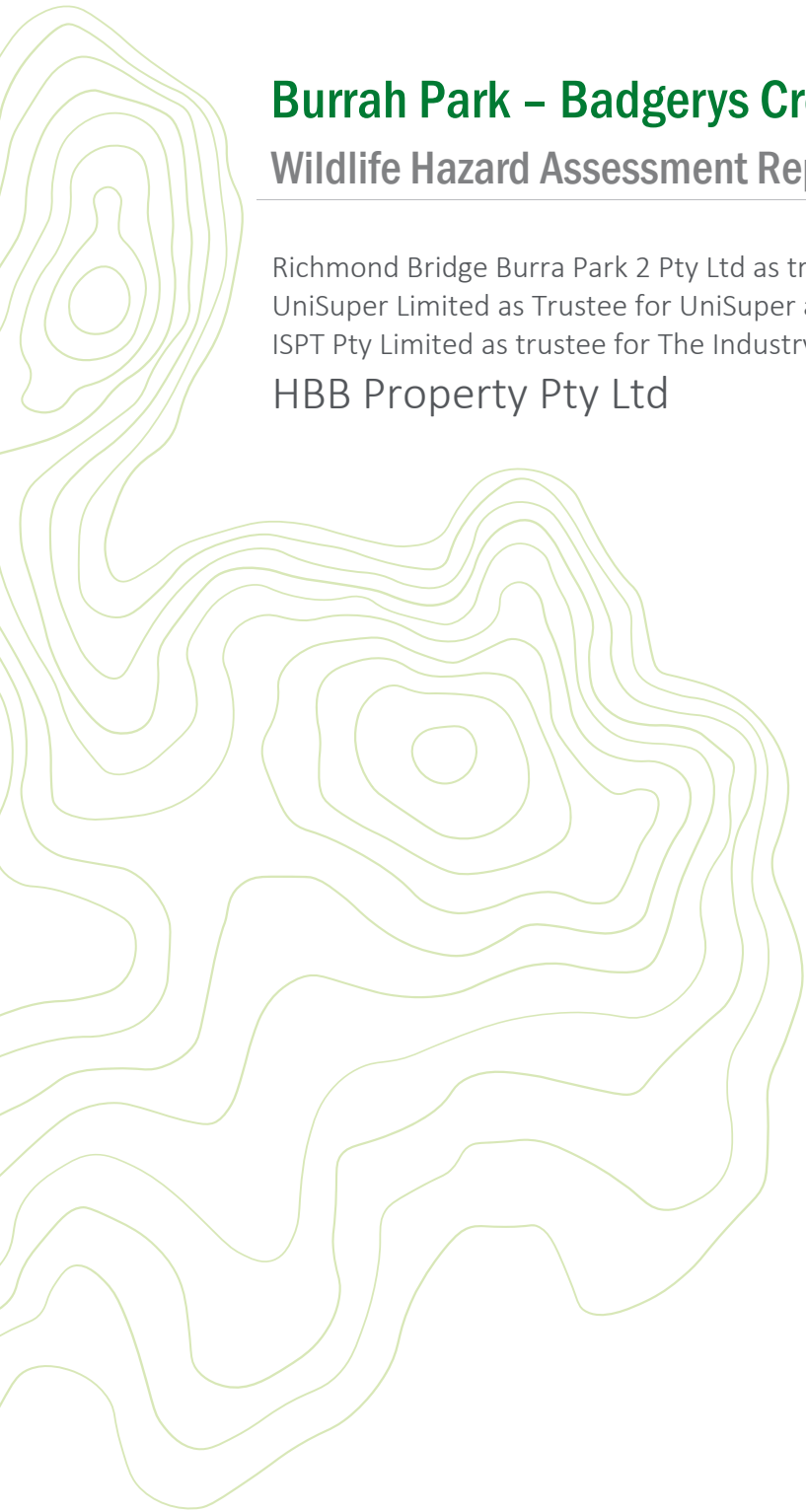




Burrah Park – Badgerys Creek

Wildlife Hazard Assessment Report

Richmond Bridge Burra Park 2 Pty Ltd as trustee for Burra Park Prop Trust 1
UniSuper Limited as Trustee for UniSuper and UniSuper Management Pty Ltd
ISPT Pty Limited as trustee for The Industry Superannuation Property Trust No. 1
HBB Property Pty Ltd

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Abbreviations

Abbreviation	Description
AAWHG	Australian Avian Wildlife Hazard Group
AAWSF	Aerotropolis Aviation Wildlife Safeguarding Framework
ATM	Air Traffic Movements
ATSB	Australian Transport Safety Bureau
BC Act	NSW <i>Biodiversity Conservation Act 2016</i>
BDAR	Biodiversity Development Assessment Report
CASA	Australian Civil Aviation Safety Authority
DCP	Development Control Plan
DITRDC	Department of Infrastructure, Transport, Regional Development and Communications
DPIE	NSW Department of Planning, Industry and Environment
EEC	Endangered Ecological Community
ELA	Eco Logical Australia Pty Ltd
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
FM Act	NSW <i>Fisheries Management Act 1994</i>
GIS	Geographic Information System
GPS	Global Positioning System
HB&B	HB&B Property Pty Ltd
ICAO	International Civil Aviation Organization
LGA	Local Government Area
MoS	The Australian Civil Aviation Safety Authority's document, the Manual of Standard Part 139
NASF	National Airports Safeguarding Framework
NSW	New South Wales
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
SSD	State Significant Development
SSDA	State Significant Development Application
The Precinct Plan	Western Sydney Aerotropolis Precinct Plan
WHA	Wildlife Hazard Assessment
WHMP	Wildlife Hazard Management Plan
WM Act	NSW <i>Water Management Act 2000</i>
WSA	Western Sydney Aerotropolis
WSI	Western Sydney International (Nancy-Bird Walton) Airport

Executive Summary

This report has been prepared to accompany a State Significant Development Application (SSDA) for a Concept and Stage 1 SSDA for a Warehouse and Logistics Estate at 1953-2109 Elizabeth Drive, Badgerys Creek, legally described as Lot 1 in Deposited Plan (DP) 1306448 (the study area). The Project is known as 'Burrah Park', within the Northern Gateway Precinct of the Western Sydney Aerotropolis, located north of the Western Sydney International (Nancy-Bird Walton) Airport (WSI).

Assessment of wildlife risk to airport operations is guided by the *National Airport Safety Framework Guideline C* (NASF – C) to reduce the risk of strikes between wildlife and aircraft by managing wildlife-attracting land uses near airports. The NASF-C framework formed the basis for the Aerotropolis Aviation Wildlife Risk Framework (Draft AAWSF) that has been applied under this assessment.

Clause 4.19 of the *State Environmental Planning Policy (Precincts - Western Sydney Parkland City) 2021* states that development consent must not be granted to 'relevant development' within the 13 km Wildlife Buffer Zone without considering a written assessment of the wildlife risk to airport operations. The Project includes water storage facilities and outdoor recreation space, and is therefore considered 'relevant development'.

This report describes existing wildlife attractiveness compared to post-development land use. A total of 177 bird and bat species are relevant to the wildlife risk assessment. In total, 20 of these are listed under either the EPBC Act only (5 species), BC Act only (10 species) or both (5 species). Latham's Snipe (*Gallinago hardwickii*) is listed under both the EPBC Act and international treaties (Bonn, JAMBA, ROKAMBA) and was observed within the study area by ELA Ecologists (ELA 2025a).

Most species with potential to occur within the study area have a negligible wildlife hazard ranking (41.8% of species). However, 30 high risk species need to be considered for mitigation and monitoring. Mitigation and monitoring should be prioritised for the following high risk groups:

- | | |
|--|--|
| • Flying-foxes | • Common Starling |
| • Pigeons | • Waterfowl (Black Swan and duck species) |
| • Waterbirds (including Ibis and Masked Lapwing) | • Raptors (Wedge-tailed Eagle, Little Eagle) |
| • Large parrots (Galah, corellas, cockatoos) | • Owls (Masked Owl, Eastern Barn Owl) |
| | • Australian Magpie |

The highest risk strike groups relevant to this development are **Megabats** (Grey-headed flying fox and Little Red Flying Fox), **Pigeons** (Rock Dove) and **Ibis** (Australian White Ibis, Straw-necked Ibis).

Mitigation measures embedded in the design of the Project include:

- selection of low-risk trees species from Appendix B of the Phase 2 DCP;
- reduced canopy cover and appropriate spacing between mature canopies; and
- designing stormwater facilities to be consistent with the draft Sydney Water Guidelines.

A regular monitoring regime is recommended to identify habitat use and behaviours of high-risk species. Where required, further mitigation measures and adaptive management will be implemented based on the outcomes of ongoing monitoring per separate Wildlife Hazard Management Plan.

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1. Introduction

1.1. Project Description

This report has been prepared to accompany an SSDA at 1953-2109 Elizabeth Drive, Badgerys Creek NSW (SSD- 70316465). The application seeks consent for a concept plan including future development lots and building footprints. The development also seeks consent for the Stage 1 works which will include bulk earthworks across the subject land, infrastructure delivery, road access/intersections, internal road construction, civil infrastructure and utilities, stormwater infrastructure works and the construction of three (3) warehouse buildings.

Specifically, development consent is sought for:

- Concept Plan:
 - Concept Masterplan for the Burrah Park comprising warehouse buildings, internal road network layout, building locations, GFA, car parking, concept landscaping, building heights, setbacks, signage strategy, public art strategy, design excellence strategy and Connection with Country framework
 - Developable area 131.45 ha
 - Total approximate GFA 63 ha
- Stage 1 – site preparation works including:
 - Demolition and removal of existing structures and vegetation.
 - Heritage salvage works (if applicable).
 - Construction of roads, access infrastructure, including a signalised intersection with Elizabeth Drive.
 - Dam de-watering and de-commissioning.
 - Bulk earthworks, cut and fill, benching, battering and retaining walls.
 - Lead in infrastructure, utilities and servicing.
 - Stormwater infrastructure including construction of Sydney Water basins and Water Sensitive Urban Design (WSUD) elements.
- Stage 1 – Development
 - Construction and fit out of 3 warehouse buildings and ancillary office space.
 - Stormwater management, fencing and landscaping.
 - Internal road network, active transport network, public domain and open space.
 - Subdivision, and
 - Estate and on lot signage.
 - Total approximate GFA 85,864 sqm
 - Warehouse 1.1 – 26,860 sqm

- Warehouse 1.2 – 31,443 sqm
- Warehouse 3.1 – 27,561 sqm

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 22 May 2024 and issued for the SSD-70316465. Specifically, this report has been prepared to respond to the SEARs requirement described in Table 1 below.

Table 1: SSD-70316465 SEARs

Item	Description of Requirement
Airport Safeguarding	including a risk assessment of the proposed development on the Western Sydney Airport operations and addressing related matters in the Western Sydney Aerotropolis Plan and Western Parkland City SEPP and the National Airports Safeguarding Framework and associated guidelines, including (but not limited to) wildlife hazards , lighting and the prescribed airspace.

1.2. Report Details

This report has been prepared by ELA on behalf of the following entities:

- Richmond Bridge Burra Park 2 Pty Ltd as trustee for Burra Park Prop Trust 1
- UniSuper Limited as Trustee for UniSuper and UniSuper Management Pty Limited
- ISPT Pty Limited as trustee for The Industry Superannuation Property Trust No. 1
- HB&B Property Pty Ltd

The Proponent is The Trustee for the Burra Park Prop Trust 1. The landowner is Richmond Bridge Burra Park 2 Pty Ltd as trustee for Burra Park Prop Trust 1.

1.3. Terms used in this report

The following key terms have been used throughout this report:

- The Project – refers to the proposed development of Burrah Park under SSD-70316465
- The Proponent – refers to the SSDA Applicant (The Trustee for the Burra Park Prop Trust 1)
- Study area – Lot 1 1306448
- Impact area – the extent of development impacts (including earthworks, civil infrastructure, warehouses, and hard landscaping such as paths) proposed under the SSDA

1.4. Report Structure

- Section 2 provides a description of the project and an overview of the Western Sydney Airport operations.
- Section 3 provides the legislative and policy context for assessing wildlife hazards of the Project
- Section 4 describes the results of the likelihood of occurrence and risk assessments undertaken to identify the risk posed by bird and bat species that have the potential to occur within or in the surrounds of the study area

- Section 5 describes the areas that may provide habitat for birds and bats under the Project and assesses the increase or decrease in risk associated with the change.
- Section 6 provides monitoring recommendations.
- Section 7 describes the Project’s consistency with the planning framework.
- Section 8 provides a conclusion.



Figure 1: Location



Figure 2: Burrah Park Concept Masterplan (Nettleton Tribe 2025)

2. Background

2.1. Site Context

The study area is located at 1953 Elizabeth Drive, Badgerys Creek (Lot 1 DP1306448) within the local government area (LGA) of Penrith City Council. It is approximately 12.5 km south-east of the Penrith Central Business District (CBD). The study area is located within the Western Sydney Aerotropolis, within the Northern Gateway Precinct and is zoned as ENT (Enterprise), SP2 (Infrastructure) and ENZ (Environment and Recreation) under the *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (Western Parkland City SEPP). The location of the development is within a strategic landholding situated immediately north of the WSI.

Under the NSW Mitchell landscapes classification, the study area is underlain by Cumberland Plain and Hawkesbury Nepean Channels and Floodplains. Currently, land includes a mixture of native and exotic vegetation, waterbodies, and watercourses. In its current state, the study area is used for agricultural purposes and is largely cleared of vegetation.

2.2. Western Sydney International (Nancy-Bird Walton) Airport

The new Western Sydney International (Nancy-Bird Walton) Airport (WSI) is under construction and is on track to begin operation in 2026. Sydney's aviation demand is set to double over the next 20 years and the airport will provide critical infrastructure to address this demand.

Western Sydney International (WSI) will be a full-service airport, catering for domestic and international passengers, as well as freight services. The airport will open with a single runway and facilities to handle 10 million passengers and is expected to accommodate approximately 82 million passengers annually by 2063. The airport will operate 24/7 and be curfew free, as planning has provided a 10 km buffer between the airport and suburban areas by prohibiting noise sensitive development in areas subject to aircraft noise. The WSI is the catalyst for the development of the Western Sydney Parkland City. The associated Aerotropolis will be the bustling commercial centre of the Parkland City providing a home for technology, science and creative industries. The proposal will contribute to the development of the city by providing commercial and industrial areas.

WSI will be a full-service airport, catering for domestic and international passengers, as well as freight services. The airport will open with a single runway and facilities to handle 10 million passengers and is expected to accommodate approximately 82 million passengers annually by 2063. The airport will operate 24/7, without a curfew or movement restrictions. The *Western Sydney Airport Plan 2021*, which has been produced by the Federal Government, estimates the aircraft movements associated with the airport. The plan estimates the airport could achieve the following max capacity (per hour) with both runways operational (DITRDC 2021):

- 45 landing operations
- 58 departure operations
- 103 total Air Traffic Movements (ATM)

The predicted airport activity forecasts area presented in Table 2.

Table 2: Airport Activity Forecasts (DITRDC, 2021)

	Stage 1	First runway at capacity (c. 2050)	Long Term (c. 2063)
Annual passengers (arrivals and departures) Presented in Million Annual Passengers (MAP)	10 MAP	37 MAP	82 MAP
Busy hour passengers (international and domestic)	3,300	9,500	18,700
Total annual ATM (passenger and freight)	63,000	185,000	370,000
Total busy hour ATM	21	49	85

Airport operations are planned to commence around mid-2020. Initial demand forecast is expected to be modest with 5 million annual passengers (MAP) but is expected to increase (DITRDC, 2021). This means that the risk of strike will increase during the operation of the airport and monitoring and mitigation measures should be reviewed periodically to adapt to the changing airport demand profile.

2.3. Wildlife issues

Occurrences involving aircraft striking wildlife, in particular birds and bats, are the most common aviation occurrence reported to the Australian Transport Safety Bureau (ATSB). Bird strike is a term that encompasses any occurrence of a bird, or bat, colliding with an aircraft. Bird strike can cause significant damage to aircrafts and in some instances can cause catastrophic crashes resulting in casualties. Bird strike has been calculated to cost the global aviation industry approximately \$US3 billion annually (ATSB, 2002) and from 1912 to 2002 had contributed to the death of 276 people and destroyed 108 aircrafts (Thorpe, 2003). Bird strikes most commonly occur during take-off and landing.

Wildlife issues associated with land-based animals (primarily terrestrial mammals) are rare and have generally been effectively mitigated through the implementation of stringent security fencing around airports. This report focusses on bird and bat strikes.

Between 2008 and 2017, there were 16,626 confirmed bird strikes in Australia reported to the ATSB. The number of reported bird strikes has increased in recent years, with 2017 having the highest on record with 1,921 bird strikes. However, COVID19 pandemic has impacted this trend as air traffic levels in 2020 were 40% below the air traffic levels of the previous year (ICAO, 2022). It is estimated that air travel will return to pre COVID levels by 2024, which is prior to the predicted full operation of the WSA in 2026.

Nearly 40% of bird strike data recorded by the ATSB between 2008 and 2017 involved a bird of an unknown species or the bird was not identified. During this period the most commonly struck identifiable types of flying animal were galahs (801), plovers (602), bats (582), magpies (575) and flying foxes (464) (ATSB, 2019). Galahs were more commonly involved in bird strikes of multiple birds, with more than 38 per cent of Galah strikes involving more than one Galah (ATSB, 2019). The extent of damage to aircraft in these occurrences generally corresponds to the size and number of animals struck, the larger bird the more likely it is to result in aircraft damage. Large animals or animals that occur in larger groups or flocks have the ability to destroy engines, windshields and cause significant damage to components and the aerodynamic surfaces of an aircraft such as leading-edge surfaces. It is noted that while bird strike incidents are often fatal for the animal, aircraft damage is rare with two to eight percent (2-8%) of strikes resulting in any aircraft damage (Metz et al, 2020).

The probability of bird strike is a function of a number of variables, for example, the specific location of the airport, in particular the availability of habitat for birds and bats near the airport. Species have different strike profiles such as the ability to avoid aircraft (Avisure, 2020). The airport operations

contribute to the strike risk through variables such as aircraft type, number of aircraft movements, flight paths and the time of flights (ATSB, 2019). Using this information and the study of the surrounding area, airports can generally be categorised as having a low, moderate or high overall bird strike risk. It is generally accepted that airports with a high number of aircraft movements located in close proximity to optimal habitat, diversity of habitats for birds and bats have a higher probability of bird strike compared to those with fewer aircraft movements and poor to sub-optimal habitat and less diverse habitats for bird and bat species. It is important to note that some man-made habitats can have high attractant properties for specific bird and bat species. Species such as the Australian White Ibis, Ravens/Crows, Pelicans, Gulls and Pigeons are commonly found in large numbers in urban environments particularly around putrescible waste facilities and locations with poor waste management.

Due to the risk associated with bird strike, international and national regulations, standards and guidelines have been developed to provide a framework to reduce the impact of bird strike around airports. This framework is discussed in Section 3. This report is directed by these documents as a basis for the approach to assess the wildlife risk associated with the proposal and the mitigation and management measures proposed.

3. Planning framework

Legal and regulatory frameworks have been developed to provide guidance on wildlife management regarding the safe operation of airports. The framework in Australia is comprised of international standards and national regulations. Furthermore, planning instruments in NSW have been developed to manage the wildlife management risks associated to developments adjacent to airports.

3.1. International standards

Australia is a member state of the International Civil Aviation Organisation (ICAO), a United Nations agency that acts as the regulatory body for international aviation. As such Australia must adhere to the rules and regulations specified by the ICAO (2013). In the case of wildlife hazard management, *Annex 14, Volume 1, Aerodrome Design and Operation* specifies the management requirements for airports and adjacent land. The controls of this document are summarised in Table 3.

Table 3: Wildlife Hazard Management Controls (ICAO 2013)

Section	Controls
9.4	The wildlife strike hazard on, or near, an aerodrome shall be addressed through: a. The establishment of a national procedure for recording and reporting wildlife strikes to aircraft b. The collection of information from aircraft operators, aerodrome personnel and other sources on the presence of wildlife on or around the aerodrome constituting a potential hazard to aircraft operations c. Ongoing evaluation of the wildlife hazard by competent personnel.
9.4.3	Action shall be taken to decrease the risk associated to aircraft operations by adopting measures to minimise the likelihood of collisions between wildlife and aircrafts.
9.4.4	The appropriate authority shall take action to eliminate or to prevent the establishment of garbage disposal dumps or any other source which may attract wildlife to the aerodrome, or its vicinity, unless an appropriate wildlife assessment indicate that they are unlikely to create conditions conducive to a wildlife hazard problem. Where elimination of existing sites is not possible, the appropriate authority shall ensure that any risk to aircraft posed by these sites is assessed and reduced to as low as reasonably practicable.
9.5	Recommendation – States should give due consideration to aviation safety concerns related to land development in the vicinity of the aerodrome that may attract wildlife.

More specific guidance is provided in the *Airport Service Manual part 3, Wildlife Control and Reduction* (ICAO, 2012) in relation to the management responsibilities of airport wildlife control, guidance for the implementation of wildlife management programs and details on how to assess the attractiveness of a site for wildlife.

The ICAO standards and guidelines directly inform the actions and framework established by the Australian Civil Aviation Safety Authority (CASA) for wildlife management on and adjacent to airports in Australia. Thus, making it relevant to this assessment.

3.2. National regulations

3.2.1. Australian Civil Aviation Safety Authority

The Australian Civil Aviation Safety Authority (CASA) document, the *Manual of Standard Part 139* (MoS) stipulates the requirements for aerodrome operations and developments in Australia. The document presents methods and instructions for aerodrome operators to work with planning authorities to consider wildlife hazard management when determining applications. It also provides guidance to

aerodromes and planning authorities to work with adjacent landowners to monitor and manage wildlife.

CASA's (2023) *Advisory Circular 139.C-16v1.0* provides further guidance for wildlife hazard management which involves influencing wildlife behaviour on or in the vicinity of an aerodrome, in order to achieve a specific goal with regards to altering behaviour, population or geographic distribution of birds or wildlife. Key elements of the document are:

- Preparation of Wildlife Hazard Management Plans
- Wildlife Hazard Monitoring
- Data collection, reporting and recording data on wildlife activities
- Wildlife risk assessment
- Wildlife hazard mitigation
- Training wildlife hazard management personnel

Whilst most of the document applies to the operation of the aerodrome, Appendix B relates to 'Land use habitat management around aerodromes' and states (CASA 2023 p. 27):

- *The following is a non-exhaustive list of the types of land uses which have proven to attract hazardous wildlife and which should, in particular, be prevented, eliminated or mitigated on and in the vicinity of aerodromes:*
 - a. *Fish processing.*
 - b. *Agriculture.*
 - c. *Cattle feed lots.*
 - d. *Garbage dumps and landfill sites.*
 - e. *Factory roofs and parking lots, or other infrastructure.*
 - f. *Theatres and food outlets.*
 - g. *Wildlife refuges.*
 - h. *Artificial and natural lakes.*
 - i. *Golf or polo courses, etc.*
 - j. *Animal farms.*
 - k. *Slaughterhouses.*

3.2.2. National Airport Safety Framework (NASF)

In 2012 the National Airport Safety Framework (NASF) was released by the Department of Infrastructure and Transport. It is a generic framework for land use planners to incorporate into land use planning frameworks to achieve airport safety outcomes. Guideline C of the NASF, *Managing the Risk of Wildlife Strikes in the Vicinity of Airports*, provides wildlife management guidelines to landowners, planning/impact assessment professionals and determining authorities.

This document has been utilised to create Aerotropolis Aviation Wildlife Safeguarding Framework (AAWSF) which aims to safeguard WSI against wildlife hazards. Extracts of the AAWSF are provided in 0 of this report. It is important to note that restrictions presented in the framework does not require

development applications to be refused but instead requires landowners to apply more stringent mitigation measures.

3.3. NSW Planning framework

3.3.1. Aviation Safeguarding Guidelines – Western Sydney Aerotropolis and surrounding areas.

The Aviation Safeguarding Guidelines were adapted from the NASF Guideline C (see above) and provide a consolidated set of aviation safeguarding planning guidelines for the Western Sydney Aerotropolis (Aerotropolis). It was developed by the NSW Government with input and data from the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA); Western Sydney Airport (WSA); and other relevant stakeholders.

The purpose of the guidelines is to assist relevant planning authorities, consultants and proponents when assessing and preparing development applications which are impacted by aviation safeguarding controls. The Guidelines also aim to protect community safety and amenity as well as safeguard the 24-hour operations of the Western Sydney International (Nancy-Bird Walton) Airport (WSI).

The guidelines can be used by relevant planning authorities to help inform land use planning decisions and by proponents to prepare applications on land impacted by aviation safeguarding controls. The Guidelines include information about managing impacts for various aviation planning constraints including aircraft noise, building windshear and turbulence, operational airspace, lighting, wildlife, wind turbines and communication, navigation, and surveillance facilities.

Of relevance to this assessment report is *Chapter 4: Managing the risk of wildlife in the vicinity of airports*. This Chapter aims to:

- *Assesses developments on land surrounding Airport where wildlife may present a risk to the operation of the Airport; and*
- *Ensure planning authorities consider wildlife management provisions when undertaking land use planning for the Aerotropolis and other airports.*

Section 4 of this report describes the provisions that have been incorporated into the Western Parkland City SEPP and the Western Sydney Aerotropolis Phase 2 Development Control Plan (DCP), including the prohibition of certain land uses within the 3 km buffer zone; referral of certain development applications to WSI (accompanied by a wildlife hazard assessment and wildlife management plan incorporating mitigation and monitoring measures); requirement for developments within 13 km buffer zone to be accompanied by a waste management plan; and appropriate landscape species being planted within these buffer zones.

Other measures for airport safeguarding have been included in the Aerotropolis DCP such as treatment for outdoor rubbish bins to minimise wildlife attraction.

3.3.2. State Environmental Planning Policy (Precincts - Western Sydney Parkland City) 2021

The Western Sydney Parkland SEPP is the primary planning instrument for regulating development around Western Sydney Airport. The study area is zoned ENT (Enterprise), SP2 (Infrastructure) and ENZ (Environment and Recreation) under the Western Sydney Parkland SEPP.

Clause 4.19 of the Western Sydney Parkland SEPP provides controls to regulate development on land surrounding the Airport where wildlife may present a risk to the operation of the Airport. The clause states that development consent must not be granted to relevant development on land within 13 km

Wildlife Buffer Zone, see Figure 3, unless the consent authority has consulted with the relevant Commonwealth body and considered a written assessment of the wildlife present and the risk it poses to airport operation. Relevant development includes the following, with those included in the SSDA indicated in bold:

- agricultural produce industries
- aquaculture
- camping grounds
- eco-tourist facilities
- garden centres
- intensive livestock agriculture
- intensive plant agriculture
- livestock processing industries
- plant nurseries
- recreation facilities (major)
- **recreation facilities (outdoor)**
- sewage treatment plants
- waste or resource management facilities that consist of outdoor processing, storage or handling of organic or putrescible waste
- **water storage facilities**

Clause 4.19 also prohibits livestock processing industries, turf farming and certain waste resource management facilities.

3.3.3. Aerotropolis Precinct Plan 2023

The Western Sydney Parklands SEPP allows for the preparation of Precinct Plans. The Aerotropolis Precinct Plan Amendment 1 was adopted in May 2023.

There are no specific objectives or requirements within the Aerotropolis Precinct Plan 2022 for wildlife management in relation to airport safeguarding, however meeting many of the objectives will pose a challenge to minimising wildlife on site.

Table 4: Relevant objectives and requirements of Aerotropolis Precinct Plan (DPE 2023)

Western Sydney Aerotropolis Precinct Plan – May 2023	
Section	Description
2.1 Objectives	(02) Celebrate culture by reflecting the cultural landscape and continuous connection of Aboriginal people and Country through: a. the design of the public domain; b. preservation and rehabilitation of the natural environment and systems; c. the alignment of movement networks with culturally significant spaces; d. the design of buildings; and e. keeping language alive in the naming of places. (03) Integrate development and the delivery of infrastructure to maintain a supply of developable land that maximises the efficiency of infrastructure investment.

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	(04) Protect Airport operations, including 24-hour operations, and protect future communities from aircraft noise. (07) Implement a landscape-led approach to designing the Aerotropolis, utilising the blue-green grid and natural topography of the Aerotropolis as the defining elements. (011) Design an urban environment that responds to the climate extremes of Western Sydney and mitigates and adapts to urban heat. (012) Manage water in the landscape to facilitate urban cooling, improve waterway health and biodiversity and promote sustainable water use. (014) Reinststate and rehabilitate natural landscape connections and systems to sustain biodiversity and allow natural systems to function sustainably.
4.5 Blue-Green Infrastructure Framework	Objective BG01: To integrate blue and green systems across the Aerotropolis for water quality management, biodiversity and recreation. Requirement BG1: Development is to contribute to the establishment of the blue-green infrastructure framework for the Aerotropolis in accordance with Figure 5 of the WSA Precinct Plan.
4.5.1 Total water cycle management	BG01 Protect, maintain and/or restore waterways, riparian corridors, water bodies and other water dependent ecosystems. BG02 Provide a landscape-led approach to integrated stormwater management and water sensitive urban design. BG03 Establish a network of multifunctional stormwater assets that support stormwater management and contribute to broader objectives for waterway health, biodiversity, urban greening and cooling, recreation and amenity.
4.5.2 Riparian Corridors	BG1 Waterways and riparian corridors of Strahler Order 2 (refer to Figure 5 of the WSA Precinct Plan) and higher are to be retained and rehabilitated to a natural state (unless minor realignment can be justified), in accordance with the requirements of the <i>Guidelines for Riparian Corridors on Waterfront Land</i> published by the Department of Primary Industries (Office of Water), or other relevant guidelines adopted and in operation at the time.
4.5.3 Public domain and canopy cover	BG3 Tree canopy is to be provided on Sub-arterial Roads and Collector Streets shown on Figure 9 in the WSA Precinct Plan to achieve a minimum of 40% tree canopy cover at maturity, measured as a percentage of the area of the road reserve.
5.5.4 Biodiversity and vegetation corridors	Objectives BG03 Protect areas of high biodiversity value including watercourses and riparian zones, existing Native Vegetation and remnant vegetation and habitat of the Cumberland Plain. BG04 Increase and improve landscape connectivity through conservation and restoration of native vegetation to enable plant and animal communities to survive in the long term. BG05 Support long-term viability and ecological connectivity by ensuring development does not encroach on protected land and any ecological restoration program selects species that are resilient to a changing climate. Requirements BG3 Revegetation and landscaping are designed and managed to account for future climatic conditions and include climate ready species. Resources relating to climate-ready species.

3.3.4. Western Sydney Aerotropolis Development Control Plan 2022

Section 2.10.3 of the DCP addresses Wildlife Hazard. The objective of this part of the DCP is to safeguard the airport from incompatible development that could compromise safe operations.

It is important to note that wildlife safeguarding conflicts with the vision of the parkland city utilising the blue and green grid, as revegetation and habitat restoration is likely to attract wildlife. This is recognised in the *Draft Western Sydney Aerotropolis Wildlife Management Assessment Report*, prepared by Avisure (2020) which states:

“Safeguarding the Western Sydney Airport against wildlife strikes is seemingly at odds with the vision of the Western Sydney Aerotropolis that includes natural area revitalisation, water retention, enhancing biodiversity, establishing an extensive blue-green grid, and increasing tree canopy cover to 40%. Despite the contradictory nature of this challenge, we have taken a balanced approach, with the National Airports Safeguarding Framework at its core, which affords the area amenity but minimises the wildlife threats to aviation” (Avisure 2020).

Retaining water within the landscape and meeting the required canopy cover across the study area and ecological restoration are key aspects of the Aerotropolis vision and the Development Control Plan. Therefore, it is advised that wildlife safeguarding is only able to be addressed through on-going monitoring, assessment and mitigation activities.

Table 5: Relevant Phase 2 DCP Requirements

Section	Performance Outcome	Benchmark Solution
PO1	Development does not attract wildlife which would create a safety hazard to the operations of the Airport.	1. All waste bins are designed and installed with fixed lids. 2. Any bulk waste receptacle or communal waste storage area is contained within enclosures that cannot be accessed by birds or flying foxes. 3. Any stormwater detention within the 3 km and 8 km wildlife buffer is designed to fully drain within 48 hours after a rainfall event. 4. Buildings and structures are designed to minimise the opportunity for roosting areas.
PO2	Landscaping does not attract wildlife that could create a safety hazard to the operations of the Airport.	1. Refer to Appendix B of the DCP for a list of suitable landscape species. 2. In areas within the 3 km wildlife buffer but outside of the Parkland Priority Areas shown in figures 1 and 3, a report prepared by a suitability qualified and experienced ecologist is to be submitted with any application when the landscaping plan: a. Incorporates alternative landscape species not listed within Appendix B; b. Incorporates landscape species denoted within the landscape species list; c. Will result in more than 5 trees being planted in 1 group (group refers to touching mature canopies); and/or d. Provides a spacing between a group of 5 or more trees that is less than 100 m. 3. The ecologist report is to consider building, site, and water body design outcomes and/or landscape maintenance measures that will mitigate bird and flying fox attraction and roosting areas.
Appendix B	Appendix B: Western Sydney Aerotropolis Landscape Species List The species list in Table 1 (Appendix B of the DCP) applies to land inside the Western Sydney Parkland Commitment Areas and beyond the 3 km wildlife buffer (Figure 1 of the DCP and figures 1 and 3 within). Any alternative landscaping species and/or groupings and spacing (as specified in the DCP) outside the Western Parkland Vision Government Commitment Areas and within the 3 km wildlife buffer will require an ecologist report submitted with the landscape plan. The report will need to discuss wildlife attraction in proximity to the airport and will be subject to a merit-based assessment. The proponent will need to demonstrate suitability in relation to wildlife management and/or encroachments into operational airspace. Within Table 1 where an additional requirement is provided against a species that states “Only within 3km wildlife buffer, where supported by ecologist report, confirming landscape design minimises wildlife attraction”, this only applies to the use of those species within the 3 km buffer that are outside of the government commitment areas	
Appendix D7	Applications for water storage facility must be accompanied by a Wildlife Hazard Assessment and Wildlife Management Plan. Wildlife Hazard Assessment Reports must assess the wildlife attraction risk of the land use, the design of the building and ancillary works including proposed landscaping, water facilities (incl.	

Section	Performance Outcome	Benchmark Solution
	stormwater infrastructure), waste management, and temporary risks associated with construction activity. ● The Wildlife Management Plan must respond to the findings and recommendations of the wildlife hazard assessment. ● Where monitoring is required to be undertaken in accordance with the Management Plan, copies of the report are to be submitted to the airport lessee company within 28 days of completion. Landscaping within the Enterprise Zone (ENT) must comply with <i>Appendix B: Western Sydney Aerotropolis Landscape Species List</i>, except where the property is subject to biodiversity certification conditions or identified as one of the key government commitments.	

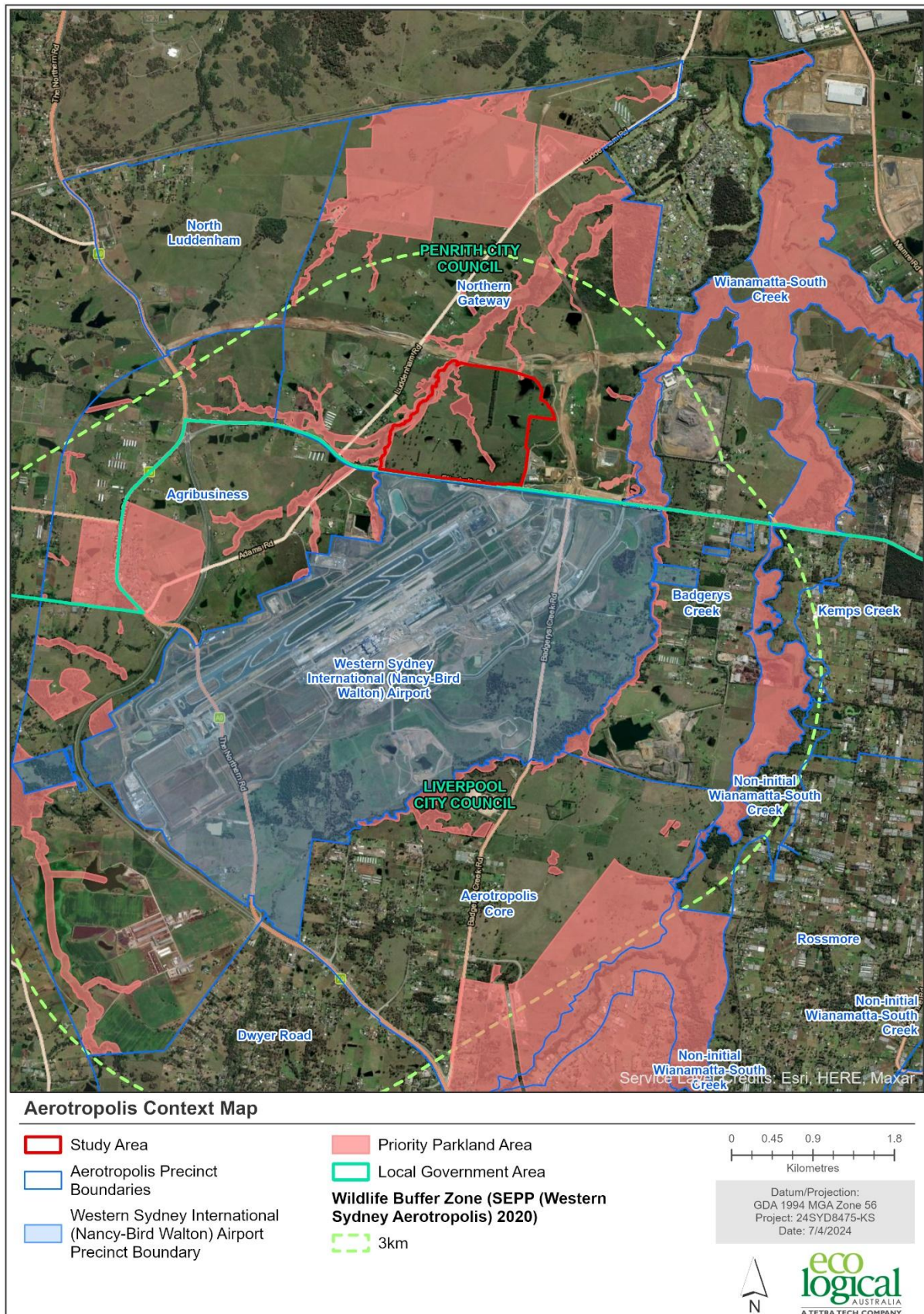


Figure 3: Aerotropolis context map

4. Wildlife Species Occurrence

This chapter identifies bird and bat species that are found in Western Sydney and ranks them according to their likelihood of occurring within the study area and their risk to airport operations. The methodology for this assessment is provided in Appendix A.

4.1. Likelihood of occurrence

The desktop assessment and literature review identified 262 bird species and 20 bat species (2 megabats, 18 microbats) that have been previously recorded within a 10 km radius of the study area. Considering the presence of existing records, habitat requirements and known information about the study area and surrounding landscape, 177 species (166 birds, 2 megabats, 9 microbats) were determined as being present, or having a moderately high or high likelihood to occur within the study area. All other species were considered unlikely to occur within the study area, based on nearby records and presence of quality of currently available habitat present within the study area. The results of the likelihood of occurrence analysis including the rationale for each species are provided in Appendix C.

4.1.1. Significant fauna species

Of the 177 species considered to potentially occur within the study area, 20 are listed under either the EPBC Act only (5 species), BC Act only (10 species) or both (5 species) (Table 6). Species with a Marine (Ma) listing, unless otherwise listed under the EPBC Act or BC Act, were excluded from the listed species list. In total, 22 species with a Ma listing (and no other listing) were excluded. One threatened species as been observed within the study area previously. Latham's Snipe (*Gallinago hardwickii*), listed as Vulnerable, Marine and Migratory (Bonn, JAMBA, ROKAMBA) under the EPBC Act was observed by ELA ecologists in 2022 (ELA 2025a).

Table 6: Threatened bird and bat species with potential to occur within the study area

Species	Common Name	EPBC Act ¹	International Treaty and/or convention	BC Act ²
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE		CE
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow			V
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	VU		V
<i>Daphoenositta chrysoptera</i>	Varied Sittella			V
<i>Gallinago hardwickii</i>	Latham's Snipe	VU, Ma, Mi	Bonn, JAMBA, ROKAMBA	
<i>Glossopsitta pusilla</i>	Little Lorikeet			V
<i>Hieraaetus morphnoides</i>	Little Eagle			V
<i>Hirundapus caudacutus</i>	White-throated Needletail	VU, Ma, Mi	CAMBA, JAMBA, ROKAMBA	
<i>Hirundo rustica</i>	Barn Swallow	Ma, Mi	CAMBA, JAMBA, ROKAMBA	
<i>Ixobrychus flavicollis</i>	Black Bittern			V
<i>Lathamus discolor</i>	Swift Parrot	CE, Ma		E
<i>Lophoictinia isura</i>	Square-tailed Kite			V
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat			V
<i>Ninox connivens</i>	Barking Owl			V
<i>Plegadis falcinellus</i>	Glossy Ibis	Ma, Mi	Bonn	
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU		V
<i>Rostratula australis</i>	Australian Painted Snipe	EN, Ma		E
<i>Turnix varius</i>	Painted Button-quail	EN		
<i>Tyto novaehollandiae</i>	Masked Owl			V
<i>Tyto tenebricosa</i>	Sooty Owl			V

¹ EPBC Act = EX: Extinct, CE: Critically endangered, EN: Endangered, VU: Vulnerable, CD: Conservation dependent

² BC Act = EX: Extinct CE: Critically endangered, E: Endangered, V: Vulnerable

4.1.2. Birds

The desktop and literature review identified 262 bird species. Of these, 166 were determined as being either present or having the potential to occur within the study area. Identified species were broken down in the following guilds or functional groups according to definitions provided in Appendix F. The below table shows the number of species within each group that may occur within the study area.

Table 7: Number of birds per guild/functional group with potential to occur within the study area

Guild/Functional Group	No. species	No. EPBC listed species	No. BC Act listed species
Bush birds	51	1	2
Honeyeaters	17	1	1
Parrots	16	1	2
Waterbirds	15	1	1
Raptors	12	0	2
Corvids	10	0	0
Waterfowl	10	0	0
Owls	8	0	3
Pigeons	7	0	0
Swifts and Swallows	7	2	1
Waders	5	2	1
Kingfishers	3	0	0
Rails	3	0	0
Game fowl	2	1	0
TOTAL	166	9	13

The 10 small to moderately sized farm dams within the study area provide appropriate habitat for waterbirds, waterfowl, waders and rails, as well as occasional and marginal habitat for migratory birds. The farm dams are the result of manmade construction and are not naturally occurring, however native aquatic vegetation was present around a number of the dams and the Plant Community Type (PCT) 1071 *Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion, was identified by ELA ecologists in a degraded condition around the dams during a site visit (ELA 2025a). A total of 10 species were opportunistically recorded occupying the farm dams by ELA Ecologists during a survey for the Dam Dewatering Plan (DDP) (ELA 2025c). Targeted surveys have not been undertaken. Species identified included common species such as Eurasian Coot (*Fulica atra*), Dusky Moorhen (*Gallinula tenebrosa*), Purple Swamphen (*Porphyrio porphyrio*), Intermediate Egret (*Ardea intermedia*), Little Egret (*Egretta garzetta*), Little Pied Cormorant (*Microcarbo melanoleucos*), Pacific Black Duck (*Anas superciliosa*), Australian Wood Duck (*Chenonetta jubata*), and Black Swan (*Cygnus atratus*). Commonwealth listed species were also identified on site including Latham's Snipe (*Gallinago hardwickii*). The existing farm dams represent a high level of existing wildlife risk, as they provide a fresh water source for these species, and waterlogged soil creates ideal conditions for birds to access worms and other invertebrates.

Appropriate foraging and roosting habitat is present within the study area for a number of bird species, particularly along the Cosgroves Creek riparian corridor (ELA 2025a). Although some patches of native vegetation were in poor condition, the study area contains patches with an appropriate canopy layer that would provide foraging and perching habitat for birds and bats (ELA 2025a). Appropriate habitat for small bush birds were also identified within the mid-story of some patches. Planted vegetation that currently exists within the study area also provides habitats for these taxa. An array of native (Lapwing,

Raven, Magpie and Parrot) and non-native birds (such as Common Myna and Starling) may also utilise the scattered paddock trees within the exotic grassland that comprises most of the study area. Additionally, a total of 14 large mature hollow bearing trees with a range of hollow sizes (from small – large) have previously been recorded within or nearby the study area, that provide appropriate nesting habitats for birds (ELA 2025a). Please note survey of habitat features excluded the Cosgroves Creek riparian corridor which has not been surveyed extensively, considering it is within High Biodiversity Value (HBV) land and will be protected and restored under a VMP.

The study area provides potential habitat for owl and raptor species. The study area contains suitable foraging habitat and breeding hollows for owl and nightjar species, particularly Australian Owlet-nightjar (*Aegotheles cristatus*), Tawny Frogmouth (*Podargus strigoides*) and Eastern Barn Owl (*Tyto javanica*). The large hollow identified previously within the study area is considered to provide potential (though marginal) breeding habitat for these species (ELA 2025a). As a number of raptor species have been recently recorded in the surrounding areas, it is expected that raptors may also occasionally forage for prey within the study area, or pass through while traversing the landscape. Common raptor species that may potentially make use of the study area include falcons, kites, eagles and goshawks such as Nankeen Kestrel (*Falco cenchroides*), Brown Goshawk (*Accipiter fasciatus*), Wedge-tailed Eagle (*Aquila audax*), Black-shouldered Kite (*Elanus axillaris*), Brown Falcon (*Falco berigora*), and Australian Hobby (*Falco longipennis*).

4.1.3. Megabats

The desktop and literature review identified two megabat species with the potential to occur in the study area, being Grey-headed Flying-fox (*Pteropus poliocephalus*) and Little Red Flying-fox (*Pteropus scapulatus*). Vegetation within the study area (particularly flowering Eucalypts) may provide seasonal foraging habitat for these species. While there are fewer records of Little Red Flying-fox within 10 km of the study area, they have been sighted in the local vicinity recently (within the last 5 years) (Appendix C), and appropriate foraging habitat exists within the study area so we cannot rule out the possibility of this species utilising the area alongside the Grey-headed Flying-fox.

No flying-fox camps occur within the study area. While no flying-fox individuals have been previously recorded within the study area, multiple flying-fox camps exist in Greater Western Sydney. Flying-foxes are highly mobile and may occasionally forage within the study area. The closest known nationally important flying-fox camp as identified on the National Flying-fox monitoring viewer (DAWE 2024) is approximately 25 km north-east of the study area at Parramatta Park. An estimated 2,500-9,999 individuals occupied this camp as of May 2022 (DAWE 2024). The nearest camp (not listed as nationally important) is Ropes Creek, approximately 11 km north-east of study area and is estimated to occupy approximately 1-499 individuals as of May 2022 (DAWE 2024).

Flying-fox populations across camps in Sydney are highly dynamic. Individuals move between permanent camps to utilise foraging resources. Flying-fox species also often intermix and share camp sites with one another. It is known that Grey-headed flying-foxes can commute daily to foraging areas, up to 15 km of the day roost site (Tidemann 1998) and critical habitat is considered to be within 20 km of a camp. Grey-headed Flying-foxes are capable of nightly flights of up to 50 km from their roost to different feeding areas as food resources change (Eby unpubl., cited in Eby 1991). Because individuals are highly mobile, and populations are not static, it is a possibility that flying-foxes, particularly the Grey-headed Flying-fox which is a Vulnerable species (BC Act and EPBC Act), may occasionally forage within the study area.

4.1.4. Microbats

The desktop review identified 18 microbat species within 10 km of the study area. Nine (9) of these have a moderate or high likelihood of occurring within the study area. The other nine species were determined unlikely to occur due to the lack of records in the locality and/or absence of suitable habitat (caves, cliffs, taller moister rainforest habitats). Microbat species that are considered likely or may occur on site are:

- **Free-tailed bats** – White-striped Freetail-bat (*Austronomus australis*), Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*) and Eastern Free-tailed Bat (*Ozimops ridei*).
- **Wattled Bats** –Gould's Wattled Bat (*Chalinolobus gouldii*) and Chocolate Wattled Bat (*Chalinolobus morio*).
- **Long-eared Bats** – Lesser Long-eared Bat (*Nyctophilus geoffroyi*) and Gould's Long-eared Bat (*Nyctophilus gouldi*)
- **Other Bats** –Eastern Broad-nosed Bat (*Scotorepens orion*) and Little Forest Bat (*Vespadelus vulturnus*).

These species occupy a variety of habitats including native forest vegetation, wetlands, and more open habitats. These species may roost in hollows and under bark of old trees such as Eucalypts, roof spaces or basements of buildings and disused birds' nests.

Potential roosting habitats within the study area include the previously identified large, mature hollow-bearing trees recorded on site (ELA 2025a). Potential foraging habitat exists within the patches of native and planted vegetation present within the study area, particular areas along the riparian corridor, as well as around the farm dams which provide microbats food in the form of flying aquatic insects.

4.2. Common strike species

In the most recent wildlife strike statistics published by The Australian Transport Safety Bureau (ATSB), it is reported that during 2008 to 2017 the most commonly struck species of identified flying animals at Sydney Airport were flying foxes (98), fruit bats (84), Australian (previously known as Richards) Pipit (70), Nankeen Kestrel (47) and bats (other) (46) (Figure 4). In the same period, most struck species of identified flying animals at Bankstown Airport were magpies (19), duck (6), pigeon (5), bat (4), and flying fox (4) (Figure 5). Many of the strikes involving animals reported as 'bats' or 'fruit bats' may have involved flying foxes.

The five most common species/groups reported to be involved in a strike Australia-wide between 2008 and 2017 were Galah, Australian Magpie, plovers, bats, and Flying Foxes. Magpie-lark, Nankeen Kestrel, Kites, and swallows were also among the highest-ranking strike species Australia wide. Similar species were recorded by Avisure in their Preliminary Western Sydney Airport Bird and Bat Strike Risk Assessment in 2016, including Masked Lapwing, Galah, Australian Magpie and duck species.

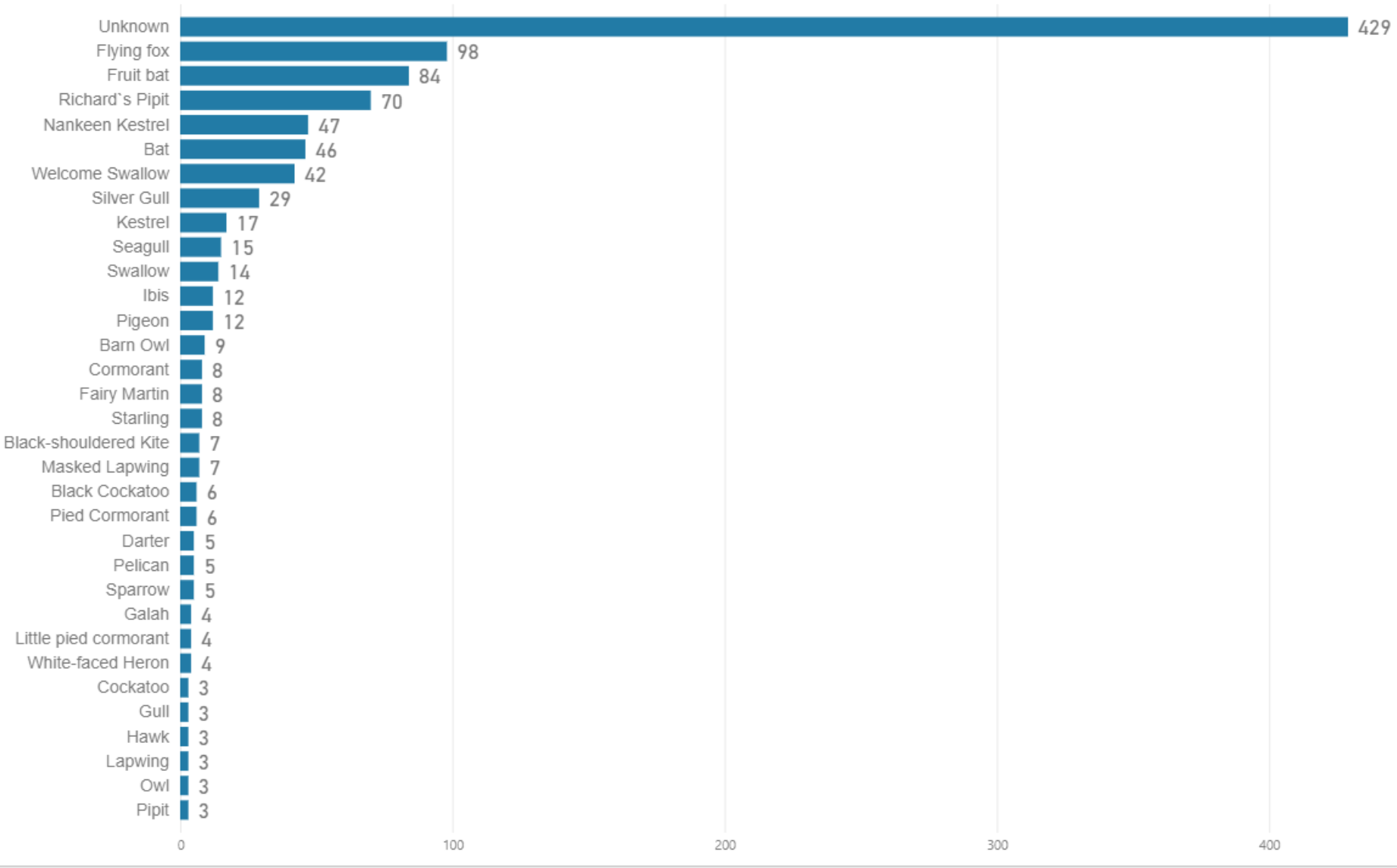


Figure 4: Bird strike by species recorded at Sydney Airport 2008 – 2017 (ATSB 2019)

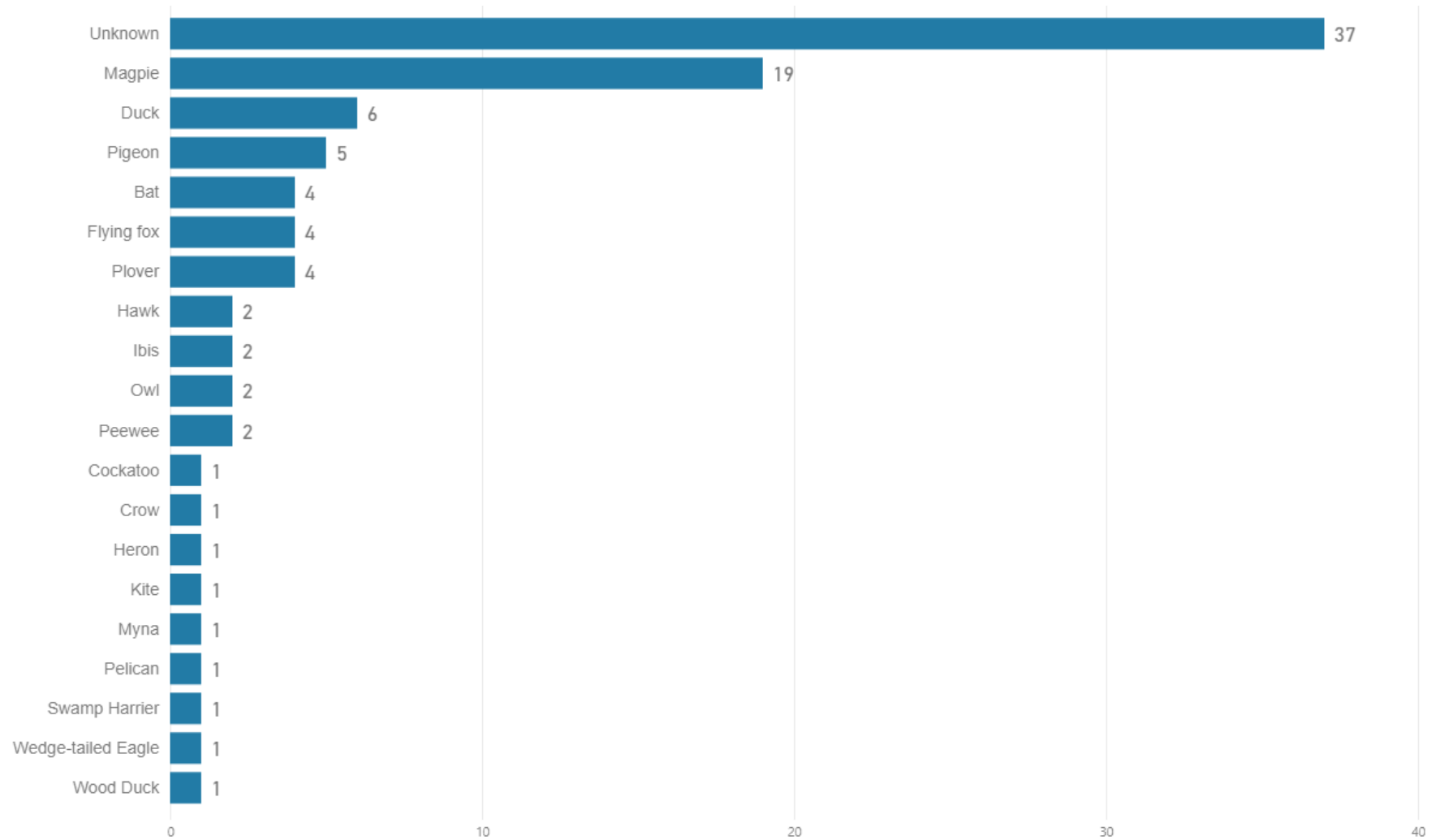


Figure 5: Bird strike by species recorded at Bankstown Airport 2008 – 2017 (ATSB 2019)

4.3. Bird and bat hazard rankings

Species from the likelihood of occurrence analysis that ranked as moderate, high, or present were considered for the hazard assessment. A total of 177 species were placed into criterion to determine their consequence score if struck, according to their body mass, flocking density, and flight behaviour. This consequence score, along with a species probability score (likelihood of being involved in a strike based on historical strike data) determined the overall hazard rank for each species. Probability scores were assigned according to the percentage of reported known strikes for each species/guild using online ATSB databases. A total of 88 species were assigned scores based on ATSB strike data for Sydney and Bankstown Airports, and a total of 59 species were assigned using Australia wide ATSB data. The remaining 30 species had no records of strikes in either database so were given a low probability. Consequence and probability scores for individual species are provided in Appendix D.

The overall hazard rank is intended to be used as a general guide to identify species that have the potential to pose the most risk for wildlife strikes. Hazard rankings for individual species in order from Extreme to Negligible can be found in Appendix E. Higher ranking species have greater probabilities of being struck and may cause greater damage when struck. For ease of interpretation, species are discussed in terms of their guilds/functional groups, outlined in Appendix F.

The majority of the 177 identified bird and bat species were assigned a Negligible hazard ranking (41.8% of species) (Table 8). However, 30 species likely to occur within the study area were assigned high hazard rankings, including species that ranked Extreme (5), Very High (3), or High (22) (Table 8). The main species or groups of species of most concern when planning mitigation measures for this development due to high hazard rankings include:

- Flying-foxes
- Waterbirds (including Ibis and Masked Lapwing)
- Pigeons
- Large parrots (Galah, corellas, cockatoos)
- Waterfowl (Black Swan and duck species)
- Raptors (Wedge-tailed Eagle and Little Eagle)
- Owls (Masked Owl, Eastern Barn Owl)
- Australian Magpie
- Common Starling

Flying-foxes, such as Grey-headed Flying-fox and Little Red Flying Fox have been identified as the highest risk species in this assessment (Extreme) due to their relatively large size, flocking behaviour, and because Flying-foxes have the highest number of recorded strikes at the nearest airports, Sydney Airport and Bankstown Airport (ATSB, 2018). While no Flying-fox camps exist within the study area, camps are present in the local vicinity (DAWE, 2024). The other highest-ranking species include Australian White Ibis, Straw-necked Ibis and Rock Dove (Appendix E). These species have a high strike consequence rank due to their large sizes and proclivity to form large flocks (Appendix D). They also have adapted well to urban environments and can be found in urbanised areas in high numbers. Other high priority species, listed as having a Very High hazard ranking include Black Swan, Long-billed Corella and Galah. These species are relatively common and have been recently recorded in the local vicinity.

Species that have highest probability of being struck within the study area include Flying-foxes, Nankeen Kestrel, Welcome Swallow and Australian (Richards) Pipit. Additionally, Waterfowl (e.g. Pacific Black Duck, Australian Wood Duck, Chestnut Teal), Waterbirds (e.g. Ibis, Cormorants and Masked-Lapwing), Pigeons (e.g. Rock Dove, Peaceful Dove, Crested Pigeon and Common Bronzewing), and Swifts and Swallows (Barn Swallow and Fairy Martin) report high numbers of wildlife strikes. The Australian Magpie, Eastern Barn Owl, and Common Starling was also amongst the birds that have a high likelihood of being struck (Appendix D). The species with high probabilities also tend to have higher consequence scores (Appendix D), except for Australian (Richards) Pipit, Nankeen Kestrel and the Swift and Swallow species. Despite having lower hazard rankings, these are some of the most commonly reported strike species Australia-wide or within the Sydney region (ATSB 2019), so should also be considered for management.

Of the high-ranking species, four have been previously identified on site, including Black Swan, Pacific Black Duck, Australian Wood Duck, and Little Pied Cormorant. Other species identified on site include four which have a medium hazard rank (Intermediate Egret, Little Egret, Eurasian Coot, Purple Swamphen), and two which have a low hazard rank (Dusky Moorhen and Latham's Snipe).

Most species categorised during this assessment had a low or negligible hazard rating (Table 8). Birds of least concern are small Bush birds (fairy-wrens, finches, thornbills, pardalotes, scrub wrens and robins), Kingfishers and Honeyeaters which have few or no reports of strikes in the Sydney Region or Australia Wide. These species also tend to have lower consequence scores due to their smaller sizes (Appendix D). Other species of least concern include small owls (Australian Owlet-nightjar), small parrots (Rosellas, Swift Parrot, Red-rumped Parrot), small Raptors (e.g. Brown Falcon), Butcherbirds and other small Corvids, as well as species that spend most of the time on the ground such as Gamefowl (Table 8). Waders such as stilts, Snipe and Dotterel also tend to have lower hazard rankings, since they are rarely reported being involved in strikes.

The nine microbat species identified in this assessment have been assigned a low or negligible hazard ranking. Microbats generally have smaller body sizes and don't form tight flocks so the consequences of being struck have been deemed lower. However, it is recommended to keep these species in mind when implementing mitigation measures since they potentially have high probabilities of being struck in the Sydney Region. Microbats were allocated as having a medium probability of being struck, however it is possible that some microbat species could have been reported within the 'other bat' taxa alongside megabats within the ATSB data. This may mean their actual strike numbers could be higher.

Mitigation measures to reduce the risk of strike on the discussed species are presented in Section 5 and 6. Measures are focused on monitoring and reducing the wildlife attracting properties of the proposed development and include the appropriate selection of landscape plantings around the study area including reduce the inclusion of species which produce nectar, fruits (for example berries and seed) that will attract birds and Flying-foxes.

Table 8: Hazard rankings of the common guilds/functional groups.

Hazard Rank	Qty species in category	Guilds/Functional Groups in order from most to least species in each group.
Extreme	5 (2.8%)	Megabats (2), Waterbirds (2), Pigeons (1)
Very High	3 (1.7%)	Parrots (2), Waterfowl (1)

Hazard Rank	Qty species in category	Guilds/Functional Groups in order from most to least species in each group.
High	22 (12.4%)	Waterfowl (7), Waterbirds (6), Pigeons (2), Raptors (2), Owls (2), Parrots (1), Corvids (1), Bush birds (1)
Medium	38 (21.5%)	Parrots (7), Waterbirds (6), Corvids (5), Owls (4), Raptors (4), Pigeons (3), Bush birds (3), Waterfowl (2), Rails (2), Swifts and Swallows (2)
Low	35 (19.8%)	Parrots (6), Raptors (6), Honeyeaters (5), Waders (4), Corvids (3), Bush birds (2), Game fowl (2), Swifts and Swallows (2), Kingfishers (2), Microbats (1), Owls (1), Rails (1), Waterbirds (1)
Negligible	74 (41.8%)	Bush birds (45), Honeyeaters (12), Microbats (8), Swifts and Swallows (3), Kingfishers (2), Corvids (1), Owls (1), Pigeons (1), Waders (1)
Total	177 (100%)	-

5. Wildlife Risk Assessment

5.1. Wildlife hazards within 3km of the airport

The study area is within the 3 km wildlife buffer of the airport. *Technical Paper 5: Wildlife strike risk for the Western Sydney International Airport* (Avisure 2023) identified 26 off-airport hazards within 3 km of the proposed first runway. Within this area, 21 of the hazards (81%) were water bodies, mostly ponds. The remainder included a showground, agriculture and a waste recovery facility.

The high and very high-risk contributors included Duncan Creek reservoir, ponds on Elizabeth Drive, and Kemps Creek Waste Recovery Park. Additional high and very high hazards were the Wolstonholm Avenue Pond, Western Sydney Parklands and the Lake Gillawarna Ibis Colony which are outside the 3 km radius. The ponds were all characterised as being permanent water bodies which provide habitat for waterbirds. Riparian corridors and vegetation throughout the landscape were not identified as hazards in this study.

Table 9: Hazards within 3 km of airport

Hazard type within 3 km (Avisure 2023)	Number of hazards within 3 km of runway
Ponds	17
Permanent basin	3
Duncan Creek (reservoir)	1
Billabong	1
Leppington Pastoral Company	1
Agriculture	1
Kemps Creek Resource Recovery Park	1
Luddenham Showground	1

5.2. Applying the AAWSF

To assist in establishing the Aerotropolis Precinct Planning framework, Avisure (2020) prepared a Western Sydney Aerotropolis Draft Wildlife Management Assessment Report. The report included an Aerotropolis Aviation Safeguarding Framework (AAWSF) that is an expanded version contained in the National Airport Safeguarding Framework (NASF) Guideline C. The AAWSF categorised land uses by their wildlife risk and recommends actions for those land uses depending on whether they were existing or proposed.

O contains the AAWSF table and identifies the general land uses proposed under the Project. For the purposes of this report, several land uses have been grouped where the risk and action required is similar.

Where an action is 'conditional', the AAWSF states:

it may be acceptable depending on the nature of the land use, its location relative to the WSA and other off-airport wildlife hazards, wildlife mitigation applied, particular design/operational features that exclude or deter wildlife.

Where the action required is 'mitigate', the AAWSF states:

the proposed development should be assessed by a wildlife hazard expert and potential wildlife attractants be suitably mitigated either before or after the development is approved or as a

condition of approval. Where approved, information regarding the development should be provided to the relevant airport operator and it should be included in future monitoring activity undertaken by the relevant airport operator.

5.3. Existing habitat (pre-development)

The study area currently contains several land uses that provide habitat for wildlife. The table below identifies the existing land uses and shows their risk classification as per the AAWSF. The full AAWSF table is provided in 0.

The study area contains remnant native vegetation (particularly along the riparian zones), planted vegetation, derived native grasslands, exotic grassland, and wetland areas such as farm dams. The majority of the existing land is comprised of grasslands, which contains scattered paddock trees (including large/mature hollow bearing trees), that provide foraging and perching habitat for a variety of bird and bat species. The 10 farm dams within the study area provide habitat for waterfowl, waterbirds and waders among other species that occur around wetland habitats. Quality bird and bat habitat is also currently found along the riparian corridor of Cosgroves Creek.

The total areas of existing (pre-development) habitat are presented in Table 10 below.

Table 10: Existing habitat for wildlife within the study area

Habitat feature	AAWSF Land Use Type	AAWSF Risk	AAWSF Action for existing development	Existing habitat (ha)
Farm Dams	Farm Dam	High	Mitigate	16.48
Grassland	Cattle/dairy farm	Moderate	Mitigate	145.82
Cosgroves Creek	Waterway	Moderate	Mitigate	0.48
Vegetated riparian corridor	Conservation area - dryland	Moderate	Mitigate	8.86
Earthworks	Earthworks	Moderate	Mitigate	1.03
Buildings/cleared land	Office Building	Very low	Monitor	0.12
Roads/carparks	Car park	Very Low	Monitor	5.82
Total				178.60



Figure 6: Existing habitat by AAWSF Land Use

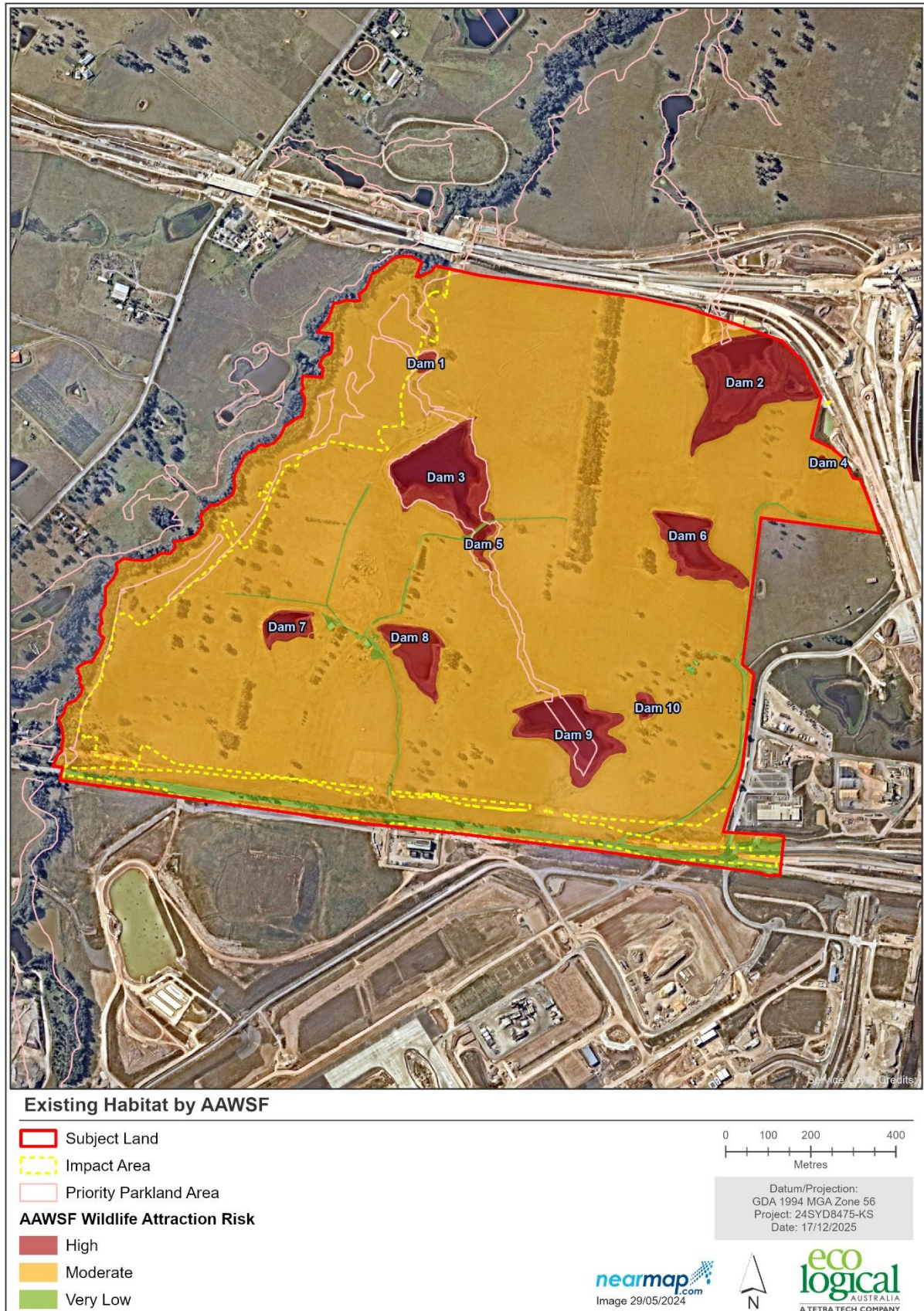


Figure 7: Existing habitat by AAWSF Wildlife Attraction Risk

5.4. Proposed habitat and mitigation

The Project will provide four broad land uses that may provide habitat for wildlife. This includes:

- Cosgroves Creek corridor and other Parkland Priority Areas
- Stormwater Infrastructure
- Urban open space and recreational areas
- Development Lots and on-lot landscaping

Table 11 below details how each habitat feature in the Project is categorized according to their AAWSF land use type, wildlife attraction risk and actions for proposed developments (Appendix B). Figure 8 shows the location of these areas within the study area. The following sections describe the design and mitigation measures for each of these land uses.

Table 11: Proposed land uses under the Project and their AAWSF Risks and Actions

Habitat feature (proposed)	AAWSF Land Use Type	AAWSF Risk	AAWSF Action	Proposed Area (ha)
Watercourses (Cosgrove Creek, naturalised trunk drainage)	Waterway	Moderate	Mitigate	1.09
Retained native vegetation	Conservation area – dryland	Moderate	Mitigate	4.85
Stormwater Infrastructure	Wetland	High	Conditional	1.30
	Water retention basins	High	Conditional	5.61
Urban open space, street trees and recreational areas	Urban open space (includes cycleways, green areas, pedestrian walkways).	Moderate	Mitigate	8.41
	Landscaping: Natural area revegetation	Moderate	Mitigate	10.34
	Landscaping: streets and transport corridors / parks and gardens	Moderate	Mitigate	29.10
Development lots, hardstand and roads	Office building / Warehouse (non-food storage)	Very Low	Monitor	97.60
	Car park (includes roads)	Very Low	Monitor	19.26
	Earthworks*	Moderate	Mitigate	N/A
Total				177.56

* ONLY DURING CONSTRUCTION OF OTHER USES

5.4.1. Cosgroves Creek corridor and Parkland Priority Areas

Under the *Burrah Park Landscape Plan* (Geoscapes 2025) the riparian zones, especially along Cosgroves Creek are to be revegetated, consistent with the Aerotropolis DCP and the principle of restoring riparian zones. The Cosgroves Creek corridor and stream through the central area of the study area is within the Government Priority Lands (Figure 3), where full revegetation is expected and the restrictions on plant species and densities do not apply. Mitigation measures for reducing wildlife attraction are therefore limited in these areas.

The riparian corridor along Cosgroves creek will be revegetated to form a 40 m River Flat Eucalypt Forest Vegetated Regeneration Zone (VRZ). A 20 m wide VRZ will also be established either side of the naturalised trunk drainage in the Central Core. Both areas will be managed under a Vegetation Management Plan (VMP, ELA 2025b) to restore to naturally occurring ecological communities. The VMP details species of plants to be used and their densities for these areas (ELA 2025b). Restoration and plantings (of trees, shrubs, grasses and other growth forms) within Parkland Priority Areas are excluded from triggering a Wildlife Hazard Assessment.

Outside of the Parkland Priority Areas, but where the VMP still applies, trees will be planted at lower densities (50% reduced density) to minimize wildlife attraction risk. Other measures, such as limiting plantings of the same species side-by-side, will be implemented as part of the VMP to avoid creating extensive foraging habitat. Wildlife attraction may increase as plants mature and seasonally when producing flowers and fruits. Fauna species composition will change at different stages of restoration. Monitoring programs and adaptive management should be implemented to identify risks early on and implement changes as necessary (refer to Section 6).

Restoring native vegetation communities along riparian corridors in accordance with the VMP (ELA 2025b) will continue to provide wildlife habitat. This restoration is aligned with the intention of the Parkland Priority Areas, High Biodiversity Value, and Avoided Land overlays which share common objectives of protecting and restoring ecological corridors.

While restoration under the VMP will not occur entirely within the Parkland Priority Area due to on-ground constraints and design requires (e.g. trunk drainage, removal of dams), the outcomes are approximately equivalent. The VMP covers a similar area (+0.35 ha) compared to the Parkland Priority Area within the study area (Table 12), with 11.23 ha of this subject to full revegetation. Additional areas of restoration along Cosgroves Creek, outside the required Vegetated Riparian Zone (VRZ) are provided in the Parkland Priority Area. Most of the Parkland Priority extent is proposed to contain basins for stormwater management (Figure 8). Some site landscaping (Geoscapes 2025) will also occur within Parkland Priority Areas, outside the VMP, using native species that are considered higher risk but will be mitigated through appropriate spacing and small clusters (up to 4 trees).

To protect the development and public open space bushfire asset protection zones (APZ) will apply with 15% canopy cover of River-Flat Eucalypt Forest native species. Trees will be planted in clusters of less than five (5) trees, separated by a 2 – 5 m buffer. Tree canopies will not touch buildings in this buffer zone to safeguard development against bushfire risk.

Table 12: VMP and Parkland Priority area comparisons

Area	Hectares (ha) within Study Area
Parkland Priority Area	17.00
VMP Area	17.35
Restoration under VMP (excludes trunk drainage low flow channel)	11.23
Area difference – Restoration vs. Parkland Priority	-5.77

5.4.2. Stormwater infrastructure and wetland areas

The 10 existing farm dams currently located within the study area are proposed to be drained and removed (further details within the Dam Dewatering Plan (DDP) (ELA 2025c)). Currently these dams are deemed to have the greatest wildlife attracting qualities under the AASWSF out of the existing habitat features within the study area (Figure 6 and Figure 7). Removal of these dams will likely reduce both the diversity and abundances of high-risk species such as waterbirds and waterfowl.

While dams will be removed, various stormwater management facilities are included within the proposed Masterplan, which also have wildlife attracting qualities and provide habitat for the same high-risk species. The stormwater management facilities proposed include:

- Sediment basins
- Bioretention ponds
- Recirculation wetlands
- Ponds and water retention basins

The stormwater management facilities are to be constructed along the western boundary, in the north-east corner, and through the central zone beside the naturalised trunk drainage line. These facilities will reduce impacts on Cosgroves Creek and are to be managed by Sydney Water once established. The locations of these facilities are presented in Figure 8.

Water storage facilities such as the above have the potential to have high wildlife attraction risks under the AAWSF (Appendix B). Open bodies of freshwater are considered to have an inherent high attracting quality to wildlife as it provides resources for fauna such as water to drink, forage, rest and breed. The type of habitat available may vary depending upon rainfall, evaporation, and drainage, that is, habitat will range from pooling, shallow through to deep water. Sedimentation ponds are designed to collect rainwater and drain within 24 to 48 hours so will not have permanent water, however when flooded they may attract some wildlife for a short time. Other facilities will have permanent water present. The three ponds/water retention basins located adjacent to the wetlands will provide fauna access to open bodies of permanent water which is surrounded by appropriate vegetation for breeding and refuge.

To mitigate against the attracting qualities of the stormwater facilities on site, the recirculation wetlands and all other stormwater facilities will be designed in accordance with the *Draft Stormwater Scheme Infrastructure Design Guideline - Western Sydney* (Sydney Water v2022-1.0) for edge treatments and depths. Key design considerations within this scheme to reduce the risk of bird strike include avoiding placement of bird habitat features in banks and bunds (e.g. logs, rocky features) and avoiding the creation of migratory bird wading habitat such as clay pans.

The designs will incorporate vertical edges instead of slopes, to minimise habitat around wetlands for waders and high-risk species that forage for invertebrates in the waterlogged soil around wetlands. On the edge of the facilities, in accordance with the Sydney Water design guidelines, a narrow concrete

formed wall (200 mm wide) will be installed. This will reduce accessibility and optimal resting places for many of the key species of birds. An increased batter slope will also be incorporated, which will reduce the width of wetland edge vegetation (and therefore reduce suitable nesting habitat), while maintaining an easily negotiated slope for public safety.

Revegetation within the recirculation wetlands will involve plantings of dense strands of macrophytes such as reeds to reduce the presence of ideal habitat for breeding/resting and open water. No logs or other habitat features are included into the design to avoid attracting fauna in the area that may act as food sources for high-risk bird strike species. These design choices will reduce the attraction of birds that prefer larger open bodies of water to forage or rest in such as high-risk duck and waterbird species. Ariel feeders such as swallows and microbats will also have less access to flying invertebrates that hover over open water. However, some areas of open water will persist and may still be utilised by these high-risk species. Plantings around the wetlands may also attract some lower-risk species that may not already be present on site such as bitterns and reed-warblers, but these are not deemed to have high risks to airport operations.

While the above mitigation measures may reduce the attractiveness of the stormwater facilities to high-risk species it won't eliminate attractiveness entirely. The areas are still likely to be utilised by birds and bats, especially waterfowl, waterbirds, waders, rails, and arial feeders such as swallows and microbats. Although habitat for these species will overall be reduced via dewatering of the 10 existing dams. To combat wildlife attractiveness to these areas, an adaptive management approach is to be adopted: monitoring of wetlands is to be undertaken to identify use of wetlands by high-risk strike species. Further mitigation can be implemented if high risk species present in hazardous numbers and/ or behaviours. Mitigations may include netting or habitat modification, which are further discussed in Section 6.

5.4.3. Urban open space and recreational areas

Under the Project, the following open green spaces/recreational areas are proposed:

- Educational and cultural spaces such as native wildflower gardens, bush tucker trails, areas for smoking ceremonies and yarning circles.
- Recreational areas including parks, playgrounds/play zones, spaces for community events or groups, sporting fields and spaces for outdoor fitness.
- Other open green spaces.

Urban open spaces and recreational areas have a moderate wildlife attracting risk under the AAWSF (Appendix B). Mitigation measures for these areas include selecting native low-risk trees species from the Western Sydney Aerotropolis DCP, Appendix B. Wildlife attracting flora species that will be avoided include larger trees that bear flowers and fruits, which would act as a food source for birds and bats.

The landscape design provides canopy cover of 45% in public open space. The design (including plant selection and canopy spacing) aims to reduce the attraction of high-risk wildlife but it is not possible to eliminate entirely. High-risk wildlife species may still occur in these habitat areas. Additionally, majority of the open space is adjacent to higher-risk stormwater infrastructure (as described above) however breaks in habitat continuity are provided through paths, roads, gaps in canopy and warehousing.

High-risk species that may still occasionally utilise these spaces include Masked Lapwing, Australian Magpie, pigeons (i.e. Rock Dove), Ibis, parrots (Long-billed Corella, Galah, Sulphur-crested Cockatoo), and waterfowl (e.g. Australian Wood Duck). When grasses in recreational areas are maintained at short

lengths such as lawns, this can provide high-risk species such as Masked Lapwing, Little Corella, Galah, Australian Magpie, Australian White Ibis, and Waterfowl an opportunity to forage.

While the landscape design aims to reduce attraction to wildlife through planting lower-risk species with the DCP, additional mitigation measures are recommended such as signage to inform the community about the issues surrounding feeding wildlife. Ongoing monitoring of these areas are also recommended to identify high-risk species that may be utilising the area. Additional mitigation measures and adaptive management will be implemented as required.

5.4.4. Developable Land (warehouses, on-lot landscaping, carparking, street trees)

The Project includes development of warehouses/buildings, loading docks, parking spaces, roads and access paths (including multipurpose maintenance paths, cycleways and footpaths). Landscaping will include tree planting and understory planting. Landscape design has sought to balance between competing DCP objectives such as tree canopy cover, Connecting to Country, riparian health and biodiversity outcomes.

Developable lots and carparks are assigned a very low wildlife attracting risk under the AAWSF (Appendix B). However, high-risk species that are adapted to urban areas such as Australian Magpie, ibis, pigeons, and starlings may become common in these areas. Buildings may also provide habitat for pigeons, owls, microbats and swallows which can nest within roofs/eaves of buildings. Because of this, mitigation measures are still recommended for the development areas on site with a focus on monitoring.

To minimise attraction of wildlife through design, development lots will target 25% canopy cover utilising low-risk species selected from Appendix B of the Phase 2 DCP. A waste management plan will also be prepared and implemented, to guide appropriate storage of waste (e.g., ensuring secure lids to prevent waste falling, blowing, washing or otherwise leaving the study area). Waste management is important since opportunistic species such as Ibis may forage through waste. Further mitigation measures for the building/lot designs are outlined in the separate *Burrah Park Aviation Safeguarding Assessment* (Avlaw 2024). Overall, with mitigation measures in place, developable land is not considered to have high wildlife-attracting potential. If monitoring indicates that further mitigation is required, implementation of anti-bird spikes to deter pigeons, swallows and owls from nesting within building structures can be applied. Signs may also be placed to increase community awareness of the harm feeding birds pose.

Landscaping along roads and paths (e.g. street trees) has a moderate wildlife attracting risk under the AAWSF (Appendix B). Street trees are required to reduce the urban heat island effect and support the goal of 40% tree canopy cover of the Greater Sydney region by 2056 (*Draft Greener Places Design Guide*, GA 2020) while balancing safe airport operations. The provision of street trees is aligned with the NSW Government's Western City Parkland Vision and contribute to visual amenity, reduced urban heat island effect, and walkability within the study area.

The majority of roadsides within the development will aim to achieve a higher canopy cover over roads and verges (Geoscapes 2025), close to continuous cover. Appropriate canopy spacing (2 – 6 m) and in clusters of no more than 4 trees in a single canopy group (defined as canopy touching at maturity) is provided by the design to balance DCP objectives and reduce wildlife attraction. This higher density of landscaping is justified by aims to firstly reduce urban heat and support public amenity, but is supported by low-risk species selection from Appendix B of the DCP and aligned with the DCP guidance on canopy groups.

The main estate road will have a 40% canopy cover (Geoscapes 2025) which will be continuous along roads, footpaths and verges outside of the APZ for bushfire protection. Areas of APZ will have a reduced canopy cover to achieve suitable setbacks and bushfire controls, with 15% canopy cover. These areas will also consist of low-risk species selected from Appendix B of the Phase 2 DCP.

Planting low-risk species along roadsides and paths will reduce the attractiveness to wildlife in these areas, however, this will not completely eliminate the wildlife risk. High-risk species such as Grey-headed Flying Fox, Long-billed Corella, Galah and Sulphur-crested Cockatoo will be less likely to be attracted to these areas due to sparsity of trees that provide food, however they may still pass through the area. Other high risk species such as Australian Magpie and Common Starling may still occupy these spaces. Ongoing monitoring of these areas are recommended to identify if any high-risk species are present, and whether additional mitigation measures are required to be implemented.

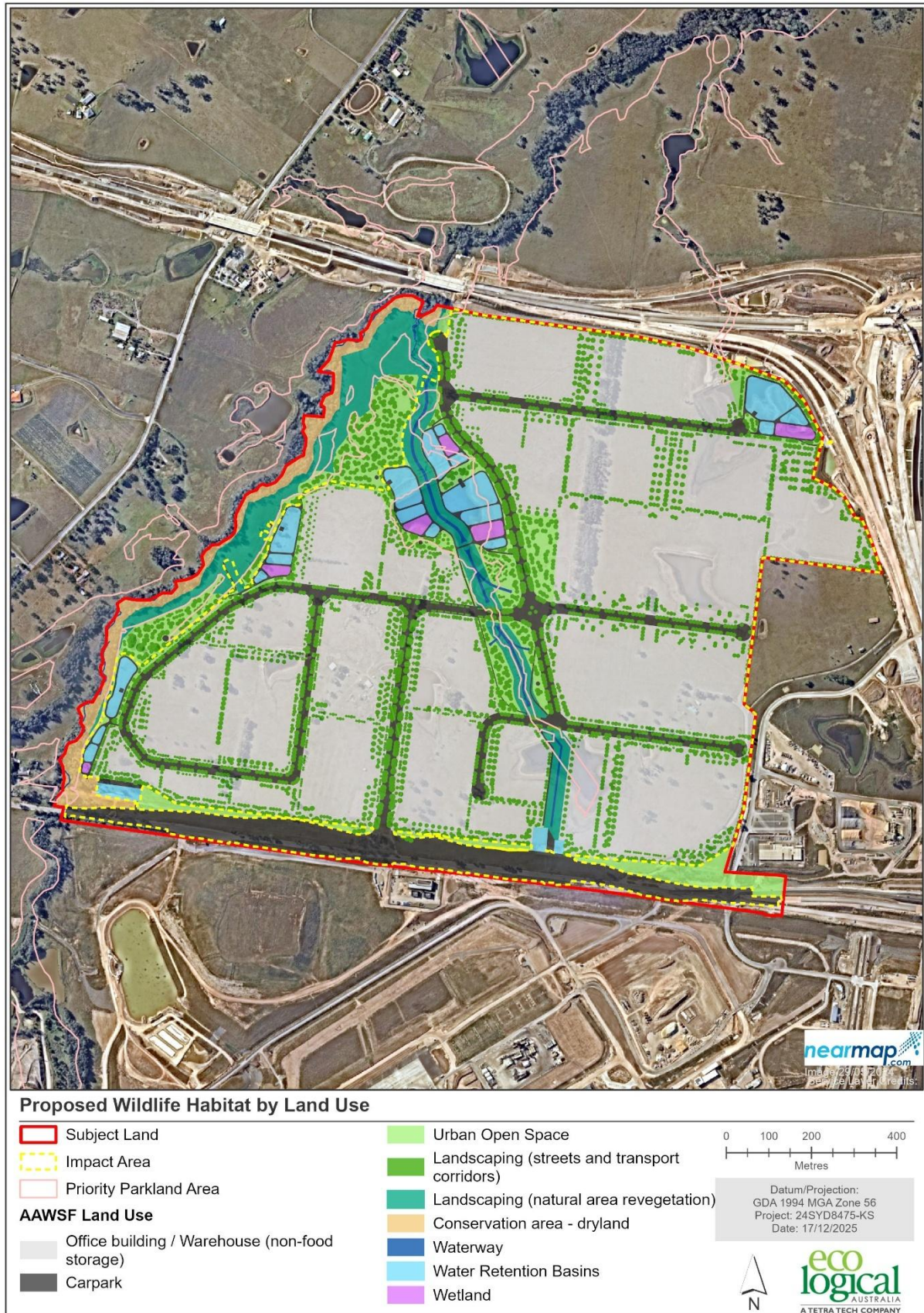


Figure 8: Proposed habitat by AAWSF Land Use

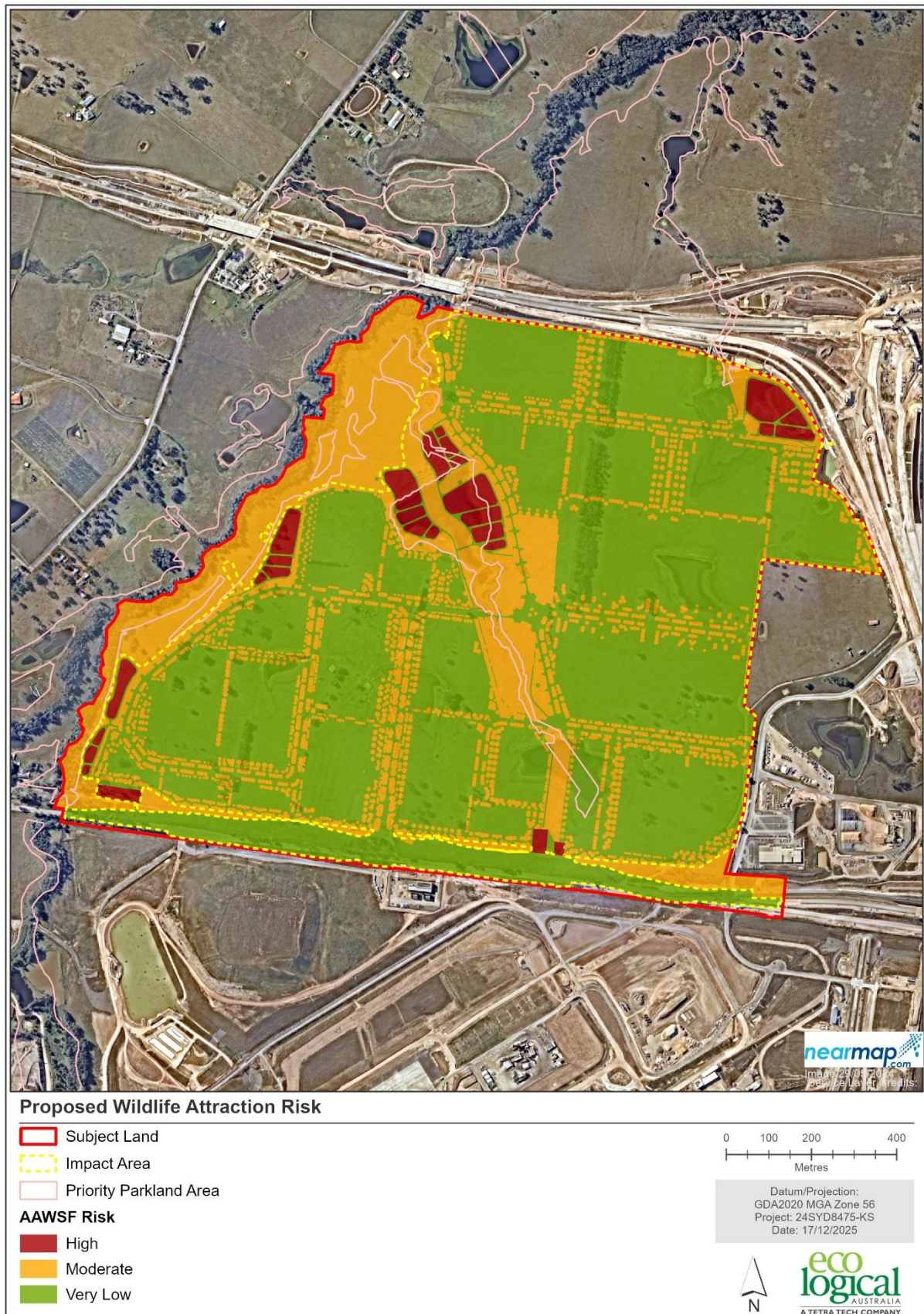


Figure 9: Proposed habitat by AAWSF Wildlife Attraction Risk

5.5. Comparison of habitat availability pre and post development

The table below summarises the habitat availability to wildlife pre- and post-development (i.e. an area breakdown of existing habitat, shown in Figure 6, and proposed habitat, shown in Figure 8, and their corresponding risk).

Table 13: Comparison of pre and post development habitat

Habitat feature	AAWSF Land Use Type	AAWSF Risk	AAWSF Action	Existing (ha)	Proposed (ha)	Change (ha)	Mitigation	Residual risk
HIGH RISK								
Farm Dams	Farm Dam	High	Mitigate	16.48	0	- 16.48	All 10 existing farm dams on site, which has the highest wildlife attracting risk out of the existing habitat, will be removed (refer to dam dewatering plan).	Nil This habitat feature will be absent from the study area post development, and therefore cannot provide common strike species habitat. However, in its place various stormwater infrastructure (e.g. basins) will be developed which may provide habitat to similar species.
Stormwater infrastructure	Water retention basin	High	Conditional	0	5.36	+ 5.36	Basin design is in accordance with Sydney Water Guidelines, including edge treatment to deter wildlife, and detention basins drain quickly following rainfall events. This area has been reduced by 0.25 ha due to redesign at the Response to Submissions stage, demonstrating commitment to reducing high risk habitat through design mitigations.	Moderate Stormwater facilities pose a moderate risk as they contain habitat features that will be attractive to some birds, but the design measures will minimise the attractiveness. Ongoing monitoring and adaptive management will be undertaken.

Habitat feature	AAWSF Land Use Type	AAWSF Risk	AAWSF Action	Existing (ha)	Proposed (ha)	Change (ha)	Mitigation	Residual risk
Stormwater infrastructure	Wetland	High	Conditional	0	1.00	+ 1.00	Wetland design follows Sydney Water guidance, including edge treatment to deter wildlife, and wetlands will have high coverage of emergent macrophytes. This area has been reduced by 0.30 ha following redesign at the Response to Submissions stage, demonstrating commitment to reducing high risk habitat through design mitigations.	Moderate As above. Ongoing monitoring and adaptive management will be undertaken.
MODERATE RISK								
Waterways (Cosgroves Creek, trunk drainage and tributaries)	Waterway	Moderate	Mitigate	0.48	1.06	+ 0.58	Additional waterway coverage is a result of the naturalised trunk drainage, required to meet Sydney Water requirements. Drainage will be constructed in accordance with Sydney Water Guidelines, and subject to monitoring and adaptive management.	Moderate Mitigation measures for reducing wildlife attraction are limited in these areas. Revegetating these areas will improve upon existing habitat for wildlife. Ongoing monitoring, and implementing any required adaptive management measures, will support mitigation of wildlife risk.
Riparian corridor, retained native vegetation	Conservation area - dryland	Moderate	Mitigate	8.86	4.82	- 3.98	Retained vegetation within the riparian corridor is largely within Parkland Priority Area. Monitoring and adaptive management will be employed to identify and apply further mitigation if required.	Moderate Mitigation measures for reducing wildlife attraction are limited in these areas. Ongoing monitoring, and implementing any required adaptive management measures, will support mitigation of wildlife risk.
Revegetation	Landscaping: natural area revegetation	Moderate	Mitigate	0	10.52	+10.52	For areas outside the VRZ, targets for reduced canopy cover and appropriate spacing between trees/clusters of trees (e.g clusters of 3-4 trees. 2-5m buffer) will be put into place.	Moderate Parkland Priority Areas are to be revegetated, consistent with the Aerotropolis DCP and the principle of restoring riparian zones. Revegetating these areas will improve upon

Habitat feature	AAWSF Land Use Type	AAWSF Risk	AAWSF Action	Existing (ha)	Proposed (ha)	Change (ha)	Mitigation	Residual risk
								existing habitat for wildlife. Ongoing monitoring, and implementing any required adaptive management measures, will support mitigation of wildlife risk.
Grassland	Cattle/dairy farm	Moderate	Mitigate	145.82	0	- 145.82	Nil as grazing lands will be completely removed.	Nil Nil as all farmland removed.
Urban open space and recreational areas	Urban open space	Moderate	Mitigate	0	9.97	+ 9.97	Selection of native low-risk trees species from the Phase 2 DCP, Appendix B. Targets for reduced canopy cover and appropriate spacing between trees/clusters of trees (e.g. clusters of 3-4 trees. 2-5m buffer).	Moderate Whilst tree planting spaces will achieve the canopy separation required by the DCP in areas outside the Parkland Priority Areas, the woodlands and parks will provide foraging, roosting and nesting habitat for some birds. The mitigation measures minimise attracting qualities to high-risk species. Monitoring is required and consideration of further mitigation undertaken if required.
On-lot and street tree landscaping	Landscaping (streets and transport corridors)	Moderate	Mitigate	0	28.21	+ 28.21	Selection of native low-risk trees species from the Phase 2 DCP, Appendix B. Targets for reduced canopy cover and appropriate spacing between trees/clusters of trees (e.g. clusters of 3-4 trees. 2-5m buffer).	Low Landscaping in streets and on-lot can provide some foraging habitat for mobile species (birds and bats) but is mitigated by built form factors (roads and warehouses creating barriers to movement).
Construction	Earthworks* (temporary during construction)	Moderate	Mitigate	N/A	N/A	N/A	Waste Management Plan will be implemented to ensure all waste is secured including stockpiles during construction. Ensure cleared vegetation is appropriately removed from site to avoid food sources.	Low Earthworks are short term and unavoidable. Mitigations will be in place.

Habitat feature	AAWSF Land Use Type	AAWSF Risk	AAWSF Action	Existing (ha)	Proposed (ha)	Change (ha)	Mitigation	Residual risk
LOW RISK								
Roads and hardstand	Car Park	Very Low	Monitor	5.82	18.82	+ 13	An increased area of hardstand built form reduces wildlife attraction, being very low risk. Additional mitigation measures are outlined in the separate Burrah Park <i>Aviation Safeguarding Assessment</i> (Avlaw 2024) if required.	Low Hardstand areas and roads offer minimal wildlife habitat on their own,. Monitoring will be undertaken with a focus on use of landscaping as above.
Developed land	Office building Warehouse (non-food storage)	Very Low	Monitor	0.12	97.81	+ 97.69	Waste Management Plan will be implemented to ensure all waste is secured. Ensure buildings have no access to ceiling spaces and areas wildlife are able to roost. If required, bird spikes can be used if further mitigation is necessary. Further mitigation measures outlined in the separate Burrah Park <i>Aviation Safeguarding Assessment</i> (Avlaw 2024).	Low Buildings can provide roosting habitat for some species, however, will not provide suitable habitat for high risk species such as Ducks, waterbirds, raptors and megabats. Application of the mitigation measures will reduce the attractiveness of these areas. Note that non-food warehouse is considered a low risk. This type of development is likely to be the dominant form of development.

5.6. Comparison of risk profile

Table 14 below presents the change in risk, in accordance with the AAWSF land use and wildlife risk ratings, from pre- to post-development. The total areas of moderate and high risk wildlife habitats has decreased by 112 ha, representing a 65% decrease in these risk ratings. The areas of low risk habitat for wildlife have increased as a result of the proposed development from moderate risk agriculture (cattle/dairy farm) to low risk built form (non-food storage warehouses, offices, carparks and roads).

On balance, in accordance with the AAWSF risk ratings (Appendix B), the Project represents considerable efforts to reduce wildlife habitat attractiveness. This assessment demonstrates that the Project, being majority low risk and subject to ongoing monitoring and management, presents a low risk to safe airport operations, compared to if left as undeveloped agricultural land (which is majority moderate and high risk land). Residual risk associated with both high-risk habitat (such as landscaping) as well as lower risk buildings and roads will be monitored in accordance with Section 6, and adaptive management measures implemented where necessary.

Table 14: Overall change in risk profile

Risk rating	Area before development (ha)	Area after development (ha)	Change in area (ha)
Very Low	5.94	116.62	+ 110.68
Low	-	-	-
Moderate	156.18	54.59	- 101.59
High	16.48	6.36	- 10.12
Very High	-	-	-

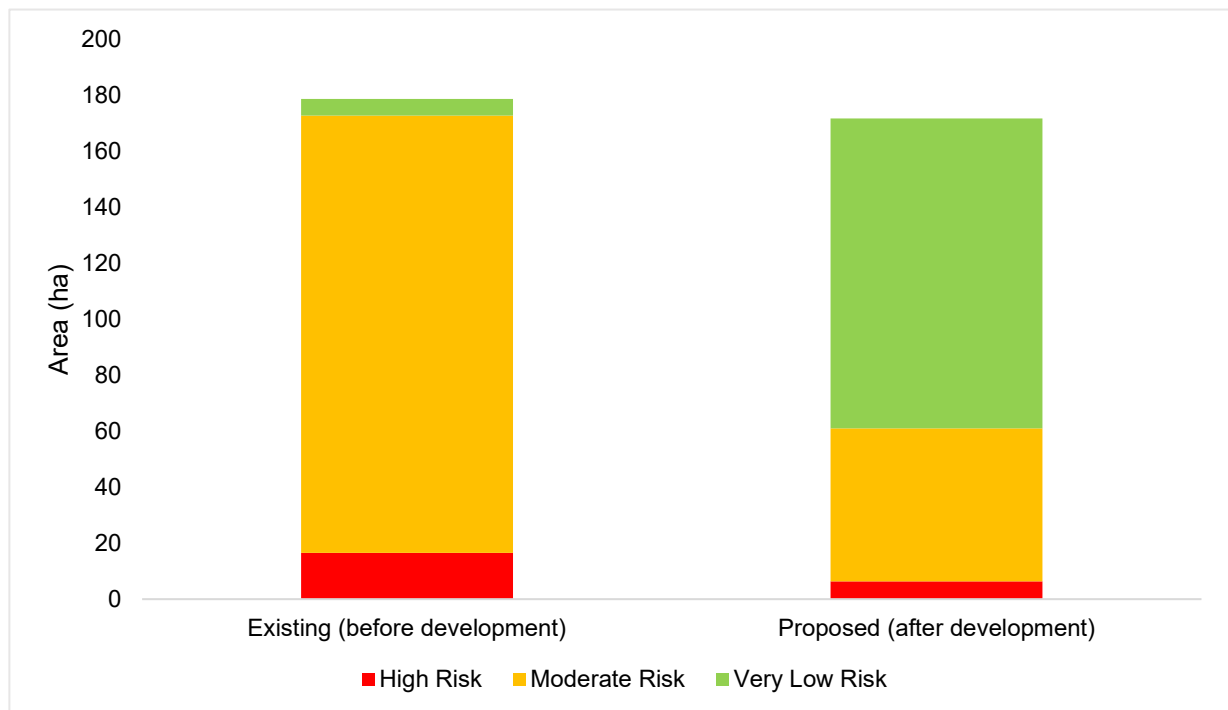


Figure 10: Comparison of AAWSF risk profile

5.7. Further mitigation

Chapter 8 of the *Air Services Manual – Part 3 Wildlife Hazard Management* (ICAO 2020) identifies the following potential methods for wildlife management at aerodromes. If monitoring of the study area identifies significant airport operations risk, further mitigation may be required and should be targeted to the species of concern, noting that some methods below may not be effective for the target species over the long term. The above document acknowledges that lethal control is also an option, although should only be considered as a last resort and where absolutely necessary after consultation with Western Sydney Airport.

Caution must be exercised in considering some of the methods below, as they can cause harm and distress to native species, disturbance to the general public or interference with Airport operations.

Table 15: Examples of further mitigation measures (ICAO 2020)

Measure	Examples
Habitat modification and exclusion techniques	Habitat modification or exclusion techniques are more effective than the below repellent and harassment techniques, however these will not rid an area of all hazardous wildlife so should be used in combination with the repellent/harassment techniques. ● Capture and relocation: relocating birds to another area e.g. relocation breeding populations of waterfowl. ● Habitat modification: removal of food, shelter and water sources. Modification of habitat such as grass length, netting over smaller waterbodies, anti-perching spikes for buildings, fencing.
Audio repellents	● Propane cannons: produces a shotgun-sounding blast that scares birds. This should only be used sparingly when birds are in specific areas as scaring birds may create extra hazard and birds over time habituate to the sound. ● Distress-call and electronic noise generation systems: recorded distress calls are broadcasted from mounted speakers. This will only be effective with associated reinforcement to provide added fear or stress. ● Shell crackers and other pyrotechnics: projectiles fired that provide auditory blasts or screams as well as smoke and flashing lights to frighten birds. To be used in combination with other harassment techniques. This has safety concerns to airport operations so is not recommended in this case.
Visual repellents	● Scarecrows and similar: includes hawk effigies/silhouettes, eye-spot balloons, flags, reflective tapes and taxidermy mounts of predators designed to move in the wind and dead birds posed in a “death pose”. These methods are not suitable long-term solutions as birds get habituated. Using dead/taxidermized wildlife may require permits. ● Laser projectors: handheld laser projectors projecting a red or green beam has been previously successful at disperse birds in Europe. Use near airports needs caution.
Chemical repellents	Only chemical repellents registered and approved by the proper national, regional and local authorities should be used. Examples include: ● Perches (polybutenes): applying sticky liquid or past formulators on perching surfaces that make birds uncomfortable, causing them to perch or roost elsewhere. ● Turf feeding (anthraquinone, methyl anthranilate): chemical sprays applied to turf (grasses) that deter birds from grazing due to aversive tastes/slight illnesses developed post ingestion. ● Water (methyl anthranilate): chemical applied to standing water to repel birds from drinking and bathing. ● Frightening agent (Avitrol [4-Aminopyridine]): Bait that causes reactions of distress symptoms and calls, which frightens other birds in the flock. This bait is toxic and primarily used at airports for pigeon control around buildings.

The *Air Services Manual – Part 3 Wildlife Hazard Management* (ICAO 2020) also identifies further methods such as the use of trained falcons and dogs, drones and non-lethal projectiles, however these are not deemed suitable or feasible for this development.

6. Monitoring

Monitoring is a critical element in determining the success of mitigation measures and identifying the need to adapt management to achieve the objective of minimising wildlife risk. Therefore, regular monitoring surveys are recommended for this development both during construction and post construction. A separate Wildlife Hazard Management Plan (WHMP) (ELA 2025d) has been prepared for further detail and guidance.

The monitoring described below is focussed on the higher risk environments of the study area, being the stormwater facilities and the revegetated riparian zones. Monitoring of urban green spaces and street trees are also covered. Monitoring is to be conducted by an ecologist experienced with long term monitoring projects involving birds and bats. Reporting of wildlife is to be provided to the Western Sydney Airport within 28 days of monitoring completion.

Monitoring of habitat areas must be undertaken at regular intervals or at specific times of year where common strike species may be attracted to the study area. The following table provides the minimum required monitoring events per year. The frequency of monitoring events may change following a review after five years.

Results of monitoring are to be provided to the WSI within 28 days as per the Aerotropolis DCP Appendix D7.

Table 16: Recommended monitoring

Area	Monitoring Tasks	Frequency	Preferred Timing	Notes
Stormwater facilities/wetland	Diurnal Bird Survey	Every six months	Mid-Autumn and mid-spring	Survey should ideally be conducted after a rainfall event and should take into consideration the different habitat types within the stormwater/wetland areas
Woodland and Riparian zones	Diurnal Bird Survey Nocturnal Megabat Surveys	Twice prior to the commencement of riparian restoration to obtain baseline data. Then every six months after commencement of restoration	Mid-Autumn and mid-spring	Bird surveys should focus on all habitat types within the woodland and riparian zones while the megabat survey focuses on fruit bearing and flowering plants
Road corridors, street trees and developed land	Diurnal bird survey	Every six months	Mid-Autumn and mid-spring	Monitoring to establish usage of habitat, focusing on waste storage areas and any evidence or roosting in buildings.

7. Consistency with Planning Framework

The following table describes the consistency of the Master Plan with the Parklands-Western Sydney City SEPP and the Phase 2 DCP controls.

Table 17: Consistency with Section 4.19 of the Western Parkland City SEPP

Clause	Response
Section 4.19 – Wildlife Hazards	
<i>(1) The objective of this section is to regulate development on land surrounding the Airport where wildlife may present a risk to the operation of the Airport.</i>	
<i>(2) Development consent must not be granted to relevant development on land in the 13 km wildlife buffer zone unless the consent authority—</i>	
<i>(a) has consulted the relevant Commonwealth body, and</i>	The Commonwealth will be consulted during assessment phase of the SSDA.
<i>(b) has considered a written assessment of the wildlife that is likely to be present on the land and the risk of the wildlife to the operation of the Airport provided by the applicant, which includes—</i> <i>(i) species, size, quantity, flock behaviour and the particular times of day or year when the wildlife is likely to be present, and</i> <i>(ii) whether any of the wildlife is a threatened species, and</i> <i>(iii) a description of how the assessment was carried out, and</i>	The wildlife likely to be present on the land is presented in Section 4. The species likelihood of occurrence is detailed in Appendix C, with their risk (size and flocking behaviour) described in Appendix D. Threatened species (species listed under the EPBC Act and/or the BC Act) that have the potential to occur within the land is described in Section 4 (Table 6). Species listings are also presented in the likelihood tables in Appendix C. In total, 20 threatened species under either the EPBC Act only (5), BC Act only (10) or both (5) have potential to occur within the study area. Times of day or year is highly variable across species and has not been factored into the risk assessment as the WSI is a 24 hour operation, 365 days a year. Therefore, the approach taken was to consider the risk of the species to such an operation. Wildlife monitoring methods target particular times of the year to where the majority of wildlife (birds and bats) are likely to be present (Section 6, Table 16). The methodology for identifying species with greatest risk to the operation of the airport is described in Appendix A. A total of 31 species were assessed as being the greatest risk to airport operations (with high, very high or extreme hazard ratings). Four of these species were previously noted within the study area (Appendix E).
<i>(c) is satisfied that the development will mitigate the risk of wildlife to the operation of the Airport, including, for example, measures relating to—</i> <i>(i) waste management, landscaping, grass, fencing, stormwater or water areas, or</i> <i>(ii) the dispersal of wildlife from the land by the removal of food or the use of spikes, wire or nets</i>	The Project will reduce the highest risk of wildlife to the operation through removal of existing farm dams, design of stormwater facilities and wetland edges to reduce attractiveness to wildlife, and application of species planting palettes. Mitigation measures are described in Section 6 and the separate WHMP (see ELA 2025d). The Project does contain some habitat features which may attract wildlife, such as waterbodies for stormwater management and rehabilitation of vegetated riparian zones. The Project aims to balance competing objectives and provide mitigation measures where possible to reduce the risk of wildlife affecting airport operations. These are a consequence of meeting requirements set out in the DCP and agencies responsible for regulating stormwater management.
<i>(3) Despite subsection (2), development for the following purposes is prohibited on land in the 3km wildlife buffer zone—</i> <i>(a) livestock processing industries</i> <i>(b) turf farming</i> <i>(c) waste or resource management facilities that consist of outdoor processing, storage or handling of organic or putrescible waste.</i>	The Project does not provide for these land uses.

Table 18: Consistency with Aerotropolis DCP Phase 2 (November 2022)

Clause	Response
1. Refer to Appendix B for a list of suitable landscape species.	The <i>Burrah Park Landscape Plan</i> (Geoscapes 2025) has utilised species from this list. The plan proposes to use some species with higher risk of wildlife attraction in order to meet other objectives of the DCP including ecological restoration along Cosgroves Creek. This is consistent with the intent of the Parkland Priority Areas. The plan uses species with less wildlife attractiveness wherever possible outside of the Parkland Priority Areas. On-lot landscaping will not use species that have additional assessment requirements.
2. In areas within the 3 km wildlife buffer but outside of the Parkland Priority Areas, a report prepared by a suitability qualified and experienced ecologist is to be submitted with any application when the landscaping plan: a. Incorporates alternative landscape species not listed within Appendix B; b. Incorporates landscape species denoted within the landscape species list; c. Will result in more than 5 trees being planted in 1 group (group refers to touching mature canopies); and/or d. Provides a spacing between a group of 5 or more trees that is less than 100 m.	The Cosgroves Creek Riparian Corridor and stream within the central core are identified as Parkland Priority Areas. Within these areas, the DCP allows a greater list of species to be used. Species to be planted in these areas are outlined in a Vegetation Management Plan (VMP). Native low-risk trees species from the Western Sydney Aerotropolis DCP, Appendix B will be selected for areas outside the Parkland Priority Areas. These areas will have targets for reduced canopy cover and appropriate spacing between trees/clusters of trees (e.g clusters of 3-4 trees. 2-5m buffer). Some species have been selected that are not on the Aerotropolis DCP, Appendix B list of approved plants, however have been selected based on collaborative work between an Indigenous Ecologist Consultant, project Ecologist, project Indigenous Consultant Group and the Landscape Architects. Trees such as fig which are highly attractive to Grey Headed Flying Fox will not be used anywhere on site.
3. The ecologist report is to consider building, site, and water body design outcomes and/or landscape maintenance measures that will mitigate bird and flying fox attraction and roosting areas	Building design has considered the DCP objective in section 2.10.3. Mitigation measures for developed land are outlined in the relevant <i>Burrah Park Aviation Safeguarding Assessment</i> (Avlaw 2024). Site and water body design has reduced the size of the available water bodies on site (through removal of 10 existing farm dams) and proposed stormwater management facilities follows the draft Sydney Water Guidelines which incorporate features such as vertical edges to water bodies, fencing and the provision of dense planting to discourage certain bird guilds. Monitoring of wildlife will be undertaken to identify any habitat elements that provide habitat for high-risk bird or bat species. Where such species are identified, consideration for further mitigation measures will be undertaken.

Clause	Response
	Landscape maintenance will be undertaken to remove or reduce habitat elements that have become attractive to animals, particularly high-risk birds or bats. The above measures reduce the attractiveness of the study area to birds and bats, however they do not eliminate the habitat that may be attractive to birds or bats. These elements are provided in order to meet other DCP objectives such as: <i>2.1 Celebrating culture by reflecting the cultural landscape and continuous connection of Aboriginal people and country through preservation and rehabilitation of the natural environment;</i> <i>4.5.3 Public domain and canopy cover;</i> <i>2.3 Waterway Health and Riparian Corridors;</i> <i>2.4.2 Conserve and manage existing vegetation and contribute to the increase of habitat and tree canopy within the Aerotropolis).</i>

8. Conclusion

The DCP requires that the proposal does not impact the safe operation of Western Sydney International Airport (WSI) in accordance with *State Environmental Planning Policy (Precincts - Western Sydney Parkland City) 2021*. Clause 4.19 of the SEPP provides controls to regulate development on land surrounding the Airport where wildlife may present a risk to the operation of the Airport. If the proposal does include relevant development, then a written assessment, of the wildlife present and the risk it poses to the airport operation, must be submitted with the development application.

A total of 177 bird and bat species were determined as having the potential to occur within the study area, including 20 species listed under either the EPBC Act only (5), BC Act only (10) or both (5). These species were assessed using the *Bird Risk Assessment Model for Airports and Aerodromes* (Paton 2010) to determine their overall wildlife strike risk. Australian Transport Safety Bureau (ATSB) strike data was used for this assessment.

Most species with potential to occur on site are associated with a 'negligible' wildlife hazard ranking (41.8%) and are not considered to present risks to the WSI. However, 30 high-risk species needed to be considered for mitigation and monitoring. The wildlife risk assessment determined that the highest risk strike species relevant to this development are Megabats (e.g. Grey-headed flying fox and Little Red Flying Fox), Pigeons (Rock Dove) and Ibis species (Australian White Ibis, Straw-necked Ibis) (Appendix E).

Monitoring and mitigation of the attraction of the identified high-risk groups/species have been prioritised during the design of the proposed development, in particular Megabat species. The proposed development will reduce the highest risk habitat (farm dams) and the majority of pre-existing moderate risk habitat associated with its current agricultural land use.

The highest risk proposed habitat (stormwater facilities – including basins and wetlands) have been designed in accordance with relevant Sydney Water Guidelines, which require wildlife-detering features such as vertical edges to water bodies, fencing and the provision of dense planting to discourage habitat for several bird species and guilds. Landscaped spaces such as open space, street trees and landscaping have been mitigated in their design process, through appropriate selection of species and careful design (spacing, cluster size, densities). Better quality habitat such as woodland and riparian zones, subject to restoration under a Vegetation Management Plan (VMP), either fall within Parkland Priority Areas or are required to meet requirements under the planning framework.

Ultimately, the study area will contain habitat that is attractive to birds and/or bats, but with a lower risk profile overall compared to current land use should the site remain undeveloped. The subject land will be subject to ongoing monitoring and management measures. If further mitigation measures are found to be required as a result of incidents or monitoring, an adaptive management approach will be taken in accordance with the separate Wildlife Hazard Management Plan (WHMP) (included in the project BMP, see ELA 2025d).

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Appendix A Methodology for wildlife risk rating

A1 Desktop and literature review

ELA reviewed literature and data to develop an understanding of the ecology of the study area and the current environment. ELA has completed work within the study area for a number of years and has utilised existing knowledge, previous assessments and data bases searches to understand the existing environment.

A desktop assessment was undertaken by ELA which involved a review of biodiversity databases to inform the potential bird and bat species that may occur within and in the proximity of the study area. The following sources was consulted during the assessment:

- BioNet (Wildlife Atlas) search for all species that have been previously recorded within or around the study area within a 10 km radius (NSW DCCEEW 2024). Accessed 3rd June 2024
- EPBC Act Protected Matters Search Tool (PMST) for Matters of National Environmental Significance using a radius of 10 km around the Study Area (DCCEEW 2024). Accessed 5th June 2024
- Birddata search for species observed within the study area via previously conducted surveys (BirdLife Australia 2024). Accessed 5th June 2024
- ESRI satellite imagery
- Atlas of Living Australia (ALA)
- Commonwealth Species Profile and Threats Database (SPRAT) (DCCEEW 2024)
- NSW Threatened Species Profiles (DPE 2024)
- Handbook of Australian, New Zealand and Antarctic Birds (HANZAB)

All searches were undertaken on an investigation area centred on the study area and covering a 10 km buffer. In addition to the above, the following documents were reviewed to inform the desktop study and understand the existing wildlife populations in the locality:

- Burrah Park – Biodiversity Assessment Report (ELA 2025a) prepared for HB&B Property
- Bird Risk Assessment Model for Airports and Aerodromes (Paton, 2010)
- Australian aviation wildlife strike statistics 2008 – 2017 (ATSB, 2019)
- ATSB National Aviation Occurrence Database (Accessed June 2024)

A2 Likelihood of occurrence

Based on the results of the desktop review, the likelihood of occurrence was determined for bird and bat species found within and in the surrounds of the study area. Likelihood of occurrence is a determination of the potential for species to be present and make significant use of the study area. Species were ranked as having either no, low, medium, or high likelihood of occurrence, or as being present, by accessing information contained in public biological datasets (e.g. past records and species distribution models), considering species habitat requirements (including surrounding habitat connectivity), and information from previous reports (ELA 2025a). Species ranked as medium, high or present were investigated in further detail for their Hazard Rank (see Appendix A3). The determinations of a species likelihood provided are not absolute; rather, they represent a species' potential to occur in the study area.

A3 Bird and Bat hazard assessment

This wildlife risk assessment utilises the ‘Bird Risk Assessment Model for Airports and Aerodromes’ (Paton, 2010) recommended by the AAWHG to assess the relative risk of wildlife strikes posed by species identified as being present or having a medium – high likelihood of occurring from the likelihood of occurrence analysis. This risk assessment is based on information available at the time of the assessment and previous knowledge of bird and bat strike issues at other airports. These results may be refined with further information.

The intention of Paton’s risk assessment model is to identify more hazardous species, and aid in hazard reduction programs. The Paton method assesses the probability and consequences of a strike event in relation to a species body mass, flocking characteristics, flight behaviour, abundance on or near an airport and data on past wildlife strikes at an airport. Both quantitative and qualitative data of abundances and strikes can be used to rank the probability of a species being involved in a strike. This flexibility enables airports with limited data to generate a risk ranking by species. The methodology used in this report for determining the consequence and probability scores are outlined in the following sections.

Paton’s method is intended to be specifically for birds, but for this assessment both birds and bats were assessed using this method. A dedicated risk assessment for bats is currently under development, and the AAWHG currently recommends following other methods such as Paton’s method in the interim (AAWHG 2014). The same logic when assigning scores can be applied for bats (e.g. large megabats that flock together would have similar consequences to large flocking birds). Microbats can be considered in a similar way to swifts, swallows and martins, which are of a similar size and also feed on the wing over bodies of water and in the air.

The outcome of a bird and bat risk assessment is a probability x consequence matrix as shown in (Table 19). The species found to exhibit the highest probability of being involved in a strike and potentially result in the greatest damage (consequence) to aircraft are then listed as an ‘extreme’ or ‘very high’ risk species in the upper left-hand boxes of the matrix.

Table 19: Probability x consequence matrix used to assign overall Hazard Rank

Consequence of a strike	Probability/Likelihood of a strike			
	Very High	High	Medium	Low
Extreme	extreme	extreme	very high	high
Very high	very high	high	high	medium
High	high	high	medium	medium
Medium	medium	medium	low	low
Low	low	low	negligible	negligible
Very low	negligible	negligible	negligible	negligible

A4 Consequence Score

Damage caused to an aircraft by a wildlife strike will depend on the body mass of the species (which determines the force of the impact), flock density (the number of individuals that may be struck in one instance), and the flight behaviour of a species. Species that fly slowly, erratically or have meandering flight paths take longer to clear airspace used by aircrafts, which may lead to longer delays, and are more likely to be struck than birds which fly rapidly and directly throughout their habitats.

Paton's (2010) model uses a simple scoring system to place species into one of:

- Six categories of body mass

- Three categories of flocking behaviour (flocking density).

- Three categories of flight behaviour – the additional category of 'Nocturnal flight activity' has been added to the standard criteria.

The scoring system for assigning species a consequence score, which estimates the level of damage to occur if involved in a wildlife strike, is described in Table 20, Table 21 and Table 22 below. There are six (6) body mass criteria, three (3) flocking density criteria and three (3) flight behaviour criteria.

Table 20: Body mass criteria and scores for indicative wildlife strike species

Body Mass	Examples	Body Mass Score
< 20 g	Welcome Swallow	1
21-50 g	House Sparrow, Skylark	2
51-200g	Common Starling, Magpie-Lark, Nankeen Kestrel	4
201-1000g	Domestic Pigeon, Galah, Silver Gull, Australian Magpie, Masked Lapwing, small ducks	8
1-5 kg	White Ibis, Straw-necked Ibis, large duck	16
>5kg	Australian Pelican, Cape Barren Goose	32

Table 21: Flocking density criteria and scores for indicative wildlife strike species

Flock Density	Examples	Flock Score
Usually solitary or widely spaced	Nankeen Kestrel, Skylark,	1
Often in loose flocks	Australian Magpie, Little Raven, Magpie-Lark, Welcome Swallow, Silver Gull	2
Often in tight flock	House Sparrow, Galah, Little Corella, lorikeets, ducks, ibis,	4

Table 22: Flight behaviour criteria and scores for indicative wildlife strike species

Flight Behaviour	Examples	Flight Score
Rapid direct	Little Raven, Australian Magpie, ducks, ibis	1
Slow, meandering, erratic, hovering, manoeuvrable	Nankeen Kestrel, Galah, Common Starling, swallows, Magpie-Lark, Silver Gull, Australian Pelican, Masked Lapwing	2
Nocturnal flight activity	Bats, Owls.	2

The scores for each criterion are then multiplied to calculate an overall consequence score, which provides a consequence ranking for each species (Table 23). Information used to place birds into each category were collected from *Appendix 1: Bird Species Scores* in Paton's 2010 Assessment model and the Handbook of Australian, New Zealand and Antarctic Birds (HANZAB).

Table 23: Consequence score categories and descriptions.

Consequence Rank	Consequence Score	Description of Consequence
Extreme	64-128	Aircraft subject to catastrophic damage and cannot maintain controlled flight. Substantial/serious incidents, accidents and damage caused by wildlife strike such as fatal or serious injuries, substantial aircraft damage or structural failures (engine failure, cracked or broken windshields), destruction or damage to property, emergency evacuations, emergency descents, forced landings, diversions/returns.
Very high	32	Aircraft subject to significant damage and ability to operate safely is compromised. Serious incidents and damage caused by wildlife strike such as serious injuries, precautionary descents, precautionary landings.
High	16	Aircraft subject to damage and ability to operate safely is compromised. Incidents and damage caused by wildlife strike such as dents or puncture holes to the aircraft skin, damage to wind shields or surrounding structures, damage to main rotor blades, tail rotor blades or landing gear.
Medium	8	Aircraft subject to damage however can maintain safe operations.
Low	4	Aircraft subject to minor damage however can maintain safe operations. Minor incidents and damage caused by wildlife strike. Minor incidents and damage caused by wildlife strike.
Very low	1-2	Aircraft misses the species or strikes the species but is undamaged and can maintain safe operations. Minor incidents and damage caused by wildlife strike.

A5 Probability Score

Paton's model outlines two main methods to estimate the probability of a species being involved in a strike. One is to use the abundances of species at an airport (the more abundant species are more likely to be involved in a strike), and the other is by using the numbers of historical strikes. Since there are few data or estimates of bird abundances for airports, this assessment utilises wildlife strike data.

The AAWSF indicates that WSA is to provide a species risk assessment to proponents undertaking wildlife management assessments. However, due the airport not yet being constructed this assessment has not been completed and species data has not been captured. Therefore, existing data from the ATSB database for Sydney Airport and Bankstown Airport has been utilised to understand common strike species for this report. This data has been used as they are the closest airports to WSA. Data from the ATSB database for strike species Australia wide was also collected to supplement data collected from Sydney Airport and Bankstown Airport.

Strike data was compiled from the ATSB web-based interactive tool, which displays the number of reported birds strikes by species and location from 2008-2017 (ATSB, 2019). Data from Sydney and Bankstown airport were combined to analyse which species are most commonly struck in the area. The majority of bird strike data recorded by the ATSB involved a bird of an unknown/unidentified species. This is because pilots often don't have an opportunity to see a bird before striking it, or the bird is unidentifiable due to the impact. For the purpose of this assessment, these unknown species were removed from the dataset. Species which were listed multiple times under different common names were consolidated (e.g. Seagull and Silver Gull).

To streamline the assessment, species have been combined into 15 guilds or ‘functional groups’, since the data from the ATSB website often used general terms like “Duck”, “Pigeon”, “Owl”, “Parrot” and “Eagle”. A description of the guilds used in this assessment can be found in Appendix F. Data for individual species were used where possible, but for instances like “Duck” all duck species in our list were assigned the higher probability score or the “Duck” score to take a conservative approach.

The percentage of all known bird strikes for each species/guild for both airports were calculated, and each species was placed into the below criteria (Table 24). Not all species could be assigned a probability score from the combined dataset of Sydney and Bankstown airports since there were no records for particular species/guilds at these locations. Instead, these species were assigned a score with supplementary data for Australian wide historical strikes. Supplementary data was used since common strike species/guilds were identified during the likelihood of occurrence that weren’t reported in the surrounding airports strike data, however should be considered since they are commonly reported strike species Australia wide. Where no records for a species or group of species were found in any data set, species were assigned the lowest probability score (as they are not reported being struck).

Table 24: Criterion for assigning a species a probability score, which estimates the likelihood of a species being involved in a wildlife strike

Relative Frequency (% all strikes at airport)	Apparent Frequency	Probability Rank
> 5%	Often	Very High
1-5%	Some	High
0.1-1%	Occasional	Medium
< 0.1%	Rare/None	Low

A6 Limitations

It is important to take note of the limitations of the ATSB data collected. ATSB data is collected through mandatory occurrence reporting requirements of the *Transport Safety Investigation Act 2003* and associated Regulations from the aviation industry. Only confirmed bird strikes are included, and suspected or near misses with birds are not reported. Data quality and consistency are dependent on what is reported. It is unclear on which individuals are involved in the identification of species, it could be from an onsite ecologist, or someone untrained in bird identification. The data also is not current (from 2008 – 2017), and therefore wildlife strike numbers may not reflect current day numbers accurately. In addition to this, strike data may not provide the best estimate of the likelihood of a strike and is a reactive approach in that species are only identified after one or more strikes. The probability scores gained in this assessment can only provide a general estimation/guide on the probabilities of each species being struck. Caution should be taken in its interpretation.

Appendix B Aerotropolis Aviation Wildlife Safeguarding Framework (AAWSF)

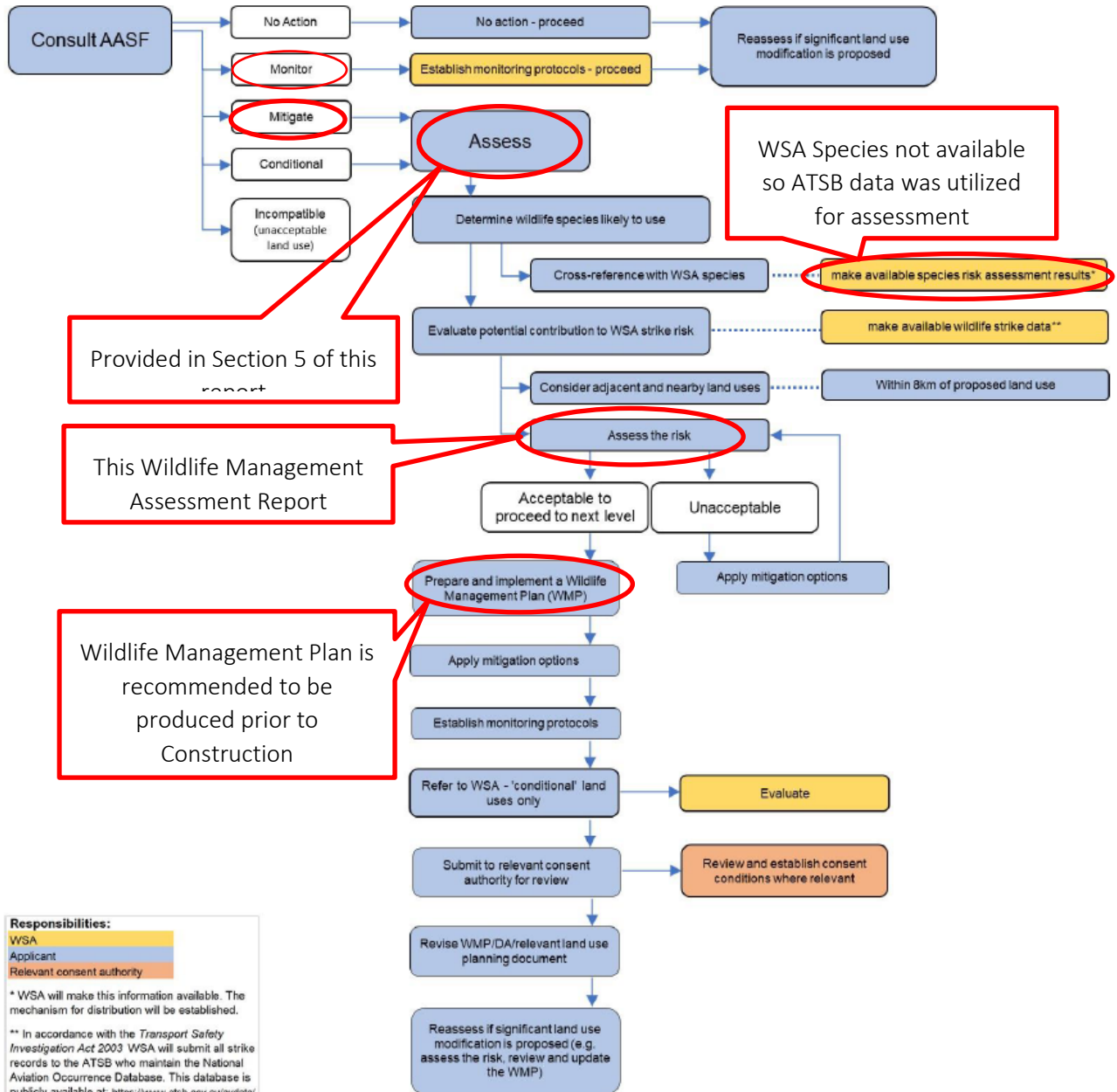
The Aerotropolis Aviation Wildlife Safeguarding Framework (AAWSF) provides guidance on assessing and managing wildlife risk. The AAWSF was adapted by Avisure (2020) from the National Airports Safeguarding Framework (NASF) to respond specifically to the land uses and planning framework of the Western Sydney Aerotropolis.

Red boxes are indicated relevant lands use of the proposed development, sub area of the study area and required action.

Land Use ¹²	Standard Instrument Definition	Wildlife Attraction Risk	Western Sydney Aerotropolis: Actions for Existing Developments					Western Sydney Aerotropolis: Actions for Proposed Developments / Changes to Existing Developments				
			3 km radius (Area A)	3 km radius (Area A)	8 km radius (Area B)	8 km radius (Area B)	13 km radius (Area C)	3 km radius (Area A)	3 km radius (Area A)	8 km radius (Area B)	8 km radius (Area B)	13 km radius (Area C)
			Sub-area A1	Sub-area A2	Sub-area B1	Sub-area B2		Sub-area A1	Sub-area A2	Sub-area B1	Sub-area B2	
Agriculture												
Abattoir	Livestock processing industry	Very High	Mitigate	Mitigate	Mitigate	Mitigate	Mitigate	Incompatible	Incompatible	Mitigate	Mitigate	Mitigate
Turf farm	Intensive plant agriculture	Very High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Incompatible	Incompatible	Mitigate	Monitor	Monitor
Piggery	Intensive livestock agriculture	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Orchard	Intensive plant agriculture	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Fish processing /packing plant	Livestock processing industry	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Aquaculture	Aquaculture	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Farm dam	Water storage facility	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Crops (e.g. wheat, grains, rice, legumes)	Agriculture	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Grain storage	Storage Premises (or ancillary)	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Cattle /dairy farm	Intensive livestock agriculture	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Poultry farm	Intensive livestock agriculture	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Plant nursery	Plant nursery	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Viticulture	Viticulture	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Market farms and gardens	Garden Centre	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Forestry	Forestry	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Horticulture	Horticulture	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Conservation and Natural Areas												
Wildlife sanctuary - wetland	Environmental protection works	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Conservation area - wetland	Environmental protection works	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Wildlife breeding/roosting	Environmental protection works	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Flying-fox camp	N/A – dependent on geographical context of camp	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Wetland	Wetland	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Wildlife sanctuary - dryland	Environmental protection works	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Conservation area - dryland	Environmental protection works	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Waterway (e.g. creeks, rivers)	Waterway	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Natural areas	Environmental facility or environmental protection works	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Recreation												
Showground	Recreation facility (outdoor) or (major)	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Fish cleaning facilities	N/A	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Public feeding of wildlife	N/A	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor

Land Use ¹²	Standard Instrument Definition	Wildlife Attraction Risk	Western Sydney Aerotropolis: Actions for Existing Developments					Western Sydney Aerotropolis: Actions for Proposed Developments / Changes to Existing Developments				
			3 km radius (Area A)	3 km radius (Area A)	8 km radius (Area B)	8 km radius (Area B)	13 km radius (Area C)	3 km radius (Area A)	3 km radius (Area A)	8 km radius (Area B)	8 km radius (Area B)	13 km radius (Area C)
			Sub-area A1	Sub-area A2	Sub-area B1	Sub-area B2		Sub-area A1	Sub-area A2	Sub-area B1	Sub-area B2	
Urban open space (e.g. cycleways, green areas, pedestrian walkways)	Recreational area	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Racetrack / horse riding school	Recreation facility (outdoor)	Moderate	Mitigate	Monitor	Monitor	Monitor	Monitor	Mitigate	Mitigate	Mitigate	Monitor	Monitor
Golf course	Recreation facility (outdoor)	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Sports facility (tennis, bowls, etc)	Recreation facility (outdoor)	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Sports fields	Recreation area	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Park / Playground	Recreation area	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Picnic / camping ground	Camping ground	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Water sport facilities	Recreational facility (outdoor)	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Boat ramps	Boat ramp	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Recreational fishing areas	N/A	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Commercial												
Food processing	Agricultural produce industry or Livestock processing industry	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Fast food / drive-in / outdoor restaurant	Food and drink premises	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Earthworks	N/A - only during construction of other uses	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Warehouse (food storage)	Warehouse and distribution centre	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Shopping centre	Retail premises	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Marina	Marina	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Zoo	Animal boarding or training establishment	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Markets	Market	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Construction	N/A - only as ancillary to other purposes	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Office building	Office premises	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
Hotel / motel	Hotel / motel	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
Car park	Car park	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
Cinemas	Entertainment facilities	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
Warehouse (non-food storage)	Warehouse and distribution centre or Storage premises	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
Petrol station	Service station	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
Public transport facility	N/A	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
Aerospace industry	N/A	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
School/university	Educational establishment	Very Low	Monitor	No Action	No Action	No Action	No Action	Monitor	No Action	No Action	No Action	No Action
Utilities												
Organic waste facility - open	Waste or resource management facility	Very High	Mitigate	Mitigate	Mitigate	Mitigate	Mitigate	Incompatible	Incompatible	Mitigate	Mitigate	Mitigate
Putrescible waste facility - landfill - open	Waste disposal facility	Very High	Mitigate	Mitigate	Mitigate	Mitigate	Mitigate	Incompatible	Incompatible	Mitigate	Mitigate	Mitigate
Putrescible waste facility - transfer station - open	Waste or resource transfer station	Very High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Incompatible	Incompatible	Mitigate	Monitor	Monitor
Sewage / wastewater treatment facility	Sewage treatment plant	High	Mitigate	Mitigate	Mitigate	Mitigate	Mitigate	Conditional	Conditional	Mitigate	Mitigate	Mitigate
Water retention basins	Water storage facility	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor

Land Use ¹²	Standard Instrument Definition	Wildlife Attraction Risk	Western Sydney Aerotropolis: Actions for Existing Developments					Western Sydney Aerotropolis: Actions for Proposed Developments / Changes to Existing Developments				
			3 km radius (Area A)	3 km radius (Area A)	8 km radius (Area B)	8 km radius (Area B)	13 km radius (Area C)	3 km radius (Area A)	3 km radius (Area A)	8 km radius (Area B)	8 km radius (Area B)	13 km radius (Area C)
			Sub-area A1	Sub-area A2	Sub-area B1	Sub-area B2		Sub-area A1	Sub-area A2	Sub-area B1	Sub-area B2	
Waste collection points (commercial)	N/A	High	Mitigate	Mitigate	Mitigate	Monitor	Monitor	Conditional	Mitigate	Mitigate	Monitor	Monitor
Organic waste facility - enclosed	Waste or resource management facility	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Putrescible waste facility - landfill - enclosed	Waste disposal facility	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Putrescible waste facility - transfer station - enclosed	Waste or resource transfer station	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Non-putrescible waste facility - landfill	Waste disposal facility	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Dams	Water storage facility	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Stormwater drains	Water storage facility	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Non-putrescible waste facility - transfer station	Waste or resource transfer station	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Potable water treatment facility	Resource recovery facility	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Stormwater management facilities	Water storage facility	Low	Monitor	Monitor	Monitor	No Action	No Action	Mitigate	Monitor	Mitigate	No Action	No Action
Landscaping and Vegetation												
Landscaping: parks and gardens	Recreation area	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Landscaping: natural area revegetation	Environmental protection works	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Landscaping: streets and transport corridors	Road	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Landscaping: roads and motorways	Road	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor
Landscaping: rooftop gardens	N/A	Moderate	Mitigate	Monitor	Mitigate	Monitor	Monitor	Mitigate	Monitor	Mitigate	Monitor	Monitor



Appendix C Likelihood of Occurrence Assessment

C1 Terms

Likelihood of occurrence	BC Act	EPBC Act
Present: Known resident of the study area based on site observations, recent database records (i.e. within last ten years) or expert advice.	EX: Extinct	EX: Extinct
High: Recent records of the species in the local vicinity (i.e. within the last 10 years); and/or, the study area contains high quality or critical/ preferred habitat.	CE: Critically endangered	CE: Critically endangered
Moderate: Previous records of the species in the local vicinity; and/or, the study area contains moderate quality or seasonal habitat.	E: Endangered	EN: Endangered
Low: Limited previous records of the species in the local vicinity; and/or, the study area contains habitat the species may use opportunistically or en-route to areas of preferred habitat.	V: Vulnerable	VU: Vulnerable
Negligible: No suitable habitat and/or outside species range.		CD: Conservation dependent

C2 Likelihood assessment - Birds

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
BUSH BIRDS									
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill			63	12/05/2022	BioNet	On the ground in open habitats, such as woodlands, forests, shrublands and grasslands with some trees. It is also common in agricultural lands, along watercourses, beside roads and in parks and gardens. It is found in most climatic zones, but only sparse in tropics, arid zone and east of the Great Dividing Range.	High	Recently recorded in the surrounding areas. Suitable habitat present within the study area including remnant patches of native vegetation, especially along the riparian corridors.
<i>Acanthiza lineata</i>	Striated Thornbill			79	23/02/2020	BioNet	Open forests and woodlands, mainly those dominated by eucalypts, with a well-developed understorey. Sometimes seen in parks and gardens, preferring areas that are more than ten years old. Also common in agricultural areas, particularly in areas with remnant patches or tree corridors near forests or woodlands.	High	Recently recorded in the surrounding areas. Suitable habitat present within the study area including remnant patches of native vegetation, especially along the riparian corridors.
<i>Acanthiza nana</i>	Yellow Thornbill			204	12/04/2021	BioNet	Open forests, woodlands and shrublands which are dominated by Casuarinas, Acacias or paperbarks rather than eucalypts.	High	Recently recorded in the surrounding areas. Suitable habitat present within the study area including remnant patches of native vegetation, especially along the riparian corridors.
<i>Acanthiza pusilla</i>	Brown Thornbill			87	9/02/2023	BioNet	Dense shrubby habitats including wet and dry forests, woodlands, shrublands, heathlands and rainforests, as well as along watercourses, mainly in the	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							temperate and sub-tropical zones.		
<i>Acanthiza reguloides</i>	Buff-rumped Thornbill			27	22/09/2018	BioNet	Open forests and woodlands with an open or sparse understory. It is often found in the foothills of ranges, but its range can extend from the coast to high sub-alpine areas.	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Aphelocephala leucopsis</i>	Southern Whiteface	VU		N/A	N/A	PMST	The southern whiteface is endemic to Australia and typically inhabits arid open woodlands with a shrubby or grassy understory, as well as grass plains throughout much of the continent south. Not present in Tasmania or in coastal areas of the mainland, this species prefers Acacia woodlands, particularly those dominated by mulga and drought-resistant chenopod shrub species, including saltbush and bluebush. They are considered sedentary; however, atlas records indicate that individuals may move into wetter areas outside of their normal range during drought years.	Low	No historical records in the local vicinity. Preferred habitat not present within the study area.
<i>Chthonicola sagittata</i>	Speckled Warbler		V	14	17/08/2013	BioNet	The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some	Low	Few historical records in the local vicinity. Limited suitable habitat present within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area.		
<i>Gerygone fusca</i>	Western Gerygone			3	20/04/2006	BioNet	Widespread in drier open forests and woodlands where it can be seen among coastal and inland eucalypts, mulga and other acacia scrubs.	Low	Few records in the local vicinity over 10 years ago. Potential habitat for this species occurs within the study area but prefer drier forest habitat.
<i>Gerygone mouki</i>	Brown Gerygone			32	19/06/2019	BioNet	Coastal and mountain rainforest, wet gullies and mangroves.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
<i>Gerygone olivacea</i>	White-throated Gerygone			54	20/05/2021	BioNet	Temperate forests and subtropical or tropical moist lowland forests.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Neosericornis citreogularis</i>	Yellow-throated Scrubwren			1	12/11/2008	BioNet	Rainforest gullies, generally with streams nearby.	Low	Few historical records in the local vicinity over 10 years ago. Limited suitable rainforest habitat present within the study area.
<i>Origma solitaria</i>	Rockwarbler			5	31/08/2017	BioNet	Found on Hawkesbury and other Sydney sandstone formations and nearby limestone formations. It is usually found around rocky outcrops, in steep rocky gullies and usually near water, including along sea-cliffs in coastal areas.	Low	Recently recorded in the surrounding areas, however preferred habitat absent from the study area.
<i>Pycnoptilus floccosus</i>	Pilotbird	VU		N/A	N/A	PMST	Pilotbirds are endemic to south-east Australia. Upland Pilotbirds occur above 600m in the Brindabella Ranges in the Australian Capital Territory, and in the Snowy Mountains in New South Wales and north-east	Low	Not recorded in the local vicinity. Preferred habitat (wet sclerophyll forests) not present within the study area, dense undergrowth not present within study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							Victoria (Higgins & Peter 2002; Loyn et al. 2021). Lowland Pilotbirds occur in forests from the Blue Mountains west of Newcastle, around the wetter forests of eastern Australia, to Dandenong near Melbourne (Higgins & Peter 2002; Loyn et al. 2021).		
<i>Sericornis frontalis</i>	White-browed Scrubwren			108	15/09/2022	BioNet	The White-browed Scrubwren lives in rainforest, open forest, woodland and heaths. It is usually seen in pairs, low down in the thick vegetation.	High	Recently recorded in the surrounding areas. Marginal habitat exists within the study area.
<i>Sericornis magnirostra</i>	Large-billed Scrubwren			1	2/07/2002	BioNet	The Large-billed Scrubwren lives in tropical, sub-tropical and temperate rainforests and wet sclerophyll forests, from the coastal lowlands to the slopes, ridges and tablelands of the Great Dividing Range.	Low	Few records in the local area over 10 years ago. Preferred habitat not present within the study area.
<i>Smicrornis brevirostris</i>	Weebill			104	23/02/2020	BioNet	The Weebill inhabits almost any wooded area, except for the wettest forests, but favours open eucalypt forests. It spends most of its time in the canopy, in pairs or small groups. The birds stay in the same area throughout the year.	High	Recently recorded in the surrounding areas. Suitable wooded habitat exists within the study area.
<i>Acrocephalus australis</i>	Australian Reed-Warbler	Ma		35	15/03/2022	BioNet	Prefers dense vegetation alongside water, especially thick reed beds, as well as tall crops, bamboo thickets and lantana.	Low	Recently recorded in the surrounding areas, however preferred habitat absent from the study area. The dams within the study area lack suitably dense vegetation.
<i>Alauda arvensis</i>	Eurasian Skylark			1	22/02/2006	BioNet	Cultivated grasslands and crops, wastelands and coastal dunes.	Low	Potential grassland habitat for this species occurs within the study area, however not

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
									recorded in the local vicinity in the past 10 years.
<i>Mirafrja javanica</i>	Horsfield's Bushlark	VU		1	20/04/2006	BioNet	The Horsfield's Bushlark occurs in tropical and temperate grasslands, open woodlands, cereal crops and sparse sugar cane fields. The Horsfield's Bushlark occurs from the Eyre Peninsula, South Australia, through Victoria, New South Wales, Queensland, Northern Territory and Western Australia to Shark Bay. This species is vagrant to Tasmania. It also occurs from Nigeria to Arabia, India and the Malay Archipelago.	Low	Few historical records in the local vicinity. Potential habitat exists within the study area.
<i>Burhinus grallarius</i>	Bush Stone-curlew		E	2	16/05/1996	BioNet	The Bush Stone-curlew is a ground-dwelling bird found throughout grasslands, heathlands, and the bush and are sometimes found in cemeteries and golf courses.	Low	Few historical records in the local vicinity. Limited suitable habitat present within the study area.
<i>Edolisoma tenuirostris</i>	Cicadabird			7	30/10/2017	BioNet	Cicadabirds mainly inhabit rainforests, paperbark woodlands and mangrove areas. Those in the eastern and southern range are also occasionally found in open eucalypt forests adjacent to these habitats.	Low	Historically recorded in the local vicinity, however little suitable habitat exists within the study area.
<i>Lalage sueurii</i>	White-winged Triller			12	15/10/2020	BioNet	Open woodlands and forest, tree-lined waterways in semi-arid regions and the nearby scrub. This is mainly lightly timbered country with an open shrub layer and grassy ground-cover.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Cinclosoma punctatum</i>	Spotted Quail-thrush			4	15/03/2023	BioNet	Dry open sclerophyll forests and woodlands mainly with an open or sparse understorey and sparse to no ground cover. They avoid moist or wet habitats such as coastal lowland rainforests, preferring forest dominated by ironbarks, mallee eucalypts, or Spotted Gum forests with an open understorey on dry rocky ridges.	Moderate	Recently recorded in the surrounding areas, potential habitat exists within the study area along the riparian corridor.
<i>Cisticola exilis</i>	Golden-headed Cisticola			40	25/02/2022	BioNet	Sub-coastal areas, wetlands, swamp margins, wet grasslands, rivers, and irrigated farmland. It prefers tangled vegetation close to the ground, but breeding males may be seen singing from tall weeds or other shrubs.	Low	Recently recorded in the surrounding areas, however preferred habitat absent from the study area. The Dams within the study area lack suitably dense vegetation.
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	VU	V	2	30/06/2022	BioNet	Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species. Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-	Moderate	Few records in the surrounding areas. Potential woodland habitat present on site.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species.		
<i>Cormobates leucophaea</i>	White-throated Treecreeper			74	23/09/2021	BioNet	Prefers forests, including rainforests, woodlands and timbered river areas. Rarely seen on the ground, it lives in permanent territories.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area along Cosgroves Creek.
<i>Eurystomus orientalis</i>	Dollarbird	Ma		25	3/01/2022	BioNet	Inhabits open wooded areas, normally with mature, hollow-bearing trees suitable for nesting.	Moderate	14 Hollow bearing trees have been recorded in the study area during previous surveys by ELA. Suitable nesting and foraging habitat exists within the study area.
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	Ma		54	16/02/2021	BioNet	Temperate forests, subtropical or tropical mangrove forests, subtropical or tropical moist montane forests, paddocks, orchards and gardens.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Cacomantis variolosus</i>	Brush Cuckoo			7	30/10/2017	BioNet	Wooded habitats, including rainforest, wet sclerophyll forests, paperbarks, along waterways and in more open forests and woodlands. Sometimes found in gardens.	Moderate	Recorded in the surrounding areas within the past 10 years. Potential habitat exists within the study area, especially along the riparian corridor.
<i>Centropus phasianinus</i>	Pheasant Coucal			3	20/01/2016	BioNet	Dense understorey vegetation, particularly grasses, rushes, bracken and sedges, in open forests and woodlands, and around wetlands.	Low	Recently recorded in the surrounding areas, however preferred habitat absent from the study area. This species requires denser understory vegetation.
<i>Chalcites basal</i>	Horsfield's Bronze-Cuckoo	Ma		11	25/10/2018	BioNet	Many wooded habitats (such as open and dry woodland and forest) with a range of understoreys from grasses to shrubs or heath. Sometimes	Moderate	Recently recorded in the surrounding areas. Suitable open woodland habitat exists within the study area, and species often occupies agricultural areas. Host species (e.g. superb fairy-wrens and

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							found near clearings and in recently logged or burnt forests. Found in farmland with some trees, orchards, vineyards and urban parks and gardens.		thornbills) are highly likely to occur in the area.
<i>Chalcites lucidus</i>	Shining Bronze-Cuckoo	Ma		24	24/10/2019	BioNet	A range of wooded habitats from lightly wooded to rainforest, usually in the tree canopy. It is mostly found in eucalypt areas.	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Chalcites osculans</i>	Black-eared Cuckoo	Ma		N/A	N/A	PMST	Occurs in open woodland and shrubland and is often found in vegetation along creekbeds. Occurs with their principal hosts, the Speckled Warbler and Redthroat.	Low	No historical records in the local vicinity. Limited suitable habitat present within the study area.
<i>Cuculus optatus</i>	Oriental Cuckoo, Horsfield's Cuckoo	Mi		N/A	N/A	PMST	Inhabits forests, occurring in coniferous, deciduous and mixed forest.	Low	Not recorded in the local vicinity. Limited suitable habitat present within the study area.
<i>Eudynamys orientalis</i>	Eastern Koel			35	21/12/2021	BioNet	Common Koels are found in tall forests and are common in suburban areas.	Low	Recently recorded within the study area, however, prefers tall forests.
<i>Heteroscenes pallidus</i>	Pallid Cuckoo	Ma		24	15/10/2020	BioNet	It is found in Australia, Christmas Island, Indonesia, New Zealand, and Papua New Guinea. Its natural habitats are subtropical or tropical dry forests and subtropical or tropical mangrove forests.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Scythrops novaehollandiae</i>	Channel-billed Cuckoo	Ma		26	26/12/2022	BioNet	Found in tall open forests, usually where host species occur. The Channel-billed Cuckoo lays its eggs in the nests of the Australian Magpie, <i>Gymnorhina tibicen</i> , the Pied Currawong, <i>Strepera</i>	Low	Recently recorded in the surrounding areas, however preferred habitat absent from the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							graculina and members of the crow family (Corvidae).		
<i>Dicaeum hirundinaceum</i>	Mistletoebird			44	16/02/2020	BioNet	Found wherever mistletoe grows and is important in the dispersal of this plant species.	Low	Recent records in the local vicinity, however limited suitable habitat exists within the study area. This species requires the presence of mistletoe.
<i>Lonchura castaneothorax</i>	Chestnut-breasted Mannikin			6	25/09/2011	BioNet	The Chestnut-breasted Mannikin is found in reed beds, long grasses, swamps and mangroves.	Low	Few historical records in the local vicinity. Limited suitable habitat for this species occurs within the study area.
<i>Lonchura punctulata</i>	Nutmeg Mannikin			5	19/11/2015	BioNet	Lives in reeds, grasses and especially in the crops around farms. It is also often around disturbed areas and vacant blocks.	Low	Few records in the local vicinity. Limited suitable habitat present within the study area.
<i>Neochmia modesta</i>	Plum-headed Finch	sdf	sdf	1	14/05/1996	BioNet	Dry savannah and subtropical/tropical (lowland) dry shrubland in Australia.	Low	Few historical records in the local vicinity. Preferred habitat absent from the study area.
<i>Neochmia temporalis</i>	Red-browed Finch			200	23/03/2023	BioNet	Grassy areas interspersed with dense understorey vegetation, often along creek lines.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Stagonopleura guttata</i>	Diamond Firetail	VU	V	3	27/03/2012	BioNet	Found throughout south-eastern mainland Australia. Inhabits grassy eucalypt woodlands, open forest, mallee, Natural Temperate Grassland, secondary derived grassland, riparian areas and lightly wooded farmland.	Low	Potential grassland habitat for this species occurs within the study area, however not recorded in the local vicinity in the past 10 years.
<i>Stizoptera bichenovii</i>	Double-barred Finch			92	23/03/2023	BioNet	Found in dry savannah, tropical (lowland) dry grassland and shrubland habitats.	High	Recently recorded in the local vicinity. Potential habitat exists within the study area.
<i>Taeniopygia guttata</i>	Zebra Finch			6	2/02/2021	BioNet	Zebra Finches are most commonly found in the drier areas of Australia, living year round in social flocks of up to 100	Moderate	Recorded in the local vicinity. Marginal habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							or more birds. They can be found in a variety of habitats, mainly dry wooded grasslands, bordering watercourses.		
<i>Falcunculus frontatus frontatus</i>	Crested Shrike-tit, Eastern Shrike-tit			52	9/07/2019	BioNet	The Crested Shrike-tit is found in eucalypt forests and woodlands, forested gullies and along rivers in drier areas. It can also be found in rainforests. It is sometimes seen in parks and gardens, on farms with scattered trees, and on pine plantations.	High	Recorded in the local vicinity within the last 10 years. Potential forest habitat exists within the study area.
<i>Carduelis carduelis</i>	European Goldfinch			4	19/11/2015	BioNet	Found in settled areas, farmlands and weedy areas such as roadsides, railway lands and industrial wasteland. They are often seen in gardens and parks. Particularly associated with patches of Scotch Thistle.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Cincloramphus cruralis</i>	Brown Songlark			2	9/02/2011	BioNet	Open country, including pastures, short crops, and grassy scrub.	Low	Potential habitat for this species occurs within the study area, however not recorded in the surrounding areas in the past 10 years.
<i>Cincloramphus mathewsi</i>	Rufous Songlark			1	23/02/2020	BioNet	The Rufous Songlark favours open grassland, grassy open woodland, farmed land and mulga.	Moderate	Recently recorded in the surrounding areas. Potential open woodland and farmland habitat exists within the study area.
<i>Cincloramphus timoriensis</i>	Tawny Grassbird			1	13/06/2008	BioNet	Within Australia the tawny grassbird is mainly found on "coastal lowlands in rank grasslands, sedges reeds and rushes" and bordering wetlands.	Low	Few historical records in the local vicinity. Limited suitable habitat for this species occurs within the study area.
<i>Poodytes gramineus</i>	Little Grassbird			8	25/10/2018	BioNet	Dense wetland vegetation, sedges, reeds and rank grass. It	Low	Recently recorded in the surrounding areas, however preferred habitat absent

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							also uses shrubs such as lignum, saltmarsh and low mangroves.		from the study area. The Dams within the study area lack suitably dense vegetation.
<i>Malurus cyaneus</i>	Superb Fairy-wren			424	19/07/2023	BioNet	Open eucalypt woodland forests of south-eastern Australia. It inhabits dense understorey, and is usually seen in pairs or small groups. Also adapted to urban parks and gardens, and exotic weeds such as lantana.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Malurus lamberti</i>	Variegated Fairy-wren			28	12/05/2022	BioNet	Found in forest, woodland and shrub land habitats.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Menura novaehollandiae</i>	Superb Lyrebird			3	9/05/2018	BioNet	Moist forests. It is a ground-dwelling species in moist forests, but roosts in trees at night.	Low	Preferred moist forest habitat is absent from the study area.
<i>Merops ornatus</i>	Rainbow Bee-eater	Ma		11	8/02/2023	BioNet	Widespread within Australia, although southern populations migrate north from February and return in September. Often occurs in open forest, woodlands and shrublands near water. May also occur in wooded farmland, quarries and orchards.	Moderate	Recently recorded in the surrounding areas. Potential open forest/wooded farmland habitat exists within the study area.
<i>Grallina cyanoleuca</i>	Magpie-lark			560	11/07/2023	BioNet	In almost any habitat except rainforests and the driest deserts and are familiar urban birds.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Monarcha melanopsis</i>	Black-faced Monarch	Ma, Mi		4	29/10/2017	BioNet	Inhabits rainforest, open eucalypt forests, dry sclerophyll forests and woodlands, gullies in mountain areas or coastal foothills, parks and gardens.	Low	Recently recorded in the surrounding areas, however preferred habitat absent from the study area.
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Ma, Mi		8	16/02/2020	BioNet	Prefers tall wetter Eucalypt-dominated forests, especially near wetlands, watercourses, and heavily-vegetated gullies.	Low	Recently recorded in the surrounding areas, however preferred habitat absent from the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Myiagra inquieta</i>	Restless Flycatcher			82	11/02/2021	BioNet	Found in open forests and woodlands and is frequently seen in farmland.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Myiagra rubecula</i>	Leaden Flycatcher			19	30/10/2017	BioNet	Found in tall and medium open forests, mainly in coastal areas, preferring drier habitats than the Satin Flycatcher.	Low	Recently recorded in the surrounding areas, however limited suitable habitat is present within the study area.
<i>Symposiachrus trivirgatus</i>	Spectacled Monarch	Ma, Mi		N/A	N/A	PMST	Listed marine migratory species. The Spectacled Monarch is found in coastal north-eastern and eastern Australia, including coastal islands, from Cape York, Queensland to Port Stephens, New South Wales. It is much less common in the south. It is also found in Papua New Guinea, the Moluccas and Timor. The Spectacled Monarch prefers thick understorey in rainforests, wet gullies and waterside vegetation, as well as mangroves.	Low	No historical records in the local vicinity. Preferred habitat not present within the study area.
<i>Anthus novaeseelandiae</i>	Australian Pipit			27	23/03/2023	BioNet	Open country, in a range of habitat types from saltmarshes to dry shrublands and open woodland clearings.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Motacilla flava</i>	Yellow Wagtail	Ma, Mi		N/A	N/A	PMST	Non breeding migratory species. Occurs in grassland habitat subject to inundation.	Negligible	No historical records in the local vicinity. Preferred habitat not present within the study area.
<i>Daphoenositta chrysoptera</i>	Varied Sittella		V	59	15/10/2020	BioNet	Distribution in NSW is nearly continuous from the coast to the far west. The Varied Sittella's population size in NSW is uncertain but is believed to have undergone a moderate reduction over the past several decades.	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.		
<i>Oriolus sagittatus</i>	Olive-backed Oriole			95	23/03/2023	BioNet	Forests, woodlands and rainforests, as well as well-treed urban areas, particularly parks and golf courses.	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Sphecotheres vieilloti</i>	Australasian Figbird			8	17/12/2022	BioNet	Rainforests and wet sclerophyll forests, but is often found in urban parks and gardens, particularly those with figs and other fruit-producing trees	Low	Recently recorded in the surrounding areas, however limited suitable foraging habitat present within the study area.
<i>Colluricincla harmonica</i>	Grey Shrike-thrush			191	15/09/2022	BioNet	Found in forests and woodlands. It is a common and familiar bird, although some decrease in numbers has been noted around human habitation, particularly in the west of its range.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Pachycephala pectoralis</i>	Golden Whistler			149	11/12/2020	BioNet	Found in almost any wooded habitat, from rainforest to mallee, but prefers the denser areas. Occasionally it visits parks and orchards.	High	Recently recorded in the surrounding areas. Suitable woodland habitat exists within the study area, especially along the riparian corridor.
<i>Pachycephala rufiventris</i>	Rufous Whistler			125	15/09/2022	BioNet	Forests, woodlands and shrublands, with a shrubby understorey. Is also found in gardens and farmland with some trees, and in remnant bushland patches.	High	Recently recorded in the surrounding areas. Suitable woodland habitat exists within the study area, especially along the riparian corridor.
<i>Pardalotus punctatus</i>	Spotted Pardalote			194	11/12/2020	BioNet	The Spotted Pardalote is mostly found in eucalypt forests and woodlands but occurs in parks	High	Recently recorded in the surrounding areas. Suitable woodland habitat exists

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							and gardens with well-established eucalypt canopy.		within the study area, especially along the riparian corridor.
<i>Pardalotus striatus</i>	Striated Pardalote			88	15/09/2022	BioNet	Found in almost any habitat with trees or shrubs, but favour eucalypt forests and woodlands.	High	Recently recorded in the surrounding areas. Suitable woodland habitat exists within the study area, especially along the riparian corridor.
<i>Passer domesticus</i>	House Sparrow			105	14/03/2021	BioNet	Occurs in and around human habitation, as well as cultivated areas and some wooded country.	High	Numerous records in the surrounding areas. Suitable habitat exists within the study area.
<i>Passer montanus</i>	Eurasian Tree Sparrow			3	14/09/2020	BioNet	Inhabits farms, lightly wooded areas (especially with hedgerows and bushes), villages, parks with ornamental plantings, and reedbeds along lakeshores. They nest in crevices in old buildings, light fixtures, fence posts.	Moderate	Some recent records in the surrounding areas. Suitable habitat exists within the study area.
<i>Eopsaltria australis</i>	Eastern Yellow Robin			264	19/07/2023	BioNet	Wide range of habitats, from dry woodlands to rainforests. They are also common in parks and gardens.	High	Recently recorded in the surrounding areas. Suitable woodland habitat exists within the study area.
<i>Melanodryas cucullata cucullata</i>	South-eastern Hooded Robin	EN	V	2	9/11/2004	BioNet	Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.	Low	Few records in the local vicinity over 10 years ago. Preferred habitat not present within the study area.
<i>Microeca fascinans</i>	Jacky Winter			68	26/11/2020	BioNet	Jacky Winters prefer open woodland with an open shrub layer and a lot of bare ground. They are often seen in farmland and parks	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Petroica boodang</i>	Scarlet Robin		V	5	25/06/2013	BioNet	Open forests and woodlands. During winter, it will visit more open habitats such as grasslands and will be seen in farmland and urban parks and gardens at this time.	Low	Potential habitat for this species occurs within the study area, however not recorded in the surrounding areas in the past 10 years.
<i>Petroica phoenicea</i>	Flame Robin	Ma	V	5	13/01/2004	BioNet	Prefers clearings or areas with open understoreys. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. The groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense.	Low	Potential habitat for this species occurs within the study area, however not recorded in the surrounding areas in the past 10 years.
<i>Petroica rosea</i>	Rose Robin			51	21/10/2019	BioNet	Prefers wet forest and rainforest habitats during spring and summer, moving into drier, more open habitats during autumn and winter.	Moderate	Historically recorded in the surrounding areas. Potential habitat for this species occurs within the study area.
<i>Psophodes olivaceus</i>	Eastern Whipbird			124	20/09/2021	BioNet	Wet habitats, including rainforest, eucalypt forest and dense scrub near watercourses, in dense vegetation near the ground.	Moderate	Numerous records in the surrounding areas. Marginal habitat exists within the study area along the riparian corridor.
<i>Ailuroedus crassirostris</i>	Green Catbird			1	7/10/2021	BioNet	Temperate and sub-tropical rainforest and paperbarks, and sometimes adjacent eucalypt forest.	Low	Limited suitable habitat exists within the study area. Few records in the local vicinity.
<i>Ptilonorhynchus violaceus</i>	Satin Bowerbird			50	16/01/2023	BioNet	Wetter forests and woodlands, and nearby open areas. Common in rainforest and tall wet sclerophyll forest.	Low	Recorded recently in the local vicinity, however preferred habitat not present within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul			119	20/09/2021	BioNet	Bulbuls are common in urban areas, where they inhabit parks, gardens and along creeks.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Rhipidura albiscapa</i>	Grey Fantail			285	23/03/2023	BioNet	Most treed habitats and urban parks.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Rhipidura leucophrys</i>	Willie Wagtail			325	23/03/2023	BioNet	A wide variety of habitats, but avoids densely forested areas such as rainforest. It prefers semi-open woodland or grassland with scattered trees, often near wetlands or bodies of water.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Rhipidura rufifrons</i>	Rufous Fantail	Ma, Mi		6	3/02/2016	BioNet	Found in south and central Victoria in wet sclerophyll forests, subtropical and temperate rainforests. It sometimes inhabits drier sclerophyll forests and woodlands.	Low	Preferred habitat not present within the study area.
<i>Acridotheres tristis</i>	Common Myna			412	24/04/2023	BioNet	Open woodland, cultivation and around habitation.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Sturnus vulgaris</i>	Common Starling			181	11/12/2022	BioNet	Once a common bird of European deciduous woodlands (now in more rural and urban areas).	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Turdus merula</i>	Eurasian Blackbird			154	24/03/2023	BioNet	The Common Blackbird is most often found in urban areas and surrounding localities but has successfully moved into bushland habitats. It is often seen in orchards, vineyards and gardens, as well as along roadsides and in parks.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Zosterops lateralis</i>	Silvereye	Ma		183	19/07/2023	BioNet	Silvereyes may occur in almost any wooded habitat, especially commercial orchards and urban	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							parks and gardens. Urban, Woodland, Forest.		
CORVIDS									
<i>Cracticus nigrogularis</i>	Pied Butcherbird			38	28/01/2023	BioNet	Drier forests and woodlands and often approaches parks and houses.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Cracticus torquatus</i>	Grey Butcherbird			293	8/08/2023	BioNet	Found in a range of wooded habitats, including suburban areas. In inland areas, the birds tend to favour the denser forests.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Gymnorhina tibicen</i>	Australian Magpie			705	8/08/2023	BioNet	Found wherever there is a combination of trees and adjacent open areas, including parks and playing fields. They are absent only from the densest forests and arid deserts. Heathland, Woodland, Coastal, Island, Urban, Grassland.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Strepera graculina</i>	Pied Currawong			230	22/09/2022	BioNet	Wet and dry sclerophyll forests, rural and semi-urban environments throughout eastern Australia.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Strepera versicolor</i>	Grey Currawong			8	22/10/2021	BioNet	The Grey Currawong inhabits a wide range of habitats from the coast to the semi-desert, including forests, woodlands, mallee, coastal and other heaths. Also found in remnant vegetation on roadsides and farms, in orchards, and in suburban areas.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike			233	11/07/2023	BioNet	Widespread and common. Outside the breeding season, large family groups and flocks of up to a hundred birds form. The Black-faced Cuckoo-shrike is	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							found in almost any wooded habitat, with the exception of rainforests. It is also familiar in many suburbs, where birds are often seen perched on overhead wires or television aerials.		
<i>Coracina papuensis</i>	White-bellied Cuckoo-shrike	Ma		3	19/09/2017	BioNet	Savanna, woodlands, Eucalyptus forests, riparian forest, rainforest, littoral forest, river redgum bushland, mangroves, open grasslands, coconut plantations, farmlands, and suburban gardens.	Moderate	Some recent records in the local vicinity. Suitable habitat exists within the study area.
<i>Corcorax melanorhamphos</i>	White-winged Chough			74	21/03/2023	BioNet	Found in open forests and woodlands. They tend to prefer the wetter areas, with lots of leaf-litter, for feeding, and available mud for nest building.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Corvus coronoides</i>	Australian Raven			516	8/08/2023	BioNet	Found in all habitat types including: Wetland, Coastal, Heathland, Forest, Woodland, Rainforest. Not found in the more arid areas of Western Australia and wet tropics of Queensland.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Corvus mellori</i>	Little Raven			5	5/08/2019	BioNet	Scrub, agricultural areas, grazing pasture, woodlands to treeless plains, coasts, and suburbs.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
GAME FOWL									
<i>Alectura lathami</i>	Australian Brush-turkey			3	20/05/2021	BioNet	Humid forests along the eastern seaboard and inland to the wetter ranges, though it is most often seen in rainforest and neighbouring eucalypt forest areas.	Low	Some recent records in the local vicinity, however preferred humid forest habitat absent from the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Coturnix pectoralis</i>	Stubble Quail	Ma		2	26/06/2002	BioNet	Lives in the grasslands and shrublands of temperate regions, usually in well-watered areas, but will move into arid areas after floods or rain. It prefers tall, dense vegetation, especially grasslands, but will use lower vegetation.	Low	Few historical records in the local vicinity. Limited suitable grassland habitat occurs within the study area. This species prefers denser vegetation.
<i>Gallus gallus</i>	Red Junglefowl			7	23/09/2021	BioNet	Red junglefowl prefer disturbed habitats and edges, both natural and human-created.	Low	While recent records exist in the local vicinity, limited suitable habitat is available within the study area.
<i>Pavo cristatus</i>	Indian Peafowl			3	15/01/2022	BioNet	It is found in moist and dry-deciduous forests but can adapt to live in cultivated regions and around human habitations and is usually found where water is available.	Low	While recent records exist in the local vicinity, limited suitable habitat is available within the study area.
<i>Synoicus ypsilophora</i>	Brown Quail			25	26/12/2021	BioNet	Agricultural areas, wet grasslands, shrublands, spinifex savannah, and freshwater wetlands.	Moderate	Recently recorded in the local vicinity. Potential habitat exists within the study area.
<i>Turnix varius</i>	Painted Button-quail	EN		11	6/05/2018	BioNet	Temperate and eastern tropical forests and woodlands form the habitats of this species. They appear to prefer closed canopies with some understory and deep leaf litter on the ground.	Moderate	Recently recorded in the local vicinity. Potential habitat exists within the study area.
GULLS									
<i>Chroicocephalus novaehollandiae</i>	Silver Gull	Ma		5	13/06/2019	BioNet	The Silver Gull is found at virtually any watered habitat and is rarely seen far from land. Birds flock in high numbers around fishing boats as these leave or return to the coast, but seldom venture far out to sea.	Low	Some recent records in the local vicinity. Species may be attracted to the waterbodies/dams on site.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
HONEYEATERS									
<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill			50	15/09/2022	BioNet	Heath, forest and woodland.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Anthochaera carunculata</i>	Red Wattlebird			125	22/09/2022	BioNet	Forests, woodlands and gardens.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Anthochaera chrysoptera</i>	Little Wattlebird			29	9/03/2021	BioNet	Prefers the drier and often scrubby, habitats, such as banksia heaths, forests, woodlands and urban parks and gardens.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	14	9/12/2019	BioNet	Inland slopes of south-east Australia, and less frequently in coastal areas. In NSW, most records are from the North-West Plains, North-West and South-West Slopes, Northern Tablelands, Central Tablelands and Southern Tablelands regions; also recorded in the Central Coast and Hunter Valley regions. Eucalypt woodland and open forest, wooded farmland and urban areas with mature eucalypts, and riparian forests of <i>Casuarina cunninghamiana</i> (River Oak).	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Caligavis chrysops</i>	Yellow-faced Honeyeater			181	26/11/2020	BioNet	Found in open forests and woodlands, often near water and wetlands. It uses ridges, sand dunes, valleys and rivers when migrating. It is often found in urban areas, including in remnant bushland, as well as parks and gardens.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Entomyzon cyanotis</i>	Blue-faced Honeyeater			4	17/11/2021	BioNet	Open forests, woodlands, mangroves and coastal heathlands close to water in tropical, sub-tropical and wetter temperate zones.	Moderate	Recently recorded in the local vicinity. Potential habitat exists within the study area.
<i>Grantiella picta</i>	Painted Honeyeater	VU	V	N/A	N/A	BioNet	Prefers forest/woodland, riparian woodlands of black box and river red gum, box-ironbark-yellow gum woodlands with mistletoe a high number of mature trees. Also occurs in acacia-dominated woodlands, paperbarks, casuarinas, callitris, and trees on farmland or gardens.	Low	Not recorded in the local vicinity. limited suitable habitat present within the study area.
<i>Lichenostomus melanops</i>	Yellow-tufted Honeyeater	CE		4	9/05/2018	BioNet	Found in open dry forests and woodlands dominated by eucalypts, and often near water. They sometimes visit gardens. The endangered Helmeted Honeyeater (subspecies <i>L. m. cassidix</i>) is confined to narrow patches of tall forest along streams or in swamps.	Low	Few recent records in the local vicinity. Marginal habitat present within the study area.
<i>Manorina melanocephala</i>	Noisy Miner			709	8/08/2023	BioNet	Found in woodlands and open forests. They have also become well adapted to suburban situations and are a common sight in parks and gardens.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Manorina melanophrys</i>	Bell Miner			235	24/04/2023	BioNet	Found mainly in open eucalypt forests and woodlands with a dense shrubby understorey.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Meliphaga lewinii</i>	Lewin's Honeyeater			36	20/05/2021	BioNet	Prefers the wetter parts of eastern Australia, from northern Queensland to central Victoria. Found in both rainforest and wet	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							sclerophyll forest, and often wanders into more open woodland. It is a common bird, and its call is often heard in these areas.		
<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater			26	24/10/2019	BioNet	Prefers open eucalypt forests and woodlands in all but the most arid zones and from the coast to subalpine areas. It is sometimes seen in parks and gardens.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)		V	1	18/08/2013	BioNet	Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (<i>Eucalyptus sideroxylon</i>), White Box (<i>E. albens</i>), Inland Grey Box (<i>E. microcarpa</i>), Yellow Box (<i>E. melliodora</i>), Blakely's Red Gum (<i>E. blakelyi</i>) and Forest Red Gum (<i>E. tereticornis</i>). Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat) and tea-trees	Low	Few historical records in the local vicinity. Limited suitable habitat present within the study area.
<i>Melithreptus lunatus</i>	White-naped Honeyeater			28	30/09/2018	BioNet	Found in open forests and woodlands, mainly in the temperate zone, and rarely in drier areas. Found in urban gardens, commonly visiting nectar feeders in areas near forests.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
<i>Myzomela sanguinolenta</i>	Scarlet Honeyeater			47	20/09/2021	BioNet	Open forests and woodlands with a sparse understorey, especially around wetlands, and sometimes in rainforests. It can be seen in	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							urban areas in flowering plants of streets, parks and gardens.		
<i>Nesoptilotis leucotis</i>	White-eared Honeyeater			10	9/05/2018	BioNet	Forests, woodlands, heathlands, mallee and dry inland scrublands. A eucalyptus canopy, rough bark and a shrub layer are the most important requirements for white-eared honeyeaters.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
<i>Philemon corniculatus</i>	Noisy Friarbird			94	7/10/2021	BioNet	Dry forests and eucalypt woodlands, as well as coastal scrub, heathlands and around wetlands and wet forests, and is found in most climate zones, extending into arid areas along rivers.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
<i>Phylidonyris niger</i>	White-cheeked Honeyeater			4	15/10/2020	BioNet	Found in moist heathlands, as well as around wetlands and in forests or woodlands with a heath understorey. Found in both temperate and subtropical zones.	Low	Few recent records in the local vicinity. Preferred habitat not present within the study area. This species prefers woodland with a healthy understorey.
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater			11	18/12/2022	BioNet	Common in heath, forests, woodland and gardens, mainly where grevilleas and banksias are found. It is inquisitive and approaches humans. It also mixes with other types of honeyeaters.	High	Recently recorded in the local vicinity. Suitable woodland habitat exists within the study area.
<i>Ptilotula fusca</i>	Fuscous Honeyeater			13	30/09/2018	BioNet	Open dry eucalypt forests and woodlands with shrubby or open grassy understorey. Sometimes found on farms with remnant forest patches and sometimes seen in gardens.	High	Recently recorded in the local vicinity. Suitable woodland habitat exists within the study area.
<i>Ptilotula penicillata</i>	White-plumed Honeyeater			67	15/10/2020	BioNet	Found in open forests and woodlands, often near water and wetlands. It is scarce or absent in	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							arid regions unless water artificially supplied (e.g. water troughs for stock). Its overall distribution is linked to River Red Gums.		
KINGFISHERS									
<i>Ceyx azureus</i>	Azure Kingfisher	EN		31	30/01/2023	BioNet	Never far from water, preferring freshwater rivers and creeks as well as billabongs, lakes, swamps and dams, usually in shady overhanging vegetation. It is sometimes seen in parks on rivers, as well as duck or goldfish ponds in urban areas.	Moderate	Recently recorded in the surrounding areas. Suitable wetland habitat exists within the study area.
<i>Dacelo novaeguineae</i>	Laughing Kookaburra			221	24/04/2023	BioNet	Forests, open woodlands, or on the edges of plains.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Todiramphus macleayi</i>	Forest Kingfisher	Ma		1	6/01/2010	BioNet	Commonly found in open sclerophyll forest with a patchy or sparse understorey. They favour watercourse vegetation and the margins of swamps and billabongs. They may also be found in mangroves, cane fields, farmlands and beaches, however they require forest and woodland for breeding.	Low	Few records in the local vicinity over 10 years ago. Potential suitable habitat within the study area along the creek line.
<i>Todiramphus sanctus</i>	Sacred Kingfisher	Ma		68	9/03/2023	BioNet	Inhabits woodlands, mangroves and paperbark forests, tall open eucalypt forest and melaleuca forest.	High	Recently recorded in the surrounding areas. Suitable woodland habitat exists within the study area.
LARGE FLIGHTLESS BIRDS									
<i>Dromaius novaehollandiae</i>	Emu			8	17/02/2017	BioNet	Emus live in various habitats across Australia both inland and near the coast. They are most	Low	Few recent records in the local vicinity, limited suitable habitat within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							common in areas of savannah woodland and sclerophyll forest, and least common in heavily populated districts and arid areas.		
OWLS									
<i>Aegotheles cristatus</i>	Australian Owlet-nightjar			14	19/01/2023	BioNet	Any tree-studded area where there are suitable hollows, although open areas are also visited. During the day it roosts in hollow branches and tree trunks. The birds form permanent bonds, and pairs occupy the same territory throughout the year.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area. Hollow bearing trees are present within the study area.
<i>Eurostopodus mystacalis</i>	White-throated Nightjar	Ma		1	29/10/2017	BioNet	Variety of habitats but is most commonly found in dry low-elevation forests. They prefer to nest and roost in dry sclerophyll woodlands with sparse and discontinuous understory.	Moderate	Few recent records in the local vicinity. Suitable habitat exists within the study area. Hollow bearing trees are present within the study area.
<i>Podargus strigoides</i>	Tawny Frogmouth			266	13/05/2023	BioNet	Forests and woodlands, scrub and heathland vegetation, savannahs, and urban areas. Rarely seen in heavy rainforests and treeless deserts. Seen in large numbers in areas populated with many river gums and casuarinas and can be found along river courses if these areas are timbered.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area. Hollow bearing trees are present within the study area.
<i>Ninox connivens</i>	Barking Owl		V	2	30/10/2017	BioNet	Open woodlands and the edges of forests, often adjacent to farmland. They are less likely to use the interior of forested habitat.	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area. Hollow bearing trees are present within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Ninox novaeseelandiae</i>	Southern Boobook	Ma		26	3/05/2021	BioNet	A variety of habitats from dense forest to open desert, including woodlands, rural, heath and urban habitats.	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area. Hollow bearing trees are present within the study area.
<i>Ninox strenua</i>	Powerful Owl		V	4	29/04/2014	BioNet	Prefers tall open continuous sclerophyll forest and woodlands with a dense understory but will also occur in more fragmented landscapes particularly if suitable adjacent habitat is present. Requires large, hollow-bearing eucalypts for breeding.	Low	Few historical records in the local vicinity. Limited suitable habitat present within the study area. This species prefers tall open continuous sclerophyll forest.
<i>Tyto javanica</i>	Eastern Barn Owl			39	19/05/2023	BioNet	Open, often arid (dry) country, such as farms, heath and lightly-wooded forest.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area. Hollow bearing trees are present within the study area.
<i>Tyto novaehollandiae</i>	Masked Owl		V	10	15/05/2017	BioNet	Timbered areas, often with a shrub understorey. They roost and nest in large tree hollows near foraging areas.	Moderate	Few recent records in the local vicinity. Suitable habitat exists within the study area. Hollow bearing trees are present within the study area.
<i>Tyto tenebricosa</i>	Sooty Owl		V	2	31/08/2017	BioNet	Occurs in rainforest, including dry rainforest, subtropical and warm temperate rainforest, as well as moist eucalypt forests.	Moderate	Few recent records in the local vicinity. Suitable habitat exists within the study area. Hollow bearing trees are present within the study area.
PARROTS									
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo			286	7/06/2023	BioNet	A variety of timbered habitats and are common around human settlements. The birds stay in the same area all year round.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Cacatua sanguinea</i>	Little Corella			106	5/06/2023	BioNet	Often form large flocks, especially along watercourses and where seeding grasses are found.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Cacatua tenuirostris</i>	Long-billed Corella			71	24/12/2022	BioNet	Grassy woodlands and grasslands, including pasture and crops, as well as parks in urban areas.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	EN	V	5	29/12/2015	BioNet	Gang-gang Cockatoos primarily occur within the temperate eucalypt forests and woodlands of mainland south-east Australia. The species is an altitudinal migrant. During summer months, Gang-gang Cockatoos primarily inhabit mature, wet sclerophyll forests, typically dominated by eucalypts. During winter months, Gang-gang Cockatoos tend to range beyond montane forests to inhabit woodland assemblages at lower, drier altitudes	Low	Suitable habitat (tall mountain forest) not within the study area.
<i>Calyptrorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	VU	V	8	30/12/2019	BioNet	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (<i>Allocasuarina littoralis</i>) and Forest Sheoak (<i>A. torulosa</i>) are important foods.	Low	This species does not forage over significant areas of cleared land, and are unlikely to utilise the study area for foraging.
<i>Eolophus roseicapilla</i>	Galah			377	27/04/2023	BioNet	Found in large flocks in a variety of timbered habitats, usually near water.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Nymphicus hollandicus</i>	Cockatiel			7	27/07/2022	BioNet	The Cockatiel is seen in pairs or small flocks, in most types of open country, usually near water. It is common throughout its range, especially in the north and the more arid inland areas.	Moderate	Potential habitat exists within the study area. Recorded in the local vicinity.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Zanda funerea</i>	Yellow-tailed Black-Cockatoo			31	9/02/2023	BioNet	Native temperate forests, while also being ubiquitous in pine plantations, and occasionally in urban areas, as long as there is a plentiful food supply.	Moderate	Potential habitat exists within the study area. Recorded in the local vicinity.
<i>Alisterus scapularis</i>	Australian King-Parrot			63	15/06/2023	BioNet	Rainforests or wet sclerophyll forests.	Moderate	Potential habitat exists within the study area. Recorded in the local vicinity.
<i>Glossopsitta concinna</i>	Musk Lorikeet			11	11/07/2023	BioNet	Found in tall, open, dry forest and woodlands, dominated by eucalypts and are usually found in the canopy. They are also seen in suburban areas, parks and street trees. They roost or loaf in tall trees away from their feeding sites.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Glossopsitta pusilla</i>	Little Lorikeet		V	4	26/02/2019	BioNet	Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species.	Moderate	Few recent records in the local vicinity. Suitable habitat exists within the study area.
<i>Lathamus discolor</i>	Swift Parrot	CE, Ma	E	30	4/09/2020	BioNet	Non-breeding winter migrant. Prefers dry forest and woodland, particularly box-ironbark forest in central and NE Victoria, and eucalyptus. within greater Melbourne. Feeds on nectar and lerps of winter flowering eucalyptus including Grey Box	Moderate	Recently recorded in the surrounding areas. Suitable foraging habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							(<i>Eucalyptus microcarpa</i>), Red Ironbark (<i>Eucalyptus tricarpa</i>), Mugga Ironbark (<i>Eucalyptus sideroxylon</i>) (far north-east Victoria), Yellow Gum (<i>Eucalyptus leucoxylon</i>) and White Box (<i>Eucalyptus albens</i>).		
<i>Melopsittacus undulatus</i>	Budgerigar			115	5/07/2021	BioNet	Budgerigars are nomadic and large flocks of birds can be seen in most open habitat types, but seldom far from water.	Moderate	Suitable habitat in study area, such as within the riparian corridors.
<i>Neophema pulchella</i>	Turquoise Parrot		V	2	8/12/2010	BioNet	The Turquoise Parrot favours open, grassy woodland with dead trees near permanent water. It also inhabits coastal heaths and pastures with exotic grasses and weeds, along roadsides and in orchards.	Low	Potential habitat for this species occurs within the study area, however not recorded in the surrounding areas in the past 10 years.
<i>Platycercus elegans</i>	Crimson Rosella			88	22/04/2023	BioNet	The Crimson Rosella is commonly associated with tall eucalypt and wetter forests.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Platycercus eximius</i>	Eastern Rosella			244	21/03/2023	BioNet	Found in open woodlands, grasslands, farmlands and remnant bushland. Often found in urban habitats such as parks, gardens and golf courses.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Psephotus haematonotus</i>	Red-rumped Parrot			257	17/06/2023	BioNet	Found in open grasslands or lightly timbered plains, as well as along watercourses and in mallee farmlands with access to water.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Trichoglossus chlorolepidotus</i>	Scaly-breasted Lorikeet			8	24/06/2020	BioNet	Lives in lowland eucalypt forests and woodlands but also occurs in heathlands and well-treed urban areas, including parks and gardens.	Moderate	Potential habitat exists within the study area. Recorded in the local vicinity.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Trichoglossus haematodus</i>	Rainbow Lorikeet			676	23/06/2023	BioNet	The Rainbow Lorikeet is found in a wide range of treed habitats including rainforest and woodlands, as well as in well-treed urban areas.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Neophema chrysostoma</i>	Blue-winged Parrot	VU, Ma	V	N/A	N/A	PMST	Occurs in range of habitats from coastal, sub-coastal, and inland areas, through to semi-arid zones. Throughout their range they favour grasslands and grassy woodlands, and are found near wetlands both by the coast and in semi-arid zones. Can also be found in altered environments like airfields, golf courses, and paddocks	Low	Not recorded in the local vicinity. Potential habitat present within the study area.
PIGEONS									
<i>Columba livia</i>	Rock Dove			99	23/03/2023	BioNet	Prefers open agricultural areas.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Geopelia cuneata</i>	Diamond Dove			2	14/03/2023	BioNet	Diamond Dove gathers in small parties or flocks in dry open savanna in mulga areas often among spinifex or grasses. They are also often in open riparian woodland (beside waterways).	Moderate	Few records in the surrounding areas. Limited suitable habitat present within the study area, other than within the riparian corridor.
<i>Geopelia humeralis</i>	Bar-shouldered Dove			46	15/09/2022	BioNet	Woodland with a grassy understorey and in nearby open areas, usually near water. They are also often found in mangroves and are frequently seen in urban areas.	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Geopelia striata</i>	Peaceful Dove			24	23/09/2021	BioNet	Open dry woodland with a grassy understorey and the edges of rainforest. In drier areas, they are	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							often in woodland beside rivers, pandanus and vine thickets. They feed on the ground and roost in trees.		
<i>Leucosarcia melanoleuca</i>	Wonga Pigeon			26	11/04/2022	BioNet	Dense coastal forests, rainforests and scrubs. It is often seen in clearings near forests.	Low	While recently recorded in the local vicinity, preferred coastal habitat not within the study area.
<i>Lopholaimus antarcticus</i>	Topknot Pigeon			5	18/03/2023	BioNet	The Topknot Pigeon is found in rainforests and nearby wet forests and woodlands, especially along moist sheltered gullies. It can also be found in drier forests and will fly across open areas to feed in rainforests or disturbed areas such as remnant forest patches, cleared farmlands, exotic trees and shrubs, particularly Camphor Laurel and privet. It is very rarely seen in suburban areas, but will forage on the outskirts of urban areas if Camphor Laurel and other fruits are available.	Low	While recently recorded in the local vicinity, limited suitable habitat exists within the study area.
<i>Macropygia phasianella</i>	Brown Cuckoo-Dove			10	3/12/2019	BioNet	This is a pigeon of rainforests and wet sclerophyll forest, particularly at the forest edges, along creeks and rivers. Often found in regrowth along roads, in clearings and in weedy areas like lantana.	Low	While recently recorded in the local vicinity, limited suitable habitat exists within the study area.
<i>Ocyphaps lophotes</i>	Crested Pigeon			296	21/03/2023	BioNet	The Crested Pigeon is found in lightly wooded grasslands in both rural and urban areas. It is usually found in the vicinity of water, as it has to drink every day, and is	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							absent from the denser forests. Woodland, Urban, Grassland.		
<i>Phaps chalcoptera</i>	Common Bronzewing			31	7/03/2021	BioNet	Common Bronzewing are found in almost every habitat type, with the exception of the most barren areas and densest rainforests. Common Bronzewing are normally seen alone, in pairs or in small flocks, and are rarely found far from water.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Phaps elegans</i>	Brush Bronzewing			1	29/05/2001	BioNet	The Brush Bronzewing inhabits areas with a dense shrub layer, and so can occur in the grassy heathlands near the coast and behind sand dunes, or further inland in wet or dry forests or woodlands including dense mallee.	Low	Few historical records in the local vicinity. Limited suitable habitat present within the study area.
<i>Spilopelia chinensis</i>	Spotted Turtle-Dove			269	19/05/2023	BioNet	A range of habitats including woodland, scrub, farmland and habitation. Found in streets, parks, gardens, agricultural areas, and tropical scrubs in diverse locations throughout eastern Australia and around the cities and major towns across southern Australia.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
RAILS									
<i>Fulica atra</i>	Eurasian Coot			74	14/06/2023	BioNet	Common in suitably vegetated lagoons and swamps. Birds are less common in the north and in the drier regions.	Present	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Gallinula tenebrosa</i>	Dusky Moorhen			148	2/06/2023	BioNet	Wetland habitats, with a preference for freshwater marshes and swamps, and are	Present	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							rarely found far from these areas except when foraging in nearby vegetation.		
<i>Hypotaenidia philippensis</i>	Buff-banded Rail	Ma		1	26/05/1991	BioNet	Seen singly or in pairs in dense reeds and vegetation bordering many types of wetlands or crops. It makes widespread use of artificial wetlands like sewage ponds and drainage channels.	Low	Few records in the local vicinity, over 10 years ago. Some potential habitat does exist within the study area.
<i>Porphyrio porphyrio</i>	Purple Swamphen	Ma		156	2/06/2023	BioNet	Found around freshwater swamps, streams and marshes.	Present	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Porzana pusilla</i>	Baillon's Crake	Ma		2	25/10/2018	BioNet	Wetland and swamp areas with dense vegetation.	Low	Few records in the local vicinity, this species prefers wetland areas of denser vegetation
<i>Porzana tabuensis</i>	Spotless Crake	Ma		1	19/09/2017	BioNet	Spotless crakes are freshwater wetland birds. Their preferred habitat is wetland and swamp areas that contain dense vegetation in which to build their nests from.	Low	Few records in the local vicinity, this species prefers wetland areas of denser vegetation
RAPTORS									
<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk			13	6/01/2023	BioNet	The Collared Sparrowhawk is found in woodlands and forests of tropical and temperate Australia.	Moderate	Recently recorded in the surrounding areas. Potential foraging habitat exists within the study area.
<i>Accipiter fasciatus</i>	Brown Goshawk	Ma		40	22/11/2023	BioNet	Timbered habitats. Eucalypt forests and woodlands, as well as farmland and urban areas.	Moderate	Recently recorded in the surrounding areas. The species may fly across the study area in passing to forage.
<i>Accipiter novaehollandiae</i>	Grey Goshawk			10	8/04/2022	BioNet	Most forest types, especially tall closed forests, including rainforests.	Moderate	Recently recorded in the surrounding areas. The species may fly across the study area in passing to forage.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Aquila audax</i>	Wedge-tailed Eagle			24	11/01/2023	BioNet	From sea level to alpine regions in the mountains, but prefers wooded and forested land and open country, generally avoiding rainforest and coastal heaths. Wedge-tailed Eagles build their nest in a prominent location with a good view of the surrounding countryside. It may be built in either a live or dead tree, but usually the tallest one in the territory.	Moderate	Recently recorded in the surrounding areas. The species may fly across the study area in passing to forage.
<i>Aviceda subcristata</i>	Pacific Baza			9	30/09/2018	BioNet	Tropical and subtropical woodlands and forest and sometimes grasslands, farmlands and urban areas. They prefer well-watered areas.	Low	Few records in the local vicinity, potential foraging habitat exists within the study area.
<i>Circus approximans</i>	Swamp Harrier	Ma		6	24/10/2019	BioNet	Terrestrial wetlands and open country of tropical and temperate Australia and New Zealand. It is mainly seen in fresh or salt wetlands, often in deep swamps with emergent reeds and over open water.	Low	Few records in the local vicinity. Marginal foraging habitat exists within the study area.
<i>Circus assimilis</i>	Spotted Harrier		V	1	19/09/2017	BioNet	Open grasslands, open woodland including acacia and mallee, inland riparian woodland, grassland and shrubland. It can be most commonly found in native grassland however it is also seen in agricultural land and inland wetlands for the purpose of foraging.	Low	Few records in the local vicinity. Marginal foraging habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Elanus axillaris</i>	Black-shouldered Kite			48	5/12/2023	BioNet	Treed grasslands and on farms, along roads, and in vacant waste lands of urban and coastal areas.	Moderate	Recently recorded in the surrounding areas. The species may fly across the study area in passing to forage.
<i>Erythroriorchis radiatus</i>	Red Goshawk	EN	CE	N/A	N/A	PMST	Inhabiting tropical and warm-temperate woodlands and forests, the Red Goshawk prefers areas with a mosaic of vegetation types, often near wetlands. They often occur at the boundary between two vegetation types, and often favour forests or woodlands dominated by eucalypts or paperbarks. They avoid very dense or very open habitats.	Low	No historical records in the local vicinity. Preferred habitat not present within the study area.
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Ma	V	24	11/04/2022	BioNet	Occurs on beaches and estuaries, inland wetlands, lakes, reservoirs, saltmarsh, major inland streams and adjacent terrestrial habitats.	Low	While recently recorded in the area, the species is not likely to make regular use of the study area for foraging and may only occasionally fly over while traversing the landscape.
<i>Haliastur sphenurus</i>	Whistling Kite	Ma		14	27/08/2020	BioNet	Woodlands, open country and particularly wetlands. It is also common around farmland, vineyards and anywhere where carrion (dead animals) can be found. Prefers tall trees for nesting.	Moderate	Recently recorded in the surrounding areas. The species may fly across the study area in passing to forage.
<i>Hieraaetus morphnoides</i>	Little Eagle		V	11	10/12/2021	BioNet	Widespread species. Occurs primarily in wooded farmland and dry woodlands.	Moderate	Recently recorded in the surrounding areas. The species may fly across the study area in passing to forage.
<i>Lophoictinia isura</i>	Square-tailed Kite		V	7	26/03/2021	BioNet	Widespread across Victoria. Occurs in primarily in open forest and woodland but will also forage in adjacent open areas such as roadside clearings, farmland and	Moderate	Recently recorded in the surrounding areas. The species may fly across the study area in passing to forage.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							logged areas. Occasionally occurs in mallee, heathland, low shrublands and grasslands.		
<i>Milvus migrans</i>	Black Kite			2	9/02/2010	BioNet	Broad range of habitats. Most are found in open areas where there is close access to water bodies such as rivers, ponds, or lakes.	Low	Few recent records in the local vicinity. Potential foraging habitat for this species occurs within the study area.
<i>Falco berigora</i>	Brown Falcon			20	11/02/2021	BioNet	Found in all but the densest forests and is locally common throughout its range. The preferred habitat is open grassland and agricultural areas, with scattered trees or structures such as telegraph poles which it uses for perching.	Moderate	Recently recorded in the surrounding areas. The species may fly across the study area in passing to forage.
<i>Falco cenchroides</i>	Nankeen Kestrel			76	11/07/2023	BioNet	Preferred habitats are lightly wooded areas and open agricultural regions and tend to be absent from dense forests. Nankeen Kestrel success as a bird of prey can be largely contributed to its tolerance for a wide variety of habitats and its ability to feed on a variety of foods and nest in a range of sites.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Falco hypoleucos</i>	Grey Falcon	VU	V	N/A	N/A	PMST	Primarily occurs inland in arid areas but can occur elsewhere in Australia. Prefers lightly timbered woodland and Acacia scrub.	Negligible	Not recorded in the local vicinity, the study area is not within arid or semi-arid areas where this species is usually distributed.
<i>Falco longipennis</i>	Australian Hobby			20	15/01/2021	BioNet	Woodlands, forests, and open country in tropics. Most common in lightly timbered woodlands.	Moderate	Recently recorded in the surrounding areas. The species may utilise the study area for foraging.
<i>Falco peregrinus</i>	Peregrine Falcon			11	10/07/2022	BioNet	Found in most habitats, from rainforests to the arid zone, and at most altitudes, from the coast	Moderate	Recently recorded in the surrounding areas. The species may utilise the study area for foraging.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							to alpine areas. It requires abundant prey and secure nest sites and prefers coastal and inland cliffs or open woodlands near water, and may even be found nesting on high city buildings.		
<i>Pandion haliaetus</i>	Osprey	Ma, Mi		N/A	N/A	PMST	Marine bird. It inhabits rocky shorelines, islands, reefs, mouths of large rivers, lagoons and lakes.	Low	Not recorded in the local vicinity. Limited suitable habitat present within the study area.
SEABIRDS									
<i>Sterna striata</i>	White-fronted Tern	Ma		N/A	N/A	PMST	Occurs in coastal seas and exposed rocky coasts, often with islands or stacks; sometimes roosts on sandy beaches of sheltered coasts.	Negligible	No historical records in the local vicinity. Preferred habitat not present within the study area. This is a primarily a coastal species.
<i>Pterodroma cervicalis</i>	White-necked Petrel	Ma		N/A	N/A	PMST	Pelagic bird. Open seas of the south-west Pacific. Subtropical or tropical seasonally wet or flooded lowland grassland (for breeding) and open seas (for foraging).	Negligible	No historical records in the local vicinity. Preferred habitat not present within the study area. This is a primarily a coastal species.
SWIFTS & SWALLOWS									
<i>Apus pacificus</i>	Fork-tailed Swift	Ma, Mi		3	13/07/2005	BioNet	Primarily an aerial species which forages in flight and may occasionally land. Listed migratory marine species. The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher.	Low	Historically recorded in the surrounding areas. Limited suitable habitat (cliffs, beaches, islands, towns, cities) present within the study area.
<i>Hirundapus caudacutus</i>	White-throated Needletail	VU, Ma, Mi		3	4/01/2022	BioNet	Primarily an aerial species which forages in flight and may occasionally land. Occurs most often over open forest and	Moderate	Marginal foraging habitat was identified by ELA ecologists during a site visit in 2022.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							rainforest, as well as heathland, and remnant vegetation in farmland.		
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow		V	42	11/02/2021	BioNet	Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. Dusky woodswallows are widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
<i>Artamus personatus</i>	Masked Woodswallow			3	3/12/2019	BioNet	Mainly inhabits open forests and woodlands usually dominated by eucalypts or acacias. They are also found in lightly timbered pastoral country, orchards and vineyards and sometimes along watercourses.	Moderate	Few recent records in the local vicinity. Potential habitat exists within the study area.
<i>Artamus superciliosus</i>	White-browed Woodswallow			8	24/10/2019	BioNet	Eucalypt, sheoak and Acacia woodland, including mallee, and adjacent open areas including grassland with scattered trees or shrubs. In agricultural landscapes it prefers healthy woodland	Low	Few recent records in the local vicinity. Limited suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							patches with low disturbance and little grazing		
<i>Hirundo neoxena</i>	Welcome Swallow			260	9/02/2023	BioNet	Welcome Swallows visit a wide variety of habitats with the exception of the more heavily forested regions and drier inland areas. Woodland, Wetland, Urban, Grassland, Coastal, Desert.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Hirundo rustica</i>	Barn Swallow	Ma, Mi		1	25/06/2021	BioNet	Open country in coastal lowlands, often near water, towns and cities. Birds are often sighted perched on overhead wires and also in or over freshwater wetlands, paperbark Melaleuca woodland, mesophyll shrub thickets and tussock grassland.	Moderate	Few recent records in the local vicinity. Potential habitat exists within the study area.
<i>Petrochelidon ariel</i>	Fairy Martin			53	25/02/2022	BioNet	Open country near water, and is usually seen near its nest sites, on cliffs, culverts or bridges.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
<i>Petrochelidon nigricans</i>	Tree Martin	Ma		13	9/01/2022	BioNet	Found in the air above a range of habitats ranging from open grassed areas to forests, especially near wetlands, but they are also found in urban areas.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
WADERS									
<i>Charadrius bicinctus</i>	Double-banded Plover	Ma, Mi		1	15/12/2020	BioNet	Beaches, grassed edges of open wetlands and intertidal mudflats.	Low	Few records in the local vicinity. Limited suitable habitat present within the study area.
<i>Euseyornis melanops</i>	Black-fronted Dotterel			25	14/12/2022	BioNet	Found in the shallow margins of wetlands, lakes, rivers, sewage farms, storm drains and marshes. It is normally always near	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area along the riparian corridor and within the 10 existing farm dams.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							freshwater and is not often seen on the coast.		
<i>Erythrogonys cinctus</i>	Red-kneed Dotterel			3	25/10/2018	BioNet	Red-kneed Dotterels are found in wetlands, lagoons and swamplands, preferring fresh water and areas prone to flooding.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area along the riparian corridor and within the 10 existing farm dams.
<i>Pluvialis squatarola</i>	Grey Plover	VU, Ma, Mi		1	19/08/2012	BioNet	The Grey Plover is almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding, sandy beaches for roosting, and also on rocky coasts.	Negligible	Coastal species. Few records in the surrounding areas over 10 years ago.
<i>Vanellus tricolor</i>	Banded Lapwing			2	24/12/2008	BioNet	Banded Lapwings prefer open, short grasslands such as heavily grazed paddocks, agricultural lands and saline herblands in dry and semi-arid regions.	Low	Few records in the local vicinity over 10 years ago. Potential habitat for this species occurs within the study area.
<i>Himantopus himantopus</i>	Black-winged Stilt	Ma		12	2/06/2023	BioNet	Marshes, shallow lakes and ponds.	Moderate	Marginal foraging habitat exists along the farm dams within the study area. Recently recorded in the surrounding areas.
<i>Rostratula australis</i>	Australian Painted Snipe	EN, Ma	E	1	28/01/2015	BioNet	Occurs in shallow fresh or brackish wetlands with permanent or semi-permanent water, cover of adjacent grasses and muddy edges. Also occurs in waterlogged grassland, sewage ponds and dams.	Moderate	Marginal foraging habitat around the farm dam was identified by ELA ecologists during a site visit in 2022.
<i>Actitis hypoleucos</i>	Common Sandpiper	Ma, Mi		N/A	N/A	PMST	Summer migrant. In NSW, widespread along coastline and also occurs in many areas inland. Coastal wetlands and some inland wetlands, especially muddy margins or rocky shores.	Negligible	Not recorded in the local vicinity. Suitable habitat (coastal areas) not present within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							Also estuaries and deltas, lakes, pools, billabongs, reservoirs, dams and claypans, mangroves.		
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Ma, Mi		2	25/02/2022	BioNet	Widespread in most regions of Victoria, especially in coastal areas. Inhabits shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation.	Low	Suitable habitat (natural waterbodies and coastal areas) not present within the study area.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE, Ma, Mi	E	N/A	N/A	PMST	Non breeding migratory species that occurs primarily on intertidal mudflats of estuaries, lagoons, mangroves, and less often on beaches, rocky shores and around lakes, dams. Can also occur on suitable inland habitats in the Kerang area, Mildura, and western districts.	Negligible	Not recorded in the local vicinity. The farm dams within the study area do not provide suitable habitat for this species.
<i>Calidris melanotos</i>	Pectoral Sandpiper	Ma, Mi		N/A	N/A	PMST	Non breeding migratory species that prefers shallow fresh to saline wetlands with open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. Also occurs in swamps, saltmarshes, lakes and inundated grasslands.	Low	No historical records in the local vicinity. Preferred coastal/saline habitat not present within the study area.
<i>Gallinago hardwickii</i>	Latham's Snipe	Ma, Mi		14	25/02/2022	BioNet	Non-breeding migratory species that occurs in freshwater wetlands with low dense vegetation on or near the coast. Preferred wetland vegetation includes sedges, grasses, lignum, reeds and rushes. Also occurs in saltmarsh and creek edges on	Present	This species was identified by ELA ecologists within one of the dams (Dam 2) within study area during a site visit in 2022.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							migration, drainage ditches along roadsides and railways, crops and pasture.		
<i>Limosa limosa</i>	Black-tailed Godwit	Ma, Mi	V	1	30/10/1982	BioNet	Coastal species found in sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats.	Negligible	This is a coastal species. No recent records in the local vicinity.
<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	CE, Ma, Mi		N/A	N/A	PMST	Non-breeding migrant. Occurs in sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Also occurs in saltmarsh and on mudflats fringed by mangroves, and sometimes within the mangroves	Negligible	No historical records in the local vicinity. Preferred habitat not present within the study area. This is a primarily a coastal species.
<i>Tringa nebularia</i>	Common Greenshank	Ma, Mi		1	21/04/2006	BioNet	Prefers sheltered coastal habitats with large mudflats and saltmarsh, mangroves or seagrass. Can occur inland, in estuaries and mudflats, mangrove swamps and lagoons, billabongs, swamps, sewage farms and flooded crops.	Low	Few historical records in the surrounding areas, however has been previously recorded along Elizabeth Drive and Badgerys Creek Road. Preferred coastal or wetland habitat absent from the study area.
WATERBIRDS									
<i>Anhinga novaehollandiae</i>	Australasian Darter			13	7/09/2022	BioNet	Wetlands and sheltered coastal waters, mainly in the Tropics and Subtropics. It prefers smooth, open waters, for feeding, with tree trunks, branches, stumps or posts fringing the water, for resting and drying its wings.	Moderate	Recently recorded in the surrounding areas. Some suitable habitat exists within the study area within the creek and dams.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Ardea Alba</i>	Eastern Great Egret	Ma		17	26/11/2020	BioNet	Prefers shallow water, particularly when flowing, but may be seen on any watered area, including damp grasslands. Great Egrets can be seen alone or in small flocks, often with other egret species, and roost at night in groups.	High	Recently recorded in the surrounding areas. Some suitable habitat exists within the study area within the creek and dams.
<i>Ardea intermedia</i>	Intermediate Egret	Ma		13	20/05/2021	BioNet	Like most egret species, associates with all types of water bodies including wet fields and usually flocks with other egrets.	Present	This species has been observed occupying one or more of the 10 existing dams present on site by ELA employees during a site visit.
<i>Ardea pacifica</i>	White-necked Heron			27	25/10/2018	BioNet	Sometimes seen in tidal areas, most are found in shallow fresh waters, including farm dams, flooded pastures, claypans, and even roadside ditches.	Moderate	Recently recorded in the surrounding areas. Some suitable habitat exists within the study area within the creek and dams.
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	E	1	25/03/2003	BioNet	Found over most of NSW except for the far north-west. Permanent freshwater wetlands with tall, dense vegetation, particularly <i>Typha</i> sp. (bullrushes) and <i>Eleocharis</i> sp. (spikerushes).	Low	Few historical records in the surrounding areas. Limited suitable habitat for this species occurs within the study area. This species prefer wetlands with taller, denser vegetation.
<i>Bubulcus ibis</i>	Cattle Egret	Ma		89	9/02/2023	BioNet	Occurs in grasslands, woodlands and terrestrial wetlands, often occurring in association with farm animals, particularly cattle. It roosts in trees and ground vegetation near lakes and swamps.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Egretta garzetta</i>	Little Egret	Ma		6	25/10/2018	BioNet	Shores of lakes, rivers, canals, ponds, lagoons, marshes and flooded land, prefers open locations to dense cover. On the coast it inhabits mangrove areas,	Present	This species has been observed occupying one or more of the 10 existing dams present on site by ELA employees during a site visit.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							swamps, mudflats, sandy beaches and reefs.		
<i>Egretta novaehollandiae</i>	White-faced Heron			161	19/07/2023	BioNet	Found anywhere where there is water, from tidal mudflats and coastal reefs to moist grasslands and gardens.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Ixobrychus dubius</i>	Australian Little Bittern			1	30/10/2000	BioNet	Diverse freshwater habitats, mainly where tall rushes, reeds, Typha (cumbungi), shrub thickets or other dense cover is inundated by at least 30 cm of water. It can be found in vast swamps, but unlike the Australasian Bittern, it often inhabits small patches of dense wetland vegetation such as Typha along drains or in small urban lakes.	Low	Few historical records in the surrounding areas. Limited suitable habitat for this species occurs within the study area. This species prefer wetlands with taller, denser vegetation.
<i>Ixobrychus flavicollis</i>	Black Bittern		V	1	15/06/2016	BioNet	Roost and nest in trees, and are found in tree-lined wetlands and in mangroves.	Moderate	Foraging habitat was identified by ELA ecologists during a site visit in 2022.
<i>Nycticorax caledonicus</i>	Nankeen Night Heron	Ma		9	24/10/2019	BioNet	Grasslands, meadows, forests, lagoons, beaches, reefs, marshes, shores, wetlands, and swamps. It is most commonly found near rivers and streams but also reside in urban wetlands, dry fields, gardens, ponds, airports, and parks. The species prefer habitats with emergent vegetation when near permanent water. Roosts during the daytime in dense cover of trees, bushes, and reeds.	Low	Few recent records in the local vicinity. Some suitable habitat exists within the study area.
<i>Vanellus miles</i>	Masked Lapwing			291	8/08/2023	BioNet	Inhabits marshes, mudflats, beaches and grasslands. It is often seen in urban areas. Where	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							this bird is used to human presence, it may tolerate close proximity; otherwise it is very wary of people, and seldom allows close approach.		
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork		E	3	27/11/2020	BioNet	Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries.	Low	Few recent records in the local vicinity. Limited suitable habitat exists within the study area.
<i>Pelecanus conspicillatus</i>	Australian Pelican	Ma		44	17/03/2021	BioNet	Pelicans are widespread on freshwater, estuarine and marine wetlands and waterways including lakes, swamps, rivers, coastal islands and shores.	Low	While recently recorded in the local vicinity, this species is unlikely to make regular use of the farm dams present within the study area. Pelicans prefer larger bodies of water, but may fly over the study area while traversing the landscape.
<i>Microcarbo melanoleucos</i>	Little Pied Cormorant			68	23/03/2023	BioNet	Fresh or salt water. It is often seen in large flocks on open waterways and on the coast. On inland streams and dams, however, it is often solitary. The Little Pied Cormorant mixes readily with the similar sized Little Black Cormorant.	Present	This species has been observed occupying one or more of the 10 existing dams present on site by ELA employees during a site visit.
<i>Phalacrocorax carbo</i>	Great Cormorant			17	25/10/2018	BioNet	In spite of its preference for extensive areas of permanent freshwater, the Great Cormorant is not confined to these and is often observed on coastal inlets and estuaries.	Low	Few recent records in the local vicinity. Prefers larger bodies of water.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant			43	23/03/2023	BioNet	Found in freshwater wetlands, but will sometimes be found on sheltered coastal waters, and can use relatively small, deep water bodies. It is strongly aquatic, seldom being seen on dry land, but is often seen resting on rocks, jetties and other perches in water.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Phalacrocorax varius</i>	Pied Cormorant			17	15/03/2022	BioNet	The Pied Cormorant is found in marine habitats (almost exclusively so in Western Australia), including estuaries, harbours and bays. It is also found in mangroves and on large inland wetlands in eastern Australia.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
<i>Platalea flavipes</i>	Yellow-billed Spoonbill			23	25/02/2022	BioNet	Shallows of freshwater wetlands, dams, lagoons and swamps, and sometimes in dry pastures, but rarely uses saltwater wetlands. It can use much smaller areas of water than the Royal Spoonbill.	Low	While recently recorded in the local vicinity, preferred wetland habitat is not present within the study area.
<i>Platalea regia</i>	Royal Spoonbill			18	25/02/2022	BioNet	The Royal Spoonbill is found in shallow freshwater and saltwater wetlands, intertidal mud flats and wet grasslands. Both permanent and temporary inland waters are used when available in the arid zone. Will also use artificial wetlands such as sewage lagoons, saltfields, dams and reservoirs.	Low	While recently recorded in the local vicinity, preferred wetland habitat is not present within the study area.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Plegadis falcinellus</i>	Glossy Ibis	Ma, Mi		1	26/09/2022	BioNet	Glossy ibises feed in very shallow water and nest in freshwater or brackish wetlands with tall dense stands of emergent vegetation such as reeds, papyrus or rushes) and low trees or bushes. They show a preference for marshes at the margins of lakes and rivers but can also be found at lagoons, flood-plains, wet meadows, swamps, reservoirs, sewage ponds, paddies and irrigated farmland.	Moderate	Few recent records in the local vicinity, however potential habitat exists within the study area.
<i>Threskiornis moluccus</i>	Australian White Ibis	Ma		76	18/06/2023	BioNet	Observed in all but the driest habitats. Preferred habitats include swamps, lagoons, floodplains and grasslands, but it has also become a successful inhabitant of urban parks, gardens and tidal mudflats.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Threskiornis spinicollis</i>	Straw-necked Ibis	Ma		34	6/07/2021	BioNet	The Straw-necked Ibis prefers wet and dry grasslands, pastures, croplands and swamp or lagoon margins. It is rarely found on coastal shores, mudflats or mangroves and is generally less adaptable than the Australian White Ibis.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area.
WATERFOWL									
<i>Anas castanea</i>	Chestnut Teal			38	23/03/2023	BioNet	Wetlands and estuaries in coastal regions, and is one of the few ducks able to tolerate high salinity waters, although it still needs fresh water for drinking. It will also use open freshwater	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area within the dams and creek.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							lakes, reservoirs and sewage ponds during dry seasons.		
<i>Anas gracilis</i>	Grey Teal			32	23/03/2023	BioNet	Common in all sheltered watered areas. These include fresh, brackish and salt water, and the birds can be found on the smallest area of water in the driest of areas. The most favoured habitat type is timbered pools and river systems of the inland areas, where these birds can be found in quite large numbers.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area within the dams and creek.
<i>Anas platyrhynchos</i>	Mallard			8	8/11/2018	BioNet	Habitats include wetlands, grasslands and crops, as well as sheltered estuaries and marine habitats. It prefers still, shallow water with abundant plant life and is most often found on artificial lakes, ponds and wetlands in urban and farm areas.	Low	Few recent records in the local vicinity, potential habitat exists within the wetland areas present within the study area.
<i>Anas rhynchos</i>	Australasian Shoveler			6	25/02/2022	BioNet	The Australasian Shoveler is found in all kinds of wetlands, preferring large undisturbed heavily vegetated freshwater swamps. It is also found on open waters and occasionally along the coast.	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the study area, however this species prefers deeper wetlands with more vegetation.
<i>Anas superciliosa</i>	Pacific Black Duck			197	24/04/2023	BioNet	Freshwater, intertidal habitats.	Present	This species has been observed occupying one or more of the 10 existing dams present on site by ELA employees during a site visit.
<i>Aythya australis</i>	Hardhead			31	23/03/2023	BioNet	Prefers open freshwater swamps and wetlands and occasionally in	Moderate	Recently recorded in the surrounding areas. Potential habitat exists within the

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							sheltered estuaries. They are rarely seen on land and tend to roost on low branches and stumps near the water. They prefer deep, fresh open water and densely vegetated wetlands for breeding.		study area, however this species prefers deeper wetlands with more vegetation.
<i>Chenonetta jubata</i>	Australian Wood Duck			273	11/07/2023	BioNet	Found in grasslands, open woodlands, wetlands, flooded pastures and along the coast in inlets and bays. It is also common on farmland with dams, as well as around rice fields, sewage ponds and in urban parks.	Present	This species has been observed occupying one or more of the 10 existing dams present on site by ELA employees during a site visit.
<i>Cygnus atratus</i>	Black Swan			53	23/03/2023	BioNet	Common in the wetlands of southwestern and eastern Australia and adjacent coastal islands.	Present	This species has been observed occupying one or more of the 10 existing dams present on site by ELA employees during a site visit.
<i>Malacorhynchus membranaceus</i>	Pink-eared Duck			3	25/02/2022	BioNet	Areas near water. It prefers shallow, temporary waters, however, open wetlands support large flocks. It is a highly dispersive and nomadic species.	Moderate	Recently recorded in the surrounding areas. Suitable habitat exists within the study area along the creek and within the Dams.
<i>Oxyura australis</i>	Blue-billed Duck		V	1	12/06/2019	BioNet	Prefers deep permanent well vegetated freshwater swamps, large dams, lakes and open waters.	Low	Few recent records in the local vicinity. Preferred wetland habitat absent from the study area. This species prefers larger, deeper more vegetation wetlands.
<i>Stictonetta naevosa</i>	Freckled Duck		V	1	25/10/2018	BioNet	Prefers permanent fresh water swamps and creeks with heavy growth of cumbungi (bullrushes), lignum or tea-tree. During drier times, the Freckled Duck moves from ephemeral (not permanent) breeding swamps to more permanent waters such as lakes,	Low	Few recent records in the local vicinity. Preferred wetland habitat absent from the study area. This species prefers larger, deeper more vegetation wetlands.

Species	Common name	EPBC Act Status	BC Act status	10 km Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							reservoirs, farm dams and sewerage ponds. They generally rest in dense cover.		
<i>Podiceps cristatus</i>	Great Crested Grebe			1	10/02/2021	BioNet	Vegetated areas of freshwater lakes. Favours large deep open bodies of freshwater. Most commonly found inhabiting rivers, lagoons, lakes, swamps, reservoirs, saltfields, estuaries and bays.	Low	Few recent records in the local vicinity. Preferred wetland habitat absent from the study area. This species prefers larger, deeper more vegetation wetlands.
<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe			9	23/03/2023	BioNet	Found in freshwater ponds or small waterways.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.
<i>Tachybaptus novaehollandiae</i>	Australasian Grebe			112	23/03/2023	BioNet	Freshwater ponds or small waterways.	High	Recently recorded in the surrounding areas. Suitable habitat exists within the study area.

C3 Likelihood assessment - Bats

Species	Common name	EPBC Act Status	BC Act status	Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
MEGA BATS									
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	V	189	15/06/2023	BioNet	Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roost near water in stands of native vegetation such as mangrove, rainforest, Melaleuca, Casuarina or introduced trees.	High	Seasonal foraging habitat was identified within the study area by ELA Ecologists during a site visit in 2022. Flying fox camps exist in the surrounding area.
<i>Pteropus scapulatus</i>	Little Red Flying-fox			3	20/04/2021	BioNet	Little Red Flying-foxes roost on the branches of trees. They roost in groups, called camps, of up to many thousands of bats. They often share camps with other flying fox species. The primary source of food for this species is obtained from Eucalyptus and Corymbia blossoms.	Moderate	Few recent records in the local vicinity however potential foraging habitat exists within the study area.
MICROBATS									
<i>Austronomus australis</i>	White-striped Freetail-bat			67	14/03/2022	BioNet	Woodland and urban areas. Roosts in hollows in old trees and under loose bark, in dead stumps and the ceilings of buildings. Up to several hundred bats live together in a colony.	High	Recent records in the local vicinity. Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts).
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat		V	42	16/03/2022	BioNet	The Eastern Freetail-bat is found along the east coast from south Queensland to southern NSW. Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures.	Moderate	Recent records in the local vicinity. Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts).
<i>Ozimops planiceps</i>	South-eastern Free-tailed Bat			2	9/01/2013	BioNet	Found across a number of vegetation types including mallee, shrubland, open forest and woodland, with a preference for wetter environments. It has adapted well	Low	Few records in the local vicinity over 10 years ago. Potential habitat is present within the study area.

Species	Common name	EPBC Act Status	BC Act status	Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							to fragmentation and is able to dwell around cities and towns. Roosts in tree hollows and man-made cavities such as sheds and barns. Does not utilise Caves. Populations can contain up to 100 individuals.		
<i>Ozimops ridei</i>	Eastern Free-tailed Bat			61	17/03/2022	BioNet	Roosts in sheltered places during the day such as inside Eucalyptus tree hollows or in buildings. Often forages near habitat edges.	Moderate	Recent records in the local vicinity. Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts).
<i>Rhinolophus megaphyllus</i>	Eastern Horseshoe-bat			82	30/03/2023	BioNet	Caves and similar sites that provide adequate warmth and high humidity are preferred and may be inhabited by groups numbering up to two thousand, however, the colony size is more often between five and fifty bats.	Negligible	While some recent records in the local vicinity, preferred roosting habitat (caves, cliffs) present within the study area.
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	VU	V	10	23/04/2019	BioNet	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (<i>Petrochelidon ariel</i>), frequenting low to mid-elevation dry open forest and woodland close to these features.	Negligible	While some recent records in the local vicinity, preferred roosting habitat (caves, cliffs) present within the study area.
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat			7	23/04/2019	BioNet	Roost in hollows in old trees, occasionally in ceilings or basements of buildings. They roost together in colonies of around 30 bats, sometimes smaller and other times larger.	Moderate	Some recent records in the local vicinity. Potential roosting and foraging habitat exists within the study area.
<i>Chalinolobus morio</i>	Chocolate Wattled Bat			121	17/02/2023	BioNet	Roost mainly in hollows in old trees, as well as disused birds' nests. They roost in caves in the Nullarbor area of South Australia. They roost together in colonies of 20 to a few hundred bats.	High	Recent records in the local vicinity. Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts).

Species	Common name	EPBC Act Status	BC Act status	Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle		V	64	2/12/2021	BioNet	Prefers moist habitats, with trees taller than 20 m.	Low	Limited suitable habitat present on site. Prefers moister habitats with taller trees.
<i>Myotis macropus</i>	Southern Myotis		V	8	23/09/2021	BioNet	Found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage.	Low	Few recent records in the surrounding areas. Limited suitable habitat present on site.
<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat			60	17/03/2022	BioNet	Roosts in hollows and fissures in old trees, under bark, in old fairy marten nests, and in occasionally in caves. They often roost in ceilings, hollow walls, unused roller doors and canvas awnings in suburban and inner-city areas. They prefer hollows of big old eucalypts for nursery colonies.	Moderate	Recent records in the local vicinity. Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts).
<i>Nyctophilus gouldi</i>	Gould's Long-eared Bat			59	8/03/2023	BioNet	Sclerophyll forests and woodland, including forest remnants. Roosts under loose bark or in tree hollows, sometimes buildings, in colonies of up to 25 individuals. The abandoned nests of birds are also utilised as roosts.	Moderate	Recent records in the local vicinity. Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts).
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat		V	26	2/12/2021	BioNet	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest.	Low	Preferred habitat (moist tall forests) not present within the study area. Marginal foraging habitat present within the study area.
<i>Scotorepens orion</i>	Eastern Broad-nosed Bat			29	14/03/2022	BioNet	Roosts in the hollows in old trees but also occasionally buildings. They have been recorded from tree hollows some 7 metres above the ground.	Moderate	Recent records in the local vicinity. Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts).
<i>Vespadelus darlingtoni</i>	Large Forest Bat			38	16/03/2022	BioNet	Found in dry and wet eucalypt forest, rainforest, and at sub-alpine to alpine	Low	Some suitable foraging and roosting habitat within the study area

Species	Common name	EPBC Act Status	BC Act status	Records	Last recorded	Source	Habitat requirements	Likelihood	Rationale
							habitats. Observed in small reserves of woodland of rural areas and present at the urbanised landscape. Roost in hollows with up to sixty others.		(hollows, mature eucalypts), limited recent records near the study area.
<i>Vespadelus pumilus</i>	Eastern Forest Bat			9	12/05/2021	BioNet	Roosts in hollows of old eucalypts; some individuals roost under loose bark.	Low	Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts), limited recent records near the study area.
<i>Vespadelus regulus</i>	Southern Forest Bat			6	9/05/2018	BioNet	Southern Forest Bats roost in hollows in old trees and under the bark of trees. They roost together in small groups and often share their roosts with Lesser Long-eared Bats.	Low	Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts), limited recent records near the study area.
<i>Vespadelus vulturnus</i>	Little Forest Bat			85	10/03/2022	BioNet	Little Forest Bats roost in hollows in old trees, buildings, and timber stacks. Up to 50 bats roost together in a colony. Some bats have been seen sharing a nest with possums.	Moderate	Recent records in the local vicinity. Some suitable foraging and roosting habitat within the study area (hollows, mature eucalypts).

Appendix D Consequence and probability scores

D1 Consequence scores, terms and key

Mass	Mass Score	Flock Spacing	Flock Score	Flight Behaviour	Flight Score	Consequence Category	Consequence Score (Mass Score x Flock Score x Flight Score)
< 20g	1	Usually solitary or widely spaced	1	Rapid direct	1	Extreme	64-128
21-50g	2	Loose flocks	2	Slow, meandering, erratic, hovering, manoeuvrable	2	Very High	32
51-200g	4	Tight flocks	4	Nocturnal flight activity	2	High	16
201-1000g	8	N/A	N/A	N/A	N/A	Medium	8
1-5kg	16	N/A	N/A	N/A	N/A	Low	4
> 5kg	32	N/A	N/A	N/A	N/A	Very Low	1-2

D2 Probability scores, terms and key

Probability Category	Relative frequency (% of all known strikes at airport) *	Apparent frequency of strikes
Very High	>5%	Often
High	1-5%	Some
Medium	0.1-1%	Occasional
Low	<0.1%	Rare/none

**Relative frequency was calculated with combined ATSB data for known bird strikes at Sydney and Bankstown Airports, or from Australia wide data where information on specific species/guilds were absent. Species that used Australia wide data, and species that were not included in any data source are noted in a separate column below.*

D3 Consequence and probability scores by functional group and species

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Bush birds	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	< 20g	1	2	1	2	Very low	<0.1%	Low		
Bush birds	<i>Acanthiza lineata</i>	Striated Thornbill	< 20g	1	2	1	2	Very low	<0.1%	Low		
Bush birds	<i>Acanthiza nana</i>	Yellow Thornbill	< 20g	1	2	1	2	Very low	<0.1%	Low		
Bush birds	<i>Acanthiza pusilla</i>	Brown Thornbill	< 20g	1	2	1	2	Very low	<0.1%	Low		
Bush birds	<i>Acanthiza reguloides</i>	Buff-rumped Thornbill	< 20g	1	2	1	2	Very low	<0.1%	Low		
Bush birds	<i>Gerygone mouki</i>	Brown Gerygone	< 20g	1	2	1	2	Very low	<0.1%	Low		X
Bush birds	<i>Gerygone olivacea</i>	White-throated Gerygone	< 20g	1	2	1	2	Very low	<0.1%	Low		X
Bush birds	<i>Sericornis frontalis</i>	White-browed Scrubwren	< 20g	1	2	1	2	Very low	<0.1%	Low		
Bush birds	<i>Smicrornis brevirostris</i>	Weebill	< 20g	1	2	1	2	Very low	<0.1%	Low		
Bush birds	<i>Lalage sueurii</i>	White-winged Triller	21-50g	2	2	1	4	Low	<0.1%	Low		X
Bush birds	<i>Cinclosoma punctatum</i>	Spotted Quail-thrush	51-200g	4	1	1	4	Low	<0.1%	Low		X
Bush birds	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	21-50g	2	1	1	2	Very low	<0.1%	Low		X
Bush birds	<i>Cormobates leucophaea</i>	White-throated Treecreeper	21-50g	2	1	1	2	Very low	<0.1%	Low		X
Bush birds	<i>Eurystomus orientalis</i>	Dollarbird	51-200g	4	2	2	16	High	<0.1%	Low		X
Bush birds	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	51-200g	4	1	1	4	Low	0.1-1%	Medium		
Bush birds	<i>Cacomantis variolosus</i>	Brush Cuckoo	21-50g	2	1	1	2	Very low	0.1-1%	Medium		
Bush birds	<i>Chalcites basalis</i>	Horsfield's Bronze-Cuckoo	21-50g	2	1	1	2	Very low	0.1-1%	Medium		

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Bush birds	<i>Chalcites lucidus</i>	Shining Bronze-Cuckoo	21-50g	2	1	1	2	Very low	0.1-1%	Medium		
Bush birds	<i>Heteroscenes pallidus</i>	Pallid Cuckoo	51-200g	4	1	1	4	Low	0.1-1%	Medium		
Bush birds	<i>Neochmia temporalis</i>	Red-browed Finch	< 20g	1	4	1	4	Low	0.1-1%	Medium		
Bush birds	<i>Stizoptera bichenovii</i>	Double-barred Finch	< 20g	1	4	1	4	Low	0.1-1%	Medium		
Bush birds	<i>Taeniopygia guttata</i>	Zebra Finch	< 20g	1	2	1	2	Very low	0.1-1%	Medium		
Bush birds	<i>Falcunculus frontatus frontatus</i>	Crested Shrike-tit, Eastern Shrike-tit	21-50g	2	1	1	2	Very low	<0.1%	Low		X
Bush birds	<i>Carduelis carduelis</i>	European Goldfinch	< 20g	1	2	2	4	Low	0.1-1%	Medium		
Bush birds	<i>Cincloramphus mathewsi</i>	Rufous Songlark	21-50g	2	2	1	4	Low	<0.1%	Low	X	
Bush birds	<i>Malurus cyaneus</i>	Superb Fairy-wren	< 20g	1	2	1	2	Very low	<0.1%	Low	X	
Bush birds	<i>Malurus lamberti</i>	Variegated Fairy-wren	< 20g	1	2	1	2	Very low	<0.1%	Low	X	
Bush birds	<i>Merops ornatus</i>	Rainbow Bee-eater	21-50g	2	2	1	4	Low	<0.1%	Low	X	
Bush birds	<i>Grallina cyanoleuca</i>	Magpie-lark	51-200g	4	2	2	16	High	0.1-1%	Medium		
Bush birds	<i>Myiagra inquieta</i>	Restless Flycatcher	21-50g	2	1	2	4	Low	<0.1%	Low	X	
Bush birds	<i>Anthus novaeseelandiae</i>	Australian Pipit	21-50g	2	1	1	2	Very low	>5%	Very High		
Bush birds	<i>Daphoenositta chrysoptera</i>	Varied Sittella	< 20g	1	4	1	4	Low	<0.1%	Low		X
Bush birds	<i>Oriolus sagittatus</i>	Olive-backed Oriole	51-200g	4	1	1	4	Low	<0.1%	Low		X
Bush birds	<i>Colluricincla harmonica</i>	Grey Shrike-thrush	51-200g	4	1	1	4	Low	<0.1%	Low		X
Bush birds	<i>Pachycephala pectoralis</i>	Golden Whistler	21-50g	2	1	1	2	Very low	<0.1%	Low		X
Bush birds	<i>Pachycephala rufiventris</i>	Rufous Whistler	21-50g	2	1	1	2	Very low	<0.1%	Low		X
Bush birds	<i>Pardalotus punctatus</i>	Spotted Pardalote	< 20g	1	1	1	1	Very low	<0.1%	Low		X
Bush birds	<i>Pardalotus striatus</i>	Striated Pardalote	< 20g	1	1	1	1	Very low	<0.1%	Low		X

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Bush birds	<i>Passer domesticus</i>	House Sparrow	21-50g	2	4	1	8	Medium	0.1-1%	Medium		
Bush birds	<i>Passer montanus</i>	Eurasian Tree Sparrow	21-50g	2	2	1	4	Low	0.1-1%	Medium		
Bush birds	<i>Eopsaltria australis</i>	Eastern Yellow Robin	21-50g	2	1	1	2	Very low	<0.1%	Low	X	
Bush birds	<i>Microeca fascians</i>	Jacky Winter	< 20g	1	1	1	1	Very low	<0.1%	Low	X	
Bush birds	<i>Petroica rosea</i>	Rose Robin	< 20g	1	1	1	1	Very low	<0.1%	Low	X	
Bush birds	<i>Psophodes olivaceus</i>	Eastern Whipbird	51-200g	4	2	2	16	High	<0.1%	Low		X
Bush birds	<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	21-50g	2	2	1	4	Low	<0.1%	Low		X
Bush birds	<i>Rhipidura albiscapa</i>	Grey Fantail	< 20g	1	1	2	2	Very low	<0.1%	Low		X
Bush birds	<i>Rhipidura leucophrys</i>	Willie Wagtail	< 20g	1	1	1	1	Very low	0.1-1%	Medium		
Bush birds	<i>Acridotheres tristis</i>	Common Myna	51-200g	4	2	1	8	Medium	0.1-1%	Medium		
Bush birds	<i>Sturnus vulgaris</i>	Common Starling	51-200g	4	4	1	16	High	1-5%	High		
Bush birds	<i>Turdus merula</i>	Eurasian Blackbird	51-200g	4	1	1	4	Low	<0.1%	Low	X	
Bush birds	<i>Zosterops lateralis</i>	Silvereye	< 20g	1	2	1	2	Very low	<0.1%	Low		X
Corvids	<i>Cracticus nigrogularis</i>	Pied Butcherbird	201-1000g	8	1	1	8	Medium	<0.1%	Low	X	
Corvids	<i>Cracticus torquatus</i>	Grey Butcherbird	201-1000g	8	1	1	8	Medium	<0.1%	Low	X	
Corvids	<i>Gymnorhina tibicen</i>	Australian Magpie	201-1000g	8	2	1	16	High	1-5%	High		
Corvids	<i>Strepera graculina</i>	Pied Currawong	201-1000g	8	2	1	16	High	<0.1%	Low	X	
Corvids	<i>Strepera versicolor</i>	Grey Currawong	201-1000g	8	2	1	16	High	<0.1%	Low	X	
Corvids	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	51-200g	4	1	1	4	Low	<0.1%	Low	X	

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Corvids	<i>Coracina papuensis</i>	White-bellied Cuckoo-shrike	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Corvids	<i>Corcorax melanorhamphos</i>	White-winged Chough	201-1000g	8	4	1	32	Very high	<0.1%	Low		X
Corvids	<i>Corvus coronoides</i>	Australian Raven	201-1000g	8	2	1	16	High	0.1-1%	Medium		
Corvids	<i>Corvus mellori</i>	Little Raven	201-1000g	8	2	1	16	High	0.1-1%	Medium		
Game fowl	<i>Synoicus ypsilophora</i>	Brown Quail	51-200g	4	2	1	8	Medium	<0.1%	Low		X
Game fowl	<i>Turnix varius</i>	Painted Button-quail	51-200g	4	2	1	8	Medium	<0.1%	Low		X
Honeyeaters	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	< 20g	1	2	1	2	Very low	<0.1%	Low	X	
Honeyeaters	<i>Anthochaera carunculata</i>	Red Wattlebird	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Honeyeaters	<i>Anthochaera chrysoptera</i>	Little Wattlebird	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Honeyeaters	<i>Anthochaera phrygia</i>	Regent Honeyeater	21-50g	2	2	1	4	Low	<0.1%	Low	X	
Honeyeaters	<i>Caligavis chrysops</i>	Yellow-faced Honeyeater	< 20g	1	2	1	2	Very low	<0.1%	Low	X	
Honeyeaters	<i>Entomyzon cyanotis</i>	Blue-faced Honeyeater	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Honeyeaters	<i>Manorina melanocephala</i>	Noisy Miner	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Honeyeaters	<i>Manorina melanophrys</i>	Bell Miner	21-50g	2	2	1	4	Low	<0.1%	Low	X	
Honeyeaters	<i>Meliphaga lewinii</i>	Lewin's Honeyeater	21-50g	2	2	1	4	Low	<0.1%	Low	X	
Honeyeaters	<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	21-50g	2	2	1	4	Low	<0.1%	Low	X	

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Honeyeaters	<i>Melithreptus lunatus</i>	White-naped Honeyeater	< 20g	1	2	1	2	Very low	<0.1%	Low	X	
Honeyeaters	<i>Myzomela sanguinolenta</i>	Scarlet Honeyeater	< 20g	1	2	1	2	Very low	<0.1%	Low	X	
Honeyeaters	<i>Nesoptilotis leucotis</i>	White-eared Honeyeater	21-50g	2	2	1	4	Low	<0.1%	Low	X	
Honeyeaters	<i>Philemon corniculatus</i>	Noisy Friarbird	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Honeyeaters	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	21-50g	2	2	1	4	Low	<0.1%	Low	X	
Honeyeaters	<i>Ptilotula fusca</i>	Fuscous Honeyeater	< 20g	1	2	1	2	Very low	<0.1%	Low	X	
Honeyeaters	<i>Ptilotula penicillata</i>	White-plumed Honeyeater	< 20g	1	2	1	2	Very low	<0.1%	Low	X	
Kingfishers	<i>Ceyx azureus</i>	Azure Kingfisher	21-50g	2	1	1	2	Very Low	<0.1%	Low	X	
Kingfishers	<i>Dacelo novaeguineae</i>	Laughing Kookaburra	201-1000g	8	1	1	8	Medium	0.1-1%	Medium	X	
Kingfishers	<i>Todiramphus sanctus</i>	Sacred Kingfisher	21-50g	2	1	1	2	Very low	<0.1%	Low	X	
Owls	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	21-50g	2	1	2	4	Low	0.1-1%	Medium		
Owls	<i>Eurostopodus mystacalis</i>	White-throated Nightjar	51-200g	4	1	2	8	Medium	0.1-1%	Medium		
Owls	<i>Podargus strigoides</i>	Tawny Frogmouth	201-1000g	8	1	2	16	High	0.1-1%	Medium		
Owls	<i>Ninox connivens</i>	Barking Owl	201-1000g	8	1	2	16	High	0.1-1%	Medium		
Owls	<i>Ninox novaeseelandiae</i>	Southern Boobook	201-1000g	8	1	2	16	High	0.1-1%	Medium		
Owls	<i>Tyto javanica</i>	Eastern Barn Owl	201-1000g	8	1	2	16	High	1-5%	High		

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Owls	<i>Tyto novaehollandiae</i>	Masked Owl	1-5kg	16	1	2	32	Very high	0.1-1%	Medium		
Owls	<i>Tyto tenebricosa</i>	Sooty Owl	201-1000g	8	1	2	16	High	0.1-1%	Medium		
Parrots	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	201-1000g	8	2	2	32	Very high	0.1-1%	Medium		
Parrots	<i>Cacatua sanguinea</i>	Little Corella	201-1000g	8	2	1	16	High	0.1-1%	Medium		
Parrots	<i>Cacatua tenuirostris</i>	Long-billed Corella	201-1000g	8	4	2	64	Extreme	0.1-1%	Medium		
Parrots	<i>Eolophus roseicapilla</i>	Galah	201-1000g	8	4	2	64	Extreme	0.1-1%	Medium		
Parrots	<i>Nymphicus hollandicus</i>	Cockatiel	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Parrots	<i>Zanda funerea</i>	Yellow-tailed Black-Cockatoo	201-1000g	8	2	1	16	High	0.1-1%	Medium		
Parrots	<i>Alisterus scapularis</i>	Australian King-Parrot	201-1000g	8	2	1	16	High	0.1-1%	Medium	X	
Parrots	<i>Glossopsitta concinna</i>	Musk Lorikeet	51-200g	4	4	1	16	High	0.1-1%	Medium	X	
Parrots	<i>Glossopsitta pusilla</i>	Little Lorikeet	51-200g	4	4	1	16	High	0.1-1%	Medium	X	
Parrots	<i>Lathamus discolor</i>	Swift Parrot	51-200g	4	2	1	8	Medium	0.1-1%	Medium	X	
Parrots	<i>Melopsittacus undulatus</i>	Budgerigar	21-50g	2	4	1	8	Medium	0.1-1%	Medium	X	
Parrots	<i>Platycercus elegans</i>	Crimson Rosella	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Parrots	<i>Platycercus eximius</i>	Eastern Rosella	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Parrots	<i>Psephotus haematonotus</i>	Red-rumped Parrot	51-200g	4	2	1	8	Medium	0.1-1%	Medium	X	
Parrots	<i>Trichoglossus chlorolepidotus</i>	Scaly-breasted Lorikeet	51-200g	4	4	1	16	High	0.1-1%	Medium	X	

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Parrots	<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	51-200g	4	4	1	16	High	0.1-1%	Medium	X	
Pigeons	<i>Columba livia</i>	Rock Dove	201-1000g	8	4	2	64	Extreme	1-5%	High		
Pigeons	<i>Geopelia cuneata</i>	Diamond Dove	21-50g	2	2	1	4	Low	<0.1%	Low	X	
Pigeons	<i>Geopelia humeralis</i>	Bar-shouldered Dove	201-1000g	8	2	1	16	High	1-5%	High		
Pigeons	<i>Geopelia striata</i>	Peaceful Dove	201-1000g	8	2	1	16	High	1-5%	High		
Pigeons	<i>Ocyphaps lophotes</i>	Crested Pigeon	201-1000g	8	1	1	8	Medium	1-5%	High		
Pigeons	<i>Phaps chalcoptera</i>	Common Bronzewing	201-1000g	8	1	1	8	Medium	1-5%	High		
Pigeons	<i>Spilopelia chinensis</i>	Spotted Turtle-Dove	51-200g	4	2	1	8	Medium	1-5%	High		
Rails	<i>Fulica atra</i>	Eurasian Coot	201-1000g	8	2	1	16	High	<0.1%	Low	X	
Rails	<i>Gallinula tenebrosa</i>	Dusky Moorhen	201-1000g	8	1	1	8	Medium	<0.1%	Low	X	
Rails	<i>Porphyrio porphyrio</i>	Purple Swamphen	1-5kg	16	1	1	16	High	<0.1%	Low	X	
Raptors	<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk	201-1000g	8	1	1	8	Medium	0.1-1%	Medium		
Raptors	<i>Accipiter fasciatus</i>	Brown Goshawk	201-1000g	8	1	1	8	Medium	0.1-1%	Medium	X	
Raptors	<i>Accipiter novaehollandiae</i>	Grey Goshawk	201-1000g	8	1	1	8	Medium	0.1-1%	Medium	X	
Raptors	<i>Aquila audax</i>	Wedge-tailed Eagle	1-5kg	16	1	2	32	Very high	0.1-1%	Medium		
Raptors	<i>Elanus axillaris</i>	Black-shouldered Kite	201-1000g	8	1	2	16	High	0.1-1%	Medium		

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Raptors	<i>Haliastur sphenurus</i>	Whistling Kite	201-1000g	8	1	2	16	High	0.1-1%	Medium		
Raptors	<i>Hieraaetus morphnoides</i>	Little Eagle	1-5kg	16	1	2	32	Very high	0.1-1%	Medium		
Raptors	<i>Lophoictinia isura</i>	Square-tailed Kite	201-1000g	8	1	2	16	High	0.1-1%	Medium		
Raptors	<i>Falco berigora</i>	Brown Falcon	201-1000g	8	1	1	8	Medium	0.1-1%	Medium		
Raptors	<i>Falco cenchroides</i>	Nankeen Kestrel	51-200g	4	1	2	8	Medium	>5%	Very High		
Raptors	<i>Falco longipennis</i>	Australian Hobby	201-1000g	8	1	1	8	Medium	0.1-1%	Medium		
Raptors	<i>Falco peregrinus</i>	Peregrine Falcon	201-1000g	8	1	1	8	Medium	0.1-1%	Medium		
Swifts and Swallows	<i>Hirundapus caudacutus</i>	White-throated Needletail	51-200g	4	2	1	8	Medium	<0.1%	Low		X
Swifts and Swallows	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	21-50g	2	2	1	4	Low	<0.1%	Low		X
Swifts and Swallows	<i>Artamus personatus</i>	Masked Woodswallow	21-50g	2	2	1	4	Low	<0.1%	Low		X
Swifts and Swallows	<i>Hirundo neoxena</i>	Welcome Swallow	21-50g	2	2	2	8	Medium	>5%	Very High		
Swifts and Swallows	<i>Hirundo rustica</i>	Barn Swallow	21-50g	2	2	2	8	Medium	1-5%	High		
Swifts and Swallows	<i>Petrochelidon ariel</i>	Fairy Martin	< 20g	1	2	2	4	Low	1-5%	High		
Swifts and Swallows	<i>Petrochelidon nigricans</i>	Tree Martin	< 20g	1	2	2	4	Low	0.1-1%	Medium	X	
Waders	<i>Elseiyornis melanops</i>	Black-fronted Dotterel	21-50g	2	2	1	4	Low	<0.1%	Low	X	

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Waders	<i>Erythronys cinctus</i>	Red-kneed Dotterel	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Waders	<i>Himantopus himantopus</i>	Black-winged Stilt	51-200g	4	2	1	8	Medium	<0.1%	Low	X	
Waders	<i>Rostratula australis</i>	Australian Painted Snipe	51-200g	4	2	1	8	Medium	<0.1%	Low		X
Waders	<i>Gallinago hardwickii</i>	Latham's Snipe	51-200g	4	2	1	8	Medium	<0.1%	Low		X
Waterbirds	<i>Anhinga novaehollandiae</i>	Australasian Darter	1-5kg	16	1	1	16	High	0.1-1%	Medium		
Waterbirds	<i>Ardea Alba</i>	Eastern Great Egret	201-1000g	8	1	2	16	High	0.1-1%	Medium	X	
Waterbirds	<i>Ardea intermedia</i>	Intermediate Egret	201-1000g	8	1	2	16	High	0.1-1%	Medium	X	
Waterbirds	<i>Ardea pacifica</i>	White-necked Heron	201-1000g	8	1	2	16	High	0.1-1%	Medium		
Waterbirds	<i>Bubulcus ibis</i>	Cattle Egret	201-1000g	8	2	2	32	Very high	0.1-1%	Medium		
Waterbirds	<i>Egretta garzetta</i>	Little Egret	201-1000g	8	1	2	16	High	0.1-1%	Medium	X	
Waterbirds	<i>Egretta novaehollandiae</i>	White-faced Heron	201-1000g	8	1	2	16	High	0.1-1%	Medium		
Waterbirds	<i>Ixobrychus flavicollis</i>	Black Bittern	201-1000g	8	1	1	8	Medium	<0.1%	Low		X
Waterbirds	<i>Vanellus miles</i>	Masked Lapwing	201-1000g	8	2	2	32	Very high	1-5%	High		
Waterbirds	<i>Microcarbo melanoleucos</i>	Little Pied Cormorant	1-5kg	16	1	1	16	High	1-5%	High		
Waterbirds	<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant	1-5kg	16	1	1	16	High	1-5%	High		

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Waterbirds	<i>Phalacrocorax varius</i>	Pied Cormorant	1-5kg	16	2	1	32	Very high	1-5%	High		
Waterbirds	<i>Plegadis falcinellus</i>	Glossy Ibis	1-5kg	16	1	1	16	High	1-5%	High		
Waterbirds	<i>Threskiornis moluccus</i>	Australian White Ibis	1-5kg	16	4	1	64	Extreme	1-5%	High		
Waterbirds	<i>Threskiornis spinicollis</i>	Straw-necked Ibis	1-5kg	16	4	1	64	Extreme	1-5%	High		
Waterfowl	<i>Anas castanea</i>	Chestnut Teal	201-1000g	8	4	1	32	Very high	1-5%	High		
Waterfowl	<i>Anas gracilis</i>	Grey Teal	201-1000g	8	4	1	32	Very high	1-5%	High		
Waterfowl	<i>Anas rhynchotis</i>	Australasian Shoveler	201-1000g	8	2	1	16	High	1-5%	High		
Waterfowl	<i>Anas superciliosa</i>	Pacific Black Duck	201-1000g	8	4	1	32	Very high	1-5%	High		
Waterfowl	<i>Aythya australis</i>	Hardhead	201-1000g	8	2	1	16	High	1-5%	High		
Waterfowl	<i>Chenonetta jubata</i>	Australian Wood Duck	201-1000g	8	4	1	32	Very high	1-5%	High		
Waterfowl	<i>Cygnus atratus</i>	Black Swan	> 5kg	32	4	1	128	Extreme	0.1-1%	Medium		
Waterfowl	<i>Malacorhynchus membranaceus</i>	Pink-eared Duck	201-1000g	8	4	1	32	Very high	1-5%	High		
Waterfowl	<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe	201-1000g	8	1	1	8	Medium	<0.1%	High		X
Waterfowl	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	201-1000g	8	1	1	8	Medium	<0.1%	High		X
Megabats	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	1-5kg	16	4	2	128	Extreme	>5%	Very High		
Megabats	<i>Pteropus scapulatus</i>	Little Red Flying-fox	201-1000g	8	4	2	64	Extreme	>5%	Very High		

Functional Group	Species	Common Name	Mass	Mass Score	Flock Score	Flight Score	Cnsqce Score	Consequence Rank	Relative Frequency	Prob. Rank	Determined by AU-wide data	No strikes recorded from any data source
Microbats	<i>Austronomus australis</i>	White-striped Freetail-bat	21-50g	2	2	2	8	Medium	0.1-1%	Medium		
Microbats	<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	< 20g	1	2	2	4	Low	0.1-1%	Medium		
Microbats	<i>Ozimops ridei</i>	Eastern Free-tailed Bat	< 20g	1	2	2	4	Low	0.1-1%	Medium		
Microbats	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	< 20g	1	2	2	4	Low	0.1-1%	Medium		
Microbats	<i>Chalinolobus morio</i>	Chocolate Wattled Bat	< 20g	1	2	2	4	Low	0.1-1%	Medium		
Microbats	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	< 20g	1	2	2	4	Low	0.1-1%	Medium		
Microbats	<i>Nyctophilus gouldi</i>	Gould's Long-eared Bat	< 20g	1	2	2	4	Low	0.1-1%	Medium		
Microbats	<i>Scotorepens orion</i>	Eastern Broad-nosed Bat	< 20g	1	2	2	4	Low	0.1-1%	Medium		
Microbats	<i>Vespadelus vulturnus</i>	Little Forest Bat	< 20g	1	2	2	4	Low	0.1-1%	Medium		

Appendix E Hazard Assessment Rankings by Species

Functional Group	Species	Common Name	Likelihood of occurrence	Consequence Rank	Probability Rank	Hazard Rank (Consequence x Probability)
Megabats	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	High	Extreme	Very High	Extreme
Megabats	<i>Pteropus scapulatus</i>	Little Red Flying-fox	Moderate	Extreme	Very High	Extreme
Pigeons	<i>Columba livia</i>	Rock Dove	High	Extreme	High	Extreme
Waterbirds	<i>Threskiornis moluccus</i>	Australian White Ibis	High	Extreme	High	Extreme
Waterbirds	<i>Threskiornis spinicollis</i>	Straw-necked Ibis	Moderate	Extreme	High	Extreme
Parrots	<i>Cacatua tenuirostris</i>	Long-billed Corella	High	Extreme	Medium	Very High
Parrots	<i>Eolophus roseicapilla</i>	Galah	High	Extreme	Medium	Very High
Waterfowl	<i>Cygnus atratus</i>	Black Swan	Present	Extreme	Medium	Very High
Waterbirds	<i>Phalacrocorax varius</i>	Pied Cormorant	Moderate	Very high	High	High
Waterbirds	<i>Vanellus miles</i>	Masked Lapwing	High	Very high	High	High
Waterfowl	<i>Anas castanea</i>	Chestnut Teal	High	Very high	High	High
Waterfowl	<i>Anas gracilis</i>	Grey Teal	High	Very high	High	High
Waterfowl	<i>Anas superciliosa</i>	Pacific Black Duck	Present	Very high	High	High
Waterfowl	<i>Chenonetta jubata</i>	Australian Wood Duck	Present	Very high	High	High
Waterfowl	<i>Malacorhynchus membranaceus</i>	Pink-eared Duck	Moderate	Very high	High	High
Owls	<i>Tyto novaehollandiae</i>	Masked Owl	Moderate	Very high	Medium	High
Parrots	<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	High	Very high	Medium	High
Raptors	<i>Aquila audax</i>	Wedge-tailed Eagle	Moderate	Very high	Medium	High
Raptors	<i>Hieraaetus morphnoides</i>	Little Eagle	Moderate	Very high	Medium	High
Waterbirds	<i>Bubulcus ibis</i>	Cattle Egret	High	Very high	Medium	High
Bush birds	<i>Sturnus vulgaris</i>	Common Starling	High	High	High	High
Corvids	<i>Gymnorhina tibicen</i>	Australian Magpie	High	High	High	High
Owls	<i>Tyto javanica</i>	Eastern Barn Owl	High	High	High	High

Functional Group	Species	Common Name	Likelihood of occurrence	Consequence Rank	Probability Rank	Hazard Rank (Consequence x Probability)
Pigeons	<i>Geopelia humeralis</i>	Bar-shouldered Dove	Moderate	High	High	High
Pigeons	<i>Geopelia striata</i>	Peaceful Dove	Moderate	High	High	High
Waterbirds	<i>Microcarbo melanoleucos</i>	Little Pied Cormorant	Present	High	High	High
Waterbirds	<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant	High	High	High	High
Waterbirds	<i>Plegadis falcinellus</i>	Glossy Ibis	Moderate	High	High	High
Waterfowl	<i>Anas rhynchotis</i>	Australasian Shoveler	Moderate	High	High	High
Waterfowl	<i>Aythya australis</i>	Hardhead	Moderate	High	High	High
Corvids	<i>Corcorax melanorhamphos</i>	White-winged Chough	High	Very high	Low	Medium
Bush birds	<i>Grallina cyanoleuca</i>	Magpie-lark	High	High	Medium	Medium
Corvids	<i>Corvus coronoides</i>	Australian Raven	High	High	Medium	Medium
Corvids	<i>Corvus mellori</i>	Little Raven	High	High	Medium	Medium
Owls	<i>Ninox connivens</i>	Barking Owl	Moderate	High	Medium	Medium
Owls	<i>Ninox novaeseelandiae</i>	Southern Boobook	Moderate	High	Medium	Medium
Owls	<i>Podargus strigoides</i>	Tawny Frogmouth	High	High	Medium	Medium
Owls	<i>Tyto tenebricosa</i>	Sooty Owl	Moderate	High	Medium	Medium
Parrots	<i>Alisterus scapularis</i>	Australian King-Parrot	Moderate	High	Medium	Medium
Parrots	<i>Cacatua sanguinea</i>	Little Corella	High	High	Medium	Medium
Parrots	<i>Glossopsitta concinna</i>	Musk Lorikeet	High	High	Medium	Medium
Parrots	<i>Glossopsitta pusilla</i>	Little Lorikeet	Moderate	High	Medium	Medium
Parrots	<i>Trichoglossus chlorolepidotus</i>	Scaly-breasted Lorikeet	Moderate	High	Medium	Medium
Parrots	<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	High	High	Medium	Medium
Parrots	<i>Zanda funerea</i>	Yellow-tailed Black-Cockatoo	Moderate	High	Medium	Medium
Raptors	<i>Elanus axillaris</i>	Black-shouldered Kite	Moderate	High	Medium	Medium
Raptors	<i>Haliastur sphenurus</i>	Whistling Kite	Moderate	High	Medium	Medium
Raptors	<i>Lophoictinia isura</i>	Square-tailed Kite	Moderate	High	Medium	Medium
Waterbirds	<i>Anhinga novaehollandiae</i>	Australasian Darter	Moderate	High	Medium	Medium

Functional Group	Species	Common Name	Likelihood of occurrence	Consequence Rank	Probability Rank	Hazard Rank (Consequence x Probability)
Waterbirds	<i>Ardea Alba</i>	Eastern Great Egret	High	High	Medium	Medium
Waterbirds	<i>Ardea intermedia</i>	Intermediate Egret	Present	High	Medium	Medium
Waterbirds	<i>Ardea pacifica</i>	White-necked Heron	Moderate	High	Medium	Medium
Waterbirds	<i>Egretta garzetta</i>	Little Egret	Present	High	Medium	Medium
Waterbirds	<i>Egretta novaehollandiae</i>	White-faced Heron	High	High	Medium	Medium
Bush birds	<i>Eurystomus orientalis</i>	Dollarbird	Moderate	High	Low	Medium
Bush birds	<i>Psophodes olivaceus</i>	Eastern Whipbird	Moderate	High	Low	Medium
Corvids	<i>Strepera graculina</i>	Pied Currawong	High	High	Low	Medium
Corvids	<i>Strepera versicolor</i>	Grey Currawong	High	High	Low	Medium
Rails	<i>Fulica atra</i>	Eurasian Coot	Present	High	Low	Medium
Rails	<i>Porphyrio porphyrio</i>	Purple Swamphen	Present	High	Low	Medium
Raptors	<i>Falco cenchroides</i>	Nankeen Kestrel	High	Medium	Very High	Medium
Swifts and Swallows	<i>Hirundo neoxena</i>	Welcome Swallow	High	Medium	Very High	Medium
Pigeons	<i>Ocyphaps lophotes</i>	Crested Pigeon	High	Medium	High	Medium
Pigeons	<i>Phaps chalcoptera</i>	Common Bronzewing	High	Medium	High	Medium
Pigeons	<i>Spilopelia chinensis</i>	Spotted Turtle-Dove	High	Medium	High	Medium
Swifts and Swallows	<i>Hirundo rustica</i>	Barn Swallow	Moderate	Medium	High	Medium
Waterfowl	<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe	High	Medium	High	Medium
Waterfowl	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe	High	Medium	High	Medium
Bush birds	<i>Acridotheres tristis</i>	Common Myna	High	Medium	Medium	Low
Bush birds	<i>Passer domesticus</i>	House Sparrow	High	Medium	Medium	Low
Kingfishers	<i>Dacelo novaeguineae</i>	Laughing Kookaburra	High	Medium	Medium	Low
Microbats	<i>Austronomus australis</i>	White-striped Freetail-bat	High	Medium	Medium	Low
Owls	<i>Eurostopodus mystacalis</i>	White-throated Nightjar	Moderate	Medium	Medium	Low

Functional Group	Species	Common Name	Likelihood of occurrence	Consequence Rank	Probability Rank	Hazard Rank (Consequence x Probability)
Parrots	<i>Lathamus discolor</i>	Swift Parrot	Moderate	Medium	Medium	Low
Parrots	<i>Melopsittacus undulatus</i>	Budgerigar	Moderate	Medium	Medium	Low
Parrots	<i>Psephotus haematonotus</i>	Red-rumped Parrot	High	Medium	Medium	Low
Raptors	<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk	Moderate	Medium	Medium	Low
Raptors	<i>Accipiter fasciatus</i>	Brown Goshawk	Moderate	Medium	Medium	Low
Raptors	<i>Accipiter novaehollandiae</i>	Grey Goshawk	Moderate	Medium	Medium	Low
Raptors	<i>Falco berigora</i>	Brown Falcon	Moderate	Medium	Medium	Low
Raptors	<i>Falco longipennis</i>	Australian Hobby	Moderate	Medium	Medium	Low
Raptors	<i>Falco peregrinus</i>	Peregrine Falcon	Moderate	Medium	Medium	Low
Corvids	<i>Coracina papuensis</i>	White-bellied Cuckoo-shrike	Moderate	Medium	Low	Low
Corvids	<i>Cracticus nigrogularis</i>	Pied Butcherbird	High	Medium	Low	Low
Corvids	<i>Cracticus torquatus</i>	Grey Butcherbird	High	Medium	Low	Low
Game fowl	<i>Synoicus ypsilophora</i>	Brown Quail	Moderate	Medium	Low	Low
Game fowl	<i>Turnix varius</i>	Painted Button-quail	Moderate	Medium	Low	Low
Honeyeaters	<i>Anthochaera carunculata</i>	Red Wattlebird	High	Medium	Low	Low
Honeyeaters	<i>Anthochaera chrysoptera</i>	Little Wattlebird	High	Medium	Low	Low
Honeyeaters	<i>Entomyzon cyanotis</i>	Blue-faced Honeyeater	Moderate	Medium	Low	Low
Honeyeaters	<i>Manorina melanocephala</i>	Noisy Miner	High	Medium	Low	Low
Honeyeaters	<i>Philemon corniculatus</i>	Noisy Friarbird	Moderate	Medium	Low	Low
Parrots	<i>Nymphicus hollandicus</i>	Cockatiel	Moderate	Medium	Low	Low
Parrots	<i>Platycercus elegans</i>	Crimson Rosella	High	Medium	Low	Low
Parrots	<i>Platycercus eximius</i>	Eastern Rosella	High	Medium	Low	Low
Rails	<i>Gallinula tenebrosa</i>	Dusky Moorhen	Present	Medium	Low	Low
Swifts and Swallows	<i>Hirundapus caudacutus</i>	White-throated Needletail	Moderate	Medium	Low	Low
Waders	<i>Erythronyctes alba</i>	Red-kneed Dotterel	Moderate	Medium	Low	Low

Functional Group	Species	Common Name	Likelihood of occurrence	Consequence Rank	Probability Rank	Hazard Rank (Consequence x Probability)
Waders	<i>Gallinago hardwickii</i>	Latham's Snipe	Present	Medium	Low	Low
Waders	<i>Himantopus himantopus</i>	Black-winged Stilt	Moderate	Medium	Low	Low
Waders	<i>Rostratula australis</i>	Australian Painted Snipe	Moderate	Medium	Low	Low
Waterbirds	<i>Ixobrychus flavicollis</i>	Black Bittern	Moderate	Medium	Low	Low
Swifts and Swallows	<i>Petrochelidon ariel</i>	Fairy Martin	Moderate	Low	High	Low
Bush birds	<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	High	Low	Medium	Negligible
Bush birds	<i>Carduelis carduelis</i>	European Goldfinch	High	Low	Medium	Negligible
Bush birds	<i>Heteroscenes pallidus</i>	Pallid Cuckoo	High	Low	Medium	Negligible
Bush birds	<i>Neochmia temporalis</i>	Red-browed Finch	High	Low	Medium	Negligible
Bush birds	<i>Passer montanus</i>	Eurasian Tree Sparrow	Moderate	Low	Medium	Negligible
Bush birds	<i>Stizoptera bichenovii</i>	Double-barred Finch	High	Low	Medium	Negligible
Microbats	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	Moderate	Low	Medium	Negligible
Microbats	<i>Chalinolobus morio</i>	Chocolate Wattled Bat	High	Low	Medium	Negligible
Microbats	<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	Moderate	Low	Medium	Negligible
Microbats	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	Moderate	Low	Medium	Negligible
Microbats	<i>Nyctophilus gouldi</i>	Gould's Long-eared Bat	Moderate	Low	Medium	Negligible
Microbats	<i>Ozimops ridei</i>	Eastern Free-tailed Bat	Moderate	Low	Medium	Negligible
Microbats	<i>Scotorepens orion</i>	Eastern Broad-nosed Bat	Moderate	Low	Medium	Negligible
Microbats	<i>Vespadelus vulturnus</i>	Little Forest Bat	Moderate	Low	Medium	Negligible
Owls	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	High	Low	Medium	Negligible
Swifts and Swallows	<i>Petrochelidon nigricans</i>	Tree Martin	Moderate	Low	Medium	Negligible
Bush birds	<i>Cincloramphus mathewsi</i>	Rufous Songlark	Moderate	Low	Low	Negligible
Bush birds	<i>Cinclosoma punctatum</i>	Spotted Quail-thrush	Moderate	Low	Low	Negligible
Bush birds	<i>Colluricincla harmonica</i>	Grey Shrike-thrush	High	Low	Low	Negligible

Functional Group	Species	Common Name	Likelihood of occurrence	Consequence Rank	Probability Rank	Hazard Rank (Consequence x Probability)
Bush birds	<i>Daphoenositta chrysoptera</i>	Varied Sittella	Moderate	Low	Low	Negligible
Bush birds	<i>Lalage sueurii</i>	White-winged Triller	Moderate	Low	Low	Negligible
Bush birds	<i>Merops ornatus</i>	Rainbow Bee-eater	Moderate	Low	Low	Negligible
Bush birds	<i>Myiagra inquieta</i>	Restless Flycatcher	High	Low	Low	Negligible
Bush birds	<i>Oriolus sagittatus</i>	Olive-backed Oriole	Moderate	Low	Low	Negligible
Bush birds	<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul	High	Low	Low	Negligible
Bush birds	<i>Turdus merula</i>	Eurasian Blackbird	High	Low	Low	Negligible
Corvids	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	High	Low	Low	Negligible
Honeyeaters	<i>Anthochaera phrygia</i>	Regent Honeyeater	Moderate	Low	Low	Negligible
Honeyeaters	<i>Manorina melanophrys</i>	Bell Miner	High	Low	Low	Negligible
Honeyeaters	<i>Meliphaga lewinii</i>	Lewin's Honeyeater	Moderate	Low	Low	Negligible
Honeyeaters	<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	Moderate	Low	Low	Negligible
Honeyeaters	<i>Nesoptilotis leucotis</i>	White-eared Honeyeater	Moderate	Low	Low	Negligible
Honeyeaters	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	High	Low	Low	Negligible
Pigeons	<i>Geopelia cuneata</i>	Diamond Dove	Moderate	Low	Low	Negligible
Swifts and Swallows	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Moderate	Low	Low	Negligible
Swifts and Swallows	<i>Artamus personatus</i>	Masked Woodswallow	Moderate	Low	Low	Negligible
Waders	<i>Elsemyornis melanops</i>	Black-fronted Dotterel	Moderate	Low	Low	Negligible
Bush birds	<i>Anthus novaeseelandiae</i>	Australian Pipit	High	Very low	Very High	Negligible
Bush birds	<i>Cacomantis variolosus</i>	Brush Cuckoo	Moderate	Very low	Medium	Negligible
Bush birds	<i>Chalcites basal</i>	Horsfield's Bronze-Cuckoo	Moderate	Very low	Medium	Negligible
Bush birds	<i>Chalcites lucidus</i>	Shining Bronze-Cuckoo	Moderate	Very low	Medium	Negligible
Bush birds	<i>Rhipidura leucophrys</i>	Willie Wagtail	High	Very low	Medium	Negligible
Bush birds	<i>Taeniopygia guttata</i>	Zebra Finch	Moderate	Very low	Medium	Negligible

Functional Group	Species	Common Name	Likelihood of occurrence	Consequence Rank	Probability Rank	Hazard Rank (Consequence x Probability)
Bush birds	<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	High	Very low	Low	Negligible
Bush birds	<i>Acanthiza lineata</i>	Striated Thornbill	High	Very low	Low	Negligible
Bush birds	<i>Acanthiza nana</i>	Yellow Thornbill	High	Very low	Low	Negligible
Bush birds	<i>Acanthiza pusilla</i>	Brown Thornbill	High	Very low	Low	Negligible
Bush birds	<i>Acanthiza reguloides</i>	Buff-rumped Thornbill	Moderate	Very low	Low	Negligible
Bush birds	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	Moderate	Very low	Low	Negligible
Bush birds	<i>Cormobates leucophaea</i>	White-throated Treecreeper	High	Very low	Low	Negligible
Bush birds	<i>Eopsaltria australis</i>	Eastern Yellow Robin	High	Very low	Low	Negligible
Bush birds	<i>Falcunculus frontatus frontatus</i>	Crested Shrike-tit, Eastern Shrike-tit	High	Very low	Low	Negligible
Bush birds	<i>Gerygone mouki</i>	Brown Gerygone	Moderate	Very low	Low	Negligible
Bush birds	<i>Gerygone olivacea</i>	White-throated Gerygone	High	Very low	Low	Negligible
Bush birds	<i>Malurus cyaneus</i>	Superb Fairy-wren	High	Very low	Low	Negligible
Bush birds	<i>Malurus lamberti</i>	Variegated Fairy-wren	High	Very low	Low	Negligible
Bush birds	<i>Microeca fascinans</i>	Jacky Winter	Moderate	Very low	Low	Negligible
Bush birds	<i>Pachycephala pectoralis</i>	Golden Whistler	High	Very low	Low	Negligible
Bush birds	<i>Pachycephala rufiventris</i>	Rufous Whistler	High	Very low	Low	Negligible
Bush birds	<i>Pardalotus punctatus</i>	Spotted Pardalote	High	Very low	Low	Negligible
Bush birds	<i>Pardalotus striatus</i>	Striated Pardalote	High	Very low	Low	Negligible
Bush birds	<i>Petroica rosea</i>	Rose Robin	Moderate	Very low	Low	Negligible
Bush birds	<i>Rhipidura albiscapa</i>	Grey Fantail	High	Very low	Low	Negligible
Bush birds	<i>Sericornis frontalis</i>	White-browed Scrubwren	High	Very low	Low	Negligible
Bush birds	<i>Smicrornis brevirostris</i>	Weebill	High	Very low	Low	Negligible
Bush birds	<i>Zosterops lateralis</i>	Silvereye	High	Very low	Low	Negligible
Honeyeaters	<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	High	Very low	Low	Negligible

Functional Group	Species	Common Name	Likelihood of occurrence	Consequence Rank	Probability Rank	Hazard Rank (Consequence x Probability)
Honeyeaters	<i>Caligavis chrysops</i>	Yellow-faced Honeyeater	High	Very low	Low	Negligible
Honeyeaters	<i>Melithreptus lunatus</i>	White-naped Honeyeater	Moderate	Very low	Low	Negligible
Honeyeaters	<i>Myzomela sanguinolenta</i>	Scarlet Honeyeater	Moderate	Very low	Low	Negligible
Honeyeaters	<i>Ptilotula fusca</i>	Fuscous Honeyeater	High	Very low	Low	Negligible
Honeyeaters	<i>Ptilotula penicillata</i>	White-plumed Honeyeater	High	Very low	Low	Negligible
Kingfishers	<i>Ceyx azureus</i>	Azure Kingfisher	Moderate	Very Low	Low	Negligible
Kingfishers	<i>Todiramphus sanctus</i>	Sacred Kingfisher	High	Very low	Low	Negligible

Appendix F Guilds/Functional Group Categorisation

Guild/Functional Group	Examples
Bush birds	Fairy-wrens, Thornbills, Gerygones, Scrubwrens, Weebills, Treecreepers, Pipits, Whistlers, Robins, Starlings, Silvereyes, Pardalotes, Finches, Sparrows
Corvids	Australian Magpie, Ravens, Currawongs, Butcherbirds, Cuckoo-shrikes, White-winged Chough.
Game fowl	Australian Brush-turkey, Quails, Button-quails, Junglefowl
Gulls	Silver Gull
Honeyeaters	Wattlebirds, Spinebills, Noisy Miner, Noisy Friar bird, other Honeyeaters.
Kingfishers	Kookaburra, Sacred Kingfisher, other Kingfishers
Large flightless birds	Emu
Megabats	Grey-headed Flying-fox, Little Red Flying-fox
Microbats	Free-tailed Bats, Long-eared Bats, Wattled Bats, Little Forest Bat
Owls	Eastern Barn Owl, Southern Boobook, Tawny Frogmouth, other nightjars
Parrots	Cockatoos, Corellas, Galah, Cockatiel, Budgerigar, Lorikeets, Rosellas, other Parrots such as Swift Parrot
Pigeons	Rock Dove, Peaceful Dove, Bar-shouldered Dove, Wonga Pigeon, Crested Pigeon, Spotted Turtle-Dove, Common Bronzewing
Rails	Coots, Moorhens, Swamphens, Crakes, Rails.
Raptors	Wedge-tailed Eagle, other Eagles, Goshawks, Kites, Falcons, Kestrels, Hobbies.
Seabirds	Terns, Petrels
Swifts and Swallows	Welcome Swallow, Fairy Martin, Tree Martin, Fork-tailed Swift, Wood swallows, White-throated Needletail
Waders	Snipe, Stilts, Dotterel, Plovers, Sandpipers, Curlews
Waterbirds	Ibis, Herons, Egrets, Bitterns, Snipe, Darters, Pelicans, Cormorants, Spoonbills
Waterfowl	Ducks, Grebes, Swans

