Wildlife Hazard Management Plan

TRG Bushfire Response and Training Centre Block 45 Section 3 Hume ACT.

*

June 2024

Ver A

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Table of Contents

Record of Review

Version	Date	Description of Change
Ver A	June 2024	Final plan

1.0 Introduction

EPSDD has requested a Wildlife Hazard Management Plan (WHMP), pursuant to an EIS for establishing a Bush Fire and Training Centre located on Block 45 Section 3 Hume ACT. The preparation of this WHMP is also in response to recommendations made by Lanterra Consulting in their Bird Strike Assessment (28 May 2023) prepared to assess the potential risk for bird strikes on proposed helicopter operations to support an emergency response to bushfires.

Consultation with Canberra Airport Group requested that the National Airport Safety Framework (NASF) guidelines be addressed. NASF (2012) aims to develop informed land use planning regimes to safeguard airports and adjacent communities by reducing the risk of collisions between wildlife and helicopters. NASF Guideline C provides guidelines to land users and land planners to identify and prevent, or mitigate, risks by assigning risk categories to land uses within radial distances of 3, 8, and 13 km of airport runways (as recommended by the International Civil Aviation Organisation), see Figure 1.

Whilst **the proposed development is not considered to be a bird attractant listed in guideline C,** the guideline was used, to assess land uses in the vicinity of the proposed development, to assess the risk of helicopter bird strike of the proposed operation base/ helicopter activity given surrounding land use and the associated bird attractant attributes.

The Lanterra assessment found that several bird attraction activities are near the proposed development and while the proposed activity itself would present a low risk of bird attraction/impact on helicopters, the activity of flying a helicopter to and from the site could be involved in the occurrence of a wildlife event, incident or accident event. Therefore, the preparation of this WHMP is in response to the report's findings. The plan provides procedures to deal with danger to helicopter operations caused by the presence of wildlife on or near the site.

The consequences of wildlife strikes with helicopters can be serious. Wildlife strikes have caused 744 human fatalities and 664 helicopter losses since the beginning of aviation (Shaw & Dolbeer, 2023). Wildlife strikes, which involve more than just the repair of damaged engines and airframes, cost the commercial civil aviation industry an estimated USD$1.2 billion per annum (Allan, 2002). In Australia, annual estimates range from AUD$11.9 million per year (Parsons, 2022) to AUD$103 million per year (Avisure 2022, unpublished data). Although wildlife strikes rarely have catastrophic outcomes for helicopters, in Australia, they remain the leading single cause of occurrence to airline transport category operations. Even apparently minor strikes that result in no obvious damage can significantly increase airline operating costs due to downtime associated with damage investigations and repair.

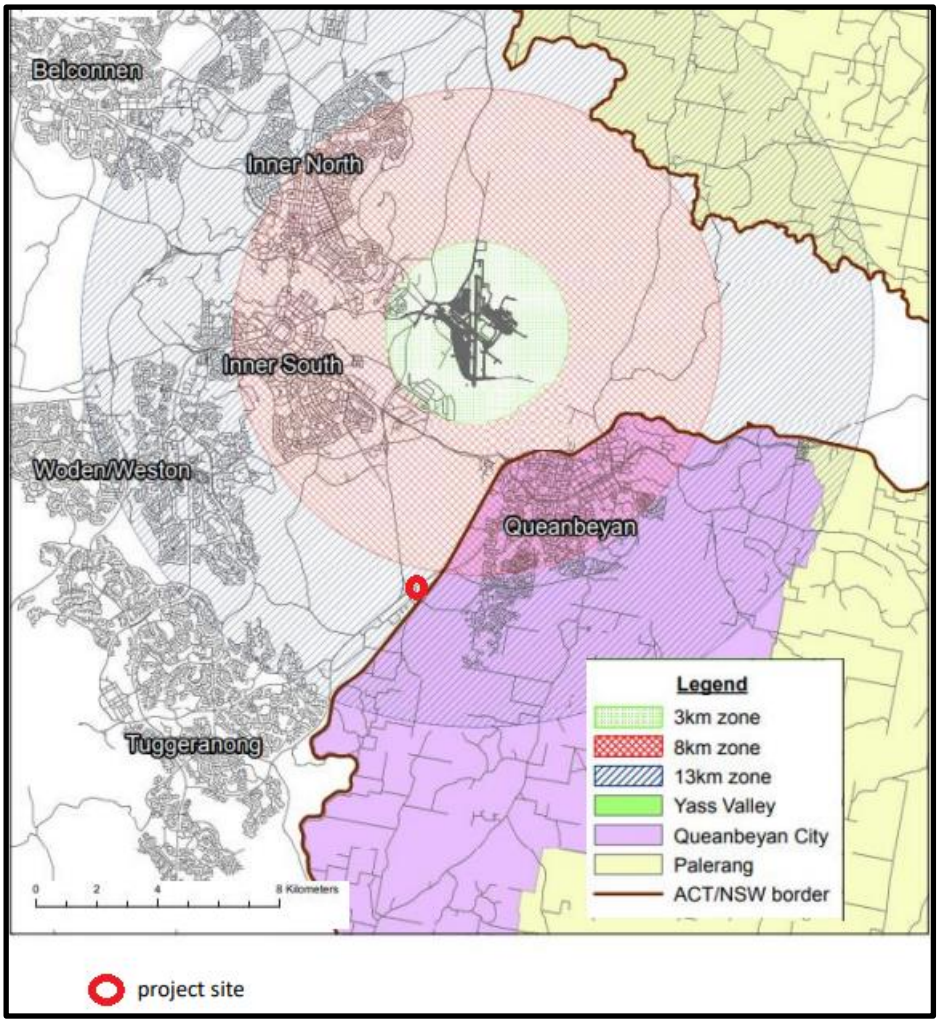
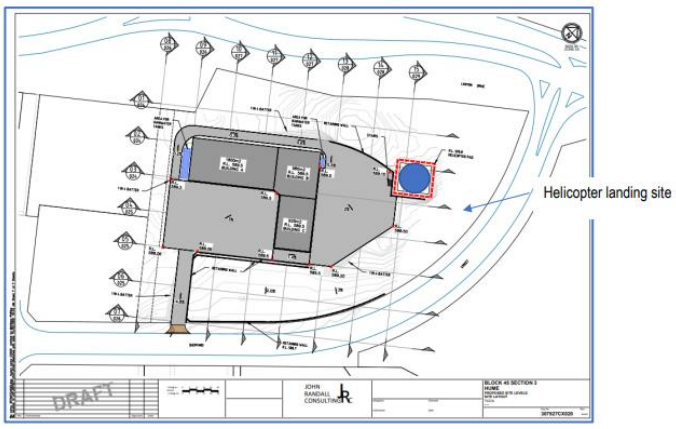


Figure 1 Wildlife risk zones near Canberra Airport

DA Number:	202240365 S144C
Site Details:	Block: 45, Section: 3Suburb: HUME, District: JERRABOMBERRA



Note: National Airports Safeguarding Framework Guideline C - Aims to develop informed land use planning decisions to safeguard airports and their adjacent communities from wildlife hazards based on the international and national regulatory framework. The NASF allocates risk categories to incompatible land uses (extremely low to high), adhering to ICAO guidelines relative to radial distances from aerodromes, and recommends actions (incompatible, mitigate, monitor, no action) for both existing and proposed developments. **The proposed development /land use is located at a radial distance from Canberra airport to not warrant action as the wildlife attraction risk is very low ,as shown in the following table.**

NASF land use guidelines.

Land Use	Wildlife Attraction Risk	Actions for Existing Developments			Actions for Proposed Developments/ Changes to Existing Developments		
		3 km radius (Area A)	8 km radius (Area B)	13 km radius (Area C)	3 km radius (Area A)	8 km radius (Area B)	13 km radius (Area C)
Agriculture							
Turf farm	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Piggery	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Fruit tree farm	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Fish processing /packing plant	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Cattle /dairy farm	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Poultry farm	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Forestry	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Plant nursery	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Conservation							
Wildlife sanctuary / conservation area - wetland	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Wildlife sanctuary / conservation area - dryland	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Recreation							
Showground	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Racetrack / horse riding school	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Golf course	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Sports facility (tennis, bowls, etc)	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Park / Playground	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Picnic / camping ground	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Commercial							
Food processing plant	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Warehouse (food storage)	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Fast food / drive-in / outdoor restaurant	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Shopping centre	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Office building	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Hotel / motel	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Car park	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Cinemas	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Warehouse (non-food storage)	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Petrol station	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Utilities							
Food / organic waste facility	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Putrescible waste facility - landfill	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Putrescible waste facility - transfer station	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Non-putrescible waste facility - landfill	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Non-putrescible waste facility - transfer station	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Sewage / wastewater treatment facility	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Potable water treatment facility	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action

2.0 Wildlife Management Plan Overview

In summary, this Wildlife Hazard Management Plan addresses current and potential wildlife attractants at and near the site, identifies appropriate methods/designs to minimise the hazard and identifies those responsible for monitoring and acting on hazards and reviewing the plan. The WHMP is a subsidiary document of the Facility Operations Manual and in particular the helicopter operation manual/ standard operation g procedures.

The Chief Operating Officer (COO) assumes overall responsibility for WHMP implementation.

There is a large body of data on wildlife in the relevant area, which can be found:

• online on the eBird website

• in publications of the Canberra Ornithologists Group (COG) and their chatline archive
• Records of quarterly bird counts at the Jerrabomberra Wetlands Reserve and Fyshwick Sewage Treatment Plant

• Canberra Airport records • Consultants' reports to Canberra Airport

• Assessments carried out as part of environmental impact assessment, and

• National Capital Authority data on the Grey-headed Flying-fox camp at Commonwealth Park (Ecosure 2019).

2.1 Environmental and Ecological Profile

These sources together with the Lanterra assessment were consulted to prepare the WHMP.

Table 1 provides a list of nearby land use activities which pose a potential risk to proposed helicopter operations from bird attractant activities.

Land Use area	Location from the proposed development site	Land Use Description /NASF	NASF Wildlife Attractant Risk	Potential risk to proposed helicopter landing site	Justification of potential risk rating
Farm dams/water course	Various	Not described	Not applicable	High	Various species – movement of birds between various water bodies could result in birds infringing flight paths.
Mugga Way Landfill	2 km W	Putrescible waste facility	High	High	Further assessment required to determine bird use of location and likelihood to transit operational flight paths.
Jerrabomberra Wetland	5km NE	Wetland	High	Low to moderate	Has the potential to roost or nesting location for wetland species. However, some distance from the site. Further assessment required to determine bird use of location and likelihood to transit operational flight paths
Grassland	.3km E	Dryland	Moderate	Moderate	May provide forage for host to a good range of summer migrants such as Rufous Songlark, bronze-cuckoos, woodswallows, Tree Martins, and gerygones, as well as some

					scarcer species like Diamond Firetail and Southern Whiteface, Masked Lapwings (Plover). Further assessment required to determine bird use of location and likelihood to transit operational flight paths
Boral Quarry	1km NE	Not described	Not applicable	Low	Ponds may attract water birds. Further assessment required to determine bird use of location and likelihood to transit operational flight paths
QPRC Regional Sports Centre. See Precinct Plan below.	Approx 800m E	Sports Centre	Moderate	Low	Further assessment required to determine bird use of location and likelihood to transit operational flight paths
Goterra Food Waste processing	Approx 460m E	Food Waste processing	High	low	The Goterra food waste facility is conducted in a controlled manner in which food waste subjected to conversion to protein meal inside sea containers. The operation is not expected to be a bird attractant activity, however monitoring may be necessary.
FOGO project	2 km SW	Food Waste processing	High	Low	The FOGO Project is proposed to be constructed on Block 5, Section 26 Hume, off John Cory Road. The site is surrounded by industrial facilities. Under the National Airports Safeguarding Framework, the site is within a 10km radius of the airport (Area B). The Project would need to include considerations for the mitigation against wildlife hazard. The scoping document prepared for the project by Arup recognises this and further states that - Appropriate land use management can significantly reduce the risk of wildlife hazards. The potential hazard and risks as well as mitigation measures will be further investigated during the EIS process and one can assume that mitigation measures will be put in place and therefore will not impact on the proposed Emergency services facility from bird strike,

Avisure (2017) prepared a detailed wildlife hazard assessment for 13 sites south of Canberra Airport that contained water bodies or were being developed as wetlands, lagoons, rain gardens, and detention ponds, as part of the ACT Healthy Waterways program. It is also likely that the Molonglo River corridor is used by birds moving between the site area and Lake Burley Griffin, Jerrabomberra Wetlands Reserve, Fyshwick Sewage Treatment Plant, and Canturf, a path that passes directly under the southern approach of the main runway. Several species of large birds such as Pelicans, White and Straw-necked Ibis, Australasian Darters and various raptors may also circle on thermals south of the airport when arriving at or leaving the area. Birds that feed and

rest at the Mugga Lane Resource Management Centre in Symonston (ACT) may also pass through the runway approach.

3.0 Management /Mitigation

The section outlines wildlife hazard management pertaining to the design and operation phases, including: • Hazard Detection • Hazard Monitoring • Hazard Communication • Wildlife Strike Reporting • Hazard Mitigation.

3.1 Design Stage

Design options and exclusion devices to exclude roosting, nesting, and perching opportunities for birds on lighting, buildings, and fences. For example: - Hardstand landing area - Drainage system to minimise the availability of standing water - Waste receptacle designed and located to reduce the accessibility of putrescible waste to scavenging species. - Bird exclusion devices installed on buildings/lights/fences.

3.2 Operation stage

The design and operation of the proposed development should avoid the following features or situations as they are likely to attract hazardous species and therefore increase the risk of collision with the helicopter.

3.2.1 General features/situations to avoid.

- Large areas of mown grassland, especially irrigated with effluent.
- Bird feeding or waste food stuffs in accessible bin - Attracts White Ibis, ravens, and Common Mynas.
- Rabbit infestations - Attract large raptors.
- Eucalypts which may grow large -, Food for flying-foxes, perching and nesting sites for raptors, etc.

3.2.2 Management Procedures

3.2.2.1Hazard Detection

Assessing the actual or potential wildlife hazard before flight and landing informs aircrew of potential strike risks and informs decision-making to mitigate the risk of a strike. Routine detection of hazards is achieved through regular site and immediate surrounding area inspections (table 2). This ensures early detection of wildlife hazards in and near the Heli site areas, particularly inside critical helicopter movement areas.

Table 2 Detecting wildlife hazards.

Task	Description	Frequency	Responsibility	Procedure /Ref
Helipad area	Check helicopter movement areas for wildlife	As required	Pilot/SM	Helicopter ops manual SOP #
Serviceability inspection	Inspect for wildlife as part of serviceability inspections.	Before emergency response periods and monthly	SM	Helicopter ops manual SOP #
Perimeter fence inspections/nearby trees/waste areas/grassed areas	Check for breaches that could allow access to terrestrial animals and bird breeding/tree hollows etc	Monthly	SM	Helicopter ops manual SOP #

3.2.2.2 Hazard Monitoring

Hazard monitoring provides essential information to identify shifts in hazards and risks. It also provides evidence of regulatory conformance and enables efficacy assessments of the WHMP.

Regularly check the site/helipad area and landside areas for sources of wildlife attraction including drains, grasslands, waste management practices, as well as proposed and existing landscaping. Developments on or in the vicinity of the site, which include construction or land use changes, are monitored for their wildlife attraction potential.

Conduct standardised airside bird counts which are used to monitor trends in bird numbers and hazards.

Table 3 Identifying and monitoring wildlife hazards.

Task	Description	Frequency	Responsibility	Procedure /Ref
wildlife counts/surrounding, note 1	Regularly complete standardised wildlife counts.	Monthly	SM	Helicopter ops manual SOP #

wildlife counts / site	Regularly complete standardised wildlife counts.	Monthly	SM	Helicopter ops manual SOP #

Note 1. There are two appropriate bird guides for the Canberra area to aid in species identification (Taylor and Day 2013, Hermes 2021). The highest number seen per week of any medium-high hazard species should be recorded. If more than 10 of any of the larger/high hazard species (pelicans, swans, ibis) or more than 100 medium size/hazard animals (ducks, coots, cormorants, gulls, egrets, herons, cockatoos, ravens, etc.) are utilising the site for more than one-week, appropriate modifications of structures, vegetation, water bodies or operational activities should be considered. The records from the above monitoring should be collated and reviewed annually by a suitably qualified ecologist, and the site operation inspected.

Table 4 Other monitoring activities

Task	**Description**	**Frequency**	**Responsibility**	**Procedure /Ref**
Development on adjoining land	Applications for development land are assessed for wildlife attraction.	As required	SM	Helicopter ops manual SOP #
Development on land in the immediate region	Applications for development land are assessed for wildlife attraction.	As required	SM	Helicopter ops manual SOP #

3.2.2.3 Hazard Communication

Managing the wildlife strike risk requires a cooperative effort amongst key stakeholders to communicate the hazard so that appropriate mitigation can be implemented. Communicating wildlife hazards to aircrew increases their awareness, which subsequently informs decision-making that can avoid a strike. In addition, communicating wildlife hazards to aerodrome operators helps inform their awareness, contributing to improved wildlife management practices and a safer environment for helicopter operations.

If a wildlife hazard is assessed as being a serious and imminent threat to the helicopter operation, directly advise the site manager to communicate the hazards to pilots.

Effective hazard communication requires two elements:

1. Clear channels of communication via processes that are efficient, timely, and easy to access/receive.

2. Providing notifications that are well-informed, are up to date, are unambiguous, and provide useful information to the intended recipient (i.e. notifications must provide the recipient with sufficient information to understand the hazards and make decisions. Notifications that simply state that a bird hazard exists do not provide sufficient detail about the hazard in order to avoid a strike.

Table 5 Communicating wildlife hazards.

Task	Description	Frequency	Responsibility	Procedure /Ref
Wildlife Hazard Notification	Communicating the wildlife hazard to aircrew/pilot	As required	SM[1]	Helicopter ops manual SOP #
Bird Watch Condition Report	Communicating the wildlife hazard to internal and external stakeholders	As required	SM	Helicopter ops manual SOP #
Survey Summaries	Summary of hazards and significant observations found in on and off airport wildlife surveys/recommendations to mitigate wildlife strike risk.	As required	SM	Helicopter ops manual SOP #
Wildlife Infocard	Summary of hazards and significant observations found / wildlife count and dispersal data	As required	SM	Helicopter ops manual SOP #

3.2.2.4 Meetings

Wildlife hazard management is a standing agenda item for the meetings.

Table 6 Meetings

Task	Description	Frequency	Responsibility	Procedure /Ref
Safety and Security	Review program against	quarterly	As required	SM	Helicopter ops

[1] A staff member - a suitably qualified Safety Manager or similar, should be nominated to monitor, record and report on wildlife use to the manager of the facility, during construction and operation of the facility.

Form Meetings	recommendations and goals, quarterly report, and wildlife issues.			manual SOP #

3.2.2.5 Reporting

Efforts are made to identify the species involved in strikes. In cases when the collection of biological remains is required, staff strictly adhere to health and safety requirements.

Table 7 Reporting wildlife strikes

Task	**Description**	**Frequency**	**Responsibility**	**Procedure /Ref**
Reporting and investigating strikes.	Report all strikes, regardless of type or location.	As required	SM	Helicopter ops manual SOP #
Identifying all strikes, processing and handling of strike remains.	Collect struck remains when possible			

3.2.2.6 Hazard Mitigation

Strategies for managing wildlife strikes at CNS focus on managing populations on and surrounding the airport. Management actions are classified as either:

• Active management – directly removing or reducing the numbers of wildlife; and

• Passive management – modifying habitats or other aspects of the environment to indirectly remove or reduce the number wildlife.

Active management

Active management methods employed include wildlife dispersal and lethal control. Lethal control of wildlife may be necessary, but in general, animals are not destroyed unless there is an immediate danger to essential facilities or the safety of the helicopter. All care is taken to ensure that lethal control is a last resort and is only used after all other non-lethal harassment measures have been taken. Wildlife hazard levels and helicopter movements determine the frequency and intensity of active management. The overall objective is to separate helicopter and wildlife which is achieved by influencing wildlife or helicopter to minimise the likelihood of occupying the same airspace at the same time. Refer to the table 8 below for the methods used. Hazard removal actions and their outcomes are important sources of information. All active management actions and their outcomes are recorded in the Operations Manual. This

provides a record for comparison and analysis and may provide evidence of adequate wildlife hazard management in the event of a safety incident.

Table 8 Active Management methods

Task	Description	Frequency	Responsibility	Procedure /Ref
Wildlife dispersal	Using tools and techniques to harass wildlife from the airside area, in particular from critical aircraft movement areas.	In response to hazards	SM	Helicopter ops manual SOP #
Wildlife lethal control	Using lethal control (under permit) to manage immediate and significant strike risks, including nest removal.	In response to hazards	SM	Helicopter ops manual SOP #
Handling wildlife carcasses and other remains	Safe handling practices to manage wildlife remains, and how to process for forensic analysis	required	SM	Helicopter ops manual SOP #

Passive management

Passive management aims to manage wildlife hazards by preventing access to food or other resources. Grassland areas are attractive to many of the species that pose risks to aircraft, as such, the grass is frequently mowed to reduce the presence of hazardous species.

Table 9 Passive Management Methods

Task	Description	Frequency	Responsibility	Procedure /Ref
grass management	grass is maintained at heights appropriate to deter hazardous species.	Ongoing	SM	Helicopter ops manual SOP #
Landscape management	Landscaped areas (e.g., gardens, trees, etc.) are managed to reduce the attraction to hazardous species.	Ongoing	SM	Helicopter ops manual SOP #

Species Action Plans

Species Action Plans (SAPs) support the WHMP and provide the actions required hazardous wildlife. SAPs for the following species are provided in a separate document:

Masked Lapwing Pacific Black Duck Bush Stone-curlew Straw-necked Ibis Spectacled Flying-fox Unidentified Flying-fox Radjah Shelduck Cattle Egret Beach Stone-curlew Grey Teal Black-necked stork Brahminy Kite Feral Pigeon Pacific Golden Plover Lace Monitor Unidentified Duck Black Kite Orange-footed Scrubfowl Unidentified Heron Unidentified Ibis Unidentified Raptor Wandering Whistling-Duck Whistling Kite Black Flying-fox Little Red Flying-fox Eastern Grass Owl Australian White Ibis White-headed Pigeon.

There are two appropriate bird guides for the Canberra area to aid in species identification (Taylor and Day 2013, Hermes 2021).

Australian Animal Welfare Strategy (AAWS)

Department of Agriculture and Water Resources

Developed to ensure the humane treatment of all animals in Australia. The Strategy:

• Provides an assessment of the relative humaneness of pest-animal control methods.
• Provides SOPs that detail animal welfare impacts for target and non-target species and describe techniques and their application, as well as considering health and safety.
• A model COP for each of the key pest animal species provides general information on best practice management, control strategies, species biology and impact, and the humaneness of current control methods.

The Animal Welfare Task Group - AWTG - DAFF (agriculture.gov.au)

3.2.3 Measurement and Analysis

Strike and survey data are used to complete risk assessments to identify high and moderate risk species. Data is used in routine reporting which ensures all staff and managers are equipped with the information needed to adapt hazard management activities and the WHMP when required. Dispersal and culling data are reviewed to evaluate for effectiveness and to ensure compliance to wildlife protection legislation.

Table 10 Data management methods.

Task	Description	Frequency	Responsibility	Procedure /Ref
Strike data management	Maintain records of wildlife strikes and review in a scorecard to assess changes in populations.	Ongoing	SM	Helicopter ops manual SOP #
Program data management	Electronically store wildlife data (e.g., surveys, strikes,	Ongoing	SM	Helicopter ops

	dispersal) to monitor program progress and identify trends.			manual SOP #
Review data and program trends	Review the data to analyse seasonal trends. Produce Scorecard Reports	Ongoing	SM	Helicopter ops manual SOP #
Risk assessment	Regularly complete standardised wildlife surveys and risk assessment.	Ongoing	SM	Helicopter ops manual SOP #

In addition to reviews, external audits are also used as an independent evaluation of the program and to improve any deficiencies identified. Audit results are incorporated into the wildlife management program.

References

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Australian Transport Safety Bureau 2002, The Hazard Posed to Aircraft by Birds, Research Paper, Canberra ACT, Australia.

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Ring, J., Tabac, P., and McKee, J. (2019) Bird Strike on Landing QF620 B737 VH VZT, In Proceedings of the 2019 Australian Aviation Wildlife Hazard Group Workshop, Sydney, Australia.

Department of Infrastructure, Transport, Regional Development and Communications, 2021, National Airports Safeguarding Framework – Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports. [ONLINE]. Available at *https://www.infrastructure.gov.au/aviation/environmental/airport_safeguarding/nasf/nasf_principles_gu idelines.aspx*

Attachments

1. HOP Procedures
2. Organisation structure /contact details

Please note these procedures will be developed as part of the facility operation plan following DA approval.

Notes: