

**Wildlife Hazard Management at Airports:
Current Trends and Potential Conflicts**




Brian Kirby
M.S. Candidate
University of Tennessee
Dept. of Forestry, Wildlife, and Fisheries
March 12, 2014 12:20PM Plant Biotech. 160



Outline


2

- I. Introduction
 - I. History
- II. Trends
- III. Regulations
- III. Current Events and Potential Conflicts
- IV. Future Directions
- V. References



Introduction -

3



9/23/1995-Elmendorf

Cleary and Dolbeer 2005, Dolbeer 2013

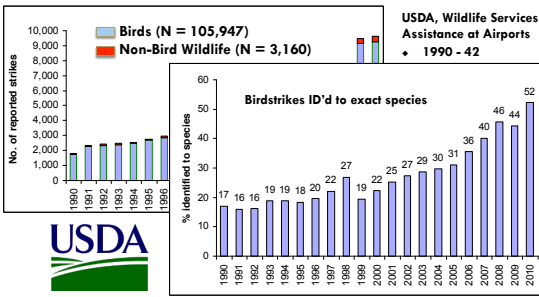
U.S. Civil Aircraft

- ◆ 1912-1959 ➔ 3 aircraft destroyed
- ◆ 1960-2010 ➔ 160 aircraft destroyed
- ◆ 1990-2013 ➔ 62 aircraft destroyed
- ◆ 2,100 U.S. Passenger Fleet (1965)
- ◆ 8,200 U.S. Passenger Fleet (2005)



Trends in Wildlife Strikes to Aircraft

USDA, Wildlife Services Assistance at Airports
◆ 1990 - 42



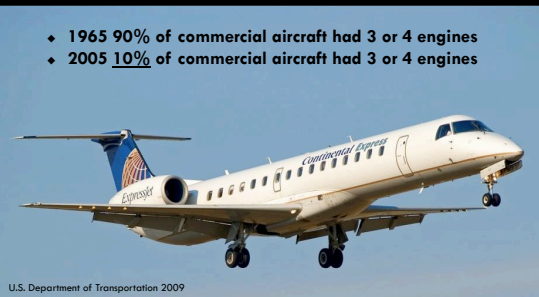
Year	Birds (N = 105,947)	Non-Bird Wildlife (N = 3,160)
1990	1,500	100
1991	2,000	100
1992	2,500	100
1993	3,000	100
1994	3,500	100
1995	4,000	100
1996	4,500	100
1997	5,000	100
1998	5,500	100
1999	6,000	100
2000	6,500	100
2001	7,000	100
2002	7,500	100
2003	8,000	100
2004	8,500	100
2005	9,000	100
2006	9,500	100
2007	10,000	100
2008	10,500	100
2009	11,000	100
2010	11,500	100

Year	% Identified to species
1990	17
1991	16
1992	16
1993	19
1994	19
1995	18
1996	20
1997	22
1998	27
1999	19
2000	22
2001	25
2002	27
2003	29
2004	30
2005	31
2006	36
2007	40
2008	46
2009	44
2010	52

Dolbeer et al. 2012, Begler and Dolbeer 2011

Causes of Increased Wildlife Strikes


- ◆ 1965 90% of commercial aircraft had 3 or 4 engines
- ◆ 2005 10% of commercial aircraft had 3 or 4 engines



U.S. Department of Transportation 2009

Wildlife Hazard Assessment (WHA)?

10

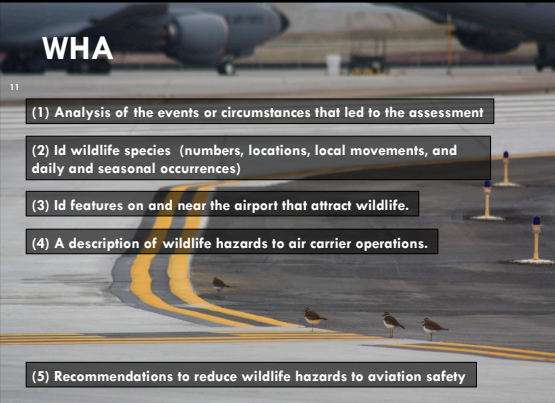


- ◆ Part 139 (b) WHA required as a result of a triggering event:
 - ◆ (1) Multiple wildlife strikes;
 - ◆ (2) Substantial damage from striking wildlife;
 - ◆ (3) An air carrier aircraft experiences an engine ingestion of wildlife; or
 - ◆ (4) Wildlife of a size, or in numbers, capable of causing an event described above is observed to have access to any airport flight pattern or aircraft movement area.

Federal Aviation Administration 2007

WHA

11



- (1) Analysis of the events or circumstances that led to the assessment
- (2) Id wildlife species (numbers, locations, local movements, and daily and seasonal occurrences)
- (3) Id features on and near the airport that attract wildlife.
- (4) A description of wildlife hazards to air carrier operations.
- (5) Recommendations to reduce wildlife hazards to aviation safety

Federal Aviation Administration 2007

Management Strategies

12

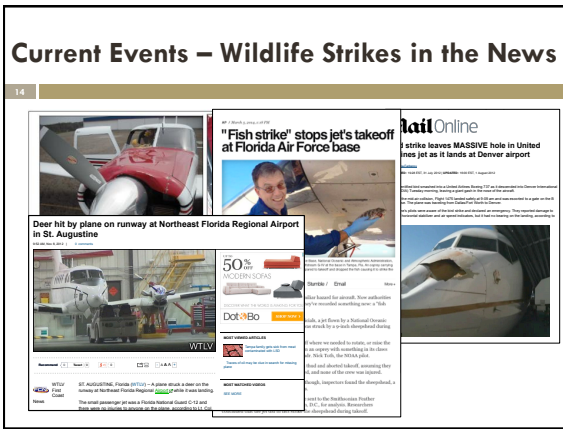
- ◆ Habitat Management & Modification
- ◆ Harassment/Hazing
- ◆ Exclusion
- ◆ Education
- ◆ Direct Control



Figure 1. Separation distance with which habitats with birds should be located, oriented, or managed.

Federal Aviation Administration 2007







Literature Cited

19

1. Cleary, E.C. and R.A. Dolbeer. 2005. Wildlife hazard management at airports: a manual for airport operators. Second edition. Federal Aviation Administration, Office of Airport Safety and Standards, Washington D.C., USA.
2. Dolbeer. 2013. Regulations for Wildlife Management at Airports. Appendix in Wildlife in Airport Environments. Devault, Blackwell, and Belant 2013. The John Hopkins University Press. Baltimore, MD, USA.
3. Dolbeer, R.A., S.E. Wright, J. Weller, and M.J. Begier. 2012. Wildlife strikes to civil aircraft in the United States, 1990-2010. Serial Report Number 17 DOT/FAA/AS/00-6(AAS-310). U.S. Department of Transportation, Federal Aviation Administration, Washington D.C., USA.
4. Begier, M.J. and R.A. Dolbeer. 2011. Protecting the flying public and minimizing economic losses within the aviation industry: technical, operational, and research assistance provided by the USDA-APHIS-Wildlife Services to reduce wildlife hazards to aviation, Fiscal Year 2010. Special report, U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services. Washington D.C., USA.
5. U.S. Department of Transportation. 2009. National transportation statistics. Table 1-13: active U.S. air carrier and general aviation fleet by type of aircraft research and innovative technology administration. http://www.bts.gov/publications/national_transportation_statistics/html/table_01_13.htm.
6. Tomasio and Nowakowski. 2013. Bloody Skies: The Fight to Reduce Deadly Bird-Plane Collisions. National Geographic. <http://news.nationalgeographic.com/news/2013/10/131108-aircraft-bird-strikes-foa-radar-science/>. Accessed 6 March 2014.
7. Federal Aviation Administration (FAA). 2004. Title 14 U.S. Code of Regulations. Part 139: certification of airports. U.S. Department of Transportation, Washington D.C., USA.
8. Federal Aviation Administration (FAA). 2007. Hazardous wildlife attractants on or near airports. Advisory Circular 150/5200-33B. U.S. Department of Transportation, Washington D.C., USA.

Acknowledgements

20



Questions

21