

NATIONAL AIRPORTS SAFEGUARDING FRAMEWORK

MANAGING THE RISK OF WILDLIFE STRIKES IN THE VICINITY OF AIRPORTS

REVISION DATE	VERSION NUMBER	CHANGES MADE	APPROVED BY
Feb 2012	3.1.1	Document Creation	NASAG
Apr 2012	3.1.2	Drafting changes post consultation process	SCOTI
15/7/12	3.1.3	Version control table added. Page numbers added.	S. Stone, GM Aviation Environment, DOIT.
27/10/2014	3.1.4	Clarification re Aerodrome Reference Point	S Stone, GM, Aviation Environment, DIRD

Purpose of Guideline

1. This document provides guidelines to State/Territory and local government decision makers to manage the risk of collisions between wildlife and aircraft at or near airports where that risk may be increased by the presence of wildlife-attracting land uses.

Why it is important

2. The *Principles for a National Airports Safeguarding Framework* acknowledge the importance of airports to national, state/territory and local economics, transport networks and social capital.
3. Wildlife strikes and / or avoidance can cause major damage to aircraft and / or reduction of safety. The consequences of wildlife strike can be influenced by the number and size of wildlife involved, phase of flight and the aircraft part hit by the wildlife.
4. Land use planning decisions and the way in which existing land use is managed in the vicinity of airports can significantly influence the risk of wildlife hazards. Many existing airports are surrounded by areas which are attractive to wildlife, especially birds. As examples, land uses such as agriculture, wildlife sanctuaries, wetlands and land fill sites can attract a high number of birds which increase the risk of interference with aviation activity.
5. The number of wildlife strikes and the attendant risk of fatalities, injuries, aircraft damage and operational delays can be reduced by managing land use around airports to minimise the potential for wildlife to be in conflict with aircraft operations.

How it should be used

6. Some States/Territories already have planning guidelines or policies in place and this document provides guidance for review. For those without policies in place, these

Guidelines (in addition to the associated Safeguarding Framework) will provide input to new policies.

Roles and Responsibilities

7. State/Territory and Local Governments are primarily responsible for land use planning in the vicinity of all airports.
8. Australia's 19 major airports are under Australian Government planning control and are administered under the Airports Act 1996. Planning on other airports is undertaken by State/Territory and Local Governments or private operators.
9. As a contracting state to the Convention on International Civil Aviation (the Convention) Australia has international obligations regarding the regulation and management of aviation safety. The International Civil Aviation Organisation (ICAO), which was established by the Convention, has established Standards and Recommended Practices covering all aspects of civil aviation safety.
10. Australian civil aviation safety legislation includes provisions to meet Australia's international obligations. Part 139 of the Civil Aviation Safety Regulations 1998 (the Regulations) imposes an obligation on airports to reduce the risks of wildlife strikes. These regulations are administered by the Civil Aviation Safety Authority (CASA). All Certified Airports are required to document procedures for wildlife hazard management in their Aerodrome Manual. Certified Airports with a confirmed wildlife hazard are also required to develop and implement wildlife hazard management plans. CASA regulates and conducts surveillance of all regulated airports to ensure that that airport operators are adequately managing the risk of on-airport wildlife strikes.
11. Under the Regulations, CASA can address the risk of waste foodstuffs being dumped near airports that may pose a risk to aviation safety by attracting wildlife. When CASA identifies a property that is being used to dump waste food stuffs, it has powers to make it an offence to dump waste foodstuffs there. CASA can also require the property owner to remove waste foodstuffs from the property and can, if necessary, make arrangements to remove the waste material.

Key considerations for managing risk of wild life strikes in the vicinity of airports

12. Most wildlife strikes occur on and in the vicinity of airports, where aircraft fly at lower elevations. The risk of a strike on airport relates to the level and form of wildlife activity both within the boundary of an airport and in surrounding areas. Wildlife attracted to land uses around airports can migrate onto the airport or across flight paths, increasing the risk of strikes. Airports actively reduce wildlife populations and manage the risk of strikes on airport land. Such on-airport activities are underpinned by current aviation safety regulations.
13. Australia's international aviation safety obligations as a contracting state to the Convention on Civil Aviation include responsibilities to take action to manage the risk from wildlife

hazards. Specifically, the following standards and recommendations relating to wildlife hazards apply. Clauses 9.4.3 and 9.4.4 and 9.4.5 of Annex 14 of ICAO state:

- Action shall be taken to decrease the risk to aircraft operations by adopting measures to minimize the likelihood of collisions between wildlife and aircraft;
- The appropriate authority shall take action to eliminate or to prevent the establishment of garbage disposal dumps or any source which attracts wildlife to the aerodrome, or its vicinity, unless an appropriate wildlife assessment indicates that they are unlikely to create conditions conducive to a wildlife hazard problem. Where the 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; and
- States should give due consideration to aviation safety concerns related to land developments in the vicinity of the aerodrome that may attract wildlife.

GUIDELINES FOR MANAGING THE RISK OF WILD LIFE STRIKES IN THE VICINITY OF AIRPORTS

14. Aviation safety regulations do not address the risk of wildlife strikes occurring outside the boundary of airports in the same way as they address on-airport risk. The risk of a strike off airport relates mostly to wildlife activity in areas surrounding the airport. There is a need to strengthen arrangements to address the risk of wildlife hazards that occur off airport and ensure Australia is in step with its local and international obligations.
15. The International Civil Aviation Organisation (ICAO) has developed specific advice on land uses with the potential to become high risk wildlife attractants. These include:
 - food garbage disposal;
 - sewage treatment and disposal;
 - artificial and natural lakes;
 - abattoirs and freezing works;
 - fish processing plants;
 - bird sanctuaries; and
 - outdoor theatres.
16. The table at **Attachment 1** aligns with international benchmarks set by ICAO and other international aviation regulators. It provides guidance on the land uses that present a risk of attracting wildlife and triggers (based on distance from an airport) for adopting active measures to mitigate that risk. Attachment 1 is a tool to assess plans for new or revised land uses within 3km, 8km and 13km of an airport.¹
17. The guidelines recognise that at many existing airports it may be difficult or impossible to change the existing usage of the land which serves as a wildlife attractant. In such cases, airport operators should work with land use planning authorities to mitigate the risk of wildlife strike.

¹ In calculating these perimeters the Aerodrome Reference Point (ARP) should generally be used as the point of origin. However, there may be circumstances where a different point or multiple points of origin may be appropriate.

18. The guidelines can also be used when considering the establishment of new airports. When a greenfields site is being considered for a new airport, selection agencies can consider the degree of incompatible land usage, including wildlife attracting land usage, in the vicinity of potential sites.

Managing on-airport wildlife strike risk

19. All certified airports (airports certified under Part 139 of the Civil Aviation Safety Regulations 1998 – CASR Part 139) are required to document procedures for wildlife hazard management in their aerodrome manual. Certified airports with a confirmed wildlife hazard are also required to have a wildlife hazard management plan (WHMP). The role foreshadowed for aerodrome operators in these guidelines should form part of future WHMPs and be incorporated in revisions of existing WHMPs.

Managing off-airport wildlife strike risk -general

20. There are many existing locations where there would be advantages in mitigating existing risk. It is also essential that new land uses and changes to land zoning within 13 km of the airport property are regularly monitored and action plans created to mitigate any unacceptable increase in the risk of bird strike. For example, the ICAO document 'Airport Services Manual- Bird Control and Reduction' suggests that dumps should be not be sited within 13km of airport property.

Managing off-airport wildlife strike risk – the role of airport operators and council/land use planning authorities

21. Airport operators should work with local councils (or the relevant land-use planning authority) to establish mechanisms that will identify land uses and prevent the creation of land uses that would cause hazardous wildlife attraction or activity at or across the airport and/or its approaches and departures. This can be accomplished through the following:
- airport operators and land use planning authorities should use the guidance at Attachment 1 as the criteria for deciding on appropriate action in relation to a particular existing or proposed development within a 13 km radius of an aerodrome. Airport operators should conduct ongoing and regular consultation with planning authorities on land uses of concern;
 - airport operators should conduct ongoing consultation with bodies such as national /state wildlife and parks management and wetlands management agencies on land uses of concern;
 - land use planning authorities should ensure that airport operators are given adequate opportunity to formally comment on planning applications for new or revised land uses that fall within the guidance provided in **Attachment 1**. Airport operators will be expected to respond with comments on how the proposed changes to land use might increase the risk of wildlife strike and on any regulatory actions that could increase the risk of wildlife strike, such as permits related to land uses of concern;
 - airport operators should conduct regular outreach/education activities to sensitise relevant stakeholders and the surrounding community to bird strike hazards and land uses that may increase these hazards;

- airport operators should be in a position to provide assistance or advice to relevant stakeholders on bird and wildlife mitigation measures, drawing on knowledge obtained in managing this issue on the airport site; and
 - airport operators should include relevant external stakeholders (including, but not limited to, planning authorities, relevant landowners, national /state wildlife and parks management and wetlands management agencies) on the Airport’s Bird and Animal Hazard Management Committee or equivalent group.
22. Airport operators should negotiate with land use planning authorities and land owners if required on agreed action plans for monitoring and, where necessary, reducing wildlife attraction to areas in the vicinity of airports, in accordance with **Attachment 1**. These plans could include:
- regular monitoring surveys;
 - wildlife hazard assessments by qualified ornithologists or biologists;
 - wildlife awareness and management training for relevant staff;
 - establishment of bird population triggers;
 - implementation of activities to reduce hazardous bird populations; and
 - adoption of wildlife deterrent technologies to reduce hazardous bird populations.
23. Airport operators should maintain files to track all contacts with land use planning authorities regarding land uses near the airport that could attract birds. The log should be used to conduct the reviews below and maintain contact with relevant parties. Under the WHMP, airport operators should consult this log annually to:
- review the status of individual bird attractants sites and any changes required;
 - identify existing/potential flyways (regular bird flight paths) between separate bird attractant sites;
 - identify measures and on-airport wildlife management procedures that would address risk; and
 - document the participants in the review, items discussed and changes identified.
 - Airport operators should document the procedures provided here in their WHMP as well as in any relevant documentation required under CASR Part 139, such as the airport’s Safety Management System.

Managing risk when new land uses are to be established which increase risk of wildlife strike

24. Where local authorities seek to establish land uses which may increase the risk of wildlife strike near existing airports, steps should be taken to mitigate risk in consultation with the airport operator and qualified bird and wildlife management experts. Risk mitigation measures that should be considered in such cases include:
- a requirement for a Wildlife Management Program;
 - the establishment of wildlife management performance standards;
 - allowance for changes to design and/or operating procedures at places/plants where land use has been identified as increasing the risk of wildlife strike to aircraft;
 - establishment of appropriate habitat management at incompatible land uses;
 - creation of performance bonds to ensure clean-up and compensation should obligations not be met;

- authority for airport operators to inspect and monitor properties close to airports where wildlife hazards have been identified; and
 - consistent and effective reporting of wildlife events in line with Australian Transport Safety Bureau (ATSB) guidelines.
25. Attached to these guidelines are the following:
- **Attachment 1:** Wildlife attraction risk and actions by land use: This identifies the risk posed by a range of land uses and the actions required, if any.
 - **Attachment 2:** Brisbane Airport Buffers: Using Brisbane airport as an example, this is a depiction of the proposed buffers. The shape of the buffers would vary depending on the runway layouts.

Background information on managing the risk of wildlife strike

26. The vast majority of wildlife strikes take place at or close to airports. Almost all involve birds and flying mammals (such as bats and flying foxes). Land animal (mainly terrestrial mammals) strikes are relatively rare and the risk of these has been reduced by the implementation of stringent fencing requirements to keep out unauthorised persons.
27. There would be safety benefits if airport operators and land use planning authorities follow a common, coordinated approach to managing existing wildlife hazards at, and within the vicinity of, airports. Managing wildlife attractants is a key strategy in discouraging wildlife on and around airports.
28. In essence, the guidelines propose distance separation benchmarks between airports and land use practices that attract wildlife species which may be hazardous to aviation. Proposed separation distances based on the radial distances of 3km, 8km and 13 km respectively are proposed. This is consistent with advice from ICAO.
29. The guidelines provide examples of land uses that are acceptable and those that require mitigation measures. In the case of land uses that need to be mitigated, advice regarding appropriate risk mitigation measures is provided.
30. The guidelines recognise that it can be impractical to consider changing existing land use or zoning around established airports which are often located in built up areas and where options for alternative land use can be limited. However, the guidelines allow for improved planning for land uses which may attract wildlife around new airports and new land uses proposed around existing airports.
31. Airport operators already have legislative obligations under aviation safety legislation to manage the risk of on-airport wildlife hazards. They do actively manage and deter wildlife, often reducing wildlife numbers. Given that aviation safety legislation regarding management of wildlife applies only on airport land, there is an opportunity to improve land use management in the vicinity of airports to further minimise the risk of wildlife hazards to aviation.

GLOSSARY

Aerodrome Reference Point (ARP)	The designated geographical location of an aerodrome.
Airport operators	These include operators, managers and owners at both regional and major airports.
ATSB	Australian Transport Safety Bureau
CASA	Civil Aviation Safety Authority
Flying mammals	Animals with vertebrae, having the body more or less covered with hair, nourishing the young with milk from the mammary glands, and, with the exception of the egg-laying monotremes, giving birth to live young which are able to fly. For example, bats and flying foxes.
High capacity air transport operations	A high capacity air transport operation involves an aircraft that is certified as having a maximum seating capacity exceeding 38 seats or a maximum payload exceeding 4,200 kg.
ICAO	International Civil Aviation Organization
Land Managers	These include local governments, local planning authorities, state governments, national park/wetland management agencies, private landowners and owners of properties.
SARP	Standards and Recommended Practices
Terrestrial mammals	Animals with vertebrae, having the body more or less covered with hair, nourishing the young with milk from the mammary glands, and, with the exception of the egg-laying monotremes, giving birth to live young which dwell on land. For example, kangaroos and foxes.
WHMP	Wildlife Hazard Management Plan