THE bogey bird

MANAGING **EGYPTIAN GEESE** ON GOLF COURSES

TEXT **ROB LITTLE**

Humans tend to have a love–hate relationship with waterfowl. Just mention Egyptian Geese and you're likely to initiate a lively discussion, especially if you're talking to golfers. These large, in-your-face birds are to South Africa's golf courses what Canada Geese are to the fairways and public parks of North America: a nuisance. But do they have to be?

EGYPTIAN GEESE *Alopochen aegyptiaca* are widely distributed across sub-Saharan Africa. In South Africa their range has not increased but their numbers have, especially in the Western Cape where cereal production has escalated and farm dams are prolific. The geese like water bodies – and better still, man-made dams – where open shorelines provide an unobstructed view of the surrounding area and potential predators, and thus offer them a safe environment for loafing around and moulting. And should a predator materialise, the water itself becomes a handy refuge.

Urbanisation, too, may alter their perceived risk of predation, since the presence of humans can safeguard the geese from their natural enemies. Thus, for an Egyptian Goose a man-made environment, where natural predators are scarce and open areas of land and water are plentiful, can provide safer conditions than a natural landscape does.

Golf courses in South Africa experience similar problems with Egyptian Geese as do their counterparts in North America with Canada Geese *Branta canadensis*. They, as well as public parks, attract the geese because they are made up of expanses of irrigated lawn interspersed with artificial water bodies – and predators are largely absent. The birds occur in high numbers and their faeces accumulate rapidly, polluting the greens and fairways and diminishing the aesthetic and recreational value of the area. Constantly removing the faeces is both expensive and labour intensive. So it would come as no surprise if Egyptian Geese were unpopular among golfers and residents of golf estates. But is this the case?

There are 106 golf courses in the Western Cape, providing Egyptian Geese with almost 5 000 hectares of attractive habitat. In 2012 Jess Sutton, a Grade 12 scholar at Reddam House, conducted a survey among the residents and members of the Steenberg Golf Estate in Cape Town to assess how they felt about Egyptian Geese on the estate.

Of the 548 questionnaires sent to 225 residents and 323 non-resident golfers, 112 (20 per cent) were returned. Non-resident golfers completed 47 (42 per cent) of these forms and the remaining 65 (58 per cent) were filled in by estate residents, 51 of whom were also golfers.

Surprisingly, 78 per cent of the respondents mistakenly believed that Egyptian Geese are not indigenous to the Western Cape, which suggests that fundamental human–wildlife conflict issues are often not well understood. Indeed, the Steenberg Estate, like other golf courses in Cape Town, was developed adjacent to natural wetlands, which influence >

Among Egyptian Geese, vigilance is higher in areas of increased predation risk, for example where surrounding vegetation does not allow them an unhindered view of their surroundings.

RICHARD GIE (2)

above *'Hotspots' are where the geese aggregate daily and therefore where their droppings need to be removed most frequently.*

right *Egyptian Geese are considered 'pleasant' until the damage they cause to lawns reaches unacceptable levels. Most golfers feel that the goose population requires active management.*

the occurrence of waterfowl in the area. It is from these wetlands that the geese disperse – and will continue to do so.

Most respondents (84 per cent) regarded the geese as a nuisance, which indicates that the 'goose problem' is real and that unless the situation is managed, it is unlikely to improve. However, the fact that only 57 per cent of the non-golfers considered the birds to be irksome suggests that the perception of a problem is specific to the golfers.

Of greatest concern to residents and golfers were the mess made by goose droppings and the tendency of Egyptian Geese to harass other birds. Fifteen per cent of those surveyed ranked the problem as minimal, 33 per cent rated it as moderate and 52 per cent considered it to be severe. Among the golfers, 87 per cent felt that the goose population requires active management, a perception shared by 86 per cent of the non-golfing residents. According to 86 per cent of all the respondents, the goose population should be reduced by at least half. Among non-golfing residents, though, this sentiment was less pronounced, with only 62 per cent subscribing to it.

INSTEAD OF TRYING TO CONTROL [EGYPTIAN GEESE], WE SHOULD LOOK AT MANAGING THE GOLF COURSE ENVIRONMENT ... TO MAKE IT LESS ATTRACTIVE TO GEESE

Overall, it seems, it is not necessary to eliminate Egyptian Geese entirely from a golf estate. Nevertheless, keeping their numbers to a level that can be tolerated by the estate managers, residents and golfers is likely to be important.

So how does one go about reducing a goose population? The methods used to control geese can be lethal or non-lethal. Among the latter, visual and audio displays such as fake predators, flashing lights, lasers, sirens, bird alarms and fireworks have been used in the past. In Tennessee, USA, playing back tapes of Canada Goose distress calls reduced goose numbers by 75 per cent. However, it didn't take the geese long to recognise the vehicle from which the tapes were played and then they simply fled into nearby water. Scarecrows and fake predators also had little success because the geese soon became habituated to their presence. To combat habituation, multiple scaring techniques have been used simultaneously – and to good effect.

Trained herding dogs have proved successful too, but they are expensive to purchase and maintain and they need expert training. Relocating geese to a new habitat is also a costly exercise, and there is always the concern that the birds will return to the capture site or become a nuisance in their new domain.

Lethal measures include spraying goose eggs with chemicals, which reduces their hatchability and can prevent successful reproduction. However, the high mobility of geese makes addling their eggs in this way ineffective. A pair will abandon an unsuccessful nest, typically make a new one and lay another clutch. Egyptian Geese also often nest in large trees, where their eggs are difficult to reach. Culling the birds is another option, but shooting geese in residential areas is largely considered unethical. Whereas lethal methods are more successful and cost-effective than non-lethal ones, they are often deemed socially unacceptable. In general, most control measures fail because of their short-term efficacy, high cost or ethical unacceptability.

In the Western Cape, attempts to control the Egyptian Goose population have involved displaying imitation owls, using dogs to chase the birds, culling by shooting, destroying eggs and nests, and relocating individuals. However, the species' opportunistic behaviour means that such measures would have to be ongoing and yet are still likely to be ineffective in the long term.

The adaptability and persistence of Egyptian Geese suggest that if we wish to reduce their numbers we need to shift our focus. Instead of trying to control the birds themselves, we should look at managing the golf course environment – in effect, manipulating the habitat to make it less attractive to geese.

Subsequent to Jess Sutton's survey, Beth Mackay, a BSc Honours student at the University of Cape Town, investigated the vigilance behaviour of Egyptian Geese at Steenberg. She also studied the attributes of habitats at 10 golf courses in the Western Cape to understand what makes the courses attractive to the birds.

Vigilance is the key to reducing predation risk and it includes visual scanning to increase the probability of detecting a predator. Geese are more vigilant where the risk of predation is higher; where they seem to feel safe in their surroundings, they appear less vigilant. Beth found that goose vigilance levels also related to the size of the group (the larger the group, the less vigilant were individual birds, supporting the 'many eyes' concept). Independent of group size, however, the level of vigilance was lower in parts of the golf course favoured by the geese ('hotspots') than in less favoured >

WHAT'S GOOD FOR THE GOOSE...

Egyptian Goose preferences that golf course managers should strive to avoid:

- A water body surrounded by a 100-metre-wide expanse of open lawn;
- An open grassy area larger than 1.5 hectares. Patches of 1–1.5 hectares are less favoured by geese, and patches smaller than one hectare are mostly avoided.

PETER RYAN

Golf course management should focus on reducing the attractiveness of favoured sites or should position them in the non-playing areas of the course.

parts ('non-hotspots'). This confirms that certain characteristics of the habitat cause the geese to feel secure. It also suggests that where the birds elect to spend time on a golf course is determined by perceived levels of safety from predators.

Hotspots were defined by two predictable habitat features: proximity to water, to which the birds can flee if danger threatens them or their young; and the size of open patches of lawn, preferably larger than 1.5 hectares. Favoured areas are those where the field of view is not obstructed by visual barriers such as vegetation or man-made structures that reduce the goose's ability to detect potential danger.

To manage golf course environments for Egyptian Geese, it is important to also understand the landscape scale at which habitat features operate. The relationship between goose numbers and the location of golf courses was weak, which suggests that the abundance of the birds at any one course may not be influenced by their abundance at nearby courses. This reflects the intrinsic properties of individual golf courses rather than landscape-scale habitat features and means that management can be tackled at the level of a particular course.

When manipulating the habitat features of a golf course environment, the intention should be to locate hotspots in non-playing areas or, perhaps with greater effect, to make them less attractive to the geese. This can be achieved by increasing the birds' perception of predation risk. Water bodies next to open expanses of lawn are easy to avoid at the design stage, but more difficult to manage on established courses. Poorly sited ponds can, however, be modified by putting up physical barriers that restrict access to the water and thus make the geese more wary of predation. If man-made, such as fences along the water's edge or a wire grid over its surface, the barriers should be aesthetically pleasing and safe for the geese and other birds while not impeding the golfers' play. More attractive, and less expensive, is to plant dense vegetation along the shoreline that will obstruct the geese's access to the water and hinder their ability to detect predators.

Since large patches of lawn are attractive safety features for Egyptian Geese, a guideline for golf course designers is to restrict each fairway to less than one hectare in size. Fairways on existing courses can be modified by planting tall grass and shrubs around them to reduce their openness – and thus their security as perceived by geese. Such clusters of natural vegetation have the added advantage of potentially increasing biodiversity on the golf course and attracting other bird species. Importantly, and in contrast to most other management measures, environmental options involve short-term costs that have potential long-term benefits.

In general, enabling Egyptian Geese and golfers to co-exist happily is a complex undertaking. Yet there is an option to design golf courses and the adjacent vegetation so that they attract the local bird species but are less appealing to geese. It is to be hoped that what we have learned so far will stimulate golf course managers to consider long-term approaches to reducing the number of Egyptian Geese on their courses and to implement further research into rendering their fairways less attractive to the birds. ◆

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