# Investigating Seasonal Patterns: An analysis of reported wildlife strikes in Part 139 airports in Florida 2011-2020

Tiago Dikerts de Tella
College of Aviation, Embry-Riddle Aeronautical University

Discovery Day 2021

## Abstract

A vital step toward mitigating the risk of aircraft accidents due to wildlife strikes is the collection, analyses, and understanding of wildlife strike data considering regional factors such as bird migration patterns, local wildlife populations, and seasons of the year as they may be different in individual regions. Those factors, in addition to wildlife habitat conditions at and around the airports, for example, vary drastically across the United States, demanding an approach that will look at the specific patterns as they relate to a specific region. The purpose of this research project is to develop empirical information obtained from the analyses of wildlife strikes at Part 139 airports in the state of Florida (2011-2020). Specifically, the purpose of this study is twofold: 1) to discover new information based upon the findings of relevant data analyzed that can be used for the safety management of wildlife; 2) to determine if there is a statistically significant difference in the likelihood of a strike among the four seasons of the year. Expected findings may suggest a direct relationship between the number of reported wildlife strikes and the seasons of the year with most active bird migration patterns in the state of Florida.


## Methodology

The wildlife strike data will be collected from the FAA wildlife strike database (FAA, 2021) from 2011 through 2020. The database output will be filtered by state (FL), airport, date range, operator (aviation sector), phase of flight, altitude of flight, time of day, and damaging / non-damaging strikes. Similarly, the researcher will collect aircraft-operations data from the FAA Air Traffic Activity System (ATADS) (FAA, 2021a). The ATADS database will be used to retrieve the number of aircraft movements by date, therefore yielding the number of movements per year and per each season of the year at the studied airports. A Wildlife Strike Index[1] will be used to determine if there is a statistically significant difference between the index and the four seasons of the year.

## Significance

This project will be the first to study the relationship between reported wildlife strikes per season of the year in the state of Florida. The findings of this project can be used as the groundwork during the development and assessment of safety programs and other aviation stakeholders' safety efforts to prevent aircraft accidents due to wildlife strikes in Florida.

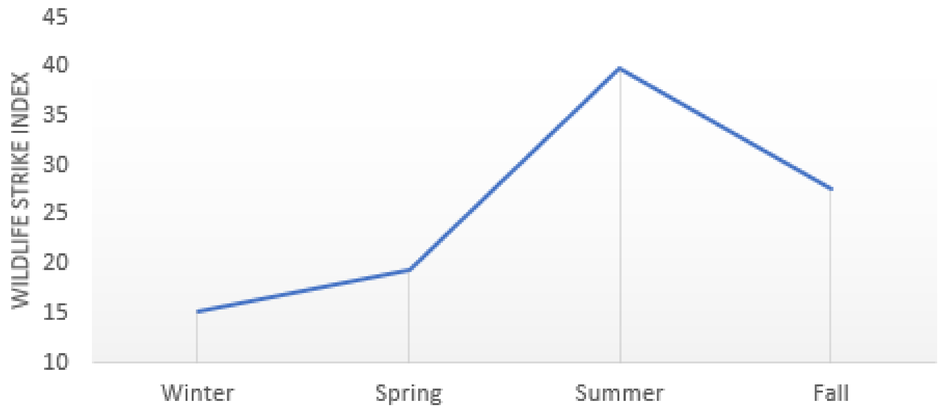


Figure 2: Wildlife Strike Index[1] yearly average compared to the season.

[1]The Wildlife Strike Index represents the number of wildlife strike reports per 100,000 movements.

## Next Steps

The next step towards investigating the reports wildlife strikes in Part 139 airports in Florida is: 1) to complete the data analyses using the reported databases; 2) to evaluate whether there is a significant relationship between wildlife strikes and the seasons of the year, using the wildlife strike index; 3) compose the final manuscript including the findings of the study and suggestions for improvement of current wildlife management techniques as they may be affected by the season of the year.

## References

Federal Aviation Administration (FAA) (2021). *FAA wildlife strike database*. Retrieved from https://wildlife.faa.gov/home

Federal Aviation Administration (FAA) (2021a). *FAA ait traffic activity system (ATADS).* Retrieved from https://aspm.faa.gov/opsnet/sys/main.asp

## Acknowledgements

Dr. Flavio Antonio Coimbra Mendonca, Assistant Professor of Aeronautical Science, ERAU