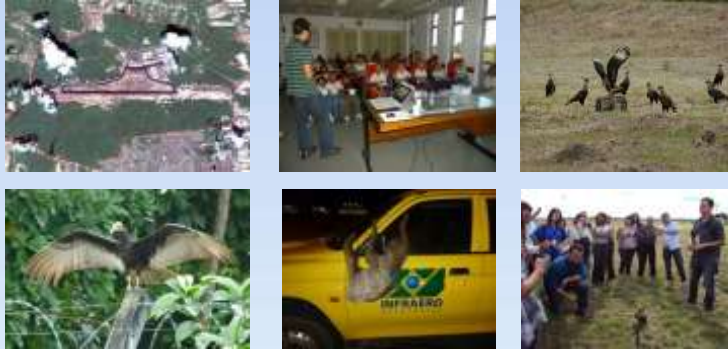




Risk Management of Wildlife in Brazil: actions at INFRAERO airports



Thaíse Leandro Barbosa; Leila Ramos Neves; Rossana de Paula Vilamiu ;Tania Cristina Chaves Farias

June 24th, 2012



INTRODUCTION

- Founded in 1972, the **Brazilian Airport Infrastructure Company (INFRAERO)** is a public company → 97% of the brazilian movement air transportation;
- Altogether there are:
 - 67 airports,
 - 69 Air Navigation Groups (GNA),
 - 51 Units of Aeronautics Techniques (UTA)
 - and 34 Cargo Logistics Terminals (TECA);
- 2.88 million takeoffs and landings of domestic and foreign aircraft;
- 178.8 million passengers per year;
- The main functions of the company are provide infrastructure and airport and air navigation services, contributing to national integration and sustainable development of the country.



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INTRODUCTION

- **Some situations:**

- **disordered occupation of the soil;**
- **inadequate management of municipal solid waste**



Urban waste in open street market, AM.



Urban waste in open dump, AM.

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INTRODUCTION

- **Some situations:**

- **disordered occupation of the soil;**
- **inadequate management of municipal solid waste**



Ox carcass disposal near the airport area with black-vultures, BA. (file: CDT/SBSV)



Disposal of urban waste on beaches near airport, attracting vultures, BA.

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INTRODUCTION




- CONSEQUENCES
 - Scenario of conflict with aviation safety









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INTRODUCTION




Reported Strikes in Brazil from 2000 to 2012



Year	Reported Strikes
2000	1900
2001	1901
2002	1901
2003	1901
2004	1901
2005	1901
2006	1901
2007	1901
2008	1901
2009	1901
2010	1901
2011	1903
2012	738*



Increasing number of reports

* Values until May, 2012.

Source: CENIPA

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INTRODUCTION



National Legislation - Obligations of the airport managers

PBGRA – Bird Risk Management Basic Plan

- **Elaboration of the Risk Fauna Management Plan, with procedures to be adopted by the airports.**
- **Completing of official notification of birdstrike events (CENIPA -15).**
- **Initial survey of attractive sites for birds near the airport.**
- **Inform the military authority (SERIPA – Aeronautical Accident Investigation Regional Service) the presence of attractive sites for birds near the airport.**

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AIRPORTS




- **Actions taken by INFRAERO to face the wildlife matter**

➤ Strategies

- 22 biologists involved with: wildlife management and the supervision of wildlife management plans
- 16 plans at the priority airports

 **Wildlife management plans**

 **Biologists from INFRAERO**



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ACTIONS

Such actions allowed:

- **Training of employee**











Treining for content of fauna, wildlife management course, operational safety and airport wildlife management

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ACTIONS

• **Wildlife and habitat monitoring**




Hazardous species

CATHARTIDAE

Turkey vulture (*Cathartes aura*)

Black vulture (*Coragyps atractus*)

Lesser yellow-headed vulture (*Cathartes*)

FALCONIDAE

Southern caracara (*Caracara plancus*)

Yellow-headed caracara (*Milvago chimachima*)

CHARADRIIDAE

Southern lapwing (*Vanellus chilensis*)

ARDEIDAE

Great egret (*Ardea alba*)

Snowy Egret (*Egretta thula*)

CAVIIDAE

Capybara (*Hydrochoerus hydrochoeris*)

MEGALONYCHIDAE/BRADYPODIDAE

Two-toed Sloth/Three-toed Sloth

MYRMECOPHAGIDAE

Anteaters

Southern tamandua

CANIDAE

Domestic dog

FELIDAE

Domestic cat



American Golden-Plover







Bare-faced ibis











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ACTIONS

• Identification and mapping attractive sites on airports



- Shavings vegetation
- Wetlands or areas subject to flooding
- Disposal of food
- Insect colonies
- Dead animals
- Nests, eggs and chicks
- Vegetation (flowers, fruits and seeds)
- Grasslands
- Tall vegetation along the wall
- Artificial structures for birds landing

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ACTIONS

• Identification and mapping attractive sites in the vicinity of airports



- Dumps
- Irregular deposit of rubbish
- Poorly controlled landfills
- Fishing
- Tanneries, slaughterhouses, abattoirs and farms
- Agriculture risk

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ACTIONS  IBSC Conference
Stavanger 25 - 29 June 2012 

- **Development of local plans for wildlife management**




- Manual of procedures and actions aimed at reducing the wildlife hazardous
- Guide to do the assessment of wildlife hazardous
- Comply and fulfill environment legislation
- Procedures to implement programs about control vegetation, fauna, human activities etc
- Names, phone numbers and functions of responsible persons for treatment of this subject.

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ACTIONS  IBSC Conference
Stavanger 25 - 29 June 2012 


- **Identification of species involved in collisions**




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• Identification of species involved in collisions








Black Skimmer - SBJV




Barn Owl - SBCG



Burrowing Owl- SBBR



Picazuro Pigeon- SBKP



Nacunda Nighthawk- SBPL

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ACTIONS




• Implementation of techniques and control strategies fauna

Management of habitat and food sources



Placement of spicules- SBKP, SBGL, SBSP.



Test height cutting grass - SBBR (under development)



Recovery of the fence to prevent access of fauna

-SBCF



Equipment Bird Wailer - SBBR



Pyrotechnics



Test with solar equipment - "Espanta Aves" - SBRF



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ACTIONS



- implementation of techniques and control strategies fauna



- Trappings, repellents, falconry

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ACTIONS



- Development of specific bird management

Vultures:

SBGR



SBEG



Southern caracara (*Caracara plancus*)



Rock Pigeon (*Columba livia*)



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ACTIONS

Relocation of wildlife



→ CETAS



→ IBAMA



→ ADOPTION

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ACTIONS

• creation of environmental education projects



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Evolution of the registration and identification of wildlife collisions as well as the movement of aircraft in Brazil from 1996 to 2011



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CONCLUSIONS

Such initiatives enabled as results:

BETTER...

- Monitoring of hazardous species to aviation in each airport and its surroundings
- Understanding of the main attractions of the fauna at airports belonged to INFRAERO;
- More effective management of wildlife risk at airports belonged to INFRAERO network.
- The database is essential to justify the presence of qualified biologists trained in wildlife damage control.
- In addition, the company has sought the participation of various levels of government and of civil society to the management of wildlife risks, promoting meetings and debates on the subject.

