

BIRD RELOCATION EFFORTS

PARTNERSHIP TO REDUCE SAFETY HAZARDS

SUMMARY:

The City of San Antonio, Joint Base San Antonio (JBSA) and the U.S. Department of Agriculture (USDA) are working together to reduce hazards associated with the large number of birds surrounding the Elmendorf Lake Park area.

WE NEED TO REDUCE HAZARDS RELATED TO THE BIRD POPULATION BECAUSE:

- The risk of collisions between birds and aircraft threatens the safety of pilots, military service members and the surrounding neighborhoods.
- Since 2010, an average of more than 50 wildlife strikes has been reported at JBSA-Kelly Field each fiscal year.
- The accumulation of bird feces has contributed to water and air quality issues and damaged the vegetation and natural habitat at Elmendorf Lake

50+ STRIKES



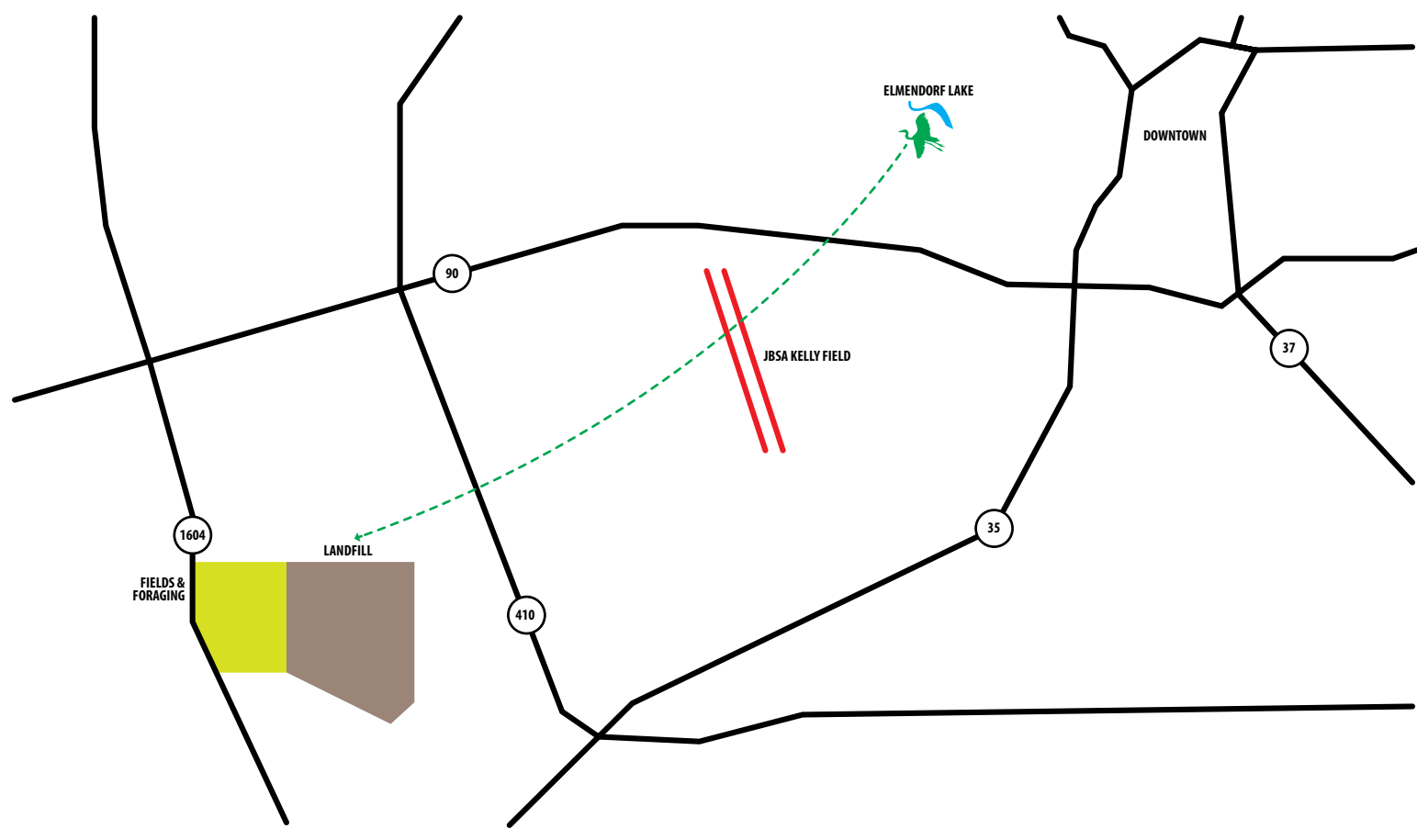
FREQUENTLY ASKED QUESTIONS:

1) HOW LONG HAS THIS BEEN A PROBLEM?

The Bird/wildlife Aircraft Strike Hazard (BASH) concern is a growing industry worldwide. The USDA and U.S. Air Force have been leaders in its development, closely studying the hazard for decades. Although wildlife hazards are inherently unpredictable, a BASH program is required at USAF airfields as an effort to reduce the possibility of damage or catastrophic events caused by wildlife strikes. In our community, JBSA-Kelly Field Aviation Safety Office and USDA Animal and Plant Health Inspection Service Wildlife Services Biologists have studied the flight safety issue at Elmendorf Lake Park since discovery in February 2016. Due to growing bird population, urban growth and increased military operations, it is important that it is now addressed. The population of birds at this location has increased and will continue to increase due to the availability of habitat for nesting and roosting, or settling to rest at night, as well as foraging opportunities. Military and civil flight operations at JBSA-Kelly Field and the Port of San Antonio are developing and expanding. Urban growth around the airfield also continues to develop. This equates to an increased probability for a damaging strike, and priority must be given for public and aircraft flight operations safety.

2) WHAT TYPES OF BIRDS ARE CAUSING THE HAZARD?

Multiple species roost on Elmendorf Lake, including cattle egrets, double-crested cormorants and great egrets, among other species. The behavior cattle egrets have developed over the last few years makes them hazardous. They visit the landfill and agricultural fields 5 miles southwest of the airfield on a daily basis, crossing the flight path of aircraft at least twice daily in numbers of roughly 800. When breeding and raising their young, these birds will make this trip several times throughout the day. In addition, due to the cattle egrets flocking behavior and size, these birds are capable of causing significant damage to aircraft and aircraft components when struck at flying airspeeds and threaten flight operations during critical phases of flight, including takeoff and landing.



3) HAVE ISSUES BEEN REPORTED WITH THE BIRDS?

JBSA-Kelly Field actively participates in monitoring wildlife and implementing programs to reduce strike risk. Specific to JBSA-Kelly Field, there has been an average of more than 50 reported wildlife strikes per fiscal year since 2010. Strikes occur from multiple bird species including cattle egrets, double-crested cormorants and great egrets. Strike statistics are half of the safety equation used to analyze risk; the other half of the equation is hazard observation. Below is synopsis of hazard observation, showing high risk.

Hazard and risk is measured in:

- **Exposure:** every day, twice a day or more when nesting; about 800 cattle egrets in large flocks pass through the north end of runway flight path¹
- **Probability:** approximately 100 aircraft pass through the north end of runway flight path daily²
- **Severity:** birds are capable of destroying an aircraft by themselves or in flocks; endangered lives on the aircraft and on the ground where the aircraft might crash; destruction or damage of aircraft and or ground property, facilities and equipment³

Notes:

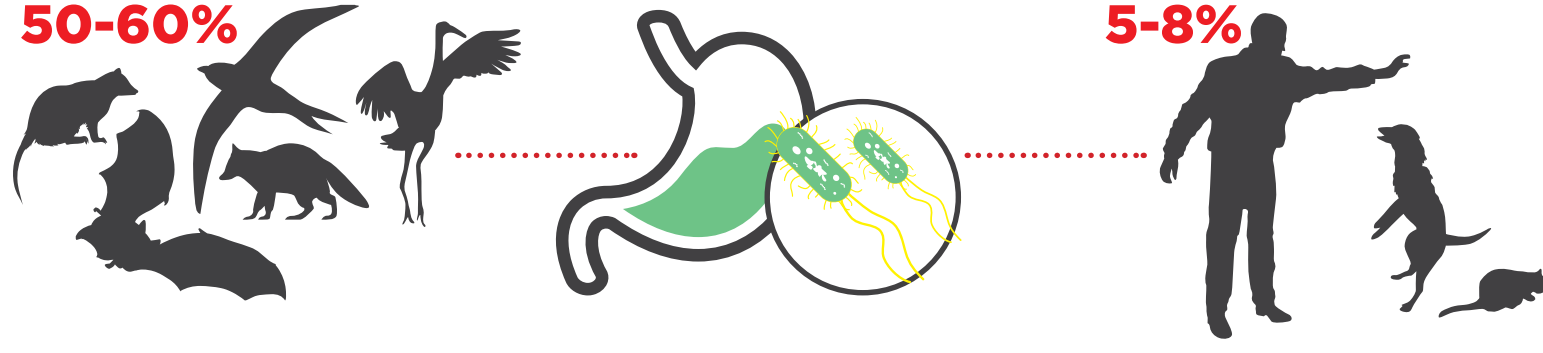
1. Depending on the time of year, about 800 cattle egrets make the trip from Elmendorf Lake Park to a nearby landfill and back every day. During breeding season, they make this trip several times per day to feed their young.
2. Computed annually, the air traffic count for JBSA-Kelly Field shows an average of more than 100 aircraft movements through this flight path corridor per day.
3. Cattle Egrets have caused over \$8.5 million in damage to USAF aircraft, ranking 11 in the USAF top 50 list of cost by species.

4) HOW HAS IT BEEN DETERMINED THAT BIRDS ARE POLLUTING THE LAKE?

The National Wildlife Research Center that is part of USDA Animal and Plant Health Inspection Service provides the latest research in wildlife conflict with human health. Fecal remains from the birds have the potential to increase the nitrogen in the water, which could kill off aquatic life. The San Antonio River Authority has also measured elevated levels of E. coli detected in Elmendorf Lake due in part to the high population of birds. Egrets have been linked to psittacosis-ornithosis agents in Texas populations which is a concern for human health, along with Histoplasma capsulatum fungus which can occur in fecal waste, especially around rivers and water systems. Breathing problems can occur from these avian diseases in addition to the uric acid produced by bird feces.

5) ARE THE E.COLI/FECAL REMAINS FROM OTHER ANIMALS, NOT BIRDS?

Over the last five years, the San Antonio River Authority has conducted bacterial source tracking (BST) throughout the basin. BST allows the identification of the source organism of bacteria in the wild by comparing the genetic makeup of sampled E. coli to known E. coli information. The largest contributors to E. coli contamination have been non-avian and avian wildlife, with those two classifications making up around 50-60% of the total, while human and domesticated animals tend to only make up 5-8% of the sampled isolates.



6) WHAT IS THE CURRENT SOLUTION TO RELOCATE THE BIRDS?

The goal is to relocate the rookery, or colony of breeding birds, and associated roost at Elmendorf Lake Park to another location using **humane** and **non-lethal** dispersal methods. The alternative rookery/roost site will alleviate or significantly reduce flight safety hazards for JBSA-Kelly Field and the Port of San Antonio, as well as alleviate potential health issues for the community. The USDA will identify habitat modification activities. The initial phase of the project includes modifying and beginning restoration of the habitat at Elmendorf Lake Park. Habitat modification entails clearing the underbrush, clearing dead trees due to bird occupancy, and trimming trees to open up the canopy, which will reduce nesting habitat and discourage birds from roosting at this location. The USDA has worked with the City Forester to develop a plan that preserves the trees while ensuring the health of the habitat at Elmendorf Lake Park. This project will be conducted outside of the breeding season to ensure the safety of the birds and abide by state and federal wildlife laws. The USDA is also working with the owners and staff of the nearby landfill to minimize the attractiveness of that foraging opportunity. The second phase of the project should discourage birds from roosting by persuading them to roost elsewhere. The methods used to disperse birds may include: pyrotechnics, lasers, spotlights, distress calls, effigies, Mylar balloons and drones. According to the Texas Parks and Wildlife Department, the best way to prevent the establishment of a rookery is through early detection. If detected early when the birds first move in, they can be easily moved with various dispersal methods.

7) WHO WAS INVOLVED WITH DETERMINING THE CURRENT SOLUTION?

To develop the solution, lead agencies relied on data and information from top experts including: Joint Base San Antonio flight safety experts, U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS) wildlife biologists, Texas Parks and Wildlife biologists, United States Fish and Wildlife Service and the San Antonio River Authority water quality experts. The USDA APHIS Wildlife Services is the federal agency mandated to resolve wildlife human conflict. They employ program biologists specifically trained to address airport wildlife hazards throughout the United States and in other countries, and they have a USDA Biologist at JBSA-Kelly Field. The current solution being offered for Elmendorf Lake Park comes from years of experience, research, extensive field work and follows regulations placed on wildlife from local, state and federal agencies.*

8) HAVE YOU TRIED NOT FLYING AIRCRAFT DURING BIRD BREEDING SEASON?

Deconflicting the aircraft flight paths, or changing the route, is impossible due to the close proximity of the hazard with the runway. As an intermittent measure, flight operations to the airport are reduced or even halted when large numbers are observed. There are flying notices released to pilots to reflect the highest activity of bird movement to change flight plans if possible. Due to the unpredictability of the birds throughout the breeding season, it is difficult to relay bird pattern information which makes flight operation constraints a challenge.

9) WHERE DO YOU THINK THE BIRDS WILL GO ONCE THEY ARE SCARED OFF?

The USDA plans to monitor the movement of these birds. Based on prior egret rookery and roost relocation projects it is anticipated that many of these birds will move as a group. Initially the birds will search out a location that affords them adequate and suitable roosting habitat. If the chosen location is agreeable from a flight safety and public health standpoint, there won't be an effort to move the birds. If flight safety and public health issues remain, the birds will be encouraged to move on. It is also possible the birds will disperse into smaller flocks across numerous locations. Bird movement will be monitored to ensure the concerns of flight safety and potential health hazards to the community are adequately addressed.

10) HOW WILL THESE EFFORTS AFFECT THE LAKE'S ENVIRONMENT, INCLUDING OTHER TYPES OF WILDLIFE?

The lake's environment will improve with the reduced population of birds. The island has reached its carrying capacity (a population size in this space is not sustainable), and there are not enough resources and space for each individual bird for breeding and growing. Not only is the increased fecal matter detrimental to water quality and other aquatic life, it can be detrimental to other birds in the area. Diseases are typically spread through fecal matter. The effects of so many birds building nests and depositing feces have been catastrophic to sensitive vegetation on the island and other birds using the same habitat. The City, USDA Wildlife Service, San Antonio River Authority and Texas Parks and Wildlife are continuously monitoring the habitat and overall the lake. Bird dispersal will likely cause positive effects on wildlife and natural habitat in the area due to the negative effects of large populations being minimized.

*Recommendations for relocation efforts come from various safety guidelines set forth by international, national, local and military sources including, but not limited to: ICAO (Airport Services Manual Part 3 Wildlife Control and Reduction), Bird Strike Committee USA, Air Force Safety Center BASH HQ (Bird/Wildlife Aircraft Strike Hazard), FAA Advisory Circular 150/5200-33B (Hazardous Wildlife on or Near Airports), Wildlife Hazard Management at Airports 2012: A manual for Airport Personnel (USDA, FAA), USDA National Wildlife Research Center.)

*BASH experts with years of training and experience consist of aviation safety, USDA wildlife biologists, environmental and natural resources experts, airfield managers, air traffic controllers, flight operations leadership and installation leadership. There is specific published guidance for the USAF BASH program, and the team regularly reviews strike information and wildlife for hazardous trends. The BASH team also attends industry-wide conferences and training opportunities to keep up with current information.

