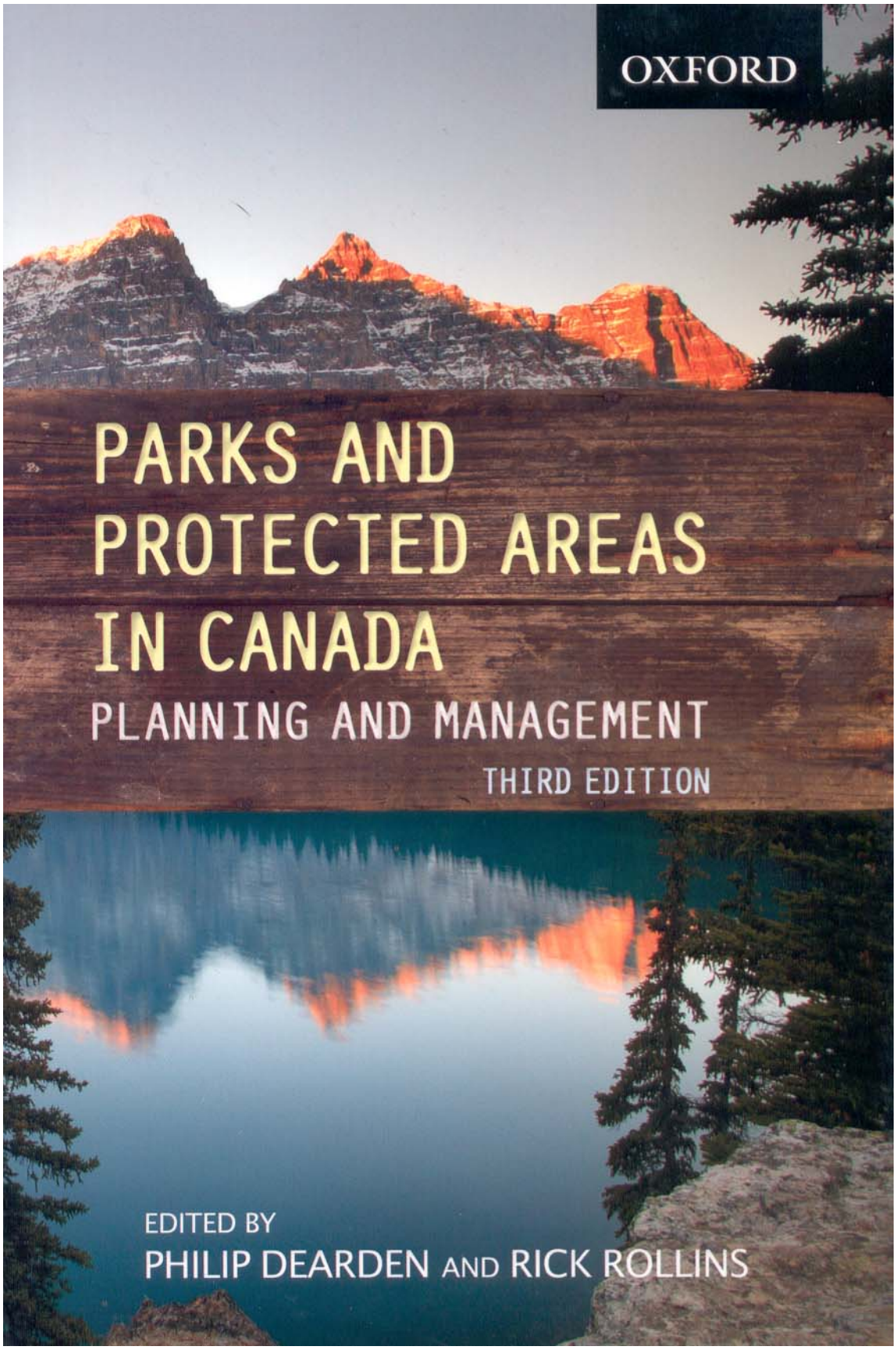
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CHAPTER 6

# Social Science, Conservation, and Protected Areas Theory

*Mark D. Needham and Rick Rollins*

## INTRODUCTION

Over 80 per cent of Canadians participate in some form of nature-related activity such as camping and boating, and much of this activity takes place in national or provincial parks (Environment Canada, 1999). Nature-based tourism is a significant industry in Canada, employing many people and attracting considerable investments. From 2001 to 2006, about 12 million people visited a national park in Canada (Parks Canada Agency, 2006a), and in 2006 this translated into a contribution of $1.2 billion to Canada's gross domestic product (Parks Canada Agency, 2006b). Although there is some debate about appropriate recreation and tourism use in parks and protected areas, there is consensus that some forms of visitor use may be acceptable or desirable. The major issue, however, is how to manage this use effectively in ways that protect park resources, provide for satisfactory visitor experiences, and create a constituency of supporters for parks.

Why do people seek out places such as Gros Morne, Algonquin Park, the Nahanni River, Banff, or Pacific Rim? What kinds of activities do they pursue? What types of experiences and benefits are generated from participating in these activities? What impacts do park visitors create? In what ways do visitors contribute to or detract from environmental sustainability of parks? What types of visitor services and facilities are desirable or appropriate? What types of experiences should or should not be provided in park settings? What types of conflict occur between and within different user groups and why? To what extent are people willing to pay for parks through taxes or user fees? How much public support exists for protected landscapes compared to use for other purposes such as logging, ranching, or urban development? Questions such as these have been explored by social scientists conducting research in Canada and elsewhere, so the intent of this chapter is to provide an overview of the contribution of social science to management of protected areas. In this chapter, social science refers to theory and research that has been applied to park management from disciplines such as sociology, psychology, geography, economics, anthropology, tourism, and leisure studies. This literature has contributed to the ongoing development of techniques for visitor management that are described in subsequent chapters of this book.

Many parks are besieged with requests to provide more facilities such as trails, campgrounds, parking areas, marinas, and downhill ski areas. Pressure is also placed on park managers to increase overnight accommodation in parks and to include roofed structures such as alpine huts, hostels, hotels, and luxury resorts. There is increasing demand on parks to accommodate more visitors and different types of activities such as camping, backpacking, rock climbing, horseback riding, hunting, fishing, all-terrain vehicle use, canoeing, kayaking, sailing, waterskiing, downhill skiing, nordic skiing, and snowmobiling. In any given park, some of these activities can be considered, but it is not possible to provide all types of visitor activities, opportunities, services, and facilities—to do so would result in loss of natural character and conversion of parks to more developed landscapes. Park managers must decide what activities should be permitted, how much use should be allowed, where this use will be allowed, and how use will be managed. In the face of budget constraints and an expanding set of visitor demands on parks, managers are challenged to articulate what purpose or role a park is to fulfill and what balance between visitor use and resource protection is appropriate.

In addition to environmental impacts created by visitors in parks (see Chapter 12), managers must deal with a variety of social issues including crowding, vandalism, and conflict among user groups. These issues can extend beyond park boundaries and impact adjacent land and nearby communities. Communities such as Tofino near Pacific Rim National Park and Canmore near Banff experience many tourism benefits due to their close proximity to popular national parks. These communities, however, sometimes experience visitor-related problems such as traffic congestion and lineups at grocery stores, gas stations, banks, and hospitals.

Visitor management is complex. In this book, impacts of visitor use are examined within the topic of ecological integrity, where it is noted that most threats to ecological integrity stem from visitor activity within parks and/or human activity outside of parks impacting park ecosystems (Chapters 5 and 13). It is apparent, therefore, that maintaining ecological integrity requires an understanding of human behaviour. Social science data can assist in this effort. When dealing with an issue such as feeding of bears by park visitors, for example, managers need an understanding of the social sciences to influence or regulate behaviour of visitors, tourism operators, and other groups and agencies that bring visitors to parks and gateway communities.

## THE BEHAVIOURAL APPROACH

Social science research into visitor behaviour in parks is described under a variety of headings such as outdoor recreation, adventure tourism/recreation, nature-based tourism, and ecotourism. What these terms have in common is the study of leisure behaviour: how people act and feel when not at work, and when activities are freely chosen and intrinsically satisfying (Manning, 1999). Park agencies seek to provide satisfying leisure experiences that minimize damage and unacceptable change to natural and social attributes of the area. Nevertheless, visitors sometimes describe their personal experiences as unsatisfactory. Dissatisfaction can take several forms, including concerns about crowding, litter, and damage to park environments. Sometimes visitors express

concerns about noisy or rowdy behaviour of other visitors, or conflict with other types of users (e.g., hikers with horseback riders, skiers with snowmobilers). People also express concerns about facilities and services provided by park agencies, including complaints regarding upkeep of campgrounds or trails, quality of interpretive programs, or availability of park wardens.

Social science researchers have examined these issues to understand outdoor recreation behaviour and assist managers in their task of providing quality visitor experiences while protecting park environments. To summarize this research and show how it can be applied to park management issues, this chapter begins with a description of the 'behavioural approach' illustrated in Figure 6.1. The behavioural approach, which is also analogous to 'experience-based management' (Manfredo et al., 1983), proposes that people engage in specific activities in certain settings to fulfill motivations and realize a group of benefits that are known, expected, and valued (Manning, 1999). These benefits (e.g., satisfaction) occur when actual experiences or outcomes meet or exceed expectations or forces that push or pull people to seek out specific leisure activities and experiences. Researchers using motivational explanations (discussed below) are concerned with what arouses or activates leisure behaviour (i.e., forces that *push* people to engage in certain activities). Researchers have also examined characteristics of leisure activities and settings that *pull* people to select certain activities or settings over others (Mannell and Kleiber, 1997; Mannell, 1999). People, for example, may seek backpacking experiences in Jasper National Park because they are being 'pushed' by motivational factors such as the need to 'escape urban life' and 'be close to nature'. They may be 'pulled' by beliefs that the backcountry in Jasper is a relatively easily accessible natural setting devoid of urban characteristics and little crowding would be experienced. If these push and pull motivations were substantial, a person might select the activity of backpacking in a setting such as Jasper National Park. If outcomes of this experience turned out as expected in terms of these push and pull motivations, the person would be satisfied with the experience and the feedback loop might result in the person seeking similar experiences in the future. If the experience was not as expected, it is less

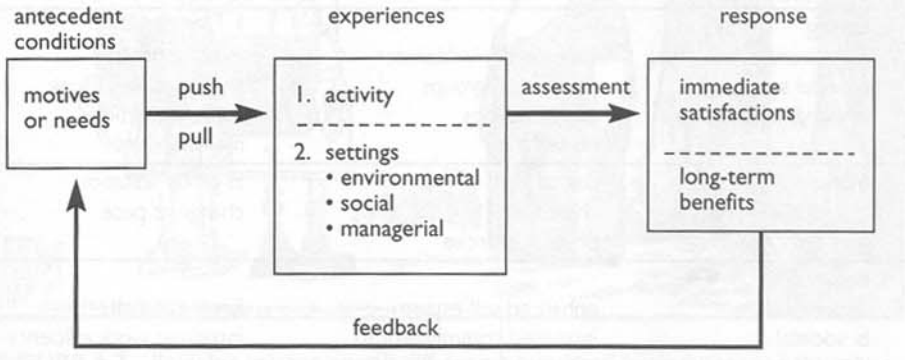


**FIGURE 6.1** Behavioural model of outdoor recreation. After Mannell (1999).

likely that all benefits would be realized and the feedback loop may result in a lower probability that a similar experience would be sought.

This model assumes that motivations are shaped by the expectation that effort to participate will lead to performance (e.g., engage in certain activities in specific settings), which will lead to desired experience outcomes, benefits, and satisfaction (Manfredo et al., 1983). The model also assumes that individuals typically have multiple motives for leisure experiences in general and for outdoor recreation in particular (e.g., to develop skills, be close to nature, escape daily routines, get physical exercise). Experiences in this model are defined as the interaction between an activity and a setting. People vary in their preferences for type of activity. Some people, for example, may prefer backpacking rather than canoeing. People also vary in their preferences for different types of settings; a backpacking experience in Jasper National Park, for example, may differ substantially from a backpacking experience on the West Coast Trail segment of Pacific Rim National Park. A canoeing experience in Algonquin Provincial Park may differ from canoeing in Winisk River Provincial Park in Ontario. Recreation settings differ somewhat in appearance and character, and can be distinguished based on variability in three important parameters: (a) environmental conditions (e.g., modern to primitive); (b) social conditions (e.g., isolated to crowded); and (c) managerial conditions (e.g., few regulations to many regulations). Table 6.1 outlines these differences for two park activities, wilderness hiking and picnicking.

The behavioural model is comprised of two types of benefits. The first type of benefit is satisfaction with expected psychological or individual motivations (e.g., developing skills, affiliating with others, escaping daily routine, seeking adventure). The second type of benefit refers to ultimate or longer-term personal, societal, economic, and/or environmental benefits that result from engaging in recreation experiences

**TABLE 6.1 Behavioural Model Illustrated with Wilderness Hiking and Family Picnicking**

| Level | Example 1 | Example 2 |
|---|---|---|
| 1. Activity | wilderness hiking | family picnicking |
| 2. Setting | | |
| a. environmental setting | backcountry/wilderness | frontcountry |
| b. social setting | few people/groups | many people/groups |
| c. managerial setting | no restrictions | some restrictions |
| | no facilities | many facilities |
| 3. Motives | risk-taking | in-group affiliation |
| | challenge | change of pace |
| | physical exercise | |
| 4. Benefits | | |
| a. personal | enhanced self-esteem | family solidarity |
| b. societal | increased commitment to conservation | increased work efficiency |

*Source*: After Mannell (1999).

(e.g., enhanced self-esteem and self-identity, personal growth, family cohesion, enhanced workplace efficiency). This second type of benefit is also known as 'benefits-based management' and extends the behavioural approach that initially focused primarily on benefits that accrue to the individual participant. Participation in an activity such as hiking, for example, can have: (a) personal benefits, such as enhanced self-esteem and physical exercise; (b) societal benefits, such as improved community health and solidarity; (c) economic benefits, such as lower health-care costs because people are engaging in physical exercise; and (d) environmental benefits, such as increasing interest in and commitment to the natural environment (Manfredo and Driver, 2002).

As shown in Table 6.1, wilderness hiking may take place in a backcountry setting with few other people, no facilities, and few restrictions. On the other hand, a family picnic could take place in a frontcountry setting used by several other groups and be provided with many facilities and a number of rules and restrictions regarding behaviour and use of the area. Both recreation experiences are influenced by various motives and lead to different types of benefits.

Outdoor recreation research in the 1960s focused primarily on participation levels in various recreation activities, but more recent studies have explored other aspects of


**FIGURE 6.2** Raeside's cartoon reveals differences in visitors' expectations and the values of park managers. *Cartoon: Adrian Raeside.*

the behavioural model, including psychological benefits (e.g., Manfredo et al., 1983; Twynam and Robinson, 1997) and broader personal and societal outcomes (e.g., Haggard and Williams, 1991; Manfredo and Driver, 2002). A recent study of summer recreationists (e.g., sightseers, hikers, mountain bikers) at several sites within the Whistler Mountain ski area in British Columbia illustrates relationships among activities, settings, motivations, and benefits that constitute the behavioural approach (Needham et al., 2004b). Most visitors at the developed restaurant area near the top of the mountain were sightseers who were motivated to engage in on-mountain tours, view the alpine scenery, and visit the restaurant and gift shop. Hikers at more remote backcountry sites were motivated primarily to get exercise and view scenery. Preferences for facilities and services, and satisfaction with social (e.g., crowding) and environmental (e.g., erosion) conditions differed among sites.

The behavioural approach has advanced ways that visitor management is approached in many jurisdictions. In a landmark study, Clark and Stankey (1979) noted a consistent finding that people vary in preferences for different types of outdoor recreation settings, presumably as a consequence of differing motivations and/or activity preferences. On the basis of these findings, they concurred with Shafer (1969) that there was no such thing as the 'average camper' and reasoned that park agencies need to provide different kinds of recreation opportunities rather than uniform standardized settings. This led to development of the 'Recreation Opportunity Spectrum' (ROS), which, as discussed in Chapter 7, is a system of land allocation or zoning such that outdoor recreation settings could be arrayed along a continuum from primitive to modern based on level of setting modification and access, and visitors' activities, motivations, and experiences (Manning, 1999). In the ROS, different types of recreation opportunities are created by varying environmental, social, and managerial conditions. Consistent with the behavioural approach, ROS can be used to plan and manage parks and recreation settings for different types of users based on the mix of outcomes, activities, and settings sought by visitors.

## VISITOR MOTIVATIONS

The behavioural model provides a useful outline for much of the kind of outdoor recreation theory, concepts, and research that have assisted the human dimensions of park management. Motivations, however, are more complex than those portrayed in Figure 6.2!

A leisure or recreation motivation is a reason for visiting an area or participating in an activity at a given time (Manfredo et al., 1996). Leisure motives are identified by people when asked what needs that they seek to satisfy through leisure involvement. Researchers typically provide study participants with a list of push and/or pull reasons (i.e., leisure motivations) and ask them to rate the importance of each motive for their participation in leisure activities. These reasons are generally referred to as 'expressed leisure motives' (Mannell and Kleiber, 1997), and are often only part of a larger and more complex picture of what motivates people to engage in leisure activities. Many of the motives reported for leisure engagement are based on physiological, learned, and cognitive motives, and these, in turn, are influenced by the interaction of inherited char-

acteristics and socialization experiences. People are often unaware of these motives when reporting reasons why they engage in activities, so capturing these deeper motives presents a challenge to researchers and managers.

Despite the large number and types of motives that have been reported in many studies of leisure behaviour, there is broad agreement that a relatively small number of basic types are operative. The Paragraphs About Leisure (PAL) motivation scales (Driver et al., 1991), for example, involve 44 psychological needs that may be gratified by participation in recreation (e.g., achievement, relaxation). The PAL scales can be reduced to eight broad reasons for participating: self-expression, power, security, intellectual aestheticism, companionship, compensation, service, and solitude. The multiple (over 300) motivations in the widely used Recreation Experience Preference (REP) scales

## BOX 6.1 Importance-Performance (I-P) Analysis: Linking Satisfaction and Motivational Factors

Measurement of visitor satisfaction in parks and protected areas has incorporated a number of methodologies reflecting the push and pull aspects of the behavioural approach. This figure illustrates how satisfaction was assessed in Yoho National Park in British Columbia by using the push element of motivation and the anticipated psychological benefits. Park visitors were asked how important they felt about each motivational factor and then how satisfied they were with each factor (Rollins and Rouse, 1993). The resulting importance-performance (I-P) matrix allows managers to identify important factors that are satisfied ('keep up the good work'), important factors that are not satisfied ('concentrate here'), unimportant factors that are satisfied ('too much effort here'), and unimportant factors that are not satisfied ('low priority'). The motivation of seeking solitude, for example, was important to most visitors (81 per cent), but many visitors (36 per cent) did not feel this had been achieved. The 'solitude' aspect of the Yoho experience is an area of concern and may require management attention. On the other hand, the motivation 'to be close to nature' was important to most visitors (93 per cent) and was achieved by most (80 per cent). Finally, the motive to 'meet new people' was viewed as not important by most visitors (84 per cent) so it may be viewed as irrelevant for visitor management.


**FIGURE 6.3** 'Push' factors and satisfaction of visitors to Yoho National Park.

(e.g., Driver et al., 1991; Manfredo et al., 1996) have been reduced to 19 domains, eight of which have been shown to be important to most recreationists in parks and wilderness settings (Rosenthal et al., 1982): exploration, general nature experience, exercise, seeking exhilaration, escape from role overload, introspection, being with similar people, and escape from physical stressors. Both the PAL and REP motivation scales emphasize gratification of needs and pursuit of desired outcomes and benefits.

The work of Iso-Ahola (1982, 1989) has particular relevance to understanding outdoor recreation behaviour. Focusing on the social-psychological aspects of personal and interpersonal rewards, Iso-Ahola proposed that leisure participation is based on two motivational dimensions: (a) seeking (i.e., approach), and (b) escaping (i.e., avoidance). These two motivational forces simultaneously influence an individual's leisure behaviour. Activities may be engaged in because they provide opportunities for novelty or change from daily routines and stress. The 'escape' dimension is seen as a powerful leisure motive due to the constraining nature of a person's life, particularly from his or her work. This aspect of motivation is based on the need for optimal arousal in that individuals are considered to be constantly trying to escape from under-arousing or over-arousing experiences. The 'seeking' dimension is the tendency to search for psychological satisfactions from participation in leisure activities. These satisfactions can be divided into personal (e.g., self-determination, sense of competence, challenge, learning, exploration, relaxation) and interpersonal (e.g., social contact, connectedness) types. Iso-Ahola (1989) suggested that both seeking and escaping are forms of intrinsic motivations that are undertaken without concern for some form of external reward. In considering both seeking and escaping, Iso-Ahola proposed that individuals are motivated to participate in recreation if they perceive that the activity provides certain rewards (e.g., feelings of mastery, competence) and helps them leave everyday routine environments behind.

Recreation participation is a dynamic, multi-phase experience consisting of phases such as anticipation, travel-to, on-site, travel-back, and recollection. On-site phases are also dynamic and include experiences at various stages of an outing. Despite these phases, it is generally accepted that motivations tend to initiate recreation participation and satisfaction occurs as a result of this participation (see Manning, 1999).

## VISITOR SATISFACTION

The behavioural approach suggests that people partake in recreation to fulfill their specific motivations and achieve certain benefits or outcomes. Satisfaction is one outcome that is a consistent goal of recreation management. Satisfaction is 'the positive perceptions or feelings that an individual forms, elicits, or gains as a result of engaging in leisure activities and choices; it is the degree to which one is content or pleased with his or her general leisure experiences and situations' (Beard and Ragheb, 1980: 22). Satisfaction is the difference between desired and achieved goals, or the congruence between expectations (i.e., motivations) and outcomes. According to Mannell (1989), satisfaction can be divided into 'global appraisal' (i.e., satisfaction with the entire experience) and 'facet appraisal' (i.e., satisfaction with various subcomponents

## BOX 6.2 Measuring Visitor Satisfaction with 'Pull' Factors

An alternative approach to the measurement of visitor satisfaction focuses more on the 'pull' aspect of motivation, as illustrated in Figure 6.4. Here visitors were asked to rate the quality of conditions experienced on the West Coast Trail during the summer of 2000 (Rollins and Randall, 2000). Most visitors were satisfied with those aspects of the setting described at the top of the figure (e.g., condition of campsites, availability of fresh water), but setting characteristics listed at the bottom of the figure were not rated as positively (e.g., condition of boardwalks, availability of park staff, or trail signs).

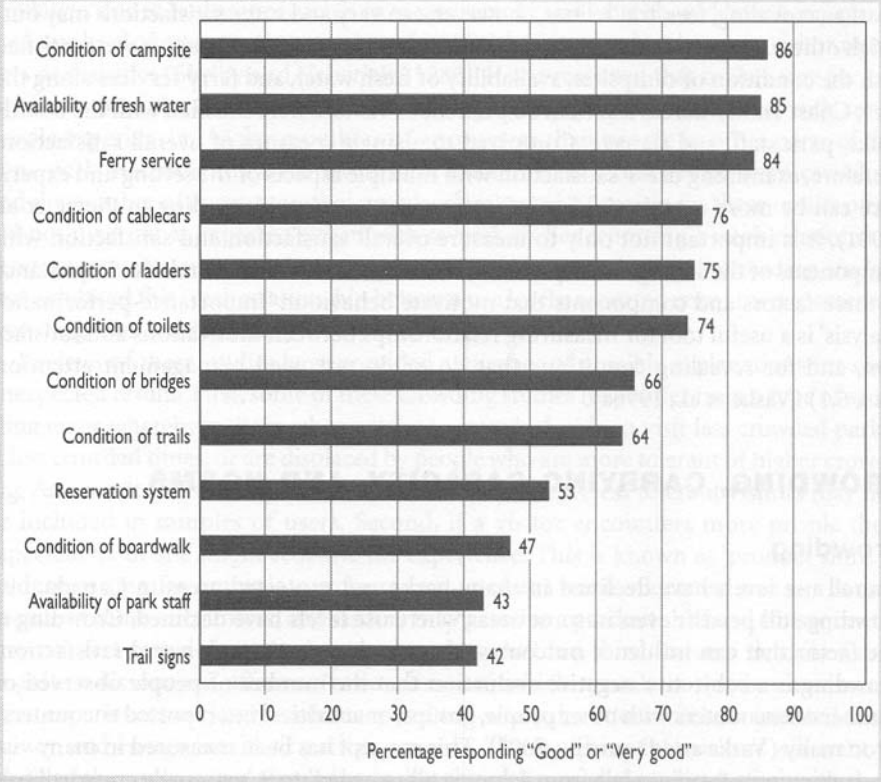


**FIGURE 6.4** 'Pull' factors in visitor satisfaction on West Coast Trail.

of the experience). Similarly, Jackson (1989) stated that satisfactions are divided between internal and external factors. Internal factors are shaped by motivations, past experience, and expectations; external factors involve specific setting attributes.

Hendee's (1974) 'multiple satisfactions' approach suggests that recreation resources offer people the opportunity for a range of experiences that, in turn, give rise to various

human satisfactions. In other words, an individual's satisfaction with an activity or experience is complex; he or she may evaluate several aspects of the activity and experience (e.g., resource, social, managerial). Satisfaction is based on different experiences that often provide different types of satisfactions, and satisfaction is based on multiple factors that differ from person to person.

Despite recognition of the multiple satisfactions approach, researchers have typically measured global evaluations of the overall experience or outing (see Manning, 1999). This approach may be useful when comparing satisfaction across settings, times, or groups (e.g., consumptive versus non-consumptive recreationists), but there is often little variance in global measures because overall satisfaction tends to be uniformly high. Satisfaction with more specific attributes of the setting and experience (e.g., weather, crowding, fees, trails, litter), however, can vary and some satisfactions may outweigh others. Box 6.2, for example, shows that over 80 per cent of visitors were satisfied with the condition of campsites, availability of fresh water, and ferry services along the West Coast Trail, whereas less than 50 per cent of visitors were satisfied with the boardwalks, park staff, and signage. Compared to a single measure of overall satisfaction, therefore, examining users' satisfaction with multiple aspects of the setting and experience can be more meaningful for informing management. According to Pierce et al. (2001), it is important not only to measure overall satisfaction and satisfaction with components of the setting and experience, but also to determine the relative importance of these factors and components that motivate behaviour. 'Importance-performance analysis' is a useful tool for measuring relationships between motivations and satisfaction, and for revealing conditions that do or do not need management attention (Box 6.1) (Vaske et al., 1996a).

## CROWDING, CARRYING CAPACITY, AND NORMS

### Crowding

Overall use levels have declined in many parks and protected areas in Canada, but crowding still persists even in some areas where use levels have declined. Crowding is one factor that can influence outcomes of recreation participation and satisfaction. Crowding is a subjective negative evaluation that the number of people observed or number of encounters with other people, groups, or activities (i.e., reported encounters) is too many (Vaske and Donnelly, 2002). This concept has been measured in many visitor surveys on a 9-point scale from 1, 'not at all crowded', to 9, 'extremely crowded' (see Shelby et al., 1989). Increasing participation has resulted in perceptions of crowding in many parks in Canada. Visits to the West Coast Trail in Pacific Rim National Park, for example, increased from a few hundred people in 1969 to about 8,000 people by 1984, by which time 34 per cent of visitors reported that they felt crowded (Rollins, 1998). At the Whistler Mountain ski area in British Columbia, summer visitation (July to September) to the high alpine area increased from approximately 180,000 in 2000 to over 250,000 in 2004, with more than 50 per cent of visitors reporting that they felt

crowded (Needham et al., 2004a, 2004b). Popularity of recreation in many natural settings in North America has led to concerns about crowding. It was hoped that social science research would provide managers with systematic scientific data from which it would be possible to reduce crowding problems, but actual research into crowding has produced mixed results. The following discussion describes recent developments in the understanding of crowding in park environments.

Early conceptualizations of crowding postulated that visitor perceptions of crowding would be directly proportional to the number of people in a setting at a given time. More people in a setting should create more reports of crowding; fewer people should result in less crowding. Results of several research studies, however, showed weak relationships between use levels and crowding. Researchers speculated that this unexpected result was due to faulty approaches in measurement and what should have been examined was level of contacts (i.e., number of reported encounters) rather than visitor numbers or densities (Shelby and Heberlein, 1986). It was reasoned that in the same park at the same time, the number of encounters might vary from place to place, with some people experiencing higher numbers of encounters than people in other parts of the same park. Recent studies, therefore, have examined relationships between crowding and the number of encounters that people experienced. Surprisingly, these results often did not turn out as expected either, with several studies reporting a weak relationship between contacts and crowding. Manning (1999) reviewed over 30 crowding studies that exhibited this weak relationship between use levels, reported encounters, perceived crowding, and satisfaction.

Reviews of these studies have provided a number of possible explanations for such unexpected results. First, some of these crowding studies may suffer from a type of sampling error whereby visitors who anticipate crowds decide to visit less crowded parks, at less crowded times, or are displaced by people who are more tolerant of higher crowding. As a result of this temporal or spatial 'displacement', less tolerant visitors may not be included in samples of users. Second, if a visitor encounters more people than expected, he or she might redefine the experience. This is known as 'product shift'. A wilderness area, for example, may be re-evaluated as a semi-wilderness area as a consequence of more encounters, and visitors may perceive a product shift and consequently may not feel crowded. Related to this product shift is a third concern described as a 'cognitive dissonance' effect or 'rationalization', which speculates that because recreation experiences are largely voluntary and self-selected, visitors will have invested time, money, and energy into their park experience. The last thing that visitors will want to admit to themselves or a researcher is that they felt crowded or dissatisfied with their experience. Displacement, product shift, and rationalization are behavioural responses to crowded conditions (see Shelby et al., 1988; Manning, 1999). A fourth explanation is that use levels in some studies are not high enough to have a major impact on visitor experiences. Finally, many visitors to settings such as parks are first-time visitors with little or no prior expectation for appropriate use levels. For these 'uninitiated newcomers', there may be a tendency to view existing conditions as appropriate, regardless of the level of contacts experienced (Manning, 1999).

**FIGURE 6.5** A commercial raft launch site just below Bow Falls on the Bow River and adjacent to the Banff Springs Hotel. *Photo: Guy Swinnerton.*

## Carrying Capacity

The number of encounters with other people that visitors experience and the extent to which they feel crowded are often used to inform social carrying capacity, which is discussed in more detail in the next chapter. Social carrying capacity, however, is generally defined as the level of use beyond which unacceptable impacts such as crowding occur to visitor experiences (Shelby and Heberlein, 1986). A parallel concept is the environmental or ecological carrying capacity approach, which is aimed at determining levels of use beyond which unacceptable impacts occur to park environments (e.g., water quality, vegetation loss, soil compaction, wildlife disruption). Yet another type of carrying capacity is managerial capacity, or the extent to which there are adequate facilities to accommodate users' needs (ibid.).

Defining acceptable conditions is central to carrying capacity and related frameworks described in Chapter 7 (e.g., Limits of Acceptable Change, Visitor Impact Management, Visitor Experience and Resource Protection, Visitor Activity Management Process). These frameworks necessitate measuring social, ecological, and managerial 'indicators' (e.g., crowding, litter) to reveal 'standards of quality' (e.g., encounter no more than 25 people) or thresholds at which indicator conditions reach unacceptable levels and are inconsistent with management objectives (Manning, 2004, 2007). Determining acceptable conditions, however, has been problematic, as illustrated in the crowding discussion above. The structural norm approach outlined in the next section has helped address some of these problems.

## Norms

The 'structural norm approach' has provided a basis for measuring indicators and informing standards of quality. One line of research commonly defines 'norms' as standards that individuals use for evaluating activities, environments, or management strategies as good or bad, better or worse (Shelby et al., 1996; Needham et al., 2005). Norms clarify what people believe conditions or behaviour 'should' be (Heywood, 2002). Much of the normative work in parks and recreation is based on the 'return potential model' (see Vaske and Whittaker, 2004). This approach describes norms as evaluative standards using a graphic device called a 'social norm curve' or an 'impact acceptability curve'. Figure 6.6 represents the amount of indicator change increasing from left to right along the horizontal axis. The vertical axis represents the evaluative responses with the most positive evaluation at the top of the axis, the most negative on the bottom, and a neutral category in between. The majority of studies have used 'acceptability' as the evaluative response (see Manning, 1999, 2007).

An example of the structural norm approach is a study conducted in Gwaii Haanas National Park off the coast of British Columbia. Kayakers in the park were surveyed and shown photographs depicting the same marine setting, but the number of other kayakers was varied in each image (Vaske et al., 1996b; Freimund et al., 2002). After viewing each photograph, respondents indicated whether they felt the number of kayakers in the setting was acceptable or unacceptable. Using this method, a personal norm was computed for each kayaker. These individual results were then aggregated across the sample of kayakers to determine how much consensus or agreement existed among kayakers for different use levels. If a large degree of consensus exists, then it is possible to express this finding as a social norm.

The norm curve (i.e., curved line) in Figure 6.6 crosses the neutral position at the point when approximately nine kayakers would be encountered. This is known as the 'minimum acceptable condition' (Manning, 1999). If the number of encounters ever exceeds nine contacts, the experience would be viewed as unacceptable by a majority of kayakers (assuming reasonable consensus in opinion). Fewer than nine contacts would be more acceptable. The most desirable situation in these results (i.e., 'optimal condition', depicted by highest point on curve) occurs when the number of contacts with other kayakers is zero, but establishing a management standard of zero visitors is unrealistic in most park and recreation settings.

Validity of the normative approach depends on a number of factors. The first factor is the amount of agreement or consensus within the group, which is known as 'norm crystallization'. If a large amount of variability exists in acceptance of impacts (e.g., contacts with kayakers), it may be difficult to describe this curve as representing a social norm. When consensus does not exist, however, it may be possible to identify subgroups who share a higher level of consensus than the whole group taken together. The Gwaii Haanas data, for example, can be segmented by examining responses of subgroups such as motorboaters and kayakers (Figure 6.7). Given differences in norms between these two groups, results indicated little consensus when motorboaters and kayakers were grouped together. Box 6.3 shows how various subgroups hold different views about acceptable use levels in the Whistler Mountain/Garibaldi Provincial Park recreation area.

The structural norm approach for addressing issues related to carrying capacity has been used by several park agencies to address social impacts, including encounters and

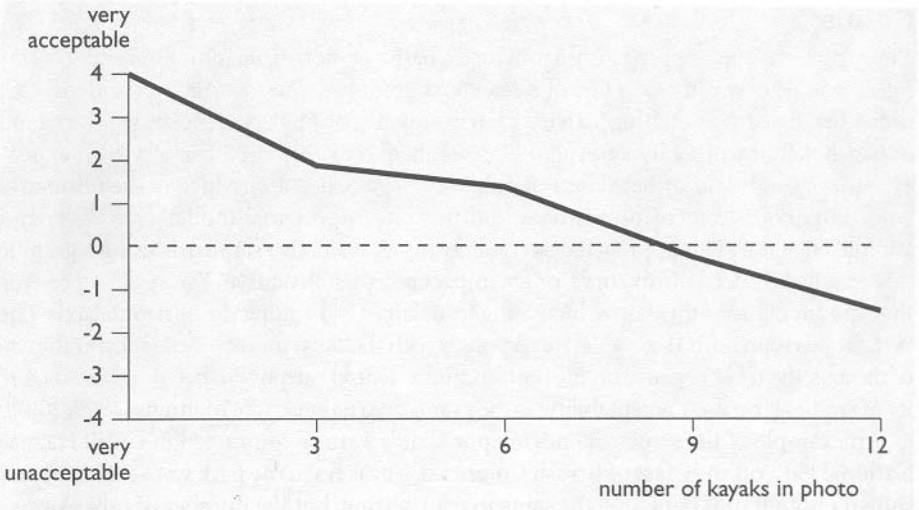


**FIGURE 6.6** Kayaker norms for encountering other kayakers in a wilderness setting in Gwaii Haanas National Park Reserve. After Vaske et al. (1996b).

crowding, and resource impacts, such as litter and erosion (see Shelby et al., 1996; Vaske and Donnelly, 2002; Manning, 2007). Needham et al. (2004a), for example, found that many summer visitors at several sites at the Whistler Mountain ski area and adjacent Garibaldi Provincial Park reported crowding and encountered more people than they believed each site could adequately handle (i.e., their norm). The social carrying capacity of the sites was likely being exceeded. Directional trails, education, higher user fees, and zoning were management strategies supported for alleviating social impacts. Other studies have measured norms for indicator impacts and conditions in other protected areas in Canada, including the Columbia Icefield in Jasper National Park (Vaske et al., 1996c) and Broken Group Islands in Pacific Rim National Park (Randall, 2003).

Advantages of the structural norm approach are that it provides a proven applied and theoretical tool for managers to understand the extent to which indicator impacts are acceptable or unacceptable, identifies the importance of indicators, and describes the amount of consensus regarding acceptable indicator conditions (Vaske and Whittaker, 2004). A concern with conventional approaches for measuring crowding and related norms, however, is the failure to come to terms with a deeper understanding of crowding. People may feel crowded when they encounter people behaving in ways that interfere with their anticipated experiences, irrespective of the density of users or number of encounters experienced. Encountering a group of 10 backpackers at a campsite, for example, may be undesirable simply because of the anticipated noise level. It may not be the number of people per se that generates a crowding impact. If a group of 10 backpackers was behaving quietly, others may not feel crowded. This suggests that part of managing use and crowding involves managing behaviour to reduce user conflict.

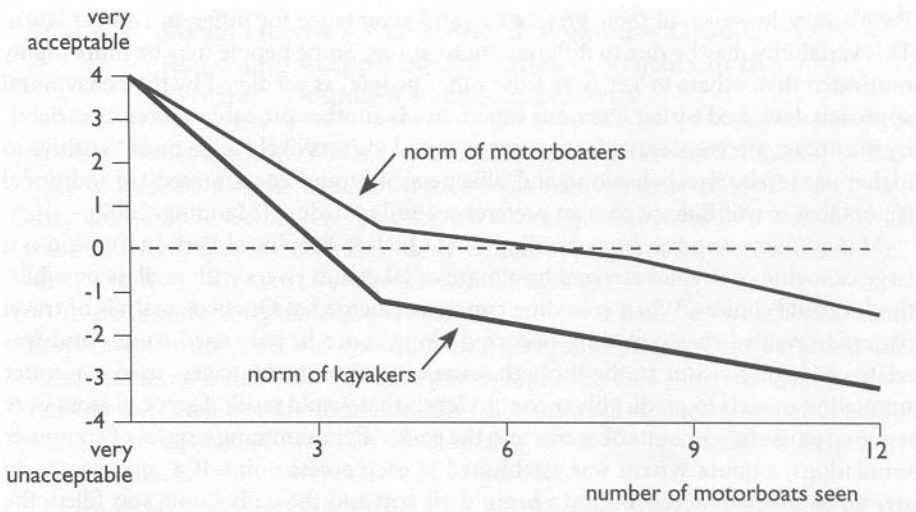


**FIGURE 6.7** Kayaker norms versus motorboater norms for encountering motorboaters in a wilderness setting in Gwaii Haanas National Park Reserve. After Vaske et al. (1996b).

There are many indicators and standards of quality within the social, resource, and managerial dimensions that characterize parks and protected areas. As a result, another potential limitation of using the structural norm approach to inform decisions related to carrying capacity is that not all of these indicators can be measured and managed simultaneously, and trade-offs must be made, especially when visitor demand for parks and protected areas is high (Manning, 2007). Park managers are often faced with making trade-offs in planning and management decisions. Providing more access, for example, may allow more park visitors, but this might be detrimental to biophysical resources and cause more crowding. On the other hand, limiting access may reduce resource impacts and crowding, but would allow fewer people to experience parks and possibly erode public support for protected areas. Recent research, therefore, has used sophisticated methodological and analytical techniques such as 'stated choice modelling' and 'conjoint analysis' to examine normative trade-offs in parks and other outdoor recreation areas (see Manning, 2007). McCormick et al. (2003), for example, examined visitor trade-offs regarding backcountry experiences at Kluane National Park Reserve, Yukon. Trade-offs favoured solitude and quietude at campsites over trail encounters and managerial aspects such as fees and regulations. Data on trade-offs allow a deeper understanding of complex relationships among social, environmental, and managerial attributes that shape park experiences, and these data can assist managers in establishing priorities when faced with challenging decisions.

## Summary of Crowding-Related Research

Research into crowding suggests that level of interaction with other people during outdoor recreation experiences is an important component of satisfactory outcomes.

People vary, however, in their preferences and acceptance for different contact levels. This variability may be due to different motivations. Some people may be more highly motivated than others to 'get away from other people', as predicted by the behavioural approach described earlier. Previous experience is another probable source of variability in contact preferences, with more experienced visitors likely to be more sensitive to higher use levels. Size, behaviour, and 'alikeness' of groups encountered are additional factors that may influence contact preferences and crowding (Manning, 2007).

Management responses to crowding vary. Quetico Provincial Park in Ontario is a large canoeing park characterized by a maze of lakes and rivers with endless possibilities for route choices. When crowding concerns emerged at Quetico, analysis of travel patterns revealed that crowding occurred along more heavily used routes and was related to higher visitor traffic through some access points. Managers used computer simulation models to predict likely contact levels that would result if some visitors were required to use other points of access into the park. After examining a series of computer simulations, a quota system was established at each access point. If a canoeing party arrived at a certain access point to begin their trip and the daily quota was filled, the group was directed to another access point where the quota was not filled. Evaluation of this approach demonstrated that reports of crowding diminished for Quetico while use levels actually increased through this more efficient spatial redistribution of visitors (Peterson et al., 1977).

In the West Coast Trail region of Pacific Rim National Park, reports of crowding compelled park managers to develop a quota system (Rollins and Bradley, 1986). Unlike the Quetico example, the West Coast Trail is a single trail with limited route options so a spatial redistribution strategy was not possible. Instead, West Coast Trail managers developed a temporal redistribution system. This involved a daily quota of 52 people, split between the two ends of the trail so that 26 people per day per trailhead were admitted into the park between 1 May and 30 September. This daily quota was computed by redistributing use from what had been a July–August concentration to that of a May–September season. Previous use levels were estimated to be approximately 8,000 people, so this total visitor level was divided by the number of days between 1 May and 30 September, and the result was a quota of 52 people per day. Annual use levels were kept constant, but daily use levels were reduced in the peak season by shifting more visitors to the shoulder seasons. Evaluation revealed high satisfaction with the quota system and encounter levels experienced while hiking, but some lingering concerns with encounter levels at campsites (Rollins, 1998). Quotas established on the West Coast Trail and in Quetico are examples of management efforts to reduce crowding and sustain quality experiences. Other possible approaches for managing encounters and crowding include: zoning, restricting or prohibiting some activity groups, advertising alternative recreation opportunities, advertising similar experiences found in other locations, fixed itineraries or directional trails, physical site alterations, education, user fees, and permits or reservation systems (see Chapter 7).

Although social science provides data that can be used to develop standards for various indicators and to inform crowding and carrying capacity-related decision-making, some element of management judgement must be exercised. What point(s) along a

## BOX 6.3 Social Norms for Different Stakeholder Groups Regarding Acceptable Densities of Visitors in the Whistler Mountain Backcountry Area

North of Vancouver, the Whistler Mountain/Garibaldi Provincial Park area has received increasing use in the summer months as a consequence of ski lifts now operating from July to October, making the backcountry more accessible. A number of stakeholder groups were consulted to determine appropriate impacts and management actions for the area (Needham and Rollins, 2005).

To determine acceptable use levels, the structural norm approach was used. Respondents completed surveys containing a series of photographs depicting differing use levels in the area. For each photograph, respondents were asked to indicate how acceptable or unacceptable they felt about each scenario (level of density), using a 5-point scale of –2 = 'very unacceptable' to +2 = 'very acceptable'. Results for each stakeholder group are portrayed in Figure 6.8.

Five social norm curves are displayed, one for each stakeholder group. Where each norm curve crosses the neutral position in the graph (acceptability = 0) is the 'minimum acceptable condition' for that group. Clearly, private companies operating in the area are willing to accept higher densities of use compared to other stakeholder groups, particularly when compared to provincial and local government agencies.

These findings provide important insights into crowding and how crowding is perceived differently by various interest groups. Acceptable conditions are somewhat different for each stakeholder group in this example, an important consideration when applied to management frameworks such as Limits of Acceptable Change (LAC), which are described in Chapter 7.

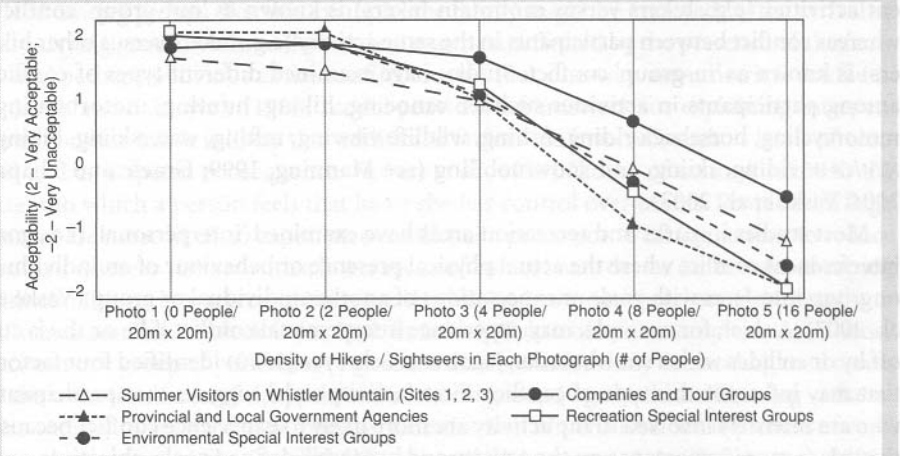


**FIGURE 6.8** Social norm curves of stakeholder groups for density of use at Whistler Mountain.

range of standards across multiple indicators should be selected for management? This comes down to a management decision that takes into account additional factors such as the purpose, objectives, and significance of an area as defined by law and policy, significance of cultural and physical resources, historic precedent, extent to which financial resources and personnel are available for management, and influence of multiple stakeholders and interest groups (Manning, 1999). Management decisions about indicators and standards of quality are not, however, either/or decisions; providing an array of visitor recreation opportunities within and among parks may be a more plausible solution to minimizing impacts than simply regulating or prohibiting use (Manning, 2007). The Recreation Opportunity Spectrum (ROS) discussed above and in detail in the next chapter provides one approach for allocating opportunities within parks and other natural resource settings.

## VISITOR CONFLICT

Like crowding, conflict is another factor that can influence the satisfaction of visits to park and recreation areas. Empirical research has revealed several different types of conflict that occur between people participating in similar or different types or styles of outdoor recreation (see Graefe and Thapa, 2004). 'One-way' or 'asymmetrical' conflict occurs when one activity group experiences conflict with or dislikes another group, but not vice versa. A study of snowmobilers and cross-country skiers in Alberta, for example, showed that skiers disliked encounters with snowmobilers, but snowmobilers did not mind skiers (Jackson and Wong, 1982). This finding is consistent with a more recent study of cross-country skiers and snowmobilers in two other alpine areas (Vaske et al., 2007). 'Two-way' conflict occurs when there is resentment or dislike in both directions, which has been demonstrated in recent studies of downhill skiers and snowboarders (Vaske et al., 2000; Thapa and Graefe, 2003). Conflict between users engaged in different activities (e.g., hikers versus mountain bikers) is known as 'out-group' conflict, whereas conflict between participants in the same activity (e.g., hikers versus other hikers) is known as 'in-group' conflict. Studies have examined different types of conflict among participants in activities such as: canoeing, hiking, hunting, motorboating, motorcycling, horseback riding, fishing, wildlife viewing, rafting, waterskiing, biking, ATV/OHV riding, skiing, and snowmobiling (see Manning, 1999; Graefe and Thapa, 2004; Vaske et al., 2007).

Most studies in parks and recreation areas have examined 'interpersonal' (i.e., goal interference) conflict where the actual physical presence or behaviour of an individual or group interferes with goals or expectations of another individual or group (Vaske et al., 2007). A skier, for example, may experience interpersonal conflict if he or she is cut off by or collides with a snowboarder. Jacob and Schreyer (1980) identified four factors that may influence this type of conflict. First, 'activity style' suggests that participants who are intensely involved in the activity are more likely to experience conflict because they place more importance on the activity and have well-defined goals, objectives, and expectations. These goals can range from quite general (e.g., to have a good time) to more specific (e.g., to spend quiet time with family in a remote setting). For example,

people with the specific goal of spending quiet time with family in a remote setting are predicted to have greater potential to experience conflict when encountering a noisy group than someone for whom this goal is not important. Second, 'resource specificity' implies that visitors who are strongly attached to a resource such as a park (i.e., 'place attachment'; see Williams and Vaske, 2003) are more likely to experience conflict because they are more possessive of the site and consider its attributes to be exceptional and unique. Third, 'mode of experience' suggests that individuals who are 'focused' on the activity and resource have more sensitive perceptions of the environment around them, and consequently are more likely to experience conflict. Fourth, 'tolerance for lifestyle diversity' refers to acceptance or rejection of different lifestyles. Thus, visitors who are intolerant of lifestyles unlike their own, and who are less willing to share resources, are more prone to report conflict. Backpackers and skiers, for example, may report conflict with helihikers and heliskiers because they may be perceived as wealthy and flaunting their affluence. Studies have offered empirical support for some of Jacob and Schreyer's (1980) propositions (see Graefe and Thapa, 2004).

Interpersonal conflict is generally viewed as stress created when recreation behaviour of one group of people directly interferes with another group in the achievement of recreation goals or motivations. Defined in this way, crowding can be seen as a special case of recreation conflict, and both can be understood within the general behavioural model described above (Figure 6.1). When two groups of people decide to visit the same recreation setting to pursue different activities, the activities may interfere with each other because the two groups have different goals as determined by differing motivations. For example, a family may choose to go camping at a particular campground to achieve a family experience. Another group may choose the same campground as a venue for letting off steam and having a late-night party in a setting where they anticipate being free of restrictions common in more urban venues. Obviously, the potential for conflict between these two groups is high. Sometimes conflict is not equally perceived among groups. For this example, the family might be annoyed by the arrival of the partying group, whereas the partiers may be unaffected by the presence of the family and perhaps oblivious to the conflict created (i.e., one-way, asymmetrical conflict).

Jacob and Schreyer's (1980) model provides a framework for explaining interpersonal conflict, but it is likely that additional factors are involved, such as locus of control and anticipated consequences (Ewert et al., 1999). 'Locus of control' refers to the extent to which a person feels that he or she has control over events. People with high control are more likely to experience conflict as a precursor to taking actions to reduce conflict, whereas visitors with a lower locus of control may devise other ways of coping with conditions in a recreation setting. 'Anticipated consequences' are also thought to influence conflict. In Neck Point Park in British Columbia, for example, conflict arose between one group of park users (e.g., scuba divers, windsurfers) demanding road access to the waterfront area of the park, and a second group (e.g., birdwatchers, dog walkers) who wanted to keep the area roadless. Examination of perceived consequences of road access by the two groups revealed different expected consequences (Rollins et al., 2002). People supporting road access felt that more people would enjoy the park and that water-based activities would be enhanced and safer. People opposed to road access

believed that a road would take away from the natural atmosphere, make the park less safe for pedestrians, and lead to crowding and rowdy behaviour. Based on this understanding of visitor perceptions, a satisfactory resolution was possible by providing a road on the southern periphery of the park, minimizing interaction of cars and pedestrians. Limited short-term parking was provided for only three vehicles to reduce concerns of crowding and depreciative behaviour.

Most conflict studies have examined interpersonal (i.e., goal interference) conflict. Recent research, however, has introduced and explored 'social values' conflict. Social values conflict occurs between groups who do not share similar opinions, norms, or values about an activity (Vaske et al., 1995). Unlike interpersonal conflict, social values conflict is defined as conflict that can occur even when there is no direct physical contact or interaction among groups (Vaske et al., 2007). For example, although encounters with horseback riders may be rare in park environments, visitors may philosophically disagree about the appropriateness of such animals in these settings. A study of wildlife viewers and hunters showed that viewers did not witness many hunters or hunting behaviours (e.g., see animals be shot, hear shots fired) in a particular backcountry setting because management regulations and rugged terrain and topography separated the two groups (Vaske et al., 1995). Regardless, wildlife viewers reported conflict with hunters simply because of a conflict in values regarding the appropriateness of hunting in the area.

Understanding the extent and type of conflict is important for managing parks and related recreation settings because some management strategies may be effective for addressing one type of conflict, but not another. When conflict stems from interpersonal conflict, for example, spatial zoning or temporal segregation of incompatible groups may be effective. When the source of conflict is a difference in social values, visitor information and education may be needed (Graefe and Thapa, 2004; Vaske et al., 2007). Managers need to understand the basis of visitor concerns to develop strategies for managing conflict.

## VISITOR VALUES, BELIEFS, ATTITUDES, AND BEHAVIOUR

The extent to which conflict, satisfaction, and crowding occur in parks and related recreation settings is largely influenced by visitor evaluations of conditions and experiences. These evaluations are shaped by visitors' values, beliefs, and attitudes. It is important to measure and understand these cognitions and the relationships among them because they can influence behaviour, such as support of and receptivity towards specific park management actions.

Theory proposes that human thought is arranged in a hierarchy (Figure 6.9) consisting of general values, beliefs and value orientations, and more specific higher-order cognitions such as attitudes, intentions, and behaviour (Ajzen and Fishbein, 1980; Manfredo et al., 2004a). At the base of this hierarchy are 'values', which are abstract and enduring, and are concerned with desirable end-states (e.g., freedom, success) and modes of conduct (e.g., honesty, politeness). Values are basic modes of thinking shaped early in life by family or other peers, few in number, relatively stable over time, change slowly, guide life decisions, and transcend situations and objects (Fulton et al., 1996).

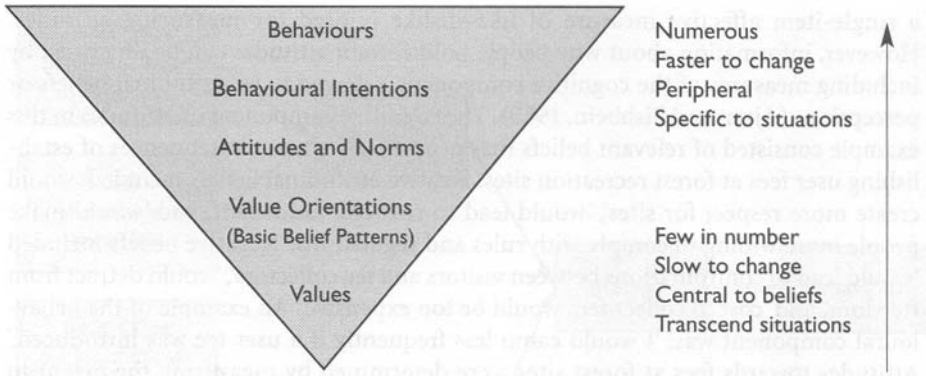


**FIGURE 6.9** The cognitive hierarchy model of human behaviour. After Fulton et al. (1996) and Vaske and Donnelly (1999).

'Value orientations' reflect an expression of these basic values and are revealed through the pattern and direction of multiple basic beliefs that an individual holds regarding a more specific situation or issue (Manfredo et al., 2004a). Fulton et al. (1996), for example, asked individuals how strongly they agreed with several basic belief statements such as 'humans should manage wild animal populations so that humans benefit' and 'we should use wildlife to add to the quality of human life.' Taken together, these items indicated beliefs related to 'wildlife use'. Patterns of basic beliefs about wildlife use, hunting, and wildlife rights were combined into a value orientation scale called the wildlife protection–use continuum. Similar value orientations such as the anthropocentric–biocentric continuum have also been examined (Vaske and Donnelly, 1999). Values and value orientations can be used to identify groups with divergent preferences for management, and can help predict attitudes towards management and anticipate receptivity to and polarization over prevention and mitigation strategies (Manfredo et al., 2004a).

An 'attitude' is a tendency to evaluate a specific object, situation, or issue with some degree of favour or disfavour (Ajzen and Fishbein, 1980). Unlike values, we have many attitudes, which are more specific to particular objects. Sometimes 'attitude' is confused with 'satisfaction'. Leisure satisfaction refers to the 'after the fact assessment of an earlier [leisure] involvement or set of involvements' (Mannell, 1999: 238). Leisure attitudes usually refer to positive or negative opinions that people have regarding a leisure setting or activity. In the Neck Point Park example discussed above, attitudes were divided between people supporting road access into the park and people opposed to road access. Satisfaction, on the other hand, could be measured by examining actual experiences that people describe after the road is constructed.

Attitudes are thought to consist of cognitive, affective (i.e., emotional), and behavioural components (Ajzen and Fishbein, 1980). This can be illustrated by considering attitudes towards a camping fee system for forest recreation sites in British Columbia (Rollins and Trotter, 2000). The affective component refers to feelings of like or dislike for an 'attitude object', which in this case was user fees at recreation sites. Often,

a single-item affective measure of like–dislike is used for measuring attitudes. However, information about why people hold certain attitudes can be identified by including measures of the cognitive component, referred to as attitudinal beliefs or perceptions (Ajzen and Fishbein, 1980). The cognitive component of attitudes in this example consisted of relevant beliefs that people held about consequences of establishing user fees at forest recreation sites. Positive attitudinal beliefs included 'would create more respect for sites', 'would lead to reduced vandalism', and 'would make people more willing to comply with rules and regulations.' Negative beliefs included 'would lead to confrontations between visitors and fee collectors', 'would detract from freedom', and 'cost to collect fees would be too expensive.' An example of the behavioural component was: 'I would camp less frequently if a user fee was introduced.' Attitudes towards fees at forest sites were determined by measuring the extent to which people agreed or disagreed with each of these types of belief statements. Analysis of responses indicated general support for user fees, although some people expressed concerns (agreed, but with negative attitudinal beliefs). In addition, users who would camp less if fees were introduced were more likely to have negative beliefs and attitudes towards fees. These results made it possible for the BC Forest Service to develop an approach to user fees that addressed many of these concerns.

This example illustrates established models of behaviour and decision-making such as the theory of reasoned action (Figure 6.10), which suggests that: (a) 'behaviour' is influenced by 'intention' to engage in that behaviour; (b) intention is a function of 'attitudes' and 'subjective norms' about the behaviour or issue (i.e., what you think other people think you should do, as determined by normative beliefs or judgements about what others feel is appropriate and motivation to comply with others); and (c) attitudes are a function of 'beliefs' that the issue or behaviour will lead to certain outcomes (i.e., cognitive) and favourable or unfavourable (i.e., affective, evaluative) 'evaluations' of these outcomes (Ajzen and Fishbein, 1980). Models such as this have helped predict behaviour for recreation and natural resource issues, including camping and hunting participation, support for wildfire management, preferences for user fees, and support for wildlife management (see Manfredo et al., 2004a; Vaske and Whittaker, 2004).

Another application of attitude theory is illustrated in a household survey conducted by BC Parks to determine attitudes towards setting aside more wilderness areas in British Columbia (BC Parks, 1994). Positive beliefs included protection of wildlife, preservation of biodiversity, places to conduct scientific studies, and stimulation of the economy by tourism. Negative beliefs included possible loss of jobs, reduction in government revenues through fees and taxes from industry, and restriction of recreation activities since no roads would be allowed into the areas. Results indicated that 61 per cent of respondents felt there was too little designated wilderness in BC, 3 per cent said there was too much wilderness, and 37 per cent said the amount of wilderness was about right. Repeated polling provided convincing evidence of public support for creating more wilderness parks in BC, and contributed to government actions in the last decade to increase the amount of protected area from about 5 per cent to 12 per cent (see Chapter 2) of the provincial land base.

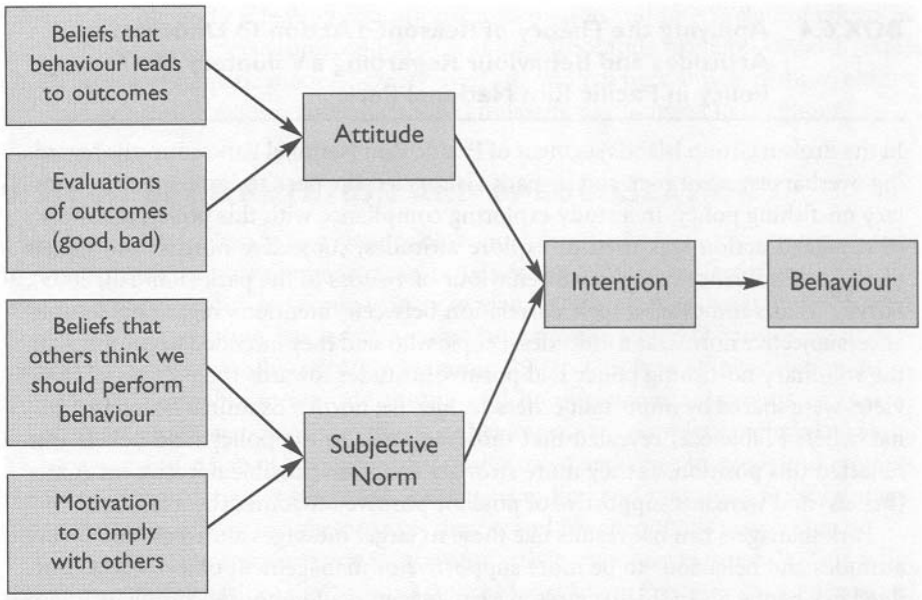


**FIGURE 6.10** The theory of reasoned action for predicting attitudes and behaviour. After Ajzen and Fishbein (1980).

Attitude surveys, interviews, and public opinion polls can be useful for documenting support or opposition towards park management activities. This is important because managers often hold different perceptions of park environments than do park visitors, and managers are often unaware that visitors have different opinions and perceptions (Hendee et al., 1990; Needham and Rollins, 2005). Opinions of park visitors or the general public may be based on misperceptions or misunderstandings, and this kind of finding can be identified through social science research.

It is important to understand relationships among values, orientations, beliefs, and attitudes. A simplified example may help to illustrate. An individual may possess a value that it is important to respect life. As a result, he or she may agree with a belief statement such as 'animals should have similar rights to humans' (related to a protectionist or biocentric value orientation). This individual may hold normative beliefs that it is unacceptable to eat meat and humans should not eat meat. Consequently, he or she may have unfavourable or negative attitudes about hunting and would not intend to go hunting or actually engage in this behaviour. By understanding visitors' values, beliefs, and attitudes, park managers may be able to predict future behaviour and anticipate support or opposition towards management strategies and decisions.

Understanding these relationships among values, beliefs, and attitudes is important because it also allows a better understanding of visitor behaviour. Given that these cognitions can help predict intentions and behaviour, they can also be targeted for change by persuading and eliciting desirable behaviour (Box 6.4). This is important, especially

## BOX 6.4 Applying the Theory of Reasoned Action To Understand Attitudes and Behaviour Regarding a Voluntary No-Fishing Policy in Pacific Rim National Park

In the Broken Group Islands segment of Pacific Rim National Park, concerns regarding overharvesting of rock cod by park visitors led the park to implement a voluntary no-fishing policy. In a study exploring compliance with this policy, the theory of reasoned action was used to explore attitudes, subjective norms, and beliefs thought to influence compliance behaviour of visitors to the park (Randall, 2003). Survey results indicated a high correlation between intentions regarding compliance, subjective norms, and attitudes. People who said they intended to comply with the voluntary no-fishing policy had positive attitudes towards the policy and these views were shared by important others (subjective norm). Examination of attitudinal beliefs (Table 6.2) revealed that those opposed to the policy held beliefs that reflected this position, as they more strongly endorsed possible negative outcomes (beliefs) and were less supportive of possible positive outcomes (beliefs).

Park managers can use results like these to target messages aimed at influencing attitudes and behaviour to be more supportive of management objectives (as outlined in Chapter 8). In this example, park managers could improve compliance with the voluntary no-fishing policy by providing information to enhance positive outcomes of the policy (i.e., will retain food sources for other creatures; protect marine life for future generations; reduce amount of litter caused by fishing). A second communication strategy could focus on discrediting negative outcomes or beliefs listed on the bottom half of the table.

**TABLE 6.2 Attitudinal Beliefs Regarding Voluntary No-Fishing Policy, Pacific Rim National Park**

| | % Agreeing with Statement | |
|---|---|---|
| | Visitors Opposed to the Policy | Visitors Supportive of the Policy |
| *Positive beliefs* | | |
| Will retain food sources for other creatures | 47.4 | 91.2 |
| Will protect marine life for the future | 36.5 | 88.5 |
| Will reduce litter caused by fishing | 40.0 | 79.4 |
| *Negative beliefs* | | |
| Will have a low compliance rate | 71.6 | 60.8 |
| Will detract from visitor satisfaction | 69.0 | 42.6 |
| Will take away from my experience | 57.2 | 9.6 |
| Will have negative economic impact | 48.8 | 30.0 |
| Will decrease my food source | 47.5 | 15.8 |

when designing and evaluating educational information and interpretation efforts in parks. Dual-process persuasion models such as the 'elaboration likelihood model' (ELM) and 'heuristic systematic model' have received attention in park and recreation settings for improving information and education campaigns, as discussed in Chapter 8.

## VISITOR SEGMENTATION AND SPECIALIZATION

Many studies described in this chapter have illustrated that people vary tremendously in their attitudes, motivations and goals, activities selected, and preferred setting attributes. This makes it difficult for managers to plan for 'the average camper who doesn't exist' (Shafer, 1969) and has led to a number of studies aimed at improving understanding of park visitor diversity (see Manning, 1999). This type of investigation determines if it is possible to identify meaningful homogeneous subgroups or market segments of similar people within the more heterogeneous population of park visitors. Managers, therefore, may be equipped to understand and cater to needs and requirements of different market segments. By understanding and managing for subgroups, more visitors may have satisfactory experiences and fewer conflicts may occur.

One approach to segmentation is by visitor activity type (see Figure 6.7). This activity approach is the basis of the 'Visitor Activity Management Process' (VAMP) developed

**FIGURE 6.11** An aircraft equipped with tundra tires lands beside the Firth River in Vuntut National Park Reserve with a group of rafters. Attitude studies have shown that aircraft accessibility is controversial in many parks. *Photo: P. Dearden.*

**BOX 6.5 Segmenting Visitors to Canada's Mountain National Parks**

To understand the types of visitors to Canada's mountain national parks, Parks Canada conducted surveys with visitors to Banff, Jasper, Kootenay, and Yoho national parks (McVetty, 2003). Using an analysis of trip motives, reported activities, and reported spending, it was possible to segment visitors into three groups:

- *Getaway visitors* (44 per cent): people staying for 2–3 days, focusing their visit on a specific activity or area, and spending less money than the other two segments;
- *Comfort visitors* (35 per cent): people tending more to use hotels and restaurants in the park, and spending more money than other segments;
- *Camping visitors* (21 per cent): people focusing on camping and recreational vehicle touring. This group attaches higher importance to learning about natural and historical heritage.

by Parks Canada and described in the next chapter. Another approach is to segment people by setting preferences. This approach was used in a study of backcountry visitors to Yoho and Kootenay national parks (Rollins and Rouse, 1993). In this study, three distinct user groups were identified: a 'purist group' wanting no backcountry facilities; a 'semi-rustic group' expressing preferences for shelters, huts, firepits, and picnic tables; and a 'rustic' group who expressed more ambivalent preferences for camping facilities, but were more supportive of horse facilities (e.g., corrals, grazing areas). A similar approach was used to examine preferences for activities, settings, and psychological outcomes of visitors to forest areas in northern Ontario (Twynam and Robinson, 1997). Distinct market segments were revealed and labelled as enthusiasts, adventurers, naturalists, and escapists. Escapists, for example, indicated a higher preference for remoteness, unaltered nature, and physically demanding and challenging activities such as climbing, canoeing, and kayaking. This group placed high importance on solitude, knowledge, and learning. Other approaches to segmentation include differentiating individuals based on demographic and socio-economic characteristics, site characteristics (e.g., frontcountry versus backcountry), beliefs and value orientations, and competing views of different interest groups and citizen advocacy organizations (e.g., Bright et al., 2000; Needham and Rollins, 2005; Box 6.3).

A common segmentation approach involves the concept of 'recreation specialization'. Specialization is defined as 'a continuum of behaviour from the general to the particular, reflected by equipment and skills used in the sport and activity setting preferences' (Bryan, 1977: 175). At one end of the continuum are novices or infrequent participants who do not consider the activity to be a central life interest or show strong preferences for equipment and technique. The other end includes more avid participants who are committed to the activity and use more sophisticated methods. Recreationists are thought to progress to higher stages along the continuum, reflected by increasing skill and commitment (Scott and Shafer, 2001).

The specialization concept has been examined relative to individuals engaged in a variety of activities in different settings. Highly specialized recreationists can differ from their less specialized counterparts on attributes such as motivations, management and setting preferences, perceived environmental impacts, crowding evaluations, and other related attitudes and opinions (see Manning, 1999; Scott and Shafer, 2001). An experienced canoeist who has paddled on several trips over a number of years in Algonquin Provincial Park, for example, is likely to be concerned if use levels become much higher; a novice canoeist travelling in the same area at the same time may be less concerned about use levels.

There is little consensus among researchers about how best to measure specialization (Scott and Shafer, 2001). Both single-item (e.g., frequency of participation; Ditton et al., 1992) and multi-dimensional approaches (e.g., Needham et al., 2007) have been employed to segment recreationists. Researchers generally agree, however, that specialization is a multi-dimensional concept consisting of behavioural, cognitive, and affective components. Behavioural variables include equipment investment and 'experience use history' (Schreyer et al., 1984), such as how often a canoeist has paddled in Algonquin Park and number of other canoe trips taken. Cognitive variables include skill level and knowledge. Indicators of affective attachment or commitment include enduring involvement and centrality to lifestyle (see Manning, 1999; Scott and Shafer, 2001). These dimensions, however, do not always increase linearly together in lock-step fashion, suggesting that specialization may be best suited for revealing styles of involvement and career stages in an activity rather than a single aggregate of dimensions and linear continuum of progression (Lee and Scott, 2004; Needham et al., 2007).

Specialization can be linked to the behavioural approach in a number of ways. Compared to novices or visitors who may be classified as less specialized, for example, people who are highly specialized have been shown to have more complex and developed goals and motivations that are important to them and not easily substituted (e.g., Kerstetter et al., 2001; Needham et al., 2007). Specialists are also more likely to develop a personal connection between anticipated goals and specific setting characteristics and site choices (e.g., Cole and Scott, 1999). A specialized climber, for example, might be disappointed to find an alpine hut in a favourite climbing area, and feel that the preferred experience of self-sufficiency has been diminished by this new facility. Conversely, a novice climber who is just developing connections between climbing, personal motivations, and setting characteristics may not feel the same impact when encountering this alpine hut. In a study of wilderness use in Clayoquot Sound, British Columbia, concerns regarding visible logging increased as a function of specialization, with levels of concern increasing from 52 per cent expressed by the low specialization group to 92 per cent for the high specialization group (Rollins and Connolly, 2001). In a study of vehicle campers in Alberta, McFarlane (2004) reported that more specialized campers chose campgrounds that were more remote and demanded higher self-reliance and decreased dependency on facilities and services.

As with other approaches to visitor segmentation, managers can apply the specialization concept to identify subgroups within a population of park visitors. Each subgroup will be more similar in their views and expectations, and may warrant

somewhat different opportunities and management responses. Management approaches such as ROS or LAC (described in the next chapter), for example, might be employed such that zones are created in a park to provide a wide selection of beginner to more challenging routes that allow visitors of differing degrees of specialization to find appropriate route choices.

## SOCIAL IMPACTS OF PARKS AND PROTECTED AREAS

Most research on protected area management in Canada has been directed to issues related to ecological integrity or visitor management in parks. Comparatively less attention has been given to social impacts of parks on nearby communities. Since parks attract many visitors who are not residents of the area, these tourists are likely to spend at least some time in nearby host or gateway communities. Examples of host communities include Tofino near Pacific Rim National Park, Marathon near Pukaskwa National Park in Ontario, and Pangnirtung near Auyittuq National Park on Baffin Island. Examining relationships between parks and adjacent communities also reflects thinking about ecosystem management discussed in Chapter 13 and ecotourism discussed in Chapter 12.

While visiting host communities, tourists may purchase goods and services such as groceries, fuel, camping supplies, restaurant meals, and accommodation in hotels or motels. In addition, tourists may meet and interact with local residents in ways that enrich the lives of local residents. However, not all interactions are positive. Visitor numbers may stress local services not designed to handle the surge of visitors and create congestion and related problems, and sometimes the behaviour of visitors is offensive to residents of host communities. These issues are described in greater detail in Chapter 12, but can also be related to the behavioural model (Figure 6.1) discussed earlier in this chapter. Conflicts between park visitors and residents of host communities can be seen as a variation of the behavioural model, with the experience dimension (i.e., activities, settings) occurring within the host community rather than within the park. Presumably, conflict occurs when behaviour of visitors blocks goals and expectations that residents have developed regarding community values and ideals.

## CONCLUSIONS

This chapter presented some of the major areas of social science theory and research that address visitor management issues in parks and protected areas. The behavioural model (Figure 6.1) suggests that visitor behaviour can be understood in terms of visitor motivations, psychological goals that visitors develop as a consequence of these motivations, and how various activities and settings are perceived as facilitating the achievement of important goals, outcomes, and benefits. Visitor satisfaction is seen as the achievement of recreational goals, that is, the degree of congruence between expectations and actual experiences. Issues such as crowding and conflict between groups can be explained, in part, through this model.

Social science research has demonstrated that people vary considerably in their motivations, preferences for different activities and settings, experiences, and attitudes towards conditions and management. This diversity suggests that quality of visitor expe-

riences can be enhanced through management strategies such as zoning that attempt to provide various opportunities aimed at serving different market niches. These market niches can be described and refined through various approaches to visitor segmentation, including the specialization approach. These insights have contributed to development of a number of approaches to visitor management described in the next chapter. Park managers, however, cannot act upon all visitor demands or preferences, no matter how well documented, if park resources are threatened by such actions.

Finally, protection of park ecosystems should take precedence over provision of visitor experiences. Protection of park ecosystems, however, requires support and co-operation of park visitors, some of whom may be asked to do without certain facilities or services, or the opportunity to participate in certain types of activities, in order to reduce environmental stresses. Protection of park environments also requires support of other constituents, including local communities located nearby or sometimes within parks. Involvement of visitors and the general public in the resolution of park issues can be facilitated by selection of appropriate social science techniques such as public meetings, expert panels, focus groups, surveys/questionnaires, and referendums. Increasingly, park managers are required to use these social science methods as part of the process of resolving park issues and gaining constituent support.

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## KEY WORDS/CONCEPTS

attitudes
behaviour
behavioural approach
beliefs
benefits
benefits-based management
carrying capacity
cognitive dissonance
community impacts
constraints
crowding
crystallization
displacement
encounters
environmental impacts
experience-based management
importance-performance analysis
interpersonal conflict
intrinsic motivation
leisure behaviour
Limits of Acceptable Change (LAC)
locus of control
minimum acceptable condition
motivations
multiple satisfactions
nature-based tourism
product shift
push/pull motivations
Recreation Opportunity Spectrum (ROS)
satisfaction
segmentation
social impacts
social interference
social science
social values conflict
specialization
structural norm approach
theory of reasoned action
value orientations
values
zoning

## STUDY QUESTIONS

1. Describe the behavioural approach, using an activity familiar to you (e.g., skiing, mountain biking, scuba diving, fishing).
2. Discuss how the behavioural approach provides the conceptual underpinning of ROS.
3. Discuss why an understanding of visitor motivations is important for a park manager.
4. Why is a single overall or global measure of satisfaction problematic for informing park and recreation management?
5. What is importance-performance (I-P) analysis and how does this help inform park management?
6. Crowding is a frequently reported concern, yet it is difficult to determine how to manage to reduce crowding in parks. Discuss.
7. Explain the normative approach to the measurement of crowding-related indicators.
8. Compare and contrast one-way, two-way, in-group, out-group, social values, and interpersonal conflict.
9. Define, with examples, the different components of the cognitive hierarchy. How can this information be useful for park management?
10. Using an outdoor activity familiar to you, describe how specialization could be involved within this activity and how it could be measured. How might this specialization influence the selection of preferred setting characteristics?