

Lessons from the Gulls of Kaikoura Peninsula

One of the world's longest-running bird studies focuses on a thoroughly common species, but its results are providing information that may help with the management of some of the rarest and most endangered.

For 43 years, red-billed gulls at seven colonies around Kaikoura Peninsula have been netted, banded, sampled and monitored. Some 100,000 chicks have been ringed, and 35,000 'breeding attempts' monitored. More than 5000 birds are colour-banded for individual recognition.

One long-term researcher, Dr Jim Mills, has been going to Kaikoura each year since 1964. He says the Kaikoura gull population has captured scientific interest because it has very little immigration or emigration, allowing researchers to calculate lifetime

reproductive rates and the contribution that an individual makes to the next generation. This is different to many bird populations where young animals disperse and breed away from the natal colony.

Data from Kaikoura has now led to a major finding with implications for the conservation of species — that is, relatively few 'high quality' individuals maintain the population from one generation to the next. While a large number of birds breed, most are continually unsuccessful.

At Kaikoura 24 percent of breeding females 'recruit' young into the breeding population. Over all, only 15 percent of the females produce 52 percent of the young 'recruits'. Dr Mills says this finding is consistent across the small number of long-term animal studies



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Dr Jim Mills returns to New Zealand from the United States each year to don overalls, hat and earmuffs and get among the red-billed gulls of Kaikoura. The biggest threat to the colonies today is predation by feral cats which now threaten the long-term viability of red-billed gull and white-fronted tern colonies at Kaikoura. Dr Mills links the increased predation to the introduction of the rabbit calicivirus disease — cats have 'prey switched'. One or two cats can, over the course of a breeding season, destroy 1000-3000 nests and kill large numbers of chicks and adults.

carried out throughout the world, ranging from insects, to birds, to elephants.

'If management of endangered species populations is to be effective it is important that these high-quality individuals are identified and carefully managed so their production is not jeopardised,' he says.

The next stage of the Kaikoura investigation will build up information about these high-quality birds. It will look at individual characteristics to see whether the more successful breeders, and those that live longer, have a better set of immunity genes; and whether females choose mates on the basis of their immunity genes, to maximise the chances of their own offspring's survival. The study is being funded by a Marsden Grant administered by the Royal Society of New Zealand.

The Kaikoura study had its beginnings as part of a nationwide study by the Ornithological Society of New Zealand to investigate the winter dispersal of red-billed gulls. Past years have shown

that most adults and young disperse from the colonies during autumn and winter, but most remain within 250 kilometres of Kaikoura. However, colour-marked birds have been seen as far away as Invercargill, Auckland and Greymouth.


Dr Mills is keen to get reports of further sightings to help build the pattern of this dispersal. Anyone who sees a colour-banded red-billed gull is encouraged to send details to the Banding Officer, Department of Conservation, P O Box 10 420, Wellington. The metal band should be read as a colour band, with the sequence running from top to bottom, noting which of the bird's legs the colours are on.

Dr Mills says long-term studies like Kaikoura have added a new dimension to the study of ecology, all thanks to the support of successive research directors of the Wildlife Service and the subsequent Department of Conservation — Doctors Gordon Williams, Malcolm Crawley, and Richard Sadleir. — Marieke Hilhorst

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