FOREST RECREATION AND CHANGING MANAGEMENT ATTITUDES IN NEW ZEALAND

J. J. KENNEDY* and A. W. BIGNELL†

ABSTRACT

Recreation-amenity considerations are of increasing importance in exotic and indigenous forest management. Because of this several studies are examined here for indications of how forest recreation fits into national and regional leisure patterns. A conceptual model defining factors that influence decisions on if, how, and where to recreate is also presented. Problems in confusing recreation demand with recreation use are discussed relative to this model.

An appreciation of the attitudes of forest managers towards recreation, amenity, and multiple-use forestry is critical in understanding their planning-management responses. Some results from the New Zealand Institute of Foresters' questionnaire in early 1978 indicate that managers think such considerations an important part of exotic and indigenous forestry.

INTRODUCTION

In the last few decades public and private forestry has become an important sector of New Zealand's economy (NZFS, 1978). This occurred in a post-depression, post-war society that was uninterested in forestry affairs. Forest managers are now under increasing and often conflicting pressures to provide forest products, foreign exchange, jobs, and recreation-amenity services, and to protect the national heritage of flora and fauna. The public also seems to have the time, interest, and desire to become involved in forestry affairs, as exemplified by the interest in proposals for utilisation of West Coast beech forests and the forests in the west Taupo region.

NATIONAL-REGIONAL RECREATION PATTERNS AND POSSIBLE FOREST USE

A basic recreation management question is how many people will use a forest for what types of activities. Cur-

*Department of Natural Resource Economics, Utah State University, U.S.A. (formerly NRAC Fellow, Forest Research Institute, Rotorua).
†New Zealand Forest Service, Private Bag, Wellington.
rently no studies exist that provide forest managers with answers to these questions in neat tables of data on an individual forest basis. The best available information is from a national leisure study and a recent regional plan.

In 1975 the N.Z. Council for Recreation and Sport conducted a national survey of leisure patterns and has recently published a preliminary report of some results (Robb and Howorth, 1977). The regional study most helpful to forest managers examines outdoor recreation patterns of residents in Marlborough province (Department of Lands and Survey, 1977). Jorgensen (1974) has published a review of New Zealand community recreation studies, and a bibliography of New Zealand recreation publications has been compiled by Neave (1977).

**National Survey of New Zealand Leisure Patterns**

In this survey 4011 New Zealanders 10 years of age and over were interviewed. The preliminary report (Robb and Howorth, 1977) cautions against taking leisure patterns of this sample as illustrating that of the nation, for there are age and sex biases which must be corrected by further data analysis. However, the survey of the leisure patterns of the 4011 people is the largest sample available and indicates general trends.

Those interviewed were asked which leisure activities they would "least like to give up". This question was repeated thrice to indicate a person's three "most preferred activities". Two hundred and twenty-eight types of outdoor and indoor leisure activities were recognised and summarised into 12 broad groups for data analysis.

The five groups of leisure activities most often stated as either first, second, or third most preferred (in declining order of preference) are:

1. Sports.
2. Home science and maintenance.
3. Active outdoor pursuits.
4. Casual activities.
5. Educational-philosophical-religious.

Recreation activities like camping, hunting, or tramping that could occur in forests are grouped in the "active outdoor pursuits", which was the third most preferred category. But most of the 50 activities in this category occur in community (urban) environments (e.g., jogging, skate-boarding), or a coastal setting (e.g., scuba diving, surfing, saltwater fishing),
or in rural non-forest settings (e.g., rodeo, ice-skating, shearing).

An appendix to Robb and Howorth (1977) presents all the 228 specific leisure pursuits listed as one of a person's "three most preferred" activities. A summary of some of these pursuits (in declining order of preference) is illustrated in Table 1. Casual, home-oriented activities of reading (No. 1) and gardening (No. 2) top the list, and one must drop to casual driving (No. 14), travel (No. 17), walking (No. 19), freshwater fishing (No. 30), or picnicking (No. 31) before leisure activities that might occur in a forest setting are encountered. Common forest recreation activities like camping (No. 35), hunting (No. 36), and tramping (No. 53) are further down the list with a much lower percentage of preference, and these activities of course often occur in settings other than a forest.

The important question of how much time New Zealanders devote to various leisure activities should be available when the time budget diaries (collected as part of the national survey) are analysed and published in future reports. Also promised is leisure pattern by five community sizes. Specific geographical region breakdowns (e.g., Northland or Hawke's Bay), however, will not be possible.

TABLE 1: LEISURE ACTIVITIES STATED AS ONE OF THREE MOST PREFERRED (1) BY 4011 NEW ZEALANDERS 10 YEARS OR OLDER (Robb and Howorth, 1977)

<table>
<thead>
<tr>
<th>Rank in Preference</th>
<th>Leisure Activity</th>
<th>Percentage Stating it as One of Three Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reading</td>
<td>16.0</td>
</tr>
<tr>
<td>2</td>
<td>Gardening</td>
<td>15.1</td>
</tr>
<tr>
<td>3</td>
<td>Sewing</td>
<td>9.7</td>
</tr>
<tr>
<td>4</td>
<td>Rugby union</td>
<td>9.6</td>
</tr>
<tr>
<td>5</td>
<td>Swimming</td>
<td>8.2</td>
</tr>
<tr>
<td>9</td>
<td>Saltwater fishing</td>
<td>6.5</td>
</tr>
<tr>
<td>14</td>
<td>Casual driving</td>
<td>4.4</td>
</tr>
<tr>
<td>17</td>
<td>Travelling</td>
<td>3.8</td>
</tr>
<tr>
<td>19</td>
<td>Walking</td>
<td>3.5</td>
</tr>
<tr>
<td>20</td>
<td>Boating</td>
<td>3.5</td>
</tr>
<tr>
<td>30</td>
<td>Freshwater fishing</td>
<td>2.6</td>
</tr>
<tr>
<td>31</td>
<td>Picnics, barbecues, hangis</td>
<td>2.6</td>
</tr>
<tr>
<td>35</td>
<td>Camping</td>
<td>2.4</td>
</tr>
<tr>
<td>36</td>
<td>Hunting</td>
<td>2.4</td>
</tr>
<tr>
<td>53</td>
<td>Tramping</td>
<td>1.8</td>
</tr>
</tbody>
</table>

(1) "preferred" measured in terms of leisure activity one would "least like to give up".
The Marlborough Study

This study (Department of Lands and Survey, 1977) examines the "demand" for, and supply of, recreation on a regional basis. While the preliminary report on the national survey presented preference for both indoor and outdoor leisure activities, the Marlborough study examines the number of visits for outdoor recreation activities only. A survey of 1000 households (receiving an 85% response) provided outdoor recreation use data of Marlborough residents. Total non-resident visits were estimated but no data were collected for types of activities pursued. Unlike the national survey, this study estimates where recreation occurs and presents information managers may use in planning for forest recreation.

Recreational use and resources (supply) were organised into three categories:

1. **User-oriented** (high-use areas, and such recreational activities as occur in sports grounds, community parks, swimming pools, etc).

2. **Intermediate** (areas with more land and lower user concentration; and activities like golf, picnicking, swimming).

3. **Resource-based** (unmodified or lightly used land, commonly used for tramping, canoeing, back-country hunting, etc).

Table 2 shows 98 ha of land classified as user-oriented. This land is in public ownership and managed for recreation. Although it represents about 0.01% of the land in the region, 26% of the resident outdoor-recreation visits occur there. The resource-based category accounts for 70% of the region's land area and receives only 8% of total residents' visits.

State forest land is mostly in the resource-based category (accounting for 19% of that land). The New Zealand Forest Service controls 58% of the area "generally available" and reserved for recreation if freehold land, Maori land, scientific reserves, etc., are excluded (Department of Lands and Survey, 1977, pp. 41-7).

Non-resident visits to categories of land were not estimated in the Marlborough study, but must be considered in State

---

1 We feel that the Department of Lands and Survey (1977) identified recreation use inappropriately as demand. The supply-demand model presented later in this paper distinguishes between recreation demand and use.
TABLE 2: SUPPLY OF RECREATION LAND IN THE MARLBOROUGH REGION(1) AND NUMBERS OF VISITS BY REGIONAL RESIDENTS
(Department of Lands and Survey, 1977)

<table>
<thead>
<tr>
<th>Land and Recreation Use Classification</th>
<th>Regional Land Area (Supply) (ha)</th>
<th>% of Land Area</th>
<th>Resident Recreation Use (No. Visits)</th>
<th>% of Recreation Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>User-oriented (2)</td>
<td>98</td>
<td>0.01</td>
<td>52 622</td>
<td>26</td>
</tr>
<tr>
<td>Intermediate (3)</td>
<td>352 717</td>
<td>29.67</td>
<td>135 580</td>
<td>66</td>
</tr>
<tr>
<td>Resource-based (4)</td>
<td>836 129</td>
<td>70.32</td>
<td>17 192</td>
<td>8</td>
</tr>
<tr>
<td>Totals</td>
<td>1 188 944</td>
<td>100.00</td>
<td>205 594</td>
<td>100</td>
</tr>
</tbody>
</table>

(1) The region for this study was considered to be that area contained within the old Marlborough provincial boundary.

(2) High-use areas; activities that occur in sports grounds, community parks, swimming pools, etc.

(3) Areas having more land and lower user concentration than user-oriented areas; activities like golf, picnicking, swimming, etc.

(4) Unmodified or lightly used land commonly used for tramping, canoeing, back-country hunting, etc.

The national sample of 4011 New Zealanders illustrates a preference for leisure activities close to home and community. Leisure activities that might occur on forest areas were considerably less preferred than home-community activities. This may reflect the fact that 83% of the nation's population live in urban environments (Department of Statistics, 1977), which are distant from major forested areas.

The Marlborough region is rural in character and unique in land-water resources. Yet indications are that a minority of all resident recreation visits occur in the “resource-based” areas where most forest land is located. However, the seemingly low numbers of active visits to forests of the Marlborough region and in the national survey might underestimate the importance of their passive role in making New Zealand or the Marlborough province a special place in which to work, play, and live.
Further analysis of the national survey and more regional data will be necessary to illustrate the relative preference different types of New Zealanders have for forest and non-forest recreation activities. The importance of the oft-neglected area of passive forest recreation will also have to be examined. There are also many supply and demand factors that encourage or discourage recreational use of forests, and these have not been studied in New Zealand.

FACTORS AFFECTING DECISION IF, HOW, AND WHERE TO RECREATE

Figure 1 presents a conceptual model illustrating how supply and demand factors interact in decisions about (1) whether or not to participate in outdoor recreation, (2) what type of recreational activity(ies) is selected, and (3) where activity will occur. It illustrates the importance of perception of supply factors, and stresses the interactive effects of supply and demand.

The model is descriptive (similar to NAS, 1975) and does not predict recreation decisions. Neither are important cost and trade-off implications of providing forest recreation addressed, as with models formulated by Manthy and Tucker (1972).

Supply Side of the Model

Forest managers are usually most conversant with the supply side of Fig. 1, but analysis often stops at potential supply.

---

**Figure 1:** Conceptual model of factors leading to forest recreation participation.
Most recreation plans perform well in documenting hectares of land and water per ownership class, kilometres of tracks available, number of picnic sites, etc. These are the most tangible aspects of recreation supply-demand situations, and most forest managers have been trained in this area.

Potential recreation supply is a combination of public and private resources. Land is the supply resource normally emphasised in recreation plans (i.e., hectares of different types of public and private land displayed in maps and tables). Capital developments like access roads, picnic areas, boat ramps, or campgrounds are also important elements of potential supply. Against tradition, we also include an individual's equipment and private land (e.g., a holiday bach) as supply elements. Availability of scuba gear, sailboats, skis, caravans, or a holiday cabin are as important to a person making recreation decisions as the hectares of land or water available. This private equipment supply has some measurement problems. But sales, registration, or licensing information is available on holiday homes, trail bikes, sailboats, or caravans, and should be considered in national or regional recreation plans.

The recreational resources that are readily available (potential supply), and the resources that users perceive as available, are often different. Lack of experience, or information, can cause people to perceive more or less recreation supply than actually exists. Road access to State forests can be perceived as more or less difficult than it actually is, tracks might be perceived as more steep, and huts more primitive than they actually are. And a forest manager intimately familiar with the location, ownership, access, and development of a region's recreational resources could have a difficult time understanding why visitors or residents of an area do not perceive the actual supply situation — especially when adequate pamphlets, maps, and signs are available.

Finally, people's appraisals of the money, skill, time, or training necessary for certain types of recreation are an aspect of supply that can encourage or discourage their participation. Many traditional forest-recreation activities like tramping or hunting may be perceived to require endurance, skill, travel time, equipment, and discomfort "costs" (in terms of physical, temporal, and monetary budgets) greater than some people feel they can "afford". Based on these perceived supply considerations, many New Zealanders may choose non-forest activities (e.g., team sports, snorkling, sailing). Even if activities that might occur in a forest setting are selected (e.g., picnicking, camping, walking, trout fishing) people may elect to go to a non-forest area.
The Demand Side of Model

Factors like age, health, income, occupation, and residence have a strong influence on the amount of time, money, and desire to recreate in activities that may or may not be best suited to a forest setting. The influence of these factors has been studied from the outset of outdoor recreation research in the United States (ORRRC, 1962) and New Zealand (Robb and Howorth, 1977). Social-institutional factors affecting workweek, amount and distribution of holidays, or school breaks are of similar importance.

Past and present social influences also have a strong effect on the amount and type of participation in outdoor recreation. Attitudes towards killing and utilising animals, for example, are common to rural cultures and are important factors in deer-hunting demand (Kennedy, 1973). These attitudes are probably easiest acquired as a youth with family and friends who also hold such views. Buse and Enosh (1977) found that adult participation in hunting, fishing, and tramping was more strongly influenced by childhood participation than occurred in any other outdoor recreational activities they studied. Acquiring pro-hunting attitudes as adults appeared more difficult than learning hunting-shooting skills. People they studied were able to master the skill and attitude pre-requisites to begin camping, skiing, or horseback riding in adulthood. But if they had not hunted, fished, or tramped in their youth, the chances were low that they would begin as adults.

Social class factors also discourage or promote certain types of recreation. West (1977) found activities like golf, that traditionally were high-income/high-education class activities, are becoming more popular in all classes of the 1000 Wisconsin householders studied. Tennis, another historically upper-class activity, is moving into the middle but not the lower classes. Motorcycle activities remained concentrated in the low-income/low-education classes of the sample.

Planning and Management Implications of Model

It is common for land managers to confuse outdoor recreation participation (use) with demand, as did the Marlborough study (Department of Lands and Survey, 1977) and the first United States national recreation study (ORRRC, 1962). The recreation participation observed and collected as use-data, illustrates participation only. And the model emphasises that alone neither supply nor demand factors explain recreation use; it is their interaction that determines if, how, and where a person recreates.
Confusing recreation use with demand is of more than academic concern, for it can contribute to poor planning and management decisions. First, consider the proposition that zero recreational use equals zero demand. In many parts of New Zealand there was little participation in water activities associated with lakes until man-made lakes were created; their current use indicates that demand factors (creating a desire to participate in these activities) probably existed before the supply was made available. Likewise, it is difficult to gauge demand for State forest recreation when access to these areas has been restricted in the past. In terms of the model, there may be a potential demand not exhibited by participation because of shortage or absence of supply.

Consider a second case where one assumes recreation demand and use are the same thing. Such logic might encourage managers to develop more access and facilities where “demand” (namely, use) is already high. Crowding pressures might thus be increased on land, facilities, and other recreationists by focusing on high use (high “demand”) areas, rather than considering substitute areas inside or outside the forest.

Finally, heavy use of forest areas does not necessarily mean a large demand for such recreational activities. Over-use of picnic sites in a State forest might reflect a regional supply situation where the limited number of pleasant areas open and developed for picnicking are only in State forests. The regional demand for picnicking might be quite low and, if alternative picnic areas on public or private land (in forested or non-forested settings) were made available, the use of State forest picnic sites might drop drastically — even though regional demand remained constant.

We recognise that recreational demand factors are influenced in the long run by supply. If areas are easily accessible for hunting, picnicking, or tramping, the chance is greater that people will use them and desire to do so in the future. Long-term supply-demand interaction effects are important considerations, but only one of many other important personal, social, and environmental factors which it is necessary to consider in recreation planning.

**A Look at Overstimulating Recreation Demand**

Long run supply-demand interaction is at issue in concerns of “overstimulating” forest recreation demand; as seen in a statement by the Forestry Development Conference (1975, p. 5): “That forest management decisions should not be made which overstimulate public demand, but rather that decisions should be taken to ensure that present and growing demands
are catered for". Forest managers have the greatest influence over potential supply, and little control over most demand factors. Intensive development of camping and picnic facilities in Kaingaroa State Forest might have little impact on increasing regional demand for, and use of, this forest. Even with intensive advertising, it might be quite difficult to stimulate regional demand for camping and recreation on this flat pine forest with extreme weather conditions and no large bodies of water. Likewise, management efforts to stimulate deer-hunting demand to achieve desirable forest management consequences might have little success in a nation urbanising as rapidly as New Zealand. Experience in other western countries (Kennedy, 1973) indicates that the social-cultural-environmental influences in urban areas do not promote a demand for hunting; and no amount of supply manipulation may be able to stimulate hunting participation.

On the other hand, there appears to be a demand for rough, adventuresome areas on which to run trail-bikes. Opening up the Whakarewarewa State Forest Park to such use might result in heavy motorbike use, with associated effects on land and people.

Some Weaknesses of the Model

Figure 1 suggests that the process of deciding if, how, and where to recreate is a weighty, ponderous decision. We recognise that experience with activities and familiarity with areas can make the decision process as effortless as habit. A person walks the dog in a park after tea each evening, always camps at a certain State forest the first week of school holidays, and returns each year to his favourite fishing spot when the trout season opens. But initially this now habitual behaviour more closely followed the interaction of supply and demand factors.

Although most of the discussion of the model has focused on individuals, the group is also important in making camping (Green and Wadsworth, 1966), wilderness use (Hendee et al., 1968; Catton and Hendee, 1968), and other recreational decisions. The model can incorporate the influences of the group in making such decisions.

Finally there is a chance that the model's focus on active recreation participation will minimise the importance of considering passive users or non-users in forest planning and management. The next section elaborates on this potential problem.

The Importance of Passive Use and Non-use

For understandable reasons, forest managers seem most sensitive to active recreation use. People asking for hunting
permits, families picnicking, or a club riding horses through a forest are easy to see and measure. It is much more difficult for managers to perceive passive forest users, such as people driving in or near forests, or the pleasure that forests add to the landscape and daily life of residents of, or visitors to, communities like Te Anau, Rotorua, Whangamata, or Naseby. Anstey (1978), in a rare study of forest-New Zealander interactions, presents a sensitive exploration of how exotic invaders of Douglas fir and larch affect the community character of Naseby.

The active recreational participation that one casually observes or collects as use-data can just be the “tip of the iceberg” of recreation-amenity values. Beyond what one sees and measures as recreational use and benefits, there are often (1) many active users not easily counted, (2) much passive use not easily perceived or measured, and (3) many “non-users” who relate to forests from a distance by photographs, stories, or TV-newspaper accounts, and care very much about the management and destiny of forests. The recreational-amenity value of the Whakarewarewa State Forest Park may be only partially reflected in the 140,000 users tallied in 1977 (N.Z.F.S., 1977). This State Forest Park might be as important as the more popular lakes to many Rotorua visitors and residents. They, and many people who will never be counted in Park-use figures, might care very much about the sensitivity and stewardship with which that exotic forest is managed.

FOREST MANAGER ATTITUDES TOWARDS MULTIPLE USE, RECREATION AND PUBLIC INVOLVEMENT

The degree to which forest managers respond to increased and different non-product demands placed on forests they manage will largely depend on their attitudes. Do forest managers believe in multiple use? Are recreation-amenity values important only in indigenous forestry? How do forest managers view public involvement?

Some empirical evidence on these attitudes is offered by the 542 New Zealand Institute of Foresters (NZIF) members who replied to a questionnaire (Kennedy, 1978). This was a 77.5% response rate. Of the respondents, 80% were full or associate members (a prerequisite for which is training and/or involvement in New Zealand forestry). The N.Z. Forest Service employed 50% of the respondents, forest industry 24%, and the rest were in other Government agencies, consultants, self-employed, etc. Table 3 presents responses to several pertinent questions. Question number and content are reproduced as they appeared in the questionnaire.
A multiple-use philosophy of managing State and private forests seems to be held by most forest managers. Question 29 (Table 3) presents an extreme version of this philosophy, by stating all State forest should be managed for multiple use. Given such a statement, there are good reasons why 28% disagreed. But there was high consensus on question 30 ("when possible private companies should practise multiple use"), where 87% agreed and none strongly disagreed.

But do multiple-use considerations apply only to indigenous forests, allocating exotic forests strictly for production? Question 35 ("Outdoor recreation, scenic quality, and/or other amenity values are not important considerations in managing exotic forests on State forest land") was overwhelmingly rejected, with 91% disagreeing. When the same question (No. 36) was asked relative to indigenous forest, 42% disagreed and 53% strongly disagreed (the highest percentage of strong disagreement in all 61 agree-disagree questions).

The numbers and types of recreationists using some State forests often create new and challenging management situations. Personal contact with these forest users is one such situation. When asked if the public would become more or less involved in how State forest lands are managed, 87% predicted there would be more public involvement, 10% the same amount, 2% less, and 1% had no opinion. When questioned as to whether more public involvement was a good or bad thing, 70% said good, 16% bad, and 14% were not sure. Finally, respondents were asked if they "personally looked forward to being more involved with the public in the organisation for which they worked"; 59% said yes, 25% no, and 16% were not sure.

Forest managers have a long history of dealing with loggers and processors who provide a wood product to consumers distant from the forest and distant from forest managers. The market system seems to get consumer signals back to the forest quite well. Forest managers and loggers have also grown accustomed to each other's attitudes and behaviour and it is generally a pretty comfortable relationship. But recreationists come directly to forests (and often to forest managers) to acquire their "forest benefits". They often bring new types of people, new personal relationships, and new attitudes to forest management. In addition, there is public involvement by people in distant cities whom a manager might never meet. The 25% NZIF sample who said they were not personally looking forward to more public involvement and the 16% who were not sure are expressing an honest and understandable response to a strange, new aspect of forest management.
### Table 3: Responses to Several Attitude Questions from NZIF Questionnaire (Kennedy, 1978)

<table>
<thead>
<tr>
<th>Question No. and Content</th>
<th>Percentage Respondents (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>29. All State forest land should be managed under multiple-use principles</td>
<td>18</td>
</tr>
<tr>
<td>30. When possible private company forests should allow multiple uses as well as wood production</td>
<td>16</td>
</tr>
<tr>
<td>35. Outdoor recreation, scenic quality, and/or other amenity values are not important considerations in managing exotic forests on State forest land</td>
<td>0</td>
</tr>
<tr>
<td>36. Outdoor recreation, scenic quality, and/or other amenity values are not important considerations in managing indigenous forests on State forest land</td>
<td>0</td>
</tr>
<tr>
<td>37. Forestry practice is generally based on logic, science, and data</td>
<td>4</td>
</tr>
<tr>
<td>38. Outdoor recreation management is generally based on logic, science, and data</td>
<td>1</td>
</tr>
<tr>
<td>46. Rangers and foresters have adequate training and experience to handle most problems in the forest dealing with silviculture and management</td>
<td>13</td>
</tr>
<tr>
<td>47. Rangers and foresters have adequate training and experience to handle most problems in the forest dealing with water, recreation, amenities, and other non-timber aspects</td>
<td>2</td>
</tr>
</tbody>
</table>

(1) Some respondents skipped over these questions: three respondents did not answer questions 36 and 47; five skipped question 46; six did not answer questions 29, 30, 37, and 38; and seven skipped question 35.
The training and experience of many forest managers might not prepare one too well for things like recreation, scenic management, and public involvement. When respondents listed the areas of forestry in which they accumulated on-the-job experience, 42% of all experience was in production forestry, 3% in protection forestry, and 6% in recreation-amenity forestry (the rest in administration, farm forestry, research, etc.). In other words, respondents had 700% more experience in production than recreation-amenities. Questions 46 and 47 (Table 3) illustrate forest managers' appraisals of their training-experience preparation for handling various problems. The majority (86%) judged they "had adequate training and experience to handle most problems in the forest dealing with silviculture and management". But only 25% judged their training-experience background adequately prepared them for many of the non-timber aspects of forestry — 61% disagreed in question 47. And perhaps another reason for viewing recreation-amenity management with apprehension is illustrated in questions 37 and 38 (Table 3); there, 64% think forestry is "based on logic, science, and data", while only 22 thought recreation management so based.

CLOSING COMMENT

The national and regional recreation studies examined do not show a large majority of New Zealanders flocking to the forest. This is not to say that active forest recreation use is not of increasing importance to exotic or indigenous forestry; and there are many passive recreation-amenity values to consider. We only observe that the forest recreation-amenity situation appears well within the capabilities, imagination, and talents of New Zealand forest managers if they put their minds to it.

In our opinion, having made up their minds, New Zealand forest managers have a reputation for getting things done. Questionnaire responses indicate many forest managers have their minds made up that recreation and other non-product considerations are important in both exotic and indigenous forestry. Forest managers still might not be as confident in their training-experience preparation for recreation problems as compared with traditional silviculture-production problems. But that confidence will develop as managers discover the best way for New Zealand to integrate people into multiple-use forestry in the next decade.

REFERENCES


