys for White-throated Needletail activity at BWF before and after the passage of frontal weather systems (i.e. a cold front or trough mapped on the Bureau of Meteorology synoptic chart);
- Weather contingent mortality searches of selected turbines, including those with previous collisions and a random selection of others, from November–May; or
- Extending monthly mortality monitoring to at least 100 m of all turbines at BWF during the migratory season of this species (November–May; i.e. continuing monitoring of 30 additional turbines to 100 m from Jan – May).

These targeted surveys should include dawn and dusk surveys for potential roosting behaviour. The weather contingent follow-up searches recommended above should occur within 0–2 days after a frontal weather system has passed through BWF, and one to three weeks after regular monthly carcass searches. The purpose of these weather dependent searches is to detect weather associated White-throated Needletail mortality that may not be apparent during regular monthly searches due to rapid decomposition of carcasses and high rates of scavenging.



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- Symbolix 2020, Post-construction bird and bat monitoring at wind farms in Victoria. Public report, 13th Wind Farm Research Meeting 2020.

## Appendix 1: Incidental Raptor and Threatened Species Flight Paths August 2023 – July 2024

Species	Count	Distance	Height range	Behaviour	Comments
Wedge-tailed Eagle	2	250	30-250	Bird is soaring	first one was circling whilst soaring, the second one appear after 1min. Circling over the woodland and then headed north before circling woodland
Unidentified large raptor	1	20	10-20	Bird is gliding	brown on top, white underneath so maybe swamp harrier or brown falcon. Was being attacked by 2x magpie-lark. The raptor was nearly double their size.
Nankeen Kestrel	1	20	30-50	Bird is hovering	hovering near damn, gliding toward the road, hovered, glided a few metres then hovered again
Unidentified large raptor	1	50	40-80	Bird is gliding	white underneath and light coloured on top, potentially a kite. Hovered then glided a short distance across the road, and then slowly glided south
Nankeen Kestrel	1	200	60-80	Bird is hovering	hovering over the woodlands (hovered in same spot)
Nankeen Kestrel	1	10	20-50	Bird is hovering	flew over the car and then hovered above the road, then glided slow a couple metres before hovering again
Wedge-tailed Eagle	2	100	20-100	Bird is gliding	both gliding in the wind, circling over the woodlands, whilst 2x smaller birds are harassing/following one of the WTE
Wedge-tailed Eagle	2	200	50-350	Bird is soaring	fighting extremely close & in-between the blades of to T13, then headed to T10 before soaring upwards heading south
Wedge-tailed Eagle	2	300	150-350	Bird is soaring	both circling whilst soaring upwards. started close to T12 and slowly headed south
Wedge-tailed Eagle	1	150	100-200	Bird is gliding	circling over patch of trees in open paddock, slowly soaring upwards and making its way south to the woodlands
Wedge-tailed Eagle	2	50	50-200	Bird is soaring	2 birds circling over the woodlands, heading east towards T36. came within metres of the blades
Brown Falcon	1	10	10-30	Bird is flapping	flew from small tree next to the road to a larger tree in the paddock.
Nankeen Kestrel	1	70	20-30	Bird is foraging	bird was perched in tree, flew down to the ground, then hovered briefly before returning to the tree
Nankeen Kestrel	1	40	5-20	Bird is hovering	hovering really low, then flew a few metres, hovered again, and repeated this several times
Brown Falcon	1	100	10	Bird is resting	is perched on a dead tree trunk in the middle of an open paddock
Wedge-tailed Eagle	1	150	30-150	Bird is gliding	WTE is slowly circling over the woodland between T24 & T25 on northern side. Was gliding fairly low, then slowly began to soar higher & heading south
Nankeen Kestrel	1	100	30-200	Bird is soaring	glided from the Ridge down to the valley, the hovered, flew to the east before hovering again
Brown Falcon	1	70	50-100	Bird is hovering	hovering over grassland before flying away
Wedge-tailed Eagle	3	300	5-150	Bird is soaring	2 circling above Ridge, 3rd one came out of trees and was flying low and went behind the Ridge. First 2 started soaring east
Wedge-tailed Eagle	2	70	30-150	Bird is flapping	2x WTE flew from trees adjacent/north of T9 down into the woodlands. They were being chased/followed by 3 other birds
Nankeen Kestrel	1	50	20 - 30	Bird is resting	Perched on dead tree, flew SW towards woodland away from T4. Avg. 25m
Nankeen Kestrel	1	45	0 - 3	Bird is resting	Resting on road near T1. Flew close to the ground out of site
Nankeen Kestrel	1	20	0-10	Bird is resting	Flew from ground to tree branch and rested near T1
Little Eagle	1	40	40-45	Bird is gliding	Seen circling while on our way to bango, outside the wind farm boundary but threatened species, so marked it anyways. Likely a juvenile.
Nankeen Kestrel	1	50	25	Bird is resting	Bird seen resting on a dead tree on our drive to western part of the wind farm.
Nankeen Kestrel	1	50	25	Bird is resting	Bird was seen resting on a power line
Nankeen Kestrel	1	30	15 - 25	Bird is flapping	Flew between trees parallel to T39
Brown Falcon	2	500	30-35	Bird is resting	Pair was seen on the way to turbine 39, they were resting before taking off into the woodlands, they were flapping and gliding later
Black-shouldered Kite	1	300	5-25	Bird is resting	Bird was seen resting, then took off flapping, gliding and hovering!
Nankeen Kestrel	1	200	35	Bird is flapping	<Null>
Nankeen Kestrel	1	20	20 - 30	Bird is flapping	Flew over road near T30
Nankeen Kestrel	1	100	35	Bird is flapping	Seen flashing away from the observer into the woodlands
Wedge-tailed Eagle	1	1000	100-125	Bird is gliding	Bird was gliding, adult male likely foraging
Nankeen Kestrel	1	50	15	Bird is resting	Was resting in the shade very close to the turbine, then took off flapping because of the car
Nankeen Kestrel	2	100	30	Bird is gliding	Gliding across slopes foraging, briefly perching on dead tree. North west of T27
Nankeen Kestrel	2	100	20-30	Bird is gliding	Pair seen gliding and then rested on a dead tree
Wedge-tailed Eagle	2	<Null>	10-100	Bird is displaying	Pair was seen gliding, one was displaying, foraging, now 100% sure there's a nest in the woodlands marked
Brown Falcon	1	85	15 - 80	Bird is resting	resting on dead tree then flew away
Nankeen Kestrel	1	200	75-100	Bird is flapping	Circling near power line
Nankeen Kestrel	1	20	0- 30	Bird is hovering	Bird resting on ground, flew away when near and began circling/hovering
Nankeen Kestrel	1	75	20	Bird is resting	Bird perched on dead tree in field
Nankeen Kestrel	1	30	20 - 40	Bird is soaring	Circling near road

Species	Count	Distance	Height range	Behaviour	Comments
Nankeen Kestrel	1	20	15 - 30	Bird is hovering	Hovering next to road, diving down multiple times
Nankeen Kestrel	2	50	0 - 35	Bird is hovering	Two birds hovering, one diving to the ground
Nankeen Kestrel	1	40	10-15	Bird is gliding	Flew across the road from ridge into woodland
Wedge-tailed Eagle	1	150	120 - 150	<Null>	Circling over woodland, flying away
Nankeen Kestrel	1	50	20 - 40	Bird is hovering	Flipping and hovering next to road
Brown Falcon	1	35	15 - 30	Bird is flapping	Flapping and perched on multiple dead trees along the road
Black Falcon	1	100	20-150	Bird is flapping	<Null>
Wedge-tailed Eagle	2	150	30- 300	Bird is soaring	Two WTE's circling over woodlands. One soared east past T25, the other continued to circle then flew towards the blades of T25 nearly getting hit
Wedge-tailed Eagle	1	<Null>	20-50	Bird is gliding	flew over the woodlands very low
Nankeen Kestrel	1	100	20-40	Bird is hovering	Hovering near slope and flew into woodland
Wedge-tailed Eagle	1	400	100-300	Bird is soaring	slow circling whilst soaring, then glided really fastly downwards
Nankeen Kestrel	1	30	20 - 50	Bird is soaring	Soaring across road between T9 and T10
Nankeen Kestrel	1	120	30-40	Bird is hovering	hovering over tree in grassland
Wedge-tailed Eagle	1	200	40 - 60	Bird is flapping	Being chased by raven and magpie
Nankeen Kestrel	1	30	20-40	Bird is hovering	Was hovering, then flew a few metres, hovered again and then flew away
Nankeen Kestrel	1	20	10-15	Bird is resting	Bird perched on branch of tree next to road before flying away
Nankeen Kestrel	1	40	30-60	Bird is hovering	hovering, then flew a few metres, hovered again
Wedge-tailed Eagle	1	40	30-60	Bird is gliding	WTE flying really low over the woodlands
Nankeen Kestrel	5	30- 150	10-80	Bird is hovering	3x hovering to the south of access, 2x hovering to the north of road, mostly hovering with the occasionally gliding between hovers
Nankeen Kestrel	1	30	25	Bird is resting	Perched on dead tree looking at open slope/plains
Wedge-tailed Eagle	1	250	100 - 150	Bird is soaring	Soaring over ridge near T24
Wedge-tailed Eagle	2	60	0 - 10	Bird is resting	Two birds resting on ground, chased away by magpies
Brown Falcon	1	70	40 - 70	Bird is soaring	Circling near T18
Wedge-tailed Eagle	1	50-200	50-150	Bird is gliding	WTE gliding & flapping towards T9 blades from the east, then over the woodlands heading west
Wedge-tailed Eagle	1	120	100-200	Bird is soaring	WTE circling whilst soaring upwards, came from westerly direction, between T10 & T9, then around T9 before heading east
Nankeen Kestrel	1	50	10-20	Bird is resting	Perched on dead tree then flew off
Nankeen Kestrel	1	20	15	Bird is resting	Perched on tree branch next to road
Nankeen Kestrel	1	25	10-20	Bird is hovering	Hovering over slope then perched on dead tree
Nankeen Kestrel	1	30	20 - 30	Bird is hovering	Hovering over plain next to road
Nankeen Kestrel	2	100	100 - 150	Bird is soaring	Two birds circling close to each other
Nankeen Kestrel	1	10	0 - 5	Bird is resting	Bird on ground then flew away on approach
Wedge-tailed Eagle	2	70	100 - 200	Bird is gliding	Circling high above road
Nankeen Kestrel	2	250	40 - 60	Bird is soaring	Two birds circling close to each other
Brown Falcon	1	20	20-30	Bird is flapping	flew in front of the car from the Ridge down into the valley
Brown Falcon	2	100	25-30	Bird is resting	a pair resting in the tree, then flew east once we drove past
Wedge-tailed Eagle	2	200	200	Bird is soaring	circling between T41 & T40
Superb Parrot	1	50	20-40	Bird is flapping	flew straight past
Nankeen Kestrel	1	300	80 - 90	Bird is foraging	circling over fence line
Nankeen Kestrel	1	150	50-80	Bird is hovering	hovering over grassland
Wedge-tailed Eagle	2	200	150 - 250	Bird is soaring	two WTEs soaring between T34 & T35 before soaring east & circling
Wedge-tailed Eagle	2	500	200 - 250	Bird is soaring	soaring whilst circling then rapidly gliding downwards
Wedge-tailed Eagle	1	600	100 - 200	Bird is gliding	High circling in the distance
Nankeen Kestrel	1	150	150-200	Bird is hovering	hovering approx. 30m behind T22 over handstand
Wedge-tailed Eagle	2	200	150-250	Bird is soaring	both circling whilst soaring upwards, heading north



Species	Count	Distance	Height range	Behaviour	Comments
Brown Falcon	2	200	20-30	Bird is resting	Two birds perched on adjacent trees. One flies from one tree and sits next to the other BF
Nankeen Kestrel	1	20	0 - 30	Bird is flapping	Perched on road before flying away over slope
Nankeen Kestrel	1	40	35	Bird is resting	Perched on the top of a dead tree
Nankeen Kestrel	1	35	15 - 35	Bird is flapping	Flapping and diving near road
Brown Falcon	1	100	35	Bird is resting	Perched on top of tree, then flew off
Nankeen Kestrel	1	30	3-30	Bird is hovering	Flew low to ground next to T29, hovered over slope
Wedge-tailed Eagle	2	150 - 500	150-250	Bird is soaring	slowly soaring whilst circling over T10 and T9 before making way to East and circling over woodlands
Brown Falcon	1	150	30 - 50	Bird is hovering	Hovering over slope, then flew west parallel to observer
Nankeen Kestrel	1	25	5-10	Bird is flapping	Flapping up slope near T28
Unidentified large raptor	1	400	50-120	Bird is hovering	raptor hovering before flying south towards T45
Wedge-tailed Eagle	1	100	50-150	Bird is soaring	circling between T10 and T18, before soaring east and circling over the woodlands
Wedge-tailed Eagle	3	1000	250+	Bird is soaring	3x WTE circling high up in the distance closely together
Nankeen Kestrel	1	100	30 - 50	Bird is flapping	Flapping away from road and perched on a power line tower
Nankeen Kestrel	3	30-100	12-15	Bird is resting	one adult resting in top of tree 100m from road, one adult & juvenile resting in another tree (hollow with nest) 30m from road
Nankeen Kestrel	2	30-100	15-30	Bird is resting	same 2 kestrel resting in tree. One started circling around the tree and area between other tree before perching in tree 100m away
Nankeen Kestrel	1	80	20	Bird is resting	Resting in tree on outer most branches, flew away at 9:39am. Was back resting on same branch by 10:10am, then flew away again
Nankeen Kestrel	4	110	20-25	Bird is foraging	juvenile squawking, all 4 resting, then 2 flew off toward the ground before coming back & appears one fed one a juvenile then one flew to nearby tree
Nankeen Kestrel	1	100	40-50	Bird is hovering	same kestrel, flew and hovered just NE of T3, then flew a few metres hovered again and did it once more before flying away
Unidentified large raptor	1	100	40-60	Bird is soaring	circling south of T12, then soared east before gliding downwards rapidly north
Nankeen Kestrel	1	40	15-40	Bird is resting	Perched in tree on highest branch. Flew down to the ground and then returned, did that twice
Wedge-tailed Eagle	1	50	0-30	Bird is soaring	circling low to ground, then perched on rock. Slowly circled again then returned to same rock, then circled slowly again before resting in close tree
Wedge-tailed Eagle	1	30-500	30-200	Bird is soaring	flew in really low near T32, then circled low over the woodlands before soaring upwards and circling south-west over woodlands
Wedge-tailed Eagle	1	120-300	30-200	Bird is soaring	initially soaring very low and slowly from the woodland to the open paddock east, between T31 & T32, circled multiple times then soared north
Wedge-tailed Eagle	1	250	10-100	Bird is soaring	resting low in tree then circled before landing then started slowly circling over trees before landing then soared/circling north over woodlands
Wedge-tailed Eagle	2	700	50-200	Bird is soaring	both circling south of T25, one started circling east of T25, while the other kept slowly heading south
Nankeen Kestrel	1	60	10-40	Bird is hovering	hovering between T26 and T27 then glided downwards, before soaring upwards in an easterly direction
Wedge-tailed Eagle	2	50-200	20-100	Bird is soaring	1x flew really low to dead tree being swopped by other birds before soaring SE then NE, then 2 starting circling approx 30-50m high between T27 & T26
Wedge-tailed Eagle	1	500	40-100	Bird is soaring	circling over same trees as yesterday, they soared behind Ridge in NW direction & continued to circle over woodlands
Nankeen Kestrel	1	40	0-50	Bird is flapping	Kestrel was on the road, then flew up and behind the tree before heading north towards the row of trees
Nankeen Kestrel	6	100	0-70	Bird is hovering	All hovering & circling over grassland. Some diving into grass before returning to the tree, then returning back out to hover over the grass again
Black-shouldered Kite	1	20	15-30	Bird is resting	sitting in tree, then flew to next tree, waited a minute then flew slowly across grassland to dead tree, where it sat for awhile
Nankeen Kestrel	1	30	15-30	Bird is resting	sitting in highest branch of dead tree, then started circling, between dead tree and tree that BS kite was sitting in
Brown Falcon	1	40	35-45	Bird is resting	resting on pin on just under electrical cables that's embedded into the post
Brown Falcon	2	30	0-40	Bird is resting	2x falcons swopped/flew very close to ground before landing on dead tree. They then rested on the top branch
Wedge-tailed Eagle	1	500	2	Bird is flapping	flew fairly close to ground along slope east of T41, heading south, then looped around and headed NE
Nankeen Kestrel	1	30	25-35	<Null>	kestrel perched high in dead tree SE of T41
Nankeen Kestrel	1	60	10-20	Bird is hovering	hovered, then flew a few metres, hovered again, then flew east
Wedge-tailed Eagle	1	100	8-12	Bird is resting	sitting in short dead tree, appears to be a juvenile
Nankeen Kestrel	3	30	0-30	Bird is resting	3 kestrels sitting on the road, two together and one further north. They all flew off when I drove up to them
Nankeen Kestrel	2	40-120	20-25	Bird is resting	one Kestrel sitting at the top of each tree (two trees), the closest one flew towards the furthest one as I approached
Nankeen Kestrel	1	Oct-60	0-40	Bird is flapping	flew past car towards tree, then flew just north & hovered, then east & hovered, before hovering at various spots on the hardstand & landed twice
Wedge-tailed Eagle	2	700	30-50	Bird is soaring	circling low over woodland between T12 and T11
Nankeen Kestrel	2	80	20-40	Bird is hovering	1 Kestrel hovering in the same spot, the over flying in circles before hovering, then flying towards the tree
Black-shouldered Kite	1	50	20	Bird is resting	resting on highest branch of dead tree, the same tree as other morning

Species	Count	Distance	Height range	Behaviour	Comments
Nankeen Kestrel	1	50	20	Bird is resting	resting on highest branch of dead tree pruning itself
Nankeen Kestrel	3	20-50	1.5 - 30	<Null>	Two were sitting on gate then flew away as I approached, while one was sitting on the tree
Nankeen Kestrel	4	80-100	0 - 30	Bird is hovering	4x kestrels swooping to ground, hovering and flying close to each other in grassland near entry
Nankeen Kestrel	1	30	15-20	Bird is flapping	<Null>
Nankeen Kestrel	1	20	15-25	Bird is hovering	Hovering and flapping over road near 20
Wedge-tailed Eagle	1	250 - 800	30 - 100	Bird is flapping	flew from woodlands across open paddocks
Wedge-tailed Eagle	1	250	30	<Null>	sitting high up in dead tree
Whistling Kite	1	200	30-120	Bird is flapping	WTE & Whistling Kite circling over woodlands, WTE started chasing kite, kite dropped something, then flew away whilst WTE kept circling
Wedge-tailed Eagle	1	200	30-120	Bird is flapping	WTE & Whistling Kite circling over woodlands, WTE started chasing kite, kite dropped something, then flew away whilst WTE kept circling
Wedge-tailed Eagle	2	300	30 - 100	Bird is soaring	circling over woodlands
Nankeen Kestrel	2	60-100	30-60	Bird is hovering	Kestrel hovering 5m east of turbine, then flew few metres SE, joined by another, who followed darting & moving quickly in strong winds, then at T27
Nankeen Kestrel	1	10	0-20	Bird is flapping	was on road, flew away when I approached and then briefly hovered on opposite side near dead tree before flying off
Wedge-tailed Eagle	2	40	30-150	Bird is soaring	circling slowly over woodlands east of T32, glided low north to woodlands east of T3, joined by another, circled then glided south, circled then SW
Wedge-tailed Eagle	2	1000	40-150	Bird is hovering	hovering in spot for long time, then slowly soared upwards, hovered, soared west, lowered to 40m & hovered again, soared east, hovered, flew west
Wedge-tailed Eagle	1	200	50-150	<Null>	soared east of T34, hovered, soared north towards woodlands & hovered, then glided north
Wedge-tailed Eagle	1	50	150-250	Bird is soaring	slowly circling over woodlands NE of T13
Wedge-tailed Eagle	3	100	15-45	Bird is flapping	3 birds circling over grassland, intermittent perch on large tree
Nankeen Kestrel	1	90	10-15	Bird is resting	Perched on dead tree
Wedge-tailed Eagle	2	60	35-50	Bird is resting	one perched on highest point of tree the other flying (like a roller coaster up & down) then flew to tree then one flew south while the other remained
Nankeen Kestrel	1	75	5-20	Bird is flapping	Flapping away from car when driving into WF
Wedge-tailed Eagle	2	50	30-250	Bird is soaring	one WTE flew north past T30, then headed SW (30-100m high), the other WTE headed south towards T30 then headed SW (approx. 250m high)
Nankeen Kestrel	1	20	8-20	Bird is flapping	flew north across road, then did a loop, headed to dead tree just south of road, did another loop and then landed on the dead tree
Wedge-tailed Eagle	1	300	40-200	Bird is soaring	slowly circling over woodlands NE of T25, then slowly soared south, rising into the clouds whilst still circling
Brown Falcon	2	100	20-40	Bird is flapping	One bird flies to a tree to perch, one bird flies over plains and begins circling
Wedge-tailed Eagle	1	350	80 - 120	Bird is soaring	Circling through T41 and 42
Nankeen Kestrel	1	30	0-20	Bird is flapping	was on the ground near the road, flew east toward T26 as I approached, then behind the turbine and south before landing in dead tree
Nankeen Kestrel	1	40	40	Bird is resting	resting on highest powerline, then flew SE once I drove past
Wedge-tailed Eagle	1	50	50-100	Bird is soaring	WTE flew NE of T6, did a circle, then soared west
Wedge-tailed Eagle	1	40	20-50	Bird is flapping	WTE flying really low (approx. 30m) north of T27, circled around tree then headed NE & circled low over woodlands north of T26
Wedge-tailed Eagle	3	250	5-150	Bird is soaring	3x WTE all circling over the woodlands, soaring upwards & then fasting gliding downwards, then up again
Nankeen Kestrel	1	40	35	Bird is resting	resting on top dead branch of tree
Wedge-tailed Eagle	1	200	150-250	Bird is soaring	slowly circling and soaring higher into the low-set clouds
Wedge-tailed Eagle	1	50	40-80	Bird is gliding	WTE gliding downwards towards T25, then glided south, before circling really low (same height as trees) and glided down the slope
Nankeen Kestrel	1	40	35	Bird is resting	resting on lowest powerline
Black-shouldered Kite	1	40	40	Bird is resting	resting at the top of the highest branch of the tree
Nankeen Kestrel	1	15	1-10	Bird is resting	Resting on road post then flew away on approach
Wedge-tailed Eagle	3	40	30-60	Bird is soaring	1x WTE soaring low back & forth & swooping at tree. 2nd WTE joined at 9:03am & 3rd at 9:13am, all soaring slowly down Ridge
Nankeen Kestrel	1	60	35	Bird is hovering	hovering, then flew a few metres, hovered again, then repeated before flying east
Wedge-tailed Eagle	2	150	10-30	Bird is resting	Two birds diving from height to a tree, both perched on top
Wedge-tailed Eagle	3	100	30 - 100	Bird is gliding	Circling at different heights, one dove near ground
Nankeen Kestrel	2	0	10-30	Bird is flapping	Circling low over road and car, flying and hovering over slope
Brown Falcon	1	30	10-15	Bird is resting	Resting at the top of a dead tree
Black Falcon	1	30	20	Bird is resting	resting on branch of dead tree

Species	Count	Distance	Height range	Behaviour	Comments
Nankeen Kestrel	2	80	5-30	Bird is hovering	both hovering close to each other then soared to further south (toward ridge), hovered again
Nankeen Kestrel	3	30	0-30	Bird is hovering	all 3 soaring around and hovering. One hovering over road & hardstand, swooping down to pick something up
Wedge-tailed Eagle	2	50	30-100	Bird is soaring	both circling fairly low and slowly making their way SW
Nankeen Kestrel	1	50	15 - 15	Bird is resting	Perched at the top of dead tree
Wedge-tailed Eagle	1	350	30-50	Bird is flapping	being chased by 3x magpies
Nankeen Kestrel	1	20	8	Bird is resting	resting on top of dead tree
Wedge-tailed Eagle	1	0	40-100	<Null>	Circling through T41, flew away north towards 25 and dropped into woodland
Wedge-tailed Eagle	1	800	50-80	Bird is soaring	circling over top of ridge north of T34
Unidentified large raptor	1	20	30-40	Bird is flapping	flew north across the road, then east, before circling over the road and then continued east
Wedge-tailed Eagle	1	200	40-150	Bird is soaring	slowly circling west of T19, very close to the turbine and around the blades (turbine not turning), then slowly headed east
Nankeen Kestrel	1	30	15	Bird is resting	resting on highest branch at the top of the tree
Nankeen Kestrel	1	30	0-40	Bird is flapping	was low to ground (possibly on the ground) and flew away as I approached
Black-shouldered Kite	1	20	10-30	<Null>	was near a road reflector post, then flew south-west as I approached in the vehicle
Nankeen Kestrel	1	30	10-40	Bird is flapping	flying low along the road, then started to soar and circling just north of the road over grassland
Black-shouldered Kite	1	40	20-35	Bird is flapping	flying then hovering briefly, then move a few metres before hovering again, continued for about 6 hovers before flying onto highest branch of a tree
Nankeen Kestrel	1	50	25	Bird is resting	resting on highest branch of dead tree
Nankeen Kestrel	1	30	1.2 - 5	Bird is resting	resting on fence post, flew SW along the fenceline as I approached and landed on another fence post
Nankeen Kestrel	1	30	0-30	Bird is flapping	was on the road, then flew parallel to the road into the trees about 100m east
Nankeen Kestrel	1	40	0-15	Bird is resting	Sitting still on top of a large rock/bolder, then flew south fairly low to ground, hovered briefly, then continued south
Wedge-tailed Eagle	1	500	40-70	Bird is soaring	WTE flew just north of T26 in westerly direction, then suddenly veered north-east over the woodlands
Nankeen Kestrel	1	50	25	Bird is resting	resting in the same dead tree on the same highest branch as the other morning
Wedge-tailed Eagle	2	400	50-200	Bird is soaring	both circling over woodlands east of T10, one circled T10 within 20m of post, both slowly circled as headed towards T17 and beyond
Nankeen Kestrel	1	40	10-35	Bird is flapping	flew across the road and landed high in the tree
Black-shouldered Kite	2	80	40	Bird is resting	both sitting on the highest dead branches of the tree approx. 1m apart (separate branches)
Nankeen Kestrel	1	20	10-20	Bird is flapping	resting on reflector post on road, flew away when I approached
Wedge-tailed Eagle	2	100	100-200	Bird is soaring	two WTE circling over woodlands
Nankeen Kestrel	1	30	10-15	Bird is flapping	was resting on reflector post on side of road, then flew away as I approached
Black-shouldered Kite	1	50	30-50	Bird is soaring	circling over grassland. Had same characteristics when looking up at it as a Letter-winged kite (all white with black bands)
Wedge-tailed Eagle	2	30	20-50	Bird is soaring	Two WTE's circling (tight, smallish circles) closely to the ground, both gliding and soaring, one following closely behind the other
Nankeen Kestrel	2	20	10-40	Bird is hovering	one resting on reflector post the other hovering above. the resting one flew a few metres away and hovered
Wedge-tailed Eagle	2	800	50-150	Bird is soaring	two circling around T20 before heading east
Wedge-tailed Eagle	1	100	50-80	Bird is flapping	slowly flew past over the woodlands, heading N/NE
Wedge-tailed Eagle	2	100	40-200	Bird is soaring	both circling just SE of T6, one circling low (50m) the other high (150m), the high one soared away, the other circled more before soaring NE
Wedge-tailed Eagle	2	300	50-200	Bird is soaring	circled NE of T5 before slowly circling south whilst soaring upwards
Wedge-tailed Eagle	2	150	50-250	Bird is soaring	slowly circling east of T5 & T6 whilst soaring upwards, then flew north into the clouds



## Appendix 2: Flight Paths from BUS (Year 1)

Species	Count	Distance	Height range	Behaviour	Comments	Incidental
Nankeen Kestrel	1	10	15	Bird is flapping	Bird was observed circling close the road, it was flapping and then rested on a dead tree	YES
Nankeen Kestrel	1	5	25	Bird is resting	Bird was seen resting on a power line	YES
Nankeen Kestrel	1	200	165	Bird is gliding	Was seen circling, it was gliding initially and then soared to a greater height, lost vision because of trees, observed during bus survey ref3	No
Wedge-tailed Eagle	1	20	25	Bird is resting	Observed close to T9, resting on a dead tree, likely foraging, about 40m from t9,	YES
Nankeen Kestrel	1	200	35	Bird is hovering	Bird was seen hovering, it was then flapping and started circling!	YES
Wedge-tailed Eagle	2	1000	250	Bird is gliding	Pair seen circling together! Flew very close the turbine	NO
Nankeen Kestrel	1	100	25	Bird is resting	Bird was resting and the flew to the ground, lost vision after some time	YES
Nankeen Kestrel	1	30	35	Bird is hovering	Bird is hovering and flapping, looking for food	YES
Nankeen Kestrel	2	50	20	Bird is soaring	Observed during bus12, very close to turbine, the pair was circling and soaring	No
Nankeen Kestrel	2	200	40-70	Bird is gliding	Observed while bus r2, foraging, circling, gliding soaring and flapping	No
Brown Falcon	1	20	20-40	Bird is gliding	Flew past really quick, while I was driving brim b12 to b5	YES
Wedge-tailed Eagle	1	1000	500	Bird is gliding	Observed during bus12, bird was circling and then lost vision of it	NO
Nankeen Kestrel	1	200	55	Bird is hovering	Hovering, foraging, lost vision due to slope	NO
Nankeen Kestrel	2	100	25	Bird is resting	The pair was resting, and then it took off into the woodlands	YES
Nankeen Kestrel	1	100	25	Bird is flapping	Bird was observed during bus17, its was flapping and then started to glide, lost vision as it went into the woodlands	No
Nankeen Kestrel	1	50	25-45	Bird is flapping	Observed while driving to R3, it was flapping around and then rested on the power line	YES
Nankeen Kestrel	1	50	45	Bird is resting	Seen resting on the power line while driving to r3	YES
Diamond Firetail	7	10	0	Bird is foraging	Diamond firetail seen foraging	YES
Brown Falcon	2	100	20	Bird is resting	Brown falcon pair, seen resting on the dead tree on my drive to r2	YES
Nankeen Kestrel	1	200	100	Bird is gliding	Bird was observed gliding during bus r2	NO
Brown Falcon	1	300	25	Bird is resting	Seen resting on a dead tree while I was driving to bus 22	YES
Nankeen Kestrel	2	200	35-55	Bird is gliding	The pair was initially seen gliding and then it was hovering and flapping.	YES
Brown Falcon	1	150	20	Bird is resting	Bird seen resting on a dead tree	YES
Nankeen Kestrel	1	50	10-15	Bird is hovering	Seen hovering very close to the turbine!	YES
Nankeen Kestrel	1	100	10-16	Bird is hovering	Observed hovering during bus12, started flapping and gliding eventually	No
Wedge-tailed Eagle	1	500	100-150	Bird is soaring	Seen circling and soaring flying close to the turbine	YES
Nankeen Kestrel	1	200	35-45	Bird is hovering	Observed bird hovering, it was flapping and gliding later, observed during bus21	No
Diamond Firetail	6	50	0	Bird is foraging	Diamond fire tail observed foraging, on the drive to b22	YES
Wedge-tailed Eagle	1	700	60-70	Bird is gliding	Observed circling very close to a turbine near bus5, observed it while surveying bus 6	NO
Nankeen Kestrel	1	500	10-40	Bird is gliding	The bird was resting, it was then gliding and hovering and then resting	YES
Nankeen Kestrel	2	50	10-20	Bird is resting	It was initially perched and then moved flew and perched on another tree. Resident breeding pair	YES
Wedge-tailed Eagle	2	1500	400-500	Bird is soaring	Circling high, near turbines	No
Wedge-tailed Eagle	2	700	200 - 400	Bird is soaring	Circling high close to turbines	No
Nankeen Kestrel	1	30	20 - 40	Bird is flapping	Flew over observer while calling	No
Nankeen Kestrel	1	50	10	Bird is resting	One individual from the resident pair	YES
Nankeen Kestrel	3	200	15 - 20	Bird is resting	Three perched on a dead tree	No
Nankeen Kestrel	1	200	15 - 30	Bird is resting	Flapping over to dead tree and perched, seemed to have food in mouth	No
Nankeen Kestrel	1	50	25	Bird is resting	Seen perched on a power line	YES
Nankeen Kestrel	2	150	20 - 30	Bird is resting	Perched on dead tree then flew (flapping) parallel to road	No
Nankeen Kestrel	1	50	25	Bird is resting	Observed perched on the power line	YES
Nankeen Kestrel	3	200	15 25	Bird is resting	All birds flew to dead tree and rested	No
Nankeen Kestrel	2	200	15 - 30	Bird is resting	Flapping over to dead tree and perched	No
Nankeen Kestrel	1	150	15	Bird is resting	Bird perched on a dead tree	NO

Species	Count	Distance	Height range	Behaviour	Comments	Incidental
Nankeen Kestrel	1	200	15 - 30	Bird is resting	Flew to dead tree and perched	No
Nankeen Kestrel	1	50	18	Bird is resting	Observed resting on a dead tree	YES
Nankeen Kestrel	1	50	25	Bird is flapping	Observed flapping and going into the woodland	YES
Wedge-tailed Eagle	2	1500	200 - 400	Bird is soaring	Circling near T27	No
Wedge-tailed Eagle	3	1000	30 - 300	Bird is soaring	Near ridge	No
Nankeen Kestrel	1	200	55-70	Bird is flapping	Observed flapping and heading towards the woodland	NO
Wedge-tailed Eagle	2	200	30 - 100	Bird is soaring	Circling close to ridge near T24,25	No
Wedge-tailed Eagle	2	300	40-100	Bird is soaring	Circling over ridge near T25	No
Nankeen Kestrel	2	150	40-70	Bird is hovering	Flapping and hovering over open slopes. Calling	No
Wedge-tailed Eagle	1	300	40 - 250	Bird is flapping	Flapping and soaring in circles	No
Wedge-tailed Eagle	2	800	50-150	Bird is soaring	Circling over ridge	No
Wedge-tailed Eagle	2	500	50-150	Bird is soaring	Circling over plains and bush land	No
Nankeen Kestrel	1	100	0-50	Bird is hovering	Hovering over slope then dove down to ground while scavenging	No
Nankeen Kestrel	1	200	20-30	Bird is flapping	In valley between ridge and open hills	No
Wedge-tailed Eagle	1	200	40-70	Bird is soaring	Soaring back and forth along ridge line	No
Wedge-tailed Eagle	1	200	20 - 50	Bird is gliding	High over trees then dove down near road	No
Wedge-tailed Eagle	2	700	40 - 100	Bird is gliding	Gliding parallel to ridge line	No
Nankeen Kestrel	2	100	30-40	Bird is soaring	Flying over open hills	No
Nankeen Kestrel	3	100	20 - 40	Bird is hovering	All circling and hovering over grassy slopes	No
Wedge-tailed Eagle	1	800	150-200	Bird is soaring	Slowly soaring over grassy slopes	No
Brown Falcon	1	100	3-20	Bird is flapping	Flapping low to ground with a catch in mouth. Perched on nearby tree then chased by magpies	No
Nankeen Kestrel	1	50	0-30	Bird is flapping	Initially seen flapping and then rested on a fence line and then took off	YES
Nankeen Kestrel	1	35	10-24	Bird is flapping	Flying low near road	YES
Nankeen Kestrel	1	40	10-20	Bird is resting	Perched on dead tree	YES
Brown Falcon	1	100	15	<Null>	<Null>	YES
Brown Falcon	1	150	20	<Null>	<Null>	YES
Nankeen Kestrel	1	50	40-60	Bird is flapping	Observed flapping, started gliding for a few seconds and then continued to flap	YES
Nankeen Kestrel	1	100	0-20	Bird is flapping	B21- observed during survey, initially flapping and then gliding	NO
Wedge-tailed Eagle	1	200	70-140	Bird is gliding	During R3, observed gliding, likely foraging, adult	NO
Wedge-tailed Eagle	1	50	0-30	Bird is flapping	Observed during b22, juvenile flapping and gliding, chased by magpies and very low to the ground	NO
Wedge-tailed Eagle	1	500	100-140	Bird is gliding	Observed circling, foraging, adult individual	YES
Wedge-tailed Eagle	1	200	100-300	Bird is soaring	Adult observed during B5, soaring, foraging, gliding	NO
Wedge-tailed Eagle	2	250	60-150	Bird is gliding	Observed during b5, pair displaying, gliding, soaring, circling and foraging. Likely a breeding pair	NO
Wedge-tailed Eagle	2	100	40-150	Bird is soaring	Soaring, displaying and foraging. Likely a breeding pair	NO
Wedge-tailed Eagle	2	600	0-110	Bird is gliding	Observed during b6, gliding, foraging	NO
Black-shouldered Kite	1	100	0-50	Bird is hovering	Observed during R2, adult foraging. Hovering, flapping and gliding	NO

## Appendix 3: Flight Paths from Targeted Superb Parrot Survey

Species	Count	Distance	Height range	Behaviour	Comments
Wedge-tailed Eagle	1	>250	>200	Bird is soaring	WTE being chased by smaller bird
Wedge-tailed Eagle	1	100	30 - 60	Bird is soaring	Circling above wooded ridge near T25
Nankeen Kestrel	1	50	25 - 45	Bird is hovering	Kestrel circling and hovering above slopes near T26
Nankeen Kestrel	1	60	30-40	Bird is hovering	Circling and hovering
Nankeen Kestrel	1	250	30 - 60	Bird is soaring	Circling
Wedge-tailed Eagle	1	400	300+	Bird is soaring	Circling near T32
Nankeen Kestrel	1	5	15 - 20	Bird is flapping	Flying just above the canopy
Wedge-tailed Eagle	1	20	20 - 60	Bird is soaring	Chased by magpie over woodland then circled over plains
Nankeen Kestrel	1	15	20 - 40	Bird is hovering	Hovering over road
Nankeen Kestrel	1	30	1-25	Bird is flapping	Flying low to the ground then circling
Black-shouldered Kite	2	100	40-80	Bird is flapping	Initially observed flapping, then it was soaring and circling, observed displaying and likely to be a breeding pair
Superb Parrot	2	50	40-65	Bird is flapping	pair observed flapping, prominent bright green with yellow face, and red band on one bird, likely a breeding pair, headed towards a small pond nearby.
Nankeen Kestrel	1	50	3-30	Bird is flapping	Observed flapping, very close to the ground and close to the road.
Wedge-tailed Eagle	2	50	80-120	Bird is gliding	Observed gliding and soaring, foraging! Likely a breeding pair.
Nankeen Kestrel	2	200	60-80	Bird is hovering	Initially observed hovering. Pair was foraging, later started to glide and soar before losing vision
Nankeen Kestrel	2	100	10-60	Bird is flapping	Observed foraging initially and flapping, went to a dead tree, which was a nest with a juvenile in it. Saw the feeding
Nankeen Kestrel	1	100	10-20	Bird is resting	Observed perched on a tree and then took off, seen using the hollow
Nankeen Kestrel	1	50	30-50	Bird is flapping	<Null>
Nankeen Kestrel	1	50	15-60	Bird is flapping	Adult observed flapping, gliding
Nankeen Kestrel	1	50	55	Bird is resting	Seen resting on the power lines



## Appendix 4: Detailed mortality data August 2023 – July 2024

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
August	7/08/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.08.1	41	77 / 93	290	Grassland & grassland between logs	Freezer	2x clusters of feathers approx. 10m apart. First cluster 1.2m feather spread, mostly downy feathers, 2nd cluster 0.3m feather spread, predominately wing feathers	Initial
August	7/08/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.08.2	37	118	197	base of tree	Freezer	5m feather spread around base of tree, wing feathers around base, downy feathers 5m away	Initial
August	8/08/2023	Australian King Parrot	<i>Alisterus scapularis</i>	Feather Spot	None	FS23.08.3	2	98	232	base of tree	Freezer	3m feather spread, base of dead isolated paddock tree trunk, mostly downy & semi-plumage feathers	Initial
August	8/08/2023	Australian Magpie	<i>Gymnorhina tibicen</i>	Feather Spot	None	FS23.08.4	2	93	75	grassland near rocky outcrop	Freezer	0.3m feather spread, mostly wing feathers	Initial
August	9/08/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.08.5	16	55	296	grassland & under fallen tree	Freezer	6m feather spread, wing feathers 10-17cm long, 1x grey red yellow semi-plumage feather	Initial
August	9/08/2023	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	C23.08.1	9	70	110	Grassland	Freezer	<48hrs old, fully in tack, injury to left hip/ upper thigh, damage to right wing feathers close to body	Initial
September	4/09/2023	Eastern Barn Owl	<i>Tyto javanica</i>	Bird	None	C23.09.1	45	46	324	Grassland	Freezer	<24hrs old, broken wing, blood on beak	Initial
September	4/09/2023	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS23.09.1	45	62	320	Grassland	Freezer	4.5m feather spread, grey semi-plumage feathers with red tips	Initial
September	4/09/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.09.2	37	108	267	Leaf litter at base of tree	Freezer	0.5m feather spread, grey semi-plumage feathers with red tips, 1x grey & blue small wing feather	Initial
September	4/09/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.09.3	2	95	230	Grassland close to base of tree	Freezer	1.5m feather spread, grey semi-plumage feathers with red tips, 1m from base of isolated tree (same location as last month)	Initial
September	5/09/2023	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	C23.09.2	10	63	215	Grassland	Disposed of	Broken wing, eye missing, full of maggots and insects	Initial
September	5/09/2023	Australian Magpie	<i>Gymnorhina tibicen</i>	Feather Spot	None	FS23.09.4	10	55	188	Grassland	Freezer	0.3m feather spread, 2x white wing feathers with black tips, 3x white semi-plumage feathers, 2x grey with black tips semi-plumage feathers	Initial
September	5/09/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.09.5	10	118/133	162/164	Grassland	Freezer	Two locations: 0.5m & 2m feather spreads 15m apart, white semi-plumage feathers, wing feathers are white at base and dark brown ends	Initial
September	6/09/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.09.6	11	110	285	Leaf litter & shrubs	Freezer	1.2m feather spread, light grey & white semi-plumage and wing feathers	Initial

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
September	6/09/2023	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS23.09.7	11	62	0	Leaf litter at base of tree	Freezer	0.5m feather spread, grey downing feathers with red tips	Initial
September	6/09/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.09.8	16	117/99	210/210	Grassland	Freezer	Two clumps found: 2m and 0.5m feather spreads 20m apart, grey downing feathers with red tips (avg. 4cm long), grey semi-plumage feathers with red tips	Initial
September	6/09/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.09.9	16	130	345	Grassland between two trees	Freezer	3m feather spread, 8x blue & grey wing feathers, 2x grey with yellow/green tips downing feathers	Initial
September	6/09/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	INC23.09.1	18	227	300	Grassland	Freezer	0.2m feather spread, 2x blue & black wing feathers, clump of grey downing feathers with yellow/green tips	Initial
September	7/09/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.09.10	10	62	195	Grassland	Freezer	0.3m feather spread, dark brown wing feathers, average 14cm long.	Pulse
September	7/09/2023	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	INC23.09.2	2	95	230	Grassland close to base of tree	Freezer	7m feather spread, grey downing feathers with red tips. Same spot as last two finds. Under isolated dead tree trunk. Two Crimson Rosellas flew out of tree trunk and two tried to fly back into it but waited in a nearby tree.	Pulse
September	12/09/2023	Noisy Friarbird	<i>Philemon corniculatus</i>	Feather Spot	None	INC.23.9.3	3	100	116	Short grass near large tree	Freezer	Scattered roughly 2m apart in small clumps and single feathers. 15 to 18cm long	Superb Parrot
September	14/09/2023	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	INC.23.9.4	38	69	169	Medium grass next to woody debris	Freezer	Adult bird, less than two weeks old, majority of upper body intact.	Superb Parrot
September	14/09/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	INC.23.9.5	38	74	169	Medium grass next to woody debris	Freezer	Many feathers	Superb Parrot
September	26/09/2023	Grey Butcherbird	<i>Cracticus torquatus</i>	Bird	None	INC.23.09.6	19	NA	235	Grassland near large tree	Freezer	Southwest of T19, roughly 15cm long, part of wing bone still attached	Incidental
September	27/09/2023	Australian Raven	<i>Corvus coronoides</i>	Feather Spot	None	INC.23.09.7	32	NA	NA	Woodland	Freezer	South of T32, in thick woodland with tall grass, small clump of attached feathers	Incidental
September	28/09/2023	Southern Free-tailed Bat	<i>Ozimops planiceps</i>	Bat	None	INC.23.09.8	39	25	173	Hardstand	Freezer	South of T39 on hardstand, found by WF workers.	Incidental
October	9/10/2023	Honeyeater Spp.	<i>Meliphaga</i>	Bird	None	C23.10.1	37	90	118	Grassland	Freezer	Dark feathers with yellow tinge along wing & tail feathers, wing length = 5.6cm	Initial
October	9/10/2023	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS23.10.1	31	112	290	Leaf litter between two trees	Freezer	1m feather spread, grey feathers with red tips & thin blue strip	Initial
October	9/10/2023	Grey Fantail	<i>Rhipidura albiscapa</i>	Bird	None	C23.10.2	31	135	162	Grassland under tree	Freezer	Very decomposed, body & wings, wing length - 7.3cm,	Initial

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
												dark brown wing feathers with white tips, dark feathers around body	
October	9/10/2023	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C23.10.3	31	36	100	rocky gravel alongside hardstand	Freezer	<48hrs, light brown fur on top, light grey fur underneath, overall length = 4.6cm, forearm length = 2.8cm	Initial
October	10/10/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.10.2	26	97	337	Grassland	Freezer	0.2m feather spread, grey & white feathers, avg. feather length = 6.5cm	Initial
October	10/10/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.10.3	22	78	302	Leaf litter & grass under tree	Freezer	1m feather spread, semi-plumage grey feathers with white tips, 1x dark brown & grey feather, lots of feathers	Initial
October	10/10/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.10.4	10	116	130	Grassland	Freezer	2m feather spread, dark grey feathers with black tips, some downing feathers, light grey with white feathers	Initial
October	11/10/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.10.5	11	85	256	Leaf litter, rocky outcrop	Freezer	2m feather spread, grey feathers with red tips, some with blue tips	Initial
October	11/10/2023	Australian Magpie	<i>Gymnorhina tibicen</i>	Bird	None	C23.10.4	11	55	313	Rocky outcrop	Freezer	Very decomposed, broken wing & leg	Initial
October	11/10/2023	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C23.10.5	13	51	112	Grassland	Freezer	Decomposed, light brown fur, overall length = 4.3cm, forearm length = 2.6cm	Initial
October	11/10/2023	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS23.10.6	18	117	25	Grassland	Freezer	Long blue & black wing feathers, could be from same bird as last month	Initial
October	11/10/2023	Common Myna	<i>Acridotheres tristis</i>	Bird	None	C23.10.6	16	60	186	Grassland	Freezer	Fairly decomposed, missing head, dark brown in colour, tail feathers have white band along end	Initial
October	11/10/2023	Grey Fantail	<i>Rhipidura albiscapa</i>	Bird	None	C23.10.7	16	82	252	Grassland	Freezer	<72hrs, decomposed shoulders & head, brown wing feathers, brown & white tail feathers	Initial
October	11/10/2023	Silvereye	<i>Zosterops lateralis</i>	Bird	None	INC23.10.1	6	4	South	Hardstand	Freezer	<48hrs, found by staff, turbine non-operational	Incidental
October	12/10/2023	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C23.10.8	37	18	322	Sandy culvert along edge of hardstand	Freezer	<48hrs, overall length = 6.2cm, forearm length = 2.8cm, tail membrane connects to end of tail, injury to lower left abdomen	Pulse
October	12/10/2023	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C23.10.9	26	26	136	Grassland	Freezer	<48hrs, light brown fur on top, light grey fur underneath, overall length = 4.1cm, forearm length = 2.7cm	Pulse
October	12/10/2023	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C23.10.10	2	57	17	Long grassland	Freezer	Slightly decomposed, light brown fur on top, light grey fur underneath, overall length = 4.1cm, forearm length = 2.7cm, tail membrane to end of tail	Pulse
October	18/10/2023	Nankeen Kestrel	<i>Falco cenchroides</i>	Bird	None	INC.23.10.2	46	1	177	Hardstand	Freezer	< 2 days old, adult.	Superb Parrot



Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
October	18/10/2023	Australian Magpie	<i>Gymnorhina tibicen</i>	Feather Spot	None	FS.23.10.7	44	70	199	Grassland	Freezer	Large black and white feathers, grey down feathers 5m away	Superb Parrot
October	18/10/2023	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	C.23.10.11	35	49	24	Rocky vegetated slope	Freezer	Very old, wings 4m apart, head present, minimal torso remaining	Superb Parrot
October	20/10/2023	Brown Falcon	<i>Falco berigora</i>	Bird	None	C.23.10.12	28	42	208	Grassland	Freezer	Old carcass, both wings present, some head present	Superb Parrot
October	25/10/2023	Australian Magpie	<i>Gymnorhina tibicen</i>	Feather Spot	None	INC.23.10.3	18	2	174	Edge of hardstand	Freezer	5m spread of feather clumps - found during hollow searches	Incidental
November	6/11/2023	Nankeen Kestrel	<i>Falco cenchroides</i>	Bird	None	C23.11.1	37	73	246	Leaf litter	Freezer	<48hrs old	Initial
November	7/11/2023	Nankeen Kestrel	<i>Falco cenchroides</i>	Feather Spot	None	FS23.11.1	26	62	176	Grassland	Disposed of	0.3m feather spread, grey downing feathers, some with light brown tips. Grey & light brown semi-plumage feathers with black spot-on tip	Initial
November	7/11/2023	Unknown Bat Spp.	NA	Bat	None	C23.11.2	24	117	318	Leaf litter, Rocky outcrop	Freezer	Back decomposed, overall length = 5.5cm, forearm length = 4.2cm, claw length = 0.3cm, tail membrane to end of tail	Initial
November	7/11/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.11.2	24	50	120	Rocky sediment area along hardstand	Disposed of	Long white semi-plumage feathers, 1x black & white wing/tail feather	Initial
November	7/11/2023	Unknown Bat Spp.	NA	Bat	None	C23.11.3	22	63	37	Grassland	Freezer	Very decomposed, forearm length = 2.6cm	Initial
November	7/11/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.11.3	22	53	356	Rocky outcrop	Disposed of	Grey downing feathers with white tips	Initial
November	8/11/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.11.4	16	25	207	Grassland	Disposed of	1m feather spread, dark grey & black downing/semi-plumage feathers	Initial
November	8/11/2023	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	Feather Spot	None	FS23.11.5	16	124	95	Grassland	Disposed of	2.5m feather spread, white downing & semi-plumage feathers	Initial
November	8/11/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.11.6	10	120	118	Leaf Litter, under tree	Disposed of	0.5m feather spread, grey downing & wing feathers, thin brown strip down left side of wing feathers, avg. length = 7cm	Initial
November	8/11/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS23.11.7	10	114	166	Grassland	Disposed of	0.8m feather spread, white semi-plumage feathers, 2x light grey wing/tail feathers	Initial
November	8/11/2023	Unknown Bird Spp.	NA	Bird	None	C23.11.4	11	115	317	Leaf Litter, under tree	Freezer	small-med sized, mostly grey feathers, wing feathers have brown strip along edge, no tail, white around face, small grey, white & brown downing feathers	Initial
November	9/11/2023	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C23.11.5	45	46	387	Hardstand	Freezer	<48 hrs, body length = 4.4cm, forearm length = 2.7cm, brown fur on top, tail membrane to end of tail	Pulse
November	10/11/2023	Southern Free-tailed Bat	<i>Ozimops planiceps</i>	Bat	None	C23.11.6	22	40	94	Hardstand	Freezer	Wing membrane decomposed, male, body length = 4.9cm, forearm	Pulse

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
												length = 3cm, extended tail, patch of fur missing on top of head	
November	10/11/2023	Australian Magpie	<i>Gymnorhina tibicen</i>	Feather Spot	None	FS23.11.8	18	26	210	Easement along hardstand	Disposed of	1.5m feather spread, dark grey semi-plumage feathers with black tips, some white feathers	Pulse
November	15/11/2023	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C23.11.7	23	76	89	Medium grass	Freezer	<24hrs old, FA=6cm, injury to side of body	Superb Parrot
November	15/11/2023	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C23.11.8	8	58	73	Hardstand	Freezer	>2 days old, FA=5.8cm, belly very decomposed	Superb Parrot
November	16/11/2023	Noisy Miner	<i>Manorina melanocephala</i>	Bird	None	C23.11.9	17	101	5	Hardstand	Freezer	Very old, found on hardstand	Superb Parrot
November	16/11/2023	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	C23.11.10	15	78	40	Grassland	Freezer	>3 days old, in open grassland near fence	Superb Parrot
November	17/11/2023	Unknown Bat Spp.	NA	Bat	NA	C23.11.11	4	3	42	Hardstand	Freezer	Very old, largely squished, head and body not identifiable, FA~4.7cm, freetail	Superb Parrot
November	17/11/2023	Nankeen Kestrel	<i>Falco cenchroides</i>	Bird	None	C23.11.12	1	74	218	Short grass, rocky	Freezer	Very old, head missing	Superb Parrot
November	27/11/2023	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	INC23.11.1	32	52	45	Hardstand	Freezer	Approx. 7 days old	Incidental
December	11/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.1	45	13	297.5	Hardstand	Freezer	Decomposing, little colour fur on chest, forearm length = 3.1cm, extended tail, body length = 4.8cm (tip of nose to lower back)	Initial
December	11/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.4	37	17	216.5	Hardstand	Freezer	Decomposed, water logged, grey fur, tail extended, forearm length = 3.3cm, body length = 4.85cm	Initial
December	11/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.5	37	27	2.2	Hardstand	Freezer	Decomposed, water logged, light brown/grey fur to underside, body length = 4.9cm, forearm length = 3.1cm, tail extends	Initial
December	12/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.10	16	60	158	Grassland	Freezer	Decomposed, grey fur, overall length = 4.1cm, forearm length = 3.15cm, tail extends	Initial
December	12/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.11	16	78	79.5	Grassland	Freezer	Very decomposed (no back), forearm length 3.3cm, chocolate brown fur, body length = 5cm	Initial
December	12/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.13	13	54	140	Grassland	Freezer	Grey fur, decomposed, tail extends, body length = 4.2cm (curled over), forearm = 3.1cm, can't determine sex due to being too decomposed.	Initial
December	13/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.14	9	117	88	Grassland	Freezer	Very decomposed, extended tail, forearm length = 3.2cm	Initial
December	13/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.17	6	112	61.7	Grass	Freezer	Small, grey fur, extended tail, forearm length = 3.2cm, body curled so can't measure length	Initial

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
December	13/12/2023	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C23.12.18	2	57	163	Edge of hardstand	Freezer	Brown fur, very decomposed, forearm length = 3.2cm	Incidental
December	11/12/2023	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	C23.12.2	37	7	70	Hardstand	Freezer	slightly decomposed, dark brown back, body length = 5.4cm, forearm length = 4.1cm, tail membrane extends to end of tail,	Initial
December	12/12/2023	Crimson Rosella	<i>Platycercus elegans</i>	Bird	None	C23.12.12	16	53/46	281/291	Under tree	Freezer	1x wing, grey feathers with green tips or strip down side, grey feathers with blue tips and top of wing, separate wing and downing feathers found within 7m.	Initial
December	14/12/2023	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C23.12.23	37	39	360	Hardstand	Freezer	Decomposed back and stomach, tiny, grey fur, forearm length = 2.65cm, overall body length = 4.2cm	Pulse
December	14/12/2023	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C23.12.25	37	47	12	Hardstand	Freezer	Decomposing, tail membrane to end of tail, forearm length = 2.6cm	Pulse
December	14/12/2023	Nankeen Kestrel	<i>Falco cenchroides</i>	Bird	None	C23.12.21	26	81	320	Rocky grassland	Freezer	Wing & other part of the body.	Initial
December	14/12/2023	Ride's Free-tailed Bat	<i>Ozimops ridei</i>	Bat	None	C23.12.22	45	50	243	Hardstand	Freezer	Water logged from storm overnight, hole in lower back, extended tail, male, penis length = 0.5cm, forearm length = 3.2cm	Pulse
December	11/12/2023	White-throated needletail	<i>Hirundapus caudacutus</i>	Feather Spot	Vulnerable	FS23.12.2	37	54	286	Thick grassy shrub under tree	Freezer	Feather spread = 0.3m, grey/blue & black wing feathers, small white feathers (couldn't get out of long grass) feather lengths = 3.4cm - 16cm long	Initial
December	13/12/2023	White-throated needletail	<i>Hirundapus caudacutus</i>	Feather Spot	Vulnerable	FS23.12.3	22	98	196	Leaf litter	Freezer	2x clusters. First cluster small white & brown feathers, avg length = 2.5cm. Second cluster, long brown and blue wing feathers, longest feather = 19cm long, clusters approx. 5m apart	Initial
December	11/12/2023	Unknown Bat Spp.	NA	Bat	None	C23.12.6	31	49	212	Thick, grassy shrub	Freezer	Part of a decomposed Bat wing stuck in long grasses	Initial
December	12/12/2023	Unknown Bat Spp.	NA	Bat	None	C23.12.9	16	20	204	Hardstand	Freezer	Old & decomposed, forearm length = 3.3cm, grey fur	Initial
December	13/12/2023	Unknown Bat Spp.	NA	Bat	None	C23.12.15	6	110	132	Grassy shrub	Freezer	Very decomposed head and one wing, wing twisted backward, part forearm length = 1.8cm	Initial
December	13/12/2023	Unknown Bat Spp.	NA	Bat	None	C23.12.20	22	126	190	Between rocks	Freezer	Decomposed wing, no membrane just bone, forearm length = 5.7cm	Initial
December	14/12/2023	Unknown Bat Spp.	NA	Bat	None	C23.12.24	37	43	10.5	Hardstand	Freezer	Old, decomposed, wing broken behind back, forearm length = 3.8cm	Pulse
December	11/12/2023	Unknown Bird Spp.	NA	Feather Spot	None	FS.12.1	37	134	201	Leaf Litter, under tree	Freezer	2x 30cm spread 3m apart, white downing feathers with	Initial



Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
												grey feather ends, feathers between 5.5cm - 7.5cm long, 1x black & blue wing feather 2m away	
December	15/12/2023	Unknown Bird Spp.	NA	Bird	None	C23.15.26	6	81	320	Grassland	Freezer	1m feather spread, small dark grey feathers, some grey feathers with light brown tips, 1x leg & claws, skull & beak, beak length = 0.9cm, 1x longer feather with blue tinge	Pulse
December	11/12/2023	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C23.12.3	37	19	340	Hardstand	Freezer	Decomposing, forearm length = 5.5cm, tail extends, body length = 8.3cm	Initial
December	11/12/2023	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C23.12.7	31	27	9.3	Hardstand	Freezer	Decomposed wings & ears, Chocolate brown in colour, extended tail, forearm length = 6cm, tail = 1.6cm long (extension part)	Initial
December	12/12/2023	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C23.12.8	16	40	61	Hardstand	Freezer	Old, lower abdomen decomposing, chocolate brown fur on back, forearm length = 5.6cm, tail extends	Initial
December	13/12/2023	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C23.12.16	6	70	140	Wedged in crevice of rocks	Freezer	Chocolate brown fur, extended tail, tail length = 2.2cm, forearm length = 5.9cm	Initial
December	13/12/2023	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C23.12.19	2	61	152.7	Edge of hardstand	Freezer	Chocolate brown fur, tail extends, tail length = 2.1cm, forearm length = 5.6cm, no head	Incidental
January	9/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.1	1	10	301	Hardstand	Freezer	Very waterlogged, free-tailed bat, extended tail, broken wing, body length = 11cm, FA length = 5.7cm	Superb Parrot
January	9/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.2	7	86	285		Freezer	Very waterlogged, free-tailed bat, extended tail, full of maggots, FA length = 5.7cm	Superb Parrot
January	9/01/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	INC24.01.3	17				Freezer	Found by farmer and given to Josh on site, FA length = 2.5cm	Superb Parrot
January	10/01/2024	Black-faced cuckoo-shrike	<i>Coracina novaehollandiae</i>	Bird	None	INC24.01.4	46	63	142	Grassland under tree	Freezer	1.5m feather spread, juvenile bird, <48hrs old, dark grey & white wing feathers, light brown with lighter tips downing feathers, injury to wing bone	Superb Parrot
January	10/01/2024	Nankeen Kestrel	<i>Falco cenchroides</i>	Bird	None	INC24.01.5	44	53	160	Grassland	Freezer	Starting to decompose, broken wing	Superb Parrot
January	10/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.6	44	10	118	Hardstand	Freezer	<48hrs old, tail extended, chocolate brown fur on back, white patch on chest, FA length = 5.9cm	Superb Parrot
January	11/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.7	38	80	279	Grassy shrub under tree	Freezer	Decomposed, broken wing, one wing missing, FA = 4.9cm	Superb Parrot
January	11/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.8	38	36	346	Sandy area of hardstand	Freezer	<48hrs, male, extended tail, extended tail length = 2.2cm, wing and ear membrane	Superb Parrot

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
												decomposing, male, FA = 6cm	
January	11/01/2024	Unknown Bird Spp.	NA	Feather Spot	None	FS24.01.1	38	78	235	Grassy shrubs	Freezer	Small grey wing and downing feathers, avg length = 5-6cm	Superb Parrot
January	11/01/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS24.01.2	38	81	174.7	Grassy shrubs	Freezer	Small grey downing feathers with coloured tips (red, red & blue, green) embedded in grass	Superb Parrot
January	11/01/2024	Australian Magpie	<i>Gymnorhina tibicen</i>	Bird	None	INC24.01.9	38	92	193.6	Grassy shrub under tree	Freezer	One wing, black feathers, some white feathers u[p near the shoulder	Superb Parrot
January	11/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.10	36	38	71.7	Hardstand	Freezer	Decomposed back, chocolate brown fur on back, white fur patch on chest & under wings along body, extended tail, FA = 5.7cm	Superb Parrot
January	11/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.11	36	45	121.6	Sand	Freezer	Decomposed and waterlogged, chocolate brown fur with white patches under wings, extended tail, FA = 5.5cm	Superb Parrot
January	11/01/2024	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	INC24.01.12	32	94	147.5	Grassy shrub	Freezer	Very decomposed, both legs with claws, couple of wing feathers	Superb Parrot
January	12/01/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	INC24.01.13	29	41	8	Hardstand	Freezer	Decomposed back, black fur on head and dark brown fur to back, little ears, membrane to end of tail, FA = 4.1cm, membrane to feet	Superb Parrot
January	15/01/2024	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	INC24.01.14	19	26	128.4	Grassland	Freezer	Extended tail, FA = 3.2cm, waterlogged	Superb Parrot
January	15/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.15	17	47	302	Grassland	Freezer	Extended tail, white fur patch on chest, very waterlogged, decomposing to lower abdomen, FA = 5.95cm	Superb Parrot
January	15/01/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	INC24.01.16	17	52	180	Grassland	Freezer	Waterlogged, tail membrane to end of tail, membrane to foot, FA = 4.1cm	Superb Parrot
January	15/01/2024	Unknown Bat Spp.	NA	Bat	None	INC24.01.17	17	38	122	Grassland	Freezer	Very decomposed, water logged, in three parts: head & one wing separate, other wing, then body, FA = 4.2cm	Superb Parrot
January	15/01/2024	Unknown Bat Spp.	NA	Bat	None	INC24.01.18	15	33	334	Grassland	Freezer	Wing only, old, top of FA Broken so can't measure	Superb Parrot
January	15/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.19	14	18	30.4	Hardstand	Freezer	Decomposing, waterlogged, tail extended, large ears that go to front of face, broken wing, FA =5.75cm	Superb Parrot
January	15/01/2024	White-throated needletail	<i>Hirundapus caudacutus</i>	Bird	Vulnerable	INC24.01.20	14	62	170	Grassland	Freezer	Green tinge to wing feathers, white feathers under beak and tail, body very decomposed	Superb Parrot
January	22/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.1	45	16	131.6	Hardstand	Freezer	Old, decomposed, long extended tail, large ears, FA = 5.65cm	Initial

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
January	22/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.2	45	21	71.5	Grassy Shrub	Freezer	Decomposed, large ears, white fur under wing, long extended tail, FA = 5.7cm	Initial
January	22/01/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.01.3	45	61	31	Thick grass	Freezer	Tiny, grey fur to front, tail membrane to end of tail, FA = 2.5cm	Initial
January	22/01/2024	Large Forest Bat	<i>Vespadelus darlingtoni</i>	Bat	None	C24.01.4	45	93	41.4	Thick grass	Freezer	Tiny, grey fur to front, darker fur to back, tail membrane to end of tail, FA = 3.3cm	Initial
January	22/01/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.01.5	45	104	50	Thick grass	Freezer	Tiny, grey fur to front, chocolate brown fur to back, tail membrane to end of tail, FA = 2.8cm	Initial
January	22/01/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.01.6	45	119	62.7	Thick grass	Freezer	Tiny, grey fur to front, chocolate brown fur to back, tail membrane to end of tail, FA = 2.5cm	Initial
January	22/01/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.01.7	41	105	313.7	Rocky sub-straight	Freezer	Tiny, grey fur to front, decomposed, tail membrane to end of tail, both wings behind back, FA = 2.6cm	Initial
January	22/01/2024	Unknown Bat Spp.	NA	Bat	None	C24.01.8	41	91	36.7	Grass	Freezer	Decomposed, orange/brown fur, tail membrane to end of tail, triangular shaped ear, FA = 3.25cm	Initial
January	22/01/2024	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	C24.01.9	37	27	283.4	Rocky	Freezer	Tail slightly extends, grey fur, ears nearly meet in centre of face, FA = 3cm	Initial
January	22/01/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.01.10	37	79	36.8	Hardstand	Freezer	Small, light brown fur, tail membrane to end of tail, grey & dark fur to front, pointy ears, FA = 2.8cm	Initial
January	22/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.11	37	38	79	Hardstand	Freezer	Extended tail, big ears, chocolate fur on back, very decomposed, FA = 5.7cm	Initial
January	22/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.12	30	92	130.7	Grass	Freezer	1x wing separate from body, head and upper body found 0.3m away, dark large ears, FA = 5.6cm. Second wing found behind turning on hardstand, some white fur.	Initial
January	23/01/2024	Unknown Bat Spp.	NA	Bat	None	C24.01.13	22	21	186.5	Hardstand	Freezer	Very decomposed, unable to identify, light brown fur, couple of bones (bones are hollow)	Initial
January	23/01/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	C24.01.14	22	40	213.6	Rocky/sand	Freezer	Wing 0.3m away, old, decomposed, black fur on head, covered in sand, FA = 4.1cm, tail membrane to end of tail	Initial
January	23/01/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.01.15	22	26	291.1	Grass	Freezer	Tiny, decomposed back, dark brown/reddish fur, tail membrane to end of tail, FA = 3.2cm	Initial



Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
January	23/01/2024	Crimson Rosella	<i>Platycercus elegans</i>	Bird	None	C24.01.16	6	89	173.5	Grass	Freezer	Part of wing, grey and blue feathers, bone length = 3.2cm	Initial
January	23/01/2024	Unknown Bat Spp.	NA	Bat	None	C24.01.17	6	97	183.6	Grass	Freezer	Very decomposed, only small parts of body left, FA bone found 10m away, FA length = 5.7cm	Initial
January	23/01/2024	Eastern Rosella	<i>Platycercus eximius</i>	Bird	None	C24.01.18	6	114	257	Grass under tree	Freezer	Feather spread = 5m, beak with red feathers, beak = 1m5cm long, hundreds of downing feathers all grey with coloured tips (red, blue, green, yellow), wing feathers are mostly black and blue	Initial
January	23/01/2024	Unknown Bat Spp.	<i>Vespertilionidae</i>	Bat	None	C24.01.19	6	118	60.5	Grass	Freezer	Very decomposed, dark brown fur, FA = 2.7cm, tail membrane to end of tail	Initial
January	23/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.20	2	60	232	Grass	Freezer	Extended tail, grass tangled around wing & head, no identifying head features, lighter fur under wings, FA = 5.7cm	Initial
January	23/01/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.01.21	2	70	49.5	Grass	Freezer	Light brown fur, dark brown fur to back, tail membrane to end of tail, FA = 3.1cm	Initial
January	23/01/2024	White-throated needletail	<i>Hirundapus caudacutus</i>	Bird	Vulnerable	C24.01.22	10	38	288	Dirt/Sand	Freezer	Upper body, abdomen and tail missing, blue tinge to feathers	Initial
January	23/01/2024	White-throated needletail	<i>Hirundapus caudacutus</i>	Bird	Vulnerable	C24.01.23	10	35	271	Dirt/Sand	Freezer	Decomposed abdomen, blue tinge to feathers, white feathers under beak and upper tail	Initial
January	23/01/2024	Spotted Pardalote	<i>Pardalotus punctatus</i>	Bird	None	C24.01.24	10	57	196.1	Grass	Freezer	Small, black feathers with white dots, orange feathers around body, yellow feathers underside of tail	Initial
January	24/01/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.01.25	37	31	84	Sand/boulders	Freezer	Old, decomposed, tail membrane to end of tail, large triangle shaped ears, light grey fur on stomach, FA = 2.65cm	Pulse
January	24/01/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS24.01.1	22	15	275.9	Sand along edge of hardstand	Freezer	Grey downing feathers with red tips	Pulse
January	24/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.26	22	49	28	Thick grass	Freezer	Large ears, decomposed, extended tail, FA = 5.6cm	Pulse
January	24/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.27	2	48	180	Hardstand	Freezer	<24hrs old, extended tail, white fur along sides of body, big ears, male, FA = 5.95cm	Pulse
January	24/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.28	10	50	124.1	Grass	Freezer	<24hrs old, extended tail, white fur along sides of body, big ears, injury to lower abdomen, FA = 5.60cm	Pulse
January	25/01/2024	Unknown Bat Spp.	NA	Bat	None	C24.01.29	13	102	6.3	Grass	Freezer	Part of wing, no membrane, 4 fingers, FA = 3.3cm	Initial
January	25/01/2024	Unknown Bat Spp.	NA	Bat	None	C24.01.30	13	30	260	Bark under tree	Freezer	Part of wing, small amount of membrane, FA = 5.5cm	Initial

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
January	25/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.31	9	50	350	Hardstand	Freezer	Decomposed, extended tail, white fur alongside of body, large ears, FA = 5.7cm	Initial
January	29/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.32	13	36	264	Grass under tree	Freezer	Decomposed, broken wing, FA = 5.8cm	Pulse
January	29/01/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.01.33	13	60	26.3	Grass	Freezer	Grey fur on chest, tiny, darker fur on back, tail membrane to end of tail, large ear for head size, FA = 2.8cm	Pulse
January	29/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.34	16	32	308.4	Grass/sand	Freezer	Part of a wing (2x bones), FA = 5.65cm	Pulse
January	29/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.01.35	16	47	287.7	Grass under tree	Freezer	Part of a wing, FA = 3cm	Pulse
January	29/01/2024	Unknown Bat Spp.	<i>Vespertilionidae</i>	Bat	None	C24.01.36	16	88	337.3	Long grass	Freezer	Very old, decomposed, tail membrane to end of tail, FA = 4.2cm	Pulse
January	29/01/2024	Unknown Bat Spp.	NA	Bat	None	INC24.01.21	17	18	236.5	Hardstand	Freezer	Just 2 wing bones, no membrane or skin, FA = 5.7cm (Marked as INC24.01.1T in freezer)	Trigger
January	30/01/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	INC24.01.22	19	86	231.7	Long grass	Freezer	Small, tail membrane to end of tail, dark fur on back, light fur underneath, FA = 2.6cm (Marked as INC24.01.2T in freezer)	Trigger
January	30/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.23	19	83	148.9	Long grass	Freezer	Old, decomposing, extended tail, large ears, FA = 5.5cm (Marked as INC24.01.3T in freezer)	Trigger
January	30/01/2024	White-throated needletail	<i>Hirundapus caudacutus</i>	Bird	Vulnerable	INC24.01.24	14	84	44	Long grass under tree	Freezer	Bird head, white feathers to underside of beak, dark brown feathers on top of head, white & dark brown feathers with slight bluey/green tinge down neck (Marked as INC24.01.4T in freezer)	Trigger
January	30/01/2024	Southern Free-tailed Bat	<i>Ozimops planiceps</i>	Bat	None	INC24.01.25	14	112	64	Grass	Freezer	Long extended tail, large ears with additional canal towards centre of head, FA = 2.3cm, white fur under neck, missing membrane to wing, decomposed to one side, Ear length = 0.8 x 0.8cm (Marked as INC24.01.5T in freezer)	Trigger
January	31/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.26	46	53	61.6	Grass	Freezer	<48 hrs, large ears, chocolate brown, wing membrane decomposed, extended tail, FA = 4.8cm (Marked as INC24.01.6T in freezer)	Trigger
January	31/01/2024	Unknown Bat Spp.	NA	Bat	None	INC24.01.27	44	47	233	Long grass	Freezer	Very water logged, decomposed, skeleton and wings mainly left, tail membrane to end of tail, FA = 3.6cm (Marked as INC24.01.7T in freezer)	Trigger

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
January	31/01/2024	Unknown Bat Spp.	NA	Bat	None	INC24.01.28	29	60	349	Hardstand	Freezer	Old, very composed, broken down into pieces, possibly scavenged on, tail membrane to end of tail (Marked as INC24.01.8T in freezer)	Trigger
January	31/01/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.01.29	27	21	243.5	Grass	Freezer	<48hrs, extended tail, male, white fur on chest, large ears, dark brown fur on back, wounds on back, FA = 4.7cm (Marked as INC24.01.9T in freezer)	Trigger
February	1/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.1	32	42	324.8	Grassy	Freezer	FA = 50mm, very decomposed and stuck to ground, only one large ear present, freetail (Marked as INC24.01.10T in freezer)	Trigger
February	1/02/2024	White-throated needletail	<i>Hirundapus caudacutus</i>	Bird	Vulnerable	INC24.02.2	32	52	355	Bare & rocky	Freezer	1m spread of FS, largest feather = 17cm, two small white feathers. Shiny with blue/green tinge, shiny grey/silver underneath. Thin and sharp shape (Marked as INC24.01.11T in freezer)	Trigger
February	1/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.3	32	33	228.7	Small shrubs	Freezer	FA = 52mm, ear 12mm W, 8mm H, older than 7 days, freetail (Marked as INC24.01.12T in freezer)	Trigger
February	1/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.4	34	37	35.2	Grassland	Freezer	FA = 50mm, very fresh < 36hrs. Freetail (Marked as INC24.01.13T in freezer)	Trigger
February	1/02/2024	Unknown Bat Spp.	NA	Bat	None	INC24.02.5	34	63	266.4	Rocky slope	Freezer	FA = 30mm, very old and decomposed, mainly bones and fur (Marked as INC24.01.14T in freezer)	Trigger
February	7/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.6	19	96	285		Freezer	Adult, less than 2 days old, infested by ants	Trigger
February	7/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.7	17	57	241.5	Grass	Freezer	Extended tail, large ears, dark coloured, FA = 5.9cm	Trigger
February	7/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.8	14	90	322	Grass	Freezer	Large ears, dark coloured, broken wing, long extended tail, white fur under wing, FA = 5.5cm	Trigger
February	7/02/2024	Unknown Bird Spp.	NA	Bird	None	INC24.02.9	14	110	154	Road	Freezer	Hollow bones	Trigger
February	8/02/2024	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	INC24.02.10	33	74	106	Grass	Freezer	Decomposing, 2x broken wings, most of skull missing, wing feathers in tack, infested by maggots	Trigger
February	12/02/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.02.1	11	12	99.5	Hardstand	Freezer	Decomposed, only skeleton & fur remaining, tail membrane to end of tail, FA = 2.9cm	Initial
February	12/02/2024	White-throated needletail	<i>Hirundapus caudacutus</i>	Bird	Vulnerable	C24.02.2	10	57	337.5	Rocky/sand	Freezer	Fully intact, decomposing to back, infested with maggots	Initial
February	12/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.02.3	10	67	255	Grass	Freezer	Decomposed, broken wing, FA = 6.1cm	Initial



Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
February	13/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.02.4	41	1.5	330	Hardstand	Freezer	Extended tail, head semi-detached, large ears, dark brown fur, FA = 6.1cm	Initial
February	13/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.02.5	41	15	234	Hardstand	Freezer	<24hrs old, extended tail, large ears, dark brown fur, FA = 6.3cm	Initial
February	13/02/2024	Black-faced cuckoo-shrike	<i>Coracina novaehollandiae</i>	Feather Spot	None	FS24.02.1	37	82	163.6	Grass under tree	Freezer	2x feather spreads 1m apart, grey downing & semi-plumage feathers with white or light brown tips, wing/tail feathers brown with white tips	Initial
February	13/02/2024	Unknown Bat Spp.	NA	Bat	None	C24.02.6	37	63	323	Grass	Freezer	Decomposed, tail membrane to end of tail, fur on ground, FA = 3cm	Initial
February	13/02/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	C24.02.7	37	131	32	Grass	Freezer	Decomposed, very dark fur, broken wing, lighter coloured fur under wing, short/flat nose, FA = 4.6cm	Initial
February	13/02/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	C24.02.8	31	8	185.8	Hardstand	Freezer	<24 hrs old, grey fur on belly, brown fur to back & black fur to head, tail membrane to end, FA = 4.5cm	Initial
February	13/02/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	INC24.02.11	29	20	112	Hardstand	Freezer	<24 hrs old, male, grey fur on belly, brown fur to back & black fur to head, tail membrane to end, FA = 4.3cm	Incidental
February	14/02/2024	Stubble Quail	<i>Coturnix pectoralis</i>	Bird	None	C24.02.9	24	65	41.5	Leaf litter under tree	Freezer	Broken back, decomposed, body twisted, brown wing feathers with some tips of white, orange feathers around beak, tail feathers brown with white spots, dark brown body feathers with one side white	Initial
February	14/02/2024	Magpie-lark	<i>Grallina cyanoleuca</i>	Bird	None	C24.02.10	22	126	206.5	Leaf litter under tree	Freezer	Wing & shoulder bones, 13cm long, feather is white at base then go dark brown/black	Initial
February	14/02/2024	Unknown Bat Spp.	NA	Bat	None	C24.02.11	9	59	300	Under shrub	Freezer	Skull, bottom jaw with teeth, couple of wing bones, wing bones approx. 5.5cm long	Initial
February	15/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.02.12	37	71	161.5	Grass	Freezer	<48hrs old, long extended tail, white fur under wings, large ears covering eyes & face, decomposing to lower back & abdomen, FA = 6cm	Pulse
February	15/02/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.02.13	31	64	115	Rocky outcrop	Freezer	<48hrs old, small, grey fur, infested with ants, broken wing, decomposing on back, tail membrane to end, FA = 3cm	Pulse
February	15/02/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.02.14	6	13	307	Hardstand	Freezer	Very decomposed, almost just a skeleton, grey fur, FA = 2.8cm	Pulse

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
February	26/02/2024	Unknown Bat Spp.	NA	Bat	None	INC24.02.12	21	93	29.9	Grass under tree	Freezer	Wing only, FA = 6cm	Trigger
February	26/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.13	17	66	266	Grass	Freezer	Decomposed back, extended tail, large ears, white fur under wings, FA = 5.9cm	Trigger
February	26/02/2024	Large Forest Bat	<i>Vespadelus darlingtoni</i>	Bat	None	INC24.02.14	15	45	107.3	Sandy hardstand	Freezer	<48hrs old, tail membrane to end of tail, extra lobe in ear, pointed ears, brown fur, FA = 3.6cm	Trigger
February	26/02/2024	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	INC24.02.15	15	76	161	Grass	Freezer	Tail extends, decomposed, large ears, FA = 3.5cm	Trigger
February	26/02/2024	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	INC24.02.16	16	28	53.7	Hardstand	Freezer	Tail extends, grey fur, decomposed back, FA = 3.45cm	Trigger
February	26/02/2024	Unknown Bat Spp.	NA	Bat	None	INC24.02.17	14	29	134.8	Hardstand	Freezer	Part of a wing, FA = 4.5cm	Trigger
February	27/02/2024	Wedge-tailed Eagle	<i>Aquila audax</i>	Feather Spot	None	INC24.02.18	25	54	138.3	Leaf litter under tree	Freezer	Brown & white large feathers, approx. 13-15cm in length, smaller white downy feathers	Trigger
February	27/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.19	28	31	280	Hardstand	Freezer	Large ears, extended tail, started decomposing, FA = 6cm	Trigger
February	27/02/2024	Nankeen Kestrel	<i>Falco cenchroides</i>	Bird	None	INC24.02.20	27	49	69	Edge of hardstand	Freezer	Fully intact beside decomposing to side laying in dirt	Trigger
February	27/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.21	32	61	277	Leaf litter under tree	Freezer	Very decomposed, broken wing, large black ears, long extended tail	Trigger
February	27/02/2024	Southern Forest Bat	<i>Vespadelus regulus</i>	Bat	None	INC24.02.22	34	18	177.5	Hardstand	Freezer	Small, grey fur, tail membrane to end of tail, facing starting to decompose, injury to abdomen, FA = 3cm	Trigger
February	27/02/2024	Free-tailed Bat	<i>Ozimops spp.</i>	Bat	None	INC24.02.23	35	67	294	Shrubs	Freezer	Tail extends, light brown fur, large triangle shaped ears, internal decomposed, FA = 3.4cm	Trigger
February	27/02/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	INC24.02.24	35	45	324	Grass	Freezer	Tiny, wing membrane decomposed, grey fur underneath, brown fur on back, decomposed & skeleton showing, one wing broken off, FA = 2.9cm	Trigger
February	28/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.25	12	88	308	Grass	Freezer	<12hrs old, large ears, extended tail, white stripe across chest & patches under wing, fur missing from lower abdomen, FA = 59.5cm	Trigger
February	28/02/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	INC24.02.26	10	35	350.6	Hardstand	Freezer	Fur stuck in weed, very decomposed, wing membrane decomposed, one wing behind body, dark brown & light brown fur, light fur under mouth, FA = 2.9cm	Trigger
February	28/02/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	INC24.02.27	10	92	164.5	Grass	Freezer	Decomposed, infested with ants, very dark in colour,	Trigger

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
												black fur in head, tail membrane to end of tail, FA = 4.55cm	
February	28/02/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	INC24.02.28	1	46	300.9	Sandy rock	Freezer	<72 hrs old, chocolate brown fur, large ears, extended long tail, FA = 59.5cm	Trigger
February	29/02/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	INC24.02.29	28	68	267.1	Rocky outcrop under tree	Freezer	Very dark fur, decomposed, one wing broken off, tail membrane to end of tail, FA = 4.4cm	Trigger
February	29/02/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	INC24.02.30	28	107	276.5	Grassy shrub	Freezer	Decomposed, maggot infested, tiny, tail membrane to end of tail, grey fur underneath, internals exposed, FA = 3cm	Trigger
February	29/02/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	INC24.02.31	36	68	325.7	Grass	Freezer	Tail membrane to end of tail, dark brown fur on back, grey fur to underside, decomposed, FA = 3cm	Trigger
March	25/03/2024	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	Bird	None	C24.03.1	16	55/48/44	283/292/328.8	Leaf litter under tree / sandy part of hardstand	Freezer	Three locations. 55m from Turbine: head only, no eyes, spinal bones in neck exposed. 48m from turbine: body found under log, some feathers, feet. 44m from turbine: both wings separated, feathers everywhere, feather spread 4m	Initial
March	25/03/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.03.2	16	71	211.5	Grassland	Freezer	Large pointy ears, light coloured fur that darkens at base on underside, dark brown fur on back, tail membrane to end of tail, decomposed, FA = 27mm	Initial
March	25/03/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.03.3	10	41	111.7	Grass	Freezer	Long extended tail, large ears, right side of face decomposed, FA = 60mm	Initial
March	25/03/2024	Spotted Pardalote	<i>Pardalotus punctatus</i>	Feather Spot	None	FS24.03.1	10	70	94.5	Grass	Freezer	Two feather spots 60cm apart, tiny dark grey feathers with yellow tips and lighter grey tips. 3x Small black wing/tail feather with white dot at end	Initial
March	26/03/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS24.03.2	2	96	29.5	Grassland	Freezer	1x blue/black wing feather, grey downing feathers with red tips and yellow band	Initial
March	26/03/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.03.4	45	15	266	Hardstand	Freezer	<12hrs old, long extended tail, large ears, injury to leg/knee joint and genital area, FA = 63mm	Initial
March	26/03/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.03.5	37	36	201.6	Hardstand	Freezer	Injuries to lower abdomen, tail membrane to end of tail, light fur on chest with darker roots, right side of face decomposing, dark fur to back, FA = 31mm	Pulse



Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
March	26/03/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	C24.03.6	30	14	231.2	Sand surrounding hardstand	Freezer	Wing membrane starting to decompose, male, penis length = 5mm, membrane to end of tail, membrane to ankle, black head, eyes still intact, FA = 44mm	Pulse
April	15/04/2024	Chocolate Wattled Bat	<i>Chalinolobus morio</i>	Bat	None	C24.04.1	45	61	338	Grassland	Freezer	Brown fur all over, decomposing to face, tail membrane to end of tail, FA = 34mm	Initial
April	15/04/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.04.2	45	55	311	Edge of hardstand	Freezer	<24hrs old, grey fur underneath, male, pendulous penis, penis 6mm long, injury to face, FA = 30mm	Initial
April	15/04/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.04.3	41	76	116.4	Grass	Freezer	Waterlogged, decomposed, large ears, extended tail, FA = 61.5mm	Initial
April	15/04/2024	Unknown Bird Spp.	NA	Feather Spot	None	FS24.04.1	41	32	106.6	Grass between rocky outcrop	Freezer	White downing feathers, feather spread 2m apart	Initial
April	15/04/2024	Unknown Bat Spp.	NA	Bat	None	C24.04.4	41	102	342	Grass	Freezer	Body very decomposed, extended tail, small ear, no wings.	Initial
April	15/04/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.04.5	41	31	322	Hardstand	Freezer	Grey fur to underside, brown fur on back, membrane to end of tail, decomposed to one side of face, pointy ears, FA = 30mm	Initial
April	15/04/2024	Spotted Pardalote	<i>Pardalotus punctatus</i>	Bird	None	C24.04.6	41	45	310.3	Edge of hardstand	Freezer	<24hrs old, small on size, black wings with white dots, grey feathers orange and black pattern near wings, dark orange with red tips near tail, black tail feathers some with white dots	Initial
April	15/04/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.04.7	41	106	290	Grass	Freezer	Decomposed, dark grey fur, membrane to end of tail, long snout/nose, FA = 29mm	Initial
April	15/04/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.04.8	37	18	321.8	Hardstand	Freezer	Very decomposed, tail slightly extends, FA = 29mm	Initial
April	15/04/2024	Unknown Bat Spp.	NA	Bat	None	C24.04.9	30	34	108.6	Hardstand	Freezer	Very decomposed, no head or wing membrane, dark fur, FA = 28mm	Initial
April	15/04/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.04.10	30	58	211.4	Grassland	Freezer	Large ears, decomposed, maggot infested, white fur under jaw & wings, FA = 60mm	Initial
April	16/04/2024	Australian Magpie	<i>Gymnorhina tibicen</i>	Feather Spot	None	FS24.04.2	22	61/47	24.6/62.4	Grass	Freezer	2x locations 35m apart, 1st = long black wing feathers, smaller white & black feathers, grey semi-plumage feathers with black tips, feather spread 0.5m, 2nd = downing & semi-plumage feathers, 3m spread, grey with black tips	Initial
April	16/04/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.04.11	26	64	259	Hardstand	Freezer	Grey fur to underside, white tragus, male, penis	Initial

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
												pendulous (looped), FA = 30mm	
April	16/04/2024	Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Bat	None	C24.04.12	6	43	118.2	Sand surrounding hardstand	Freezer	Black fur on head, brown fur to body, membrane to end of tail, membrane to toe, FA = 45mm	Initial
April	16/04/2024	Gray Fantail	<i>Rhipidura albiscapa</i>	Bird	None	C24.04.13	6	134	65.5	Grass	Freezer	Small, grey feathers with yellow chest, wing & tail feathers have white tips and some tail feathers have white stripe along edge	Initial
April	16/04/2024	Gray Fantail	<i>Rhipidura albiscapa</i>	Bird	None	C24.04.14	6	110	57.4	Grass	Freezer	Same species found 30m away from C13, small, grey feathers with yellow chest, wing & tail feathers have white tips and some tail feathers have white stripe along edge	Initial
April	16/04/2024	Unknown Bird Spp.	NA	Feather Spot	None	FS24.04.3	2	116	107.8	Grassland	Freezer	Long grey semi-plumage feathers, 2m feather spread	Initial
April	17/04/2024	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS24.04.4	16	112	40	Leaf litter under tree	Freezer	Grey downing feathers with coloured ends (mostly yellow, red), blue & green wing feathers, 30cm feather spread	Initial
April	17/04/2024	Striated Pardalote	<i>Pardalotus striatus</i>	Bird	None	C24.04.15	16	44	156.4	Grassland	Freezer	Decomposed, small, grey feathers with white stripe, small red markings on wings, black tail feathers with white tips, orange feathers above tail, tiny grey & white downing feathers	Initial
April	17/04/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.04.16	16	38	194	Grassland	Freezer	Very decomposed, long tail, large teeth, FA = 60mm	Initial
April	17/04/2024	Little Forest Bat	<i>Vespadelus vulturnus</i>	Bat	None	C24.04.17	10	9	41.1	Hardstand	Freezer	Brown fur, fur stuck to rocks, membrane to end of tail, white ear piece, FA = 28.5mm	Initial
April	17/04/2024	Gray Fantail	<i>Rhipidura albiscapa</i>	Feather Spot	None	FS24.04.5	10	30	26.4	Hardstand	Freezer	Dark grey wing/tail feathers with white tips and stripe, some just dark grey feathers	Initial
April	17/04/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.04.18	9	15	219.1	Hardstand	Freezer	Decomposed, bug infested, dark brown, extended tail, large ears, FA = 58.5mm	Initial
April	18/04/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.04.19	22	49	209.3	Rocky/sandy substrate	Freezer	<48 hrs, brown fur, patch of fur missing from lower back, grey fur underneath, membrane to end of tail, injuries to lower abdomen, FA = 30mm	Pulse
April	19/04/2024	Forest Bat Spp.	<i>Vespadelus</i>	Bat	None	C24.04.20	16	58	334	Sand	Freezer	Decomposed, grey fur to underside, brown fur on back, membrane to end of tail, white tragus, FA = 29mm	Pulse
May	13/05/2024	Silvereye	<i>Zosterops lateralis</i>	Bird	None	C24.05.1	16	43	351	Hardstand	Freezer	Small bird, grey wing feathers with yellow/green band along edge, yellow/green feathers	Initial

Month	Date	Common Name	Scientific Name	Carcass type	Threatened Status	*Find Reference	Turbine number	Distance from turbine (m)	Bearing from turbine (°)	Substrate	Freezer or disposed of?	Notes	Search type
												near rump, white, grey and light orange feathers on belly	
May	13/05/2024	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS24.05.1	16	90	147	Clovers/Grass	Freezer	Feather spread = 0.5m, grey feathers with yellow and light green tips	Initial
May	13/05/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS24.05.2	13	83	21.5	Grass & stuck in fence	Freezer	Feather spread = 1m, grey downing feathers, some feathers with red tips	Initial
May	13/05/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS24.05.3	10	72	56.3	Grass	Freezer	Feather spread = 0.3m, grey downing feathers, some with red and light green tips	Initial
May	13/05/2024	Gray Fantail	<i>Rhipidura albiscapa</i>	Feather Spot	None	FS24.05.4	10	132	341	Grass	Freezer	Feather spread = 1m, small grey wing/tail feathers with slight green tinge along edge of feathers, grey downing feathers with green tinge tips	Initial
May	13/05/2024	Rock Pigeon	<i>Columba livia</i>	Feather Spot	None	FS24.05.5	10	56	103.9	Grass	Freezer	Feather spread = 3m, grey/light brown feathers, wing/tail feathers light brown with light blue tinge and 1cm thick black band near the tip	Initial
May	14/05/2024	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	C24.05.2	37	24	275	Sandy/Rocky	Freezer	Mostly intact, broken neck & wing, infested with maggots	Initial
May	14/05/2024	Wedge-tailed Eagle	<i>Aquila audax</i>	Feather Spot	None	FS24.05.6	37	101	316.6	Grassy shrubs	Freezer	Located 85m NW from where C2 body was found. Feather spread = 1m, mostly white downing feathers & smaller wing feathers	Initial
May	14/05/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS24.05.7	22	71	75.3	Grass	Freezer	Feather spread = 0.4m, grey feathers with red tips and blue band under the red	Initial
May	15/05/2024	White-striped Free-tailed Bat	<i>Austronomus australis</i>	Bat	None	C24.05.3	45	99	35.3	Grass	Freezer	Decomposed, white fur on chest & under wings, large ears, FA = 59mm	Initial
May	15/05/2024	Wedge-tailed Eagle	<i>Aquila audax</i>	Bird	None	C24.05.4	2	60	93.4	Rocky outcrop under tree	Freezer	<48 hrs old, fully intact, broken wing, eyes still present, no insects, missing full wing, no feathers spread, wing not found in radius	Initial
May	30/05/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	INC24.05.1	10	53	322.9	Grassy shrub	Freezer	Feather spread = 0.3m, 5x long blue wing feathers, grey downing & semi-plumage feathers with red tips	Efficiency Trials
May	30/05/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	INC24.05.2	16	83	331.3	Grass	Freezer	Either a Crimson or Eastern Rosella - Blue wing/tail feathers, feather spread = 1m	Efficiency Trials
June	11/06/2024	Australian Magpie	<i>Gymnorhina tibicen</i>	Bird	None	C24.06.1	16	61	18	Hardstand	Freezer	Possibly same bird as FS24.06.1. Bird leg & foot. Black & white feathers	Initial
June	11/06/2024	Australian Magpie	<i>Gymnorhina tibicen</i>	Feather Spot	None	FS24.06.1	16	49	31.5	Hardstand	Freezer	Possibly same bird as C24.06.1. Located a few metres away from the leg, black & white wing feathers, white & grey semi-plumage feathers, two clumps of feathers approx. 1.5m apart	Initial



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June	11/06/2024	Sulphur-crested Cockatoo	<i>Cacatua galerita</i>	Bird	None	C24.06.2	16	127	158	Leaf litter under tree	Freezer	Parts of a wing, bones exposed, white & yellow feathers, feather spread = 1.2m	Initial
June	11/06/2024	Unknown Bird Spp.	NA	Feather Spot	None	FS24.06.2	16	43	291	Grass	Freezer	Could be from FS24.06.1 & C24.06.1. Dark grey semi plumage feathers, some with white tips and some with black tips, 3x clumps, feather spread = 5m,	Initial
June	11/06/2024	Eastern Rosella	<i>Platycercus eximius</i>	Feather Spot	None	FS24.06.3	18	128	251.1	Dirt	Freezer	Grey semi plumage feathers with red tips. One has a thin blue band under the red	Initial
June	11/06/2024	Unknown Bat Spp.	NA	Bat	None	C24.06.3	10	100	205	Grass	Freezer	Part of a bat wing, FA = 3.9mm, flock of magpies scavenging in the area found and Kitty scared them away	Initial
June	13/06/2024	Striated Pardalote	<i>Pardalotus striatus</i>	Bird	None	C24.06.4	6	38/24	345/23.7	Rocky outcrop	Freezer	Small bird, no head, white grey & yellow feathers underneath, dark grey wing feathers with red dots near top and white markings at base of feathers, feather spot matching those of the bird found approx. 10m away (closer to turbine)	Initial
June	13/06/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS26.6.4	2	92	230.2	Grass	Freezer	Grey feathers with black/red tips and some with blue on them, feather spread = 0.6m	Initial
July	22/07/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS24.07.1	31	103/103	237.5/235.6	Leaf litter under tree	Freezer	Two locations - Location one - small blue and grey feathers, mostly downing and wing feathers. Feather spread = 0.2m. Location two - larger feathers & more downing feathers, some downing feathers with red tips, most downing feathers wet & stuck in thick shrubs	Initial
July	22/07/2024	Fan-tailed cuckoo	<i>Cacomantis flabelliformis</i>	Feather Spot	None	FS24.07.2	26	69	226.1	Rocky ground	Freezer	Feather spread = 0.2m, light brown wing feathers, some with white stripes, avg 8-12cm in length, grey downing feathers	Initial
July	23/07/2024	Australian Wood duck	<i>Chenonetta jubata</i>	Feather Spot	None	FS24.07.3	45	80	210.9	Grass under tree in woodlands	Freezer	Possibly same duck as FS24.07.4 - Two massive clumps of downing feathers approx. 1.5m apart. Brown & white stripped downing feathers and 1x dark brown wing feather	Initial
July	23/07/2024	Australian Wood duck	<i>Chenonetta jubata</i>	Feather Spot	None	FS24.07.4	45	27	326.2	Hardstand	Freezer	Possibly same duck as FS24.07.3 - dark brown wing & tail feathers, underside of feathers are light in colour	Initial

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July	23/07/2024	Australian Magpie	<i>Gymnorhina tibicen</i>	Bird	None	C24.07.1	45	58	317.9	Hardstand	Freezer	One wing, long black wing feathers and smaller white feathers near base	Initial
July	24/07/2024	Rock Pigeon	<i>Columba livia</i>	Feather Spot	None	FS24.07.5	6	70	70.9	Logs and grass	Freezer	<48hrs, massive pile, white & grey downing feathers, grey wing feathers with black band across end, most downing feathers stuck in grass	Initial
July	24/07/2024	Crimson Rosella	<i>Platycercus elegans</i>	Feather Spot	None	FS24.07.6	2	91	233.7	Grass	Freezer	Same location as previous finds (under dead tree hollow), 2x half grey and half blue wing feathers, grey downing feathers with red and one with blue tips	Initial

Squadron Energy is Australia's leading renewable energy company. Proudly Australian owned, our mission is to be a driving force in Australia's transition to a clean energy future by providing green power to our customers.

We develop, operate and own renewable energy assets in Australia, with 1.1 gigawatts (GW) of renewable energy in operation and a development pipeline of 20GW.

With proven experience and expertise across the project lifecycle, we work with local communities and our customers to lead the transition to Australia's clean energy future.

Squadron Energy acknowledges the Traditional Owners of Country throughout Australia. We pay our respects to Elders past, present, and emerging.

