

Cairo Airport Company(CAC)
Birds and Wildlife Directorate

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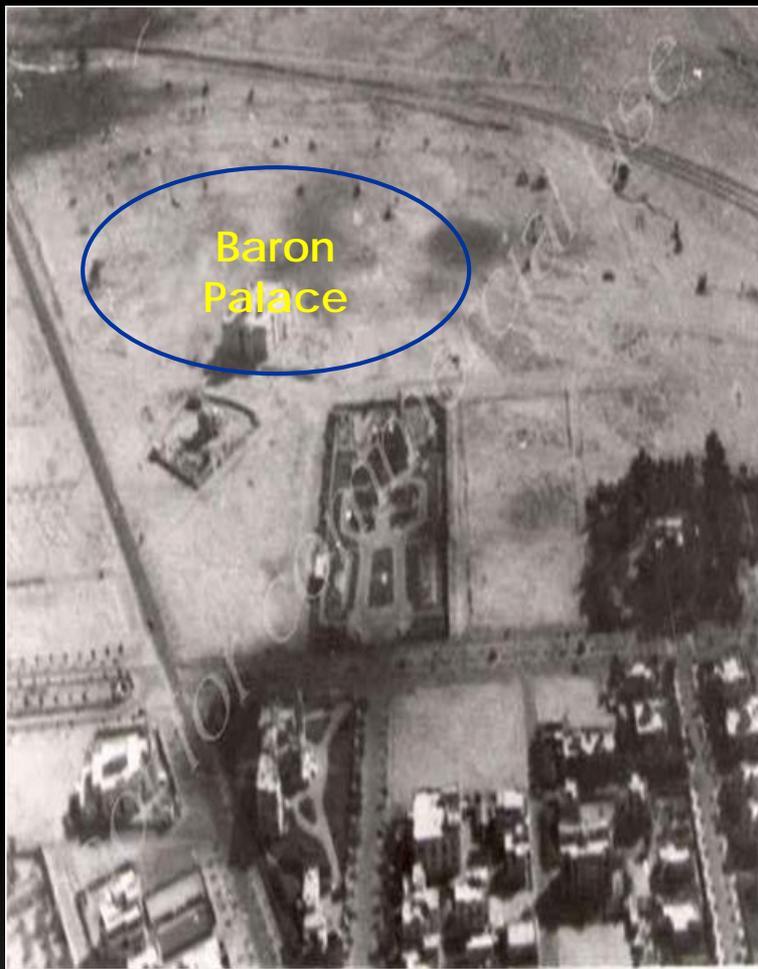


Birds/Wildlife Hazard Management At Egyptian Airport

Presented By: ECAA
Egyptian Civil Aviation Authority
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Cairo International Airport History





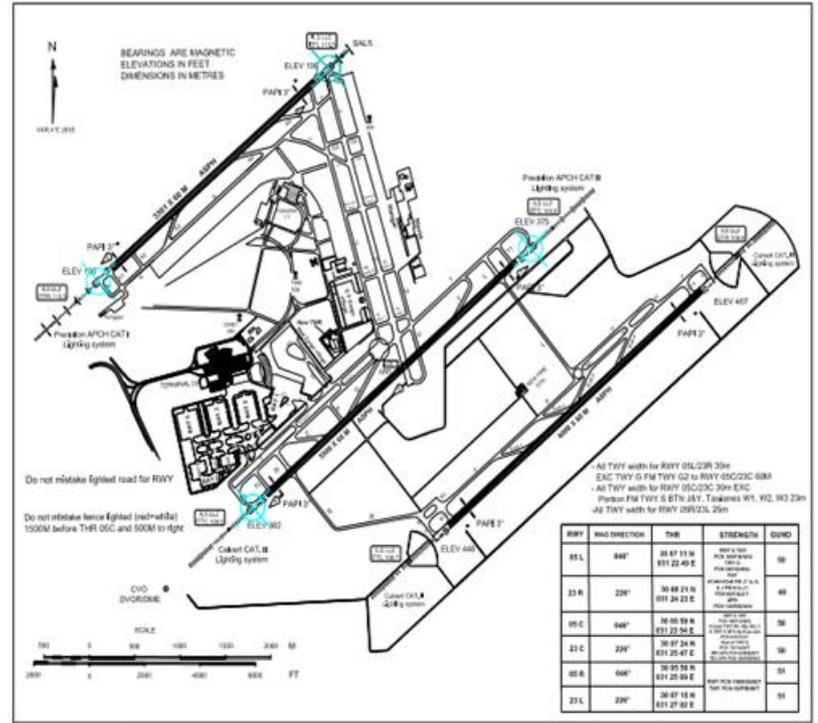
CAIRO INTERNATIONAL AIRPORT WAS INAUGURATED ON 18TH MARCH 1963, IN A WELL SELECTED, UNINHABITED DESERT AREA THAT DOES NOT LIE UNDER BIRD'S MIGRATION LINES AND NO SURROUNDING MOUNTAINS MAY BE INHABITED BY ANIMALS.



AERODROME CHART - ICAO 30 06 41N
031 24 50 E ELEV 467FT

TWR	116.1	126.875
PRE-FLIGHT	120.1	127.6
D-ATIS	122.6	
GND	120.4	121.9 126.375
EMERG	121.5	

CAIRO/CAIRO



Time by time, the airport developed gradually, as TB2 was held, then the halls related to TB1, the Air mall, then TB3 & the Third runway plus the innovation of TB2. The airport became more crowded with people and Air traffic.



The areas **surrounding** the airport became **more inhabited** with **people, buildings, clubs, hotels, streets, trees and waste dumps.**

All the above mentioned elements are considered a **perfect bird & wildlife attractant.**

Consequently, many complaints regarding birds & wildlife are received & going to be received.

Rules and regulations :

- 1- Annex 14 volume 1 ,ICAO DOC.9137-P3 , ICAO DOC.9774 .
- 2- RSA 13(MID-Region - Wildlife Management and Control Regulatory Framework & Guidance Material)
- 3- ECAR 139.345.
- 4-EACs 139 – 20 , 139-16 ,139-11 and139-25.
- 5-Aviation and Environment. Laws

Wildlife hazard assessments:

● The initial assessments should be included :

1- identify wildlife species .

2- describe the feature that may attract wildlife .

3- assess the wildlife hazard (likelihood - impact).

4- Recommended action for reducing the hazard.

Why should airport conduct of a wildlife hazard assessment in ADs vicinity ?

- Bird and other wildlife strikes to aircraft annually cause over \$650 million in damage in U.S. civil and military aviation only either physical damage or in flight delays.
- Bird strikes put the lives of aircraft crew members and their passengers at risk.
- More than **219 people have been killed** worldwide as a result of wildlife strikes since **1988**.

How Will This Cute Little Bird Hurt This Huge Airplane?



VS



Collision Force Impact

Collision Force (Impact)	Airplane speed Mile/Hour	Bird size and weight
1330 Pounds	100 Mile	Birds of <u>3</u> Inches size And 1 Pound Weight
5320 Pounds	200 Mile	
12000 Pounds	300 Mile	
21000 Pounds	400 Mile	
33300 Pounds	500 Mile	
48000 Pounds	600 Mile	
2000 Pounds	100 Mile	Birds of <u>4</u> Inches size And 2 Pounds Weight
8000 Pounds	200 Mile	
18000 Pounds	300 Mile	
32000 Pounds	400 Mile	
50000 Pounds	500 Mile	
72000 Pounds	600 Mile	

The Result Is...



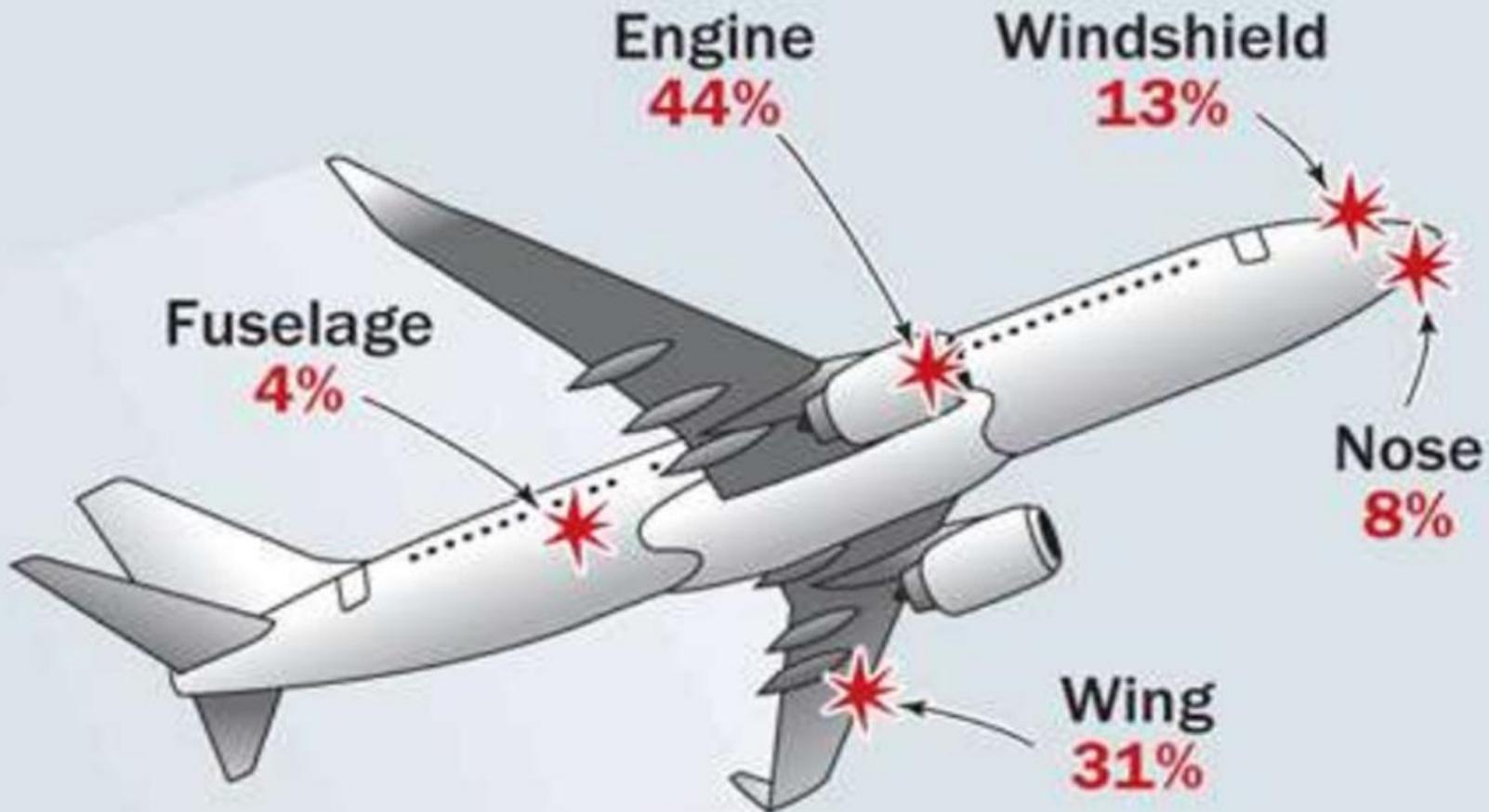








LOCATION OF BIRD STRIKE DAMAGE



SOURCE: EASA

Bird Attractants around airports:

- Natural Parking of birds.
- Hotels Around airports.
- Sea.
- Garbage dumps.
- ...

Migration:

- Many of EAC airports are located a long traditional annual bird migration routes.
- The migratory seasons are:
 1. Autumn (From August to November)
 2. Winter (From December to February)
 3. Spring (From March to May)

Local movements :

- Some birds make daily flights across airports.

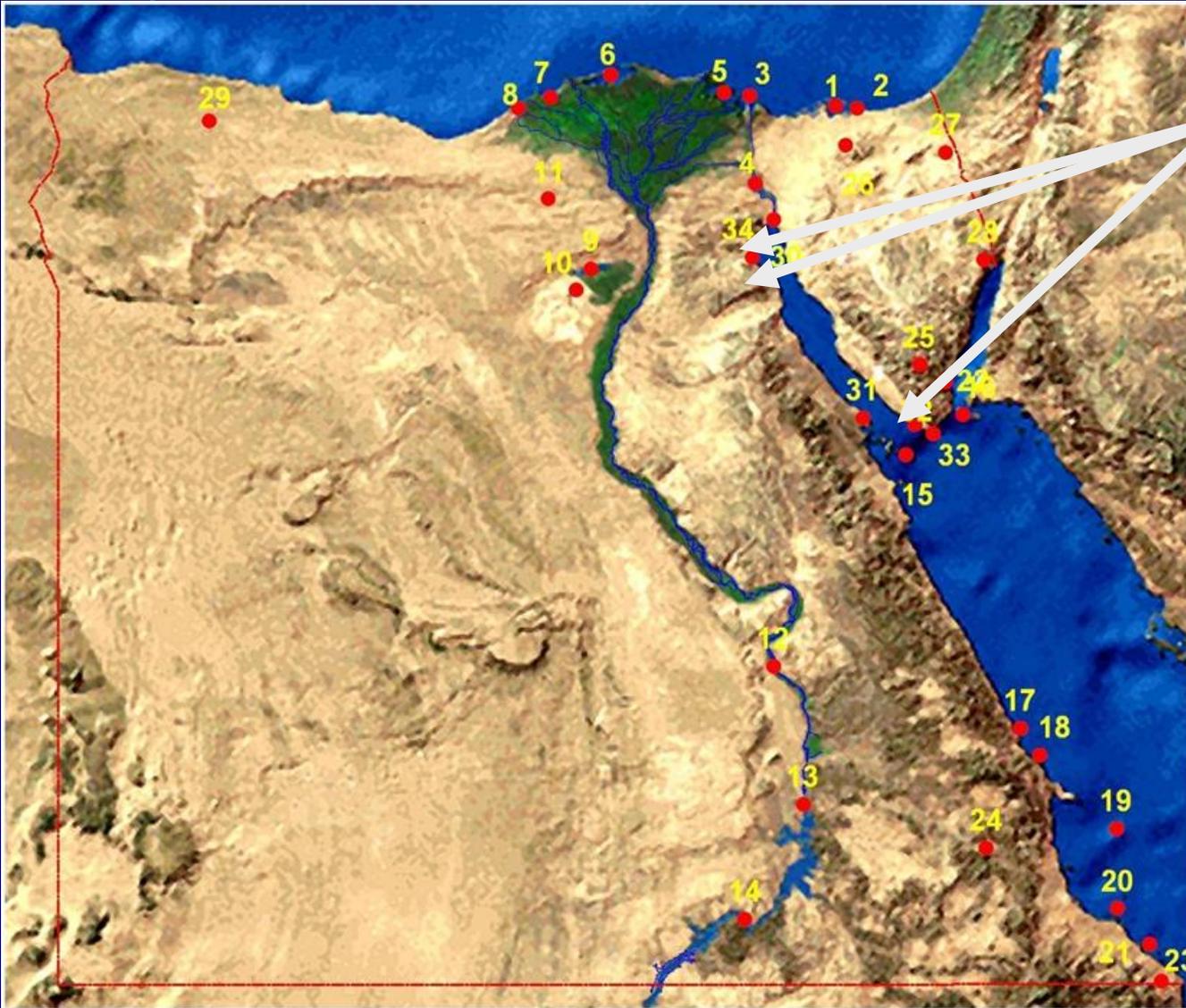
Bird/ wildlife strike is of natural problems facing Egypt because of:

- 1 –Geographical location of Egypt (Mid of Asia , Africa ,Europe).
- 2- Geographical location, locating of bird migration.
- 3 - large area of the Egypt.
- 4 - Number of airports(23 ADs).
- 5 - The large size of Flight Operations.

Migratory Routes Of migratory birds



Sensitive Area of Migratory Birds in Egypt



Neck of bottle area

1.2 Millions of Raptors

White stork من

Pelican من 6000

34 of sensitive, important area of birds (about 34000km²)



Some bird breeds flyways over Egypt as in the wildlife hazard management plan :



White stork
migratory
flyway



Some bird breeds flyways over Egypt as in the wildlife hazard management plan



**Raptors
Migratory flyway**



Wildlife hazard assessments:

- The initial assessments should be included :
 - 1- identify wildlife species .
 - 2- describe the feature that may attract wildlife .
 - 3- assess the wildlife hazard (likelihood-impact).
 - 4- Recommended action for reducing the hazard.

General Authority :

- 1- Establish Environmental Protection Unit at Headquarter.
2. Establish Environmental Protection Unit at each airport.

Roles and responsibilities :

- 1- Civil aviation Authority.
- 2- Airport Manager.
- 3- Assistant Manager.
- 4- ATC.
- 5- wildlife management team(wildlife hazard assessment) .
- 6- Safety Department.

1-Civil aviation Authority

- Responsible for the development of the regulatory and guidance material applicable to aerodrome design and operations.
- evaluates the Aerodrome Manual submitted by an Aerodrome Operator including the wildlife hazard assessment and the wildlife control measure

1-Civil aviation Authority

- collects, through its reporting systems, information from aircraft operators, airport personnel, and other sources, on the presence of wildlife on or around the aerodrome constituting a potential hazard to aircraft operations. .
- adopts the mutual coordination and communication among aerodrome operator and any other state departments regarding land-use planning and development in the vicinity of aerodrome as long as this development affects the likelihood of wildlife existence.

1-Civil aviation Authority

- CAA submits wildlife strike reports to the ICAO bird strike information system .

The Importance Of Reporting a Bird strike

- The **ICAO Birds strike Information System (IBIS)** insures the fast, accurate and detailed reports, which will eventually help us in the management process of the bird strike and wildlife management system.

2- Airport Manager

- ◉ Implementation of WHMP.
- ◉ Provision of training and awareness program.
- ◉ Submission of the annual strike reports .

3- Assistant Manager

- ◉ Coordinating and supervising the over all management of WHMP.
- ◉ Coordinate the training .
- ◉ Ensure the necessary equipments is available .

4- ATC:

- ◉ Informing wildlife hazards controller ,Env. Departments ,operation departments in case of observing any bird or wildlife in the vicinity or when receiving notification from the pilot.
- ◉ Warning pilot in case of wildlife observation .
- ◉ Report any wildlife hazard.

5- wildlife management team(wildlife hazard assessment) .

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- Maintenance wildlife management (strike data – activity and numbers of birds / wildlife)
- WHMP measure under taken ,firearm use details .
- Coordinating the monitoring program .
- Preparation the annual strike reports..
- Identification of equipments , training needs

6- safety department

- ◉ Receiving all wildlife strike and events to apply risk assessments .
- ◉ Chare in the wildlife hazard control committee .

Wildlife Strike Hazard Reduction:

- 1- Habitat modifications .
- 2- Repellants .
- 3- Positive ways .

HECA initial ecological study:

- Air travel has become more popular, fast and easy way of travelling resulting in increasing numbers of aircrafts & aircrafts`s movements.
- So , **in 2010** , HECA Initial ecological study was performed by a team of Faculty of Veterinary Medicine faculty of Suez Canal University.

CAC development of a habitat management plan

- **Wildlife Hazard Assessment in the vicinity of Cairo airport includes:**
 - all birds and wildlife species identification, sizes, location & movements and population.
 - Describes the aerodrome features & areas that attract wildlife.

HECA development of a habitat management plan

- assessed the wildlife hazards or potential hazards to aircraft operating to or from the aerodrome, in terms of:
 - i. the likelihood of occurrence of a wildlife strike; and
 - ii. its impact on the flight
- ◉ recommend actions for reducing identified wildlife hazards to aircraft operating to or from the aerodrome,
- ◉ One of the main recommend actions at Cairo Airport is control in habitat management

HECA WHMC department policy

- Another main recommend actions at HECA is the recent WHMC department policy encourages the land use planning of its vicinity, construction, maintenance, operation of the airport and its facilities in a manner that minimizes these hazards.



Types of Birds & Wildlife At Cairo Airport

Study Results:-

- birds at Cairo Airport are resident (native to the airport for all or most of the year).
- The birds are of small size such as:





Most Common Types are:
Pigeons, Crows, Doves, Sparrows , Dogs and
Cats

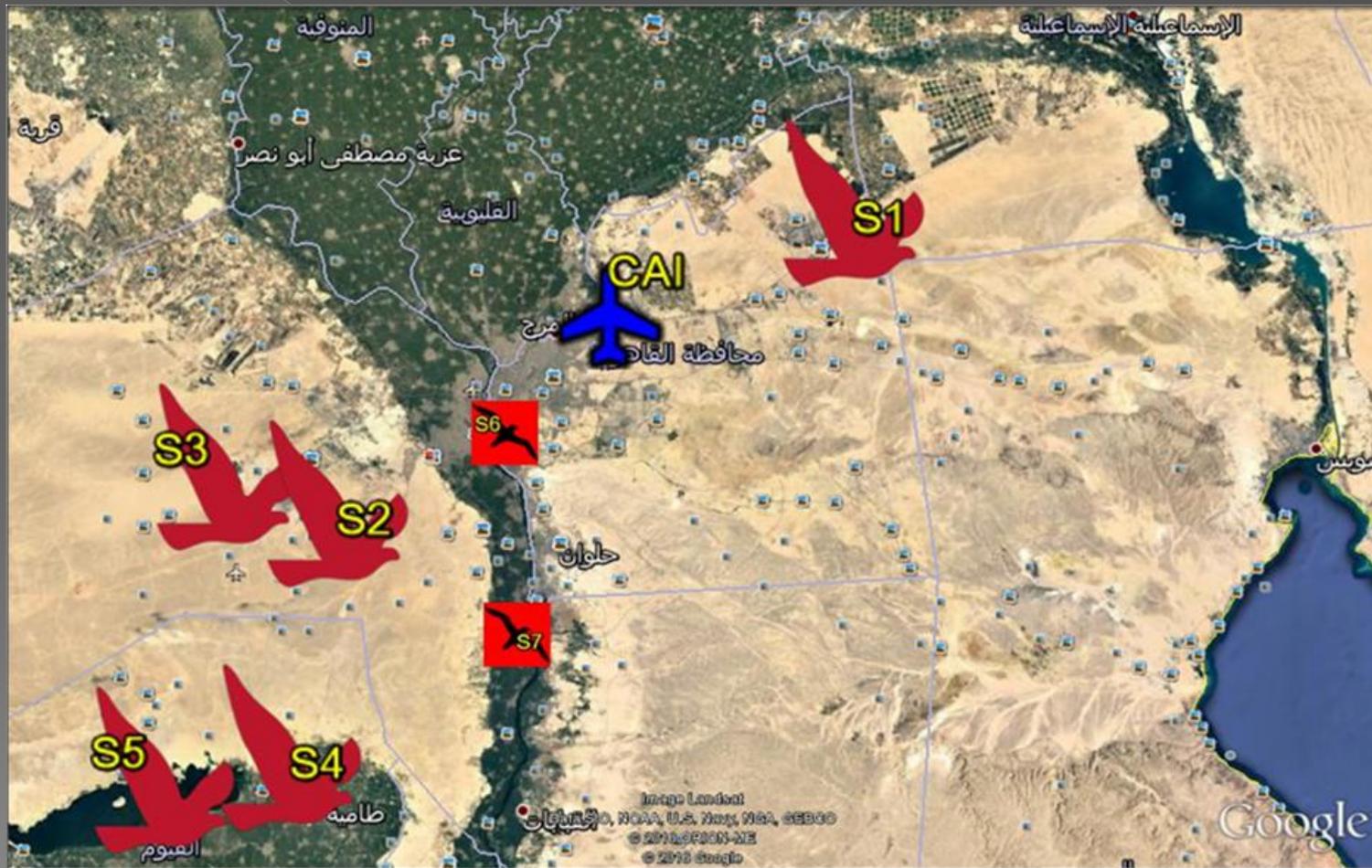
- Animals are Transient (periodically inhabit airport sites) like Cats, Foxes and Dogs.



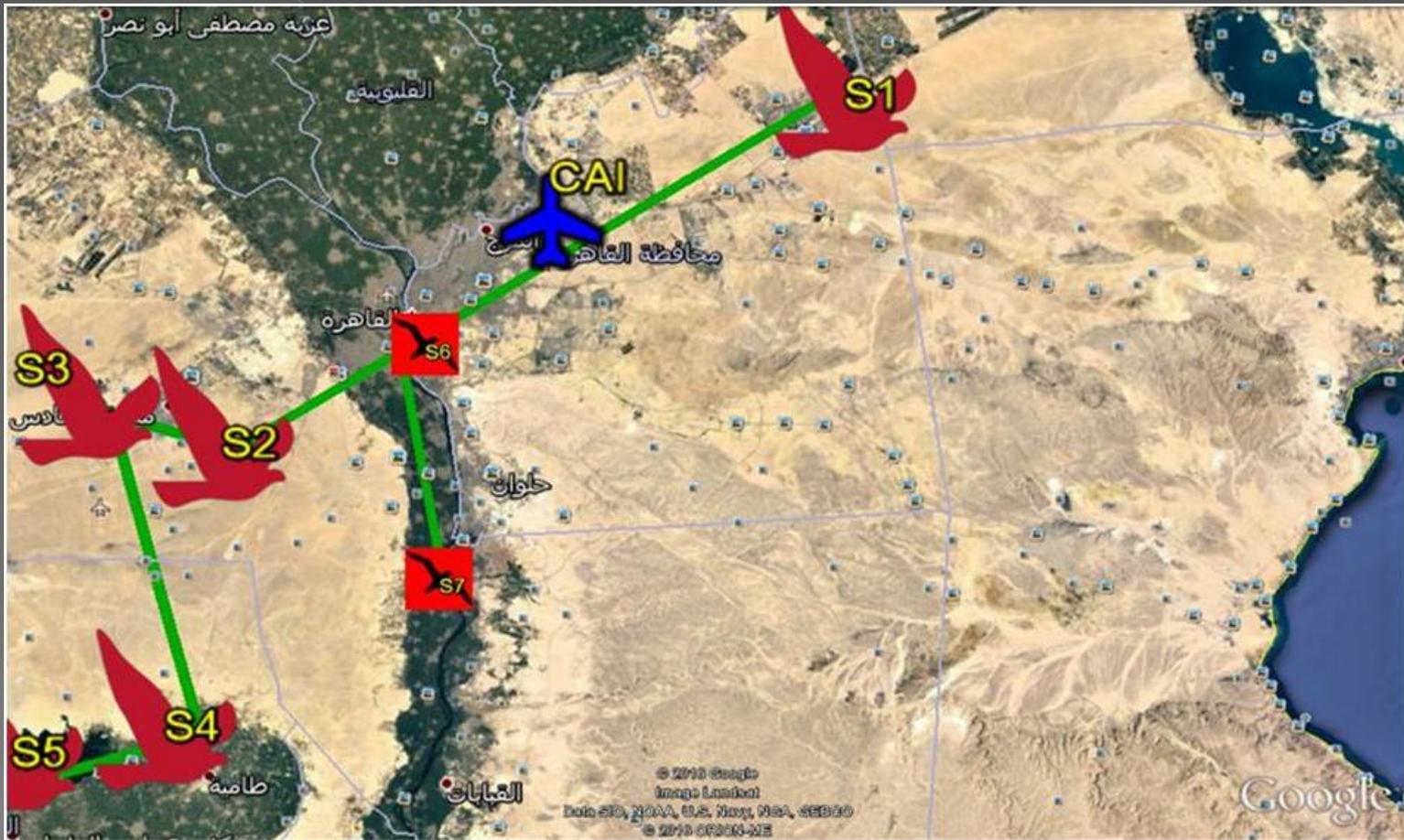
HECA development of a habitat management plan

- In 2015 and renewed in 2018 a new study conducted to stand on the latest updates in the wildlife and bird strike hazards and its management in Cairo International Airport .
- In this study areas that attracts wildlife and birds were identified, plans for their management were conducted.
- Birds migrations routes and their intersection with the aviation routes (flight paths) were identified.

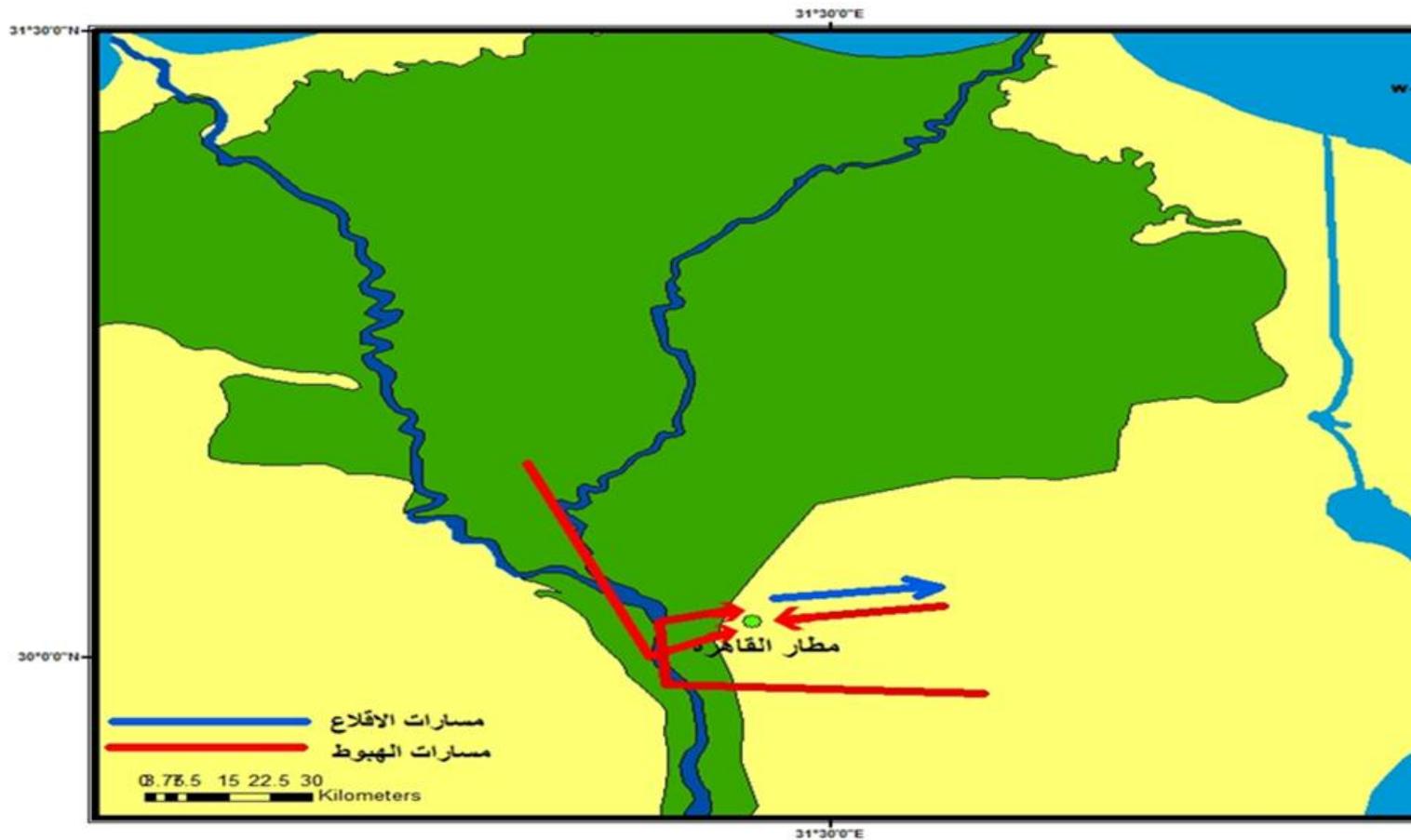
Birds attraction areas and its position according to Cairo International Airport



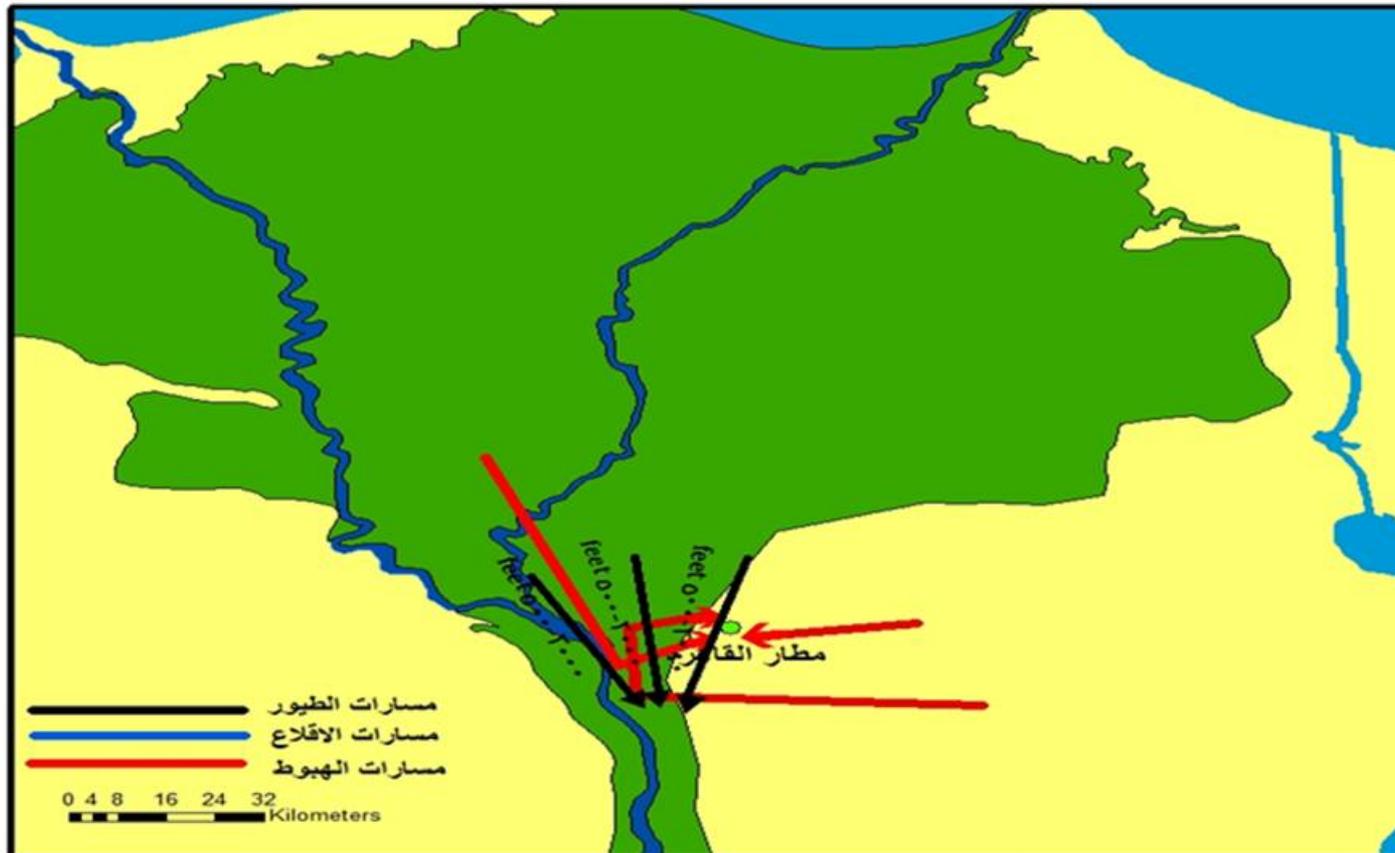
Birds Movement Patterns Between Those Points



Flight Paths In The Approach Area



Birds Routes and its Intersection With Flight paths in the Approach Area



Habitat Management In Cairo International Airport

Food – Water - Shelter

Habitat Modification

- Eliminate the standing water.
- Thinning the trees.
- Managing the grass height (not more than 20 cm).
- Daily get ride of garbage.
- Ideal transfer station.
- Searching of nests of birds and removal of it.
- Non fruity trees .

Habitat modification Actions₁

○ Attractants of Birds & Wildlife:

Most birds & mammals are attracted to airports by sources of food, water & by the availability of shelter, where they can safely rest, nest & roost.

○ Food Sources :

- > Garbage (edible waste)
- > Another party collect garbage regularly from all over the airport including its premises to insure comprehensive removal of garbage.
- > Regular Inspection is performed all over the airport sites including airlines caterings & areas under construction.
- > Catering of Egypt Air needs severe habitat modification as it is filled with Casuarina trees which is full of crows nests.
- > Besides, uncovered garbage attracts birds.



Habitat modification Actions



○ Water:

- > Periodic inspections are conducted, so any damage happens to water pipes is repaired at once upon reporting.

Habitat modification Actions₃

◎ Shelter habitats include:

safe areas where wildlife perch, roost and rest.

Birds find man – made or natural shelter in the following areas:-

- ✓ Trees.
- › Overhead wires, towers.
- › Vents and ducts.
- › Building roof ledges, crevices & holes.
- › Open drainage ditch.





- HECA contracted with a Company to trim the trees in a way sun may penetrate among the trees. They also were thinned at their tops to become less attractant.
- This modification procedure reduced the number of crows at that area about **70%**, the rest shall be removed upon the coordination to maintain the compliance of Egypt Air (national airliner) catering.





Airport wildlife is controlled by:



Airport wildlife is controlled by:

- Removing Wildlife, either dead or alive.



Airport wildlife is controlled by:

- Excluding Wildlife from the Airport through the use of fences.



- Another area is at TB1, as there is another colony of pigeons in the space between the façade of the building towards the airside & its metal plate.
- A recommendation to delegate Service Company to a comprehensive removal of all nests, birds & remains, upon cleaning the space,
- engineering sector is recommended to cover all these spaces with wire or net.



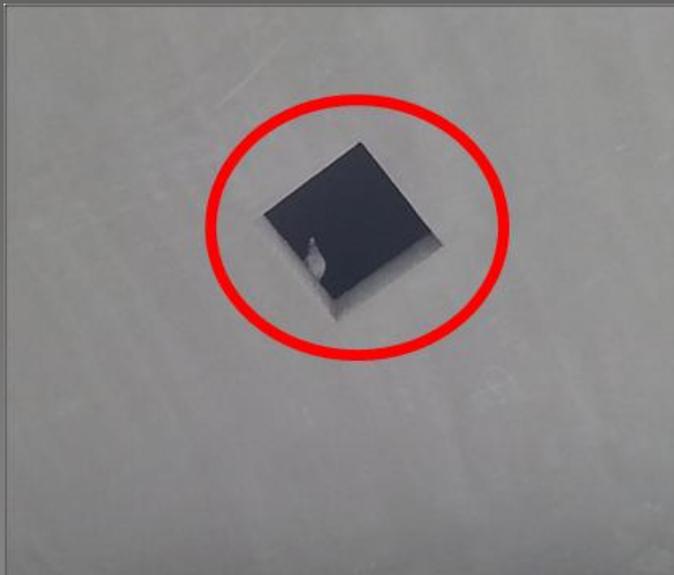
○ Hall 3:

- > Its ceiling is curved like a bow so, a lot of pigeons enjoy roosting & nesting inside the hall, so, the engineering sector is recommended to cover all holes, vents & ducts .



At TB3 & TB2:

- The bridges in front of departure hall is caved from the inside & there are a lot of holes under it which allows the pigeons to penetrate inside it and nest.
- Recommendation to the TBs managers to assign the service company to clean the bridge ,then the engineering sector shall cover all the holes with net.



- More & above, through ecological surveys on all sites of the airport which are conducted by the **Environmental inspection department** regularly to provide the department with critical knowledge that require to develop effective measures.
- Co-operation protocols have been made with the districts that surround or close to the airport to insure safe airport and minimize birds & wildlife hazards.
- We believe that reporting is a very important

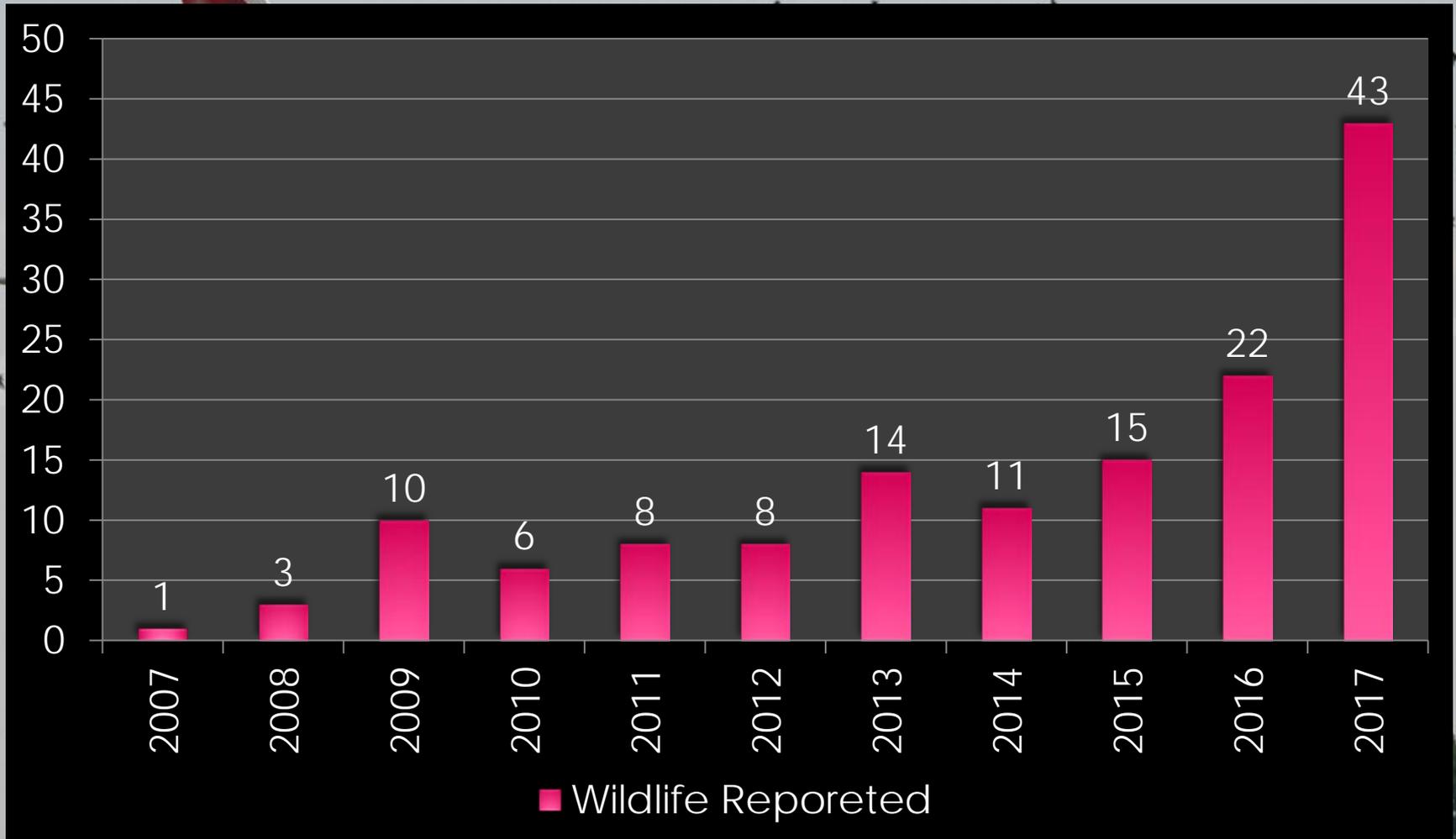
The Importance Of Bird strike & wildlife Reporting

- The data collection and analysis of actual wildlife strikes are the necessary first step to understand the complex problem of aircraft collisions with wildlife

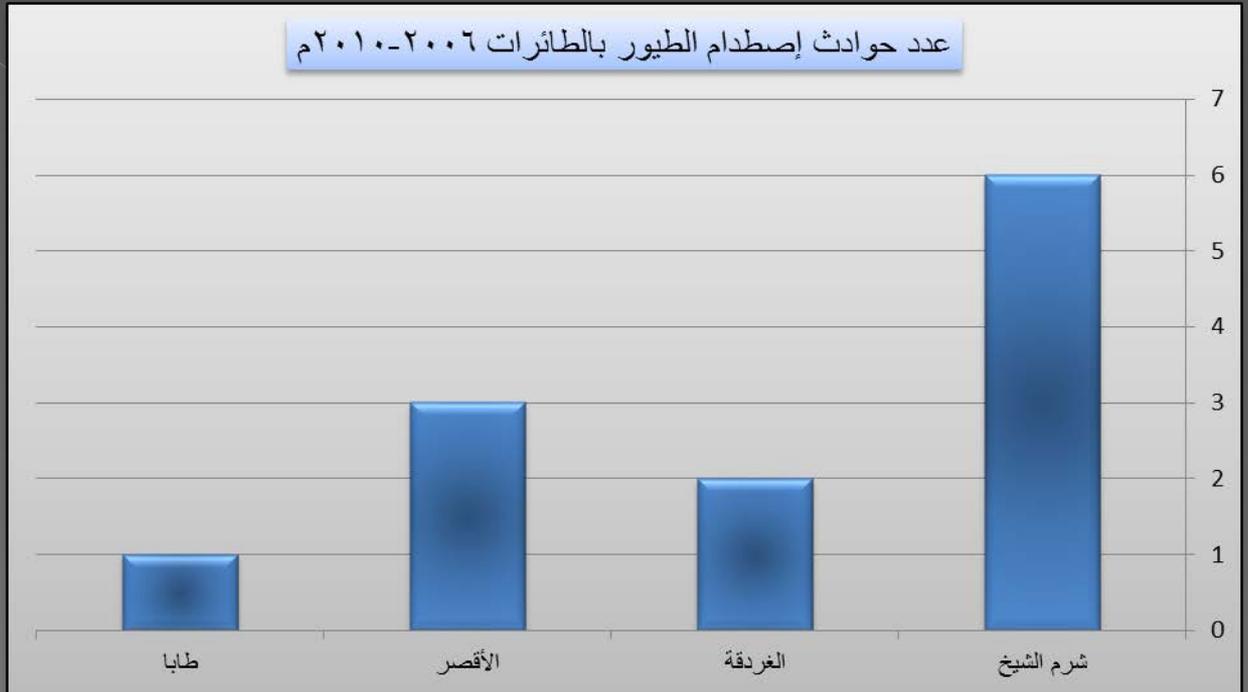
The Importance Of Reporting a Bird strike

- Analyses of wildlife strike data have proven invaluable in determining the magnitude, nature, and severity of the wildlife strike problem. The database provides a scientific basis for identifying risk factors; justifying, implementing, and defending corrective actions at airports; and judging the effectiveness of those corrective actions. The database is also of critical value to engine manufacturers and aeronautical engineers.

Wildlife Reported at Cairo Airport



عدد حوادث إصطدام الطيور بالطائرات ٢٠٠٦-٢٠١٠م



عدد حوادث إصطدام الطيور بالطائرات

شرم الشيخ	6
الغردقة	2
الأقصر	3
طابا	1

The Importance Of Reporting a Bird strike

- We notice that the steady increase in reports was the result of several factors:
 - ❑ The increased **awareness** of the wildlife strike issue
 - ❑ The increase in **aircraft operations**
 - ❑ The increase in **populations ,wildlife species and their hazardous**
 - ❑ and the increase in the **number of reportes and incidents.**

The plan of eradication

- 1- Survey of infested area .
- 2- Methods of eradication .
- 3- Birds and wildlife proofing measures .
- 4- Regular inspection , maintenance control .
- 5-Training.
- 6-Tools and equipments.

Mobile Units

For each runway one staff with

- – a 4x4 car equipped with distress call generator
- – an alarm gun
- – a Laser gun
- – ear protection
- – 10 x 42 binoculars



Alarm guns



Binoculars :



Telescope:



Products

Laser Gun:

Advantages:

- Hand Held
- Easy to use
- Humane dependant
- Battery operated

Usage:

- Useful in deterring birds from staying on airfields



Falcon Captive Breeding :



Training

- 1 Integrated Environmental course
- 2 Environmental Impact assessment (EIA)
- 3 Internal Audit for Environmental Management System
- 4 Auditor / Lead auditor ISO14001/2004
- 5 Auditor / Lead auditor ISO 14001/2015
- 6 Auditor / Lead auditor ISO 9001/2015
- 7 Safety Management System Aerodrome

Training

- ◉ 8 Aerodrome Certification
- ◉ 9 Bird strike and Wild life Management in Civil Aviation
- ◉ 10 Best Practices of Response for Wild life and Bird strike
- ◉ 11 Runway Incursions
- ◉ 12 Egyptian Holding Company for Airports and Air Navigation
- ◉ (EHCAAN) Airport Development Project (ADP) (18 course)
- ◉ Emergency and Crises Management



Thank you