



A synthesis and gap analysis of research on visitors to public conservation areas in New Zealand 1995–2010

Brent Lovelock, Andrea Farminer and Arianne C. Reis



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Executive summary

Increasing the participation of New Zealanders and overseas visitors in recreation and tourism activities in public conservation areas is a priority task for the Department of Conservation (DOC). To help achieve this goal, DOC commissioned research to investigate and review the literature on outdoor recreation and tourism (nature-based, eco- and heritage tourism), focussing on visitor demand for and participation at public conservation areas, and the segmentation of those visitors, for both New Zealand and Australia. This report provides a synthesis of the information gathered in the New Zealand research bibliography and identifies key gaps in knowledge that future research needs to address.

The main findings are that the international visitor market is still increasing but the status of the New Zealand domestic visitor market is less certain—available research does not fill the gaps in our deeper understanding of this market. Motivations for visiting conservation lands remained unchanged over the period of the literature review. However, changes in the make-up of the population mean that DOC needs to better understand this current and future market. Understanding and responding to cultural differences in recreation behaviour are especially important if DOC is to attract new customers to conservation lands. Such an approach may also help DOC to prepare for forecasted changes in the international visitor market, with the emergence of non-traditional source markets (e.g. China and India).

Further research is required on participation (and non-participation) by marginalised members of the population such as the disabled, people of lower socio-economic status and those unfamiliar with the outdoor recreation opportunities offered by DOC. Family demand for use of DOC-managed lands is also worthy of greater research attention. There is a lack of information on visitation to conservation areas that do not have national park status, particularly in the North Island. Visitation by locals and ‘other’ activities, especially water-based ones, are also under-researched. There is also a lack of information on visitor demand for and participation at historic sites in general, and in particular for the built heritage that DOC manages.

The sizeable quantities of data from visitor research have yet to be drawn together and analysed collectively. There is also a need to better integrate the findings of previous reviews of visitor research and the resulting recommendations to avoid further fragmentation of that information. Importantly, longitudinal (over time) and regional or conservancy-wide studies are needed; most of the visitor research is site specific or was undertaken at one point in time. Furthermore, there has been little focus on the actual visitor, and his or her longitudinal relationship with DOC-managed areas. Such studies will assist in understanding wider visitor flows and patterns of visitation, and the overall dynamics of visitation to public conservation areas.

Keywords: visitor demand, participation, segmentation, public conservation areas, research bibliography, New Zealand

© Copyright December 2011, Department of Conservation. This paper may be cited as:

Lovelock, B.; Farminer, A.; Reis, A.C. 2011: A synthesis and gap analysis of research on visitors to public conservation areas in New Zealand 1995–2010. Department of Conservation, Wellington. 17 p.

1. Introduction

The Department of Conservation (DOC) commissioned the Centre for Recreation Research, School of Business, University of Otago, to undertake a literature scan of recent research relating to visitors to public conservation areas. This report is one of four reports—two bibliographies and two related gap analysis and research synthesis reports—addressing visitor research in New Zealand and Australia. The gap analysis and research synthesis reports discuss the key trends, issues and research gaps relating to visitor demand for, participation at, and segmentation at public conservation areas in both countries.

The aim of the visitor research programme was to inform the work currently being undertaken by DOC in developing a Destination Management Framework (DMF) for its conservation areas, which will ensure that it becomes more customer focussed in its provision of recreation opportunities and visitor experiences. With its knowledge base of this area brought up to date, DOC will be able to identify research priorities, which can be incorporated into a wider programme of future research and which, in conjunction with the DMF, will aid DOC in developing a better understanding of the market demand for outdoor recreation and tourism in public conservation areas in New Zealand.

1.1 The research bibliography

A comprehensive bibliography (1995–2010) of research literature relating to visitors to public conservation areas in New Zealand was completed by the Centre for Recreation Research in June 2010 (from this point, referred to as the ‘Bibliography’).

1.1.1 Relationship of this report to the bibliography

This report provides a synthesis of the information from the New Zealand visitor literature presented in the Bibliography. It identifies key trends and issues from the data and analyses the information gaps that require further research to improve DOC’s understanding of visitor demand, both currently and in the future.

This report should therefore be read in association with the following three reports:

Lovelock, B.; Farminer, A.; Reis, A.C. 2011: A bibliography of research on visitors to public conservation areas in New Zealand 1995–2010. Department of Conservation, Wellington. 85 p.

Lovelock, B.; Reis, A.C.; Farminer, A. 2011: A bibliography of research on visitors to public conservation areas in Australia 1995–2010. Department of Conservation, Wellington. 112 p.

Lovelock, B.; Reis, A.C.; Farminer, A. 2011: A synthesis and gap analysis of research on visitors to public conservation areas in Australia 1995–2010. Department of Conservation, Wellington. 18 p.

1.2 Report approach

The approach taken in this report is to present the synthesis of the research covered in the Bibliography under three main themes: visitor demand, visitor participation and visitor segmentation.

Visitor demand—how much of New Zealand’s public conservation land is being used, what types of outdoor recreation activities and locations visitors to public conservation areas desire, and what kinds of facilities, services and information they require.

Visitor participation—how and why visitors to public conservation areas participate in outdoor recreation, what kinds of activities they partake in, and how their participation is gauged in terms of their motivations, expectations, satisfactions and perceptions.

Visitor segmentation—how and why visitors are separated into different categories, and how visitors are grouped by their motivations, activities, characteristics, demographics (e.g. age, gender, income, education) and market share.

Each theme is addressed in two parts: a discussion of the types of research identified, and a synthesis of the main research findings and the primary pieces of research. Then, the key trends and issues identified in the Bibliography are discussed, and the gaps in knowledge outlined.

This report synthesises data from many research reports rather than referring to specific documents. However, the Appendix contains a selection of research publications from the Bibliography that we consider may be useful and representative. These are listed under the three main headings (see above) and cited by their Bibliography index number (e.g. no. 22).

Preparation of the research synthesis and gap analysis has been undertaken in light of the *Review of Visitor Research* prepared by Kay Booth for DOC in 2006 (Booth 2006). That report introduced an updated Visitor Research Framework ('VRF'), the aim of which was to provide a 'common language for managers and researchers'. The VRF identified seven types of visitor information 'commonly required by managers'. Unfortunately, it was not possible to align our approach strictly with the VRF owing to overlaps between information types, and because not all types of visitor information were addressed in this study. Notwithstanding, our analysis aligns with information types 1 (Visit numbers), 2 (Visit and visitor characteristics), 3 (The visitor experience (from motivation to satisfaction)) and 6 (Recreation resource demand and supply).

1.3 Additional research information

Within this research project, several national tourism and recreation data sources are referred to that do not appear as entries in the Bibliography. In particular, the International Visitors Survey (IVS) and Domestic Travel Survey (DTS), both collated and published by the Ministry of Tourism, are mentioned on several occasions as sources of national visitor research data. They have not been included in the Bibliography on the grounds that their content was more general than the specific visitor research themes set out in the DOC project brief. Also, they both require interrogation of the data to produce relevant results.

2. Contents of the bibliography

The Bibliography that forms the basis for this report contains 237 separate entries for New Zealand literature on visitor demand for and participation at public conservation areas and similar recreation and tourism locations, and the segmentation of those visitors.

Much of the research has been undertaken (or commissioned) by DOC: of 237 items in the Bibliography, 38% (90 items) were attributable to DOC, and 62% were 'other' publications. However, about half (48%) of those 90 items remained unpublished and relatively inaccessible at the time of writing. Much of the non-DOC research was also unpublished, in the way of theses and reports,

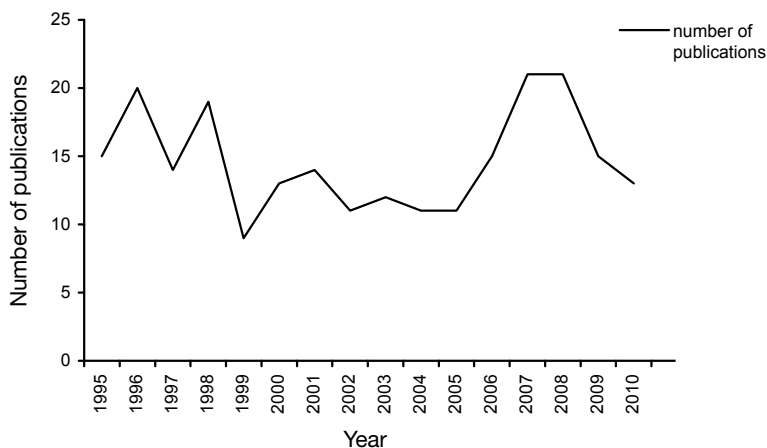


Figure 1. Number of New Zealand visitor research publications by year.

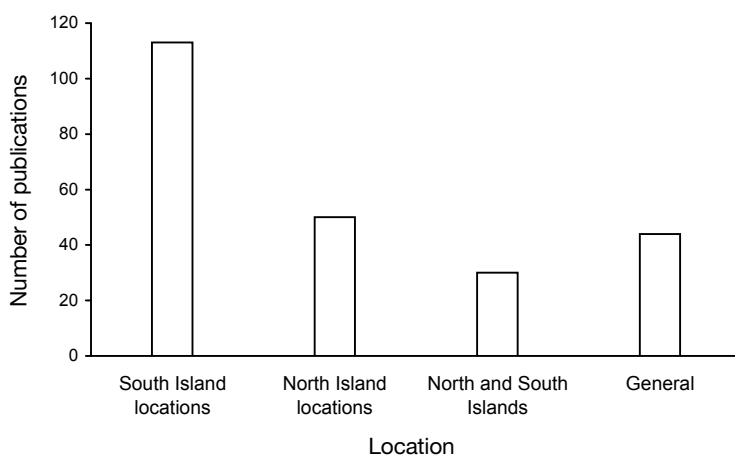


Figure 2. Location of visitor research in New Zealand.

and a considerable portion was not independently peer-reviewed. There have been two 'peaks' of publishing activity in terms of visitor research (Fig. 1), the first in the mid-late 1990s, much of it a result of nationally funded (Foundation for Research Science and Technology) projects, and the second in the mid-late 2000s, based on research undertaken by a variety of bodies.

Geographically, relatively few visitor studies have been undertaken in the North Island compared with the South Island (Fig. 2). In the South, much of the visitor research has been focussed in two areas: Fiordland National Park (and periphery) and Aoraki/Mount Cook National Park (and periphery). In the North Island, Auckland received by far the most research attention, mainly relating to the Auckland Regional Parks (Fig. 3). Most of the DOC-related visitor research was undertaken for national parks. Few studies considered conservation parks, or the range of conservation areas of different status, with a 'lower profile', or smaller in size.

By far the most commonly addressed topic in the visitor research was visitor satisfaction, followed distantly by visitor

experience and visitor perceptions (Fig. 4). Visitor segmentation and visitor characteristics received only moderate attention from researchers. And, importantly, very few studies addressed actual visitor demand, visitor flows or absolute visitor counts.

Crowding was clearly the most commonly raised issue in the visitor research, followed by impacts of visitors (Fig. 5). Constraints to recreation also received a reasonable amount of research attention.

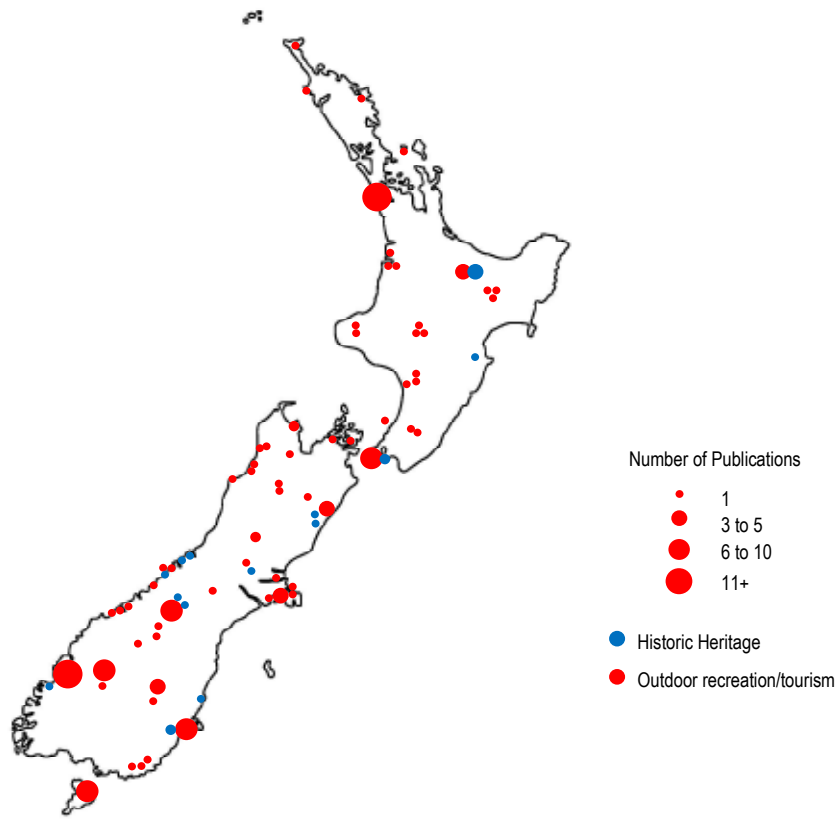


Figure 3. Sites of visitor studies in New Zealand.

Figure 4. Topics of New Zealand visitor studies.

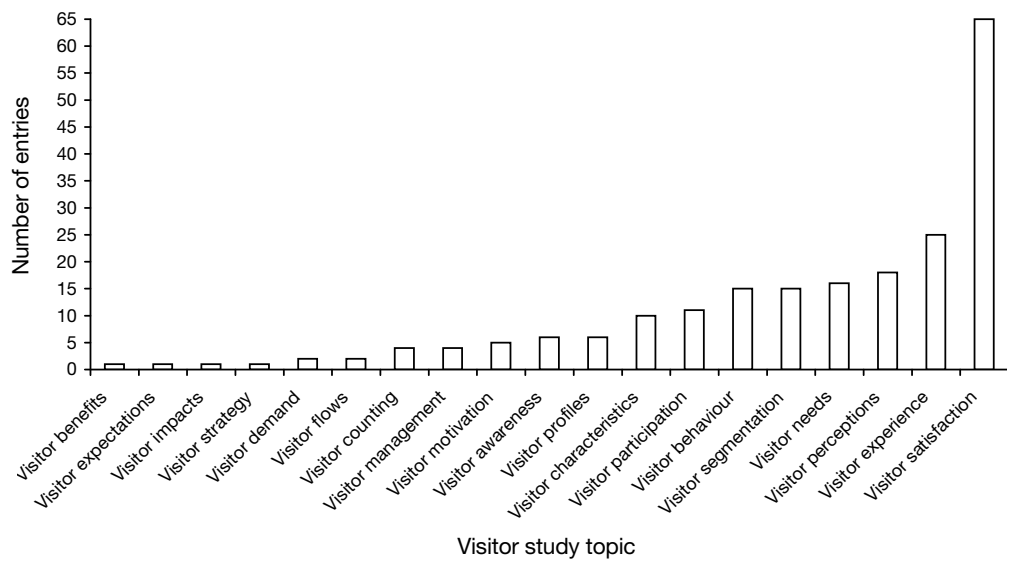
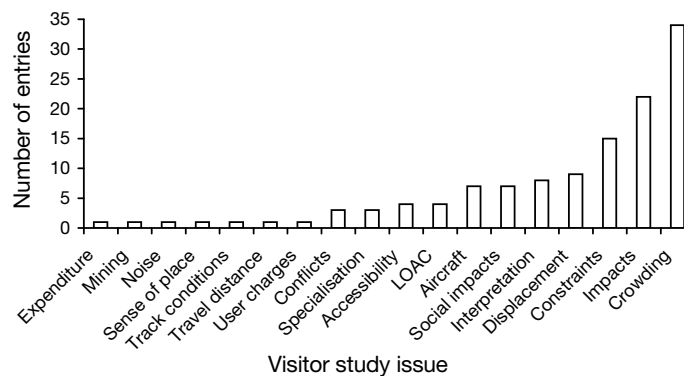


Figure 5. Issues raised in New Zealand visitor studies. LOAC = Limits of Acceptable Change.



3. Visitor demand

3.1 Research type and themes

An extremely limited range of research specifically on visitor demand has been undertaken in New Zealand since 1995. The literature scan identified only three such pieces of research, two of which related to DOC-managed areas directly. Looking further afield, at research that overlapped with visitor demand, we found several studies that included aspects of ‘visitor need’, which mainly addressed requirements at specific locations (e.g. the need for more visitor information or site interpretation, improved hut facilities and tracks), and visitor monitoring methods. It is important to note that visitor ‘needs’ (as opposed to ‘demand’) were touched on to at least a small degree in almost every study based on a visitor survey found in the literature scan.

3.2 Research synthesis

From the few identified studies relating directly to visitor demand, we can conclude that the New Zealand population is changing in terms of its age structure, with the population becoming increasingly older and having greater ethnic diversity, and that this may impact on domestic (New Zealanders’) visitation to DOC-managed areas. While international visitor numbers continue to grow, there is still a lack of detailed information on domestic tourism demand. We can also infer that the nature of outdoor recreation in New Zealand also seems to be changing. Front-country locations are being used more, while the use of backcountry sites is possibly decreasing (or certainly increasing at a much lower rate—an important difference). The implications of this for DOC are that its visitor market is changing, as is visitors’ ‘style’ of participation—both of which will directly affect future visitor demand for locations and activities in DOC-managed areas.

The main sources of national-level tourism and recreation data were the Hillary Commission/SPARC Active New Zealand Surveys, run since 1997, and generic data from the IVS and DTS; however, for none of these sources are DOC-managed areas a primary focus, and extraction of data about specific sites and/or activities can sometimes be difficult if not impossible.

Likewise, there were few studies of visitor demand that had a regional or DOC conservancy focus. Of these, the studies of Wanganui Conservancy and Auckland Regional Parks were the most valuable because they examined current visitor demand (based on visitor characteristics, visitation numbers and visitor experiences), in order to predict future demand and strategic management responses. Auckland Regional Council has collected many visitor monitoring data over the last 10 years. Its reports provide data on trends in visitor demand and use, many of which are transferable to DOC-managed areas. A common, key finding of these studies was that visitor demand, although fairly stable or slightly increasing, was based mainly on a domestic market dominated by New Zealanders of European descent; Māori and Pasifika demand was low, and this was largely attributed to cultural differences in recreational behaviour.

In regard to demand for built and/or cultural heritage, there were no studies with this particular focus for DOC-managed areas. However, some studies suggested that there was a strong demand from international visitors for cultural heritage tourism products in general, and especially for Māori-related attractions.

In DOC research, visitor demand is largely ‘measured’ by visitor participation, which in turn is determined by visitor monitoring, which tends to be site specific. The measurement of numbers of visitors to public conservation areas is thus an important part of gauging current and future visitor demand, and several useful studies specifically considered aspects of visitor monitoring (e.g. visitor surveys and vehicle or visitor counts) in national and regional parks. Some made recommendations for best practice (these are addressed in more detail in sections 4 and 5, below).

As noted previously, many of the 237 references included in the Bibliography contain some element of visitor participation, need, satisfaction and characteristics (in either their methodology or results), all of which—to varying degrees—intersect with and contribute to the concept of visitor demand and how this is measured. These are discussed in more detail in sections 4 and 5, below.

4. Visitor participation

4.1 Research type and themes

Visitor participation is a very broad term, which has been interpreted as covering a range of different components, including visitor awareness, attitude, behaviour, expectations, motivations, experience, perceptions and satisfaction—as well as just simply visiting public conservation areas. The literature scan for visitor participation reflects these differing interpretations and a considerable proportion of the Bibliography (roughly 75% of documents) is related directly to these themes to some degree.

Many different methods have been employed to generate the relevant research data discussed here, including visitor surveys, both on-site and population-based, as well as qualitative techniques, including interviews, focus groups, photographic sorting methods and visitor observation.

4.2 Research synthesis

Since 1995, the principal development in knowledge about visitor participation in public conservation areas has mainly been the increase in the collection and use of statistical information. There is now more detailed and qualitative information on the nature of participation and non-participation, and a focus on understanding the constraints to participation. Some research suggests that the steady increase in international visitors to DOC-managed areas will continue, based upon the continued marketing of New Zealand as ‘100% Pure’ and as the key place to experience nature-based tourism. However, no studies to date have addressed potential changes to participation as our international visitor market changes—in particular, the emergence and growth of new source markets such as China and India.

The findings relating to domestic (New Zealanders’) participation are inconsistent. The one national survey with a focus on DOC-managed areas suggests that visitation overall (at least since 2001, when that study began) remains constant at roughly between one-third and one-half of the population. That research also suggests (at least for recent years) that the profile of visitors is constant (i.e. higher income earners, males, with managerial-professional occupations, rural dwellers). However, other research suggests that the continued and steady participation of domestic visitors is less certain owing to an ageing population, a possible decrease in youth interest, a more ethnically diverse population with different cultural traditions for recreation and a possible decline in traditional mainstay activities such as tramping. This is coupled with competition from other leisure opportunities.

Some research into non-participation identifies a high level of ‘latent’ demand (associated with people who may want to participate in outdoor recreation but don’t because of lack of information or other constraints). A lack of knowledge about park opportunities among non-participants, or information on parks in general, contributed to the high levels of latent demand reported. In relation to our increasingly ethnically diverse population, studies identified several barriers to participation, including costs of gear and access, and lack of knowledge and recreation

experience. Similarly, research into the demands by, and participation of, mobility-challenged visitors to the backcountry highlights the current low levels of participation by this visitor group but its potential to increase significantly in response to the predicted increase in older citizens in New Zealand and in key international populations.

Furthermore, studies of participation tended to focus on 'iconic' conservation areas, the national parks and high-profile sites, with a focus on traditional (tramping) activities. Few studies addressed sites of potential high local significance. Very little work has been compiled on localised hunting (or fishing), for example. Some recent work on the newly created southern conservation parks identified their critical role for local recreation, often family-based and involving children.

Even fewer studies addressed participation involving the aquatic (marine and freshwater) resources of DOC-managed areas. One study on recreational river use in New Zealand is important not only for providing a fairly detailed survey of river use that touched on many public conservation areas, but also because it pointed out that, as individuals become more specialised in their chosen activity (e.g. kayaking, boating or fishing), the importance of particular motivations change over time, and this leads in turn to changes in patterns of use and site preference. This has implications for recreation providers in terms of providing a range of opportunities for visitors of different skill and/or experience levels.

The motivations and experience of visitors to public conservation areas are key aspects of their participation and this relationship was addressed in a large number of the studies. Motivations range from the desire to visit natural areas, the wilderness and the backcountry to wanting to participate in Māori cultural tourism, ecotourism, river activities and parks in general. Key findings are that the motivations of visitors to DOC-managed areas have remained remarkably stable over the time frame of this research review. The numerous, mainly site-specific surveys of visitor participation and motivation across a range of conservation areas demonstrated that visitors (both international and domestic) go to DOC-managed areas for a diverse range of reasons:

- Their scenic beauty and naturalness
- Their wilderness qualities (to varying degrees)
- The opportunity to 'get away from it all', especially from other people
- The unique opportunities they provide for specific recreational activities (e.g. tramping, hunting, fishing, mountain biking, walking, kayaking and skiing)
- Their role as places of historic and cultural experience and especially as places of high cultural significance for Māori New Zealanders
- The opportunity to encounter native wildlife in natural settings
- The opportunity to explore parts of the country that would otherwise be difficult to access
- The opportunity to develop social bonds with family and friends and generally improve well-being

Such a diverse range of visitor motivations points to the value of (the limited number of) in-depth qualitative studies that address the specific needs of different user groups. This is especially important considering the growth and diversification of visitation observed at many sites, where 'traditional' users are encountering growth in the numbers of 'new' visitors with new ways of visiting.

Some research has examined the relationship between visit motivation and satisfaction in light of the need to develop effective marketing strategies and sustainable management plans for conservation areas. The key conclusion reached was that assessing visitor motivations without considering visitor satisfaction and vice versa was an incomplete exercise and would not provide a full understanding.

The relationship between visitor experience and satisfaction featured in many of the visitor surveys and studies. In general, visitor satisfaction was shown to be determined by several factors, including visitors' previous experiences, perceived crowding at sites and individual levels of tolerance. In the late 1990s, DOC carried out a programme of research into visitor satisfactions, impact perceptions and attitudes towards management options of several different sites relating to Great Walks tracks. The research programme primarily examined issues of perceived crowding on visitors to the tracks and its resulting impacts on their experience. Similar, later research examined how such perceptions of crowding affect participation in general, and whether they lead to the displacement of visitors to other less-crowded sites. Overall, the studies concluded that some crowding occurred in specific situations (e.g. at huts in peak season). However, perceptions of crowding were largely dependent on visitors' expectations of their outdoor recreation experience and how these were met. The related issue of displacement is more difficult to assess, as the lack of detailed visitor monitoring limits our understanding of precise visitor patterns (i.e. where visitors go). But the studies again concluded that displacement was likely to be happening, particularly with the increase in international visitors to backcountry areas.

Linked to this, studies warned that our 'limited and fragmented information base' was insufficient to inform the future needs of the outdoor recreation sector. They emphasised the urgent requirement for a visitor research strategy and standardisation of research methods, including a standardised method for monitoring visitor satisfaction.

Finally, while several studies addressed the potential impact of commercialised tourism activities (concessions) on traditional users of DOC-managed areas, very few (if any) studies considered the participation of concession clients, in terms of absolute numbers, nor were clients' motivations, experiences or satisfaction addressed.

5. Visitor segmentation

5.1 Research type and themes

Visitor segmentation is a term often used in marketing, and refers to separating visitors into different categories. Visitors may be grouped by their motivations, activities, characteristics, demographics (e.g. age, ethnicity, income) or simply by market share. A very limited range of research specifically on the segmentation of visitors to public conservation areas has been undertaken in New Zealand since 1995. The literature scan identified only two specific pieces of research, although there were a small number of more general studies that had a visitor segmentation focus. However, as with the literature for visitor demand and participation, reports of several of the visitor surveys contained some information relevant to segmentation, i.e. on visitor groups, profiles, characteristics and behaviour. Visitor demographics, which are often used as baseline data for many segmentation methods, are also found in most of the visitor surveys.

5.2 Research synthesis

There are very few visitor studies that use specific segmentation approaches. A small number have utilised elements of DOC's Visitor Group categories in their method and analysis, or have 'tested' the DOC segmentation approach to assess how accurately the resulting segments aligned with visitors, sites and activities in practice. Other segmentation techniques have been explored in a few studies, such as segmenting park visitors according to how they used on-site interpretation. The Auckland Regional Parks segmentation work in particular has enabled park managers to focus more strategically on improving levels of visitor satisfaction and experience. Of relevance to the management of DOC's historic sites, some research has effectively used other segmentation approaches to understand the way that visitors experience and value wider cultural heritage attractions. The research also pointed out the potential of using other models to segment users (e.g. based upon how they 'value' the environment—this 'ecological-orientation' model has been used in some studies). In the wider heritage sector, segmentation approaches based upon visitors' lifestyles have been used successfully.

Related to visitor segmentation is visitor profiling and characterisation. The literature showed that we have, for example, a good understanding of the profile of visitors to ecotourism sites in New Zealand. Also, a programme of research undertaken by Lincoln University for 1998–2001 has led to a good understanding of the characteristics, activities and decision-making of visitors to the natural and cultural heritage destinations of Rotorua, Kaikoura and the West Coast. Some research pointed to the value of creating and using visitor profiles to identify the 'average' visitor to different sites. This information can then be used along with other information, such as visitors' site loyalty and the frequency of visitation, to 'measure' the relative importance of each site.

6. Key trends and issues in the research data

While there has been a wide range of visitor studies undertaken on DOC-managed areas, the lack of consistently applied longitudinal (over time) studies, coupled with the current inability of wider tourism monitoring programmes (e.g. the IVS and DTS) to provide accurate data on visitor demand for and use of DOC-managed areas, mean that it is difficult to accurately determine visitation patterns. However, some general trends can be identified.

The growth in demand for both front-country and backcountry experiences by international visitors is continuing despite a current lull, and is predicted to continue to increase for the foreseeable future. However, demand from domestic visitors is less certain. Estimates for overall domestic visitor demand appear to have remained fairly constant over the last decade. Some data suggest relatively consistent visitor numbers to DOC-managed areas (since 2001). Other research warns that domestic visitation to public conservation areas may be lower than previously measured by DOC and may be in decline.

A possible decline has been linked to increased demands on our leisure time, and the availability of a greater range of ‘competing’ recreational activities. This may be impacting especially on youth participation in nature-based recreation. The predicted decline in population growth for the next 20 years, and the ageing of the population, may further contribute to a decline in domestic visitor numbers. Moreover, based on current low demand and participation levels, those segments of the New Zealand population that are projected to have higher population growth rates (e.g. Māori and Pasifika) are unlikely to counteract any decrease in demand for nature-based recreation.

Ethnic minority groups have relatively low participation. There is a reported lack of information on visitor opportunities aimed at those who have little experience in visiting, or confidence to visit, public conservation areas and regional parks. In particular, such information is lacking for recent immigrants and people of lower socio-economic status.

Research on regional parks has emphasised the need for greater flexibility in park management with regard to attracting and informing ethnically diverse populations, with a view to increasing ethnic visitor participation.

Similarly, the limited research addressing older visitors and persons with disabilities reveals current low levels of participation, but does suggest some unfulfilled demand (this may hinge on enhanced physical access to visitor sites, however).

In some DOC-managed areas, commercial recreational activity has declined (measured by a drop in concession applications), but there are insufficient data to allow wider generalisations. The decrease may be a reflection of saturation in terms of new commercial recreation opportunities in many areas.

The data do suggest, however, that demand for front-country experiences is growing—possibly at the expense of traditional backcountry activities (e.g. tramping). They also suggest that the range of activities that visitors are participating in is diversifying and also expanding geographically (e.g. mountain biking).

Research also points to the social impacts from increasing (international) visitor numbers with regard to crowding, noise and the displacement of repeat visitors and recreationists, particularly in backcountry areas. The physical impacts on public conservation areas and upon wildlife have also been raised as key issues.

Visitor monitoring practices and information improved over the review period but methodological and reliability issues still remain, for example, with visitor counting technology, data storage and analysis practices.

7. Research gaps in current knowledge

7.1 Developing the right kinds of studies

While the number of visitor studies conducted over the review period was substantial, most were one-off studies of individual parks or conservation areas. There was little long-term strategic visitor research undertaken on DOC-managed areas.

There are almost no studies with longitudinal (over time) datasets, so it was difficult to analyse and predict patterns of participation over time. Baseline data, for example on the new southern conservation parks (or on any new major facility development), are of immense value.

Similarly, there was little focus on the individual visitor's longitudinal relationship with DOC-managed areas (e.g. over their entire visit to New Zealand, for international visitors; or over a number of seasons, for domestic visitors).

Most studies focussed on individual parks or conservation areas. There was a lack of regional or nationwide spatial analyses of visitation to DOC-managed areas. The application of Geographic Information System (GIS) analysis to tourism flows and demand is useful in wider tourism planning and forecasting. The use of such a tool by DOC, to connect these data and to forecast visitor trends and the demand for public conservation areas, may be of value.

There were few true studies of demand from the general domestic population, or from international visitors. Visitor demand has not been well defined, nor basic methods established for its consistent measurement.

7.2 Better use of current and historic visitor data

There was a large quantity of survey data existing in a variety of forms and in a variety of locations; however, to date, there has been little effort to bring these datasets together.

Current visitor data are abundant from numerous visitor surveys undertaken in many DOC-managed areas. If these data were brought together in a systematic way (e.g. into a 'mega database'), compiled and analysed, they could be used to paint a broader picture of visitation. Again, a GIS or related approach may add value to this database, shedding light on conservancy, regional and/or national visitor trends.

Related to the above point, consistency in criteria for the gathering of visitor monitoring data across DOC-managed areas would allow DOC to more accurately compare survey results regionally and nationally.

7.3 Addressing all types of visitors

Evidence pointed to a diversifying visitor market—both internationally and domestically. To date, this diversification did not appear to have been addressed by visitor research.

International visitors to New Zealand are coming from more diverse markets. Considering the observed and forecast changes in international visitation, especially the growth of new markets (e.g. China, India), data are needed on to what extent and how these 'new' visitors will engage with DOC-managed areas.

There were some survey data on the constraints to visitation and on participation and experiences of ethnic groups (such as Māori, Pasifika and Chinese) while visiting DOC-managed areas and regional parks, but little information was available on demand by these segments. Considering the current and predicted changes in New Zealand's population mix, this is a key area that requires more information.

There was limited information on the participation of youth or this segment's demand for use of DOC-managed areas.

There was also limited information on the participation needs of the aged and those people with disabilities. Considering the frequency of mobility-related disabilities and predictions about the ageing of populations (domestic and international), this is also an area for attention.

7.4 Addressing the range of recreational activities

Most visitor studies to date have focussed on the traditional users (i.e. trampers) of DOC-managed areas. There was comparatively little information on the activities and experiences of the wide range of other visitors.

There were few studies that focussed on non-tramping recreational activities, that addressed for example, local visitors, day walks, mountain biking, hunting, fishing and other water-based recreational activities.

There were very few visitor data relating to the historic heritage within DOC-managed areas or other natural recreation areas. This is a significant omission considering that, at present, DOC manages over 600 such heritage sites. Do the motivations, expectations and satisfactions of these visitors differ from those visiting primarily for natural heritage?

There was limited information on the numbers, characteristics, motivations, experiences and levels of satisfaction of recreational users of DOC-managed areas who participate in commercial concession activities.

Similarly, while there was information on the socio-economic characteristics of visitors, we have little knowledge of the nature of their visit-related expenditure, and how this may be linked to site location, features and facilities, and to visitor satisfaction.

7.5 Addressing the range of DOC-managed areas

Visitor research appears to have focussed on those areas receiving substantial numbers of international visitors, and areas with more 'iconic' status.

Visitor studies were geographically widespread but with a distinct clustering on the lower South Island and fewer studies in the North Island. Future visitor studies should address this imbalance, particularly since most of the New Zealand population resides in the north, and since the main international gateways are located there.

Similarly, there were few studies that incorporated the less well-known and less-visited DOC-managed areas that nevertheless may be important for local visitors. Studies have tended to focus on the 'iconic' (e.g. national park) sites.

7.6 Use of visitor segmentation approaches

Despite DOC adopting a visitor segmentation framework in its 1996 Visitor Strategy (DOC 1996), this appears to have been used in visitor studies to only a limited extent. Perhaps consequently, there has not been a consistent approach to visitor segmentation across DOC-managed areas. Nor have there been any historic-heritage visitor segmentation studies. There is potential to apply segmentation approaches (e.g. 'lifestyle analysis') that have been used successfully elsewhere in the cultural heritage tourism sector.

Finally, more information on the broader New Zealand domestic visitor market is needed for forecasting wider trends in outdoor recreation and tourism demand. There is potential to better link with current national visitor surveys (e.g. the DTS) in order to achieve this.

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Appendix 1

Key papers on which the main text is based

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