

# ***AIRPORT WILDLIFE HAZARDS OVERVIEW***

---

## ***USDA APHIS Wildlife Services***

**720 O'Leary Street NW**

**Olympia, WA 98502**

**(360) 753-9884**



**Laurence M. Schafer, Airport Coordinator**

**Matt Stevens, Airport Wildlife Biologist**

FAA Northwest Mountain Region, Spring 2006

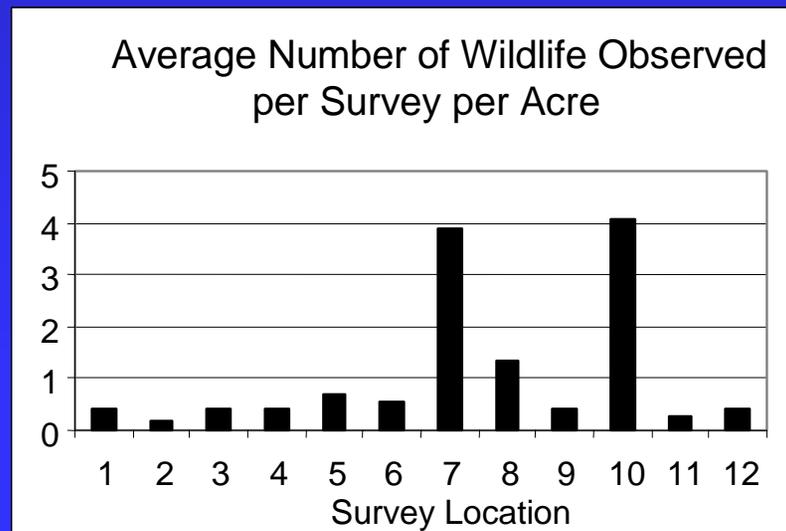
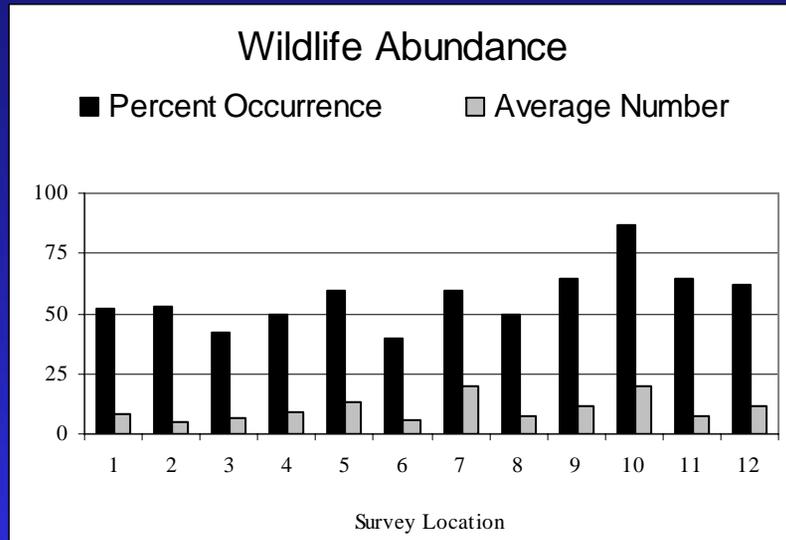
# § 139.337 Wildlife Hazard Management

A Wildlife Hazard Assessment is conducted when an air carrier aircraft experiences:

- (1) multiple wildlife strikes;
- (2) substantial damage from striking wildlife;
- (3) an engine ingestion of wildlife; or
- (4) wildlife of a size, or in numbers, capable of causing an event above is/are observed to have access to any airport flight pattern or aircraft movement area.

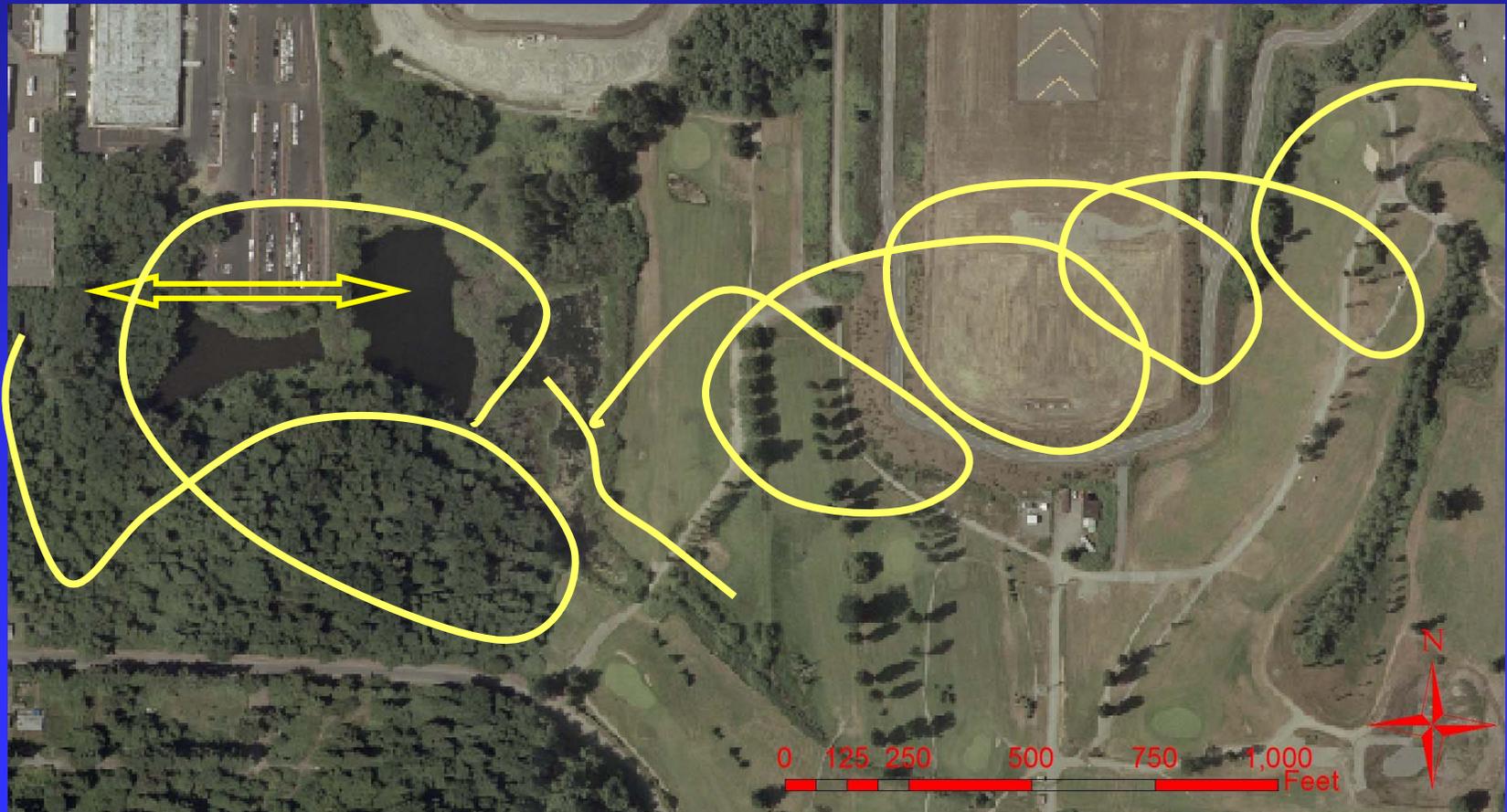


# How we identify hazards and hazardous species



# *How we identify hazards and hazardous species*

*Not all birds are created equal,  
or equally hazardous*



# *Washington Think Tank*

---



**We think and we  
plan, until  
everything is  
sitting just right...**



# Flyway Approach

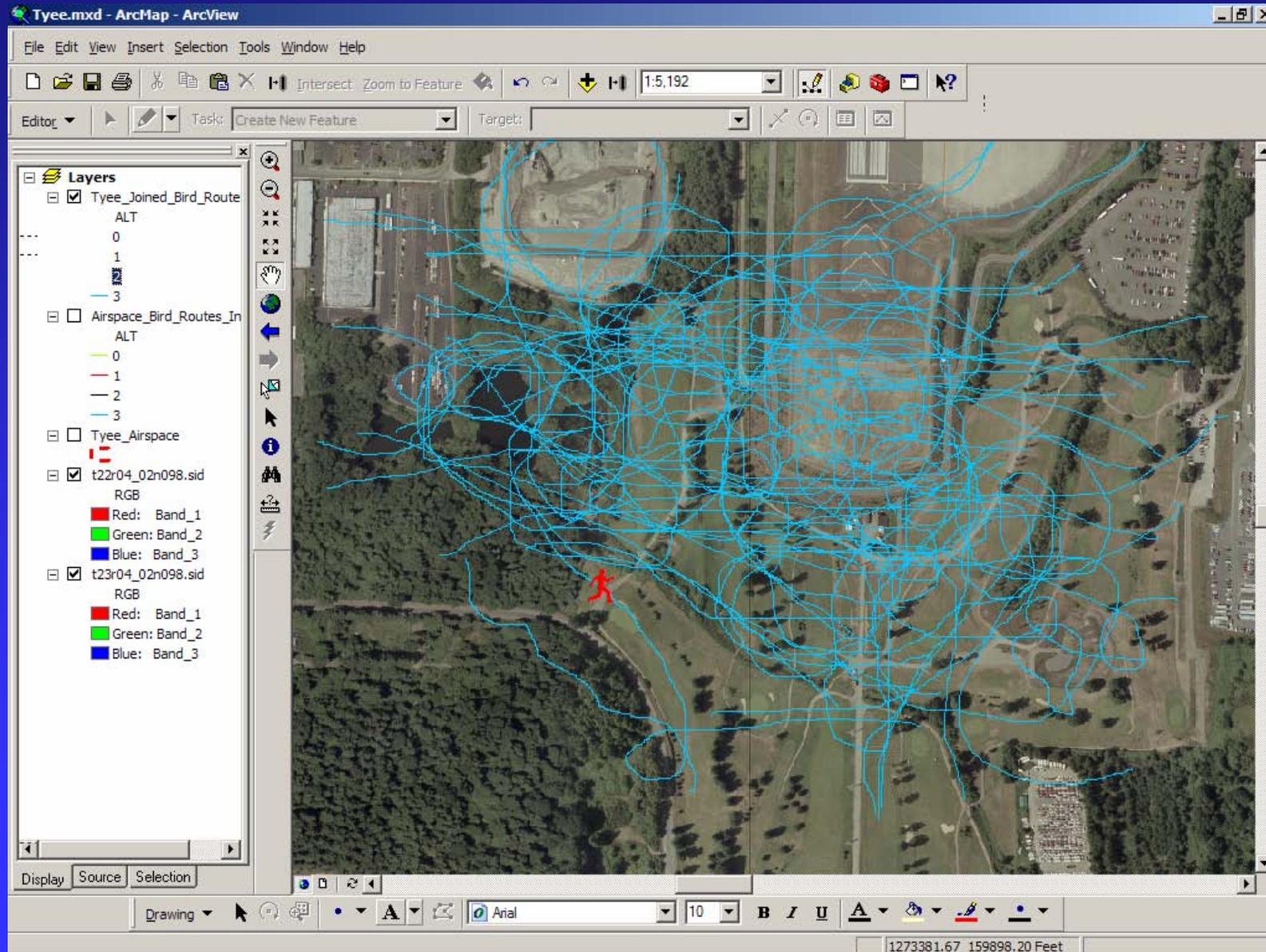
See bird fly, draw  
bird's route, record  
bird data

Observer: \_\_\_\_\_ Date: \_\_\_\_\_ Page: \_\_\_ of \_\_\_  
 Weather: \_\_\_\_\_ Wind direction/speed: \_\_\_\_\_  
 Temp: \_\_\_\_\_

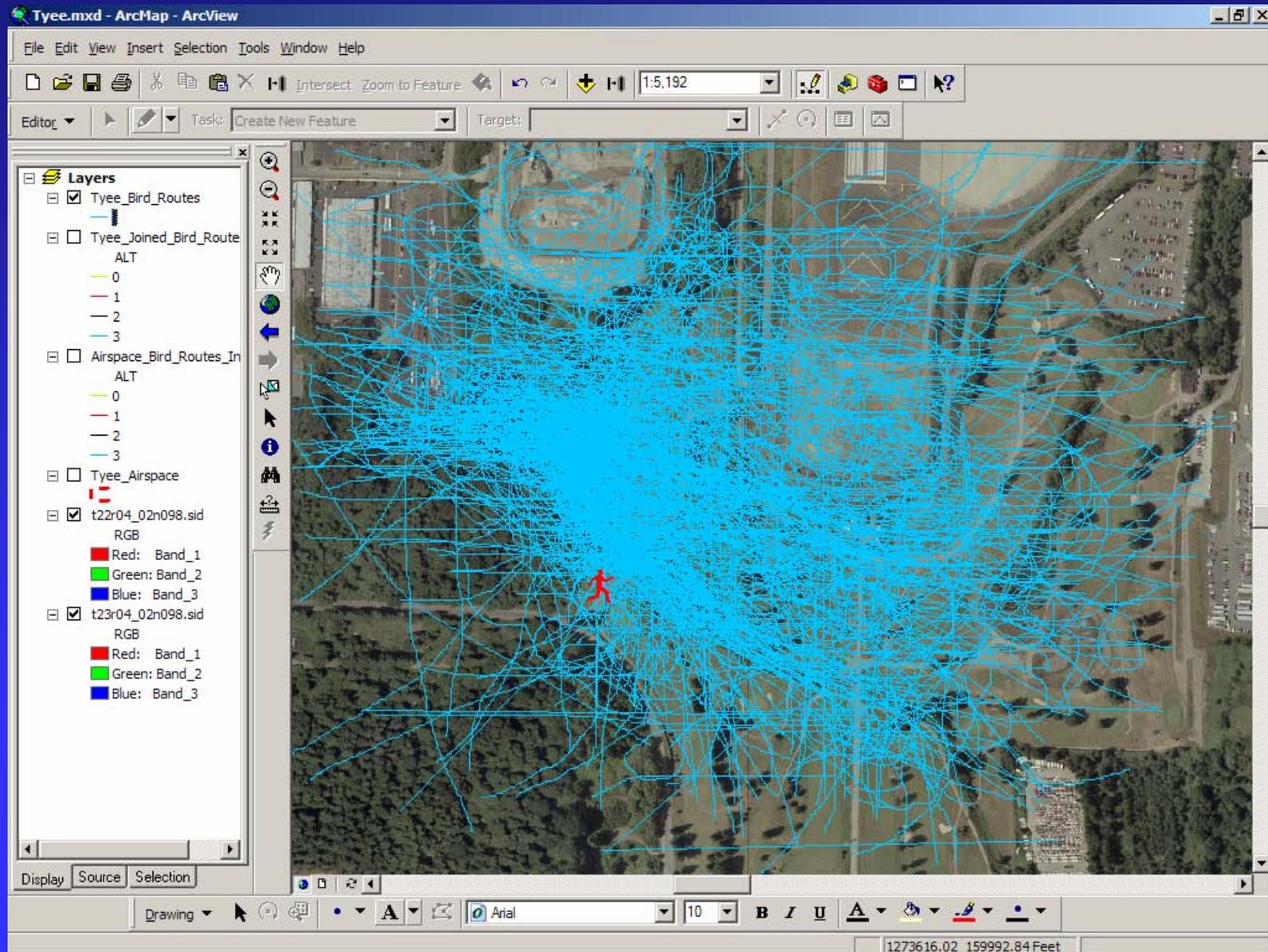
Time	Location	Spp	#	Cover	Activity	Dir	Alt	Obs	Air traffic flow	Comments
	900 Tye	RTHA	1	var	FP	W	3	1	S	



# Flyway Approach

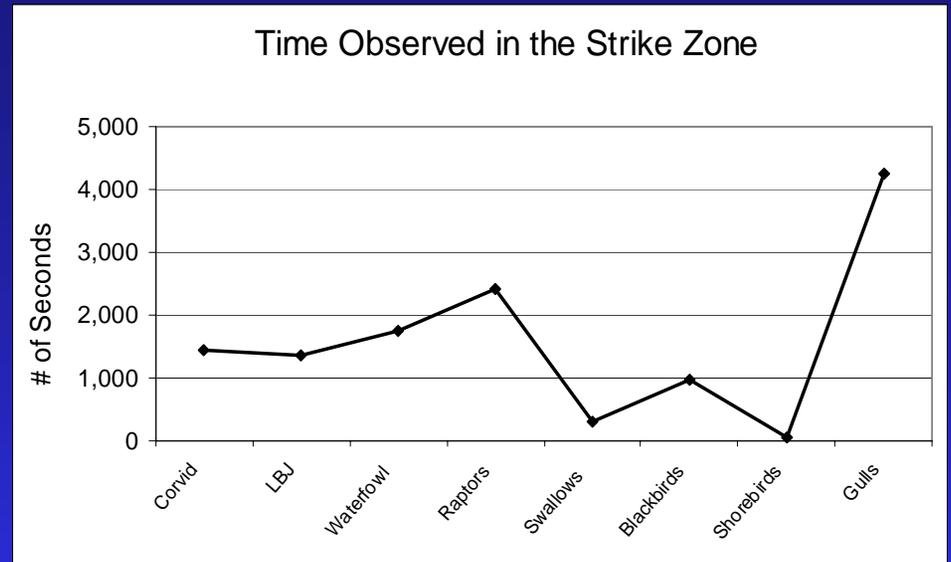


# Flyway Approach

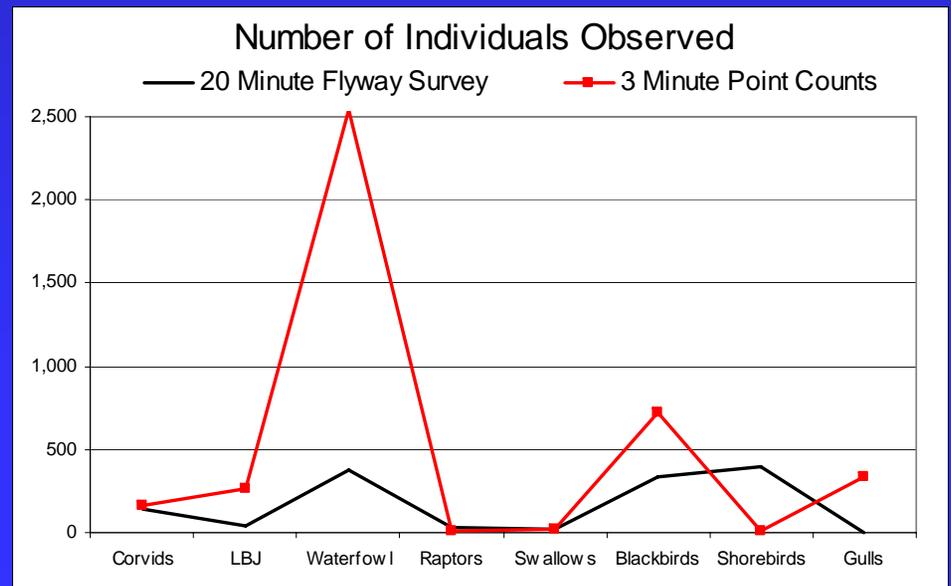


# Flyway versus Point Count

## Flyway Results



## Point Count Results



# *Flyway Approach*



**Distance to lake =  
3,900'**

**Distance to McDonald's =  
3,958'**

**Distance to agr =  
8,465'**

# ***The Assessment identifies hazards, the WHMP identifies how they will be managed***

## **CertAlert 97-09: Wildlife Hazard Management Plan Outline**

**1. The persons who have the authority and responsibility for implementing the WHMP.**

**2. Priorities for management changes in land study, with target**

Wildlife Coordinator (Maintenance Supervisor)  
Wildlife Patrol (Field Maintenance and Operations)  
Airport Safety/Compliance Officer  
Planning and Engineering  
FAA  
USDA Wildlife Services

**3. Requirements local, State, and**

**4. Identification of certificate holder**

ROA conversion to tall grass (3.2.2 and 3.4.2)		Ongoing	Possible
SW Detention Basin Pond (3.3.2)			Yes
Removal of temporary standing water (3.3.3)		Ongoing	Possible
Beaver and beaver dam removal		Ongoing	Yes

# ***The Assessment identifies hazards, the WHMP identifies how they will be managed***

---

CertAlert 97-09: Wildlife Hazard Management Plan Outline

## ***5. Procedures to be followed during air carrier operations, including at least-***

- i. Assignment of personnel responsibilities for implementing the procedures;*
- ii. Conduct of physical inspections of the movement area and other areas critical to wildlife hazard management sufficiently in advance of air carrier operations to allow time for wildlife controls to be effective;*
- iii. Wildlife control measures; and*
- iv. Communication between the wildlife control personnel and any air traffic control tower in operation at the airport.*

# ***The Assessment identifies hazards, the WHMP identifies how they will be managed***

---

CertAlert 97-09: Wildlife Hazard Management Plan Outline

## **6. Periodic evaluation and review of the WHMP for-**

- i. Effectiveness in dealing with the wildlife hazard; and*
- ii. Indications that the existence of the wildlife hazard, as previously described in the ecological study, should be reevaluated.*

WHMPs must be reviewed at least every 12 consecutive months

## **7. A training program to provide airport personnel with the knowledge and skills needed to carry out the WHMP required by FAR part 139.337(d).**

Airport personnel implementing an airport's Wildlife Hazard Management Plan receive initial training and, every 12 consecutive calendar months thereafter, recurrent training.

***How the airport wildlife biologist incorporates these documents into an effective wildlife control program...***

---





200  
0.131

28 29

25

TRC

# ***IDENTIFYING SPECIFIC HAZARDS***

---

Some wildlife hazards are GLARING problems...



# ***IDENTIFYING SPECIFIC HAZARDS***

---

**...While other attractants are less obvious**



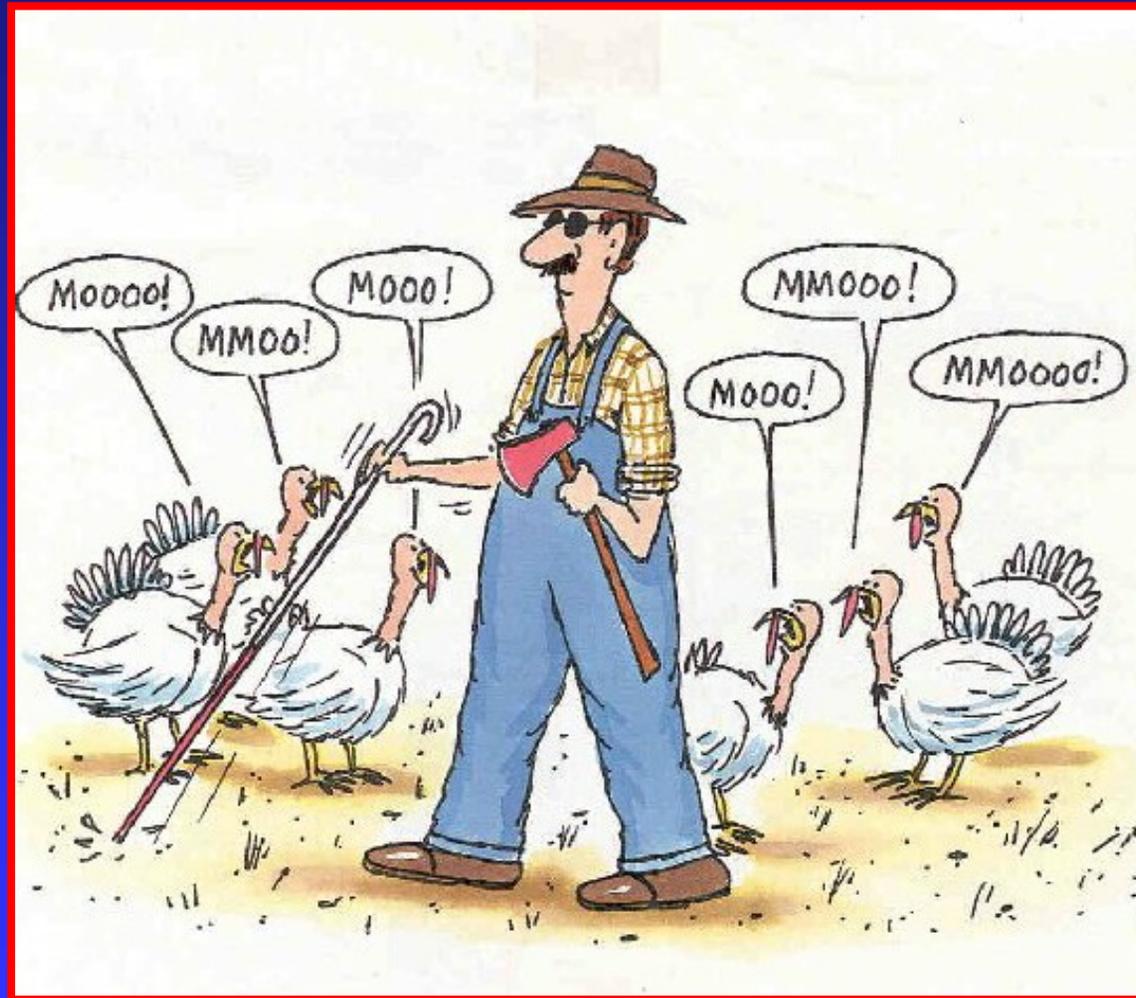
# IDENTIFYING SPECIFIC HAZARDS

**Every airport has different challenges**

- Even things you'd least expect



# *Things are not always what they seem!*



- Formal, year long Wildlife Hazard Assessment conducted by a Certified Biologist
- Wildlife Hazard Management Plan based on recommendations from Assessment

# ***USDA-WILDLIFE SERVICES MANAGEMENT TECHNIQUES***

---

## **1. PROACTIVE APPROACHES**

- **Exclusion**
- **Habitat Modification**

*Long-Term  
Goals & Solutions*

## **2. REACTIVE APPROACHES**

- **Harassment**
- **Population Control**
  - a. **Trapping**
  - b. **Lethal Control**

*Temporary  
Goals & Solutions  
(Ongoing)*

# ***PROACTIVE APPROACHES***

---

## ***Deterrence***

**Static “Scary”  
Devices**



# ***PROACTIVE APPROACHES***

---

## ***Exclusion***

### **Fencing**



# *PROACTIVE APPROACHES*

---

## *Exclusion*

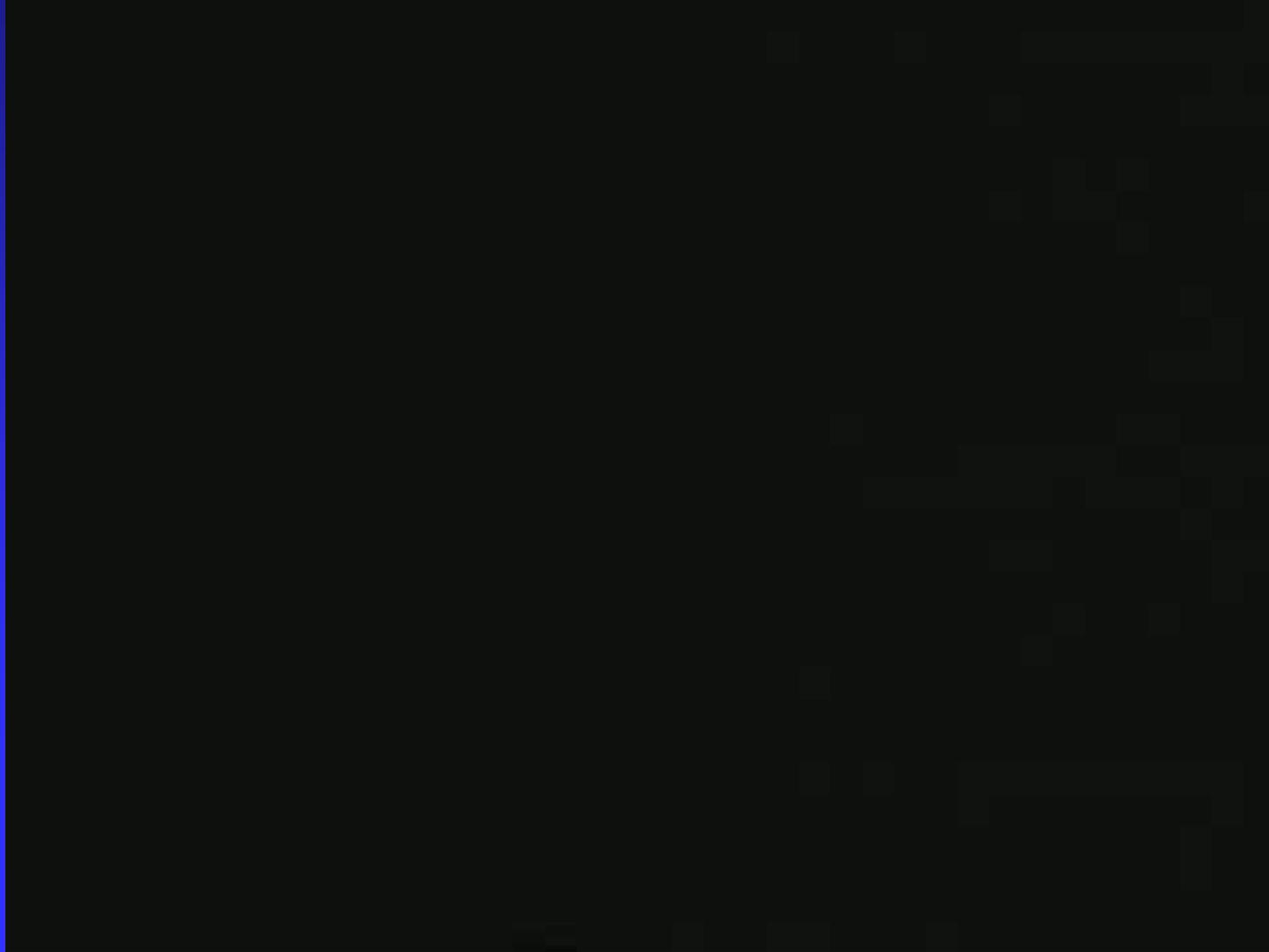
### Gates



# ***PROACTIVE APPROACHES***

---

## ***Corridors***



# PROACTIVE APPROACHES

---

## Exclusion

### Waterways

*Swanson Wetland Mitigation Project = Baine Field, WA*



# *PROACTIVE APPROACHES*

---

## *Exclusion*

Netting



# ***PROACTIVE APPROACHES***

---

## ***Habitat Modification***

**Drainage**



# ***PROACTIVE APPROACHES***

---

## ***Habitat Modification***

**Think it through!**



# ***REACTIVE APPROACHES***

---

## ***Harassment***

*Some Techniques Are More Effective Than Others !*



# ***REACTIVE APPROACHES***

---

## ***Harassment***

### **Wildlife Can't Read**



# ***REACTIVE APPROACHES***

---

***Harassment***

**Pyrotechnics**



# REACTIVE APPROACHES

---

## Harassment

## Cool Toys



# ***REACTIVE APPROACHES***

---

## ***Harassment***



# REACTIVE APPROACHES

## Population Control

### Trapping

Date: 3 October 1960

Aircraft: Lockheed Electra

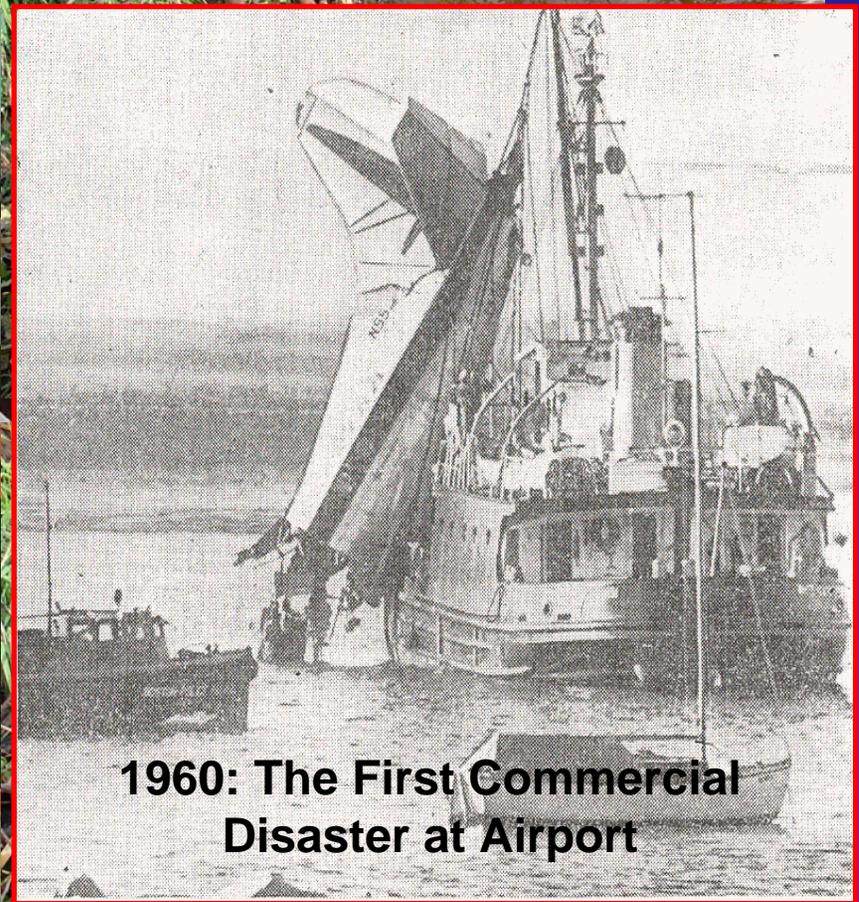
Location: Boston Logan Airport (MA)

Phase of flight: Climb

Effect on flight: Engine shutdown, crash

Damage: Engines, aircraft destroyed, 62 fatalities, 9 injuries

Wildlife species: European starlings



1960: The First Commercial Disaster at Airport

# REACTIVE APPROACHES

---

## Population Control

### Lethal Control

Innovation is often  
When "Spank & Release"  
necessary, especially if  
"Doesn't Work!!!"  
this per se glazes Timotes!!



# DOCUMENTATION



- Standardized Surveys
- Database
- Incidental Observations
- Agency Involvement
  - FAA Cert. Inspector
  - USFWS (permits)
- Direct Control
- Bird Strikes

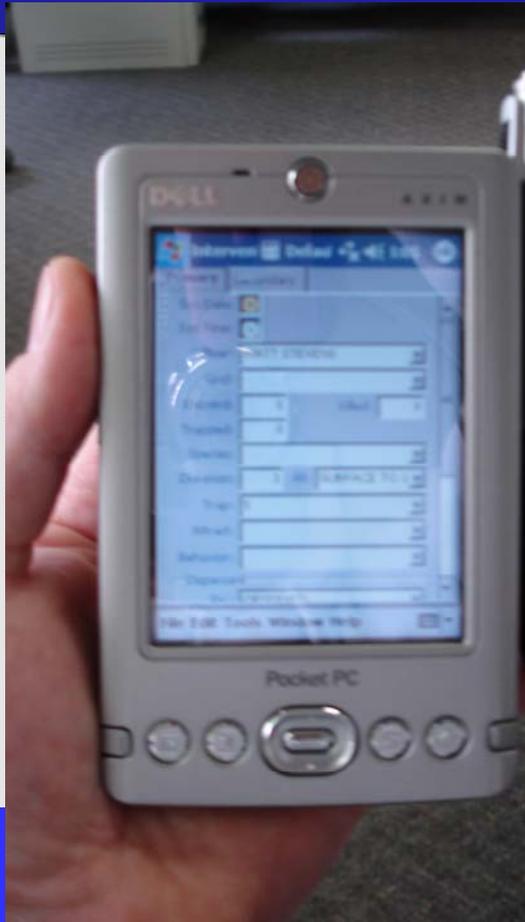
# DOCUMENTATION

## Standardized Surveys



# DOCUMENTATION

## Standardized Surveys



AIRMAN - Airport Information Report Manager (Version 4.12.21.1B) - System Map is PAINE FIELD - WASH - [Daily Log Book]

File Administration Field Activities Reports Queries Help

Sync Process Statistics Map Drill-Down Defaults Intervention Daily Log Exit

PAINE FIELD - WASH entries for 04/03/06 Cal Assign Map Delete Save Print Strike Form Non-Trapped Obs Replicate Close

Flagged	Date	Time	Officer	Surveyed	Survey Type	Survey Point	Grid	Species	Amount	Killed	Trapped	Duration
<input type="checkbox"/>	04/03/06	15:43	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	10	J9	GEESE, CANADA	2	0	0	
<input type="checkbox"/>	04/03/06	15:49	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	8	G7	BLACKBIRD, RED-WING	2	0	0	
<input type="checkbox"/>	04/03/06	15:50	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	8	F5	ROBIN, AMERICAN	20	0	0	
<input type="checkbox"/>	04/03/06	15:57	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	7	D2	GEESE, CANADA	4	0	0	
<input type="checkbox"/>	04/03/06	15:58	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	7	D2	STARLING, EUROPEAN	3	0	0	
<input type="checkbox"/>	04/03/06	16:17	MATT STEVENS	<input type="checkbox"/>	N/A	N/A	C4	MALLARD	2	2	0	
<input type="checkbox"/>	04/03/06	16:25	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	5	D10	STARLING, EUROPEAN	40	0	0	
<input type="checkbox"/>	04/03/06	16:26	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	5	D10	ROBIN, AMERICAN	10	0	0	
<input type="checkbox"/>	04/03/06	16:38	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	1	E24	GEESE, CANADA	2	2	0	
<input type="checkbox"/>	04/03/06	16:39	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	1	F23	STARLING, EUROPEAN	10	0	0	
<input type="checkbox"/>	04/03/06	16:41	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	2	F22	MALLARD	4	0	0	
<input type="checkbox"/>	04/03/06	16:42	MATT STEVENS	<input checked="" type="checkbox"/>	STAND. POINT	2	F22	SWALLOW, VIOLET-GRN	60	0	0	

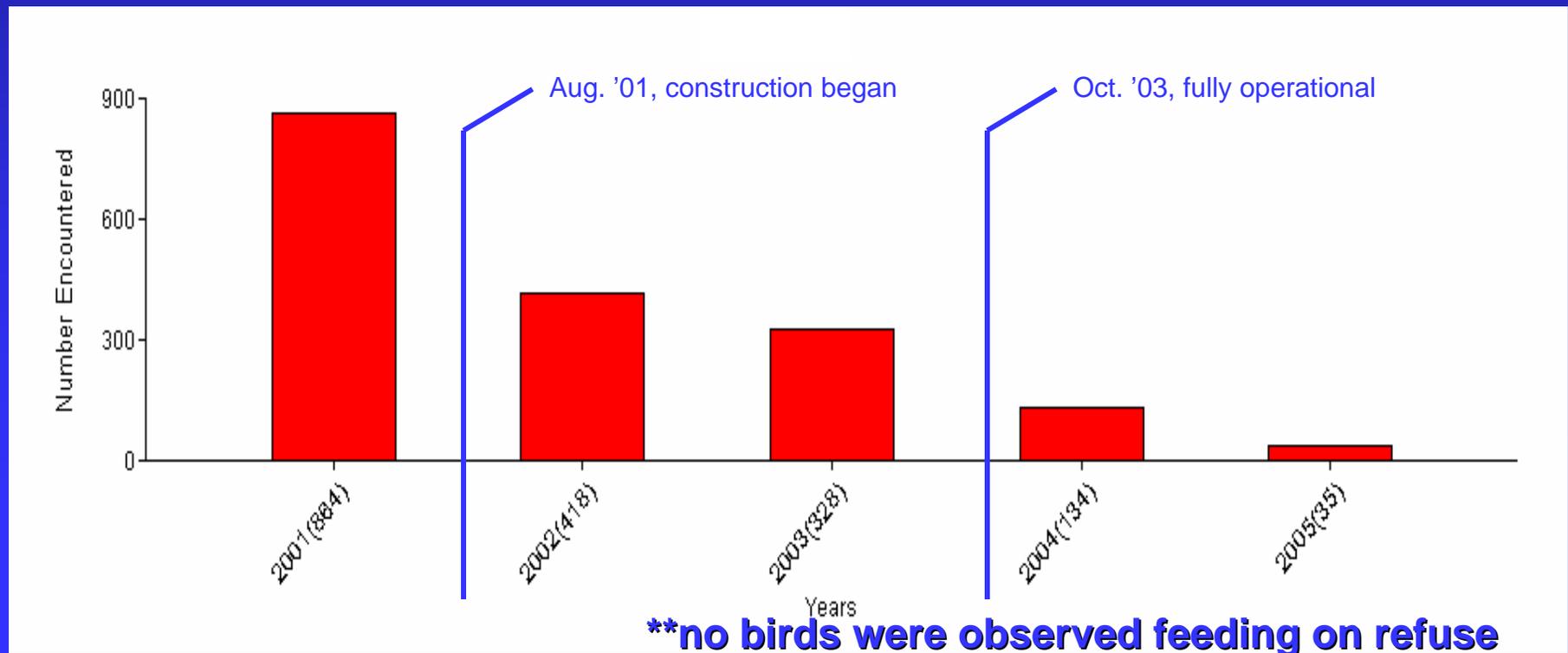
0 PAINE FIELD - W/ 11 12 Events/Actions 159 4 0

Ready

# DOCUMENTATION

## Standardized Surveys

### Multi-year Trend for Bird Use At Airport Road Transfer Station (ARTS)



# DOCUMENTATION

## Incidental observations & direct control

Date Range: From 02/01/03 To 02/28/03

Report Header: [Dropdown]

Assign: [List: ANDREW RARDIN, BRUCE GOETZ, BRYAN JOHNSON, CHUCK THOMAS]

Print: [Button]

Close: [Button]

Zoom: 100

BEAVER, BLACKBIRD, BREWER'S, BLACKBIRD, RED-WING, BUFFLEHEAD, CAT, FERAL

All  One

Species	Matt Stevens	Others	%	Total	%
<b>CROW, AMERICAN</b>					
MATT STEVENS	29	0	0.0%	2	6.9%
Species Total...	29	0	0.0%	2	6.9%
<b>GADWALL</b>					
MATT STEVENS	30	0	0.0%	1	3.3%
Species Total...	30	0	0.0%	1	3.3%
<b>GEESE, CANADA</b>					
MATT STEVENS	3	0	0.0%	1	33.3%
Species Total...	3	0	0.0%	1	33.3%
<b>KILLDEER</b>					
MATT STEVENS	12	0	0.0%	1	8.3%
Species Total...	12	0	0.0%	1	8.3%
<b>MALLARD</b>					
MATT STEVENS	114	0	0.0%	18	15.8%
Species Total...	114	0	0.0%	18	15.8%
<b>TEAL, GREEN-WINGED</b>					

Windows Taskbar: start, I..., A..., C..., S..., F..., H..., M..., A..., W..., N..., S..., 9:2

# ***DOCUMENTATION***

---

***Bird strikes are a significant threat to human safety... everywhere!!!***

30 March 1999

World famous Supermodel, Fabio, and an unsuspecting goose collide during the opening of the Apollo's Chariot rollercoaster in Williamsburg, Virginia.



# DOCUMENTATION

<http://wildlifemitigation.org>



[Mid-flight Bird Strike on Engine](#)  
Costs \$1,000,000

[Birds Threaten Operations](#)  
at PH (Nigeria) Airport

A screenshot of the Wildlifemitigation.org website. The page features a search bar at the top, a navigation menu with links for "State Map", "Item", "24 August", "Louis, MO", "Technical program", "strike.org", "Circulars", "REPORTING", "Strike", "ic Plan", "Beat", "ports", and "com". The main content area displays a photograph of a nest containing several speckled bird eggs. A pink sign in the nest reads "Living With Wildlife" and "STILL NESTED".



# ***DOCUMENTATION***

---

***Record keeping and paperwork can be a hassle, but . . .  
. . . it could be worse!***



**And you thought your job sucked**

# Utilizing properly trained personnel is critical!

---



**Remember. . .  
everybody gets training!**

---



# Why there needs to be some standard for wildlife training.

---

It's not as simple as just going out and chasing or shooting a few birds now and again.



The #1  
Work-Related Injury:



# Why there needs to be some standard for wildlife training.

---





U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

# Advisory Circular

**Subject:** Qualifications for Personnel  
Conducting Wildlife Hazard  
Assessments and Training Curriculum  
for Airport Personnel Involved in  
Controlling Wildlife Hazards

**Date:** DRAFT

**Initiated by:** AAS-  
300

**AC No:** 150/5200-  
XX

**Change:**

## 7. Training Curriculum for Airport Personnel Involved in Airport Wildlife Hazard Management.

Train all personnel who access movement areas and safety areas and perform duties in compliance with the requirements of the Airport Certification Manual and the requirements of this part. This training must be completed prior to the initial performance of such duties and at least once every 12 consecutive calendar months.

In addition, §139.303(c)(5) and (e)(5) require this training to include “any additional subject areas required under §139.337 (Wildlife Hazard Management).” Thus, certificated airports must provide initial training and, every 12 months thereafter, recurrent training in wildlife hazard management to personnel involved with activities related to the airport’s Wildlife Hazard Management Plan.



U.S. Department  
of Transportation  
Federal Aviation  
Administration

# Advisory Circular

**A. General overview of wildlife hazards to aviation based on the most recent annual FAA National Wildlife Strike Database Serial Report.**

**B. Review of wildlife actions, and observations over at least the past**

***i. Review of the airport Wildlife Hazard Assessment, conducted by a qualified airport biologist. Existing wildlife hazards, and wildlife abundance.***

***ii. Status of any open wildlife hazard, and recommended actions to reduce wildlife hazards to operations within the***



## Paine Field Wildlife Control

### Monthly Statistical Report for MATT STEVENS

Paine Field

Date From: 02/01/03    Date To: 02/28/03

Total Days Reported <b>28</b>	Total A/C Movements <b>14220</b>
Total Wildlife Encountered <b>1697</b>	Encountered to Movement Ratio <b>1 to 8.38</b>
Total Strikes <b>0</b>	Strike to Movement Ratio <b>Not Available</b>
Possible Strikes <b>0</b>	Possible Strike to Movement Ratio <b>Not Available</b>
Near Miss <b>0</b>	Near Miss to Movement Ratio <b>Not Available</b>
Total Killed <b>28</b>	Killed Percent vs Encountered <b>1.6500%</b>
Total Trapped <b>0</b>	Trapped Percent vs Encountered <b>Not Available</b>
Total Interventions <b>106</b>	Average Intervention per Day <b>3.79</b>
Total Inspections <b>0</b>	Average Inspection per Day <b>Not Available</b>
Average Movement per Day <b>507.86</b>	Average Encountered per Intervention <b>16.01</b>
Raptor Prevention Flights <b>0</b>	
Dog Prevention Runs <b>0</b>	

	<u>Birds</u>	<u>Mammals</u>
Interventions Against	<b>106</b>	<b>0</b>
Amount Encountered	<b>1697</b>	<b>0</b>
Minimum Encountered	<b>1</b>	<b>0</b>
Maximum Encountered	<b>100</b>	<b>0</b>
Killed	<b>28</b>	<b>0</b>
Trapped	<b>0</b>	<b>0</b>

ready





U.S. Department  
of Transportation  
Federal Aviation  
Administration

# Advisory Circular

---

**C. Review of the airport's Wildlife Hazard Management Plan, preferably conducted by a qualified airport biologist, to include—**

- 1) Airport-specific wildlife attractants and habitat management practices of the last 12 months.***
- 2) Review of the airport's wildlife permits (local, State, and Federal).***



U.S. Department  
of Transportation  
Federal Aviation  
Administration

# Advisory Circular

---

## *3) Review of other airport-specific items:*

*a) Wildlife hazard management strategies, techniques, and tools, such as—*

- i. Flight schedule modification.*
- ii. Habitat modification, exclusion.*
- iii. Repelling methods.*
- iv. Wildlife population management.*

*b) Responsibilities of airport personnel for—*

- i. Reporting wildlife strikes, control actions, and wildlife observations.*
- ii. Communicating with personnel who conduct wildlife control actions or who observe wildlife hazards and air traffic control tower personnel and others who may require notification, such as airport operations or maintenance departments.*



U.S. Department  
of Transportation  
Federal Aviation  
Administration

# Advisory Circular

**D. Basic bird and mammal identification, emphasizing local, hazardous, and rare/endangered species of concern.**

**E. For any airport personnel using pyrotechnic launchers or firearms, annual training on the following topics from a qualified individual who understands the safe use of pyrotechnic devices.**

- (1) Safety, parts, and operation of firearms/pyrotechnic launchers.*
- (2) Fundamentals of using ammunition and pyrotechnics.*
- (3) Personal protective equipment.*
- (4) Cleaning, storage, and transport of firearms/pyrotechnic launchers.*
- (5) Applicable local, State, and Federal regulations on firearms, pyrotechnic launchers, and pyrotechnics.*
- (6) Live fire training with firearms and pyrotechnic launchers.*

**F. Any other training required by local, State, or Federal regulations.**

**Effective wildlife control requires  
dedication and diligence...**

---

