THE BLACK-FRONTED DOTTEREL IN HAWKE'S BAY

By NORMAN MACKENZIE

In an earlier paper (*Notornis IX,* 269) on the Black-fronted Dotterel *(Charadrius melanops)* I have given an outline of the previous history of this species in Hawkes Bay. Since then it has been possible to follow their colonisation of the district and give a substantially accurate report of their present status.

The species has been closely studied since breeding was noted in 1961. As it was not possible to cover their entire available range, attention was concentrated on the area described previously, that is the Tutaekuri river between the Redclyffe and Brookfield bridges.

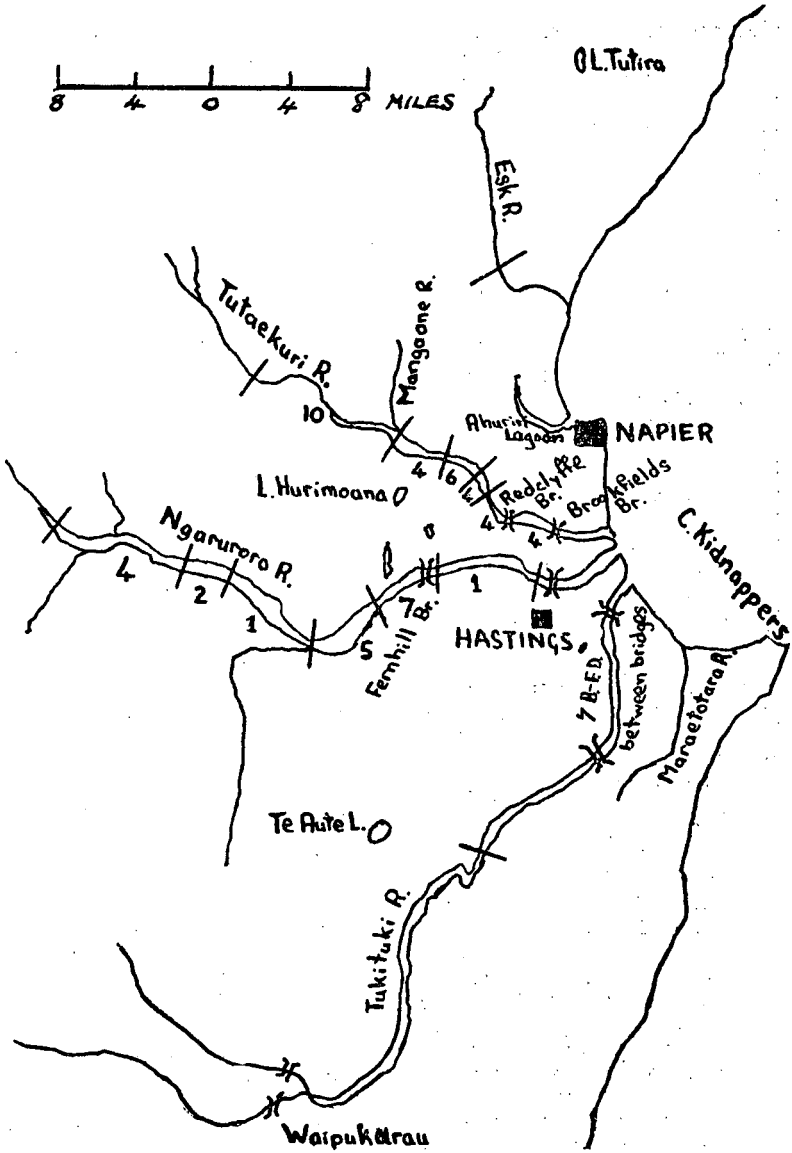
However, perhaps the most satisfying event was the decision to hold a Field Study Course in Hawkes Bay and to devote the major part of the time to a census of this "new" dotterel. In all, 31 observers took part in this study and completed a thorough traverse of the lower reaches of both the Tutaekuri and Ngaruroro rivers. There was no time to spare for a search of the Tukituki river but this was later covered by Mr. and Mrs. E. J. Trollope and myself. The traverse of the latter river completed a survey of all the rivers, streams and lakes in this part of the district from and including the Maraetotara in the east, the Tukituki and Ngaruroro rivers to the hills in the west, the Esk river to the North and Lake Tutira.

The counts for these areas are as follows: Tutaekuri 63; Ngaruroro 39; Tukituki 7; Total 109.

A noticeable feature of this colonisation by Black-fronted Dotterels has been their restriction to riverbeds and the larger rivers at that. There are numbers of small stony bottomed tributary streams, lakes and marshes in the district but apart from Lake Hurimoana they seem at the moment to show no interest in such places. This is a feature which seems rather surprising when one reads of their wide range of habitat in Australia but is perhaps an indication of the early stage of their colonisation here and a lack of population pressure.

The riverbeds so far occupied are characterised by their moderate to swiftly flowing waters with gravelly bottoms, flowing between wide beds of dry shingle which is sparsely covered with vegetation. They are subject to periodic flooding and seldom retain their courses for more than a season. The three main rivers of this part of Hawkes Bay, while serving a large catchment, all enter the sea within a short distance of each other. This, plus the fact that the Ngaruroro and Tukituki in their lower reaches are near Pakowhai little more than 1½ miles apart, offers an easy means of interchange and spread for local water-birds.

The 1961/62 season was apparently very favourable to the breeding of this species. The climatic conditions were equable with no floods and with a steadily dropping water level, which resulted in many land-locked pools along the river margins and much shallow water; perfect conditions for a large increase in the insect population. During this period the 2½ miles of the Tutaekuri river between the Redclyffe and Brookfield bridges were closely studied. This stretch held four pairs of birds which reared fifteen young, so it is evident that in a good year the natural increase can be significant.



Distribution of Black-fronted Dotterels in Hawke's Bay, 1962
(Figures indicate breeding pairs)

Adult birds, once mated, appear to be rather sendentary. The original four pairs remained in their breeding territory throughout the following winter and have again reared their young within a few yards of last year's nests. There is, however, a certain amount of flocking

after the season, when flocks of ten to twelve birds are not uncommon. Also noticeable at this time has been a gradual extension of range upstream, probably a normal dispersal of young birds as no more pairs have become established in the study area. Breeding evidently follows the Australian pattern (Hindwood and Hoskin, *Emu* 54, 232) in occurring over a long season. We have not been able to pinpoint the date of earliest and latest laying, but have found nests with full clutches in mid-September while a chick less than a week old was seen by Mrs. Trollope on the Ngarurоro on 26/3/63. Also B. D. Hankins and myself, while watching a family group on 9/2/62 noticed the adults copulating, the breeding season evidently being a long one. Eggs are laid on shingle beds generally ten to thirty yards from the water, the nest itself being a mere depression lined with tiny stones and a few pieces of dried vegetation. The cryptically coloured eggs lie loosely in the nest and we have seen several that have been cracked presumably through rolling against stones projecting into the nests. The incubation period is at present unknown. There is some evidence that three clutches are sometimes laid, three eggs being normal early in the season and two eggs in the third clutch. On one occasion four young were seen in a family group, see (*Notornis IX*, 269). The family pattern seems to be strongly developed. In the first couple of weeks after hatching both parents are in constant attendance on the chicks and even after the young become fledged at least one adult accompanies them at all times. The other adult forages further away, returning at intervals and at the latest just after dusk, when a series of churring calls is exchanged, while the returning bird is in the air.

When predators such as Harrier and Black-backed Gulls are overhead, the chicks freeze and are apparently invisible but the adults pay little attention. When forced to fly the whole family group merely moves a little distance upstream or down, and resumes feeding or resting.

Nests are not difficult to locate, once the mating territory is known. The incubating bird, it may be either male or female (pers. comm. G. J. H. Moon), leaves the nest when the observer is anywhere from 30 to 100 yards away and quietly walks away among the shingle. On its return it follows a devious path through the shingle and, if suspicious, will move away again and sit down elsewhere. Once convinced the situation is normal it will return more or less circuitously, look around and sit down on its nest. When incubation becomes well advanced the bird will often attempt to decoy the observer by deliberately showing itself while slowly leaving the nesting area, fluttering a wing and spreading its tail feigning injury. When the young are hatched this performance becomes even more impressive, the chicks will freeze, while nearby the parent flutters an apparently broken wing so energetically that the white underside of the body is often completely exposed; at the same time the tail feathers are widely spread to show the white outer margins and the bird commences a feeble cheeping. The adult seems to be quite willing to keep this up as long as the observer can endure it. It has not been possible to identify the food taken but it seems to be small aquatic insects at or near the water's edge.

There is a substantial difference both in appearance and habitat between this Australian dotterel and the Banded Dotterel (*C. bicinctus*). Smaller in size, Black-fronted Dotterels are generally found close to the

water's edge. They appear to be rather indifferent to the presence of humans and it is sometimes possible to walk well within a chain of them. They have a rather frustrating habit of turning their stern towards one when they realise they are being watched. The characteristic bobbing of the dotterel is well developed. If disturbed when feeding they run very swiftly away along the water's edge and at these times the body is held very nearly horizontal, not at all like the upright stance of the Banded Dotterel. The overhead circling flight of the latter when disturbed is also completely absent, while the call is much lighter in tone. The black primaries are very noticeable in flight and offer immediate and positive identification while the flight is more irregular and undulating.

Reference to the map will show that this species has not attempted to occupy the lower areas near the rivermouths. This may be on account of the brackish waters there, but is most likely attributable to the relatively unsuitable river margins, grassy banks on the Tutaekuri and high willow trees along the banks of the Ngaruroro. The highest populations at the moment are on the wide shingle banks of both rivers upstream from Fernhill and Brookfields bridges respectively with a steadily increasing distance between pairs as they move upstream, the last birds being found at Ngaroto on the Tutaekuri and Whanawhana on the Ngaruroro.

It is not clear why the Tutaekuri population should be so much larger than that of the Ngaruroro. The former is a smaller riverbed carrying less water with a much more evenly distributed population of Black-fronted Dotterel. The Ngaruroro is larger and much more turbulent, as two of the senior observers found out, and has a much more concentrated breeding area for a smaller number of Black-fronted Dotterel. It also has a much larger number of Black-backed Gulls *(L. dominicanus)*. 2125 as against 34 were counted and it was noticeable that as the number of Black-backed Gulls increased the number of Black-fronted Dotterel and Banded Dotterel decreased sharply. This may, of course, be coincidence and it is hoped that when a further census is taken in a few years' time, the position will be clarified.

The Tukituki river is evidently in the very early stages of colonisation with only seven known birds occupying a very large stretch of riverbed. This appears to be a very suitable area as it carries a large number of Banded Dotterel, a factor which generally seems to indicate that an area will be suitable for Black-fronted Dotterel. Both species seem to live amicably in the same areas with no evidence so far of any inter-specific rivalry. Nests of the two species have been found only ten feet apart. On this occasion it was noted by Mrs. Trollope that the Banded Dotterel appeared to be more aggressive and occasionally flushed the other species from the nest. However, the eggs were successfully incubated.

It would not have been possible to obtain such an overall knowledge of the *melanops* population without the co-operation of the members of the Society during the Labour Week-end Course in October, 1962. The rivers searched were traversed from the sea upstream to such a point where it became obvious that it would be most unlikely that any more *melanops* would be found. The actual searching was carried out by parties of two or more people, each party being led by an experienced member.

The opportunity was taken of making a complete count of other river inhabiting birds seen during the entire traverse. This census has been recorded in full detail by species for each section of the rivers and will form a most valuable basis for future studies.

I would like to offer my sincere thanks to the members of the Society who helped take the census and also to Mr. B. D. Hankins for much patient observation during the breeding season. Thanks are also due to the many landowners who gave permission to cross their properties during the census.

A CONDENSED CENSUS OF RIVER INHABITING BIRDS ON THE TUTAEKURI AND NGARURORO RIVERS

From the rivermouths to Ngaroto and to Whanawhana respectively, 20th and 21st October, 1962

Species	*Tutaekuri*	*Ngaruroro*
Black-fronted Dotterel	63	39
Banded Dotterel	372	514
Pied Stilt	274	323
Bar-tailed Godwit	–	3
White-faced Heron	8	7
Black Shag	21	18
Little Shag (a) Little Pied	6	–
(b) White-throated	16	9
Canada Goose	–	3
Grey Duck/Mallard	24	56
Paradise Duck	71	111
Shoveller	2	7
Black-backed Gull	34	2125
Black-billed Gull	4	–
Red-billed Gull	–	–
White-fronted Tern	–	–
Caspian Tern	1	–
Pukeko	–	3
Pipit	20+	12

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INDIVIDUAL AND SOCIAL BEHAVIOUR OF THE SOUTHERN BLACK-BACKED GULL

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INTRODUCTION

This paper presents some of the results arising from a two-year study of the general biology of the Southern Black-backed Gull *(Larus dominicanus)* in the Wellington area, in particular the roosting and breeding colony on Somes Island in Wellington Harbour. Aspects discussed include the principal calls and postures, hostile behaviour, roosting and general flock activities and some inter-specific relationships. An attempt has also been made to throw further light on the relationship of *L. dominicanus* to its northern hemisphere relatives. Though purely a southern hemisphere species, the closest relatives of the Southern Black-back lives in the northern hemisphere, forming the complex inter-breeding assemblage of subspecies of the Herring Gull