

Wildlife Hazard Management Outside Airport Perimeter Fence

ICAO NACC AGA/WG/04

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Wildlife Hazard Management (WHM)

- ACI has identified wildlife hazard management as a high priority.
- Despite the three editions of the ACI Wildlife Hazard Management Handbook and ACI's active participation in the updates of ICAO Doc.9137 Part 3, wildlife continue to be a global challenge.
- WP54 (presented during the ICAO AN Conference 14th) was passed on to the ICAO WHMEG,
- **Bird sanctuary** management is unavailable
- Increase in wildlife reports



Status:

- WP 54 is the WHMEG under discussion. They are promoting the development of an ICAO circular, similar to the volcanic ash one.
- ACI developed a working paper to ICAO with the objective of proposing tangible solutions to this issue, in particular to the roles and responsibilities of the State outside the airport perimeter fence.

ALPA WHITE PAPER

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Wildlife Hazard Mitigation Strategies for Pilots

February 2009

Executive Summary

From the very beginning of powered flight, pilots have competed with birds for airspace, sometimes with fatal results.

Over the years, aircraft and wildlife have been designed to avoid each other. However, certain high-speed operations have not been designed to avoid each other.

To complicate matters, efforts have been made to benefit, it also waterfowl are a problem for engine. When greatly exacerbated, the problem can become a significant hazard.



Airports are required to reduce the number of strikes. Federal Aviation Regulation 135.177 requires pilots to conduct a visual inspection of the aircraft before flight, if a bird strike is suspected, they must use the appropriate procedures to reduce the risk of a strike.

While it may be useful for reducing the number of strikes on the aircraft, they may do little or nothing to prevent bird strikes encountered, or climbing out from, an airport.



Canada goose population and strike trends—Dolbeer and Seubert, 2007

This paper is intended to inform airline pilots of the risk posed by bird and wildlife strikes, the kinds of actions that airport authorities may take to limit this risk, and, finally, what specific actions they and their companies can take to further reduce the risk.



Hazard Management

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Pilot Procedures and Vigilance



While the airport operator is responsible for taking action to reduce the potential for bird and wildlife strikes on its facilities, the pilot in command is ultimately responsible for taking every reasonable precaution to operate safely. For that reason, wildlife avoidance techniques and guidance, such as that in the Aeronautical Information Manual (AIM), should be included in flight operations manuals, training materials, and other company guidance for flight crew. However, anecdotal evidence suggests that some companies may not provide any such guidance at all. In a nonscientific survey conducted at an international bird strike conference in 2007, all flight crew attendees participating in a discussion of operational avoidance methods were asked if any guidance had been provided to them by their respective flight operations departments. Without exception, the answer was an emphatic “NO.”

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Wildlife Hazard Mitigation Strategies for Pilots

Wildlife Collision Prevention Guidance Material for Aircraft Operators

Birds/non-avian Hazards



Introduction

[Safety Issue Hub](#)

[S59-Bird/Wildlife Strikes](#)

In aviation, **aircraft operate in an environment shared with birds and other animals**, which can sometimes lead to interactions that pose risks to flight safety. While aircraft and other animals typically occupy separate domains, their paths sometimes intersect, potentially with catastrophic consequences.

Wildlife strikes, which refer to a collision between aircraft and birds or non-avian wildlife, **pose a serious threat to flight safety**. These events can damage aircraft structures and engines, and may lead to emergency landings, flight delays, and, in rare cases, fatal accidents. **In all cases, airlines bear the effects of these incidents, resulting in disruptions to flight operations.**

Initially termed "bird strikes" due to the high frequency of incidents involving bird collisions, the term has broadened to "wildlife strikes" as the number of incidents involving various animal species has increased with the growing number of air traffic and airfields. The term today is known as "Wildlife", which includes collision with birds as well as other non-avian wildlife.

Wildlife hazards are most prevalent during critical phases of flight, take-off, initial climb, approach, go-around, and landing, i.e., in low-altitude operations, making **airport** environments particularly vulnerable. The risk level is influenced by numerous factors, including habitat availability, food sources, local wildlife populations, and seasonal migration patterns. As air traffic continues to grow, and some wildlife species tend to adapt well to urban and **airport** environments, systematic and proactive Wildlife Hazard Management becomes increasingly crucial.

Wildlife Hazard Management is a coordinated set of strategies and actions aimed at minimizing the risk of wildlife strikes. It involves multiple stakeholders, including **airport** authorities, civil aviation regulators, air traffic controllers (ATC), and aircraft operators, all of whom share responsibility in creating and maintaining a safe operating environment. However, **Airport** Authorities are responsible for implementing wildlife management programs. The strategy for assessing wildlife at **airports** and the control measures for reducing wildlife risk is outlined in the **airport's** Wildlife Hazard Management Programs (WHMP). The effectiveness of the strategy varies among **airport** authorities.

Aircraft operators are a critical part of the wildlife risk management ecosystem. While they may not manage wildlife directly, their actions and policies can significantly influence how risks are identified, reported, and mitigated.

What is the problem with WHM?

Airport wildlife-hazard programs are well established within aerodrome boundaries through ICAO and ACI guidance. However:

- A **major safety gap remains outside the airport perimeter**, especially along approach, departure, and en-route corridors.
- Most reported wildlife strikes occur **below 3,500 ft AGL**, with 80% below 1,500 ft—mostly in areas outside airport operator control.
- Off-airport strikes can cause significant safety and financial impacts; the FAA reports average downtime of 83 hours and about USD 225,000 per damaging event.
- Airport operators can identify and report off-airport hazards, but generally **lack legal authority to manage nearby land uses**.
- Common off-airport wildlife attractants include landfills, sewage plants, reservoirs, agriculture, waste facilities, and nature reserves.
- Current cooperation with local authorities and landowners is often voluntary and inconsistent across States.



What can we do about it?

WHM Responsibility Outside Airport Boundaries at WHMEG/12

Rec. 1	States should designate a competent authority (civil aviation authority, land-use planning authority, or equivalent) with explicit responsibility for assessing and managing wildlife hazard attractants in the approach, departure, and en-route corridors in the vicinity of aerodromes (outside the airport perimeter fence).
Rec. 2	States should establish and/or enforce regulatory instruments (land-use zoning, environmental permitting, municipal by-laws, or equivalent) that either (a) prohibit land uses constituting a significant wildlife attractant within a defined distance of an aerodrome, or (b) require operators of such land uses to implement “certified” wildlife management measures.
Rec. 3	The relevant authority should be required to formally consult with the aerodrome operator and the civil aviation authority before approving any new land-use project that may introduce wildlife attractants within the ICAO 13-km bird circle or its equivalent.
Rec. 4	ICAO and relevant organizations (ACI included) should consider developing an implementation package to support States in the wildlife hazard management outside the airport perimeter fence.

Updates on ICAO AOWG

Current Framework

ICAO SARPs & Doc 9137 Part 3

Assign WHM responsibility to the aerodrome operator — correctly, but exclusively.

ACI WHM Handbook (2022)

Acknowledges the aerodrome "does not have the opportunity to directly manage habitats outside of the aerodrome."
Recommends voluntary partnerships.

Annex 14 (existing)

Requires States to prevent hazardous development in approach/departure areas — but no explicit SARPs for off-airport wildlife management responsibility.



What Is Missing

No designated competent authority

No ICAO requirement for States to name a body responsible for land-use and wildlife management outside the aerodrome.

Voluntary cooperation only

Partnerships with landowners, municipalities, and environmental agencies are unenforceable and globally inconsistent.

No consultation obligation

Developers and land-use planners can approve wildlife-attracting facilities near airports with no mandatory aviation safety review.

Updates on WHMEG

❖ WHM Responsibility Outside Airport Boundaries

86%

of strikes on/near the aerodrome
— *but the damaging tail lies beyond the fence*

Four Measures

1

Designate a competent authority
for off-airport WHM

2

Enforceable instruments
zoning · permitting · by-laws

3

Mandatory consultation
within the 13-km bird circle

4

Reflect in ICAO SARPs
Annex 14 / Doc 9137 / Doc 9981

The Gap

- ✓ **Inside the fence** — airport operators already meet their WHM obligations
- ✗ **Outside the fence** — no binding obligation on States, planning bodies or municipalities

Three Precedents

EU

EASA RMT.0751 — Protection of aerodrome surroundings (rulemaking task, 2026) — covers wildlife hazard around aerodromes

AU

NASF Guideline C — National Airports Safeguarding Framework — sits in land-use planning, not aviation regulation

ES

Royal Decree 369/2023 — Aeronautical easements explicitly list wildlife-attraction sources as regulated hazards

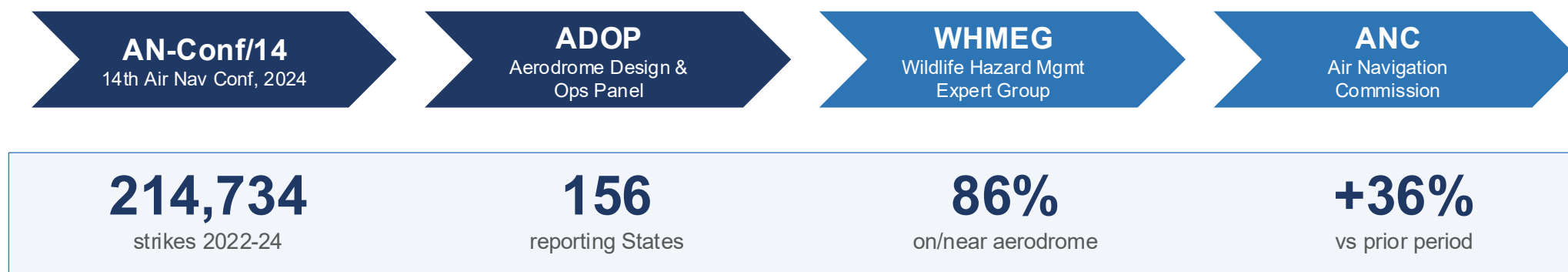
NEXT STEP

Recommend an ICAO Wildlife Symposium — raise State awareness; share national models

Updates on WHMEG

❖ Cross-Disciplinary Wildlife Strike Risk Management (WP/54)

Mandate Chain



Source: ICAO Bulletin EB 2026/8 (20 March 2026, IBIS)

Documents in Scope — why a cross-disciplinary job card



Path Forward — ~5 years total



Broad support · IFALPA · IFATCA · IATA · ACI · ATMOPS & FLTOPS panels · Flight Safety Bureau

6. Updates on WHMEG

❖ Introducing "Threat" — a Real-Time Operational Layer

Three Operational Layers

HAZARD	WHAT static inventory (species + aircraft) WHEN documented WHERE in WHMP / Doc 9137
RISK	WHAT probability × severity WHEN biennial cycle WHERE in SMS / Doc 9859
THREAT	WHAT hazard × current conditions WHEN real-time WHERE to the pilot, in the cockpit

the missing layer

Proven Model: GRF → Proposed Model: WHCC

GRF · runway surface · in force since 2021 RCAM assessment matrix RWYCC 0–6 runway condition code SNOWTAM + ATIS + ATC	WHCC · wildlife condition · proposed WHAM assessment matrix WHCC 1–5 wildlife hazard condition code BIRDTAM + ATIS + ATC · PWOR feedback
WHCC scale	1 2 3 4 5
	hazardous significant moderate low no activity

Wildlife Hazard Management is not an aerodrome problem, it is a low altitude problem.

Thank you!