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## Latest developments of ICAO on Wildlife hazard reduction

Yong Wang

*Air Navigation Bureau at ICAO*

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International Civil Aviation Organization

# Latest developments of ICAO on Wildlife hazard reduction

Yong Wang

Chief, Aerodromes Section, ANB/ICAO

12 September 2011

2011 Bird Strike North America Conference





# Bird Strikes – an Increasing Safety and Economic Concern



Bird strikes are an increasing safety and economic concern, annually costing commercial air carriers over **\$1.2 billion USD**

**Learjet 45 strike with pigeons at Linate Airport, Italy, June 2003. Aircraft and building destroyed, two pilots killed.**



## Why?:

1. Increasing populations of large- and flocking- bird species.
2. Faster quieter turbofan-powered aircraft.
3. Non Bird Strike resistant airframes and engines, relative to large- and flocking-bird species.

# Power of Birds

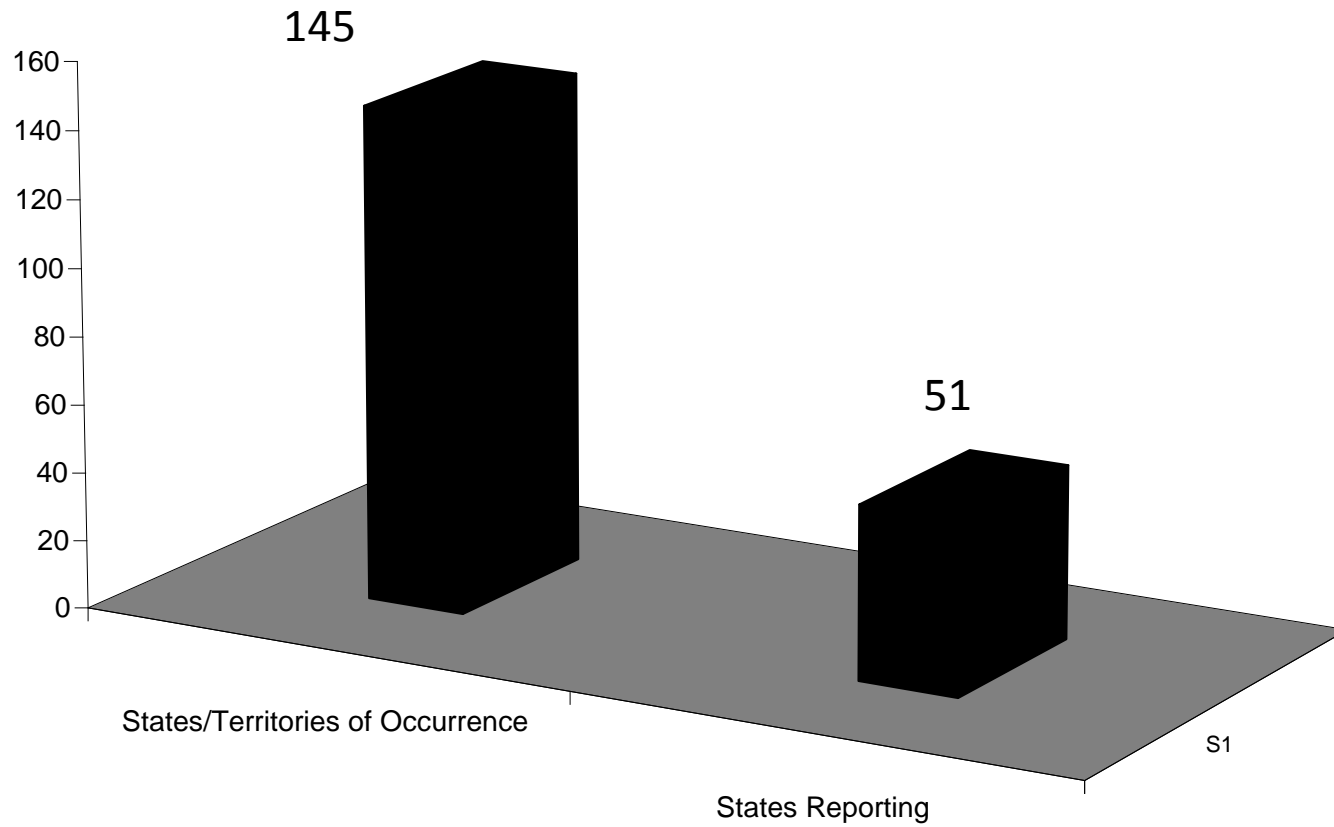




# Overview

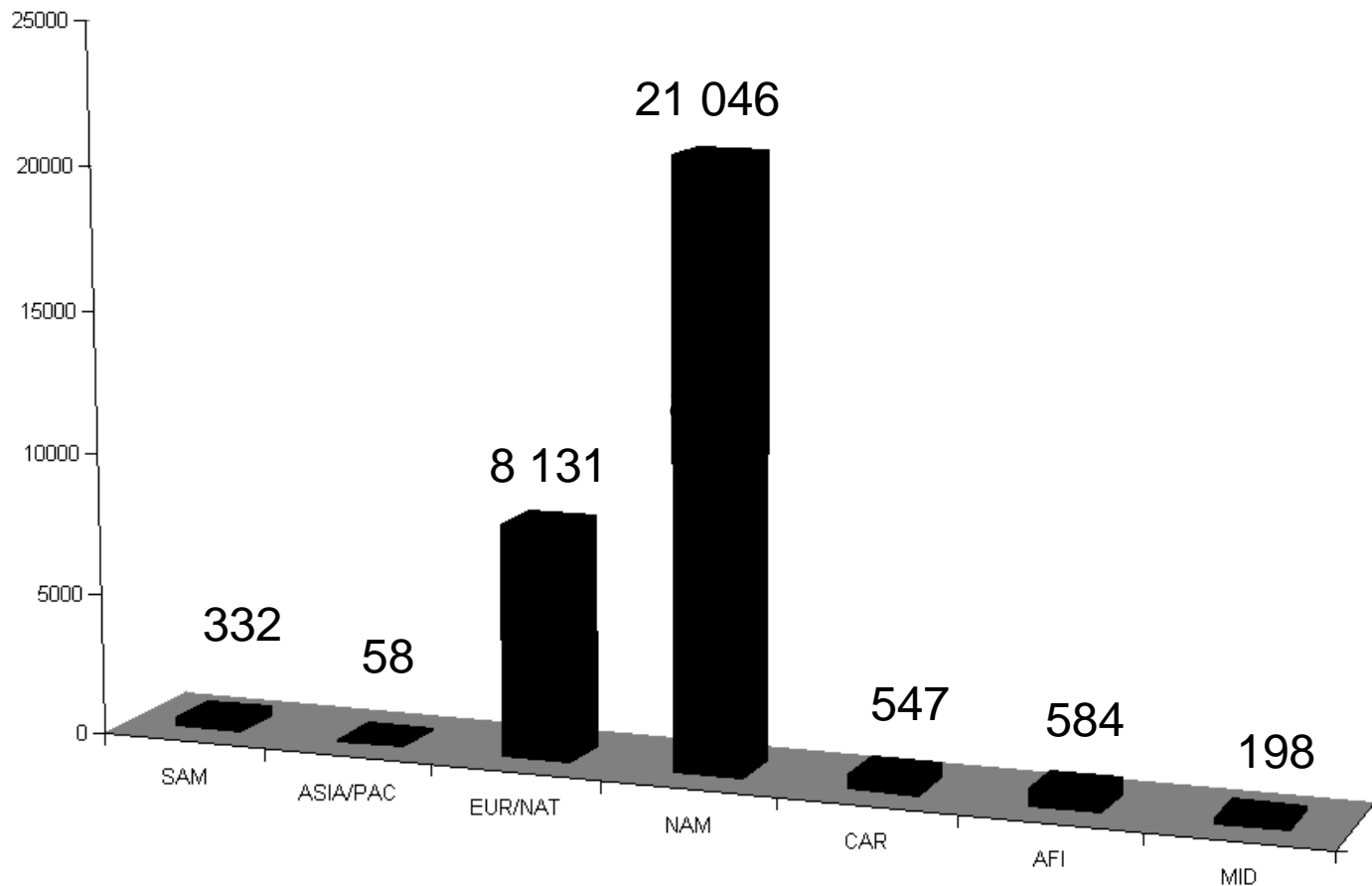
- ICAO bird strikes analysis (IBIS)
- Amendment 10 to Annex 14, Volume I
- Airport Services Manual, Part 3 – Wildlife Control and Reduction (4<sup>th</sup> edition)

# ICAO Bird Strikes Analysis (IBIS)





# Reported Strikes Distributed by Region in Which They Occurred



# When and Where the Bird Strikes Occurred



## When and where the bird strikes occurred

*time of the strikes*

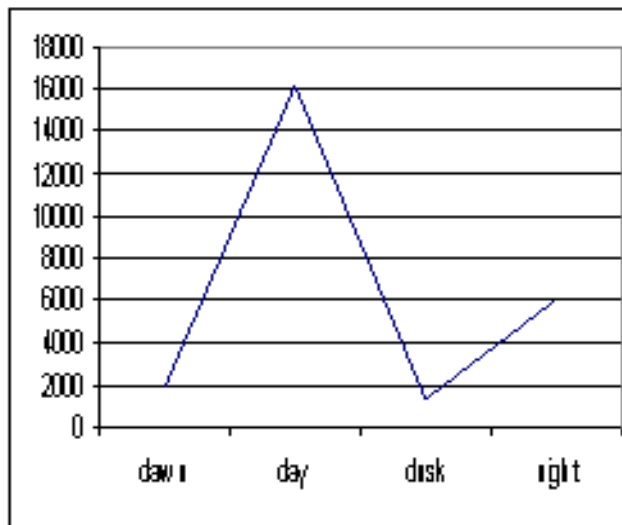


Chart 1: strikes reported according to time

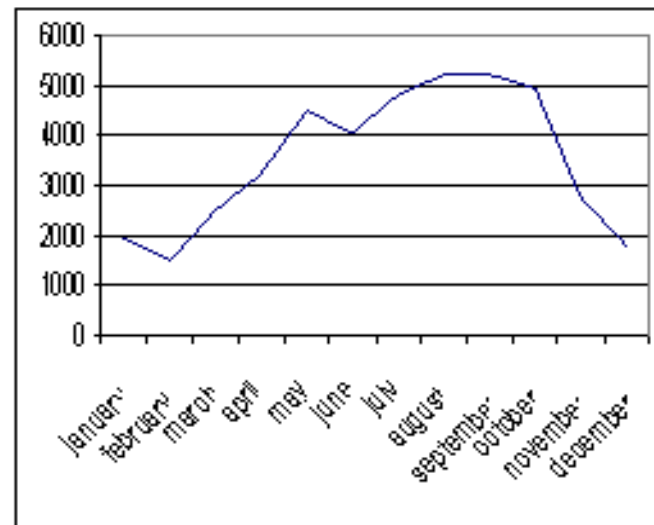


Chart 2: strikes reported according to season

# Bird Strikes Reported According to Flight Phases

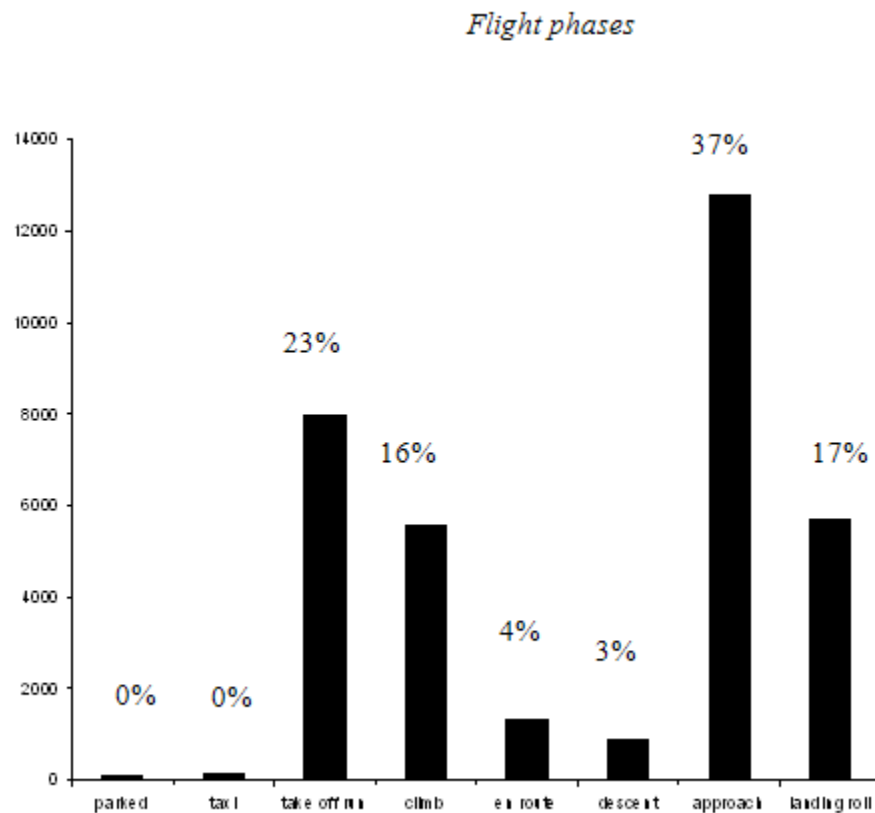
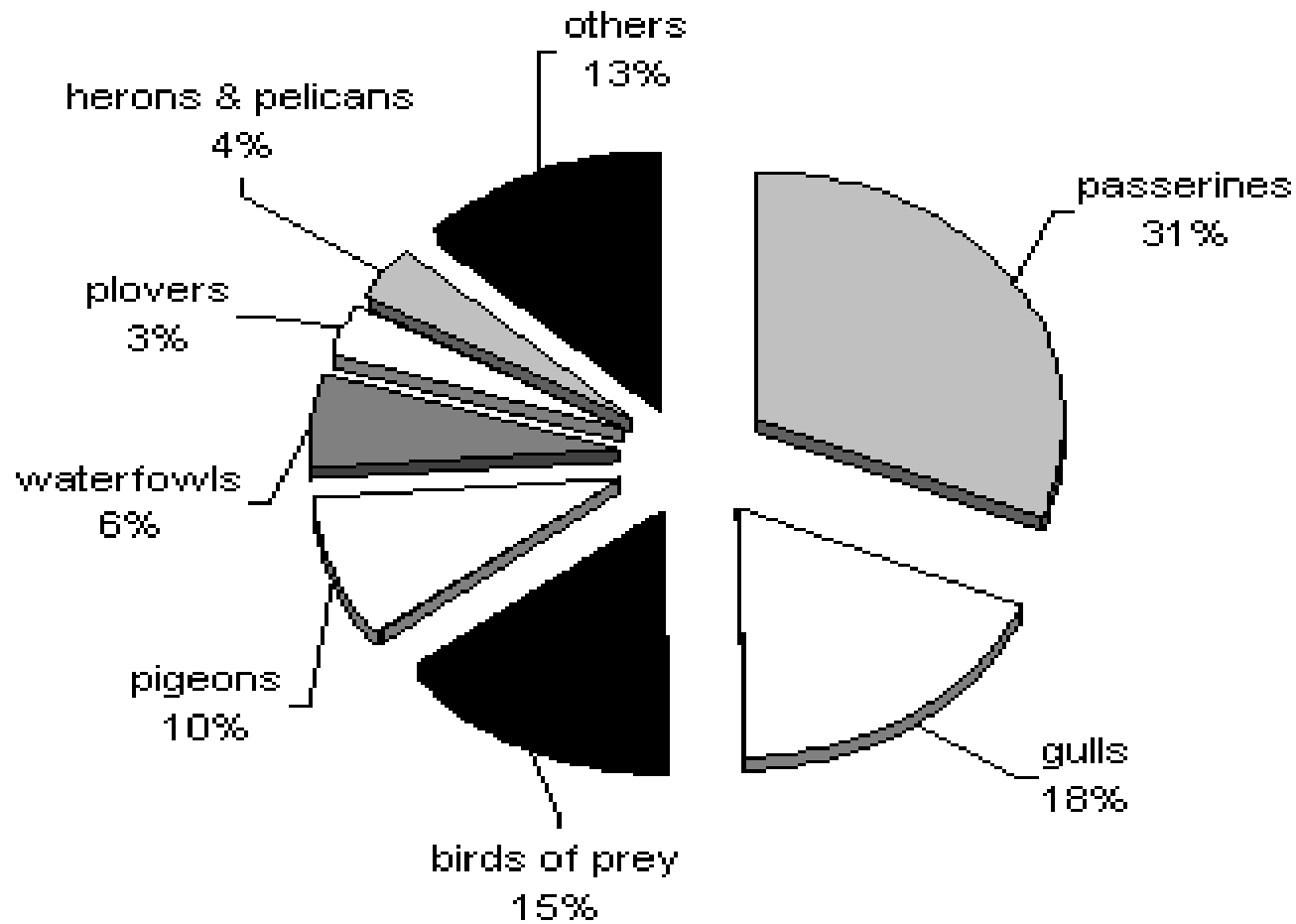


Chart 3: Bird strikes reported according to flight phases

# Bird Types Frequently Struck



# Effects on Flight

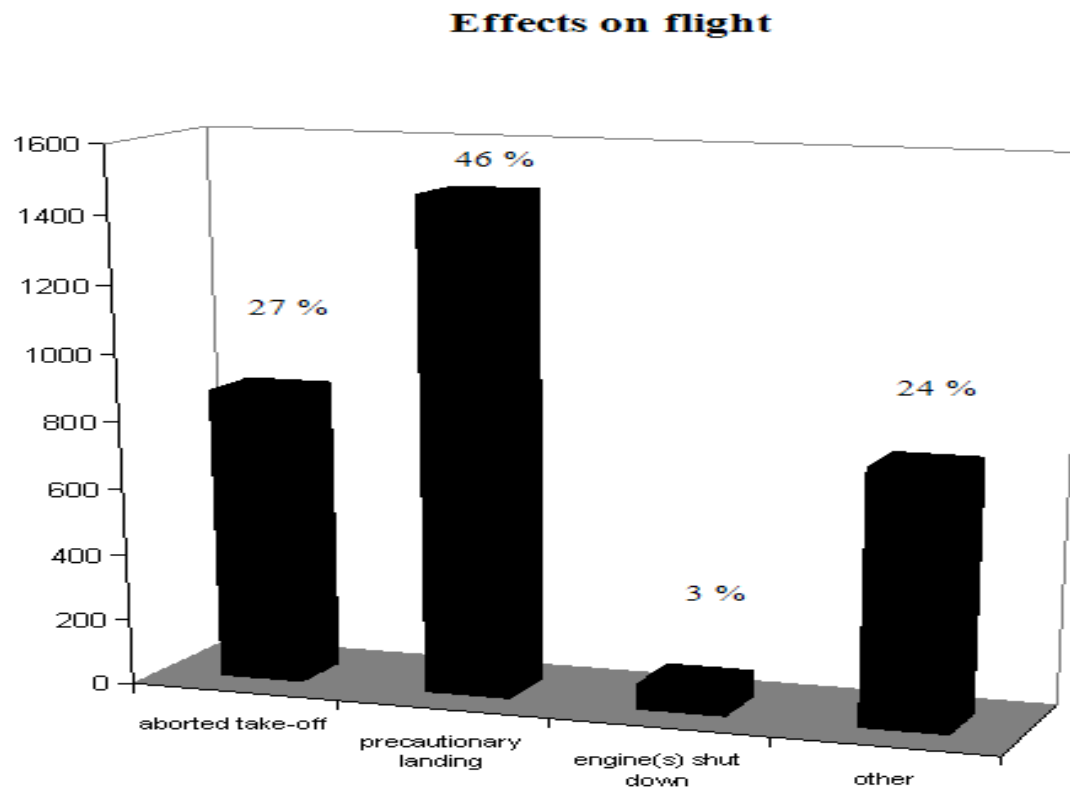


Chart 6: effects on flight, if any

# Parts of Aircraft Struck and Damaged

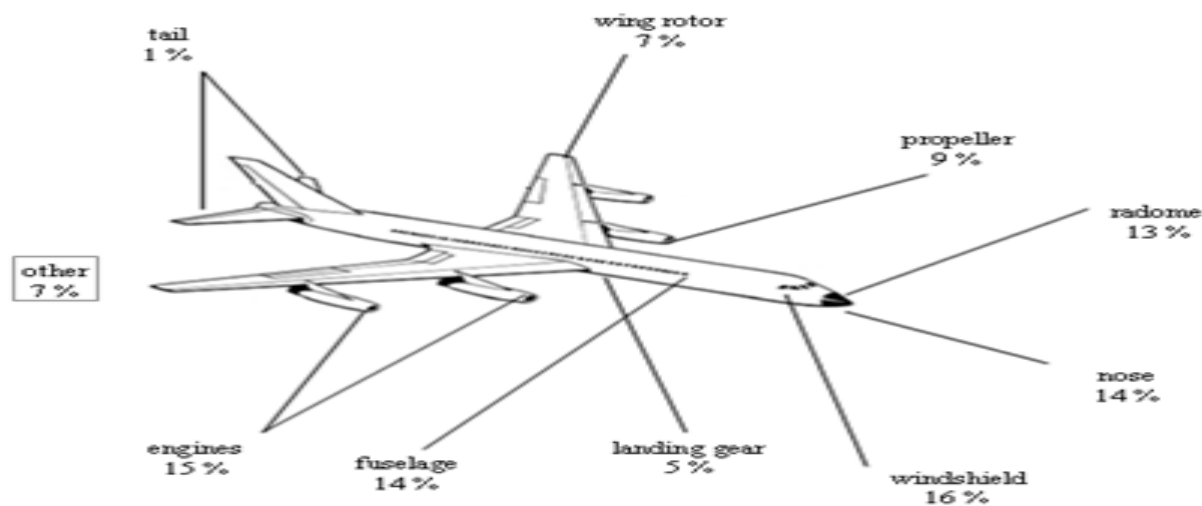


Chart 6 : parts of aircraft struck or damaged

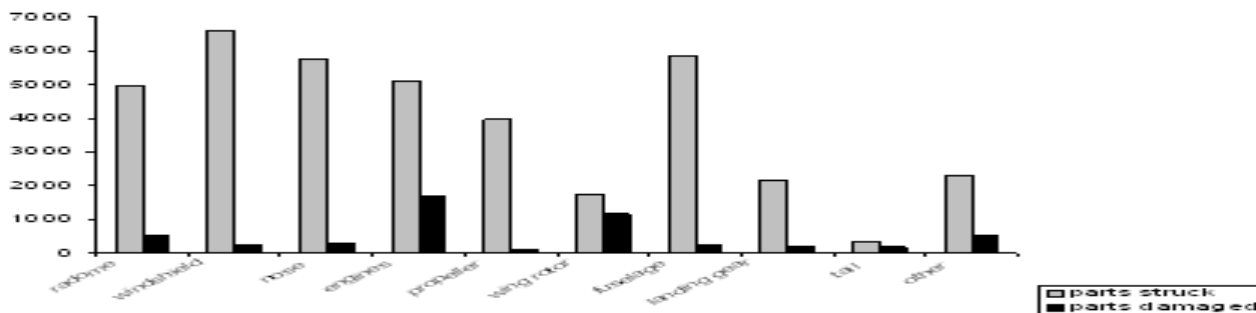


Chart 7 : parts of aircraft struck and damaged



# Amendment 10 to Annex 14, Volume I

- 9.4 **Wildlife** strike hazard reduction
- ***Note.—The presence of wildlife (birds and animals) on and in the aerodrome vicinity poses a serious threat to aircraft operational safety.***

# Strike by Animals Other than Birds



**December 2002**  
**Dash 8 landing at**  
**Airport in North**  
**Carolina hit**  
**White-tailed Deer**

**Nobody wins when wildlife are**  
**tolerated at airports**



**Impact collapsed**  
**nose gear**



**Professional programs**  
**to manage wildlife**  
**hazards at airports**  
**benefit both aviation**  
**and wildlife!**



# Alligator Alert!



## Alligator Alert at Orlando International Airport, USA 2001





# Amendment 10 to Annex 14, Volume I

- 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 of the wildlife hazard by competent personnel.**



# Amendment 10 to Annex 14, Volume I

- 9.4.3 Action shall be taken to decrease the **risk** to aircraft operations by adopting measures to **minimize the likelihood of collisions between wildlife and aircraft.**



# Amendment 10 to Annex 14, Volume I

- 9.4.4 The appropriate authority shall take action to eliminate or to prevent the establishment of garbage disposal... unless an appropriate **wildlife assessment** indicates that they are unlikely..... **Where the elimination of existing sites is not possible, the appropriate authority shall ensure that any risk to aircraft posed by these sites is assessed and reduced to as low as reasonably practicable.**



# Amendment 10 to Annex 14, Volume I

- **9.4.5 Recommendation.— *States should give due consideration to aviation safety concerns related to land developments in the vicinity of the aerodrome that may attract wildlife.***

*(it was a Note before)*

# ASM, Part 3 – Wildlife Control and Reduction (4<sup>th</sup> edition)



Doc 9137 - AN/901  
Part 3



## Airport Services Manual Part 3

### Wildlife Control and Reduction

Fourth Edition - 2011

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# What's New in ASM, Part 3

- Guidance dealing with wildlife other than birds
- Risk assessment of bird/wildlife strikes
- Best practices for bird/wildlife management programmes on airports
- Emerging technology and communications procedures
- ...

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Thank you