

Wildlife Hazard Management

Safety Risk Assessment - Lite

Description

Wildlife strikes involving birds, mammals, reptiles, bats amphibians, and other wildlife remain a significant aviation safety risk. While encounters may occur both in the air and on the ground, they most commonly take place during take-off, climb, approach and landing and can result in engine damage, structural aircraft damage, flight crew workload, rejected take-offs, go-arounds or aborted landings, operational disruption, delays and, in severe cases, serious incidents or accidents.

Insects further contribute to wildlife hazards. Swarms of wasps, bees, or locusts can create operational hazards by obstructing sensors, clogging aircraft systems or interfering with ground activities. Even seemingly minor insect activity, such as wasps nesting inside aircraft components, has led to in-flight system malfunctions and serious safety events.

The challenge is becoming increasingly complex due to changing wildlife populations, migration patterns, climate influences, land-use developments and aerodrome expansion. As many wildlife attractants exist beyond aerodrome boundaries, effective mitigation requires a risk-based Wildlife Hazard Management Programme (WHMP) supported by strong collaboration between all stakeholders including States, Aerodrome Operators, Civil Aviation Authorities (CAAs), Air Navigation service Providers (ANSPs), Airline Operators, Air Traffic Control (ATC) and relevant government agencies.

Key Risk Area	Regional Exposure	Sector Exposure	Proximity
Loss of Control	All regions	Industry wide	Current

Main Threats

Inadequate Wildlife Hazard Management

Wildlife hazards require continuous assessment and management to remain effective. Where Wildlife Hazard Management Programmes (WHMPs) are not regularly reviewed, supported by risk assessments or integrated into the Safety Management System (SMS), aerodrome operators may be less effective in identifying and mitigating emerging wildlife risks.

Wildlife Attractants on and Around Aerodromes

Aerodromes and surrounding areas can provide food, water and shelter that attract wildlife into aircraft operating environments. Common attractants include drainage ponds, grassed areas, food waste, landfills, water bodies, and agricultural activity. Many of these attractants are outside aerodrome boundaries, making effective mitigation dependent on broader stakeholder cooperation.

Lack of Stakeholder Coordination

Effective wildlife hazard management requires coordination between all stakeholders. Inconsistent communication, fragmented responsibilities and limited stakeholder engagement can reduce the effectiveness of mitigation measures and increase exposure to wildlife strike risk.

Insufficient Data and Reporting

Wildlife strike reports, wildlife observations and trend analysis are essential to understanding risk and evaluating programme effectiveness. Inconsistent reporting, limited information sharing and insufficient analysis may prevent stakeholders from identifying emerging threats and implementing timely, data-driven mitigation actions, and limits the ability to conduct informed risk assessments.

Seasonal migration and wildlife movement

Seasonal migration and wildlife movement patterns represent a threat to aircraft operations as they can result in increased concentration of birds and other wildlife at or in the vicinity of the aerodrome and along the aircraft flight paths. These movements are often influenced by factors such as breeding, weather conditions, food availability, and habitat changes, leading to periods of elevated wildlife activity. Failure to account for seasonal migration and wildlife movement patterns can result in an underestimation of wildlife risk and increased aircraft exposure to wildlife during periods of high activity.

Land-Use Development and Regulatory Challenges

Urban development, aerodrome expansion and environmental protection policies can significantly influence wildlife activity near aerodromes. Without effective coordination between aviation authorities, aerodrome operators and planning agencies, these changes may introduce new wildlife attractants and increase wildlife exposure to aircraft operations.

Call To Action. Wildlife strike risk is increasingly influenced by factors both within and beyond the aerodrome boundary. Aerodrome Operators, CAAs and Airline Operators should work together to strengthen governance, stakeholder engagement and risk-based decision-making. A collaborative approach will support the effective identification, assessment and management of wildlife hazards throughout the aviation system. This collaborative approach could be within the framework of a runway safety team.

Preventive controls

Risk-Based Wildlife Hazard Management Programme (WHMP)

A risk-based WHMP provides the foundation for identifying, assessing and mitigating wildlife hazards within the aerodrome environment. Integrating the WHMP into the SMS of both aerodrome and airline operators supports continuous monitoring, performance evaluation and adaptation to changing wildlife risks.

Increase Wildlife Detection and Monitoring

Regular wildlife surveillance enables aerodrome operators to identify high-risk species, activity patterns and emerging wildlife hazards. Technologies such as radar, camera systems and routine airfield inspections can improve situational awareness and support timely intervention.

Management of Wildlife Attractants

Reducing access to food, water and shelter helps make aerodromes and surrounding areas less attractive to wildlife. Effective management of waste, vegetation, drainage systems and other attractants can significantly reduce wildlife presence in operational areas.

Wildlife Control Measures

Deterrents, fencing, barriers and habitat management measures can help prevent wildlife from entering aircraft operating areas. These controls are most effective when tailored to local wildlife species and regularly reviewed to maintain their effectiveness.

Improve Reporting, Data Sharing and Performance Monitoring

Wildlife reporting, data sharing and analysis support evidence-based decision-making and continuous improvement of mitigation strategies. Sharing information between aerodrome operators, airline operators and authorities enhances risk awareness and helps identify emerging trends and areas requiring attention.

Aeronautical Information Services

1. Aeronautical Information Publication (AIP)

Aerodrome operators should include timing and periods of peak wildlife activity in the AIP to enhance situational awareness and support operator risk assessment and flight planning decisions.

2. Notice to Airmen (NOTAMs)

Use NOTAMs to communicate temporary or unexpected wildlife activity that may pose an operational safety concern.

Improve Awareness and Training

Personnel involved in wildlife control and hazard management must receive appropriate training in proper reporting, adherence to established communication protocols, and understand the importance of timely and accurate information exchange.

Stakeholder Engagement and Coordination

Collaboration between all stakeholders strengthens the effectiveness of wildlife risk management activities. Regular engagement helps align mitigation efforts, improve communication and support a coordinated response to evolving wildlife risks.

Call To Action. The aviation industry should continue to strengthen WHMPs through effective surveillance, reporting, data sharing and proactive management of wildlife attractants. Enhanced collaboration between Aerodrome Operators, CAAs, Airline Operators and relevant government agencies will support more effective implementation of preventive controls and continuous improvement of wildlife risk mitigation activities. Greater use of risk assessments and performance monitoring can improve understanding of local wildlife hazards and support timely mitigation actions. Together, these efforts will contribute to a more proactive and resilient approach to wildlife hazard management.

Escalation Factors

- **Climate Change and Shifting Wildlife Patterns:** Climate change is altering migration routes, breeding cycles and habitat distribution worldwide. Wildlife species that historically posed limited risk at certain aerodromes may become more prevalent, while traditional mitigation strategies may become less effective as wildlife behaviour changes over time.

- **Competing Land-Use and Conservation Priorities:** Urban expansion, infrastructure projects and environmental protection initiatives can increase wildlife activity near aerodromes while limiting available mitigation options. Without effective collaboration between aviation, planning and environmental agencies and authorities, these competing priorities may increase long-term wildlife strike exposure.

- **Increasing Aviation and Wildlife Exposure:** Growing aircraft movements, aerodrome expansion and increasing wildlife populations are increasing the likelihood of interactions between wildlife and aircraft. As both aviation activity and wildlife presence continue to expand, existing controls may require continuous enhancement to maintain an acceptable level of safety.

Call to Action. As wildlife hazards continue to evolve, stakeholders should adopt a proactive and adaptive approach to wildlife risk management. Key areas of focus include:

- Proactively assessing the impact of environmental, operational and land-use changes to ensure wildlife risks continue to be effectively managed.
- Strengthening collaboration between aviation stakeholders, planning and environmental agencies and authorities and wildlife experts to improve awareness of emerging risks and support coordinated mitigation strategies.
- Regularly reviewing WHMPs using wildlife activity data, strike reports and performance monitoring to ensure mitigations remain effective against changing wildlife hazards and operational environments.

By working together, stakeholders can strengthen long-term resilience and further enhance aviation safety across the industry.

For additional information visit the IATA Safety Issue Hub