Wildlife Hazard Assessments

Biologists Help Airports Improve Safety and Meet Part 139 Certification Requirements

How can a mousetrap improve airport safety? In the hands of a Burns & McDonnell wildlife biologist, it can be a tool to help airports decrease the risk of bird strikes.

Wildlife a Growing Hazard

The bird strike that forced U.S. Airlines Flight 1549 to make an emergency landing in the Hudson River in 2009 raised awareness of the danger wildlife can pose to aircraft operations. Most wildlife strikes occur at low altitude, at or shortly after takeoff. And, partly due to the success of wildlife preservation efforts, the number of strikes is growing. Wildlife hazard assessments (WHA) are conducted to comply with Federal Aviation Administration Part 139 certification requirements following a triggering event, and proactively by airports wanting to improve safety even when there's no triggering event under Part 139 guidelines.

"Wildlife are attracted to an airport because something exists on or near it that they desire," says Burns & McDonnell senior environmental scientist Shari Cannon-Mackey. "It may be abundant food or water, nesting cover or large open areas where they can loaf in relative safety. These attractants need to be identified and evaluated to reduce the risk that wildlife pose to aircraft, pilots and passengers."

Follow the Food Chain

Biologists conducting a WHA observe all wildlife with access to the airport, recording their numbers, locations, local movements, and daily and seasonal occurrence. Deer are a common wildlife hazard at airports. So are waterfowl, such as the Canada geese that downed Flight 1549. Toads and frogs (slippery when squashed) can be a major hazard on the runway.

"The key to identifying attractants is looking at what the wildlife eat — and what eats them," Cannon-Mackey says.

For example, red-tailed hawks, found throughout the United States and often involved in reported strikes, mostly eat mice. Biologists may set traps to find out what kind of mice are attracting the hawks, since those mice also have a food preference — perhaps even for the seed of a plant being grown as part of airport landscaping.

At the start of a WHA, biologists interview airport managers, pilots, the tower, and operations and maintenance personnel to identify issues at the airport associated with wildlife. The biologists then determine an appropriate survey plan — usually two or more visits a month over a 12-month period. Analyzing data collected in different seasons helps identify hazards posed by both resident and migratory wildlife.

Recommendations to Reduce Hazards

Biologists can recommend ways to reduce hazards by making the airport less attractive to wildlife and by limiting their access.

"The easiest way to deal with most issues is turf management," says Cannon-Mackey. "Recommendations can include adjustments to mowing heights. Manicured, low-cut grass can actually cause problems. A height of 6-14 inches can make movement more difficult for insects that attract toads and rodents that are a meal for raptors."

Solutions can be as novel as covering stormwater detention ponds with floating black or grey balls. The covering allows water in the basin to rise and fall, but prevents birds flying overhead from seeing the water's reflection. If waterfowl do spy a patch of water, the difficulty of landing on the bobbing, shifting surface quickly sends them elsewhere.

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