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Interest group standards for recreation and tourism impacts at ski areas in the summer

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Abstract

Many contemporary recreation and tourism management frameworks including the Limits of Acceptable Change (LAC) require multi-stakeholder input for measuring and monitoring indicators and standards of quality. Most studies, however, have used visitor norms to formulate standards for indicators, whereas the norms of other stakeholders have received less empirical attention. This paper examines the acceptability norms of several groups regarding indicators of summer use at the Whistler Mountain ski area in British Columbia, Canada. Data were obtained from surveys conducted with 432 visitors and 21 representatives of 12 companies, government agencies, and recreation and environmental interest groups. Respondents evaluated photographs of impacts for the *density of hikers/sightseers* and *amount of bare ground at a campsite* indicators. Responses were plotted on social norm curves. Results showed that standards for each indicator differed among the groups. The importance of each indicator (i.e., norm intensity) was high among the groups, but was highest for the density of hikers/sightseers, suggesting that it may be a more important indicator for this tourism-oriented setting. Management implications and future research topics are discussed.

Keywords: Indicators; Norms; Ski areas; Stakeholders; Standards of quality; Whistler Mountain

1. Introduction

Contemporary management planning frameworks including the Limits of Acceptable Change (LAC) (Stankey et al., 1985), Visitor Impact Management (VIM) (Graefe, Kuss, & Vaske, 1990), and Visitor Experience and Resource Protection (VERP) (Manning, 2001) offer highly sophisticated and systematic techniques for managing social and resource conditions in recreation and tourism settings. In these frameworks, the typical carrying capacity question of "how much use or impact is too much" is redefined as "how much use or impact is acceptable or should be allowed?" This focuses management attention on desirable social and resource conditions rather than just the amount of use and its impact. Basing decisions on how much and what kinds of uses and impacts are acceptable can allow managers to better address their clientele's attitudes, needs, and wants. In turn, this has the potential for increasing visitor satisfaction regarding aspects of their experience and the setting (Ryan, 1995).

Common to each of these frameworks is the requirement of measuring a small host of indicators (e.g., litter) to reveal standards of quality for acceptable conditions (e.g., two pieces seen per day). However, given that some recreation and tourism areas contain a multitude of user groups and are governed by policies shaped by various agencies and interest groups, formulating standards can be difficult if stakeholders have competing views regarding acceptable indicator conditions (Martin, McCool, & Lucas, 1989; Shelby & Shindler, 1992).

This paper measures social and resource indicators to reveal standards of quality for managing a commercial tourism-oriented setting—summer use at ski areas. To devise standards, the norms of summer visitors at a ski area are compared to those of several other interest groups. Important considerations of this paper include (1) how to measure indicators, (2) how to establish standards, and (3) comparing standards among different stakeholder groups. It also represents the first major

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study to examine the use and management of ski areas in the summer season.

2. Conceptual background

2.1. Indicators and standards

Indicators are measurable and objective social, resource, or managerial variables that define quality settings and experiences (Manning, Newman, Valliere, Wang, & Lawson, 2001; Merigliano, 1989). Indicators can be measured to permit the discovery of *standards of quality*, or thresholds at which indicator conditions reach unacceptable levels (Manning, 1999). Once standards are developed, indicators can be monitored to ensure that standards are maintained. If standards are being violated, management action is likely required (Manning, Valliere, Wang, & Jacobi, 1999). Recreation and tourism research has typically employed norm theory to provide a basis for measuring various indicators and formulating standards of quality.

2.2. Normative approach

To set standards, researchers and managers need to be cognizant of the point(s) at which experiential or setting indicators become degraded or are perceived as problematic (Hall & Roggenbuck, 2002). The *normative approach* is a useful theoretical and methodological model for collecting, organizing, and analyzing data representing evaluative judgments about indicators (Manning et al., 1999). If visitors or other groups possess norms regarding indicators, then these can be used to formulate standards (Manning, Lawson, Newman, Laven, & Valliere, 2002).

Homans (1950, p. 123) defined *norms* as "an idea in the minds of the members of a group…that can be put in the form of a statement specifying what the members or other men should do, ought to do, are expected to do…norms are not behavior itself, but rather what people think behavior ought to be". When applied to recreation and tourism research, one line of research has commonly defined norms as standards that individuals use for evaluating activities, behavior, environments, or management proposals as good or bad, better or worse (Shelby, Vaske, & Donnelly, 1996; Vaske, Shelby, Graefe, & Heberlein, 1986). Norms can be measured at the individual or personal level and results can be aggregated to test for the existence of social norms (Shelby et al., 1996).

2.3. Social norm curve

The thrust of the normative work in recreation and tourism is based on Jackson's (1965) model. This approach describes norms (i.e., evaluative standards) using a graphic device called a *social norm curve* (Manning et al., 1999) or an *impact acceptability curve* (Shelby, Vaske, & Harris, 1988). Social norms are depicted as averages of evaluations provided by individuals within a population (e.g., visitors, other stakeholder groups). This two-dimensional graph represents the amount of indicator change increasing from left to right along the horizontal axis (Fig. 1). For example, studies of crowding indicators often represent conditions as the number of encounters with people per day (Hammitt & Rutlin, 1995; Martinson & Shelby, 1992) or at one time (Manning, Lime, Freimund, & Pitt, 1996; Manning et al., 1999, 2001).

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

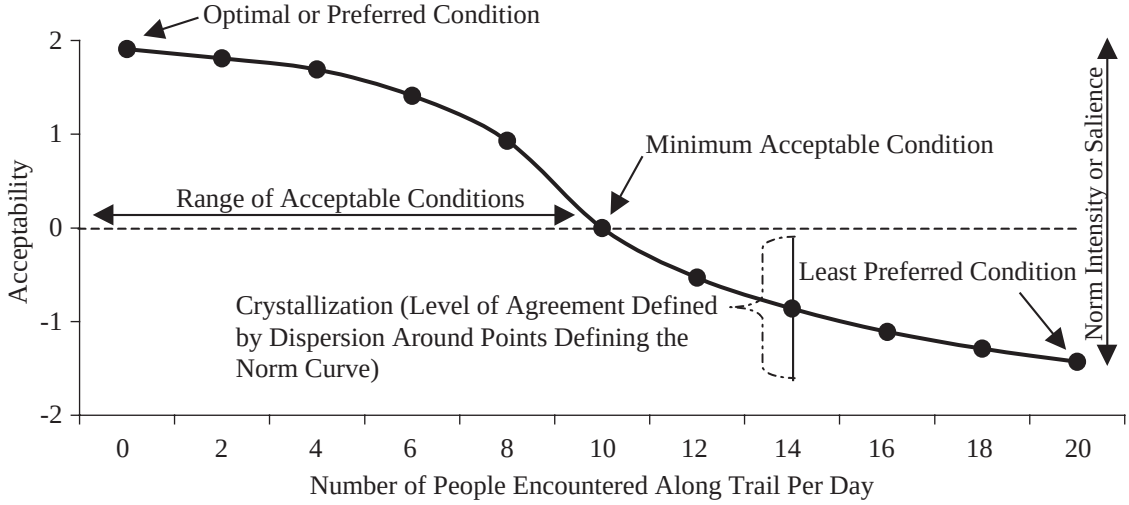


Fig. 1. Hypothetical social norm curve (modified from Manning et al., 1999).

in between. It has been a scale ranging from pleasant to unpleasant (Vaske et al., 1986), preferable to unpreferable (Martinson & Shelby, 1992; Shelby & Harris, 1985), satisfied to unsatisfied (Shelby & Whittaker, 1995), favorable to unfavorable (Ormiston, Gilbert, & Manning, 1998; Vaske et al., 1986), and desirable to not desirable (Hammitt & Rutlin, 1995; Martin et al., 1989). Most recreation and tourism studies have used acceptable to unacceptable as the evaluative response scale (e.g., Freimund, Vaske, Donnelly, & Miller, 2002; Manning et al., 1996, 2002; Shelby & Shindler, 1992).

The norm curve can be analyzed for various structural characteristics including the *optimal/preferred condition*, which is the highest point on the curve and the condition receiving the most positive evaluation. The *range of tolerance or acceptable conditions* suggests the conditions that respondents will tolerate, and is represented by the points on the curve above the neutral line. The curve height above and below this line defines the *norm intensity/salience*. This measures the degree to which the indicator is important to respondents; the greater the cumulative distance from the neutral line, the higher the intensity and the stronger their feelings are regarding the indicator. Freimund et al. (2002) suggested that norm intensity reveals possible ramifications if the standard is violated, as a flat curve indicates that few people may be upset, but a curve that declines sharply and remains negative implies that more people may be impacted. The *minimum acceptable condition* is the point where the norm curve crosses the neutral line. In many studies (see Manning, 1999; Shelby et al., 1996; Vaske, Donnelly, & Shelby, 1993 for reviews), this represented the standard of quality for the measured indicator. *Crystallization* measures the amount of consensus among respondents for the indicator conditions. This measure of normative agreement is often presented as one standard deviation (i.e., interval around the mean containing the majority or 68% of responses) or the percentage of respondents rating the conditions as acceptable or unacceptable (Shelby et al., 1996). If crystallization is high (i.e., small standard deviation), managers should have confidence in using normative data to formulate standards of quality (Manning, 1999).

2.4. Normative research in recreation and tourism

At least 75 papers have been published on the normative approach and its empirical applications in recreation and tourism research. Reviews of this work have also been published (Donnelly, Vaske, Whittaker, & Shelby, 2000; Manning, 1999; Shelby et al., 1996; Shelby, Vaske, & Heberlein, 1989; Vaske & Donnelly, 2002; Vaske et al., 1986, 1993).

Research has mainly focused on encounter norms, or the maximum number of people that respondents will accept seeing in an area (see Donnelly et al., 2000 for a review). There are studies, however, that have addressed resource and managerial indicators such as fire rings and bare ground at campsites (Martin et al., 1989; Shelby et al., 1988; Shelby & Harris, 1985; Shelby & Shindler, 1992; Whittaker & Shelby, 1988), litter (Heywood & Murdock, 2002), instream flows (see Whittaker & Shelby, 2002 for a review), and customer service quality (Ormiston et al., 1998).

Most research on recreationists' and tourists' norms has occurred in the United States. Normative research, however, has been conducted recently in Canada (Freimund et al., 2002; Vaske, Donnelly, & Petruzzi, 1996) and in other countries (Inglis, Johnson, & Ponte, 1999; Kim & Shelby, 1998; Martinson & Shelby, 1992). Most studies have also been conducted in public parks and related areas, whereas very few have been applied to commercial recreation and tourism settings such as alpine ski areas (Ormiston et al., 1998). This paper addresses this knowledge gap, as it focuses on summer use at ski areas.

2.5. Interest groups

There is a wide body of literature in many disciplines focusing on the competing views of various stakeholders such as environmental organizations, companies, and government agencies (see Bryk, 1983; Crowfoot & Wondolleck, 1990; Decker, Krueger, Baer, Knuth, & Richmond, 1996 for reviews). Despite this breadth of research, few studies have specifically examined the norms of stakeholder groups. For example, the recreation and tourism literature has primarily focused on visitor/tourist norms, whereas the norms of other stakeholders have received limited empirical attention (Martin et al., 1989; Shelby & Shindler, 1992). This paper addresses this issue by examining the norms of several interest groups regarding indicators of summer use at ski areas.

Stakeholders or interest groups are defined as identifiable organized bodies representing the shared views or interests of a group (McCarthy & Zald, 1977). In recreation and tourism research, these may include outdoor activity groups, visitors, companies and tour operators, environmental organizations, and government agencies. Multi-stakeholder input is important because the normative standards of visitors, managers, and other interest groups can vary (Hendee & Pyle, 1971; Martin et al., 1989; Shelby & Shindler, 1992). For example, Shelby and Shindler (1992) observed differences among park managers, recreationists (e.g., hikers, horseback riders), and Sierra Club members with respect to their normative evaluations of campsite impacts.

Although managers are responsible for ensuring that standards comply with legal and jurisdictional mandates and objectives, understanding how different groups perceive impacts and how such impacts influence guests and the general public is crucial if managers are to make

informed and intelligent management decisions (Martin et al., 1989). If standards are similar among stakeholders, managers of recreation and tourism areas may be able to condense the number of groups that they need to consider, thus making complicated decisions simpler. If differences are exposed, however, they should be considered to address conflicting views.

The lack of multi-stakeholder input in normative research is somewhat surprising given that some management planning frameworks, especially the LAC (Stankey et al., 1985), demand a *transactive* approach to measuring indicators and standards (McCool, 1990). This involves utilizing input inclusive of many or all individuals and organizations with economic, recreational, governmental, and ecological interests (Payne & Graham, 1993).

The purpose of this paper is to measure social and resource indicators of summer use at ski areas. The norms of visitors and other stakeholder groups are compared to reveal standards of quality for summer use at the Whistler Mountain ski area in British Columbia, Canada.

3. Study context

Skiing and snowboarding are commonplace activities at alpine ski areas. Although winter use continues to prosper in many countries, the advent of operating ski lifts in the summer to accommodate activities such as hiking and mountain biking is increasing, especially in North America. For example, 12% of the ski areas in British Columbia (BC), Canada had at least one lift operating in the summer of 1991. Summer lift operations, however, occurred at 65% of these areas a decade later (BC Assets & Land Corporation, 2000). Most major ski areas worldwide now have one or more lifts operating in the summer, with hills such as Vail and Aspen in Colorado, USA and Whistler Mountain in BC, Canada receiving upwards of 250,000 visitors each summer.

Studies have focused on the activities and management of winter recreation and tourism at alpine ski areas (e.g., Ormiston et al., 1998; Thapa & Graefe, 2003; Vaske, Carothers, Donnelly, & Baird, 2000; Williams, Dossa, & Fulton, 1994) and on the environmental impacts of summer use at these areas (Price, 1983; Wood, 1987). There has been no substantial prior research, however, to examine the social and managerial aspects of summer recreation and tourism at ski areas.

4. Methods

4.1. Study area

Data for this paper were drawn from a larger study designed to develop a baseline understanding of summer use at the Whistler Mountain ski area (Needham, 2002). This area is located 100 km (62 miles) north of Vancouver near the world-renowned Whistler resort in southwest BC, Canada. The Intrawest Corporation owns the facilities on the mountain and operates the Whistler Village Gondola to shuttle summer visitors from Whistler Village (652 m, 2140 ft elevation) to the Roundhouse Lodge and restaurant area on the mountain (1809 m, 6030 ft elevation). Over one million skiers and snowboarders visit the mountain each winter, whereas 183,700 and 225,000 people visited in the summers (July–October) of 2000 and 2002, respectively. Summer activities offered include hiking, mountain biking, helicopter tours, and bear viewing.

4.2. Data collection

The main source of data was a 10-page, 37-question survey conducted on-site (face-to-face) in the study area with summer visitors. The survey layout followed procedures outlined by Salant and Dillman (1994). After two pilot tests, 651 visitors were contacted from July 1 to September 4, 2000. Of this, 548 summer visitors completed the survey, yielding an 84.2% response rate.

Sampling was conducted at five separate sites on and adjacent to Whistler Mountain (Fig. 2). Visitors completed the survey at these locales. This paper is only concerned with the responses of visitors at the sites on Whistler Mountain (Sites 1, 2, and 5) because they are compared with the responses of several other stakeholder groups who were asked to respond to the survey questions based solely on the area within the jurisdictional boundaries of the ski area, not Sites 3 and 4, which are located in neighboring areas of Garibaldi Provincial Park. This reduced the sample size for this paper to 432 visitors (response rate = 83.2%). This sample yields a 95% confidence interval with a margin of error of $\pm 4.7\%$. Sample sizes were 187 at Site 1, 119 at Site 2, and 126 at Site 5.

To include multi-stakeholder input, data were also collected from 21 members of 12 organizations with recreational, environmental, governmental, and economic interests in summer use at Whistler Mountain (Table 1). These groups were selected for two main reasons. First, they collectively represent a broad range of interests. For example, environmental interest groups such as the Association of Whistler Area Residents for the Environment (AWARE) are concerned with environmental stewardship issues, whereas companies such as Blackcomb Helicopters are mainly interested in operating as many tours as possible to generate profit (Needham, 2002). Second, most of the organizations have been involved in the on-mountain operations or development of the ski area. For example, the Whistler Off-Road Cycling Association (WORCA) constructed most of the mountain bike trails in the ski area.

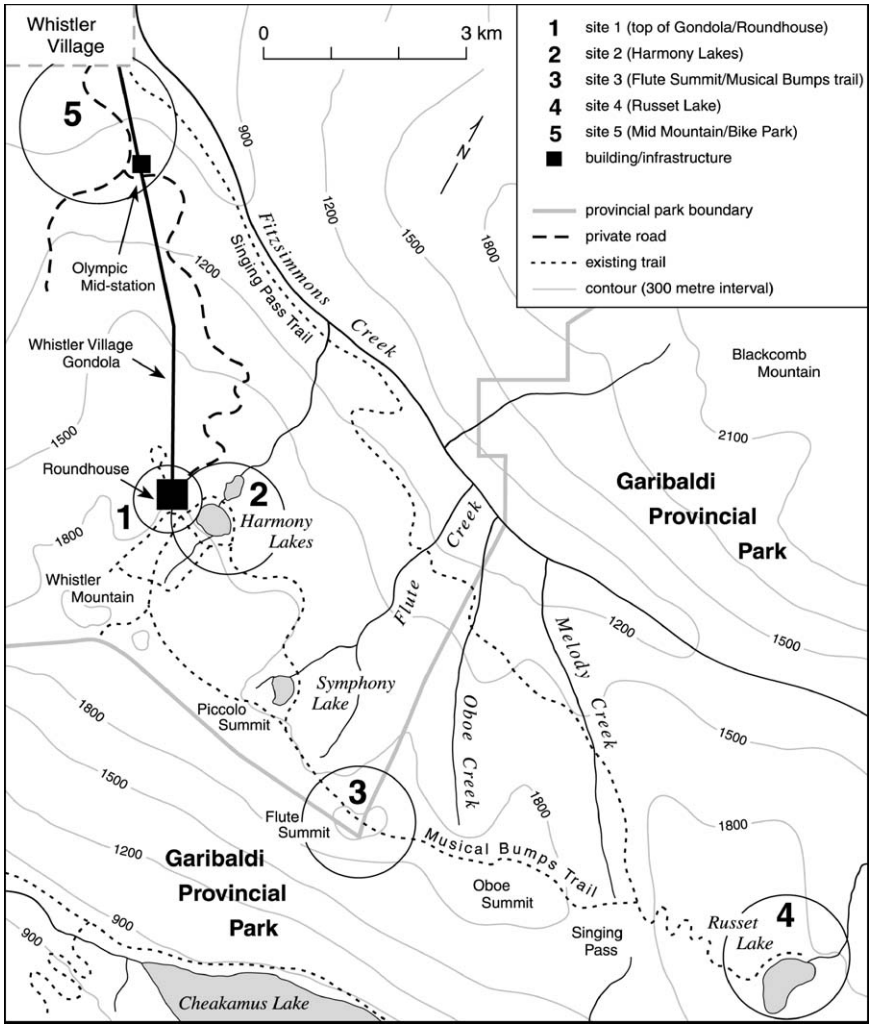


Fig. 2. The five visitor survey site locations in the study area. 3 km on scale = 1.86 miles. The 300 m contour intervals = 984 ft each. Only the Whistler Village Gondola operates in the summer. There are 15 other ski lifts (not shown on map) that do not operate in the summer).

Table 1
Categorization of stakeholder group involvement in study[a]

Companies and tour groups	Provincial and local government agencies	Recreation special interest groups	Environmental special interest groups
Intrawest at Whistler/Blackcomb	Garibaldi District of BC Parks	WORCA	CPAWS
Canadian Snowmobile Adventures	Resort Municipality of Whistler	Alpine Club of Canada	AWARE
Blackcomb Helicopter Tours		FMCBC	WCWC
Canada West Ski Areas Association			

[a] WORCA: Whistler Off-Road Cycling Association, FMCBC: Federation of Mountain Clubs of British Columbia, CPAWS: Canadian Parks and Wilderness Society, AWARE: Association of Whistler Area Residents for the Environment, and WCWC: Western Canada Wilderness Committee.

Blackcomb Helicopters and Canadian Snowmobile Adventures are subcontracted to provide tours on the mountain. All 21 respondents had also visited Whistler Mountain in the summer at least once in the 3 years prior to this study (Needham, 2002).

Two members from each organization participated except for Canadian Snowmobile Adventures, Blackcomb Helicopters, and Canada West Ski Areas Association, which were each represented by one person. Each participant was a president or manager, thus can be considered as a representative of his or her organization as a whole. Prior to participating, members signed a letter of consent stating that their organization can be named in publications from this study. Participants completed a survey similar to the visitor survey and a semi-structured face-to-face interview.

4.3. Visual approach to measuring indicators and standards

In this study, two indicators were measured using *image capture technology* (*ICT*), or the use of computer software to manipulate and create visuals (Lime, 1990). This is becoming a popular method for depicting multiple levels of indicator impacts associated with recreation and tourism use (Manning, 1999). Impacts are displayed in photographs or videos, which are shown to respondents to reveal their norms. Social norms may then be plotted on a norm curve, thereby enabling the potential for devising standards. According to Hall and Roggenbuck (2002) and Manning et al. (1996, 1999), visuals may generate a more realistic and accurate normative evaluation of indicators compared to written descriptions because the levels of indicator change are easier to understand.

First, the *density of hikers/sightseers* social indicator was measured with five photographs depicting 0–16 people per 20 m^2 (65 ft^2) with the number of people doubling in each image (Fig. 3). Similar to past research then, images portraying different user densities were employed to measure encounter norms (Basman, Manfredo, Barro, Vaske, & Watson, 1996; Freimund et al., 2002). This indicator was chosen because the most popular summer activity in the study area is sightseeing/hiking (Needham, 2002). In addition, visitor experiences can, in part, be negatively affected by the amount of use or number of encounters in an area (Vaske & Donnelly, 2002).

Using Adobe PhotoShop 5.5 software, the image with 16 people/20 m^2 was created first. People were randomly positioned, but their age, sex, number walking in different directions, and number in the foreground and background was balanced. People were also positioned on trails since it may have biased responses if they were placed on alpine vegetation. Once this image was created, people were randomly removed to create four other visuals of different densities. The density scale for the visuals was measured in the field at 20 m^2.

Second, the *amount of bare ground at a campsite* resource indicator was portrayed with three photographs showing 2–8 m^2 (7–26 ft^2) of bare ground with the amount doubling in each image (Fig. 4). Using the software, an 8 m^2 area of bare ground was copied from a different slide and then reduced by $\frac{1}{2}$ and $\frac{3}{4}$ in size. A person was shown in each image to provide respondents with a reference of scale. This indicator was chosen because although not present in the ski area at the time of this study, campsites were being considered. Campsites have since been developed at a few locales on the mountain. In addition, previous research (Martin et al., 1989; Shelby et al., 1988; Shelby & Harris, 1985; Shelby & Shindler, 1992; Vaske, Whittaker, Needham, & Donnelly, in press; Whittaker & Shelby, 1988) has

Fig. 3. Sample photographs depicting density of hikers/sightseers social indicator.

Fig. 4. Photographs depicting amount of bare ground at a campsite resource indicator.

measured several different campsite indicators (e.g., bare ground, fire rings, human waste, litter). Many of these studies have concluded that the amount of bare ground is one of the most important campsite indicators.

The color photographs were printed in 20 cm × 15 cm (8 in × 6 in) size and shown to respondents in cue-card fashion during survey completion (i.e., one at a time). The visuals were presented in random order (e.g., 4, 16, 0, 8, 2 people/20 m^2), chronological/increasing in impact (e.g., 0, 2, 4, 8, 16 people/20 m^2), and decreasing (e.g., 16, 8, 4, 2, 0 people/20 m^2) order in the two pilot tests to check for *starting point bias* (i.e., order effects). There were no significant differences (hiker visuals: Kruskal–Wallis $H = 0.01-0.99$, df = 2, $p = 0.611-0.993$; bare ground visuals: $H = 0.67-2.87$, df = 2, $p = 0.232-0.718$) between responses using these three approaches, so the visuals were presented in chronological order during main data collection. These findings are similar to those reported by Manning et al. (2001, 2002), suggesting that starting point bias may not be a major concern when measuring recreation and tourism-related norms.

Respondents rated the conditions in each photograph on a scale of −2 "very unacceptable" to +2 "very acceptable" with interior narratives of −1 "somewhat unacceptable," 0 "neither," and +1 "somewhat acceptable". Respondents were asked to ignore the generic backgrounds, focus on the conditions (density of use or amount of bare ground) in each visual, and assume that they were occurring on Whistler Mountain in the summer. This is similar to past studies (Basman et al., 1996; Freimund et al., 2002), but an improvement that warrants future research may come from using images of the exact study area.

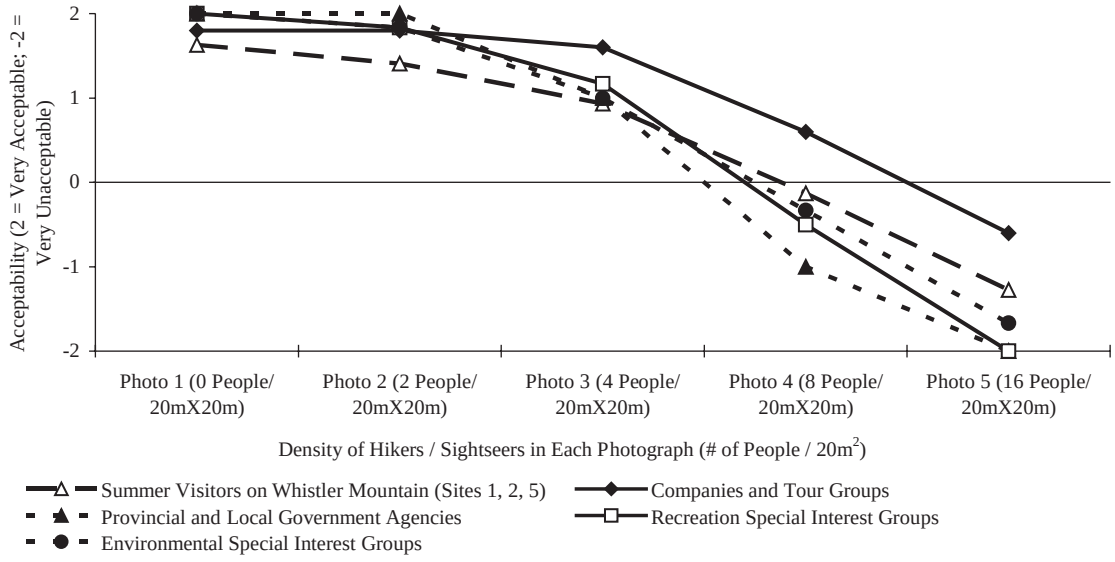
4.4. Analysis

Contingency tables were used to describe the norms and standards of the stakeholder groups. Mean acceptability ratings of the impacts for each indicator were also plotted on social norm curves. This provides a visual means of assessing similarities and differences among the groups. The visitors at Sites 1, 2, and 5 and organizational members were consolidated into broader groups to permit statistical comparisons among the groups with similar interests (Table 1). Given the relatively small sample size for the companies, government agencies, and recreation and environmental interest groups, descriptive and non-parametric Kruskal–Wallis (H) tests were used to compare the norms and standards of the visitors ($n = 432$) and other stakeholder groups ($n = 21$) for each indicator (Lutz, 1983). An alpha level of 0.05 was used for all statistical tests.

5. Results

5.1. Norms and standards for the density of hikers/sightseers indicator

The mean norm curves of the stakeholders for the density of hikers/sightseers indicator are illustrated in Fig. 5 and described in Table 2. There were significant differences among the groups regarding the acceptability of 8 people/20 m^2 ($H = 18.77$, df = 4, $p < 0.001$) and 16 people/20 m^2 ($H = 26.29$, df = 4, $p < 0.001$). The company representatives tended to accept these impacts more than the other groups did. There was also a significant ($H = 19.74$, df = 4, $p < 0.001$) difference among the groups regarding the minimum acceptable condition (point where curve crosses the neutral line). The companies would tolerate higher densities (12 people/20 m^2) on Whistler Mountain than the other groups. This is predictable because these companies consisted of Intrawest and two operators that run tours on the mountain. High densities could translate into increased profits through more summer lift tickets and



Photograph 1: Kruskal - Wallis (H) = 4.79, df = 4, sig. = .309, $p > .05$
Photograph 2: Kruskal - Wallis (H) = 7.89, df = 4, sig. = .096, $p > .05$
Photograph 3: Kruskal - Wallis (H) = 9.72, df = 4, sig. = .058, $p > .05$
Photograph 4: Kruskal - Wallis (H) = 18.77, df = 4, sig. = .001, $p \leq .001$
Photograph 5: Kruskal - Wallis (H) = 26.29, df = 4, sig. = .000, $p < .001$
Minimum Acceptable Condition: Kruskal - Wallis (H) = 19.74, df = 4, sig. = .000, $p < .001$

Fig. 5. Mean social norm curves of stakeholders for density of hikers/sightseers indicator.

Table 2
Social norm curve characteristics of stakeholders for density of hikers/sightseers indicator

	Stakeholder groups					H-value	p-value
	Summer visitors on whistler mountain	Companies and tour groups	Provincial and local government agencies	Recreation special interest groups	Environmental special interest groups		
Optimal or preferred condition[a]	0.00	2.00	2.00	0.00	0.00	0.94	0.857
Minimum acceptable condition (standard)[a]	7.51	12.00	6.00	6.80	7.00	19.74	<0.001
Norm intensity or salience (max. = 10)	7.73	8.00	8.00	7.83	8.17	3.65	0.455
Crystallization of minimum acceptable condition[b]	1.36	1.60	0.00	0.71	1.40		
Range of acceptable conditions[a]	0.00–7.51	0.00–12.00	0.00–6.00	0.00–6.80	0.00–7.00		

[a] Cell entries are the mean number of people (hikers/sightseers) per 20 m^2.
[b] Cell entries are the standard deviations of the minimum acceptable condition.

tours being sold. By comparison, visitors accepted a maximum of 7.5 people/20 m^2 on the mountain in the summer, the environmental and recreation groups would tolerate 7 people/20 m^2 and 6.8 people/20 m^2, respectively, and the government agencies would tolerate 6 people/20 m^2. Since the companies felt that the standard should be 12 people/20 m^2, whereas the other groups would tolerate about half this density level, negotiations would likely be needed to reach a compromise regarding an appropriate standard. Despite these differences, each group would accept 0, 2, and 4 people/20 m^2, but would not accept 16 people/20 m^2 on the mountain in the summer.

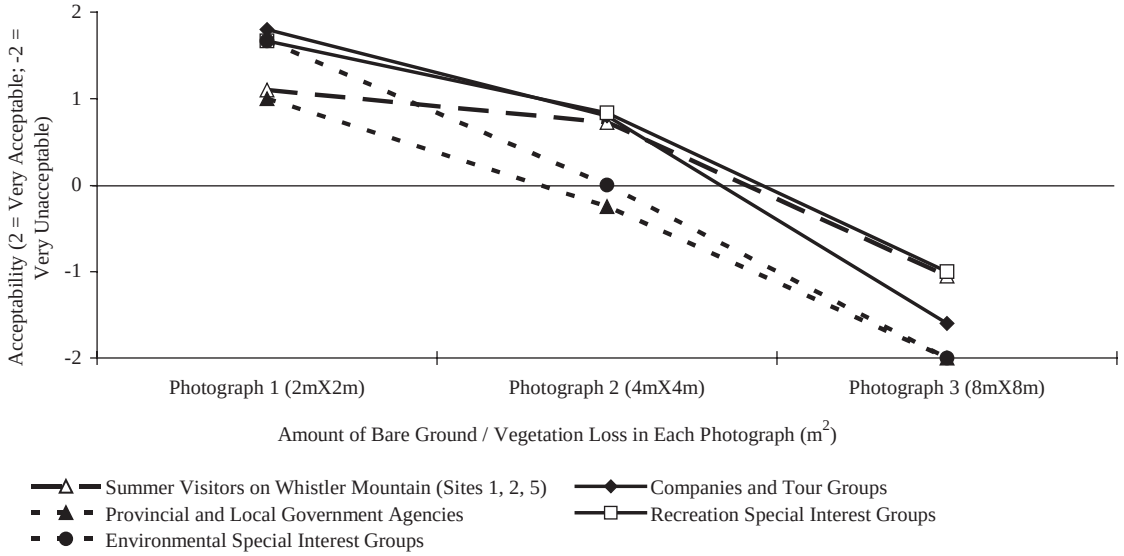
The crystallization was also different among the groups. There was considerable disagreement among the companies ($SD = 1.60$), visitors ($SD = 1.36$), and environmental groups ($SD = 1.40$) (Table 2). This is represented by the higher standard deviations for the minimum acceptable conditions for these groups compared to the government members who all agreed ($SD = 0$) that the standard should be 6 people/20 m^2. These findings are not particularly useful from a management perspective because the main goal of including stakeholder input is not to reveal the level of agreement within organizations. Rather, the goal of multi-stakeholder or transactive input is to generate consensus among the different participating interest groups (Payne & Graham, 1993).

Table 2 also shows that norm intensities (i.e., indicator importance) were similar among the groups ($H = 3.65$, df = 4, $p = 0.455$). Intensities were also high for each group, as they ranged from 7.73 (max = 10) for the visitors to 8.17 for the environmental groups. This suggests that each group felt that this was an important indicator of summer use at Whistler Mountain.

5.2. Norms and standards for the amount of bare ground at a campsite indicator

Fig. 6 shows that the groups thought that 2 m^2 campsites would be acceptable for the ski area in the summer, but 8 m^2 campsites would be unacceptable. On average, the visitors, companies, and recreation groups would accept campsites containing upwards of 4 m^2 of bare ground. Acceptability of the 4 m^2 campsite for the environmental groups and government agencies was close to neutral. This indicates that there was no clear majority agreement among these groups regarding this level of impact. There were significant differences ($H = 17.50-19.35$, df = 4, $p = 0.002$ to < 0.001) among the groups regarding the acceptability of all three campsite conditions.

The standards of quality reported by the recreation groups, visitors, and companies show that these groups would accept significantly ($H = 26.28$, df = 4, $p < 0.001$) more bare ground at campsites (minimum acceptable conditions of 5.82, 5.63, and 5.33 m^2, respectively) compared to the environmental groups (4 m^2) and government agencies (3.6 m^2) (Table 3). These findings are consistent with Shelby and Shindler (1992) who reported that recreation groups accepted higher amounts of bare ground at campsites compared to managers and environmental groups.



Photograph 1: Kruskal - Wallis (H) = 17.50, df = 4, sig. = .002, $p < .01$
Photograph 2: Kruskal - Wallis (H) = 17.94, df = 4, sig. = .001, $p \leq .001$
Photograph 3: Kruskal - Wallis (H) = 19.35, df = 4, sig. = .000, $p < .001$
Minimum Acceptable Condition: Kruskal - Wallis (H) = 26.28, df = 4, sig. = .000, $p < .001$

Fig. 6. Mean social norm curves of stakeholders for amount of bare ground at a campsite indicator.

Table 3
Social norm curve characteristics of stakeholders for amount of bare ground at a campsite indicator

	Stakeholder groups					*H*-value	*p*-value
	Summer visitors on whistler mountain	Companies and tour groups	Provincial and local government agencies	Recreation special interest groups	Environmental special interest groups		
Optimal or preferred condition[a]	2.00	2.00	2.00	2.00	2.00	0.02	0.998
Minimum acceptable condition (standard)[a]	5.63	5.33	3.60	5.82	4.00	26.28	<0.001
Norm intensity or salience (max = 6)	4.37	4.60	4.25	3.83	4.67	9.01	0.061
Crystallization of minimum acceptable condition[b]	1.22	1.03	1.20	0.91	1.10		
Range of acceptable conditions[a]	2.00–5.63	2.00–5.33	2.00–3.60	2.00–5.82	2.00–4.00		

[a] Cell entries are the mean amount of bare ground at a campsite (m^2).
[b] Cell entries are the standard deviations of the minimum acceptable condition.

Although there were no campsites in the ski area at the time of this study, most of the groups felt that this could be a somewhat important indicator of quality for the area in the summer. Norm intensities ranged from 3.83 to 4.67 (max = 6), but were not significantly ($H = 9.01$, df = 4, $p = 0.061$) different among the groups (Table 3). Regardless, the recreation groups possessed the lowest intensity, suggesting that this was a somewhat irrelevant indicator for them. Conversely, the environmental groups had the highest intensity, likely due to the ecological impacts such as soil erosion and vegetation trampling commonly associated with campsites (Hammitt & Cole, 1998).

6. Discussion

This was the first major study to address the use and management of ski areas in the summer season. It also addressed two issues that have received limited empirical attention. First, it applied the normative approach to a commercial recreation/tourism setting. Second, it measured the norms of various stakeholder groups. Several conclusions can be derived from the results. For instance, the normative standards for both the density of hikers/sightseers and amount of bare ground at a campsite indicators varied considerably among the stakeholders. The different norm curve shapes likely reflect the different characteristics and philosophies of the organizations. In other words, the groups may have different lenses through which they evaluated the indicator conditions. For example, the curves of the environmental groups for the bare ground indicator declined sharply as impacts increased, possibly reflecting their shared conservationist or preservationist views.

The limited agreement among the groups regarding acceptable standards for the two indicators also suggests that negotiations would likely be needed to reach a compromise. This should serve as a warning to the agency responsible for managing the area (Intrawest) not to assume that their views are necessarily congruent with those of the visitors and interest groups. This should be kept in mind when indicators and standards are being established and monitored. However, Intrawest is a corporate entity, thus is not compelled to acknowledge the views of other groups or base management actions on their input. Regardless, by acknowledging views of interest groups, the public, and their clientele, managers may, in turn, make more informed, intelligent, and accountable decisions regarding standards for summer use at Whistler Mountain (Martin et al., 1989).

The literature suggests that recreation and environmental special interest groups have contrasting views because they have different incentives motivating people to join. Motives for belonging to recreation groups are mostly based on materialistic or resource use goals, whereas those for environmental groups are mainly based on ideological causes such as conservation and preservation (Dennis & Zube, 1988; Hammitt, 1987). Findings from this study showed both similarities and differences among the organizations in these two groups. They expressed similar normative standards for the density of hikers/sightseers indicator. The environmental groups, however, held more restrictive standards for the amount of bare ground at a campsite indicator.

The density of hikers/sightseers seemed to be more salient (i.e., norm intensity) than the amount of bare ground at a campsite as a potential indicator of quality for summer use at Whistler Mountain, suggesting that

use densities may be more important to monitor in the area. This was illustrated by higher norm intensity measures for the density of hikers/sightseers indicator. Each group's norm curve for use density was steeper, suggesting that more people may be negatively impacted if standards are violated for this indicator compared to the amount of bare ground at a campsite (Freimund et al., 2002). This may be attributed, in part, to the fact that the mountain endures high summer use levels (e.g., 225,000 people in the summer of 2002), whereas campsites have only recently been constructed on the mountain. In addition, other attributes related to campsites may be more important than the amount of bare ground. Perhaps the number of campsites or fire rings in an area should also be considered when choosing campsite indicators.

The companies (e.g., Intrawest, Blackcomb Helicopters) accepted the highest use densities on the mountain in the summer. This is not surprising given that higher use levels could translate into more profit. Conversely, the government agencies (Resort Municipality of Whistler, BC Parks) that manage the land surrounding Whistler Mountain had the least tolerance for increased densities. This is also predictable because many Canadian government and parks agencies have experienced financial cutbacks for on-site management (Dearden & Rollins, 2002). If use increases in the ski area, some of this may "spill over" into adjacent areas of Garibaldi Park and other interface areas, thus increasing management demands on these agencies.

Additionally, the norm intensity levels for each indicator were similar among the groups, but increased densities of hikers and amount of bare ground at campsites provoked the most extreme reactions from the environmental interest groups. This is likely because impacts associated with high use such as trampling, as well as campsite impacts such as vegetation removal and soil erosion can be detrimental to the ecological integrity of a setting (Hammitt & Cole, 1998).

7. Future research

To increase the generalizability of the findings, some considerations should be taken into account when extending this research. First, this study focused on two indicators, a small subset of all potential indicators related to summer use at ski areas. This study did not address indicators such as noise, litter, and lift ticket cost, which may be equally important indicators. More research, therefore, is needed to explore different variables related to summer use at ski areas.

Second, this study applied norm theory to a commercial recreation/tourism setting. The results of this study lend credence to the application of this approach as they discerned what are and what are not appropriate indicators and standards for this type of setting, thus guiding management tactics. Research is required, however, to apply the normative approach to more commercial areas; with different groups; and using various social, resource, and managerial indicators.

Third, the methodology of this study permitted site-specific visitor evaluations of the indicators within the study area. The purpose of this paper, however, was to compare evaluative (i.e., normative) standards among visitors, companies, government agencies, and recreation and environmental interest groups regarding indicators of summer use on Whistler Mountain as a whole. Therefore, the responses of visitors at Sites 1, 2, and 5 were pooled. Assessing multi-stakeholder attitudes regarding site-specific indicators and standards remains a topic for future investigation.

Fourth, this research used generic backgrounds in the photographs and respondents were told to assume that the indicator conditions were occurring in the ski area. This is similar to past research (Basman et al., 1996; Freimund et al., 2002), but an improvement may come from using backgrounds of the exact study area. One set of visuals also showed hikers/sightseers per unit area ($20\,m^2$). Given that people do not space themselves evenly across an area, managers should not assume that they can estimate a setting's capacity by dividing its total area by the corresponding unit standard. Research is required to explore the extent to which this approach can be extrapolated to a landscape level. The photographs also depicted "snapshots" of indicator conditions, thus more research using videos (Freimund et al., 2002) and other graphic devices is warranted.

Fifth, studies have measured visitors' and other stakeholders' acceptability norms of increasing impacts for resource indicators such as the amount of bare ground at campsites (Martin et al., 1989; Shelby & Shindler, 1992). This is identical to the approach used in this paper. What remains unclear, however, is whether respondents based their evaluations on the utility of the impacts (e.g., a large amount of bare ground is acceptable because a tent requires the space to fit), or the potential biophysical impacts (e.g., a large amount of bare ground is unacceptable because it necessitates the removal of vegetation). In addition, normative evaluations of these indicators may or may not measure biodiversity or ecological integrity, as they are mainly based on visual and perceptual impacts. Empirical research is required to examine these issues.

Sixth, this study assessed respondents' acceptance of indicator conditions. Recent studies (Manning et al., 1999, 2001, 2002) have shown that measures such as respondents' preference and absolute maximum tolerance of indicator conditions can differ from their acceptance. Future research should continue to explore differences between these evaluative response categories.

Seventh, this study ascertained the norms and standards of several different stakeholders that have interests in summer use at the Whistler Mountain ski area. This is important because most recreation and tourism studies have focused solely on visitor/tourist norms (Manning, 1999), whereas few have examined the norms and standards of other interest groups (Martin et al., 1989; Shelby & Shindler, 1992). This study measured the norms of 432 visitors, but only 21 presidents and managers of 12 different stakeholder groups. This sample size enabled non-parametric statistical tests to be conducted to reveal differences among the groups. Future studies, however, should attempt to increase sample sizes of interest groups to allow more powerful parametric tests (e.g., ANOVA) to be employed. Research is also needed to determine the norms and standards of more stakeholders with similar and/or competing viewpoints. This may allow for more informed, accountable, and transparent management decisions to be made in recreation and tourism settings.

Finally, the findings of this study are limited to one alpine ski area; the results may not generalize to all ski areas where lifts operate in the summer. The applicability of these findings to other ski areas and other commercial recreation and tourism settings remains a topic for further investigation. In addition, some of the explanations of this study's results are clearly speculative, suggesting that more research is required to substantiate and generalize these findings.

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