# NEW ZEALAND DOTTEREL (Charadrius obscurus) — AN ENDANGERED SPECIES?

By SYLVIA M. REED

The scheme for individual banding of New Zealand Dotterel *(Charadrius obscurus)* was started by H. R. McKenzie in 1950. From 1950 to 1974 only fledglings were banded. Juvenile mortality is high. The colour bands at first used wore off in a very short time (McKenzie, 1978, *Notornis* 25: 186-194).

The scheme is a continuing project with the aim of learning more about this species' breeding biology, distribution and population trends. Much has yet to be learned.

The main difficulties have been to catch enough birds to band, and then to follow them up. Until the 1970s, observers were few and many areas infrequently visited. Even now, with the best of conditions, it is not easy to read band combinations accurately without the aid of a telescope. The birds seem to like to play a game of hiding their legs behind a ridge of shell or sand, or of running off with fast twinkling steps the moment you have sharply focused on their legs. They favour areas not too far from brackish water where it meets the shore. No birds are found on long stretches of completely dry sand or shell.

The first adult to be banded was a female caught on a nest at Mangawhai on 2/11/74; males are more difficult to catch as they do not normally incubate. Subsequent catching of adults has taught that, although the birds are quiet and easy to handle once caught, individual temperaments vary considerably. Nest trapping has not resulted in any nests being deserted. During 1980 and up to March 1981, 14 birds have been caught in nets (cannon and clap) in late summer and autumn when they are in small flocks. (Here, may I insert a plea for the use of the collective noun "trip"? It is both apt and distinctive.)

*Behaviour of marked birds:* Banded birds seen repeatedly and often in the same place become personal friends. Many have acquired names that help you remember the colour-band combination. For example, Gerald (GR-M) and his mate Gabbie (M-GB) are known to have bred together on the same territory from 1975 to 1981. They are excellent parents, rearing one or two chicks each year. Unfortunately none of the five chicks banded has been seen after its first winter. A fine example is Wimble (WB-M), the oldest known inhabitant who was last seen on 12/11/80, being then 30 years old (McKenzie, *ibid*). In spring 1978, his partner Wardle (WR-M) disappeared, and she has not been seen since. On subsequent sightings, Wimble has been on

territory but without a mate until 12/11/80 when he seemed loosely associated with another banded bird but apparently was not breeding. Wimble's temperament is as befits a placid old gentleman. In contrast is Regal (RG-M), banded as a chick at Mangere Airport on 15/12/74, who attempted to breed at the Mangere Oxidation Ponds in 1977. A feckless, flighty, restless type, she laid one egg, deserted it, laid another in a different area, deserted that, returned to the original area

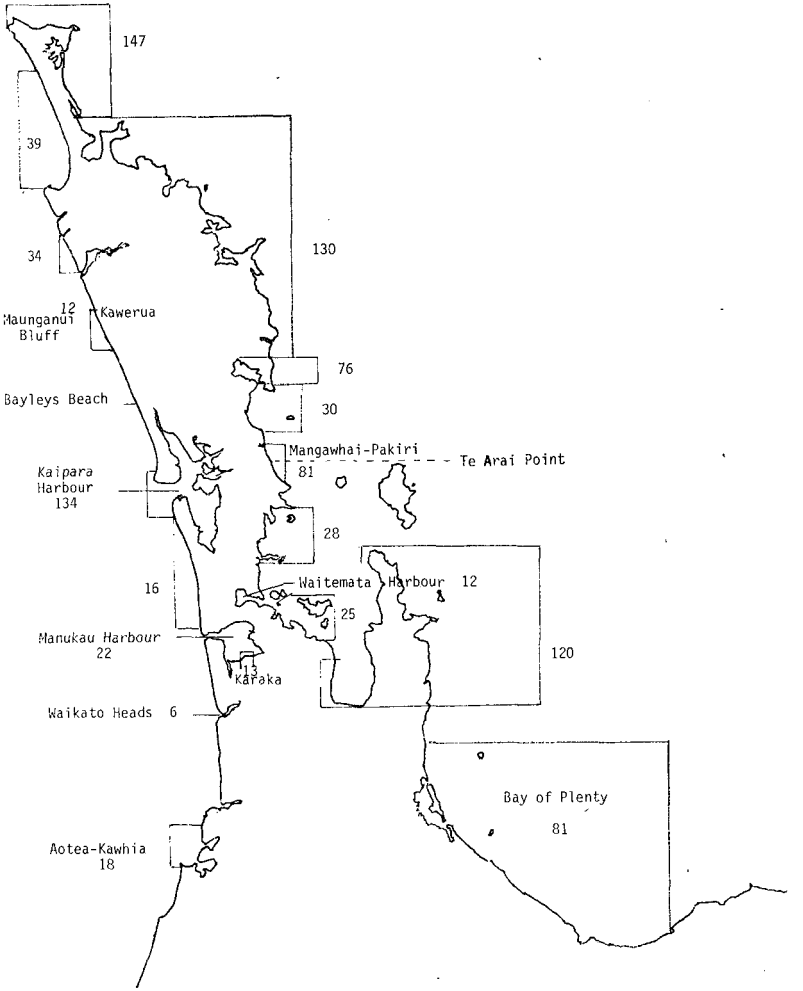


FIGURE 1 — Distribution and population of New Zealand Dotterels in the North Island. Coast not bracketed is either *unsuitable as dotterel* habitat or not recently surveyed.

and gave up ideas of any more breeding that season. In 1978-79 she turned up at Mangawhai but there was no evidence of her breeding there. She was last seen at Karaka on 26/1/81.

The area most consistently studied to date is Mangawhai-Pakiri (approx. 20 km of coastline). The population there remains fairly static at 70-80 birds. Except for Te Arai Point, this used to be one long stretch of beach backed by sand dunes, but in July 1979 a big storm created an island of the tip of Mangawhai Spit. Between 1974 and 1981, 33 birds (16 chicks, 14 adult females, 3 adult males) have been banded in the area. Few have wandered far. A count on 25/4/81 gave a total of 81 birds, 17 of which were banded. All these 17 had been banded in the area, which besides being a flocking area is also a favourite breeding ground. Although a Refuge, it is subject to a good deal of disturbance from dogs, motorbikes, and innocent beach users who are unaware of the damage they can cause when they wander and play close to the well-camouflaged nests.

The shellbanks at Karaka (see Fig. 1) have been a known breeding area for many years. Three females, banded when adult, are frequently seen there; one of them (Bluey, BY-M) commutes regularly between there and Waikato Heads, and she has attempted to breed in both places. One day she beat an observer back from the Heads to Karaka ! At Karaka, rats have been troublesome — controlled later by poisoning. Breeding success has remained low, and only two chicks are known to have fledged in the past three seasons. One permanent resident, Whitley (WY-M) has not managed to rear a chick since she was banded in 1976, and in the last two seasons, though paired, did not make any known attempt at nesting. Are some birds intermittent breeders ?

The Waitemata Harbour population, though small (c.12 birds) has had better breeding success. Pairs are widely scattered in different arms of the harbour, but in one season (1979-80) three pairs nested in the comparatively small area of shellbank and short mangroves at Shoal Bay while traffic on the main north highway roared past only about 100 m away. The females of each pair are banded and are often seen on an adjacent beach during the non-breeding season.

Although the banded birds are few in relation to total population, study of them has led to the following tentative conclusions:

1. Birds remain paired for life and can live up to 31 years.
2. Once established on a breeding ground, they return to the same area each year.
3. The flocking period is short, lasting approximately from February to early May, but some birds remain in pairs all the year round.

*Plumage changes:* An attempt has been made to follow plumage changes of breast and belly colour through the seasons, using the following code:

1 = pure white underparts
2 = some sparse smudges of colour
3 = colour more generally spread but still patchy
4 = well diffused, evenly spread over most of the underparts
5 = rich glowing chestnut, outstandingly bright from throat to belly

Only colour-banded birds are recorded. The broad conclusions from this survey are

1. In late April-May most birds are in category 1.
2. The degree of colour developed in the breeding season reaches the same category for the same individual each year.
3. Comparatively few males attain category 5.
4. For a short period, late in the breeding season, both male and female can have the same degree of colour.
5. Chicks also have their individual degrees of breast colour. Usually all colour is lost soon after they are flying. They may develop considerable colour in their first summer but it is unlikely that they breed until at least 2 years old.

*Population:* The best time to make a count is during the flocking season. This is possible within about 60 miles of Auckland City but difficult further north where observers are few and access is not easy; hence, breeding season figures are used in a few places. It is known that many breeding grounds are deserted in the flocking season.

Numbers on the map, taken from records made 1979-1981, show reliable counts for areas south of Whangarei; north of there, a few records are older. In assessing the population figure, the few sightings of birds south of the map area have been ignored as they would make little difference to the total. Numbers on the map add up to 1024. A. T. Edgar's estimate for the North Island was 1114 (Edgar, 1969, *Notornis* 16: 85-100). Allowing for birds missed from counting and areas not surveyed, the population appears fairly static.

The most recent report from the far south is of 21 birds at Awarua Bay, Southland, on 29/3/80, but the whole Stewart Island (or southern) population could be some 200 birds. In the south, the problem is lack of observers in the right place at the right time and very difficult access. The origin of the few birds which occasionally appear at Farewell Spit remains a mystery as no banded bird has been seen there.

A species with a total population of fewer than 1400 is surely entitled to be classed as "endangered."

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