



# A Decade in Retrospect (2000-2012): Statewide and Community Involvement to Reduce Wildlife Hazards at BWI Thurgood Marshall Airport



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## Background – BWI Thurgood Marshall Airport

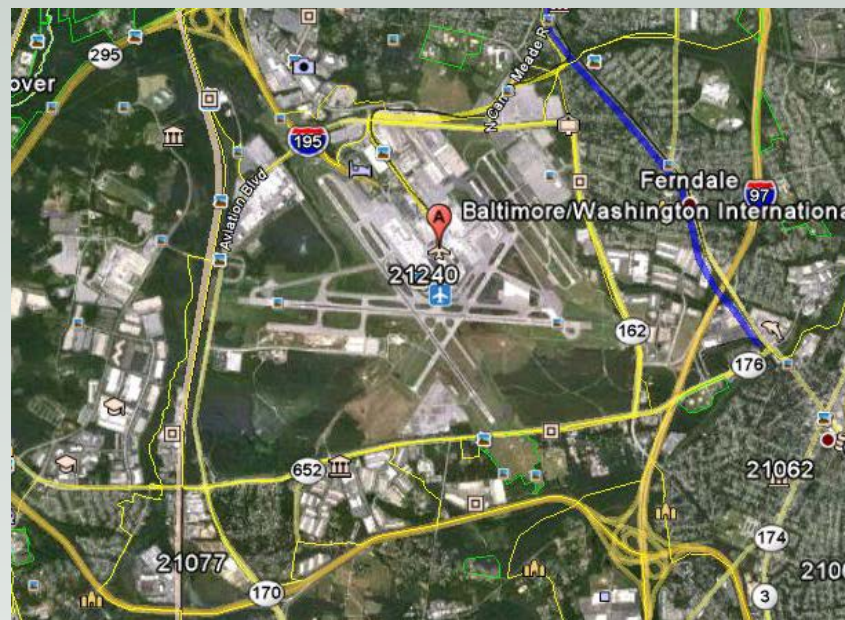
- State owned and operated
- 10 miles south of Baltimore / 30 miles north of D.C.
- Medium-sized hub
- Top 20 airports in U.S. (enplanements)
- One general aviation and two commercial service runways





## Background – Environment

- 3,200-acre campus
- 90 acres of wetlands
- 9 miles to Chesapeake Bay
- 13 headwater streams
- 200 forested acres
- Atlantic flyway





# Wildlife Management Efforts

## 2000: Wildlife Hazard Assessment

Thirteen guilds:

- Blackbirds/Starlings (64%)
- Corvids (15%)
- Gulls (11%)
- Waterfowl (3%)
- Columbids (3%)
- Raptors, Herons and Egrets, Shorebirds, Songbirds, Meadowlarks and Robins, Swallows (each <1%)
- Deer!





## What we did (2000-2002)

### Put our house in order

- WHMP and Working Group
- Modified on-site landscaping
- Covered/buried SWM ponds
- Reviewed all airport projects early in design/engineering

*Linked wildlife management to airport planning, design and construction*





## What we did (2000-2002)

### Educated Everyone

- Educated staff and consultants
- Involved airlines (reporting, strike identification)
- Revised leases
- Involved neighbors and visitors

*Reached out to airport staff, tenants and visitors*





## What we did (2000-2002)

### Ongoing management!

- Full-time WS presence
- Continuous monitoring
- Recurrent staff training
- Ongoing facility maintenance (fences, ruts, vegetation management)





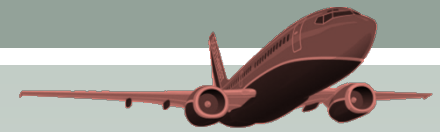
## What we did (2000-2002)

### Reached out to other State agencies

- Department of Natural Resources (forests, listed species)
- Department of the Environment (water quality, wetlands, SWM)
- Chesapeake Bay Critical Area Commission (water quality)

*Non-standard mitigation strategies for the airport environment*





## What we did (2000-2002)

### Applied State and Local Laws/ Regulations

#### Code of Maryland Regulations (COMAR)

- BWI Airport Zone (4-mile radius of BWI Marshall)
- MAA must “identify land use that could endanger the takeoff, landing or maneuvering of aircraft”
- MAA requires permit to undertake any construction or activity prohibited by the regulations (height, noise, approach protection, etc.)

*Expanded and applied existing regulations to include wildlife hazards*





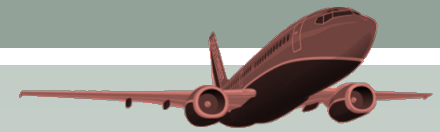
## What we did (2000-2002)

### Local Planning and Zoning Codes

- Addressed off-site development
- Trained County planners
- Amended local planning and zoning code
  - ✓ Landscape Review (species)
  - ✓ SWM Review

***Airport approval is required for County Approval!***





## 2012 WHA Results: Did it work?

### *Substantial* Decrease in Overall Abundance

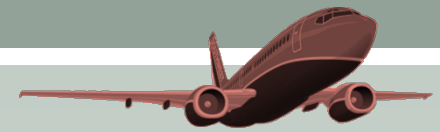
Guild	2000	2012	% Change
<b>TOTAL Individuals</b>	37,107	18,216	<b>-51%</b>
Gulls	4,258	120	<b>-97%</b>
Corvids	5,645	243	<b>-96%</b>
Shorebirds (killdeer)	191	35	<b>-82%</b>
Columbids (doves, pigeons)	1,157	237	<b>-80%</b>
Songbirds	325	153	<b>-59%</b>
Raptors	357	156	<b>-56%</b>



## 2012 WHA Results: Did it work?

### Changes in Overall Abundance - continued

Species	2000	2012	% Change
Swallows	246	119	<b>-52%</b>
Starlings/Blackbirds	23,792	15,966	<b>-32%</b>
Waterfowl (Geese, ducks)	1,049	920	<b>-12%</b>
Hérons & Egrets	24	35	<b>+45%</b>
Larks & Thrushes (Am Robins)	128	252	<b>Nearly Doubled</b>
<b>Mammals</b>			
Deer	248	0	<b>-100%</b>



## Benchmarking: Is it working?

### Wildlife Strike Records

Criterion	1990 to 2002	2003 to 2012
Strikes/year	35/year	86/year
Damaging Strikes/year	4.4	4.1

- More strikes reported
- Slight decrease in damaging strikes



## What does it mean?

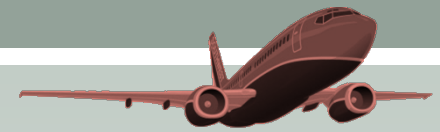
### Substantial reduction in abundance

(>50% reduction in 10 of 12 guilds)

### Strike results unclear

- 150% increase in *reported* strikes
- Increased reporting diligence
- Strike kits for airlines
- Ongoing inspections (identify carcasses)
- *No increase* in damaging strikes





## Strikes, Trends and Data

### Historic Damaging Strikes (by species)

- Unknown birds (closing in)
- Gulls (97% decrease)
- Deer (None observed in 2012)
- Geese (12% decrease)
- Raptors (56% decrease)
- Doves (80% decrease)



*The Program is Working!*



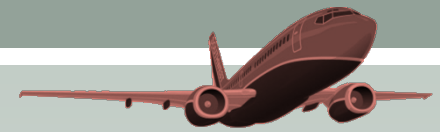
## Why it works

### Integrated Approach

Everyone participates:

- Staff
- Consultants
- State and local agencies
- Tenants
- Neighbors





## Why it works

### Full-time attention is key!

- Two full-time WS staff
- Ongoing harassment
- Lethal reinforcement
- Diligent observation and timely response!





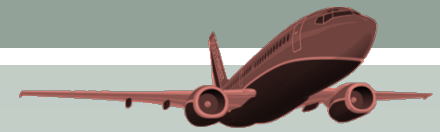
## Efforts must continue!

### Lessons

- Everybody must help
- Diligence is necessary
- Daily monitoring/dispersion

*Geography doesn't mean destiny!*





# *Questions?*

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