BIRD DISTRIBUTION — A NEW MAPPING SCHEME

By P. C. BULL

INTRODUCTION

The Society's recording scheme has yielded much useful information on the distribution of birds, particularly the rarer ones; common species, however, have been rather neglected despite their scientific interest and economic importance. One important reason for this may be the lack of any clear statement of existing knowledge to show where further observations are required.

In 1968 the writer suggested to Council that the current recording scheme should be supplemented by species lists compiled from as many as possible of the 10,000 yard squares of the National Grid; the North Island has about 1600 such squares and the South Island about 2000. The lists would allow the preparation of maps showing where a given species had been found, where it seemed to be absent and where it had not been sought.

A limited trial of the scheme was undertaken during September and October 1969 so that its potential could be assessed and any unforeseen problems recognised before the Society was committed to another continuing activity. Instruction sheets and record forms were supplied to members through Regional Representatives who also checked the completed lists before returning them to the writer. The main results of the trial are summarised below.

RESULTS OF THE TRIAL

About 150 members took part in the scheme and they compiled over a thousand lists of birds, covering 335 grid squares in the North Island (21% of all North Island squares) and 195 (10%) in the South Island; three squares were covered on Stewart Island. The number of lists per square varied from 1 to 15 with an average of 2. The small squares on the accompanying maps (whether blacked in or merely outlined) are the ones from which one or more lists were received. The coverage varies markedly from one part of the country to another and probably reflects the numbers and enthusiasm of local observers.

The number of species per list varied from 1 to 50 and averaged 15. In all, 134 species were reported, but many of these were mentioned only once or twice. Thirty-four species were recorded from more than 100 squares (Table 1); Blackbirds had the most records and were reported from 462 squares (87% of those from which lists were available). The birds listed in Table 1 tend to be large and conspicuous species or ones that are common on farmland or in other habitats strongly modified by man; these habitats seem to have been sampled more thoroughly than were native forests.

Obviously, lists must be compiled from many more squares before meaningful maps of distribution can be made. The maps accompanying this report are intended mainly to show the large areas from which there are at present no species lists but, as an indication of the kind of results that may be expected from the scheme, the maps also summarise information obtained during September and October 1969 on the distribution of White-eyes. These birds have been recorded from one end of the country to the other, but they seem to be encountered more commonly in the north than

the south. There are as yet too few records to show whether or not White-eyes are completely absent from any substantial area of country; probably they are not. As more lists are made in Southland many squares, at present seeming to lack White-eyes, may be found to have them.

For any given district, the number of lists that include White-eyes can be expressed as a percentage of the total lists available from that district (Table 2) and, provided the lists have been compiled in a uniform manner, this value is useful in comparing the frequency with which White-eyes are encountered in different districts. Table 2 seems to confirm the suggestion, already evident in the maps, that White-eyes are encountered more frequently in northern districts than in southern ones. The uniformity of this trend is intriguing, but too much importance should not be attached to it at this stage; some of the percentages may merely reflect differences between the habitats sampled in each district or in the manner in which the lists were compiled. If comparisons, such as in Table 2, are to have any value, it is imperative that all lists be compiled in exactly the same manner.

The scheme also promises to produce some useful information on the distribution of Mynas and Magpies which, unlike White-eyes, are absent from extensive areas of country; on Rooks, which are rapidly increasing their range; and on Goldfinches and Redpolls, the former being reported more often in northern districts and lowland areas and the latter in southern districts and higher country.

FUTURE WORK

As a result of the 1969 trial, Council has agreed to sponsor the scheme for a further three years. It is hoped that, within this period, enough squares will be covered to allow the preparation of maps showing the detailed distribution of at least the more common species. Such maps would be invaluable in showing the habitat requirements of these species and in detecting future changes in distribution.

Any member willing to compile species lists should contact his Regional Representative who has the necessary instruction sheets and record forms. This year's forms are the same as last year's ones, but printed stationery, designed to facilitate the handling of the data by computer, should be available in 1971. Lists from readily accessible areas are best compiled in spring and early summer when many species are more conspicuous and there is the chance of establishing the breeding status of some species: Lists made in any square (even those already covered) at any time are, however, welcome, and lists from remote areas are especially so. Annual reports, with a map showing the squares still to be covered, will keep members informed on the scheme's progress.

ACKNOWLEDGEMENTS

This report is based on the work of a great many people: the observers who compiled the lists, the regional representatives who organised the scheme locally, and the Ecology Division of D.S.I.R. who provided stationery and office services. The checking and tabulation of the species lists and the drafting of the maps were done by Miss Shona Robertson; the maps were redrawn for publication by the Cartographic Section of D.S.I.R.

TABLE 1. SPECIES RECORDED FROM MORE THAN 100 SQUARES

Species	No. Squares from which Recorded		
	North Is	South Is	Total
Blackbird	285	177	462
Song Thrush	258	165	423
Starling	262	160	422
Chaffinch	271	150	421
Skylark	231	150	381
House Sparrow	265	115	380
Black-backed Gull	209	163	372
Yellow Hammer	244	122	366
Harrier	227	123	350
Grey Warbler	252	92	344
Goldfinch	249	90	339
Fantail	247	60	307
White-eye	227	67	294
Hedge Sparrow	175	103	278
Mallard	144	124	268
Kingfisher	242	21	263
Pied Stilt	136	90	226
Pukeko	153	58	211
Greenfinch	126	84	210
White-faced Heron	125	70	195
Pipit	119	63	182
Grey Duck	122	60	182
Myna	178	-	178
Tui	140	37	177
Redpoll	49	117	166
Magpie	144	20	164
Black Shag	103	46	149
Red-billed Gull	109	32	141
Californian Quail	121	13	134
Bellbird	50	76	126
South Is. Pied Oystercatcher	20	103	123
White-throated Shag	97	13	110
N.Z. Pigeon	69	37	106
Shining Cuckoo	86	16	102

TABLE 2. FREQUENCY OF WHITE-EYE RECORDS IN DIFFERENT DISTRICTS

District	No. Lists Returned	Lists including White-eyes	
		No.	%
Northland	155	109	70
Auckland	209	119	57
Central North Is.	135	75	56
Hawke's Bay-Manawatu	174	72	41
Wellington	57	20	35
South Is. (except Southland and Otago)	80	39	49
Otago	61	18	30
Southland	236	45	19

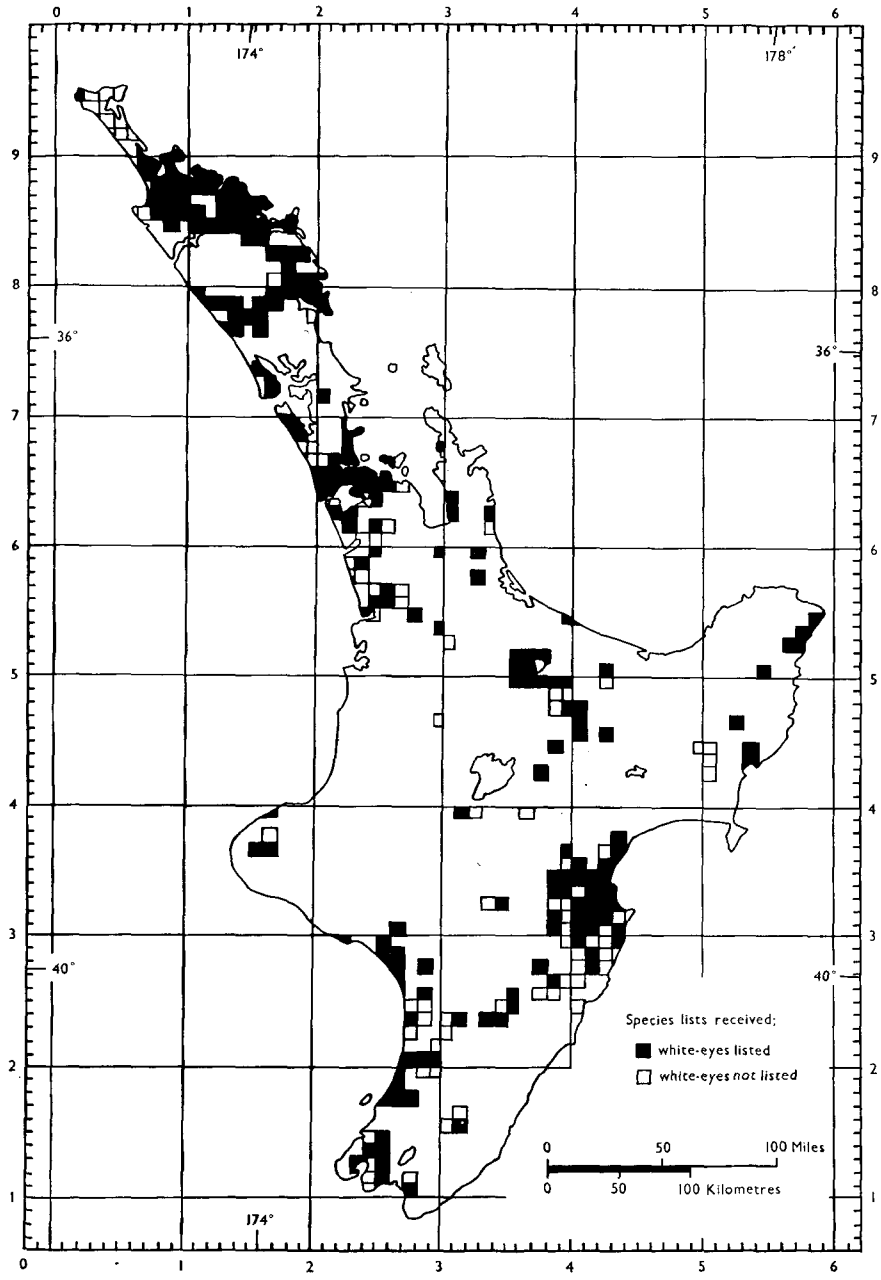

FIGURE 1 — North Island showing grid squares from which species lists were received.

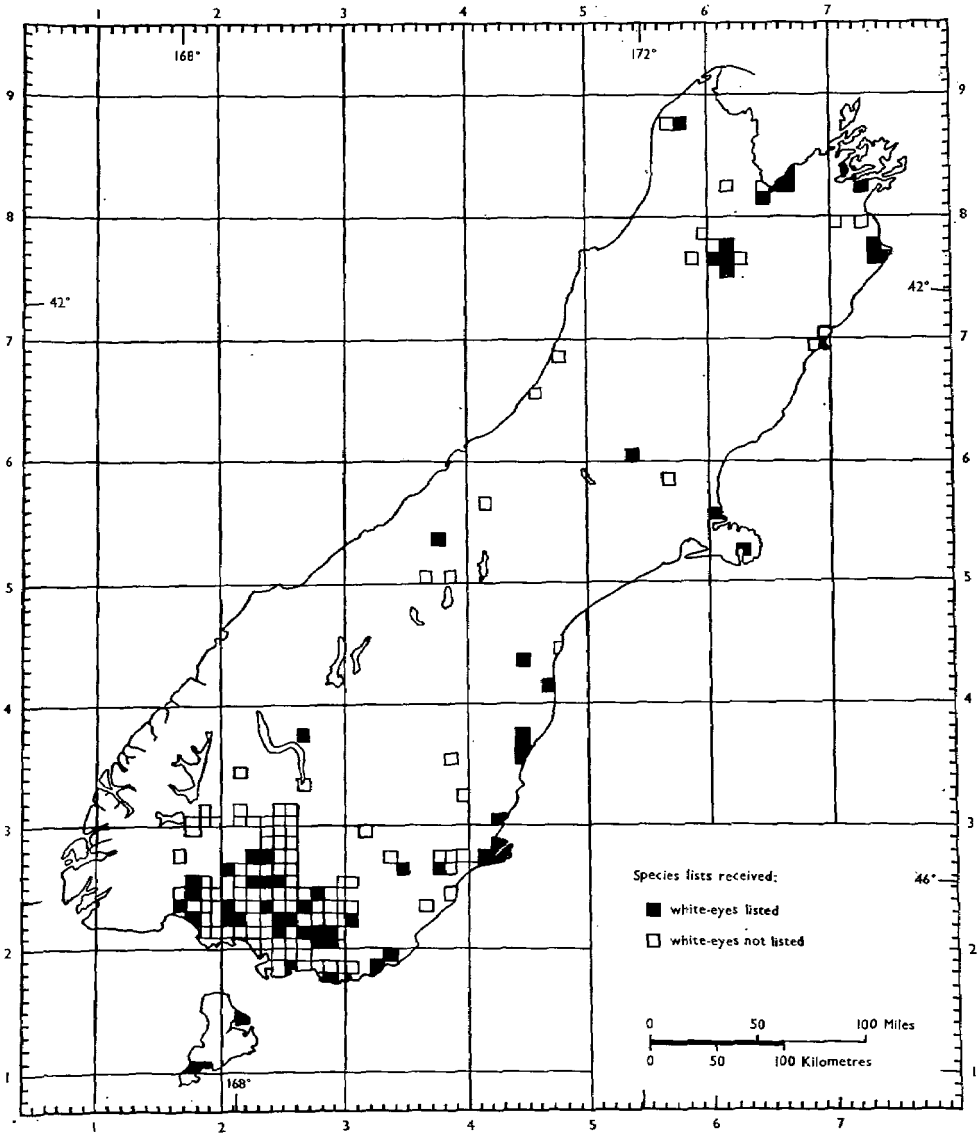

FIGURE 2 — South Island showing grid squares from which species lists were received.