



# WILDLIFE STRIKE PREVENTION AT U.S. AIRPORTS

**ICAO, World Birdstrike Association &  
CARSAMPAF Bird/Wildlife Strike  
Prevention Conference**

**Santa Fe, Mexico City, Mexico,  
October 20<sup>th</sup> – 24<sup>th</sup>, 2014**

*John R Weller*

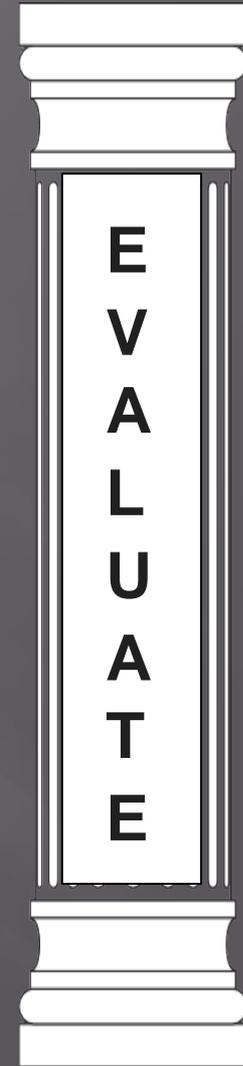
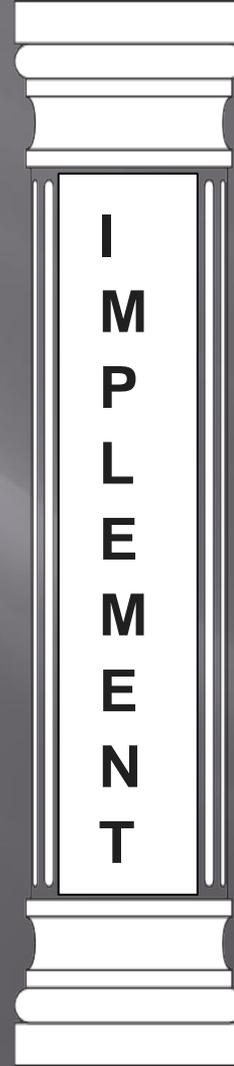
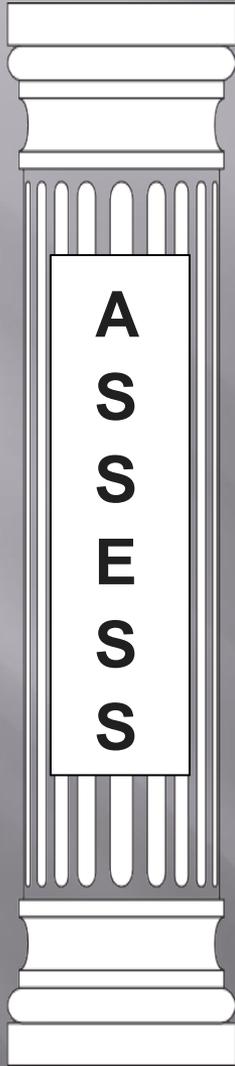




**IF YOU THINK SAFETY IS  
EXPENSIVE**

**TRY AN ACCIDENT**

# 4 PILLARS OF WILDLIFE MITIGATION PROGRAM



# **ULTIMATE GOAL = ELIMINATION / REDUCTION OF DAMAGING STRIKES ON AND NEAR THE AERODROME**

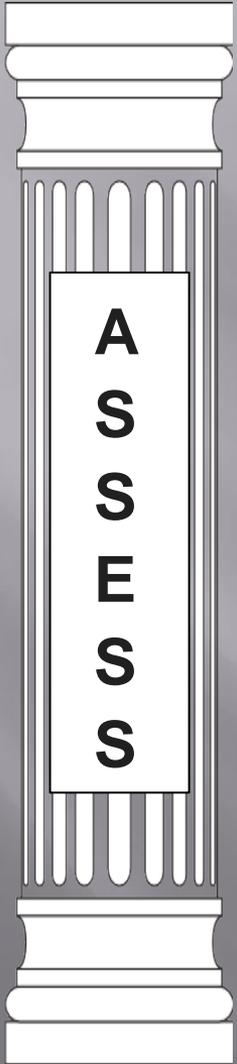
(increase human safety, reduce \$\$ losses)



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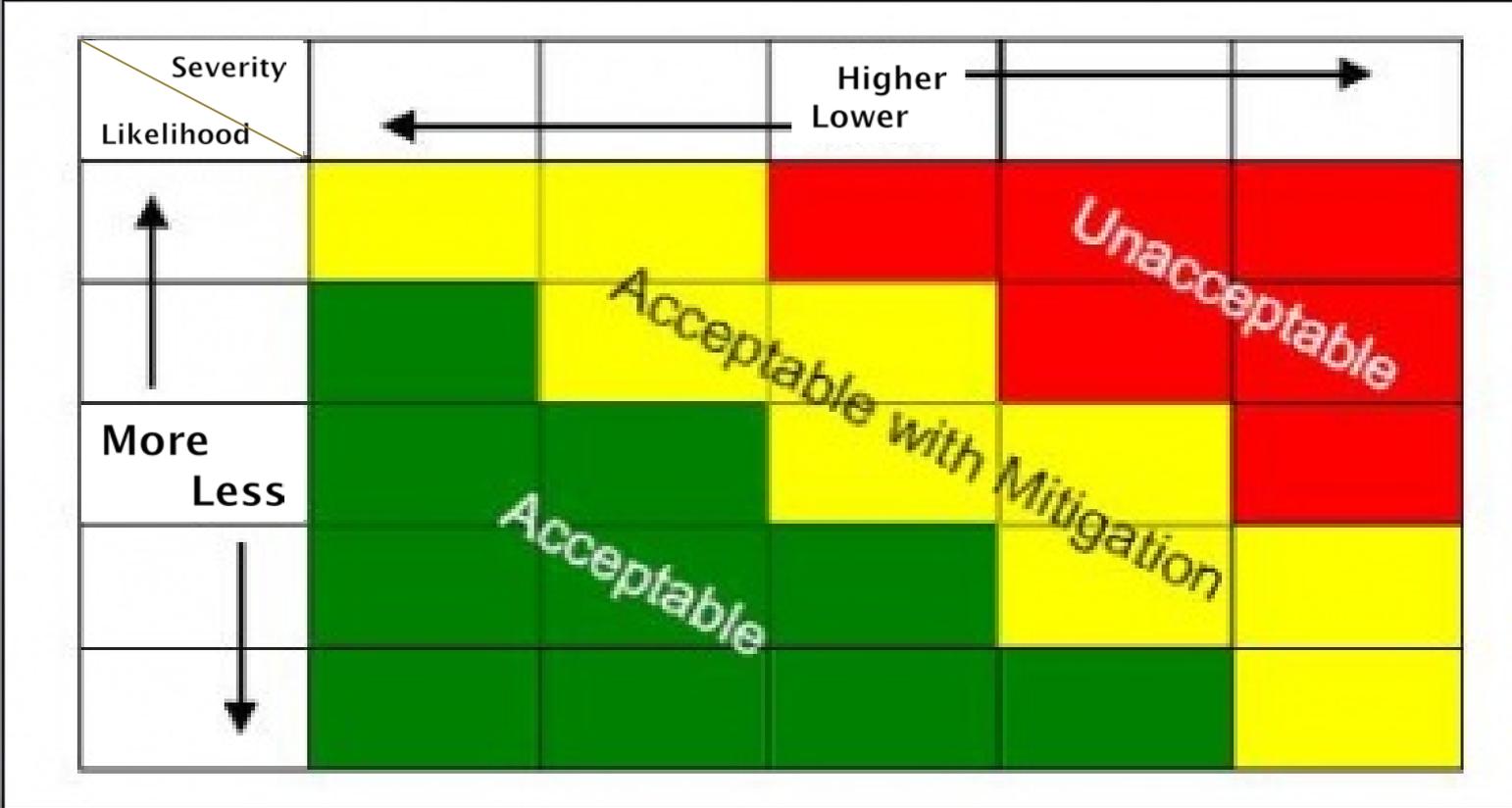
# 139.337 (c) cont'd... The wildlife hazard assessment must address:



- (1) Wildlife Populations**
- (2) Habitat Attractants**
- (3) Determine Hazards to Aircraft;  
Operations, Communication, etc...**
- (4) Recommendations**



# RISK ANALYSIS

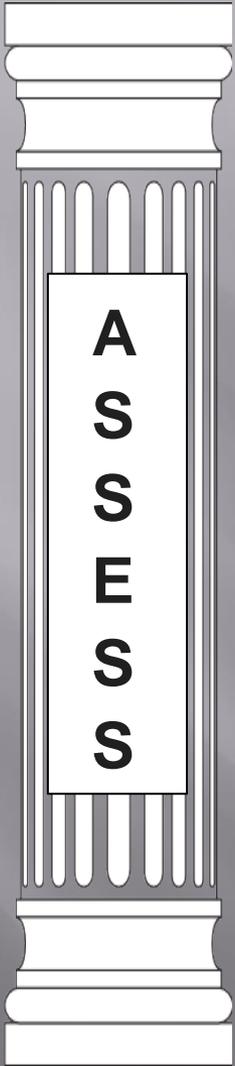


# HAZARDOUS WILDLIFE IDENTIFICATION

WILDLIFE HAZARD RANKING: Zero tolerance species ID'd?



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- **Communication procedures (ATC involvement?)**
- **Notification to Airport & FAA re: new development (off-site attractants)**
- **Threatened & endangered species on or near airports**
- **ATIS / NOTAMS advisories “white noise”**



# ASSESSMENT of WILDLIFE ATTRACTANTS

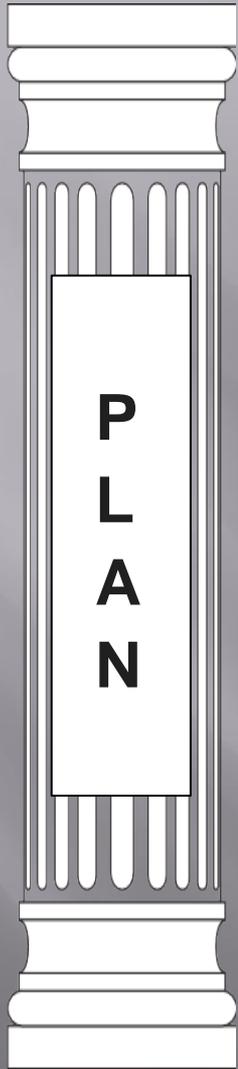
## Major Wildlife Attractants (existing or proposed?)

- Waste disposal operations
- Water management facilities
- Wetlands
- Dredge spoil containment areas
- Agricultural activities
- Golf Courses
- Landscaping



# WILDLIFE HAZARD MANAGEMENT PLAN

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1. **Authorities and responsibilities**
2. **Hazardous wildlife identification and mitigation procedures**
3. **Habitat/ wildlife attractant management**
4. **Permits (local, state, and federal)**
5. **Documentation of strikes/ mitigation**
6. **Resources for employees**
7. **Training of employees**
8. **WHMP review / evaluation**
9. **Project target dates for initiation and completion**



# Management of Wildlife Hazards

## PROACTIVE

Modify / Remove Attractants  
Exclude Wildlife

## REACTIVE

Repel/Disperse Wildlife  
Remove Wildlife (lethal or nonlethal)

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REMOVE

HARASS

EXCLUDE

MODIFY

# Habitat Modification



Mowing



Grade Improvement



Tree / shrub removal



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# Modify construction of storm water ponds



# Clear Waterways & Drainages



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# Offsite Habitat Modification



**Waste Disposal Operations**

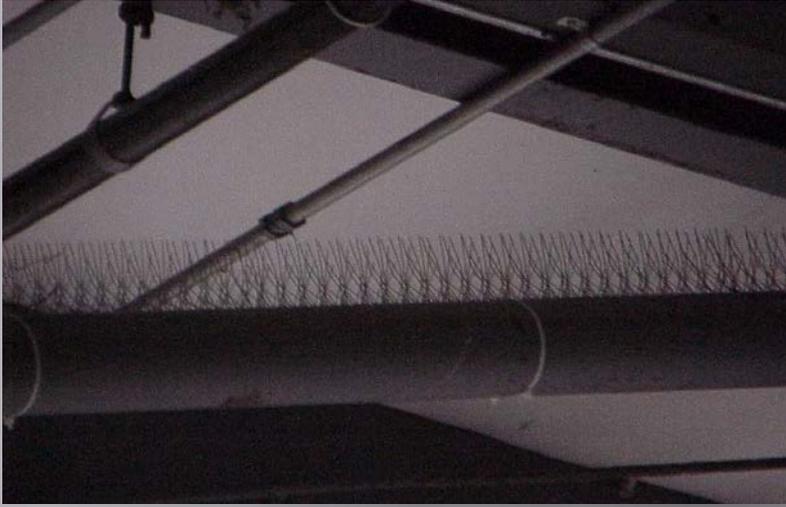
**GOOD FENCE = EXCLUSION**



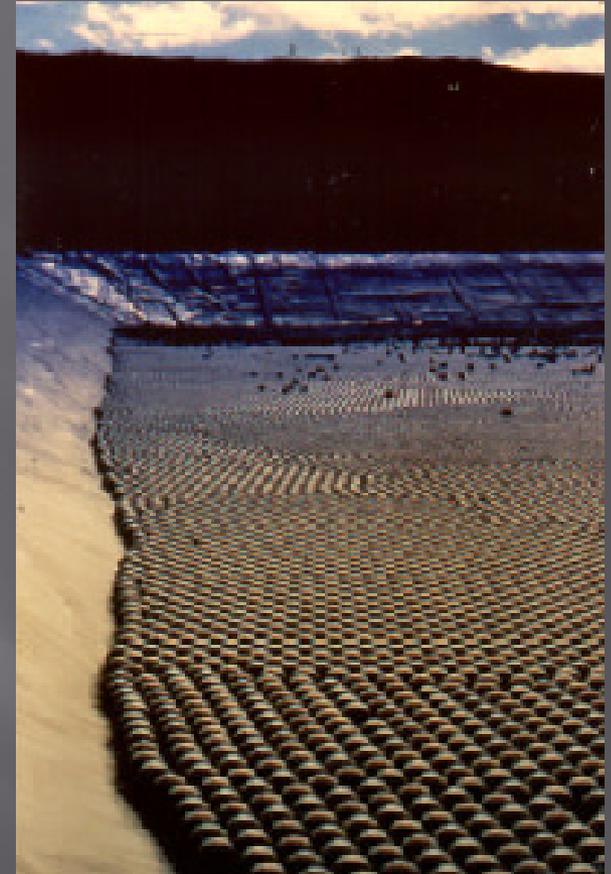
**BAD FENCE = NO FENCE**



# Exclusion



**Metal  
spiking**



**Bird balls-Covering  
ditches and ponds**

**Bird  
netting**



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# Bird Repellants

**Methyl-anthranilate**

– Rejex-it

**Anthraquinone**

– FlightControl



# Visual repellents - Sight & Motion



Scary Man

Scarecrows



Combination  
Eyes & Mylar



Evil Eye balloons

Mylar tape



# Effigies have limited success



# Pyrotechnics



Bangers/screamers – manual



Gas cannon - timer



# Harassment Techniques



# DEPREDATION PERMITS

- Federal and State
- Lethal removal or injurious methods
- Annual report
- Must renew

 DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
**FEDERAL FISH AND WILDLIFE PERMIT**

1. PERMITTEE  
AKRON-CANTON REGIONAL AIRPORT  
5400 LAUBY ROAD  
N. CANTON, OH 44720

2. AUTHORITY/STATUTES  
16 USC 703-712

REGULATIONS (including)  
50 CFR PART 13  
50 CFR 21.41

3. NUMBER  
MB738556-0

4. RENEWABLE  
 YES  
 NO

5. MAY COPY  
 YES  
 NO

6. EFFECTIVE DATE  
01/01/2004

7. EXPIRES  
12/31/2004

8. NAME AND TITLE OF PRINCIPAL OFFICER (FIRST IN BUSINESS)  
TODD LAPS  
OPERATIONS DEPT.

9. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED  
AKRON-CANTON REGIONAL AIRPORT  
5400 LAUBY ROAD  
NORTH CANTON OH 44720

8. TYPE OF PERMIT  
DEPREDATION

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES SPECIFIED IN THE APPLICATION SUBMITTED. CONTINUED VIOLATION OF ANY OF THE TERMS OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FEDERAL, STATE, LOCAL OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

D. AUTHORIZED TO KILL UP TO 50 RING-BILLED AND/OR HERRING GULLS IN THE AGGREGATE, UP TO 50 CANADA GEESE, UP TO 50 MALLARDS, 5 GREAT BLUE HERONS, 5 RED-TAILED HAWKS, AND 5 AMERICAN KESTRELS ON AIRPORT PROPERTY TO PROMOTE PUBLIC SAFETY AND/OR TO REDUCE HAZARD TO AIRCRAFT. BIRDS MAY BE KILLED ONLY IN CONJUNCTION WITH AN ON-GOING NON-LETHAL CONTROL PROGRAM.

E. ONLY ON AN EMERGENCY BASIS ON AIRPORT PROPERTY: AUTHORIZED TO KILL, CAPTURE, TRAP AND/OR RELOCATE UP TO TEN (10) OTHER MIGRATORY BIRDS, MIGRATORY BIRD NESTS AND EGGS THAT ARE NOT CURRENTLY IDENTIFIED IN CONDITION D, ANY EMERGENCY ACTIVITY MUST BE REPORTED TO USFWS-OH OFFICE AND TO THE PERMIT ISSUING OFFICE WITHIN 24 HOURS.

F. METHOD OF TAKING IS LIMITED TO THE USE OF A SHOTGUN, NO LARGER THAN 10 GAUGE, FIRED FROM THE SHOULDER ON OR OVER THE THREATENED AREAS ONLY. NON-TOXIC SHOT MUST BE USED.

G. THE FOLLOWING ARE AUTHORIZED TO CONDUCT THE DEPREDATION CONTROL ACTIVITY: TODD LAPS, ANTHONY ADAMO, JODY ADKINS, BILL CLAUSE, DARRYL CORRIN, JR., JONATHAN GREEN, MATTHEW HUNT, JORINNA KETRON, JEFF MOORE, JEFF RICHMOND, JEFF ROSETTE, KEVIN RIPLEY, JEFF MOHRL, ROBERT ROBSON, SCOTT HOSTLER, ATLEE HAYNAM, RICK BYERS AND SCOTT HOSTLER.

H. PERMITTEE MUST ALSO COMPLY WITH ATTACHED DEPREDATION STANDARD CONDITIONS.

ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS:  
ANNUAL REPORT DUE: 1/10

ISSUED BY:   
TODD LAPS  
CHIEF PERMIT SECTION

DATE  
04/02/2004



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# Nonlethal Removal - trap and relocation from airport



Raptors and other “sensitive” species



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# Lethal Removal - Trapping



Feral hogs



Pigeons



Canada geese during molt

# Lethal Removal - Shooting



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# OBJECTIVES

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- ✓ Determine program's overall effectiveness
- ✓ Identify deficiencies
- ✓ Determine airport's compliance with regulations and WHMP (in ACM)



# Evaluation of an Airports Wildlife Hazard Management Program

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1. **Authorities and responsibilities**
2. **Hazardous wildlife identification and mitigation procedures**
3. **Habitat/ wildlife attractant management**
4. **Permits (local, state, and federal)**
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# PROJECT TARGET DATES FOR INITIATION AND COMPLETION

WILDLIFE HAZARD/ HABITAT MANAGEMENT PROJECTS	TARGET COMPLETION DATE
<i>Water Management</i>	
<b>Reduce occurrence of temporary pools of water on hard surfaces after periods of precipitation or melting</b>	<b>Ongoing</b>
<i>Vegetation Management</i>	
<b>Continue to implement the current mowing schedule, which consists of spring to fall mowing</b>	<b>Ongoing</b>
<b>Removal of all wooded areas within the perimeter fence that attract hazardous mammals and birds</b>	<b>June 2015</b>
<i>Structure Management</i>	
<b>Initiate the use of exclusion devices on airfield towers, structures, buildings, concourses and hangars</b>	<b>September 2013</b>
<b>Modify/ repair existing perimeter fence to exclude white-tailed deer and medium sized mammals such as canids</b>	<b>March 2015</b>
<i>Food and Prey Base Management</i>	
<b>Enforce No Feeding Policy on all airport properties</b>	<b>Ongoing</b>
<b>Remove all dead animals from airfield; document and either save for identification or dispose of properly</b>	<b>Ongoing</b>
<i>Hazardous Wildlife Management</i>	
<b>Maintain AOA “Zero Tolerance” harassment and lethal removal for any hazardous wildlife such as white-tailed deer, Canada geese, raptors, canids, gulls and flocking birds</b>	<b>Ongoing</b>



# Objective Metric to Evaluate Effectiveness of Wildlife Program

## Options:

Number of strikes / aircraft movements = poor metric

Number of damaging strikes / 100k aircraft movements = good metric

**Number of adverse effects\*/ 100k aircraft movements = very good metric**

**Biomass of all animals struck / 100k aircraft movements = very good metric**

\* (damaging strikes plus affected flights that results in lost revenue)



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**Human  
Safety &  
Strike  
Prevention**

**Costs  
&  
Species  
Preservation**



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