



Federal Aviation Administration

Airport Technology Research & Development (ATR)



Flocking birds in the air operations area create an ingestion hazard for aircraft above

Innovation and education significantly reduce damaging wildlife strikes

Wildlife strikes pose a significant safety risk to aircraft. Consequently, airports must take measures to monitor, and if necessary, mitigate wildlife strike risks on and within the vicinity of an airport.

Wildlife strike risk mitigation comprises several areas of research, development, and operations that support the National Airspace System. Aviation safety stakeholders include: wildlife biologists, airports, aircraft and jet engine manufacturers, airlines, the National Transportation Safety Board (NTSB), FAA Aviation Safety Information Analysis and Sharing (ASIAS), and the Commercial Aviation Safety Team (CAST).

The FAA works collaboratively with the U.S. Department of Agriculture (USDA), the Smithsonian Institution, and academia to increase aviation safety through research on habitat management and wildlife control techniques, wildlife

strike data collection and analysis, avian surveillance research, and outreach. Strike reports are collected and stored in FAA's Wildlife Strike Database.

Education of key participants within the community contributes to comprehensive reporting of wildlife strike activity and fuels the development of advanced methodologies and new technology that continue to reduce the risk of damaging wildlife strikes.

The FAA will continue to research, evaluate, and communicate the effectiveness of various habitat management and wildlife control tools and methods that reduce wildlife strikes with aircraft at and within the vicinity of airports. These

operational and research activities provide a scientific basis for FAA policies, regulations, and recommendations for improved airport safety at and around our nation's airports.

THE FAA WORKS WITH
USDA, THE SMITHSONIAN
INSTITUTION, AND
ACADEMIA TO INCREASE
SAFETY THROUGH RESEARCH
ON HABITAT MANAGEMENT
AND WILDLIFE CONTROL.



Federal Aviation Administration

Airport Technology Research & Development (ATR)

The **Wildlife Strike Database** is a publicly available research tool that allows anyone to report and investigate wildlife strikes throughout the U.S. Wildlife strike data is validated by USDA, with the Smithsonian verifying biological data through feather identification and DNA analysis.

The Database supports both strategic planning and tactical prevention. It serves as a tool for the creation, development, and monitoring of airport Wildlife Hazard Management Plans. Additionally, the FAA publishes an annual analysis report on cumulative strike data within the Database, offering accurate, searchable data for specific wildlife strike analyses.

Due largely to Database utilization, the percent of wildlife strikes which are damaging has fallen tremendously, from 18% of annual U.S. strikes per 100,000 movements when wildlife strike tracking began in 1990, to just 5% in recent years. A movement is any aircraft takeoff or landing.

ATR continually improves the Database to meet stakeholders' needs. Planned enhancements include an upgraded user interface and streamlined functionality to validate and post new strike data more quickly.

Version 3.1.8.1 of the database is live at <https://wildlife.faa.gov/>.

Non-lethal **Technologies for Surveillance and Deterrence** provide further means for managing wildlife hazards. Detection technologies such as radar allow airport operators to respond to wildlife activity, while acoustical and visual deterrents like specialized Unmanned Aircraft Systems (UAS), aim to scare wildlife away from the attractive airport environment.

Interagency research has made possible the effective communication of bird radar data to Air Traffic Control. Continued efforts will investigate transmission directly to pilots, even further reducing hazard response time.

Finally, other innovative **Control Methods and Techniques** are employed across the U.S. to control wildlife populations in and around airports. Artificial turf, wildlife tagging, and even K9 units appear in Wildlife Hazard Management Plans to protect passengers and our ecosystem.

Visit the ATR Website at www.airporttech.tc.faa.gov



A landing to remember

Shortly after taking off from New York City's LaGuardia Airport on January 15, 2009, U.S. Airways Flight 1549 struck a flock of geese and faced a total loss of engine power.

Flight data records confirmed that the Airbus A320-214 lost thrust due to a bird strike, evidenced by soft-body damage, organic debris (remains), and dents discovered in the dual engines. DNA testing revealed that the birds were Canada geese, a species typically too large in size for aircraft engines to ingest without incurring serious damage.

Devoid of means for an airport landing, pilots Chesley Sullenberger and Jeffrey Skiles navigated the plane to a ditching in the Hudson River and evacuated it quickly.

Sustaining only a few serious injuries, all 155 passengers and crew on board were rescued by nearby boats. The event would come to be known as the "Miracle on the Hudson"—and the flight crew and responders, as heroes.

January 2019 marks the ten year anniversary of this emergency landing and rescue.

WILDLIFE STRIKE RISK MITIGATION

Annual Reported Strikes in the U.S. per 100,000 movements

