



Presented By:
Oman Transport Safety Bureau



01

Introduction

02

ICAO Requirements , Statistics &
Recommendations

03

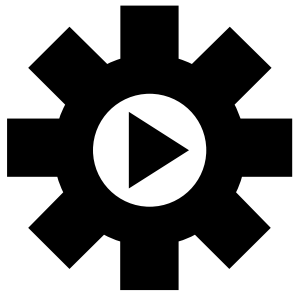
OTSB Compliance

04

Objective of the Study

05

Background of the Study





01

Introduction

ICAO Requirements , Statistics & Recommendations

OTSB Compliance / Bird Strike Safety Study

02

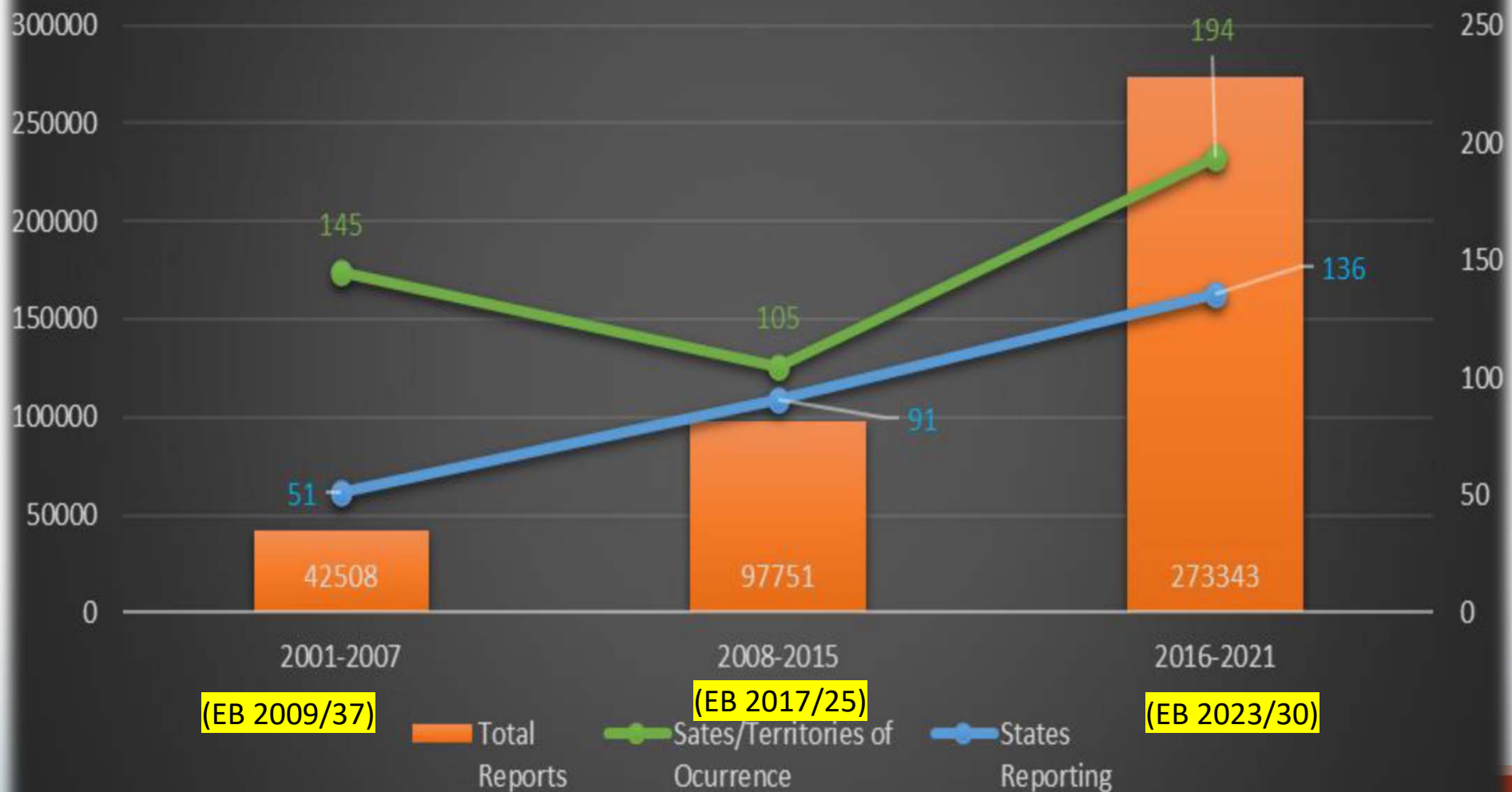
ICAO Requirements , Statistics & Recommendations

- ICAO-Doc 9137-Part 3 – (Wildlife Hazard Management) Importance of planning and establishing successful Wildlife Hazard Management Program (WHMP) and committees
- Annex 14, Volume I- (Aerodromes) Actions to decrease the risk to aircraft operations by adopting measures to minimize the likelihood of collisions
- Annex 19 (Safety Management) Provisions applicable to safety management functions and the State Safety Oversight for the collection, analysis, exchange and protection of information

02

ICAO Statistics(2016-2021)

Wildlife strikes reported to ICAO



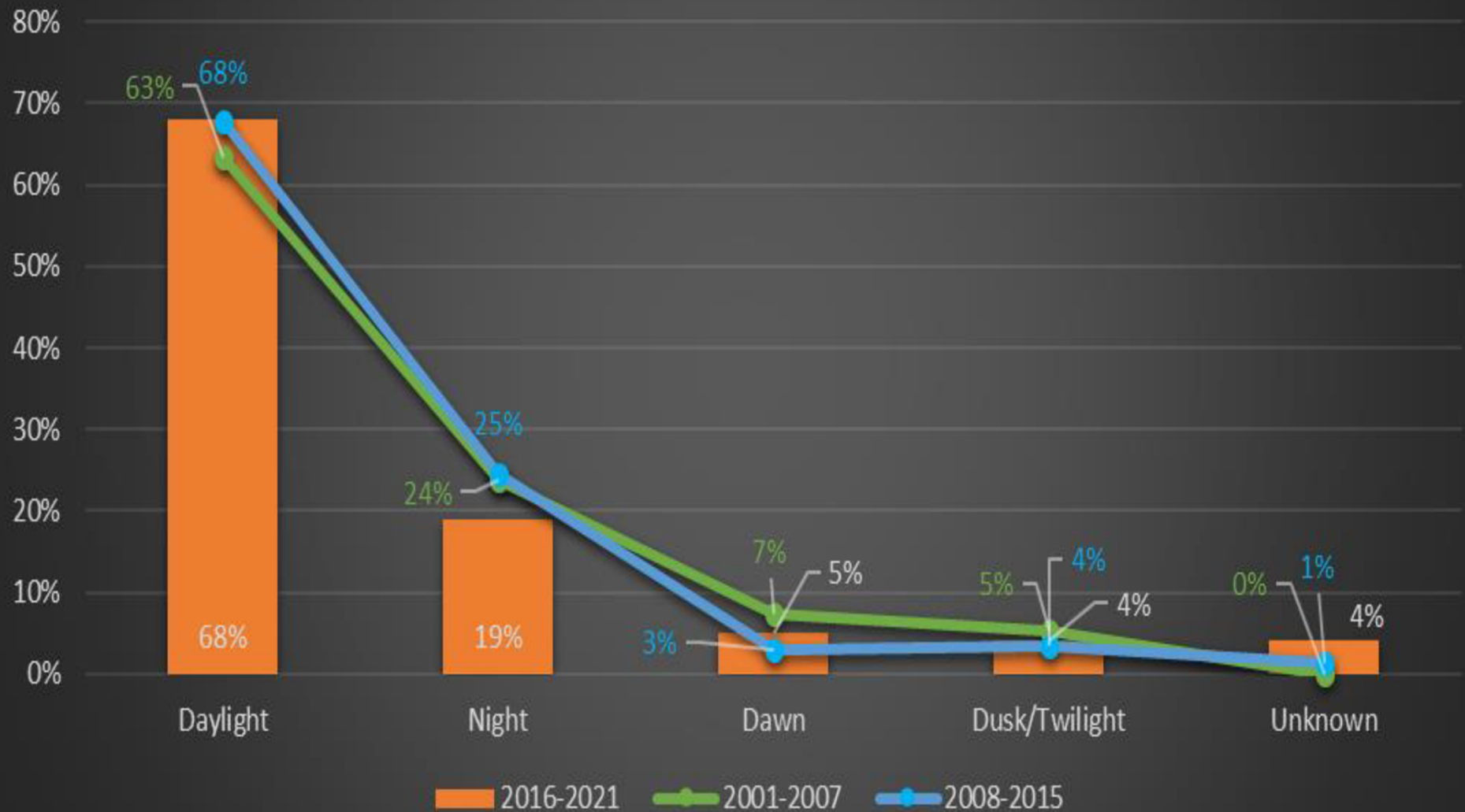
SUMMARY OF WILDLIFE STRIKES REPORTED TO THE ICAO BIRD STRIKE INFORMATION SYSTEM (IBIS) FOR THE YEARS 2016-2021

Reports by ICAO Region

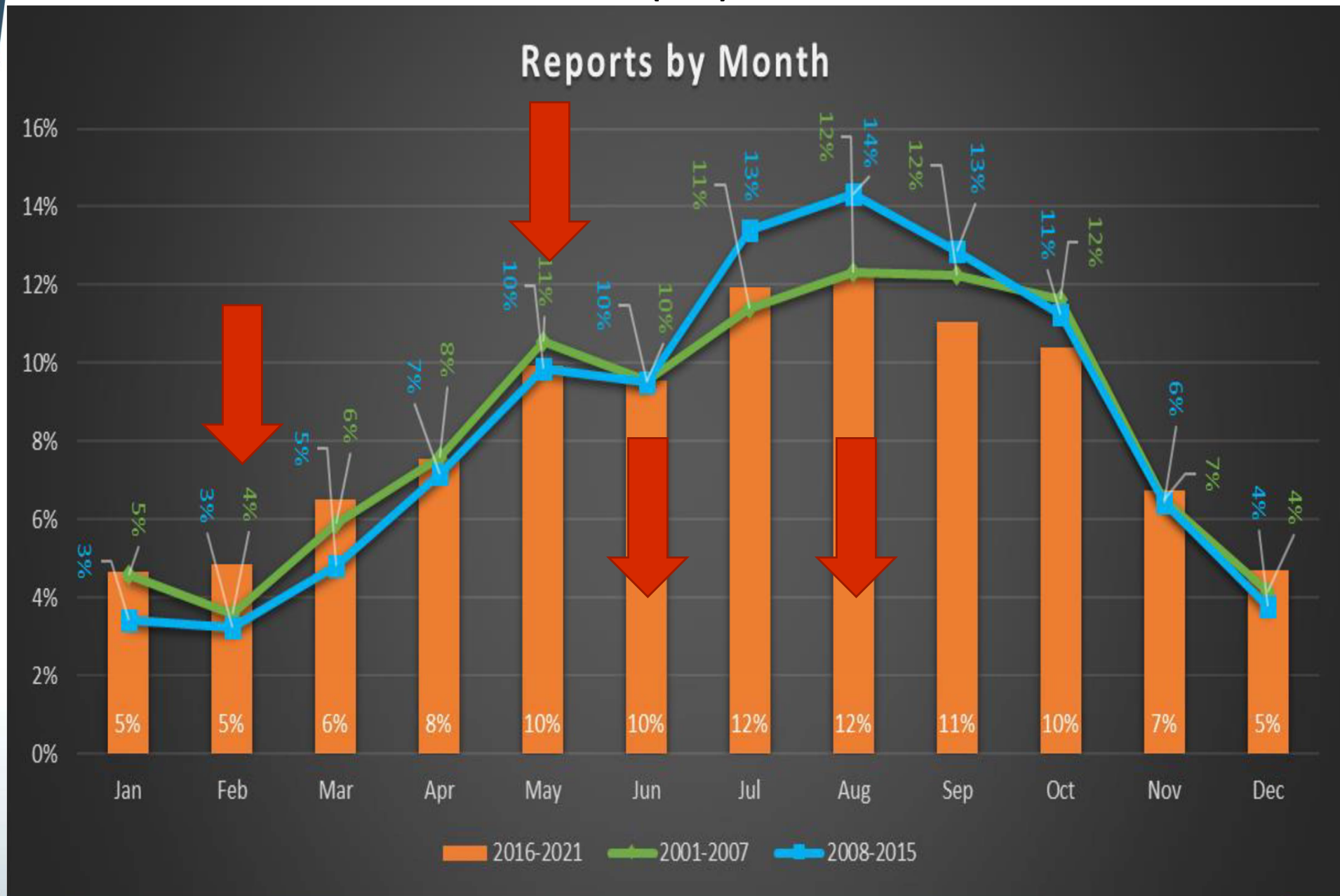


SUMMARY OF WILDLIFE STRIKES REPORTED TO THE ICAO BIRD STRIKE INFORMATION SYSTEM (IBIS) FOR THE YEARS 2016-2021

Reports by Light Conditions

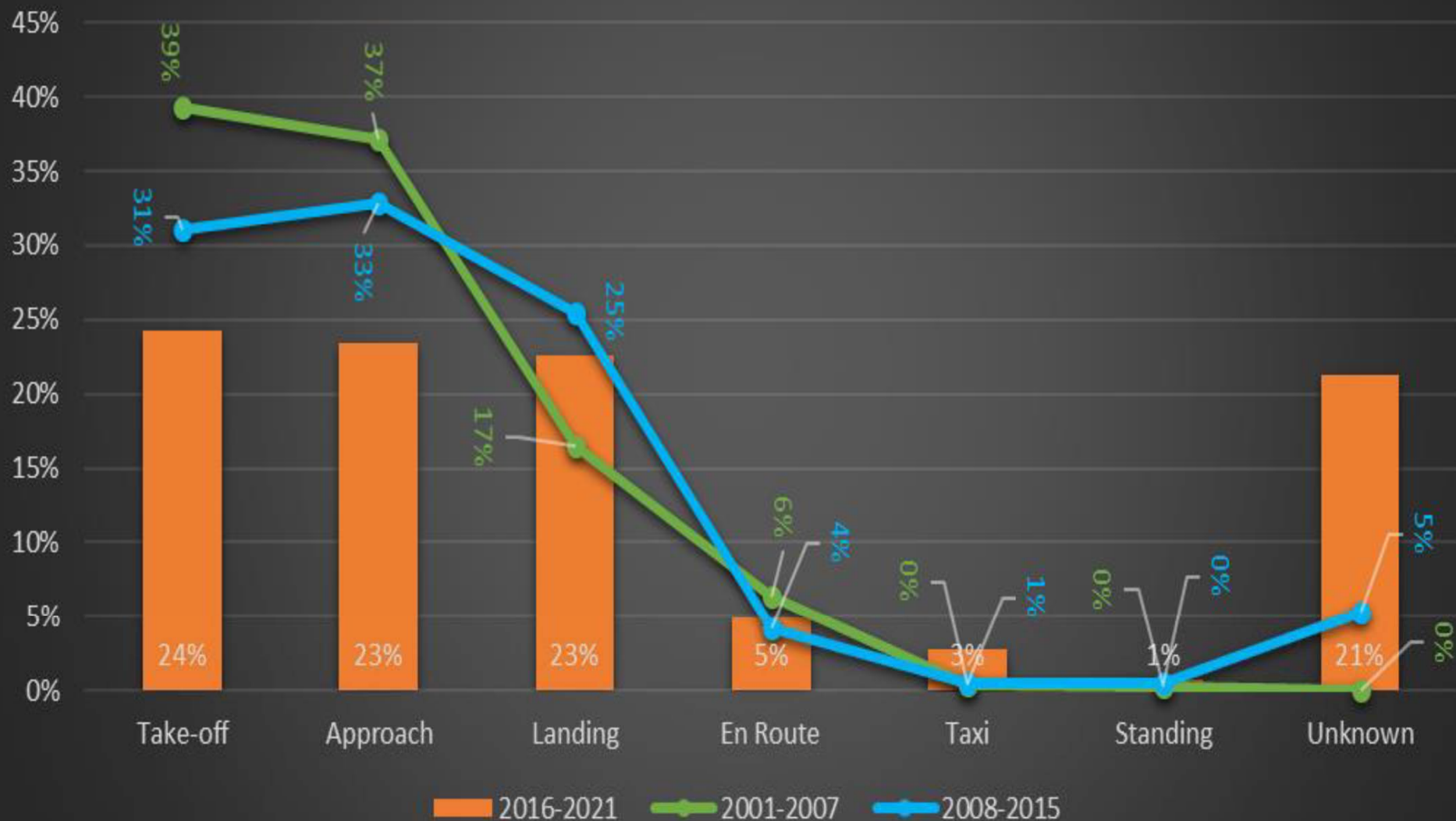


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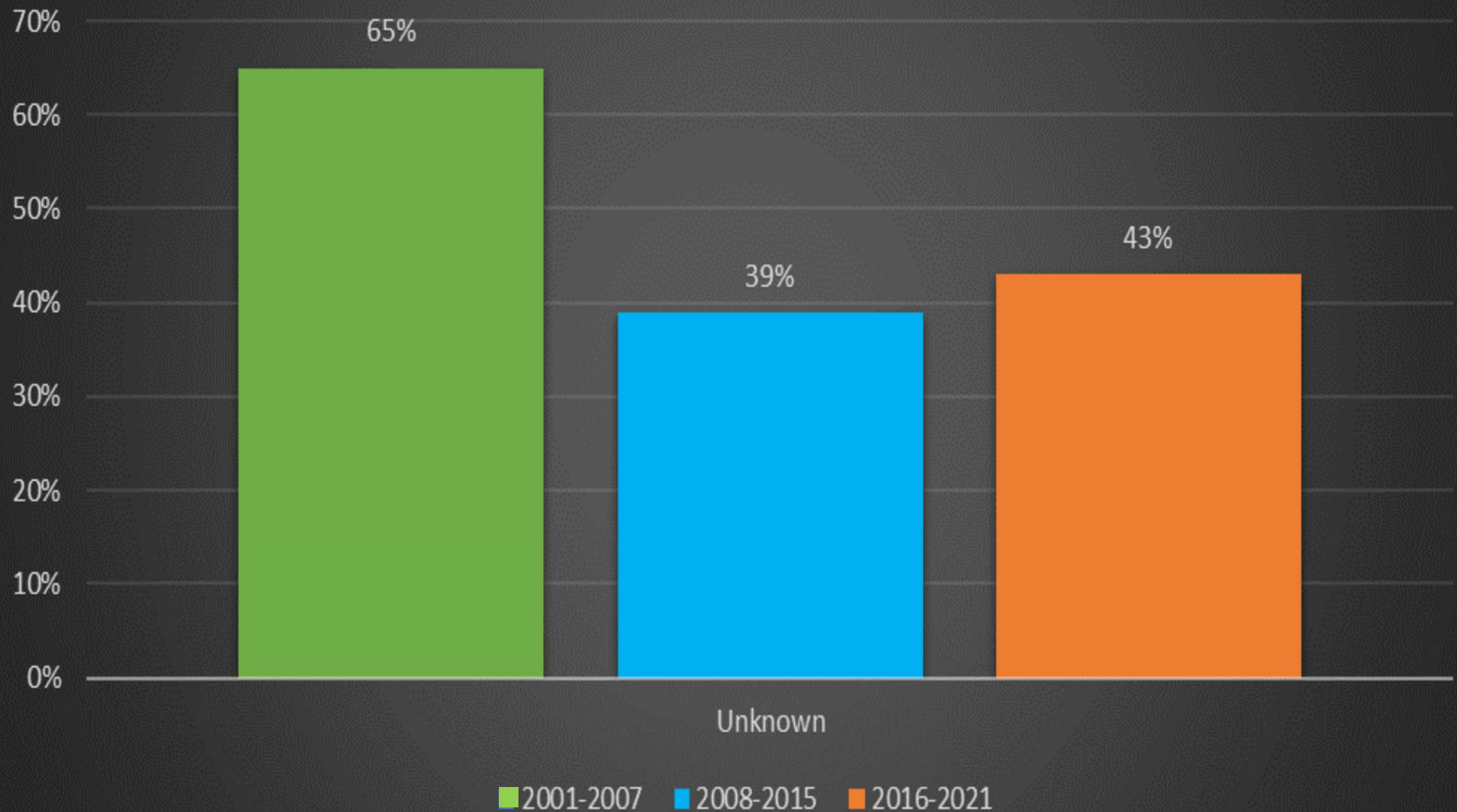
SUMMARY OF WILDLIFE STRIKES REPORTED TO THE ICAO BIRD STRIKE INFORMATION SYSTEM (IBIS) FOR THE YEARS 2016-2021

Reports by Flight Phase



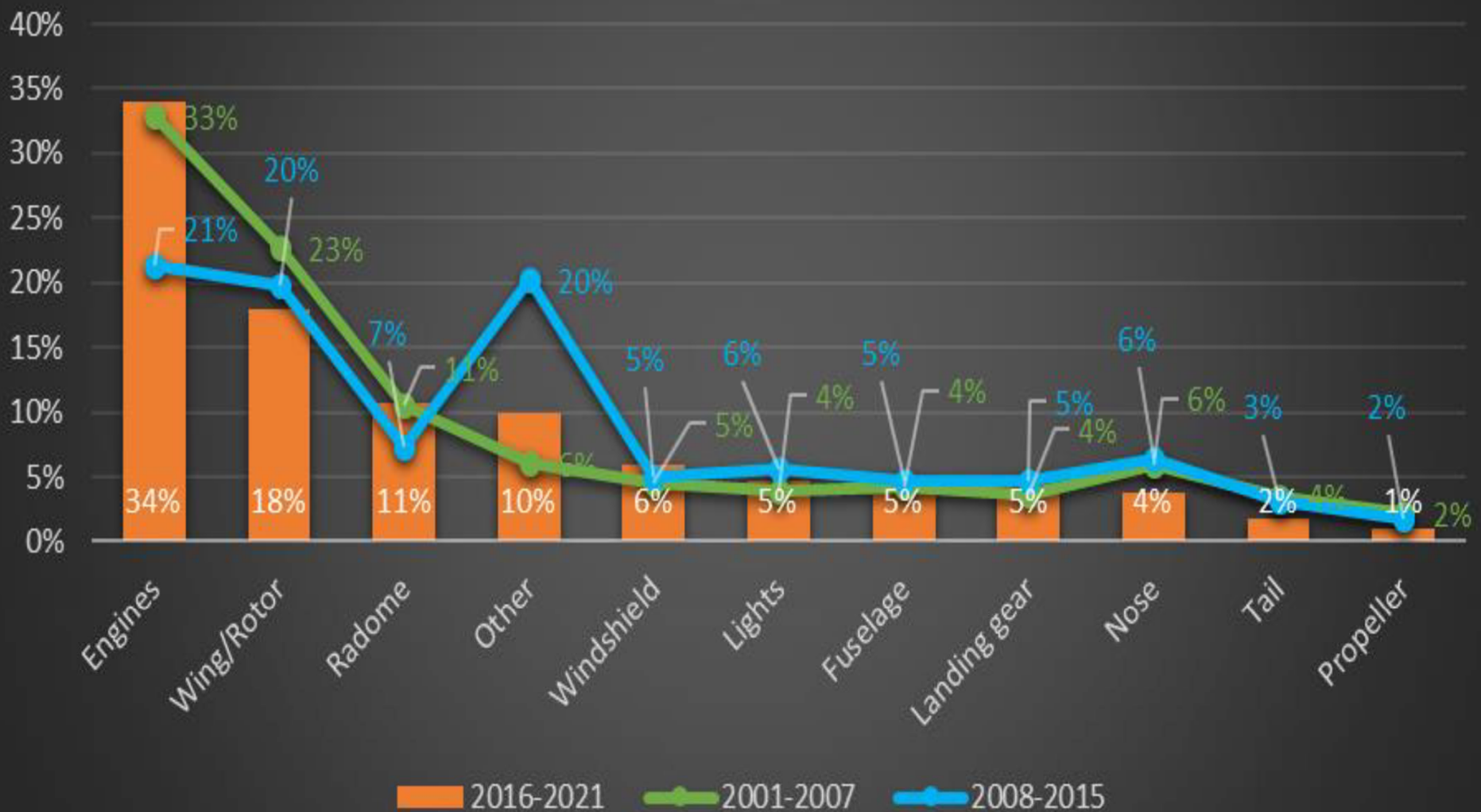
SUMMARY OF WILDLIFE STRIKES REPORTED TO THE ICAO BIRD STRIKE INFORMATION SYSTEM (IBIS) FOR THE YEARS 2016-2021

Reports by Wildlife Species (classified as Unknown)



SUMMARY OF WILDLIFE STRIKES REPORTED TO THE ICAO BIRD STRIKE INFORMATION SYSTEM (IBIS) FOR THE YEARS 2016-2021

Reports by Parts of Aircraft (damage)





02

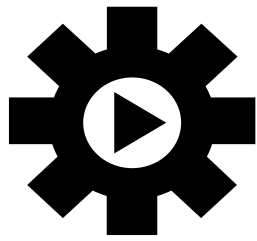
ICAO Recommendations

- Recommended Roles and Responsibilities
- Establishment of A National Committee/Forum
- The Safety Management System (SMS) of the aerodrome should be coordinated with other stakeholders
- ATC is the link between the airside personnel and pilots and they should maintain a continuous liaison with the aerodrome wildlife hazard control personnel

02

ICAO Recommendations

Cont.



Recommended Roles and Responsibilities

- **CAAs, Pilots, Airlines**
- **Aerodrome Operators**
- **Airside Personnel**
- **Environmental authorities, local & regional authorities**
- **Local community groups**
- **Wildlife Experts, scientific and academic communities**

02

ICAO Recommendations

Cont.

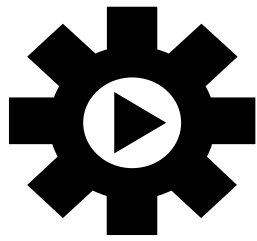
Recommended Roles and Responsibilities (Civil Aviation Authorities)

- Annex -14 requires States to certify all aerodromes used for international operations
- Shall ensure that aerodrome operators have developed and documented procedures
- Responsible for the regulation, oversight and enforcement of the WHMP
- Wildlife reports are collected and forwarded to ICAO for inclusion in the IBIS database

02

ICAO Recommendations

Cont.



Recommended Roles and Responsibilities (Aerodrome Operator)

- Primary stakeholder and the common link among all other stakeholders at the aerodrome
- Maintain aerodrome safety and ensure that action is taken to reduce the risk of wildlife strikes
- Provide pilots and aircraft operators with recurrent wildlife behavior and habits that may impact aircraft safety

02

ICAO Recommendations

Cont.

Establishment of A National Committee

- Proven to be effective to gain and exchange information on Research & Development in aerodrome wildlife control
- Ideal way to connect different stakeholders with wildlife concerns within the aviation community and national aerodromes

Composition Of Committee

- ANSPs, aircraft operators' association, pilots' association
- Environmental Authorities, Regional Authorities
- NGOs, ecological associations, conservation agencies
- National Departments, Accident Investigation Boards
- MRO organization; airframe and engine manufacturer



03

OTSB Compliance

OTSB Investigation / Safety Studies

OTSB Safety Analysis Data Base identified Safety Risks of Bird strike. Trends have increased within the country, specifically in Muscat International Airport

OTSB decided to conduct a safety study to identify any safety deficiencies that could be causing an increase in numbers of bird strike

04

The Objective of the Study

As part of OTSB's mandate, Safety Studies on trends are conducted to determine any preventive actions and issue Safety Recommendations that can effectively and proactively reduce the number of incidents

The aim of the Safety Study is to provide information to pilots, airports and operators, regulators, and other aviation industry participants to assist them with managing the risks associated with bird strikes hazards

05

Background of the Study

The Study is based on the information and data for the period 2019 – 2023, however the study focused in 2022 & 2023

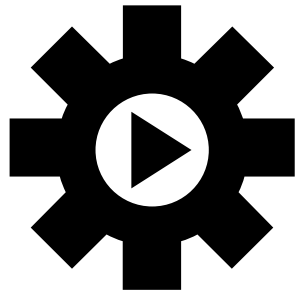
Wildlife Hazard Management Plan (WHMP) was developed by Oman Airports based on CAA requirements

This study shows the result of implementing the WHMP on birds strike and helps to evaluate the effectiveness of the implementation of the plan

Background of the Study

05

Cont.




The Wildlife team carries out day to day inspection. These data give clear view and idea about the wildlife activities

It is also used to establish scientific studies where the data are focusing on the number, behavior of wildlife species and why it is attracted to the airport:

- Shelter, Hangars, Structure building, Light Masts, trees and towers
- Food such as algae, small fish species, insects, rodents, grasses and worms
- Water such as Ground fresh water, water ponds and saline water

06

Management of Hazardous Wildlife

- 
- **The Importance of Understanding Animal Behavior**
 - **Essential to understand their responses on a site-by-site basis**
 - **Control can be achieved by understanding whether the ‘response’ of wildlife will be to ignore, hide or flee**
 - **Once the responses are understood, then the control action can be determined**
 - ✓ **Patrols and Observations to prevent Birds presence**
 - ✓ **Automatically dispense repellents (noisemakers, chemical sprays, etc ...**
 - ✓ **Audio repellents (Shotguns, Pistols, stationary canon)**
 - ✓ **Visual repellents (hawk effigies, silhouettes on kites, eye-spot balloons, flags have short-term effectiveness**
 - ✓ **Lasers. Are best used at night or at dawn and dusk**

7

Statistics and Analysis

Confirmed and Unconfirmed Bird Strike at MCT Int'l Airport from 2018-2023

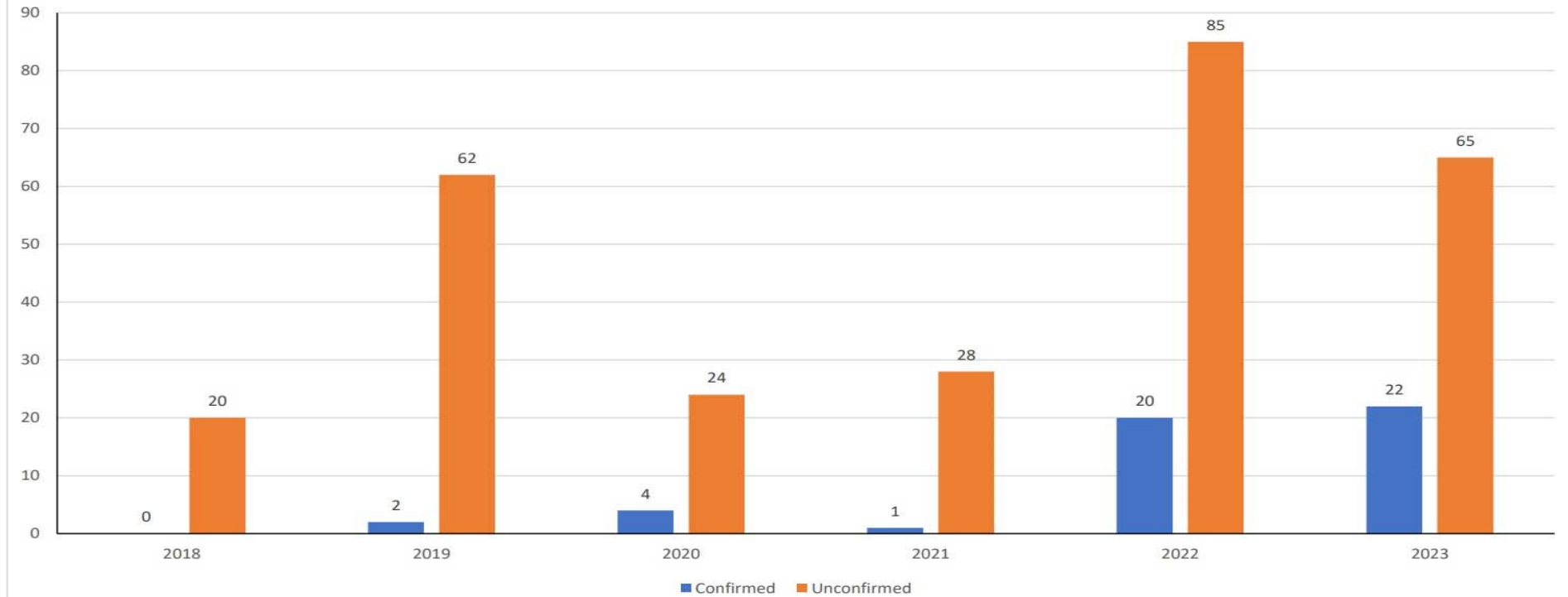
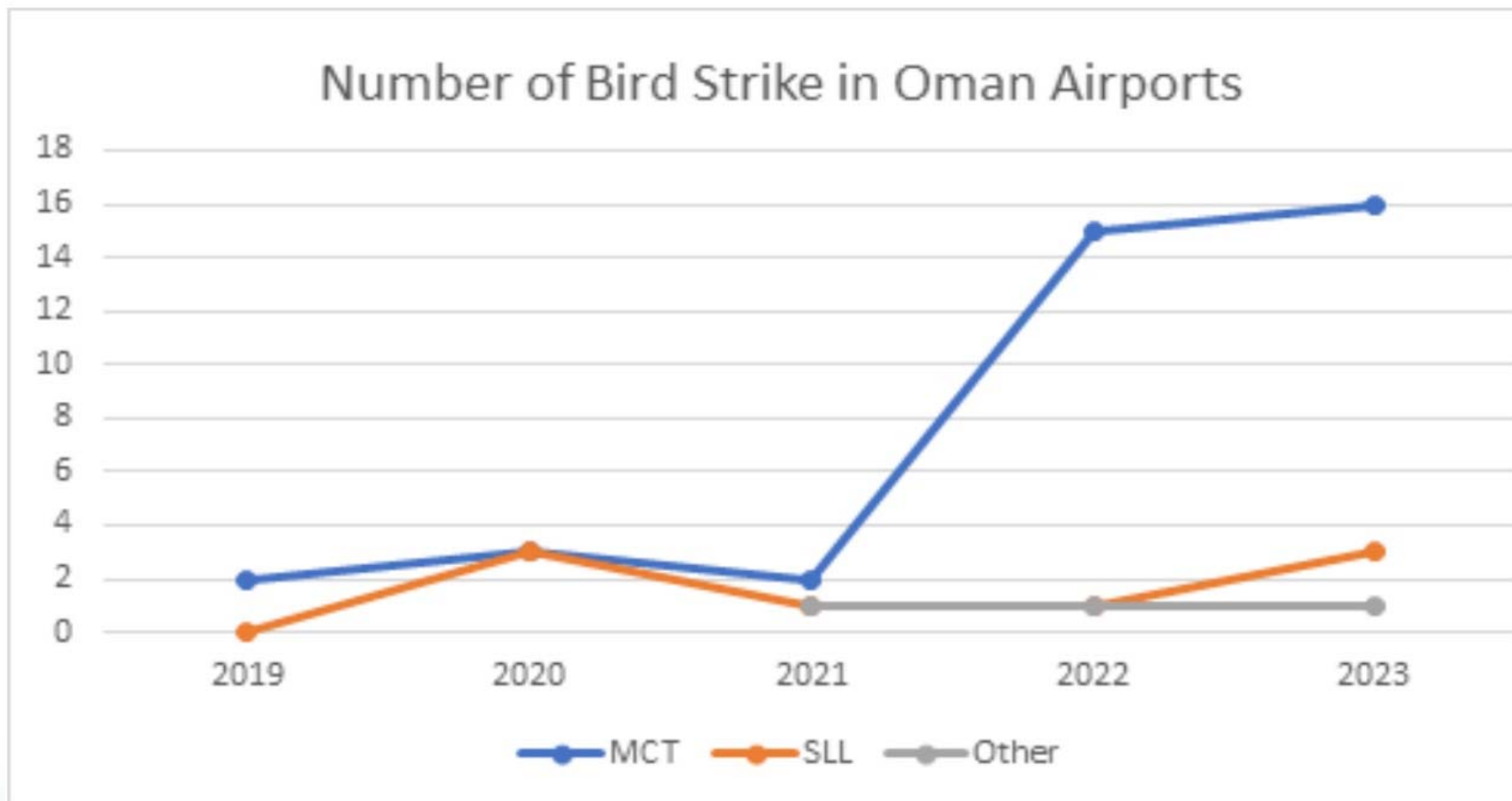


Figure.1: The graph above shows the number of birds strikes for MCT for the last 5 years (2018-2023)

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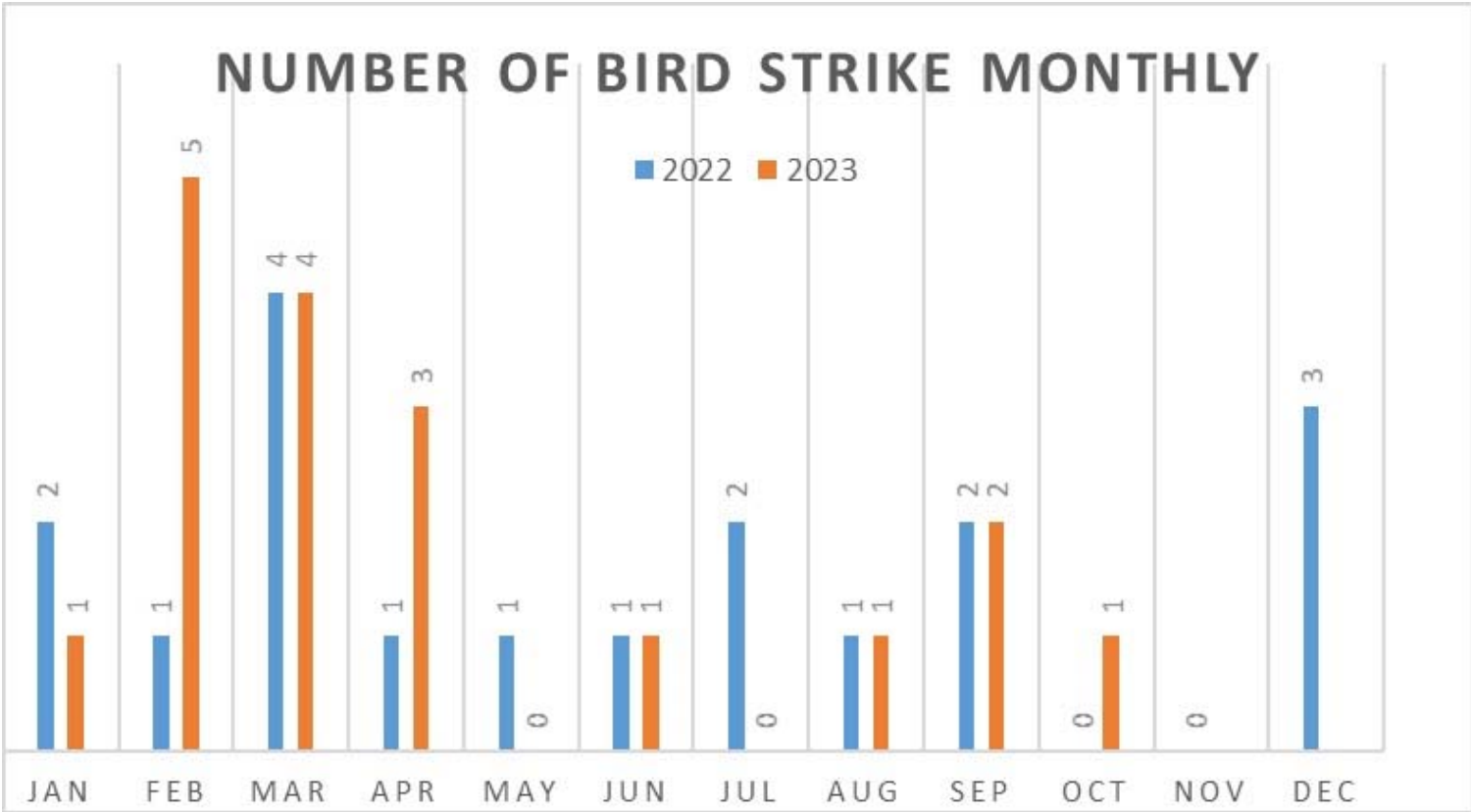
Statistics and Analysis

Cont.

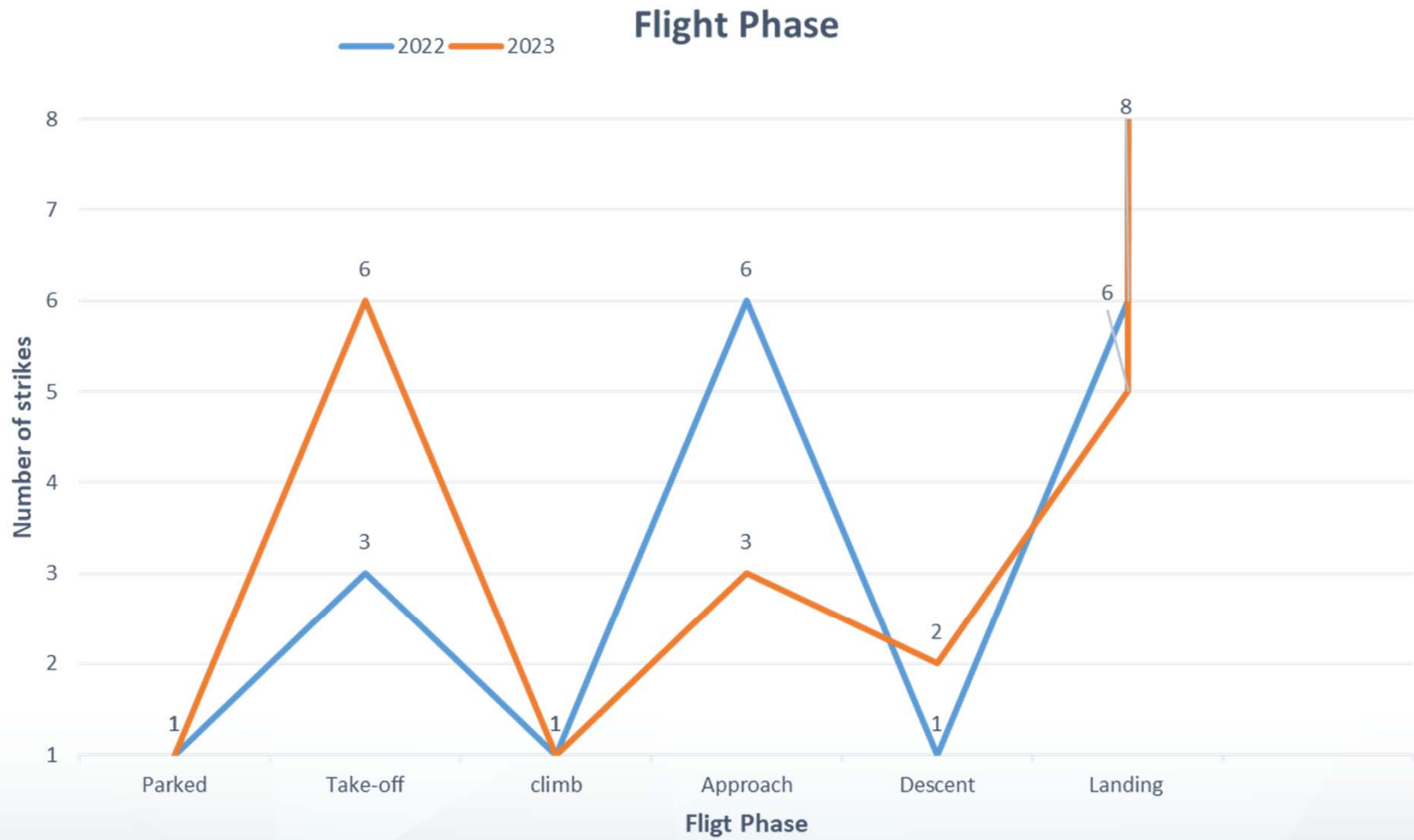


The graph above shows the number of birds strikes per Airport between 2019 and 2023 (Source: OTSB database)

7 Statistics and Analysis Cont.



7 Statistics and Analysis Cont.



Muscat International Airport WHMP

Wildlife Hazard Mitigation Plan

- ✓ Self Evaluation
- ✓ Proper implementation of tasks & responsibilities
- ✓ Adequate Comms Protocols
- ✓ Correct identification of the most hazardous
- ✓ Training

WHMP Evaluation

- ✓ Evaluate the effectiveness of the WHMP annually, at minimum

CAA WHMP Evaluation

- ✓ Evaluation of The Safety Oversight System for WH
- ✓ Procedures to determine compliance with wildlife strike reporting requirements
- ✓ Analyse and Summarize their strike records both Quantity and Quality

08

Achievements / Implementation

Civil Aviation Authority

- Established National Committee with different Government entities
- 3 Meetings with different relevant authorities in 2023
- MCT AIP Risk assessment conducted in Nov 2023
- MCT AIP WHMP reviewed and updated on 25 Dec 23

Oman Airports

- Wildlife specialist taking records daily
- When occurrence happened the WL team involve with TWR
- OA WHMP involved all the concerned parties
- WHMC is combined with Runway Safety Team (RST)

ICAO Requirements , Statistics & Recommendations

**Achievements /
Implementation**

OTSB Compliance

Statistics and Analysis

Conclusion

Objective of the Study

**Management of Hazardous
Wildlife**

Background of the Study





Thank you
&
Questions