FAA Strike Dashboard

Presented by:

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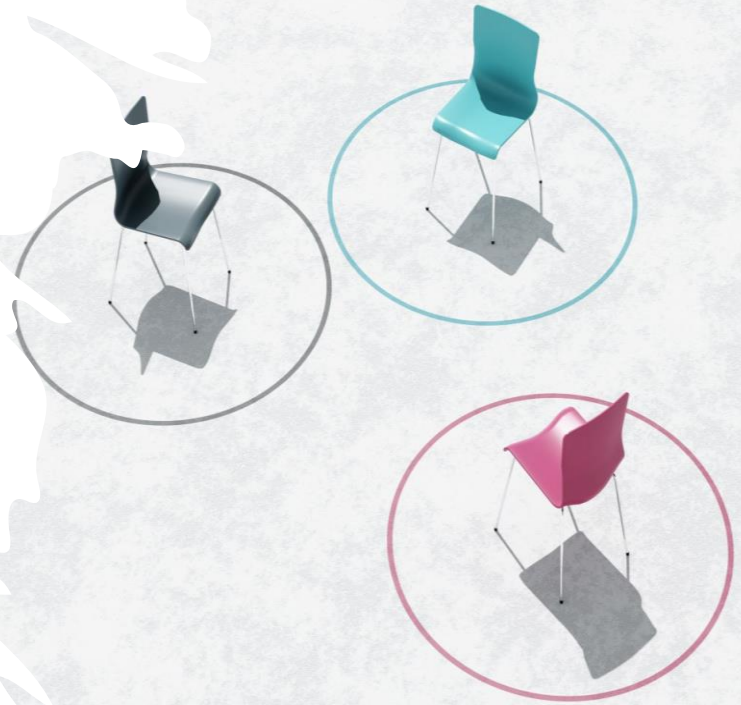
Project flow structure:

FAA Wildlife Strikes, 2015:

- Step 1- Connect the data to Tableau.
- Step 2- Detect and understand the different data types in the table.
- Step 3- Build different visualizations to learn about the dataset.
- Step 4- Identify the categorical features in the table.
- - Effect- Amount of damage, impact of flight, indicated damaged.
- - When - Collision date and time, time of day and phase of flight
- - Wildlife – Animal category, species order, species group and species.



Trends findings:

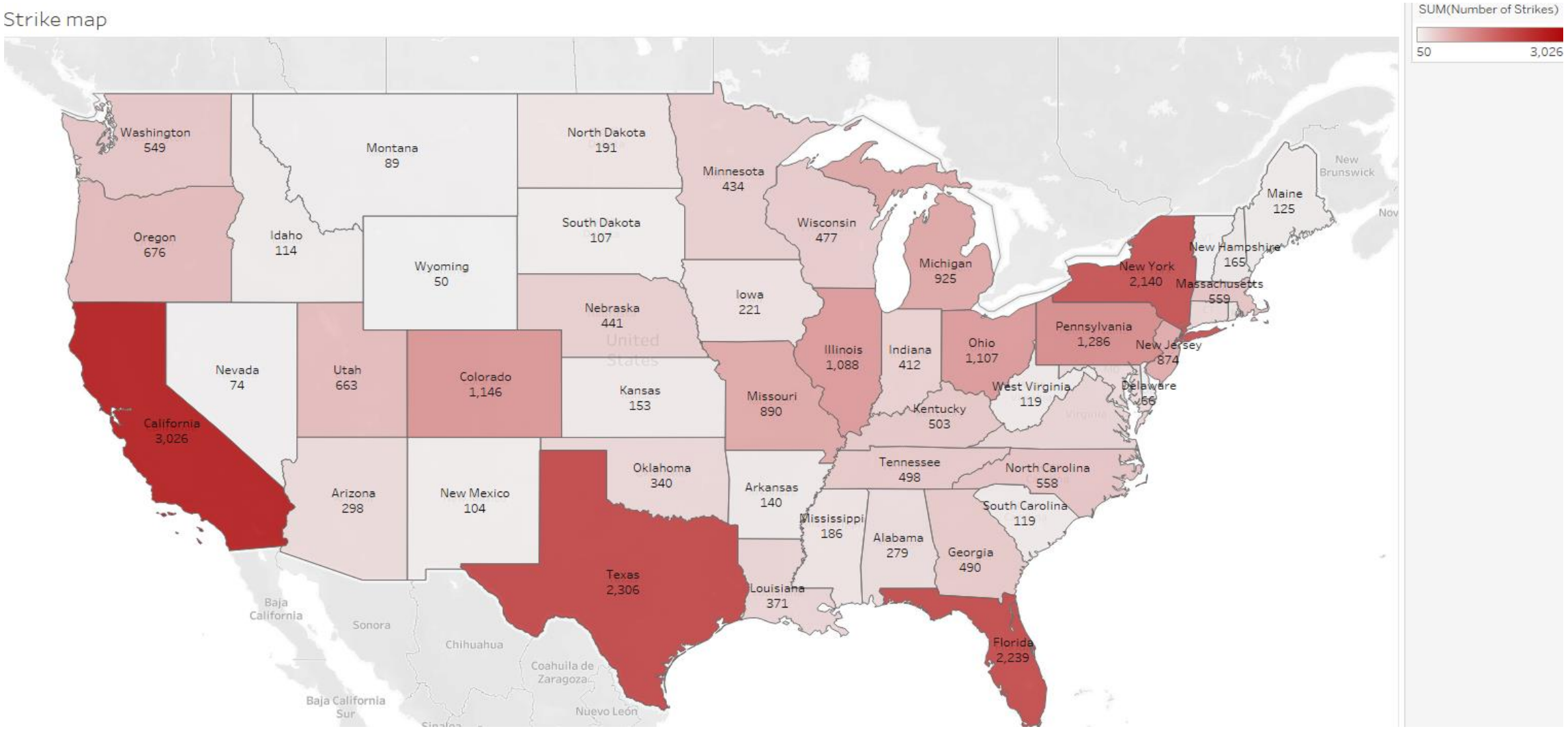
- Increase in the number of wildlife strikes over time.
- Birds are the dominant wildlife category with the most strikes.
- Most wildlife strikes have no impact or no damage.

Visualization-Number of strikes table

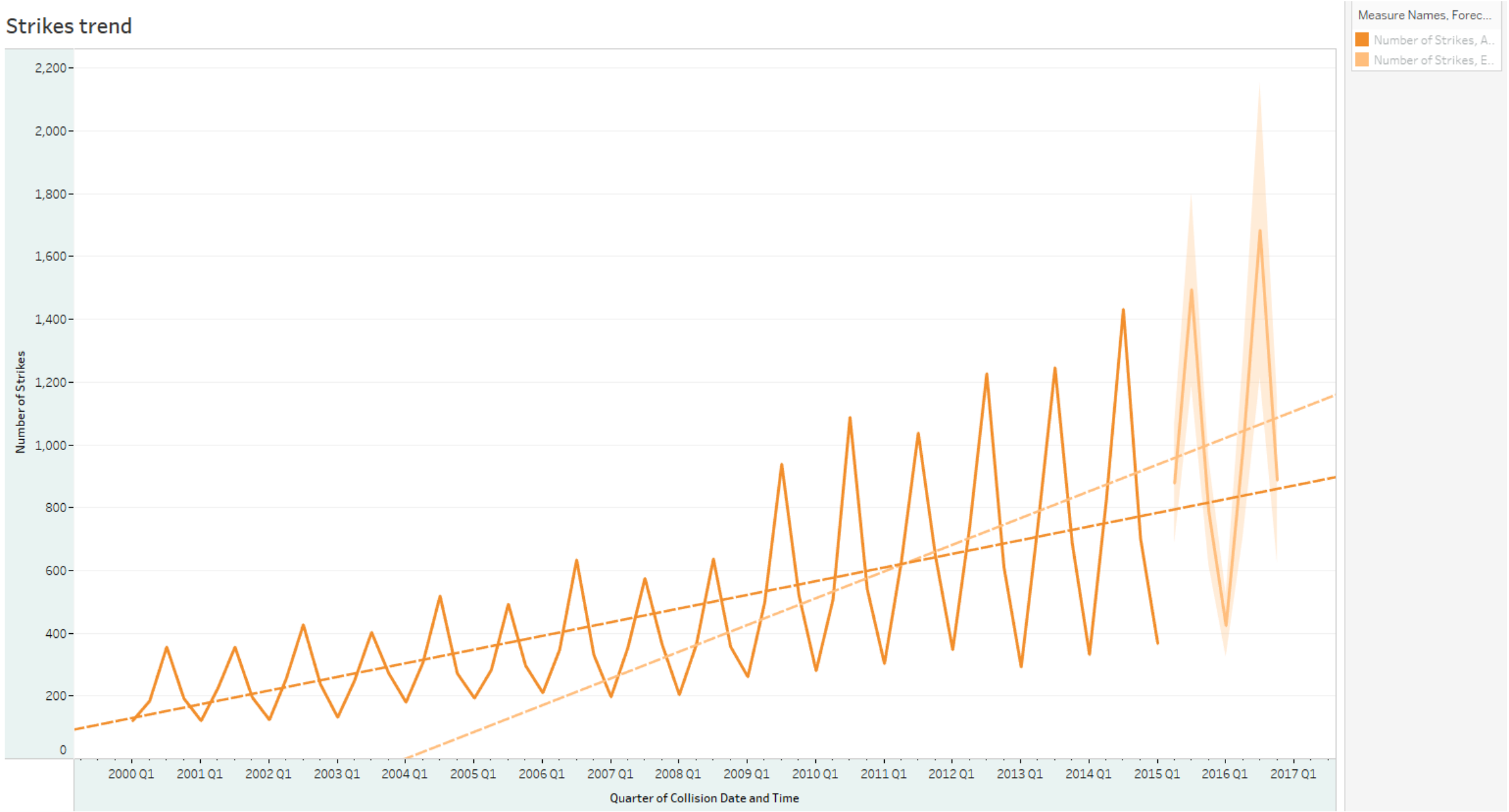
No_strikes_table

Origin State	Airport: Name	
Alabama	BIRMINGHAM-SHUTTLES..	159
	HUNTSVILLE INTL ARPT-C..	60
	MOBILE REGIONAL	20
	MONTGOMERY REGIONA..	19
	MOBILE DOWNTOWN ARPT	9
	NORTHEAST ALABAMA RE..	2
	NORTHWEST ALABAMA R..	2
	TROY MUNICIPAL ARPT	2
	ANNISTON METROPOLITA..	1
	AUBURN-OPELIKA RG PIT..	1
	JACK EDWARDS ARPT	1
	THOMAS RUSSELL FIELD	1
	TUSCALOOSA REGIONAL ..	1
	WEEDON FIELD ARPT	1
Arizona	PHOENIX SKY HARBOR IN..	113
	TUCSON INTL	53
	PHOENIX-MESA GATEWAY	44
	PHOENIX DEER VALLEY A..	21
	ERNEST A LOVE FIELD	14
	FLAGSTAFF PULLIAM	11
	PHOENIX GOODYEAR ARPT	9
	GRAND CANYON NATIONAL	5
	SCOTTSDALE ARPT	5
	SIERRA VISTA MUNI ARPT..	5
	FALCON FIELD ARPT	4
	YUMA MCAS/YUMA INTL ..	3
	LAUGHLIN/BULLHEAD INT..	2
	MARANA REGIONAL ARPT	2
	PAGE MUNICIPAL	2
	SHOW LOW REGIONAL AR..	2
	KINGMAN	1
	PINAL AIRPARK	1
	SEDONA ARPT	1
Arkansas	BILL AND HILLARY CLINT..	73
	FORT SMITH REGIONAL A..	32
	NW ARKANSAS REGIONAL	19
	TEXARKANA-WEBB FIELD	5

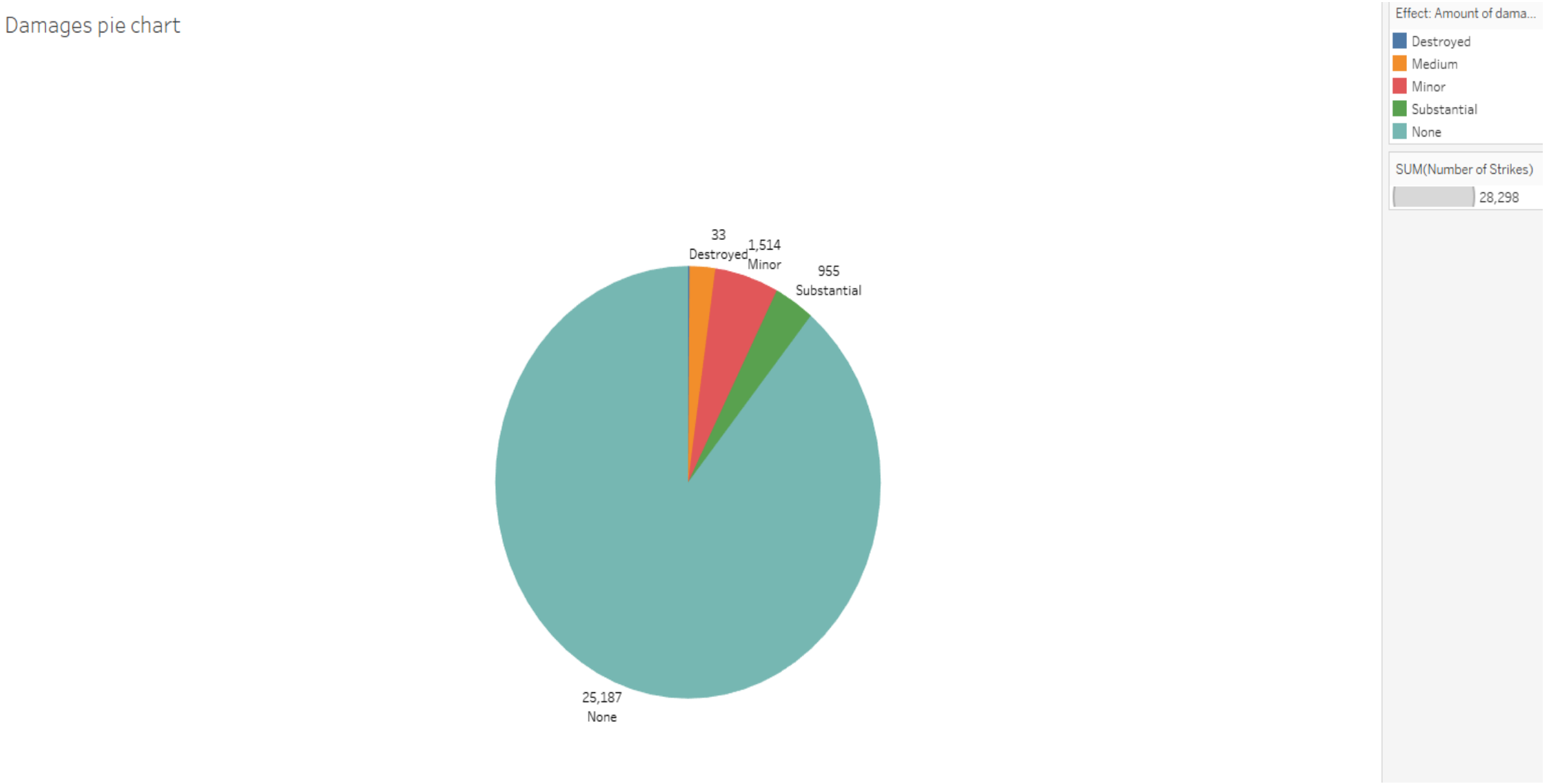
- Used map to show the states with the most strikes



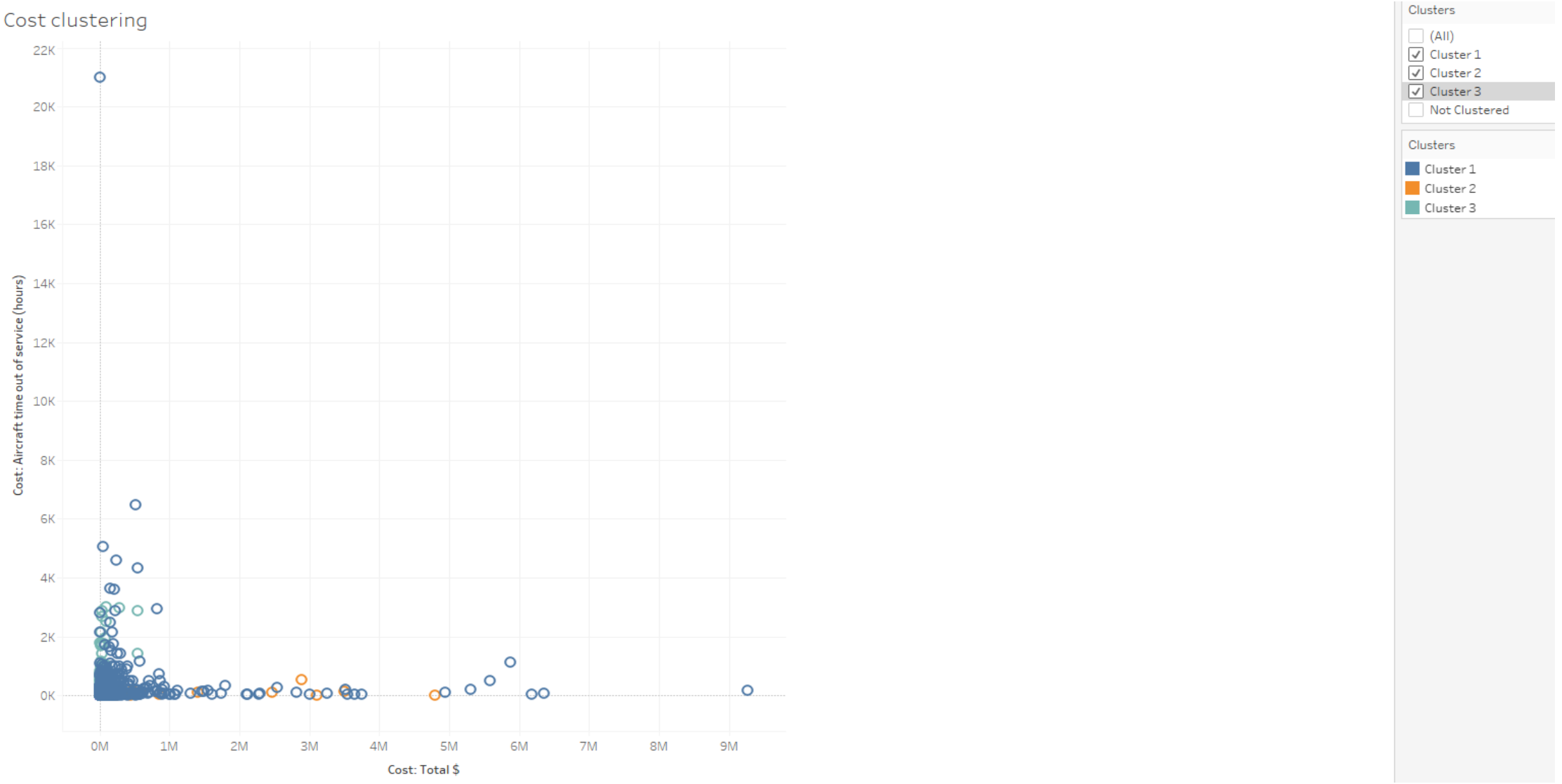
- Trend and forecast - Date and time (Using line chart)



- Pie chart showing amount of damages



- Clustering – cost (amount and time)



- Clustering variables

Describe Clusters

Summary | Models

Inputs for Clustering

Variables: Sum of Cost: Aircraft time out of service (hours)
Sum of Cost: Total $
Sum of Aircraft: Number of engines
Sum of Days

Level of Detail: Not Aggregated

Scaling: Normalized

Summary Diagnostics

Number of Clusters:	3
Number of Points:	2238
Between-group Sum of Squares:	38.525
Within-group Sum of Squares:	11.104
Total Sum of Squares:	49.628

		Centers			
Clusters	Number of Items	Sum of Cost: Aircraft time out of service (hours)	Sum of Cost: Total $	Sum of Aircraft: Number of engines	Sum of Days
Cluster 1	1966	89.183	82732.0	2.0	3.716
Cluster 2	84	43.619	2.8393e+05	3.381	1.8175
Cluster 3	188	326.94	17605.0	1.0	13.622

- Clustering model

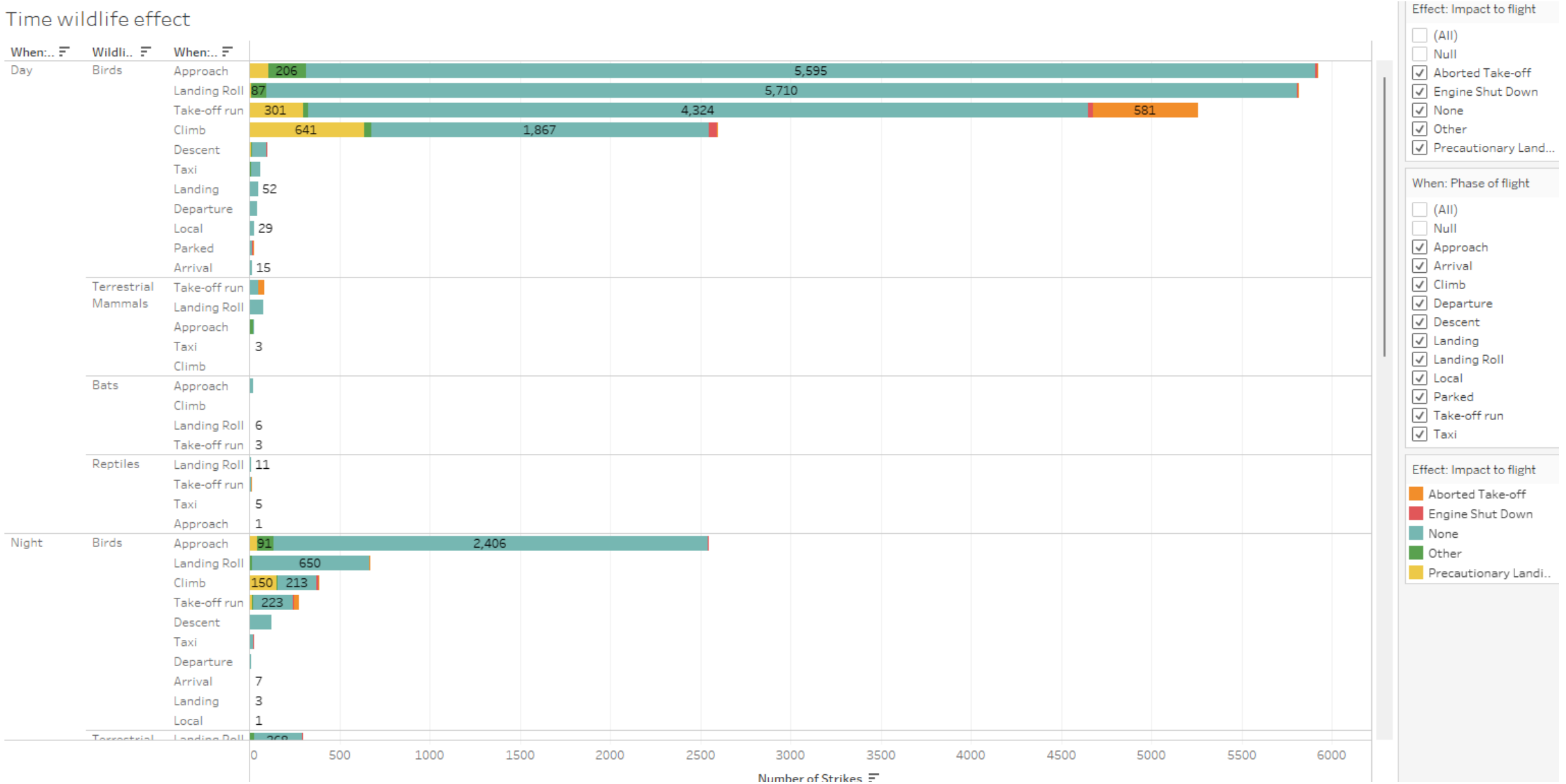
Describe Clusters

Summary | Models

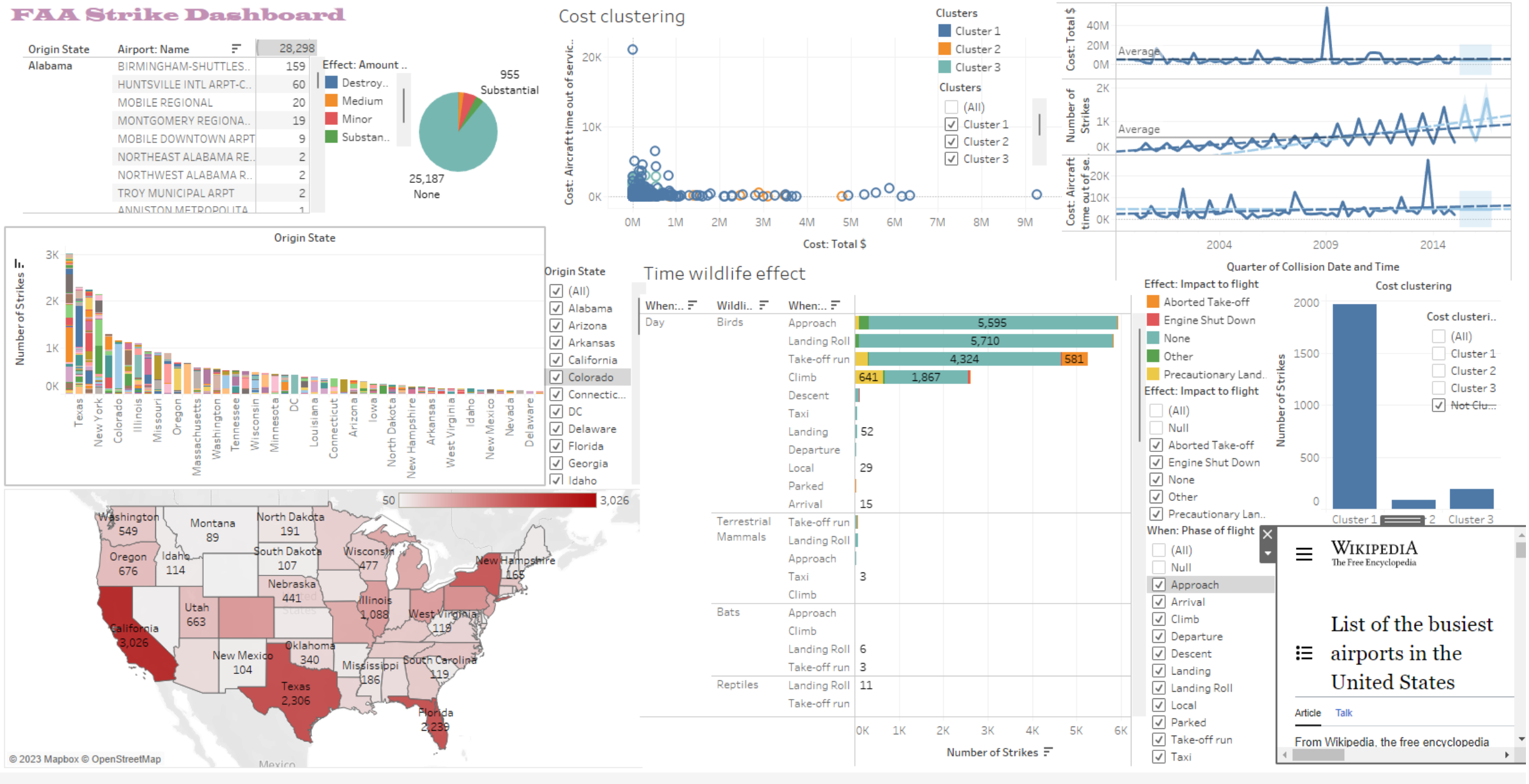
Analysis of Variance:

Variable	F-statistic	p-value	Model		Error	
			Sum of Squares	DF	Sum of Squares	DF
Sum of Aircraft: Number of engines	1057.0	0.0	38.43	2	40.63	2235
Sum of Cost: Aircraft time out of service (hours)	15.14	2.943e-07	0.0228	2	1.683	2235
Sum of Days	15.14	2.943e-07	0.0228	2	1.683	2235
Sum of Cost: Total $	9.67	6.585e-05	0.04872	2	5.631	2235

- Bar chart – showing categorical features of when and effects.



• FAA Dashboard



Problem questions

- Will the cost of repair increase over time as the number of wildlife strikes increase?
- Will the out of service hours increase over time as the number of wildlife strike increase?
- Can we find out the major cause of high number of wildlife strikes at state level or airports?

States with most Airports.

States	Number of airports
Texas	1494
Alaska	573
Florida	489
California	485
Illinois	431
Wisconsin	410
Ohio	397
Oklahoma	364
Pennsylvania	364
Missouri	359
Indiana	357
Washington	356
New York	344
Kansas	342
North Carolina	342
Georgia	332
Michigan	329
Oregon	326
Minnesota	298