

## **APPENDIX H**

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### Wildlife Hazard Memo to Solano County



# memorandum

date August 26, 2015

to Mr. Jim Leland  
Department of Resource Management  
Solano County  
675 Texas Street, Suite 5500  
Fairfield, CA 94533-6341

from LeChi Huynh

subject RE: Aerial Analysis of Potential Wildlife Attractants in the Vicinity of Travis Air Force Base (SUU)

Wildlife hazard concerns at airports have risen to the forefront following the “Miracle on the Hudson” and other recent high profile incidents related to hazardous wildlife. With ongoing economic challenges and limited budgetary resources, airports must balance managing wildlife concerns with providing cost effective infrastructure and resources for their users. Solano County (County) has requested that ESA conduct an aerial analysis of potential wildlife attractants occurring in the vicinity of Travis Air Force Base (AFB) (SUU) and identify potential wildlife that may use these attractants. The purpose of this memo is to summarize general (remote) results from an analysis of potential land uses in the vicinity of Travis AFB that may serve as wildlife attractants. This analysis does not include field surveys and further studies such as a formal Wildlife Hazard Assessment (WHA), which may be necessary for specific land use or development actions.

## Methodology

The following methodology and sources were used to conduct the analysis:

- Bird strike data provided by Travis AFB;
- Review of aerial imagery for areas within 14,500 feet and 5 miles of Travis AFB to identify land uses that serve as potential wildlife attractants;
- Review of the Travis Air Force Base Bird/Wildlife Aircraft Strike Hazard (BASH) Reduction Program;
- Review of Federal Aviation Administration (FAA) Advisory Circulars (ACs); and
- Review of regional wildlife and bird lists and online databases such as e-Bird and National Wetland Inventory (NWI).

## Results

The data provided by Travis AFB includes a record of 312 bird strikes at SUU from 2005-2015 (**Table 1**) that cost a total of \$432,649 in damages. There has been a substantial increase in the number of bird strikes in the last few years at Travis AFB, with a sharp increase from 2009 to 2010 and onward. While 2011 had the greatest number of bird strikes (55), 2015 had the second highest number of bird strikes (49) to date and the highest overall cost (\$156,954). The cost for the year 2015 alone accounts for about 36 percent of the total costs for the ten-year period.

**Table 1. Bird Strike Database Results for SUU within 15 Nautical Miles**

Year	Strikes	Cost
2005	11	\$40,322
2006	17	\$33,913
2007	13	\$41,058
2008	12	\$0
2009	9	\$17,960
2010	31	\$573
2011	55	\$2,112
2012	39	\$114,589
2013	46	\$22,634
2014	30	\$2,524
2015	49	\$156,954
<b>Total</b>	<b>312</b>	<b>\$432,649</b>
<b>Source: Travis Air Force Base</b>		

Travis AFB also has a Bird Aircraft Strike Hazard (BASH) Plan, which serves to implement two documents, Air Force Instruction (AFI) 91-202 (“US Air Force Mishap Prevention Program) and Air Force Pamphlet (AFPAM) 91-212 (“Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques”). The BASH Plan analyzes existing conditions and wildlife attractants in the vicinity of Travis AFB to develop strategies to minimize wildlife attraction and strikes. The actions to be taken through the BASH Plan are designed to operate through two phases: Phase I is implemented year-round and focuses on wildlife control and dispersal. Phase II imposes wildlife avoidance techniques that involve scheduling and restricting airfield operations during the avian migration period from September 1 to April 30 and is implemented in conjunction with Phase I. Within the Phase II period, two windows that severely limit aircraft operations remain in effect for the entire Phase II period. These windows are imposed daily from one hour before sunrise to one hour after sunrise and 30 minutes before sunset to 30 minutes after sunset. All departures and any other deviations in aircraft operations within either window require Operations Group Commander approval.

In addition to reported bird strikes, SUU is situated north of Suisun Bay, and within five miles of the San Francisco Bay National Estuarine Research Reserve and Grizzly Island Wildlife Area. SUU is situated near several parks (Lagoon Valley Park, Allan Witt Park), golf courses (Green Tree Golf Club, Green Valley Country Club, Paradise Valley Golf Course, Cypress Lakes Golf Course, and Rancho Solano Golf Course), estuarine habitat, open space and

agricultural lands. Union Creek runs through the southern portion of the airport and has hydrological connectivity to Hill Slough and Suisun Slough. Two landfills occur near Travis AFB: Recology Hay Road Landfill is located five miles to the northeast and Potrero Hills Landfill is located approximately two miles to the south. North Bay Regional Water Treatment Plant is located within five miles northwest of Travis AFB. Data from the National Wetland Inventory (NWI) indicate a large number of wetland features, primarily freshwater emergent wetland and estuarine marine wetland features southeast, southwest, and west of Travis AFB. The potential habitat features/land uses within 14,500 feet and five miles of SUU are shown on **Figure 1**. Wetlands known to occur in the vicinity of the airport (based on NWI Database) is shown on **Figure 2**.

Per FAA AC 150/5200-33B *Hazardous Wildlife Attractants on or Near Airports*, large tracts of open, undeveloped land can “. . . present potential hazards to aviation if they encourage wildlife to enter an airport's approach or departure airspace or air operations area (AOA).” Constructed or natural areas such as detention/retention ponds, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, and wetlands can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Based on known land uses in the vicinity of Travis AFB, the following types of wildlife are expected to potentially use habitats provided by each land use type (**Table 2**).

**Table 2. Species Groups Known to be Attracted to Land Use Types in the Vicinity of SUU**

<b>Land Use Type/Habitat Feature</b>	<b>Species Group(s) Known to be Attracted to Land Use Type/Habitat Feature</b>
Public Parks	Swallows, sparrows, blackbirds/starlings, crows/ravens, doves, pigeons, geese and ducks
Golf Courses	Geese and ducks, blackbirds/starlings, sparrows, swallows
Water Treatment Plants	Geese and ducks, cormorants/pelicans, herons, shorebirds
Landfills	Gulls, blackbirds/starlings, vultures
Agricultural Lands	Hawks, vultures, blackbirds/starlings, crows/ravens
Rivers and Creeks	Egrets, songbirds, geese and ducks, mammals such as raccoons and otters
Estuarine/Wetland Habitat	Shore birds, blackbirds, geese and ducks, egrets, cormorants, pelicans
Open Space	Hawks, swallows, sparrows, kestrels, coyote, owls, turkey/pheasants, osprey, eagles, vultures
<b>Note: Table 2 is not comprehensive; it provides general groups of wildlife that may use each land use type/habitat feature.</b>	

Based on a cursory review of the e-Bird database, “hotspot” areas near SUU that are also known to contain the highest number of bird species in Solano County include the Grizzly Island Wildlife Area and Lagoon Valley/Pena Adobe Regional Park. Approximately 200 species of birds have been observed in these areas; species most frequently observed include blackbirds, ducks, red-winged blackbird, swallow, geese (wild and domestic), ducks, gulls, pelicans, and egrets. The nearest observation point is at Creed Road near the southern perimeter of Travis AFB, in which 86 species were recorded. Red-winged blackbird, greater white-fronted goose, long-billed dowitcher, tricolored blackbird, and brewer’s blackbird were the most abundant in count at this location.

The information presented within this memo is based on the best available information without performing a field reconnaissance. Please feel free to contact me if you have any questions.

Sincerely,



LeChi Huynh  
Senior Associate Biologist

**References:**

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Federal Aviation Administration. 2007. FAA AC 150/5200-33B *Hazardous Wildlife Attractants on or Near Airports*. Issued August 28, 2007. Available: [http://www.faa.gov/documentLibrary/media/advisory\\_circular/150-5200-33B/150\\_5200\\_33b.pdf](http://www.faa.gov/documentLibrary/media/advisory_circular/150-5200-33B/150_5200_33b.pdf)

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