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A Geographical Study of Some Factors
That Affect the Location of
Deer Farms in New Zealand

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of the requirements for
the degree of Master in Arts (Geography)
at
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Ian Darcy Mawson

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Darcy Mawson

ABSTRACT

This study of the rapidly-expanding industry of deer farming does not claim to be an economic treatise on the commercial viability of farming deer, nor does it claim to be a practical manual for prospective and established deer farmers. It is, however, a document designed and written to help the farmers of deer understand themselves, and their infant industry, a little more fully, and to help other interested persons gain an insight into the development of the exciting new enterprise of farming deer.

The underlying theme of the study is that the present distribution of deer farms throughout New Zealand, after some eight years of development within the industry, is explainable. Such explanations are expressed in terms of the past and present cultural attitudes within New Zealand to deer, the resultant legislation and official actions taken, the major modes of diffusion of both the underlying notion involved and the successful, practical methods that have evolved, the characteristics of the deer farming operation itself as well as of the people involved in it, and the relative productivity of the land employed for the farming of deer, particularly in view of man's changing knowledge of deer. Regional variations in the distribution of deer farms, and in other related phenomena, are examined, and possible explanations for these are sought.

Trends that have evolved within the industry up to the present time are examined, particularly in the light of more recently-gained scientific and empirical knowledge on both productivity and profitability. The future of the industry is then viewed with reference to these trends and to marketing outlets.

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INTRODUCTION

A common question asked of the writer in the course of this study has been, "What made you pick this topic?". The reasons for its choice are many and varied, but they can be generally summed up as:

1. The possession of a personal interest in deer.
2. The realisation that very little geographical research has been done in this field.
3. The hope that something of practical value would emerge.
4. The knowledge that most diffusion studies have been done after the innovation has been well-diffused; here was an opportunity to study an innovation and its diffusion while it was still in the early stages of development and diffusion.
5. The hope that the knowledge gained would be of value to the writer, even if to no one else, in his professional work as a practicing teacher.

Aims:

Many factors affect the location of man's economic activities. The major purpose of this study is to examine the spread and distribution patterns of deer farms in New Zealand to determine what factors have affected their location.

From the one broad hypothesis that was initially formulated, namely that the distribution of deer farms can be explained, several minor hypotheses were evolved for specific testing. The proof of these minor hypotheses would, in total, provide the proof of the major hypothesis. The main body of the text will not necessarily deal with the minor hypotheses in the order in which they are listed below, as the author will also be concerned with his second aim, that of producing an interesting and coherent account of the development of deer farming, the current economic viability of the practice of deer farming, and possible

future prospects of the deer farming industry.

Hypotheses:

1. That the distribution of deer farms in New Zealand can, over space and time, be explained.
2. That the recent development of the deer farming industry is based upon the cultural reappraisal of deer as a resource.
3. That the spatial distribution of deer farms is the product of public and official attitudes and policies that resulted from this resource reappraisal.
4. That the deer farming operation has characteristics that have been favourable to its adoption by farmers and that have caused the continuing expansion of the deer farming industry.
5. That deer farmers, as a group of individuals, tend to possess characteristics common to innovators.
6. That man's increasing knowledge of habitats suitable for deer has caused him to reappraise his selection of optimum locations for his deer farming units.
7. That the methods by which the basic notion of farming deer has diffused through the country has affected both the rate of adoption of the innovation and the spatial patterns of deer farms.
8. That the prime reason for individuals being attracted to the deer farming industry has been their great interest in deer.
9. That the nature of the groups of deer farmers who followed the initial innovative group, while still largely displaying an interest in deer for their own sakes, have been increasingly attracted by other factors, notably the apparent profitability of the units owned by the innovators.

Review of the Selected Literature:

It had originally been presumed that there would be little published material on deer and deer farming.

Although there may not be as much on farming deer as there is on other farming activities, there is, in view of the extreme youth of the deer farming industry, a fairly substantial amount of published information available.

For the historical aspects, Sharp's thesis "An Historical Geography of the Changing Attitudes to the Use and Abuse of Land by Deer" was found to be an extremely full account of the changing attitudes to, and reappraisals of, deer up to 1968, although the author at times had difficulty in remaining objective and emotionally uninvolved. It was an invaluable source of information.

Sutherland's thesis "The Wild Game Packing Industry in the South Island, New Zealand" was found to be helpful in parts. It did, however, provide a fairly comprehensive and succinct account of the development of, and the methods employed by, the game recovery industry.

The eight volumes of McKinnon and Caughlan provided an encyclopedic source of information on pre-1960 official reports and acts of legislation. This source, too, was invaluable.

For information on deer farming itself, two sources stand out for the amount of valuable information they contain. The many individual writers who have contributed to them will be acknowledged separately in the bibliography, and so will not be mentioned here. The first major source consists of both volumes of the "New Zealand Deer Farming Annual", 1976 and 1977-78, which have been published by the New Zealand Deer Farmers' Association. The second major source is the special volume of a journal dealing only with deer farming and associated matters, namely "New Zealand Agricultural Science", Volume 11, Number 4, 1977, which is the journal of the New Zealand Institute of Agricultural Science. The former volumes were largely written by deer farmers for deer farmers, while the latter presents much scientific and marketing research and opinions, but several writers have contributed to both.

Other sources, too, have been useful, but it is felt that the five mentioned above deserve special acknowledgement because of their special contributions to this thesis. The other sources will be acknowledged both in the text and in the bibliography.

Methods and Associated Problems:

After some initial reading, a questionnaire was drawn up. This questionnaire was then used for a pilot survey in the local Manawatu-Horowhenua region. Because of helpful suggestions from those interviewed in the pilot survey, several fairly minor alterations were made to the questionnaire. Multiple copies of it were then run off, and a copy was then mailed to every deer farmer as part of a nationwide survey.

How to define a 'deer farmer' posed a problem. Government statisticians tend to define a deer farmer as being a farmer whose income is at least half derived from deer, but it was soon realised that because the deer farming industry is still in its infancy, there would be very few such farmers about. This definition was inappropriate for the purpose of this study. It was decided to define a deer farmer, for this study, as being "any individual who was farming deer for profit, or at least with the full intention of eventually achieving a profit".

The Ministry of Agriculture and Fisheries had been approached for a list of deer farmers, and it was then discovered that they possessed the names of only those who had applied for a deer farming licence. The New Zealand Forest Service was subsequently approached, and it willingly provided the names of all those who had permits to hold deer in captivity. The Forest Service had noted those who intended to farm deer, those who wanted to keep deer as pets, and those who wanted to have deer for their own home consumption. The writer initially settled for the names and addresses of those in the first group, but in the course of his pilot survey, he discovered that some people who had been in the last two groups were now keeping deer

commercially, the major increase in profitability of producing deer and deer products having caused them to change their minds. The list of names was subsequently amended to include all those who, according to the files of the Forest Service, were in the last two groups. The definition of a deer farmer, however, was not changed.

The postal questionnaire was mailed to all the people whose names appeared on the amended list. Some three weeks after the mailing of the questionnaires, small reminder cards were sent off to the non-repliers.

As the responses came in, they were checked and it was found that a small number of them were from people who were, in fact, actually keeping deer as pets or for the purposes of home consumption. As these people did not fall within the definition of a deer farmer, their responses were destroyed and the names of the respondents concerned were deleted from the list.

It was then discovered that, although a further group of respondents had applied for the permit to hold deer in captivity with the intention of farming them, they had as yet not obtained any deer. This created a situation that was not covered by the definition, namely, at what stage an intending deer farmer could legitimately be called a deer farmer. Obviously the application for, and possession of, a permit to hold deer for the purpose of farming them was insufficient, as there is nothing to prevent an individual from obtaining such a permit and then changing his mind. In fact this particular instance was very rare, being discovered only in two cases. It was felt that if an individual had progressed as far as erecting the required fences for deer, then this, together with his avowed intention to farm deer, would suffice, the investment in fences more or less representing a commitment to subsequent investment in stock. The definition of a deer farmer was thus slightly altered to include, "any individual who was farming deer for profit, or who was setting up a unit with the full intention of farming them for profit and who had made a discernible,

evidential progress towards the attainment of that objective on his property".

Survey Returns:

Of the 383 postal questionnaires sent out, a total of 294 were returned (a further 4 arrived, but were too late for inclusion in the study). These 294 represented a very high return rate, 76 percent, but 36 of them could not unfortunately be used. The 36 unuseable returns consisted of the following:

- 8 from holders of pet deer
- 4 from home consumption units
- 4 from agents stating that the owners were abroad
- 2 from people who had sold their properties and who did not pass the questionnaire on to the new owners
- 3 from uncooperative people
- 5 were returned by the Post Office's "dead letter" office

A total of 10 were in the 'grey' area of having obtained a permit, but also of having done nothing else, and so were deleted by the definition used.

These returns that could not be used not only lowered the effective number of responses to 258, but some of them also reduced the total number of deer farmers. The 12 holders of deer for pets and home consumption, together with the 10 who had a permit only, represented a total of 22 deletions from the original list. Such deletions could not be done for the "dead letter" returns, or for those returns relating to properties where the original owners had sold and the new ones had not yet taken out permits, even though they may possibly have intended to continue farming deer on those properties.

The response rate thus became 258 out of 361, or 72 percent, and this is still a very high response rate for a postal survey. Furthermore, as it is not known how

many more owners there are of pet deer and home consumption units who did not respond as they considered that the questionnaire did not apply to them (although they had been asked to reply, stating that the questionnaire was not applicable to them), it is likely that the response rate for deer farmers is, in reality, even higher than the 72 percent estimated.

Not all respondents answered all questions. Those who had only recently set up their units and so had had no income from their deer could not, for example, indicate returns on the investment made. A few others omitted responses which they considered too personal, even though they had been assured of complete confidentiality. Thus the response rates for some questions are lower, perhaps in the order of 65 percent, but even so the findings based on them are held to be valid.