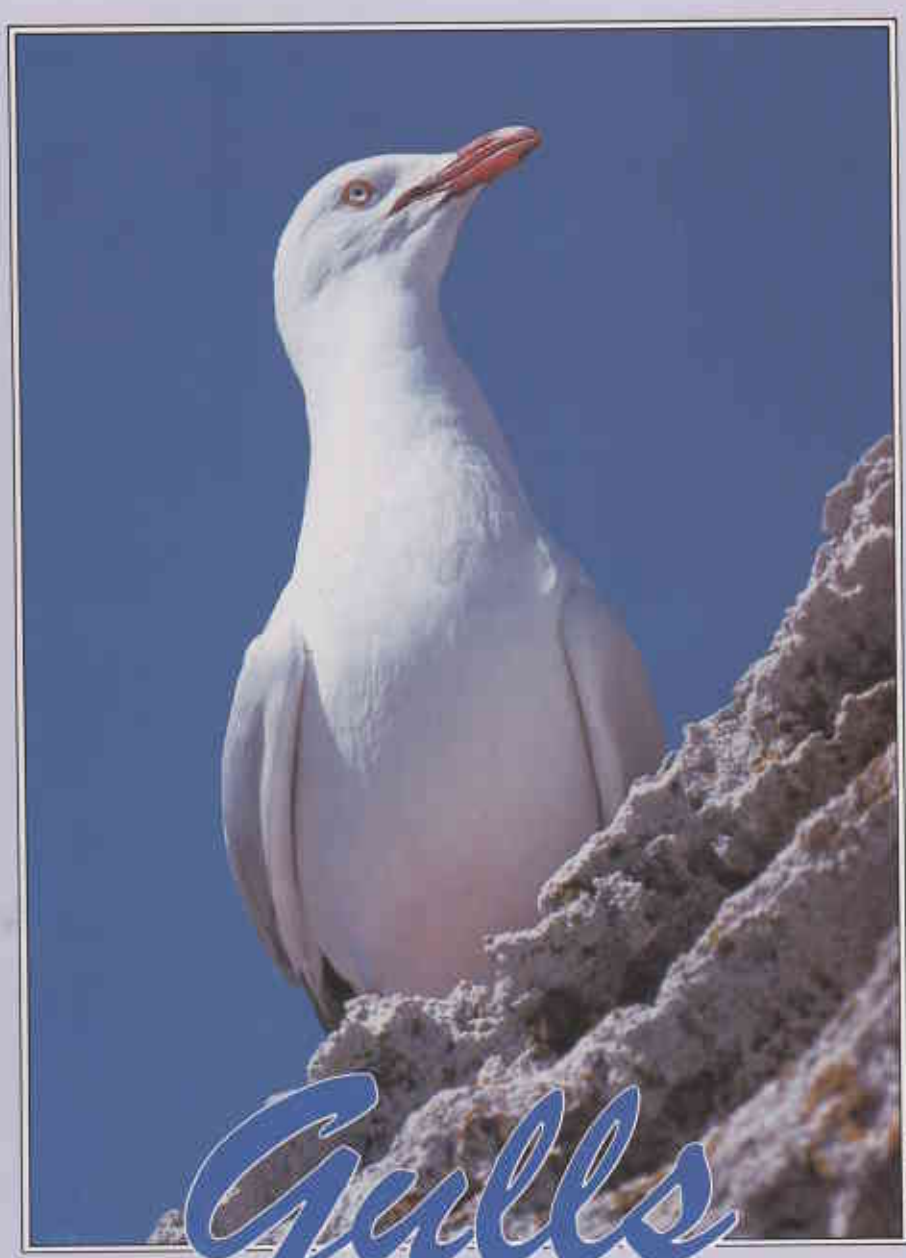


The seagull - inspiring symbol of untamed freedom? or public enemy hazardous to health? Catherine Meathrel, a gull biologist from Canada, sorts out the facts from the myths.

Catherine is currently undertaking doctrate studies at Murdoch University, examining the factors affecting reproductive success of Silver Gulls on Penguin Island. She has done research on gulls in both Canada and the United States.Worldwide attention has been given to the fear that gulls spread diseases such as flu, fowl pest, ornithosis, intestinal parasites and food-poisoning. The possibility that Silver Gulls transmit *Salmonella* to humans is potentially serious because gulls fly between sewage farms, rubbish dumps, reservoirs (where they commonly roost at night and during non-breeding times) and the roofs of factories and markets dealing with food. There have, however, been very few cases of human food-poisoning directly caused by gull droppings. Nonetheless, all gull species are viewed as a pest.

. . . . straight from rubbish tip to you?

Wade Hughes

Anyone who has sat in the park defending their chips from a raucous, ravenous flock of gulls would no doubt agree. Some farmers claim gulls eat valuable grain crops, earthworms and other soil invertebrates responsible for ground aeration and nutrient recycling. Some fishermen believe gulls greatly reduce their catch, but close association between gulls and human refuse weakens that argument. Reduced catch size may reflect overfishing or indicate a polluted aquatic environment.

Marie Lochman

Flocks of gulls frequenting airports present a major hazard to aircraft. The increasing abundance of gulls has been shown to displace other bird species nesting on islands, for example the Crested Terns *(Sterna bergii)* on Penguin Island.

Yet the Silver Gull is not an introduced pest, it is a native species. A large part of the problem is its sheer abundance: 50 000 in the south-west; 40 per cent of all the breeding pairs in the State are on Penguin Island. All gulls are colonial nesters and opportunistic feeders. Being scavengers, they are closely associated with humans. Great flocks of them can be seen at granaries, farm fields, sewage treatment plants, rubbish dumps, public beaches and city parks. Throughout this century the use of larger domestic waste disposal sites worldwide has been associated with an annual growth rate of 10-12% in all gull species. Within Australia all large gull colonies occur withing 30 km of major city dumps - a short distance for such an adept flier.

Both the public and private sectors want the government and scientists to control gull numbers. Gull control has varied widely in scope, expense and effectiveness. The use of deterrents such as loud noises and tape recordings of distress calls, on and off the nesting area, are usually short-term in their effects. Deterrents may be effective if one just requires a limited gull-free area like a city park or market. But such methods only move the problem elsewhere. Longer term solutions, over larger areas, require either habit modification or reduction in gull numbers. The first is expensive; the second emotive.

Jiri Lochman

What's in a name

Dr. R.D. Wooller

Jiri Lochman

Jiri Lochman

The term 'seagull' is a misnomer since gulls are essentially shorebirds and not seabirds. Seabirds such as penguins, albatrosses and petrels are compelled to return to land solely to breed. Gulls, on the other hand, spend a great deal of time on land, both during the breeding and non-breeding seasons. Few gulls will be observed far out to sea since foraging is usually restricted to shallower, continental-shelf areas or inland lakes.

Currently, there are about 48 gull species worldwide. The general appearance of the adults is familiar and easily recognised: grey above and white below. Variations in bill, leg and eye colour are associated with mating and species recognition. Gulls range in length from 25-75 cm and in weight from 200 g to 1.3 kg.

Of all the 'seabirds', gulls have been the most successful. Their distribution ranges from polar regions to the tropics, in both fresh and salt water in each hemisphere. Larger gulls are generally associated with oceanic habitats, smaller gulls with inland areas. The Silver Gull (*Larus novaehollandiae*), which is seen in Perth, is a small gull, but larger Pacific Gulls (*Larus pacificus*) and Southern Black-backed Gulls (*Larus dominicus*) do occur along the southern coast of W.A. Large Silver Gull colonies can be found on several islands, including Carnac, Penguin, Rottnest, Lancelin and islands near Albany. Most gull species lay three eggs per year in one breeding attempt. Silver Gulls nesting around Perth, however, lay two eggs in both spring and autumn and can easily replace destroyed eggs. In the Perth metropolitan area the availability of fresh water bodies (lakes and reservoirs) help Silver Gulls survive through the long, hot (non-breeding) summer.

Food, and hence the condition of adults, does not appear a limiting factor of reproductive success in this area. Gulls have few natural predators. King skinks (*Egernia kingii*) and tiger snakes (*Notechis scutatus*) do eat eggs and young, and adult gulls often succumb to fishing line and nets. It is possible that the cannabilistic lifestyle of some gulls may help to control their own numbers, but this seems of little importance when the potential for population increase is so great. On average, female Silver Gulls can reproduce for ten years.

The south-western population of Silver Gulls is currently estimated to be 10 000 - 15 000 breeding pairs. Even with population growth restricted to 10% per annum, the population could be in excess of 80 000 by the year 2 000.

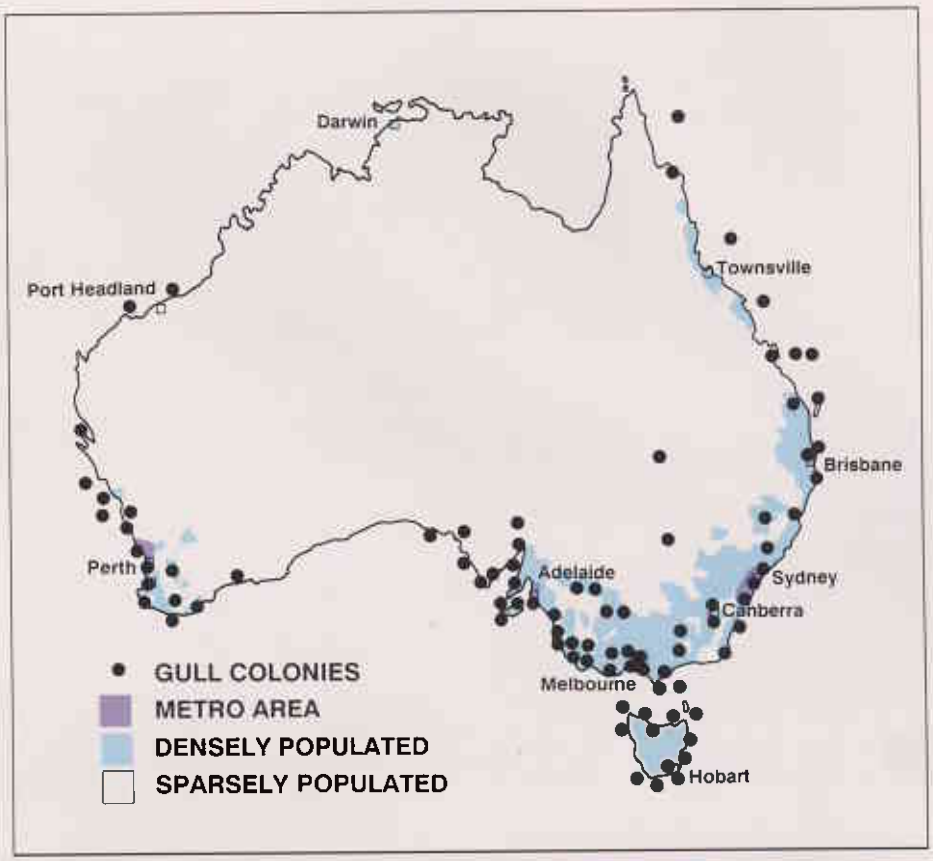
Culling has been used successfully in Great Britain and North America. Generally, adults are shot or poisoned with baits. Unfortunately, other animal species may also be shot or take baits. The cost is large since culling operations must continue for at least five years before the results are visible. Once culling is discontinued, gull numbers often rebound quickly if suitable food and nesting sites persist. Past culls suggest that if all 5 000 nesting pairs on Penguin Island were destroyed in one season, the population would probably rebound in as little as four years.

Culling eggs and chicks is hard work since gulls, particularly Silver Gulls, may re-lay several times. Unless intensive work is maintained, sufficient eggs and young will escape notice to supply the annual increase which can be supported on the available food supply. To destroy just some of the eggs and young does not change the rate of population increase since the natural mortality rate is 40 per cent, i.e. an egg only has a 60 per cent chance of surviving to breed.

The answer to altering gull numbers is to remove the reasons for large numbers of gulls, and their unwanted distributions, but this is considered uneconomic. Covering rubbish and stricter use of landfill sites rather than open dumps have proven effective gull control measures in Canada. By implementing such legislation, the city of Toronto reduced its breeding population of Ring-billed Gulls (*Larus delawarensis*) from 70 000 in 1977 to 10 000 in 1986. The cost to the taxpayer was considerable, but the results worthwhile. There are still gulls on the beaches, but the city is now cleaner, much to the relief of citizens and health authorities.

The public often views gulls as dirty scavengers, all but ignoring the benefits they bring to our society. Our beaches and city streets are undoubtedly freer of refuse due to gulls. It was the examination of gull eggs and chicks that alerted scientists to the deleterious effects of environmental contaminants in the aquatic ecosystems of North America. In the 1970s, gull eggs were found to harbour dioxin, DDT, PCB and mercury. Sampling is now carried out regularly, and gull eggs are used as indicators of both pollution levels and biotic resources.

The remarkable behavioural flexibility of gulls has enabled them to exploit human mismanagement of waste. The solution is clear, time-consuming and expensive. Effective control of waste disposal, not gull numbers, is the only satisfactory long-term answer.




R.D. Woolfer

If young are lost, gulls will often breed again in the same season.


R.D. Woolfer

Seagulls feeding each other


Jiri Lochman

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Editor: Liana Christensen
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Cover Photo

We've heard of wolves baying at the moon, but frogs? Obviously, this amphibian is not above displaying a little lunacy. Nor is the photographer, Jiri Lochman, who must have been moonstruck to get this superb shot.

EDITORIAL

Every year at this time the subject of bush fires becomes a preoccupation with land managers. Steps must be taken to ready fire-fighters and their equipment; hazards must be identified and minimised; education programs for neighbours and visitors must be renewed. Fires are inevitable. The combination of hot, dry weather, inflammable fuels in the bush and ignition from lightning or careless people will see to it that almost every day over the next few months Conservation and Land Management Staff or Bush Fire Brigades will be fighting a bush fire somewhere in the State. Because of modern technology and efficient fire control practices, land managers these days can very largely determine the fire regime which is to be applied in a given area. For example, in most of the land CALM is responsible for, the policy is to try to keep fire out, pending a better understanding of ecological requirements. In a small proportion of the CALM estate (notably parts of the south-west forests), regular, controlled burning is done. The aim of this operation is to minimise the risk of serious wildfires in places where values are highest. The most important value to be considered in the South-West is human life.

In this edition of *Landscope* readers are urged to recognise their individual responsibilities. Most importantly, these are to make their own houses safe from bush fires and to learn how to look after themselves and their families if a fire occurs.

This dual approach by land managers and householders will help combat the worst consequences of one of nature's most dangerous and predictably-occurring events: the Australian summer bushfire.

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For details please phone: 367 0437, 367 0439.

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