Department of Environment and Conservation
Our environment, our future

Prevention and Control of Damage by Animals in WA

Sliver Gull *Larus novaehollandiae*

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The Silver Gull *Larus novaehollandiae* is commonly known as the Seagull. It is a scavenger that is adaptable to a range of nest sites. It occurs throughout coastal Australia and its offshore islands and has increased in number and distribution by exploiting food and rubbish discarded by humans.

Scaring techniques are not effective and damage can be controlled via: exclusion with netting and barriers; limiting access to food, water and loafing sites and preventing people from feeding the gulls.

In extreme cases shooting, drugging and population control via removal of eggs may be effective in reducing population numbers.

Identification

Silver Gulls weigh 265 to 315g and have a wingspan of 91 to 96cm (Higgins and Davies 1996). Adults have white on the head, neck and body; white eyes with a red eye ring; silver grey wings with black tips and an orange-red bill and orange-red bill legs (Higgins and Davies 1996). Juveniles may be distinguished from adults by a black eye; dark grey-brown bill and legs and mottled grey-brown on grey wings (Higgins and Davies 1996).

Distribution and abundance

Australian populations of Silver Gulls have increased in size over the past 50 years, probably due to an increasing volume of human refuse (Smith and Carlile 1993). In 1991, the total number of Silver Gulls in Australia and New Zealand was estimated to number 800,000 (Meathrel *et al.* 1991).

The largest populations of Silver Gulls in Western Australia occur near Perth and Albany in coastal towns, ports and at breeding colonies of other seabirds on offshore islands (Johnstone 1982; Barrett *et al.* 2002). Around 40,000 Silver Gulls were estimated to be resident in the Perth metropolitan area in 1992 and large colonies of 3,000-5,000 occur on Carnac, Penguin and Rottnest Island (Lane and Coughran 1994).

Biology

Silver Gulls occur along Australia's coast line, rivers and inland waters (Higgins and Davies 1996). They form loose associations with other land and seabirds and exploit locally abundant food sources (Serventy *et al.* 1971).

Silver Gulls nest on off-shore islands and inland swamps and lakes (Higgins and Davies 1996). They nest on or near the ground in rock, sand, grass and shrubs (Higgins and Davies 1996) and

in other sites such as rooves, jetties, boats and buildings (Temby 2002).

During a study on Carnac Island, Silver Gulls bred continuously from March to November, with peaks in laying in April, June and August to September (Wooller and Dunlop 1979). The main peaks were followed by troughs in newly initiated clutches (Dunlop 1986) and peaks were progressively less synchronised throughout the protracted breeding season (Wooller and Dunlop 1980). Multiple laying by Silver Gulls is most likely to occur as a result of sustained predation pressure in an environment where climatic conditions are not limiting (Wooller and Dunlop 1979).

Sliver Gulls usually lay two eggs but sometimes three or four (Higgins and Davies 1996). The gulls show high site fidelity (Dunlop 1986). For example, on Carnac Island, near Perth, 93% of birds re-trapped were in the same area and 91% were in the same site where they had previously been captured (Wooller and Dunlop 1979). Incubation is carried out by both parents and takes 21 to 27 days (Higgins and Davies 1996). The young fledge 3 to 4 weeks after hatching and are independent at around 6 weeks of age (Serventy *et al.* 1971).

Gulls feed on land or water on aquatic animals, invertebrates, small vertebrates, plant remains, carrion and refuse (Higgins and Davies 1996). They take the eggs and young of other nesting seabirds such as terns, noddies and boobies (Meathrel *et al.* 1991; Smith 1992) and hatching marine turtles.

Habits

The main factors that attract gulls to an area are fresh drinking water, food, nesting habitat and shelter (Blokpoel and Spaans 1991). They use water in ponds, lakes, creeks and drainage channels to drink and preen. At high tide, gulls move from estuaries to inland water sources. Gulls are generalised feeders and take advantage of spillages and uncontained waste (Blokpoel and Spaans 1991). In flooded creeks and wetland areas, they forage on worms and other invertebrates (Meathrel *et al.* 1991). Access to fresh water in summer may limit distribution and possibly population size (Meathrel *et al.* 1991).

Flat, open grassy areas allow gulls to congregate in large numbers away from predators and people. Gulls may take advantage of nesting sites in rock cervices, grass, shrubs, gutters, jetties and boats.

Damage

Increasing Silver Gull populations have lead to a variety of problems in many segments of society, relating to aircraft strike, faecal contamination and the survival of other seabirds (Smith and Carlile 1993).

Nuisance

Silver Gulls harass people for food and generate noise in recreation areas.

Fouling

The presence of large numbers of Silver Gulls and result in fouling of recreation areas, cars, rooves machinery and infrastructure with faeces.

Hazard

Although they are medium sized birds, Silver Gulls represent a hazard to aircraft because they fly erratically in large flocks. Of 136 bird strikes involving gulls between 1991 and 2001, 31% involved more than one bird (Australian Transport Safety Bureau 2002). They can also be a hazard to helicopters on offshore oil and gas rigs.

Health

Silver Gulls carry *Salmonella* spp. and thus there is a risk of transmitting diseases and infections to humans from contact with faeces (Iveson 1979).

Biodiversity

Silver Gulls prey on the eggs and young of other native birds and crowd other birds at breeding sites (Meathrel et al. 1991; Smith 1992). They also prey on hatching marine turtles at sites where gull and turtle nesting co-occur

Environmental Law

Commonwealth

Silver Gulls are listed as a Marine Species under Section 248 of the *Environment Protection and Biodiversity Act 1999*. Thus, it is an offence to intentionally or recklessly kill, injure, trade, keep or move them in Commonwealth lands or waters unless authorised by a permit issued under Section 258, or it was reasonably necessary to prevent a risk to human health (Section 255). A permit to kill, injure, take, trade, keep or move a member of a listed marine species in or on a Commonwealth area may be obtained from the Department of Environment, Water Heritage and the Arts by filling out an application form.

The applicant must demonstrate that due process has been followed prior to applying for such a permit. Thus the applicant would have to demonstrate that all reasonable non-lethal methods have been attempted, assess the environmental impacts of culling and obtain a permit to cull prior to undertaking population control.

State

Silver Gulls are native to Western Australia and as such are protected under the provisions of the *Wildlife Conservation Act 1950*. They may be taken only with a licence issued by the Department of Environment and Conservation (DEC). Licences to take are issued only after other methods have been employed as part of a co-ordinated management program.

Damage Prevention and Control

Many techniques may work only for a few days before the gulls ignore them, including static artificial predators such as snakes, owls and hawks; kites resembling birds of prey; humming line (tape); electronic noise generators that create artificial noises (as opposed to the birds' own alarm and distress calls) (Temby 2003). A co-ordinated program involving DEC, metropolitan Local Government Authorities and the community is needed to effectively limit population sizes in Western Australia.

Exclusion

Barriers can be effective in preventing gulls from landing on buildings and other structures. Examples include spring wires used on linear surfaces such as railings, spikes for relatively small areas such as ledges and chimneys, and spinning wires on circular and square surfaces such as rooves and lighting posts. Spikes and wires are often supplied and fitted by private pest control companies.

Exclusion of gulls from sites such as garbage dumps, sewage treatment ponds, catering areas and airports can significantly reduce their use of the surrounding area (Salmon 1994). Experience with gulls in Australia and overseas has shown that management at selected landfill sites will simply drive gulls to other landfill sites. Therefore, all landfill sites in the region must be managed to reduce silver gull numbers (CALM 1993).

Silver Gulls can be excluded from large areas such as sewage treatment ponds and land fills by installing wire or plastic netting (Salmon 1994). Custom installed netting may be useful to exclude gulls from pieces of heavy machinery (Temby 2003).

Covering waste on the tipping face continuously during the day and at the end of the day will reduce access to food (CALM 1993). The tipping face should be kept as small as possible (Figure 1) and compacted and covered quickly to reduce exposure to gulls (CALM 1993). For large loads of organic waste, such as offal, prior arrangement should be made, to bury the waste immediately, with the landfill site manager (CALM 1993).

Figure 1 Minimise the size of the tipping face to reduce exposure to gulls (photograph from Ecosure 2004).

Nylon monofilament lines of 50kg breaking strain installed parallel at 3-4m spacing up to 6m overhead can exclude gulls from food service areas (Temby 2003). Wires are also effective if used in combination with lidded bins and umbrellas over dining tables (Figure 2). A line spacing of 1m or less may be needed to exclude gulls from nesting on roofs (Temby 2003).

Bins with lids deny gulls access to food and should be used throughout the city where gulls are likely to be a problem at restaurants, fast food outlets, recreation areas, schools, shopping centres, factories and food processing plants. It is important to ensure that a sufficient number of bins are available and that bins are emptied regularly to ensure that they do not become over-filled. This is particularly important in recreation areas and schools.

Figure 2 Parallel overhead wires, bins with lids and outdoor umbrellas at Cicerellos, Fishing Boat Harbour, Fremantle.

Habitat Modification

Standing surface water allows gulls to congregate, feed, drink, bathe and preen (Ecosure 2004). Depressions that hold water should be filled in or drained via drainage channels to remove the water from the site (Ecosure 2004). Drainage channels may require wires, netting or covers to restrict access (Salmon 1994). If covering of drainage channels and ponded water is not possible, scaring devices should be used randomly to deter the gulls, but scaring must be started as soon as

the birds arrive to prevent habituation (Smith and Carlile 1993).

Gulls feed on invertebrates, such as worms and insect, in freshly mown grassy areas. Mowing less frequently or mowing at night limits the exposure of invertebrates to the gulls. Grass maintained at 30cm makes it difficult for gulls to access invertebrates and monitor approaching predators and aggressive birds at nest sites (Smith and Carlile 1993).

Behaviour Modification

Feeding of food scraps to gulls should be strongly discouraged using signs and other educational materials (CALM 1993). In recreational and outdoor eating areas, food scraps should be wrapped and placed in a bin immediately. Employees in the workplace and members of the public must be educated on the disadvantages of feeding gulls (CALM 1993), including the harmful effects of feeding gulls. These include fouling and pollution of water with food and droppings, inappropriate foods for the birds, harassment of people for food, artificial increase in the population and increased risk of spreading disease (Bomford and Sinclair 2002).

Figure 3 Not feeding the birds can be made part of the dining experience.

Scaring

Silver Gulls can be deterred using explosive shells, gas guns, distress calls, sirens, lights and harassment with vehicles (Braysher 1993). These methods have been used at rubbish dumps, airports and water reservoirs (Smith and Carlile 1993). However, the gulls can be difficult to disperse and harassment must be started as soon as the birds arrive (Smith and Carlile 1993). In addition, these methods do not provide long-term relief (Smith and Carlile 1993).

Shooting

Shooting with shotguns or rifles can be a useful form of control for Silver Gulls under some circumstances. For example, shooting can be used to eliminate birds from regular flight paths near airports (Salmon 1994). However, the effectiveness of shooting can vary widely between sites and years (Smith and Carlile 1993) and shooting removes only a small proportion of the population at any one time (Smith and Carlile 1993). The 'gaps' left by removing birds are quickly filled by other birds from the same colony or by immigration (Smith and Carlile 1993).

Shooting, can however be effective for reinforcing other scaring techniques (Salmon 1994). The recommended firearms and shot size for Silver Gulls is a 12 gauge shot gun with 4s-6s shot size (Sharp and Saunders 2004). The recommended and optimum range for shooting is 30m (Sharp and Saunders 2004). Firearms must be licenced, shooting must be conducted under the conditions of the licence and should reflect the national guidelines for Shooting of Pest Birds (Sharp and Saunders 2004).

Population control

A combination of habitat modification, culling and human disturbance has been used to reduce

breeding by Silver Gulls on Big Island, NSW (Smith and Carlile 1993). Removal of eggs from experimental plots did not affect overall nesting success. Human disturbance reduced nesting success probably due to increased exposure to nest and egg predators, nest abandonment and the energy expended by parents in continually leaving the nest (Smith and Carlile 1993). Mowing of long grass and selective culling of adults reduced nest density and egg-pricking reduced breeding success (Smith and Carlile 1993).

Eggs must be removed every two weeks to be effective and this can be time-consuming and labour intensive (Salmon 1994). Egg pricking and 'egg oil' are more likely to be successful than removal because the adults will continue to brood the eggs and not re-build the nest or lay another clutch (Martin *et al.* 2006).

Spraying eggs with canola oil is 99 to 100% effective in preventing hatching regardless of time in the breeding cycle it is applied (Martin *et al.* 2006). The oil clogs the pores of the egg, causing asphyxiation of the embryo (Martin *et al.* 2006). Around 5ml of canola oil is sprayed on each egg (Martin and Dawes 2005). Coating eggs in oil renders egg unviable and does not leak or smell as pricking might and thus, induces the adults to sit on infertile for extended periods (Blokpoel and Hamilton 1989).

Alpha-chloralose ($C_8H_{11}Cl_3O_6$) is not registered for use for controlling bird populations in Western Australia, but licenced pest controllers who hold a relevant license may use it. Alpha-chloralose is considered a humane method of control, because it is a narcotic and acts by anaesthetising rather than poisoning. If used correctly, it is also specific to particular birds and the probability of secondary effects is low. The Alpha-chloralose should be delivered at a dose of 200 mg per bird. Five grams of Alpha-chloralose mixed with 30 g of butter spread on three slices of bread is a sufficient dose for 25 birds (Caithness 1968).

The Alpha-chloralose must only be used by trained and licenced personnel in accordance with the guidelines. A licence to take gulls using this method must first be obtained from DEC.

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