DISTRIBUTION OF WEEDS IN NEW ZEALAND

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Summary

A scheme for recording the distribution of weeds in New Zealand is outlined. Classes of weeds to be surveyed are listed, and contributions to the scheme are invited.

INTRODUCTION

INFORMATION about the distribution of weeds in New Zealand is patchy and not readily available. Some is submerged in a diverse literature, but a great deal is unpublished. Further, there are large gaps in our existing knowledge of certain weeds. The reasons for this should be fairly obvious. The weed flora is large and widely dispersed, and some groups are notoriously difficult to separate. Moreover, botanical studies are wanting.

Few people are fully conversant with weed distribution on a national basis. On the other hand, there are many workers with a reasonable knowledge of local or regional weed distributions. The scheme presented here would help to draw this information together and thus determine more precisely the distribution of weeds and other plants of scientific interest.

DISTRIBUTION SCHEME

The scheme outlined below follows that begun by Wardle and MacRae (1966) for recording the distribution of New Zealand native plants, which in turn is adapted from the scheme used by Perring and Walters (1962) for British plants.

For convenience, New Zealand is divided into 12 recording regions; 6 covering the North Island and 6 covering the South Island. Each region is reproduced at a scale of about 16 miles to 1 inch on a cyclostyled sheet of foolscap size.

The basic unit of recording is the 10,000 yd grid square of the National Grid. Each cyclostyled sheet carries the same 10,000 yd grid squares as the Provisional 1 Mile Series (N.Z.M.S. 1), published by the Lands and Survey Department, together with a minimum of topographical detail. The large numbers on the cyclostyled sheet are sheet references of the N.Z.M.S. Topographical Series, and apply only to each individual sheet. The smaller, three-figure co-ordinate numbers correspond with those of the Provisional 1 Mile Series. Experience has shown that the recording sheets are best used in conjunction with standard maps.

Only one species is recorded on each sheet, and not more than one symbol is entered in any one of the grid squares. The following symbols are suggested (*cf.* Wardle and MacRae, 1966):

- (1) Presence of the species is confirmed by a voucher or herbarium specimen.
- (2) Species reliably reported to be present.

- (3) Published accounts or general knowledge of the area indicate that the species is almost certainly present, but there is not enough information to state positively that it is present in that particular grid square.

Records based on (1) are the most useful and those based on (3) the least useful to the collator.

It must be emphasized that this scheme is purely qualitative; the presence of one plant of a particular weed or of thousands is of equal significance, and means that the appropriate symbol is placed in the centre of the grid square. However, the observer may indicate precise localities of records by smaller dots, and lines may be drawn to separate areas where a species is present from those where it is believed to be absent. Brief ecological notes are desirable and these are best recorded separately or on the back of each sheet.

Observers should aim to collect at least one voucher specimen of a species for which there is a positive record in their area. In cases where two or more species are involved—e.g., *Hordeum* spp.—it is desirable to collect a greater number of specimens.

Field identification of the more difficult weeds could be made easier by preparing an additional cyclostyled sheet illustrating the chief diagnostic features and other points of interest to the observer.

LIST OF WEEDS

The following classes of weeds are suggested as a starting point from which a systematic, long-term survey could begin (one or more species or genera could be selected each year):

- (1) Species which are more or less widespread and continuously distributed and significant for one reason or another—e.g., noxious, poisonous, causing damage to produce or loss in production, injurious to livestock. Examples are *Hordeum murinum*, *Cytisus* spp., *Ulex europaeus*.
- (2) Species which are discontinuously distributed and significant for one reason or another. Examples are *Carex longibrachiata*, *Carduus nutans*, *Hypericum perforatum*.
- (3) Species which are discontinuously distributed and of no significance yet in this country, but are prominent weeds in others. Examples are *Galinsoga* spp., *Nardus stricta*, *Opuntia monacantha*.
- (4) Species either continuously or discontinuously distributed and of scientific interest for one reason or another—e.g., weeds of contrasting environments and land use systems, indicator plants. Examples are *Rumex acetosella*, *Holcus lanatus*, *Dipsacus sylvestris*.

CO-ORDINATION

The success of the above scheme will depend on the co-operation of willing and reliable observers. As mentioned previously, there are many workers of various organizations with a reasonable knowledge of local areas, and whose duties demand frequent visits to these areas. If the response from these people were encouraging, then a flexible network of observers could be established immediately. Clearly, the scheme requires as many reliable sources of information as possible.

Obviously such information would have to be collated, with the ultimate aim of preparing smaller-scale distribution maps. Plant ecologists of the Field Research Section, Research Division, Department of Agriculture, who are currently studying the distribution of certain weeds, are prepared to act in this capacity. Initially, the co-ordination would be done at Lincoln in close co-operation with staff of the Botany Division, D.S.I.R.

Contributors' names and suggestions may be forwarded to the writer c/o Plant Science Department, Lincoln College, Canterbury.

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