

Namibia Civil Aviation Authority

WILDLIFE HAZARD MANAGEMENT

Outline

Introduction and Definitions

ICAO and NAMCARS

Statistics

Wildlife Assessment

STEP 1 Describe Species

STEP 2 Identify Attractants

STEP 3 Classify Hazards

STEP 4 Recommend Actions for Reduction of Wildlife Events

Continuous Improvement

Wildlife Reporting Process

Challenges

Definitions

“**Wildlife management** is the management process influencing interactions among and between wildlife, its habitats and people to achieve predefined impacts. It attempts to balance the needs of wildlife with the needs of people using the best available science.” (Wikipedia)

“**Wildlife management** is the art and science of reaching goals by manipulating and/or maintaining wildlife habitats and populations..” (Google)

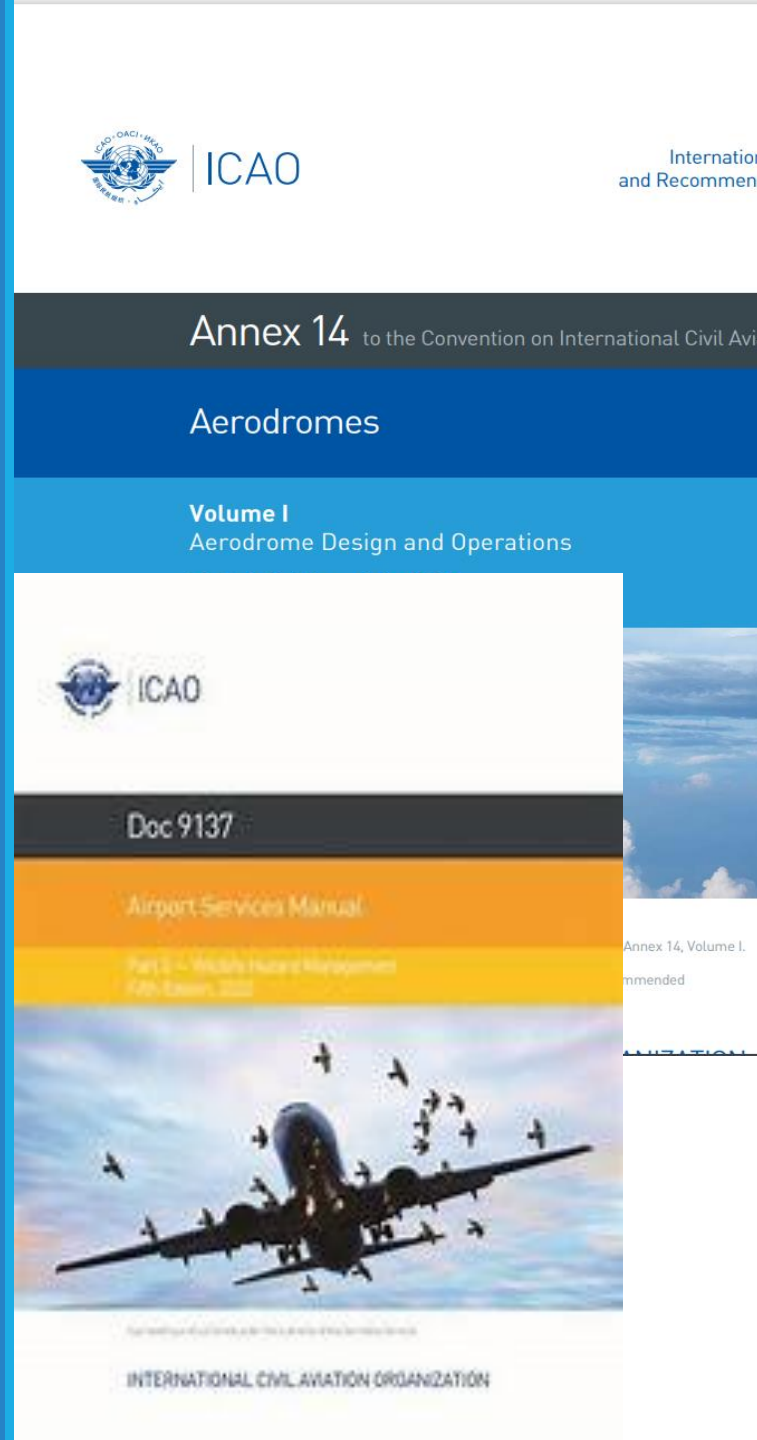


“Safety is not a destination, it’s a continuous journey.”

Why should we be worried about wildlife?

- Increasing populations of many bird species hazardous to aviation
- Adaptation of birds to urban settings
- Increasing air traffic
- Faster, quieter 2-engine jet aircraft
- Increased liability issues with bird strikes

Aerodrome Wildlife Management Referencing





ICAO
International Standards
and Recommended Practices



NCAA
NAMIBIA CIVIL AVIATION AUTHORITY



**GOVERNMENT GAZETTE
OF THE
REPUBLIC OF NAMIBIA**

NS137.40	WINDHOEK - 8 November 2018	No. 6763
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AMENDMENT OF NAMIBIAN CIVIL AVIATION REGULATIONS, 2001: CIVIL AVIATION ACT, 2016

Under sections 54 to 57 of the Civil Aviation Act, 2016 (Act No. 1 of 2016) and with the Board of Directors of the Namibia Civil Aviation Authority, the Minister of Works and Transport has decided to:

- (a) made the regulations set out in the Schedule;
- (b) determined that the said regulations come into effect on 1 October 2018, except for regulation 10 (relating to Part 139) which shall come into effect on 1 January 2019; and
- (c) repealed Government Notice No. 181 of 5 July 2018.

(October 2018)

J. MUTORWA
MINISTER OF WORKS AND TRANSPORT

**Namibia Civil Aviation Technical
Standards**
PART 139 – SUBPART 16
AERODROMES
(NAM-CATS-AH)

Annex 14, Volume I

The presence of wildlife (birds and animals) on and in the aerodrome vicinity poses a serious threat to aircraft operational safety.

Wildlife Strike

9.4.1 The wildlife strike hazard on, or in the vicinity of an aerodrome shall be assessed through:

a) the establishment of a national procedure...

b) the collection of information from aircraft operators, aerodrome personnel....

c) an ongoing evaluation and mitigation of the wildlife hazard by competent personnel.

ICAO Wildlife Requirements

Wildlife strike hazard reduction

The wildlife strike hazard on, or in the vicinity of, an aerodrome shall be assessed through:

- the establishment of a national procedure for recording and reporting wildlife strikes to aircraft; and
- the collection of information from aircraft operators, airport personnel, etc. on the presence of wildlife on or around the aerodrome constituting a potential hazard to aircraft operations.
- an ongoing evaluation of the wildlife hazard by competent personnel.

Wildlife hazard reduction

Wildlife strike reports shall be collected and forwarded to ICAO **ANNUALLY** for inclusion in the ICAO Bird Strike Information System (IBIS) database.

ICAO Wildlife Requirements

Note:

- The IBIS is designed to collect and disseminate information on wildlife strikes to aircraft.
- Information on the system is included in the Manual on the ICAO Bird Strike Information System (IBIS) Doc 9332

Namibian context of wildlife requirements

NAMCARs, PART 139.16.5 requires an operator of a certified or licensed aerodrome to have in place a Wildlife Management Programme (WMP) that includes assessment of the wildlife strike hazard on, or in the vicinity of an aerodrome to minimize the effects of such hazard or potential hazard.



GOVERNMENT GAZETTE OF THE REPUBLIC OF NAMIBIA

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No. 293 2018

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Under sections 54 to 57 of the Civil Aviation Act, 2016 (Act No. 6 of 2016) I have, after consultation with the Board of Directors of the Namibia Civil Aviation Authority -

- (a) made the regulations set out in the Schedule;
- (b) determined that the said regulations come into effect on the date of publication of this notice, except for regulation 10 (relating to Part 139) which comes into effect on 1 January 2019; and

NAMCARS 139.16.5 requires

Aerodrome operator to establish a programme to minimize the effects of hazards posed or likely to be posed by bird and wildlife.



In order to comply with this regulation, the aerodrome needs as a first step to assess the existence and level of hazard posed or likely to be posed by bird and wildlife:

Initial Wildlife Hazard Assessment, conducted by a wildlife specialist, provides the scientific basis for the development and implementation of an Environment Management Programme

Continuous review of the Wildlife Hazard Assessment, conducted by a wildlife specialist, provides the scientific basis for the refinement and maintenance of the Environment Management Programme

Wildlife Strike Statistics 2021 in Namibia

HOURS		Wildlife	Rate/1000
1746.000	JAN	5.000	2.864
1626.000	FEB	12.000	7.380
2216.000	MAR	17.000	7.671
2437.000	APR	3.000	1.231
2403.000	MAY	9.000	3.745
2131.000	JUN	7.000	3.285
2096.000	JUL	0.000	0.000
2520.000	AUG	5.000	1.984
2879.000	SEP	2.000	0.695
3234.000	OCT	4.000	1.237
3592.000	NOV	1.000	0.278
2459.000	DEC	0.000	0.000
29339.000	Total	65.000	2.215
	Actual	2021	2.215
	Target	2022	1.994
	Target	2023	1.795
	Target	2024	1.615



Current incidents for 2022

Beginning of 2021 recorded a huge spike, however our current target of 2021 is slightly above the ICAO recommendation of 1 per 1000 movements. This year has been better than previous year.

		Wildlife No.	Wildlife. Rate
11620	Average 2022	13	1.095
2363	JAN	2	0.846
2705	FEB	2	0.739
3552	MAR	4	1.126
3000	APR	5	1.667
Target for 2022	Target		1.994

“Aircraft–wildlife collisions at two major Namibian Airports from 2006–2010”

*“An analysis, BY MESSER MORGAN L.
HAUPTFLEISCH, NICO L. AVENANT & ALTON
TSOWASEB “*

TWO MOST COMMON SPECIES



Helmeted guinea fowl (**Numida meleagris**)



Crowned lapwing (**Vanellus coronatus**)

Wildlife Attraction



Habitat-cover



Water

Food



Security

An initial wildlife hazard assessment shall include as a minimum the following steps:

A description of the wildlife species;



Identification of the features that may attract birds or wildlife;



Description of the wildlife hazards or potential hazards to aircraft operating to or from the aerodrome; and



Recommended actions for reducing identified wildlife hazards to aircraft operating to or from the aerodrome.



STEP 1: A description of the wildlife species

The Aerodrome Operator must:

- Identify wildlife species that have access to the airport, their numbers, locations, local movements, and daily and seasonal occurrences.
- In most cases, a 12-month assessment would need to be conducted so the seasonal patterns of birds and other wildlife using the airport and surrounding area during an annual cycle can be properly documented

STEP 2: Identification of the features that may attract birds or wildlife

- Wildlife are attracted to an airport by something that exists on or near the airport that they desire, such as large open areas where they can loaf in relative safety; abundant food or water; and escape, loafing, or nesting cover.
- The wildlife hazard assessment shall identify and evaluate potential attractants to include: waste disposal, water management facilities, wetlands, confined disposal facilities, agricultural activities (livestock, aquaculture, farming etc.), golf course, landscaping or any other specific land-use activities that may attract wildlife.



STEP 3:

Description of the
wildlife hazards or
potential hazards
to aircraft
operating to or
from the
aerodrome

- The applicant for an aerodrome certificate or license specifies the wildlife hazards or potential hazards identified in STEP 1, considering the attractants identified in STEP 2.
- The wildlife hazards or potential hazards can be categorized based on their probability and severity.

STEP 3 Continued

An example of classification of the hazards is given below indicating the probability of occurrence, its severity if it occurs, and the combination of probability/severity:

		Severity		
Probability		Major damage C	Damage B	Negligible Effect on flight A
Frequent	3	3C	3B	3A
Occasional	2	2C	2B	2A
Remote	1	1C	1B	1A

Probability / Severity

A colour coding may be used to indicate what is intolerable (Red – unacceptable under the existing circumstances), tolerable (Yellow – acceptable based on mitigation measures to control wildlife) or acceptable (Green – acceptable).

Bird strikes in Namibia are generally classified as yellow, since they are frequent occurrences and while we have had consequences such as an engine failure already in 2021, the resultant effect on flight, even in this case, is normally negligible.

STEP 4: Recommended actions for reducing identified wildlife hazards to aircraft operating to or from the aerodrome

Repellent and harassment techniques: Repellent and harassment techniques are designed to make the area or resource desired by wildlife unattractive or to make the wildlife uncomfortable or fearful





STEP 4: Recommended actions for reducing identified wildlife hazards to aircraft operating to or from the aerodrome

Wildlife removal: if legally allowed for the species being considered, wildlife removal may include: capturing, destroying eggs and nests, shooting, oral or contact toxicants, fumigants, lethal traps, etc.

STEP 4: Recommended actions for reducing identified wildlife hazards to aircraft operating to or from the aerodrome

The aerodrome operator presents the wildlife control measures to address the hazards or potential hazards identified in STEP 3. Wildlife control measures are generally:

Aircraft schedule modification:

Although not generally practical for regularly scheduled commercial traffic on larger airports, there may be various situations when flight schedules of some aircraft can be adjusted to minimize the chance of a strike with a wildlife species that has a predictable pattern of movement.





STEP 4: Recommended actions for reducing identified wildlife hazards to aircraft operating to or from the aerodrome

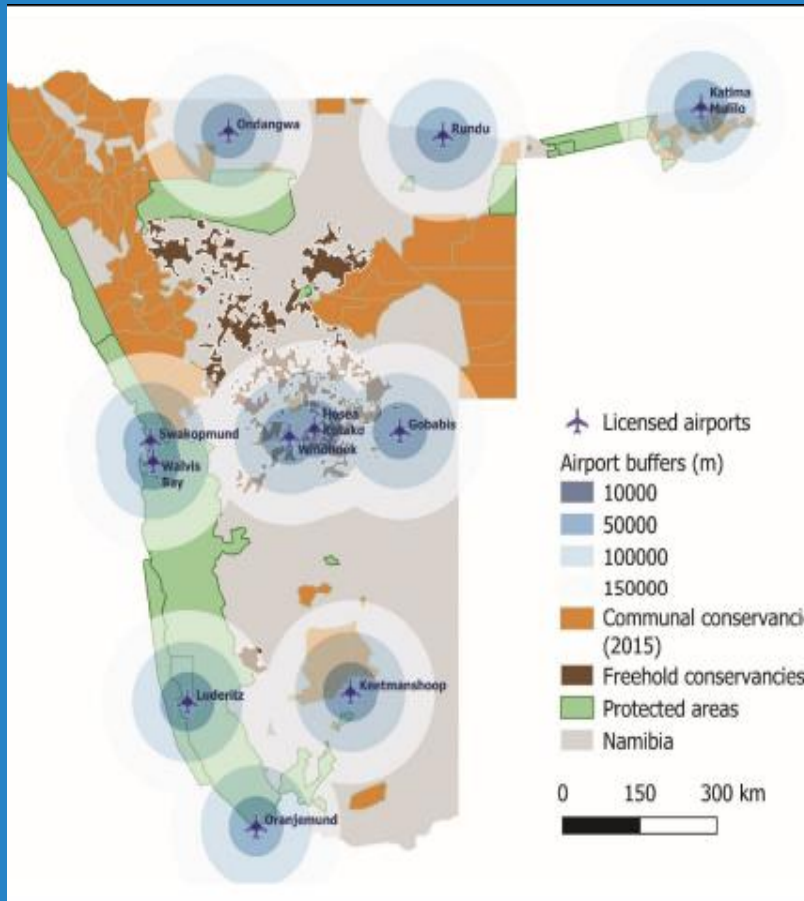
Habitat modification and exclusion:

Habitat modification means changing the environment to make it less attractive or inaccessible to the problem wildlife. All wildlife requires food, cover, and water to survive.

Any action that reduces, eliminates, or excludes one or more of these elements will result in a proportional reduction in the wildlife population at the airport.

Habitat modifications to make the airport and surrounding area as unattractive as possible to hazardous wildlife must be the foundation of every airport's Environment Management Programme.

CONTINUOUS ASSESSMENT OF WILDLIFE HAZARD



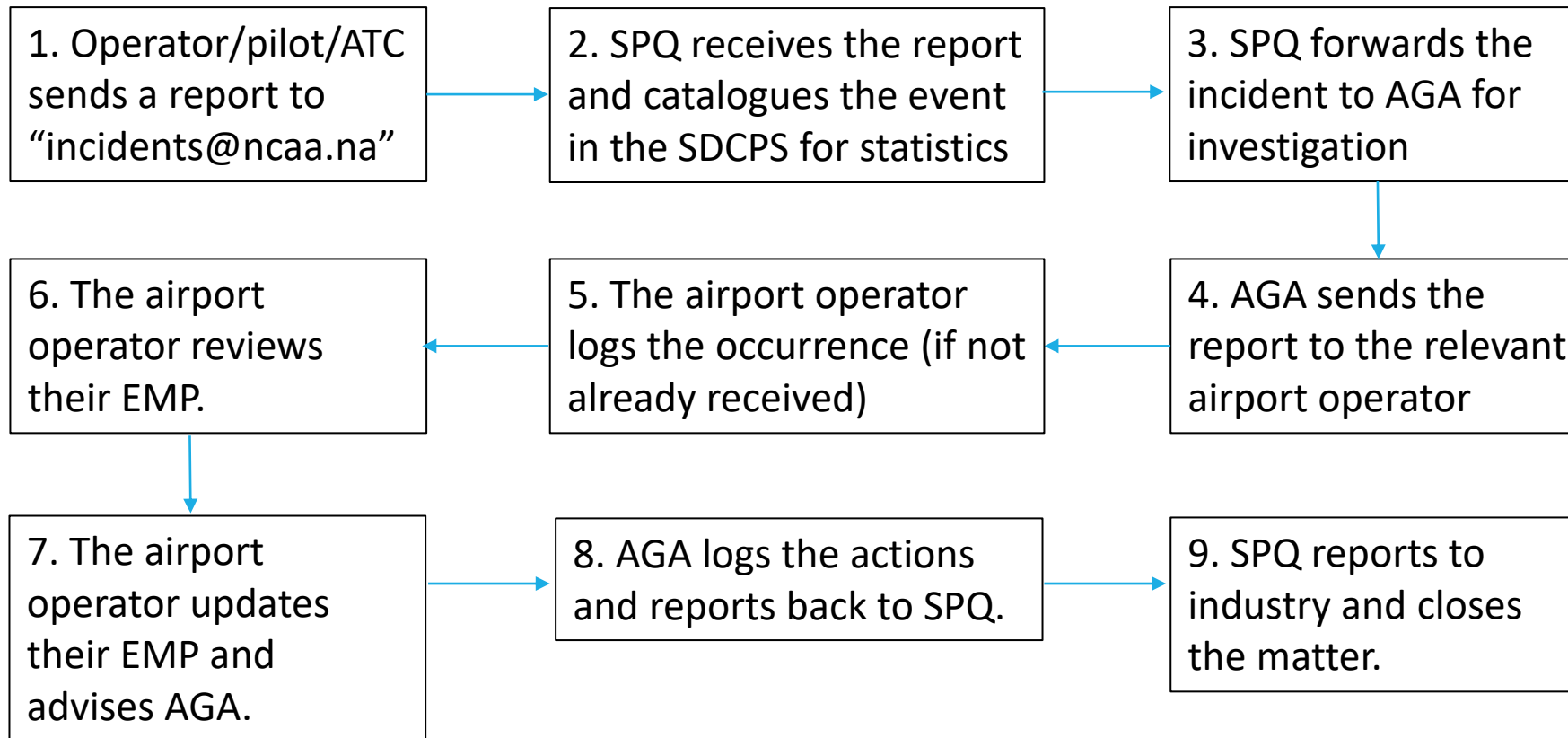
The aerodrome operator reviews at least once a year, or after a wildlife occurrence, the wildlife hazard assessment in order to identify any changes in wildlife species, the features that may attract wildlife on, or in the vicinity of the aerodrome as well as the probability and/or severity of occurrences.

The information obtained can then be used to determine whether new wildlife control measures are required or address newly identified hazards, reinforce existing ones, or discontinue those that may no longer be required.



“subjectivity on acceptable level of safety requires establishing minimum acceptable level of safety”

Outline of the Wildlife hazards and Incident reporting System



Challenges

- Lack of service providers' competent staff and specialists in the area of bird and wildlife management
- Lack of training for aerodrome operators on birds and wildlife management within the vicinity of an aerodrome
- Lack of effective implementation to provide recommended and/or required intervention strategies for risk management
- Aerodrome operators not conducting investigations of reported incidents in the required time to ensure efficient resolutions of reported incidents
- Lack of onsite verification by the CAA for each reported incident to determine the nature of the incident and to ensure that it has been resolved
- Lack of training to ensure that the aviation industry is competent to complete incident report forms
- Lack of training to ensure that the aviation industry provides all evidence required when reporting an incident

Contacts

Dennis Gaingob

Acting Senior Manager : Aerodromes and Ground Aids

gaingobd@ncaa.na

aga@ncaa.na

+264 83 235 2364 (office)

+264 81 555 2072 (cell)

Questions?

