Visualisations of Bird Strikes
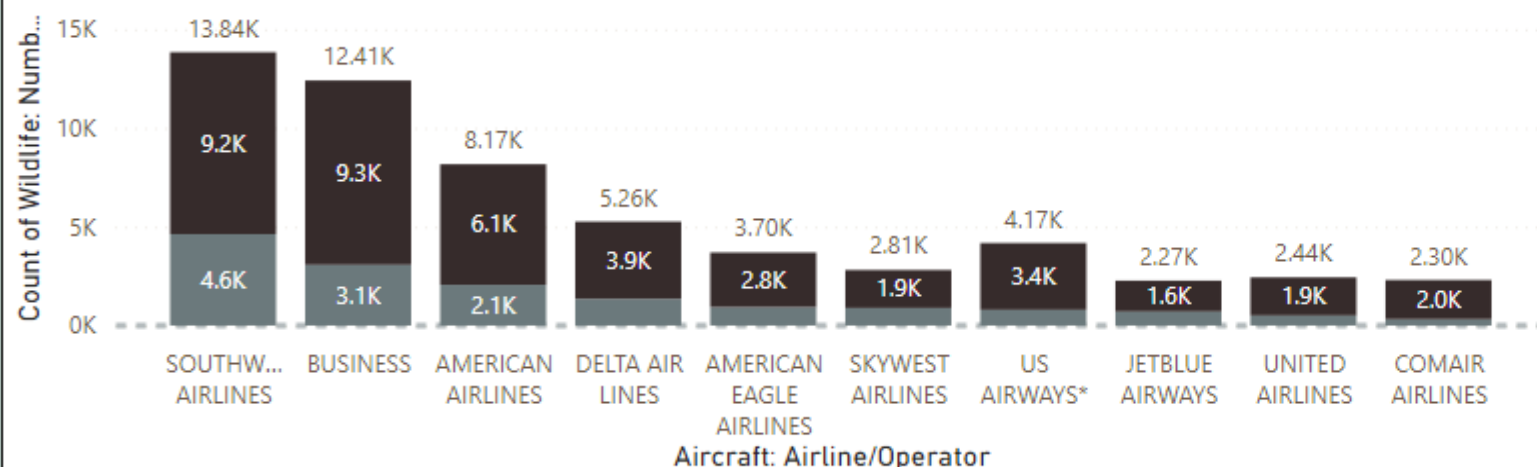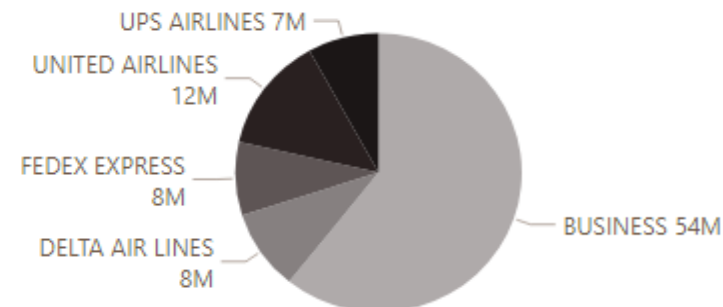
View in Power BI ↗

Count of Wildlife: Number struck and Sum of Wildlife: Number Struck Actual by Aircraft: Airline/Operator

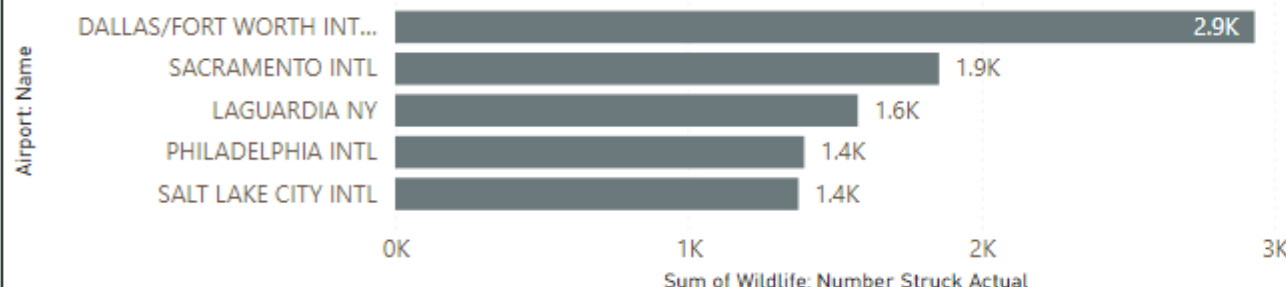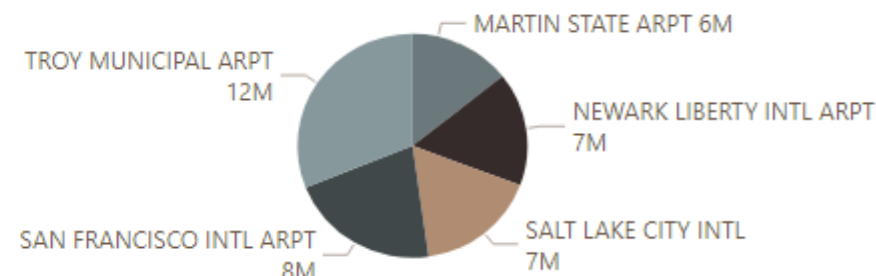● Count of Wildlife: Number struck ● Sum of Wildlife: Number Struck Actual

Count of Wildlife: Numb...

Aircraft: Airline/Operator	Total (top)	Sum Actual (dark)	Count struck (gray)
SOUTHW... AIRLINES	13.84K	9.2K	4.6K
BUSINESS	12.41K	9.3K	3.1K
AMERICAN AIRLINES	8.17K	6.1K	2.1K
DELTA AIR LINES	5.26K	3.9K	—
AMERICAN EAGLE AIRLINES	3.70K	2.8K	—
SKYWEST AIRLINES	2.81K	1.9K	—
US AIRWAYS*	4.17K	3.4K	—
JETBLUE AIRWAYS	2.27K	1.6K	—
UNITED AIRLINES	2.44K	1.9K	—
COMAIR AIRLINES	2.30K	2.0K	—

Sum of Cost: Total $ by Aircraft: Airline/Operator

- UPS AIRLINES 7M
- UNITED AIRLINES 12M
- FEDEX EXPRESS 8M
- DELTA AIR LINES 8M
- BUSINESS 54M

Sum of Wildlife: Number Struck Actual by Airport: Name

Airport: Name	Sum of Wildlife: Number Struck Actual
DALLAS/FORT WORTH INT...	2.9K
SACRAMENTO INTL	1.9K
LAGUARDIA NY	1.6K
PHILADELPHIA INTL	1.4K
SALT LAKE CITY INTL	1.4K

Sum of Cost: Total $ by Airport: Name

- MARTIN STATE ARPT 6M
- TROY MUNICIPAL ARPT 12M
- NEWARK LIBERTY INTL ARPT 7M
- SALT LAKE CITY INTL 7M
- SAN FRANCISCO INTL ARPT 8M

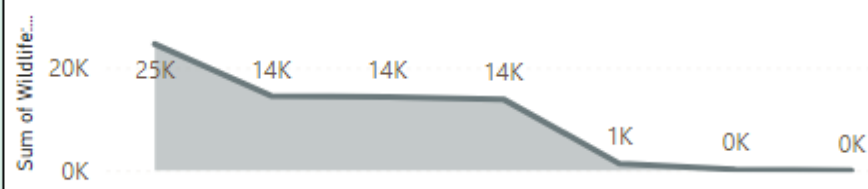< 1000 ft
59802
Sum of Wildlife: Number Struck Actual

> 1000 ft
8847
Sum of Wildlife: Number Struck Actual

Sum of Wildlife: Number Struck Actual by When: Phase of flight

Sum of Wildlife...
25K, 14K, 14K, 14K, 1K, 0K, 0K

Total_Cost
$142M

Number of wildlife struck each year

Year	1	2	3	4	5	6	7	8	9	10	11	12	**Total**
2000	125	101	372	337	180	405	432	444	317	411	1319	111	**4554**
2001	219	305	133	173	149	177	973	859	761	451	337	184	**4721**
2002	233	255	335	210	500	254	393	875	1534	450	322	144	**5505**
2003	437	237	120	231	221	1320	1034	794	489	562	494	254	**6193**
2004	278	128	174	197	261	386	403	732	588	669	330	203	**4349**
2005	215	194	309	306	294	320	590	621	954	663	458	214	**5138**
2006	246	211	567	299	267	374	756	1000	626	653	508	332	**5839**
2007	194	152	240	328	331	264	873	848	659	522	393	265	**5069**
2008	249	170	195	394	352	351	752	1043	523	525	443	353	**5350**
2009	220	273	374	618	476	412	986	1192	876	841	453	448	**7169**
2010	255	321	399	387	473	439	1280	1357	879	791	733	343	**7657**
2011	435	255	321	322	573	507	872	1248	995	739	516	322	**7105**
Total	**3106**	**2602**	**3539**	**3802**	**4077**	**5209**	**9344**	**11013**	**9201**	**7277**	**6306**	**3173**	**68649**

Sum of Wildlife: Number Struck Actual by Year
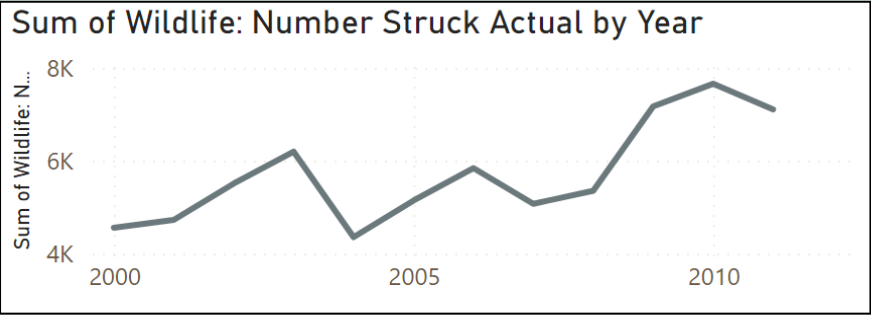
DATA VISUALISATION OF BIRD STRIKES BETWEEN 2000 – 2011

1. INTRODUCTION

1.1 ABOUT THE DATA

THE DATA CONTAINS 26 COLUMNS AND 25559 ROWS, CONTAINING INFORMATION ABOUT THE COLLISION OF BIRDS WITH DIFFERENT TYPES OF AIRCRAFT BELONGING TO VARIOUS AIRLINES, THE AIRPORT NAME, THE AIRCRAFT'S ALTITUDE, THE BIRD'S SIZE, THE NUMBER OF COLLISIONS, ETC.. THE DATA ALSO CONTAINS MISSING VALUES WHICH ARE LABELLED AS 'NULL' .

1.2 OBJECTIVES
THE MAIN OBJECTIVES OF THIS PROJECT ARE TO:
1. VISUALISE THE DATA TO SEE MEANINGFUL CORRELATIONS USING POWER BI
2. COMPARE THE NUMBER OF COLLISIONS REPORTED TO THE ACTUAL NUMBER OF COLLISIONS CAUSED.
3. THE AIRLINE WHICH ACCOUNTS TO THE MAXIMUM NUMBER OF COLLISIONS.

1.3 DATA CLEANING
WE FIRST CHECK FOR THE DATA TYPE OF EACH COLUMN AND CORRECT IT. FOR INSTANCE, THE FIGHTDATE COLUMN HAS DATE AND TIME ALONG WITH IT BUT TIME IS IRRELEVANT IN THE ANALYSIS HENCE WE CHANGE THE COLUMN DATATYPE FROM DATE/TIME TO DATE.
SECONDLY, WE THEN NOTICE 129 ROWS HAVING MISSING VALUES (NULL) IN SEVERAL COLUMNS. WE COULD FILL THESE ROWS USING THE FILL UP OR FILL DOWN OR DELETE THEM. FILLING THESE NULL VALUES HERE WOULD BE INACCURATE AS MISFILED ROWS FOR IMPORTANT COLUMNS SUCH AS ALTITUDE OR AIRPORT NAME CAN LEAD TO INACCURATE RESULTS. HENCE, WE DELETE THE ROWS CONTAINING NULL VALUES.

2. METHODOLOGY

* A STACKED COLUMN CHART (CHART 1) IS PLOTTED AGAINST THE AIRLINE AND THE NUMBER OF WILDLIFE STRUCK. THE TOP 5 AIRLINES WITH THE HIGHEST ACTUAL NUMBER OF WILDLIFE STRUCK ARE BUSINESS (9300), SOUTHWEST AIRLINES (9200), AMERICAN AIRLINES (6100), DELTA AIRLINES (3900) AND US AIRWAYS (3400).

HOWEVER, THE NUMBER OF WILDLIFE STRUCK THAT WAS REPORTED BY AIRLINES WAS IN A DIFFERENT ORDER, WITH THE TOP 5 BEING SOUTHWEST AIRLINES (4600), BUSINESS(3100), AMERICAN AIRLINES (2100), DELTA AIRLINES (1300) AND AMERICAN EAGLE AIRWAYS (932).

* A STACKED BAR CHART (CHART 2) IS PLOTTED AGAINST AIRPORTS AND THE NUMBER OF WILDLIFE STRUCK ACTUAL. THE TOP 5 AIRPORTS ACCOUNTING FOR THE HIGHEST NUMBER OF WILDLIFE STRUCK ACTUAL ARE DALLAS/ FORT WORTH INTL ARPT (2900), SACRAMENTO INTL (1900), LAGUARDIA NY (1600), PHILADELPHIA INTL (1400) AND SALT LAKE CITY INTL (1400).

* THE TOTAL NUMBER OF WILDLIFE STRUCK AT <1000 FT IS 59802 AND AT >1000 FT IS 8847. (CHART 6)

* A LINE CHART IS PLOTTED (CHART 9) AGAINST THE NUMBER OF WILDLIFE STRUCK ACTUAL AND YEAR. THE LINE IS NOT AN INCREASING LINE ALTHOUGH THERE ARE INCREASING TRENDS. THE HIGHEST NUMBER WAS IN 2010 (7657) AND THE LOWEST WAS IN 2004 (4349).

* A MATRIX IS CONSTRUCTED (CHART 8) TO BREAKDOWN THE NUMBER OF WILDLIFE STRUCK ACTUAL EACH YEAR AND EACH MONTH OF THAT YEAR. AUGUST ACCOUNTS FOR THE HIGHEST NUMBER (11013) AND FEBRUARY ACCOUNTS FOR THE LOWEST (2602).

* THE TOTAL COST DUE TO THE BIRD STRIKES WAS $142 M (CHART 3). TWO PIE CHARTS (CHART 4 & CHART 5) ARE CONSTRUCTED TO FIND THE TOP 5 AIRLINES AND AIRPORTS THAT INCURRED THE HIGHEST COST.

THE TOP 5 AIRLINES WITH THE HIGHEST COSTS WERE BUSINESS ($54M), UNITED AIRLINES ($12M), FEDEX EXPRESS ($8M), DELTA AIRLINES ($8M), AND UPS AIRLINES ($7M).

THE TOP 5 AIRPORTS WITH THE HIGHEST COSTS WERE TROY MUNICIPAL ARPT ($12M) SAN FRANCISCO INTL ARPT ($8M), NEWARK LIBERTY INTL ARPT ($7M), SALT LAKE CITY INTL ($7M) AND MARTIN STATE ARPT ($6M).

* AN AREA CHART (CHART 7) WAS PLOTTED AGAINST THE PHASE OF FLIGHT AND THE NUMBER OF WILDLIFE STRUCK THE ACTUAL. HIGHEST NUMBER OF WILDLIFE WERE STRUCK DURING APPROACH (25000), FOLLOWED BY TAKE-OFF (14000), LANDING (14000), CLIMBING (14000) AND DESCENT (1000).