Predators can influence their prey directly through predation, but the mere presence of a predator also can alter the behaviour of prey. By instilling fear in their prey, the perceived risk of predation can affect individual movement patterns and ultimately influence the spatial dynamics of whole populations. Prey animals living in a landscape influenced by the risk of predation try to avoid risky areas and choose instead to feed and breed in areas where they perceive the risk of predation to be lower. This response can be used to manage problem animals.

Egyptian Geese Alopochen aegyptiaca are widespread and despite their name are indigenous to South Africa. During the past 30 years, their population has escalated dramatically in response to an increase in the number of farm dams, the expansion of agricultural crop-lands, and the introduction of large areas of urban green space. These green spaces include golf courses, where there are relatively few natural predators and which thus present the geese with safe feeding, breeding and mouthing grounds. Lush expanses of green grass provide ideal grazing lawns and open waterbodies are a safe refuge, especially for goslings. Because of this, many golf courses have become home to large numbers of Egyptian Geese. In the Western Cape in particular they have become a nuisance, irritating golfers, residents and greenkeepers by obstructing play, being noisy and fouling greens and fairways.

While investigating solutions for this problem, we found that geese on golf courses prefer particular areas, or ‘hotspots’, within which they feel safer. One option to reduce the desirability of these hotspots is to manipulate them through management interventions to increase the ‘landscape of fear’ and thus make the playing area of the course less attractive to the geese. On overseas and local golf courses, goose populations are controlled by lethal and non-lethal means. While some of these are partly effective, many are either ineffective or socially unacceptable. An effective non-lethal method of manipulating the landscape of fear so that there are fewer areas where the geese feel safe is to plant areas where the geese feel safe and choose to leave the property.

landscape of fear

Birds flown from a golf cart, suggesting that they learned to associate the carts with the threat of predation.