

Data Visualization of Bird Strikes Between 2000 – 2011



ARIYA BHARADWAJ

Project Title

Data Visualization of Bird Strikes Between 2000 - 2011

Technologies

Data Science

Domain

Transportation and Communication

Project Difficulty Level

Intermediate

**Programming
Language Used**

Python

Technologies Used

Jupyter Notebook, MS Excel



Table of contents

01

**Problem
Statement**

02

Objective

03

**Visual Analytics
Dashboard**

04

**Key
Performance
Indicator**

05

Conclusion



Problem Statement

Environmental impacts and safety in urban transport and aviation are critical concerns for the scientific community.

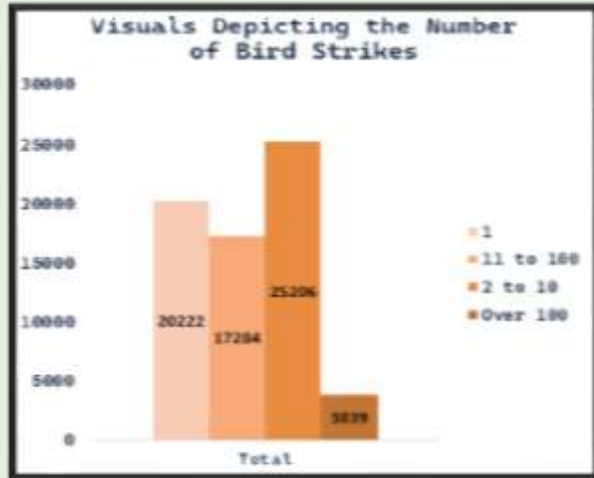
Bird strikes, collisions between birds and aircraft, pose significant aviation safety threats, especially during take-off and landing. These incidents can cause severe aircraft damage and fatal accidents, requiring thorough analysis and preventive measures.



Objective

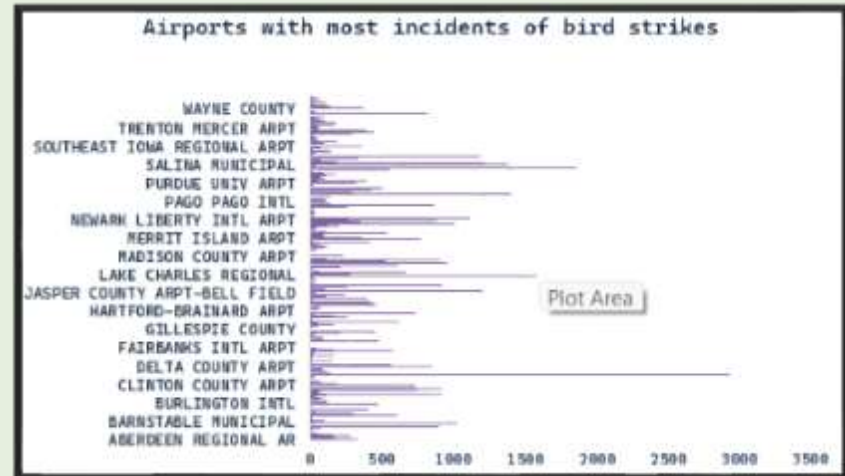
The objective is to address environmental and safety concerns in urban transport and aviation using technology and AI. Focusing on bird strikes, which threaten aviation safety, this study analyzes FAA data from 2000 to 2011. The goal is to develop preventive measures and distributed approaches using available technologies and multi-agent systems (MAS) to enhance transport safety.

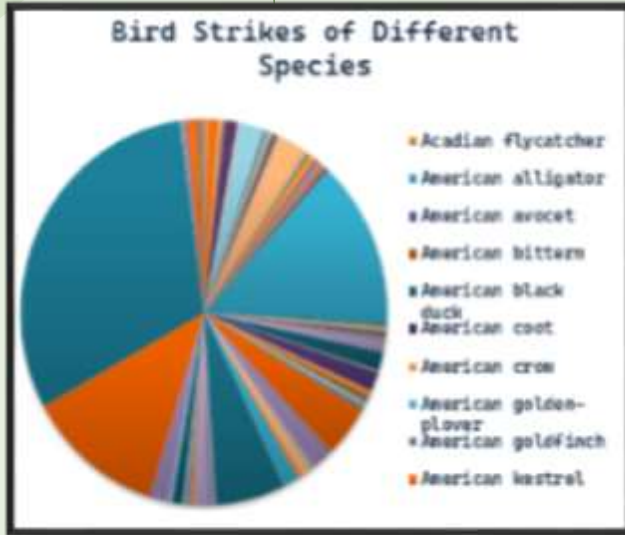
Visual Analytics Dashboard



Delta County Airport experiences the highest number of bird strikes.

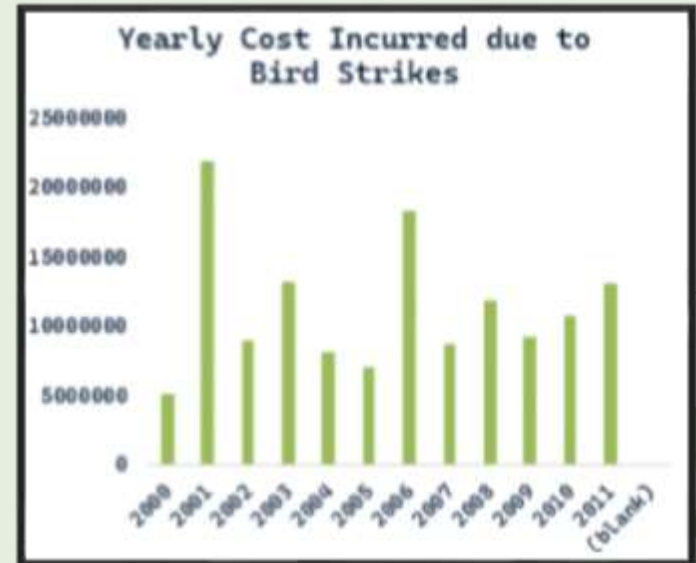
Visual data shows that bird strike occurrences often lie between 2 and 10, which is notably high.

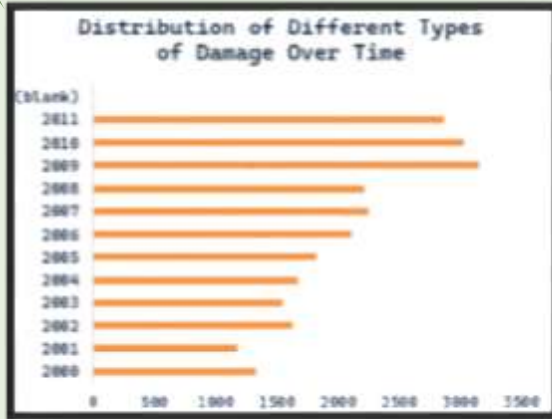




The American alligator suffers the highest mortality rate in bird strike incidents.

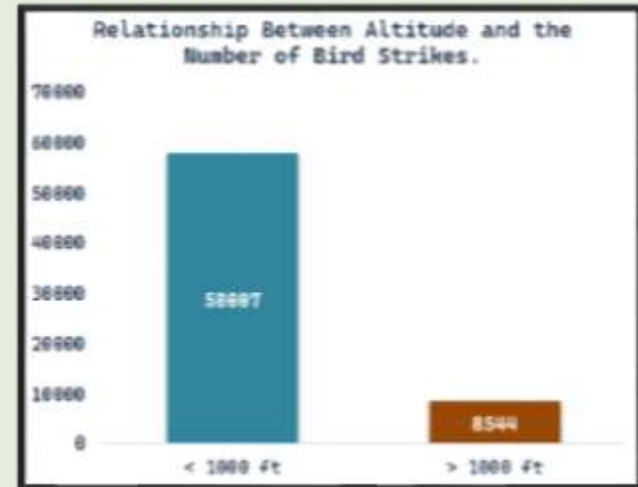
The cost incurred due to bird strikes in 2001 was significantly high.

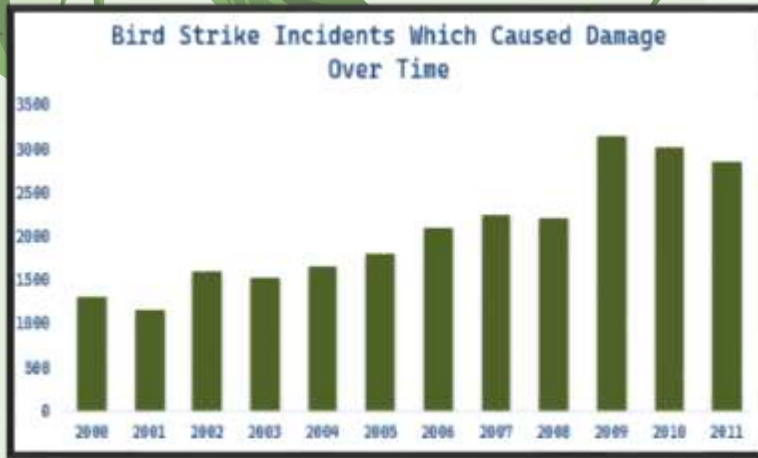




The year 2009 experienced a significant spread of damages over time.

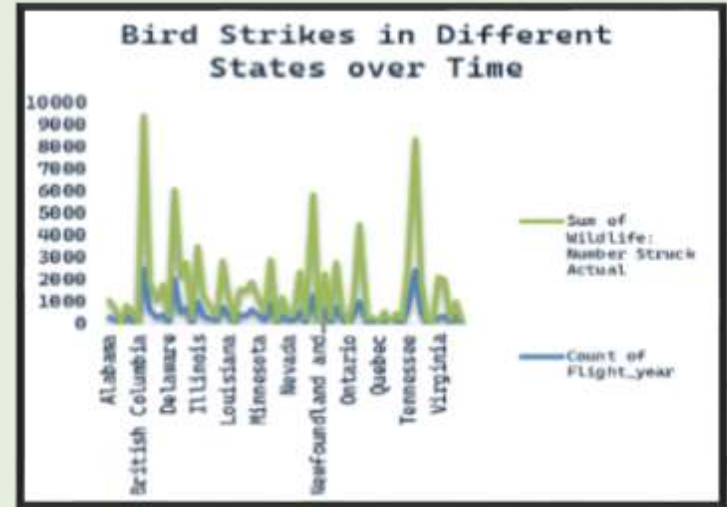
The occurrence of bird strikes increases with altitude, particularly beyond 1000 feet.





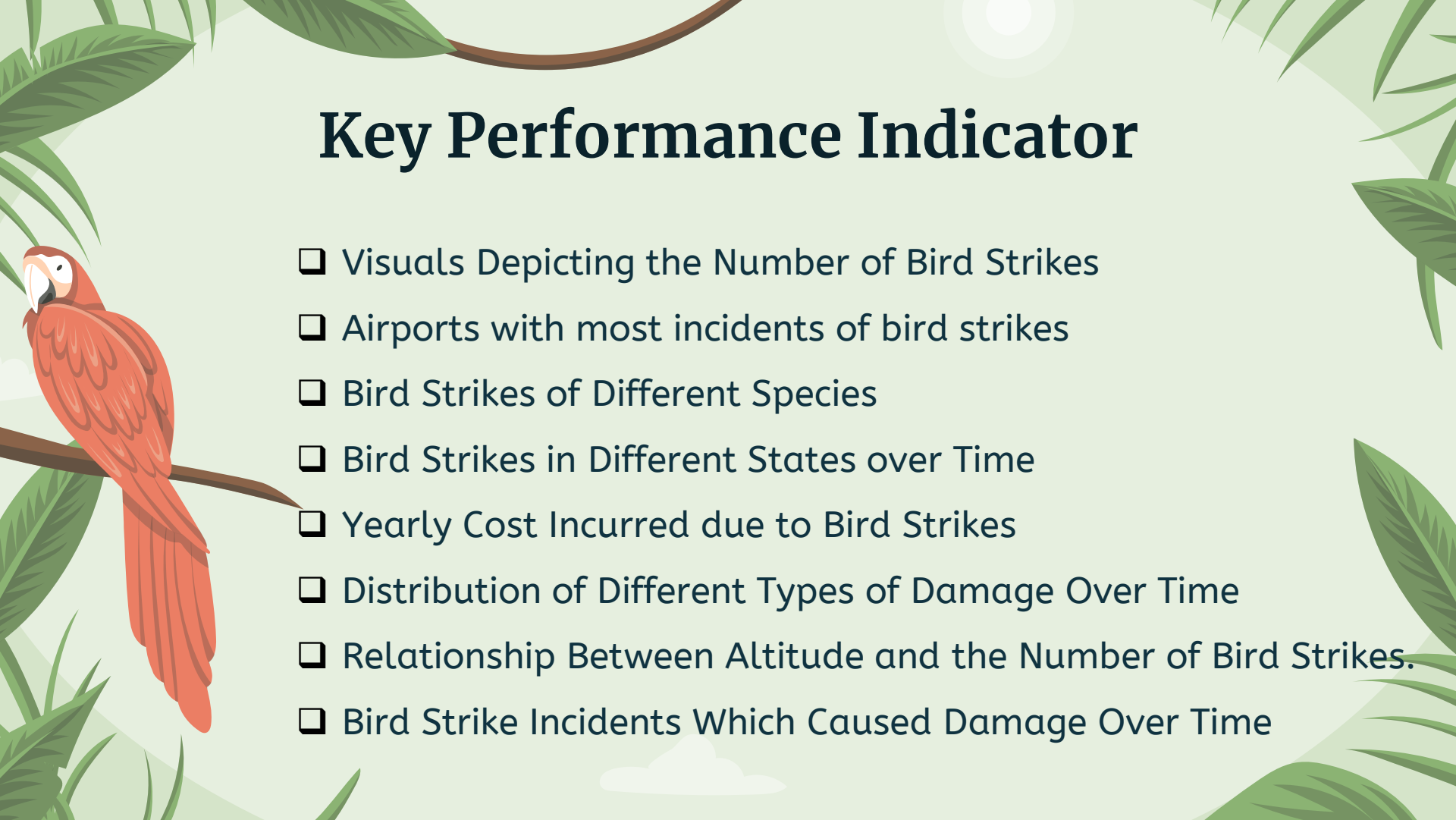
Bird strike damage was especially high during the year 2009.

The occurrence of bird strikes in British Columbia has grown over time.



Key Performance Indicator

- ☐ Visuals Depicting the Number of Bird Strikes
- ☐ Airports with most incidents of bird strikes
- ☐ Bird Strikes of Different Species
- ☐ Bird Strikes in Different States over Time
- ☐ Yearly Cost Incurred due to Bird Strikes
- ☐ Distribution of Different Types of Damage Over Time
- ☐ Relationship Between Altitude and the Number of Bird Strikes.
- ☐ Bird Strike Incidents Which Caused Damage Over Time



Conclusion

- ❑ Visual data shows that bird strike occurrences often lie between 2 and 10, which is notably high.
- ❑ Delta County Airport experiences the highest number of bird strikes.
- ❑ The American alligator suffers the highest mortality rate in bird strike incidents.
- ❑ The cost incurred due to bird strikes in 2001 was significantly high.
- ❑ The year 2009 experienced a significant spread of damages over time.
- ❑ The occurrence of bird strikes increases with altitude, particularly beyond 1000 feet.
- ❑ Bird strike damage was especially high during the year 2009.
- ❑ The occurrence of bird strikes in British Columbia has grown over time.





Thank You