



We are
Airports

REGULATORY EVALUATION

an Approach for CAA's to Assess the
Effectiveness of Their Wildlife Programs

Shared Skies – WBA Conference

Bird / Wildlife Strike Prevention

Warsaw, Poland November 19-21, 2018

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FAA National Wildlife Biologist



FAA
Office of Airports

HOW DO YOU DETERMINE THE EFFECTIVENESS OF YOUR WILDLIFE PROGRAM?

➤ **REGULATORY COMPLIANCE**

Regulatory compliance = probability of achieved goals and increased safety

➤ **MONITOR SAFETY DATA (broad, reactive)**

Monitor hull losses, Fatalities

➤ **MONITOR TRENDS THROUGH DATA ANALYSIS / GAP ANALYSIS (specific, proactive)**

Systematically evaluate strike data; Determine and Target data gaps and poor performance using metrics and KPI's

EVALUATION METHODS REQUIRE METRICS AND KEY PERFORMANCE INDICATORS

- **Metrics are quantifiable measures used to gauge performance or progress (but can be qualitative)**
- **Metrics use data from a live source (i.e., it's still updating with new information)**
- **Select metrics that track procedures for increasing safety.**
 - **Strike Data ratios and trends, Number of Airports with Wildlife Plans, Number of Airlines and Airports reporting strikes, etc.**
- **All KPI's are metrics, but not all metrics are KPIs**
- **KPI's are KEY (vital signs focusing attention on what matters most)**

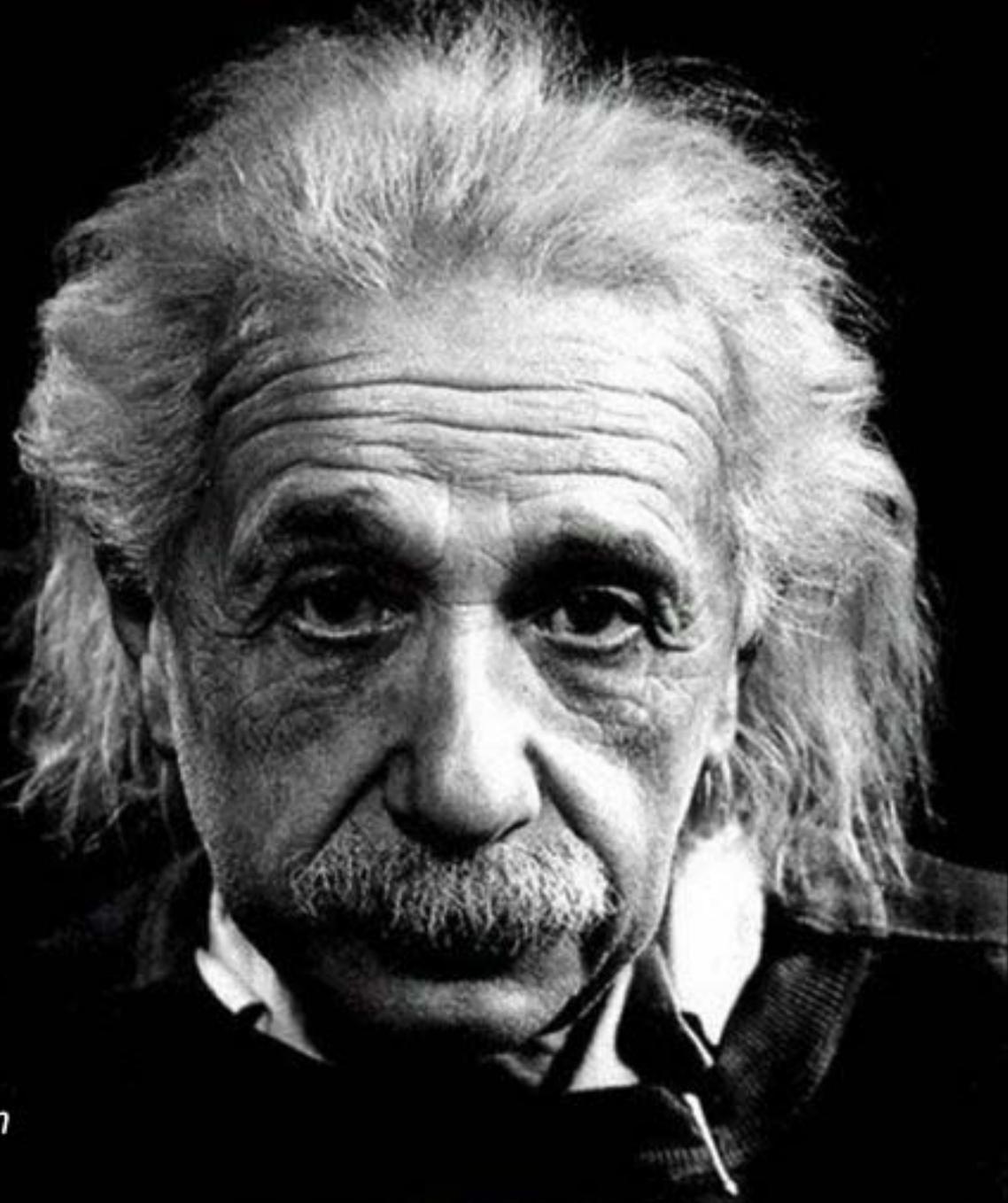
"GIVE ME SIX HOURS TO CHOP DOWN A TREE
AND I WILL SPEND THE FIRST FOUR
SHARPENING THE AXE"

Abraham Lincoln



"If I had an hour to solve a problem and my life depended on the solution, I would spend the first 55 minutes determining the proper question to ask, for once I know the proper question, I could solve the problem in less than 5 minutes."

- *Albert Einstein*



CAA OVERSIGHT of WILDLIFE HAZARDS

REGULATORY GUIDANCE



DATA COLLECTION



OUTREACH / EDUCATION



RESEARCH



PARTNERSHIPS



FUNDING



FAA METRICS AND KPI's

- **Metric 1.** Monitor ratio between damaging / non-damaging strikes
- **Metric 2.** Monitor number damaging strikes per 100,000 operations.
- **Metric 3.** Monitor number Part 139 certificated airports with WHA's (100%)
- **Metric 4.** Monitor number of GA airport Assessments or Site Visits initiated (124 airports [91%] of 136 have conducted WHAs or WHSVs;
- **Metric 5.** Monitor the altitude of reported strikes including a comparison of damaging vs nondamaging strikes to evaluate off-airport hazards.
- **Metric 6.** Systematic, comprehensive Gap Analysis (5 years) on reporting

FAA Wildlife Regulations - Evaluate Compliance -



14 CFR 139.337
(revised 2010)

139.337(a) ... each certificate holder shall take immediate action to alleviate wildlife hazards whenever they are detected.



Federal Aviation
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FAA Regulations, Advisories and CertAlerts

Advisory Circulars



AC 150/5200-32B REPORTING WILDLIFE AIRCRAFT STRIKES. May 31, 2013 (May 31, 2013)



AC 150/5200-34A CONSTRUCTION OR ESTABLISHMENT OF LANDFILLS NEAR PUBLIC AIRPORTS. January 26, 2006



AC 150/5200-33B HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS 8/28/2007



AC 150/5200-36A Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curricula for Airport Personnel Involved in Controlling Wildlife Hazards on Airports January 31, 2013



AC No: 150/5200-38 PROTOCOL FOR THE CONDUCT AND REVIEW OF WHSVs, WHAs, WHMPs and CONTINUAL MONITORING August 2018



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Certalerts – NonRegulatory Support

- Certalert No. 97-09 Wildlife Hazard Management Plan Outline 11/17/1997
- Certalert No. 04-16 Deer Hazard to Aircraft and Deer Fencing 12/13/2004
- Certalert No. 98-05 Grasses Attractive To Hazardous Wildlife 9/21/1998
- Certalert No. 04-09 Relationship Between FAA and Wildlife Services 8/30/2004
- Certalert No. 02-06 Access to the FAA National Wildlife Aircraft Strike Database 10/1/2002
- Certalert No. 03-03 Guidelines For Submitting Bird Strike Feather Remains For Identification 8/29/2003
- Certalert No. 06-07 Requests by State Wildlife Agencies to Facilitate and Encourage Habitat for State - Listed Threatened and Endangered Species and Species of Special Concern on Airports Date: 11/21/2006
- Certalert No. 09-10 Wildlife Hazard Assessments in Accordance with Part 139 Requirements June 11, 2009

Certalert No. 13-01 Federal and State Depredation Permit Assistance

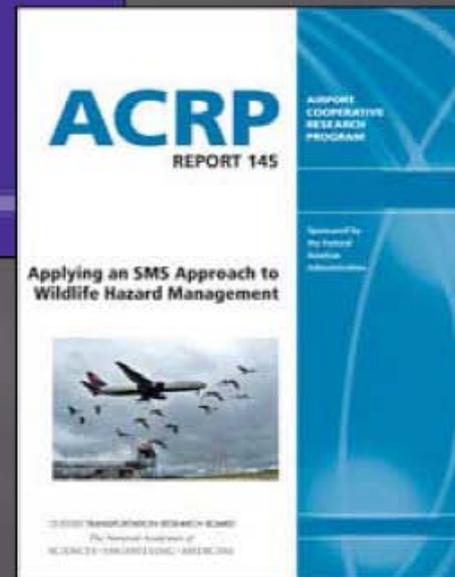
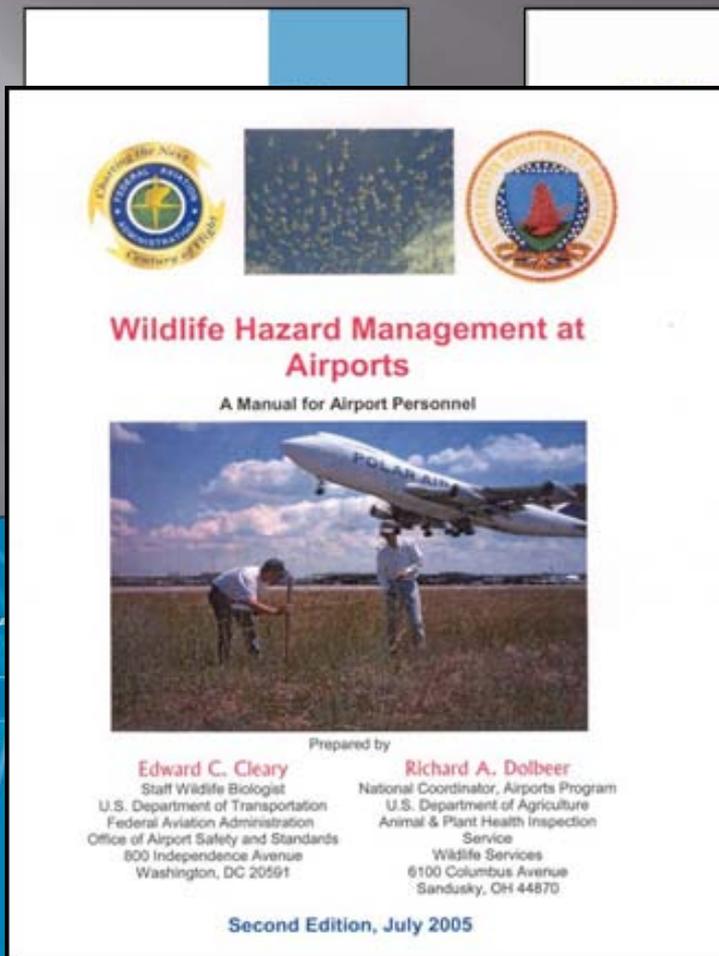
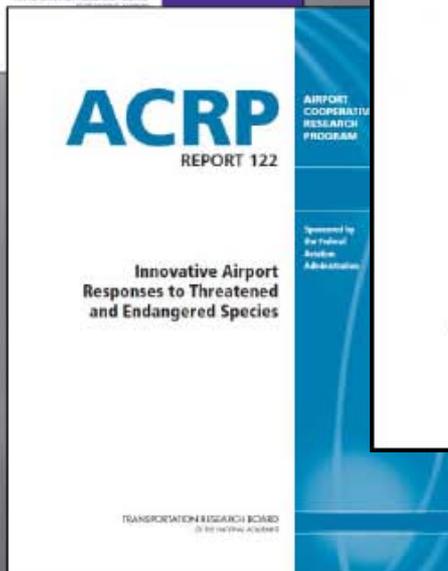
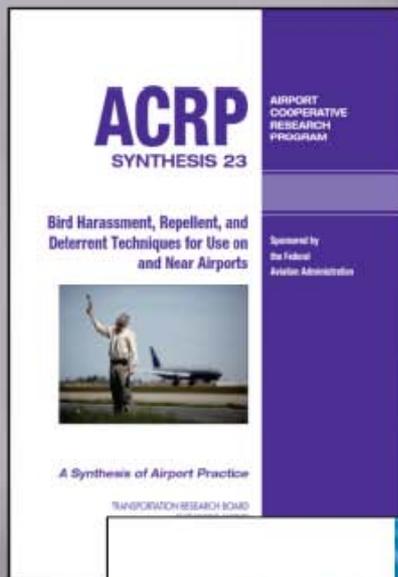
January 30, 2013



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ADDITIONAL RESOURCES

ACRP Manuals on Wildlife Hazard Management at Airports



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Part 139.337 (f) and AC-38 - Plan shall include at least the following:

- 1. Authorities and responsibilities**
- 2. WHA actions target dates for initiation and completion**
- 3. Wildlife hazard management procedures**
- 4. Habitat management**
- 5. Permits (local, state, and federal)**
- 6. Resources**
- 7. Training**
- 8. WHMP review / evaluation**

Electronic Reporting Options



Federal Aviation Administration Support Technology 9827 Search Airport Wildlife Hazard Mitigation

FAA Wildlife Strike Database

Search the Database Report a Strike Edit a Strike Report

About the FAA Wildlife Strike Database

The FAA Wildlife Strike Database contains records of reported wildlife strikes since 1992. Strike reporting is voluntary. Therefore, the database only represents the information we have received from airlines, airports, pilots, and other sources.

There are two ways to view information in the database:

1. Do a quick search from the Search the Database page. You can export the results to Microsoft Excel.
2. Download the complete FAA Wildlife Strike Database in Microsoft Access format, and create your own queries.

Our search tool shows key information for each wildlife strike, including Date, Airport, Airline, Aircraft, and Species. To view all 34 fields of information for one or more reports, you must open the complete database. You can also visit the FAA page for [Frequently Asked Questions](#) about wildlife strikes.

Quick Facts

The FAA has maintained a wildlife strike database since 1992.

The FAA wildlife strike database has recorded over 121,000 (Civil and USAF) wildlife strikes between 1992 and 2010.

82% of the total strikes in commercial service occur at or below 3,000 ft AGL, below ground level.

In 2010, 52% of the birds struck were identified to the species level.

<http://wildlife.faa.gov> <http://www.faa.gov/wildlife>

Outreach

**Strike Posters
2011, 2012, 2014
12,000 posters each year**

- Airports (3,300)
- Flight Schools
- Airlines
- Pilots Association
- Engine Manufacturers
- Aviation Industry

U.S. Department of Transportation
Federal Aviation Administration

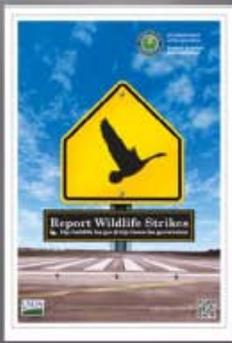
REPORT WILDLIFE STRIKES

<http://www.faa.gov/gowildlife> <http://www.faa.gov/mobile>



QR Code

<http://wildlife.faa.gov>



Federal Aviation Administration

Outreach



50th anniversary Challenge Coin celebrating first official strike reporting guidance (1965 - 2015)



FAA Safety Video Series: Wildlife Hazard

ment

and Strike Reporting 2015

“Sandy Wright / Richard Dolbeier Excellence in Strike Reporting” Award 2014



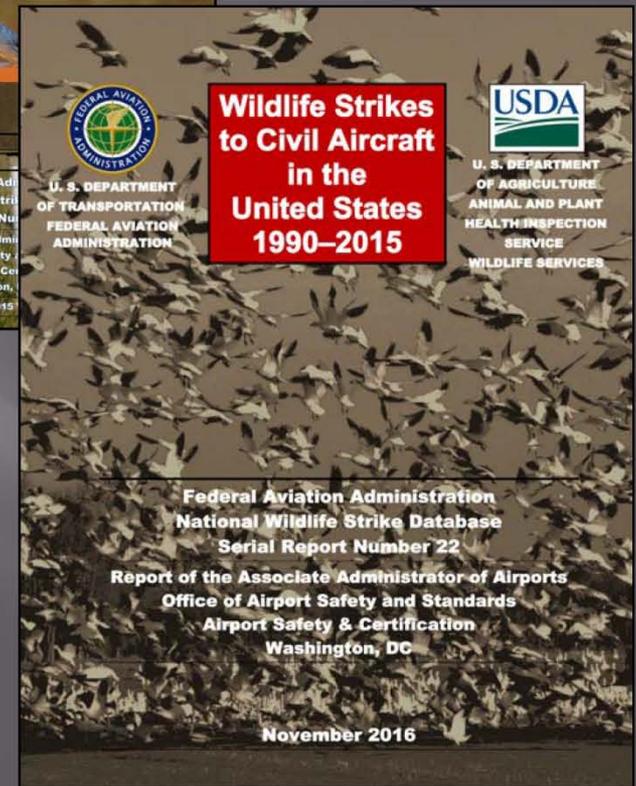
USDA & Smithsonian Institution video: Guide to Reporting Strikes



Federal Aviation Administration

DATA

National Wildlife Strike Database Report



Data current 1990 – Sep, 2018 (23 reports over 28 years)
209,000 strike incidents entered



USA strikes - birds (529 species; 97% of all strikes); terrestrial mammals (43 species); bats (22 species); reptiles (18 species)



About 38 strikes reported / day (<5% = damaging and decreasing)



Strike reporting increased 7.4-fold from 1,850 in 1990 to over 13,000 for years 2014 - 2016 and 14,400 for 2017.



82% of strikes occur <1,500 ft AGL - these strikes are within the 5 mile separation distance for attractants and can be successfully mitigated.



GA 662 airports reported strikes in 2016 (403 were Part 139 airports; 259 were airports). Overall, 1,962 airports have reported strikes.



“Strikes are rare events, that happen every day”

Wildlife / Aircraft Strikes

- from the ground up -

0-3,500 ft AGL = 92% of strikes



*

0-1,500 ft AGL = 82% of strikes



0-500 ft AGL = 71% of strikes



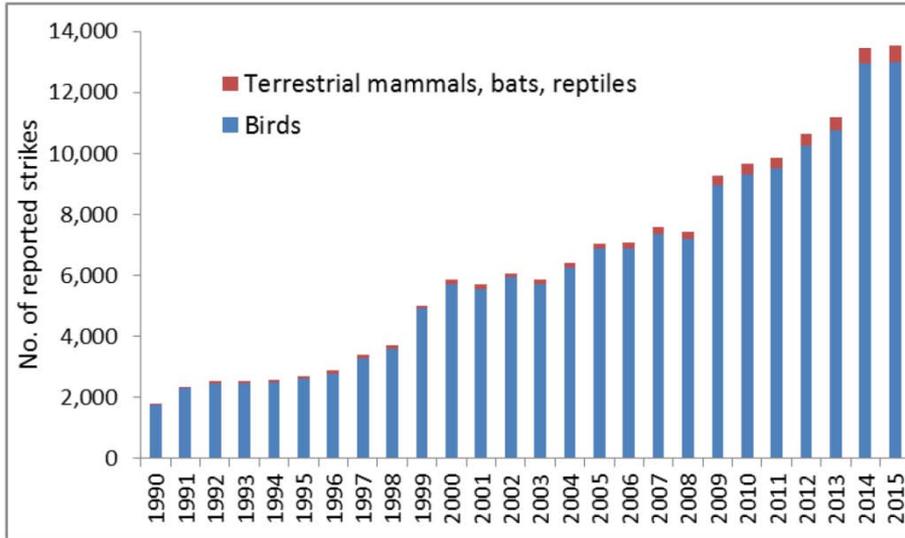
0 ft AGL = 41% of strikes



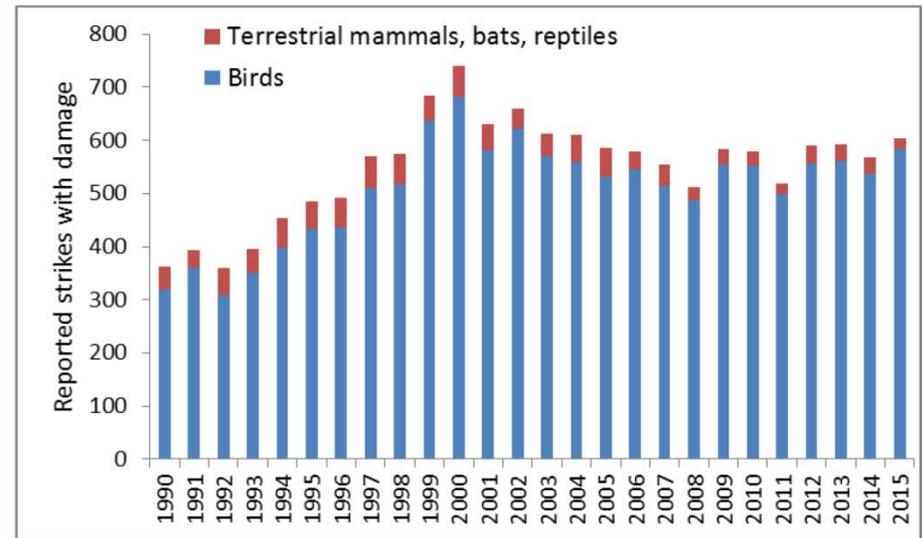
*(these strikes are within the 5 mile separation distance)

STRIKE REPORT CHALLENGE – USE THE DATA

- **Strike reporting continues to increase at all airports.**
- **Damaging strike within the airport environment (1,500 feet AGL) continue to decrease indicating safer airports.**



Strikes Reported to Civil Aircraft, USA: 1990 - 2015



Damaging Strikes to Civil Aircraft, USA: 1990 - 2015

EXPECTATIONS OF STRIKE DATA

- CAA needs enough data to:
 - determine high risk species
 - track national trends
 - provide scientific foundation for regulatory guidance
- Airports need enough data to: identify & mitigate hazardous species, strike dynamics and attractants and evaluate effectiveness of wildlife management program
- Industry needs enough data to: evaluate effectiveness of aircraft components



RESEARCH PROJECTS

**>\$25 million between
2009 and 2018**



AIP FUNDING

**>\$350 million between
2009 and 2018**



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PARTNERSHIPS – MOUs and MOAs

An MOU between the FAA and the BSC-USA was signed May 2012 to formalize this cooperative relationship.

MOA - Between the FAA, the U.S. Air Force & Army, EPA, USFWS and USDA to Address Aircraft-Wildlife Strikes



Richard Dolbeer Strike Data Evaluations (2009-2013) & (2004-2008) - Quantity & Quality of Data Increasing



- Multiple strike reports for a single strike event = improved Outreach.
- Decrease in average bird size involved in strikes = improved safety & Outreach.
- Bird identification high of 60% in 2014, 2015, 2016 & 2017.
- 47% of all strikes reported (2009 – 2013). 42% estimated in 2004-2008.





Questions...?