

# Bird Control at Schiphol



## Schiphol

You wouldn't normally associate an airport with nature, but Amsterdam Airport Schiphol's 1600-hectare runway area offers a very special natural environment. As people rarely enter this area, its wildlife has flourished: you will find over two hundred species of flowers and plants here, including several protected ones.

Over seventy species of birds populate Schiphol as well, all of which receive special attention from a very special Schiphol team: the bird controllers.

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Further information: Corporate Affairs  
Schiphol Group: 020 601 2673

[www.schiphol.nl](http://www.schiphol.nl)

[www.youtube.com/schiphol](http://www.youtube.com/schiphol)

## Bird controller keeps watch over birds and aircraft

Amsterdam Airport Schiphol is located in a polder landscape, with a lot of water, grassy meadows and rich farmland. The Amsterdamse Bos forest area, the coast and the dunes are located nearby, just as the Westeinder, Vinkeveen and Nieuwe Meer lakes. These factors all contribute to Schiphol being a popular roost for birds. However, birds create a genuine risk for aircraft. To ensure an optimum degree of aviation safety, Schiphol takes measures to keep the birds as far away from the aircraft as possible. Schiphol employs 17 'bird controllers' solely for this purpose, who work in the runway area in teams of twos and threes to keep the birds away at all hours of the night and day.

The airport has also planted the surrounding area with special varieties of grass, bushes and trees that are unattractive to birds. All of the above measures are designed to prevent 'bird strikes', or collisions between birds and aircraft.



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Birds can compromise safety at the airport. They pose a risk to air traffic if they collide with aircraft landing or taking off. As it is essential that the 'aluminium birds' and the real birds are kept strictly separated, bird controllers take a wide range of measures to chase birds away and discourage them from roosting on the airport grounds. Of course, not every collision causes immediate damage to aircraft.



### Habitat management

One of the most important measures the airport takes to limit the number of bird strikes is to make the runway area as unattractive to birds as possible. This is called 'habitat management'.

Several species of bird like to roost at Schiphol because they can find food here, or because they feel safe in the area. As hardly any people ever enter the runway area, it is a relatively undisturbed spot that attracts birds. Amsterdam Airport Schiphol has been trying to make the area as unattractive as possible for birds by planting grasses, bushes and trees that birds don't like. The grass between the runways at Schiphol is kept longer than you would normally see in a park or garden, growing as high as 15-20 cm in summer and approximately 18 cm in winter. Schiphol applies a special grass-cutting method to keep the grass at the right height. Birds don't like tall grass, as it makes it more difficult for them to find food and to spot natural enemies, such as birds of prey.

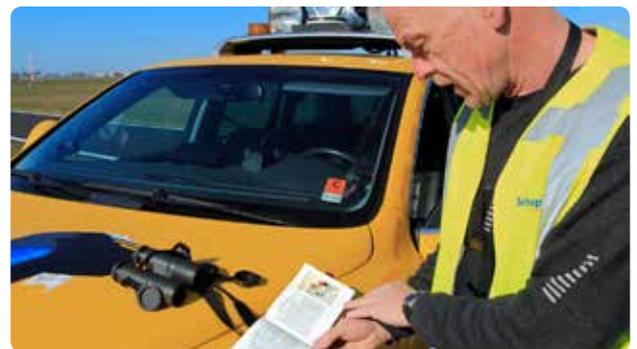
The type of grass grown at the runway area has also been adapted to repel birds. Special blends of coarse grass that birds don't like have been developed especially for Schiphol. Additionally, monthly 'hot spot' rounds are held, during which the maintenance

staff help identify locations that attract birds.

This immediately shows which trees and/or shrubberies have become attractive for birds and must therefore be adapted or removed. The runway area is also kept dry with a special drainage system that prevents puddles from forming after rainfall, as puddles also attract birds. Bird Control also makes waterways around the runway area less attractive to water birds by fixing ropes and/or netting across ditches or floating hopper balls in them.

### Bird controllers

Twenty-four hours a day and 365 days a year, the 17 bird controllers employed by Amsterdam Airport Schiphol ensure that air traffic is disturbed as little as possible by birds. Their busiest periods are just after the nesting season when young and inexperienced birds fly out, in summer during harvesting operations in the vicinity of the airport and in autumn when the birds start migrating. The International Civil Aviation Organisation (ICAO) holds the airports responsible for chasing away birds up to a height of 60 metres (200 ft) for landing air traffic and 150 metres (500 ft) for air traffic taking off.



The bird controller's job is to chase birds away from the runways, using all sorts of equipment. Bird controllers continually patrol the entire runway area in all-terrain vehicles, dubbed 'lapwings' (Kieviten in Dutch).

All runways are inspected by a bird controller prior to being used, and at least once every two hours when actually in use. Bird controllers maintain radio contact with the air traffic controllers in the tower. If pilots report the presence of birds in the vicinity of a runway, the first thing the traffic control tower will do is to



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notify a bird controller, who will immediately take action. Conversely, bird controllers will also notify air traffic control of any birds they encounter that could pose a threat to air traffic.

The bird controllers take note of many things other than just birds. They will remove any unusual objects they find on the runway that could be dangerous to aircraft and report any damage detected to signs, lights and asphalt. They pay extra attention to obstacles such as construction cranes parked in the vicinity of the runways. Depending on their height, these are not allowed to be parked close to any runways in use. If it rains the runway is inspected for puddles and in winter bird controllers pay close attention to the runways and aprons in order to warn air traffic control about any slippery and icy conditions. The bird controllers also act as a guide for the snow fleet, driving ahead when the fleet is called into action on the runways.

In the past, the bird controllers kept a list of all runway inspections, chase away actions and all birds that had been spotted. This is now done using tablets, making it possible to store and share the data digitally. Tablets also automatically record the bird controller's location.

### Bird-chasing methods and resources

There are various resources a bird controller can use to keep birds away from the runways. Standard equipment includes a flare gun with noise blanks and a sound system. The bird controller uses three different types of flare gun: medium and large. These flares produce not only a flash of light but also make a great deal of noise. The noise blanks come in various sizes, including a number of 'whizzers'. The ammunition used is tailored to the bird species and the number of birds the controller wants to scare away. Some species respond better to a loud bang and others to a screeching noise.

In addition to flares, audio equipment is used to chase away the birds. Bird controllers have all the most common bird alarm calls at their disposal, which serve as a warning for the other members of the species to leave the area as soon as possible.

All bird controller vehicles are equipped with a mobile green laser. This type of torch emits a green laser beam to chase water birds away from the surrounding ditches. Although laser beams do not harm the eyes of people or animals, they instantly repel birds. Other equipment used by bird controllers includes stationary equipment such as gas canons, small windmills, bird flashers (little mirrors), irritape (tape that produces a shimmering effect) and scarymen (inflatable scarecrows) to chase away birds on locations which are temporarily attractive.

However, as birds may get used to some of the methods used on them, Amsterdam Airport Schiphol regularly tests new bird-chasing methods and equipment. Over the past year, Schiphol ran a new test in applying stationary green lasers, in the water courses this time. The existing laser had insufficient effect from a large distance. The test has enabled the supplier to design a laser that does meet the requirements. The bird controllers also used border collies for several years to permanently chase large groups of lapwings away from the runway area, which produced exactly the results hoped for. Also, over the past two years a stationary green laser was tested in the area near Runway 18L-36R which could shine its beams across the entire runway in three minutes to automatically chase away any birds roosting in the grass. Unfortunately, avian activity did not subside near this runway, causing Schiphol to renew its search for innovative methods to support the bird controllers.

Schiphol did a pilot with a falconer. Though the pilot was very effective, it resulted to be local and short. The bird controllers with their cries of distress and flare guns were just as effective.

Although the airport would prefer to see its grounds entirely free of birds, there are some that can barely be chased away, if at all. Kestrels, for example, which nest in the vicinity of Schiphol and hunt mice in the runway area, are tolerated in small numbers. If these birds were to be chased away permanently, 'new' birds would take their place that are not as used to air traffic and would be more likely to pose a serious threat to aviation safety than these 'permanent' guests. Additionally, the airport collaborates with the Haarlemmermeer Birds of Prey Group to catch young predator birds, provide them



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with a bird ring and number, and release them in an area far away from the airport. These birds rarely visit Schiphol again.

### Geese

The goose population around Amsterdam Airport Schiphol has increased substantially over the past decade. Geese pose a higher risk to aviation safety than other birds due to their size and tendency to fly in flocks, while even a single goose can do substantial damage to an aircraft. Far-reaching measures have been taken at Schiphol and the surrounding area since 2005 to keep away the geese, which do not actually roost on the runway area but cross the runways flying at various altitudes. Although Schiphol recently tested new 'extended range' noise blanks to impact geese flight at higher altitudes and greater distances, it remains very difficult to take effective anti-geese safety measures on the airport grounds. This makes it necessary to extend the preventative activities to surrounding area.

In recent years, Schiphol has conducted a great deal of research into the flight patterns of geese moving between their sleeping, nesting, moulting and feeding areas.

These patterns have now been charted, which will enable the airport to take even more targeted measures against geese. According to recent counts, several tens of thousands of geese live within a radius of twenty kilometres from the airport during the summer season. To help alleviate the problem, the province of North Holland launched a project in 2008 in collaboration with the Game Management Units (Wild Beheer Eenheden, WBE), the State Forestry Commission (Staatsbosbeheer), the North Holland Landscape Organisation, the Spaarnwoude Recreational Area and the Amsterdamse Bos forest area to reduce the goose population around the airport by treating their eggs to prevent hatching. Also, geese are now allowed to be shot. Geese primarily flock to the Haarlemmermeer area in late summer to feed on the grain stubble on the surrounding farmland. In the next few years almost all grain farmers around the airport area will deploy accelerated stouple ploughing to ensure that in August and September

geese cannot feed on their grounds. At the same time, the possibility of growing other crops, such as maize and elephant grass, is being examined, and of extending the area in which bird-attracting activities are prohibited, which is currently restricted to a radius of six kilometres from the airport.



### Bird Strike Control Group

On 6 June 2010 a Royal Air Maroc aircraft collided with Canada geese and was forced to return to Schiphol, where it made an emergency landing with one engine shut down. In order to more effectively deal with the goose problem, the Netherlands Control Group for Bird Strikes (NRV) was established in June 2010. In addition to the Ministry of Infrastructure and the Environment and Amsterdam Airport Schiphol, the NRV includes representatives from the Province of North Holland, the Municipality of Haarlemmermeer, the Netherlands Horticultural and Agricultural Organisation (Land- en Tuinbouworganisatie Nederland, LTO), the Natural Heritage Association (Natuurmonumenten) (which acts also on behalf of the Netherlands Association for the Protection of Birds (Vogelbescherming Nederland)), the Ministry of Defence and the Dutch Airline Pilots Association (Vereniging van Nederlandse Verkeersvliegers, VNV). This control group signed a covenant in April 2012 to jointly tackle the goose problem. In addition to all the measures stated above, the covenant will use four tracks to address the problem: population management, crop adjustment, plans to adapt the surrounding wetlands and a test conducted with a bird detection system. It is hoped that this system will promote the early detection of approaching birds that pose a serious risk to air traffic (large or heavy birds, or species that tend to fly in flocks), so that bird controllers can take measures sooner.



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The trial year with the bird detection system at Runway 18R-36L has now been completed, and the results are quite favourable. The bird detection system is equipped to detect all flying objects from a considerable distance. The challenge for 2014 will mainly be filtering all the data so that we can make the right decisions by asking the right questions.

### Bird counts

The bird controllers perform a bird count in the runway area every two weeks, on a set day and time and according to a set route, in order to record the most common species and their numbers. Doing so enables the airport to identify trends and take action accordingly. The bird counts also help the airport precisely measure the effectiveness of a particular bird-chasing method on a specific species.

### The Flora and Fauna Act

In the interest of aviation safety, the province of North Holland has declared Amsterdam Airport Schiphol exempt from the Flora and Fauna Act, an act that was called into being to protect wild plants and animals. This exemption means that birds may, in particular situations, be chased away and even killed, if necessary. Schiphol uses this authorisation as little as possible, and sees it as a last resort when other bird-chasing methods have proven futile.

### Reporting

Dead birds (or cadaver parts) are regularly found on or near the runways. The bird's death cannot always be attributed directly to a collision with an aircraft. Often, the turbulence caused by the wings of an aircraft will simply knock birds flying nearby to the ground. In 2013, 6.1 bird strikes were recorded per 10,000 air transport movements (in 2012: 7.0).

### Bird calendar

The bird calendar provides a convenient overview that all involved parties can use to see which birds are most active during which months. Pilots can use the calendar to quickly identify and accurately report the presence of specific species.

