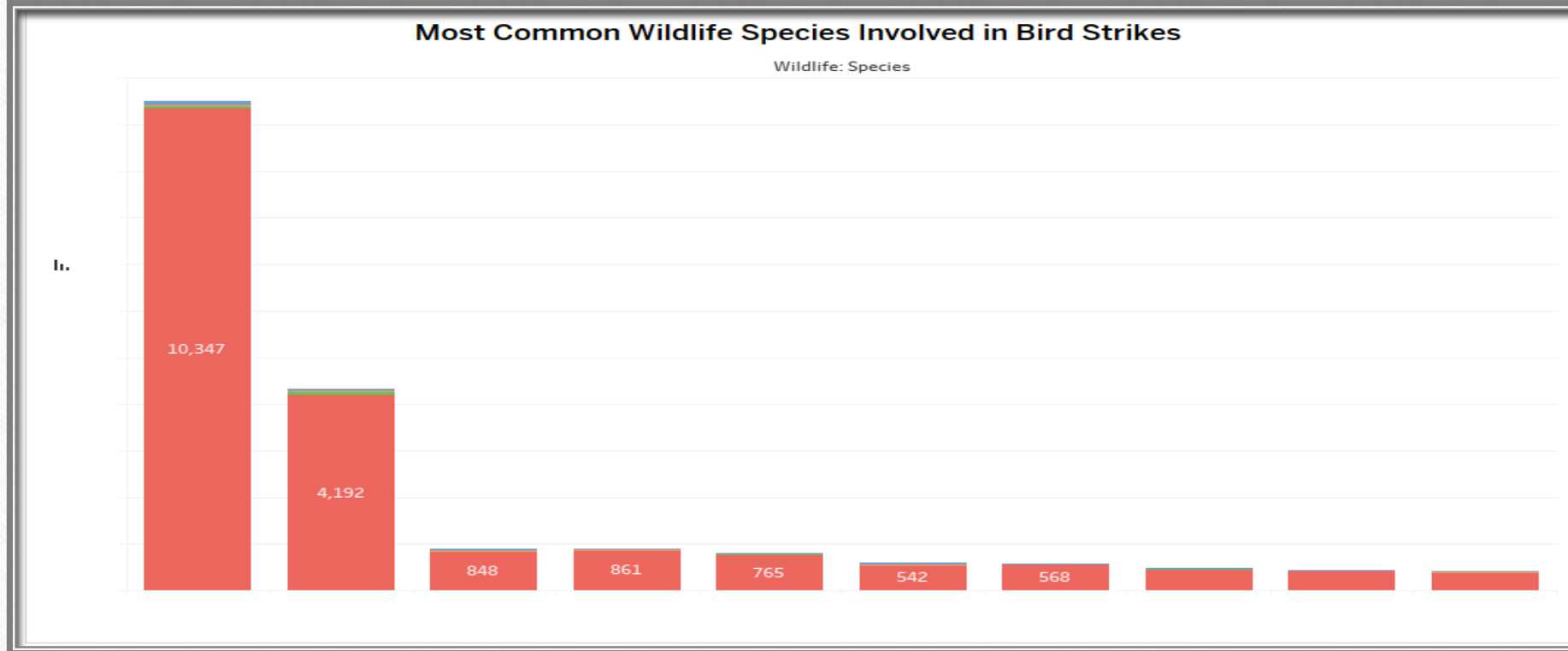


Mitigating Bird Strikes in Aviation

By
Kalaimani Muthu

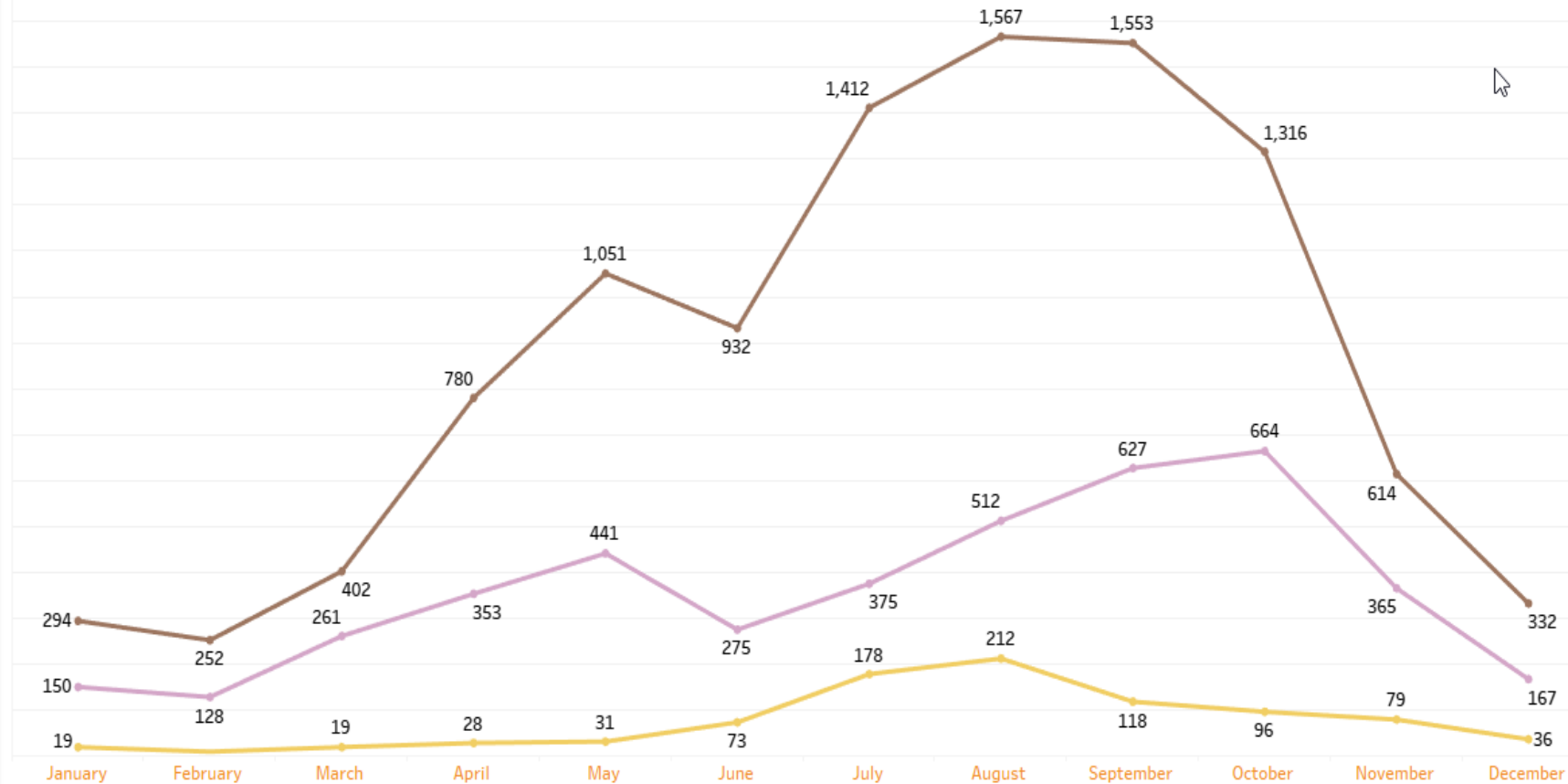


Most Common Wildlife Species:

Unknown small and medium birds are frequently involved in strikes, often leading to minor or significant flight impacts like Precautionary landing.

Bird Strikes Month Wise

Flight Date



Caption

Interpretation:

The chart shows that bird strikes involving small unknown birds peak between July and September, with the highest count in September. Mourning doves and medium-sized unknown birds also show increased activity during these months, indicating a higher risk of strikes in late summer and early fall.

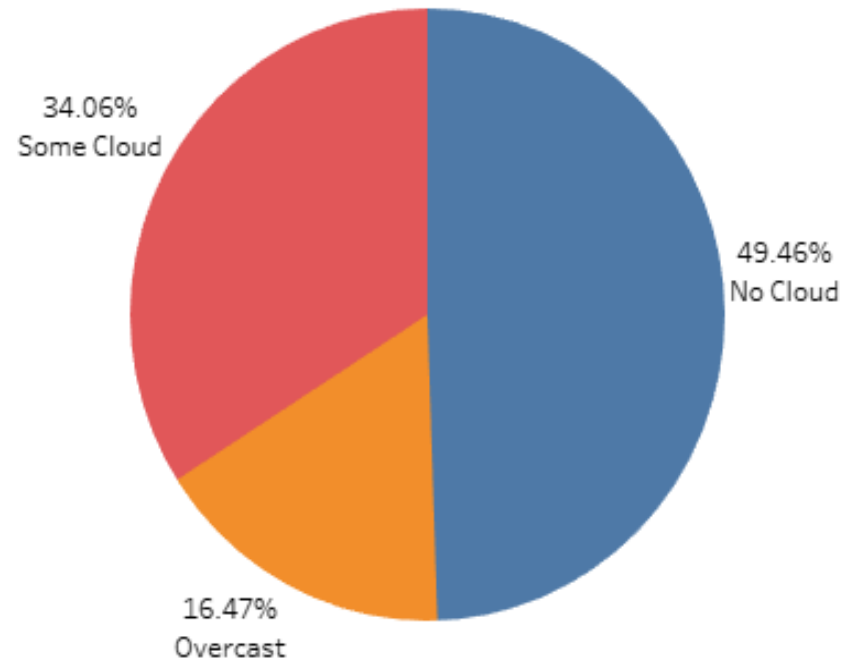
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Wildlife Strikes in States Over the Years



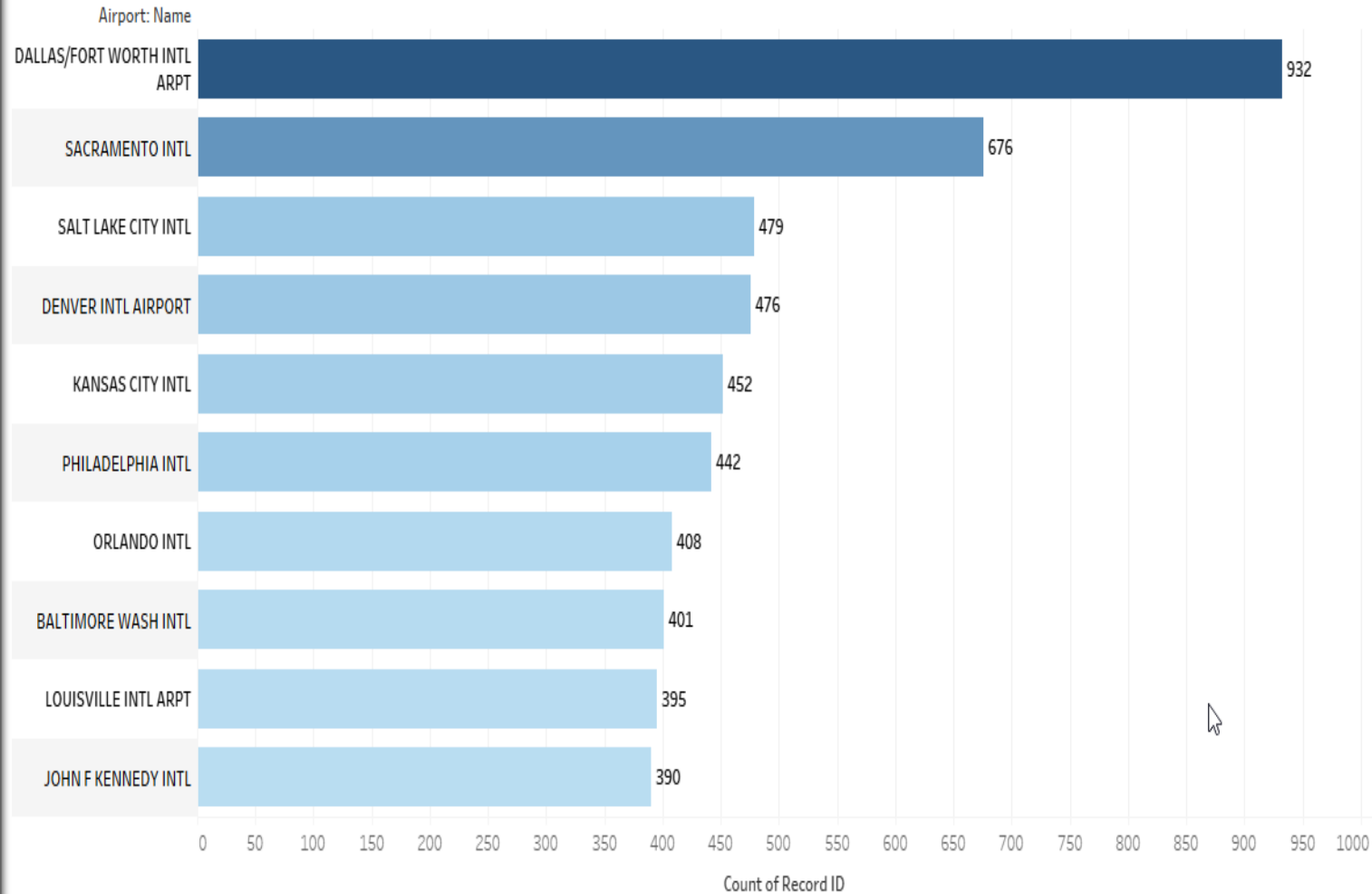
The chart shows that wildlife strikes in California, Florida, and Texas have generally increased over the years, with California experiencing the highest spike around 2009. This trend indicates growing wildlife activity or increasing aircraft traffic, highlighting a need for enhanced mitigation efforts in these states.

Sky Conditions During Bird Strikes



Most bird strikes (49.46%) occur in clear skies, with a significant number also happening under partially cloudy conditions (34.06%). Strikes are least common during overcast conditions (16.47%), indicating birds are more active in clearer weather.

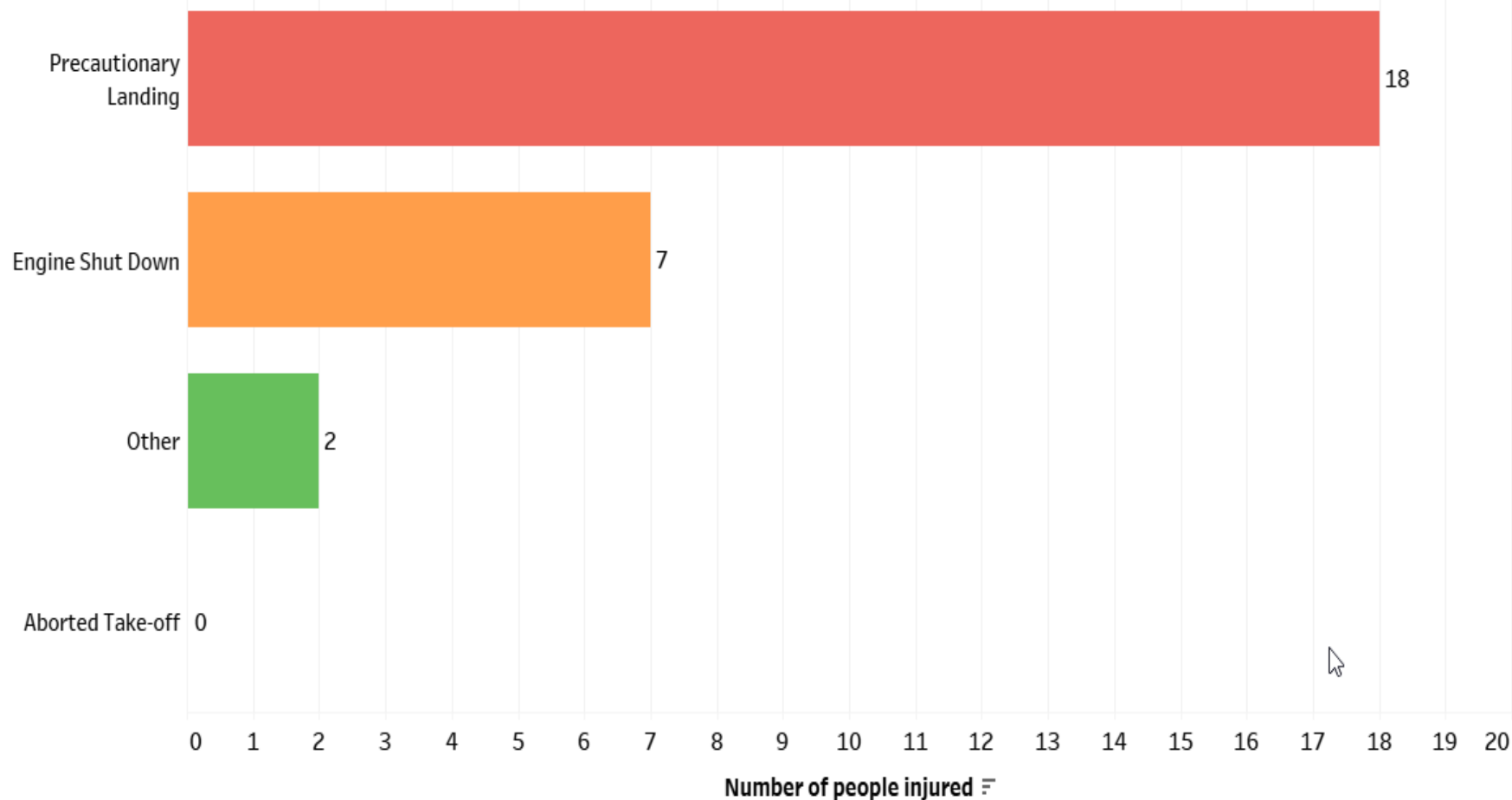
Top Airports with Highest Number of Airstrikes



Dallas/Fort Worth International Airport has the highest number of bird strikes (932), followed by Sacramento International (676). Other airports like Salt Lake City and Denver also report high strike rates, indicating that major hubs with significant flight activity are more prone to bird strikes, emphasizing the need for enhanced wildlife management at these locations.

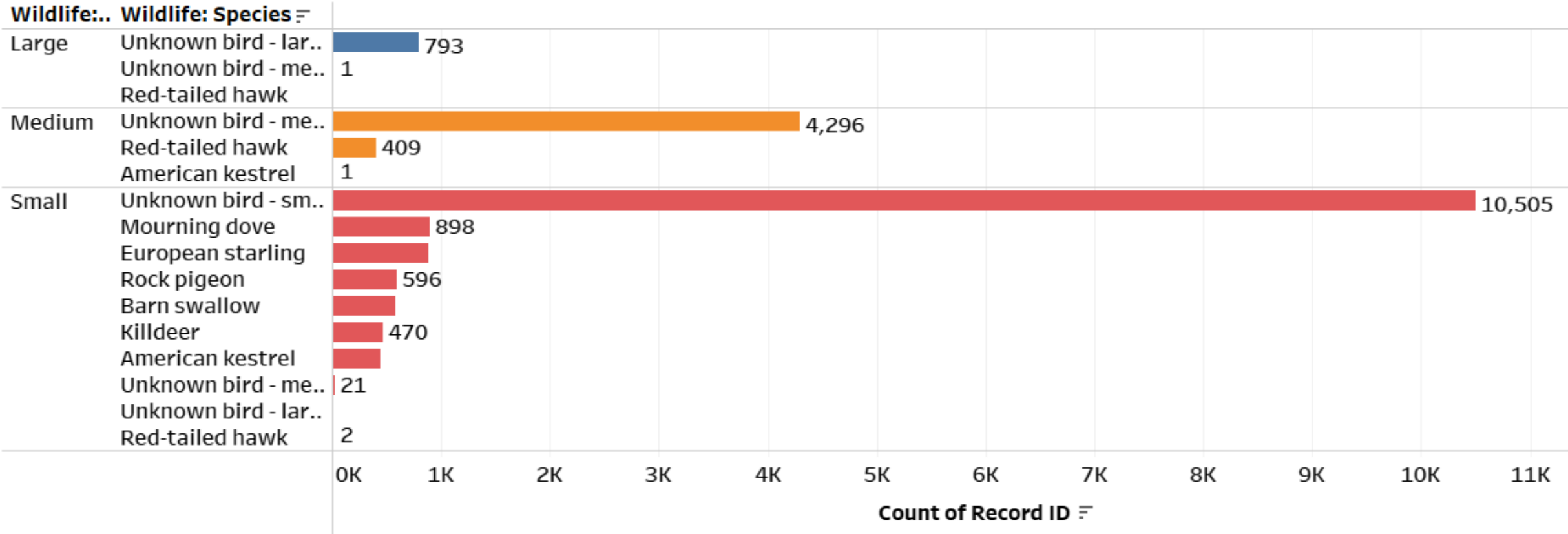
Types of Incidents Leading to Injuries

Effect: Impact to flight



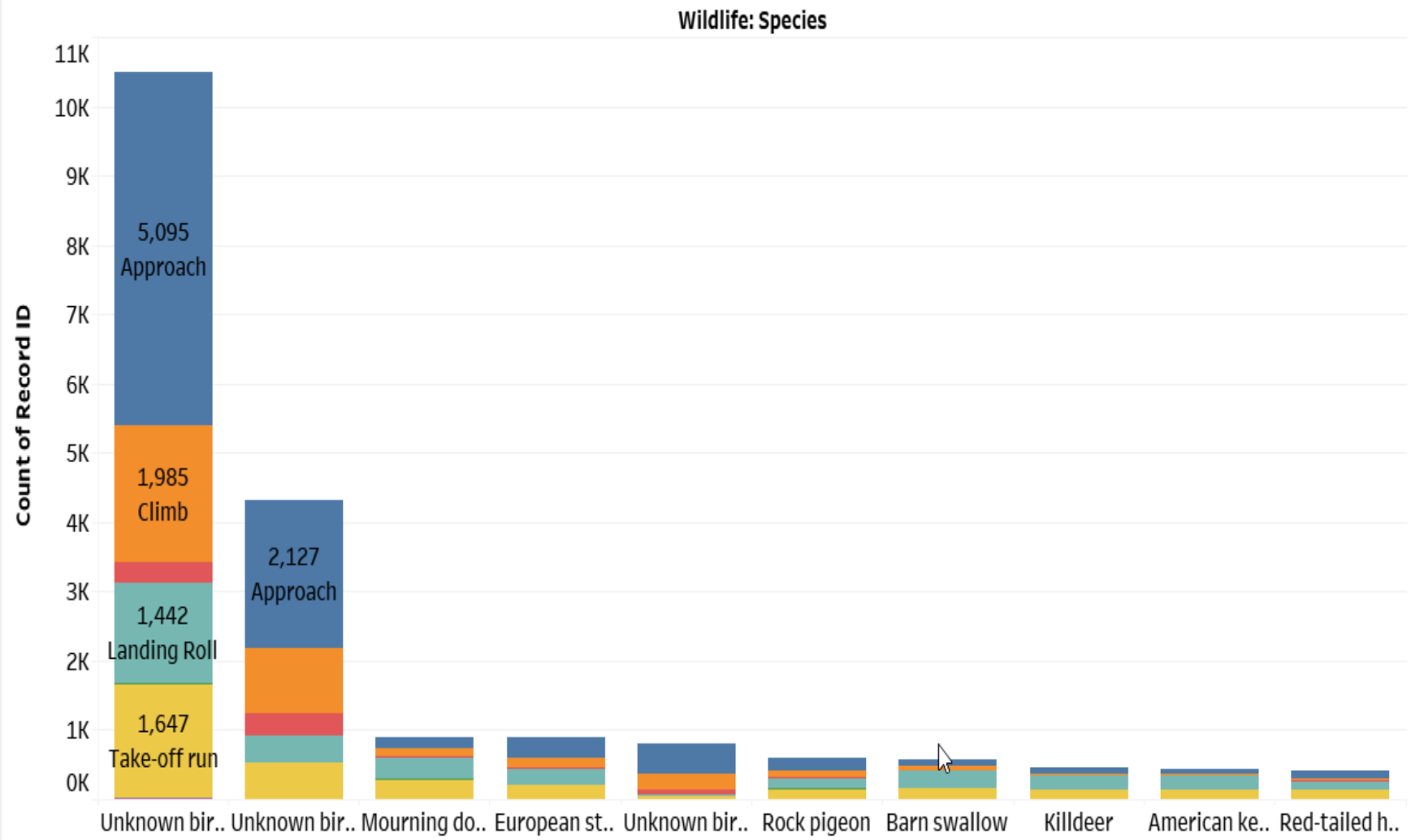
Precautionary Landings are the most common incidents leading to injuries (18 injuries), followed by Engine Shut Downs (7 injuries). This suggests that emergency landings pose a significant risk to passengers, highlighting the need for improved safety measures during these scenarios to minimize injuries.

Display sizes of frequently involved wildlife species



Unknown small and medium birds are most frequently involved in strikes, especially during the approach and climb phases of flight.

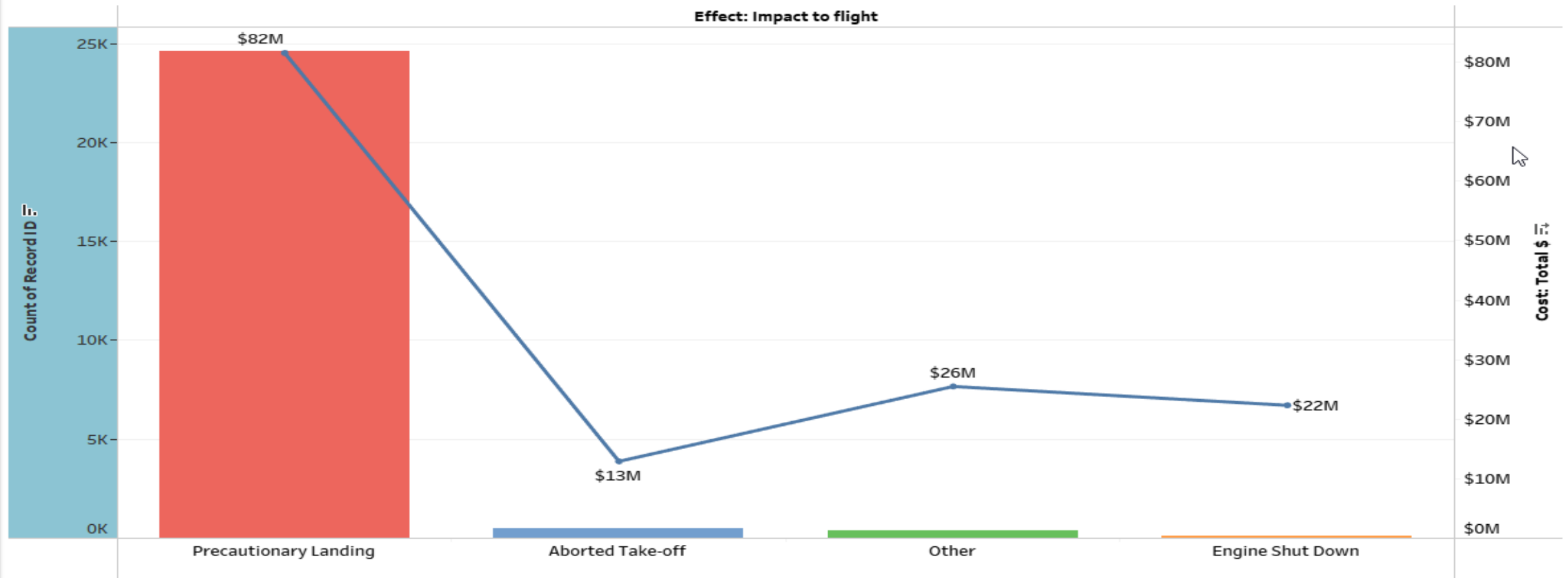
wildlife species are most frequently involved in strikes



Unknown small and medium birds are most frequently involved in strikes, especially during the approach and climb phases of flight.

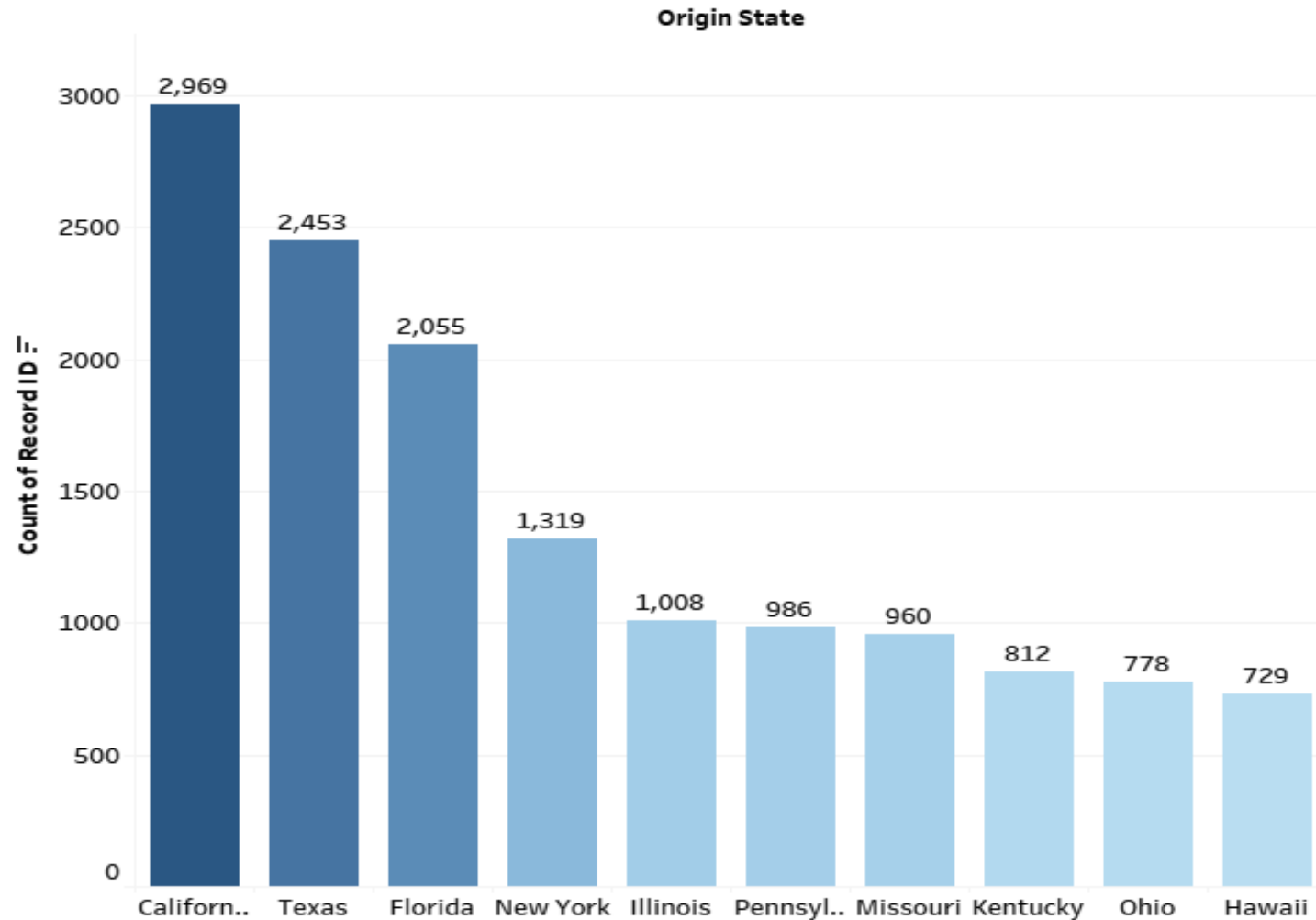
Conservation Measures: Implement habitat management, use deterrents, monitor bird activity, employ exclusion techniques, and develop wildlife control programs to reduce bird presence near airports.

Bird strikes affect flight schedules and operations



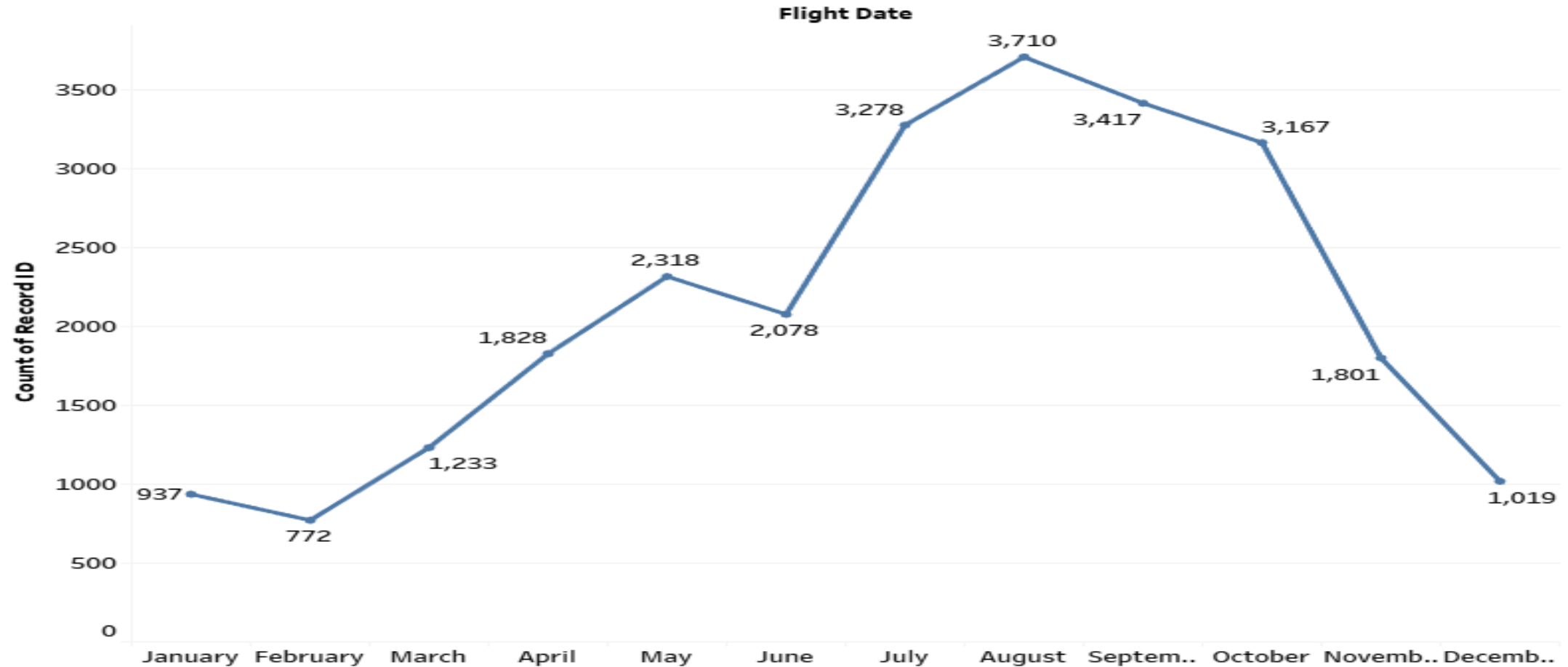
Precautionary Landings are the most frequent and costly incidents, with total costs reaching \$82M, followed by Engine Shut Downs (\$22M) and Other disruptions (\$26M). Aborted take-offs, though less frequent, still incur significant costs (\$13M).

locations where the risk of bird strikes is higher



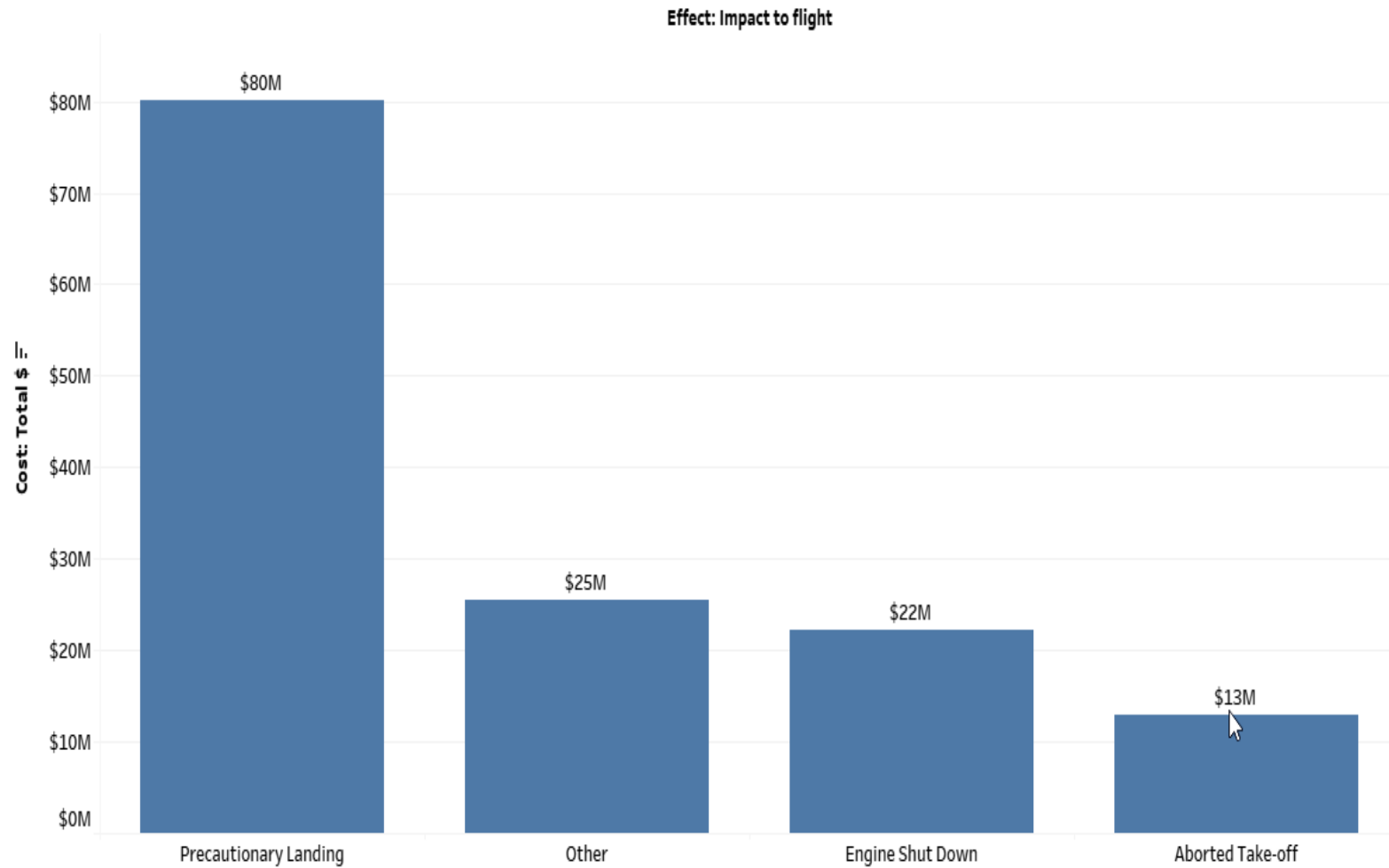
California, Texas, and Florida are the top three states with the highest risk of bird strikes, with California leading at 2,969 incidents. These high-risk locations suggest a need for enhanced bird management and safety protocols at airports within these states to mitigate the impact of bird strikes on flight operations.

Flight schedules to minimize the impact of bird strikes



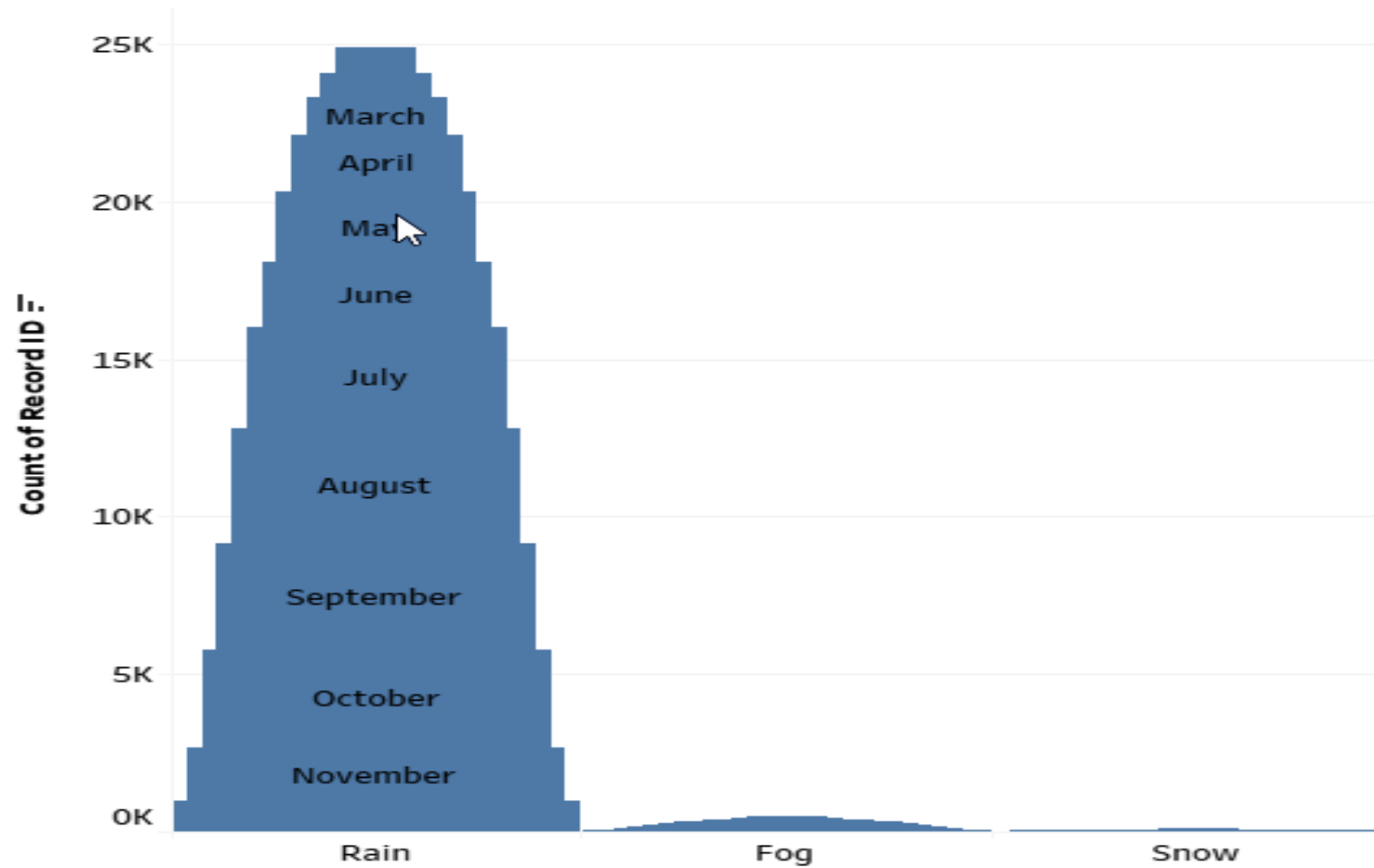
The chart shows that bird strikes involving in peak between July and September, with the highest count in September.

Total Cost of Wildlife Strikes.



The total cost associated with wildlife strikes, including damages and operational disruptions, is approximately \$140 million, with Precautionary Landings accounting for the highest cost at \$80 million. Operational disruptions due to Precautionary Landings These disruptions lead to significant financial losses, increased maintenance requirements, extended ground times, and overall impacts on flight schedules and airline operations.

Communication Strategies for Pilot Awareness

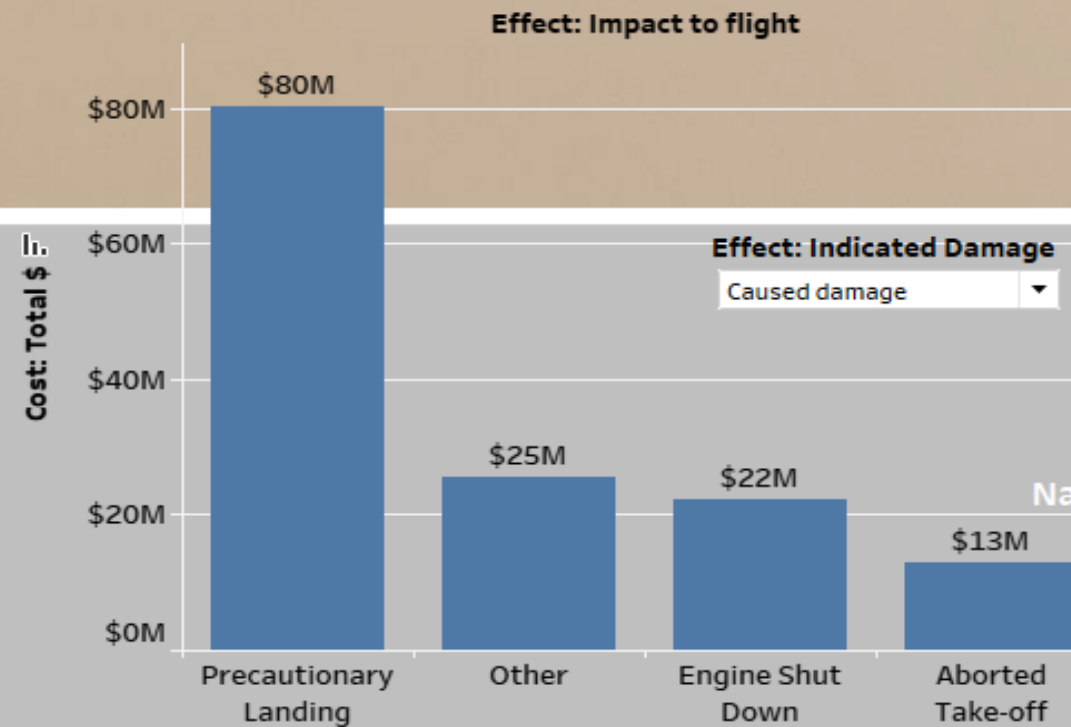


Interpretation:

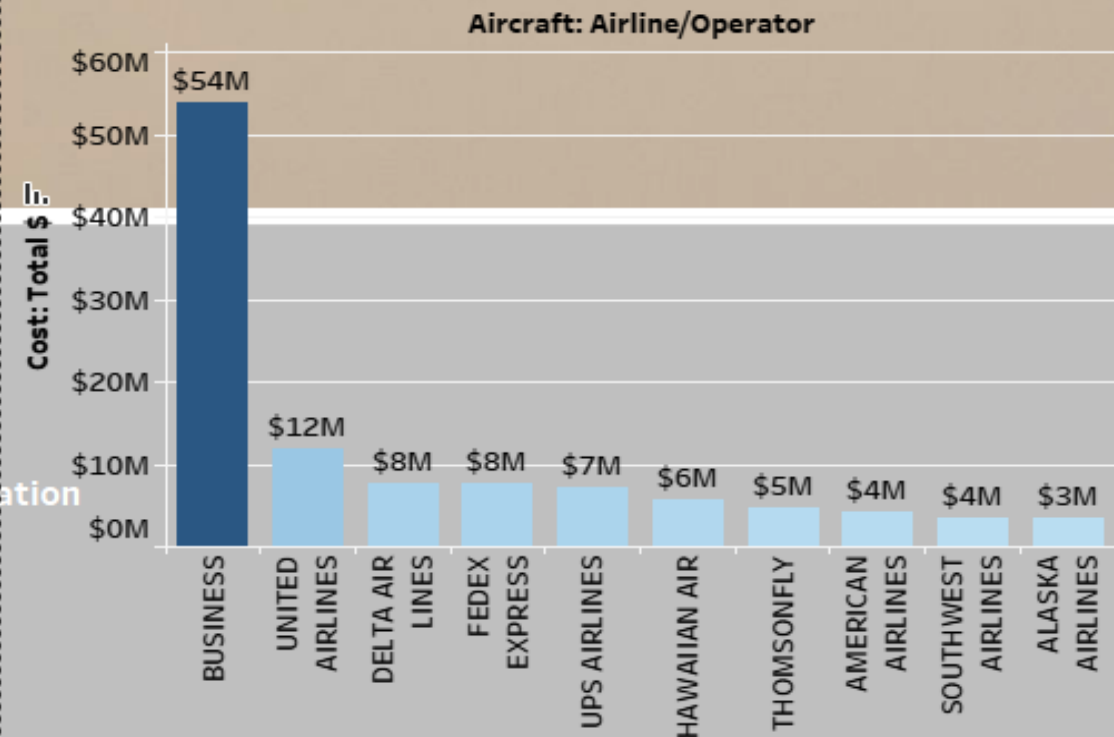
The chart shows that wildlife strikes are most frequent during rainy months (April to November), highlighting rain as a significant risk factor. Strategies like real-time weather updates, pre-flight briefings, and simulations can enhance pilot awareness and responsiveness to mitigate these risks effectively.

Cost Reduction

Total Cost of Wildlife Strikes.



Costs by Airline.



Risk management and communication Training

