

Wildlife Services
Protecting People
Protecting Agriculture
Protecting Wildlife

Factsheet
November 2018

Safer Skies: For Birds and People



Wildlife Services (WS), a program within the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS), provides Federal leadership and expertise to resolve wildlife conflicts that threaten the Nation's agricultural and natural resources, human health and safety, and property. Birds and other wildlife can pose significant threats to both human safety and property when they appear near airports. Through a balanced effort of research and wildlife management, WS biologists are reducing the risk of wildlife-caused damage to U.S. aviation.

The metal wings of planes and feathered wings of nature often compete for the same airspace at the same time. When that happens, collisions may occur that result in damage to aircraft and sometimes injuries or even death to passengers and crew. The January 2009 emergency landing of U.S. Airways Flight 1549 on the Hudson River dramatically demonstrated this hazard.

To help reduce the risk of these potentially dangerous interactions, WS biologists provide airport operators across the Nation with advice and recommendations on how to keep runways and flight paths clear of wildlife. WS' Airport Wildlife Hazards Program works closely with the military, the civil aviation industry, and the U.S. Department of Transportation's Federal Aviation Administration (FAA) to reduce the safety hazards and economic impacts to aviation caused by birds, mammals, and other wildlife.

Airports in the Eastern and Southeastern United States experience the greatest number of wildlife-aircraft collisions, but the problem exists nationwide. In 2017, wildlife strikes were reported from 690 U.S. airports. The FAA estimates that birds and other wildlife cause well over \$230 million in damage each year to civil aircraft in this country. U.S. military aircraft also incur many millions of dollars in wildlife damage annually. Indirect costs, such as flight delays, aircraft changes, and loss of revenues, add immeasurably to direct costs.

How WS Helps

In fiscal year (FY) 2017, WS biologists provided assistance in reducing wildlife hazards at 890 airports located in 50 States, 3 Territories, and 7 foreign countries. Altogether, they provided 300 staff-years of assistance at 765 civil airports and 125 military airbases. WS assisted at airports that served a total of 750 million commercial passengers and recorded 19.7 million commercial aircraft movements. The 355 general aviation (GA) airports where WS provided assistance recorded 11.8 million GA aircraft movements.

Wildlife Services employees routinely train and assist airport officials on techniques to reduce collisions between wildlife and aircraft.



Airports face ecologically and legally complex issues in controlling wildlife hazards. Each airport presents unique geographic and environmental conditions requiring professional expertise in wildlife damage management. With more than 400 personnel trained in airport-wildlife management, WS provides assistance, drawing on its network of experienced staff and the research conducted at its National Wildlife Research Center (NWRC). When the Nation's airports experience wildlife conflicts, the FAA recognizes that WS is available to assist.

WS offers technical and direct assistance. Technical, or informational, assistance includes: consultations; hazard assessments; development of hazard management plans; and environmental assessments. The program trained more than 5,072 employees at 406 airports in wildlife hazards awareness, wildlife identification, and control methods in FY 2017.

WS offers direct assistance using an integrated approach to wildlife hazard management:

1) Habitat modifications to make airports unattractive or inaccessible to wildlife provides the foundation. This includes:

- reducing water and garbage sources
- installing wildlife-resistant fences
- modifying or removing vegetation, trees, and roosting sites
- Controlling natural food sources, such as rodents and insects.

2) Nonlethal dispersal activities.

This includes:

- Visual and noise-making devices, such as pyrotechnics, propane cannons, lasers, and recorded bird distress calls
- Harassment with trained dogs, drones and vehicles

When habitat management and non-lethal dispersal are insufficient to eliminate a threat, the following actions may be taken:

3) Trapping and relocating wildlife away from the airport.

4) Lethal control. This is used as a last resort when imminent danger is observed or when other methods are ineffective or impractical. Selective lethal control can also reinforce non-lethal dispersal techniques.

NWRC conducts research on wildlife population dynamics and behavior, habitat management, new harassment methods including the use of unmanned aircraft systems, and the impact of activities near airports on bird-aircraft strikes. This research helps WS develop new integrated ways to minimize wildlife hazards at airports.

All program activities comply with Federal and State laws, regulations, and policies. Airports request the work, which is conducted on a user-fee basis. Program biologists are active in professional groups, such as The Wildlife Society, the American Association of Airport Executives, and Bird Strike Committee-USA.

WS biologists provide assistance at more than 350 general aviation airports in FY2017.



Memoranda of understanding with several groups recognize WS' expertise and experience in the management and mitigation of wildlife strikes. These include the FAA, the U.S. Department of Defense, and the National Association of State Aviation Officials.

The History of Wildlife Strikes

The first reported wildlife-aircraft strike that resulted in a fatality occurred on April 12, 1912, when a Model EX Wright Pusher collided with a gull and crashed into the ocean, killing the pilot. Recent data shows that bird strikes with civil and military aircraft caused at least 282 human deaths and destruction of 262 aircraft between 1988 and 2017. The following are examples of the widespread and diverse nature of wildlife strikes.

WS biologists provide assistance at more than 350 general aviation airports in FY2017.



Airport Wildlife Hazards Program: FY 2017 Quick Facts

- Assisted 890 airports and airbases
- Provided 300 staff-years of assistance
- Trained 5,097 airport personnel in wildlife identification and strike management
- Live-trapped and relocated wildlife at 149 airports
- Conducted habitat modification projects at 255 airports
- Airports/airbases contributed \$31.3 million to fund WS work

- In 1960, a plane taking off from Boston's Logan Airport struck a flock of starlings and went down, causing 62 human deaths. Relatively small, starlings pose a hazard due to body density and flocking behaviors.
- In 1975 at a New York airport, a plane sucked herring gulls into one engine, which exploded and separated from the aircraft. The plane caught fire and was destroyed. No fatalities occurred in the aborted takeoff, because the passengers were airline employees trained in evacuation procedures.
- Twice in 1994, commercial aircraft struck coyotes during takeoff at a Chicago airport.
- In 2001, on an Alabama airport runway two deer collided with a Learjet, which ran off the runway and burst into flames. Firefighters fought the flames for 40 minutes until the pilots could be rescued.
- In 2008, a DC-10 on descent at 9,700 feet collided with snow geese. Repairs required 8 days out-of-service at a cost of \$220,000. Another DC-10 required 78 hours out-of-service and \$913,678 to repair engine and cowling damage caused by ingesting gadwall ducks.
- In 2008, white pelicans and Canada geese were implicated in strikes that resulted in human fatalities.
- In 2015, a plane taking off from a Minnesota airport hit a soaring bald eagle at 5,000 feet causing major damage. The pilot returned the aircraft to the airport. Repair costs were \$100,000. Bald eagles weigh about 9 lbs for males and 12 lbs for females.
- In 2015, 24 bald eagle strikes with civil aircraft were reported in United States.
- In 2017, a medical transport helicopter en route at 1,000 feet in Arkansas hit a flock of migrating snow geese. The burned wreckage was found several hours later next to reservoir containing large numbers of waterfowl. Bird remains were found in the helicopter at the wreckage site. The three people on board were killed.

National Wildlife Strike Database

Current studies suggest that approximately 91 percent of all strikes with commercial aircraft at certificated airports are reported.

WS maintains the National Wildlife Strike Database for the FAA and compiles regularly published reports. Information, covering 1990-2017, shows:

- A total of 187,343 reported bird strikes and 4,054 terrestrial mammal strikes in the United States.
- Of the strike reports noting the level of damage, 92 percent of the bird strikes and 73 percent of the terrestrial mammal strikes identified no damage to aircraft. Less than one percent of bird strikes and one percent of mammal strikes resulted in the total destruction of the aircraft.
- Of aircraft totally destroyed, 59 percent were struck at general aviation airports and 64 percent were small general aviation aircraft. Outreach to encourage strike reporting at general aviation airports remains an important WS and FAA activity.

In fiscal year 2017, WS trained 5,097 personnel at 406 airports in wildlife hazards awareness, wildlife identification, and control methods.

Technical and Direct Management Assistance Provided by Wildlife Services' Biologists To Reduce Wildlife Hazards at Airports¹, FY 2017

Category of assistance	Type of assistance to reduce wildlife hazards	No. of airports
Technical	Consultation regarding wildlife issues	852
	Training of airport personnel	406
	Wildlife hazard assessment	128
	Wildlife hazard management Plan	189
	Environmental assessment	77
Direct	Lethal control of hazardous wildlife	382
	Non-lethal dispersal of hazardous wildlife	255
	Habitat modification	149
	Live-trap/translocation of wildlife from airport	149

¹ A total of 785 airports were assisted.

² Number of airports where training took place; personnel from additional airports attended some training courses.

Additional Information

¹ A total of 635 airports were assisted.

² Number of airports where training took place; personnel from additional airports attended some training courses.

For more information about managing wildlife damage at airports or other WS operations, please call 1-866-4USDA-WS (1-866-487-3297) or visit the Web site www.aphis.usda.gov/wildlife_damage/.



United States Department of Agriculture
Animal and Plant Health Inspection Service

USDA is an equal opportunity provider and employer.