# SOME ASPECTS OF THE ECOLOGY OF THE HEDGEHOG

## *(Erinaceus Europaeus L.)*

## IN THE MANAWATU NEW ZEALAND

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## ABSTRACT

During the period from 1/1/70 to 24/6/71, 150 hedgehogs were marked and 356 resightings were recorded in a study area covering 16.28 hectares of pasture and trees. Population size and density are estimated and the seasonal changes in activity are described.

The sex ratio of the population and the apparent changes in this ratio due to behavioural dimorphism between sexes are discussed in relation to the body weights of the animals and to hibernation and breeding season. No detailed age structure is presented for the present population.

The breeding season and the number and size of the litters are discussed, as are the causes of mortality in the population. Dispersal of the population is seen as an important demographic parameter, and the sexual and seasonal influences upon movement are discussed.

Home ranges are investigated using two statistical methods; the convex polygon method and a probability ellipse method. The shape and size of individual's ranges are described using the first method, while the second method is used to describe synthesised ranges for

males, females and juveniles. The nest site and food locations are discussed in terms of foci of activity, and seasonal changes in movements were investigated and an argument is advanced on the hedgehog's territorial behaviour and social structure.

## PREFACE

When choosing a topic within the desired field of mammalian ecology, the length and economics of the study meant that certain restrictions had to be applied. Short studies of mammalian population ecology are usually complicated by the difficulties of catching enough individuals and the expense of traps. As hedgehogs are numerous in the Manawatu and are easily caught without traps, this species fulfills these two requirements. Further, the number of mammalian species within the region is limited and the majority of species have been or are being studied more intensively than this thesis allows. The exception to this was the hedgehog, the last ecological study in New Zealand having been carried out by Brockie (1958).

An appreciation of the critical assistance and patience of my supervisor, Dr R.A. Fordham is gratefully acknowledged.

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