



**“Right On Coo”:
Effective White-Winged
Dove Operational
Avoidance At Randolph
AFB, Texas**



Mr. Mike Pacheco
Staff Wildlife Biologist
USDA-WS Texas



U.S. AIR FORCE

Mr. Tim Young
Lt Col, USAF (Ret.)
Former Chief of Safety,
12th Flying Training Wing



AGENDA

- Identified Problem
- Proposed Actions
- Approved Actions
- Results
- Lessons Learned for Aviation Wildlife Hazard Management

Figure 77. Bird Strike, Engine Failure—Touch and Go.



AGENDA



Source: "U.S. Air Force Pilot Training Yearbook, Class 55D," Reese Air Force Base, 1955.

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Randolph Layout

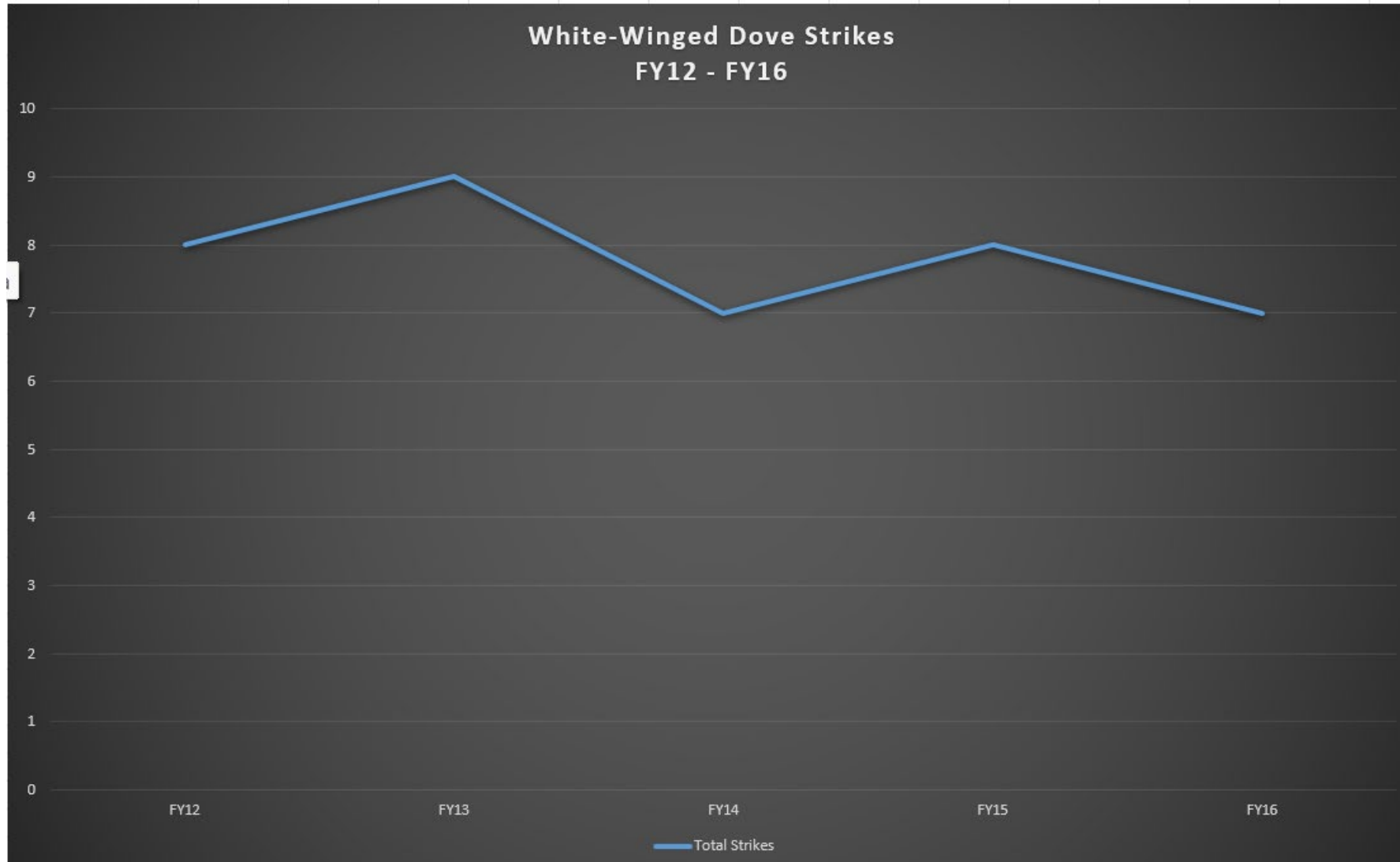




Randolph's WWDO Strike Problem



White-Winged Dove Strikes FY12 – FY16



Bird Strikes by Species Group

Oct 2010 – Feb 2016

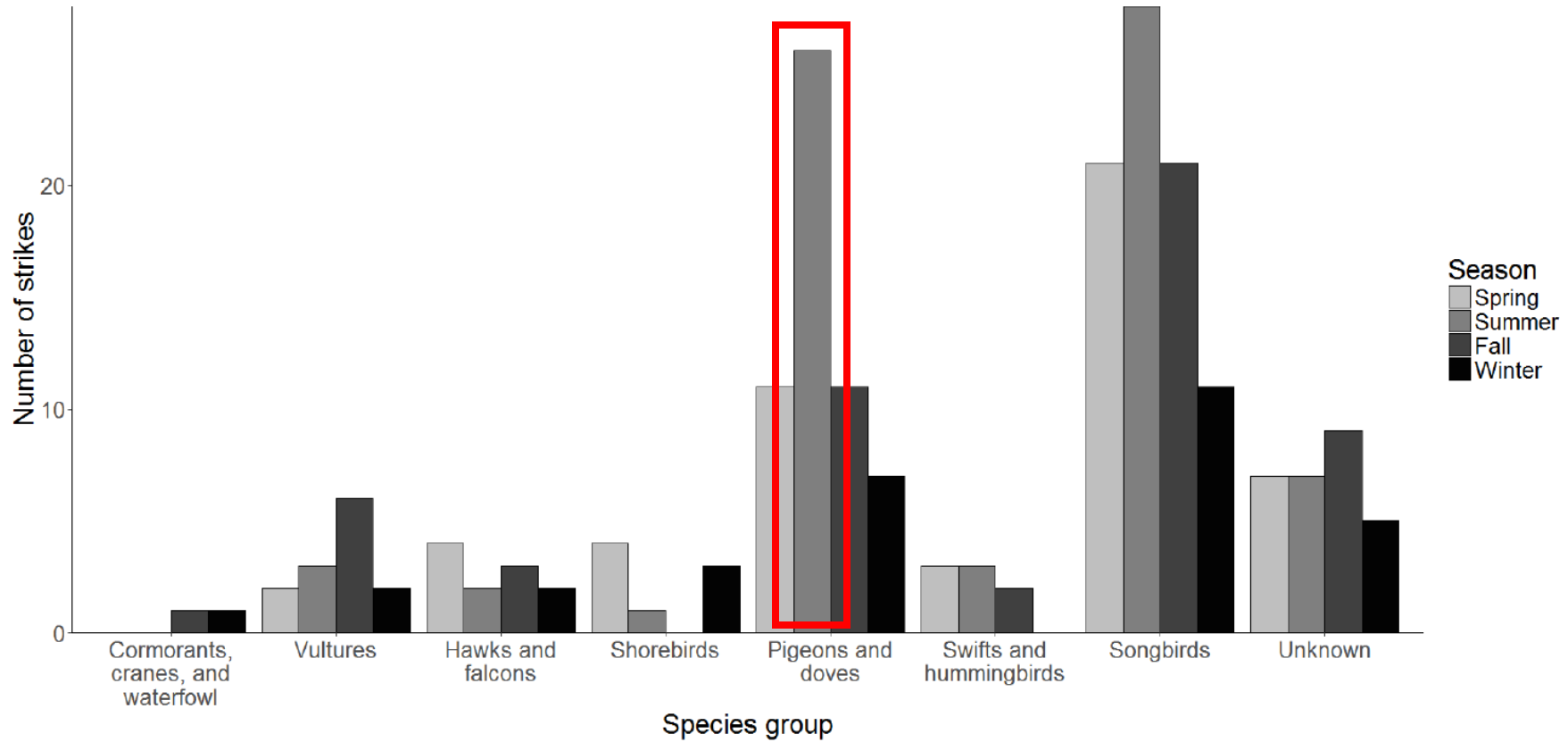
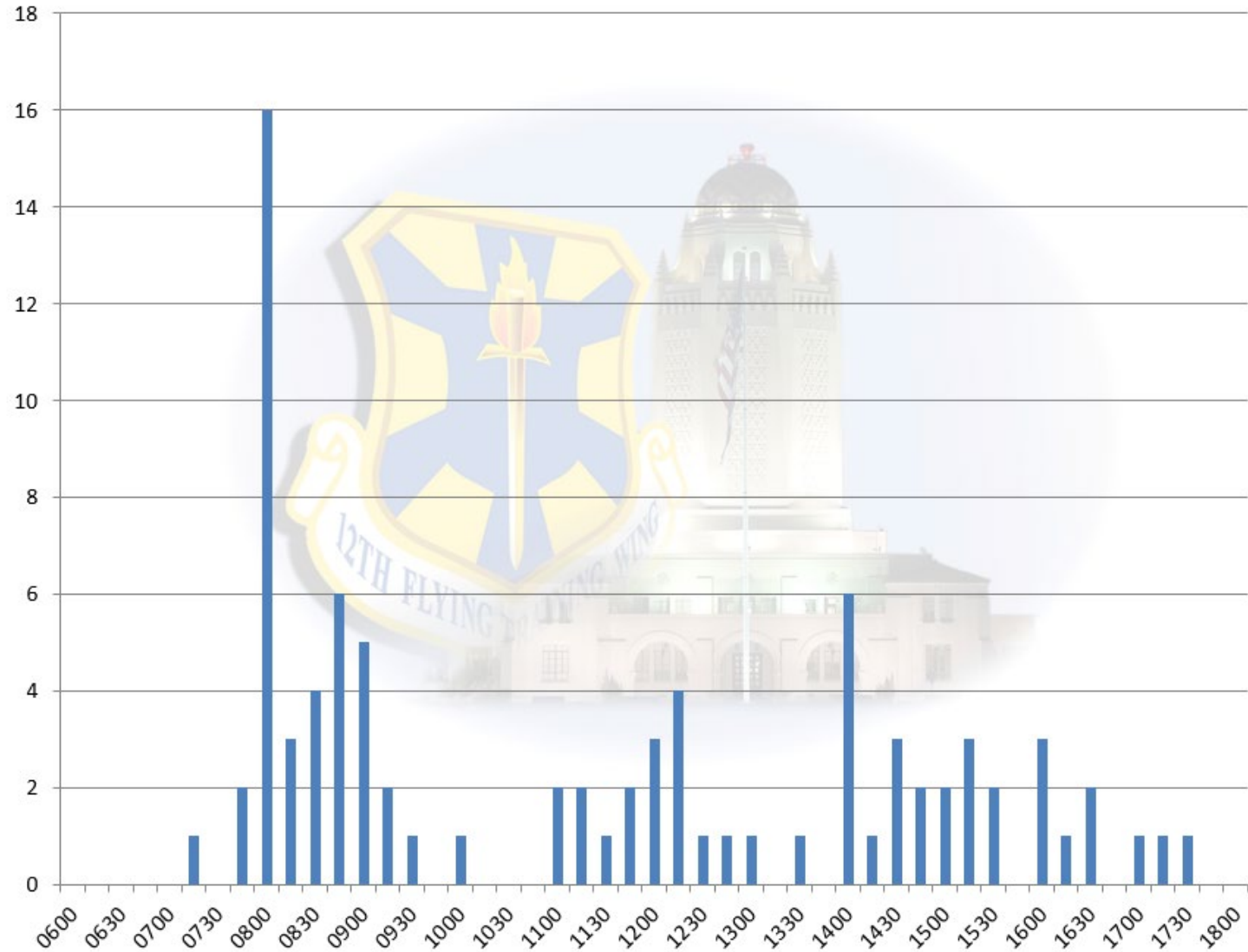


Figure 15. Seasonal counts of bird-aircraft strikes by species group at Joint Base San Antonio-Randolph, near San Antonio, Texas, from October 2010–February 2016 based on data provided by the 12th Flying Training Wing Safety Office.

Bird Strikes by Time of Day 2007 - 2014



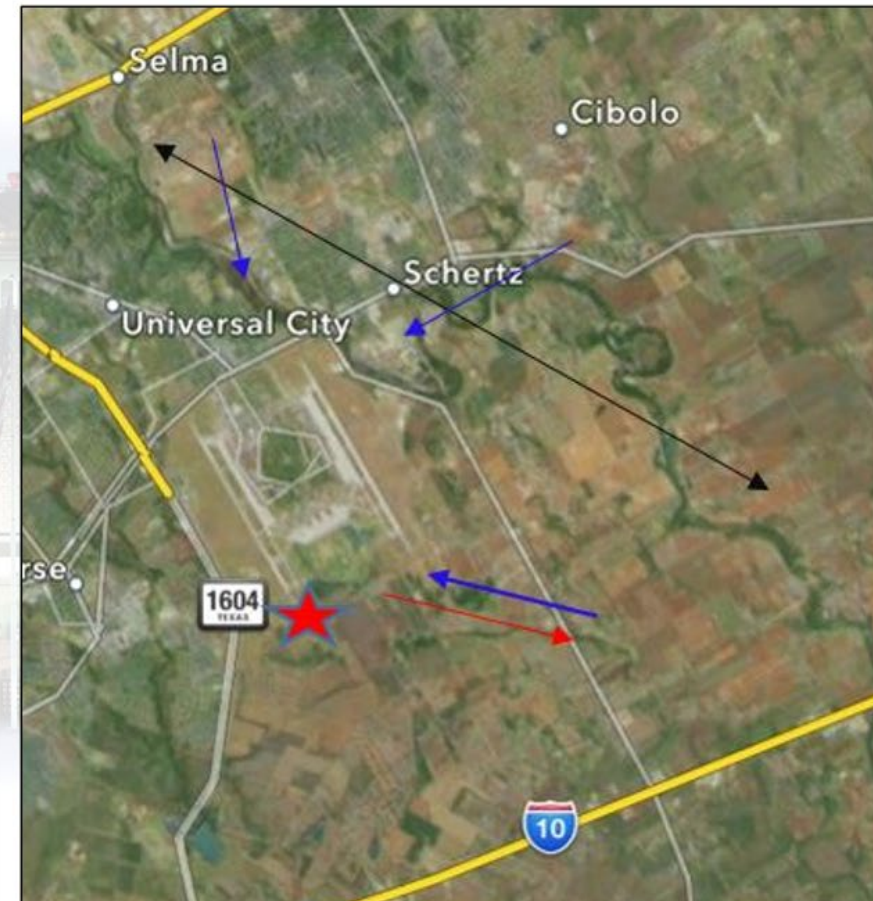


Additional Monitoring



Develop America's Airmen Today ... for Tomorrow

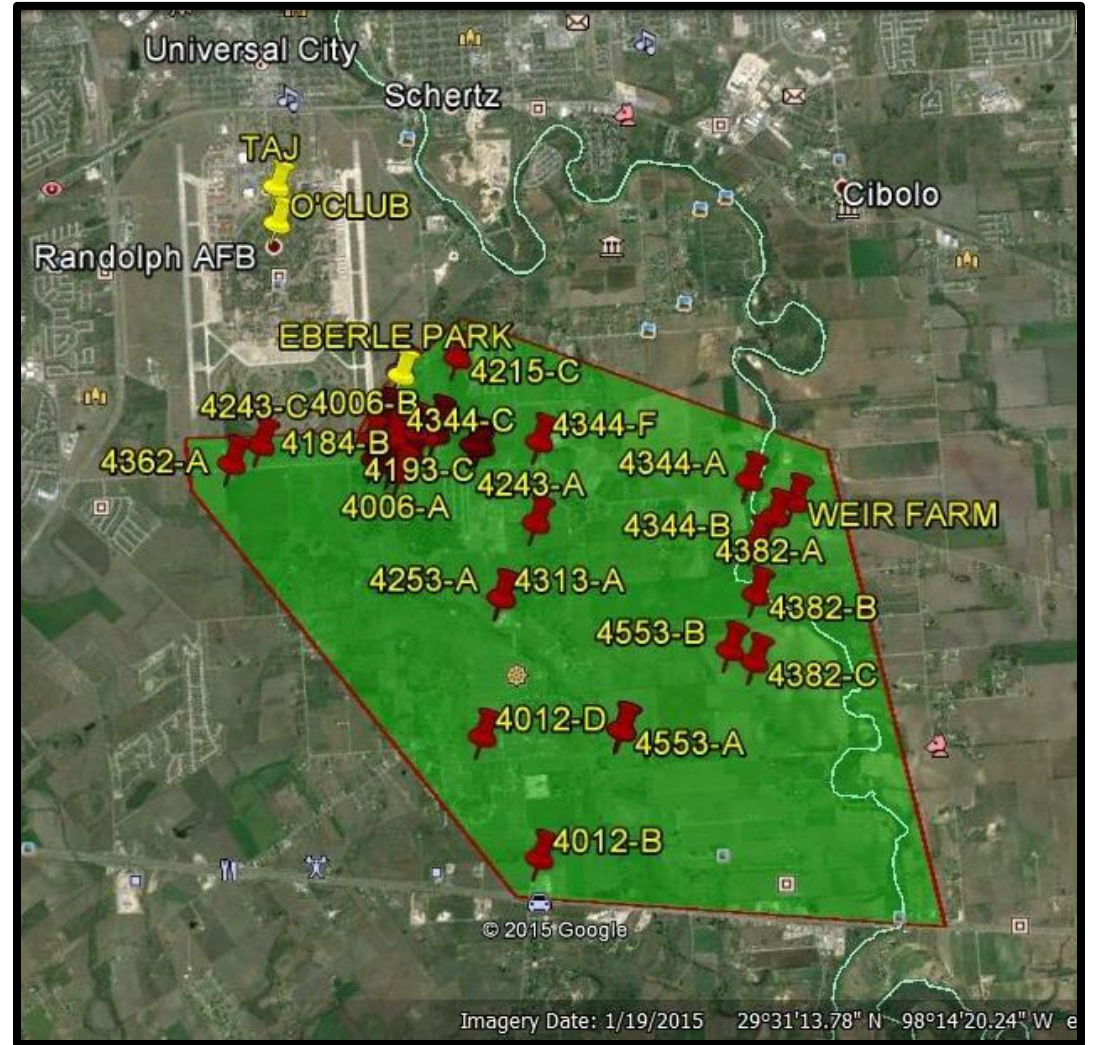
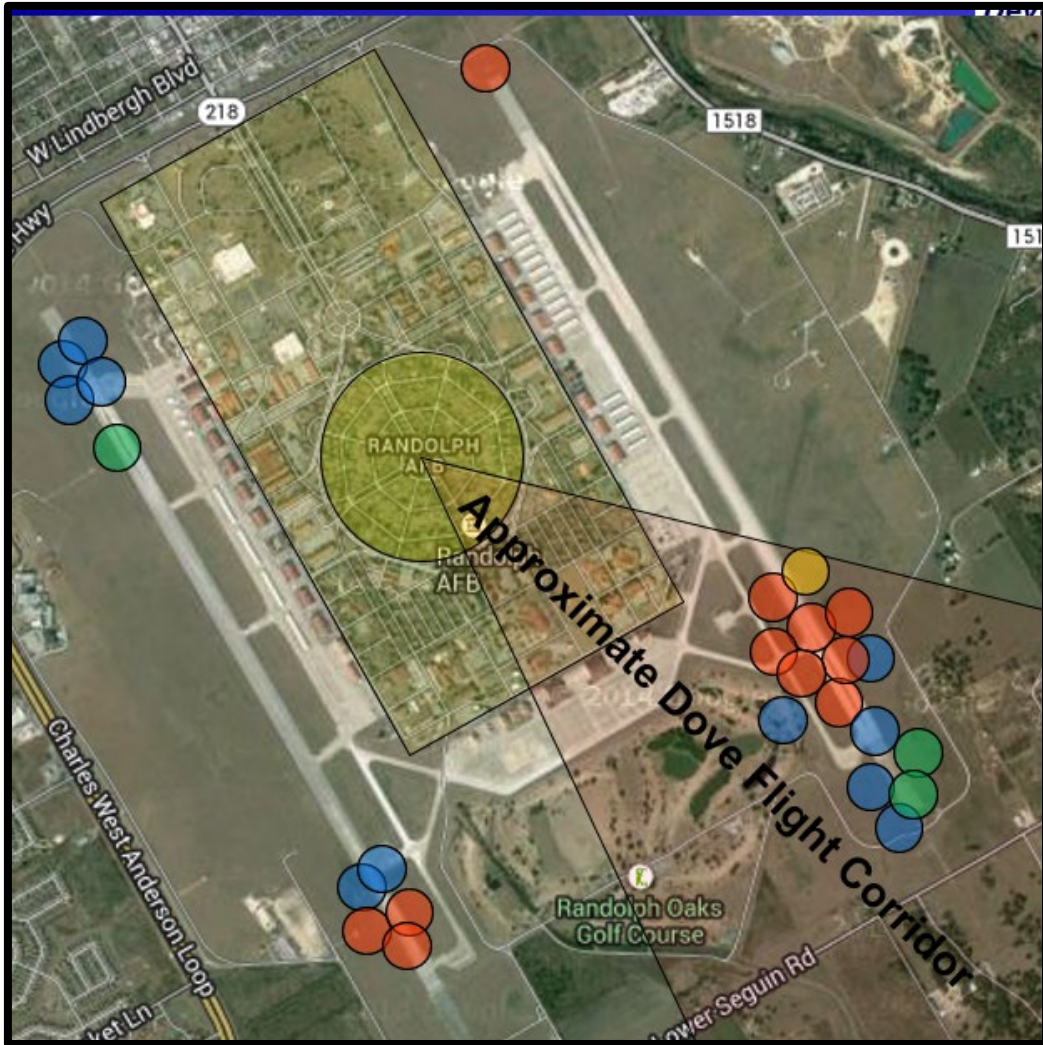
- USGS WWDO Bird Banding Project
- VHF Telemetry Project
 - 39 successful subcutaneous surgeries to implant VHF radio-transmitters for mobile & stationary datalogging systems



Throughout Day
Morning Departure
Evening Return

Training the world's finest Airmen for tomorrow... Deploying combat-ready warriors today

Narrowing the Problem



AGENDA



Source: "U.S. Air Force Pilot Training Yearbook, Class 55D," Reese Air Force Base, 1955.

- Identified Problem
- Proposed Actions
- Approved Actions
- Expected Outcomes / Exercising Due Diligence
- Lessons Learned for Aviation Wildlife Hazard Management

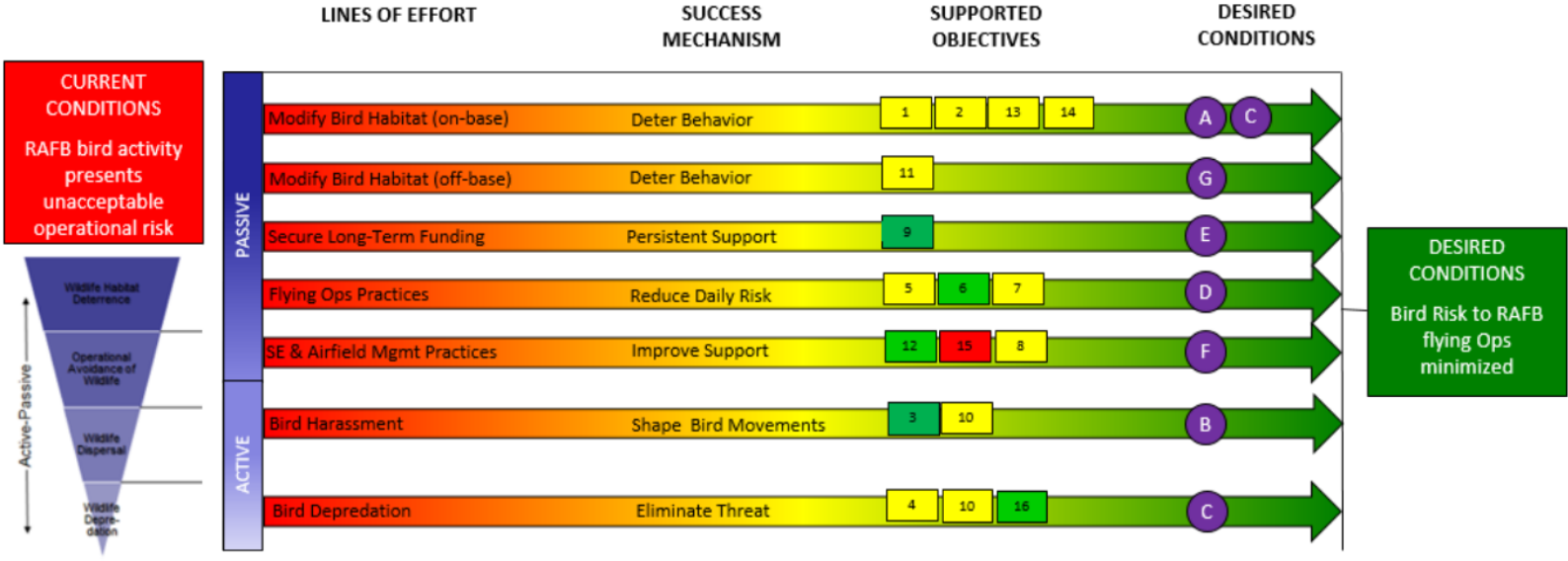
Proposed Actions



12 FTW BASH Action Plan FY15



CAO Oct 2015



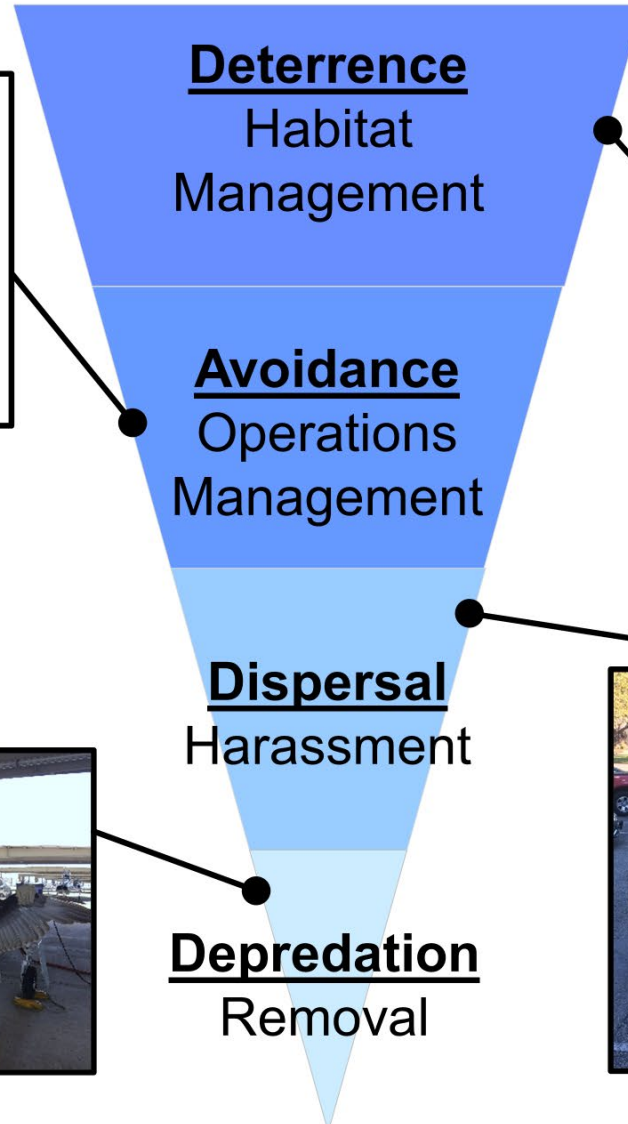
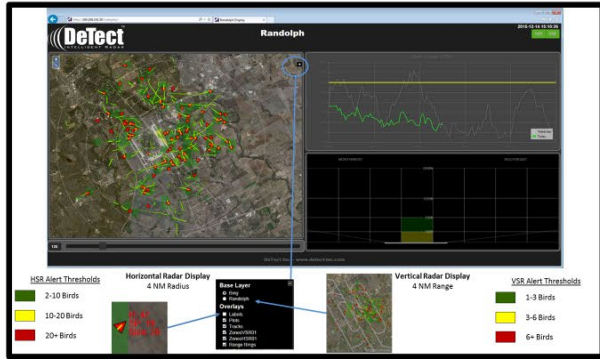
- | | | |
|---|---|--|
| <p>SUPPORTED OBJECTIVES</p> <ul style="list-style-type: none"> 1 Tree trimming and/or tree removal 2 Create BASH-compliant environment at Seguin 3 Install Seguin Air Cannons 4 Maximize Usage of Depredation Permit 5 Implement Flying Window Controls 6 Revise SOF Bird Watch Condition procedures 7 Employ AFSEC Bird Radar 8 Develop Integrated JBSA BASH Plan | <p>SUPPORTED OBJECTIVES</p> <ul style="list-style-type: none"> 9 Secure tree trimming funding in FY16 and beyond 10 Expand Bird Dispersal Team (BDT) 11 Reduce off-base bird habitats & food supply 12 Complete AFSEC-SAV 13 Improve Grass Management Program 14 Maintain & Drain Chain-of-Lakes 15 Augment Airfield Management manning shortfall 16 Update carcass disposal process | <p>DESIRED CONDITIONS</p> <ul style="list-style-type: none"> A JBSA-RND environment less attractive to WWDO pop B Qty & Density of WWDO crossing Rwy 14L minimized C Growth of WWDO, vulture & migratory bird pops reduced D Immediate risk to AM T-38 ops reduced to acceptable lvl E Crisis-to-crisis cycle eliminated w/ secure resources F SE, AM, & CE BASH activities synchronized G Environment surrounding RAFB less attractive to birds |
|---|---|--|



Proposed Actions: 4 Pillars of BASH



Active – Passive

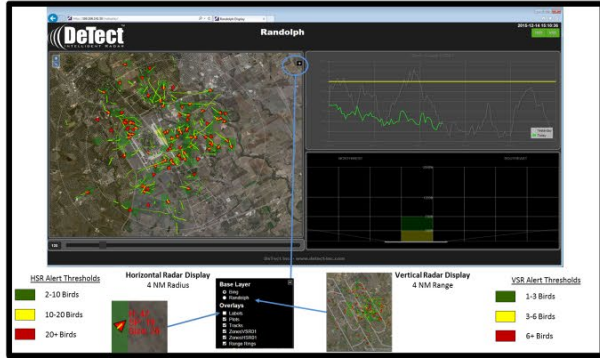




Proposed Actions: 4 Pillars of BASH



Active – Passive



Habitat Management: Randolph 1920s vs Today



Historic District Base Housing Area

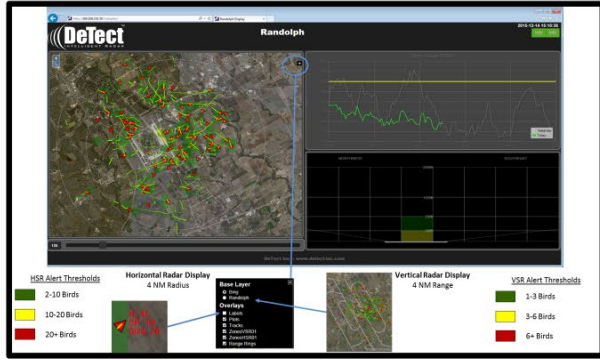
- Man-made 175-acre urban forest - 3,000 live oak trees
- Located between runways <1,000 feet from centerline
- Habitat in a residential neighborhood
- Trees & neighborhood protected as National Historic Landmark District



Proposed Actions: 4 Pillars of BASH



Active – Passive



Deterrence
Habitat
Management

Avoidance
Operations
Management

Dispersal
Harassment

Depredation
Removal

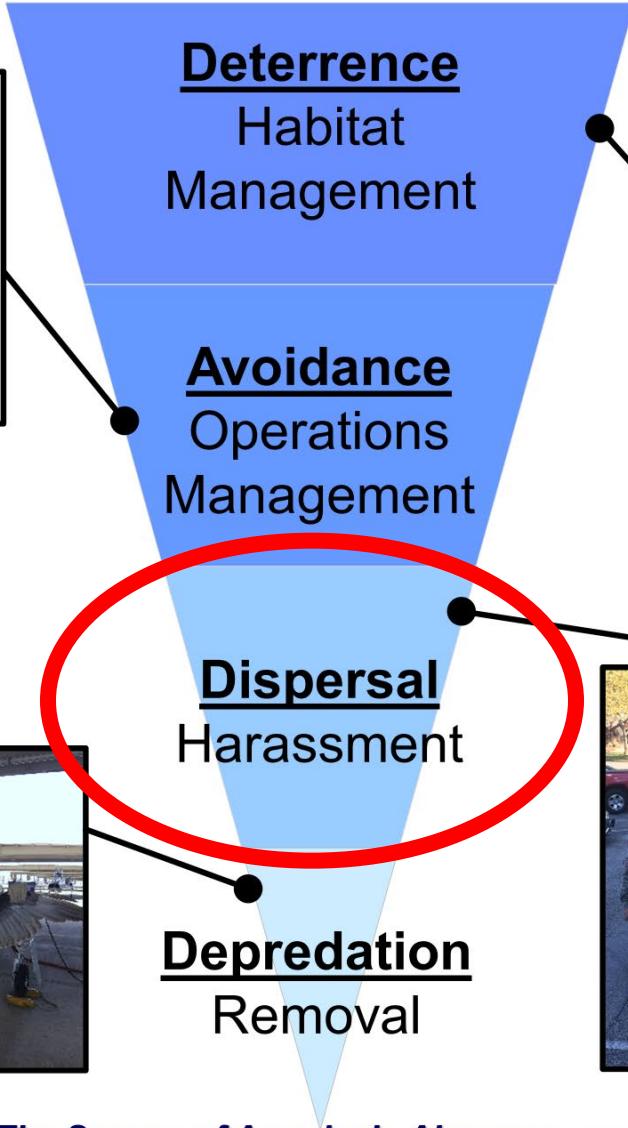
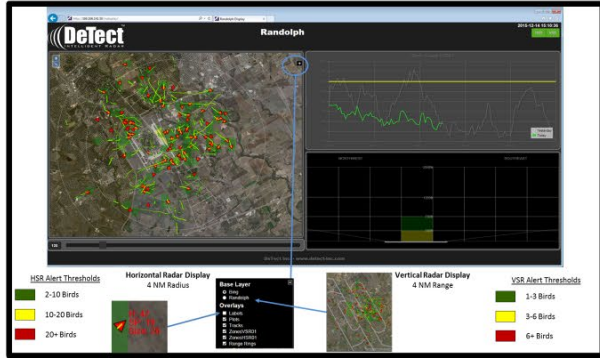




Proposed Actions: 4 Pillars of BASH



Active – Passive



Dispersal/Repellant/Harassment

- As part of integrated wildlife management approach, and in conjunction with recommendations by multiple AFSEC SAVs, all primary dispersal methods were proposed:
 - Pyro
 - Paintball
 - Clappers/Sirens
 - Falconry
 - LRAD
 - MA
- Method implementation constrained by location in residential neighborhood
- Limited effectiveness due to habitat size (~175 acres) and size of WWDO population
 - Columbids are highly resistant to repellant and harassment techniques

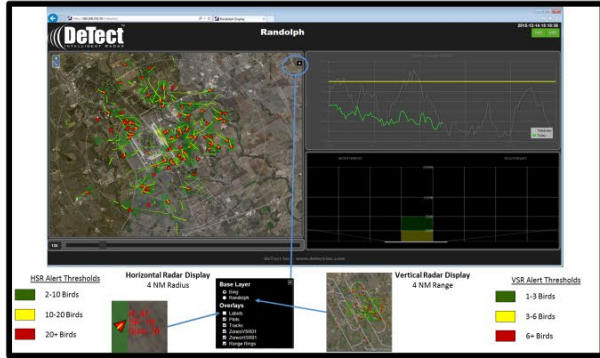




Proposed Actions: 4 Pillars of BASH



Active – Passive



Deterrence
Habitat Management



Avoidance
Operations Management



Dispersal
Harassment



Depredation
Removal

Depredation/Wildlife Removal

- WWDO depredation limited by MBTA
 - USFWS permit allows for limited take per permit year
- Shooting and trapping constrained by habitat location in a residential neighborhood
 - Multiple depredation initiatives within base housing established between 2014 and 2016 were halted by base leadership due to perceived public outcry
- Texas Dove season opens September 1st, providing indirect off base support



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12 FTW BASH Action Plan FY15



CAO Oct 2015



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 - 4 Maximize Usage of Depredation Permit
 - 5 Implement Flying Window Controls
 - 6 Revise SOF Bird Watch Condition procedures
 - 7 Employ AFSEC Bird Radar
 - 8 Develop Integrated JBSA BASH Plan

- 9 Secure tree trimming funding in FY16 and beyond
- 10 Expand Bird Dispersal Team (BDT)
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- 12 Complete AFSEC-SAV
- 13 Improve Grass Management Program
- 14 Maintain & Drain Chain-of-Lakes
- 15 Augment Airfield Management manning shortfall
- 16 Update carcass disposal process

- DESIRED CONDITIONS**
- A JBSA-RND environment less attractive to WWDO pop
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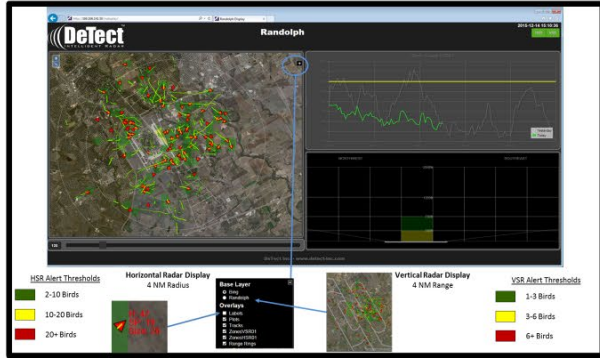
The Source of America's Airpower



Proposed Actions: 4 Pillars of BASH



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Habitat
Management

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Operations
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Dispersal
Harassment

Depredation
Removal



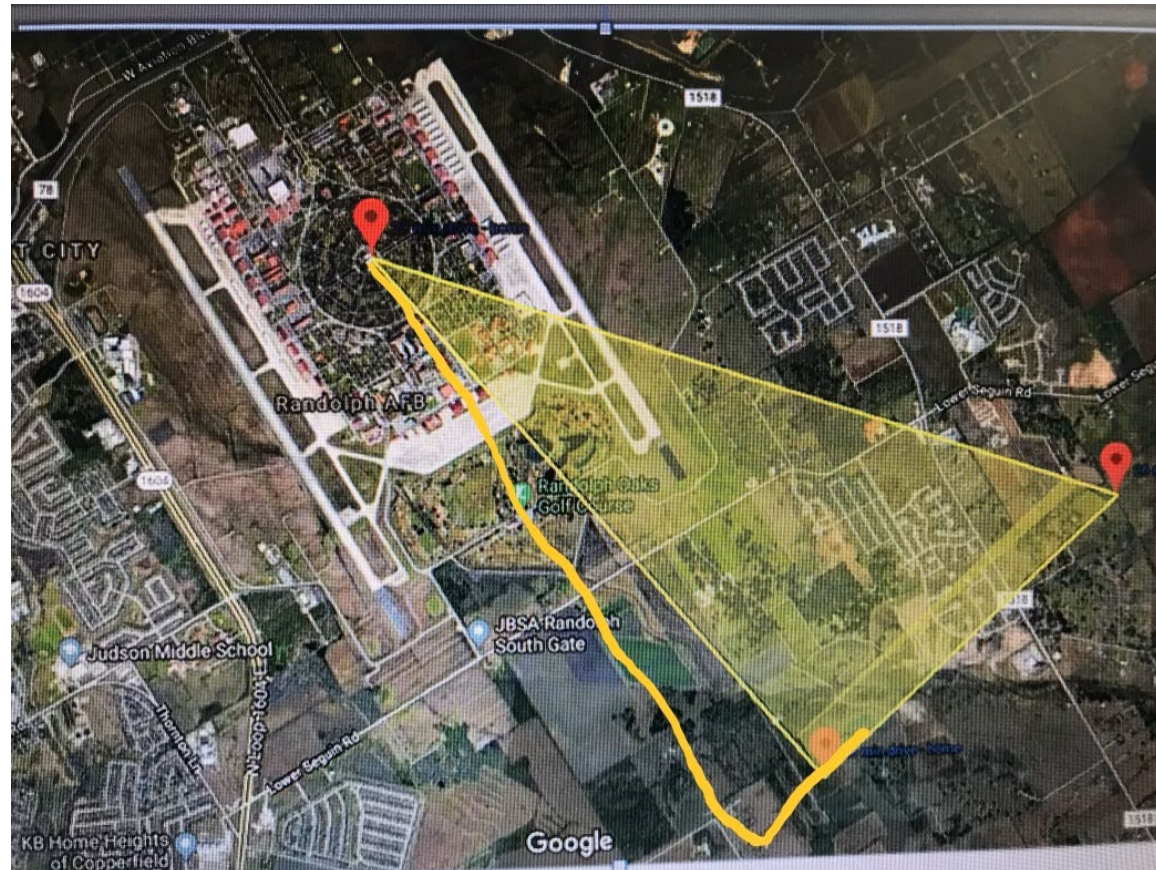
Operational Avoidance/Flight Schedule Modification



- Operational Avoidance remained as only viable management technique
- Multiple operational avoidance options were evaluated
- Persuading base leadership that the cost of operational avoidance was worth the gain in wildlife hazard mitigation relied heavily on relationships and partnerships to get all parties to do the due diligence needed to arrive at an acceptable level of safety
- Leading the process of due diligence required highly precise and comprehensive wildlife hazard data that clearly illustrated the risks and the effectiveness of mitigation measures

First Iteration of White-winged Dove Movement Zone Polygon

- A zone for monitoring WWDO was established during the initial WWDO analysis in August 2020
- The zone began with an area which on-site USDA personnel had observed WWDO movements during 2019 and evolved over time to the final polygon illustrated below. USDA observations on direction, season, and timing of WWDO movements were used to initially identify and define WWDO activity, and develop the methods used to quantify activity within this WWDO zone

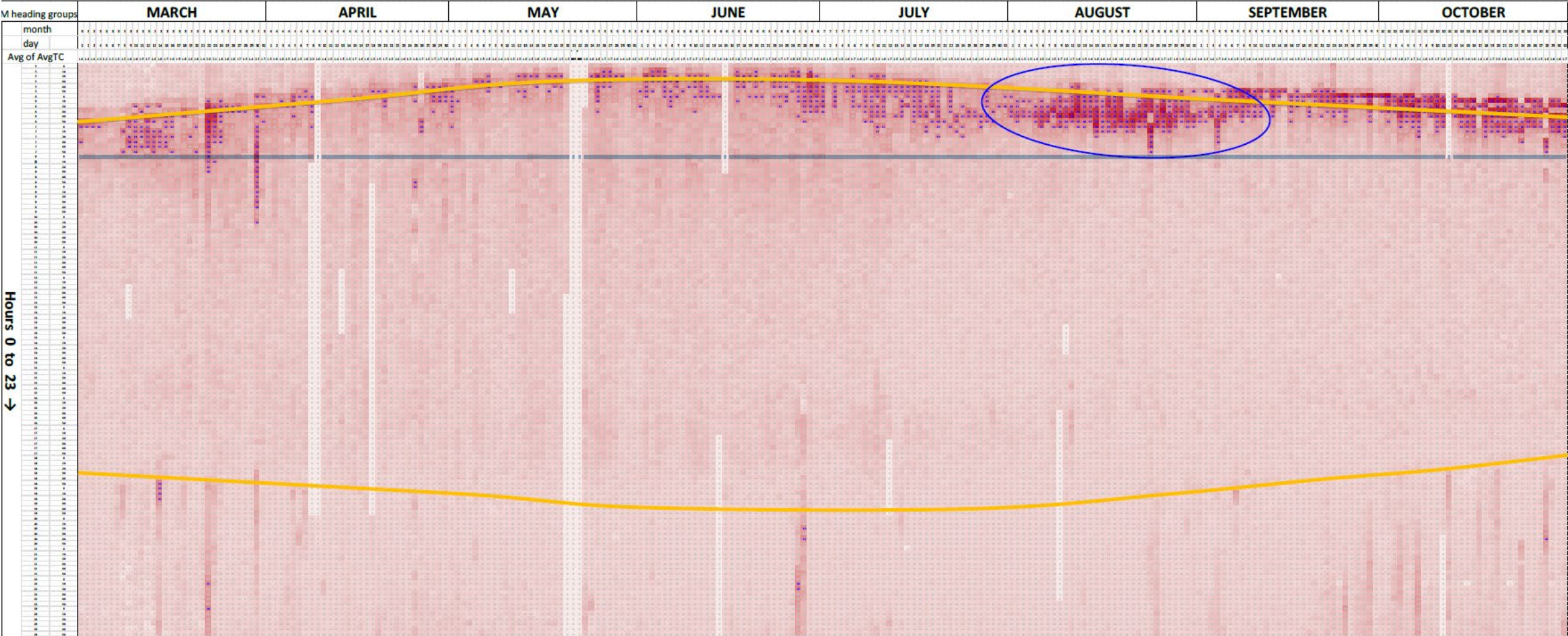


Current White-winged Dove Movement Zone Polygon



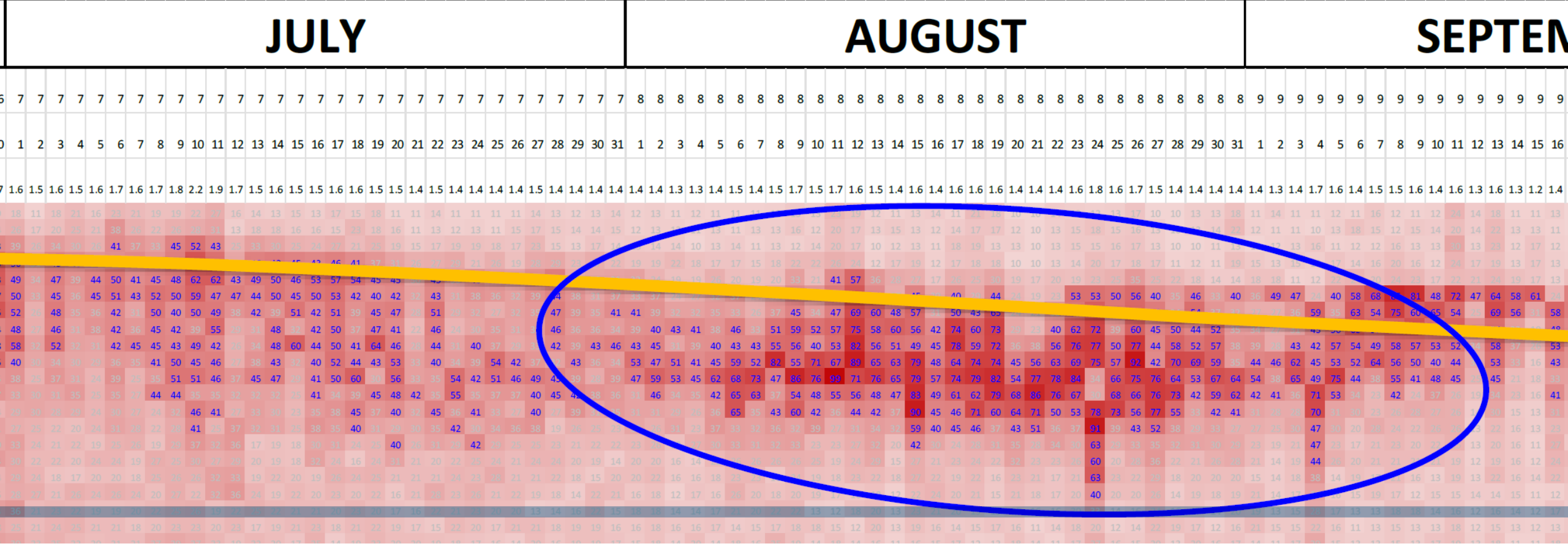
WWDO Movement Zone Heat Map

30-second rolling count of birds moving SE through WWDO movement zone on headings between 050° - 150°



WWDO Movement Zone Heat Map

30-second rolling count of birds moving SE through WWDO movement zone on headings between 050° - 150°



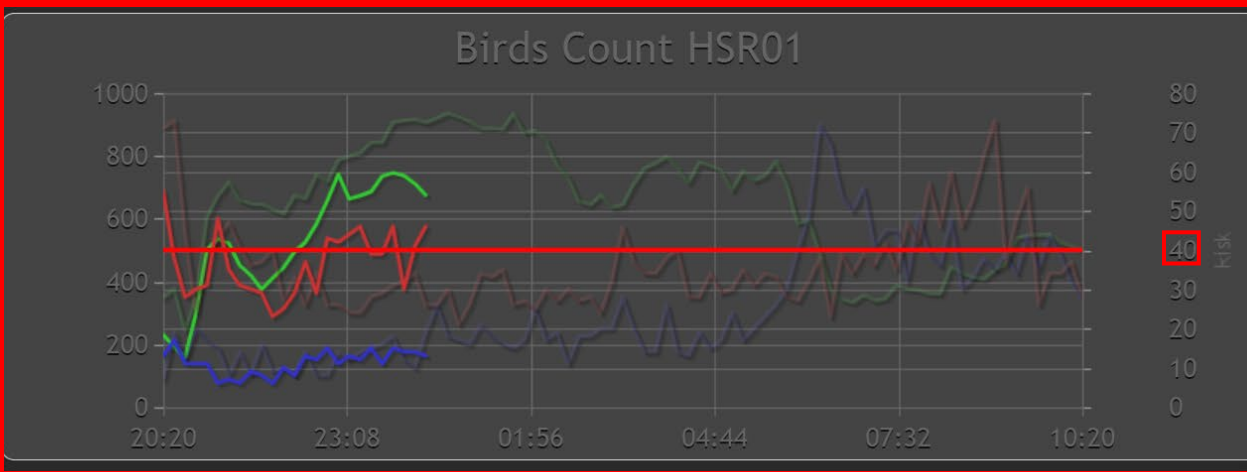
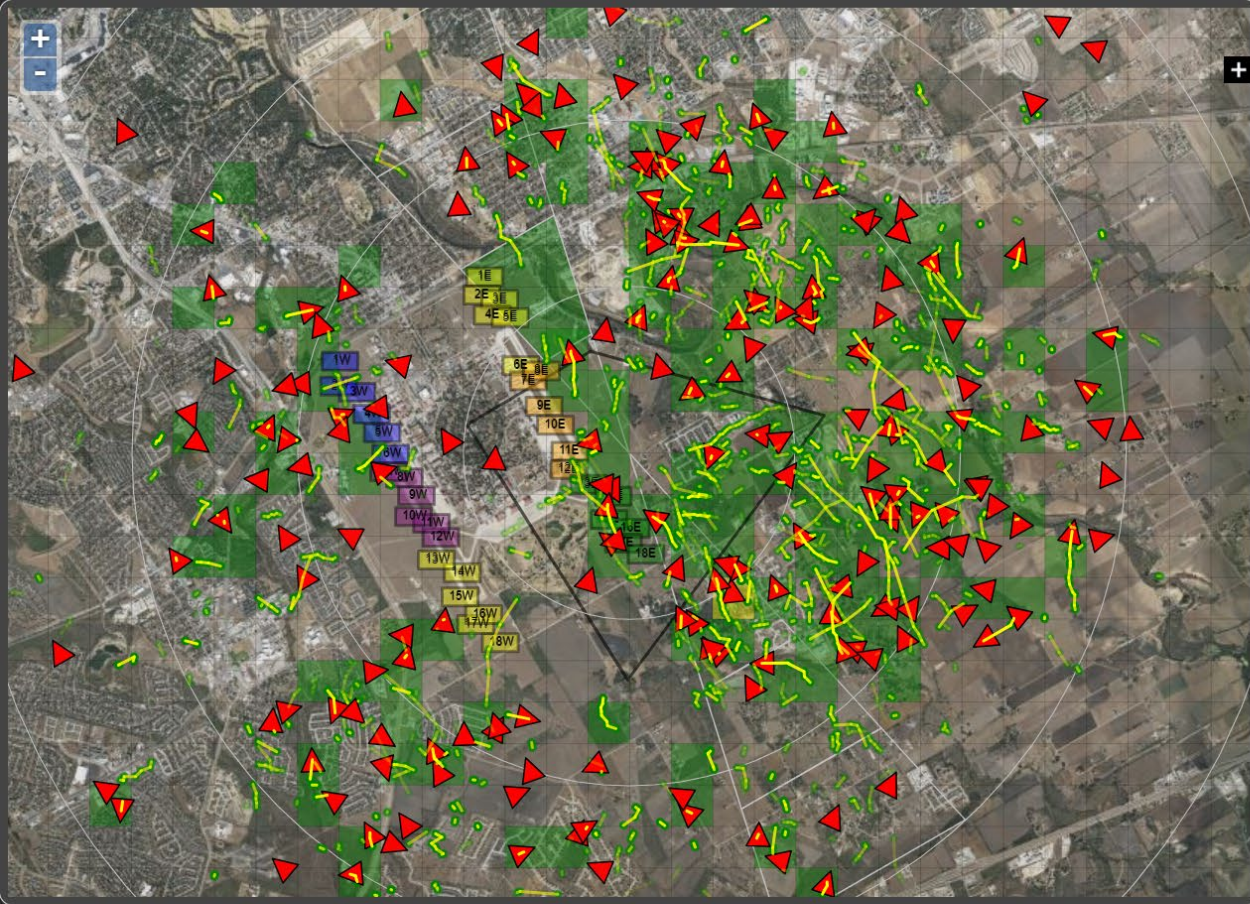
White-winged Dove Risk Threshold Display



Randolph

2024-05-31 05:25:45

HSR VSR



White-Winged Dove

2023 Daily Movements

28 June 2023

Sunrise: 0626

Peak movement: 0600-0800



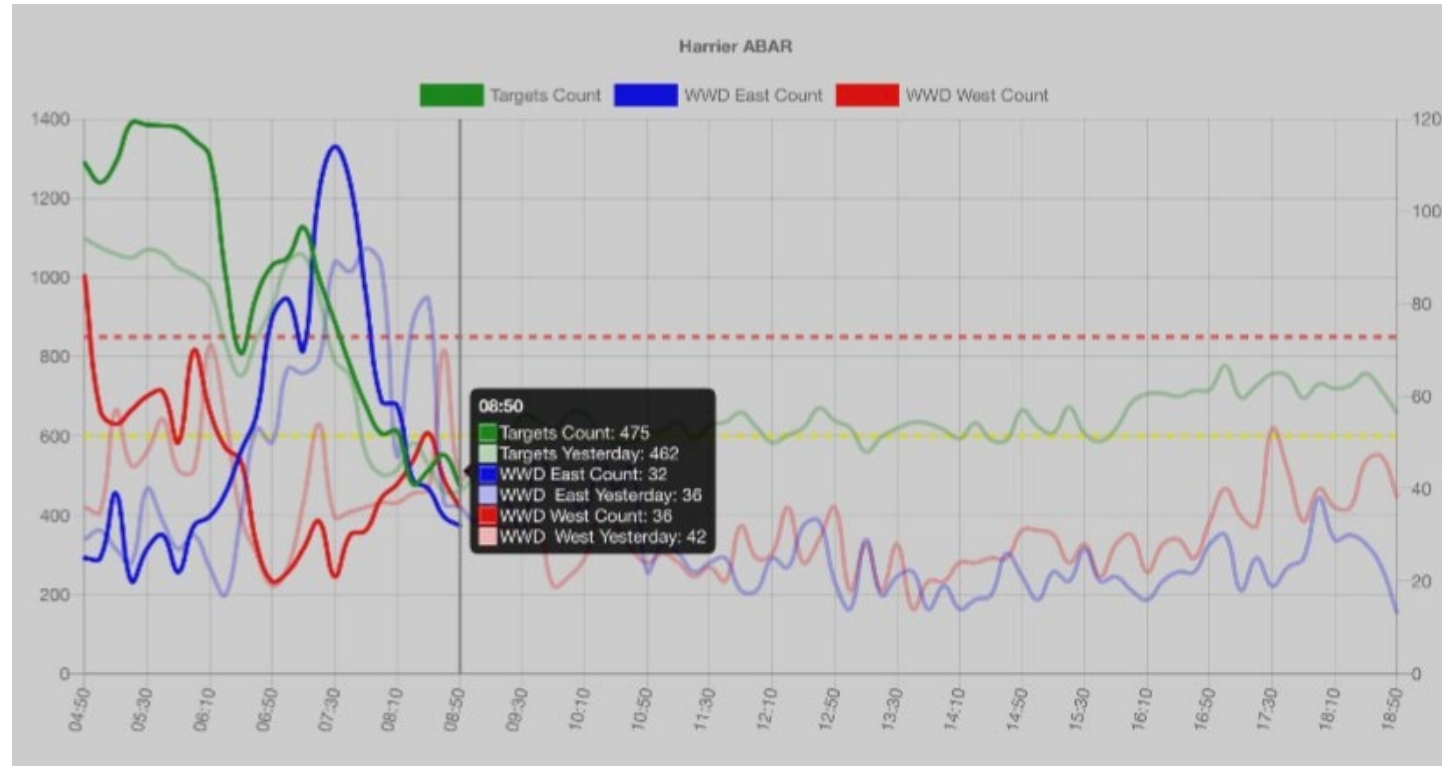
White-Winged Dove

2023 Daily Movements

7 August 2023

Sunrise: 0656

Peak Movement: 0630-0800



AGENDA

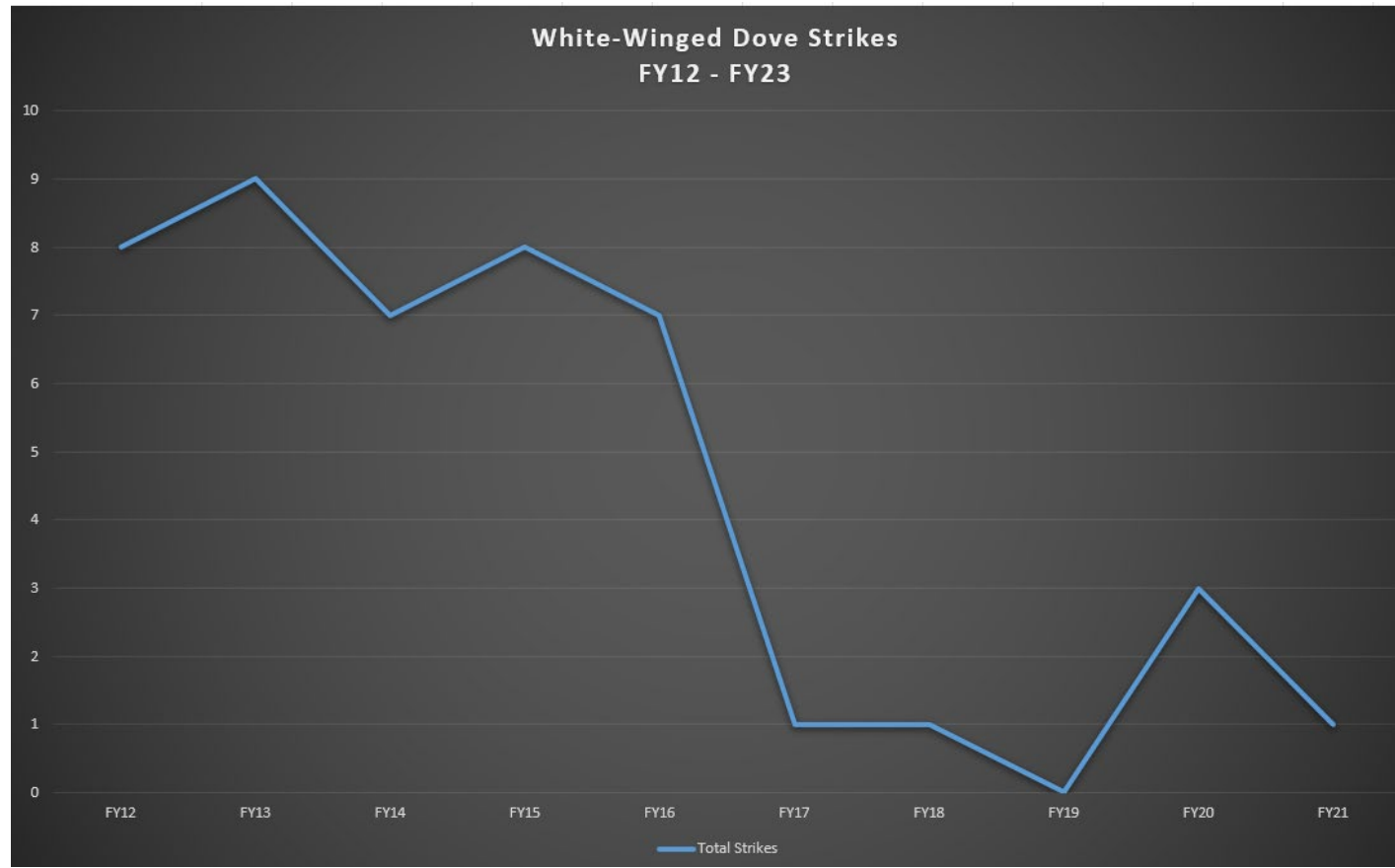


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Results

- Significant reduction in WWDO BASH risk to the flying mission on east runway by moving AM T-38 operations to the west airfield where 90-95% of the WWDO don't transit
- Reduction in WWDO strikes on the east airfield to near zero
- Significant drop in WWDO damage cost to near zero



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Lessons Learned for Airport Wildlife Hazard Management

- Operational Avoidance and flight schedule modification is an effective tool, but must demonstrate strategic value to your specific location and organization
- Significant analysis required to accomplish due diligence of minimizing operational avoidance and flight schedule modification to only amount necessary to achieve acceptable level of risk reduction
- Data is key to trust, transparency, and buy-in from organizational and operational leadership
- Another key is ability to assess risk and effectiveness of operational avoidance in near real-time and adjust mitigation based on real-time wildlife threats and risks
- USDA or other Wildlife Management Team can only provide recommendations to decision makers – and must document those recommendations – that is the due diligence

Questions?

