

Tableau_Project-1

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FINAL TABLEAU PROJECT

LHL FLEX Bootcamp - Data Analyst

FAA Wildlife Strikes

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2023-09-26



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FAA Wildlife Strikes

PROCESS



The FAA Wildlife Strike Database:

- Contains records of reported wildlife strikes **since 1990**.
- Strike reporting is **voluntary**.
- Reporting from **airlines, airports, pilots**, Mandatory Occurrence Reports (MOR), incident/accident information, and other sources.



<https://wildlife.faa.gov/home>

Assumption:

- Data represent extract from **2000 to 2015**. I assume that the data has reached a point of maturation and any trend observed should be reflective of actual phenomena.

- Known insights:

- + Expanding wildlife populations
- + Increases in number of aircraft movements

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Source: NASA



Source: NBC News, "The Silent Aircraft"



Source: The Spokesman, "Cpt Sully and his crew"

Goals:

1. Validate known insights and detect special trend and new insights on three categories:
 - + **WHEN**
 - + **EFFECT**
 - + **WILDLIFE**
2. Create a Dashboard in Tableau with a focus on **cost of damage**

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When



Effect



Wildlife

FAA Wildlife Strikes

What have we learned?

- Number of strikes greatly depends on **human activity**, specially during holidays.
- Most of the strikes happen during **Day and Night**, 2X more during day.
- Number of strikes increase but **not that much for cost of damage** (except for rare destroyed aircraft).
- Most of the damage are substantial, so the **out of service hours are very high**.
- Most of the strike happen during **climbing**.
- **Canada goose** are having the most impact on cost.
- Most of **ducks** are beeing strike **at night**.

Cover

Introduction

Dashboard

Conclusion

Questions?



THANKS FOR WATCHING

https://github.com/Christian-Leclerc/Tableau_Project-1.git

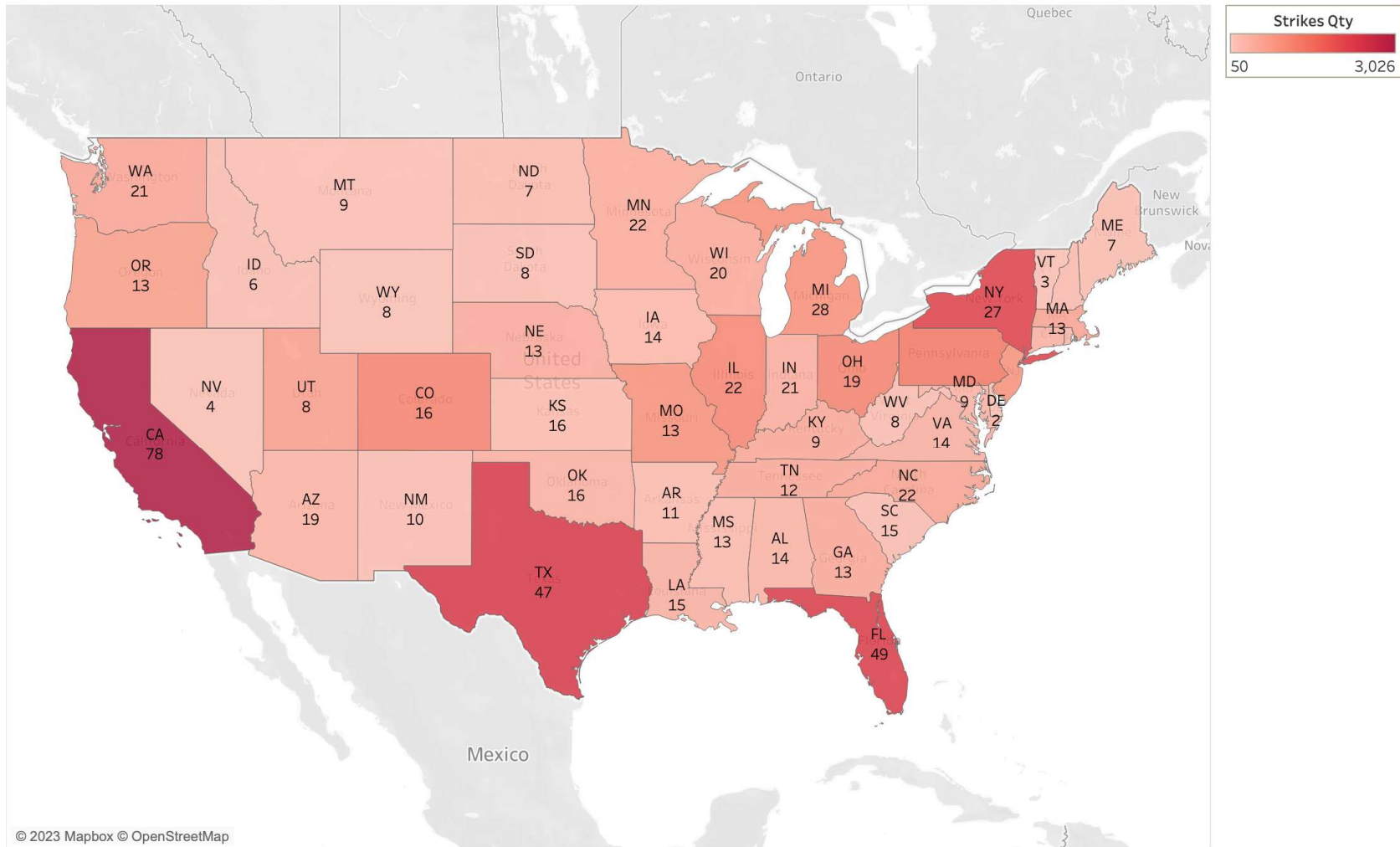
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Number of Strikes

Strikes	% with Cost	Total Out of Service (hours)	Total Cost (\$)
28,298	10.99%	248,276	\$322,160,887

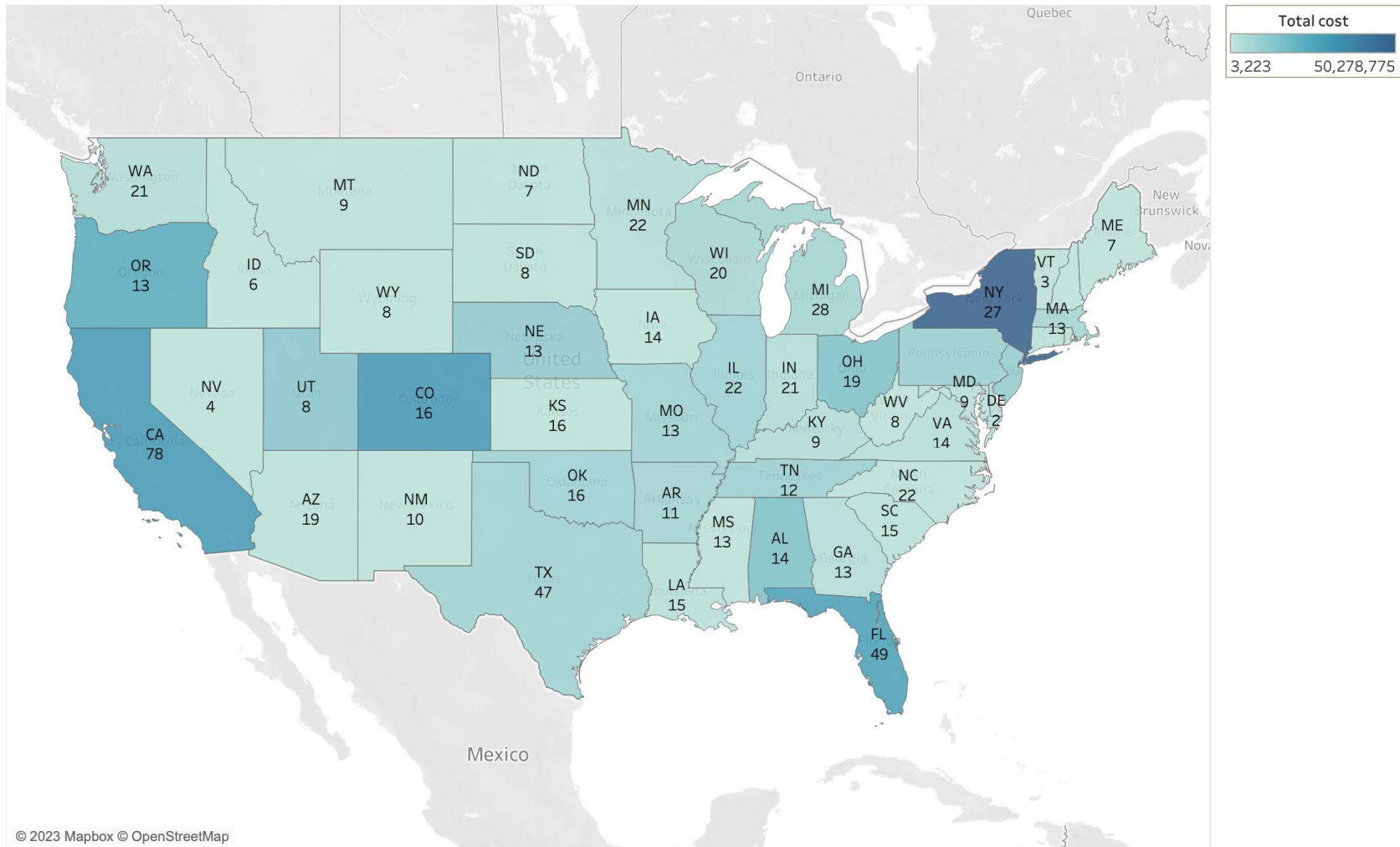
Strikes, % with Cost, Total Out of Service (hours) and Total Cost (\$). The data is filtered on Collision DateTime Year, State and Airport Name. The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members.

Strikes per State



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Strikes Qty. The marks are labeled by State Code and distinct count of Airport Name. Details are shown for State. The data is filtered on Collision DateTime Year, Airport Name and Action (State,State Code). The Collision DateTime Year filter keeps 16 of 16 members. The Airport Name filter keeps 771 of 771 members. The Action (State,State Code) filter keeps 49 members. The view is filtered on State, which keeps 49 of 49 members.

Cost of damage per qty of airport



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Total cost. The marks are labeled by State Code and distinct count of Airport Name. Details are shown for State. The data is filtered on Collision DateTime Year, Airport Name and Action (State,State Code). The Collision DateTime Year filter keeps 16 of 16 members. The Airport Name filter keeps 771 of 771 members. The Action (State,State Code) filter keeps 49 members. The view is filtered on State, which keeps 49 of 49 members.

Graphic selection



Select gr



Y-T-Y Tre



When



Effect



Wildlife

Categories broken down by Categories. Color shows details about Categories. Shape shows details about Categories. The marks are labeled by Categories.

Categories

▶ Select graphic

📊 Y-T-Y Trend

📅 When

✈️ Effect

🦋 Wildlife

Categories

■ Select graphic

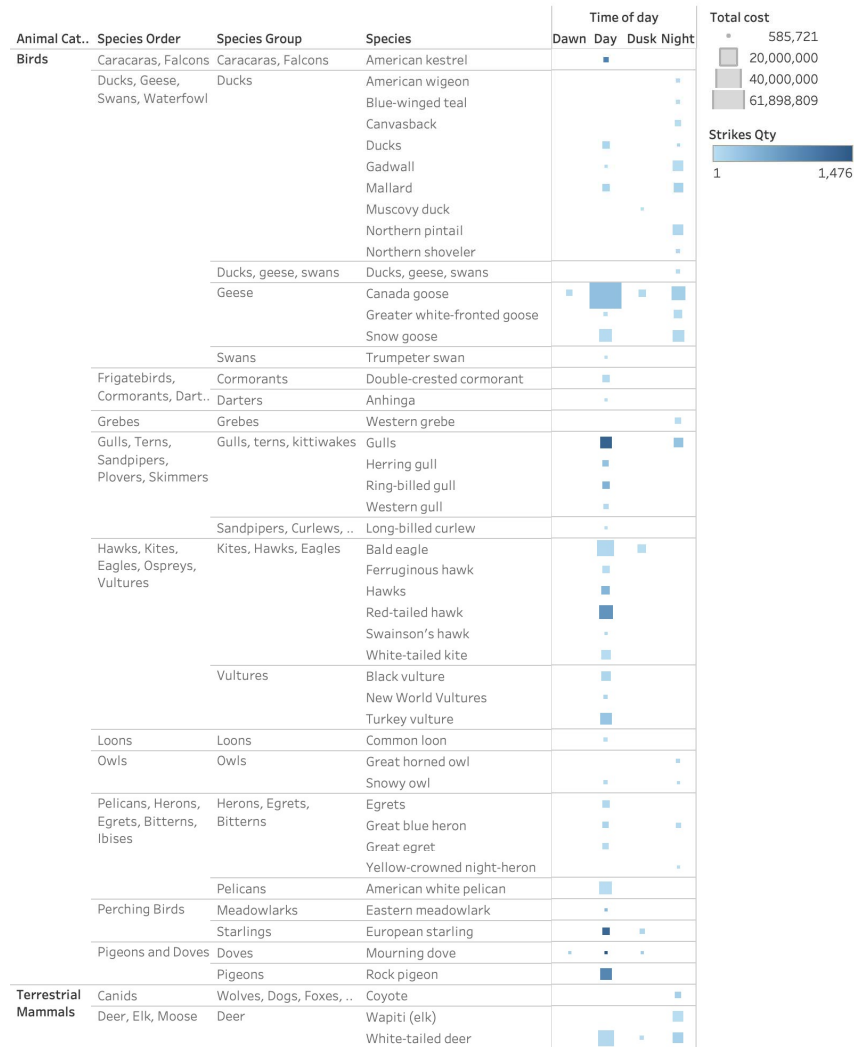
■ Y-T-Y Trend

■ When

■ Effect

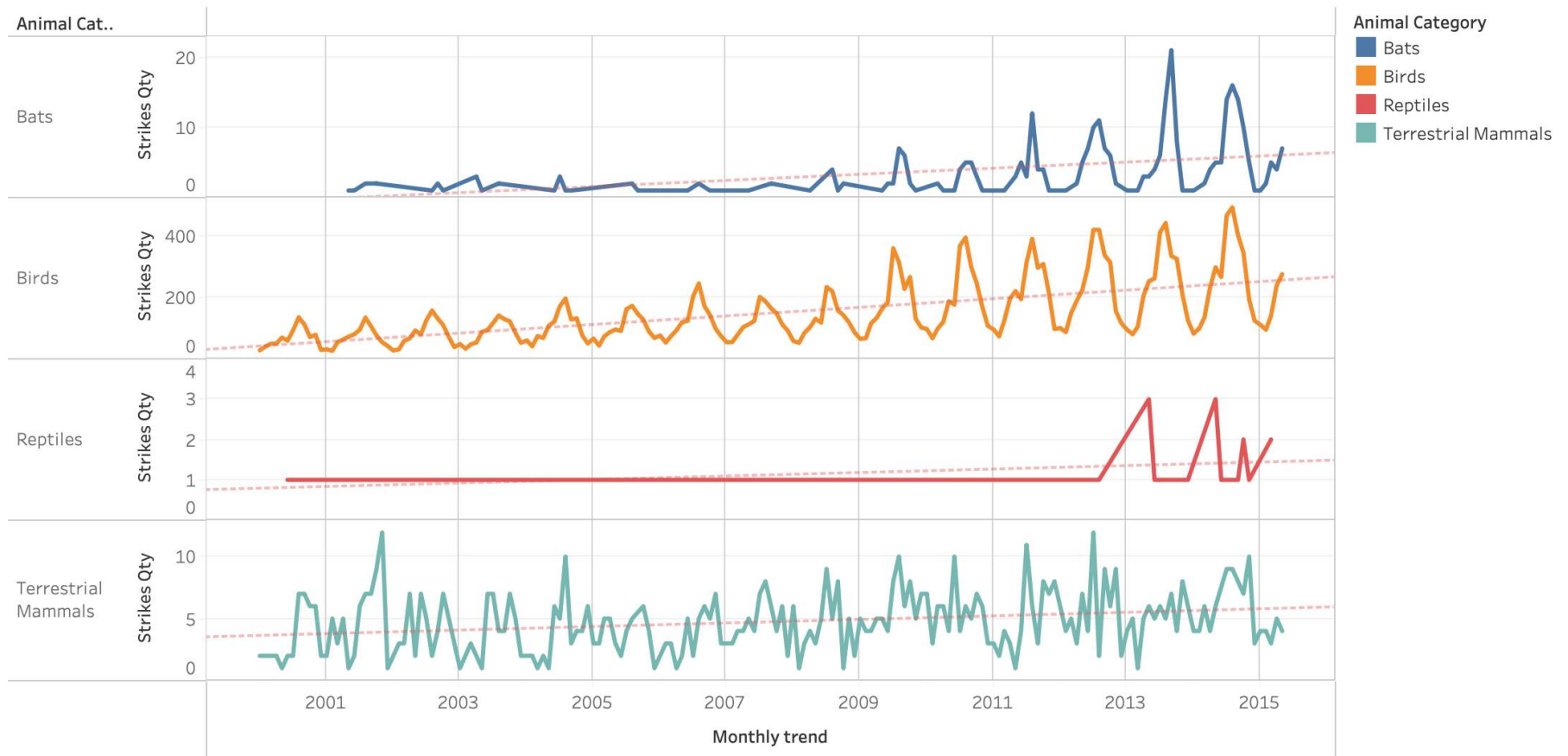
■ Wildlife

Cost per species



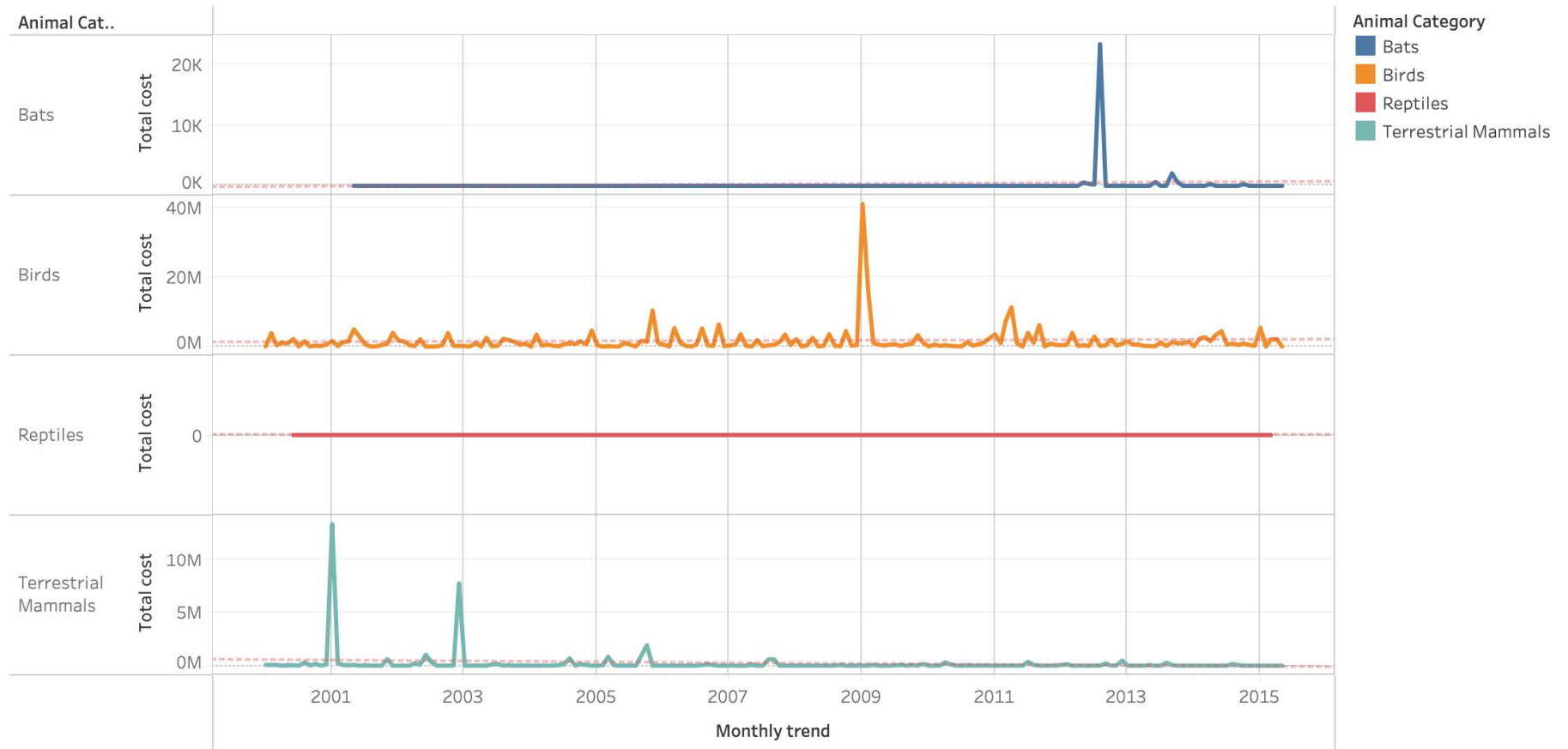
Sum of Strikes Qty (color) and sum of Total cost (size) broken down by Time of day vs. Animal Category, Species Order, Species Group and Species. The data is filtered on Collision DateTime Year, State, Airport Name and Action (State,State Code). The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members. The Action (State,State Code) filter keeps 49 members. The view is filtered on sum of Total cost, which includes values greater than or equal to 582,112.

Strikes over time

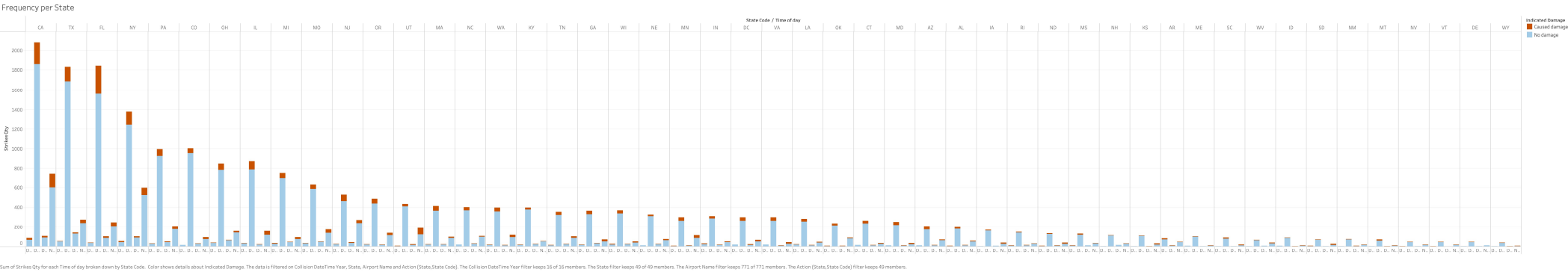


The trend of sum of Strikes Qty for Collision DateTime Month broken down by Animal Category. Color shows details about Animal Category. The data is filtered on Collision DateTime Year, State, Airport Name and Action (State,State Code). The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members. The Action (State,State Code) filter keeps 49 members.

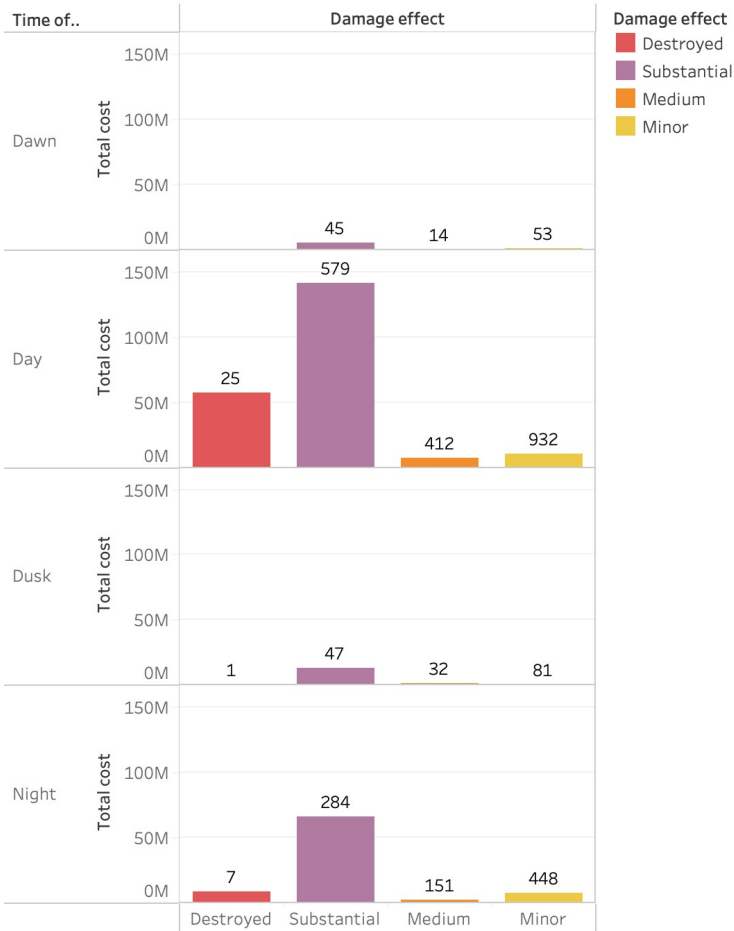
Cost over time



The trend of sum of Total cost for Collision DateTime Month broken down by Animal Category. Color shows details about Animal Category. The data is filtered on Collision DateTime Year, State, Airport Name and Action (State,State Code). The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members. The Action (State,State Code) filter keeps 49 members. The view is filtered on Exclusions (Animal Category,MONTH(Collision DateTime)), which keeps 482 members.

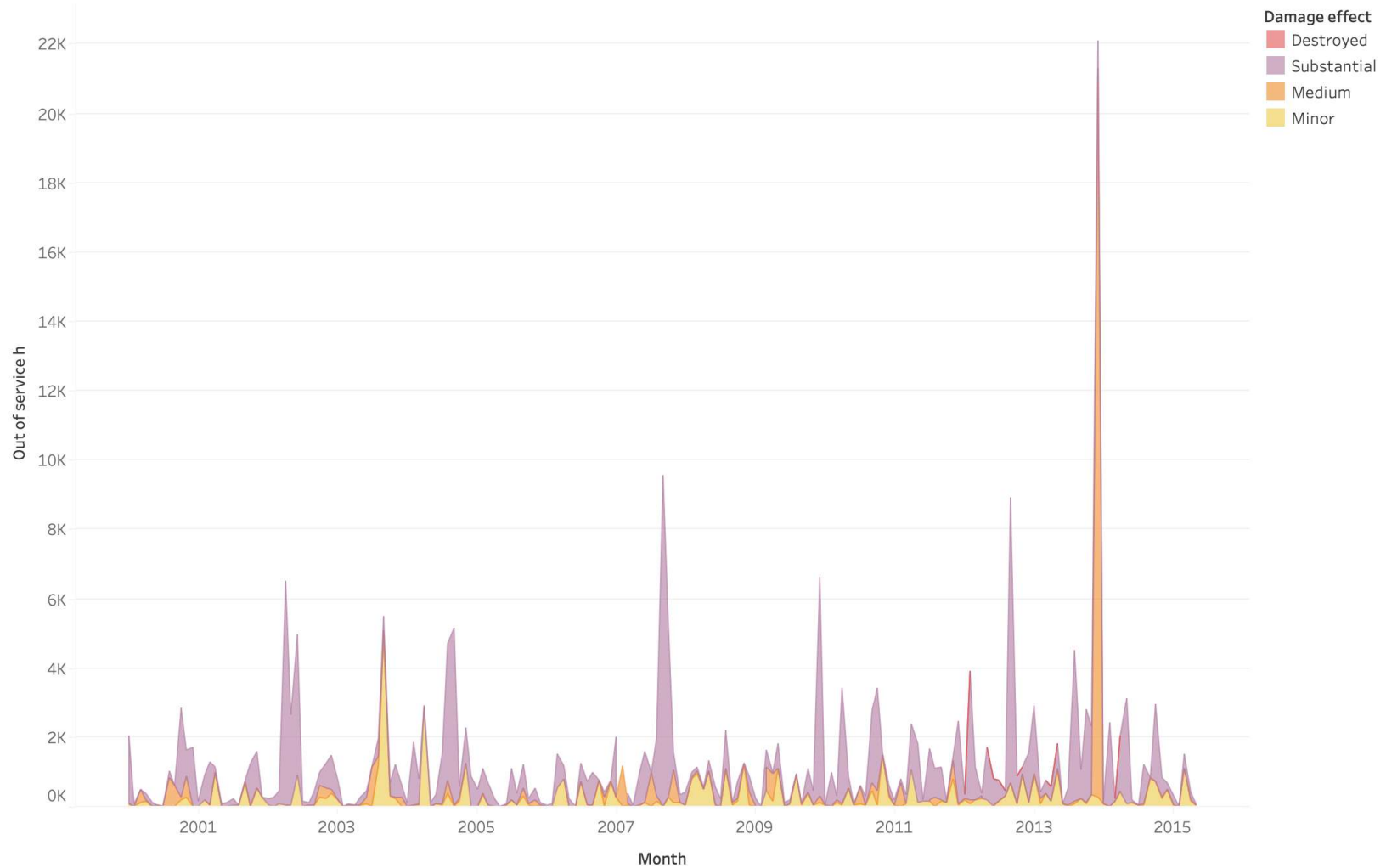


Cost per time of day



Sum of Total cost for each Damage effect broken down by Time of day. Color shows details about Damage effect. The marks are labeled by sum of Strikes Qty. The data is filtered on Collision DateTime Year, State, Airport Name and Action (State,State Code). The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members. The Action (State,State Code) filter keeps 49 members. The view is filtered on Damage effect, which keeps Destroyed, Medium, Minor and Substantial.

Out of service (h) over time per effect



The plot of sum of Out of service h for Collision DateTime Month. Color shows details about Damage effect. The data is filtered on Collision DateTime Year, State and Airport Name. The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members. The view is filtered on Damage effect, which keeps Destroyed, Medium, Minor and Substantial.

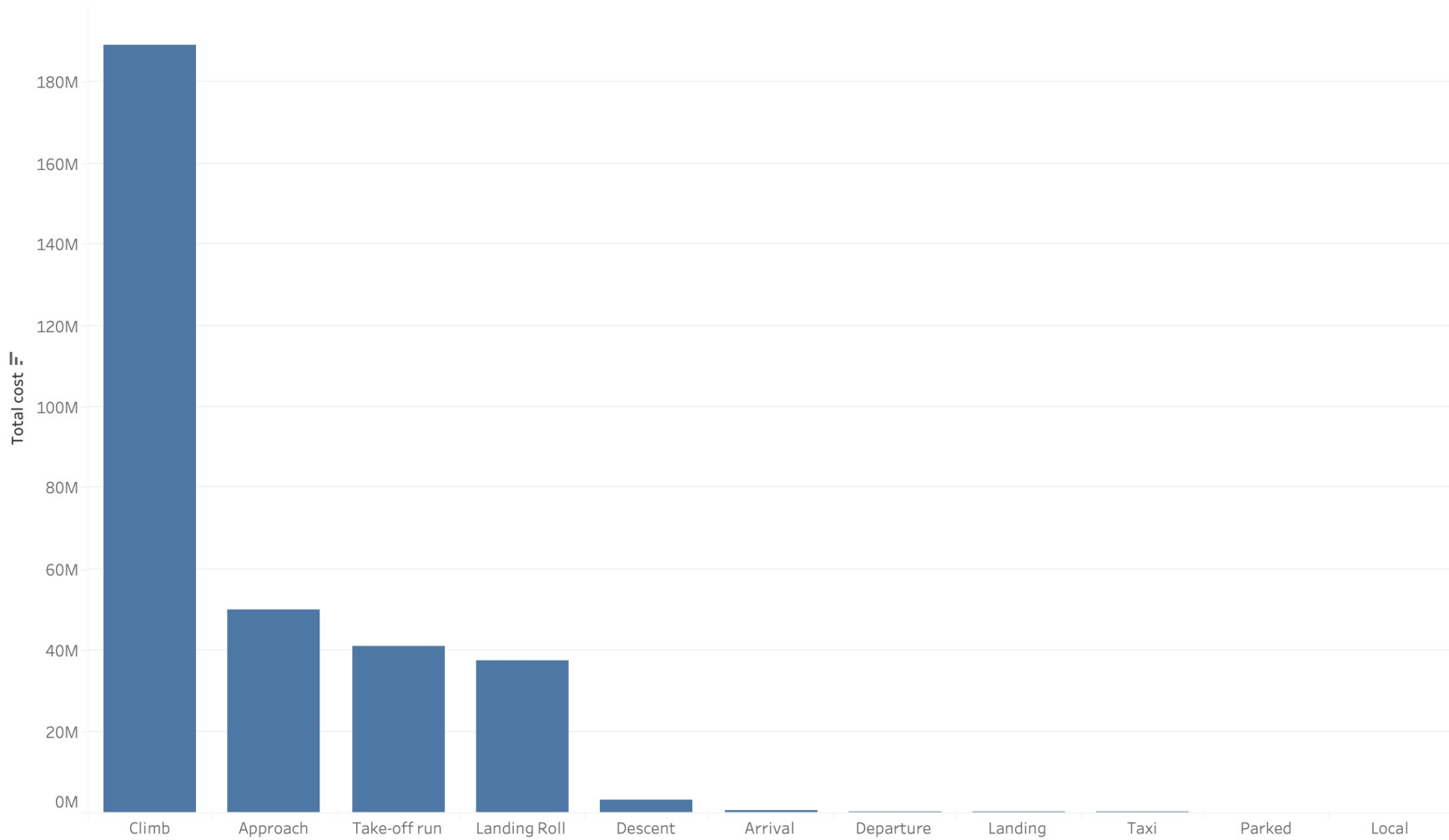
Distribution of effect per category

Animal Category	Destroyed	Substantial	Medium	Minor	None
Bats	1				331
Birds	25	866	584	1,400	24,214
Reptiles					33
Terrestrial Mammals	7	89	25	114	609

- Destroyed
- Substantial
- Medium
- Minor
- None

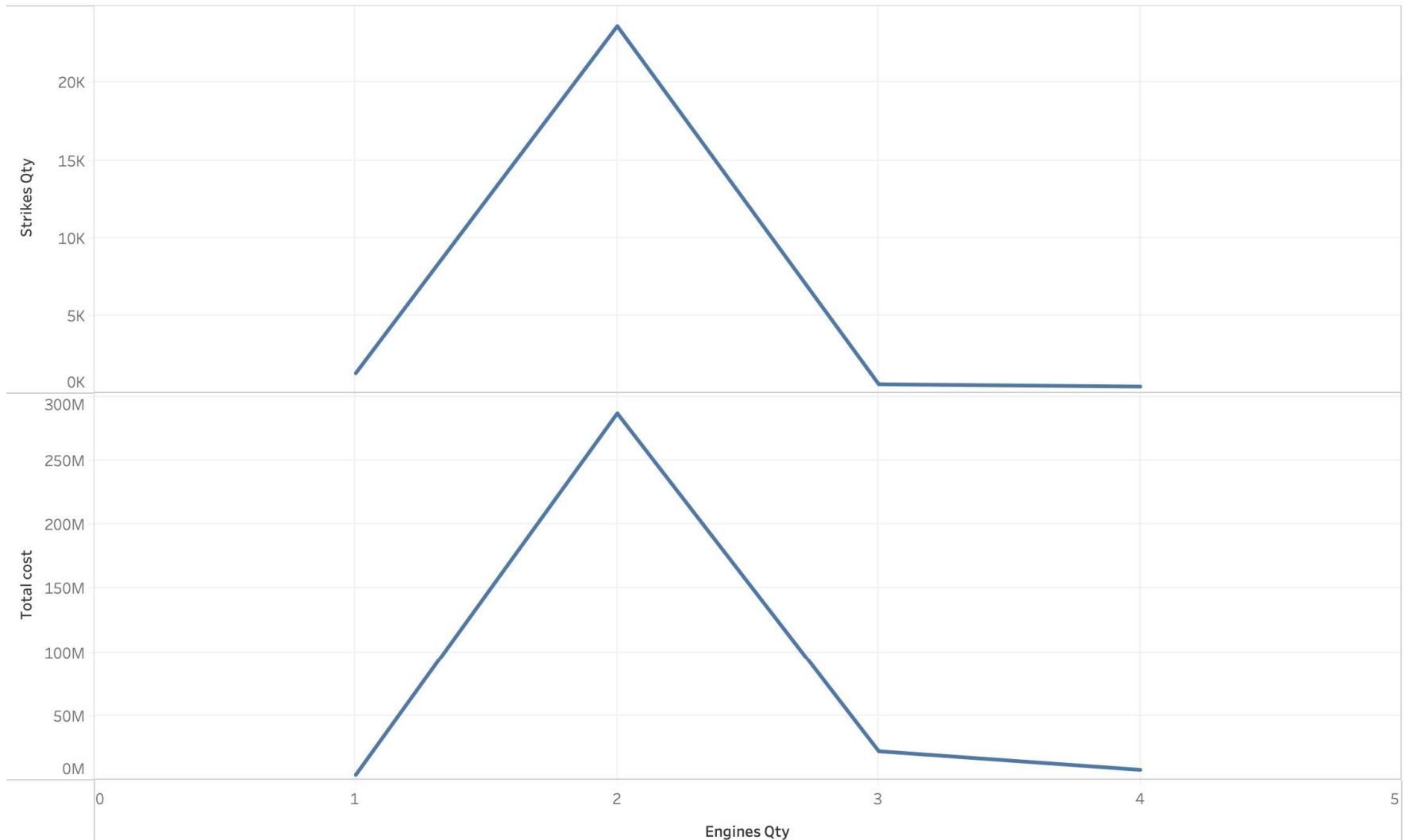
Sum of Strikes Qty broken down by Damage effect vs. Animal Category. Color shows details about Damage effect. The data is filtered on Collision DateTime Year, State, Airport Name and Action (State,State Code). The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members. The Action (State,State Code) filter keeps 49 members.

Cost per phase of flight



Sum of Total cost for each Phase of flight. The data is filtered on Collision DateTime Year, State, Airport Name and Action (State,State Code). The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members. The Action (State,State Code) filter keeps 49 members. The view is filtered on Phase of flight, which excludes Null.

Strikes and Cost per Engine Qty



The trends of sum of Strikes Qty and sum of Total cost for Engines Qty. The data is filtered on Collision DateTime Year, State and Airport Name. The Collision DateTime Year filter keeps 16 of 16 members. The State filter keeps 49 of 49 members. The Airport Name filter keeps 771 of 771 members. The view is filtered on Engines Qty, which keeps non-Null values only.