

Wilderness Perception Scaling in New Zealand: An Analysis of Wilderness Perceptions Held by Users, Nonusers and International Visitors

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Abstract—Wilderness is a concept that has both a physical and a perceptual meaning. Wilderness images have been collected by a number of researchers in recent years in an attempt to understand precisely what wilderness users consider wilderness to be. This paper sets out to analyze the original works of three researchers, studying three distinct sample populations so that wilderness perception comparisons can be made. The results of this research show striking similarities and differences of perception, between different study samples. They show that many people have a common perception of wilderness, but that they may also hold quite different images of wilderness. Some of the implications of this for management are briefly discussed.

The concept of wilderness can be defined in physical, legislative and perceptual terms. Each has a different application, and it can be argued, that for the purpose of visitor management, understanding perceptions of wilderness is particularly relevant. It has been suggested that recreationists may achieve wilderness experiences in any natural environment that they perceive to be wilderness. Such perceptions may comply with, or be far removed from legislated and designated wilderness areas. It is, therefore, likely that the majority of wilderness experiences can be accommodated in nonwilderness areas. In other words, wilderness experience can be satisfied in areas somewhat removed from (and possibly buffering) core wilderness designations. Semi-remote areas or areas that have been developed to provide for primitive recreational pursuits (for example, developments such as hut accommodation and tracks) are likely to provide wilderness experiences for all but the most purist of wilderness adventurers.

This paper examines this theory and applies it to the New Zealand wilderness recreation context. It reports on three studies that examine the wilderness perceptions held by three distinct samples: users of the New Zealand recreational backcountry, the New Zealand general public and international visitors to the New Zealand recreational

backcountry. All three studies involved the collection of primary data through the administration of questionnaires followed by the analysis of data employing the Wilderness Perception Scaling (WPS) technique (Stankey 1973). This technique allows discrete groups to be identified within each sample based on the wilderness perceptions that they hold. Labels are applied to each to illustrate the extent to which the wilderness perceptions common to each group comply with, or are increasingly removed from, legislative definitions of wilderness in New Zealand. The paper presents a detailed analysis of the qualities of wilderness sought by the members of each purism class; it then discusses the similarities and differences between them.

The New Zealand Wilderness Resource

An important part of New Zealand's tourism product is its range of natural environments and wild places. Wilderness can be found in Alpine ranges, volcanic peaks, native forests and mountain grasslands and subalpine fields. Most wilderness is protected in a system of national parks, forest parks and other reserves; the system is over a hundred years old and covers nearly a third of the country's land area. But for a small number of specially protected areas, these designations, known generically as the conservation estate, are open to unrestricted public access and use.

The conservation estate has long played a part in New Zealand's economic development. New Zealand national parks have generally been designated in areas considered to otherwise have no economic value. The designation of national parks has commonly been justified as a resource for regional economic development through tourism. The first national parks in New Zealand were alpine parks in regions offering no potential for agriculture (Hall and Higham 1998). This scenario still applies with New Zealand's most recent park designations (Paparoa and Kahurangi National Parks), providing a tourism resource base for remote communities. The same is the case for proposed additions to the national park system in the Catlins region and Stewart Island. These gazettals have been advocated on the grounds that they would serve the tourism development interests of economically marginalized regional and remote communities. The philosophy of 'economic conservation' (Hall and Higham 1998) is deeply entrenched in contemporary New Zealand. In 1993, the New Zealand Tourism Board (NZTB)

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and Department of Conservation (DOC) established a policy aimed at tripling or doubling annual international tourist arrivals to New Zealand. Wilderness images have become a key resource in the promotion of New Zealand as an international destination.

In recent years, there has been a rise in domestic demand and recreational use of wilderness. This trend has been compounded by growth in demand for wilderness experiences from overseas visitors to New Zealand (Higham 1996). Coupled with this has been increasing evidence of ecological impact, crowding and displacement (Higham 1996; Higham and Kearsley 1994; Kearsley 1990, 1997, Kearsley *et al* 1996; Kearsley and O'Neill 1994). Wilderness areas are recreational environments that are vulnerable to physical impact. Crowding is experienced by all types of users and, for many, diminishes the wilderness experience. Where visitor experiences are being compromised by ecological or social impacts, New Zealand's wilderness values are also being degraded.

This scenario presents a challenge for New Zealand's Department of Conservation, which is charged with the management of the conservation estate. In meeting this challenge, the Department of Conservation can draw selectively from the North American wilderness management context. A comparison of wilderness designation and management practice in New Zealand and North America provides a range of common issues and interests. These include visitor management, physical impact management and tourism and community development issues. However, a number of widely researched wilderness management issues in North America do not apply to the same field in New Zealand. The definition of designated wilderness areas in New Zealand dictates that they should be remote and so situated to preclude day visitation. Wilderness areas in New Zealand are also designated and managed to remain free of artefactual constructs (huts, bridges, walk wires, tracks), natural resource development, commercial recreation, mechanized access or overflight and nonnative stock or introduced (exotic) fauna. These areas are buffered to protect their largely natural and relatively pristine condition. For these reasons, a number of widely researched wilderness management issues in the North American context do not apply, or apply less so, in New Zealand (for example, managing day visitors and designated camping areas, livestock, river flow, wildlife and fire management). Managing the New Zealand wilderness resource (wilderness areas and adjacent lands offering qualities of wilderness experience) centers on the need to manage qualities of remoteness, solitude and challenge in the face of increasing levels of demand and diversifying demographic and motivational profiles.

Wilderness Images

Wilderness can be defined in several ways. One approach is to define wilderness as a pristine environment free from any human impact. Vitousek (1999) confirms that by this definition, wilderness no longer exists, least of all in the Northern Hemisphere, where agricultural chemicals act as an agent of environmental change. Wilderness may also be defined in legislative terms. This approach recognizes

wilderness as an area of the earth that is affected primarily by the forces of nature. By this definition, wilderness is an area of unmodified naturalness that is of a size and remoteness that makes practical its protection from agents of change. In New Zealand, legislated areas of wilderness have been defined and designated by the Wilderness Advisory Group (1985).

This paper adopts the third approach to wilderness definition, which is based on personal perception. Wilderness is a personal construct that can be defined as an image that varies from person to person. This allows wilderness to be found in different environments by different people. If so, the most fragile places can be protected by directing people to the environments where their wilderness expectations may be satisfied. Just as attitudes to wilderness have varied over time by culture and society (Glacken 1967; Hall 1992; Kearsley 1997; Nash 1982; Oelschlaeger 1991; Shultis 1991), so too have individual perceptions of wilderness. While wilderness environments have an objective reality as physical places, what makes that reality 'wilderness' rests very much upon personal cognition, emotion, values and experiences. As Stankey and Schreyer (1987) point out, a wilderness environment does not so much 'give' a wilderness experience as act as a catalyst for what are essentially inherent emotional states. Wilderness, then, has no commonly agreed physical reality, but it exists where personal cognitions dictate; different people perceive wilderness in different ways and in different places, but, for each of them, wilderness exists in that place, although it might not for others.

Many attempts have been made to explore the dimensions of the wilderness image (for example, Beaulieu 1984; Heberlein 1973; Hendee, *et al* 1968; Lucas 1964; Stankey 1973). In New Zealand, Wilson (1979) showed that the general public and regular backcountry users held similar views about how wilderness might be described. Both groups generally considered wilderness to be natural and unspoiled, wild and challenging. However, the two groups diverged when their views about what activities are permissible in a wilderness environment were analyzed. Among trampers, purists did not believe it possible to have wilderness where there was any sign of people or their artifacts, whereas the public exhibited a much broader range of tolerance. Most of them, and, indeed, some trampers, believed that there was no inconsistency between a wilderness experience and the presence of such facilities as huts, tracks, swing bridges and even toilets and picnic sites. Both samples generally agreed that vehicular access or any evidence of overt commercialization is unacceptable in wilderness. Thus, it appears that the highly purist required a pristine ecological wilderness, but the majority could find wilderness values in places that had been developed in part. Clearly, many of those seeking to experience wilderness may find satisfaction in areas unacceptable to the purist minority. It is necessary, therefore, for wilderness managers to understand the quality of wilderness sought by different groups of users, and the extent to which those experiences can be achieved in lands buffering core wilderness areas.

The notion that wilderness can be encountered by various people in environments that are more or less developed was advanced in a number of subsequent studies (Higham 1996; Kearsley 1982; Kearsley 1990; Kearsley 1997; Shultis 1991;

Shultis and Kearsley 1988). These have provided a detailed appreciation of the perceptions of wilderness held by users, the general public and international visitors to the Conservation Estate. Members of these groups were asked to state the extent to which they accepted various developments or specific attributes in wilderness environments. These included physical facilities such as huts, tracks and bridges, attributes such as remoteness and solitude, or physical developments, including exotic forests and mining, in wilderness areas. Kliskey (1992) and Kliskey and Kearsley (1993) show how responses to such a question may be used to group people into discrete purism classes and to plot the extent to which specific environments provide wilderness for those groups.

Methodology

Three studies are included in this paper, the first of which is the sample used by Kliskey in his original analysis. In this, he used data collected by Shultis in late 1987 (Shultis 1991, Shultis and Kearsley 1988). This was a sample of 233 backcountry users, collected with an on-site survey in natural areas throughout New Zealand. The second sample was collected by Higham in 1994 (Higham 1996) and is composed of 336 international backcountry users. The final group is derived from 250 members of the general public whose views on wilderness were collected by Kearsley in 1995. This paper reports on the key findings of each study and compares and contrasts the results generated from each sample.

All three studies collected data that could be analyzed employing the Wilderness Perception Scaling (WPS) technique (Stankey 1973). WPS measures the extent of a persons perceptions of wilderness and makes possible a classification of wilderness users based on their levels of perception. This methodology involves four stages, as follows:

1. The development of a 21 variable list that functions as a list of indicators for the delineation of wilderness.

2. The collection of quantitative data that allows respondents to indicate the acceptability of each variable (based on their personal perception of wilderness) on a five-point Likert scale.

3. The aggregation of responses (1-5) to provide a total purism score ranging from 21-105 (21 variables)

4. The clustering of the sample into four purism classes, the membership of each sharing common perceptions of wilderness.

All three studies were able to identify four discrete purism classes, confirming that a range of wilderness perception do exist. In each study, the respective wilderness perception classes were labeled non purists, neutralists, moderate purists and strong purists. The ways in which the members of each purism class perceive wilderness are set out in table 1.

The results presented in table 1 can be examined in two ways. First, column (vertical) analysis within each of the three samples confirms that clear differences in perception differentiate each wilderness purism class. It is apparent, for example, that non purists (NP) generally consider most listed variables to be consistent with the images of wilderness that they hold. At the opposite end of the wilderness purism scale, strong purists (SP) see the same variables as unacceptable in wilderness. In between the poles of the scale, neutralists (N) and moderate purists (MP) are also distinguished on the basis of their wilderness perceptions, particularly when considering aspects of artifactualism (human constructs in wilderness environments, such as campsites, road access, tracks and bridges). The former tend to be accepting or neutral when considering these variables, whereas the latter are more likely to be neutral or unacceptable.

Alternatively, row (horizontal) analysis (table 1) allows similarities and differences in perceptions across purism classes and samples to be identified. So, for example, most agree that the term wilderness describes extensive (size) and remote natural environments. A general consensus is

Table 1—Comparison of wilderness perceptions: domestic and international users and the general public.

Wilderness perceptions variable list	Domestic tourists (Shultis 1991; Kliskey 1992)				International tourists (Higham 1996)				General public (Kearsley 1995)			
	NP	N	MP	SP	NP	N	MP	SP	NP	N	MP	SP
Campsites	+	+	-	-	+	/	/	-	+	/	-	-
Exotics	/	/	-	-	+	+	+	-	-	-	-	-
Road access	+	+	+	-	+	+	/	-	+	+	/	-
Commercial recreation	+	/	-	-	+	-	-	-	+	/	-	-
Maintained tracks	+	+	+	-	+	+	/	-	+	+	/	-
Bridges	+	+	+	-	+	+	/	-	+	+	/	-
Hunting	+	+	/	-	/	-	-	-	/	-	-	-
Logging	/	/	/	/	/	-	-	-	-	-	-	-
Motorised travel	/	-	-	-	+	/	-	-	/	-	-	-
Huts/shelters	+	+	+	-	+	+	/	-	+	+	-	-
Hydro	/	-	-	-	/	-	-	-	-	-	-	-
Mining	-	-	-	-	/	-	-	-	-	-	-	-
Solitude	-	+	+	+	/	/	/	/	+	+	+	+
Remoteness	+	+	+	+	+	+	+	+	+	+	+	+
Little human impact	+	+	+	+	+	-	-	-	+	+	+	+
Size	+	+	+	+	+	+	+	+	+	+	+	+

NP = Non purists, N = Neutralists, MP = Moderate Purists, SP = Strong Purists.
+ = acceptable, / = neutral, - = unacceptable.

achieved when respondents consider the acceptability of commercial developments (such as mining, hydroelectric, logging) and commercial recreation in wilderness. These were seen to be unacceptable by most. The same applies to perceptions of hunting and motorized transport which, but for one or two exceptions, are seen to be contrary to the image of wilderness.

Row analysis also allows the identification of variables toward which the views of various purism groups are substantially different. Most particularly, differences in wilderness perceptions relate to human developments in wilderness areas. Road access, maintained tracks and campsites, bridges and walk wires, huts and shelters are viewed quite differently by the members of different purism groups. Non purists are most accepting of these developments, and many consider them essential to the wilderness experience. Indeed, some of the more extreme members of this group considered further developments such as flush toilets and hot water consistent with their personal views of wilderness. By contrast, neutralists tend to be generally accepting of facility development, moderate purists selective but generally neutral, and strong purists wholly opposed to any such facility developments. These variables most clearly differentiate between the membership of different wilderness purism classes. Wilderness purism groups can also be distinguished on the basis of perceptions of solitude. New Zealanders (both domestic wilderness users and the general public) agree that solitude is an important aspect of the wilderness experience. International visitors to New Zealand are, by contrast, neutral towards solitude as a quality of wilderness experience. It is important to note that these results tell only of perceptions of solitude, without identifying precisely what sample units consider solitude to be; it is possible that different respondents have quite different feelings about solitude.

These results serve to illustrate that different purism groups are not necessarily in accord with the views of wilderness held by other groups. However, while contrasts exist within each sample, the fact that the relative size of purism classes varies between samples is also noteworthy. Table 2 illustrates that purism class membership varies considerably, with the general public, perhaps unsurprisingly, tending to be much less strict in their perceptions than either of the other two groups. Some 83.3% of Kearsley's public sample are neutral or non purist, compared with 48.0% of domestic wilderness users and only 33.1% of international visitors. By contrast, over half of

backcountry users (52.0%) fall into the moderate and strong purist classes and fractionally over two thirds (66.9%) of international visitors. Again, it is clear that there are wide divergences in wilderness perception among differing groups.

Conclusions

In New Zealand, as in many other countries, difficult decisions regarding the designation of wilderness areas and rights of access need to be made if the resource base is not to be further impaired. While government and tourism organizations such as the New Zealand Tourism Board continue to focus on encouraging visitation, insufficient attention is being given to maintaining the wilderness resource. This paper focuses on the demand-side of wilderness management. It draws together samples from three distinct studies and confirms that different groups of wilderness users cannot be viewed or treated as homogenous by wilderness managers. Several qualities of wilderness are viewed quite similarly by members of different purism classes, across different samples. Remoteness was seen by most to be fundamental to wilderness, and commercial development, commercial recreation and motorized transport were viewed as generally unacceptable. On the other hand, perceptions of wilderness may vary most strikingly across purism classes and study samples. This is particularly the case in terms of facility development.

This paper also confirms that the relative membership of discrete purism classes varies considerably between samples. Wilderness users, both domestic and international, proved to be more purist in the wilderness perceptions that they hold (international users slightly more so than domestic), while the non purists and neutralist classes were more strongly represented in the general public sample. This all serves to emphasize that wilderness perceptions vary among individuals. This fact must be recognized by wilderness managers and reflected in the management of different environments to meet the wilderness interests and demands of different active and latent user groups. The perceptual approach to wilderness management should serve the additional function of protecting designated wilderness areas from overuse by meeting the majority of wilderness recreation demand in non wilderness environments.

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Table 2—Purism class memberships: New Zealand backcountry users, New Zealand general public and New Zealand international tourists (%).

Sample	Non purists	Neutralists	Moderate purists	Strong purists
Backcountry users (Shultis 1991; Kliskey 1992)	11.0	37.0	34.0	18.0
General public (Kearsley 1995)	40.4	42.9	15.9	0.8
International tourists (Higham 1996)	4.4	28.7	45.0	21.9

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