

Desert Vegetation and Habitat Management On USAF Airfield

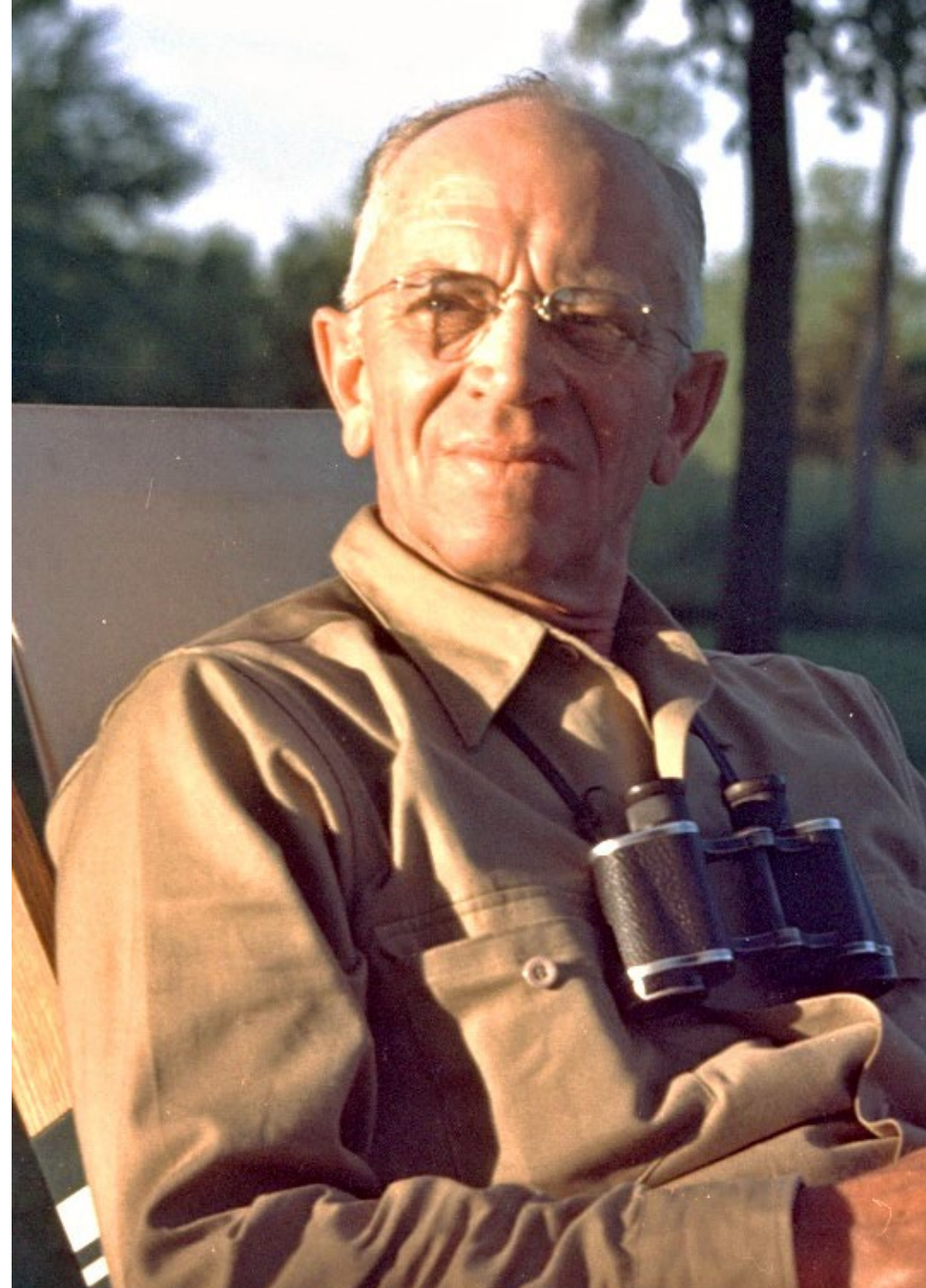
Tom Correll, Valerie Burton, David Bergman, Kevin Wakefield, and MSgt. Austin Close



"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise"

- Aldo Leopold

..... Aldo never worked at an airport!



What is BASH?

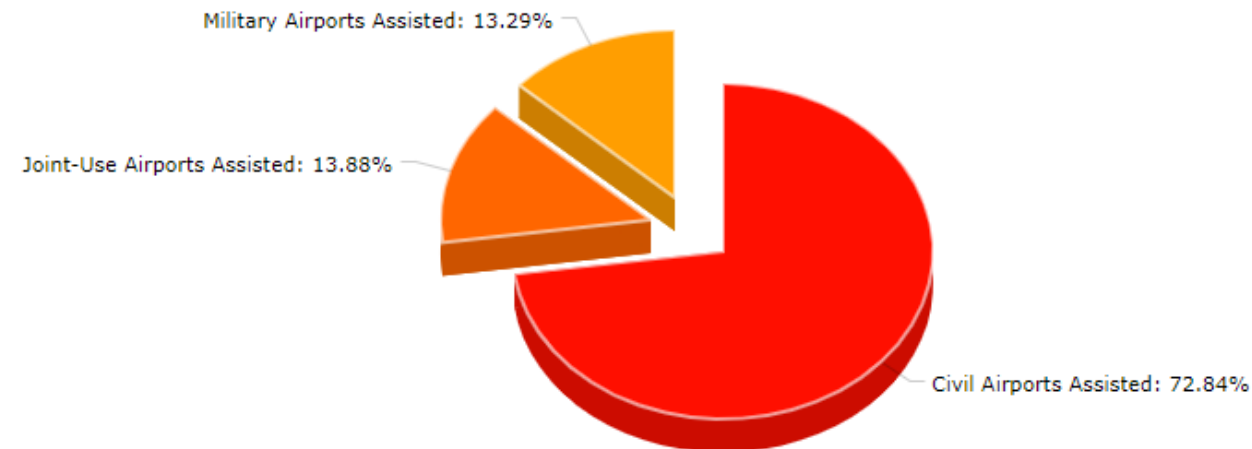
- **Bird Aircraft Strike Hazard**

- When birds or other animals collide with aircraft.
- May occur during take off, landing, or while in the air.
- Identification via “Snarge” aka biological remains on aircraft.
 - Smithsonian Feather ID Lab
- Measure Risk:Hazard
 - Risk = Probability of strike
 - Hazard = Severity of strike



USDA APHIS Wildlife Services and Aviation

- USDA APHIS Wildlife Services Airport Wildlife Hazards Program
- Nationwide network of biologists trained and certified in wildlife hazard management at airports.
- Provide airport site visits, wildlife consultations, full-time biologists.
 - Develop wildlife hazard assessments and wildlife hazard management plans
 - Conduct operational wildlife management programs
 - Provide technical expertise and assistance to mitigate wildlife hazards



Davis-Monthan AFB, Tucson AZ



Davis-Monthan Air Force Base

Located in Tucson, Arizona.

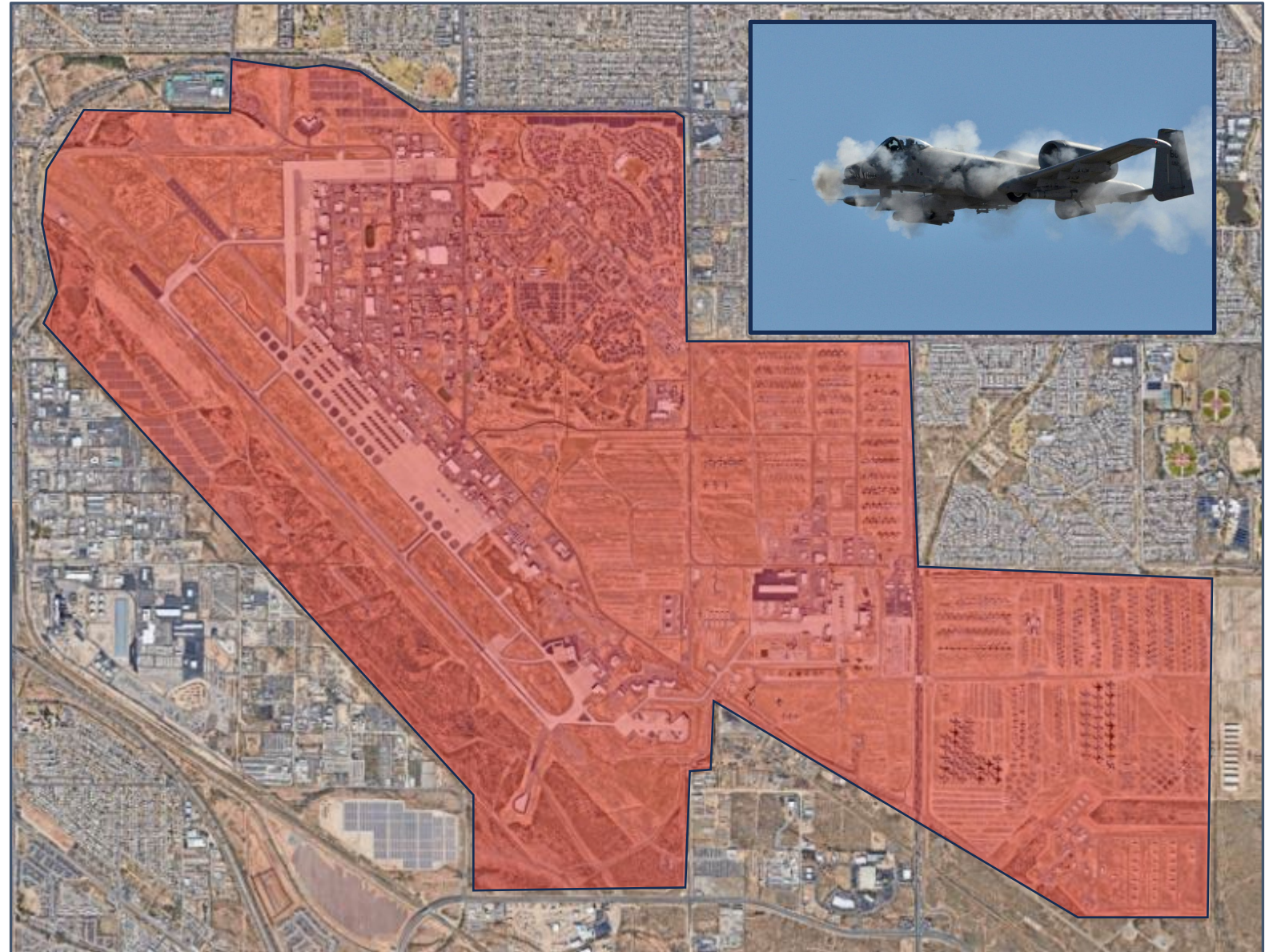
Operates single busiest runway in the Air Force.

Home to the famous A-10 Warthog, soon to become AFSOC Forward Projection Wing.

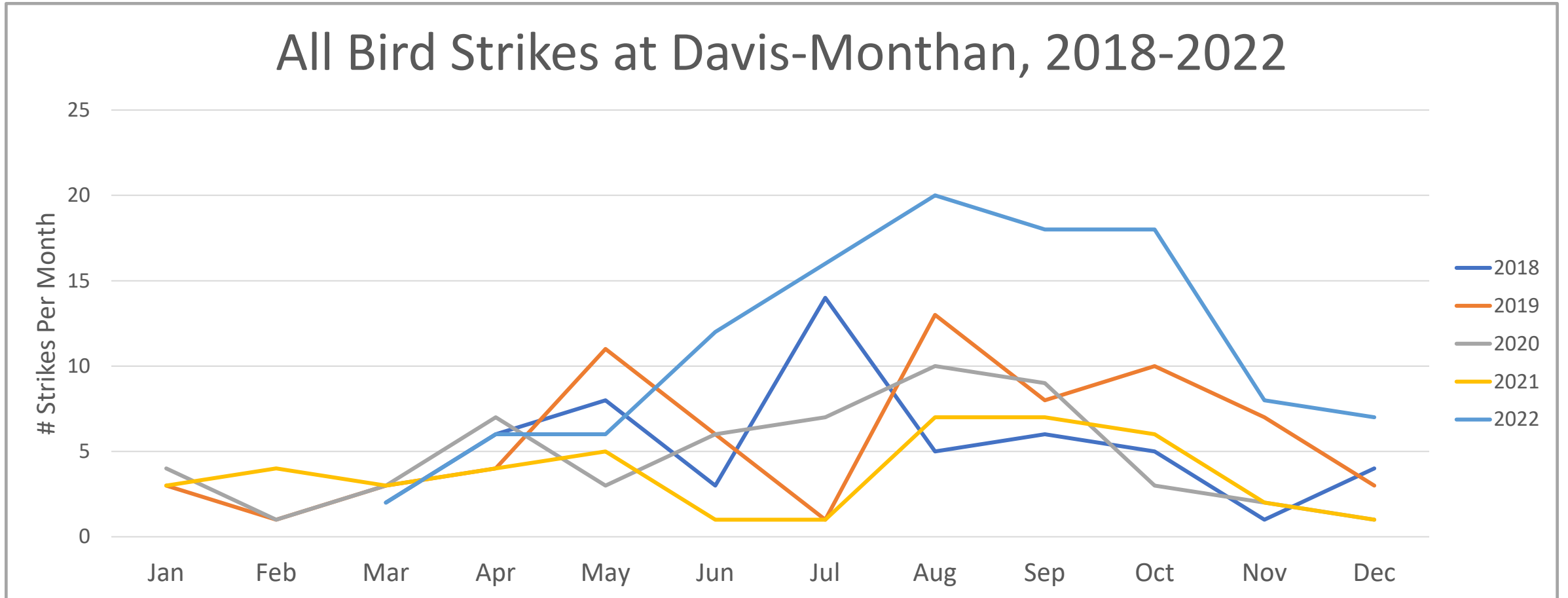
Over 46,000 DoD and Civilian personnel

11 Flying Units, 152 aircraft:

- 355th Wing Group
- 12th Air Force
- 309th Aerospace Maintenance and Regeneration Group
- 55th Electronic Combat group
- 214th Attack Group
- 943rd Rescue Group

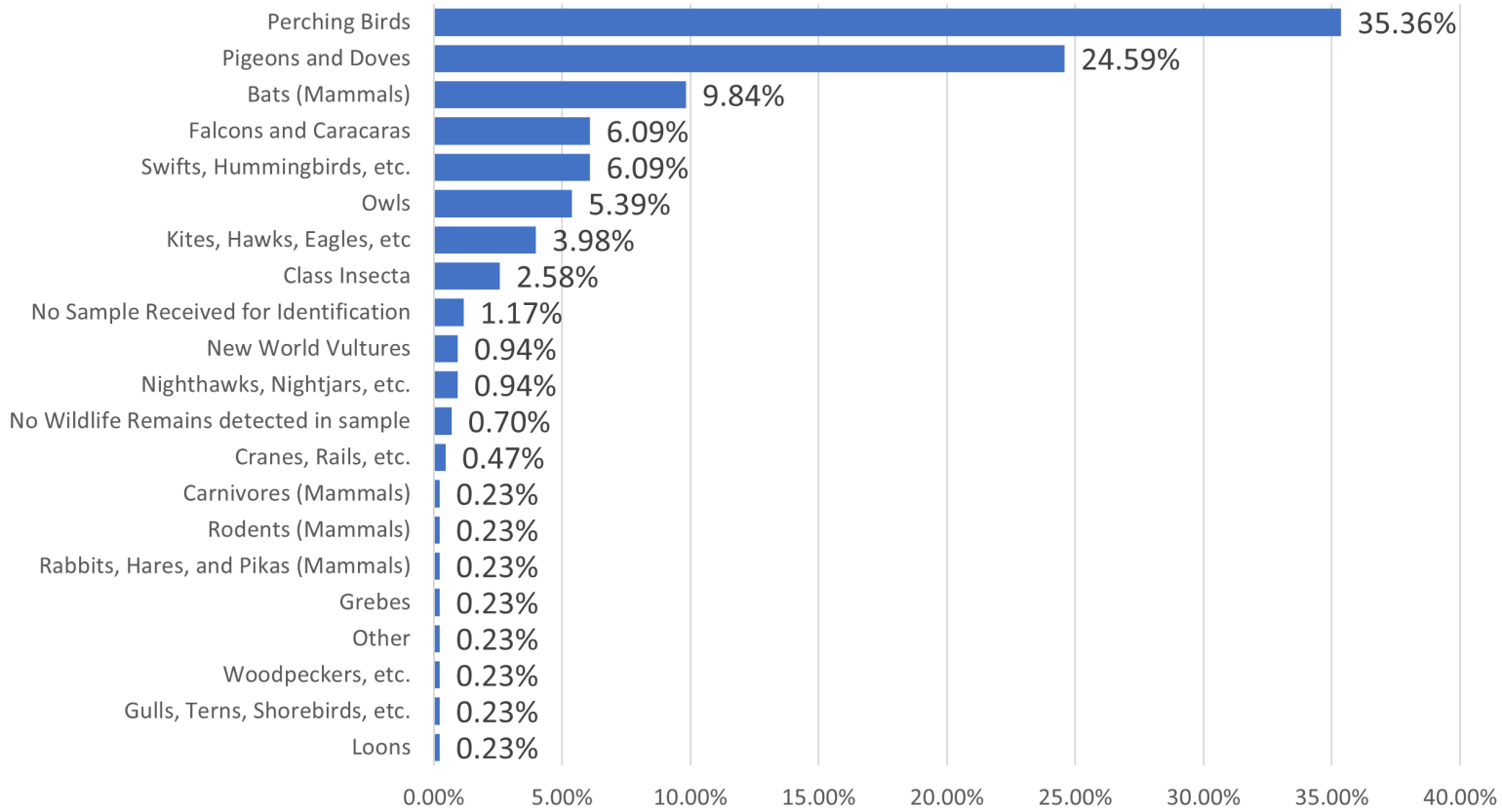


Bird Strikes At-A-Glance

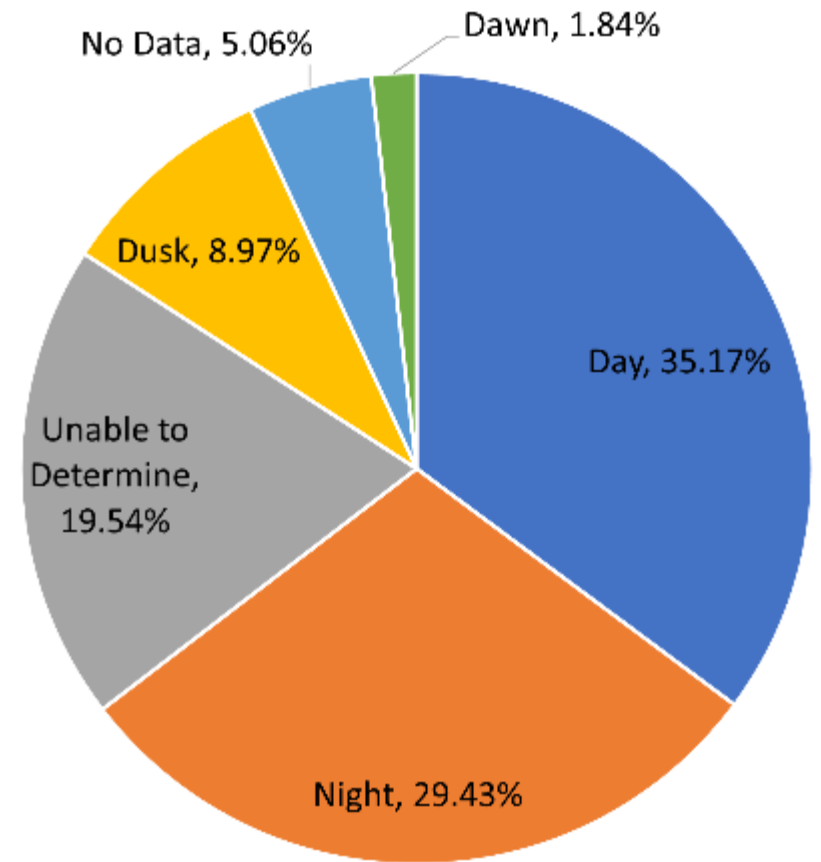


Bird Strikes At-A-Glance

Distribution of Orders Struck By Aircraft, 2018-2023



Bird Strikes By Time Of Day

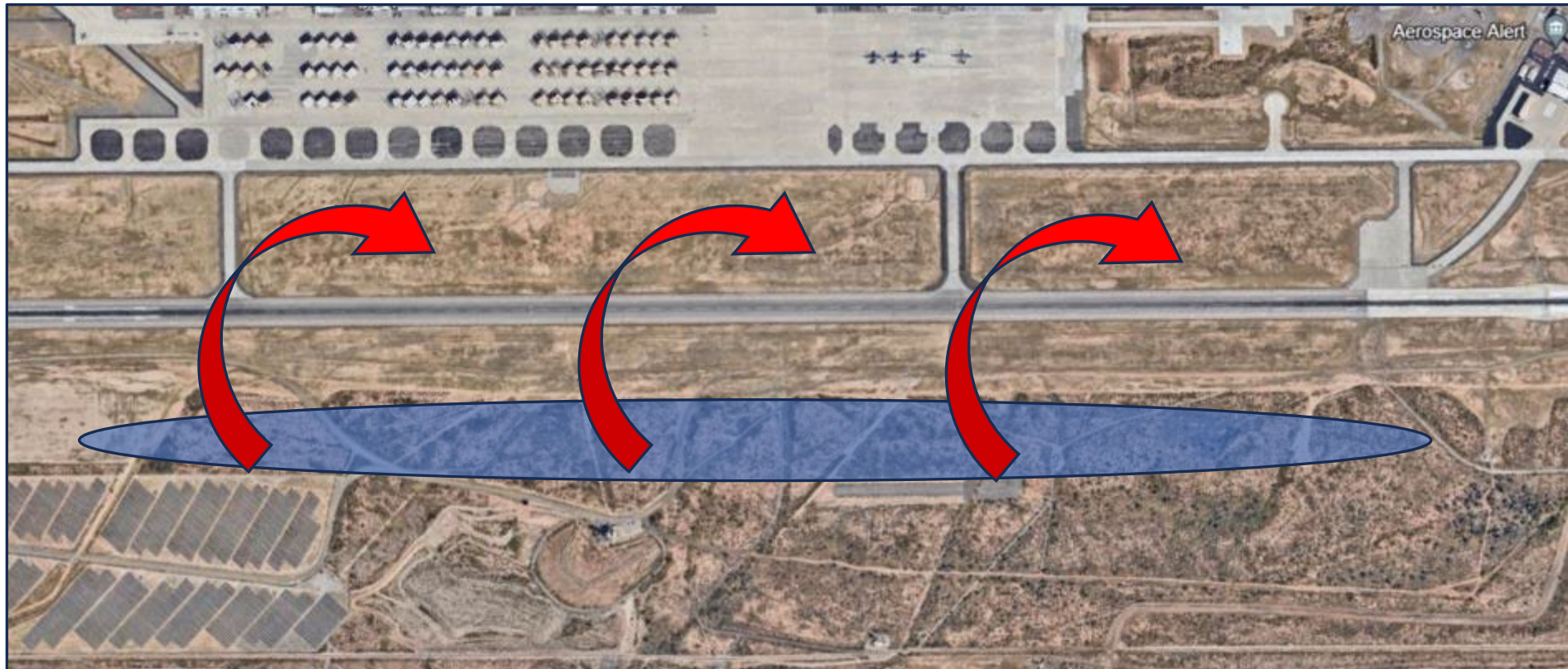


Bird Strikes At-A-Glance

- CY22, **30%** of all strikes occurred on airfield.
- CY21-23: Mourning dove represent **27%** of all bird strikes.
- CY21-23: **~50%** of all bird strikes occurred July-Oct.

A Problem Of Too Much Cover Cover

- The majority of habitat on the 2,400 acre airfield at DMAFB is desert scrub; mesquite, palo verde, creosote, cactus.
- Provides ample cover from predators, heat, etc... Doesn't provide much food.
- Monsoon rains provide daily respite from intense heat. Increase grass seed production.
- As clouds build, doves leave cover, cross runway to gravel/forage.
- Highest risk of bird strike occurs below 500 ft AGL.

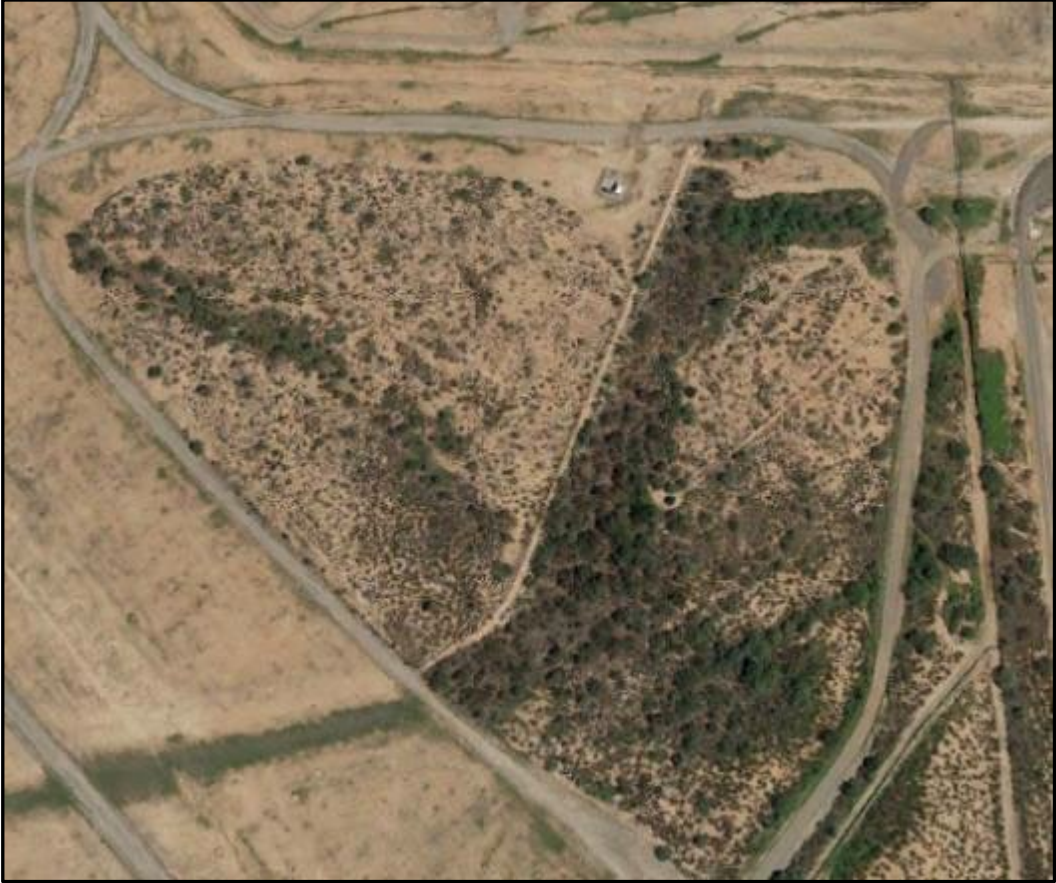


Removal via Mastication

- Preferred over burning due to local air quality concerns.
- Higher margin of safety, no continued monitoring for flare-ups.
- Leaves behind mat of debris which prevents regrowth.



2020 VEGETATION REMOVAL



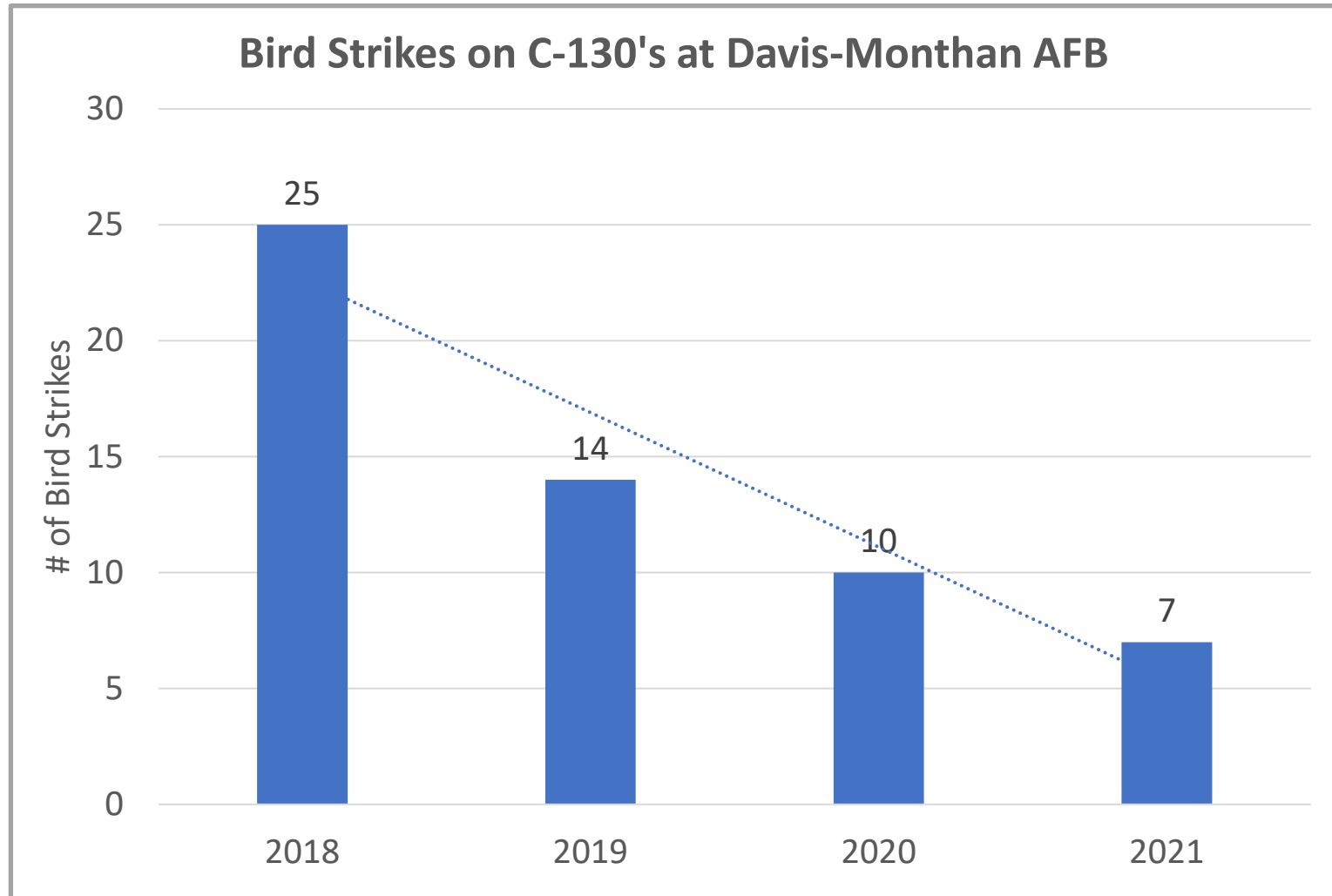
Before: 8/2018



After: 12/2023

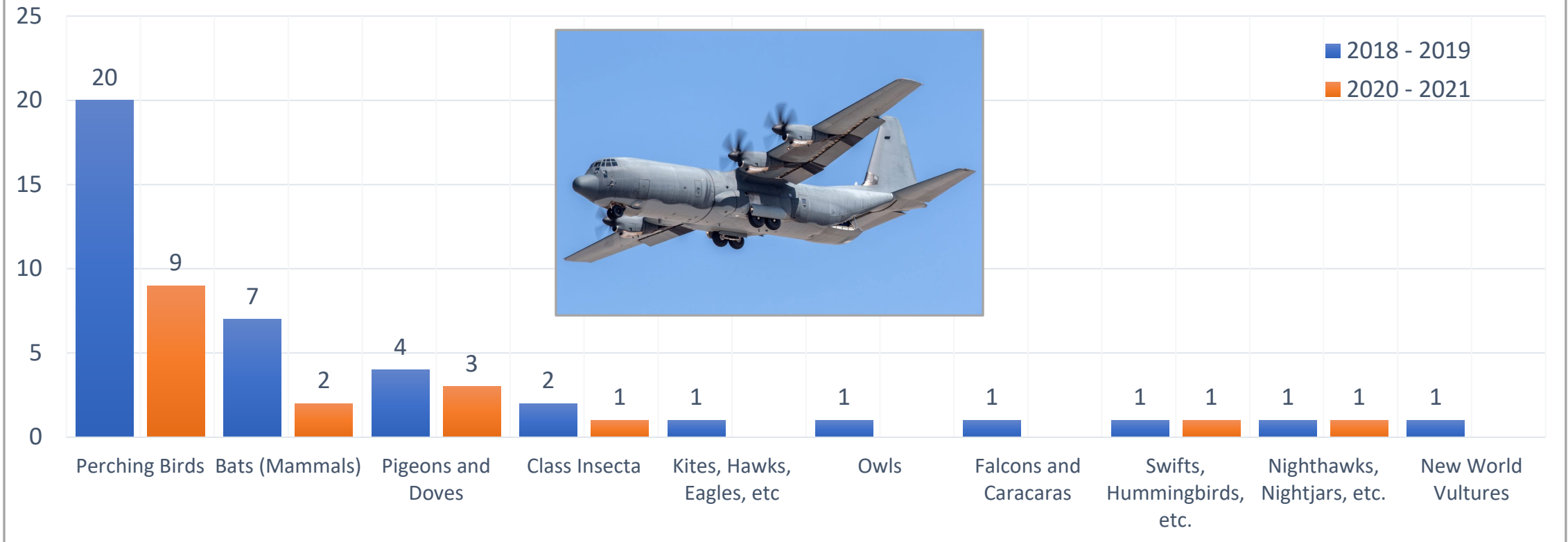
Results from 2020 Vegetation Removal

- Results seen for C-130 bird strikes; 2018 - 2021:
- **2018**: 810 flights – 25 bird strikes
- **2019**: 680 flights – 14 bird strikes
 - **44% reduction from 2018**
- **2020**: 743 flights – 10 bird strikes
 - **29% reduction from 2019**
- **2021**: 753 flights - 7 bird strikes
 - **30% reduction from 2020**
- **78% total reduction in bird strikes on C-130 aircraft**



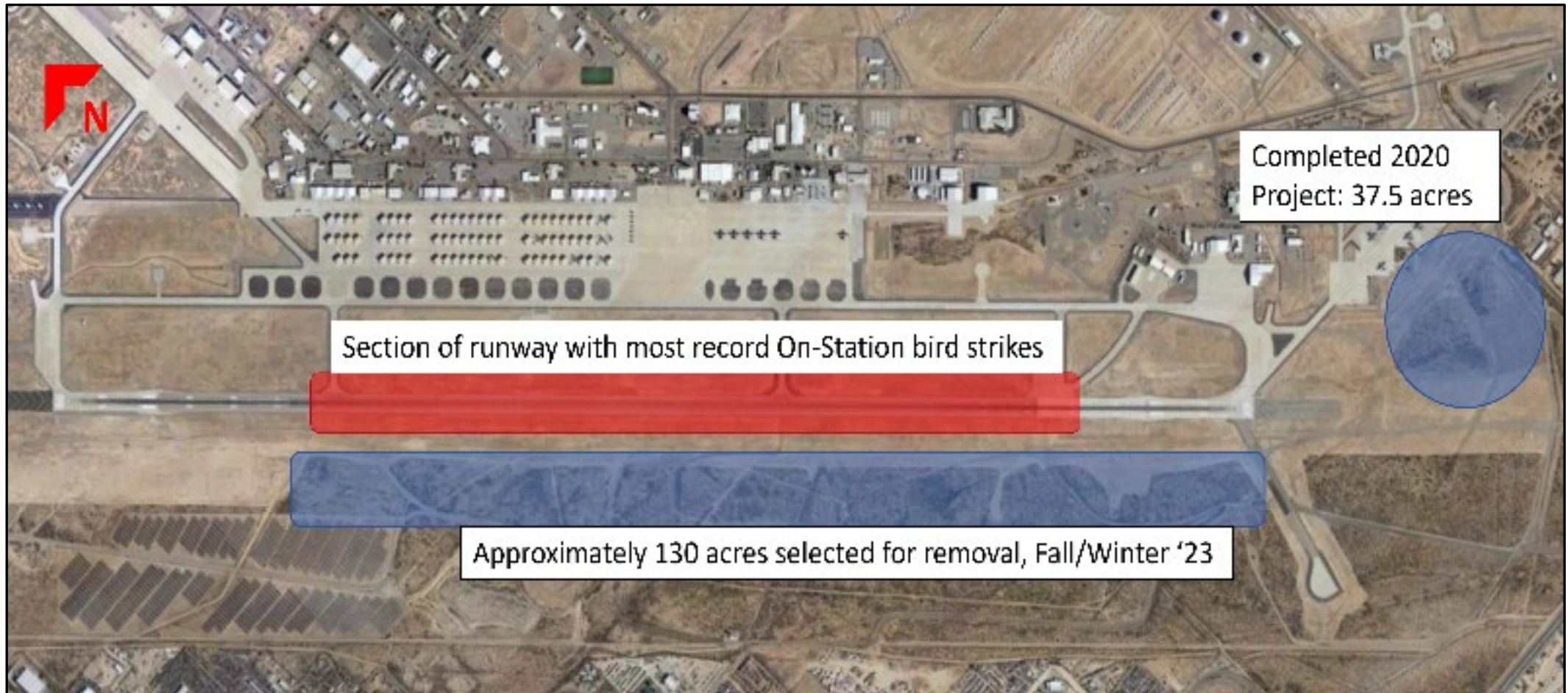
Results from 2020 Vegetation Removal

C-130 Bird Strikes by Order, 2018/19 vs. 2020/21



Observed over 50% reduction in Perching Bird strikes, the most frequently struck bird by aircraft

2023-2024 West Airfield Vegetation Removal



- Per AFI Airfield Environment regulation, vegetation must be $>1,000$ ft from RWY center.
 - Exempted area, <750 ft from centerline.
- Approx. 130 acres of sparse desert scrub cover.

2023-2024 West Airfield Vegetation Removal



- **Air Force Wildland Fire Team + Nellis BLM module.**
- **Project Complete – At no local cost to installation.**
- **Work ended 01/18/2024**
- **Previous estimates: ~\$1,200,000**
- **Actual Cost of Completion: ~\$30,000**
 - **Paid by Air Force Civil Engineering Center**

2023-2024 West Airfield Vegetation Removal



- ~4 Acre section could not be mowed due to Unexploded Orndance.
- Now seeing increased bird strikes on Runway adjacent to un-mowed habitat

Special Thanks

A high-angle photograph of a long line of military transport aircraft, likely C-130 Hercules, parked on a runway. The aircraft are arranged in a neat row, receding into the distance. The runway is paved and has yellow markings. The background shows a dry, brown landscape with mountains in the distance under a blue sky with scattered clouds.

355th Wing Group

Lt. Col. James Swigert, Chief of Safety

Capt. Dick 'Sin' O'Brien, Chief of Flight Safety

Mr. Richard Sims, Airfield Manager

Nellis WSW Fire Management

Mr. Brady Shultz, Fire Management Specialist