



**EFFICACY OF ROBOTIC FALCONS AS A
BIRD STRIKE REDUCTION TOOL AT
INTERNATIONAL AIRPORTS**

INTRODUCTION

- Introduction of AERIUM Analytics & Robird
- Methodology & Limitations
- Case Study 1: Edmonton International Airport
- Case Study 2: Grand Forks International Airport
- Findings & Results
- Conclusion
- Questions





ABOUT AERIUM ANALYTICS

- Head office in Calgary, Canada
- Fully integrated, comprehensive RPAS service provider
- Leader in RPAS wildlife management solutions
- Founded in 2014, conducting operations since 2017





ABOUT ROBIRD

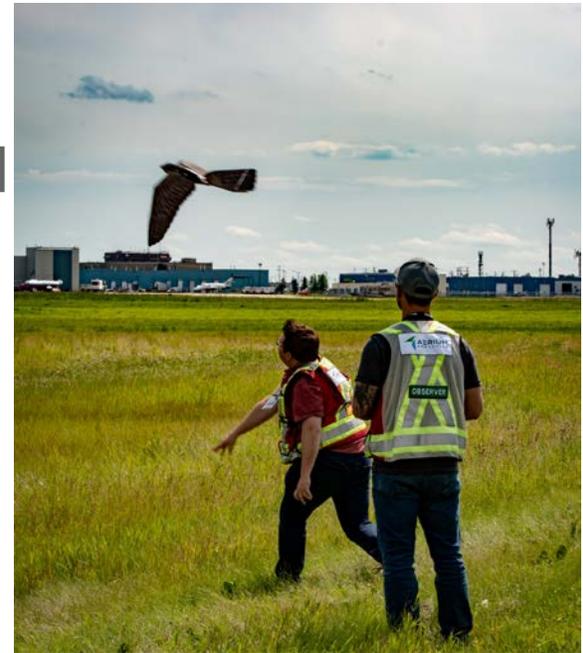
- Based in Enschede, Netherlands
- Formerly known as Clear Flight Solutions
- Founded in 2012
- Developed RoBird ornithopter drone in 2015

ROBIRD

METHODOLOGY

Definition: *Damaging bird species, for this report, have been determined to be any species that has a body mass that is similar or greater than that of a Gull. Less-damaging bird species have been determined to be those species with a body mass less than that of a gull.*

- Focus around impacts of Robird on Bird Strike data reported
- Daily rounds around the vicinity of the airport
- Safety concerns & risk level assessment performed
- Set-up & safety procedures completed
- Bird / Flock is engaged, herded, chased
- Details recorded



LIMITATIONS OF DATA

- Not a scientific study
- Observational and reported data gathered during operations
- Secondary data
- Imprecision in bird strike reporting



CASE STUDY: *EDMONTON INTERNATIONAL AIRPORT*

- Data collected over 2-year period 2017-2018
- Work area of appx. 5000 acres
- Focus on all roosting and loafing areas on airport property
- Active area up to 150' from runway centerline
- Wildlife management support using the Robird & supporting equipment
- Integration with EIA wildlife team





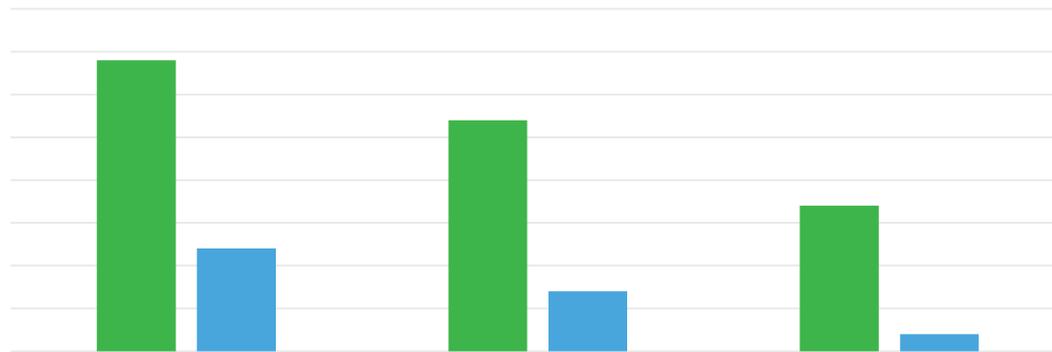
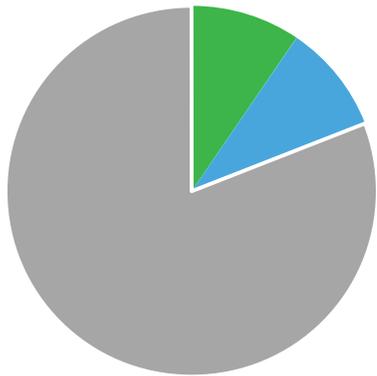
CASE STUDY: *GRAND FORKS INTERNATIONAL AIRPORT & WASTEWATER TREATMENT FACILITY*

- Data collected during fall of 2018 & Spring 2019
- Manage local gull population - ~10,000 birds
- Symbiotic relationship with USDA
- Substantial decrease in resident gull population
- Substantial decrease in bird strikes at Grand Forks International Airport

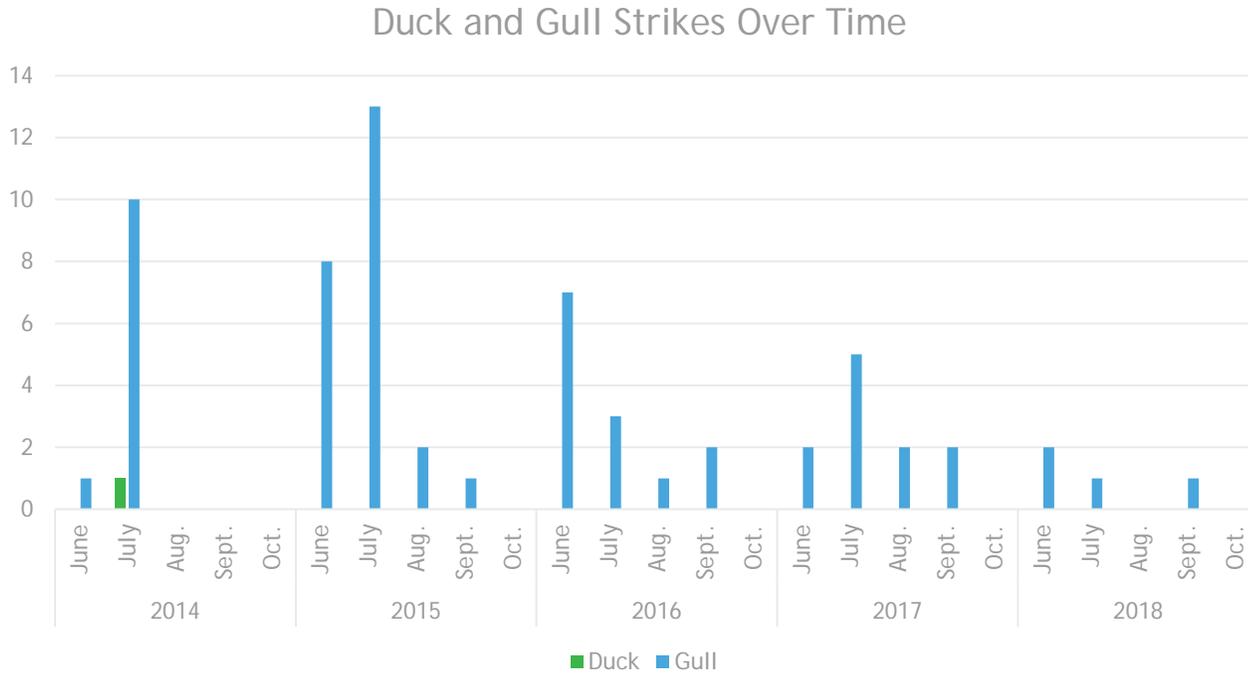


RESULTS

- Data is a snapshot into what appears to be a positive correlation and impact of AERIUM and RoBird presence on a decrease in bird strikes
- There is the appearance of a positive correlation between the presence of Robird and a decrease in bird observations (Data Analysis was discounted due to too many impacting factors)

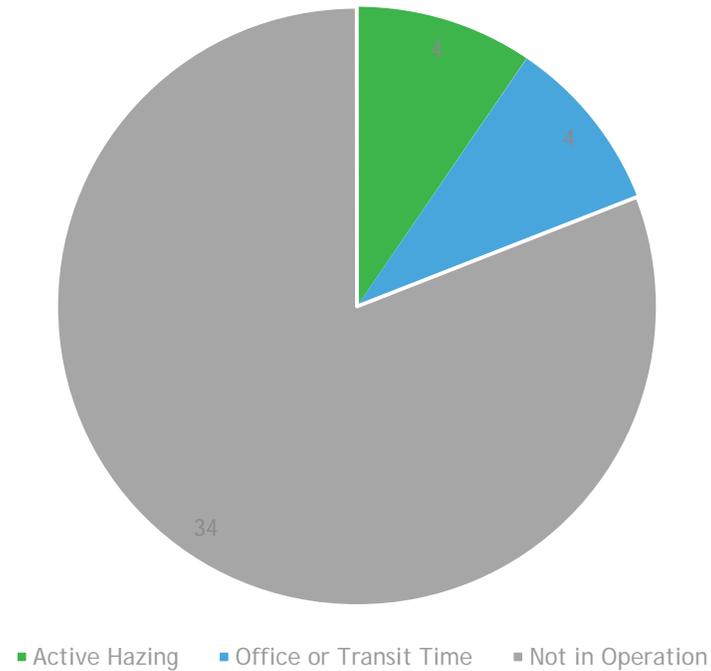


Edmonton International Airport Data



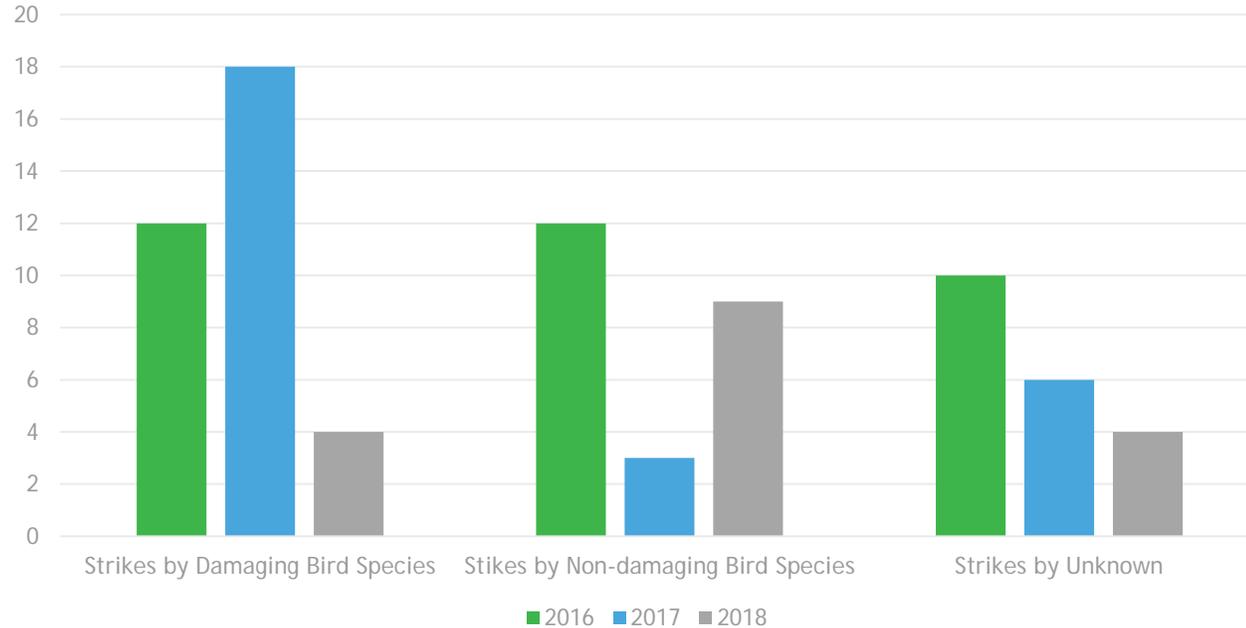
Edmonton International Airport Data

BIRD STRIKES ANALYZED BY AERIUM OPERATIONAL TIMES - 2018



Grand Forks Data

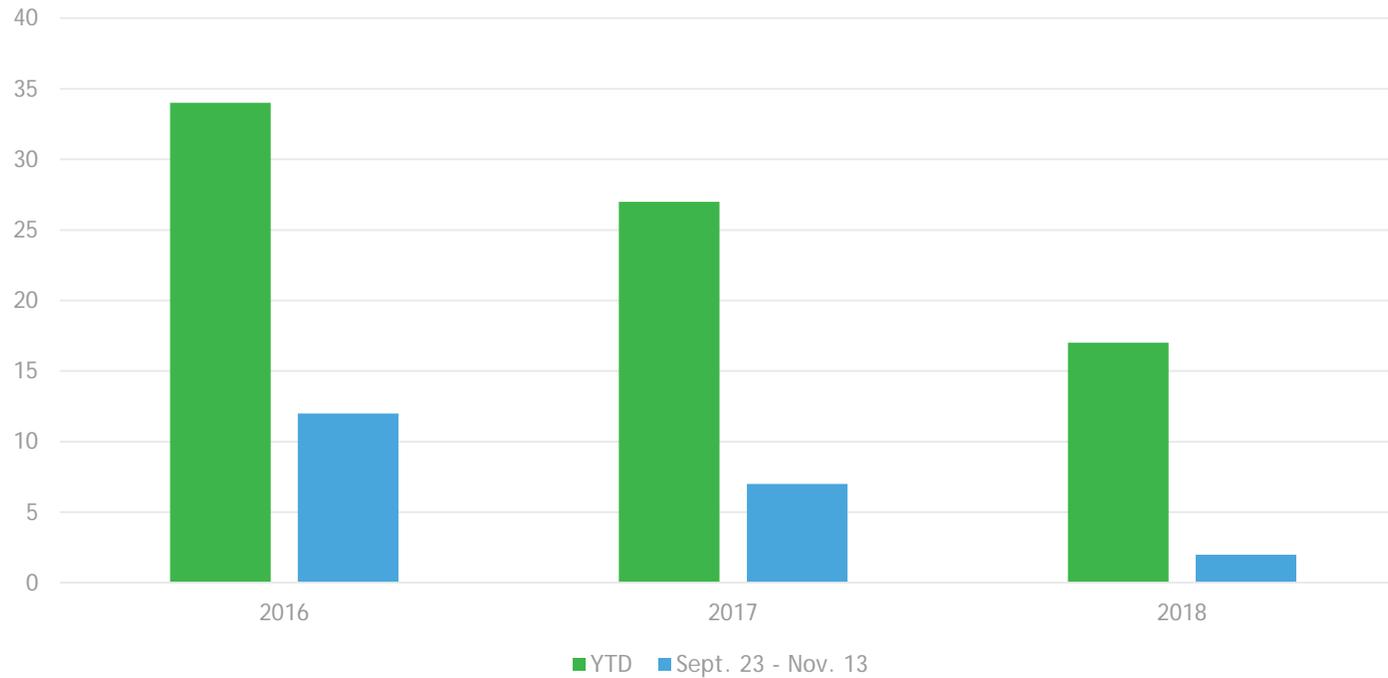
Strikes by Damaging Bird Species



DAMAGING BIRD STRIKES BY YEAR			
	2016	2017	2018
STRIKES BY DAMAGING BIRD SPECIES	12	18	4
STRIKES BY NON-DAMAGING BIRD SPECIES	12	3	9
STRIKES BY UNKNOWN SPECIES	10	6	4

Grand Forks Data

GFK Bird Strike Data



CONCLUSION

- Correlation between activities and decrease in bird strikes at airports
- Correlation between activities and decrease in damaging bird species
- Sensitization observed over multiple seasons & migratory periods
- Next Steps
 - Additional Studies required
 - Effectiveness against larger species such as Turkey Vultures
 - Continuation of Edmonton Project
 - Continuation of Grand Forks Project





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