The Recreational Value of the Ruahine Forest Park

A survey to look at the demands and concerns of the users of the Ruahine Forest Park

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ABSTRACT

More knowledge about the users of a park leads to better management. Management systems reflect only what we know about outdoor recreation and recreationists. Part of this comes from research; the rest comes from the experience and value judgements of managers. Research on outdoor recreation is very important and helpful to policy makers, planners and managers of natural resources.

The present survey provides data about the demands, concerns and general information about the two biggest user groups of the Ruahine Forest Park. These are the recreational hunters and the trampers, which belong to clubs. 'User groups' can also be defined here as 'resource-based recreationists'. The resource is the Ruahine Forest Park and the satisfaction of the users is dependent on the natural environment of this particular Park.

The trends found within the present survey were a high participation of older age groups in the active outdoor activities, an increase in education level by the recreational hunters and an increase in the number of days people spend for hunting and tramping per year.

The hunters are mostly concerned about the competition with commercial hunters and about the aerial dropping of poison. This is the main reason for the inconsistent returning of the hunter diaries or kill returns and it shows the distrust towards DoC's management activities. Although, in general, the management of DoC was rated as good to fair, most hunters do not want to provide DoC with much information about deer densities and locations, via hunting diaries.

Many respondents of the present survey would like to see more

development in the Ruahine Forest Park; these were more long and short tramping tracks, more signs for route marking, and more provision of information.

The concerns mentioned by hunters and trampers focused mainly on particular tracks and huts and on the new established standards for facilities and services. The appreciation of the provided facilities differs per user group in importance. However, luxurious huts with gas-heating and gas-stove are not ranked as important by both groups and it seems that the users of the Park are satisfied with the provided facilities present and do not want to see any changes in the amount and status of huts.

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TABLE OF CONTENTS

LIST OF MAPS AND TABLES

List of Maps:

List of Tables:

LIST OF FIGURES

List of Figures

CHAPTER ONE: - Introduction

This research was conducted to identify and discuss the demands and concerns of recreational users of the Ruahine Forest Park. It will also briefly discuss the management network of a natural resource and some of the issues, which will influence the management of outdoor recreation in New Zealand. As a foreigner the researcher wanted to understand how the management of natural resources is carried out in New Zealand and how recreation and conservation co-exist in New Zealand.

Research on outdoor recreation is very important and helpful to policy makers, planners and managers of natural resources. In New Zealand, the first research on outdoor recreation was conducted in the 1970's and repeated earlier research done in especially the United States (Department of Conservation, 1995).

While in the past outdoor recreationists were identified in traditional tramping clubs or other organisations recreation is now largely unstructured. According to Allan and Booth (1992) activities are increasingly being pursued with family and friends rather than organised groups.

In recent years a trend has developed that shows an increasing number of outdoor activities by individual multi-activity recreationists. The task of labelling and analysing park users by their activity is often very difficult – a hunter one day may be a mountain biker or tramper the next day. This is the rationale for deciding to survey only the traditional tramping and hunting clubs for the present research. These two groups have also been identified as the biggest user groups in the Ruahine Forest Park.

The survey has provided data about the demands and concerns of the users of the Ruahine Forest Park and also about the users themselves. 'User groups' can also be defined here as 'resource-based recreationists'. The resource is the Ruahine Forest Park and the satisfaction of the users is dependent on the natural environment of this particular Park.

There are serious questions over how satisfaction can be measured, but as mentioned by Perkins (in Department of Conservation, 1995: pg. 406)

> "... satisfaction is usually said to depend on the match between expectations (of a place, event, activity, etc.) and what actually happens (the 'performance'). Expectations are influenced by past experience, available information (both external and internal, the latter in the form of memories), attitudes, cognitive style and personality. Like reasons and needs, expectations tend to be situation-specific and short-term".
>
> The information gained from the user groups will be of benefit to park managers in predicting future use patterns and management needs.
>
> "Predictions regarding recreation behaviour would have greater validity if more was known about attitudes, motivations, and perceptions affecting recreation decision making" (Pigram, 1993).

More knowledge about the users of a park leads to better management. Management systems reflect only what we know about outdoor recreation. Part of this comes from research; the rest comes from the experience and value judgements of managers.

In 1980, Lincoln College in Canterbury undertook a study about the

Mountain Land Recreationists in New Zealand (Aukerman & Davison, 1980). It concentrated on the wants, needs, and behaviour of New Zealand mountain recreationists. The basic theme of this report was that those people managing land for recreation activities must understand the motivation of recreationists. According to this report the greatest problem facing recreational planners, managers, and the recreationists themselves is a lack of information on the recreation user. The greatest requirement is to know more about these people. Without knowing the needs of recreationists, managers and planners will continue to impose their own beliefs as to other people's needs.

The information collected within this survey has been compared with earlier surveys, which were undertaken on similar topics and areas. This comparison shows the trend in outdoor recreation, like changes in motivations, age structure, education levels, etc.

CHAPTER TWO: - The Department of Conservation

The Department of Conservation (DoC) manages the Ruahine Forest Park. This department was created in 1987 after the development of the Conservation Act in the same year. It took over parts of functions of several other departments, for example; the Department of Lands and Survey (DLS); New Zealand Forest Service (NZFS); Wildlife Service of the Department of Internal Affairs; New Zealand Historic Places Trust; and the Ministry of Agriculture and Fisheries. It is structured with a Head Office and 14 conservancies (regions) (see Map 2.1) and is responsible for approximately one-third of New Zealand's total land area, which means it operates at national, regional and local levels.

The Department of Conservation is the central government agency responsible for the conservation of New Zealand's natural and historic heritage. Its role includes (http://www.doc.govt.nz):

- Administration and management of national parks, forest parks, historic sites and offshore islands, rivers and the coast
- The provision of recreational facilities for the public to enjoy New Zealand's conservation lands, including huts, tracks, and visitor centres
- Administration and management of marine protected areas and marine reserves
- Protection and enhancement of native birds, animals, invertebrates, marine mammals and their habitats
- Protection of freshwater fisheries
- Conservation advocacy.

Map 2.1 DoC offices in New Zealand

The Hawke's Bay and the Wanganui Conservancies have administered the Ruahine Forest Park since 1976. The Park lies within parts of the Hawke's Bay and Manawatu-Wanganui Regions. Included in the Hawke's Bay Region are the central Hawke's Bay and Hastings Districts. The

Tararua, Manawatu and Rangitikei Districts are included in the Manawatu-Wanganui Region. The Hawke's Bay Conservancy manages the East Side and the Wanganui Conservancy manages the West Side of the Ruahine Forest Park.

The Park has been administered by the Department of Conservation as a "Conservation Park" under Section 61 of the Conservation Act. The Park will continue to be managed as a Conservation Park according to the provisions of the Act, but for reasons of familiarity the term "Forest Park" will remain. Section 19 of the Act stipulates how Conservation Parks will be managed:

"Every Conservation Park shall be managed so that its natural and historic resources are protected, and subject to this, to facilitate public recreation and enjoyment."

CHAPTER THREE: - Objectives of the Research

3.1 Problem Statement

The Department of Conservation has very little information on the demands and the concerns of the users of the Ruahine Forest Park. This makes it difficult to create management plans, which should satisfy the needs/wishes of the users, and at the same time protect the natural and historical values, for this area.

3.2 Null Hypotheses:

- The Ruahine Forest Park Management Plan, prepared by the Department of Conservation, does not satisfy the expectations of the users of the Park.

- Due to a lack of information about the users of the Ruahine Forest Park, the Department of Conservation is not able to provide enough protection for the natural and historical values of the Ruahine Forest Park.

3.3 Aim of Research

To provide the Department of Conservation with information on the users of the Ruahine Forest Park.

3.4 Objectives

1. To identify the users of the Ruahine Forest Park

2. To identify the demands of the users regarding their use and expectation of the Park

3. To identify the concerns of the users and the Department of

Conservation

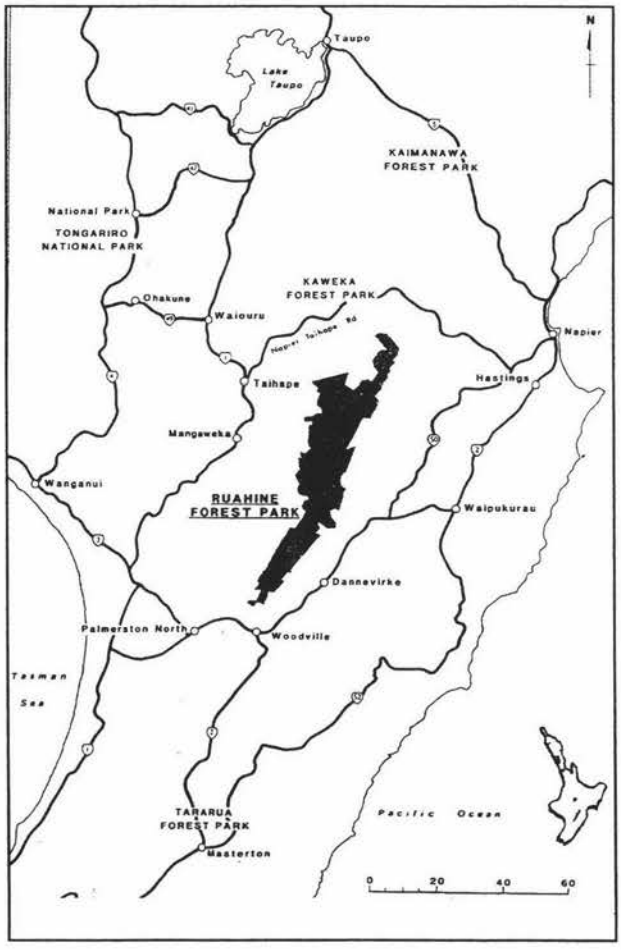
4. To assess the current management system of the Department of Conservation

5. To suggest what the Department of Conservation might do to improve the management of the Ruahine Forest Park

CHAPTER FOUR: - The Ruahine Forest Park

4.1 Introduction

The Park is situated on the North Island of New Zealand and is part of two regions; the Hawke's Bay Region and the Manawatu-Wanganui Region (See Map 4.1). The natural feature of the main ranges forms the border between these regions, which runs through the middle of the Park.



Map 4.1 Locality of the Ruahine Forest Park

It is approximately 100 km long and runs from the Manawatu Gorge in the south to the Taruarau and Ngaruroro Rivers, which form the

boundary between the Ruahine Forest Park and the Kaweka Forest Parks in the north. The Park is comparatively narrow. The southern third is little more than 8 km across, widening to 24 km in the north.
The fenced border of the Park creates a distinct dividing line between the Park and the surrounding farmland, which extends on either side to the foot of the main slopes (Department of Conservation, 1992).

4.1 Topography and Climate

The Park includes the main Ruahine Range, plus four subsidiary ranges, the Ngamoko, Whanahuia, Hikurangi, and Mokai-Patea Ranges. Altitudes range from about 450 m along the foot of the ranges to 1110 m on the southern part and 1375 m on the northern plateau. The highest peak on the main range is Rangioteatua (1,704 m). The highest peak in the Park is Mangaweka (1,733 m), which is part of the Hikurangi Range.

The Ruahine Ranges are characterised by a cool, cloudy climate with high annual rainfalls and very heavy rain during periodic cyclonic storms from the south or south-east. Average annual rainfall varies from 1150 mm near the north-eastern foothills, to about 5000 mm on the top of the range. Daily rainfalls up to 150 mm can be expected at any time of the year. Snow may occur at the highest levels at any time of the year and frequently lies above 1,400 m from May until October (Department of Conservation, 1992).

4.3 The Geology and Soils

The Ruahine Range is considered to be 1 to 2 million years of age, which is geologically very young and is being uplifted rapidly (approximately 4 mm per year).
The physical structure (steep, unstable landforms) of the ranges combined with high rainfall, the frequency of cyclonic events, and strong

winds, results in a high rate of natural erosion. The vulnerability of the ranges to erosion has many implications for management of the Park, particularly in the areas of soil and water conservation, revegetation and animal control (Department of Conservation, 1992).

4.4 The Vegetation of the Ruahine

Vegetation ranges from alpine grassland and herbfields, down through subalpine shrublands, to beech or kamahi dominated forests, and to podocarp-broad-leafed forest types at lower attitudes. In the far north areas of fire-induced manuka and kanuka forests are found, and tussock grasslands extend into the Park from the Mangaohane Plateau. The basic pattern consists of forests rising up to 1370m, above which it is replaced by subalpine shrubland, sometimes extending to 1430m. Alpine grasslands and herbfields may range from 1100m to the summit. Beech is dominant north of the Pohongina River, but is virtually absent from the southern third of the range. Mountain beech is the dominant forest species at higher altitudes, while red beech predominates at lower altitudes. Both black and silver beech are present in the Park, but to a much lesser degree. The upper forest may comprise kaikawaka, mountain beech, pink pine and Hall's totara. Lowland podocarp forests occur on the flanks of the ranges, and in a few areas within the ranges, such as around Lake Colenso and near Makirikiri. Predominant podocarp include rimu, kahikatea, miro, matai and totara (Department of Conservation, 1992).

The huge expanse of Tupare (Leatherwood) *Olearia colensoi* that covers the southern Ruahine tops is the largest, unbroken mass of leatherwood in New Zealand (approximately 25 km long and up to 2 km wide). It also grows throughout the rest of the Park, between the tall forests and the open tussock and rocky ridgelines (Ombler, 1993).

Snowgrass or red tussock dominates alpine grasslands. Tall, snow tussocks dominate the central ranges, which is the most extensive area of mid-ribbed snow tussock in the North Island. Further north, red tussocks blanket the plateau country. Red tussock is a feature of the dramatic landscapes of the central North Island of New Zealand. However, much has now disappeared to farmland, which makes the tussock land of the northern Ruahine Ranges all the more significant. North of the Park boundary, botanists have recorded several hundred species of indigenous plants, many of which are found nowhere else in the North Island (Ombler, 1993).

The forest, scrub, and grassland cover of the range is of both regional and national value. The vegetation plays an important role by intercepting rainfall and protecting the erosion prone soils from rainwash, wind, and frost. Due to this fact the major part of Ruahine Forest Park is classified as a protected zone for the conservation of soil, water, indigenous flora, and fauna (New Zealand Forest Service, 1977). The management of the Park needs to be consistent with the needs of soil and water conservation, so the objective of the Department of Conservation is to minimise the risk of fire and to control introduced wild animals, rather than build river control works or plant exotic vegetation within the Park.

Table 4.1. The main changes in forest of the Ruahine Range from 1870 to 1970

Period	**Main changes**	**Causes**
Pre – 1870	Forest generally healthy and complete with only slight modification	Maori fires and bark stripping
1870 – 1920	Clearing of foothill forests and also of some part of the range. Sheep and cattle present.	European fires. Sheep and cattle grazing
1920 – 1940	Severe modification of beech forest. Goats noted in south, opossums noted in north	Deer

1940 – 1950	Canopy defoliation in rata-kamahi forest. Damage to kaikawaka.	Opposums and deer
1950 – 1960	Heavy mortality in rata-kamahi forest. Reduction or elimination of under storey species throughout range. Defoliation of red beech. Widespread ill thrift of kaikawaka. Increase in frequency of 'slips'.	Deer, goats, insects. Unknown Forest instability.
1960 – 1970	Widespread collapse of former rata-kamahi forest. Introduction of conifers and willows for erosion control. Continuing ill-thrift of kaikawaka. Continuing high incidence of slips. Some indication of forest recovery.	Death, decay, winds. Concern for stability. Decline in deer numbers.

Source: Cunningham, New Zealand Journal of Ecology, Vol. 2, 1979

4.5 The Fauna (Native and Introduced Species)

The Park provides a sanctuary of natural habitat for nearly forty species of native birds Rare and threatened[1] species include North Island Brown Kiwi, Blue Duck, NZ Falcon, North Island Kaka, Powelliphanta Snails, Long-tailed Cuckoo, and North Island Robin. Other recorded species in the Park include Whiteheads, Yellow-Crowned Parakeets and Wainuia Snails (A bird survey in 1983/84, see Appendix 4 and 5). The existence of native bats in the ranges is unknown as yet but they are present around the southern Hawke's Bay Region.

Cattle and sheep have been present in some parts of the ranges since the 1880's. Cattle grazing in the Park was a common practice well into the first half of this century and Merino Sheep were stocked especially on the northern areas of the ranges. Today grazing no longer occurs in the Park but stray sheep, goats, and particularly cattle from adjoining farmlands do pose a localised problem at times.

[1] As referred to in "The Conservation Status of New Zealand Wildlife" (Bell 1986, stated in Department of Conservation 1992)

Possums were first liberated in New Zealand to create a fur industry. The first liberation was in the 1890's and by the 1920's several liberation's had been made on both sides of the Ruahine Ranges. The effects of Possums on the forest in this area became apparent and possum trapping was encouraged in an attempt to reduce numbers. Other introduced animals present in the Park include Mice, Rats, Stoats, Weasels, Ferrets, feral Cats, Rabbits, Hares, Hedgehogs, and stray Dogs (Department of Conservation, 1992).

4.6 Deer in the Park

Red deer and Possums have probably had the most pronounced effect on the vegetation of the Park over the last century. Red deer are found throughout the Park, while Sika deer are found in small numbers in the north of the Park. Red deer first appeared in the north-western Ruahines between 1890 and 1900, probably from the Matapiro liberation of 1883. In the early 1930's deer numbers peaked in the northern Ruahines and a few years later in central and southern areas. In 1938 Government control was started by the Internal Affairs Department and was later intensified in the 1960's under the NZ Forest Service. A network of huts and tracks was established at this time and now form the basis of recreational facilities used by present-day recreationists. According to Cunningham (1979), the Department of Internal Affairs carried out the first Ruahine deer destruction operation in the summer of 1938-39, killing 4718 deer.

The development of a commercial market for feral venison in the late 1960's attracted many hunters to the Park. Later the advent of commercial helicopter hunting resulted in a whole new industry being based in the ranges. As a result of the pressure from recreational and

commercial hunters, deer numbers dropped by about 90% and have been kept below the 1930's level ever since (Department of Conservation, 1992).

4.7 Human history in the Park

- Maori history

Maoris have been in and around the Ruahine Ranges for hunting, fishing, plant collection, and other purposes. The area provided the Maoris with food and fibre and it remains of spiritual and cultural significance to Maori people. The many stories and legends associated with the ranges are still unrecorded. No archaeological sites of early Maori origin have been recorded in the Park as yet, although a number of sites have been recorded on its surrounds. The tribes, which are associated with the range, include Ngati Kahungunu, Ngai Tahu, Ngati Apa and Rangitane, plus the many Hapu (Subtribes) included in these tribes.

- European history

Reverend William Colenso, an early explorer and botanist was one of the first settlers to collect data for records. Colenso made the first collection of NZ alpine plant species in the ranges in 1854 during one of his several epic journeys across the range in the company of Maori guides.

- Historic places of the Park

Mineral prospecting was undertaken in the ranges as early as the 1880's. Copper was discovered in the Coppermine Creek Area of the southern Ruahine in the late 1880's and small sporadic mining operations continued until the 1930's. A small number of tramlines, a magazine shaft, and regenerating bush bear testimony to these activities. This is the only site in the Park, which is recorded as an archaeological site.

To date no traditional sites have been recorded, also historic buildings have not been classified. However, according to the management plan several huts in the Park warrant protection because they represent a significant era in the history of the ranges. The DoC, in liaison with the NZ Historic Places Trust will investigate the historic values of these huts and if appropriate will take steps to protect these values.

4.8 The Present Uses of the Park and the Recreational Opportunities

- Recreational significance

Recreation is becoming more important in New Zealand society and the Ruahine Forest Park is an important recreational resource in the North Island. It is situated between two significant urban areas: Palmerston North on the western side, with its large population of students, and Napier/Hastings on the eastern side.

Tramping, hunting and fishing are considered the most popular kinds of outdoor recreation for the local population in New Zealand and as a result there are many tramping clubs, hunters associations, and fishing groups situated in the areas explained above. The interior of the park is especially famous for tramping and recreational hunting. However, an increasing number of people are visiting the fringes of the Park and utilising the area for picnicking, fishing, day walking, swimming, camping, and nature studies. Outdoor Educational Centres are situated at Wakarara, Pohangina (Totara Reserve YMCA), Oroua (Sixtus Lodge), and in the Kawhatau valley. International visitors are not common in the Ruahine Forest Park. However, the two most popular huts (Rangiwahia Hut at the western side and Sunrise Hut at the eastern side of the Park) are utilised by international visitors, due to their easy access, good track conditions and the quick access they provide to the subalpine tops of the

Park.

Tramping opportunities range from day walks on well-graded tracks to multi-day trips through tracked and untracked country. Trampers and hunters today use a complex network of huts and tracks developed for animal control purposes in the 1960's and 1970's (see Map 4.2, pg. 20).

As mentioned earlier the Ruahine Forest Park contains a large number of introduced animals, which are highly preferred for recreational hunting activities. Red deer are found throughout the Park, while Sika deer are found in small numbers in the north of the Park. Possums stray Goats and Pigs are also found and are highly valued by recreational hunters.

The Ruahine Forest Park also has some very important indigenous flora- and fauna species. These are in need of protection due to their existence only in the Ruahine Forest Park and not elsewhere in New Zealand (see Appendices 5 and 6).

There are some rafting and canoeing opportunities on rivers in the Park, although the best stretches of water are found outside Park boundaries, particularly on the Rangitikei River.

Some river angling occurs in the Park, mostly in conjunction with other activities such as tramping and hunting. The most popular rivers include the Whakaurekou, Kawhatau, Waikamaka, Maropea and Pohangina. The Park streams and catchments are important spawning areas for trout.

The Rangiwahia Skiing Club erected a hut in the Whanahuia Ranges in the 1930's to develop snow skiing. But with the development of skiing on Mt Ruapehu and the unreliability of snowfalls in the Whanahuia Ranges,

interest quickly declined. However, the ranges are sometimes used for cross-country skiing.

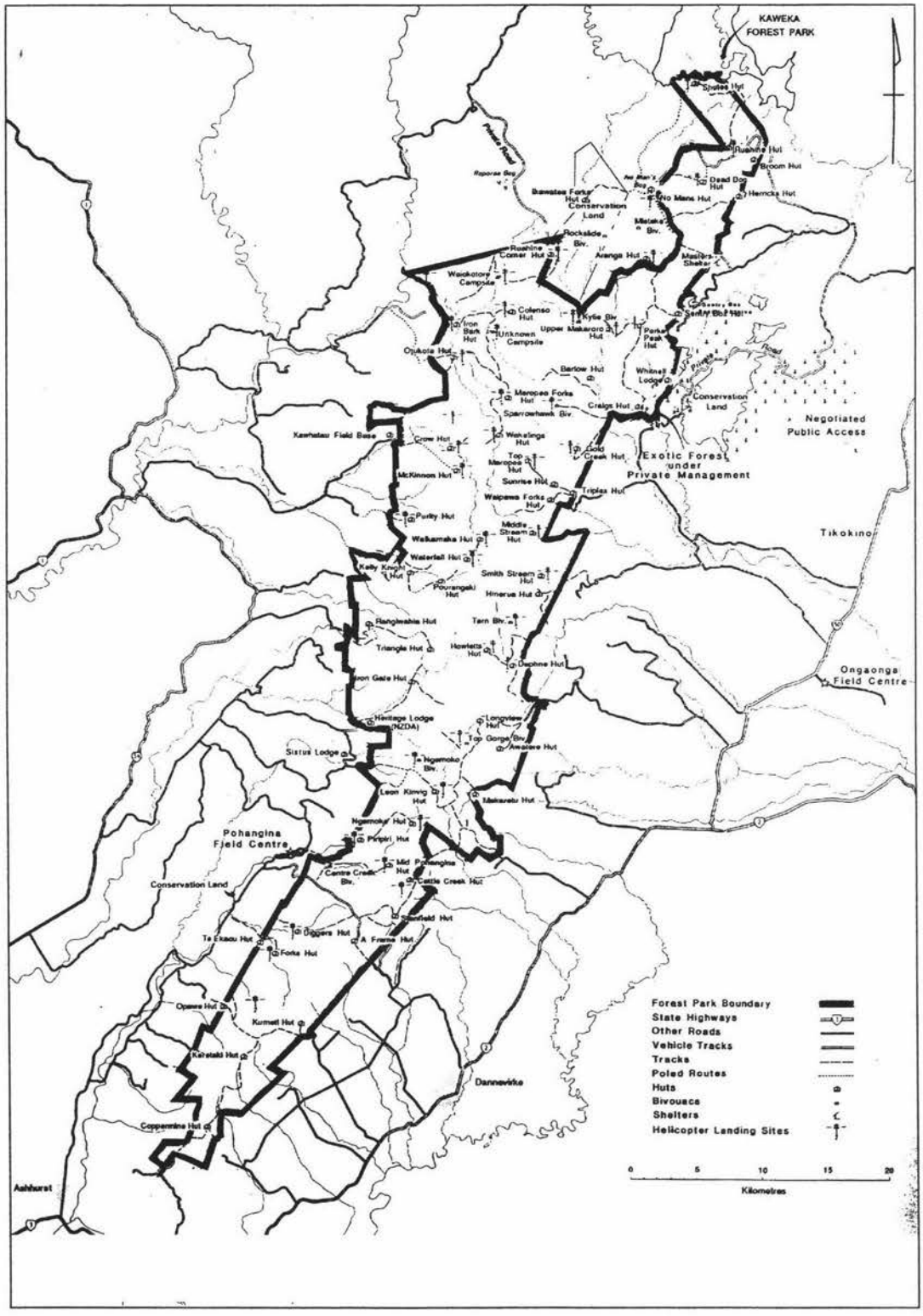
Motorised vehicles (off-road) are allowed on the five formed roads in the Park. The formed roads are Takapari, No Mans, Wharite, Holmes Ridge, and Kashmir. They are also allowed in the Tamaki, Kumeti and Makaroro riverbeds on the eastern side of the ranges, as long as conservation values are not compromised.

Horses, other pack animals, and mountainbikes are also allowed on the five formed roads in the Park. However, only the mountainbikes are allowed in the Tamaki, Kumeti and Makaroro riverbeds.

Public Access:
According to the Visitor Strategy of the Department of Conservation (1996), the opportunity to freely visit forests and coastlines, mountains and rivers, historic sites and attractive landscapes, is a deeply cherished part of the New Zealand way of life.

> "... the public shall have freedom of entry and access to the parks, so that they may receive in full measure, the inspiration, enjoyment and other benefits that may be derived from mountains, forests, sounds, sea coast, lakes, rivers, and other natural features" (Department of Conservation, 1996a).

The public has free and unrestricted access to the Park, confident in the protection of natural resources, and with public safety. However, the area can be temporarily closed for conservation purposes or the access via farmland can be denied by farmers during lambing activities.



Map 4.2 Hut and Track Network of the Ruahine Forest Park

4.9 Regional and District Planning

Revegetation plantings in catchment headwaters were carried out from the 1940's when accelerated erosion caused concern. This resulted in the establishment of the Ruahine Range Control Scheme Committee in 1975. The Committee's task was to review the problem of erosion in the ranges and the river system that drains the Park.

The effects of erosion control trials and planting operations are still very evident in the Park today. Some of the exotic plants used in the revegetation trials had a detrimental impact on the natural values of the Park in some areas. The success of exotic plantings has been mixed.

> "The conflict between the early objective of erosion control by revegetation with exotic species, and the Departments primary objective of management (protection of natural values) needs to be re-appraised to give effect to the current legislation" (Conservation Act, 1987; Department of Conservation, 1992).

4.10 The Ecological Significance of the Park

The Park is within three ecological districts[2]. The North Manawatu Gorge Ecological District, the Ruahine Ecological District, and the Moawhango Ecological District. The first two districts are important in the North Island because of the native vegetation coverage they provide. The latter is an area of major bio geographic significance, and contains several species of plant found to exist here and not elsewhere in the North Island (Department of Conservation, 1992) (Appendix 6 gives descriptions of these plants).

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[2] NZ Biological Resources Centre

As indicated earlier, the Ruahine Forest Park has significant vegetation types, like the Tussock and Leatherwood areas, and also endangered or threatened fauna species (see Appendix 4 and 5). There could also be populations of other plants and animals of similar importance in the Park, that are as yet unknown.

CHAPTER FIVE: - The Management of the Park

This chapter will focus on the Conservation Act and the Resource Act. The two are equally important for park management in New Zealand and for the future of the Ruahine Forest Park.

5.1 The Conservation Act

The functions of the Department of Conservation are to administer this Act and the enactments specified in the First Schedule to this Act, and, subject to this Act and those enactments and to the directions (if any) of the Minister:

(a) To manage for conservation purposes, all land, and all other natural and historic resources, for the time being held under this Act, and all other land and natural and historic resources whose owner agrees with the Minister that they should be managed by the Department:

(b) To advocate the conservation of natural and historic resources generally:

(c) To promote the benefits to present and future generations of.....

(i) The conservation of natural and historic resources generally and the natural and historic resources of New Zealand in particular; and

(ii) The conservation of the natural and historic resources of New Zealand's sub-antarctic islands and, consistently with all relevant international agreements, of the Ross Dependency and Antarctica generally; and

(iii) International co-operation on matters relating to conservation:

(d) To prepare, provide, disseminate, promote, and publicise educational and promotional material relating to conservation:

(e) To the extent that the use of any natural or historic resource for recreation or tourism is not inconsistent with its conservation, to

foster the use of natural and historic resources for recreation, and to allow their use for tourism:

(f) To advise the Minister on matters relating to any of those functions or to conservation generally:

(g) Every other function conferred on it by any other enactment.

5.2 The Resource Management Act

Purpose:

(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, ``sustainable management'' means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while,

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

(http://rangi.knowledgebasket.co.nz/gpacts/public/text/1987/an/065.html)

The following section will discuss the major park management issues and management objectives for the Ruahine Forest Park.

5.3 Management objectives

The management objectives for the Park are derived from S19 (1) (a) and

(b) of the Conservation Act 1987 and reflect the requirement to firstly protect the natural values of the area, and secondly to facilitate appropriate recreational use and enjoyment.

5.3.1 Protection:

- To protect the natural and historic resources of the Park
- To ensure that the natural character and landscapes of the Park are retained and where appropriate restored and/or enhanced
- To manage the Park in a manner consistent with the needs of soil and water conservation

5.3.2 Recreation:

- To provide for a range of recreational opportunities that are compatible with the primary objective, i.e. protection of natural and historical features
- To provide recreational opportunities which complement or enhance the opportunities available elsewhere in the Hawke's Bay and Manawatu-Wanganui Regions, and in adjoining natural areas, as far as they are consistent with protection objectives for the Park

5.3.3 Management:

- To achieve protection of the natural and historic resources of the Park in the most cost efficient and environmentally manner
- To liase and co-operate with the appropriate Iwi authorities, local bodies, and interest groups on Park management issues where appropriate.

5.4 Major Park management issues

5.4.1 Erosion/Soil and water conservation:

Large-scale hand planting and aerial sowing of woody and non-woody species took place in the 1970's. But an NZFS report (Thomas, 1985), that investigated the benefits of mountainland plantings in the Tukituki Catchment, recommended against conducting further extensive revegetation work because of the high costs involved for marginal downstream benefit in terms of erosion control. The report recommended that protection work should continue by means of controlling introduced animals, fencing Park boundaries to exclude stock, and by strict fire control.

5.4.2 Wild animal management:

Control of introduced animals is an essential activity in the Ruahine Forest Park, due to the significant impact on the native flora and fauna. Recreational and commercial hunters are keeping the number of red deer low enough to be of no concern to the Department of Conservation. Sika deer, goat and pigs are only found in low numbers in specific areas of the park, in particular the Ikawatea Catchment and other small areas in the north of the Park.

Due to the pressure from recreational and commercial hunter's deer numbers dropped by about 90% and have been kept below the 1930's level ever since. This hunting pressure was a result of the development of a commercial market for feral venison in the late 1960's, which attracted many hunters to the Park. Later the advent of commercial helicopter hunting resulted in a whole new industry being based in the ranges (Department of Conservation, 1992).

The control of possum numbers in New Zealand is one of the biggest concerns of the Department of Conservation. Estimates of possum

numbers in New Zealand put the population at about 70 million. However, complete eradication of possums from New Zealand and from the Ruahine Forest Park is currently not a realistic option.
The control of possum is carried out with the help of traps, hunters, and poison. The latter can be carried out in two different ways: by aerial or ground-based techniques and different types of poison are also used.
In 1994, aerial poisoning, with a poison called 1080, was carried out in the northern Lake Colenso area and the Ruahine Corner area. These are two of three areas of the park that have been identified as having significant ecological values. The third area is the southern leatherwood area (the Waiokotore and Ikawatea areas belong to the Ruahine Corner area).

> "Aerial 1080 poisoning operations were executed in the Ruahine Forest Park in 1994, but only in the Lake Colenso and Ruahine Corner areas. This 1080 is only used in areas with very high ecological value. The Lake Colenso and Ruahine Corner areas have certain plants, which are only found in these areas. The rest of the Ruahine Forest Park is already collapsed by heavy forestry use and grazing. It is not worth dropping 1080 (pers. comm. by Trevor Bullock, DoC officer Pohangina field centre)".

Aerial poisoning was chosen over ground-based techniques because it is the best available method for large-scale possum control, particularly in rugged country (Department of Conservation, 1996).
Since 1994, no other aerial poisoning operation has taken place in the Ruahine Forest Park. There are a large number of ground-based bait stations in the Park and 500 grams of poison (BRODIFICUM) are used for each of these stations. A recent survey found evidence that this poison

can affect invertebrates and DoC will use another poison (FERACOL) in the future (pers. comm. Sherman Smith, DoC officer Pohangina field centre).

The reason for not carrying out more aerial poisoning elsewhere in the Park is that it would only be necessary in areas with significant ecological values. The main area of the Park does not have ecological value due to the earlier mentioned impacts of forestry activities, fire, and animal browsing.

Helicopters are not permitted in about half of the Ruahine Forest Park. These areas[2] were established in consultation with recreational hunting groups, and provide areas of the Park where ground hunters do not have to compete with commercial aerial hunting. However, it was made clear that helicopters would be permitted to these areas if the animal numbers reach an unacceptable level.

> "At all times the Department's decision on helicopter access will be based on the main management objective, which is protection of natural Park values. Recreational hunting will be provided for and encouraged, subject to this overriding objective" (Department of Conservation, 1992).

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[2] Oroura and Pourangaki Catchment, Triplex/Waipawa Area, Tamaki to Wharite Peak – southeastern ranges, Takapari to Maharahara – southwestern ranges.

CHAPTER SIX: - Methodology

The present research aims to identify the demands and concerns of the users of the Ruahine Forest Park and also to collect information about the users themselves. It was decided to identify the demands and concerns of the main user groups who mostly use the interior of the Ruahine Forest Park. This includes tramping clubs, the New Zealand Deerstalkers Association, and other small hunting clubs. Two regions were analysed, the Manawatu-Wanganui Region at the West Side, and the Hawke's Bay Region at the East Side of the Ruahine Forest Park. In order to achieve the stated research objectives, the following research methods were employed:

6.1 Literature Review

A literature review was conducted to identify the current management activities in the Ruahine Forest Park, provided by the Department of Conservation. This information was used to achieve the fourth objective. The literature review also helped to find out what is already known about outdoor recreation in New Zealand and looked at previous research done in this field.

6.2 Informal Interviews

Informal interviews with DoC officers, trampers and hunters were undertaken to help identify the uses and values of the Park, and some of the concerns and demands of the user groups. The information from these interviews also revealed the concerns of the Department of Conservation about the users of the park and its constraints on improving its management system.

6.3 Analysis of Hut Logbooks

The Ruahine Forest Park provides a large number of huts for recreational purposes. In each hut, a logbook is kept for users of the huts to write down their details and comments. DoC provides the logbooks for safety reasons. For instance 'search and rescue' operations.

The logbooks contain information about who is using the huts and where these people come from. The comments from the hut users helps to identify the need for improving certain management activities. In the present research they assisted in meeting the requirements of objectives one, two, three, and five. The logbooks from recent years were available at the local offices (in the Pohangina Field centre and Napier) of the Department of Conservation. Using these older books, instead of visiting all the huts, helped reduce the time and effort required for gathering the data.

6.4 Mail Survey

As a further data collection methodology, a mail survey was undertaken. A mail survey has many advantages:

-It is easy to undertake, and can be very time-effective in obtaining data from a large sample set.

-It also can be cost-effective in obtaining quantitative data.

-Respondents may give more accurate replies to personal questions because they feel they have greater anonymity.

The disadvantages of mail surveys are:

-There is no chance for discussion.

-In general, the response rate may be lower compared to other methods of data collection.

The survey instrument itself contained a variety of question types. There were a number of closed questions in order to determine why people make use of the park for certain activities. The respondent was also asked to rank the park management effectiveness and their preferences for certain parks on a scale from one to five. Open-ended questions were also employed to determine the park user's concerns. Open-ended questions have the advantage of including unanticipated reasons. Conversely, a pre-selected list of motives simplifies coding and analysis, but will prejudge responses. Therefore it was chosen to add some space under the pre-selected list of motives so that people could put another choice of their own in the questionnaire.

The questionnaires were sent by mail to tramping clubs and Deerstalker Association Branches in the two chosen regions mentioned earlier. The researcher also went to the meetings of various clubs and associations were he introduced himself and the aim and goals of his research. He also gave presentations at two very large deerstalker associations about hunting regulations and techniques in Germany. This was done to encourage interest in the research and people had the chance to ask questions or discuss certain matters, all of which was very useful to the researcher. It was hoped to increase the response rate through attending all these meetings. It was hoped that response rate to the survey would be increased by attendance of the aforementioned meetings.

The tramping club addresses were obtained from the memberlist of the Federated Mountain Clubs of New Zealand (FMC). The FMC is the national association of over 100 mountain clubs with about 14,000 members in New Zealand. Other tramping clubs were contacted, which were not members of FMC. This was done by using the so-called 'Snowball Sampling' method (Ryan, 1995), where the researcher

approached some respondents, and asked to be referred to other potential respondents. The contact addresses of the different Deerstalker Association branches were also obtained by using the snowball sampling method. The researcher contacted the president or the secretary of a Tramping club or Deerstalker Association and asked them to pass on his questionnaires to members who they thought would be most familiar with the Ruahine Forest Park. Because of the Privacy Act, the researcher was unable to gain access to the personal address lists of the club members; this was a major constraint during the present research. Due to the use of this technique the sample size was dependent on the secretaries and presidents of the different clubs and associations.

Another way of contacting trampers and hunters was through the retail traders for tramping and hunting equipment. Numerous questionnaires were left on the counter of several shops in the main towns of the two regions (Palmerston North and Napier) and the shopkeepers were asked to hand them out to potential users of Forest Parks. Also the DoC offices were an important help to reach a wide number of hunters. Hunters who came to the DoC offices to pick up hunting permits were also given the questionnaire.

6.5 Analysis of Data

The coded data collected from the mail survey was first entered into Microsoft Excel 2000 and later converted to the Statistical Package for Social Sciences (SPSS, version 10) computer package in which the data were analysed. Standard statistical techniques such as frequency distribution, mean, and standard deviation were used. Descriptive analysis techniques were used to display the outcome of the survey in graphs and tables.

The information from the hut logbook analysis was used for identifying the average size of groups, the average numbers of nights spent in huts, and the total number of visitors during the time the book was provided. The summaries of selected individual hut logbooks are included in chapter nine under section 9.3.

CHAPTER SEVEN: - Outdoor Recreation and its Management

This chapter will look at the definition of outdoor recreation and will provide information about planning tools that have been developed for the management of outdoor recreation.

7.1 Outdoor recreation

Recreation is defined as a use of leisure time. It makes people's leisure time more enjoyable and satisfying and can be described as 'refreshment of body or mind'. The definition of the term recreation opportunity is the 'availability of a real choice for a user to participate in a preferred activity within a preferred setting in order to achieve a satisfying experience'. Recreation opportunities are dependent on three important factors: access, facilities, and information. These three are the only factors that managers can easily manipulate in order to create or reduce changes within recreational settings (Department of Conservation, 1993).

The 1985 policy for Outdoor Recreation in New Zealand defined Recreation as follows:

> "Recreation is the way in which a person chooses to spend time that is free and report from work and other tasks involved in providing and maintaining a livelihood. Recreation activities can be formal and organised, or informal and spontaneous. The activity is freely chosen and is an expression of that person fulfilling independently or in any combination, physical, intellectual, emotional, spiritual and cultural needs as well as needs for challenge, relaxation, achievements, and social contact, according to his or her

personal circumstances, constraints imposed by law and socially acceptable behaviour."

"Outdoor recreation may be passive or active. The essential elements are that it involves the use and enjoyment of nature and is intrinsically non-competitive. The outdoor recreation environment encompasses largely unmodified natural areas" (Davison, 1986).

Many researchers have tried to define the term outdoor recreation. Devlin (1995; cited in Department of Conservation, 1995, pg.16) gave an extensive summary.

"Outdoor recreation combines many things. For some participants it is an ultimate physical challenge in which they subject their bodies to conditions far beyond the tolerance of most people. For others it is a relationship between them, a machine or equipment, and the environment. Yet others use the outdoors for passive and introspective purposes as they seek inspiration in a natural setting. Then again we have many people for whom the mountains, forests and waterways have cultural-spiritual connotations, which require that they be appreciated from a respectful distance. Next, perhaps, are those for whom the meanings and activities mentioned are of no current significance, a condition that in the absence of some major catalyst is unlikely to change. Finally, there are those who view recreational areas only in terms of their potential for exploitation or harvest".

In 1996, the Department of Conservation came up with a Visitor

Strategy, which was part of 'Conservation 2000' a departmental process that established the department's vision and directions for the year 2000 and beyond.

The status of this strategy was the following:

> "The visitor strategy will guide and inform the department's planning and management relating to visitor services and where relevant, it may also assist the implementation of conservation management strategies as well as management plans for national parks and other specific conservation areas.
>
> For the purpose of this strategy, visitors are people visiting areas managed by the Department. They include people using visitor centres and clients of concessionaires, New Zealanders and international visitors" (Department of Conservation, 1996a).

Earlier research in the 1970's had established a number of motivations for visitors to the New Zealand outdoors:

- A desire to "recreate" oneself, to get away from the stresses of "civilisation" (the freedom that comes with a simpler lifestyle, even if only for a few hours or days)
- The attractions of new places, especially the scenery, and appreciation of native plants and wildlife, geology, or historic features
- The physical challenge and exercise involved
- The sociability of the experience, especially the close relationships developed with companions on the adventure
- The "aesthetic-spiritual" experience of close contact with a natural order which had not been fashioned by humans (Cited in Department of Conservation 1996a)

There are also seven distinct visitor groups identified by this visitor strategy. These are:

- short stop travellers,
- day visitor,
- overnighters,
- backcountry comfort seekers,
- backcountry adventurers, remoteness seekers,
- and the thrill seekers.

Although some visitors can belong to different groups at different times, at any one time visitors will be one of these seven groups.

7.2 Planning Tools

A variety of planning tools or strategic systems have been developed in New Zealand to assist resource managers with the decision-making process. Table 7.1 gives a brief summary of these planning tools.

Table 7.1 Summary of planning tools

Strategic Systems	A Tool for
ROS (Recreation Opportunity Spectrum)	Spatial allocation of recreation opportunity classes
RCC (Recreation Carrying Capacity)	Determining limit of recreational use. Difficult to implement and has been rejected by some observers.
LAC (Limits of Acceptable Change)	Determining objectives and establishing the necessary processes to achieve these; integrates well with ROS, but has proved somewhat complex in application. Has

	its basis in wilderness management experience.
VAMP (Visitor Activity Management Programme)	Identification of visitor activity groupings as a basis for determining appropriate recreation opportunities.
VIM (Visitor Impact Management)	Determining objectives and establishing the necessary processes to achieve these; a relatively simple process which has proved relatively easy for park managers to apply. Has its basis in a somewhat wider range of environmental conditions.

Source: Department of Conservation 1995, pg. 197

The Recreation Opportunity Spectrum (ROS)[3] identifies seven recreation zones. These are: urban, urban fringe, rural, backcountry, remote, wilderness, and coastal areas. A variety of activities are carried out in these zones and visitors have different requirements for facilities and services.

With the development of new strategic systems, new standards were also established for facilities and services in areas managed by DoC. DoC has the responsibility to manage nearly 1000 backcountry huts and thousands of kilometres of track throughout the country, most of which were constructed by previous agencies (Department of Forestry in the Ruahine Forest Park) and for reasons, which have since changed (animal pest control), and with budgets now markedly reduced. DoC now perceives it has an over-supply of backcountry facilities (Department of

[3] ROS is a system that enables land managers to inventory, plan for, and protect opportunities for recreation. The system was developed in the United States and was adopted for use in New Zealand by the department, in consultation with key recreation groups, during 1993 (Department of Conservation 1996a)

Conservation, 1995).

There are two new standards, which affect huts on conservation land, the hut service standard and the legal standards, such as the Building Act and Code and gas regulations. The former is developed with the involvement of national user groups and states that huts must be weatherproof and in a reasonable state of repair. The Building Act states that huts must not be dangerous, or unsanitary, and they must comply with the gas regulations (where applicable).
Huts that fall below these bottom line standards will be temporarily closed and either brought up to standard, replaced or removed. Huts will only be permanently removed if:

- They have been inspected and do not meet these bottom lines
- They are considered low priority through a local review of huts and other visitor facilities
- No organisation wishes to bring it up to standard and maintain it
- There has been active consultation with interested people over the proposed removals

According to DoC there will be no huts removed on the western side of the park, but one hut on this side will drop in category (see table 7.2 Hut Categories). On the eastern side DoC is about to consult the public in regards to the possible replacement/removal of a hut (Happy Daze, mentioned by Ken Hunt, DoC officer, Napier office). No other hut will be negatively affected by the new upgrading standards.

Active tramping clubs often want to participate with the maintaining of huts and tracks and would rather be in charge of huts than see them removed. The Heretaunga Tramping Club in Hastings, Hawke's Bay,

owns two huts in the Ruahine Forest Park. These huts are open for everyone as well as all the other huts owned by DoC. The participation of big clubs helps DoC to save money and the clubs are maintaining their huts very well. However, according to DoC many clubs, which are at first very enthusiastic about being responsible for a hut back off eventually if it comes to signing contracts about third party insurance matters.
The NZ Deerstalker Association branch based in Palmerston North also owns one hut on the western side of the Park and private persons own another three huts in the Park.

7.3 Recent changes to Backcountry Hut and Camp Fees:

On the first of November 1999 the backcountry hut and camp fees were increased between 50 cents and $3 per person per night, while the annual hut pass fees increased by $7 for adults and $3.50 for children.

Back Country Huts are classified in four different Categories, these are:

Table 7.2 Hut Categories

Category	**Price** (1/11/99)
Category 1: Great Walk (Hut/Campsite Pass), Alpine	From $12 - $15
Category 2: Intermediate (2 Tickets/Night)	Adult $10/Youth $5
Category 3: Basic (1 Ticket/Night)	Adult $5/Youth $2.5
Category 4: Free	Free

Source: Backcountry Huts, Fact sheet June 2000

The Adult Annual Pass fits in all categories except of Great Walks and Alpine Huts and costs $65. The same counts for the Youth Annual Pass, which costs $ 32.50.
Compared with other Forest Parks and National Parks the Ruahine Forest Park has the greatest number of huts. The Ruahine Forest Park

has 3 Category- 2 huts, 47 Category- 3 huts, and 14 Category- 4 huts.

At the national level, the Department of Conservation and a handful of active public interest groups (Hillary Commission for Sport, Fitness and Leisure; Federated Mountain Clubs of New Zealand; New Zealand Mountain Safety Council; Water Safety Council; Public Access New Zealand; Royal Forest and Bird Society; and the Queen Elizabeth II National Trust) dominate the management of outdoor recreation in New Zealand. The Wellington and Auckland Regional Councils provide comprehensive provision of regional recreation opportunities. Many other city/regional councils and other local authorities provide additional outdoor recreation opportunities. All contribute to the network of available opportunities (Department of Conservation, 1995).

The most important councils, agencies and organisations, which can contribute to the management of outdoor recreation, will be briefly explained next.

7.4 Regional Councils:

The regional councils are responsible for the ensuring of the implementation of the national policy in the region and its local areas. Each council develops and monitors regional management plans and its application to local communities. They receive and allocate to local communities a proportion of funds received from central sources (Government). Horizons.mw (Regional council for Manawatu and Wanganui) is responsible for ensuring that the physical and natural resources of the Manawatu-Wanganui Region are used sustainable. This includes ensuring that the quality and quantity of the Region's land, water and air is maintained or enhanced.

Horizons.mw provides technical and financial support to groups or individuals to undertake projects, which include erosion control, tree planting, riparian planting alongside streams, protection of indigenous vegetation and fauna habitat, and research and support of landcare groups. Self Help Pest Control Groups of landholders who live along the boundaries of the Ruahine Forest Park work together on animal and plant pest control. Technical assistance is provided by horizons.mw and, if certain criteria are met, some financial assistance is provided.

7.5 NZ Deerstalkers Association:

The fundamental aim of the association is to ensure that hunters carry out the organisation and management of recreational hunting in New Zealand. Each region has several branches of the Association. The numbers of members range from just a few to more than 100 per branch. The Palmerston North NZ Deerstalker Association Branch has only forty-five members, but owns one hut at the western side of the Park (Heritage Hut).

Their Mission Statement is:

> "...to retain, enhance and create opportunities for the enjoyment of legitimate recreational hunting and sport shooting, for the members of the Association" (http://www.deerstalkers.org.nz).

The principle activities of the Association are:

- The promotion of hunting as a legitimate recreational pursuit.
- The promotion of running target, scoped rifle, & benchrest shooting.
- The promotion of sensible, effective, legislation on firearms

ownership.

- The publication a quarterly magazine, "New Zealand Hunting & Wildlife".
- The promotion of effective hunter education through the HUNTS programme.
- The collection of data, and publication of the New Zealand Big Game Trophy Record Book.

7.6 Royal Forest and Bird Society

The Royal Forest and Bird Protection Society of New Zealand is New Zealand's largest national conservation organisation. The Society's mission is to preserve and protect the native plants and animals and natural features of New Zealand. Forest and Bird is active on a wide range of conservation and environmental issues. These include the protection of native forests, tussock grasslands, wetlands, coastlines, and marine ecosystems, energy and resource conservation, sustainable fisheries and sustainable land management (http://www.forest-bird.org.nz).

The Ruahine Forest Park has a high value for the Royal Forest and Bird Society due to the high ecological significance of the native forest, extensive tussock grasslands, and leatherwood areas.

7.7 Fish and Game

Fish and Game is a New Zealand Government agency responsible for managing freshwater fisheries and game bird hunting.

While Fish and Game New Zealand must remain politically neutral, they can promote to all the parties draft policies that are important to anglers and hunters.

7.8 Federated Farmers of New Zealand (Inc.)

A key part of the Federation's environmental policy is its involvement in the New Zealand Landcare Trust – to assist in the development and promotion of landcare groups throughout the country. The network of provincial offices and regional policy analysts underpins the Federation's work in sustainable land management.

Increasingly, farmers are taking collective action on many land care issues. At least 55 "Landcare" or community based groups have formed throughout the country to address local problems. Projects these groups are working on include:

- land and water monitoring
- pest and weed control
- revegetation and research into alternative management techniques.

Many projects are being worked on in partnership with local authorities and research agencies. Federated Farmers, farm discussion groups, and producer boards are also working on a variety of sustainable land care issues.

CHAPTER EIGHT: - Recreational Hunting as a Management Tool

This chapter will briefly look at the number of deer and at the value of recreational hunting as a management tool in New Zealand Forest Parks. How deer management is carried out in some parts of the United States of America will also be discussed briefly in this chapter.

8.1 The value of recreational hunters

Wild deer occupy approximately two-thirds of New Zealand, but their densities have been reduced by over 75% since the 1950's, primarily by commercial hunting from helicopters but also to some extent by ground-based commercial and recreational hunters (Department of Conservation, 2000). The estimated breeding population size of about 250, 000 deer in 1988 (Nugent & Fraser, 1993) suggests an average national density of about 4 deer/km^2 of forest. Wild deer has a high recreational and commercial value but it is also defined as a significant conservation pest, therefore DoC aims to manage deer numbers at the 'lowest level that can practically be achieved' for the entire conservation estate (Holloway, 1989).

As mentioned in chapter three recreational and commercial hunters reduced the number of deer in the Ruahine Forest Park by 90%. Nation wide recreational hunters have a great impact on the number of deer.
In the late 1980's recreational hunters accounted for approximately 50% of the annual deer harvest. Together with commercial hunting operators they represented the only significant control mechanism for deer on DoC-administered conservation land (Nugent, 1992). But, because of recent fluctuations in the price of wild venison and changes in the wild animals recovery industry (pesticide residues constraints) it is uncertain whether present levels of commercial hunting pressure will be sustained in the

longer term. Because of this and funding constraints together with a wide range of other urgent conservation problems faced by DoC, there is at present no active management of deer (either as a resource or as a pest), therefore, recreational hunting may be the only long-term low-cost animal control mechanism available to DoC for big-game species, at least for a considerable part of its estate. Recreational hunting is arguably the most stable control tool available to DoC because it involves a large number of individuals whose motivations and participation levels seem unlikely to change quickly. In contrast, commercial hunting pressure fluctuates widely in relation to changes in venison prices, and state-funded deer control has never been sustained at consistent levels (Department of Conservation, 2000).

The value of recreational hunting for conservancy perceptions as a management tool appears to be influenced by several factors; for example the wild animal species present, the accessibility of various areas to hunters, and the level of competition from commercial hunting within the conservancy. In some parks in New Zealand (particularly North Island) there appears to be some potential for increasing the benefits from recreational hunting, while in other areas recreational hunting is likely to be of limited benefit. In 1988, two-thirds of the wild deer harvests in New Zealand (c. 55,000 animals, all species killed and captured alive) were taken by ground hunters. However, the network of collection depots for wild game has decreased and there is very little live-capture occurring at present. Therefore, this component of the ground-based harvest is likely to have declined markedly. Between 1986 and 1994 the helicopter-based commercial harvest fluctuated from about 13,000 to about 29,000 deer annually (Parkes *et al,* 1996; cited in Department of Conservation, 2000), these changes largely reflecting fluctuations in the price of venison. According to Nugent and Fraser (1993) the number of carcasses sold for

export was 29,500 in 1989, then declined to 23,400 in 1990, and just 12,800 in 1991. Then in 1992, the venison prices recovered somewhat and the number increased again to 16,500. The venison price fluctuations and the more preferred venison from deer farms (due to more consistent availability, tenderness, mild-taste, and hygienic processing) work against the stability of commercial hunting. Most likely this will result, over time, in a limited number of people involved in commercial deer harvest operations (Nugent & Fraser, 1993).

While recreational hunters operate in all 14 DoC conservancies, commercial hunters are presently active in only 11 of these. Despite the numerically greater total deer harvest by recreational hunters, the relative importance of recreational and commercial hunting varies between conservancies. Recreational hunting appears to be less effective on a 'per kill basis', because commercial hunters kill more young animals and a higher proportion of hinds compared with recreational hunters, who pass up opportunities to shoot fawns and/or hinds in favour of stags (Fraser & Speedy, 1997; cited in Department of Conservation, 2000), presumably in an effort to conserve the deer population but also partly due to the considerable concentration of recreational hunting effort during the roar.

Recreational hunting is presumably more stable than commercial hunting because there are many more people involved and economic considerations (e.g. the price for venison) are relatively unimportant. While recreational hunting pressure is largely confined to areas with easy access and close to relatively large population centres, commercial hunting pressure is largely determined by economic considerations and the density of deer in the areas available for hunting (Department of Conservation, 2000).

The relatively low kill-per-unit-effort efficiency of recreational hunters is obviously offset by their low cost to DoC. The only fixed costs incurred are those authorising hunters to hunt on the conservation estate and the costs of hunter liaison. However, these can be significant, with estimates for the annual cost of permit issue alone as high as $576,000. Doc is asking itself whether greater conservation benefits might result by spending that money actually controlling deer (and other wild animals) rather than simply accepting whatever level of control is achieved by recreational (and commercial) hunters. One possible option is to find ways of reducing the cost of hunting permit issue without reducing recreational hunting pressure (Department of Conservation, 2000).

From the estimated wild deer breeding population of approximately 250,000 in New Zealand, an annual harvest of about 80,000 animals is taken (c. 77% of these are red deer, c. 13% sika deer, c. 7% fallow deer, c. 3% white-tailed deer; Nugent, 1992). Rusa deer, sambar deer, and wapiti constitute only a small fraction of the estimated total harvest. While recreational hunters target all seven deer species, commercial hunters take red deer almost exclusively (with only small numbers of sika deer, fallow deer, and wapiti-red deer hybrids also taken). Table 8.1 focuses on the animal harvest of the two regions involved in the management of the Ruahine Forest Park.

Table 8.1 Number of animals harvested

DoC	Deer Species				Pigs	Goats
Conservancy	Red	Fallow	Sika	Sambar		
Hawke's Bay	503	n.a.	483	n.a.	30	22
Wanganui	10	8	n.a.	27	14	605
Total	513	8	483	27	44	627

Most data is from the 1993 calendar year
Source: Department of Conservation, 2000

Recreational hunting pressure is higher in the North Island than in the South Island reflecting the greater human population and smaller area of deer range. Proximity to large urban centres and accessibility are important determinants of recreational pressure.
Hunting effort also varies with deer density since hunters tend to focus their effort where deer numbers are greatest. When deer numbers drop below the level required for hunter satisfaction, most hunters either cease hunting or move to another area. Aerial-1080 poisoning of possums and deer over much of the Hauhungaroa Range in 1994 apparently resulted in a subsequent 15% increase in the demand for hunting permits in the nearby Kaimanawa Range (pers. Comm. C. Speedy, Tongariro/Taupo Conservancy; cited in Department of Conservation, 2000).

Hunting effort can be influenced by incentives. Hunting competitions with prizes can encourage hunters to target species and areas they would not normally hunt. However, it is unclear whether such incentives actually increase the overall hunting effort or merely redirect it. One of the critical problems with competitions is ensuring that hunting effort is targeted at the desired area. Therefore, there needs to be some way to verifying where animals were shot (Department of Conservation, 2000). However, more co-operation between DoC and recreational hunters would save DoC a lot of money. Regular organised feral goat hunts within the conservancy were seen as useful for targeting this species in problem areas and also fostering better co-operation between DoC and recreational hunters. The organised hunting competitions cost DoC $7,600, but it would have cost DoC $24,000 to kill a similar number of feral goats using its own staff (Boardman, 1992, unpubl. DoC report;

cited in Department of Conservation, 2000).
Similarly, the start of an annual sika trophy competition was seen as a useful communication exercise as well as raising the profile of hunting opportunities within the conservancy generally. Also increasing aerial access to remote areas and informing hunters about areas where deer numbers are high have been used (Department of Conservation, 2000).

The large-scale aerial 1080 poisoning operations for brush tail possum control in 1994 resulted in deer being killed incidentally. This is seen as a contribution in some way to the control of deer numbers in the area targeted (principally where bovine tuberculosis is endemic). However, these areas are small in relation to the overall conservation area administered by DoC and the effect may be only short term, as initial knockdown operations are typically followed by possum-specific maintenance control (Department of Conservation, 2000).

As mentioned earlier active management of deer – either as a resource or as a pest - does not exist. The management is difficult due to the conflicting perspectives between the conservationists and the recreational hunter. The conservationists would like wild deer to be eradicated or, failing that, would like them to be kept at the lowest level possible. The hunters however would like to see a high number of deer in New Zealand. DoC, as a manager of the parks has to find a compromise so that the deer damage will be reduced, but at the same time maintain or increase the benefits for recreational hunters. The type of hunters who come closest to the aspirations of the conservationists are the trophy hunters, because stags produce the best trophies when population densities are moderate to low, and high-quality food is plentiful (Nugent & Fraser, 1993). This is one deer management practice, which could serve the conservationists and the recreational hunters, at least those

hunters who appreciate trophies and/or a healthy breeding population of deer.

8.2 How is Deer managed in other countries?

Two wildlife biologists in Texas, Al Brothers and Murphy E. Ray Jr., originally popularised a novel concept in their 1975 book, *Producing Quality Whitetails*. This idea was brought to the Southeast of the United States in the late 1970s and it has since been employed successfully on millions of acres of private and public lands throughout the United States (http://qdma.com).

What is QDM?

> "Quality Deer Management (QDM) is a management philosophy/practice that unites landowners, hunters, and managers in a common goal of producing biologically and socially balanced deer herds within existing environmental, social, and legal constraints. This approach typically involves the protection of young stalks (yearlings and some 2.5 year-olds) combined with an adequate harvest of female deer to maintain a healthy population in balance with existing habitat conditions and landowner desires. This level of deer management involves the production of quality deer (Stag, Hinds, and fawns), quality habitat, quality hunting experiences, and, most importantly, quality hunters" (Dr. R. Larry Marchinton), (http://www.qdma.com/why/).

Antler characteristics (i.e., number of points, main beam length, spread and mass) provide the necessary clues as to which stags should be harvested. Considerations for selectively harvesting antler less deer are

based on size, shape, and behaviour of deer.

One of the primary objectives of quality deer management is to improve the herd's sex ratio. Moving more stags into the older age classes produces animals with better antler development and larger bodies. Also, as the sex ratio becomes better balanced, the breeding season may be shortened and shifted to earlier in the year.

In the future we will be faced with too many deer and fewer hunters. The Quality Deer Management focuses on the harvest of the hinds, i.e., the reproductive part of the population. The stags, particularly the young stags, are looked on as animals to watch and learn from and someday, when they grow to maturity, possibly harvest. The hunter becomes a manager. He culls the part of this particular deer herd that needs to be harvested in order to bring it into proper balance or structure, like a predator does in natural environments. Another trend that is affecting not only deer management but also that of all wild resources is the "naturalism" movement. We are told that "natural" forest communities are better, and that deer populations should be similar in attributes to those that are managed in the United States; wolves, coyotes and mountain lions. A 1:1.3 sex ratio, stags : hinds, is probably "natural," based on populations that are controlled primarily by natural predators today. There are not many of these kinds of populations today, but there are enough upon which to make educated guesses about the past. Moving from the traditional stag-oriented harvest system allows sex and age structures more like those times when predators controlled populations (http://www.qdma.com).

The joint principles of Quality Deer Management (QDM) are simple, harvest fewer young males in conjunction with harvesting more female deer within the carrying capacity of the property and the desires of the landowner or DoC. A common misconception is that QDM is only about

'trophy' deer management, where the objective is to harvest only mature males. Whilst the older age groups of deer are a bonus for hunters, the major benefit is to the biological health of the herd.
The principle has revolutionised wild deer management in many parts of the world. It has proven so successful that it is being applied throughout the United States and involves many thousands of hunters and landowners.

The number of deer will decline and the quality of the deer as a trophy animal will increase and would encourage more recreational hunters to go hunting (Hall, 2000). The recreational and commercial hunters had the most effective impact on the numbers of deer in the past. However, as mentioned earlier, it is unclear whether levels of hunting pressure will be sustained in the longer term. The proposed management practice could encourage the hunters to hunt more again and there would be no high costs involved with the implementation of this management practice, which is very profitable due to the funding constraints faced by DoC. However, most New Zealand hunters tend to regard trophies as a bonus rather than as the fundamental reason for hunting (Nugent & Fraser, 1993) and it would be a difficult task to implement this practice to New Zealand.

CHAPTER NINE: - Results and Discussions

The presentation of the results is divided into three sections. The first section presents the outcomes of the questionnaire, which was sent out to hunters. The second section presents the outcome of the tramper questionnaire and the third section shows the brief analysis of the hut logbooks.

The first two sections start with personal information about the respondents. For example, the region where they live, their age groups, gender, and their level of education. The outcome of each question, per user group, will be discussed in detail with assistance of graphs or tables.

The questionnaires consisted of an information sheet and a number of questions. The questionnaires for the hunters had 21 questions and the questionnaires for the trampers had 18 questions.

The survey targeted in general hunters and trampers who belong to clubs and who visit the Ruahine Forest Park quite regularly. These two groups can be identified as users of the Park. The outcome of certain questions may have been different if this survey was undertaken as an on-site survey, which could have surveyed non-club-members or non-users.

In 1988 a study by the University of Otago (Shultis & Keasley, 1988) looked at the nature of environmental perception and human aspirations, as they relate to interaction with the natural environment. It focused on two different groups: the users who visit wilderness areas quite regularly and the non-users who rarely visited such area. The outcome showed great differences between the two groups (see table 9.a).

Table 9.a Relative Importance of Appeals of Wilderness

Key of Statements	Users %	Non Users %
To observe the beauty of nature	58	60
Exciting sights, sounds and smells of civilisation	57	51
Exit work-a-day world	32	48
Taste the rugged world	31	11
Experience the solitude of seeing no one else but own party	26	8
Take it easy and have a good time	18	37
Experience the intellectual puzzle that nature presents	11	9
Push the body to its limits in terms of physical exertion	10	6
Restore health	7	18
Spends lots of time with family and friends	7	10

Adapted from Shultis and Kearsley 1988

While both groups ranked the first three statements highest, users preferred the 'challenge in the rugged world', whereas non-users preferred 'taking it easy' and 'restoring themselves'. Similarly, solitude was an important component of wilderness for users, but not for the non-users at large.

Response Rate

Most clubs had more than 100 members, but the sample size depended on the presidents or secretaries of the different clubs and associations. The presidents or secretaries were asked to hand the questionnaires on to their club members (because of the Privacy Act the researcher could not get the addresses of club members), but they often thought 10 % to 25 % of all the club members would be familiar with the Ruahine Forest Park. Also, only 10 % to 30 % of the club members showed up during the club meetings where questionnaires were handed out.

In total 635 questionnaires were sent out to both trampers and hunters.

Trampers received 301 questionnaires and hunters received 334 questionnaires. 137 trampers and 94 hunters responded (see Table 10.b).

Table 9.b Response rate

	Questionnaires send out	Questionnaires collected	Percentage
Trampers	301	137	45.51 %
Hunters	334	94	28.14 %
Total	**635**	**231**	**36.37 %**

Of the 635 questionnaires, 86 of these were displayed at counters in different shops in Palmerston North and Napier. Only 32 questionnaires were actually handed out to trampers and hunters. Sixty-two questionnaires were handed out to hunters via the DoC offices in Palmerston North and Napier when they collected their hunting permits.

9.1 SECTION ONE: - Hunters

This survey targeted mostly hunters who are members of the NZ Deerstalkers Association. However, some questionnaires were sent out to smaller hunting clubs as well. The hunters belonging to a club may be only a fraction of the total number of hunters in New Zealand.

Seventy-seven of the ninety-four responders belong to a club. These clubs are the NZ Deerstalker Association (64 of the responders), Forest & Bird, Fish & Game, several small hunting clubs (e.g. Safari Club International, Central Hawke's Bay Shooters, Black Stag Hunting Club), and also some Tramping- and Fishing Clubs. Twelve of the hunters belonged to more than just one club.

9.1.1 Regions

Table 9.1.1 Survey Respondents by Region

	Frequency	Valid Percent
Manawatu	33	35.9
Hawke's Bay	50	54.3
Other	9	9.8
Total	92	100.0

Most questionnaires were sent to the Hawke's Bay Region, which results in the higher response rate for this region (54.3%). The Wanganui and Rangitikei Regions are grouped together as 'Other'.

9.1.2 Gender

Hunting is a male-dominated activity. A survey in the Wellington region in 1974 showed 97% contribution by male and several more-recent surveys (Simmons and Devlin, 1981; Groome *et al.*, 1983; Cessford,

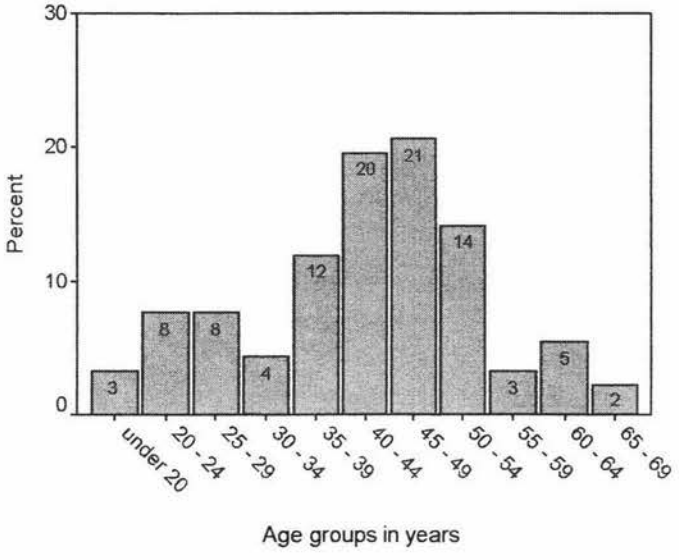
1987) never found less than 95% male participation for hunting. The outcome of this survey was 100% male contribution, probably because only club members were targeted. The researcher noticed that there were only male present at the meetings, except for one small NZDA branch in Taihape, which had a female secretary.

9.1.3 Age group

A Wellington survey in 1974 (Henderson & Stagpoole) showed that 42% of the hunters were in the 12-24 year age group. The 25-34 year age group made up 29%. A survey in Christchurch (Neighbour, 1973) showed hunters in the 16-24 year age group dominant. Surveys almost ten years later, in Canterbury (Simmons and Devlin, 1981) and in the Central North Island (Groome *et al.,* 1983) showed an increase in ages of hunters. They found the 30-39 year age group the most dominant group. A more recent survey by Cessford in 1987 used a much wider range of age groups and found hunters between 25 and 44 years most active.

The statistics census in 1996 found that the age structure in Hawke's Bay was slightly older than the national average, with a median age of 33.8 years compared with 33.0 years nationally. The Manawatu-Wanganui Region had the fourth-lowest median age structure (32.2 years) in the country. The high number of students in Palmerston North probably affects this outcome.

Figure 9.1.1 Age groups



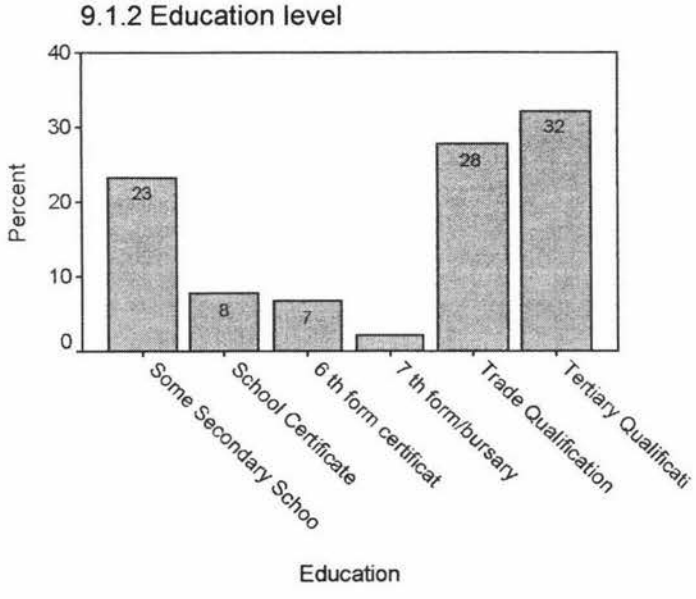
The average age group in this survey (40-49 years) is much higher than in the surveys from the 1970's and 80's. Possible reasons for this may be that young hunters have a lack of knowledge and the rate of success is much less than experienced hunters. After the commercial venison industry had become the ultimate means of control (after 1960), the number of deer declined radically. In the past the deer numbers were high both near population centers and in remote country, and a hunter could pick up his rifle and go hunting almost wherever and whenever he wanted. It can be assumed that the low number of deer discourages young hunters. Low Deer numbers make it difficult for young inexperienced hunters to develop hunting skills, and low rates of hunting success provides them with little incentive to continue. However, this outcome can also mean that the active hunting groups from the 1970's are still active, but are now in a much older age group.

According to Cessford (1987), hunting shows evidence of an older age profile of users. They suggested from speculation that this has to be a

result of a reduced recruitment rate into hunting in the younger age groups and the lack of opportunity as the population is increasingly urbanised. However, the decline may also reflect falling interest in hunting generally, as a result of public sentiment about blood sport, or other factors (Department of Conservation, 1995).

9.1.4 Education

In 1980, hunting as a recreational activity had a very low percentage of participation from those with university degrees (2% were found in the Aukerman & Davison survey in 1980). The Kaweka and Kaimanawa survey in 1983 found the secondary school and trade qualification as the highest education, about 15% had a degree or tertiary qualification.

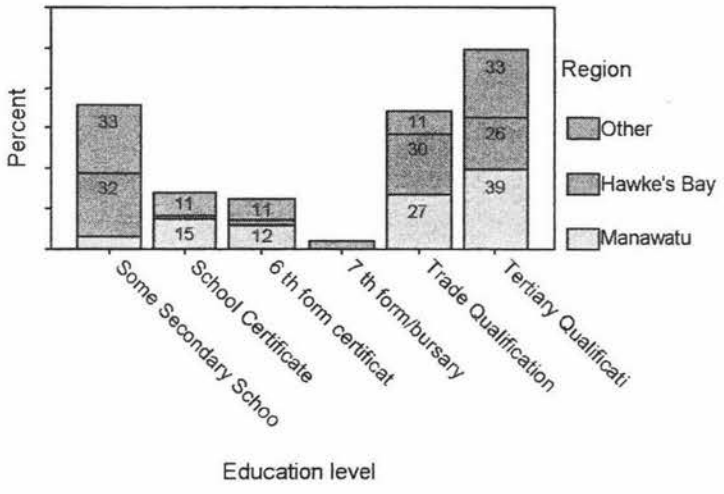


Within this survey the participation of hunters with a Tertiary Qualification is more than 30%.

If we compare the level of education with the region where the hunters come from, we can see that hunters from the Manawatu Region have a higher education level than people from Hawke's Bay. This could be

because of the presence of Massey University in the Manawatu Region but it may also be due to social and economical reasons.

Figure 9.1.3 Education level compared with the region



According to the Regional Profile Statistics Census from 1996 the Manawatu-Wanganui Region has a higher education qualification level than the Hawke's Bay Region. Although the region as a whole has a low level of educational qualification, the city of Palmerston North really stands out from other districts in the Manawatu-Wanganui Region and is higher (13.2 %) than the national level of educational qualification (9.5 %). The presence of Massey University, related research institutions, and the polytechnic is evident in the greater proportion of people with university degrees. At the time of the 1996 census people in Hawke's Bay were generally less qualified than the national population. Only 5.5 % of adults had a degree compared with 9.5 % nationally.

9.1.5 Number of days

The researcher wanted to know how often the individual hunters go hunting in the Ruahine Forest Park and also in other Parks. Most of the respondents could give detailed information about the number of days they would stay in the Park per month. Other respondents did not give detailed information but wrote next to the question that they stay in general about one or two days a month in either the Ruahine or other Parks.

Figure 9.1.4 How often do you go hunting in the Ruahine Forest Park?

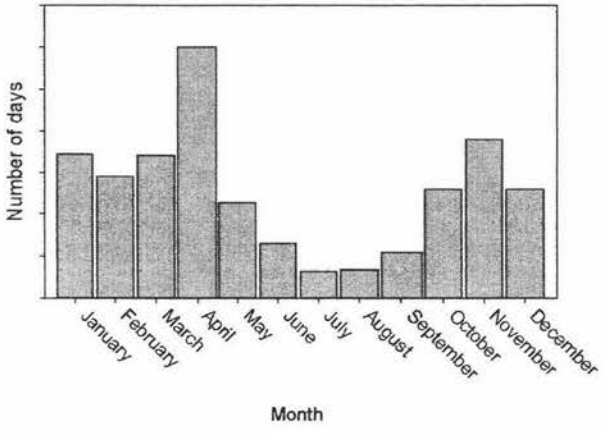
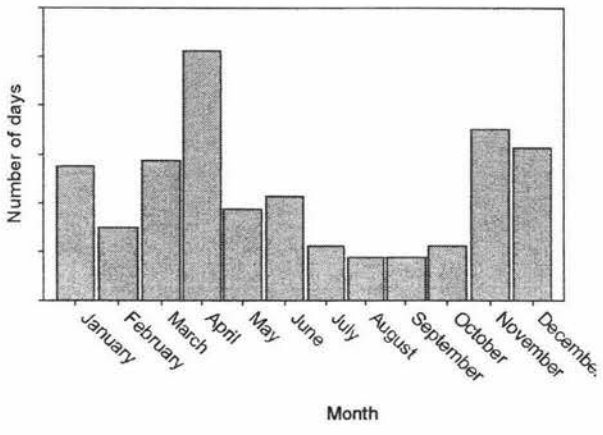


Figure 9.1.5 How often do you go hunting in other Parks?



The most preferred months were April and November. There are probably two main reasons why people mostly go hunting in April: the Easter holiday and the Roar season (1 February – 31 May). Hunters prefer the Roar season because deer are much easier to hunt than in any other time of the year. The deer can be heard over several kilometers range and hunters can try to attract their attention by simulating the sound of stags. During the Roar season deer are also not as careful as usual and are generally more visible. The second peak from October till December is the springtime when deer again lose their caution and become an easy target for hunters. The lush grasslands and the development of the stag's

antlers force the deer out of the dense bush. The winter months are not preferred for hunting trips because of the cold weather and deer tend to hide more in the dense bush, which often results in an unsuccessful hunting trip.

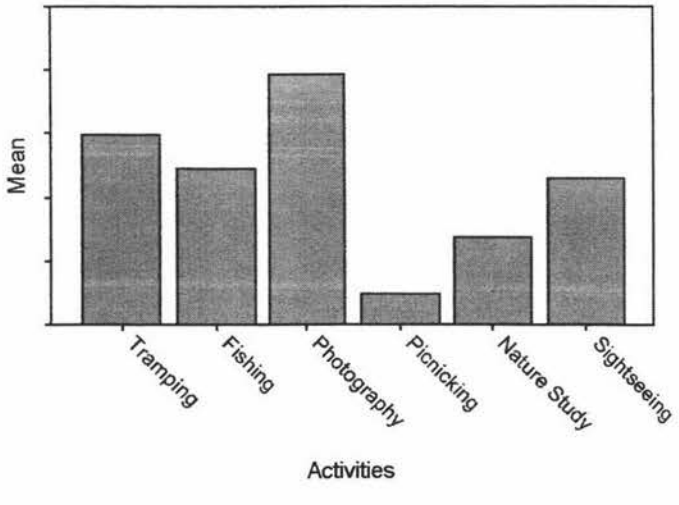
Earlier surveys in the Wellington region by Henderson (1974) indicated that 36% of the Wellington hunters had hunted on more than 15 days in the previous year, 35% had hunted on 5-14 days and 26% on 1-4 days (Aukerman & Davison, 1980).

The hunters who responded to this survey hunt about 24 days on average per year in the Ruahine Forest Park and 20 days in other parks. These numbers are significantly higher than the numbers found in earlier studies, which is probably a result of the increase in importance of recreation activities, the increasing motivation of "exiting the civilization", and the ease of access and transportability. Plus, this region is a rural area; farmers may be more likely to hunt than Wellington city dwellers.

9.1.6 Other activities

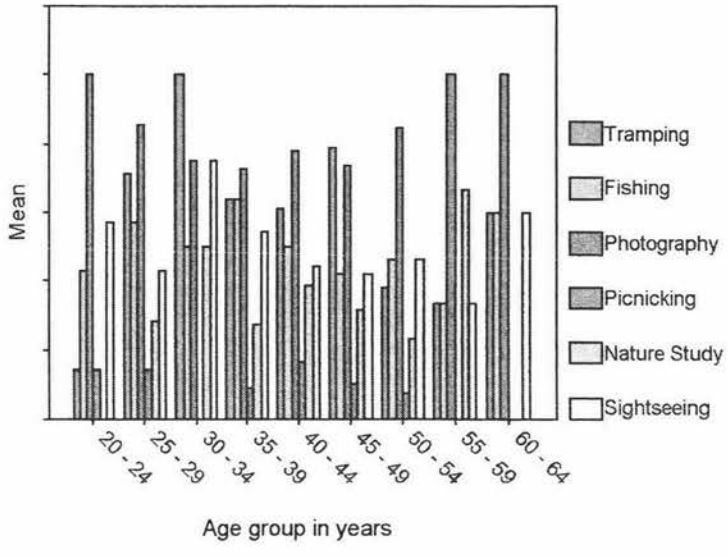
Other information gathered included what other activity hunter's do while hunting. As mentioned earlier in the introduction there is today an associated trend in the increasing number of outdoor activities by individual multi-activity recreationists.

Figure 9.1.6 Which of the activities do you do while hunting?



Photography was mentioned as the most preferred other activity done during hunting trips. Also tramping is considered as an important activity while hunting. The hunters also mentioned other activities, which were not provided in the questionnaire. These included relaxing, bird watching and getting away from civilization.

Figure 9.1.7 Activity combined with Age-group

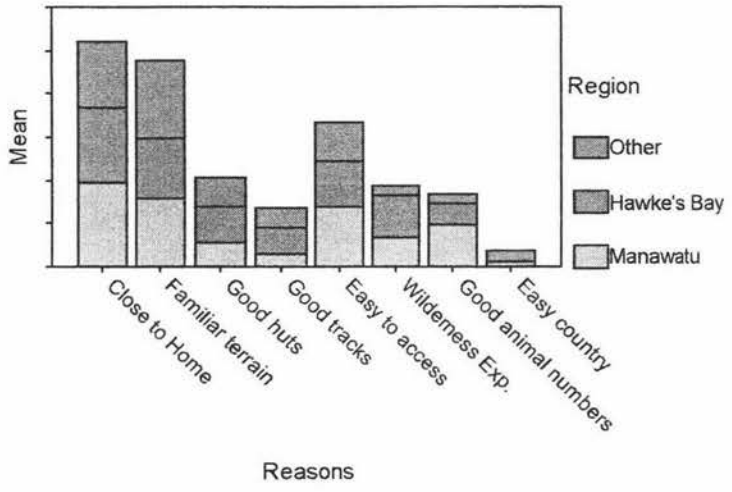


If we compare the activity with the age group we can see that photography is most important in almost every age group, except in the age group 30-34 and 45-49 where tramping seems to be the most important activity during hunting.

9.1.7 Why hunting in the Ruahine Forest Park?

To manage the park more effectively those managing the Park need some understanding of the motivations of the hunters in choosing Ruahine Forest Park for their activity. Therefore the hunters were asked to select from eight choices their reason for going into Ruahine Forest Park.

Figure 9.1.8 Reasons for hunting in the Ruahine combined with Region



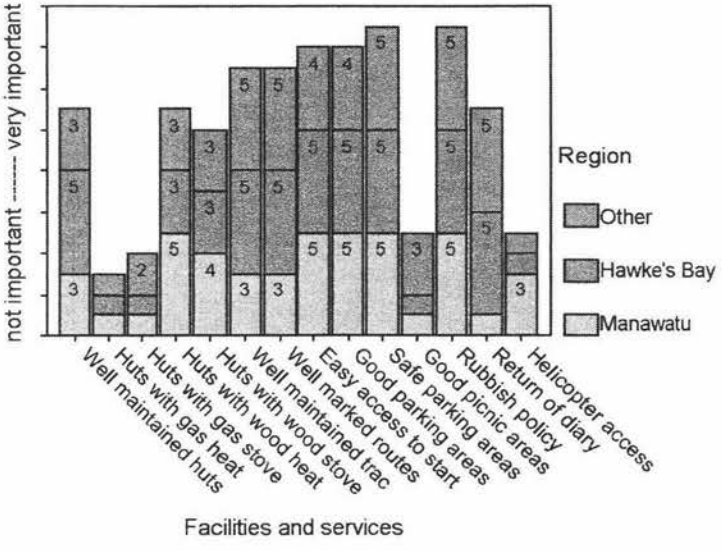
The main reasons for going hunting in Ruahine Forest Park are the closeness to the hunter's home and the familiarity of the terrain. The ease of access is related to the closeness of the Park to the hunter's home. Other reasons mentioned were; less crowded than other parks, variety of vegetation, variety of animals (Red deer, goats, sheep, etc.), and quantity of huts. The proportion of the human population choosing to hunt in a particular area declines markedly with increasing distance from that area and is largely a consequence of the increased time and transport costs. However, in recent years the increased use of helicopters for transport into remote areas has reduced the differences between areas, particularly during the roar (Department of Conservation, 2000).

9.1.8 Importance of facilities and services

The survey also questioned hunters about their demands for the maintenance and supply of facilities in the park. The hunters were asked to rank attributes according to their importance. The scale ranged from 1 = Not important, over 3 = Moderately important, to 5 = Very important.

The table below shows the mode of the responses in order of importance.

Figure 9.1.9 Importance of facilities per region



If we compare the responses of the importance between the three different regions we can see that the responses are not very different from each other per region. But it seems, that people from the Manawatu Region do not consider well maintained tracks, well marked routes, and the returning of the hunter diaries as important as people from the Hawke's Bay region or the Other region (Rangitikei and Wanganui). Therefore the Manawatu Region find huts with wood heating and stove, and helicopter access more important than the other two regions. Huts with gas-heating or gas-stove are not important to hunters at all, because hunters often do not use huts when searching for deer and value a tent almost as much as a hut (see section 'Overnight stay').

9.1.9 Concerns about tracks and huts

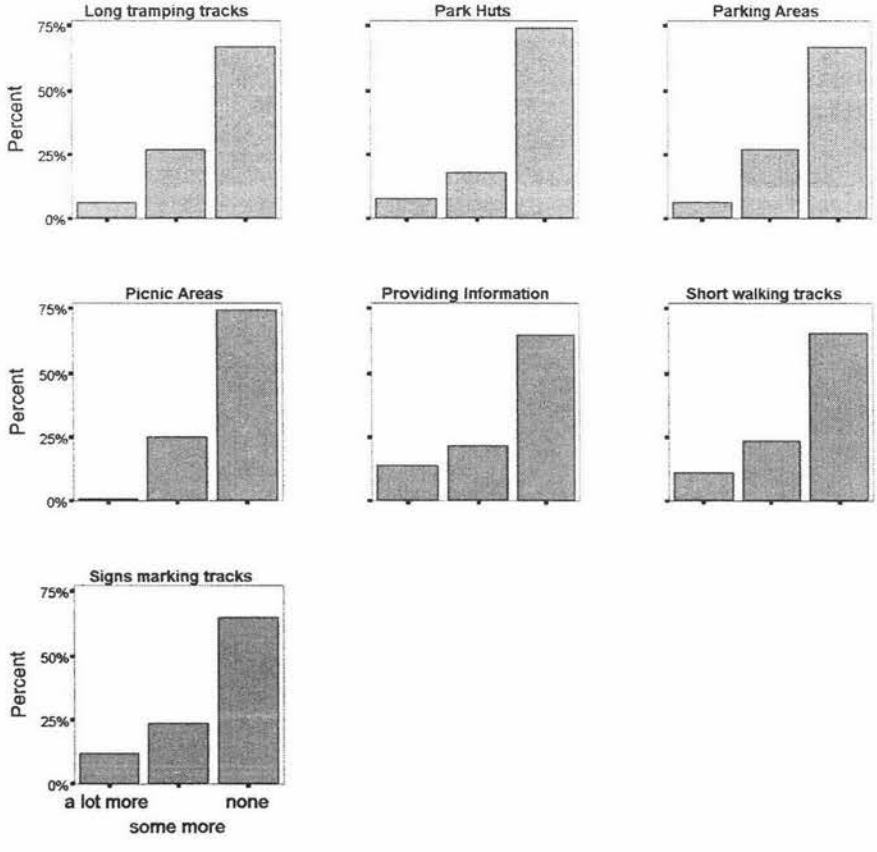
Table 9.1.2 Concern about tracks or huts

	Frequency	Valid Percent
Have no concerns	64	68.1
Have concerns	30	31.9
Total	94	100.0

Only 31.9% of the hunters had concerns about certain tracks and huts. A list of the different concerns can be seen in Appendix 3.

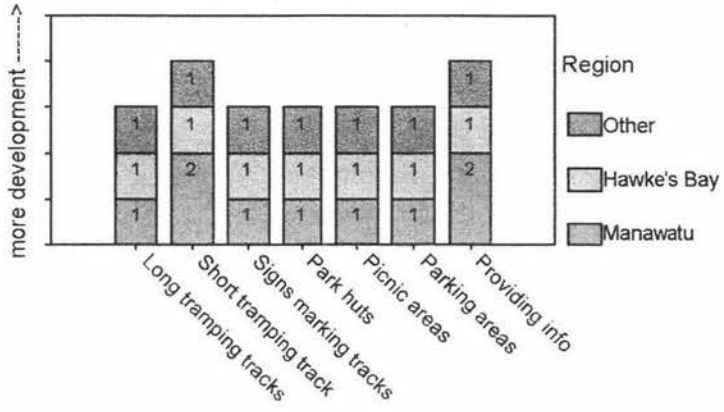
9.1.10 Further development of the Park?

Figure 9.1.10 Further development of the Park



50.5% of the hunters found that Ruahine Forest Park should be further developed to cater for visitors. From the 50.5%, the people from the Manawatu region would like to see a lot more development. For example, the provision of a lot more information and a lot more short walking tracks.

Figure 9.1.11 Further development of the Park combined with Region



1 stands for 'Some more development'

2 stands for 'A lot more development'

9.1.10 The rating of DoC's management

How the hunters rate DoC's management of the Ruahine Forest Park can be seen in the next graph (Figure 9.1.12).

Figure 9.1.12 Rating of DoC's Management

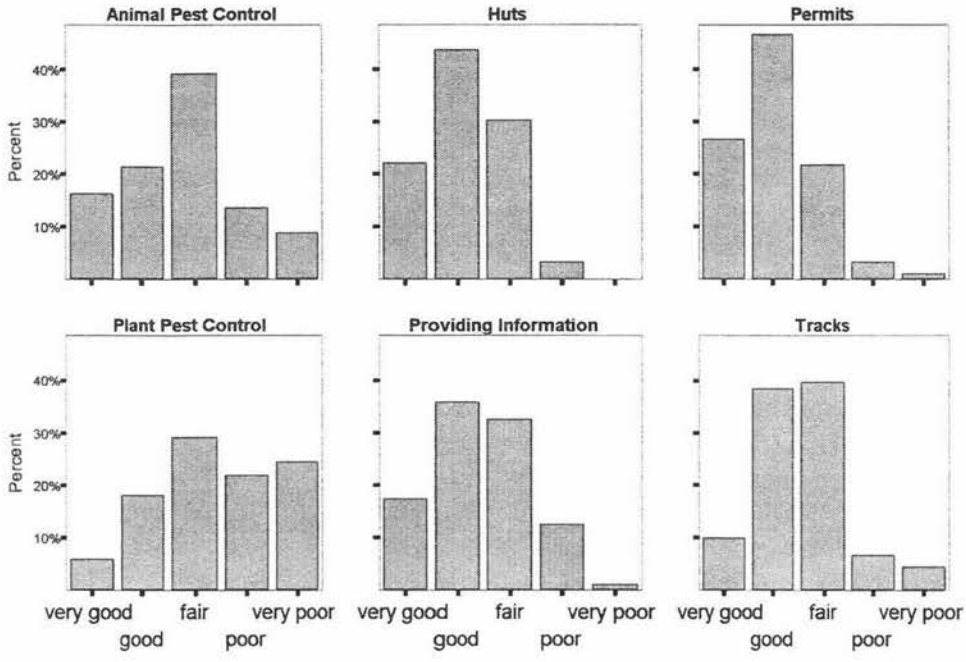
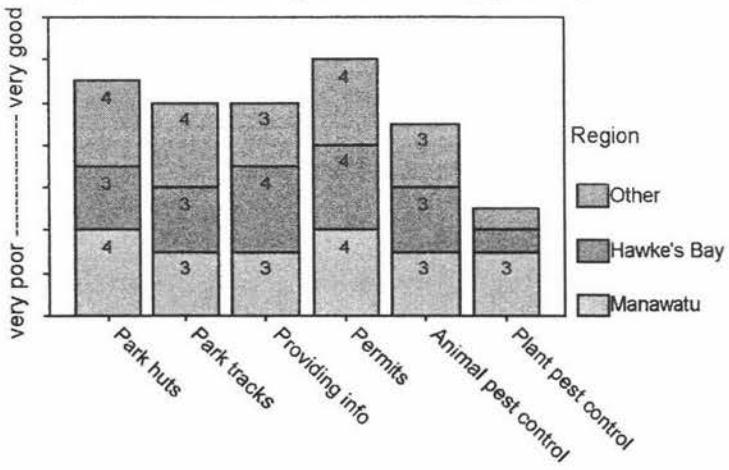


Figure 9.1.13 Management ranking per Region



1 stands for 'very poor', 2 for 'poor', 3 for 'fair',

4 for 'good', 5 for 'very good'

The long bars represent the good rating. For the issue 'Permits' a lot of responders did not give any judgement, some mentioned that they do not have enough information about this particular issue to make a judgement.

In general the management is rated good to fair. Only two regions mentioned plant pest control as poor. Hunters from the Hawke's Bay Region had quite different views on animal pest control compared to plant pest control. However, some hunters also mentioned that the animal pest control is too good. The plant pest control seems instead to be very poor in the Hawke's Bay region.

9.1.11 Other Parks visited regularly

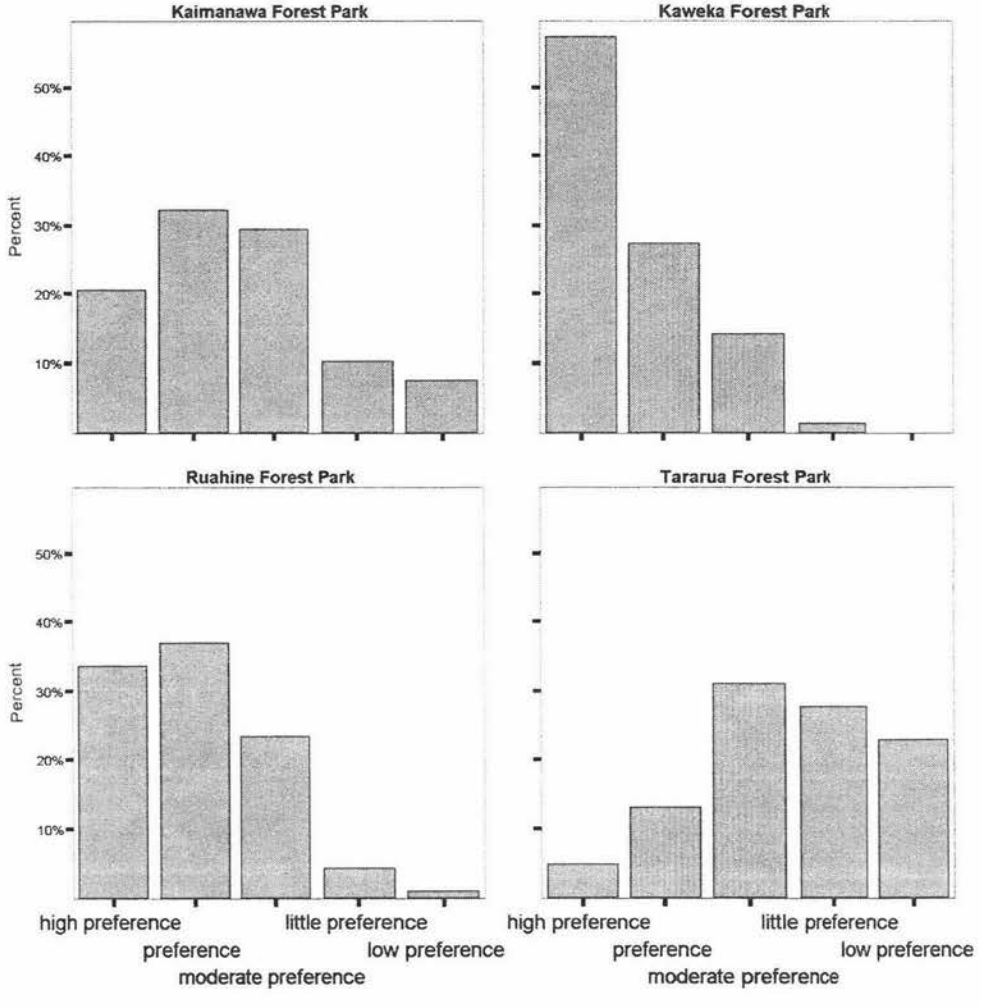
With 19 Forest Parks and several National Parks in New Zealand people have a great choice to go to different parks. The researcher wanted the hunters to state other parks they regularly visit for their hunting activity. A wide range of different Forest and National Parks were mentioned, but there are four parks, which are particularly preferred for hunting purposes. These are Kaweka Forest Park = 68 respondents, Kaimanawa Forest Park = 37 respondents, Urewera Forest Park = 15 respondents, and Tararua Forest Park = 13 respondents. It can be assumed that they are preferred for their closeness. Three of these four parks will be further analysed in the next paragraph.

9.1.12 Most preferred Parks in the two regions

The Ruahine Forest Park is surrounded by other Forest Parks, which are also managed by DoC Conservancies. These are the Kaweka Forest Park, the Tararua Forest Park, and the Kaimanawa Forest Park. The parks are all quite different from each other in terms of vegetation, landscape, and animals but people often have certain preferences for certain parks, therefore the hunters were asked to rank the four different parks in order

of preferences and give also reasons for doing so.

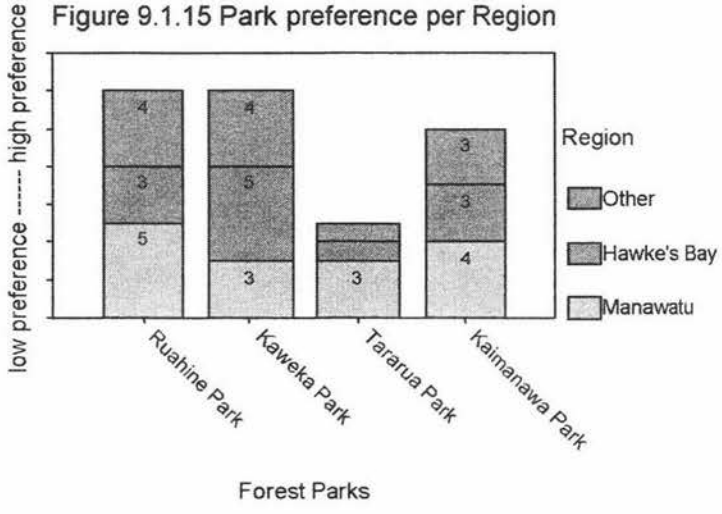
Figure 9.1.14 The most preferred Park



Several reasons were given that make the Kaweka Forest Park the most preferred park for hunting. These were especially the larger numbers of Sika deer, which are often preferred to Red deer, and the more open terrain, where it is much easier to hunt. The Ruahine is preferred for Red deer, the closeness to home, and for the low number of other visitors. The Kaimanawa is also liked for the presence of Sika deer, which seems to be more challenging than hunting Red deer. Hunters have an aversion

to the Tararua Forest Park, because of the low number of deer and the high number of visitors.

Figure 9.1.15 Park preference per Region



1 stands for 'low preference', 2 for 'little preference', 3 for 'moderately preference', 4 for 'preference', 5 for 'high preference'

Compared with the region the Ruahine and the Kaweka Forest Park score both as high. The main reason mentioned for the high preference for a certain park is 'closeness to home'. The graph shows the relation between the parks and the regions and as you can see the park closest to a certain region is most preferred (e.g. Kaweka Forest Park is high preferred by hunters from the Hawke's Bay region).

Earlier research in the Christchurch region by Neighbour (1973) indicated that the most hunters travel two hours or more to hunting destinations. A quarter traveled to areas within half an hour of the city. The ease of access is also an important factor. By far the majority of permits are issued for easily reached forests. (Aukerman & Davison, 1980). However, another important reason mentioned for the preference of a certain park was the presence of Sika deer in the Kaweka and Kaimanawa Forest Parks and the word 'challenge' was often used in combination with Sika Deer. Research by Aukerman and Davison (1980)

indicated that the most important need expressed by hunters is proof of their hunting skill in shooting an animal. This involves challenge and exercise of the hunter's bushcraft knowledge and skills. However, the success of hunting is very important and for many hunters the number of animals in other parks than Kaweka has been reduced far below the level, which will guarantee a reasonable chance of success for the time and energy expended.

9.1.13 How often do you do the following?

The Department of Conservation as the manager of the Ruahine Forest Park expects from the Park visitors that they act in accordance with the regulations set up for the use of the Park. The hunters were asked to be honest about complying with the regulations and could respond to five issues on a scale from 1=never, over 3=sometimes, to 5=always. The outcome shows that hunters always remove their rubbish from the park and pay their hut fees, but only sometimes hand their hunting diaries back in to the DoC offices.

Figure 9.1.16 How often do you do the following, by Region?

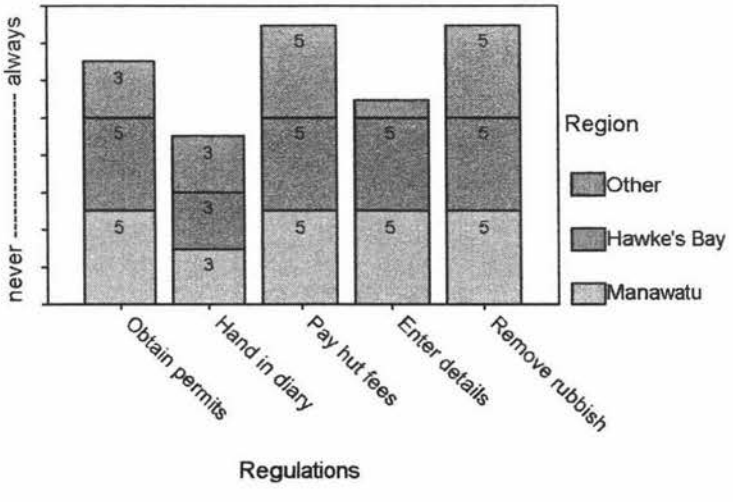
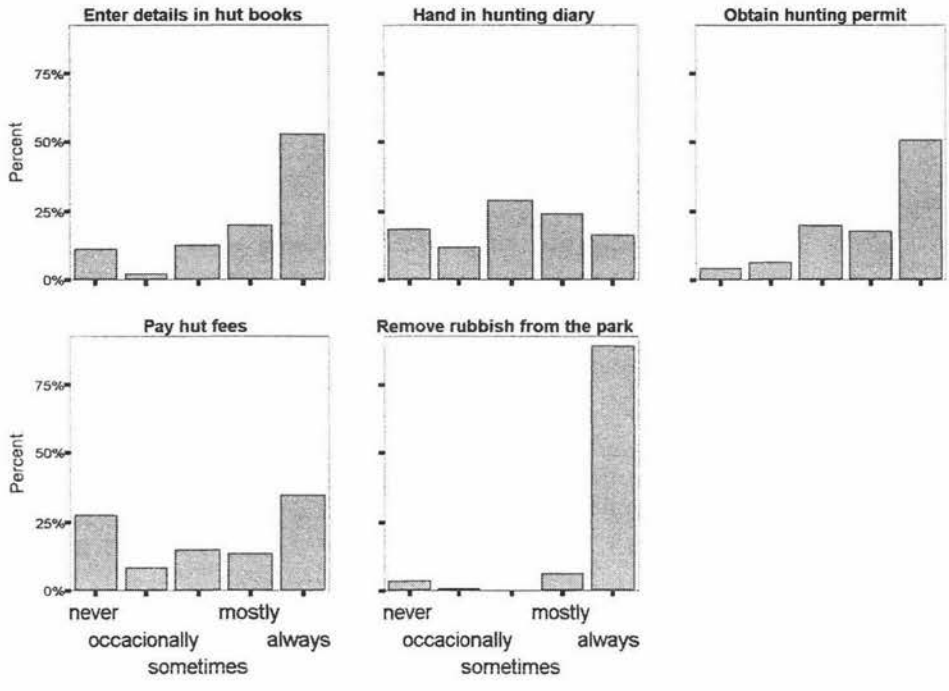


Figure 9.1.17 How often do you do the following?



Sixty-nine of the ninety-four hunters (73%) gave several reasons for not always complying with the regulations. The main reasons for not always handing in the hunting diaries were the distrust of DoC and laziness. Distrust of DoC means that hunters think that when they provide DoC with information about the location and numbers of deer that DoC will send commercial helicopter hunters to these areas.

Often hunters find that helicopters have recently harvested an area and that the remaining deer are hiding in dense bush. This appears to anger hunters, especially if a lot of effort was involved to reach a certain destination. About half of the area of the Ruahine Forest Park is not allowed for helicopter hunting, which leaves only a few areas where the urban-based hunters can find deer. It is also often very difficult to get permission to hunt on private land as the landholders may wish to keep

the commercial value of deer for themselves or ask enormous rental charges.

Hand in hunting diaries:

Approximately 63,500 permits for recreational hunting are issued annually throughout New Zealand, from which about 20,200 (32%) hunting returns are received.

The return rate for hunter diaries varies considerably, from relatively poor levels of up to 10% in the Bay of Plenty and Wanganui Conservancies to at least 50% in the Waikato, Canterbury, Otago, and Southland Conservancies. Return rates tended to be highest for those conservancies where follow-up reminder letters were used or where restricted block systems operated in some areas. Table 9.1.3 show data collected during a 12-month period in 1993 (Department of Conservation, 2000).

Table 9.1.3 Return rate of kill returns

Conservancy	**Approx. Area (km^2)**	**Big-Game Species Present***	**No. Of Permits issued**	**No. Of Returns Received**	**Return Rate (%)**
Hawke's Bay	1700	Re, Si, Pi, Go	c. 6200	c. 1300	21
Wanganui	2800	Re, Fa, Si, Sa, Pi, Go,	5161	238	5
Total	**3500**		**11361**	**1538**	**13**

* Re = Red Deer, Fa = Fallow Deer, Si = Sika Deer, Sa = Sambar Deer, Pi = Feral Pig, Go = Feral Goat

The reported number of days hunted typically exceeds the total number of permits issued by a factor of 2-3 times (Fraser, 1996). Allowing for 25% of hunters not obtaining a permit and approximately 3 days hunting per permit, the 11,361 permits issued equates to c. 42,600 days of

hunting annually on conservation land by recreational hunters.

Enter details in hut books:
Since the introduction of a comprehensive hut fees system within DoC-administered areas in 1988, managers have perceived a drop in the number of hut users filling in hut books (N. Jones, DoC, Head Office, Wellington, pers. comm., 1993, cited in Department of Conservation, 2000). The reasons for not entering their details were in general: they do not stay often in huts, using hut books as a rescue tool does not occur to them, or they could not find a pen.

Obtain hunting permits:
According to some of the hunters the hunting trips are often not planned and prepared a long time in advance. Hunters often find it too late on Friday evening or Saturday morning to obtain a permit at the DoC office, which is often far away from their home.

Pay hut fees:
Some hunters do not agree with the hut fee system and believe that as the huts were built with tax money they should not have to spend more money on them. They also stated that they are doing a lot of maintenance and cut firewood for the huts.

9.1. 14 Trophy hunter
Would you be satisfied with shooting a deer but not obtaining a trophy?

Table 9.1.4 Trophy satisfaction for all regions

	Frequency	Percent
Yes	86	91.5

No	7	7.5
Missing	1	1.1
Total	**94**	**100.00**

To obtain a trophy is a very important issue with hunting, but only 7 out of 94 responders (7.4%) would not be satisfied with not obtaining a trophy. Information relating to deer indicates that recreational hunters are less efficient than state-funded hunters in terms of hunting effort per kill. This partly reflects selectivity by some recreational hunters who pass up opportunities to shoot fawns and/or hinds in favour of stags (Nugent, 1990b, unpubl. FRI contract report; Fraser & Speedy, 1997; cited in Department of Conservation, 2000), presumably in an effort to conserve the deer population but also partly due to the considerable concentration of recreational hunting effort during the roar.

Recreational hunters hunt for a variety of reasons including taking home some venison, trophies, the outdoor experience, and comradeship (Fraser & Sweetapple, 1992; Fraser, 1996). As a consequence, recreational hunters take considerably fewer animals per hour hunted than full-time professional (commercial or state-funded) hunters do.

9.1.15 Use of animals

According to Aukerman & Davison (1980), recreational hunters cannot be classed as recreational hunters anymore since the commercial value for venison and the stocking of deer as livestock on deer farms. The reward of success means extra cash for living and luxury items. However, the price for venison has changed a lot in the last twenty years and deer harvest seems to be less profitable than it used to be.

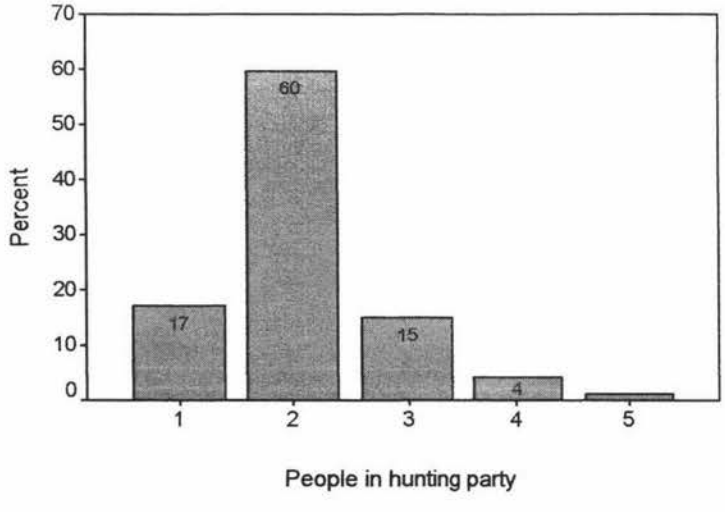
Table 9.1.5 Use of Animal

		N	Own use	Sell
First animal	Take meat only	49	48	1
	Take meat and trophy	67	67	0
	Take trophy only	4	4	0
	Take whole carcass	41	35	6
Second animal	Take meat only2	36	33	3
	Take meat and trophy2	43	43	0
	Take trophy only2	5	5	0
	Take whole carcass2	30	18	12

According to Fraser and Sweetapple (1992) and Fraser (1993) the motivations and goals of recreational hunters were in the early years principally related to trophy hunting, while the opportunities for shooting good quality trophy stags on public land are now considerably less. Typically, the average hunter of today is motivated more by the opportunity to take home some venison and enjoyment of the outdoor experience. This statement is supported by the outcomes of this survey. Hunters would take the meat and if there would be a trophy they would be pleased with collecting it.

9.1.16 Size of hunting parties

Figure 9.1.18 Average number of people in hunting party

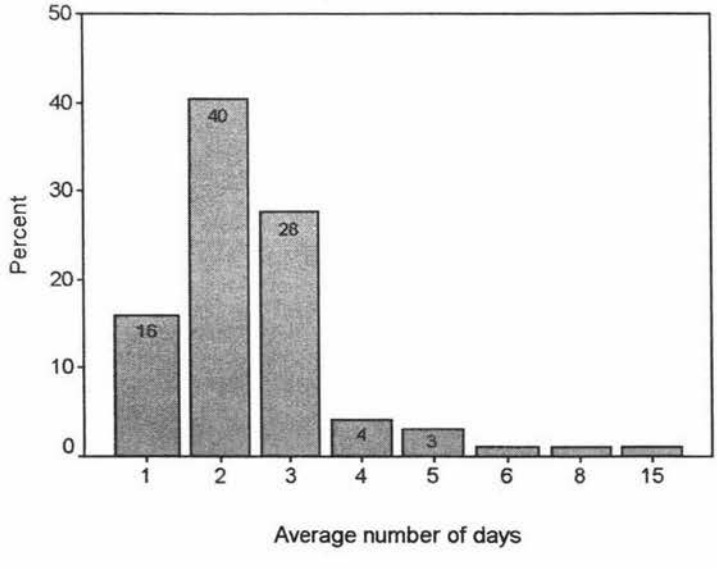


Hunting can be undertaken alone or with a few companions. This survey targeted in general hunters who are member of the NZ Deerstalker Association. However some surveys were sent out to smaller hunting clubs as well. The hunters belonging to a club may be only a fraction of the total number of hunters in New Zealand.

Almost every hunter responded to this survey belongs to a club, either the NZ Deerstalker Association or smaller hunting clubs, which hunt alone or with friends and club members. Belonging to a club has social and educational advantages as well as an active political lobby. The Association is fighting for recognition and maintenance of the hunting resources.

9.1.17 Average number of days for hunting

Figure 9.1.19 Average number of days in Park



The average numbers of days hunters stay in the Forest Parks are 2 to 3 days. For hunting deer, hunters need to go to the bush either very early in the morning or late in the evening because this is the most active time

for the deer. For this reason it is easier to spend a night in the hut, tent or bivouac than traveling during the night to spend just one day in the Park.

9.1.18 Overnight stay

Table 9.1.6 Overnight stay

		Frequency	Valid Percent
	Huts	38	46.9
	Tents	31	38.3
	Bivis	12	14.8
	Total	81	100.0
Missing	0	13	
Total		94	

Huts and tents are almost equally valued for hunters. Hunters often do not use the provided tracks on search for deer and therefore often stay in tents or bivouacs. This was also the reason for not always paying the hut fees under the heading 'How often do you do the following?' and it explains the outcome that huts with gas-heating or gas-stove are not important to hunters (see section 'How important are the following?').

9.1.19 Summary of hunter survey outcome

Table 9.1.7 Summary of survey outcome

Member of outdoor clubs	77 of the 94 responders (82%) belong to a club. These clubs are the NZ Deerstalker Association (64 of the responders), Forest & Bird, Fish & Game, several small hunting clubs (e.g. Safari Club International, Central Hawke's Bay Shooters, Black Stag Hunting Club), and also some Tramping- and Fishing Clubs. Twelve of the

	hunters belonged to more than just one club.
Region	The Hawke's Bay Region had the highest response with 54.3%. The Manawatu Region responds with 35.9%. The "Other" Region (9.8%) consists of the Wanganui and Rangitikei Region.
Gender	Hunting is a male-dominated recreational activity. This survey had a 100% male contribution, probably because only club members were targeted.
Age Group	The most responders (41%) were between 40 and 49 years old.
Education	The tertiary (32%) and trade (28%) qualifications counted together 60% of the responders, which is very high compared with earlier research focusing on hunters.
Number of days	The hunters hunt about 24 days on average per year in the Ruahine Forest Park and 20 days in other parks. The most preferred month were April and November probably due to the Roar season and the springtime.
Other Activities	Photography was the most preferred activity done during hunting. Also tramping is considered as an important activity while hunting. The hunters also mentioned other activities, which were not provided in the questionnaire. These were in general relaxing, bird watching and to exit civilization.
Reasons for hunting in the R.F.P.	The main reasons for going hunting in the Ruahine Forest Park is the closeness to the hunter's home and the familiarity of the terrain.

	The ease of access has also to do with closeness of the Park to the hunter's home. Other reasons mentioned were: Less crowded as other parks, variety of vegetation, variety of animals (Red deer, goats, sheep, etc.), and quantity of huts.
Importance of facilities/services	It seems, that people from the Manawatu Region do not consider well maintained tracks, well marked routes, and the returning of the hunter diaries as important as people from the Hawke's Bay region or the Other region (Rangitikei and Wanganui). Therefore the Manawatu Region find huts with wood heating and stove, and helicopter access more important as the other two regions. Huts with gas-heating or gas-stove are not important to hunters at all.
Concern about tracks and huts	Only 31.9% of the responders had concerns about certain tracks and huts (see Appendix 3).
Further development of the Park	50.5% of the responders found that the Ruahine Forest Park should be further developed to cater for visitors. From these 50.5% the people from the Manawatu region would like to see more development in especially: the providing of a lot more information and a lot more short walking tracks
Rating of DoC's management	In general the management is rated good to fair. Only two regions mentioned plant pest control as poor. However, some hunters also mentioned that the animal pest control is too good. The plant pest control seems instead to be very poor in the Hawke's Bay region.

Other Parks visited regularly	A wide range of different Forest- and National Parks were mentioned, but there are four parks, which are really preferred for hunting purposes. These are Kaweka Forest Park = 68 respondents, Kaimanawa Forest Park = 37 respondents, Urewera Forest Park = 15 respondents, and Tararua Forest Park = 13 respondents.
Most preferred Park	Compared with the region the Ruahine and the Kaweka Forest Park score both as high. The main reason mentioned for the high preference for a certain park is 'closeness to home'.
How often do you do the following?	Hunters always remove their rubbish out of the park and pay their hut fees, but only sometimes hand their hunting diaries back in to the DoC offices.
Trophy hunting	Only 7 out of 94 (7.4%) responders would not be satisfied with not obtaining a trophy.
Use of animals	The average hunter of today is motivated more by the opportunity to take home some venison and enjoyment of the outdoor experience. This statement is supported by the outcomes of this survey. Hunters would take the meat and if there was a trophy they would be pleased with collecting it.
Size of hunting party	Almost every hunter responded to this survey belongs to a club, either the NZ Deerstalker Association or smaller hunting clubs, which hunt alone or with friends and club members. The most mentioned party size was two people.
Average number of	The average numbers of days hunters stay in the

days	Forest Parks are 2 to 3 days.
Overnight stay	Huts and tents are almost equally valued for hunters. Hunters often do not use the provided tracks on search for deer and therefore often stay in tents or bivouacs.

9.2 SECTION TWO: - Trampers

Traditionally, tramping is considered the major recreational use of the Ruahine Forest Park. The survey targeted trampers who are members of tramping clubs in the regions around the Ruahine Forest Park. These tramping club members can be classified in certain groups identified by the DoC's visitor strategy. There are seven distinct visitor groups, which can be identified; short stop travellers, day visitors, overnighters, backcountry comfort seekers, backcountry adventurers, remoteness seekers, and thrill seekers. The club members can belong to different groups at different times, but at any one time the trampers from a tramping club will be one of these seven groups, because the clubs offer a variety of different trips almost every weekend. These trips range from easy daytrips for everyone, to trips where they stay for several nights in the bush (for people who should have a high rate of fitness and bushcraft skills).

Only 10 of the responders did not belong to a club. The clubs and organisations mentioned were the Manawatu Tramping & Skiing Club, Palmerston North Tramping & Mountaineering Club, Heretaunga Tramping Club, Massey University Alpine Club, Wanganui Tramping Club, Royal Forest & Bird Society, Rangitikei Tramping Club, Taihape Tramping Club, NZ Alpine Club, and many other small clubs.

9.2.1 Regions

Table 9.2.1 Survey Respondents by Regions

	Frequency	Valid Percent
Manawatu	84	61.3
Hawke's Bay	22	16.1
Other	31	22.6
Total	137	100.0

The most responses came from the Manawatu Region. The Wanganui, Wairarapa, Rangitikei, and Horowhenua Regions are grouped together as 'Other'.

9.2.2 Gender

Forty-six female trampers (33%) responded to this survey. Compared with the hunter responses tramping is not as male-dominated as hunting and the researcher noticed a high participation of women during the meetings of the tramping clubs.

According to Booth (1989), men are frequently over-represented in active outdoor pursuits. She suggests that there are one-and-a-half to two times more men than woman participating in active outdoor pursuits.

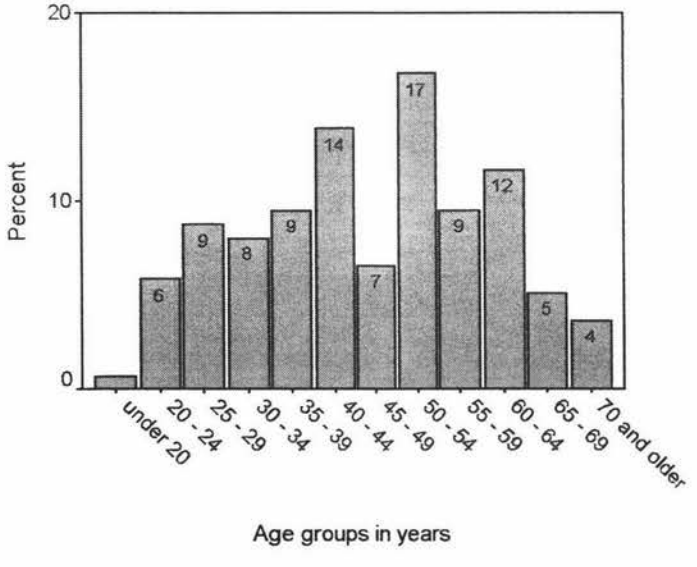
Studies of tramping (Devlin, 1976; Mawhinney, 1980; Simmons, 1980; Groome, et al. 1983; Harris, 1983; and Cessford, 1987; cited in Department of Conservation, 2000) show greater variation in gender, with the proportion of males ranging from 50-70 %.

9.2.3 Age groups

A survey in Auckland in 1973 showed that 31% of the 16-24 year age group, 16% of the 25-44 year age group and 6% of those over 45 years, had tramped during the previous year. In a Wellington study (Henderson & Stagpoole, 1974), 42 % were aged 16-24 years and only 3% were aged

25-34 years, while the 35-44 and 45-54 year age groups accounted for 10% and 11% respectively. Groome *et al.* (1983) found during his survey in the Kaimanawa and Kaweka Forest Parks that most trampers belonged to the 30-39 (21.9%) year age group and almost the same percentage was found in the 20-24 (21.5%) year age group. Cessford (1987) found the 25-34 year age group the most dominant group at the Greenstone/Caples Valleys and he together with Simmons found in 1989 the 30-44 year age group most dominant at the St. James Walkway. As already mentioned in the hunter response results the statistics census in 1996 found that the age structure in Hawke's Bay was slightly older than the national average, with a median age of 33.8 years compared with 33.0 years nationally. The Manawatu- Wanganui Region had the fourth-lowest median age structure (32.2 years) in the country, which is probably affected by the high number of students in Palmerston North.

Figure 9.2.1 Age groups



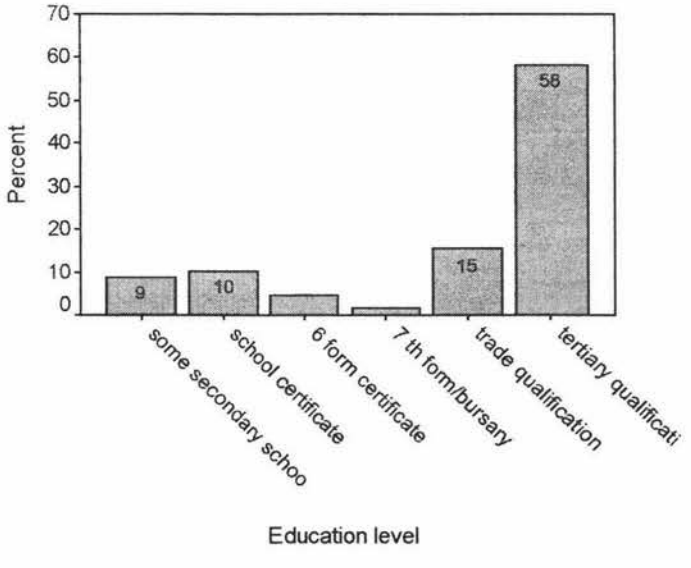
The major age groups in this survey were the 40-44 years and the 50-54 years age groups (see Figure 9.2.1), which are much higher than the age

groups found in the earlier 1970's and 1980's surveys and in the statistics census from 1996. The reason for this is probably that only trampers who belong to a tramping club were targeted. The older age groups are more interested in socializing, like to share the recreational activity with other people of their own age and fitness is nowadays more important to older people. If this survey were undertaken as an on-site survey the average age groups may probably have been younger.

9.2.4 Education

Earlier survey's noted that persons with degrees were more likely to go tramping than those with primary qualifications only. A Tongariro National Park hut user survey in summer 1976 found 50% had university degrees or part degrees. A Mount Cook study showed 55% of the trampers had some university or higher education.

Figure 9.2.2 Education level



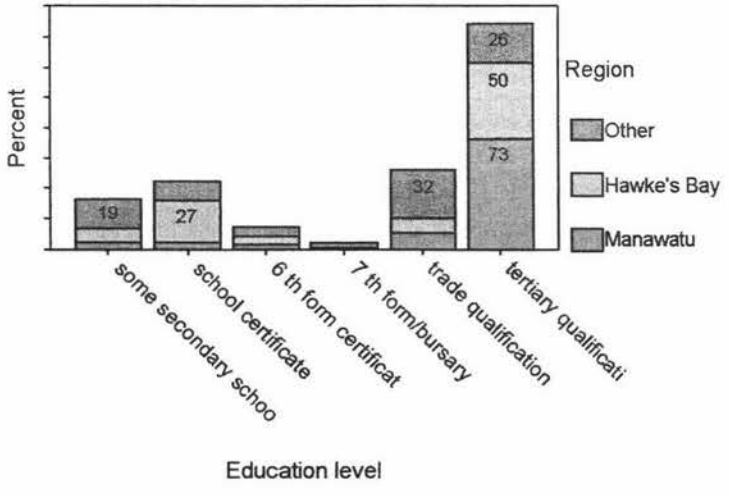
The level of tertiary qualification in this survey is very high. Research has examined the relationship between outdoor recreation and level of education and found that people with higher educational qualification

tend to be over-represented. Various researchers show that as many as 50 per cent of outdoor recreation resource users have full or part tertiary qualifications (Devlin, 1976; Simmons, 1980; Groome et al., 1983a; Cessford, 1987, cited in Department of Conservation, 2000). This is significantly more than the general population.

Consideration should be given to the likelihood that more highly educated people are more likely to complete questionnaires, thus influencing the results. Sutton (1989) and Devlin (1993) note that education data may not be a true reflection of the education qualification of users (mentioned in Department of Conservation, 2000).

> "Those with degrees would either be academically interested, feel obligated towards the researcher, or be motivated by strategic interest in the belief that their response may influence management" (Devlin, 1993: pg. 93; cited in Department of Conservation, 1995).

Figure 9.2.3 Education level compared with region



As already mentioned in the hunter response results the Regional Profile Statistics Census from 1996 found that the Manawatu-Wanganui Region

has a higher education qualification level than the Hawke's Bay Region. Although the region as a whole has a low level of educational qualification, the city of Palmerston North stands out from other districts in the Manawatu-Wanganui Region with 13.2 %, compared to the national level of educational qualification (9.5 %). The presence of Massey University, related research institutions and the polytechnic is evident in the greater proportion of people with university degrees. At the time of the 1996 census people in Hawke's Bay were generally less qualified than the national population. Only 5.5 % of adults had a degree compared with 9.5 % nationally.

9.2.5 Number of days

Figure 9.2.4 How often do you go tramping in the Ruahine Forest Park?

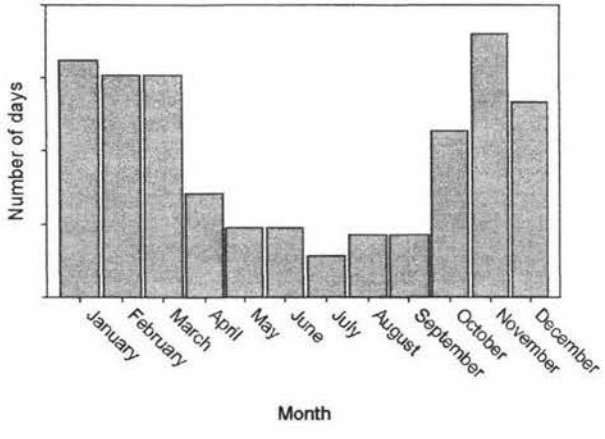
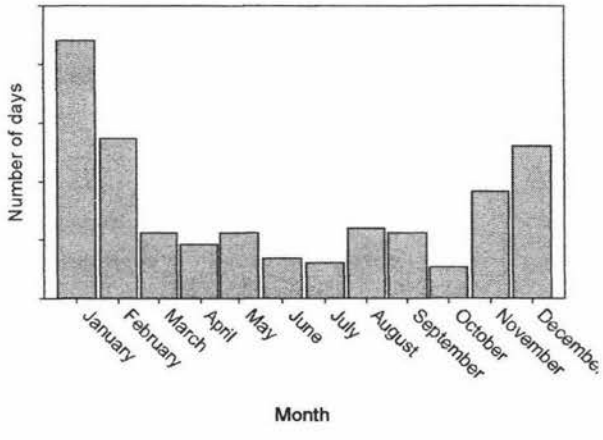


Figure 9.2.5 How often do you go tramping in other Parks?



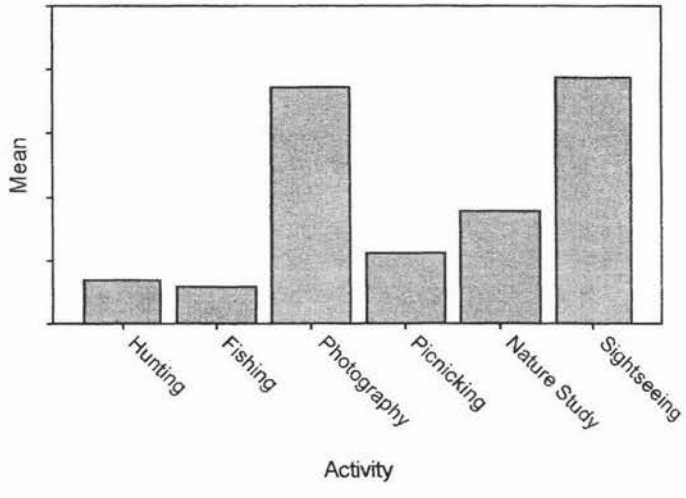
If we compare the most preferred month for tramping between Ruahine Forest Park and other Parks, we can see that people visit other Parks most often during their summer public holidays, while they often visit the Ruahine Forest Park also outside of the holiday periods. This is probably due to the closeness to people's homes. It can easily be visited for day or weekend trips. Nineteen of the trampers mentioned hunting as another activity they do while tramping. This could explain the peak in

the month November, but it could also just mean that springtime is a preferred time by trampers.

The average number of days tramped is 12 days per year in the Ruahine Forest Park and 19 days per year in other Parks. A Wellington survey (Henderson & Stagpoole, 1974) indicated that 32.5% tramped only one to four days a year, 29.5% tramped five to 14 days per year and 37.5% over 15 days per year. But this survey did not target club members who would go tramping more frequently.

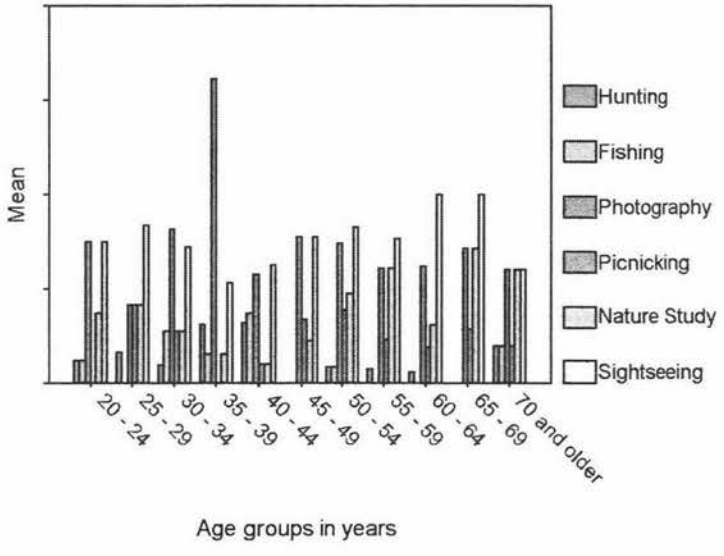
9.2.6 Other activities

Figure 9.2.6 Which of the activities do you do while tramping?



Sightseeing and photography are almost equally preferred as another activity combined with tramping. But there is quite a difference in the 35-39 year age group where photography seems to be very popular (see Figure 9.2.7, Activity combined with Age groups). Sightseeing is an increasing trend with the increase in the age group of trampers.

Figure 9.2.7 Activity combined with age group

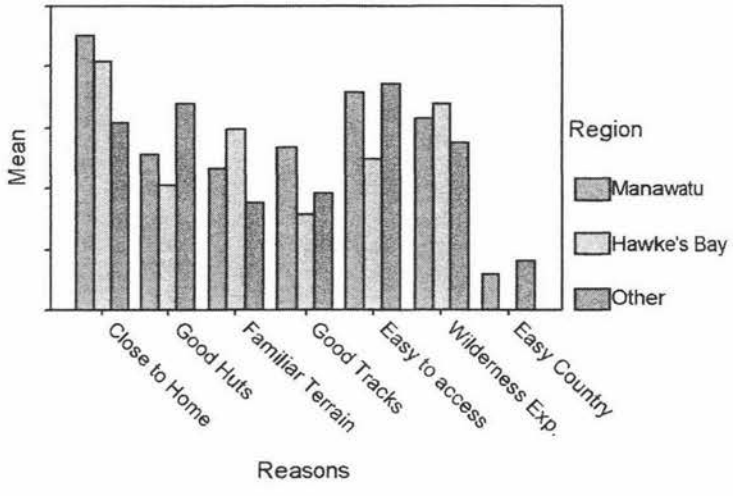


Other general activities mentioned by the trampers were: socialising, relaxing, climbing, exercise, and getting away from civilization. Often mentioned motivations in earlier surveys for outdoor recreation were: exit civilisation, aesthetic-religious, physical challenge, sociability, simple lifestyle, and individual-intellectual.

The pre-selected list of motives used here simplified coding and analysis, but it prejudged the responses. The choices of mentioning other activities were taken by almost 40% of the responders. The extent to which a particular activity was a motive for visiting a park differed from activity to activity. In an earlier survey 67% of hunters cited hunting as their primary motive with minimal reference to other motives such as getting away from civilisation. In contrast 33% of trampers cited tramping as their primary motive but also cited other motives very high.

9.2.7 Why tramping in the Ruahine Forest Park?

Figure 9.2.8 Reasons for tramping in the Ruahine combined with Region



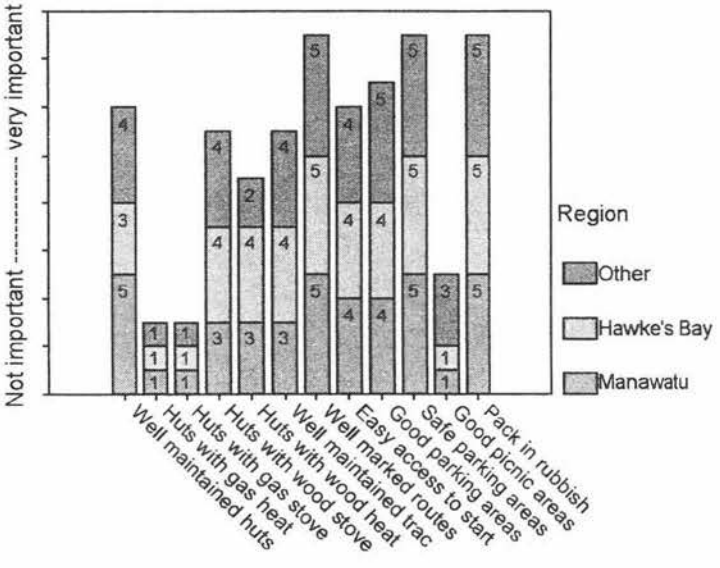
Commonly reported reasons for people walking a particular track were; scenery, physical challenge/exercise, natural history, and sociability. Solitude was another reason. The question is when and why do site-specific motives become more important than more general motives? The other reasons mentioned by the trampers which were not included in the pre-selected list were; Easy to get to the top, variety of terrain and vegetation, fewer people compared to other parks and good physical exercise.

The trampers from the Manawatu Region seem to prefer the 'closeness to their home', the 'ease of access', and the 'wilderness experience'. The people from the Hawke's Bay Region prefer also the' closeness to their home' and the 'wilderness experience', but also the 'familiarity of the terrain'. The trampers from the 'Other' Region liked instead the 'ease to access' and the 'good huts', but also the 'closeness to their home'.

9.2.8 Importance of facilities and services

The researcher wanted to find out the trampers demands for the maintenance and supply of facilities in the park. The trampers were asked to rank given attributes according to their importance. The scale ranged from 1 = Not important, over 3 = Moderately important, to 5 = Very important. The figure below shows responses in order of importance.

Figure 9.2.9 Importance per Region



As we can see, there are three issues, which are very important for the trampers in all of the surveyed regions. These are: well marked routes, safe parking areas, and the pack-in-and-pack-out rubbish policy. Good parking areas seem to be more important to people from the "Other" region. Earlier research (Aukerman & Davison, 1980) mentioned access as an important adjunct of available tramping areas, which also scored high in the survey. Access in the form of a road up to the start of a track with a car park or a space to park a car, is one of the prime requirements of trampers. Legal access across private land, whether on a formed road

or by foot, is also essential. The latter issue is often a concern to DoC, because the farmers living along the fringes of the Ruahine Forest Park deny access sometimes during lambing periods and have concerns about recreationists who leave gates open.

The safety of parking areas is an important issue for park visitors and cases of vandalism and robbery is often mentioned as additional information on the questionnaire. DoC staff members also mentioned vandalism in huts close to parking areas, as a serious problem. A 100% safe parking area will be very difficult to provide, but recommendations are made in this report to improve the safety for parking areas. For example DoC could make arrangements with farmers living close to the parking areas to keep an eye on the cars and on the people leaving the parking areas.

Well-maintained huts in this case do not mean that the trampers demand new, more luxurious huts (concluded from the answers given at other questions and notes from the responders). It just means the huts need to be kept in a tidy and good condition. From the hut logbook analysis many comments were concerns about other hut users who did not clean the hut after use and left their rubbish in the hut. It is interesting that the level of importance is quite different between the Regions.

Huts with either gas heating or gas stove are not important for trampers, probably due to their preference for the wilderness experience and trampers are in general very well equipped with portable gas stoves themselves.

A variety of track marking systems were used in the past. The strips of red or orange came in different shapes and sizes. White strips are difficult to see in snow and orange strips are difficult to see in the dark. The shapes range from circles, to squares and triangles and the orange triangle strip seems to work best and is most often used in the Ruahine

Forest Park.

9.2.9 Concerns about tracks and huts

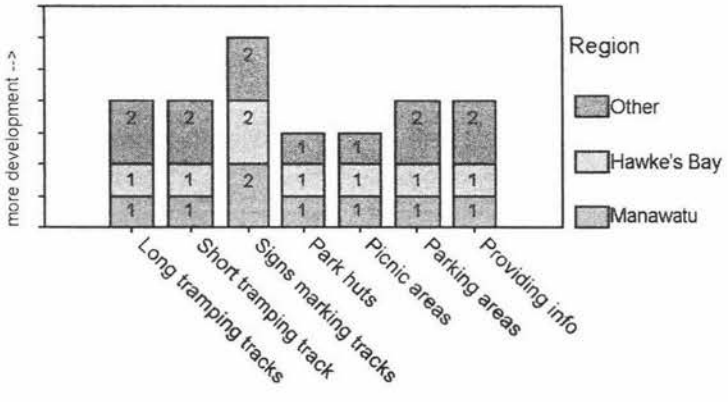
Table 9.2.2 Concern about tracks or huts

	Frequency	Valid Percent
Have no concern	79	57.7
Have concern	58	42.3
Total	137	100.0

A list with all the concerns mentioned is included in Appendix 3.

9.2.10 Further development of the Park?

Figure 9.2.10 Further development of the Park combined with Region



1 stands for 'Some more development'.

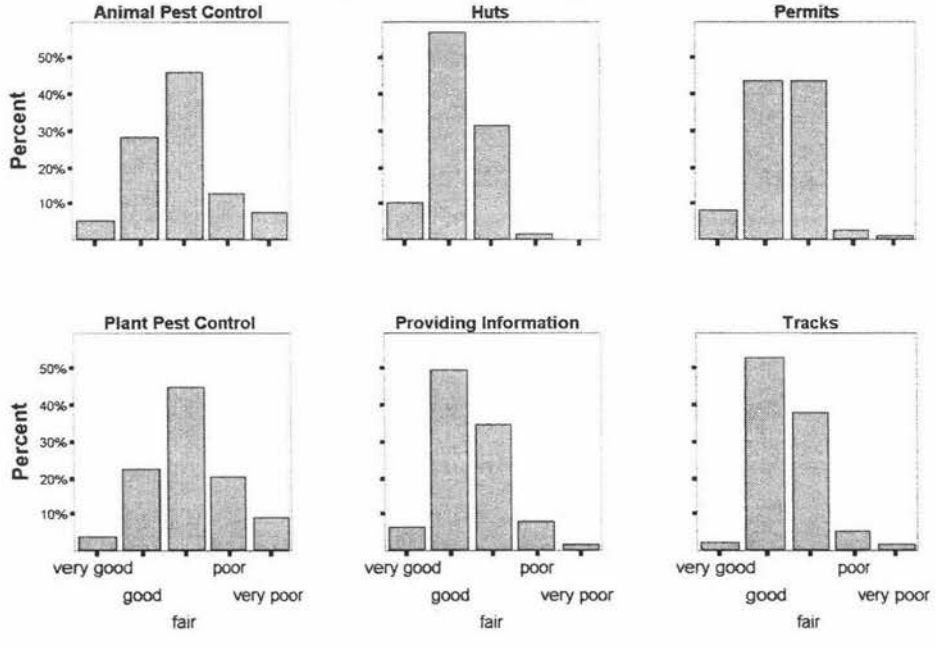
2 stands for 'A lot more development'.

Fifty-eight per cent of the responders suggested that the Ruahine Forest Park should be further developed to cater for visitors. The most development people from all regions wanted to see were a lot more signs for marking the tracks. Except for the trampers from the Other Region

the trampers just want to see some more development for most of the stated issues. There is not a big demand for Park huts and picnic areas. The respondents from the hunter questionnaire instead wanted to see a lot more provision of information in the Manawatu Region.
Compared with the survey undertaken in the Kaimanawa and Kaweka Forest Park (Groome *et al.*, 1983), the demands were about the same. The trampers in 1983 also wanted more track-marking, information and long tracks.

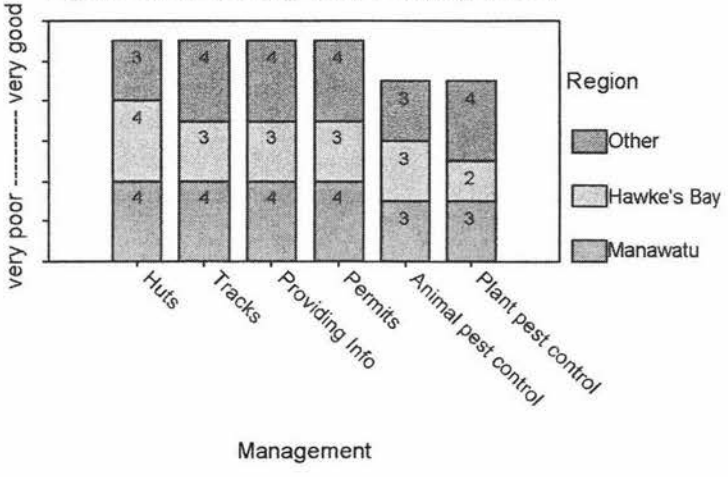
9.2.11 The rating of DoC's management

Figure 9.2.11 Rating of DoC's Management



In general the management of DoC can be called good to fair. The plant pest and animal pest control is sometimes mentioned as poor or very poor, but compared with the amount of trampers who rated the management of the Park good to fair, it is only a small fraction.

Figure 9.2.12 Rating DoC's Management



1 stands for 'very poor', 2 for 'poor', 3 for 'fair',
4 for 'good', and 5 for 'very good'.

Many respondents did not give any information about the question 'Permits' because they did not have enough knowledge about that issue. Trampers from the Hawke's Bay Region did not agree with the other two regions about the good management of tracks, permits, and the provision of information. They also rated poorly the plant pest control compared with the Manawatu and especially the 'Other' Regions (Wanganui, Wairarapa, Rangitikei, and Horowhenua Regions).

9.2.12 Other Parks visited regularly

A wide range of different Forest and National Parks on either the North Island or the South Island were mentioned.

9.2.13 Most preferred Parks in the two regions

Figure 9.2.13 What Park do you prefer most?

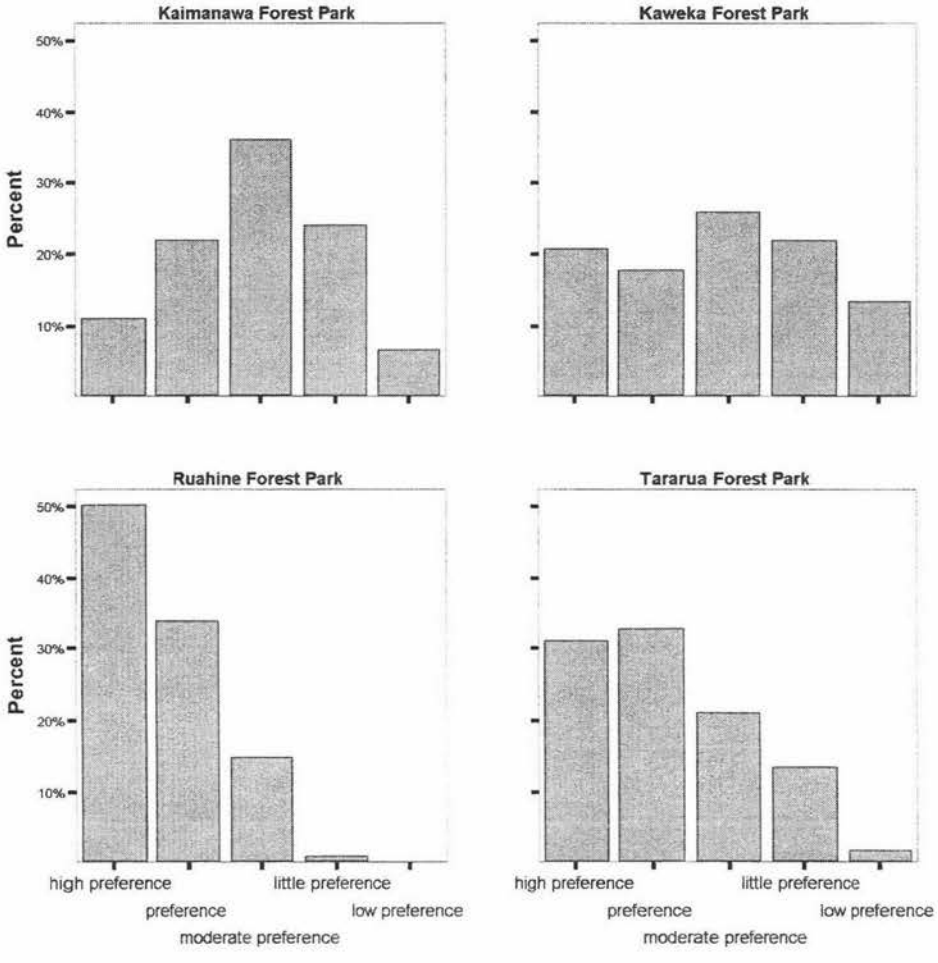
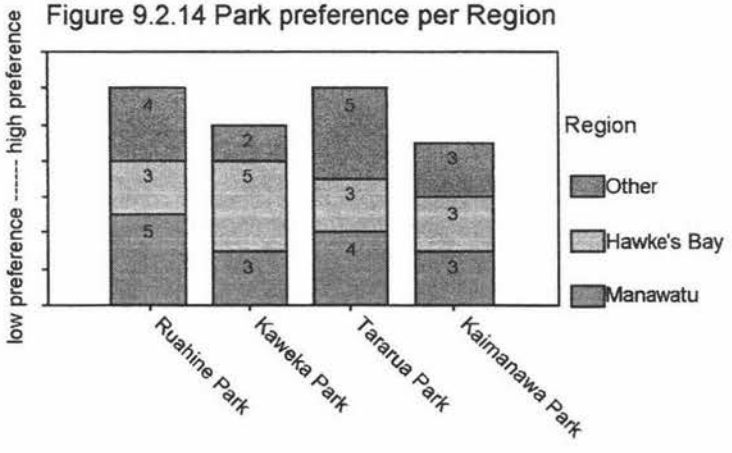


Figure 9.2.14 Park preference per Region



1 stands for 'low preference', 2 for 'little preference', 3 for 'moderately preference', 4 for 'preference', 5 for 'high preference'

The Ruahine Forest Park is the most preferred park by trampers from the Manawatu Region. The Kaweka Forest Park is the most preferred Park by trampers from the Hawke's Bay Region, the Tararua Forest Park is most preferred by the trampers form the Other regions and the Kaimanawa Forest Park has the lowest level of preference for all the Regions.

Reasons for the people's judgment for the Ruahine Forest Park were: Close to home, easy to access, low number of people, variety of terrain, easy to go to the tops, better weather than in the Tararuas, and it provides a better wilderness experience.

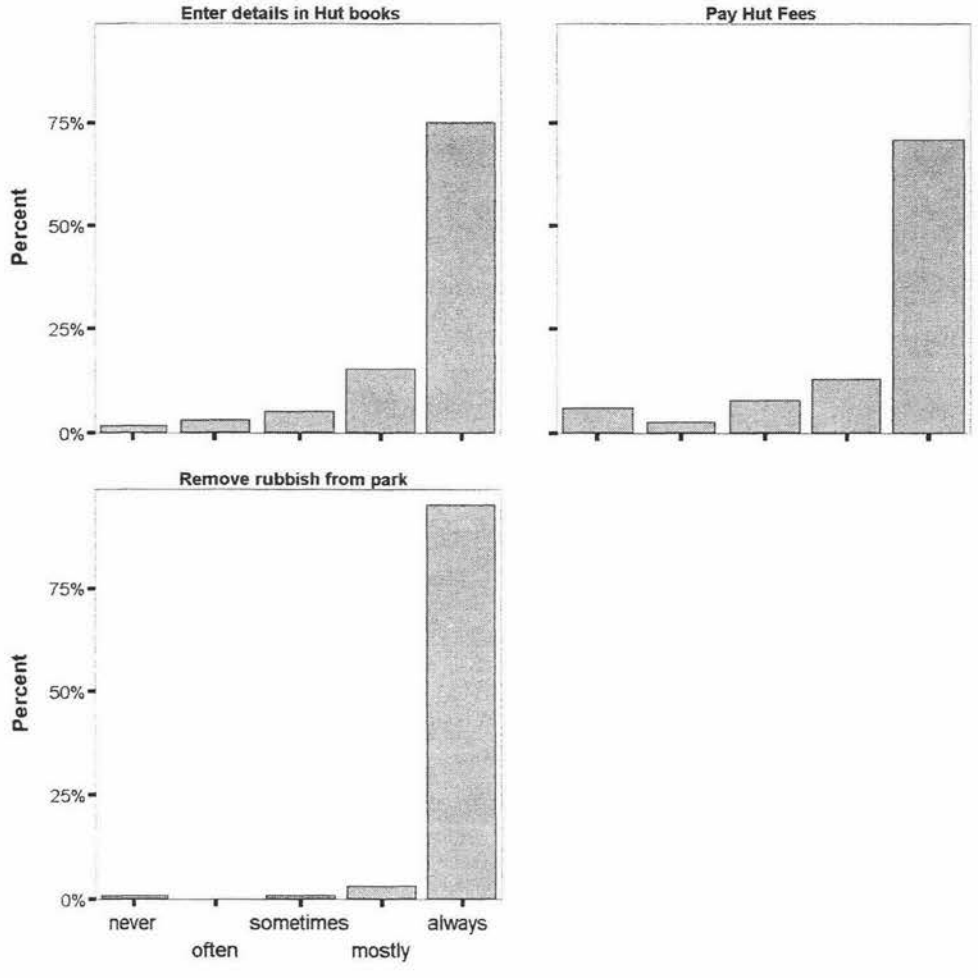
Reasons for the Tararua Forest Park were: Close to Palmerston North, variety of terrain, challenging tramping, and it provides a good track network.

Reasons for the Kaweka Forest Park were: Easy access for people from Hawke's Bay, more open terrain, the presence of hot pools, has more scope for round trips of shorter duration, and it is good for fishing and hunting.

Reasons for the Kaimanawa Forest Park were; More extensive open tops, some of the best higher Tussock valleys and best red beech forest, and more variation in forest type flora and fauna.

9.2.14 How often do you do the following?

Figure 9.2.15 How often do you do the following?



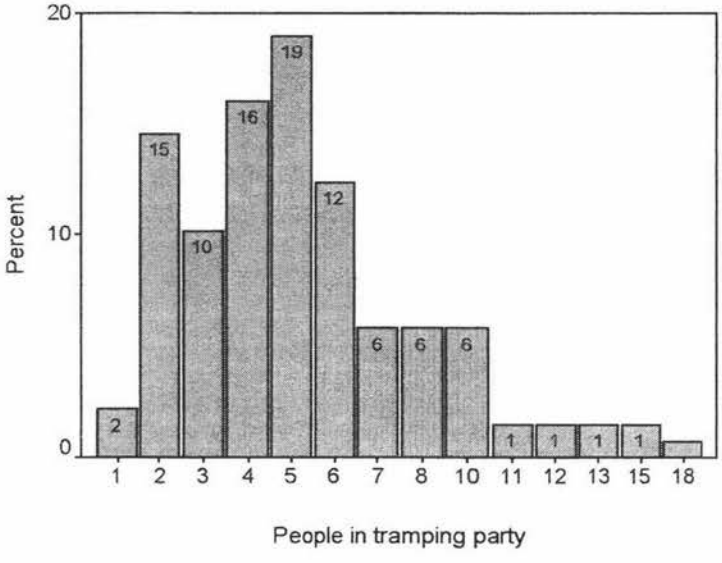
The trampers seem to be very keen to comply with the regulations. Only 45 of the 137 trampers (32.8%) gave several reasons for not always complying with the regulations. These reasons were; forgot to pay the hut fees, should not have to pay fees as I am a taxpayer, do not fill in detail if I tramp with a large group, burn my rubbish, and that they use annual hut passes or never stay in huts.

Since the introduction of a comprehensive hut fees system within DoC-administered areas in 1988, managers have perceived a drop in the

number of hut users filling in hut books (N. Jones, DoC, Head Office, Wellington, pers. comm., 1993; cited in Department of Conservation, 1995).

9.2.15 Size of tramping parties

Figure 9.2.16 Size of tramping parties

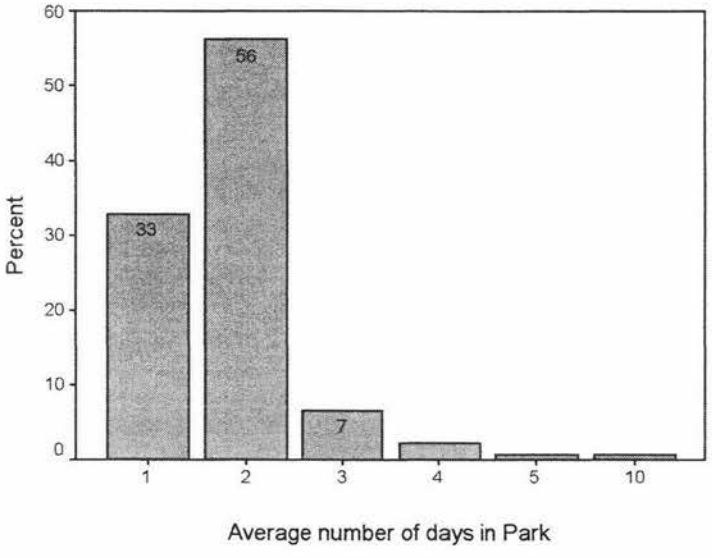


The most mentioned group size was five people, followed by four people. Only 10 of the 137 respondents (7.2%) did not belong to a club, which explains the high percentage of the larger group sizes.

Belonging to a club, a tramper not only commits himself to a degree of participation, but he also benefits from the social advantages. Most clubs have regular meetings at least once a month and the club members can choose from a variety of guided trips almost every weekend. These trips range from "fit" to "easy" or "technical", if the clubs offer bushcraft or mountaineering introduction courses.

9.2.16 Average number of days for tramping

Figure 9.2.17 Average number of days for tramping



The average number of day's tramper stay in the Ruahine Forest Park is two days. The clubs often leave their home on Saturday morning and come back on Sunday evening. The same result was found from the analysis of the hut logbooks and by other researchers (Groome *et al.*, 1983).

9.2.17 Overnight stay

Table 9.2.3 Overnight stay

		Frequency	Valid Percent
	Huts	99	83.9
	Tents	15	12.7
	Bivis	4	3.4
	Total	118	100.0
Missing	0	19	
Total		137	

The trampers certainly use huts more often than tents. Compared with the hunters, trampers only follow the provided tracks and arriving at a certain hut is mostly the goal of the trip.

9.2.18 Summary of the tramper survey outcomes

Table 9.2.4 Summary of the survey outcomes

Member of outdoor clubs	127 of the responders (92.7) did belong to a club. The clubs and organizations mentioned were the Manawatu Tramping & Skiing Club, Palmerston North Tramping & Mountaineering Club, Heretaunga Tramping Club, Massey University Alpine Club, Wanganui Tramping Club, Royal Forest & Bird Society, Rangitikei Tramping Club, Taihape Tramping Club, NZ Alpine Club, and many other small clubs.
Region	84 responses from Manawatu, 22 from Hawke's Bay, and 31 from Other Regions. The 'Other' Region consists of Wanganui, Wairarapa, Rangitikei, and Horowhenua Regions.
Gender	46 female tramper (33%) responded this survey.
Age Group	The major age groups in this survey were the 40-44 years and the 50-54 years age groups
Education	58% of the responders is holding a tertiary qualification and 15 % a trade qualification, which is a very high rate of high education.
Number of days	The average number of days tramped is 12 days per year in the Ruahine Forest Park and 19 days per year in other Parks. The most preferred

	months are January and November in the R.F.P. and January and December in other parks.
Other Activities	Sightseeing and photography are almost equally preferred as another activity combined with tramping. Sightseeing is getting higher preferences with the increase in age of the trampers. Other general activities mentioned by the trampers were: socializing, relaxing, climbing, exercise, and exit civilization.
Reasons for tramping in R.F.P.	The trampers from the Manawatu Region seem to prefer the 'closeness to their home', the 'ease of access' and the 'wilderness experience'. The people from the Hawke's Bay Region prefer also the' closeness to their home' and the 'wilderness experience', but also the 'familiarity of the terrain'. The tramper from the 'Other' Region liked instead the 'ease to access' and the 'good huts', but also the 'closeness to their home'. The other reasons mentioned by the trampers which were not included in the pre-selected list were: Easy to get to the top, variety of terrain and vegetation, fewer people compared to other parks and good physical exercise.
Importance of facilities/services	Very important issues were: well-marked routes, safe parking areas, the "pack in and pack out" rubbish policy, and the easy access to the start of the track.
Concern about tracks and huts	42.3% had concerns about particular tracks and huts (see Appendix 3).

Further development of the Park	57.9% of the responders found that the Ruahine Forest Park should be further developed to cater for visitors. The most development people from all regions wanted to see were a lot more signs for marking the tracks.
The rating of DoC's management	In general the management of DoC can be called good to fair. The plant pest and animal pest control is sometimes mentioned as poor or very poor, but compared with the people rated the good to fair it is only a small fraction.
Other Parks visited regularly	A wide range of parks on either the North and the South Island are visited by the trampers.
Most preferred park	The Ruahine Forest Park is the most preferred park by trampers from Manawatu. The Kaweka Forest Park is most preferred by the trampers from Hawke's Bay, the Tararua Forest Park is most preferred by the trampers form the Other regions and the Kaimanawa Forest Parks has the lowest level of preferences for all the Regions.
How often do you do the following?	Only 45 of the 137 trampers (32.8%) gave several reasons for not always complying with the regulations. These reasons were: forgot to pay the hut fees, do not have to pay fees as taxpayer, do not fill in detail if I tramp with a large group, burn my rubbish, and that they use annual hut passes or never stay in huts.
Size of groups	The most mentioned group size was five. The reason for this is probably that only club members were targeted.
Average number of	The average number of days people stay in the

days	Park are two days.
Overnight stay	72.3% of the responders mentioned huts as their most preferred accommodation.

9.3 SECTION THREE: - Hut Logbook Analyses

Hut logbooks have been a feature of NZ backcountry huts for a long time. They have served, and continue to serve, three very important purposes:

1. They provide a record of people's progress through the backcountry, which may be important if a 'search and rescue' operation is required.
2. They provide a record of who uses the huts, how long people stay and what time of the year they visit.
3. They allow users to record their comments and observations about the hut and the general area.

Over time this will build up a substantial, useful and often witty body of information on the area.

When you arrive at the hut you are expected to fill out the date of arrival, names of people in your party and how long you expect to stay. Before you leave the hut you should fill out the remainder of your entry so that a complete record of your stay and intentions is noted (Hut Book Information Sheet).

Analysis:

At both sides of the Park five hut books were analysed, these were: Iron Gate Hut, Lake Colenso Hut, Ruahine Corner Hut, Triangle Hut, and Top Maropea Hut at the western side. Parks Peak Hut, Barlow Hut, Cattle Creek Hut, Ruahine Hut, and No Mans Hut at the eastern side.

Only the three main group sizes and number of days for each hut are displayed in the table.

Table 9.3.1 Hut Logbook Analyses (Western side)

Hut	**Beds**	**First entry**	**Last entry**	**Number of entries**	**Size of group**	**Number of days**	**Hunting trips**
Iron Gate	10	9-10-97	17-7-00	341	2=111 1=72 3=46	1=135 2=44 3=13	64
General comments: Clean, tidy hut. Spotted some blue ducks. Many rats.							
Lake Colenso	8	17-2-96	24-4-00	210	2=77 1=45 3=39	1=94 2=24 3=6	19
Comments: Clean, tidy hut. A lot of mice and too much poison. Many bird life							
Ruahine Corner	6	22-10-93	2-11-98	198	2=66 3=38 1=35	1=38 2=19 3=12	54
General comments: Nice, tidy hut. No pest sign and many deer.							
Triangle	6	5-4-94	22-4-98	211	2=78 1=37 3=31	1=116 2=21 3=10	45
General comments: Nice hut, good stove. Track not good, hills are too big							
Maropea	4	21-10-95	29-6-99	199	2=88 1=58 3=20	1=63 2=4 3=1	27
General comments: Fireplace smoky but fixed later by DoC. Clean and tidy hut.							

Table 9.3.2 Hut Logbook Analyses (Eastern side)

Hut	**Beds**	**First entry**	**Last entry**	**Number of entries**	**Size of group**	**Number of days**	**Hunting trips**
Parks Peak	4	11-9-96	17-5-99	102	2=45 1=25 3=17	1=39 2=1 3=1	27
General comments: Nice little hut. Good improvements.							
Barlow	10	18-7-94	24-1-98	178	2=73 1=35 3=34	1=56 2=14 3=1	43
General comments: Good, nice, clean hut. Door handle bad maintained.							
Cattle Creek	10	19-3-91	15-4-95	223	2=88 1=39 3=39	1=83 2=20 3=2	49
General comments: Excellent hut. Track needs more marker.							
Ruahine Hut	6	5-7-91	14-6-96	150	2=57 3=20 1=22	2=29 1=22 4=5	69
comments: Fire smoking, Clean and tidy. Hut needs water tank. Mice everywhere							
No Mans Hut	10	29-3-95	12-10-96	67	2=29 3=23 1=5	1=13 2=13 3=4	30
General comments: In general hut is tidy. Any concerns are resolved short after.							

CHAPTER TEN: - Conclusion and Discussion

The outcomes of the survey are compared with earlier surveys. These surveys must be compared with caution. They were often executed more than twenty years ago and the different surveys targeted different user groups, from club members to family parties, and also targeted different activities from one particular to a variety of different activities. However, a comparison with this older material could show the trend in recreation activities to a certain extent. Compared with other recreational activities like skiing or four-wheel-drive use, tramping and hunting are not rapidly developing recreational activities and the motivations of hunters and trampers remain in general the same.

Earlier research effort has been focused unevenly across recreation areas and activities. For some parks and activities there is a solid database; for others little information is available. The Ruahine Forest Park belongs to the latter category. The Department of Conservation has no exact knowledge about the total number of people who enter the park for different outdoor activities. This is due to the many access points, the inconsistency of leaving details in hut books, returning of hunting diaries, and obtaining of hut passes and hunting permits. The local DoC offices in Palmerston North and Napier estimate only 30% of the people who stay in huts would fill in the hut logbooks. The same counts for the returning of the hunting diaries and obtaining permits for huts and hunting. This means that the analysis of the hut logbooks show only a small fraction of the people who use huts, only those people who mostly comply with DoC's regulations and who appreciate the providing and management of facilities and services by the Department of Conservation. DoC is working with rough estimates about the number of people who enter the park and they do not believe that the Park is very

popular for the many overseas tourists who come to New Zealand. These estimates, however, provide DoC with enough information to protect the natural values of the Park. There is no need for DoC to protect any historic values because there are, at this stage, no historic values present in the Park. According to the management plan there are no historic values in the Park, except of one archaeological site, a Copper Mine. There is no traditional site, historic building or historic area identified, although the ranges have spiritual and cultural significance to Maori people and several huts could have historic values because they represent a significant era in the history of the ranges. Recommendations are made in this report to protect certain old huts from the new upgrading system by giving them historic values.

The aim of this research was to provide the Department of Conservation with information about the users of the Ruahine Forest Park. The Ruahine Forest Park is used by a variety of different people who use the Park for different purposes. These users can be identified as day walkers, trampers, hunters, four-wheel-drive enthusiasts, motorcyclists, mountain bikers, anglers, and picnickers. Many of these users can be categorised in more groups then just one and one group can do more different activities at the same time. It was decided to investigate only two groups of users for this survey. These were the trampers and the hunters who are the biggest user groups in the Ruahine Forest Park and who have a traditionally connection with the Ruahine Forest Park, especially the hunters, because the large network of huts and tracks was first established for the purpose of animal pest control.

According to the local DoC office in Palmerston North the number of park users has increased since the development of the management plan in 1992. This increase is especially noticeable by looking at the day walkers

and picnickers, who only use the fringes of the Park. Many respondents of the present survey would like to see more development in the Ruahine Forest Park; these were more long and short tramping tracks, more signs for route marking, and more provision of information. Different people have different demands. Some people do not want very well maintained tracks because this would destroy their feelings for being in the wilderness. Other people do want well maintained tracks so that they can push a mountain buggy over the ranges (a list with all the concerns and demands from both users groups are presented in Appendix 3). The concerns mentioned by hunters and trampers focused mainly on particular tracks and huts and on the new established standards for facilities and services. The appreciation of the facilities provided differs per user group in importance. Luxurious huts with gas-heating and gas-stove are not ranked as important and it seems that the users of the Park are satisfied with the provided facilities present and do not want to see any changes in the amount and status of huts. DoC has to find compromises and has to provide facilities and services, which is preferred by the majority of the park users.

The hunters are mostly concerned about the competition with commercial hunters and about the aerial dropping of poison. This is the main reason for the inconsistent returning of the hunter diaries or kill returns and it shows the distrust towards DoC's management activities. Although, in general, the management of DoC was rated as good to fair, (with some bad judgements about animal and plant pest control) the hunters do not want to provide DoC with much information about deer densities and locations, via hunting diaries. Hawke's Bay and especially Wanganui Conservancy receive far less hunting diaries back than other conservancies. As mentioned in Table 9.1.3 'Return rate of kill returns', the return rate in these two regions is far below the national average.

They are also afraid DoC would contact them if they would enter personal details in the hut books without having paid the hut fees. DoC needs to establish a better co-operation between DoC management and recreational hunters, which could increase the providing of information by hunters and trampers.

Recreation areas should be managed to increase their conservation value, which means that on sensitive habitats only certain recreational activities are permitted or possibly none of all, while parts of recreation areas or nature reserves remain undisturbed. The management plan needs to have clear objectives, which takes both recreation and nature conservation considerations into account and should be developed in consultation with all user and interest groups. Monitoring and review of a management plan are the key methods to ensure that good practice is continuously developed and quality maintained. The Department of Conservation provides a wide range of facilities and services for many different outdoor activities. These activities range from picnicking along the fringes of the Park to four-wheel-driving through riverbeds. Although the first management objective is to protect the natural values of the Park the provision of appropriate recreational use is well organised within the management of the Park and is taken in consideration in the management plan. The management of the Park was ranked in general as good to fair by the respondent hunters and trampers and they seemed to appreciate the provided facilities and do not want to see much upgrading or other changes within the Park.

According to Booth and Peebles (cited in Department of Conservation, 1995), age was identified by earlier studies as the most important factor affecting participation in outdoor recreation activities. Active outdoor activities seemed to attract young people, while less active pursuits

appeal to a wide range of ages. However, the outcomes of the present survey found older age groups participating in the active outdoor activities. This increase could simply reflect the younger age groups who were surveyed in the late 1970's and 1980's and who still continue with their preferred recreational activities. Or it reflects the preferences for club membership by older age groups. But it shows an important trend in the biggest user groups of the Ruahine Forest Park and needs consideration for management planning. Other trends identified within this survey were an increase in education level by the recreational hunters and an increase in the number of days people spend hunting and tramping per year. The participation of hunters with university degrees was identified as very low in earlier research but these high-educated hunters now represent the biggest groups. The reason for spending more time in Forest Parks could be the higher level of importance in recreation activities.

Long term management planning must address three areas: likely changes in participation, the motivations and satisfactions of participants, and resource data on the supply and conservation of resources. But there have not been enough studies that analysed the trends in outdoor recreation in New Zealand. There is little information of the true rates of participation, or what it would take to turn current non-users into users. Also the knowledge, in any real sense, about the values and benefits of outdoor recreation and the ways in which such knowledge should guide management is only limited (as mentioned by Devlin in Department of Conservation, 1995). Clearly managers will benefit from regular, updated information about the type of use undertaken, and the nature of the users visiting outdoor recreation areas to help predict future use patterns and management needs. Furthermore, descriptive data is often a prerequisite for other studies,

such as motivations and satisfaction research. The current management plan was developed in 1992 and it is supposed to last for ten years. It will be reviewed and if necessary changed over two years and hopefully the outcome of this research will contribute to the improved new version of the management plan.

RECOMMENDATIONS

As mentioned in Table 9.1.3 'Return rate of kill returns' the return rate in these two regions is far below the national average. Distrust of DoC by hunters is often mentioned as the reason for not providing DoC with information. DoC needs to establish a better co-operation between DoC management and recreational hunters.

There are no historic features or areas identified in the Park, except one archaeological site. There are several huts in the Park, which warrant formal protection in that they represent a significant era in the history of the ranges (according to Department of Conservation, 1992).
With the new upgrading standards for especially the huts in the Park it would be a good move if these huts gain historic values to preserve them for future generations.

DoC could investigate if it would be possible to implement the Quality Deer Management Principle in the Ruahine Forest Park. The Park could serve as a test area for a period of five years, e.g. to see if it can work in New Zealand.

There is a need for better public relations by the Department of Conservation through better personal contact and through publications with trampers and especially hunters (educate them in: reasons for kill returns, how certain areas should be hunted effectively, the minimum impact code, values of other recreationists, safety and riffle handling during overcrowding). The hunters and trampers are likely to be interested to management policies and education programs because of their high level of skills and education. If new and less-successful hunters were to be encouraged, a range of hunting opportunities should

be provided.

Encouraging more volunteer work for pest and weed eradication, the construction, maintenance and operation of tourist facilities, transport service and many other activities would help to minimise production costs.

Noxious animals should be managed and not totally exterminated, for both aesthetic and sport purposes.

DoC is doing nothing with the hut logbooks. Even if they would analyse them, it takes about two years before they will be replaced with new books. Some books were never replaced, because there are only a few people going to these huts. DoC officers should sometimes read through the hut books to get an idea about the general complaints.

Organised feral goats hunts within the conservancy were seen as useful for targeting this species in problem areas and also fostering better co-operation between DoC and recreational hunters. The organised hunting competitions cost DoC $7,600, it would have cost DoC $24,000 to kill a similar number of feral goats using its own staff (Boardman, 1992, unpubl. DoC report; cited in Department of Conservation, 2000). These organised hunting competitions should be more regular with harvesting the female deer in the park. This way it will save money and it will help create improved co-operation between hunters and DoC.

The start of annual sika-, red-, and other deer trophy competition was seen as a useful communication exercise as well as raising the profile of hunting opportunities within the conservancy generally. These annual trophy days would encourage the hunters.

Deer numbers are getting so low that hunting is losing its recreational value. Helicopter operations should be suspended at certain times of the year, e.g. in early autumn during the roar when most hunting activity is concentrated. Exceptions should be made for helicopters that bring in hunters to huts.

The proportion of the human population choosing to hunt in a particular area declines markedly with increasing distance from that area and is largely a consequence of the increased time and transport costs (Nugent, 1990b, unpubl. FRI contract report; Henderson & Nugent, 1989, unpubl. FRI contract report; cited in Department of Conservation, 2000). However, in recent years the increased use of helicopters for transport into remote areas has reduced the differences between areas, particularly during the roar. The helicopter access would be very helpful especially due to the physical structure of the Ruahine Forest Park. Aerial access to remote areas and informing hunters about areas where deer numbers are high (mainly through newsletters) should be encouraged more.

BIBLIOGRAPHY

Allan, S. and Booth, K., (1992), *River and lake recreation: issues, research priorities and annotated bibliography*, prepared for the electricity corporation of New Zealand, Wellington

Aukerman, R. & Davison, J., (1980), The Mountain Land Recreationist in New Zealand, *Lincoln Papers in Resource Management No.6*, Tussock Grasslands and Mountain Lands Institute, Lincoln College, Canterbury

Booth, K.L., (1988), Recreation and Tourism Research for Conservation, *Science and Research Internal report No. 10*, Department of Conservation, Wellington

Booth, K.L., (1989), A literature review of visitors to the conservation estate with special reference to families and under-represented groups, Vol.1 and 2, *Science & Research Series No. 13*, Department of Conservation, Wellington

Bryman, A. & Cramer, D., (1997), *Quantitative Data Analysis with SPSS for Windows, A guide for social scientists*, Routledge, London

Cessford, G.R., (1987), *Recreation in the Greenstone and Caples Valleys: for whom and how?*, unpubl. Master of Applied Science thesis, Lincoln College, University of Canterbury

Cunningham, A., (1979), A Century of Change in Ruahine Range Forests, *New Zealand Journal of Ecology*, Vol. 2, New Zealand Forest Service, Napier

Davison, J.J., (1986), *Policy implications of Trends in Supply and Demand for Natural Areas for Protection and Recreation 1970-2000*, Master of Applied Science Thesis, Centre for Resource Management, Lincoln College, University of Canterbury

Department of Conservation, (1992), *Ruahine Forest Park, Conservation Management Plan*, Napier

Department of Conservation, (1993), *The New Zealand Recreation Opportunity Spectrum, Guidelines for users*, Department of Conservation, Wellington

Department of Conservation, (1995), *Outdoor Recreation in New Zealand*, Department of Conservation, Lincoln University, Wellington

Department of Conservation, (1996a), *Visitor Strategy*, Department of Conservation, Wellington

Department of Conservation, (1996b), *1995/96 Wild Animal Control, Wanganui Conservancy*, Department of Conservation, Wanganui

Department of Conservation, Fraser, K.W., (2000), Status and conservation role of recreational hunting on conservation land, *Science for Conservation 140*, Department of Conservation, Wellington

Devlin, P.J. and O'Connor, K.F., (1989), Exploring Relationships of Recreation Users, Impacts and management, in B. Craig (ed.), *Environmental Monitoring in New Zealand with Emphasis on Protected Natural Areas, Proceedings of a Symposium*, Dunedin, May 1988, Department of Conservation, Wellington

Federated Mountain Clubs Conference Paper, (1992), *Backcountry Recreation 2000,* Federated Mountain Club, Wellington

Fraser W., (1996), *The effect of recreational hunters on deer populations in Pureora Conservation Park,* Department of Conservation, Wellington

Fraser, K.W.; Sweetapple, P.J., (1992), Hunters and hunting patterns in part of the Kaimanawa Recreational Hunting Area, *New Zealand journal of zoology,* 19, 91-98

Groome, K.H., Simmons, D.G. and Clark, L.D., (1983), Recreational users in Kaimanawa/Kawka Forest Parks, *Bulletin No. 39, Department of Horticulture, Landscape and Parks,* Lincoln College, Canterbury

Hall, Dr. Graham, (2000), Introduction to Quality Deer Management, *Hunting & Wildlife,* July-September 2000, NZDA, Wellington

Hartley, P., (1997), *Conservation Strategies for New Zealand,* New Zealand Business Roundtable, Astra DPS Ltd, Wellington

Hellström, K.A., (1999), *Conservation Versus Visitor Use: A Case Study Within New Zealand's Conservation Estate,* Thesis for the degree of Master of Resource and Environmental Planning, Massey University, Palmerston North

Henderson, E. and Stagpoole, J., (1974), *Regional Recreation and Conservation Study, Part 1, Participation, Attitudes and Aspirations in Regional Recreation,* Wellington Regional Planning Authority, Wellington

Holloway, J.S., (1989), The future of wild animals, a Department of Conservation viewpoint, Pp. 10-19 in Newton, A.E., (Ed.), *The future of New Zealand's wild animals, Seminar 2000 Proceedings*, New Zealand Deerstalkers Association, Christchurch

http://rangi.knowledge-basket.co.nz

http://www.deerstalkers.org.nz

http://www.doc.govt.nz

http://www.forest-bird.org.nz

http://www.publicaccessnewzealand.org

http://www.qdma.com

Laurence, R.R., (1994), *Aspects of Visitation to Egmont National Park*, Thesis for the degree of Master of Philosophy in Ecology/Zoology, Massey University, Palmerston North

Neighbour, A.M., (1973), *Outdoor Recreation in Christchurch, A Survey of Activity Patterns*, Department of Geography, University of Canterbury, Christchurch

New Zealand Forest Service, (1977), *Ruahine State Forest Park – Management Plan*, New Zealand Forest Service, Wellington

Nugent, G. and Fraser, K.W., (1993), Pest or valued resource: conflicts in game management, *New Zealand journal of zoology*, 20: 361-366

Nugent, G., (1992), Big-game, small-game, and gamebird hunting in New Zealand, hunting effort, harvest, and expenditure in 1988, *New Zealand journal of Zoology*, 19: pg. 75-90

Ombler, K., (1993), *Ruahine Forest Park*, Printgroup, Wellington Ltd, Wellington

Patmore, J.A., (ed. Sue Glyptis), (1993), *Leisure and the Environment: Essay in honour of Professor J.A. Patmore*, Belhaven Press, New York

Ryan, C., (1995), *Researching Tourist Satisfaction*, Issues, Concepts, Problems, Biddles Ltd, Guildford and King's Lynn, Great Britain

Shultis, J.D. and Kearsley, G.W., (1989), Environmental Perception in Protected Areas, in B. Craig (ed.), *Environmental Monitoring in New Zealand with Emphasis on Protected Natural Areas, Proceedings of a Symposium*, Dunedin, May 1988, Department of Conservation, Wellington

Simmons, D.G. and Devlin, P.J., (1981), The recreational hunter, *Bulletin No. 33, Department of Horticulture, Landscape and Parks*, Lincoln College, Canterbury

Statistics New Zealand, (1999), *A Regional Profile Hawke's Bay*, Statistics New Zealand, Wellington

Statistics New Zealand, (1999), *A Regional Profile Manawatu/Wanganui*, Statistics New Zealand, Wellington

Thomas, Hawke's Bay Catchment Board & Regional Water Board, (1985), *Upper Tukituki Catchment Control Scheme Investigation and Proposed Scheme*

Vaus de, D.A., (1995), 4th edition, *Surveys in Social Research*, Allen & Unwin Pty Ltd, Australia

APPENDICES

Appendix 1: Questionnaire for the Recreational Hunters

Massey University

Information Sheet

What is this survey about?
The aim of this survey is to gather information about you and your feelings towards the Department of Conservation and their management of the Ruahine Forest Park.

This research should contribute towards improvements in the management of the Park. The information about your demands and concerns will help the Department of Conservation to come up with possible management improvements for the Ruahine Forest Park.

Who is the target group?
Recreational hunters, who are familiar with the Ruahine Forest Park.
This survey will also be sent to other users of the Park, specifically trampers.

Your reply
Enclosed is a stamped, addressed envelope. Simply fold your completed survey, put it in the envelope and drop it into the mail box.

Confidentiality
Your responses will be kept confidential and anonymous. No individual will be able to be identified from the survey.

Who is the researcher?
I am an international student who is doing his Master of Applied Science in Natural Resource Management at Massey University. This research will help me fulfil the requirements for my degree.

Thank you for taking the time to answer the questionnaire to help find out about the demands and concerns of potential consumers of the Ruahine Forest Park.

If you have any questions concerning this research please feel free to contact either myself or my supervisor at Massey University:

Michael Roehrig
Home ph: (06) 3532335
University ph: (06) 350-5799 extn 2944
email: michael_roehrig@hotmail.com

supervisor Mike Tuohy (06) 350-5799 extn 7371.

1. How often do you go hunting in the Ruahine Forest Park?

	Number of days		Number of days
January	:_____	July	:_____
February	:_____	August	:_____
March	:_____	September	:_____
April	:_____	October	:_____
May	:_____	November	:_____
June	:_____	December	:_____

2. How often do you go hunting in other Parks?

	Number of days		Number of days
January	:_____	July	:_____
February	:_____	August	:_____
March	:_____	September	:_____
April	:_____	October	:_____
May	:_____	November	:_____
June	:_____	December	:_____

3. Indicate which of the following activities you do while hunting? (Tick as many boxes as apply).

- □ Tramping
- □ Fishing
- □ Photography
- □ Picnicking
- □ Nature study
- □ Sightseeing
- □ Other. Please specify

---

4. Why do you like hunting in the Ruahine Forest Park? (Tick as many boxes as apply).

☐ Close to home ☐ Easy to access

☐ Familiar with the terrain ☐ Wilderness Experience

☐ Good huts ☐ Good animal numbers for hunting

☐ Good tracks ☐ Easy country

☐ Others. Please specify?

---

5. As a hunter, how important are the following? Please, rank the attributes according to how important each is to you (circle appropriate number).

	1	2	3	4	5
	Very important		Moderate		Not important
Well maintained huts (clean and safe)	1	2	3	4	5
Huts with gas heating	1	2	3	4	5
Huts with gas stove	1	2	3	4	5
Huts with wood heating	1	2	3	4	5
Huts with wood stove	1	2	3	4	5
Well maintained, formed tracks	1	2	3	4	5
Well marked routes	1	2	3	4	5
Easy access to the start of the track	1	2	3	4	5
Good parking areas	1	2	3	4	5
Safe parking areas	1	2	3	4	5
Good picnic areas	1	2	3	4	5
'Pack in rubbish and pack it out' policy	1	2	3	4	5
Return of Hunter Diary	1	2	3	4	5
Helicopter access	1	2	3	4	5

6. Do you have any concerns regarding particular tracks or huts in the Ruahine Forest Park? Please specify.

---

7. Do you think the Ruahine Forest Park should be further developed to cater for visitors?

□ Yes

□ No

If yes, how much development would you like to see in the following areas?

	A lot more	Some more	None
Long tramping tracks	□	□	□
Short walking tracks	□	□	□
Signs marking tracks	□	□	□
Park Huts	□	□	□
Picnic areas	□	□	□
Parking areas	□	□	□
Providing Information	□	□	□

8. How would you rate DoC's management of the Ruahine Forest Park? Please specify.

	1 Very good	2 good	3 fair	4 poor	5 very poor
Huts	□	□	□	□	□
Tracks	□	□	□	□	□
Providing Information	□	□	□	□	□
Permits	□	□	□	□	□
Animal pest control	□	□	□	□	□
Plant pest control	□	□	□	□	□

9. What other parks do you visit regularly for hunting?

---

10. What parks do you prefer most? Please rank the parks in order of preference (circle appropriate number).

	1	2	3	4	5
	High		Moderate		Low
Ruahine Forest Park	1	2	3	4	5
Kaweka Forest Park	1	2	3	4	5
Tararua Forest Park	1	2	3	4	5
Kaimanawa Forest Park	1	2	3	4	5

Why? Please specify.

---

11. How often do you do the following? (circle appropriate number)

	1	2	3	4	5
	Never		Sometimes		Always
Obtain hunting permits	1	2	3	4	5
Hand in your hunting diary	1	2	3	4	5
Pay hut fees	1	2	3	4	5
Enter details in hut books	1	2	3	4	5
Remove your rubbish from the park	1	2	3	4	5

Please give reasons for not always (5) complying with regulations.

---

12. If deer hunting, would you be satisfied with shooting a deer but not obtaining a trophy?

Yes ☐ No ☐

13. When you shoot an animal what do you usually do with it? (Tick as many boxes as apply.)

	First animal		Second animal	
	Own use	sell	Own use	sell
Take meat only	☐	☐	☐	☐
Take meat and trophy	☐	☐	☐	☐
Take trophy only	☐	☐	☐	☐
Take whole carcass	☐	☐	☐	☐

14. How many people are usually in your hunting party?

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15. What is the average number of days you stay in the park when hunting?

---

16. Where do you mostly stay overnight while hunting in the Ruahine Forest Park? (Tick one box.)

□ Huts □ Tents □ Bivi's

17. Are you a member of any outdoor clubs, conservation groups or similar organizations?

Yes □

No □

If yes please list them_____

18. What gender are you? (Tick one box.)

□ Male □ Female

19. What age group do you belong to? (Tick one box.)

□ Under 20	□ 35 – 39	□ 55 - 59
□ 20 – 24	□ 40 – 44	□ 60 - 64
□ 25 – 29	□ 45 – 49	□ 65 – 69
□ 30 – 34	□ 50 – 54	□ 70 and older

20. In what region do you live? (Tick one box.)

□ Manawatu □ Hawke's Bay □ Other. Please specify.

_____

21.What is the highest level of education you have achieved?

Primary school	☐
Some secondary school	☐
School Certificate	☐
6th Form Certificate	☐
7th Form/bursary	☐
Trade Qualification	☐
Tertiary Qualification	☐

Thank you for taking the time to complete this questionnaire. The information you have provided is extremely important to the aims of this study.

Appendix 2: Questionnaire for the Trampers

Massey University

Information Sheet

What is this survey about?
The aim of this survey is to gather information about you and your feelings towards the Department of Conservation and their management of the Ruahine Forest Park.

This research should contribute towards improvements in the management of the Park. The information about your demands and concerns will help the Department of Conservation to come up with possible management improvements for the Ruahine Forest Park.

Who is the target group?
Members of a tramping club, who are familiar with the Ruahine Forest Park.
This survey will also be sent to other users of the Park, specifically hunters.

Your reply
Enclosed is a stamped, addressed envelope. Simply fold your completed survey, put it in the envelope and drop it into the mail box.

Confidentiality
Your responses will be kept confidential and anonymous. No individual will be able to be identified from the survey.

Who is the researcher?
I am an international student who is doing his Master of Applied Science in Natural Resource Management at Massey University. This research will help me fulfil the requirements for my degree.

Thank you for taking the time to answer the questionnaire to help find out about the demands and concerns of potential consumers of the Ruahine Forest Park.

If you have any questions concerning this research please feel free to contact either myself or my supervisor at Massey University:

Michael Roehrig
Home ph: (06) 3532335
University ph: (06) 350-5799 extn 2944
email: michael_roehrig@hotmail.com

supervisor Mike Tuohy (06) 350-5799 extn 7371.

1. How often do you go tramping in the Ruahine Forest Park?

	Number of days		Number of days
January	:_____	July	:_____
February	:_____	August	:_____
March	:_____	September	:_____
April	:_____	October	:_____
May	:_____	November	:_____
June	:_____	December	:_____

2. How often do you go tramping in other Parks?

	Number of days		Number of days
January	:_____	July	:_____
February	:_____	August	:_____
March	:_____	September	:_____
April	:_____	October	:_____
May	:_____	November	:_____
June	:_____	December	:_____

3. Indicate which of the following activities you do while tramping? (Tick as many boxes as apply).

- □ Hunting
- □ Fishing
- □ Photography
- □ Picnicking
- □ Nature study
- □ Sightseeing
- □ Other. Please specify

---

4. Why do you like tramping in the Ruahine Forest Park? (Tick as many boxes as apply).

☐ Close to home ☐ Good tracks ☐ Easy country

☐ Good huts ☐ Easy to access

☐ Familiar with the terrain ☐ Wilderness Experience

☐ Others. Please specify?

---

5. As a tramper what are your requirements for tramping in the Ruahine Forest Park? Please rank the attributes according to how important each is to you (circle appropriate number).

	1	2	3	4	5
	Very important		Moderate		Not important
Well maintained huts (clean and safe)	1	2	3	4	5
Huts with gas heating	1	2	3	4	5
Huts with gas stove	1	2	3	4	5
Huts with wood heating	1	2	3	4	5
Huts with wood stove	1	2	3	4	5
Well maintained, formed tracks	1	2	3	4	5
Well marked routes	1	2	3	4	5
Easy access to the start of the track	1	2	3	4	5
Good parking areas	1	2	3	4	5
Safe parking areas	1	2	3	4	5
Good picnic areas	1	2	3	4	5
'Pack in rubbish and pack it out' policy	1	2	3	4	5

6. Do you have any concerns regarding particular tracks or huts in the Ruahine Forest Park? Please specify.

---

7. Do you think the Ruahine Forest Park should be further developed to cater for visitors?

□ Yes

□ No

If yes, how much development would you like to see in the following areas?

	A lot more	Some more	None
Long tramping tracks	□	□	□
Short walking tracks	□	□	□
Signs marking tracks	□	□	□
Park Huts	□	□	□
Picnic areas	□	□	□
Parking areas	□	□	□
Providing Information	□	□	□

8. How would you rate DoC's management of the Ruahine Forest Park? Please specify.

	1 Very good	2 good	3 fair	4 poor	5 very poor
Huts	□	□	□	□	□
Tracks	□	□	□	□	□
Providing Information	□	□	□	□	□
Permits	□	□	□	□	□
Animal pest control	□	□	□	□	□
Plant pest control	□	□	□	□	□

9. What other parks do you visit regularly for tramping?

---

10. What parks do you prefer most? Please rank the parks in order of preference (circle appropriate number).

	1	2	3	4	5
	High		Moderate		Low
Ruahine Forest Park	1	2	3	4	5
Kaweka Forest Park	1	2	3	4	5
Tararua Forest Park	1	2	3	4	5
Kaimanawa Forest Park	1	2	3	4	5

Why? Please specify.

---

11. How often do you do the following? (circle appropriate number)

	1	2	3	4	5
	Never		Sometimes		Always
Pay hut fees	1	2	3	4	5
Enter details in hut books	1	2	3	4	5
Remove your rubbish from the park	1	2	3	4	5

Please give reasons for not always (5) complying with regulations.

---

12. How many people are usually in your tramping party?

---

13. What is the average number of days you stay in the park when tramping?

---

14. Where do you mostly stay overnight while tramping in the Ruahine Forest Park? (Tick one box.)

☐ Huts ☐ Tents ☐ Bivi's

15. Are you a member of any outdoor clubs, conservation groups or similar organizations?

Yes ☐

No ☐

If yes please list them_____

16. What gender are you? (Tick one box.)

☐ Male ☐ Female

17. What age group do you belong to? (Tick one box.)

☐ Under 20	☐ 35 – 39	☐ 55 - 59
☐ 20 – 24	☐ 40 – 44	☐ 60 - 64
☐ 25 – 29	☐ 45 – 49	☐ 65 – 69
☐ 30 – 34	☐ 50 – 54	☐ 70 and older

18. In what region do you live? (Tick one box.)

☐ Manawatu ☐ Hawke's Bay ☐ Other. Please specify.

---

19. What is the highest level of education you have achieved?

Primary school	☐
Some secondary school	☐
School Certificate	☐
6th Form Certificate	☐
7th Form/bursary	☐
Trade Qualification	☐
Tertiary Qualification	☐

Thank you for taking the time to complete this questionnaire. The information you have provided is extremely important to the aims of this study.

Appendix 3: Concerns of Hunters and Trampers

Hunters Concerns about certain tracks and huts

- Access to Piripiri Bivi in Pohangina Catchment, Track between Opawe Hut and Mt Maharahara could do with clearing lower down.
- Being a hunter I tend to stay away from the main tracks and huts if possible.
- I am concerned at public treatment (Bad) of public/DoC huts (Property). Education generally about treatment of tracks/huts in the forest is important. Perhaps DoC could be funded to advertise to visit schools to "increase" the knowledge/education of NZ'ers, to "respect" the park (not - national parks not - Greeny approach). Test "plain" common "respect" for the wilderness (eg. use dead wood for fires, break camp and leave as found, burn/bury rubbish).
- Some huts are in very poor condition eg. Triangle Hut (July 2000). Have observed chemical spraying of vegetation on tracks on occasions - consider this an absolute No-No! (in 'natural' parks.!!)
- Huts and Tracks seem to be ok. in Northern Ruahine, where I hunt. Contorta and Pampas are encroaching.
- Maps become less useful, in fact quite dangerous for some people, when tracks are not kept clear + huts fall into disrepair. People going into the area for the first time might rely on tracks and huts shown on huts being there, being navigable + being habitable.
- I think that Rangi Hut should have a hut warden during holiday periods to stop people wrecking the place and for fee compliance.
- Keep the choppers out. Only 5% of Deerstalkers would use there own lodge.

The rest would be public + trampers.

- That all tracks and huts are maintained to there present level.
- The down grading of tracks + removal of huts is of concern.
- Contorta is going to become a huge problem if not addressed.
- Leave the huts there. DoC is struggling to maintain huts + tracks but any shelter is better than nothing. In a perfect world a hut would be gas heated etc. I would be circled all the way down, but not if poor huts (unsafe huts) were to be removed.
- Access to road end huts encourages vandalism. I have noticed huts that take as little as 20 min to walk to in better condition both in Kaweka + Ruahine.
- All huts need some form of heating. Rubbish is dumped by many, I think a drum system is necessary. Easily tipped into a fudge for removal by helicopter.
- No Mans Hut' I realize its on private land, but that's no reason to allow a sign saying 'Trespassers will be shot' The sign should be removed if it hasn't already.
- No to the forest park huts but Shutes should stay as it is and not be upgraded.
- Tracks where I hunt (lower Ruahine) are virtually non-existing. Doesn't worry me - less access equal more animals.
- Huts and Tracks are poorly maintained by DoC. Some completely overgrown.
- No Mans new bulldozed track.
- Please keep them all going in good order. Currently family commitments

mean I don't use them. When the kids grow up we will use them.

- Should state bridges here also, because the Ruahine don't have many bridges (...) I am very concerned that DoC want to abandon maintenance of huts, tracks and bridges. Tell them that it takes very limited maintenance to keep the resource that they already have up to a satisfactory standard.
- I am very concerned about DoC's VAMP Programme which may be a little saver to some backcountry user in the future. I'm also concerned at DoC's continued lack of acceptance of hunters and hunting.
- Would appreciate all high level (alpine) routes being poled.
- No Mans Hut, Dead Dog.
- Some tracks are overgrown in South West Ruahines. Contorta pines in Northern Ruahines.
- Huts often are not big enough for a large party (usually 4 beds).
- Not easy access to the start of the track.
- Better access Northern/Northwestern Ruahines. E.g. No user friendly access from Golden Crown on North/Eastern Side to Kaweka base on Midwestern side. A huge area without formal access.
- Track from Ruahine Hut to Shutes Hut could be cleared now that access beyond No Mans hut is less accessible due to boundary changes.
- No public access, to readily get into the Piripiri Bivy.

Trampers Concerns about certain Tracks and Huts

- Triplex- Never sure if there will be enough mattresses for young children. Rangiwahia- Afraid young children will seriously burn themselves on heater.
- Lack of maintenance. Overgrown at times.
- Take them as I find them. Prefer clean and dry huts.
- Nothing specific, but I would not like to see huts disappear just because it was perceived that they weren't being used much. It's good to keep them in some condition in case needed as an emergency.
- As a general rule tracks should not be over maintained so as to spoil a challenging tramp.
- Why are so many tracks no longer maintained eg No Mans to Ikawatea Forks. Crow Hut is rat infested. Camping area in front of Wakhings is rapidly overgrown preventing camping. Some campsites need to be created and maintained.
- Yes, that there seems to be a DoC mentality that every hut should be of very high presentation or standard. All we want is a round clearable functional hut, not designed for oversees tourists.
- Minimal track marking & hut maintenance in some areas could improve safety aspects.
- Think DoC do a great job with money & resources they get from government & users.
- Contrast of Pinus Contarta. Keep exiting tracks open, marked & exiting

huts maintained. Aorangi (not a DoC hut) but in disgusting condition.

- Tracks need repair: Over Waipawa saddle to Waikamaka, from Craigs to Aranga, from top to Barlows.
- Huts in areas with little available fallen timber require alternative forms of heating - so forest is not at risk.
- The track over Waipawa saddle is dangerous, needs work.
- Rangi Track slip. Poor marking on Dead man's track, especially coming down from Rangi.
- Track to Leon Kinrig could be better marked (from Ngamoko Rd) but either way it's a superb park.
- There could be more tracks - easier access from the bigger cities.
- Track to Rangiwahia hut gets press coverage frequently in regard to slips, (slips ongoing) little is done on a track often used.
- Concern Huts being taken down. Could mean life or death in zero temperatures when huts marked on maps are no longer there.
- As I haven't tramped 1998 – 2000 I can't answer.
- Better track maintenance generally.
- Erosion on Rangi track. Some get a little overgrown (eg. A-frame, Mid- Pohangina tracks).
- I would like to see all huts and tracks in the Ruahines to be maintained so its encourage us to go to the hills.
- Only when the leatherwood grows too close, or hasn't been cut back enough.

- Huts near Road ends in 1/2 days walk suffer from vandalism, also huts near Tacapari Rd also get lots of use but without paying with tickets by 4x4 Drive day trips.
- Longview, toilet badly needs fixing. Tracks, some are of too high a standard eg. Sunrise. Encourages people who tend to underestimate the vagaries of weather and fitness.
- Limited Forest Park experience.
- Deadman Ridge track, Rangi hut track slip area.
- The huts with open fires should be changed to have wood stoves, as too much heat goes up the chimney with the open fires & also don't give as much heat. Too many opossums & a lack of bird sound.
- Rangi Hut track: The large slip has gone again & the detour is a nasty scramble. New slip has occurred just before old slip - its like the hillside is slipping away. Suggest re-routing track further up ASAP.
No more patch-ups. Hinerva Hut (eastern Ruahine): Start of track very difficult to find & not marked over farmland to bush. Track needs clearing in many places as very overgrown.
- Ragwort & Kelly thistle that is prevalent in open areas and around huts.
- Some tracks in the Northern Ruahines are not clearly marked and overgrown.
- Rangiwahia track to Rangi Hut upper section could be upgraded round slips etc. This is a heavy use area and important access to park.
- Private farm access into Kelly Knight, landowners are really good but

it would be better if permission didn't have to be obtained. Gas heating/stoves are okay as long as hut fees get paid, which doesn't always happen. Wood heating/stoves relies on a good supply of wood.

- I am concerned the tracks and huts will disappear.
- The new orange markers do have on disadvantage (over the whole pesmolot markers) harder to see in dark.
- The ragwort (about 1 km) above Kelly Knight, The pines in the slips.

Dogs in hut (Pourangaki). Dogs in Tararua Park (with human companion). Dogs in Ohau-Otaki.

- Pourangaki Hut needs some netting on the verandah floor as it is extremely slippery.
- More care should be exercised in placing track markers where they are needed and less placed beside obvious clearly defined tracks where they are quite unnecessary. Closer supervision of where markers are placed would be very helpful.
- Daphne track from Kashmir road and particularly West along ridge to Tuki Tuki river - very overgrown, lots of wind throw - needs work badly.

DoC policy of selective track maintenance cuts down options
eg. Rague Ridge, track from parks Peak track down to Barlows.
Often these less well-used tracks give more variety to trips or in the case of Parks Peak to Barlow make a good round trip possible.

- Some of the tracks are overgrown and if you had no maps could get lost.

- Some huts are well overdue for replacement.
- All of the areas worry me. DoC seem to be turning some tracks into main highways (with wooden bridges + plank boardwalks everywhere). They cut foliage back so far that you could drive a 4 wheeler through them and other tracks, which trampers rely on being there, are being allowed to grow over with the risk that people will get lost in areas where the think they will find a track.
- Pouranaki Hut has extremely slippery verandah - maybe needs netting.
- That they will be overdeveloped (boardwalks, bridges, etc.) and over marked (eg. Poled routes) a cans best or one pole at a major junction, no more.
- Rangiwahia Hut Track - the slip could be safer than the improvised track above the original in very wet weather.
- Access through Big Hill + the loss of No Mans.
- Rangi - Dead mans: more route markers desirable in tussock section on Dead Mans. Removal of ladder (after bridge) a retro step danger of narrow tracks across slips further up. Main slip a continuing worry – needs grading to "family" trip level. Longview: new gas heater has no instructions. Pahongina Carpark: poorly sign-posted (non existent). Mahahao crossing: Kuneti side prone to long grass/cutty grass on track - difficult to descend when wet especially (can't see feet). Sunrise: overflowing toilet very off putting last autumn (summer?). Iron - bark - Colenso: stinging nettle rampant in places.
- The track to Rangi Hut needs to be redone or rerouted.

- I hope they don't remove older huts. They have character and any shelter is a help at refuge in a storm.
- Track via Stanfield to Cattle Creek was so overgrown. It would be senseless to remove heating & stoves from Rangi Hut. This is one of the few accessible huts to parents with younger families & these facilities should stay for them. Rangi is often the first tramp for youngsters to the views & snow. I do not believe 'Dead Mans' should be made too accessible as these groups are not experienced enough for changing weather.
- Any poorly maintained huts, eg. Opawe.
- We need tracks that are capable of pushing a mountain buggy along. Not just one or two bench tracks which go for 2 - 3 hrs, but a network where you can do a 3 - 4 day walk (even 2 - 3). Also all the effort goes into bench tracks but often they are not wide enough for a buggy.
- Rangi Hut Track - with that slip looks very dangerous. Lots of schools & clubs use this track.
- Purity a mess in early 2000, but didn't stay there.
- The more remote the hut is I am concerned that DoC will not maintain them as they say not enough people visit the area.
- No, but I would be concerned if any huts were removed and not replaced.
- I have concerns DoC will remove huts and close tracks rather than maintain them even if they still provide shelter, and the tracks by their method of assessmen not used enough.

Appendix 4: Animal Species Recorded in Ruahine Forest Park

ANIMAL SPECIES RECORDED IN RUAHINE FOREST PARK

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION CLASS •
Bat (long-tailed)	*Chalinolobus tuberculatus*	E
Bellbird	*Anthornis rnelanura*	E
Blackbird	*Turdus merula*	I
Brown Quail	*Synoicus ypsilophorus*	I
Chaffinch	*Fringilla coelebs gengteri*	I
Cuckoo (long-tailed)	*Eudynamys taitensis*	E
Cuckoo (shining)	*Chrysococcyx lucidus lucidus*	Es
Duck (Blue)	*Hymenolaimus malacorhynchos*	E
Duck (Grey)	*Anas superciliosa*	N
Duck (Mallard)	*Anas platyrynchos*	I
Duck (Paradise Shelduck)	*Tadorna variegata*	E
Falcon (New Zealand)	*Falco novaeseelandiae*	E
Fantail (North Island)	*Rhipidura fuliginosa placabilis*	E
Frog	*Litoria spp*	I
Gecko	*Naultinus spp*	E
Goldfinch	*Carduelis carduelis*	I
Greenfinch	*Carduelis chloris*	I
Grey warbler	*Garygone igata*	E
Gull (Black-backed)	*Larus dominicanus*	N
Harrier hawk (Australasian)	*Circus approximans*	N
Hedgesparrow	*Prunella modularis*	I
Heron (White-faced)	*Ardea novaehollandiae*	N
Kaka (North Island)	*Nestor meridionalis septentrionalis*	E
Kingfisher (New Zealand)	*Halcyon sancta vagans*	E
Kiwi (North Island Brown)	*Apteryx australis mantelli*	E
Magpie (White-backed)	*Gymnorhina tribicen hypoleuca*	I
Magpie (Black-backed)	*Gymnorhina tibicen tibicen*	I
Myna	*Acridotheres tristis*	I
Morepork	*Ninox novaeseelandiae*	E
Parakeet (yellow-crowned)	*Cyanoramphus auriceps auriceps*	E
Pheasant	*Phasianus colchicus*	I
Pied Stilt	*Himantopus himantopus*	N
Pigeon (New Zealand)	*Hamiphaga novaeseelandiae*	E
Pipit (New Zealand)	*Anthus novaeseelandiae*	E
Pukeko	*Porphyrio porphyrio*	N
Red poll	*Carduelis flammea*	I
Rifleman (North Island)	*Acanthisitta chloris granti*	E
Robin (North Island)	*Petroica australis longipes*	E
Rook	*Corvus frugilegus frugilegus*	I
Shag (Black)	*Phalacrocorax carbo novaehollandiae*	N
Silvereye	*Zosterops lateralis*	N
Skink	*Leiolopisma spp*	E
Skylark	*Alauda arvensis*	I
Snail	*Powelliphanta spp,*	E
	Wainuia spp	E
Sparrow (House)	*Passer domesticus*	I
Spurwinged plover	*Vanellus miles novaehollandiae*	N

Starling	*Sturnus vulgaris*	I
Swallow (welcome)	*Hirundo tahitica neoxena*	N
Thrush (sons)	*Turdus philomelos*	I
Tomtit (North Island)	*Petroica macrocephala toitoi*	E
Tui	*Prosthemadera novaeseelandiae*	E
Whitehead	*Mohoua albicilla*	E
Yellowhammer	*Emberiza citrinella*	I

Reference is the OSNZ - "The Atlas of Bird Distribution in New Zealand" in the case of birds.

COMMON NAME	SCIENTIFIC NAME	DISTRIBUTION CLASS •
Deer (Red)	*Cervus elaphus scoticus*	I
Deer (Sika)	*Cervus nippon*	I
Ferret	*Mustela putorius*	I
Goat	*Capra hircus*	I
Hedgehog	*Erinaceus europaeus*	I
Hare	*Lepus europaeus occidentalis*	I
Mouse	*Mus musculus*	I
Pig	*Sus scrofa*	I
Possum	*Trichosurus vulpecula*	I
Rabbit	*Oryctolagus cuniculus cuniculus*	I
Rat (ship)	*Rattus rattus*	I
Rat (brown)	*Rattus norvegicus*	I
Stoat	*Mustela erminea*	I
Weasel	*Mustela nivalis*	I
Eel (longfinned)	*Anguilla dieffenbachii*	N
Eel (shortfinned)	*Anguilla australis*	N
Common Smelt	*Retropinna retropinna*	N
Koaro	*Galaxias brevipinnis*	N
Inanga	*Galaxias masculatus*	N
Common bully	*Gobiomorphus cotidianus*	N
Torrent fish	*Cheimarrichthys fosteri*	N
Black flounder	*Rhombosolea retiaria*	N
Brown trout	*Salmo trutta*	I
Rainbow trout	*Oncorhynchus mykiss*	I
Dwarf galaxias	*Galaxias divergens*	N
Cran's bully	*Gobiomorphus basalis*	N
Upland bully	*Gobiomorphus breviceps*	N
Goldfish	*Carassius auratus*	I
Koura (freshwater crayfish)	*Paranephrops planifrons*	E

Reference is the OSNZ - "The Atlas of Bird Distribution in New Zealand" in the case of birds

• Distribution Classification (Bell, Brian, D)

E = Endemic Species (A species which is confined to New Zealand and is not found elsewhere. It includes species which breed only in New Zealand but disperse or migrate to other countries in the non-breeding season or as sub adults).

Es = Endemic Species (A subspecies or geographical race which is confined to New Zealand. Other subspecies of the species occur in other parts of the World).

N = Indigenous Species (A species which occurs naturally in other countries as well as New Zealand).

I - Introduced Species (A species which has been transported to New Zealand and helped establish, by man).

ENDANGERED, THREATENED' AND RARE WILDLIFE SPECIES RECORDED IN THE PARK[2]

(Bell, B D 1986)

SPECIES	CONSERVATION STATUS	DISTRIBUTION CLASS	COMMENT
North Island Brown Kiwi (Apterix australis mantelli	Threatened	Endemic	Threatened by land clearance. Also vulnerable to accidental kills by pig hunting and possum trapping.
Blue Duck Hymenolaimus malacorhynchus	Threatened	Endemic	Declining population being affected by river manipulation particularly for hydro development.
New Zealand Falcon (Falco novaeseelandiae	Threatened	Endemic	Population still being eroded by illegal shooting.
North Island Kaka (Nestor meridionalis septentrionalis	Threatened	Endemic	Limited distribution. Threatened locally by loss of habitat (felling of indigenous forest).
Long-tailed Cuckoo (Eudynamys taitensis	Rare	Endemic	
North Island Robin (Petroica australis longipes	Threatened (regionally)	Endemic	Limited distribution. Threatened locally by timber milling etc.
Powelliphanta marchanti	Rare	Endemic	
Yellow-Crowned Parakeet	Threatened (regionally)	Endemic	

"Threatened" equates with the term "vulnerable" in the IUCN Classification (definitions PTO).

1 "Threatened" equates with the term "vulnerable" in the IUCN Classification (definitions PTO).

2 Freshwater fish are not included.

Appendix 6: Rare Plants recorded in and adjacent to the Park

RARE PLANTS RECORDED IN AND ADJACENT TO THE PARK

The vegetation of the Ruahine Range has been generally described in section 2.6 of this plan. There are some major values present in the botany of the ranges (particularly in the far north west - both in and adjacent to the Park). Significant values include a species found nowhere else, several species found only here in the North Island and some unique patterns of vegetation types.

Rogers (1987) explains the anomalous distributions of many of the species listed below as an expression of the geological history of the lower North Island since the Miocere, and regards these species as a fragment of an early Miocene flora. The Miocere period began about 25 million years ago and ceased about 13 million years ago.

1. Aceana unnamed ("NW Ruahines")

A species of bidibidi found only in the NW Ruahine Ranges. Local endemic in Reporoa Bog, Makirikiri tarns and elsewhere in northwestern Ruahine Range (Druce, 1983).

Classified as "rare" (Given 1990).

2. Tetrachondra hamiltonii (Creeping, native herb)

Disjunct distribution - confined to Mangaohane Plateau as its sole location in North Island, but also found in parts of the South Island.

Is present in damp, herbaceous communities in non forest areas of the plateau.

Listed as a species of restricted distribution by Given (1990). These are plants that require monitoring and may include plants occurring in habitats which are under threat, and species found in sensitive habitats which are prone to damage.

3. Cardamine unnamed ("Reporoa Bog Slender var")

Disjunct distribution - confined [o NW Ruahine Range in North Island and has been reported in NW Nelson.

4. Euphrasia disperma (native eyebright)

Disjunct distribution. Confined to Mangaohane Plateau in northern part of Ruahine Ranges, and from west Nelson to south Westland.

5. Myosotis tenericaulis (slender herb)

Disjunct distribution. Restricted to NW Ruahine Range in North Island. South Island distribution is more widespread, but as an alpine is restricted to Central Otago (Mark and Adams 1973).

Habitat - in alpine zone is confined to bogs and is easily overlooked unless flowering.

6. Ourisia modesta

Endemic to NW Ruahine Range. Disjunct distribution. Only North Island location is in NW Ruahine Range, but it is more common in the South Island.

Rogers (1987) reports that it is restricted to one damp stream bank in a forest clearing at Ruahine Corner.

7. Ranunculus ternatifolius (slender herb)

Endemic. Disjunct distribution. Only located in North Island in Ruahine Range, and in South Island in NW Nelson, Canterbury and Southland.

Present in streambanks, tarns and bogs.

8. Geum leiospermum

Found in Mt Taranaki and Ruahine Ranges in North Island. More widespread in mountain regions in South Island.

Habitat - in North Island occurs in bogs. Much wider range in South Island from tussock grasslands, herbfields and fellfields.

9. Senecio glaucophyllus subspecies discoideus

Only North Island locality in NW Ruahine Range.

10. Hebe colensoj var colensoi

11. Hebe colensoi var hillij

12. Pittosporum turneri

Listed as rare and endangered species by Given (1981).

Rogers (1987) documents 11 small populations in the Waiokotore Stream basin and 4 groups at Ruahine Corner.

Druce (1974) recommends creation of a sanctuary in the west Waiokotore Stream to protect a portion of this population.

(b) outstanding recreational, fisheries, and wildlife habitat features.

(2) It is hereby declared that the Middle River includes:

(a) outstanding scenic characteristics; and

(b) outstanding recreational and fisheries features.

4. Retention of Natural Rivers in Natural State

Because of the outstanding characteristics and features specified in clause 3(1) of this Order the Upper River shall be preserved as far as possible in its natural state.

5. Rate of Flow of Natural Water

Because of the outstanding characteristics and features specified in clause 3(2) of this Order, the rate of flow of natural water to be retained at any point in the Middle River shall be not less than 95% of the River Flow at that point, subject to the provisions of clause 8.

6. Right to Dam not be Granted

Subject to the provisions of clause 8, a right to dam the Upper River or the Middle River shall not be granted under Sections 21 or 23 of the Act.

7. Water Rights

Subject to the provisions of clause 8:

(1) A water right under Sections 21. 23 or 24 of the Act may not be granted by the Minister or by the Regional Water Board (as appropriate) and a general authorisation under Section 22 of the Act may not be made by the Regional Water Board in respect of the Upper River or the Middle River if the combined effect of the grant or authorisation and of existing rights would be that the provisions of this Order cannot remain without change or variation.

(2) Notwithstanding anything in this Order, it shall be lawful for water rights to be granted, and general authorisations to be made, in respect of the Upper River or the Middle River for the purposes of research into, and enhancement of, fisheries and wildlife habitats.

(3} Nothing in this Order shall be construed as limiting the effect of the second proviso to Section 21(1} of the Act relating to the use of water for domestic needs, for the needs of animals, and for or in connection with fire fighting purposes.

(4) In granting any rights under Sections 21, 23 or 24 of the Act or making a general authorisation under Section 22 of the Act, in respect of the Upper River or the Middle River, the Minister or the

Regional Water Board shall ensure that:

(a) the natural water temperature of the Upper River or the Middle River shall not be changed by more than 3 degrees Celsius;

(b) the acidity or alkalinity of the water as measured by the pH shall be within the range of 6.0 to 9.0; and within the range the natural pH of the water shall not be changed by more than 1.0 unit;

(c) the water shall not be tainted so as to be unpalatable or unsuitable for consumption by humans or farm animals;

(d) the water shall not emit an objectionable odour;

(e) there shall be no adverse effect on the aquatic community attributable to pollutants;

(f) aquatic organisms shall not be rendered unsuitable for human consumption by accumulation of excessive concentrations of pollutants;

(g) the natural colour and clarity of the waters shall not be changed to a conspicuous extent;

(h) there shall be no visible oil or grease films or conspicuous floating or suspended waste materials;

(i) the concentration of dissolved oxygen shall be not less than 80percent of saturation concentration;

(j) there shall be no undesirable biological growths attributable to pollutants.

(5) Nothing in this Order shall prevent the renewal of any water right or general authorisation which is current on the commencement of this Order.

8. The construction of a dam structure downstream from the Middle River which impounds water in the Middle River as far upstream as the confluence with the Hautapu River is not limited by this Order.

Appendix 7: Environmental Care code

ENVIRONMENTAL CARE CODE

* PROTECT PLANTS AND ANIMALS
Treat New Zealand's forests and birds with care and respect. They are unique and often rare.

* REMOVE RUBBISH
Litter is unattractive, harmful to wildlife and can increase vermin and disease. Plan your visits to reduce rubbish, and carry out what you carry in.

* BURY TOILET WASTE
In areas without toilet facilities, bury your toilet waste in a shallow hole well away from waterways, tracks, campsites, and huts.

* KEEP STREAMS AND LAKES CLEAN
When cleaning and washing, take the water and wash well away from the water source. Because soaps and detergents are harmful to water-life, drain used water into the soil to allow it to be filtered. If you suspect the water may be contaminated, either boil it for at least 3 minutes, or filter it, or chemically treat it.

* TAKE CARE WITH FIRES
Portable fuel stoves are less harmful to the environment and are more efficient than fires. If you do use a fire, keep it small, use only dead wood and make sure it is out by dousing it with water and checking the ashes before leaving.

* CAMP CAREFULLY
When camping, leave no trace of your visit.

* KEEP TO THE TRACK
By keeping to the track, where one exists, you lessen the chance of damaging fragile plants.

* CONSIDER OTHERS
People visit the backcountry and rural areas for many reasons. Be considerate of other visitors who also have a right to enjoy the natural environment.

* RESPECT OUR CULTURAL HERITAGE
Many places in New Zealand have a spiritual and historic significance. Treat these places with consideration and respect.

* ENJOY YOUR VISIT
Enjoy you outdoor experience. Take a last look before leaving an area; will the next visitor know that you have been there?
Protect the environment for your own sake, for the sake of those who come after you, and for the environment itself.

Toitu te whenua (Leave the land undisturbed)

(The NZ Environmental Care Code was developed by a number of organisations, including FMC, ECO, NZ Mountain Safety Council, NZ Institute of Park and Recreation Administration Inc., Royal Forest & Bird Protection Society of NZ, and co-ordinated by the Department of Conservation 1991).

Department of Conservation
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NAPIER
Phone: (06) 8350415
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PERMIT NO:

PERMIT PERIOD: February 1992-April 1992

Conservation
TE PAPA ATAWAI

HAWKE'S BAY CONSERVANCY HUNTER DIARY

The data *you* provide on this form is essential for effective management of your hunting resources. Your co-operation in its careful and accurate completion is vital.

Date of Hunting Trip	Area Hunted eg: Kaweka FP, Ruahine FP, Tarawera Forest etc.	River/ Catchment eg: Makino, Makaroro, Kawhatau, etc,	Days on which some hunting was done	Average number of hours hunted per day	Animal* Seen Including Animals Killed					Animals Killed							Gut/Jaw Samples Taken	
					Deer		Pig	Goat	Other	Sika Dear		Red Deer		P'B	Goat	Other	Gut	Jaw
					Sika	Red				M	F	M	F					

Observations/Comments (eg; Wildlife, facilities etc):

Thank you for the blue duck, kaka and falcon sightings: please keep sending us this valuable Information,
All diaries received within 14 days after 30 June annually will be eligible for an annual prize draw [refer front cover (or delays). You do not have to shoot an animal lo win a prize. All diaries Including nil returns provide valuable data.

Please renew my permit: Yes/No (A stamped, self-addressed envelope is not required but would be helpful).

Name: _____ __ _____

Address:

I wish to take a dog; Yes/No

Phone:

Description/Reg No: _

Rifle Calibre:

My dog(s) have/has a current dosing certificate; _(itional conditions relating to dogs ask when applying for permi

Signature:

Appendix 9: Remind Letter

Massey University

Dear Members of the Heretaunga Tramping Club,

In the last few weeks you should have received a survey about the management of the Ruahine Forest Park. If our letters have crossed in the mail, please disregard this letter. However, if you have not filled in the survey form could you please complete the survey and return it to me at Massey University.

To provide valid and concise information about the demands and concerns of the Park users and to help with my 'Master of Applied Science' degree I need to get a good representation of recreational users of the Park. To do this I need a good response rate. Hence this letter is to seek your help.

I know your time is precious, but this research will benefit the recreational users of the Ruahine Forest Park. This is a survey about recreational users, for users; a chance for you to voice your demands and concerns on an important issue for park management. Please take this opportunity, by returning your completed survey, to make your contribution to the society.

Yours sincerely

M. Röhrig

Michael Roehrig

Master of Applied Science Student

in Natural Resource Management