

## 2011 Bird Strike North America Conference



## Risk Fauna Management In Mexico: Accomplishments in ASA airports

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# Introduction

**Aeropuertos y Servicios Auxiliares (ASA)** is an independent government agency. The main functions of the organization are to design, build and operate airports, as well as 62 fuel farms.

Since 1965, ASA has contributed to the building of the airport industry in Mexico. ASA is responsible of providing a safe, secure, efficient service, and environmental concerns.



# Airports

- Until 1998, ASA operated 63 airports in the Mexican Airport System.
- Currently, ASA operates 18 airports and participates as a partner in other five.
- **15 airports have a Wildlife Hazard Management Program.**





# Reporting wildlife strikes in Mexico

- Increase in the number of incidents
- Mexico has participated in the Bird Strike Committee USA-Canada Conferences since 1997
- Web report: <http://aplicaciones3.sct.gob.mx/riaf/home.do>



# Wildlife Hazard Management Program



# Airport Datasheet



## Ficha técnica

### Datos Generales

Nombre: Aeropuerto Internacional de Cd. Obregón  
 Designador: CEN  
 Categoría: V  
 Clasificación: Internacional  
 Tipo: Regional  
 Superficie: 385.6 ha

### Pistas

Número de pistas: 1  
 Tipo de pavimento: Asfalto  
 Designación pista: 13-31  
 Dimensión pista: 2,300 x 45 m  
 Capacidad (ops. x hora): 20

### Rodajes

Rodaje: Alfa de 370 x 23 m  
 Tipo de pavimento: Asfalto  
 Rodaje: Bravo de 215 x 23 m  
 Tipo de pavimento: Concreto

### Plataforma Comercial

Superficie: 17,325 m<sup>2</sup>  
 Tipo de pavimento: Concreto Hidráulico  
 Número de posiciones: 3

### Plataforma de aviación general

Superficie: 10,640 m<sup>2</sup>  
 Tipo de pavimento: Asfalto  
 Número de posiciones: 18

### Edificio terminal comercial

Superficie total: 4,069.17 m<sup>2</sup>  
 Capacidad (pas. x hora): 800

### Datos operacionales

Horario de operación: 06:00 a 18:00 hrs.  
 Avión máximo operable: Boeing 757



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SAAB-340 (Aeroméxico)



ERJ-145 (Aeroméxico)



LET-410 (Aeropacífico)



Cessna-208 (Aerocalafia)

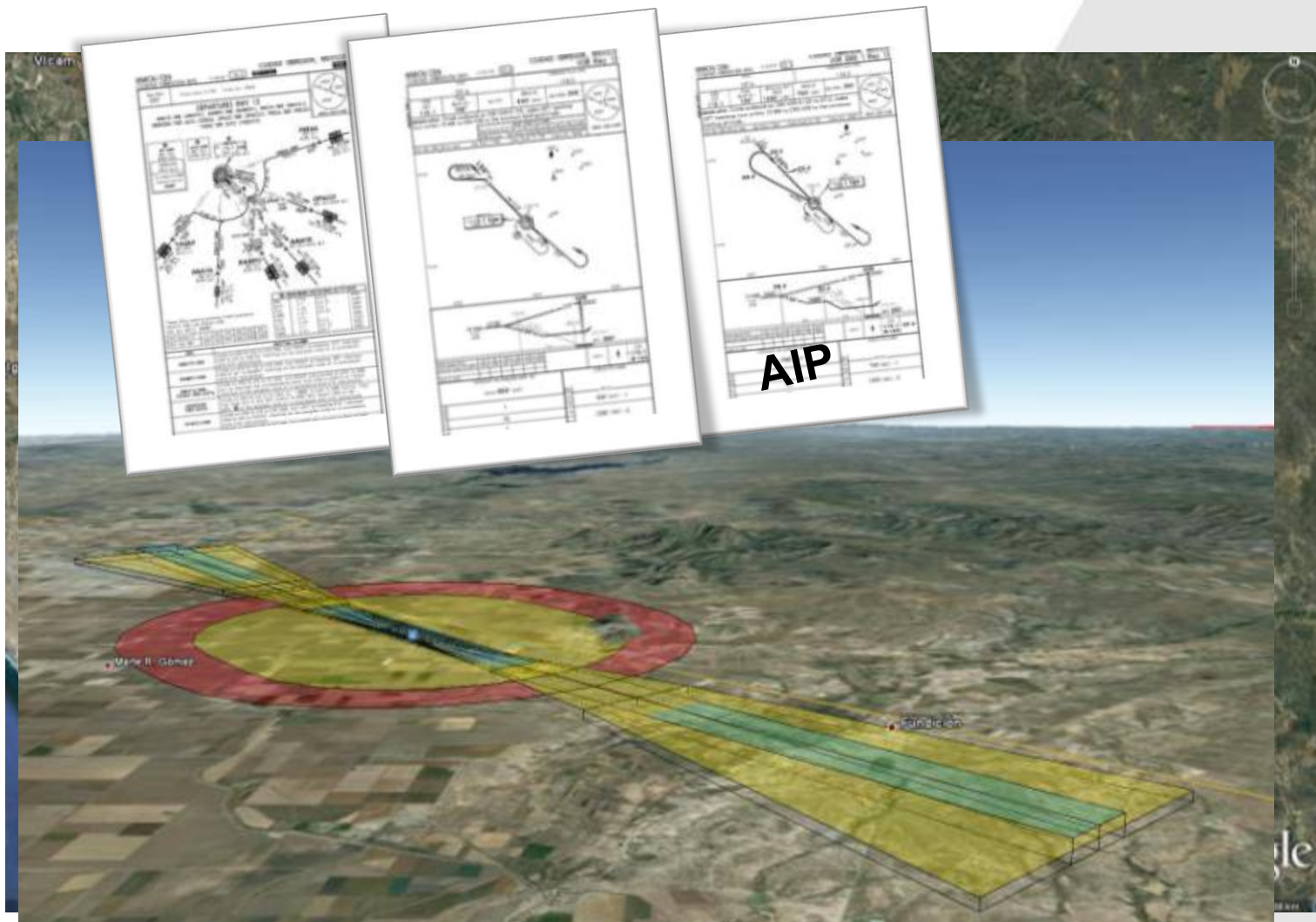


# Recognizing hazardous wildlife attractants on or near airports



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# Attractive sites for hazardous wildlife near airports



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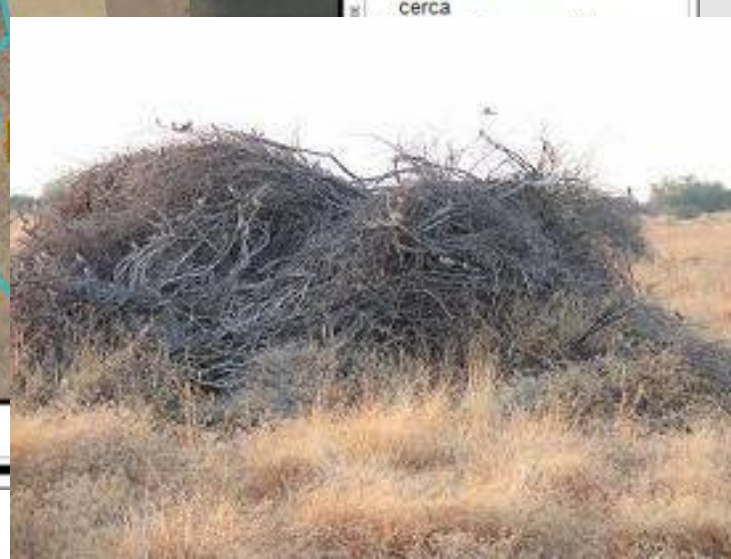




# Identification of attractive sites on airports



7. Hoyos en la base de la cerca



# Airport vegetation and zonation (TPQ)



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# Airport zonation

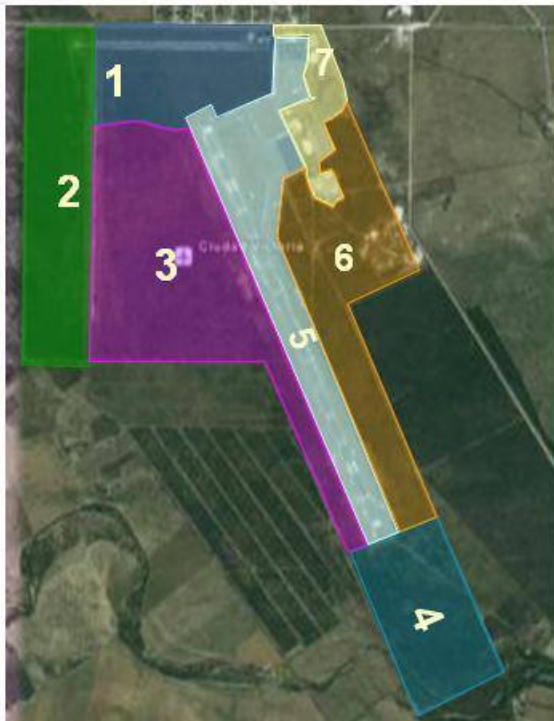


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## CVM



## CTM



## UPN





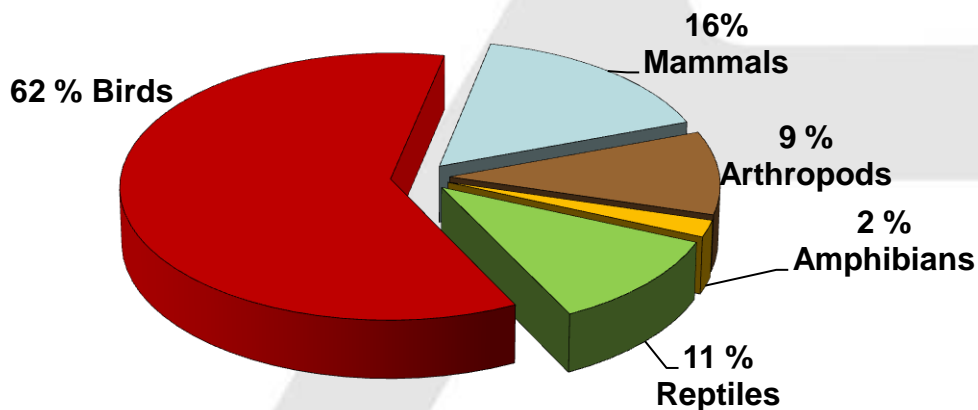
# Hazard assessment

**Hazard level:** 1) size, 2) number of organisms, 3) behavior in relation to aircraft, 4) likelihood of being in the path of an aircraft and 5) strike records

Hazard level	Value
Very High	4
High	3
Medium	2
Low	1
Undetermined (ND)	0

Airport	Species	Hazard level					
		Very High	High	Medium	Low	ND	To humans
CTM	126	9	11	17	77	13	0
CVM	109	13	11	13	57	10	5
UPN	94	3	3	13	25	50	0

**Wildlife Distribution**



# Endangered or threatened species



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Airport	NOM-059-SEMARNAT-2010 Official list of species under conservation				IUCN	CITES		Total
	Endangered	Threatened	Vulnerable	Endemic	Critically Endangered	I	II	
CTM	1	5	9	-	-	-	8	23
CVM	-	3	6	2	-	-	9	15
UPN	1	1	1	10	1	-	3	15

**IUCN** = International Union for the Conservation of Nature.

**CITES** = Convention on International Trade in Endangered Species of Wild Fauna and Flora

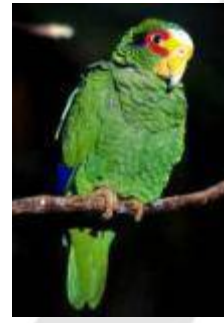
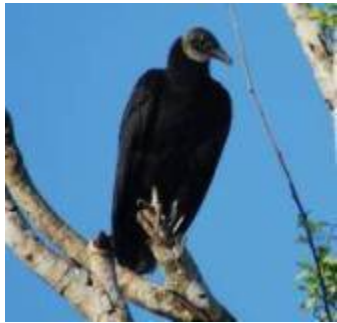


**SEMARNAT: Ministry of Environment and Natural Resources**

# Hazardous Species



## CTM



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## CVM



## UPN





# Stages for Implementation



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## Stage 1 Habitat & infrastructure Management

## Stage 2 Implementation of wildlife control strategies

- Vegetation management
- Retention pond management
- Fencing improvement
- Wildlife deterrence
- Animal carcasses management
- Wildlife capture and relocation
- Reproductive control
- Lethal control

# Stage 1. Wildlife and habitat monitoring



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# Stage1. Wildlife Monitoring

- ✓ Monitoring and record for data base
- ✓ Empty nest removal
- ✓ Fence survey



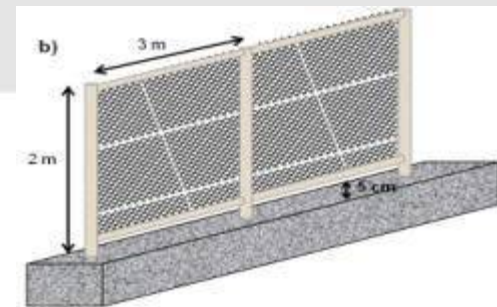
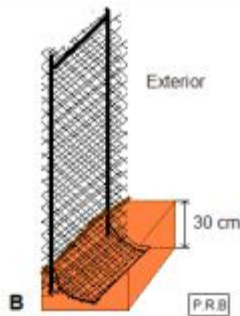


# Stage 1. Fencing improvement



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# Stage 1. Net placement (TPQ)





# Stage 1. Trap Camera monitoring



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Dirección de Operación



	1	2	3	4	5	6	7	
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A  
B  
C  
D

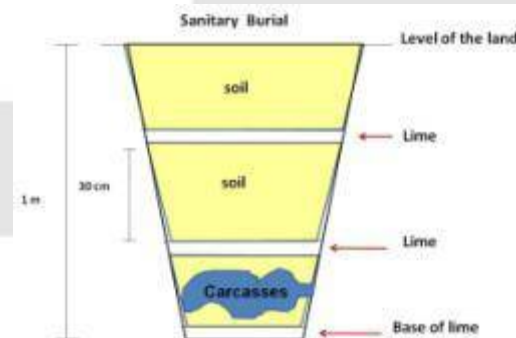
	1	2	3	4	5
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# Stage 1. Management of habitat and food sources

- ✓ Empty nest removal
- ✓ Runways sweeps
- ✓ Animal carcasses management



# Stage 2. Management, control and relocation of wildlife



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# Stage 2. Management, control and relocation of wildlife



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Nilgae (*Bocelaphus tragocamelus*)





# Monitoring records



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Base\_de\_Datos\_FAUNA\_CTMMESAM31oct09 [Modo de compatibilidad] - Microsoft Excel

Inicio Insertar Diseño de página Fórmulas Datos Revisar Vista

Vista previa de salto de página Regla Barra de fórmulas Nueva ventana Organizar todo Guardar área de trabajo Cambiar ventanas + Macros +

Vistas personalizadas Vistas de libro Mostrar u ocultar Zoom 100% Ampliar selección Ventana Macros

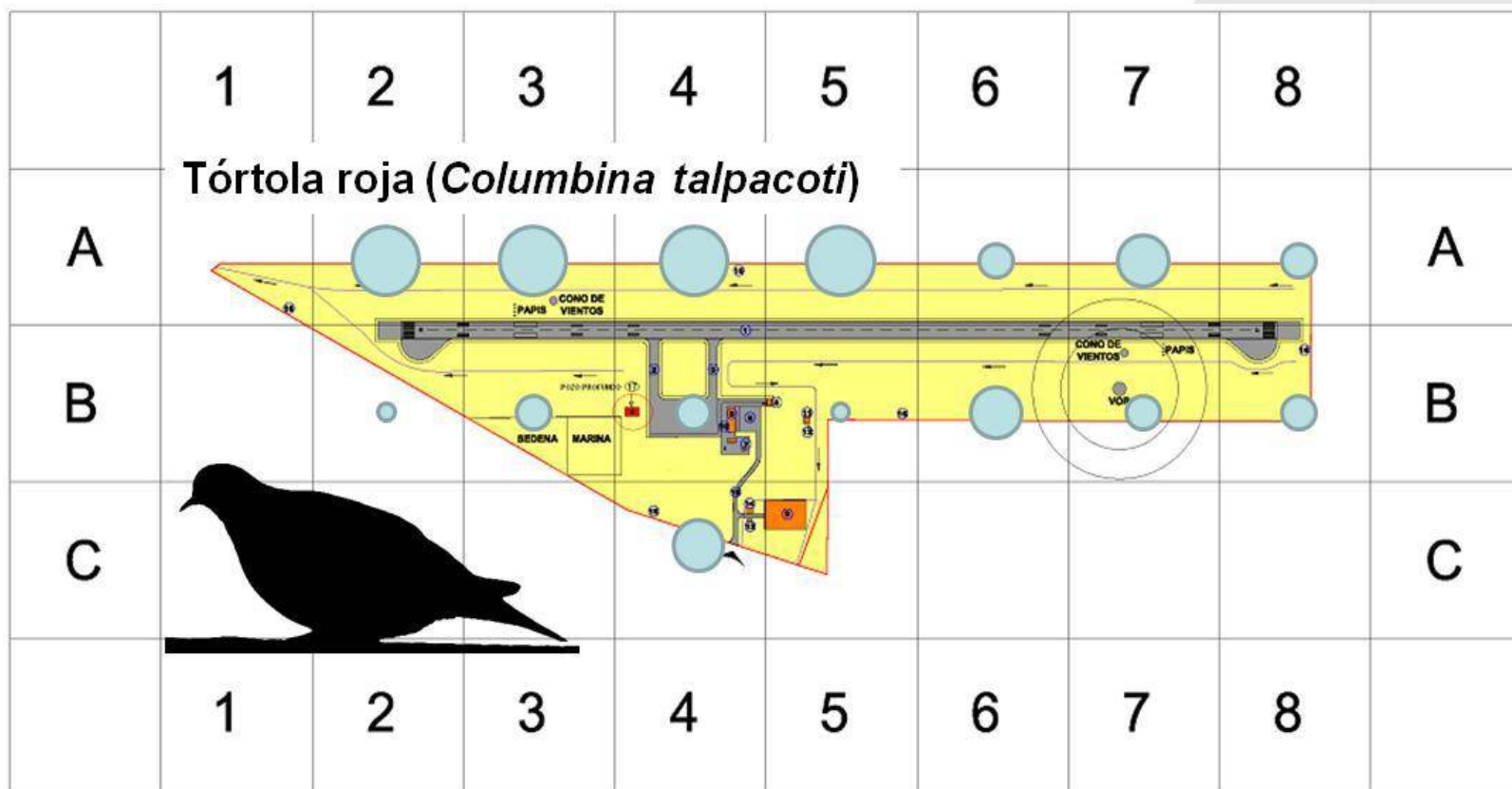
A2110 2112

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	No. consecutivo	Aeropuerto	Fecha elaboración	Hora inicio	Hora fin	No. de registros	Cuadrante	Fauna observada	No. de ejemplares	Actividad	Aviso a Torre	Actividad Control de Fauna	Resultado de Actividad	Registro Fotográfico	Elaboró	Revisó
2093	2095	CTM	20091030	1800	1915	28	86	Nyctidromus albigollis	3	echado	No	No necesaria			Daniel Mejia	Luis Mora
2094	2096	CTM	20091031	635	700	1	84	Falco sparverius	1	perchando	No	No necesaria			Daniel Mejia	Luis Mora
2095	2097	CTM	20091031	635	700	2	85	Quiscalus mexicanus	2	alimentandose	No	No necesaria			Daniel Mejia	Luis Mora
2096	2098	CTM	20091031	635	700	3	86	Quiscalus mexicanus	2	volando	No	No necesaria			Daniel Mejia	Luis Mora
2097	2099	CTM	20091031	635	700	4	87	Quiscalus mexicanus	3	volando	No	No necesaria			Daniel Mejia	Luis Mora
2098	2100	CTM	20091031	635	700	5	86	Quiscalus mexicanus	5	alimentandose	No	No necesaria			Daniel Mejia	Luis Mora
2099	2101	CTM	20091031	635	700	6	86	Progne chalybea	3	volando	No	No necesaria			Daniel Mejia	Luis Mora
2100	2102	CTM	20091031	635	700	7	85	Quiscalus mexicanus	2	volando	No	No necesaria			Daniel Mejia	Luis Mora
2101	2103	CTM	20091031	635	700	8	85	Charadrius montanus	4	volando	No	No necesaria			Daniel Mejia	Luis Mora
2102	2104	CTM	20091031	635	700	9	85	Quiscalus mexicanus	8	alimentandose	No	No necesaria			Daniel Mejia	Luis Mora
2103	2105	CTM	20091031	635	700	10	82	Patagioenas flavirostris	1	volando	No	No necesaria			Daniel Mejia	Luis Mora
2104	2106	CTM	20091031	635	700	11	82	Quiscalus mexicanus	2	volando	No	No necesaria			Daniel Mejia	Luis Mora
2105	2107	CTM	20091031	635	700	12	83	Quiscalus mexicanus	3	volando	No	No necesaria			Daniel Mejia	Luis Mora
2106	2108	CTM	20091031	635	700	13	84	Patagioenas flavirostris	5	volando	No	No necesaria			Daniel Mejia	Luis Mora
2107	2109	CTM	20091031	635	700	14	83	Egretta thula	1	volando	No	No necesaria			Daniel Mejia	Luis Mora
2108	2110	CTM	20091031	635	700	15	84	Quiscalus mexicanus	8	alimentandose	No	No necesaria			Daniel Mejia	Luis Mora

I. Fauna II. Hábitat III. Restos Impactos Avistamiento Ista sistemática oct-cuad oc

Listo 75%

# Monitoring records



- $\geq 7 \leq 30$  Ejemplares (tercer cuartil a máximo)
- $\geq 6 < 7$  Ejemplares (mediana al tercer cuartil)
- $\geq 4 < 6$  Ejemplares (primer cuartil a mediana)
- $\geq 1 < 4$  Ejemplares (mínimo al primer cuartil)

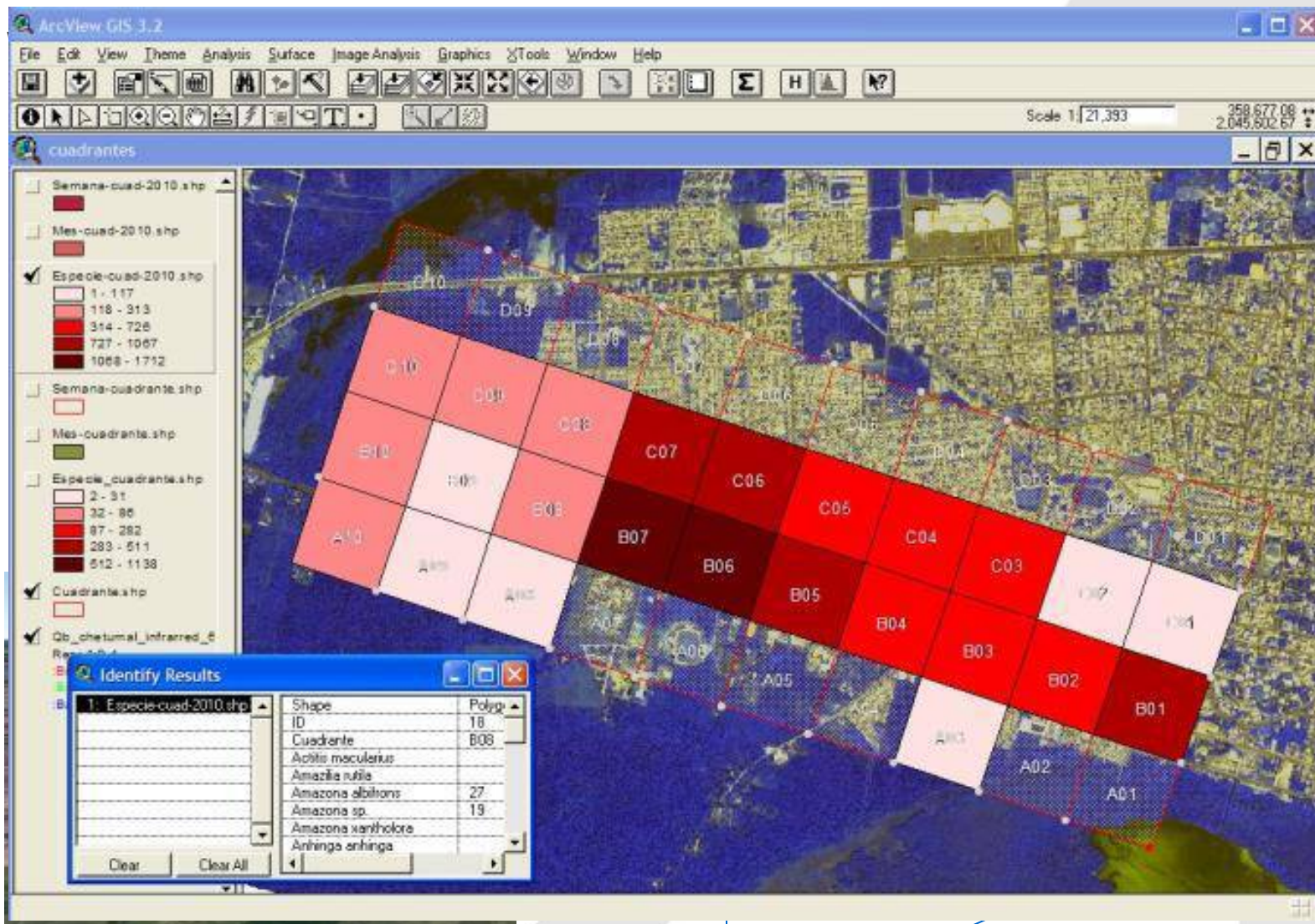


# Geographical Information System



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# Training and awareness

- Since 2005, ASA has trained over 400 airport personnel in the 15 ASA airports.
- ASA has developed special training and awareness workshops for the Aeronautical Authority, airlines and the local community, including children





# New Palenque Airport (PQM)



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## Translocación

El mono aullador en su nuevo hábitat

# Conclusions

- Mexico has improved greatly in Wildlife Hazard Assessment, Control and Management
- In Mexico, it is important to promote the participation of **pilots, traffic controllers, airlines, aircraft manufactures and maintenance personnel** as well as Aeronautical Authorities in the report strikes
- The database is critical to justify the presence of qualified biologists trained in wildlife damage control.



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# Thank you for your attention!

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