

Peninsula up to Banks Peninsula. The next most significant aggregation of these birds is centred on the Tautuku Peninsula with their northern limit at the Nuggets and their southern limit on the mainland at Slope Point in Southland. They are found on Stewart Island and its small offshore islands, on Campbell Island and the Auckland Islands but are absent from the Snares, Antipodes and Bounty Islands.

We shall never know what the population of the yellow-eyed penguin once was. Richdale considered that they bred in their thousands on the Otago Peninsula. It is sobering to realise that nowhere on the east coast of the South Island is there more than a few metres of unmodified coastal forest which is inhabited by penguins. Of even more concern is the fact that there is barely half a kilometre of coastal forest, modified or not, that still retains a colony of breeding penguins.

Greatest single threat

A comparison of some colony sizes in the Catlins area with Richdale's early figures

traordinary work on this species, he provided no formula for conservation other than his dedication and enthusiasm for this penguin. Many aspects of the bird's biology need urgent attention. Habitat type determines the density of birds, but where the density is high, populations tend to be subject to high levels of predation. There are 38 known breeding areas on the South Island. On average there are 1.6 pairs per hectare on the mainland. Of the 323 hectares with breeding penguins, only 137 hectares are theoretically afforded any sort of protection on the South Island, but if we exclude the one offshore island population adjacent to the mainland (Green Island off the Otago Peninsula) only 14 hectares providing protection for 32 pairs of birds are adequately protected. By adequate protection I mean here the **TOTAL** exclusion of farm stock.

Rarest of world's penguins

There are a number of compelling reasons why stock should be excluded from penguin breeding areas. The chief



Penguins co-exist very uneasily with farmstock.
All photos John Darby

A pair of chicks four months old. They go to sea for the first time at between 16 to 18 weeks old. It appears that they may spend all their first three months at sea and to the north of where they were born.



Antarctic and Stewart Island, this is not the case on the east coast of the South Island where even now, small remaining pockets of forest are rapidly being brought under the plough. While it is heartening that a few land owners have already taken the initiative to protect small colonies of penguins on their land, the total number of areas adequately protected on the South Island is still less than six.

In New Zealand we take the presence of this bird for granted. It is easy to forget that there is no other penguin quite like it anywhere else in the world; it is only found in New Zealand; it is the only member of its genus and is also the rarest of the world's penguins. It surely deserves more consideration for the protection of its nesting grounds than it presently receives.

suggests losses of up to 60% in some areas. It is not that the penguins have deserted or moved away, it is their habitat that has been moved. And it is this loss of habitat to farming and recreation that must remain the greatest single threat to them.

Stewart Island is probably the main stronghold of this species. But here too, as on the main Auckland Island, Campbell Island and the South Island, it shares its nesting grounds with feral cats.

What lies in the future of this bird? Its population is estimated at 1200 to 1800 pairs throughout its range. About 550 pairs are to be found on the mainland, about half of those are on the Otago Peninsula. Despite Dr Richdale's ex-

one is the continued loss or reduction in the integrity of the habitat. The second and no less important reason is that wherever stock are found so are the ubiquitous rabbit and hare. I believe that these animals provide the dietary mainstay for ferrets and cats for most of the year; penguin chicks in season are a bonus. If we can reduce the rabbits and hares in areas adjacent to penguin breeding areas then we can probably go some considerable distance towards removing a significant threat to the survival of penguin chicks.

But the main problem lies in the protection of what little remains of this penguin's habitat. While this appears to be secure on the islands of the sub-

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