PROPOSED EXPANSION OF THE CAPE WINELANDS AIRPORT
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ANNEXURE 11B: WILDLIFE HAZARD MANAGEMENT PLAN

OCTOBER 2026

AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Cape Winelands Airport

[Insert Aerodrome Licence Number]

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Approved by: [Accountable Manager / CWA]



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Document Control

This Wildlife Hazard Management Plan (WHMP) is a controlled operational document forming part of the aerodrome's overall safety and operational management system. It should be read together with the Aerodrome Manual, Safety Management System (SMS) Manual, Emergency Response Plan, and any approved wildlife control standard operating procedures. All amendments to this document shall be made through an approved document control process.

Document Title	Wildlife Hazard Management Plan (WHMP)
Aerodrome	Cape Winelands Airport (CWA)
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1.0	2026-06-08	Initial issue	Albert Froneman	[Insert]
2.0	2026-08-28	Second issue	Albert Froneman	[Insert]

Related Documents

- Aerodrome Manual
- Safety Management System Manual
- Emergency Response Plan
- Environment Management Programme / Environmental Management Plan
- Bird/Wildlife Strike Reporting Procedure
- Wildlife Patrol and Control Standard Operating Procedures
- Training Matrix and Competency Register
  *Note – these documents may not be available for Cape Winelands Airport at this time

1. Purpose, Objectives and Scope

1.1 Purpose

The purpose of this Wildlife Hazard Management Plan (WHMP or the Plan) is to establish a structured, site-specific system for identifying, assessing, controlling and monitoring wildlife hazards at and in the vicinity of the aerodrome in order to reduce the likelihood and consequence of collisions between aircraft and wildlife and to minimise wildlife-related operational disruptions. This version of the WHMP should be seen as a draft that will be further refined and developed during the construction phase of the airport.

1.2 Objectives

- During the construction phase, this WHMP will serve as an interim, adaptive management framework to identify and manage wildlife hazards associated with both ongoing construction activities and the future operational environment of the aerodrome. In this context, the objectives below are intended not only to support aviation safety planning for eventual airport operations, but also to guide the early identification of wildlife attractants, emerging risk areas, contractor responsibilities, habitat

changes and monitoring requirements so that wildlife hazard management measures are built into the airport's design, construction and transition to operation from the outset.
- Identify wildlife species, attractants and activities that may present a hazard to aircraft operations.
- Record and report wildlife sightings, strikes, near misses, carcasses and operational impacts in a consistent manner that is easily accessible to all relevant parties for reporting, monitoring and evaluation purposes.
- Assess wildlife strike risk using a defined and repeatable risk assessment process.
- Implement habitat, infrastructure and land-use controls to reduce wildlife attractiveness on and near the aerodrome.
- Implement active wildlife control and dispersal procedures where required.
- Define clear responsibilities, communication pathways and reporting lines.
- Ensure staff competence through training, supervision and periodic review of programme effectiveness.

1.3 Scope

During the construction phase of the airport, this Plan will also apply as a practical framework to identify and manage wildlife hazards associated with construction activities, site disturbance, temporary infrastructure and changing habitat conditions that may affect current and future aviation safety. This Plan applies to all operational airside areas, including runways, taxiways, aprons, runway strips, RESAs, drainage features, grassed areas and the aerodrome perimeter, as well as off-site land uses and features that may materially influence wildlife activity and aircraft safety. The Plan addresses birds, mammals, reptiles and domestic animals, where relevant to aerodrome operations.

2. Regulatory and Reference Framework

This WHMP has been prepared with reference to applicable international and South African aviation requirements and guidance, including ICAO and SACAA material dealing with wildlife hazard management, wildlife strike reporting, habitat management, staff training and programme evaluation. The operator and its appointed specialist advisors shall keep this list under review and ensure the Plan remains aligned with the most current applicable requirements.

- ICAO Annex 14, Volume I – Aerodrome Design and Operations.
- ICAO Doc 9137, Airport Services Manual, Part 3 – Wildlife Hazard Management.
- ICAO Doc 9332 – Manual on the ICAO Bird Strike Information System (IBIS).
- South African Civil Aviation Regulations, 2011, Part 139.
- South African Civil Aviation Technical Standards (SA-CATS 139), as applicable.
- SACAA Technical Guidance Material for Aerodrome/Heliport Ecosystems and Species – Wildlife Control and Reduction.
- Applicable environmental, biodiversity and permitting legislation relevant to wildlife control measures.

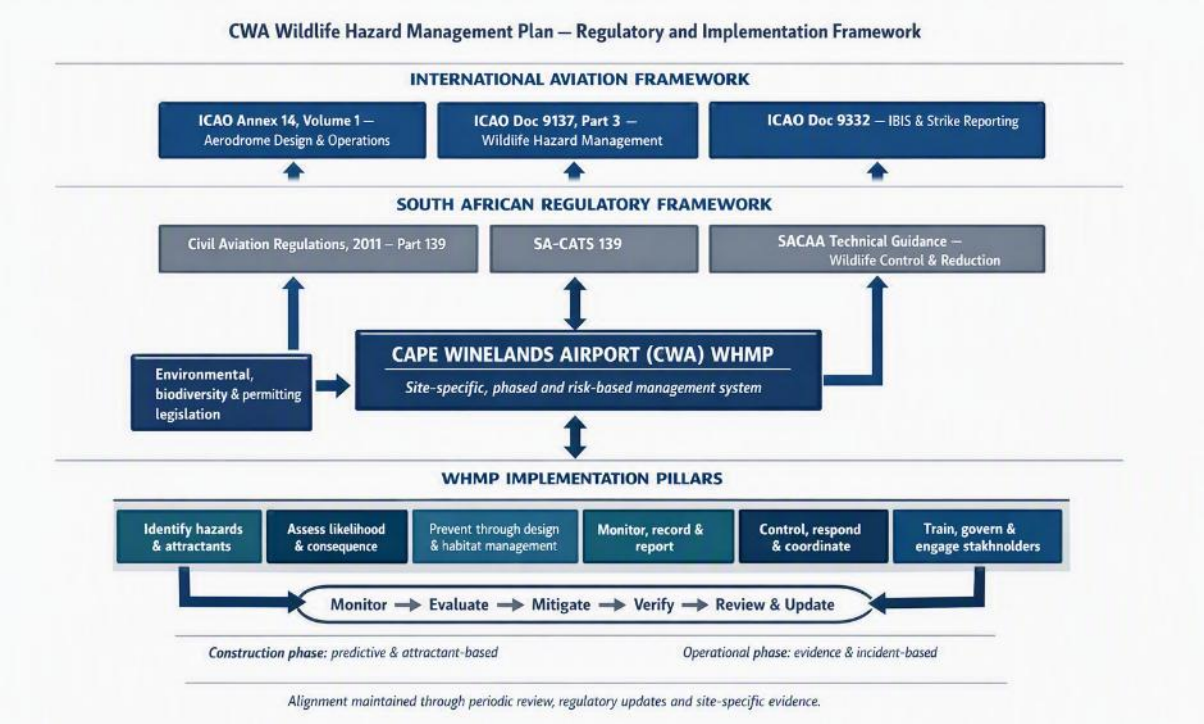


Figure 1: Conceptual framework illustrating the regulatory basis, implementation pillars and adaptive management cycle of the Cape Winelands Airport Wildlife Hazard Management Plan.

3. Definitions and Abbreviations

3.1 Definitions

Adaptive Management

A structured, iterative approach to decision-making whereby management actions are continuously improved based on monitoring results, observations and evolving site conditions.

Aerodrome (Airport/Airfield)

A defined area on land or water intended for the arrival, departure and movement of aircraft, including associated infrastructure and operational areas.

Aerodrome Operator

The entity responsible for the management, operation and safety oversight of the aerodrome, including implementation of the WHMP.

Aerodrome Vicinity

The area surrounding the aerodrome that may influence wildlife hazard risk, typically considered within a broader radius (e.g. up to 13 km for land-use considerations in line with ICAO guidance).

Airside

The movement area and adjacent areas of an aerodrome to which access is controlled and which are used for aircraft operations.

Attractant

Any natural or artificial feature (e.g. water, food sources, waste, vegetation or shelter) that attracts birds or other wildlife to the aerodrome or its vicinity.

Critical Operational Areas

Areas where wildlife presence poses the greatest risk to aviation safety, including runways, taxiways, aprons, runway strips and approach/departure paths.

Damaging Wildlife Strike
A wildlife strike that results in damage to an aircraft, ranging from minor damage to significant structural or operational impairment.

Hazard
A source of potential harm or a situation with the potential to cause injury, damage or disruption to aircraft operations.

Habitat Management
The proactive modification of the environment to reduce its attractiveness to hazardous wildlife species.

Incident
An occurrence associated with aircraft operations that affects or could affect safety, including wildlife-related events.

Movement Area
The part of an aerodrome intended for the movement of aircraft, including the manoeuvring area and apron.

Near Miss (Wildlife)
An incident where wildlife is observed in close proximity to an aircraft, creating a risk of collision but without actual contact.

Off-Aerodrome Attractant
A land use or feature outside the aerodrome boundary that attracts wildlife and may influence bird or animal movement through the airport environment.

On-Aerodrome Attractant
A feature within the aerodrome boundary that attracts wildlife and increases hazard risk.

Risk
The combination of the likelihood of a wildlife–aircraft interaction and the severity of its potential consequences.

Risk Assessment
A systematic process of evaluating wildlife hazards by considering likelihood, consequence and overall risk level.

Runway Strip
A defined area surrounding a runway intended to reduce the risk of damage to aircraft in the event of excursion and to protect aircraft flying overhead.

Wildlife
All birds, mammals, reptiles and other animals that may pose a hazard to aircraft operations.

Wildlife Hazard
The presence or potential presence of wildlife that could result in damage to aircraft or disruption to operations.

Wildlife Strike

A collision between wildlife and an aircraft, whether confirmed or suspected.

Wildlife Control Officer (WCO)
A designated person responsible for monitoring, controlling and managing wildlife hazards on an operational aerodrome.

Wildlife Hazard Management Plan (WHMP)
A structured and controlled document outlining the processes, responsibilities and measures for managing wildlife hazards at an aerodrome (i.e., this document).

3.2 Abbreviations and Acronyms

The following abbreviations are used within this WHMP:

Abbreviation	Definition
AIP	Aeronautical Information Publication
ANSP	Air Navigation Services Provider
ATC	Air Traffic Control
ATS	Air Traffic Services
ATIS	Automatic Terminal Information Service
CAA	Civil Aviation Authority
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
FOD	Foreign Object Debris
GIS	Geographic Information System
IBIS	ICAO Bird Strike Information System
ICAO	International Civil Aviation Organisation
KPIs	Key Performance Indicators
NOTAM	Notice to Airmen
PBHZ	Primary Bird Hazard Zone
SACAA	South African Civil Aviation Authority
SBHZ	Secondary Bird Hazard Zone
SMS	Safety Management System
SOPs	Standard Operating Procedures

WCO	Wildlife Control Officer
WHMP	Wildlife Hazard Management Plan
WLM	Wildlife and Land-use Management

(Core abbreviations aligned with ICAO Doc 9137 and aviation usage)

3.3 Interpretation of Terms (Construction and Operational Phases)

Unless otherwise stated, the definitions and terminology used in this WHMP shall be interpreted in the context of the applicable phase of the Cape Winelands Airport project, namely the construction phase, pre-operational transition phase and operational phase. Given that this WHMP is currently implemented during the construction phase and is based on a preliminary wildlife hazard profile, certain terms shall have a broader or adapted interpretation during this phase compared to full aerodrome operations.

During the **construction phase**, references to wildlife hazard management shall primarily relate to:

- the identification, monitoring and management of wildlife presence associated with site disturbance, construction activities and temporary or emerging habitat conditions;
- the prevention and rapid remediation of attractants such as standing water, disturbed feeding areas, exposed waste, improperly managed stormwater and vegetation establishment;
- environmental compliance monitoring, inspections and reporting rather than formal airside wildlife control operations;
- predictive and precautionary risk assessment based on habitat attractiveness and wildlife presence, in the absence of aircraft operations or historical strike data.

During this phase, terms such as critical operational areas, wildlife hazard, risk, and wildlife occurrence shall therefore include areas intended for future aircraft movement, as well as any construction areas where wildlife activity may influence future aviation safety conditions.

During the **pre-operational and operational phases**, the same terms shall be interpreted in their conventional aviation safety context, including:

- direct interaction between wildlife and aircraft operations;
- wildlife presence within active movement areas, approach and departure paths, and other defined high-risk operational zones;
- wildlife strike prevention, patrol-based monitoring, dispersal activities and real-time coordination with air traffic services;
- data-driven risk assessment based on observed wildlife activity, strike records and operational trends.

Where terminology such as wildlife strike, near miss, ATC coordination or operational response is used within this WHMP, it shall be understood that these elements become fully applicable only once aircraft operations commence but may be referenced during the construction phase for planning, system development and procedural alignment purposes.

In all cases, this WHMP shall be applied using a phased and adaptive approach, whereby the interpretation and application of terms evolve as the airport transitions from construction to full

operation, ensuring that the Plan remains relevant, proportionate and aligned with both current site conditions and future aviation safety requirements.

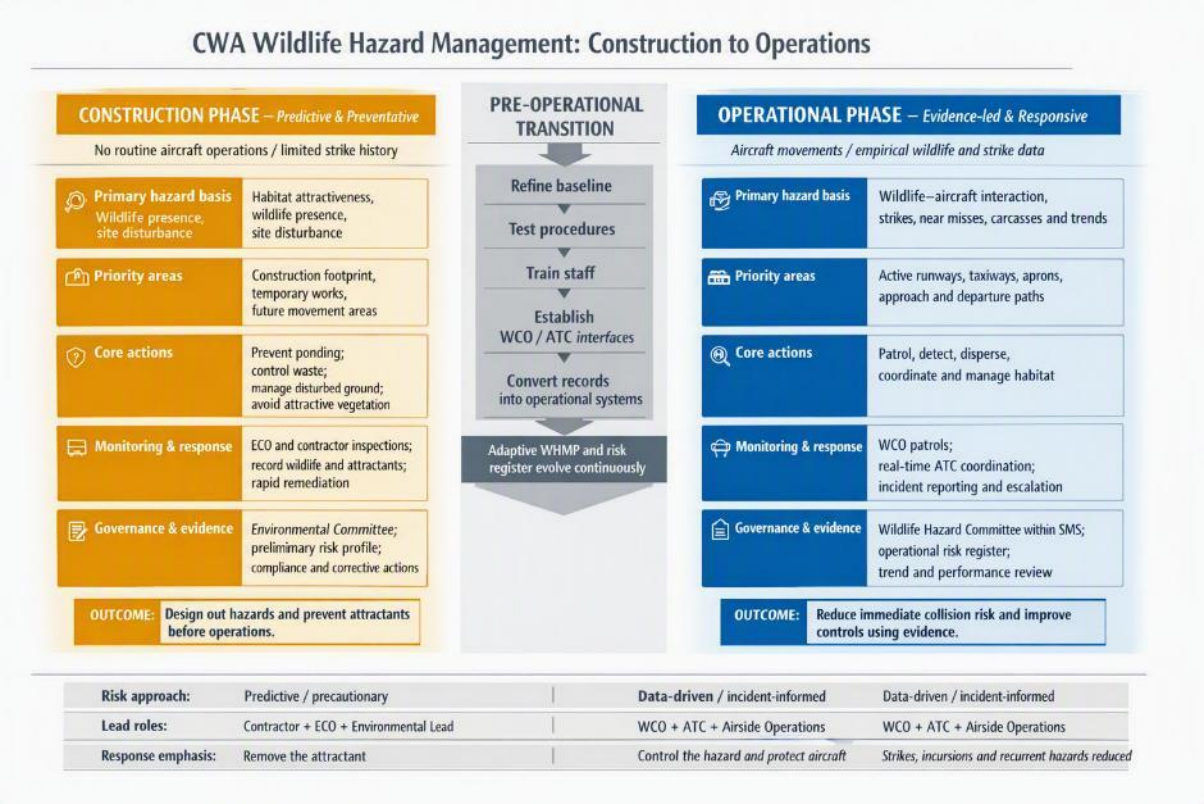


Figure 2: Conceptual framework illustrating the transition from predictive, attractant-based wildlife hazard management during construction to evidence-led, operational wildlife risk management at Cape Winelands Airport.

4. Aerodrome Description and Wildlife Hazard Context

4.1 Aerodrome Description

Cape Winelands Airport is a proposed phased redevelopment of the existing Fisantekraal Airfield, located near Durbanville in the Western Cape, into a modern commercial airport intended to serve the greater Cape Town region. The planned development comprises an approximately 880 ha airport and associated precinct, including a Code 4F runway of approximately 3.5 km capable of accommodating wide-body international aircraft, together with a new passenger terminal, cargo handling facilities and supporting airside and landside infrastructure. The airport is intended to enhance regional air connectivity, provide additional operational resilience and diversion capacity within the Western Cape aviation network, and support long-term economic growth through expanded passenger, freight and related commercial activity.

4.2 Environmental and Land Use Setting

The site falls within the Fynbos Biome and is associated predominantly with the critically endangered Swartland Granite Renosterveld vegetation type. The broader area has, however, been extensively transformed by agriculture and urban expansion.

For wildlife hazard management purposes, the receiving environment must be considered at both the airport site and the surrounding landscape. The bird strike risk assessment conducted as part of the EIA studies considered the ICAO-recommended 13 km radius around the aerodrome, including primary and

secondary Bird Hazard Zones, as these surrounding areas influence bird presence and movement patterns relevant to aircraft operations.

The natural fynbos and renosterveld vegetation of the area is generally less suitable for large hazardous bird species. In contrast, transformed land uses in the surrounding landscape, particularly agricultural areas and water-associated habitats, provide favourable conditions for a range of bird species of aviation safety concern.

The dominant land uses of concern in the airport surrounds include cultivated lands, livestock-related agricultural activities, waste management facilities, managed short-grass areas, wastewater treatment infrastructure, farm dams, wetlands and other artificial or natural waterbodies. These habitats are known to attract and support hazardous bird species and are considered the main environmental features influencing bird strike risk in the study area.

Attention is required for the wastewater treatment works to the north-west of the site, associated agricultural activities and feedlots, and the large farm dam and waste facility to the south-east of the proposed airport, which may attract significant numbers of high-risk bird species and contribute to regular bird movements through the airport approach and departure environment.

This environmental setting confirms that wildlife hazard management at Cape Winelands Airport must address both on-site habitat conditions and off-site land use influences. The WHMP should therefore seek to avoid the creation of additional bird-attracting features on the airport site and support ongoing monitoring and engagement regarding surrounding land uses that may increase wildlife hazard risk.

4.3 Wildlife Hazard Profile

The bird and wildlife hazard profile presented in this Plan is preliminary in nature and is based on the findings of the bird strike risk assessment undertaken as part of the EIA for the Cape Winelands Airport. It is intended to provide an initial understanding of the principal bird and wildlife hazards, associated habitat attractants and areas of potential risk relevant to the construction and planning for the initial operational phase. This profile will be further refined and updated during the construction phase as additional site-specific observations, monitoring data and information become available prior to commercial operations.

The bird and wildlife hazard profile for Cape Winelands Airport is characterised by a transformed agricultural and water-influenced landscape that supports a range of hazardous bird species within the airport's wider operating environment. The most significant risks are associated with very large and large bird species linked to waterbodies, waste facilities, wastewater infrastructure, cultivated lands and short-grass habitats. The WHMP must therefore apply a risk-based approach that prioritises these species, habitats and off-site attractants, while ensuring that on-site development and landscaping do not create additional wildlife attractants.



Figure 3: Conceptual framework linking the evidence base for the wildlife hazard profile to risk categorisation, operational WHMP application, and adaptive monitoring and review.

4.3.1 Bird and Wildlife Hazard Profile

The bird and wildlife hazard environment for Cape Winelands Airport is shaped primarily by the surrounding transformed landscape, rather than by the natural vegetation of the site itself. The airport falls within the Fynbos Biome and is associated predominantly with Swartland Granite Renosterveld, a vegetation type which, in its natural state, is generally less favourable to large hazardous bird species. However, the broader study area has been extensively transformed by agriculture, urban expansion and artificial water-related infrastructure, resulting in environmental conditions that support a diversity of bird species of aviation safety concern.

The earlier risk assessment considered the ICAO-referenced 13 km radius around the proposed aerodrome and confirmed that both the Primary Bird Hazard Zone (PBHZ) and Secondary Bird Hazard Zone (SBHZ) contain extensive habitats capable of attracting hazardous bird species. The report identifies agricultural land uses and waterbodies/wetlands as the dominant habitat classes associated with elevated bird strike risk.

A total of 200 bird species has been recorded in the study area and immediate surroundings, with at least 20 species identified as posing a potential bird strike hazard. These species are associated mainly with cultivated land, short grass habitats, wetlands, waste facilities, wastewater infrastructure, dams and other artificial or natural waterbodies.

The presence and abundance of high-risk species are primarily linked to agricultural land use and water bodies within the primary bird hazard zone, and that bird movement between these habitats requires particular attention for airport safety management. Specific areas of concern identified in close proximity to the proposed airport include the Fisantekraal Wastewater Treatment Works to the north-west, associated feedlots and agricultural areas, lawn or turf-related cultivation areas, and a large farm dam and waste facility to the south-east of the site along the R304.

4.3.2 Hazardous Bird Species Profile

Highest-risk species (Hazard Ranking Level 1)

The highest-risk bird group comprises very large species, generally exceeding 1.8 kg, and includes Great White Pelican, Spur-winged Goose, Egyptian Goose, Blue Crane, White Stork, African Fish Eagle and White-breasted Cormorant. These species are of greatest concern because of their body mass and, in several cases, flocking behaviour and association with high-risk habitats such as waterbodies, cultivated fields and wetlands.

High-risk species (Hazard Ranking Level 2)

Level 2 species include large-bodied birds such as Hadada Ibis, African Sacred Ibis, Helmeted Guineafowl and Black-headed Heron. These species are associated mainly with grasslands, cultivated fields, wetlands and short-vegetation habitats and are regularly recorded in the study area.

Moderate-risk species (Hazard Ranking Level 3)

Level 3 species include Western Cattle Egret, Common Buzzard, Spotted Thick-knee and Yellow-billed Kite. These species are associated with open agricultural land, grassland, airfields and built-up or open habitats and remain relevant due to their regular occurrence within the study area.

Lower-risk but still relevant species (Hazard Ranking Level 4)

Level 4 species include Grey-headed Gull, Common Starling and Blacksmith Lapwing. Although smaller-bodied, these species remain relevant to airport wildlife hazard management because they may occur

frequently, may use short-grass or water-associated habitats, and may occur in numbers that increase strike potential.

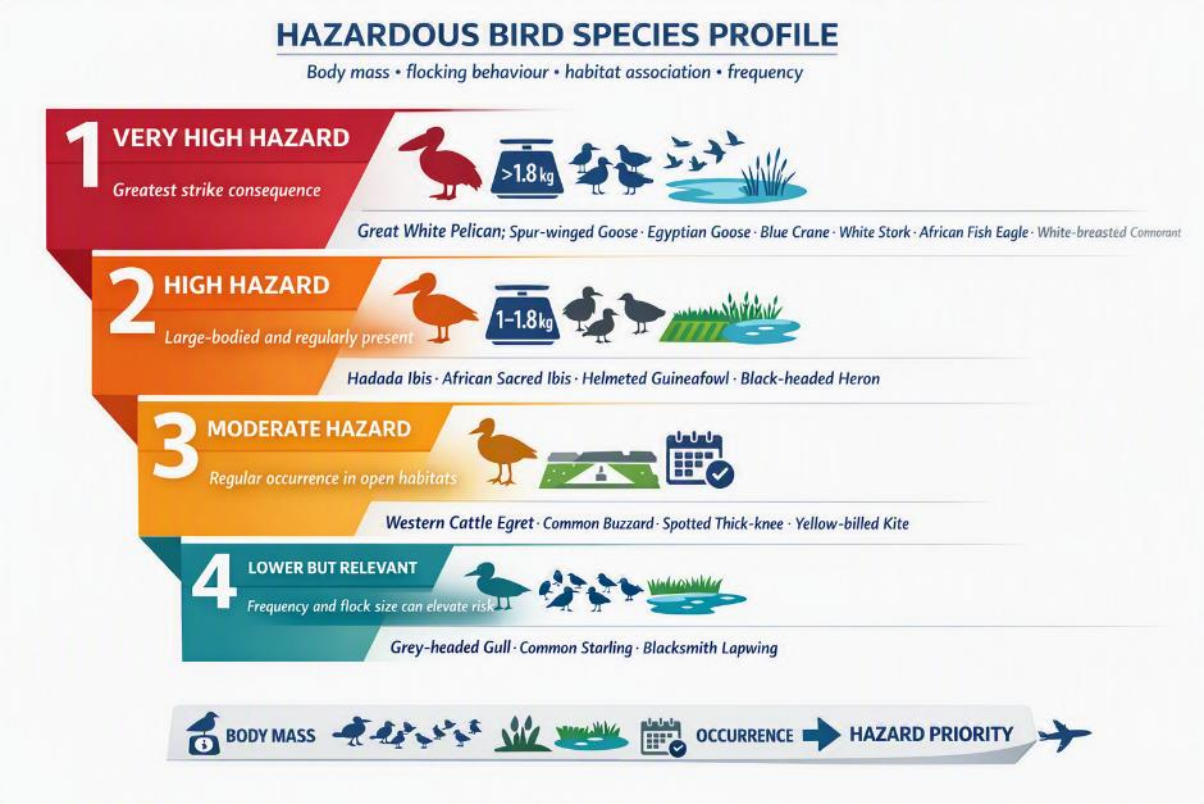


Figure 4: Hazardous bird species profile showing the four hazard ranking levels and the influence of body mass, flocking behaviour, habitat association and occurrence on hazard priority.

4.3.3 Principal Habitat and Land Use Attractants

The report identifies the following habitat and land use categories as the principal bird attractants relevant to the airport environment:

- **Agricultural land uses**, including irrigated or dryland crop fields, livestock-related areas and feedlots, which support species such as Egyptian Goose, Spur-winged Goose, African Sacred Ibis, Hadada Ibis and Western Cattle Egret.
- **Short-vegetation and managed grass habitats**, including lawns, turf cultivation and similar managed open areas, which attract species such as Hadada Ibis, lapwings, guineafowl, Black-headed Heron, cattle egrets and starlings.
- **Waterbodies and wetlands**, including artificial dams, natural wetlands, rivers and wastewater infrastructure, which attract water-associated high-risk species such as Egyptian Goose, Spur-winged Goose, Sacred Ibis, Great White Pelican, White-breasted Cormorant and African Fish Eagle.
- **Waste-handling facilities such as landfills, transfer stations, and open refuse areas** act as major attractants for scavenging and flocking bird species such as gulls, ibises, crows and ravens, storks, pigeons, starlings, egrets, herons and medium sized raptors such as kites and buzzards.
- **Wastewater treatment infrastructure and associated open areas**, particularly the Fisantekraal Wastewater Treatment Works, which may function as a focal attractant for waterbirds and commuting birds.

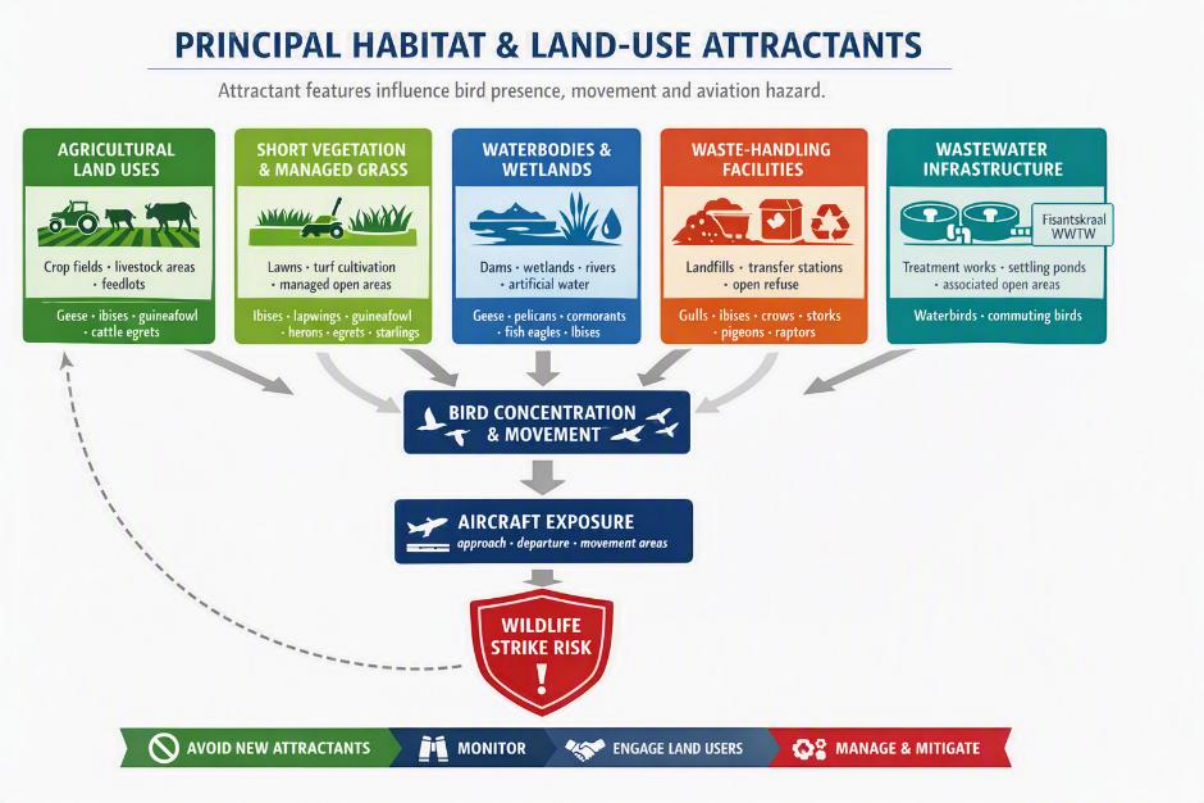


Figure 5: Conceptual framework showing how principal habitat and land-use attractants influence bird concentration and movement, aircraft exposure and wildlife strike risk, together with the corresponding management response.

4.3.4 Spatial Hazard Profile

The report found that Level 1, 2 and 3 bird hazard species occur in high densities within both the primary and secondary bird hazard zones around the proposed airport. It further notes that regular bird movement is likely between high-risk habitat patches, particularly between waterbodies and agricultural foraging areas. The large farm dam to the south-east of the site is specifically noted as supporting a high diversity of potentially hazardous waterbirds, including regular Great White Pelican presence, and may therefore contribute to flight paths intersecting aircraft approach and departure routes.

4.3.5 Risk Categorisation Framework

The following framework is based directly on the bird hazard ranking system and land-use findings presented in the initial risk assessment report and is used in the WHMP to categorise bird and wildlife hazards for monitoring and management purposes.

A. Species-based hazard categories

WHMP Risk Category	Description	Indicative species/groups
Category 1 – Very High Hazard	Very large bird species, generally exceeding 1.8 kg, with the greatest potential to cause severe strike consequences.	Great White Pelican, Spur-winged Goose, Egyptian Goose, Blue Crane, White Stork, African Fish Eagle, White-breasted Cormorant.
Category 2 – High Hazard	Large bird species between approximately 1 kg and 1.8 kg, frequently associated with cultivated land, wetlands and	Hadada Ibis, African Sacred Ibis, Helmeted Guineafowl, Black-headed Heron.

	grassland-type habitats.	
Category 3 – Moderate Hazard	Medium-sized species that are of concern were regularly present in open habitats, grasslands or on the airfield.	Western Cattle Egret, Common Buzzard, Spotted Thick-knee, Yellow-billed Kite.
Category 4 – Lower Hazard / Routine Management	Smaller bird species that may still be relevant because of frequent occurrence, flocking behaviour or association with specific attractant habitats.	Grey-headed Gull, Common Starling, Blacksmith Lapwing.

B. Habitat and land use risk categories

WHMP Land Use / Habitat Category	Risk Status	Basis for classification
Waterbodies, wetlands, dams and wastewater infrastructure	**Highest priority habitat risk**	Identified as key attractants for multiple Level 1 and Level 2 hazardous species, including geese, ibis, pelicans and cormorants.
Agricultural fields, livestock areas and feedlots	**High habitat risk**	Identified as major foraging habitat for hazardous species, particularly geese, ibis, guineafowl and cattle egrets.
Managed short-grass areas, lawns and turf-related areas	**High habitat risk**	The report notes that short grass and mown open areas are highly attractive to several hazardous species and should not be promoted on the airfield.
Natural fynbos / renosterveld vegetation	**Lower habitat risk**	The report states that natural fynbos vegetation is generally less suitable for large hazardous bird species than transformed agricultural or wet habitats.

4.3.6 Operational WHMP application

For WHMP implementation, any observation, habitat feature or land use activity involving **Category 1 species** or **highest priority habitat risks** should be treated as requiring the most urgent management attention, monitoring and, where relevant, engagement with surrounding landowners or operators.

Similarly, on-airport activities or design features that may replicate known attractants — particularly short grass, standing water, temporary ponds, wet retention areas, exposed food waste or disturbed foraging surfaces — should be avoided or managed proactively, as the report indicates that such features may attract hazardous species and increase wildlife strike risk.

5. Policy Statement

The Aerodrome Operator shall establish, implement and maintain a Wildlife Hazard Management Plan as an integral component of the aerodrome Safety Management System, with the objective of identifying, assessing and reducing risks to aviation safety associated with birds and other wildlife.

During the construction phase, the Aerodrome Operator shall ensure that wildlife hazard management measures are applied on a site-specific and risk-based basis, taking into account the changing conditions, activities and temporary habitat features that may arise as construction progresses. Such measures shall include, as a minimum, routine monitoring and reporting of bird and wildlife activity, assessment of wildlife-related risks, management of habitat and attractants, implementation of appropriate control measures where required, coordination with contractors and relevant stakeholders, staff awareness and training, and the regular review of hazard information and management responses.

This WHMP shall be treated as a living management document. It shall be reviewed and updated at regular intervals, and whenever material changes to the site, surrounding land uses, construction activities, wildlife observations, monitoring findings or risk conditions so require, in order to ensure that the Plan remains current, effective and aligned with the evolving hazard profile of the aerodrome.

6. Governance, Roles and Responsibilities

6.1 General

The implementation of this WHMP shall be based on a phased approach aligned with the development status of Cape Winelands Airport. During the pre-construction and construction phases, responsibilities shall focus primarily on design review, construction oversight, monitoring, reporting and the proactive prevention of bird and wildlife attractants associated with site establishment and earthworks. During the operational phase, the governance structure shall expand to include airport operational personnel responsible for routine wildlife hazard management, airside coordination and active response actions.

The responsibilities below should therefore be read in the context of the applicable project phase, noting that certain functions, such as Air Traffic Control and a dedicated Wildlife Control department, will become fully relevant only once the aerodrome is operational.

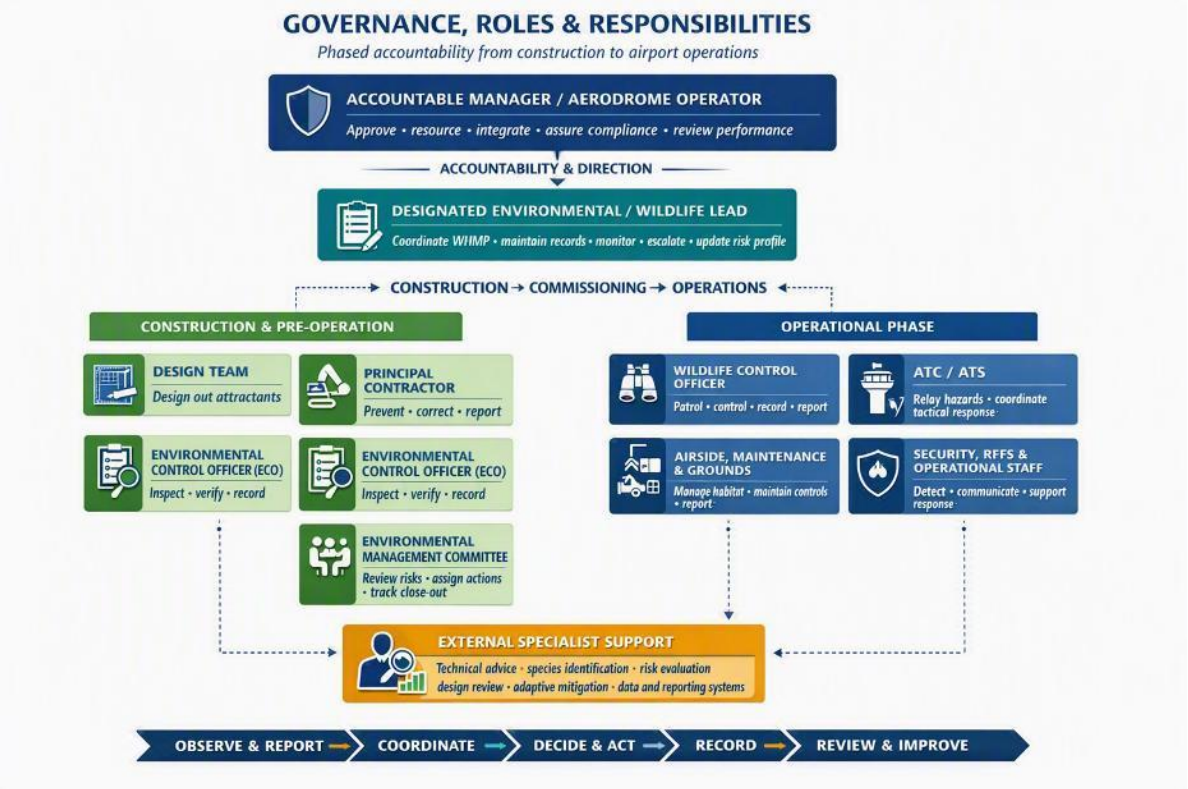


Figure 6: Conceptual governance framework showing phased accountability, coordination, implementation and review responsibilities for wildlife hazard management from construction through commissioning to airport operations.

6.2 Accountable Manager / Aerodrome Operator

Applicable during construction and operations

- Approve, resource and support implementation of the WHMP across the relevant project phases.
- Ensure that the WHMP is integrated into the broader aerodrome safety and environmental management framework and is updated as the airport progresses from construction into operations.
- Ensure regulatory compliance, reporting, oversight and close-out of corrective actions arising from monitoring, audits or inspections.
- Ensure that design, construction and operational activities are undertaken in a manner that minimises the creation of bird and wildlife attractants on the airport site.
- Ensure that appropriate specialist input, monitoring and stakeholder engagement are secured where off-airport land uses or surrounding activities may influence wildlife hazard risk.
- Review overall programme performance and authorise revisions to the WHMP where required.

6.3 Design Team / Architectural and Engineering Design Professionals

Primarily applicable during pre-construction and construction

- Ensure that the layout, landscaping, stormwater systems, buildings and associated infrastructure are designed to avoid or minimise features that may attract hazardous bird and wildlife species.

- Incorporate the bird hazard management principles derived from the risk assessment into the detailed design of airside, landside and open space areas, including avoidance of lawns, ornamental water features and persistent standing water.
- Ensure that stormwater and drainage infrastructure is designed to prevent the formation of permanent or temporary waterbodies that may attract hazardous species.
- Where landscaping is required, promote the use of indigenous fynbos / renosterveld-type vegetation and avoid habitat conditions associated with short grass and open wet areas that are known to attract hazardous birds.
- Liaise with the appointed environmental and avifaunal specialists where design elements may affect wildlife hazard risk.

6.4 Construction Contractor / Principal Contractor

Applicable during construction

- Implement all wildlife hazard management requirements applicable to construction activities and ensure that subcontractors comply with the relevant provisions of the WHMP and environmental specifications.
- Ensure that construction activities do not create unmanaged bird or wildlife attractants, including temporary ponds, poorly managed stormwater accumulation, exposed food waste, open refuse areas, or areas of disturbance that attract feeding birds.
- Maintain good housekeeping across the construction site, including proper waste handling, drainage management and the prompt removal or remediation of conditions that may attract wildlife.
- Report significant bird and wildlife observations, attractants, carcasses, fence breaches or wildlife-related incidents to the designated responsible person without delay.
- Cooperate with the Environmental Control Officer, specialist advisors and the Aerodrome Operator in implementing any required corrective actions.
- Where directed, modify work practices or sequencing if construction activities are shown to be creating an unacceptable wildlife hazard. The risk assessment specifically notes that temporary ponds should be avoided and that, where large numbers of birds are attracted to disturbed feeding areas, site activities may require active management.

6.5 Environmental Control Officer (ECO)

Applicable during construction

- Provide independent environmental oversight of construction activities and monitor compliance with the wildlife hazard management measures applicable to the construction phase.
- Undertake regular inspections of the site to identify temporary or emerging bird and wildlife attractants, including standing water, excavations, disturbed topsoil, waste accumulation and inappropriate vegetation establishment.
- Verify that construction-related mitigation measures are implemented effectively and recommend corrective actions where non-compliance or increased wildlife risk is identified.

- Maintain records of wildlife-related observations and construction-phase attractants and ensure that relevant findings are communicated to the Aerodrome Operator and Contractor.
- Liaise with the avifaunal specialist where specialist interpretation or input is required.
- Support periodic review and refinement of the WHMP during construction based on observed site conditions and monitoring findings.

6.6 Designated Environmental / Wildlife Lead

Applicable during construction and operations

(This role may be undertaken by a designated airport representative during construction and later transition to a dedicated Wildlife Control Officer during operations.)

- Coordinate implementation of the WHMP on a day-to-day basis appropriate to the applicable project phase.
- Maintain wildlife records, incident logs, monitoring data, risk registers and action trackers.
- Coordinate wildlife monitoring, inspections and reporting, and escalate significant risks to management.
- Liaise with contractors, environmental personnel, specialists and, when relevant, operational stakeholders regarding wildlife hazard management measures.
- Support regular review of the wildlife hazard profile as site conditions evolve through construction into operations.
- Coordinate the management, welfare and regulatory compliance of any bird-scaring dog facilities, including liaison with veterinary and animal welfare authorities.

6.7 Wildlife Control Officer

Operational phase only

- Implement and maintain the airport wildlife hazard control programme once the aerodrome becomes operational.
- Coordinate patrols, routine observations, reporting and day-to-day wildlife response actions on the operational aerodrome.
- Maintain wildlife records, risk registers, equipment registers, strike records and trend reports.
- Coordinate with ATC, airside operations, maintenance personnel and external stakeholders regarding wildlife activity affecting aircraft operations.
- Report programme performance and emerging risks to airport management on a regular basis.

Note: This function is generally not required as a dedicated role during pre-construction, but its future operational responsibilities should be anticipated in the development of systems, procedures and reporting lines.

6.8 Air Traffic Control / ATC

Operational phase only

- Receive and relay wildlife hazard information as required for safe aircraft operations.

- Coordinate tactical responses to significant wildlife activity affecting aircraft movements.
- Support operational notifications, warnings or other flight safety communications where required.

Note: ATC responsibilities become applicable only once flight operations commence or where temporary aviation activities require such coordination.

6.9 Airside Operations, Maintenance and Grounds Staff

Primarily operational phase; limited relevance during late construction / commissioning

- Implement grass, drainage, waste, fencing and housekeeping controls relevant to the operational aerodrome environment.
- Report wildlife sightings, attractants, carcasses, fence breaches and habitat conditions of concern.
- Ensure that maintenance activities do not create unmanaged wildlife attractants.
- Maintain landscaped and open areas in accordance with the bird hazard mitigation principles adopted for the airport, including the avoidance of habitats known to attract hazardous species.

Note: During early construction this function may be limited or absent, with equivalent responsibilities resting largely with the Contractor and ECO.

6.10 Security, Rescue and Fire Services, Apron Staff and Other Operational Personnel

Operational phase only (except security oversight where present during construction)

- Report wildlife incursions, attractants and operationally significant bird or wildlife activity.
- Support perimeter integrity, access control and emergency response actions where required.
- Assist in communicating wildlife hazards to the relevant operational personnel.

Note: During construction, any on-site security personnel should report wildlife incursions, fence damage, open waste areas and other unusual wildlife-related observations to the Contractor and ECO.

6.11 External Specialist Support

Applicable during construction and operations

Specialist support shall be provided by AfriAvian Environmental to fulfil both a technical advisory and strategic oversight role in relation to the implementation of this WHMP. In addition to specialist input on species identification, ecological assessments, habitat management, interpretation of monitoring findings and review of bird movement patterns, AfriAvian Environmental will provide higher-level guidance on risk evaluation, adaptive mitigation, design review, construction-phase attractant management and periodic refinement of the wildlife hazard profile as the airport develops. AfriAvian Environmental also brings experience in innovative digital data capture and reporting systems, including application-based field data capture and web-based reporting dashboards, which can support improved wildlife record management, trend analysis and decision-making. In this capacity, AfriAvian Environmental as the specialist advisor shall assist the Aerodrome Operator in ensuring that the WHMP remains current, evidence-based and responsive to changing site conditions during construction and into the operational phase.

7. Wildlife Hazard Committee / Consultative Structure

Prior to commencement of the construction phase, the CWA will need to establish a dedicated Environmental Management Division and appoint an Environmental Management Committee that will be responsible for wildlife hazard management during the construction phase. Bird and wildlife hazard management activities should be included as a standing agenda item during committee meetings. This committee should provide for the review of construction-related wildlife risks, temporary habitat attractants, environmental incidents, monitoring findings and required corrective actions. As the airport progresses towards commissioning and operations, this consultative function should transition into, or be supplemented by, a more formal Wildlife Hazard Committee operating within the broader governance structure of the aerodrome Safety Management System.

The purpose of the consultative committee shall be to review wildlife hazard information, assess emerging and ongoing risks, evaluate the adequacy of mitigation measures, coordinate implementation responsibilities and track required corrective and preventative actions. During construction, the emphasis should be on design review, habitat and attractant prevention, construction oversight and adaptive management. During operations, the emphasis should expand to include strike prevention, wildlife control, operational coordination and wildlife hazard trend management associated with aircraft movements.

7.1 Composition

(a) Construction Phase – Environmental Management Committee

The construction-phase Environmental Management Committee should, as a minimum, include the following representatives:

- Aerodrome Operator / Project Proponent representative
- Environmental Control Officer (ECO)
- Construction Contractor / Principal Contractor representative
- Relevant design team representative, including architectural / civil / stormwater / landscape input where required
- Designated environmental or wildlife coordinator
- Airport Wildlife Hazard Management & Avifaunal specialist
- Ecological / Offset specialist, where required
- Health, Safety and Environment (HSE) / site management representative
- Other stakeholders or authorities, where relevant to surrounding land use, waste, stormwater or environmental compliance matters

This structure is intended to ensure that wildlife hazard considerations are addressed proactively during construction, particularly where site establishment, earthworks, stormwater management, waste handling or landscaping may create temporary or permanent bird attractants.

(b) Operational Phase – Wildlife Hazard Committee

Once the aerodrome becomes operational, the formal Wildlife Hazard Committee should include, as appropriate:

- Aerodrome Operator / Accountable Manager representative
- Wildlife Control Officer / Programme Coordinator
- ATC / ATS representative
- Airside operations / maintenance representative
- Aircraft operator / flight safety representative
- Environmental / municipal / waste authority representative, where relevant
- Airport Wildlife Hazard Management & Avifaunal specialist
- Wildlife rehabilitation advisor
- Ecological / wildlife specialist, where required

This operational structure should function within the aerodrome SMS and support the routine review of wildlife-related operational risk and mitigation performance.

7.2 Meeting Frequency and Responsibilities

During the construction phase, the Environmental Management Committee should meet at regular intervals appropriate to the pace and nature of construction activities, and additionally where significant wildlife-related incidents, major site changes or material environmental non-compliances are identified. Key responsibilities during this phase should include:

- reviewing wildlife observations and monitoring findings;
- identifying temporary or emerging bird and wildlife attractants associated with construction activities;
- reviewing stormwater, waste, vegetation and housekeeping issues relevant to wildlife hazard management;
- considering specialist recommendations on design refinements, habitat controls and adaptive mitigation; and
- tracking corrective actions and responsibilities to close-out.

During the operational phase, the Wildlife Hazard Committee should meet at regular intervals (at least quarterly) and additionally following serious strikes, significant changes in wildlife activity, major land-use changes or other material wildlife hazard events. Responsibilities during operations should include review of strike statistics, wildlife sightings, risk assessments, mitigation measures, training status, outstanding corrective actions and any changes in surrounding land use or on-airport conditions that may influence wildlife hazard risk.

8. Wildlife Hazard Identification and Baseline Assessment

The baseline assessment presented in this WHMP is preliminary and predictive in nature during the construction phase, as it is primarily informed by the specialist bird strike risk assessment and available ecological data. It shall be progressively refined and validated through construction-phase monitoring and further updated during the operational phase as empirical wildlife activity and strike data become available.

8.1 Sources of Information

During the pre-construction and construction phases, the identification of wildlife hazards shall be informed primarily by the findings of the baseline bird strike risk assessment and supplemented by ongoing monitoring and site-based observations. As the airport transitions into operations, additional operational data sources will become available and should be incorporated into the assessment framework.

The following sources of information shall be utilised, as applicable to the relevant project phase:

Construction Phase (Primary data sources):

- Findings from the Bird Strike Risk Assessment and associated specialist studies
- Targeted monitoring, structured observations and site inspections undertaken by the Contractor, Environmental Control Officer (ECO) and/or specialist advisors
- Environmental compliance inspections and audit findings
- Records of wildlife observations, attractants and incidents identified during construction activities
- Reports from construction personnel, site management, security and environmental staff
- Consultation with design teams, contractors and specialists regarding potential attractants arising from construction activities (e.g. stormwater, earthworks, waste)
- Engagement with surrounding landowners, facility operators and relevant authorities regarding off-site attractants and land use influences
- Ecological surveys, habitat mapping and specialist inputs, where required

Operational Phase (Additional data sources):

- Routine wildlife patrols and structured observations by airside personnel
- Wildlife strike data, incident reports and near-miss records
- Pilot reports and aircraft operator feedback
- Carcass records and species identification results
- Air Traffic Services (ATS) notifications and operational reports
- Maintenance, operations and security reports
- Ongoing stakeholder consultation and specialist monitoring inputs

This phased approach recognises that, during construction, the emphasis is on predictive risk identification and proactive management of attractants, while during operations the emphasis shifts to data-driven risk management based on observed wildlife–aircraft interactions.

8.2 Baseline Assessment Content

The wildlife hazard baseline assessment for Cape Winelands Airport shall be developed as a progressive and adaptive profile, initially informed by the risk assessment and subsequently refined through construction-phase monitoring and operational data collection.

The baseline assessment shall include, as a minimum:

- **Hazardous species profile:**
    - Identification of key hazardous species and species groups based on the risk assessment
    - Consideration of body size, flocking behaviour, typical habitat association and relative hazard ranking
- **Abundance and occurrence:**
    - Relative abundance, reporting frequency and spatial distribution of key species (where data are available)
    - Identification of species likely to occur during construction in response to temporary habitat conditions
- **Habitat and attractant mapping:**
    - Identification and mapping of key habitat types and attractants within the airport site and surrounding hazard zones
    - Specific focus on high-risk habitat classes identified in the risk assessment, including agricultural land uses and waterbodies
    - Ongoing identification of temporary or emerging attractants during construction, including standing water, disturbed ground, exposed food sources and waste accumulation
- **Movement patterns and flight behaviour:**
    - Known or likely bird movement patterns between key habitats (e.g. between waterbodies and agricultural feeding areas)
    - Potential interaction of these movement patterns with future runway orientation, approach and departure paths (predictive during construction; observed during operations)
- **Temporal patterns influencing risk:**
    - Daily, seasonal and climatic drivers influencing bird presence and activity
    - Identification of periods of elevated risk, including seasonal migration, rainfall events and agricultural cycles
- **Critical areas and potential hotspots:**
    - Identification of areas within the airport site and surrounding landscape that may present elevated wildlife hazard risk
    - During construction: focus on temporary high-risk areas associated with earthworks, drainage features, borrow pits, stockpiles and disturbed surfaces
    - During operations: identification of strike hotspots and high-use areas based on monitoring and incident data

9. Wildlife Reporting, Recording and Data Management

The wildlife reporting and database management system shall support a progressively refined understanding of the wildlife hazard profile, transitioning from construction-phase observation and attractant management to a fully integrated operational wildlife hazard reporting system aligned with international best practice and regulatory requirements.

During the pre-construction and construction phases, all wildlife observations, incidents and attractant-related issues shall be recorded through a structured reporting system appropriate to the project phase. The reporting system shall initially focus on systematic observation, identification of attractants and early risk detection, and shall be progressively developed into a comprehensive aviation wildlife reporting system prior to the commencement of operations.

All relevant wildlife information shall be captured, stored and managed in a centralised and auditable format to enable trend identification, adaptive management, specialist review and regulatory reporting. As the aerodrome becomes operational, this system shall fully align with the requirements of the aerodrome Safety Management System (SMS) and support wildlife strike reporting, operational decision-making and programme performance evaluation.

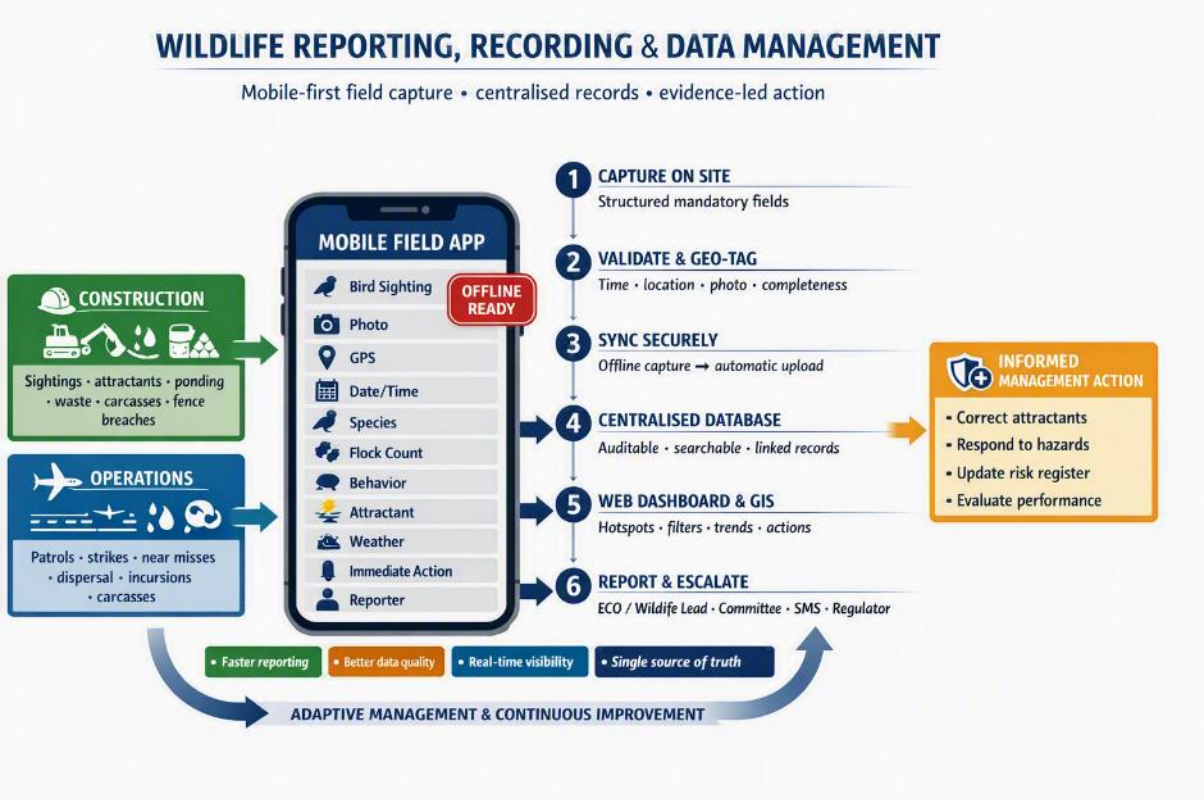


Figure 7: Mobile-first wildlife reporting and data management framework showing structured field capture, secure synchronisation, centralised storage, dashboard and GIS analysis, escalation, and feedback into adaptive management.

9.1 Reportable Events

The type of reportable events shall vary according to the project phase.

(a) Construction Phase – Primary focus on observations and attractants

- Wildlife sightings on or in the vicinity of the construction site, particularly those involving identified hazardous species or large flocking species

- Identification of temporary or emerging attractants, including:
    - standing or ponded water;
    - disturbed ground or exposed invertebrate-rich substrates;
    - waste accumulation or food sources;
    - poorly managed stormwater or drainage features
- Congregations or unusual concentrations of birds associated with construction activities
- Wildlife carcasses found on site, irrespective of cause
- Mammal, reptile or domestic animal incursions and fence breaches
- Any wildlife-related environmental incidents or non-compliances
- Any wildlife observations that may require modification of construction practices or mitigation measures

(b) Operational Phase – Aviation-related events

- Confirmed wildlife strikes with physical evidence
- Suspected strikes where there is a reasonable indication of collision
- Wildlife carcasses found on the aerodrome without another obvious cause of death
- Near misses and wildlife-related flight disruptions
- Routine wildlife sightings and dispersal events in operational areas
- Mammal, reptile or domestic animal incursions and fence breaches

This phased approach reflects that, during construction, risk management is proactive and attractant-based, whereas during operations it becomes event-driven and aviation safety-focused.

9.2 Minimum Data Fields

The following minimum data fields shall be recorded for all reportable events, with flexibility to expand data capture as the monitoring system matures:

- Date and time
- Location (GPS or defined site reference)
- Species or species group and estimated number of individuals
- Observed behaviour (e.g. foraging, roosting, commuting, circling)
- Presence and description of any associated attractants (particularly relevant during construction)
- Relevant activity or site condition (e.g. earthworks, stormwater ponding, waste accumulation, vegetation condition)
- Phase of aircraft movement/flight, where applicable during operations

- Aircraft type/operator, where relevant (operational phase)
- Damage severity or operational impact, where applicable
- Weather and environmental conditions
- Immediate actions taken (e.g. drainage, removal of attractant, reporting to contractor/ECO, dispersal actions)
- Reporting person and organisational affiliation

During construction, particular emphasis shall be placed on capturing environmental context and attractant conditions, to support rapid intervention and adaptive mitigation.

9.3 Responsibilities and Submission

All personnel present on site during construction and operations shall be responsible for reporting relevant wildlife observations, incidents and potential attractants through the prescribed reporting channel.

(a) Construction Phase

- Construction Contractor personnel, site management, security staff and environmental personnel shall report wildlife observations, attractants and incidents to the designated reporting lead.
- The Environmental Control Officer (ECO) shall oversee the reporting process, verify observations and ensure that identified risks and non-compliances are addressed.
- The designated Environmental / Wildlife Coordinator shall collate and maintain records, track trends and escalate significant risks to the Aerodrome Operator and Environmental Committee.
- Specialist advisors (where appointed) may review data periodically and provide input on risk interpretation and required mitigation measures.
- Reporting outputs shall be used to inform Environmental Committee discussions and adaptive management actions during construction.

(b) Operational Phase

- All airport personnel shall report wildlife-related events through the formal reporting system.
- The Wildlife Control Officer or designated coordinator shall collate, verify, analyse and maintain the wildlife database.
- Required reports, including statistical summaries and regulatory submissions, shall be prepared and submitted to the relevant authority in accordance with applicable requirements.
- Data shall be used to support ongoing risk assessment, wildlife hazard management decision-making and review of programme effectiveness within the SMS framework.

10. Wildlife Risk Assessment Methodology

The wildlife risk assessment process shall follow an adaptive management approach, whereby risks are continuously identified, evaluated and mitigated based on the best available information, transitioning

from a predictive, attractant-based assessment during construction to a data-driven operational risk assessment once the aerodrome becomes operational.

Wildlife risk shall be assessed using a documented, risk-based methodology that considers both the likelihood of a wildlife–aircraft interaction and the potential severity of the outcome, consistent with the principles of the aerodrome Safety Management System (SMS).

During the construction phase, where aircraft operations are limited or absent and historical strike data are not available, the risk assessment shall be based primarily on:

- the attractiveness of habitats and site conditions to hazardous species;
- the likelihood of wildlife presence and activity within defined hazard zones; and
- the ability to proactively prevent, manage or eliminate attractants through design, construction practices and environmental controls.

As the project progresses into the operational phase, the risk assessment shall be refined and updated based on observed wildlife activity, strike records, operational data and monitoring results, thereby transitioning to a fully evidence-based aviation wildlife hazard risk framework.

10.1 Risk Factors

Wildlife risk assessment during both construction and operations shall consider the following factors, noting that the relative weighting of these factors may differ between project phases:

Species-related factors:

- Body mass and associated damage potential
- Flocking or aggregation behaviour
- Typical habitat association and feeding ecology

Occurrence and exposure factors:

- Frequency and relative abundance in the project area
- Presence within critical areas (construction activity areas, future runway corridors and hazard zones)
- Likely movement patterns between key habitats (particularly between agricultural areas and waterbodies identified in the risk assessment)
- Temporal factors, including daily activity cycles, seasonal patterns and weather-related influences

Construction-phase attractant factors (critical during site establishment):

- Presence and persistence of temporary or permanent attractants, including:
    - standing or ponded water;
    - disturbed ground and exposed food sources;
    - waste accumulation and poor housekeeping;

- inappropriate vegetation establishment or landscaping

- Scale, duration and spatial extent of such attractants
- Proximity of attractants to future operational movement areas and hazard zones

Manageability and control factors:

- Ease with which attractants can be prevented, reduced or eliminated
- Effectiveness of existing controls and mitigation measures
- Responsiveness of the site management system to identified risks

Operational phase additional factors:

- Timing of wildlife presence relative to aircraft movements
- Historical strike records and severity of incidents
- Observed wildlife behaviour in response to control measures

10.2 Risk Matrix

The aerodrome shall apply the approved SMS risk matrix, or an equivalent framework, to ensure consistent evaluation and prioritisation of wildlife hazards. The following structure may be applied:

Criterion	Scale	Description
Likelihood	Rare to Almost Certain	During construction: probability of wildlife occurrence and use of attractive habitats. During operations: probability of wildlife–aircraft interaction based on observed data.
Consequence	Insignificant to Severe	Potential impact of a wildlife strike or hazard on aircraft safety, infrastructure or operations (predicted during construction; observed during operations).
Risk Rating	Low / Medium / High / Extreme	Combined rating used to prioritise mitigation actions and management attention.
Review Trigger	Defined events	Includes significant wildlife observations, formation of new attractants, environmental incidents, major land-use changes, or (during operations) wildlife strikes and trend changes.
Residual Risk	Post-control rating	Risk level remaining after implementation of mitigation measures or controls.

During the construction phase, the application of the matrix shall emphasise early identification and proactive mitigation of high-risk habitats and attractants, rather than reliance on reactive or incident-based assessment.

10.3 Wildlife Risk Register

A wildlife risk register shall be maintained as a central tool for documenting, tracking and managing identified risks throughout the construction and operational phases.

The risk register shall, as a minimum, include:

- Hazard source (species, habitat or attractant)
- Location and spatial context (including reference to hazard zones)
- Description of exposure conditions (e.g. construction activity, habitat condition, attractant type)
- Current risk rating (pre-control)
- Existing mitigation and control measures
- Additional actions required (with priority ranking)
- Responsible persons (e.g. Contractor, ECO, Aerodrome Operator)
- Target timeframes for implementation
- Status and review history
- Residual risk rating following implementation of controls

During the construction phase, the risk register shall place particular emphasis on:

- identifying and managing temporary and emerging attractants;
- assessing the effectiveness of construction-phase controls; and
- informing Environmental Committee discussions and adaptive management actions.

During the operational phase, the risk register shall be updated with empirical data, including wildlife activity trends and strike records, and shall be used to support ongoing risk-based decision-making within the aerodrome SMS framework.

11. Habitat Management and Site Modification

Habitat management at Cape Winelands Airport shall follow a proactive, design-led approach, whereby the creation of bird attractants is avoided at source during construction and establishment, rather than relying on reactive control measures during operations. This approach is aligned with the site-specific environmental context and represents the most effective strategy for long-term wildlife hazard risk reduction.

The Aerodrome Operator shall ensure that both the design and construction of the airport environment are undertaken in a manner that minimises the attractiveness of the site to hazardous bird and wildlife species, with particular emphasis on avoiding the creation of artificial habitats known to increase bird strike risk.

During the construction phase, habitat management shall prioritise the prevention of temporary and permanent attractants, informed by the risk assessment findings that hazardous species in the area are strongly associated with agricultural habitats, short grass systems and waterbodies.

This approach shall be aligned with the principle that the natural fynbos/renosterveld vegetation is inherently less attractive to hazardous bird species and therefore provides a more suitable long-term baseline condition for the aerodrome environment.

The Aerodrome Operator shall also engage, where necessary, with relevant stakeholders regarding off-site attractants that may influence wildlife hazard risk within the airport's operating environment.

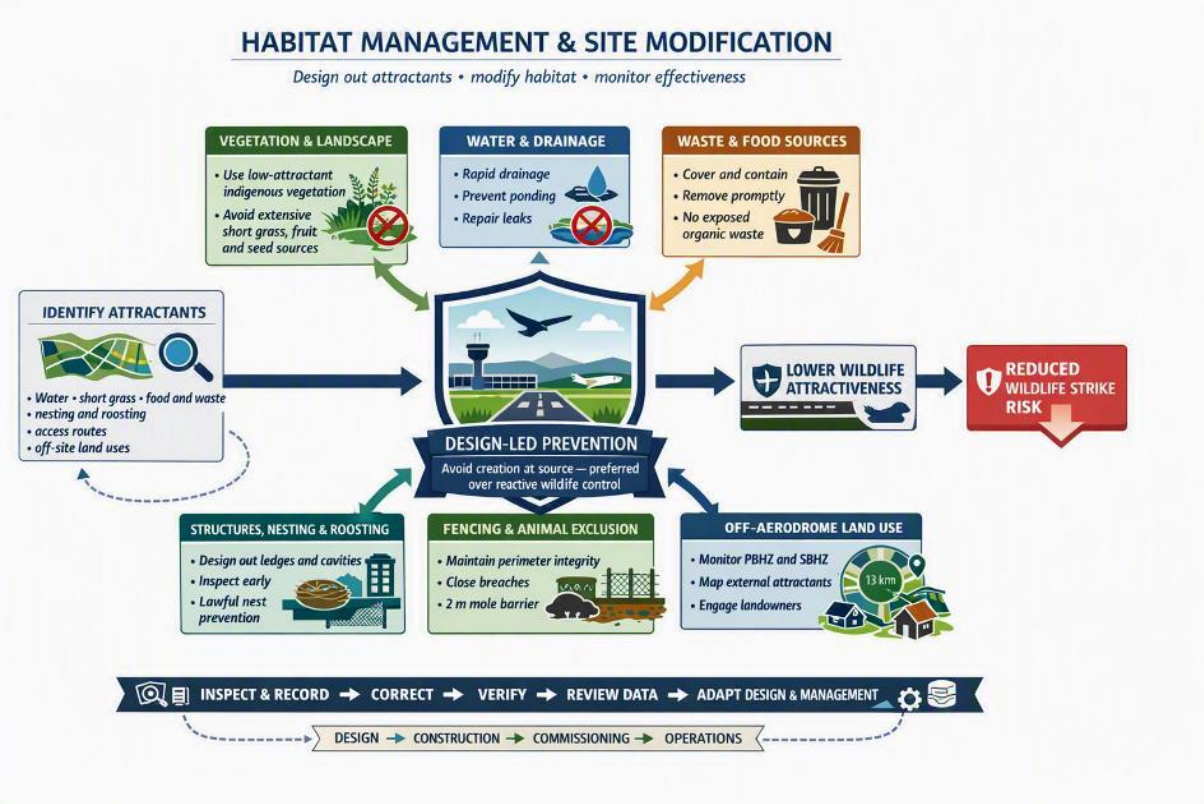


Figure 8: Conceptual framework for design-led habitat management and site modification, showing the principal controls used to reduce wildlife attractiveness and wildlife strike risk across the airport development lifecycle.

11.1 Vegetation and Landscape Management

During the construction and early establishment phase, vegetation and landscape design shall prioritise low-attractant, indigenous vegetation systems, rather than conventional grassed surfaces.

- Avoid the establishment of extensive short grass habitats, as these are known to attract a range of hazardous bird species, particularly during mowing and disturbance events.
- Promote the use of indigenous fynbos and renosterveld vegetation, with controlled height limits appropriate to aviation safety requirements (typically low-growing species).
- Avoid lawns, irrigated landscaping and vegetation types that produce food sources (e.g. seeds, fruit) or provide perching and roosting opportunities.
- During construction, prevent uncontrolled vegetation establishment on disturbed soils that may attract foraging birds.
- Where vegetation is required for erosion control or dust suppression, select plant species and management approaches that minimise habitat suitability for hazardous bird species.
- Ensure that the design of airport precinct landscaping, gardens and associated external spaces takes bird attraction and associated bird hazard risk into account, including avoidance of lawns, ornamental water features and other landscaping elements that may increase the attractiveness of the precinct to hazardous bird species.

- Close cooperation and coordination shall be maintained between wildlife hazard management personnel and the department or contractors responsible for airside maintenance, including vegetation management, grass cutting (if required), drainage and waste control. Wildlife monitoring data and observations shall be used to inform maintenance practices, and maintenance activities shall be planned and implemented in a manner that does not create or exacerbate bird or wildlife attractants. Particular attention shall be given to the timing, frequency and method of grass cutting (if required) and vegetation management to minimise the attraction of hazardous bird species.

- Provision should be made, where applicable, for operational wildlife control infrastructure including facilities required for the housing and management of trained bird-scaring dogs.

Note: Traditional grass height and mowing prescriptions should not be the primary approach for this site, given the strong evidence that short grass systems increase bird hazard risk in this landscape context.

11.2 Water Management

Water management shall be treated as a critical control measure, given the strong association between waterbodies and hazardous bird species identified in the risk assessment.

- Prevent the formation of standing or ponded water during construction, including within excavations, borrow pits, drainage lines and compacted areas.

- Design and construct stormwater infrastructure to ensure rapid drainage and avoid conditions that may lead to persistent wet areas or wetland formation.

- Avoid the creation of stormwater retention systems that function as permanent or semi-permanent waterbodies.

- Ensure that retention structures are designed to drain efficiently and do not support waterbird habitat.

- Monitor for leaks, wastewater discharges and drainage failures that may create unintended attractants.

Where existing waterbodies occur on or near the site, their management should aim to reduce bird attractiveness, including minimising shallow edges and roosting features where feasible and lawful.

11.3 Waste and Food Source Control

Strict waste and housekeeping controls shall be implemented throughout the construction phase.

- All waste storage areas shall be covered, enclosed and managed to prevent access by birds and other wildlife.

- Ensure prompt removal and proper handling of waste, including food waste, litter and any organic material.

- Prevent the accumulation of food sources that may attract birds, including exposed refuse.

- Ensure that all contractors and service providers comply with site-specific waste management requirements and environmental specifications.

- Always maintain a high standard of site housekeeping to prevent the development of wildlife attractants.

11.4 Structures, Nesting and Roosting Prevention

All buildings and structures shall be designed and managed to minimise opportunities for nesting and roosting.

- Avoid architectural features that provide sheltered ledges, cavities or perching opportunities.
- Inspect construction areas, temporary structures and infrastructure for early signs of nesting or roosting activity.
- Implement preventative measures, where practical and lawful, to discourage establishment of nests in operationally sensitive areas.
- Apply nest management procedures in accordance with applicable legal and permitting requirements.

11.5 Fencing, Exclusion and Burrowing Mammal Control

Effective perimeter control shall be maintained throughout the construction phase and carried forward into the operational phase to prevent the access of hazardous wildlife to the airfield and to limit the establishment of habitat conditions that may increase wildlife hazard risk.

- Install and maintain appropriate perimeter fencing and access controls to prevent wildlife entry.
- Identify and address any gaps, breaches or vulnerabilities in fencing and access points.
- Prevent access by domestic animals (e.g. stray dogs) and larger wild mammals that may pose a safety risk.
- Monitor site boundaries regularly, particularly during active construction where fencing may be temporarily compromised.

In addition, specific consideration shall be given to the management of Cape dune mole-rats that may gain access to the airfield and create conditions that are undesirable from both an airfield maintenance and wildlife hazard management perspective. Burrowing activity has the potential to undermine the integrity of vegetated areas and may also create secondary attractants for predatory birds and other wildlife species. The CWA landscape and open space planning guideline specifically recommends that a 2 m underground mole barrier fence be established around the outer perimeter of the airfield.

Accordingly, the airport perimeter design should incorporate an underground mole barrier associated with the security perimeter fence, or an equivalent engineered exclusion measure, to reduce the likelihood of Cape dune mole-rats gaining access to the airfield during operations. This measure should be considered during the detailed design and construction of the perimeter security system so that exclusion of burrowing mammals is addressed proactively rather than retrospectively.

During the construction phase, the Contractor and Environmental Control Officer shall monitor for signs of burrowing mammal activity along the perimeter and within disturbed areas and shall report any evidence of mole-rat presence or burrow establishment within areas intended for future airside operations. Where such activity is recorded, appropriate management or removal responses shall be considered as part of the site's adaptive habitat management approach.

The perimeter fence, underground mole barrier and any associated exclusion measures shall be inspected periodically and maintained in an effective condition to ensure that burrowing access pathways do not become established over time. This requirement is aligned with the general principle in the WHMP that perimeter integrity and wildlife exclusion measures must be maintained on an ongoing basis.

11.6 Off-Aerodrome Land Use Management

The Aerodrome Operator shall identify, monitor and, where feasible, engage with relevant stakeholders regarding off-aerodrome land uses and habitat features within the ICAO-referenced 13 km radius of the aerodrome that may influence bird and wildlife hazard risk. The initial risk assessment for Cape Winelands Airport adopted this 13 km study area and further identified Primary Bird Hazard Zones (PBHZs) and Secondary Bird Hazard Zones (SBHZs) to guide the assessment of surrounding land uses and wildlife attractants relevant to aircraft approach and departure paths.

In accordance with the risk assessment and ICAO guidance, off-aerodrome land use management shall not be treated as a once-off exercise, but as a structured and ongoing process during both the construction phase and the operational phase, in order to maintain an updated overview of external wildlife hazard sources, detect emerging risks early, and support timely remedial or collaborative management actions. The risk assessment report records that land use around the airport should be assessed with regard to wildlife hazard management within a 13 km circle, that hazardous sites should be monitor high-risk seasonally, and that land use surveys should be reviewed at intervals determined by the safety risk assessment, with a new comprehensive land use assessment generally desirable every three to five years based on high risk species presence in the landscape.

Key external attractants identified in the risk assessment and supporting documentation may include:

- farm dams and other waterbodies;
- wastewater treatment facilities;
- livestock areas, feedlots and abattoirs;
- agricultural practices and cultivation areas;
- waste disposal or landfill sites;
- other developments introducing water, waste or open feeding areas.

Attention shall be given to those land uses and habitat features occurring within the PBHZ and SBHZ, or elsewhere within the 13 km radius where they may influence bird movement through the airport environment. The initial risk assessment specifically identified agricultural land uses and water-associated habitats as the principal external habitat classes associated with hazardous bird species in the study area, and highlighted the need to pay attention to the wastewater treatment works, associated agricultural activities and feedlots, and the large farm dam to the south-east of the airfield, as these features may attract high-risk species and contribute to regular bird movements through the airport approach and departure environment.

During the construction phase, this process shall focus on maintaining an updated understanding of surrounding land uses and attractants that may interact with the evolving site environment, particularly where temporary construction-related features could add to the broader off-site hazard context. During the operational phase, the same process shall continue as part of the airport's ongoing wildlife hazard management programme, so that changes in surrounding land use, attractant condition or bird use can be identified and addressed as early as possible. The report states that a comprehensive WHMP should include coordination among the aerodrome operator, aviation regulatory authority, aircraft operators and surrounding communities, and that the aerodrome operator should engage with local farmers in the vicinity to encourage practices that are least attractive to hazardous bird species.

Information arising from off-aerodrome land use monitoring, stakeholder engagement and any identified changes within the 13 km radius shall be tabled and reviewed through the Environmental Committee / consultative forum during construction, and thereafter through the formal Wildlife Hazard Committee or equivalent consultative structure during operations. This forum shall provide the mechanism for reviewing external hazard trends, discussing necessary engagement with landowners and responsible authorities, and tracking any agreed corrective or preventative actions. The use of the Environmental Committee / Wildlife Hazard Committee in this way is a WHMP governance recommendation based on the committee structure already developed for this Plan; it is not expressly set out in the source documents.

Engagement with surrounding landowners, land users, illegal operators and relevant authorities should aim to reduce the attractiveness of external features to hazardous bird species, or where this is not possible, to better understand and manage their influence on bird movement patterns and overall wildlife hazard risk within the defined hazard zones around the airport. The initial risk assessment expressly notes that effective management will require engagement with surrounding landowners and that collaboration with neighbouring land users is integral to reducing strike risk.

12. Wildlife Control and Dispersal Operations

Wildlife control and dispersal operations shall form part of the active, reactive component of the Wildlife Hazard Management Plan and shall be implemented in a manner that is proportionate to the project phase, current risk conditions and the nature of wildlife activity observed. The purpose of these operations shall be to reduce the immediate presence of hazardous wildlife in, on, or near critical flight safety areas, while supporting longer-term risk reduction through monitoring, recording and adaptive management. ICAO states that the objective of deterring or expelling wildlife is not to scare wildlife randomly around an aerodrome, but to control movements and disperse wildlife away from high-risk areas, and that all active control systems should be used only when required in order to reduce habituation.

For Cape Winelands Airport, this section must be read together with the hazard profile in the WHMP and the initial risk assessment, which identified hazardous species linked primarily to agricultural habitats, short-grass systems, wetlands, wastewater infrastructure and other waterbodies within the wider aerodrome environment. The same assessment also notes that the construction phase may temporarily increase bird attraction if standing water, disturbed topsoil or exposed feeding opportunities are created.



Figure 9: Conceptual framework for risk-based wildlife control and dispersal operations, showing patrol and detection, hazard assessment, operational coordination, proportionate control, clearance verification, response escalation, recording and adaptive review.

12.1 Patrols and Monitoring

Wildlife patrols, inspections and structured observations shall be undertaken as a core operational requirement of the WHMP. ICAO states that patrols of airside areas to check for birds and other hazardous wildlife are a direct requirement for wildlife hazard management of aerodromes, and that patrols should aim to prevent wildlife presence on, or crossing, runways and approach or departure paths. The same guidance notes that patrols should target locations of hazardous wildlife activity, record wildlife observed, identify attractant areas and help trigger proactive habitat management responses.

During construction, patrols and monitoring shall focus primarily on:

- temporary and emerging habitat attractants, including ponded water, disturbed ground, exposed invertebrate-rich areas, open waste and poorly managed stormwater features;
- wildlife use of the construction footprint and any areas intended for future operational movement areas;
- early detection of congregations of hazardous species linked to construction activities; and
- rapid reporting to the Environmental Control Officer, Contractor and designated wildlife/environmental lead so that remedial action can be implemented promptly. The initial risk assessment specifically states that temporary water ponds should be avoided, that construction companies and environmental control officers should monitor such conditions closely, and that areas should be drained immediately where birds are attracted.

During operations, wildlife patrols shall become a formal airside control activity and shall be undertaken at defined frequencies, with increased patrol effort during high-risk periods, adverse weather, following strikes, when repeated wildlife activity is observed, or when external land-use conditions are likely to

elevate risk. ICAO states that some aerodromes conduct wildlife patrols at least 15 minutes prior to aircraft movement and that wildlife controllers should have appropriate vehicles, binoculars and recording devices. It also highlights the value of randomising routes and timings so that wildlife does not habituate to predictable controller movements.

For Cape Winelands Airport, it is recommended that operational wildlife patrols be undertaken primarily as vehicle-based scaring and monitoring patrols using a suitable all-terrain patrol vehicle, supported by a trained bird-scaring dog under the control of a competent handler. This is a project-specific operational recommendation for the WHMP. It is consistent with ICAO recommendations, which recognises the effectiveness of vehicles in eliciting a response from hazardous wildlife and states that trained dogs can introduce a predator presence that results in a flee response, provided the animals are properly trained and do not themselves become a strike risk.

12.2 Approved Control Techniques

Wildlife control techniques shall be selected according to species, context, phase of operation, location relative to aircraft movement areas, weather conditions and the likely behavioural response of the target wildlife. ICAO notes that there is no single solution that is best for all situations, that different species respond differently to different repellent techniques, and that active control should be based on understanding the behaviour of the species present.

Approved control techniques may include the following, subject to local authorisation, competence and safety constraints:

- **Vehicle-based dispersal and tactical positioning.** The visible presence of a vehicle or controller is identified by ICAO as one of the most effective visual stimuli for hazardous wildlife. Vehicle-based operations are well suited to runway strips, taxiway strips, open airside areas and perimeter patrol routes.

- **Pyrotechnics and specialised launchers.** ICAO states that pyrotechnics are a common means of dispersal at aerodromes, can help control direction of departure, and are most effective when used skilfully, in combination with other harassment techniques and with due coordination with ATC. The same source also notes that pyrotechnics may present an FOD hazard and that fire risk must be considered in dry conditions.

- **Distress calls or species-specific acoustic deterrents.** ICAO states that distress call systems should be species-specific, manually operated, and are most effective when vehicle-mounted through roof-mounted speakers. It also warns that distress calls or any auditory deterrent can lead to rapid habituation and should therefore be used sparingly within an integrated suite of techniques.

- **Visual deterrents and direct human presence.** Visual repellents may be used tactically, but ICAO states that most such devices are only short-term tools and are not suitable as long-term standalone solutions.

- **Trained dogs and, where justified, falconry.** ICAO states that trained dogs and falcons introduce a predator presence resulting in a flee response, and that proper training for the animals and instruction for handlers is required to ensure that the animals do not become a strike risk. For this WHMP, the use of a trained bird-scaring dog is particularly appropriate as part of formal operational scaring patrols, especially in open airside areas where large terrestrial or water-associated birds may require active displacement.

- **Trap, capture, removal or lethal control.** These measures shall be considered only where lawful, appropriately authorised and justified by risk. ICAO states that lethal control should generally follow failure of non-lethal methods and must be undertaken safely, humanely and in accordance with local laws and provincial permit requirements.

During the **construction phase**, the use of active dispersal techniques shall generally be more limited and targeted. The principal emphasis during construction shall remain on eliminating the attractant that is causing the problem. Active dispersal during construction may nevertheless be necessary where hazardous birds are repeatedly using disturbed feeding areas, ponded water or future critical movement areas, and where site activities must continue safely. This is consistent with the initial risk assessment, which notes that if large numbers of birds are feeding in disturbed areas it may be necessary to modify activity timing or implement active management.

During **formal commercial operations**, active control and dispersal operations shall become a standard operational function and shall be undertaken in direct support of safe aircraft movements. At this stage, patrols, rapid response dispersal, recording, ATC coordination and equipment readiness shall all be formalised through SOPs and training. The external SACAA Technical Guidance Material for Aerodrome/Heliport Ecosystems and Species – Wildlife Control and Reduction states that the wildlife control programme should include processes for reporting, collecting and recording data, risk assessment, habitat management, control and reduction techniques, liaison with non-airport agencies, stakeholder engagement and staff training.

12.3 Equipment Control

A formal equipment control system shall be maintained for all wildlife control equipment. This shall include patrol vehicles, radios, binoculars, torches, data capture devices, pyrotechnic launchers and cartridges, acoustic devices, PPE, first-aid and emergency items, and any equipment used in support of trained dog operations. The WHMP already requires an equipment register, and ICAO states that equipment used by wildlife management personnel should be appropriate to the aerodrome environment and species encountered, while the SACAA Technical Guidance Material for Aerodrome/Heliport Ecosystems and Species – Wildlife Control and Reduction emphasise training, reporting and the use of effective control methods.

Equipment shall only be issued to trained and authorised personnel. Inspection, maintenance, safe storage, ammunition/pyrotechnic control and proof of user competence shall be documented. For the use of trained bird scaring dogs, the WHMP in the operational phase should also contain records of handler competence, dog training status, deployment restrictions and veterinary welfare arrangements.

12.4 Escalation Levels and Response Triggers

Wildlife control and dispersal operations shall follow clearly defined escalation levels so that response intensity matches the level of operational risk.

- **Routine hazard:** normal patrol, monitoring and standard dispersal response. This applies to isolated or low-level wildlife presence where immediate risk is limited, and effective control can be achieved through routine intervention.

- **Elevated hazard:** intensified patrols, targeted dispersal, focused use of control methods and, during operations, immediate coordination with ATC. This applies where repeated wildlife activity is occurring in critical areas, when large-bodied or flocking species are present, or when environmental conditions are driving increased bird use of hazardous areas.

- **Severe hazard / operational impact:** urgent tactical response, immediate communication with ATC, runway or movement area inspection, and consideration of tactical suspension or restriction of operations by the accountable authority where required. In the operational phase the WHMP should recognise an escalation structure, and ICAO guidance supports the principle that control methods should be selected dynamically in relation to the species present, aircraft movements and the level of immediate risk.

During **construction**, equivalent escalation shall focus on environmental and site-management triggers rather than aircraft movement impact. Examples include repeated attraction of hazardous species to construction features, formation of persistent ponding, wildlife use of future operational areas, or a failure of contractors to remediate attractant conditions promptly. Such issues should be escalated through the designated wildlife/environmental lead and tabled at the construction Environmental Committee. The WHMP already provides for this committee-based approach during construction.

12.5 Bird-Scaring Dog Facilities and Welfare Requirements

The trained bird-scaring dogs that will be used as part of the wildlife control programme, would require appropriate kennel and housing facilities which should be appropriately designed and maintained to ensure the health, welfare and safe management of the animals.

All kennel facilities shall be designed, operated and maintained in accordance with applicable animal welfare standards and shall comply with the requirements of relevant authorities, including the Society for the Prevention of Cruelty to Animals (SPCA), the Kennel Union of Southern Africa (KUSA), and any other applicable regulatory or professional bodies.

The Aerodrome Operator shall ensure that:

- kennel facilities are subject to inspection and approval by relevant animal welfare authorities, where required;
- appropriate veterinary care, feeding, shelter, exercise and handling procedures are implemented;
- handlers are suitably trained and competent in the care, control and operational use of bird-scaring dogs; and
- operational deployment of dogs is undertaken in a manner that does not introduce additional aviation safety risks.

Records of inspections, approvals, veterinary care and handler competence shall be maintained as part of the WHMP supporting documentation and shall be available for audit.

12.6 Wildlife Handling, Transportation, Rehabilitation and Permitting Requirements

Where injured, distressed or otherwise affected wildlife is encountered on or in the vicinity of the aerodrome, appropriate procedures shall be in place to ensure the safe, lawful and humane handling, temporary care, transport and, where applicable, rehabilitation of such animals.

This requirement shall apply during both the **construction phase** and the **operational phase** of the project.

During the **construction phase**, particular emphasis shall be placed on ensuring that appropriate arrangements are in place in advance, as injured wildlife may be encountered during site clearance, earthworks, vegetation disturbance or other construction-related activities. Any ad hoc or temporary

arrangements for handling and transfer shall comply with applicable permitting and animal welfare requirements.

During the **operational phase**, more formalised procedures and agreements shall be established with suitably qualified wildlife specialists and registered wildlife rehabilitation facilities.

The Aerodrome Operator shall ensure the following:

(a) Handling and Transportation Permits

- All required permits and approvals for the capture, handling, possession, transport and temporary holding of wildlife are obtained and maintained in accordance with applicable legislation and regulatory requirements.
- All permit conditions are understood and complied with by relevant personnel, contractors and service providers.
- Wildlife handling and transport is undertaken only by suitably authorised and competent personnel, or under the supervision of appropriately permitted wildlife rehabilitators or specialists.
- Copies of relevant permits are available for inspection and audit at all times.

(b) Wildlife Handling and Welfare

- Injured wildlife is handled in a manner that minimises stress, injury and risk to both the animal and personnel.
- Appropriate equipment and procedures are used for the safe capture, restraint and transport of wildlife.
- Transport of wildlife complies with permit conditions and recognised animal welfare standards.

(c) Rehabilitation and Transfer

- Where rehabilitation is required, only appropriately permitted and authorised wildlife rehabilitation facilities or organisations shall be used.
- Formal arrangements or contact protocols shall be established, where practicable, with recognised rehabilitation centres and wildlife authorities.
- Wildlife shall not be rehabilitated, treated or held on-site unless the necessary permits, approvals and facilities are in place.

(d) Temporary Holding (where applicable)

- Any temporary holding or stabilisation of wildlife on-site shall be:
    - limited in duration,
    - undertaken only where necessary, and
    - compliant with all applicable environmental, veterinary and animal welfare requirements.

- Any temporary or permanent facility used for this purpose shall be subject to the necessary inspections and approvals by relevant authorities.

(e) Inspection, Compliance and Oversight

- Facilities, procedures and activities related to wildlife handling, transport and rehabilitation shall be subject to inspection and approval by the relevant competent authorities, where required.
- Compliance with permitting and animal welfare requirements shall be verified through routine inspections, environmental compliance monitoring and audit processes.

(f) Record Keeping and Reporting

- Records shall be maintained for all wildlife handling, transport and rehabilitation activities, including:
    - species involved,
    - nature of injury or condition,
    - actions taken,
    - transfer details, and
    - receiving facility (where applicable).
- These records shall form part of the WHMP reporting system and shall support monitoring, audit and programme evaluation.

13. Operational Communication and ATC Coordination

Formal operational communication and ATC coordination will become a primary requirement once Cape Winelands Airport enters commercial operational service, when wildlife control activities must be integrated directly with aircraft movements, runway safety and flight crew information processes. The current WHMP already notes that ATC responsibilities become fully relevant once the aerodrome is operational, while the Wildlife Control function will only become a dedicated operational role at that stage.

Notwithstanding the above, the development of communication protocols should begin before commercial operations commence, so that all relevant departments and role-players are aligned on reporting lines, control authority, movement area access, radio procedures, escalation thresholds and safety constraints applicable to wildlife patrols and dispersal actions. This is consistent with the WHMP's phased implementation approach, which states that future operational responsibilities should be anticipated in the development of systems, procedures and reporting lines, and with ICAO and SACAA guidance that wildlife control procedures should be integrated into the aerodrome's documented programme and coordinated with ATC and other stakeholders.

Where wildlife control methods expected for the operational phase include vehicle-based patrols, pyrotechnics, acoustic dispersal devices and the use of a trained bird-scaring dog, these procedures should be discussed and agreed in advance during the pre-operational period to ensure that communication and movement control arrangements are safe, practical and clearly understood.

During the construction and pre-operational phase, the principles and draft procedures for future operational communication should therefore be developed, reviewed and, where appropriate, tabled through the Environmental Committee / consultative forum established for the project. The WHMP already provides that this forum must review wildlife-risk information, implementation responsibilities and corrective actions during construction, and should transition into or be supplemented by the formal Wildlife Hazard Committee during operations.

13.1 Routine Communication

(a) Construction and Pre-Operational Phase

During construction and pre-operation, communication relating to wildlife observations, temporary attractants, dispersal requirements and site-access issues shall be routed through the designated Environmental Management Division and internally appointed Environmental Manager, the Environmental Control Officer and relevant site management personnel in accordance with the project's agreed reporting lines. The purpose during this phase is not routine ATC coordination for aircraft movements, but rather the establishment of clear internal procedures and early testing of operational concepts that may later apply once the aerodrome becomes active.

Where pre-operational trials, commissioning activities or planning discussions involve future wildlife control methods such as all-terrain patrol vehicles, pyrotechnic use or bird-scaring dog deployment, the relevant departments should agree in advance on communication protocols covering authorisation, route access, control of movement into sensitive areas, emergency recall procedures and incident reporting.

(b) Operational Phase

Once the aerodrome is operational, wildlife control personnel shall maintain reliable communication with ATC and/or operations while on patrol, during dispersal operations and whenever significant wildlife activity is observed in or near critical operational areas. The WHMP already states this principle, and ICAO guidance further indicates that ATC and other personnel should inform wildlife controllers when wildlife is observed, while SACAA guidance states that the wildlife control coordinator should coordinate wildlife control activities with ATC and other stakeholders.

13.2 Notification Triggers

The following triggers shall be treated as requiring communication and escalation through the applicable reporting chain, with direct ATC/operations coordination becoming mandatory during the operational phase:

- Large flocks or large-bodied species near a runway, or near an approach or departure path. This is consistent with the WHMP's current notification triggers and with the risk profile identifying large-bodied and flocking species as key hazards.
- Repeated runway crossings or incursions by mammals or other wildlife. The WHMP already recognises runway crossings and mammal incursions as operational notification triggers and reportable events.
- Carcasses found in critical operational areas. ICAO guidance requires wildlife found dead on the aerodrome and observations with potential flight effect to be recorded and used in risk assessment.
- Persistent roosting or nesting in operationally sensitive locations. The WHMP already includes persistent roosting or nesting in sensitive locations as a notification trigger.

- Temporary or persistent environmental conditions increasing wildlife concentration, including standing water, waste, drainage failures or other attractants. This reflects both the WHMP and the initial risk assessment, which specifically highlight temporary water and construction-phase attractants as important risk drivers.

- During the operational phase, any wildlife control action involving a bird-scaring dog, vehicle entry into movement areas, or use of pyrotechnics should be subject to agreed communication and authorisation procedures so that these activities do not create secondary safety risks. ICAO explicitly states that pyrotechnic use should be coordinated with ATC and that trained dogs must be managed so that they do not themselves become a strike risk.

13.3 Pilot Information and Formal Operational Notifications

This element will apply primarily during the commercial operational phase of the airport. At that stage, the aerodrome shall specify when wildlife information is to be passed to pilots via ATC, and when ATIS, NOTAM or other formal notification is required for persistent or significant hazards. The WHMP already requires this, and ICAO includes operational notifications such as ATIS, NOTAM and pilot reports as formal components of a wildlife hazard management system.

Before commercial operations commence, the intended criteria and thresholds for these notifications should nevertheless be developed and agreed in principle by the relevant airport functions so that pilot information procedures are ready for implementation from day one of operations. This is aligned with the WHMP's broader requirement that systems, procedures and reporting lines be developed during the construction-to-operations transition.

13.4 Integration into the Environmental Committee / Pre-Operational Planning Process

During construction and pre-operation, the development of wildlife communication protocols shall be included as a standing item under the project's Environmental Committee / consultative forum, particularly where these protocols affect future airside access, patrol routes, control methods, emergency procedures, interface with ATC, and the operational use of bird-scaring dogs. The WHMP already provides that this forum should review wildlife risks, responsibilities and corrective actions during construction, and that it should transition into or be supplemented by a formal Wildlife Hazard Committee as the airport approaches operation.

This forum should be used to ensure that relevant departments are aligned before operations commence, including the Aerodrome Operator, designated wildlife/environmental lead, specialist advisor, design and project management representatives, and, as appropriate during late pre-operation and commissioning, ATC / operations representatives.

14. Training and Competence

All personnel with wildlife hazard management responsibilities shall be appropriately trained, supervised and assessed to ensure competence in their assigned duties, taking into account the applicable phase of the project and the nature of their role. ICAO states that aerodrome operators should ensure that wildlife hazard control personnel and managers are adequately trained, and that competency should be demonstrated through training and assessment, and that training records should be kept on file.

For Cape Winelands Airport, training shall be implemented on a phased basis. During the construction phase, training shall focus primarily on wildlife hazard awareness, the identification of temporary and emerging attractants, reporting requirements, environmental compliance and the measures needed to avoid creating bird and wildlife attractants through construction activities. The WHMP already states that, during construction, the Plan serves as an interim adaptive management framework to support

early identification of attractants, contractor responsibilities, monitoring requirements and the transition to operation.

As the airport progresses towards commissioning and commercial operations, the training programme shall expand to include formal wildlife patrols, active dispersal operations, communication with ATC and operations, use of approved wildlife control equipment, strike and carcass procedures, and operational reporting and escalation protocols. ICAO states that training should include wildlife ecology and biology, wildlife identification and observation, documentation and reporting of strikes, off-aerodrome land use issues, wildlife removal techniques, safe use of firearms and hazardous materials, and stakeholder involvement.

Specific provision shall be made for new staff being recruited into wildlife hazard management roles, as well as new staff in other positions that may carry wildlife-related reporting or response responsibilities. Newly appointed personnel shall receive structured induction and role-specific training before being permitted to undertake wildlife hazard management duties without supervision. ICAO states that potential wildlife management personnel should complete a training programme, be tested, and have the results recorded and kept on file before being regarded as competent.

Where new staff are recruited into future operational roles such as wildlife control personnel, patrol vehicle drivers, airside staff, or handlers of trained bird-scaring dogs, the operator shall ensure that induction training, supervised familiarisation and practical competency assessment are completed before independent deployment. ICAO specifically notes that trained dogs may be used as part of wildlife control provided that the animals are properly trained and their handlers appropriately instructed so that the dogs do not themselves become a strike risk.

Refresher and recurrent training shall be undertaken periodically to ensure that knowledge, operational consistency and competence are maintained. ICAO recommends recurrent training at least every two years, while the WHMP already requires that all personnel with wildlife hazard responsibilities be appropriately trained, supervised and assessed.

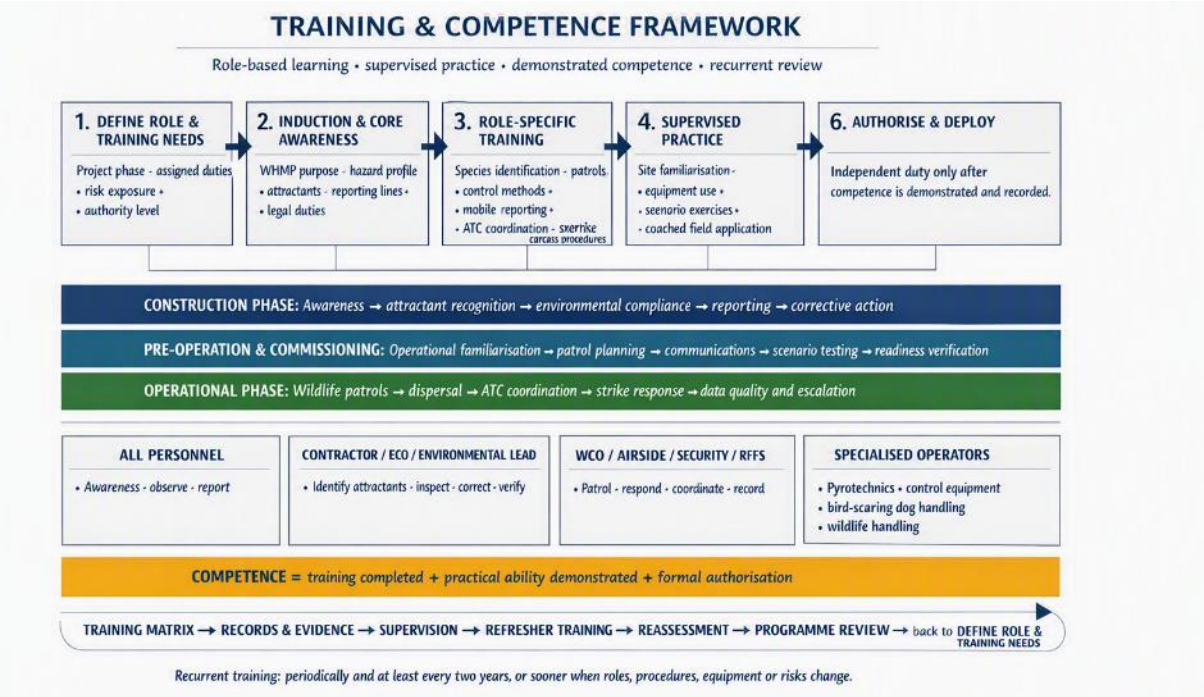


Figure 10: Training and competence framework showing the phased pathway from role-based induction and supervised practice to competency assessment, authorisation, recurrent training and programme review.

14.1 Training Content

Training content shall be appropriate to the role, level of responsibility and applicable project phase, and shall include, where relevant:

- **Wildlife hazard awareness and operational significance**, including the purpose of the WHMP, the principal hazard drivers at Cape Winelands Airport, and the aviation safety implications of bird and wildlife presence on and around the aerodrome.
- **Species identification, basic ecology and behaviour**, with emphasis on the hazardous species and habitat associations identified in the initial risk assessment, and on understanding how different species respond to different dispersal techniques. ICAO states that wildlife controllers must be able to identify the species present and understand their behaviour.
- **Recognition of on-site and off-site attractants**, including standing water, disturbed ground, short-grass systems, waste, wastewater infrastructure, agricultural activities and other features known to elevate wildlife hazard risk within the project area and wider hazard zones.
- **Use of wildlife control devices and associated safety requirements**, including patrol vehicles, binoculars, radios, pyrotechnics, acoustic devices and any other approved dispersal systems relevant to the role. ICAO states that equipment should be appropriate to the aerodrome environment and species encountered and used by trained personnel.
- **Use of trained bird-scaring dogs and handler responsibilities**, where this control method is adopted during operations. ICAO states that trained dogs may be used as predator-based dispersal tools provided that both the animals and handlers are properly trained.
- **Patrol procedures, observations and recording requirements**, including how to record sightings, dispersal actions, location, weather conditions, attractants and wildlife response. ICAO sets out

minimum observation and control-action recording requirements and identifies patrols as a direct requirement for wildlife hazard management.

- **Reporting procedures, data quality and records management**, including use of standard forms or digital systems, escalation pathways and the need for reliable data to support trend analysis, risk assessment and programme evaluation. The WHMP requires centralised and auditable wildlife records, while ICAO and SACAA both identify reporting and recording as core programme elements.

- **Strike investigation, carcass handling and species identification**, where applicable. ICAO states that the aerodrome should have procedures for the collection, management, conservation and identification of animal remains, including DNA analysis where relevant.

- **Communication with ATC, operations and other relevant departments**, particularly for the operational phase and for pre-operational development of communication protocols. The WHMP already provides that operational communication protocols must be developed before commercial operation, even though formal ATC coordination applies primarily during the operational phase.

- **Legal, environmental and permitting constraints**, including protected species considerations, limitations on trapping or lethal control, and environmental compliance requirements relevant to construction and operations. The WHMP identifies applicable international and South African regulatory and permitting requirements as part of its reference framework.

- **Role-specific induction for newly recruited staff**, including supervised familiarisation with the site, the hazard profile, reporting lines, approved equipment, emergency procedures and the boundaries of their responsibilities before they are allowed to operate independently. This requirement is aligned with the WHMP's phased implementation approach and ICAO's requirement that personnel demonstrate competence before undertaking wildlife control duties.

14.2 Training Matrix

A formal training matrix shall be maintained indicating the training requirements for each role, the required induction content, refresher interval, competence assessment method, supervising person where applicable, and the location of training and assessment records. The existing WHMP already requires a training matrix and identifies it as a related controlled document.

The training matrix shall differentiate, at a minimum, between:

- **Construction-phase personnel**, including the Environmental Control Officer, Contractor representatives, site management, designated environmental/wildlife leads and any security or environmental staff involved in wildlife observation or reporting. These roles are already identified in the WHMP governance structure for the construction phase.

- **Operational-phase personnel**, including the Wildlife Control Officer, airside operations staff, maintenance and grounds personnel, security and rescue personnel, and any other operational staff with wildlife-related responsibilities. These roles are also identified in the WHMP governance structure.

- **Newly recruited staff**, who shall be clearly identified in the matrix as requiring induction, supervised familiarisation and formal competency sign-off before independent duty is authorised. ICAO requires that training results be recorded and retained as proof of competency.

- **Specialised operational roles**, including personnel authorised to use pyrotechnics or other specialised deterrents, and any handlers of trained bird-scaring dogs, where these operational methods are adopted. ICAO requires competent training in wildlife control methods and specifically notes the need for proper instruction of handlers where trained dogs are used.

Training records shall be retained in a controlled and auditable manner and shall be reviewed during internal oversight, committee review and periodic WHMP evaluation. The SACAA Technical Guidance Material states that staff training is one of the minimum programme elements that should form part of an aerodrome bird/wildlife strike control programme, and ICAO links training directly to programme effectiveness and safety oversight.

15. Stakeholder Engagement and External Liaison

The Aerodrome Operator shall establish and maintain structured engagement with internal and external stakeholders whose activities, land uses, statutory functions or decision-making may influence bird and wildlife hazard risk on, or in the vicinity of, the aerodrome. This requirement shall apply during both the construction phase and the operational phase, although the focus of engagement will differ according to the stage of project development. The WHMP already recognises that off-site land uses and features may materially influence wildlife activity and aircraft safety, and ICAO states that a WHMP should include coordination among the aerodrome operator, aircraft operators and surrounding communities.

During the construction phase, stakeholder engagement shall focus primarily on the early identification and management of wildlife attractants associated with design decisions, land disturbance, temporary infrastructure, drainage and stormwater management, waste control, perimeter integrity and changes in surrounding land use that may affect the future operational environment of the airport. The WHMP states that, during construction, it serves as an interim adaptive management framework to identify wildlife hazards associated with ongoing construction activities, temporary infrastructure and changing habitat conditions.

During the operational phase, stakeholder engagement shall support the routine management of on-airport and off-airport wildlife risk, the communication of emerging issues, and the implementation of collaborative actions where surrounding land uses or habitat features influence wildlife presence, bird movements or aviation safety. ICAO states that off-aerodrome land use management requires coordination among the aerodrome operator, regulatory authority, aircraft operators and surrounding communities, and that operators should engage with local farmers and other responsible parties where external land uses attract hazardous species.

Stakeholder engagement is particularly important for Cape Winelands Airport because the initial risk assessment identified agricultural land uses and water-associated habitats as the principal external drivers of hazardous bird activity, with specific attention required for the Fisantekraal Wastewater Treatment Works, associated agricultural activities and feedlots, managed short-grass areas, and the large farm dam to the south-east of the proposed airport. The same assessment states that effective management will require engagement with surrounding landowners in order to reduce the attractiveness of farming and other land uses to hazardous birds or to manage their influence on bird movement through the defined hazard zones.

15.1 Key Stakeholders

Stakeholder engagement shall include, where relevant to the project phase and identified risk profile:

- **Municipal authorities**, particularly where municipal planning, drainage, wastewater, waste management, stormwater infrastructure or land-use approvals may influence wildlife attractants

in the airport vicinity. The SACAA Technical Guidance Material states that wildlife control committees should include relevant governmental departments and that stakeholder engagement is a required programme element.

- **Waste disposal authorities and waste facility operators**, including operators of disposal, transfer, organic waste or illegal dumping sites that may attract hazardous wildlife. The initial risk assessment and ICAO off-aerodrome guidance both identify waste-related facilities as relevant external attractants requiring attention.

- **Environmental and conservation authorities**, where their input is required in relation to protected species, permitting, environmental compliance, habitat management or remedial actions. The WHMP identifies applicable environmental, biodiversity and permitting legislation as part of its regulatory framework.

- **Neighbouring landowners, land users and land developers**, especially those associated with agricultural land, feedlots, waterbodies, wastewater facilities, turf or lawn cultivation areas and any new development introducing water, waste or open feeding opportunities. The initial risk assessment expressly states that collaboration with landowners is integral to effective management.

- **Aircraft operators and pilot groups**, particularly during the operational phase when wildlife activity, strikes, near misses and operational notifications must feed into the broader wildlife hazard management system. ICAO identifies aircraft operators as stakeholders in the WHMP and links wildlife incident reporting to the aerodrome operator's control programme.

- **Contractors and service providers**, especially during the construction phase where site activities, temporary works, stormwater handling, landscaping, waste practices and housekeeping may create or worsen wildlife attractants. The WHMP already assigns specific wildlife hazard management responsibilities to the Contractor and associated site personnel during construction.

- **Internal airport role-players**, including the Accountable Manager/Aerodrome Operator representative, Environmental Control Officer, designated environmental/wildlife lead, specialist advisor, and, during operations, the Wildlife Control Officer, ATC, airside operations, maintenance, security and relevant operational staff. These roles are already defined in the WHMP governance structure.

15.2 Engagement Objectives

Stakeholder engagement and liaison shall aim to:

- maintain awareness of land uses, activities and developments that may increase the attractiveness of the airport environment or its vicinity to hazardous wildlife;

- support early identification of changing risk conditions during construction and operations;

- facilitate collaboration on remedial actions where external attractants or land-use practices contribute to wildlife hazard risk;

- improve communication and mutual understanding between the airport and surrounding land users regarding wildlife hazard implications; and

- support a coordinated and defensible approach to on-airport and off-airport wildlife hazard management.

These objectives are consistent with the WHMP's broader emphasis on phased governance, off-aerodrome land-use management, committee review and adaptive management, as well as ICAO's requirement that wildlife hazard management extend beyond the airport boundary where surrounding land uses influence risk.

15.3 Engagement Mechanisms

Engagement mechanisms may include, as appropriate to the issue and project phase:

- committee meetings and consultative forums;
- formal notices or correspondence;
- project consultations and technical meetings;
- inspections, site visits and joint reviews;
- issue-specific discussions relating to identified attractants, land-use change or wildlife incidents; and
- ongoing liaison through designated responsible persons.

The WHMP already provides that, during construction, wildlife hazard issues should be addressed through the Environmental Committee or equivalent consultative forum, and that this structure should transition into or be supplemented by a more formal Wildlife Hazard Committee during operations. The SACAA Technical Guidance Material likewise states that the committee is the platform through which information is exchanged, hazard issues are reviewed and airport bird/wildlife control policy can be developed and updated.

15.4 Integration with Committee Structures

During the construction phase, stakeholder engagement matters relevant to wildlife hazard management shall be tabled through the project's Environmental Committee / consultative forum, with bird and wildlife hazard management included as a standing agenda item. The WHMP already states that this forum should review construction-related wildlife risks, temporary habitat attractants, monitoring findings and corrective actions.

During the operational phase, external liaison and stakeholder engagement matters shall feed into the formal Wildlife Hazard Committee or equivalent governance structure operating within the aerodrome SMS. ICAO and SACAA both support the use of committee structures to analyse data, review hazards, assess trends and determine suitable control responses.

15.5 Records and Follow-up

Records of significant stakeholder engagement, identified issues, agreed actions and follow-up responsibilities should be maintained as part of the broader WHMP implementation record. This aligns with the WHMP's requirements for structured reporting, data management, corrective action tracking and committee review, and supports the Plan's status as a controlled, living management document.

16. Technology, Mapping and Data Tools

Where proportionate and feasible, the Aerodrome Operator shall make use of technology, mapping and structured data tools to support wildlife hazard identification, monitoring, recording, trend analysis and proactive management during both the construction phase and the operational phase of the project. The WHMP already recognises that digital patrol logs, GIS mapping, detection systems and land-use

monitoring tools may be used to strengthen hazard management, while ICAO provides specific guidance on the use of GIS, radar, cameras, satellite land-use monitoring, and databases as part of modern wildlife hazard management.

During the construction phase, the emphasis shall be on tools that support the early identification of attractants, the structured recording of wildlife observations and environmental conditions, and the progressive development of a defensible wildlife hazard dataset ahead of commercial operations. The initial risk assessment specifically recommends ongoing monitoring to detect changes in bird activity and to support adaptive management, and the WHMP already provides that its reporting and baseline systems should be developed during construction and refined over time.

During the operational phase, these same tools shall support a more formal wildlife hazard management system, including routine patrol logging, hotspot mapping, strike and carcass data recording, incident trend analysis, assessment of control effectiveness and the structured production of management and regulatory reports. ICAO states that databases should be implemented at aerodromes to keep a record of wildlife incidents and enable aerodrome operators to analyse trends and update risk assessments where necessary.

For the purposes of this WHMP, SafeRunways© should be adopted as a Mobile App and web-based wildlife hazard data collection, management and reporting platform. SafeRunways© will be used to replace paper forms and disconnected spreadsheets with an offline-ready field application and centralised online dashboard, that supports structured secure online storage, linked records, filters, exports and reporting workflows.

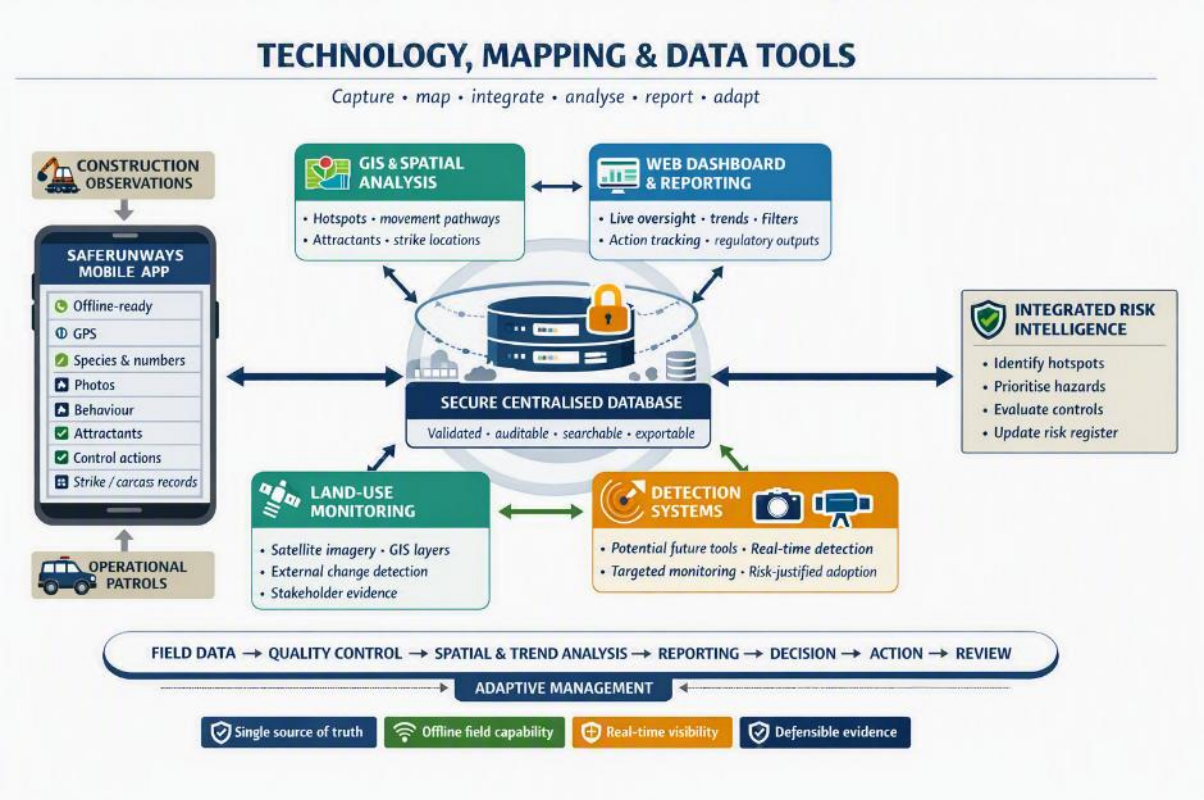


Figure 11: Conceptual framework showing how SafeRunways© mobile data capture, GIS, centralised records, dashboards, detection systems and land-use monitoring combine to support integrated risk intelligence and adaptive wildlife hazard management.

16.1 GIS Mapping and Spatial Analysis

GIS-based mapping and spatial analysis should be used, where feasible, to support the interpretation of wildlife observations, attractants, carcass locations, strike events and off-airport land-use influences. ICAO states that GIS can be used to manage and analyse spatial data, to map wildlife strikes and hotspots, and to analyse land uses off the aerodrome when combined with other data collection methods. All data collected on SafeRunways© will be spatially linked and can easily be integrated into an aerodrome GIS.

For Cape Winelands Airport, GIS tools are particularly relevant because the initial risk assessment identified the need to understand bird activity and movement in relation to the Primary Bird Hazard Zone, Secondary Bird Hazard Zone, and specific off-airport attractants such as waterbodies, agricultural land uses and wastewater infrastructure.

16.2 Digital Wildlife Patrol Logs and Mobile App Data Capture

SafeRunways© is a structured digital wildlife patrol log and mobile app data capture system that should be used to facilitate consistent field data collection, reduce reliance on paper-based records and improve the accessibility and auditability of wildlife hazard information. This WHMP already prescribes digital wildlife patrol logs and mobile data capture as required tools, and ICAO states that databases and electronic systems should be used to store incident and observation records and enable reporting and analysis.

The SafeRunways© platform is a purpose-built digital platform combining an offline-ready field app with a centralised web dashboard, that supports GPS-linked field data capture, species records, photographs, structured storage and dashboard-based reporting.

16.3 Centralised Database, Dashboard Reporting and Adaptive Management

A centralised database and reporting interface should be maintained to support ongoing review of wildlife hazard information, trend analysis, management oversight and adaptive decision-making. ICAO states that databases should be connected with reporting systems so that personnel can input data directly and that data can then be extracted to produce reports and identify trends.

Within SafeRunways© the data collected in the field feeds into a centralised secure server supported by an online dashboard customised for different users, that it supports reporting, and that it is designed to improve transparency, data quality and adaptive management.

Accordingly, the use of SafeRunways© is specified in this WHMP as the preferred platform for data collection, storage, dashboard review and reporting, provided that the platform is configured to suit the airport wildlife hazard context and the operator's reporting requirements.

16.4 Detection Systems

Detection systems, including radar and camera-based systems, may be considered where justified by risk profile, budget, operational complexity or the need for enhanced monitoring capability. ICAO states that radar can act as a tactical tool for detecting and tracking wildlife hazards in real time, while cameras can provide continuous monitoring and assist with movement detection and data collection.

At this stage, the WHMP should not assume that such systems are needed or warranted at Cape Winelands Airport. Rather, it should recognise them as potential future tools that may be adopted if warranted by the operational hazard profile and management requirements.

16.5 Land-Use Monitoring Tools

Land-use monitoring tools, including satellite imagery, GIS layers and periodic off-airport land-use review, should be used to support the structured monitoring of external attractants within the wider aerodrome environment. ICAO states that satellite imagery can aid in monitoring off-aerodrome sites that attract hazardous wildlife and that such information can become critical evidence for habitat management measures and stakeholder communication.

This is directly relevant to Cape Winelands Airport, where the initial risk assessment identified the need to monitor off-airport land uses within the 13 km radius and the bird hazard zones, especially agricultural areas, waterbodies and wastewater infrastructure.

17. Monitoring, Performance Indicators and Programme Evaluation

The effectiveness of the WHMP shall be monitored through a structured programme of inspections, observations, reporting, trend review and management oversight appropriate to the relevant phase of airport development. During the construction phase, monitoring shall focus primarily on the early identification of hazardous bird and wildlife activity, the detection and rapid remediation of temporary or emerging attractants, compliance with habitat and housekeeping controls, and the progressive refinement of the airport's wildlife hazard profile. As the project transitions into operations, the monitoring framework shall expand to include formal wildlife occurrence trends, strike statistics, patrol performance, response effectiveness, training compliance and wider programme performance within the aerodrome safety management system.

Programme evaluation shall be based not only on the occurrence of wildlife incidents, but also on whether the WHMP is being implemented effectively, whether identified risks are being addressed timeously, whether monitoring data are adequate to support informed decision-making, and whether the airport environment is being managed in a manner that prevents the creation of conditions known to attract hazardous species. Where monitoring identifies deteriorating trends, repeated non-compliance, delayed corrective action or increasing wildlife use of high-risk areas, the Aerodrome Operator shall ensure that the relevant mitigation measures, responsibilities and procedures are reviewed and strengthened accordingly.

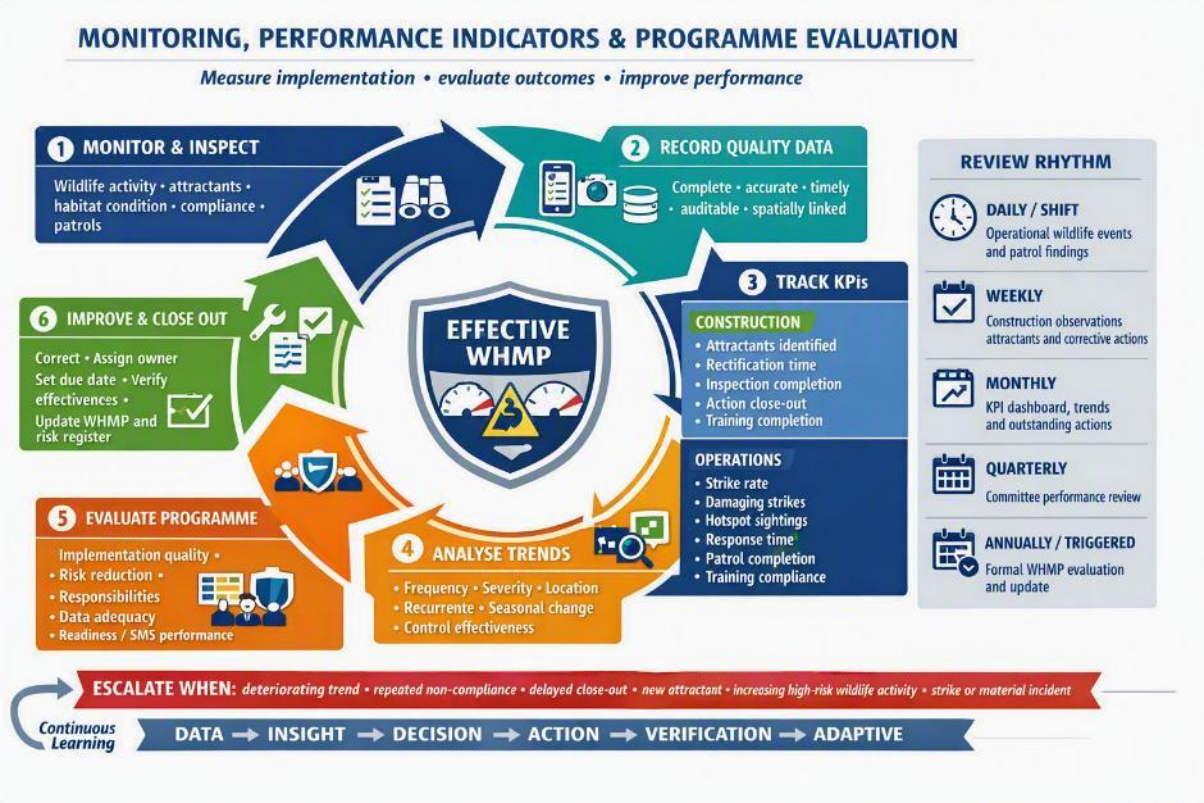


Figure 12: Conceptual framework for monitoring, performance indicators and programme evaluation, showing the cycle from inspection and quality data capture through KPI tracking, trend analysis, evaluation, corrective action and adaptive improvement.

17.1 Key Performance Indicators – Construction Phase

During the construction phase, key performance indicators should focus on proactive hazard prevention, attractant management, compliance monitoring and implementation readiness, rather than relying primarily on strike-based indicators. The following indicators are recommended:

- Number and frequency of hazardous bird or wildlife sightings within the construction footprint and in areas intended for future operational movement areas.
- Number of temporary or emerging attractants identified during inspections, including standing water, ponding, poorly managed stormwater features, exposed waste, food sources, disturbed feeding areas, or unmanaged vegetation establishment.
- Time taken to rectify identified attractants or wildlife-related environmental non-compliances following detection.
- Number of mammal, reptile or domestic animal incursions, including fence breaches or evidence of mole-rat activity.
- Percentage completion of scheduled site inspections, monitoring visits and wildlife-related compliance checks.
- Quality and completeness of wildlife observation and attractant reporting records, including the capture of minimum required data fields.
- Close-out rate for corrective and preventative actions arising from inspections, specialist recommendations, committee meetings or environmental audits.

- Compliance with waste management, drainage control, housekeeping, fencing and vegetation management measures relevant to wildlife hazard reduction.
- Percentage of relevant construction and environmental personnel who have completed wildlife hazard awareness and reporting training.
- Frequency with which the wildlife hazard profile, risk register and related mitigation requirements are reviewed and updated in response to changing site conditions.

17.2 Key Performance Indicators – Operational Readiness and Operational Phase

As the airport approaches commissioning and later enters operation, the performance framework should progressively incorporate more formal aviation wildlife hazard indicators. These may include:

- Total wildlife strike rate and, where available, strike rate relative to aircraft movements.
- Damaging wildlife strike rate.
- Number and frequency of wildlife sightings in critical operational areas, including runways, taxiways, aprons and approach/departure corridors where monitored.
- Number of wildlife dispersal events and response time to significant wildlife occurrences.
- Number of mammal, reptile and domestic animal incursions into operationally sensitive areas.
- Completion rate for scheduled wildlife patrols, inspections and habitat checks.
- Training and competency compliance for personnel with wildlife hazard management duties.
- Timely submission and quality of required wildlife records, strike reports and trend summaries.
- Close-out rate for corrective actions arising from incidents, audits, inspections, committee review and management review.
- Evidence of reduction, stabilisation or effective control of recurrent high-risk wildlife hazards and attractant conditions over time.

17.3 Monitoring and Review Frequency

Monitoring and review shall be undertaken at frequencies appropriate to the applicable phase of the project and the level of identified risk. During the construction phase, the emphasis shall be on regular inspection, timely escalation and adaptive management. During the operational phase, the emphasis shall broaden to include routine patrol-based monitoring, trend analysis, strike review and formal programme evaluation.

Recommended construction-phase review frequency:

- Routine (at least monthly or weekly) site-based review of wildlife activity, attractants and environmental conditions during regular inspections and monitoring visits.
- Weekly or other suitably frequent review of reported wildlife observations, temporary attractants, fence integrity issues and corrective action status, depending on the pace and nature of construction activities.

- Monthly review of monitoring records, inspection findings, trends and outstanding mitigation actions by the designated environmental/wildlife lead, ECO and relevant site management personnel.
- Regular review through the Environmental Committee or equivalent consultative forum, with frequency aligned to the project's environmental governance structure and increased where significant wildlife-related issues arise.
- Formal update of the wildlife hazard profile, risk register and relevant management measures whenever major site changes, new attractants, recurring wildlife use or material risk shifts are identified.

Recommended operational-phase review frequency:

- Daily or shift-based review of wildlife activity, patrol findings and significant wildlife events.
- Monthly review of sightings, strikes, carcass records, dispersal actions and observed trends.
- Quarterly review by the Wildlife Hazard Committee or equivalent governance structure within the aerodrome SMS.
- Annual formal review of the WHMP, related SOPs, performance trends, training status, risk register and overall programme effectiveness.

17.4 Programme Evaluation and Adaptive Improvement

The WHMP shall be treated as a living management system and shall be evaluated regularly to confirm that monitoring arrangements remain proportionate to the evolving hazard profile of the airport. Evaluation shall consider whether: monitoring is being implemented as planned; data quality is adequate; recurring hazards are being identified and addressed; attractants are being prevented or removed effectively; responsibilities are being fulfilled; and the programme remains aligned with the airport's progression from construction to operations.

Where review findings indicate that controls are ineffective, that hazardous bird or wildlife activity is increasing, that surrounding land uses are changing, or that construction activities are creating repeated attractants, the Aerodrome Operator shall ensure that the relevant procedures, mitigation measures, inspection frequency, responsibilities and reporting processes are revised accordingly. Significant findings and required actions shall be recorded and tracked to close-out through the appropriate committee or management review process.

18. Review, Amendment and Change Management

This WHMP shall be treated as a controlled, living management document and shall be reviewed and updated on a phased and adaptive basis to ensure that it remains aligned with the changing wildlife hazard profile of Cape Winelands Airport as the project progresses through construction, pre-operational development and eventual operations. During the current construction phase, the Plan shall be reviewed not only at defined intervals, but also whenever monitoring, inspections, specialist input or project changes indicate that the wildlife hazard profile, attractant conditions, responsibilities or mitigation requirements have materially changed.

Because the present WHMP is informed primarily by the initial bird strike risk assessment and other baseline information, and because site conditions will continue to evolve during construction, this Plan shall be progressively refined as additional site-specific observations, monitoring results, design

developments and construction-phase findings become available. Review and amendment shall therefore form part of the airport's broader adaptive management process and shall support the transition from a predictive, construction-phase framework to a more detailed operational wildlife hazard management system.

Formal review of the WHMP shall be undertaken at least annually. In addition, interim review and amendment shall be initiated whenever significant changes or findings arise, including, where relevant:

- major construction activities, new work fronts or significant changes in site layout, drainage, stormwater systems, waste management arrangements, vegetation establishment or perimeter infrastructure that may influence wildlife attraction or movement;
- repeated or significant observations of hazardous bird or wildlife activity on the site or in areas intended for future operational movement areas;
- identification of temporary or recurring attractants such as ponded water, disturbed feeding areas, unmanaged waste, fence breaches or burrowing mammal activity;
- findings from inspections, environmental audits, committee reviews, specialist assessments or trend analysis indicating that current controls are inadequate or require strengthening;
- material changes in surrounding land use or off-site attractants within the wider hazard environment that may alter bird or wildlife risk;
- significant regulatory changes, new guidance, or updates to aerodrome, safety or environmental management requirements relevant to wildlife hazard management; and
- during later pre-operational and operational phases, serious wildlife incidents, confirmed or damaging strikes, repeated high-risk wildlife events, or any other wildlife-related occurrence indicating a need for review of the Plan, associated SOPs or control measures.

All proposed amendments to the WHMP shall be subject to the aerodrome's approved document control process. Revisions shall be clearly version controlled, dated, described in the revision history, and communicated to all relevant personnel, contractors and role-players whose responsibilities may be affected by the change. Where amendments alter management actions, reporting lines, inspection requirements, mitigation measures or training needs, the Aerodrome Operator shall ensure that such changes are incorporated into the relevant procedures, registers, forms and briefings without delay.

During the construction phase, review outcomes and required amendments should be considered through the Environmental Committee or equivalent consultative forum, and thereafter through the formal Wildlife Hazard Committee or equivalent governance structure as the airport transitions toward operations. This review process shall ensure that the WHMP remains current, evidence-based and responsive to both site-specific monitoring findings and wider changes in the airport environment.

19. Appendices

The appendices to this WHMP shall be developed and maintained as supporting controlled documents appropriate to the applicable phase of the Cape Winelands Airport project. As the current WHMP is intended to function primarily as a construction-phase and pre-operational framework, priority shall be given initially to appendices that support wildlife observation, attractant identification, risk tracking, inspections, corrective action management and environmental governance during construction.

Additional appendices required for formal airport operations shall be developed, refined and implemented progressively as the airport transitions toward commissioning and operational service.

For clarity and ease of implementation, the appendices should be grouped as follows:

19.1 Construction-Phase and Pre-Operational Supporting Appendices

The following appendices should be prioritised during the current phase of the project, as they support construction-related wildlife hazard identification, monitoring, attractant management, environmental oversight and adaptive review:

Appendix A: Construction-phase wildlife hazard map / preliminary hotspot and attractant map. This should identify the airport site, construction footprint, temporary risk areas, drainage features, waste areas, perimeter vulnerabilities, adjacent land-use influences and any areas intended for future operational movement areas.

Appendix B: Wildlife risk register. This should be used to record identified bird and wildlife hazards, temporary and permanent attractants, risk ratings, mitigation measures, responsible persons, target dates, review history and residual risk.

Appendix C: Construction-phase wildlife sighting, monitoring and attractant reporting form. This should support the recording of wildlife observations, unusual concentrations of birds, temporary ponding, disturbed feeding areas, waste-related attractants, carcasses, fence breaches and other relevant environmental conditions.

Appendix D: Habitat, drainage and site inspection checklist. This should support routine inspections by the Contractor, Environmental Control Officer and designated environmental/wildlife lead, with specific reference to standing water, waste handling, vegetation establishment, disturbed soils, perimeter integrity and other construction-related attractants.

Appendix E: Corrective action and close-out tracker. This should be used to record actions arising from inspections, monitoring, specialist recommendations, committee meetings, audits and environmental non-compliances relevant to wildlife hazard management.

Appendix F: Environmental Committee / consultative forum terms of reference and wildlife agenda template. This should provide the structure through which wildlife hazard issues are reviewed during construction and pre-operation.

Appendix G: Construction-phase training matrix and awareness register. This should reflect wildlife hazard awareness, reporting responsibilities, attractant prevention measures and role-specific obligations for contractors, environmental personnel, site management and other relevant staff.

Appendix H: Stakeholder and external liaison contact list. This should include relevant project personnel, contractor contacts, environmental oversight personnel, specialist advisors and, where relevant, external stakeholders associated with surrounding land use, waste, wastewater, drainage or other off-site attractants.

19.2 Operational-Phase Supporting Appendices

The following appendices should be prepared or progressively developed during the construction and pre-operational phase, but will become fully applicable once the aerodrome enters formal operation and wildlife hazard management becomes integrated with aircraft movement safety and the aerodrome SMS.

Appendix I: Operational wildlife patrol and dispersal form / digital patrol log. This should support routine patrol records, sightings, dispersal actions, patrol effort, weather conditions, response times and the location of wildlife activity in operational areas.

Appendix J: Bird/wildlife strike reporting form / digital log. This should be aligned with operational reporting requirements for confirmed and suspected strikes and associated incident recording procedures.

Appendix K: Carcass recovery, preservation and species identification procedure. This should set out the process for the collection, handling, preservation, documentation and specialist identification of carcasses or remains found on the aerodrome.

Appendix L: Wildlife control equipment register and maintenance log. This should include patrol vehicles, radios, binoculars, pyrotechnic equipment, acoustic devices, PPE, mobile data capture tools and any equipment used in support of trained bird-scaring dog operations, where adopted.

Appendix M: Wildlife Hazard Committee terms of reference. This should reflect the formal operational committee structure that will succeed or supplement the construction-phase Environmental Committee.

Appendix N: Operational training matrix and competency register. This should include role-specific training and competency requirements for the Wildlife Control Officer, airside personnel, maintenance staff, security personnel, operational responders and any specialist control method operators.

Appendix O: Operational communication, escalation and notification flowchart. This should set out communication pathways for wildlife sightings, high-risk wildlife events, runway incursions, dispersal actions, ATC coordination, pilot notification and management escalation.

19.3 Transitional and Common Supporting Appendices

Certain appendices are relevant across both the construction and operational phases and should therefore be developed early and updated progressively as the WHMP matures. These common appendices may include the wildlife risk register, contact lists, training records, mapping products and reporting templates that evolve from construction-phase use into operational application.

Where an appendix is initially developed for construction-phase use, it should be reviewed and revised before operations commence to confirm that it remains suitable for formal aerodrome use, regulatory compliance and integration into the airport's operational safety management framework. All appendices shall be subject to document control, version management and periodic review in the same manner as the WHMP itself.

20. Reference Sources

The following reference documents and guidance materials were used in the preparation of this Wildlife Hazard Management Plan (WHMP) and shall be read in conjunction with this Plan:

20.1 International Aviation Standards and Guidance

- International Civil Aviation Organization (ICAO).

  Annex 14, Volume I – Aerodrome Design and Operations.

- International Civil Aviation Organization (ICAO).

  Doc 9137, Airport Services Manual, Part 3 – Wildlife Hazard Management, 5th Edition, 2020.

- International Civil Aviation Organization (ICAO).

  Doc 9332 – Manual on the ICAO Bird Strike Information System (IBIS).

20.2 South African Regulatory Framework

- South African Civil Aviation Authority (SACAA).

  Civil Aviation Regulations, 2011 (as amended), Part 139 – Aerodromes and Heliports.

- South African Civil Aviation Authority (SACAA).

  Civil Aviation Technical Standards (SA-CATS 139), as applicable.

- South African Civil Aviation Authority (SACAA).

  Technical Guidance Material: Aerodrome/Heliport Ecosystems and Species – Wildlife Control and Reduction (2025).

20.3 Project-Specific and Specialist Studies

- AfriAvian Environmental.

  Cape Winelands Airport Bird Strike Risk Assessment Report, prepared as part of the Environmental Impact Assessment (EIA) process (2025).

- AfriAvian Environmental.

  Bird and Wildlife Landscape and Open Space Planning Guideline for Cape Winelands Airport (2024).

20.4 Environmental and Supporting Legislation / Guidance

- National Environmental Management Act (NEMA), Act No. 107 of 1998 (as amended).
- National Environmental Management: Biodiversity Act (NEMBA), Act No. 10 of 2004 (as amended).
- Applicable provincial and municipal biodiversity, conservation and land-use planning frameworks relevant to wildlife hazard management.

20.5 Related Aerodrome Documentation

The following aerodrome documents should be read together with this WHMP, where available:

- Aerodrome Manual
- Safety Management System (SMS) Manual
- Emergency Response Plan
- Environmental Management Programme (EMPr) / Environmental Management Plan
- Wildlife Strike Reporting Procedures
- Wildlife Patrol and Control Standard Operating Procedures (SOPs)
- Training Matrix and Competency Register