Findings

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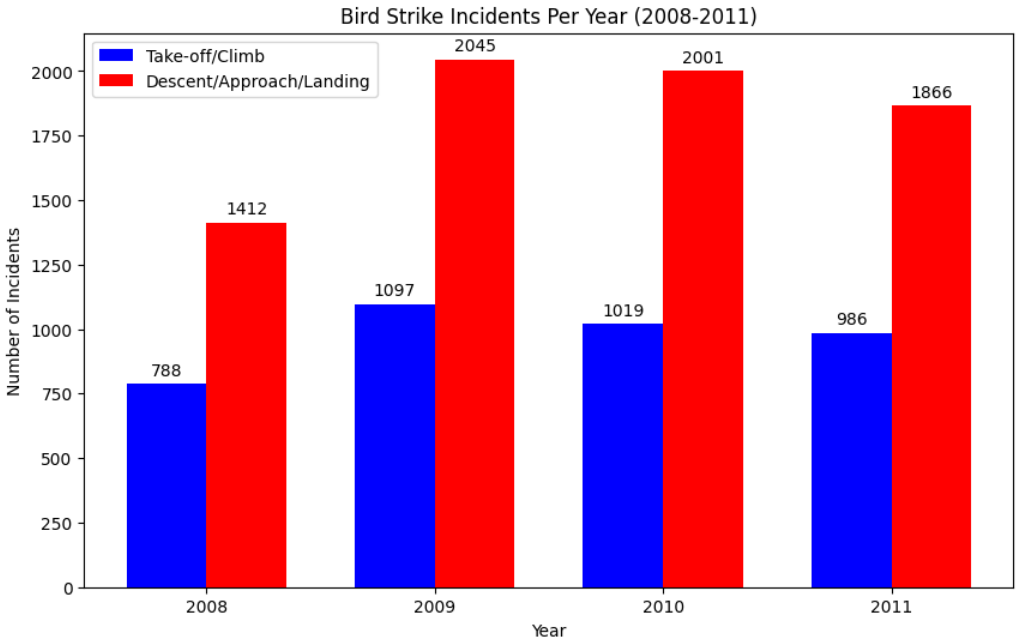
Regarding The number of bird strikes incidents per year from 2008 to 2011 during take-off/climbing and during descent/approach/landing.



From the chart, several trends can be observed regarding bird strike incidents during different flight phases from 2008 to 2011:

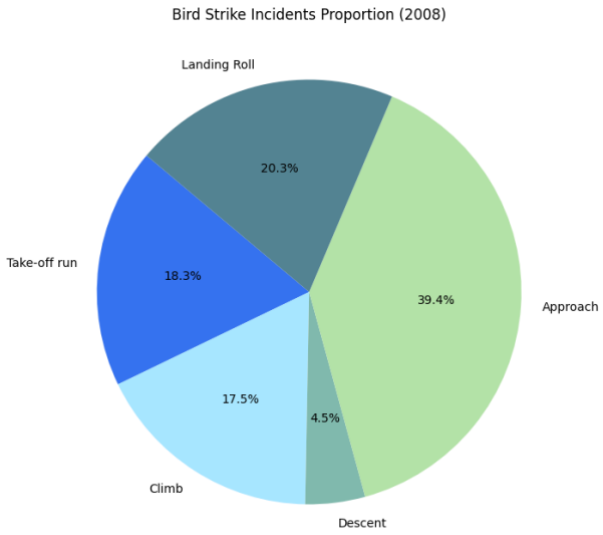
1. **Higher Incidents during Descent/Approach/Landing: The number of incidents during descent/approach/landing is consistently higher than during take-off/climb across all years.**

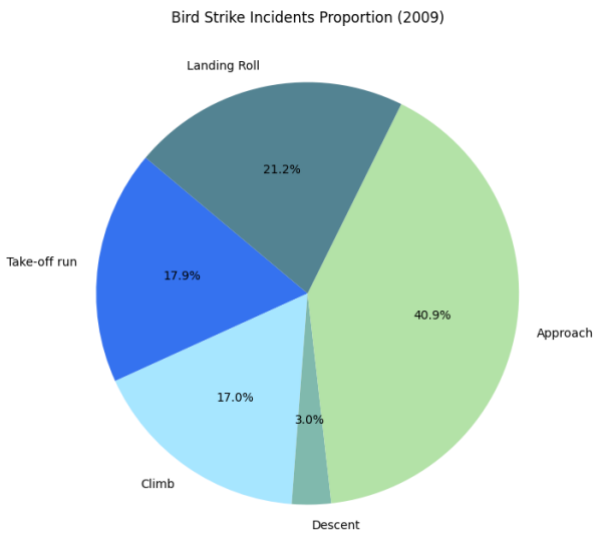
In order to find out the reasons behind this trend, we did some research further. We first calculate the average altitude of Descent/Approach/Landing group and take-off/climb group.

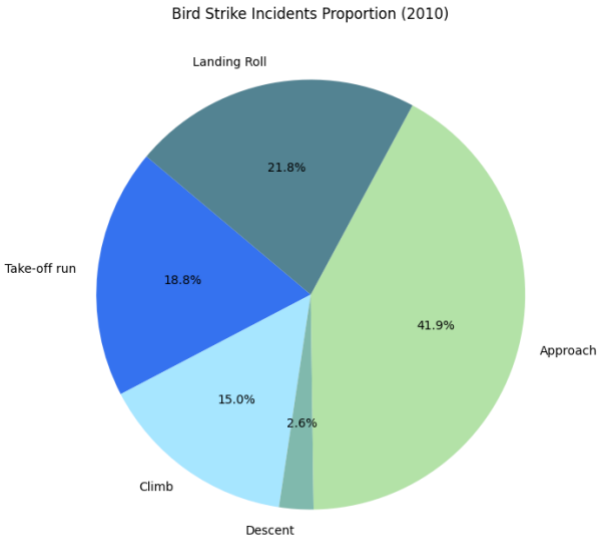
However, the following query result indicates that the average altitude during take-off/climb phases is approximately 586 feet. The average altitude during descent/approach/landing phases is even higher at approximately 1349 feet. This is contradicted by our perception.

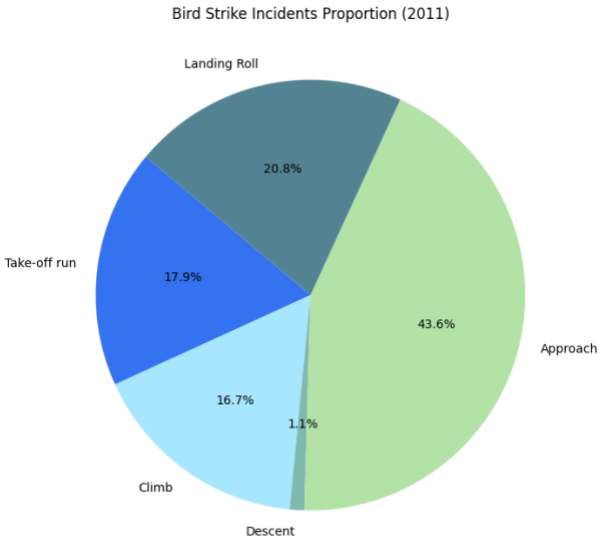
We decided to analyse each phase in more detail.

Bird Strike Incidents Proportion in a Year









We find that there's a huge difference inside the descent/approach/landing group. Approach phase accounts for a large percentage of the incidents, while descent phase only accounts for a small percentage of the incidents, but descent may level up the average altitude of the descent/approach/landing group.

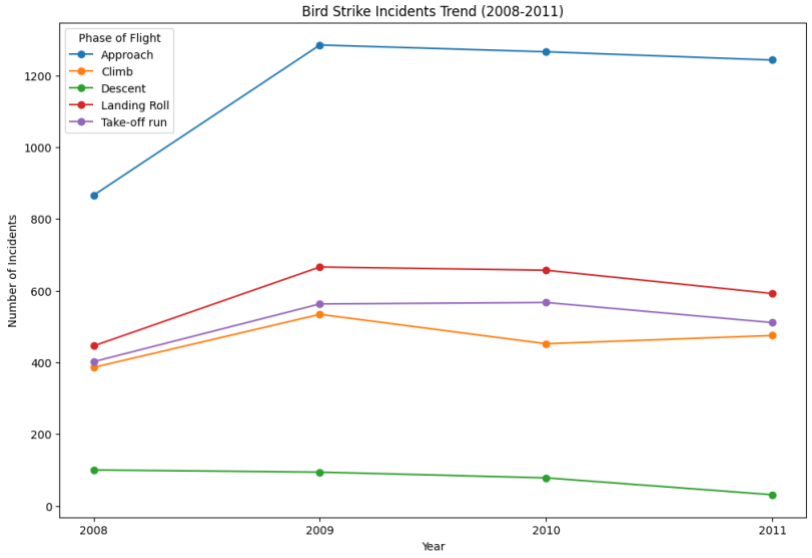
Thus, we re-calculate the average altitude divided into specific phases. The query below shows that higher risk at Lower Altitudes. The approach phase, occurring at an average altitude of around 1005 feet, and the climb phase at around 1205 feet, are at altitudes where birds are more commonly found. This increases the likelihood of bird strikes. Also, there's a lower risk at higher altitudes. The descent phase, occurring at an average altitude of approximately 5927 feet, experiences fewer bird strikes likely due to the higher altitude where bird presence is less common.

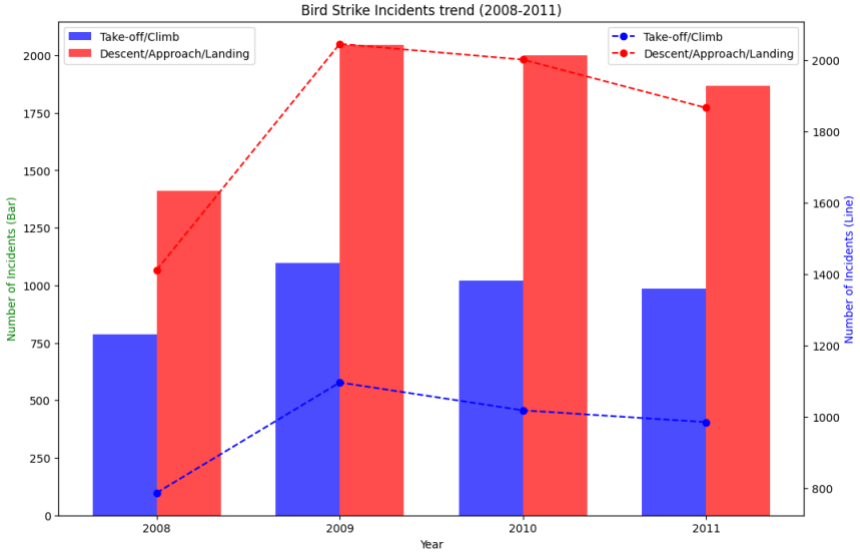
The data of specific phases also give us insight that most of the incidents happens at or near the airport. From 2008 to 2011, each year more than 95% of the incidents happened at the take-off/climb/approach/landing phases, which are at or near the airport. It gives us insight that the importance of enhancing bird activity monitoring at the airport, and near approach paths and take-off zones, to predict and prevent potential bird strikes.

2. **Overall Trend in Incidents: Both the take-off/climb group and the descent/approach/landing group show an increasing trend in incidents from 2008 to 2009, followed by a slight decrease from 2009 to 2011.**

As to specific phases within these groups, the climb phase experienced an increase in incidents from 2010 to 2011. The descent phase showed a decrease in incidents from 2008 to 2011. This insight suggests that even within the same group, different phases demonstrate distinct trends. Therefore, further dividing the groups for deeper analysis can provide more valuable insights.

By analyzing the data more granularly, we can identify specific trends and factors affecting each phase, allowing for more targeted safety measures and strategies to mitigate bird strike risks effectively.


Bird Strike Incidents Trend (2008-2011)
Phase of Flight
Approach
Climb
Descent
Landing Roll
Take-off run
Number of Incidents
Year
0
200
400
600
800
1000
1200
2008
2009
2010
2011


Bird Strike Incidents trend (2008-2011)
Take-off/Climb
Descent/Approach/Landing
Take-off/Climb
Descent/Approach/Landing
Number of Incidents (Bar)
Number of Incidents (Line)
Year
0
250
500
750
1000
1250
1500
1750
2000
800
1000
1200
1400
1600
1800
2000
2008
2009
2010
2011