

# **WILDLIFE CONTROL**

## **Session Highlights**

In October 2002, the Airport Technical Assistance Program, also known as AirTAP, sponsored three wildlife control training sessions at different locations in Minnesota. Sessions were designed to offer practical-yet-specialized training and information outreach for personnel operating, maintaining, and administering Minnesota's public-use airports. These particular sessions provided information on wildlife identification, legal issues associated with wildlife control, and techniques for reducing wildlife hazards at an airport.

Wildlife biologist John Hart and wildlife specialist Paul Wolf, both with the United States Department of Agriculture (USDA), facilitated the sharing of ideas and best practices among session participants, which included airport managers, maintenance staff, consultants, and elected officials. Hart became involved with wildlife hazard management activities at Minnesota airports in 1997. His duties range from consultation on airport expansion projects to operational field assistance for airport operators. Wolf has been responsible for operational wildlife hazard management activities at the Minneapolis-St. Paul International Airport and the St. Paul Downtown Airport since 1999.

This "highlights" package summarizes much of the information shared during these training sessions. If you were unable to attend, we hope this will provide you with useful new information on airport wildlife control issues. For those of you who attended the seminar, use these highlights as a reference for the information presented during the sessions.

AirTAP is a statewide assistance program for aviation personnel that offers a range of information resources and practical instruction by knowledgeable and experienced trainers. AirTAP's efforts include providing training programs, technical assistance, access to experts, and printed materials.

AirTAP was developed through the joint efforts of the Minnesota Department of Transportation (Mn/DOT), the Minnesota Council of Airports (MCOA), and the Center for Transportation Studies at the University of Minnesota.

To receive more information about the program or copies of the AirTAP materials mentioned in these highlights, please contact:

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## **GENERAL OVERVIEW OF WILDLIFE HAZARDS**

Wildlife can create hazards for an airport environment when it interferes with the safe operation of an aircraft. Wildlife can have both a direct and indirect impact on an airport.

Direct impact:

- A bird or mammal strike with an aircraft

Indirect impacts:

- Birds nesting in hangars
- Mammals chewing or digging in the ground, causing holes and damaging buried wires
- Smaller mammals serving as prey for the larger mammals that can have a greater impact on aircraft

There are two goals when trying to control wildlife at an airport. The primary goal is to protect public safety; the secondary goal is to help reduce product damage and costs. Increased concern over wildlife strikes is due to the following issues:

- Growing populations of many wildlife species
- Adaptation of birds to urban settings
- More air traffic
- Fast, quieter two-engine jet aircraft
- Increasing liability issues with bird strikes

Only about 20 to 25 percent of wildlife strikes to civil aircraft are reported in the United States; thus, the majority of strikes go unreported every year. Of the reported strikes nationwide, 72 percent occur below 500 feet Above Ground Level (AGL) and 88 percent occur below 2,000 feet AGL. Of the damaging strikes that occur with birds in the United States, 31 percent are from waterfowl and 31 percent are from gulls. Of the mammals struck, 96 percent are deer.

Reporting wildlife strikes is important for identifying trends such as:

- Species of wildlife that was struck
- Aircraft that was struck
- Damage that was done to the aircraft
- Phase of flight where the strike occurred
- Altitude at which the aircraft was struck
- Airport where the strike occurred

Anyone can report a wildlife strike, from the pilot of the aircraft that was struck to an observer on the ground. Many people avoid reporting strikes for various reasons. Airport managers may fear their airport will earn a bad reputation from having a strike, or a pilot may not want a bird strike on his or her record, or an observer may assume that someone else will report the strike. However, the true negative aspect of a bird strike is a failure to report it. If airport personnel or pilots are afraid of a bad reputation, they can always leave identifying questions blank on the form (but remember, the more information that is reported the better). People who report a bird strike do not need to worry that duplicate reports will be submitted because each reported strike is checked against similar cases and duplicate reports are thrown out.

One-page strike reporting forms and instructions on how to fill them out are available online at [http://wildlife-mitigation.tc.faa.gov/public\\_html/EnglishManual/AppendH.pdf](http://wildlife-mitigation.tc.faa.gov/public_html/EnglishManual/AppendH.pdf).

## WILDLIFE IDENTIFICATION

Before you can start solving your wildlife problems, you need to identify which types of birds and mammals are affecting your airfield. Size, shape, color, and behavior can help identify the differences between species. These characteristics are known as “field marks.” Field marks to look for when identifying wildlife include:

- Size (larger or smaller than a robin or crow)
- Color(s)
- Color patterns (tail, wings, eye stripes)
- Bill type (long and skinny or short and stout)
- Type of habitat (marsh, water, short grass, forested area)

Session instructors John Hart and Paul Wolf recommend the *Peterson Field Guide*, which can be found in almost any bookstore, for helping to identify wildlife.

During the session, the instructors spent a good deal of time discussing the field marks of various species that can be found at an airport. The reason for doing so was to stress the importance of identifying a species in order to know which method will work best for trying to haze or remove it from the airfield.

Some typical species and their field marks:

Canada goose—Black head and neck, white chinstrap, dark wings and tail. One of the most common birds in North America, found in a wide variety of habitats near water. Flocks fly in V-shaped formation, often “honking” as they pass by.

Ring-billed gull—Pale gray mantle, yellow bill with black ring near tip, yellowish legs and yellow eyes, black wing tips with small white dots. Found over a wide range of habitats from wetlands and ponds to beaches and dumps.

Red-tailed hawk—Reddish upper tail, white chest with dark belly band, dark bar on leading edge of underwing, pale mottling on back of wings that often forms a “V.” Found most commonly in the east near semi-open country consisting of pastures or fields mixed with woods and roadsides.

Be aware that males and females of the same species may not look alike. For example, a male mallard has an iridescent green head, while a female’s head is a dull brown color.

## LEGAL ISSUES

The training sessions referenced several court cases that dealt with wildlife control. At this time, the Federal Aviation Administration (FAA) and other aviation organizations realize how serious dealing with wildlife can be. Recommendations that may help protect your airport if it's involved in litigation include:

- Having the airport operator bear the liability
- Documenting **all** wildlife control efforts
- Obtaining opinions from wildlife biologists
- Issuing NOTAMs for existing hazards

### Agency resources

Several agencies, both federal and within the state of Minnesota, can help when working with wildlife control at your airport. These include:

- Federal Aviation Administration (FAA)
- USDA Wildlife Services
- U.S. Fish and Wildlife Services (USFWS), an agency similar to the federal DNR
- Minnesota Department of Natural Resources (DNR)
- Environmental Protection Agency (EPA)
- Department of Defense

The FAA is responsible for enforcing the regulations for Part 139 airports—the airports that have scheduled air service. The FAA has a Memorandum of Understanding with the USDA Wildlife Services stating that Wildlife Services will provide:

- Technical expertise to airport operators
- Operational assistance to airport personnel
- A review of proposed wildlife control developments
- Recommendations for reducing wildlife hazards

Wildlife Services' mission is to provide federal leadership in managing problems caused by wildlife. Wildlife Services can provide technical assistance and can recommend permits to the USFWS for airports at no cost. Other provided services are paid for by the airport. Certified airports are required by the FAA to conduct a wildlife hazard assessment when either a significant wildlife strike has occurred or when a wildlife species in numbers capable of causing such a strike is present at an airport. Wildlife Services can also conduct wildlife hazard evaluations, wildlife hazard assessments, or operational assistance to these airports.

Another helpful tool is FAA Advisory Circular 150/5200-33: *Hazardous Wildlife Attractants On or Near Airports*, which can be obtained at [www.faa.gov](http://www.faa.gov) or by mail from:

Federal Aviation Administration, Airports  
800 Independence Ave. S.W.  
Washington, D.C. 20591

The advisory circular covers land-use issues that may attract wildlife if implemented too close to an airport. These land uses include potential compatible land uses (transfer stations, agricultural crops, water detention ponds, or golf courses), incompatible land uses (landfills, wetlands, and wastewater treatment plants), and notification (wetlands and wastewater treatment plants).

There are three protection statuses on birds in the United States: super protection (the bald eagle is a good example), protected, and not protected.

The Migratory Bird Treaty Act is a federal law that protects all birds except English sparrows, pigeons, and starlings. The Code of Federal Regulations (CFR) lists all of the federally protected birds. The CFR also covers the different types of permits needed to remove wildlife. Airports need to get a depredation permit to lethally remove wildlife from their airfield.

The **U.S. Fish and Wildlife Service (USFWS)** grants federal permits to airports to lethally remove migratory birds. It also provides biological opinions on proposed federal activities that may impact federally listed endangered or threatened species.

The **Minnesota Department of Natural Resources (DNR)** regulates wildlife laws within the state of Minnesota. The DNR issues state permits to take mammals and birds and also works with wetland protection. It is important that you have both a state and federal permit when needed, and that the state and federal permits are in sync with one another. For example, if the federal permit says you can take 50 Canada geese, then the state permit should also state that you can take 50 Canada geese.

The **U.S. Army Corps of Engineers (COE)** mainly deals with the federal Clean Water Act. The agency issues permits required for wetland filling or disturbance.

The **Department of Defense** has a wildlife strike reduction team called the U.S. Air Force's Bird Aircraft Strike Hazard (BASH) team. This group documents and records military wildlife strikes in a way that is similar to the FAA and Wildlife Services' database for civilian strikes. Because of its low-level high-speed flights, the Air Force experiences many bird strikes.

The **Environmental Protection Agency (EPA)** works with the FAA on wetland projects. The EPA also approves or disapproves landfill sites and the use of pesticides.

## **Permits**

The USFWS issues permits that allow airport personnel to remove migratory birds from the airfield, while the state DNR issues permits to remove protected birds. Any protected bird except the bald eagle can be hazed or harassed without a permit. For example, a state and federal permit is required to remove gulls, waterfowl, wading birds, raptors, and other protected birds. A federal or state permit is not needed for crows, blackbirds, or magpies if they are causing damage or are a hazard to the airport. Finally, a permit is never needed to take starlings, house sparrows, and pigeons. Just be mindful of any city ordinances you may be violating if your airport is within the city limits.

Following is the process for obtaining a migratory bird depredation permit (needed for all federal migratory birds except starlings, pigeons, and house sparrows) from the USFWS:

- The applicant completes the one-page application form (airports are exempt from the application fee).
- Wildlife Services recommends a permit for approval to the USFWS, including the species, numbers, and conditions.
- The USFWS approves the recommendation and issues a permit.
- The airport operator fills out an annual report reviewing the number, species, and methods used to take wildlife from the airfield.
- The permit is easily renewed after the annual report is received.

An application for a migratory bird depredation permit can be found at <http://forms.fws.gov/3-200-13.pdf>.

The DNR issues wildlife removal permits. (No permit is required for rabbits, squirrels, or raccoons that are causing damage, or for coyotes, woodchucks, weasels, and striped skunks, which are unprotected species.) For deer, bears, and moose, a permit is needed from the local DNR Area Wildlife Office. For state protected birds and routinely controlled mammals, a permit is needed from the DNR Wildlife Office in St. Paul. Be aware of local firearm ordinances, even when removing mammals for which no permits are needed.

## **REDUCING WILDLIFE HAZARDS**

There are two things to consider when taking action to reduce wildlife hazards on an airfield: the legal/liability issues and the operational issues. Wildlife logs, strike reporting, wildlife hazard assessment, wildlife hazard management plans, and wildlife hazard working groups fall under legal/liability issues, while exclusion, repellents, hazing, harassment, shooting, and trapping are considered operational issues.

The simplest way to protect yourself from liability is to document all wildlife control activities. Documentation protects both you and the airport. It is best to conduct an inspection of your airfield every day and, even if you do not see any wildlife affecting the airport, document the fact that you did not see anything. This informs authorities such as the FAA that you are aware of wildlife hazards that can occur at an airfield.

Wildlife logs also serve as a historical record of the wildlife activity at an airport. For example, if you tend to see Canada geese only in September, you can prepare yourself before the Canada geese arrive. A log also identifies wildlife population reductions or increases and raises employee awareness.

A wildlife hazard assessment and management plan are recommended more for Part 139 airports than for general aviation airports. Part 139 airports are required by the FAA to conduct a wildlife hazard assessment when either a significant wildlife strike has occurred or a wildlife species in numbers capable of causing such a strike are present. The Wildlife Hazard Assessment documents wildlife species, numbers, seasonal use patterns, behavior, and attractive habitat features at the airport and provides recommendations to mitigate these hazards. The Wildlife Hazard Management Plan is prepared after the Wildlife Hazard Assessment (if it is required). It outlines the Wildlife Hazard Management Program specific to an airport.

Another important element of reducing wildlife hazards at an airport is conducting project reviews. Project reviews examine development, construction, and expansion projects on and off the airport that may influence wildlife activity.

It is also important to communicate with the city, county, and neighbors when taking action to reduce wildlife hazards at an airport. Establish a wildlife hazard committee, or simply meet with your neighbors to help them understand the reason for trying to control wildlife on the airfield. You may even gain some

support and help in your efforts from your neighbors.

One of the first steps for reducing wildlife hazards is to identify habitats on your airfield that may be attractive to wildlife. These could consist of open water, ponds, or nesting and perching sites. Such habitats might also include food sources such as landfills, waste transfer stations, or agriculture. Habitat modification is a place to start to avoid attracting wildlife to the airport. You can remove abandoned facilities, remove trees, manage airport vegetation, and drain standing water (as long as it is not a wetland area). Habitat modification can be good for the public relations at an airport and has proven to be effective. The drawback is that it can be expensive and may require additional permits if wetlands are involved.

### **Tools and Techniques**

Variety is the key to any wildlife control program. Using more than one technique has proven to be more effective than using the same method every day to control wildlife.

A few general, common-sense maintenance techniques can help keep wildlife out of the airfield. This includes picking up trash and litter, covering garbage cans and dumpsters, removing dead animals from the field, and not feeding wildlife. Following are more specific techniques, recommended by wildlife control specialists, that have proven to be effective. Different methods are more effective at different airports, depending on individual situations.

**Exclusion**, such as putting grids along culverts, placing pin wire on top of lights or signs, or using duct tape to cover holes used for nesting, can help eliminate wildlife. Covering retention ponds and installing bird netting along hangars and buildings are other exclusion methods. This type of wildlife control can be good for public relations and is a longer-term solution. These techniques may help solve a specific problem on the airfield but can have a high initial cost. And one problem with methods such as bird netting is that it just displaces birds to a different location, and that location might still be at the airport.

**Chemical repellents** are another tool that can help control wildlife at an airport. Chemical repellents such as Rejex-it® are better for short-term solutions or with a small piece of property. The advantages to using chemical repellants are that they can be very effective and require only a moderate amount of labor. The drawbacks are that they are very expensive and need to be reapplied about every three weeks (more often if it rains or if the grass is not mowed).

More active wildlife hazard management techniques include hazing/harassing, removal, trap and relocate (which is not recommended), and egg/nest destruction. Many wildlife species eventually return after a control technique is used, but for the sake of good public relations, control techniques are better than just removing all of the wildlife at an airport.

Some alternatives to those techniques include remote-control planes, dogs, falcons, or effigy. Dogs and falcons can be expensive to use at an airport because you will need to pay for both the dog or falcon and the handler. Also, if a dog or falcon became loose on the airfield, it would be just as much of a hazard as the wildlife you are trying to get off of the airfield. Effigy has worked well at the Minneapolis-St. Paul International Airport. The airport has a coyote sitting out on the field. Since the coyote is mounted on a post that spins in the wind, it makes the coyote appear more realistic. The key to this device is that you need to keep moving it around the airfield every few days or the geese and other wildlife will habituate to it. These methods are great for public relations and have proven to be semi-effective, but they will not help manage local populations.



**Pyrotechnics**, such as cracker shots, 15mm launchers, and screamers and bangers, are a common way to scare birds from an airport. The shells used in the cracker shot 12-gauge shotgun are quite corrosive, so it is best to purchase an inexpensive gun because the shells will rust the barrel of the gun even if it is cleaned after every use. A crack-open single-shot shotgun is recommended.

Wearing safety glasses and ear protection is recommended when using pyrotechnics. This type of control method is reasonably priced and easy to use. Pyrotechnics can be very effective, but are most effective when used with some lethal reinforcement. Timing is important when using these hazing/harassment techniques. You do not want to create more of a hazard by moving birds into an approaching aircraft.

**Scare devices** are also used to haze and harass wildlife. Like effigy, they need to be moved frequently around the airfield to prevent habituation. These devices include



*At the Cloquet-Carlton County Airport, John Hart demonstrates how to use cracker shots with a shotgun.*

propane cannons, distress-cry generators, horns and sirens, Mylar<sup>®</sup> tape, and scare-eye balloons. These devices are usually reasonably priced and easy to set up and use. A negative aspect of scare devices is that reviews are mixed on how well they work. Also, as stated earlier, wildlife can habituate to them if the devices are not moved frequently.

**Shooting** with a rifle or a shotgun is an effective way to reinforce hazing and harassing techniques. Shooting helps control wildlife populations, is effective for displacement, and involves just a moderate amount of labor. Drawbacks include the negative public opinion that may be created at the airport, as well as possible violation of local ordinances.

Finally, one last technique is **trapping**. Foothold traps, hawk traps, live traps, and conibears (used for beavers) can be quite effective. Studies have shown a 50 percent return rate on red



*Peter Buchen uses a pistol and a screamer to try to scare away birds at the South St. Paul Airport.*

## CONCLUSION

Networking is a great way to find techniques that will work for you at your airport to control wildlife. Why reinvent the wheel? Contact other airports or agencies for their wildlife management plans or to learn the techniques that do or do not work for different species. Also, contact agencies for insight on the wildlife population as a whole, or for insight on the newest techniques or tools. There is no “magic wand” when it comes to wildlife control. There is no one tool that does it all; rather, a combination of

tools and techniques is the best way to reduce hazards. Rely on proven methods, but do not be afraid to try new techniques, either. Keep an open mind and be creative, but also remember to stay legal.

## **ADDITIONAL RESOURCES**

*Assistance:* Federal bird permits  
U.S. Fish & Wildlife Service  
Migratory Bird Permits, Region 3  
Bishop Henry Whipple Federal Building  
Fort Snelling, MN 55111-0045  
612-713-5436

*Assistance:* General assistance, wildlife hazard evaluations and assessments, operational assistance  
USDA–APHIS–WS  
John Hart  
34912 U.S. Hwy. 2  
Grand Rapids, MN 55744  
218-327-3350

*Assistance:* State bird/mammal permits except deer (for deer, contact the local DNR Wildlife Office)  
Minnesota Department of Natural Resources  
DNR Wildlife – Box 7  
Christine Drassel/Roger Lake  
500 Lafayette Rd.  
St. Paul, MN 55155-4007  
651-296-0707

*Assistance:* Bird strike identification  
Marcy Heacker-Skeans  
Research Assistant  
Smithsonian Institution  
National Museum of Natural History  
Division of Birds  
E610, MRC 116  
10th & Constitution, NW  
Washington, D.C. 20560-0116  
202-357-2334

### **Video**

Each wildlife control session began with a video, “Crossed Paths,” which served as a great introduction

to the serious impact wildlife can have on an airport. To receive a copy of this 20-minute video, please contact:

Bruce MacKinnon, Wildlife Control Specialist  
Transport Canada  
Aerodrome Safety Branch  
Safety and Security  
330 Sparks Street  
Place de Ville, Tower C  
Ottawa, Ontario Canada K1A 0N8  
Telephone: 613-990-0515

The video costs \$5.00 Can. per copy (or about \$3.39 in U.S. dollars) as of 2002. U.S. citizens can purchase the video by check or credit card in U.S. currency.