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(turf)

A big honking mess

What do golf courses and airports have in common? Turfgrass. Turfgrass may not be what first springs to mind when we think of airports, but many runways are bordered by narrow to large expanses of short-mowed turf. In addition, both airports and golf courses often have a body of water nearby.

The combination of well-maintained turfgrass and a plentiful water supply can entice migratory birds to make a stop — and, sometimes, to stay. Birds find airports and golf courses ideal habitat because each provides essential elements: food, water and security.

- Food in the area may include carrion, invertebrates, small mammals, weeds and food waste.
- Water is often abundant: The facility may be near a river or lake; ponds or drainage ditches may be on the property.
- To protect themselves and potential chicks, birds require open space (short-mowed grass) and flat roofs or perching sites for monitoring predators.

Once birds arrive, they are destructive to the landscape, and they can be a hazard to aviation. Since a bird strike forced an airliner to plunge into the Hudson River near New York City in January 2009, awareness of bird strikes has increased, as have efforts to prevent birds from taking up residence near airports. Nonetheless, burgeoning bird populations have continued to be a problem. According to the U.S. Fish and Wildlife Service's "Waterfowl Population Status, 2015," populations of Canada geese in North America have jumped from about 500,000 in 1972 to more than 5.6 million in 2015.

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Nearly driven to extinction in the early 1900s, the Canada goose has made a remarkable comeback, actually becoming a significant pest in some areas. On the ground, they can cause damage to golf courses, parks and lawns, and, more seriously, in the air, a collision between bird and aircraft can have grave consequences. Photo by Tim Bowman/USFWS

Numerous strategies have been employed to disperse nuisance birds and discourage their return, including scarecrows, fake owls and snakes, decoys, lasers, pyrotechnics, propane canons, goose-herding dogs, distress calls, and adding goose eggs to reduce the population. Unfortunately, none of these is usually effective for a long period of time.

The search for a longer-lasting, environmentally friendly and humane way to control bird pests has pointed to a habitat management solution. If the turf is attracting the birds, perhaps modifying the turfgrass environment will keep the birds away.

As early as 1999, scientists in New Zealand began exploring the use of grasses that would not attract insects and would also be unappealing to birds' taste buds. A tall fescue and a perennial ryegrass developed under this program are currently sold in New Zealand and Australia under the Avanex brand. Independent research published in 2015 by Diane Miller at the University of Kentucky has found that these particular grasses are not consistently unappealing to birds and therefore would not likely be useful in an airport setting.

Approximately seven years ago, DLF International began its attempt to identify grasses that are suitable for use at airports and are not attractive to birds. That initial effort has blossomed into an international program including Europe, the United States, New Zealand, China and other countries. Some grasses were planted in trials last fall and this spring to determine their effectiveness.

Researchers have found that the texture of the grass affects its desirability. Tufted hairgrass (*Deschampsia cespitosa*), for example, has a rough texture that irritates the mouths of Canada geese, which routinely refuse second helpings. One of the turfgrass blends currently being tested by DLF contains *Deschampsia*.

Turf growth habit and management also play a role in bird habitat selection. Birds will not land in areas where grass is high and



stands upright, because they will not feel secure in such a setting. Therefore, the ideal airport grass would be erect, spiky and tall (not mowed short). The ideal grass would also have a natural endophyte that protects it from insects. Such a grass would create an environment that is less attractive to insects and to the birds that feed on them and on the grass itself.

Because of the focus on aviation safety, the DLF program is called ClearSky. The company says that solving the trouble of unwanted bird populations requires "a full habitat survey to establish individual site requirements, problems and micro-climatic conditions from which a maintenance program can be devised with recommendations for a long-term solution."

The maintenance program includes several recommendations.

- Remove bird attractants such as weed seed and insect populations.
- Remove thatch, which provides nesting material for birds and shelter for insects; thatch removal will also increase penetration of herbicides/pesticides.
- Trim only the tops of the grass (topping), which will also reduce seedheads and weed seed.

The critical objective is to establish plantings that can make aviation safer, but, in the long term, the information gained in this effort should promote the development of similar programs to discourage migratory birds from setting up house on golf courses, and in public parks as well.

Teresa Carson is GCM's science editor.