



**JANDAKOT AIRPORT  
FERAL ANIMAL MANAGEMENT PLAN**

**CONSERVATION MANAGEMENT PLAN  
APPENDIX F**

Jandakot Airport Holdings Pty Ltd  
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## 1 Introduction

The objective of this Feral Management Plan is to control populations of feral and overabundant native species so that:

- Impacts on native wildlife and associated values are minimised
- Impacts on human health and safety are minimised.

This plan is aligned with the Jandakot Airport Environment Strategy 2009 and is a component of the Jandakot Airport Conservation Management Plan.

It is recognised that feral animal management within remnant bushland in an urban setting is a complex task, especially when there is increasing pressure from surrounding urban development and neighbouring properties are subjected to differing (or no) feral management practices.

Reinfestation of targeted feral animals is likely to eventually occur in most instances. Whilst benefits may be achieved by potentially coordinating feral animal management programs with neighbouring landholders, in reality, 'control' is considered more realistic and achievable than eradication at Jandakot Airport.

## 2 Domestic Animals

The JAH Policy on domestic animals (specifically cats and dogs) is that all domestic animals are prohibited from conservation and airside precincts of Jandakot Airport. Domestic animals are permitted within landside areas, though they are not permitted to be housed on site. In these instances, local laws and regulations in regards to domestic cats and dogs are applicable at Jandakot Airport. The airport lies entirely within the boundary of the City of Cockburn, with the northern boundary of the airport forming the southern boundary of the City of Melville and the north east Airport boundary abutting the City of Canning.

### 2.1 Cats

Domestic cats from nearby residences may hunt for birds, reptiles and other animals, especially at night.

Under the *Cat Act 2011* (the Cat Act), all domestic cats under over 6 months of age need to be sterilised, micro-chipped and registered by 1 November 2013. Local governments will be responsible for administering and enforcing the legislation.

The City of Cockburn supports responsible cat ownership and provides advice and guidance on keeping cats within the City in accordance with the requirements of relevant legislation. The City of Melville and the City of Canning have similar approaches.

Until such time as the Cat Act comes into effect, domestic cats captured at Jandakot airport will be passed on to the Armadale/ Byford Veterinary Hospital (Tel. 9399 4299) or the Shenton Park Cat Haven (Tel. 9442 3600) where they will be either returned to their owners (if micro-chipped) or re-homed.

### 2.2 Dogs

Local government authorities are responsible for administering and enforcing the *Dog Act 1976* within their municipalities. The Act states that 'a dog shall not be in a public place unless it is:

- a) Held by a person who is capable of controlling the dog; or
- b) Securely tethered for a temporary purpose; by means of a chain, cord, leash or harness of sufficient strength and not exceeding the prescribed length.'

These rules apply at Jandakot Airport.

In the event that a domestic dog is found unrestrained without their owner at Jandakot Airport, the City of Cockburn Ranger Service (Tel. 9411 3444) will be contacted.

### 3 Overabundant Native Species

Overabundance of native species is considered to occur when:

- Animals exceed the carrying capacity of the property
- Animals cause unwanted effects to their ecosystems
- Animals impact on endangered species
- Animals impact on humans (particularly from a safety perspective) and/or livestock.

Management of Overabundant Native Species is addressed below.

#### 3.1 Macropods (Wallabies and Kangaroos)

Kangaroos (Western Grey Kangaroos, *Macropus fuliginosus*) and wallabies (Western Brush Wallabies, *Macropus irma*) pose a high risk to aircraft in the vicinity of the runways. Recent studies have estimated there to be approximately 57-71 wallabies within the Conservation Precincts of Jandakot Airport. Refer also to the Jandakot Airport Conservation Management Plan for management actions associated with Western Brush Wallabies.

##### 3.1.1 Management Methods

**Exclusion.** Exclusion of macropods is generally an effective way to manage macropods in the vicinity of an airport. Exclusion from the airport site is usually by perimeter fencing. At Jandakot Airport, whilst perimeter fencing exists, many of the conservation precincts that support the kangaroo and wallaby populations are not fenced from the airside areas. Exclusion methods are not applicable for all macropod habitats at Jandakot Airport, and until recently, have not been justified by the risk posed. However, consideration has and will continue to be given should other methods fail to mitigate the risks posed by the presence of kangaroos and wallabies.

**Deterrence.** Deterring macropods from air movement areas generally involves removing as many features of the airport and its surrounds that are attractive to problem species. Deterrence should be integral to the airport design, operation and maintenance. Therefore, the effect that all development, operation or management activities will have on wildlife management needs to be considered. However, this is not necessarily easily applied in an airport situation, as is the case at Jandakot Airport. The maintenance of grasses/vegetated areas around airside areas is essential to stabilise the underlying soil and prevent impacts caused by dust, debris etc. These areas in turn become very attractive food sources for macropods, particular at time of the year when natural food sources within the conservation precincts are depleted.

**Harassment.** Harassment and dispersal of macropods from runways and airstrips is usually the most immediately effective method. Currently a Roo Guard system exists to protect the movement area from macropods. These systems are inspected monthly and maintained by Airport Services Officers. They work by emitting a high pitched frequency during low light conditions. Kangaroos moving into an area nearby are put on edge by the sound, reducing their ability to hear predators. If a negative reinforcement occurs after they hear the sound (like a vehicle, aircraft or "Bird Frite" shot), then the kangaroo associates the noise with the negative occurrence and will avoid areas they can hear the noise. However, if they haven't associated the noise with fright or are desperate for grass/water, then the noise barrier itself may not pose sufficient deterrent.

Periodic use of bird fright cartridges or a vehicle (hazing) to scare kangaroos can improve the effectiveness of the Roo-guards by reinforcing the association of the devices with an unpleasant experience. Hazing can also be used to disperse a macropod back towards the conservation precincts.

**Lethal Management.** Limited lethal control methods will be employed at Jandakot Airport when warranted, based on the risk posed by the species and their activities. An annual “Licence to Take Dangerous Fauna” is obtained from the WA Department of Parks and Wildlife (DPAW - previously Department of Environment and Conservation) allowing for an agreed number of western grey kangaroos (*Macropus fuliginosus*) to be ‘taken’ annually.

To date, lethal control measures have not been employed to manage the risks posed by wallabies. However, should other control methods fail to sufficiently reduce the risk posed to aircraft safety to an acceptable level, JAH will liaise with DER in order to assess the problem and obtain the necessary permits. The only exception to this will be in the event that it has been justified and documented that failure to take immediate action has a high probability of resulting in a catastrophic event that impacts air safety/human lives.

## **3.2 Birds**

Birds and bird strike are a recognised problem at many airfields and airports both nationally and internationally. Bird strike can pose a significant safety risk to pilots and passengers and can result in considerable damage to both rotary and fixed wing aircraft. Bird strike is more common during take-off and landing than at other times during an aircraft’s flight.

Impacts from bird strikes are primarily associated with safety, increased costs and reduced flying time. Whilst a severe bird strike can potentially result in an aircraft crash, the majority of bird strikes generally result in damage to the aircraft. The extent of impact is dependent on many factors, including the size and number of birds, the speed of the aircraft and the component hit (turbines and windscreens are the most vulnerable). Generally, bird strikes that have resulted in crashes have been due to flocks of large birds that have been ingested into the engine causing failure, or collided with the windscreen resulting in loss of visibility during a critical time (e.g. during take-off and landing).

### **3.2.1 Management Methods**

**Exclusion.** Exclusion of problem birds is difficult and this method will generally be effective only for flightless birds. Exclusion from areas and features attractive to birds is more commonly used and this may include constructions that minimise perching, access to nesting sites and artificial water supplies. However, excluding birds is difficult and expensive and may only be feasible in certain situations. Exclusion methods are not generally applicable at Jandakot Airport but will be considered if warranted.

**Deterrence.** Deterrence is often the easiest and most effective way of reducing the incidence and severity of bird strike. It generally involves removing as many features of the airport and its surrounds that are attractive to problem bird species. Deterrence should be integral to the airport’s design, operation and maintenance. Therefore the effect that all development, operation or management activities will have on bird and wildlife management needs to be considered.

Drainage management and grass maintenance are important to ensure that the area is not attractive to birds. Some grass and sedge species are known food sources for birds, whilst wading birds are attracted to drains that contain emergent vegetation as a food source. Eliminating standing water on pavements, maintaining grass at a height between 50 and 300 mm, removing food sources such as seed heads and removing cover so that the airfield is less attractive to the birds are all important management activities that can be considered, although these will depend on the species of the problem bird. Other deterrence activities may include:

- regularly inspecting and maintaining drains (removing emergent vegetation) to discourage wading birds;
- controlling insects or removing insect attractants, including extinguishing runway lights when not required to reduce the number of insects available as a food source;
- removing dead birds and other animals to avoid attracting scavenger birds; and
- removing nests, roost sites and perch sites where possible (note – depending on the type of species and the stage of breeding, the removal of nests may require a licence/permit from the DPAW).

Deterrent methods are and will continue to be employed at Jandakot Airport to reduce the risk of bird strike. In particular, grassed vegetation in the proximity of runways will be maintained at an appropriate level to deter bird activity, and stormwater and irrigation will be managed to reduce pooling on pavements and within open drain systems. Any dead birds found on or in the vicinity of runways will be removed and reported in line with the existing Safety Management System and Air Transport Safety Bureau (ATSB) requirements.

**Harassment.** Bird harassment and dispersal of birds from runways and airstrips is usually the most immediately effective tool in bird management. However, harassment will generally need to be associated with a real threat to be effective in the long term as birds will soon learn that the threat is not real. The use of a real threat is therefore a more effective harassment technique in the long term. Harassment should be undertaken during operational hours. Concerted harassment effort in the first two hours after sunrise can result in a reduced number of birds for the rest of the day. Other harassment and dispersal methods that can be effective include vehicle lights, sirens and horns, pyrotechnic charges (e.g. Bird Frite), recordings of distress calls and firearms. In some circumstances bird scaring devices may also be used to deter specific species of birds from nesting in aircraft and facilities.

Harassment methods at Jandakot Airport will primarily be utilised in the form of Bird Fright cartridges and other auditory deterrents as required in response to potentially unsafe bird activity.

**Lethal Management.** In some situations, lethal management methods must be used where there is a significant threat to safety and non-lethal methods do not adequately mitigate the risks. They should generally be considered as an emergency or short-term solution only. Lethal methods can also increase the effectiveness of related non-lethal methods, such as a combination of noisemakers and the actual shooting of birds.

Limited lethal control methods will be employed at Jandakot Airport when warranted based on the risk posed by the species their activities. Currently, an annual “Licence to Take Dangerous Fauna” is obtained annually from the WA DPAW for banded lapwings (*Vanellus tricolour*) and Australian ravens (*Corvus coronoides*).

## 4 Feral Animals

Feral animals are those species that have the potential to cause serious impact on natural systems through direct effects such as predation, habitat destruction, competition for food and territory, introduction of disease, and through environmental degradation such as that caused by over-grazing. Feral animals can be either native species that are impacting on nature conservation values (for instance, from unsustainable populations) or introduced species that have established wild or naturalised populations.

Introduced animals such as feral cats, foxes, rabbits and bees potentially occur at Jandakot Airport and all have a detrimental effect on nature conservation values. The control and removal of these introduced animals will help protect the native fauna and flora of Jandakot Airport.

#### **4.1 Rabbits**

Rabbits at Jandakot Airport are controlled using 1080 oat rabbit baits. Whilst rabbit baiting can occur at any time of year, baiting is usually conducted in later summer to early autumn when feed is at a minimum and rabbits are foraging for food.

Rabbit baiting at Jandakot Airport will be undertaken according to 1080 regulations and the 1080 Code of Practice by a person(s) approved by the WA Department of Agriculture and Food.

Airport tenants and neighbouring landholders need to be advised of the baiting program 3-14 days in advance of the baiting event. A sign check should also be conducted prior to the bait laying session and any missing signs replaced.

All rabbit carcasses found should be buried on site. Following a baiting event, the number of rabbit carcasses found on site should be noted by Airport Services Officers/Grounds Staff and details (number, date and located) forwarded to the Jandakot Airport Holdings Environment Manager for inclusion in the Environmental Site Register. This will aid in assessing the effectiveness of the baiting program.

#### **4.2 Foxes**

Foxes at Jandakot Airport are controlled using 1080 baits. The most effective fox control is usually achieved in late winter and spring. At this time food demands are high as foxes are rearing young. Foxes are also less mobile so reinfestation of baited areas can be delayed. At other times (especially autumn), foxes are more mobile. Jandakot Airport will undertake at least one fox baiting event annually, with a second event to potentially occurring in conjunction with the peak rabbit baiting event (i.e. late summer to autumn) if required.

Fox baiting at Jandakot Airport will be undertaken according to 1080 regulations and the 1080 Code of Practice by a person(s) approved by the WA Department of Agriculture and Food.

Airport tenants and neighbouring landholders need to be advised of the baiting program 3-14 days in advance of the baiting event. A sign check should also be conducted prior to the bait laying session, and any missing signs replaced. Therefore, there are potential efficiencies in conducting rabbit and fox baiting concurrently.

All fox carcasses found should be buried on site. The number of fox carcasses found on site should be noted by Airport Services Officers/Grounds Staff and details (number, date and located) forwarded to the Jandakot Airport Holdings Environment Manager for inclusion in the Environmental Site Register.

#### **4.3 1080 Approvals**

Approval to use 1080 is obtained from the Western Australia Department of Food and Agriculture well in advance of the planned baiting. The 1080 Authorisation Voucher/Permit is received by an accredited site staff member or contractor who then procures the baits from a certified supplier. Refer to [www.agric.wa.gov.au](http://www.agric.wa.gov.au) for further details.

Refer to Figure 1 for the approved 1080 baiting plan.

#### **4.4 Cat Trapping**

Feral cat trapping can potentially be conducted throughout the year. Cat trapping is undertaken by either approved Airport Services Officers or a contractor. As cat trapping is potentially very labour intensive, it is typically only undertaken in response to reported repeated cat sightings/evidence. If trapping is required, it is typically undertaken for a 1-

week period and repeated every 4-6 weeks until multiple cat sightings/evidence are no longer noted.

Captured feral cats are euthanased and buried in approved borrow pits. All trapping events are to be recorded along with details of the number of animals trapped and euthanased.

Trapping and euthanasia should be conducted in accordance with "Model Code of Practice for the Humane Control of Feral Cats" NSW Department of Primary Industries. This document refers to relevant Standard Operating Procedures (SOPs) that should be adhered to, including:

- Ground shooting of feral cats
- Trapping of feral cats using cage traps
- Trapping of feral cats using padded-jaw traps.

The above documents can be found at:

<http://www.environment.gov.au/biodiversity/invasive/publications/humane-control.html>

In addition to the Code of Practice and SOPs, the following should be noted:

- As a general guide, traps can be 'set' after Sunset (e.g. after 6pm) and should be checked and disabled as soon as practical after sunrise (e.g. before 7am). Trapping during the day is likely to capture non-target animals and should therefore be avoided.
- Traps should be set where morning shade will lie in hot conditions and to maximise cover during cold or wet conditions.
- Traps should be covered in hessian top and sides. This increases cover and comfort (wind, sun and some dampness) for the trapped animals, as well as making the trap more appealing.
- Traps should be marked with stakes and flagging tape to prevent them being lost and to allow another operator to find them in an emergency.
- Traps and hessian must be kept clean and hygienic. Pressure-wash the traps on completion of use and dispose of any soiled hessian.
- Feral cats like a smelly bait, but rotten bait is not humane or effective.
- Fauna often found in cage traps include bandicoots, crows and bobtails. Bobtails and crows are diurnal and indicate that the trap has been 'set' too early in the evening. Assess fauna briefly for injuries or distress before releasing where caught.

#### **4.5 Bees**

Feral honeybees (*Apis mellifera*) are introduced bees that originally escaped from hives and have become established in the wild. Colonies can be found in many parts of WA, usually living in tree hollows.

Honeybees have several impacts on native environments. They:

- take tree hollows that are needed by native birds and animals, making it hard for some species to find shelter or breed
- eat nectar and pollen which native birds, insects and other animals need to survive, possibly forcing these native species out of an area
- may affect the pollination of native plant species.



Whilst 'managed' hives are occasionally located within the conservation precincts of Jandakot Airport, feral honey bee hives are generally not known to occur in these areas due to the absence of large hollow bearing trees. However, hives and swarming bees have occasionally been found in aircraft hangars and other buildings. Any hives found at Jandakot Airport will be removed by specialists.

## **5 Monitoring**

All sightings and reports of feral and overabundant native species associated with air safety management are to be recorded in the JAH Safety Management System. Additionally, sightings and incidents not directly associated with aircraft safety will also be recorded.

The JAH Environment Manager is responsible for maintaining a record of all feral and overabundant native species incidents within the JAH Safety Management System and providing a summary in the JAH Environmental Site Register.

## **6 Reporting Requirements**

Reporting against actions described in this plan will be included within the Jandakot Airport Annual Environment Report (AER). In line with the *Airports (Environmental Protection) Regulations 1996*, the AER will be submitted to the Department of Infrastructure and Regional Development (DIRD) by 28<sup>th</sup> October each year. A copy of the report will be provided to DOE by 28<sup>th</sup> October each year.

## **7 Review and Amendment of Feral Animal Management Plan**

As with the overarching The Conservation Management Plan, the Feral Animal Management Plan is a 'live' document and as such will require regular review and amendment in order to meet practical requirements on site as changing circumstances demand.

Where amendments are unlikely to have a material impact on matters protected under the EPBC Act or the intent of EPBC 2009/4796 conditions of approval, copies of the amended plan, including appropriate rationale and justification for each amendment, will be provided to DOE and DIRD. If DOE deem it necessary, the amended plan will be elevated for the Minister's approval.

Where amendments to the Feral Animal Management Plan impact matters protected under the EPBC Act or are deemed not to be in accordance with that approved by the Minister (ref Conditions 6 and 12 of EPBC 2009/4796 approval), the amended Plan will be submitted to DOE for review and approval by the Minister.

The Feral Animal Management Plan will undergo a comprehensive review every 5 years. This is designed to coincide with the revision of the Jandakot Airport Master Plan and Environment Strategy. The next comprehensive review will be undertaken in 2018 prior to the completion of Master Plan 2019.

## 8 Summary of Actions

The Table below contains a list of summary actions relating to the Jandakot Airport Feral Animal Management Plan.

<b>Table 1. Feral Animal Management Plan Summary of Actions.</b>			
<b>Action</b>		<b>Responsibility</b>	<b>Timing</b>
<b>Overabundant Native Species</b>			
FAMP1	Apply for DPAW Annual Licence to Take Dangerous Fauna.	JAH EM in consultation with the OM and SASO.	Annually (or sooner if quota on licence is reached prior to expiry date).
FAMP2	Complete 'Licence Return' for Licence to Take Dangerous Fauna and submit to DPAW.	JAH EM in consultation with the OM and SASO.	Annually when applying for new licence (or with licence application if quota on licence is reached prior to expiry date).
FAMP3	Inspect/maintain Shoo Roo Units and undertake repairs if required.	JAH OM/SASO.	Monthly.
FAMP4	Utilise Bird Frite, hazing and other appropriate methods to deter bird and macropod activity.	JAH OM supported by ASOs.	Immediately in response to bird/macropod sighting in (or in vicinity of) air movement areas.
<b>Fox and Rabbit Baiting</b>			
FAMP5	Apply for 1080 permit renewal.	JAH EM.	Within 6 months of the expiry date of current permit before the next biannual baiting occurs.
FAMP6	Notify tenants and neighbouring landholders.	JAH EM	At least 3 days prior to baiting event.
FAMP7	Install warning signs in accordance with permit (not required if old signs are still intact).	JAH EM	At least 3 days prior to baiting event.
FAMP8	Undertake 1080 fox and/or rabbit baiting.	JAH EM and 1080-trained ASOs.	Biannually (Spring and Autumn).
FAMP9	Report to JAH EM the number/date/location of any carcasses found.	JAH ASOs.	In the 2 weeks following a baiting event.
<b>Cat Trapping</b>			
FAMP10	Undertake cat trapping in response to reported cat sightings and report trapping outcomes.	JAH EM in consultation with the OM and SASO.	Traps to be deployed within 5 days of a triggering event (i.e. repeated sightings or evidence of 'activity') for a period of 7 days.
<b>Monitoring and Reporting Requirements</b>			
FAMP11	Report in SMS all incidents/near misses (including 'action taken')	JAH ASOs and JAH EM.	Within 48 hours of incident occurring.

**Table 1. Feral Animal Management Plan Summary of Actions.**

Action		Responsibility	Timing
	associated with feral and overabundant native species*.		
FAMP12	Report all use of firearms (Bird Frite and culling) on the Firearms Register and in the SMS.	JAH ASOs	Within 48 hours of using firearm.
FAMP13	Enter 'animal hazard' and feral animal incident data from SMS onto Site Environment Register and analyse for reporting within the AER.	JAH EM	Annually prior to 28 October.
FAMP14	Report against actions of the FAMP within the Jandakot Airport Annual Environment Report (AER) and provide copies to DIRD and DOE.	JAH EM	28 October Annually.
<b>Review and Amendment of FAMP</b>			
FAMP15	Update and revise the existing Feral Animal Management Plan.	JAH EM	2018

\* It is recognised that rabbit sightings are a common occurrence in areas of Jandakot Airport and appropriate management action is taken. Rabbit sighting are excluded from the SMS (unless associated with a specific safety incident or extenuating circumstances) in order to prevent the data being skewed in relation to the higher risk incidents.

## 9 Glossary.

<b>AER</b>	Annual Environment Report
<b>ARRPA</b>	Agricultural and Related Resources Protection Act
<b>ASO</b>	Airport Services Officer
<b>ATSB</b>	Air Transport Safety Bureau
<b>CMP</b>	Conservation Management Plan
<b>DEC</b>	Department of Environment and Conservation. On 1 July 2013 the Department of Environment and Conservation separated into two agencies, the Department of Parks and Wildlife (DPAW) and the Department of Environment Regulation (DER).
<b>DAFWA</b>	Department of Agriculture and Food Western Australia
<b>DEWHA</b>	Department of Environment, Water, Heritage and the Arts (now DOE)
<b>DIRD</b>	Department of Infrastructure and Regional Development (previously DIT)
<b>DIT</b>	Department of Infrastructure and Transport (now DIRD)
<b>DOE</b>	Department of the Environment (previously DEWHA and DSEWPaC)
<b>DPAW</b>	Department of Parks and Wildlife (formerly DEC).
<b>DSEWPaC</b>	Department of Sustainability, Environment, Water, Population and Communities (Previously DEWHA and now DOE)
<b>EPBC</b>	Environmental Protection and Biodiversity Conservation Act 1999
<b>FAMP</b>	Feral Animal Management Plan
<b>JAH</b>	Jandakot Airport Holdings
<b>JAH EM</b>	Jandakot Airport Holdings Environment Manager
<b>OM</b>	Operations Manager
<b>SASO</b>	Senior Airport Services Officer
<b>SMS</b>	Safety Management System (An access database used by JAH to record all Incidents).
<b>SOP</b>	Standard Operating Procedure

Figure 1. 1080 Baiting Plan.



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