



"Red-Yellow-White", a large chick caught on Table Hill in December 1988, about to be released after banding. It spent its first two winters as a juvenile at Awarua Bay in Southland, returning to Stewart Island in 1990. It bred for just one season on the Tin Range and is now missing, presumed dead.

**I**N LATE 1988, my wife Elaine Murphy and I began a comprehensive survey of the Stewart Island birds. We systematically searched the open mountain tops for breeding sites, checking one or two new areas each season. We also began banding chicks and adults; from our band sightings and aided by a few previous records, we found that after each breeding season the birds gather in three flocks. One of these is not on Stewart Island but at Awarua Bay, near Bluff. Band sightings there confirmed what had been suspected for some years – that the Awarua Bay flock actually consists of Stewart Island birds that cross Foveaux Strait to winter on the mainland.

Our banding also revealed that the largest flock, based around feeding grounds in Paterson Inlet, was highly mobile. Each day the birds fly across to Mason Bay on Stewart Island's west coast and roost in the sand dunes there, but at night they cross to the east coast and roost at The Neck. They are therefore commuting from one side of the island to the other and back, a round trip of some 60 km, every 24 hours. The third flock feeds and roosts on the remote tidal flats at the head of Cooks Arm, a shallow reach extending west from Port Pegasus at the southern end of the island.

By adding the numbers of birds in these three flocks each autumn and allowing for a few juveniles wandering elsewhere, we can now make an accurate annual estimate of total numbers. In 1990, the whole southern population was about 100-105 birds, a marked decline since Ross McKenzie's count 35 years earlier. The more we looked, the worse the situation became. We had hoped that the population might have stabilised at about 100, but in 1991 it was down to 80. Trying to be optimistic, we suggested that it might just have been an unusually bad

evidence suggests that predation is the main problem.

As there are no ferrets, stoats or weasels on Stewart Island, we think feral cats are the main predator, probably taking adult birds on the nest, although ship rats could be a problem too. Why this is happening now is something of a mystery. Cats and rats have probably been present on Stewart Island for 150 years or more – if they had been killing dotterels at the present rate for long, the population should have disappeared many years ago. Has the density, distribution or diet of



The New Zealand dotterels in some remote parts of Stewart Island are often very confiding – this bird on the ridge west of Mt Anglem is displaying at the photographer's feet, defending its nest. The Stewart Island dotterels are larger in some measurements, considerably heavier and usually have noticeably darker plumage than the North Island birds. These are all features to be expected in a population from a colder climate.

season, but 1991-92 was just the same.

This year there are only 60-65 birds; some of these are juveniles and some of the surviving adults may not have mates. There are probably, in fact, only about 20 breeding pairs left.

What is causing such a rapid decline? A lot of the problems faced by New Zealand dotterels breeding in the North Island simply don't exist on Stewart Island. Like most of the birds once found in the South Island, Stewart Island dotterels breed inland on exposed mountain tops, where there is virtually no disturbance by people, dogs, stock or vehicles. There is also plenty of suitable habitat available. However, our banding studies show that considerable numbers of adult birds are disappearing each season; this and other

cats on the island changed in the past 40 years? We simply don't know. Whatever the exact reasons for the decline, it can't go on much longer.

One of the main problems in trying to manage these birds is that their breeding grounds are widely scattered, in difficult terrain and there are few birds at each location. Protecting more than a few pairs is now feasible only at one site – around Table Hill, at the northern end of the Tin Range. Our findings suggest that if nothing is done to help the Table Hill birds within the next two seasons, the whole population will be past the point of no return – it will simply be too difficult and expensive after that to protect enough birds to ensure that the population survives.