Southern Cross University
ePublications@SCU

School of Tourism and Hospitality Management

2009

Recreation conflict and sport hunting: moving beyond goal interference towards social sustainability

Arianne Carvalhedo Reis
University of Otago

James ES Higham
University of Otago

Publication details

Post-print of: Reis, AC & Higham, JES 2009, 'Recreation conflict and sport hunting: moving beyond goal interference towards social sustainability', *Journal of Sport and Tourism*, vol. 14, no. 2-3, pp. 83-107.
Published version available from:
http://dx.doi.org/10.1080/14775080902965025

ePublications@SCU is an electronic repository administered by Southern Cross University Library. Its goal is to capture and preserve the intellectual output of Southern Cross University authors and researchers, and to increase visibility and impact through open access to researchers around the world. For further information please contact epubs@scu.edu.au.

Recreation Conflict and Sport Hunting:
Moving beyond goal interference towards social sustainability

Reis, A. & Higham, J.E.S.

Paper accepted
Journal of Sport & Tourism (Special Issue on Sustainability L. Jago and A. Fyall eds.)

Abstract

Sport and recreational conflict in natural areas arises from growth in the diversity of, and demand for, nature-based sport activities and recreation pursuits. The social sustainability of such activities within a tourism context should recognize that conflicts between different users are complex and dynamic, not simply the result of goal interference or competition for scarce resources. This paper critically explores the complexities of sport hunting and recreational conflict using quantitative and qualitative techniques implemented on Stewart Island, New Zealand. The empirical research points to an ambiguity of feelings and attitudes concerning the relationship and potential/real conflicts between sport hunters and recreational hikers. While some reportedly experienced actual conflict, quantitative methods did in fact highlight many common elements of motivation and environmental values that are shared by both hunters and hikers. Interviews and participant observations highlighted three key elements of the outdoor sport/recreation experience that provide *potential* for conflict. These included user group characteristics, hut behaviour/etiquette and the use of firearms/killing of animals. We propose that conflict is an integral part of society and hence considerable effort should focus on accurately understanding conflict situations. The results support the need for management based on integration rather than segregation, and may be viewed as a move away from reactive management based on relatively isolated instances of goal interference, towards a social sustainability paradigm founded upon a nuanced understanding of conflict phenomena.

Key-words: Sport, hunting, recreational conflict, social sustainability

Introduction

Both leisure researchers and recreation managers alike have recognized the increasing diversification of sport and recreational pursuits. As a consequence, conflict between participants has emerged as a major concern in sport and outdoor recreation management. Initially triggered by the introduction of motorised recreational vehicles (Butler, 1974; Dunn, 1970; Knopp & Tyger, 1973; Lucas, 1964), with the development of new technologies, the hybridization of some sports, and the expanding commercialisation of the 'outdoors', conflict between discrete user groups has become a subject of wide interest (Vittersø *et al.,* 2004).

Despite this, a consensual definition for recreational conflict has not yet been reached (Vittersø *et al.*, 2004). This shortcoming notwithstanding, most studies have been based on the theoretical framework presented by Jacob and Schreyer (1980, p. 369) where conflict is described as a "goal interference attributed to another's behaviour". These authors proposed four causes of user conflicts (activity style, resource specificity, mode of experience and lifestyle tolerance) and several empirical studies have used the model to analyse conflict situations in different settings and contexts (Vaske *et al.,* 2000; Wang & Dawson, 2005). More recent research has included efforts to develop the framework further and has added a fifth variable, expectations (Mann & Absher, 2008), to the four social-psychological conflict factors proposed by Jacob and Schreyer. Other current approaches to recreation conflict have reflected greater interest in how people deal with conflict situations (Schuster, Hammitt & Moore, 2006; Schuster *et al.*, 2006). These approaches represent an important development in terms of understanding rather than simply measuring conflict.

In this respect, social sustainability of outdoor environments for sport and recreation seems to be an important but understudied concept that is dependent upon the understanding of human-human relationships, including conflicts. The issue of social sustainability has been studied on multi-use trails in outdoor recreation, and the use of communication theories and marketing tools has been proposed to manage conflict situations better (Beeton, 2006). Nonetheless, limited research to date has expanded on the concept of social sustainability and how conflict understanding and management may contribute to more balanced and sustainable social interactions in the outdoors.

Social conflict theory may contribute fruitful insights to this discussion. Seminal works in the sociology of conflicts (*see* Kriesberg, 1973) have acknowledged that conflicts are an integral part of society, an "expected and functional outcome in a social system" (Woehrle & Coy, 2000, p. 1). However, conflicts often are perceived as destructive, and therefore societal structures are frequently formulated in a way that attempts to eliminate conflict. This approach, according to Woehrle and Coy (2000), is not ideal since it limits individual creativity and communication, leading to homogeneity and apathy. Contemporary conflict theory, on the contrary, advocates conflicts as being potentially positive and creative, and proposes that this approach should guide conflict resolution processes. Kriesberg (1998) affirmed that conflict is not simple competition, as several studies in recreation conflict have proposed (Heer *et al.*, 2003; Lindsay, 1980). Rather there is a set of factors necessary to trigger conflict and, therefore, one cannot limit the understanding of conflict to one main factor. Cook-Huffman (2000, p. 124), for instance, argued that social identities and access to goods and resources are antecedents to conflict, but, by the same token,

social identities "are modified and sometimes transformed throughout the conflict process".

The present paper aimed, therefore, to include such perspectives in the discussions of recreation conflict in order to better situate conflict management strategies within a social sustainability framework. The strategy used to achieve such goal was to frame our discussion with the analysis of quantitative and qualitative data that explore the experiences of hikers and sport hunters on Stewart Island, New Zealand, and their perceptions and experiences of conflict. The research intended to gather data that would provide insights into motivations, values and norms held by members of these two groups, particularly as they relate to encounters with other visitors, as well as in-depth qualitative material underlying issues of conflict.

Study Area

Despite recognition of the relevance of recreational conflict solving to the sustainable development and management of tourism in New Zealand (Hall & Higham, 2000; Kearsley, 2000), little empirical research has specifically addressed this field in this country (c.f. Coughlan, 1996; Willis, 2002). This represents a lacuna in tourism research given that, historically, outdoor pursuits have been an important part of New Zealand lifestyle and identity (Kearsley, 2000; Star, 2002; Star, 2003).

Stewart Island is the southern-most of New Zealand's three main islands and is home of the country's newest National Park (Rakiura National Park), which comprises 85% of the island (Department of Conservation, 2006).

Stewart Island has long been a place of interest to hunters and hikers. It is known within outdoor recreation circles for challenging terrain and magnificent landscapes. For hikers, it offers the longest and one of the most demanding tracks in

the country: a ten- to twelve-day circuit around the island's northern coast (Barnett, 2006). For hunters, it offers the only readily available population of Whitetail deer in the Southern Hemisphere (Stewart Island Promotion Association, 2007). For other outdoor enthusiasts, it offers excellent diving, fishing, kayaking and sailing opportunities (Stewart Island Promotion Association, 2007). It is, therefore, a place of longstanding and growing popularity for outdoor recreationists.

In terms of multiple-day hiking trails, Stewart Island offers three formally constituted tracks. The most heavily utilised, the Rakiura Track, is a 29km circuit that starts and ends at Halfmoon Bay, the only permanent settlement on an island of 390 inhabitants. It is classified by the Department of Conservation[1] as a 'Great Walk', which means it is a well formed, easy track, with two high quality huts[2], and it is promoted to people of all levels of backcountry experience (Department of Conservation, 2007a; Standard New Zealand, 2004). The North West and Southern Circuits, in contrast, are considered challenging hikes (Department of Conservation 2007a). These tracks, 125km (9-11 days) and 105km (6-9 days) respectively, offer remoteness, physical challenge and solitude.

Whitetail deer were introduced to the island specifically for hunting in 1905 and today hundreds of hunting parties visit the island every year. Most areas around the coast are managed by a ballot system in which hunting blocks are defined and can be booked for pre-determined periods of time. This system is administered by the Department of Conservation and divides the coast into 35 blocks. At these sites, hunting parties can stay in huts or at camp sites, depending on the area chosen.

---

[1] The Department of Conservation (DOC) is the main government organisation responsible for conserving and protecting the natural and historical heritage assets of New Zealand.

[2] Huts are a very basic form of accommodation serving hikers on backcountry trails. Typically, huts offer shelter, bunk beds, cold running water and little else. For a more thorough illustration of huts in a New Zealand context see: http://csl.doc.govt.nz/upload/documents/parks-and-recreation/places-to-stay/hut-information/backcountry-huts-info-and-order-form.pdf

Together with this history of shared passion for the island there is a more recent record of conflicts and tensions between the two groups – hunters and hikers. Although there are vast areas where hunters can freely stalk their targets, many hunting blocks are crossed by the three formally constituted hiking tracks. Moreover, some hunting parties base themselves at huts on these tracks, which represent shared recreational spaces. This proximity has resulted in anecdotal reports of complaint, tension and conflict between the groups. The balance of this paper reports on a study that was developed and implemented in 2007 to explore and understand this conflict context.

Methods

This study adopted a multi-method approach. Initially a quantitative survey was implemented in order to define groups, activities, and perceived conflicts accurately. Qualitative methods (in-depth interviews and participant observations) were subsequently utilised to explore the motivations and values held by the respective study groups, as a critical step toward understanding conflict (c.f. Vittersø *et al.*, 2004).

The questionnaire survey was administered on-site to both hikers and hunters, and was designed to provide demographic information of participants as well as to assess motivations, expectations, norms and behaviours, levels of place and activity attachment, and perceived and *de facto* conflicts. Following pre- and pilot testing (n=40), surveys were distributed to hunters and hikers visiting any of the three hiking tracks (Rakiura Track, Southern Circuit and North West Circuit) or any of the hunting blocks under the booking systems managed by the Department of Conservation.

Surveys were administered between February and May 2007 in an attempt to cover parts of both the hunting and hiking high seasons[3]. The following distribution strategies were used: On-site personal delivery both to hunters and hikers on an encounter basis[4]; random distribution by commercial transport operators (helicopters, charter boats and water-taxis) to hunters using their services; random distribution by the New Zealand Deerstalkers Association to members visiting the island during the research period; and random distribution by DOC field centre staff to visitors signing in to hike on the island. Due to a short-term overlapping of the hiking and hunting season on the island, the strategy employed aimed at reaching the largest sample size possible within limited time allowances and budget. In total, 469 questionnaires were distributed both to hikers and hunters, and 220 valid questionnaires were returned, representing a 46.9% return rate (hikers 50.6%; hunters 44.9% response rates) (*see* Reis, 2008). The sample is considered representative of the study population once the groups were targeted at different entrance points, and at all hunting and hiking areas of the island throughout significant part of the season. Furthermore, participant observations and interviews confirmed survey findings, supporting the appropriateness of the sample representation.

Each questionnaire was composed of 25 questions, some of which presented more than one item for response. However, due to the limitations of space and the purposes of the present article, only selected questions are included in discussions here (for full details, *see* Reis, 2008). Survey responses were coded and entered onto an SPSS (Statistical Package for the Social Sciences) database. Open-ended responses were coded and then entered into SPSS for analysis. The differences between the two

[3] The hiking season officially runs from October to April (Department of Conservation 2007b) while the hunting season, on Stewart Island, tends to concentrate between the months of March and July. The aim was to, therefore, encompass both seasons into the time frame permitted by this research.
[4] Every hunter and hiker, aged 16 and above, met on tracks and at huts was given a survey.

groups were tested individually for each closed-ended response. Chi-square tests were utilised for responses to items producing nominal data (simple and multiples) and Mann-Whitney tests for those generating ordinal data.

In-depth interviews were conducted with 13 recreationists (seven hunters and six hikers) who were selected with prior permission through the sample of valid questionnaires. Interviews ranged in duration from 55 to 120 minutes and followed a semi-structured template of themes, which included: hiking/hunting background, ethical issues related to hiking/hunting, place and activity attachment, environmental/conservation issues and recreational conflicts *per se*. Also, participants were encouraged to raise other issues that they considered relevant. Some questions were adapted from McLeod's (2004) ethnographic study of South Island (New Zealand) hunting which identified some common elements surrounding hunting practices and provided insights into the behaviours and norms of hunters generally. Interviews were transcribed and themes that emerged during the 'conversations' were identified and coded for content analysis (Krippendorff & Bock, 2008).

Participant observation constituted the third research method and played a pivotal role in the analysis of data from both quantitative and qualitative instruments. Observation of hunters and hikers during the survey period, both on tracks and at huts, significantly assisted the understanding of on-site behaviours (both shared and contrasting) of the two groups. Also, valuable data were gathered through informal conversations with water taxi and charter boat operators, commercial guides, Department of Conservation field centre staff, Stewart Island locals and flight operators. A personal diary was used to record information, with notes being made throughout the day and immediately after informal conversations. The strategy used to analyse the large amount of data gathered during this phase was similar to that used

for the interviews. Themes were identified, coded and clustered for subsequent content analysis. The research received ethical approval from the University of Otago ethics committee.

Survey Results

Reflecting the international context (Franklin, 2007) the majority of hunters were male (only 2.2% of respondents were female). By contrast, females accounted for 39.8% of hiker respondents. New Zealanders accounted for the majority (87.6%) of hunters, whereas the majority of hikers (65.1%) were international tourists, with the highest percentages coming from Germany and United States (13.3% for both groups). Hikers were mostly young adults (68.7% of the sample fell into the 16-24 and 25-34 age categories). In contrast, hunters were evenly spread in age between the three age groups of 35-44, 45-54 and 55-64 years (21.9%, 27.7% and 21.2% respectively), and few respondents reported being between 65 to 74 years of age (4.4%). Only 23.3% of hunters were younger than 35 years.

Survey respondents were asked to describe their travel parties. Table 1 describes a sample of hunters that almost invariably engage in their sport hunting activity with groups of friends (median party size of seven). Hikers by contrast tend to participate in their recreational activity either independently or with a partner or friend (median party size of two). All findings of the demographics section of the survey were found to be significantly different between the two groups ($p<0.001$).

Insert Table 1 here

<u>Perceptions of Backcountry Areas</u>

Perceptions of backcountry areas were explored via a 16-item list, of which four variables indicated differences of statistical significance between the study samples (Table 2). For the most part, members of the two study groups demonstrated largely shared perceptions of backcountry areas. Both groups indicated that maintained tracks were appropriate in backcountry areas, although 14.7% of hunters indicated that maintained tracks were not at all appropriate (reflecting the tendency of hunters to follow their target animals rather than formed tracks). 'Limits set on the types of access to backcountry areas' was perceived as appropriate by hikers and neutral by hunters, but no significant difference was found between the two groups. Notably however, one-fifth of hunters (21.2%) perceived this variable as 'not at all appropriate'. This might be due to the fact that hunters, unlike hikers, tend to use motorised vehicles (e.g., helicopters, boats and fixed wing aircraft) to reach their hunting areas.

Insert Table 2 here

The sample diverged significantly in the analysis of only four variables. While hikers considered that safety information should be provided to recreationists in backcountry areas, hunters were neutral about the issue. Qualitative material supported this finding, showing that hunters rely less on information about track conditions, as they tend to move away from formed tracks; hunters are more likely to rely on independent means such as navigation devices (e.g., global positioning systems or compasses), whereas hikers tend to be more dependent on the information provided by the Department of Conservation.

Disagreement between the two groups was also found in the questions regarding road access to start of the track and receiving general information about the site through rangers. Hunters did not consider these to be appropriate, whereas hikers tended to be more supportive of these features.

Also, perceptions of the hunting of non-native animals separated the two samples. As expected, hunters strongly supported this practice whereas hikers were neutral on this issue. This result is somewhat surprising given that previous research has indicated recreational conflict based on opposing views on the hunting of animals (Fraser, 2000; Vaske *et al.*, 1995). Reasons for opposition range from animal rights advocacy arguments to feminist positions against any form of violence, including hunting of exotic animals (c.f. Kheel, 2006, Singer, 1975). This notwithstanding, a high percentage of hikers affirmed that the hunting of non-native animals is 'appropriate' or 'very appropriate' in backcountry areas (37.4%) and a further 28.9% indicated a neutral stance. 33.8% of hikers asserted that hunting was either 'not at all appropriate' or 'not appropriate'. This result is consistent with Lovelock's (2003) finding that 43% of outdoor recreationists (hunters aside) agreed that exotic deer should be exterminated from New Zealand's natural areas. As Lovelock (2003, p. 202) pointed out "these results (…) revealed that, while many valued the aesthetic of deer, they also recognized the damage they caused (to native flora)".

Place and Activity Attachment

Variables referring to place and activity attachment were the only ones in the survey to have consistent significant differences between the two groups. Place attachment here relates to the concept of resource specificity as a combination of place dependence and place identity. According to Wang and Dawson (2005, p. 299)

"place dependence refers to the importance of the resources in providing the environment the activity needs. Place identity is defined as the psychological investment with the setting. In general, empirical studies support resource specificity [which is a composition of the two concepts] as a predictor of recreation conflict" (*see also* Adelman *et al.*, 1982; Gibbons & Ruddell, 1995; Watson *et al.*, 1994).

Hikers reported neutral feelings regarding all but one of the questions; 'Participating in hiking is one of the most enjoyable things that I do' received general agreement. Hunters, on the other hand, reported different views on the same issues. 'Participating in hunting is one of the most enjoyable things I do' and 'Stewart Island means a lot to me', received strong agreement from hunters. Hunters also agreed with the statement that 'Hunting has a central role in my life'. Conversely, the statement 'I enjoy hunting on Stewart Island more than in any other place' received a neutral response from hunters, similar to that of hikers. However, although both groups presented a median rate of 3 (neutral), the distribution of responses was dramatically different leading to statistically significant differences, with hunters tending to agree and strongly agree with the statement and hikers tending to disagree.

These results suggest that hunters place more importance on their selected activity and on Stewart Island as the preferred setting for the activity (implying both place and activity attachment). In terms of activity attachment, hikers feel attached to hiking (it is also 'one of the most enjoyable things' they do), although it does not play a 'central role' in their lives. Conversely, hunters reported high activity attachment with 46.8% strongly agreeing that hunting plays a central role in their lives and 51.8% strongly agreeing that hunting is one of the most enjoyable things they do.

Insert Table 3 here

When analysing place attachment, the differences are even more striking. Only 6% of hikers strongly agreed that they enjoyed hiking on Stewart Island more than anywhere else, while 29.2% of hunters strongly agreed that they enjoyed hunting on the island more than anywhere else. Similarly, a small percentage of hikers indicated that Stewart Island had an important meaning for them (13.3%) while the majority of hunters strongly agreed with the statement (57.7%). This reflects the fact that hunters visit Stewart Island regularly and repeatedly while hikers are more typically first time and (in the case of international tourists) one-off visitors. This fact may explain why hunters presented a higher level of attachment to place than did hikers.

Environmental Values

It has been argued that conflicts tend to arise from discrepancies between values and norms (cf. Jacob & Schreyer, 1980). From a list of seven variables used to explore environmental values, the two study groups again demonstrated elements of convergence and divergence of views, with three variables presenting significantly different results (Table 4). Both groups agreed that they are more environmentally conscious when participating in hiking/hunting, a result that reflects the findings of Dawson (2003) who reported that recreationists appreciate the fragility of nature when engaging in outdoor activities. Both groups reported neutral feelings towards the statement 'the earth has plenty of natural resources if we learn how to develop them', but disagreed with the statement that 'humans have the right to modify the natural environment to suit their needs'.

Insert Table 4 here

The two groups showed a statistically significant disagreement when asked if deer are exotic animals that should be hunted. Again, hikers were neutral overall in regards to deer hunting, whereas hunters obviously were in favour of the practice. The fact that the majority of our sample was composed of international hikers might explain the neutral position found in our results; a significant part of the respondents (hikers) possibly is not aware of the exotic status of deer in New Zealand hence not feeling comfortable to make a judgment. In addition, international hikers might not have been sufficiently exposed to the concept of exotic animal hunting, as hunting in Europe and North America is largely based on native species provision. It should be noted, nonetheless, that hikers, again, were relatively approving, with a higher percentage (45.8%) actually endorsing rather than opposing (20.5%) the practice of hunting.

Hikers reported strong disagreement with the statement: 'there is no point in having a place where plants and animals are preserved, when I never actually see them', with only 12% of respondents agreeing or strongly agreeing with it. Hunters held more diverse views on this statement, with the median score falling on neutral. The two study groups differed also in their views on 'Nature has a value in itself, so preservation should be a priority when managing parks'; hikers being significantly more certain in their support of this statement.

These results point to some dissonant environmental positions, which indicate that conflicts may arise from different views based on contrasting environmental values. This point notwithstanding, findings from this section of the survey did indicate also some consistency between the groups in regard to other issues, such as access to the backcountry and the influence of outdoor recreation upon

environmentally friendly behaviour. These positive outcomes may be useful tools for developing tolerance and respect between the two groups while managing resources and conflicts in the outdoors.

Motivations for Outdoor Recreation on Stewart Island

Motivations for outdoor recreation were measured employing a list of eleven variables of which only two revealed significantly different views held by hunters and hikers (Table 5). As indicated previously, hunters travel in larger groups and tend to place high value in their travel party membership and shared experiences. Conversely, a high proportion of hikers travel alone, what might explain why this group reported that company was not a main motivation for travel. This finding is reinforced by the results from the following question, where hikers indicated that meeting people and making new friends was neutral as a motivational aspect for their travel to Stewart Island. In fact, only 27.7% of hikers reported this as being an important motivation for hiking on the island, suggesting that the social component of the trip is not of major significance for this group.

Interestingly, the various motivations for engaging in outdoor sport and recreational activities on Stewart Island are otherwise remarkably similar. This contradicts anecdotal information and previous research that infer that consumptive and non-consumptive users of natural environments have quite distinct motivations for participation (c.f. Dawson, 2003; Hammitt, 1988).

Insert Table 5 here

Reasons for Conflict in Backcountry Areas

Conflict was addressed employing an 18 variable list, of which only three highlighted diverging views held by hikers and hunters (Table 6). One divergence related to the use of motorised transport in accessing sites, and another related to the noise of motorised transport. Hunters considered both issues 'not important' and hikers were neutral about them. Nevertheless, in general, hikers were more balanced in terms of the distribution of their responses, with a similar number of participants considering the issues either not important (31.3% and 30.1% for each variable, respectively) or important (36.1% and 39.8%). On the other hand, more than half of the hunters considered the issues not important (54.7% and 52.6%), and hence explaining the significant difference found in the statistical tests.

Insert Table 6 here

'Noise of people on tracks and in huts' also provided a statistically significant point of difference between the two groups. Even though on average both groups rated the variable neutrally, the distribution of responses was again quite distinct between hikers and hunters. Hunters opted for the 'not important' end of the scale while hikers were divided between the two extremes. For 43.8% of hunters, the issue was either 'not important' or 'not at all important'. Conversely, 41% of hikers found that 'noise of people on tracks and in huts' was either an 'important' or 'very important' contributor to conflict.

'Littering' and 'Visitor behaviour/activity showing disregard to resources' were considered significant causes of conflict by both groups. These findings concur with previous research on recreational conflict as it relates to disregard for natural resources (c.f. Dustin *et al.*, 2002; Lynch *et al.*, 2004; Vittersø *et al.*, 2004).

Lastly, as expected, hunters did not perceive their activity as a cause of conflict. More surprising, although concurring with our previous results, is the fact that hikers generally agreed that hunting *per se* is not a cause of conflict.

Qualitative Findings and Discussion

Descriptive material and statistical analyses were supported and significantly enriched by in-depth insights achieved through semi-structured interviews and participant observations. In general, the qualitative material highlighted three key elements of the sport/recreation experience that can potentially lead to conflict situations. The first of these elements is user group characteristics. The surveys established that hunters travel in bigger groups (usually 4-12 people) and commonly remain based at one hut for around 10 days. The qualitative material, in addition, revealed that the sport hunting trip typically is considered the most important holiday trip of the year and is planned in detail and anticipated throughout the year. As one hunter wrote in a survey form: *"guys (are) waiting 12 months to hunt one of Stewart Island's better hunting blocks (...)"*. Another hunter said in an interview: *"I hunt in other areas as well, yeah. Stewart Island is our biggest trip of the year, it's our big holiday. So, it's the biggest trip, and most of the other ones are sort of weekends, you know, long weekends and stuff like that"*.

Beyond these descriptive accounts, interviews and observations revealed that user group characteristics provide stark contrasts between hunting and hiking experiences. Since hunters tend to be based in only one location they are relieved of the constraint of carrying all food and equipment each day from hut to hut. Thus, hunting is associated with considerable volumes of food supplies (including alcohol) that are considered luxurious, bordering on excessive, by other recreationists. As one

hunter mentioned: *"Hunters eat steak, stew, bread, etc. while trampers*[5] *eat freeze dried food and tend to get a bit jealous."* Indeed backcountry luxury items, it emerges, are an important element of the hunting experience. *"Stewart Island is a bit different, for some reason, it is like… every year we try and out-do each other and try to get something a bit different… Always someone brings something along that's something better than the year before."* Another stated that *"the fish or the venison, or whatever it happens to be, is the end result, but certainly the whole package is actually getting to that end result, you know, organizing the trip, going on the trip, the company (…)"*.

The consumption of alcohol in backcountry huts emerged as an important aspect of the hunter group characteristics. As indicated by the survey results, socialising and sharing experiences is clearly an important part of the hunting experience. Adding to this characteristic, hunting groups are almost exclusively comprised of men, who consume more alcohol, and more frequently, than do women (Anderson & Baumberg, 2006). One interviewee, talking about the consumption of beer in his hunting party, explained that *"down on Stewart Island, I mean… I've been down there when …it's been absolutely teeming, gusty winds, horrible, horrible weather, so… those little comforts come in handy then … it's just a way to keep up the good fun, I suppose"*.

The consumption of alcohol is an important point of distinction between hunters and hikers. Hikers are unable to carry such items, although some were observed carrying a bottle of wine, for instance, which in such cases is treated as an extravagance. Hunters, by contrast, tend to consume alcohol every day. Furthermore, the daily routine of hunters as it relates to the consumption of alcohol stands in

[5] 'Tramper' is the New Zealand term for overnight hikers.

contrast to hikers. As one hunter explained in reference to conflicts associated with alcohol consumption *"well, at the end of the day the hunters come back… later in the evening, trampers basically want to go to bed then. …We'll come back, we'll have our tea and most of the trampers are already in bed, and they'd wanna probably sit around, have a couple of quiet drinks, which they can't do, 'cause they got to get up and tramp, and they can't carry that sort of stuff with them. I'd say 90% it's probably alcohol related, or 80% of it alcohol related, and you know, the other 20% is probably attitude related".* Similar comments were expressed by hikers: *"Obviously hunters' hours are quite different to trampers, so they sort of hang around in the hut during the day, and they were heading… they arrived back quite late… so we only had to ask them to be quiet once so we could get to sleep, but they were very considerate".*

Interviews and observations indicated some interesting elements of host/guest and home/visitor relationships inherent in the use of huts by hunters and hikers. It has been noted that hunters are able to carry large amounts of supplies by virtue of accessing sites by motorised transport, and being more settled in terms of hut use. As a consequence, hunters are able to 'make themselves at home' in shared public-use huts. Huts that are used by hunters as bases can become cluttered with hunting equipment and supplies. With reference to this, some hikers expressed the view that huts can serve as a second home to hunters, which can make hikers feel a bit uneasy when arriving at a hut at the end of a long day. *"The life with hunters groups was strange because you seem to arrive in their house, so it doesn't give you a good impression".*

However, the impression is not always negative, as another hiker reported in an interview: *"We came across a whole lot of hunters actually, at East Ruggedy Hut,*

… they made themselves very much at home, … it was quite a large group of them… they were very friendly, they, yeah, offered us food and everything, I think, well, that's what I've come across with all hunting parties who are in huts but, yeah, they definitely spread themselves in the huts a little bit". In the case reported by this hiker: *"I felt like we were intruding a little bit because he sort of made himself quite at home"*.

In addition, taking into consideration the quantitative findings, it is possible to assert that hunters to Stewart Island are usually more attached to the setting than are hikers, contributing to this 'host' behaviour. This sentiment of place attachment is consistent with the political organisation of hunters and their active involvement in discussions on issues related to the management of the island. Stewart Island is highly valued by this group and most users are recurrent visitors who pass the 'legacy' of Stewart Island hunting from generation to generation. Hikers, in this study, were less attached to the recreational landscape and tended to be first time and one-off visitors.

The second key element of the conflict context is hut behaviour and etiquette, which forms a significant part of New Zealand's outdoor recreation norms. Use of the extensive network of hut facilities in New Zealand is governed by a hut-use etiquette that is well established in the recreational context. This etiquette includes practices such as signing the hut book on arrival and departure, keeping huts clean and tidy, removing all non-biodegradable material on departure, replacing all firewood used, sweeping floors, cleaning benches and propping up mattresses, and paying hut fees.

Non-compliance with hut etiquette is frequently reported as a cause of conflict between park users (e.g. Wray *et al.*, 2005). One common complaint raised by hunters related to hikers not restocking firewood supplies. *"Hikers are quick to*

whinge and moan about things but I've never seen a tramper restock the wood pile, go out there with a bloody saw and cut up some wood or anything, they're quite happy to use our wood. You know, that pisses me off. I've never seen them… the people that I do see cleaning huts up are generally kiwis, experienced trampers that as they leave their bunk room they give their bunk room a sweep out and, you know, is all nice and clean." It is likely that international visitors are not as familiar with such norms and might not follow them as New Zealanders generally do. However, this point was not specifically explored in interviews with hikers from international origins and remains a point for further investigation.

Another example of conflict derived from behaviour in huts is the use of water. Several hunters reported in informal conversations that they have seen hikers washing their boots in the hut sink, which for them means a waste of limited hut water supplies (typically gathered from rain water). Moreover, when the complaints do not mention cleaning boots over the hut sink they can instead relate to hikers bringing dirty boots inside the hut. *"Generally the first thing we do when we get there is, obviously after unpacking the bucket load of luggage… a couple of guys go out and got a whole lot of drift wood… and we cut heaps of wood … and also a couple of guys will clean the hut, so the hut is all nice and clean… things all packed away… And then the trampers come in with their bloody dirty boots, they don't give a shit!"*

Hut etiquette and behaviour can also be a cause of conflict for hikers. In fact, most complaints about hunters concerned hut etiquette and were particularly focused on the fact that hunters tended to use too much space and were not particularly accommodating to hikers. Nonetheless, hikers criticised hut users in general terms more often than hunters specifically; common themes revolved around untidiness,

noise and disrespect for nature. As one hiker said in an interview *"Hunters are not necessarily the 'bad guys'. It's people in general! People who have no respect for others and who end up messing up for everyone!"*

The third key theme that emerged from interviews and observations revolves around contrasting views on the use of firearms and the killing of animals. Previous studies have highlighted the potential for conflict arising from polarised views on such matters (Brower 2005; Kerasote, 1993; Lovelock, 2003; Vaske *et al*., 1995). The use of rifles by hunters have several times been associated with the display of masculinity (McLeod, 2004), and some groups, especially feminists, tend to censure the activity based on critiques of patriarchal society (Cohn, 1999). As one hunter quoted by Marx and Chavez (2002, p. 211) expressed: "The non-hunter believes we make these decisions on a desire for a macho thrill. I cannot remember that feeling ever coming over me while hunting". However, such critiques did not seem to be the case among hikers from our sample. When the use of firearms was mentioned as a cause of concern or problem, it was invariably related to safety issues.

Nevertheless, hunters on Stewart Island seemed to be very aware of this situation and tended to be considerate to other users, usually safely storing guns as well as keeping them out of sight so as not to upset or disturb hikers. *"I always put my firearm away and I generally have it beside my bed, tucked up beside the bed so they are away, out of sight, out of mind, which I just think it's a nice thing to do"*. It also seems, from the interviews and observations, that it is international visitors who are more put off by the use of firearms in outdoor settings. This may be explained in part by the fact that New Zealanders seem to be more accustomed to hunting, and therefore the use of firearms for that specific purpose, as this activity is considered a longstanding element of New Zealand outdoor culture and lifestyle (Franklin, 2006).

The killing of animals is another major issue concerning hunting in modern society. Modern forms of production have effectively distanced people from most aspects of food production (Franklin, 2007). Perhaps reflecting this point, one Stewart Island hiker reported feeling squeamish and disgusted when seeing a deer carcass hanging outside a hut. Hunters generally reject preconceived notions of hunting as animal cruelty. *"It's quite funny these people that judge other people in a way… like people that judge us to be hunting, and yet I guarantee that they all eat chicken, and I guarantee that the chicken are being [raised]… probably in a battery"*. Another stated that *"well, yeah, I mean, and that's the thing with the whole hunting thing, I mean, the animals are in the wild, generally it doesn't know that you are there, so generally doesn't know that it has been shot, and generally the kill is really quick.* Some highlighted the hypocritical elements of hunter criticism: "*As I say, it just sort of intrigues me why people… go on about hunting…you know, fine, don't eat meat then!"*

This issue notwithstanding, the potential for conflict, and actual manifestations of conflict, are overstated. Despite differences, hunters and hikers seem to share the space and their experiences in a manner that is generally harmonious. In general, few negative comments were expressed in interviews and informal conversations with either hunters or hikers. In fact, both groups reported more positive than negative experiences. Several hikers expressed interest and entertainment associated with encounters with hunters who generally were very knowledgeable and had interesting 'tales' to tell. Moreover, a number of hikers were very happy to be offered fresh fish or venison caught by hunters, as well as some fresh vegetables and a can or two of beer.*"[I] stayed in hut with 7 hunters. They were friendly and offered me food. I don't believe there is conflict between trampers and hunters."* Furthermore, another hiker

explained that, *"I think there is a natural unspoken animosity between hikers/trampers and hunters, but this is all but unapparent here… The two groups can easily coexist… If any problems with hunters are reported, I assume is hyper sensitivity and a foregone distaste for hunting seeking any outlet of indignation".* Accordingly, hunters seemed happy to meet a different lot of hikers every day, especially overseas visitors, as they felt they had learnt from, and heard about, a different culture. *"We all enjoyed the relaxation, hunting and fishing, as well as trampers. Trampers are interesting to get to know and learn of their home countries and experiences. Thanks for this opportunity." "We fed two lots of trampers with fish and they loved it!"*

Another hunter stated that *"We do our best not to cause frustration to others and like to provide them with cooked fish, cold beer and other extravagances… On this trip we offered to take a French tramper fishing (he declined because the weather was not too good and he wanted to get on the track). Previously we have taken a German tramper out fishing and he loved it (caught his first fish). I believe it is good to mix hunters and trampers as long as people are mindful of others and want them to have a good experience."*

Both the quantitative and the qualitative analyses, surprisingly, revealed little actual perceived conflict between hunters and hikers, but rather a mutual awareness of conflict concerns, and the existence of underlying and contrasting user group characteristics that offer potential for conflict. This is not unexpected given that conflicts (e.g., inter- or intra-group, symmetric or asymmetric) inevitably arise in any environment where human beings are organized into social structures (Woehrle & Coy, 2000). Kreisberg (1973) suggests identification with a group that has a developed sense of itself (e.g., the New Zealand hunting fraternity) may heighten the

potential for recreational conflict, a point supported by the fact that hunting advocacy groups have long been alienated from the Federated Mountain Clubs of New Zealand (Burrell, 1983). The quantitative phase of this research, however, is indicative of values that are actually shared to a much higher degree than expected.

Conclusion

This paper reports on a two-phase, mixed-methods study of social sustainability that identified key elements of sport/recreation experiences on Stewart Island (New Zealand) that offer potential for conflict. Interestingly, however, the majority of the results indicated similarity in the opinions of members of both groups investigated, which contradicts expectations of conflict due to discordant values and norms. It is therefore possible to assert that conflicts from polarised views will inevitably arise, as Woehrle and Coy (200) state, but are not necessarily linked to group membership, in this case hunters and hikers, but more to personal, individual characteristics. Moreover, deer hunting was relatively well accepted amongst hikers, which, again, counters previous research and local management approaches to mitigating conflict. This acceptance reflects the fact that, overall, reports of conflict were the exception rather than the rule.

Clearly conflict is an integral and inescapable part of society. In order to mitigate conflict, participatory involvement of all stakeholders may be an effective alternative to the spatial segregation of discrete user groups. In that respect, education of recreation participants is one possible management response to conflict situations that has been proposed elsewhere (c.f. Cordell & Tarrant, 2001; Hammitt & Schneider, 2000; Hawke & Booth, 2001) and that seems appropriate in the Stewart Island context. Information for hunters and hikers on backcountry behaviour norms,

extending to hut etiquette, should be complemented by interpretative materials outlining the historic introduction of exotic animals for hunting, the importance of hunting in terms of population control and in terms of personal and collective identity, as well as the prominence of hunting in New Zealand's backcountry heritage. Such an approach would counter the current argument in favour of developing dedicated hut facilities and zoning practices to segregate hunters and hikers, an approach that has been shown to be limited in effectiveness elsewhere (Cordell & Tarrant, 2001). A focus on education through interpretation could represent a move away from management based on generalised constructions of goal interference. This would signal a shift toward a social sustainability paradigm centred upon recognition of values that are shared, to a large degree, by both hunters and hikers, and to an understanding of, and respect for, values held in common by hunters and hikers.

References:

Adelman, B. J. E., Heberlein, T. A., & Bonnicksen, T. M. (1982). Social psychological explanations for the persistence of a conflict between paddling canoeists and motorcraft users in the Boundary Waters Canoe Area. *Leisure Sciences, 5*(1), 45-61.

Anderson, P., & Baumberg, B. (2006). *Alcohol in Europe: A public health perspective*. London: Institute of Alcohol Studies.

Barnett, S. (2006). *Tramping in New Zealand: 40 great New Zealand tramping trips*. Nelson: Craig Potton Publishing.

Beeton, S. (2006). Sustainable tourism in practice: Trails and tourism. Critical management issues of multi-use trails. *Tourism and Hospitality Planning & Development, 3*(1), 47-64.

Brower, M. (2005). Trophy shots: early North American photographs of nonhuman animals and the display of masculine prowess. *Society & Animals, 13*(1), 13-31.

Burrell, R. (1983). *Fifty years of mountain federation: 1931-1981*. Wellington: Federated Mountain Clubs of New Zealand.

Butler, R. (1974). How to control 1,000,000 snowmobiles? *Canadian Geographical Journal, 88*(3), 4-13.

Cohn, P. (1999). Exploding the hunting myths. In P. Cohn (Ed.), *Ethics and wildlife*, pp. 101-141. Lewiston: The Edwin Mellen Press.

Cook-Huffman, C. (2000). Who do they say we are? Framing social identity and gender in church conflict. In P. G. Coy, & L. M. Woehrle (Eds.), *Social conflicts and collective identities*, pp. 116-132. Lanham: Rowman & Littlefield Publishers.

Cordell, H. K., & Tarrant, M. A. (2001). *Forest-based outdoor recreation: Southern Forest Resource Assessment Draft Report.* Athens: Southern Research Station, USDA Forest Service; Warnell School of Forest Resources, University of Georgia.

Coughlan, D. (1996). *Conflict in the outdoors: Mountain biking - A case study.* Paper presented at the Tourism Down Under II: Towards a more sustainable tourism, Dunedin.

Dawson, J. (2003). *Environmental values of consumptive and nonconsumptive marine tourists in the South Island of New Zealand*. Master's Thesis, Department of Tourism, University of Otago, Dunedin.

Department of Conservation (2006). *Stewart Island/Rakiura conservation management strategy review and Rakiura National Park management plan*

preparation. Discussion Document. Invercargill: Southland Conservancy, Department of Conservation.

Department of Conservation (2007a). Track categories. Retrieved June 2007 from http://www.doc.govt.nz/templates/summary.aspx?id=38516.

Department of Conservation (2007b). *Homepage*. Retrieved September 2007 from http://www.doc.govt.nz/index.html.

Dunn, D. R. (1970). Motorized recreation vehicles...on borrowed time. *Parks and Recreation, 5*(7), 10-14, 46-52.

Dustin, D. L., Scheneider, I. E., McAvoy, L. H., & Frakt, A. N. (2002). Cross-Cultural Claims on Devils Tower National Monument: A Case Study. *Leisure Sciences, 24*, 79-88.

Franklin, A. (2006). *Animal nation: The true story of animals and Australia*. Sydney: UNSW Press.

Franklin, A. (2007). Human-nonhuman animal relationships in Australia: An overview of results from the first national survey and follow-up case studies 2000-2004. *Society & Animals, 15*, 7-27.

Fraser, K. W. (2000). *Status and conservation role of recreational hunting on conservation land* (Vol. 140). Wellington: Department of Conservation.

Gibbons, S., & Ruddell, E. J. (1995). The effect of goal orientation and place dependence on select goal iterferences among winter backcountry users. *Leisure Sciences, 17*(3), 171-183.

Hall, C. M., & Higham, J. (2000). Wilderness management in the forests of New Zealand: Historical development and contemporary issues in environmental management. In X. Font, & J. Tribe (Eds.), *Forest tourism and recreation:*

Case studies in environmental management, pp. 143-160. Cambridge: CABI Publishing.

Hammitt, W. E. (1988). *The spectrum of conflict in outdoor recreation.* Paper presented at the Outdoor Recreation Benchmark: National Outdoor Recreation Forum, Tampa, Florida.

Hammitt, W. E., & Schneider, I. E. (2000). Recreation conflict management. In W. C. Gartner, & D. W. Lime (Eds.), *Trends in outdoor recreation, leisure and tourism*, pp. 347-356. Oxon: CABI Publishing.

Hawke, N., & Booth, K. (2001). *Conflict between sea-kayakers and motorised watercraft users along the Abel Tasman National Park coastline, New Zealand* (No. 50). Christchurch: Lincoln University.

Heer, C., Rusterholz, H.-P., & Baur, B. (2003). Forest perception and knowledge of hikers and mountain bikers in two different areas in Northwestern Switzerland. *Environmental Management, 31*(6), 709-723.

Jacob, G. R., & Schreyer, R. (1980). Conflict in outdoor recreation: A theoretical perspective. *Journal of Leisure Research, 12*(4), 368-380.

Kearsley, G. (2000). Balancing tourism and wilderness qualities in New Zealand's native forests. In X. Font & J. Tribe (Eds.), *Forest tourism and recreation: case studies in environmental management*, pp. 75-91. Cambridge: CABI Publishing.

Kerasote, T. (1993). *Bloodties: Nature, culture, and the hunt*. New York: Kodansha International.

Kheel, M. (2006). The killing game: An ecofeminist critique of hunting. *Journal of the Philosophy of Sport, 23*(1): 30-44.

Knopp, T. B., & Tyger, J. D. (1973). A study of conflict in recreational land use: snowmobiling vs. ski-touring. *Journal of Leisure Research, 5*(3), 6-17.

Kriesberg, L. (1973). *The sociology of social conflicts*. Englewood Cliffs: Prentice Hall.

Kriesberg, L. (1998). *Constructive conflict: From escalation to resolution.* Lanham: Rowman & Littlefield.

Krippendorff, K., & Bock, M. (2008). *The content analysis reader*. Thousand Oaks: Sage.

Lindsay, J. J. (1980). *Trends in outdoor recreation activity conflicts.* Paper presented at the National Recreation Symposium, Upper Darby, PA.

Lovelock, B. (2003). International and domestic visitors' attitudes as constraints to hunting tourism in New Zealand. [research note]. *Journal of Sport Tourism, 8*(3), 197-203.

Lucas, R. C. (1964). Wilderness perception and use: The example of the Boundary Waters Canoe Area. *Natural Resources Journal, 3*, 394-411.

Lynch, T. P., Wilkinson, E., Melling, L., Hamilton, R., MacReady, A., & Feary, S. (2004). Conflict and impacts of divers and anglers in a marine park. *Environmental Management, 33*(2), 196-211.

McLeod, C. (2004). *Pondering nature: An ethnography of duck hunting in southern New Zealand*. PhD thesis, University of Otago, Dunedin.

Mann, C., & Absher, J. (2008). Recreation conflict potential and management implications in the northern/central Black Forest Nature Park. *Environmental Planning and Management, 51*(3), 363-380.

Marx, M., & Chavez, D. J. (2002). Conflict and coalitions: an examination of outdoor recreation magazines. *Environmental Management, 29*(2), 207-216.

Reis, A.C. (2008). *An empirical study of visitor conflicts in New Zealand Southland Conservancy: The case of hunters and trampers on Stewart Island.* Dunedin: Centre for Recreation Research, University of Otago.

Schuster, R., Hammitt, W., & Moore, D. (2006). Stress appraisal and coping response to hassles experienced in outdoor recreation settings. *Leisure Sciences, 28*(2), 97-113.

Schuster, R., Hammitt, W., Moore, D., & Schneider, I. (2006). Coping with stress resulting from social value conflict: Non-hunters response to anticipated social interaction with hunters. *Human Dimensions of Wildlife, 11*(2), 101-113.

Singer, P. (1975). *Animal liberation: A new ethics for our treatment of animals*. New York: Avon Books.

Standard New Zealand (2004). *Tracks and outdoor visitor structures*. Wellington: Standard New Zealand.

Star, P. (2002). Native forest and the rise of preservation in New Zealand (1903-1913). *Environment and History, 8*(3), 275-294.

Star, P. (2003). New Zealand environmental history: A question of attitudes. *Environment and History, 9*(4), 463-475.

Stewart Island Promotion Association (2007). *Stewart Island official visitor guide 2007-2008: Island of tranquillity*. Stewart Island: Stewart Island Promotion Association.

Vaske, J. J., Donnelly, M. P., Wittmann, K., & Laidlaw, S. (1995). Interpersonal versus social-values conflict. *Leisure Sciences, 17*(3), 205-222.

Vaske, J. J., Carothers, P., Donnelly, M. P., & Baird, B. (2000). Recreation conflict among skiers and snowboarders. *Leisure Sciences, 22*, 297-313.

Vittersø, J., Chipniuk, R., Skar, M., & Vistad, O. I. (2004). Recreational conflict is affective: The case of cross-country skiers and snowmobiles. *Leisure Sciences, 26*(3), 227-243.

Wang, C.-P., & Dawson, C. P. (2005). Recreation conflict along New York's Great Lakes Coast. *Coastal Management, 33*, 297-314.

Watson, A. E., Niccolucci, M. J., & Williams, D. R. (1994). The nature of conflict between hikers and recreational stock users in the John Muir Wilderness. *Journal of Leisure Research, 26*(4), 372-385.

Willis, M. (2002). Who has the right to recreate? User conflict in the outdoors. *New Zealand Journal of Outdoor Education, 1*(1), 60-67.

Woehrle, L. M., & Coy, P. G. (2000). Collective identities and the development of conflict analysis. In P. G. Coy, & L. M. Woehrle (Eds.), *Social conflicts and collective identities*, pp. 1-15. Lanham: Rowman & Littlefield Publishers.

Wray, K., Harbrow, M., & Kazmierow, B. (2005). *Planning for visitor management at Mason Bay (Rakiura National Park, Stewart Island)*. DOC Research & Development Series 222. Wellington: Science & Technical Publishing, Department of Conservation.

Table 1: Sport Hunting and Recreational Hiking Travel Parties

Travel party		Solo	Recreational club	Partner	Children	Educational group	Friends	Other *	Total
Hunters	n	2	13	4	6	1	125	2	137
	%	1.5	9.5	2.9	4.4	0.7	91.2	1.5	
Hikers	n	22	0	28	5	0	29	4	83
	%	26.5	0.0	33.7	6.0	0.0	34.9	4.8	
Total	n	24	13	32	11	1	154	6	220
	%	10.9	5.9	14.5	5.0	0.5	70.0	2.8	100

* 'Other' responses included 'With Parent' and 'With Family'

Table 2: Perceptions of Backcountry Areas (%)

Variables	Hunters						Hikers					
	Not at all appropriate (1)	Not appropriate (2)	Neutral (3)	Appropriate (4)	Very Appropriate (5)	*Median*	Not at all appropriate (1)	Not appropriate (2)	Neutral (3)	Appropriate (4)	Very Appropriate (5)	*Median*
To be provided with track/trail safety information	**12.7**	**24.6**	**23.9**	**14.9**	**23.9**	***3***	**1.2**	**1.2**	**10.8**	**26.5**	**60.2**	***5***
To receive general info about the site through brochures, maps, etc.	4.4	16.2	24.3	27.2	27.9	*4*	1.2	1.2	20.7	37.8	39.0	*4*
To encounter and receive general info about the site through rangers	**23.1**	**29.1**	**29.1**	**14.2**	**4.5**	***2***	**4.9**	**12.2**	**42.7**	**23.2**	**17.1**	***3***
To encounter and receive general info about the site through guides	42.9	27.1	18.8	8.3	3.0	*2*	24.4	26.8	31.7	9.8	7.3	*2*
To have road access to start of track	**38.3**	**19.5**	**16.5**	**11.3**	**14.3**	***2***	**13.3**	**19.3**	**27.7**	**26.5**	**13.3**	***3***
Provision of huts and shelters	1.5	5.8	19.7	21.9	51.1	*5*	2.4	3.7	14.6	26.8	52.4	*5*
Provision of campsites	4.4	9.5	23.4	25.5	37.2	*4*	4.8	3.6	24.1	30.1	37.3	*4*
Maintained tracks	14.7	19.9	22.8	17.6	25.0	*3*	0	14.6	26.8	26.8	31.7	*4*
To have gas provided in huts for cooking	51.5	20.6	13.2	8.1	6.6	*1*	39.8	27.7	15.7	9.6	7.2	*2*
Guided hunting	66.7	18.5	11.9	1.5	1.5	*1*	45.1	25.6	20.7	4.9	3.7	*2*
Guided tramping/hiking	51.5	18.8	21.1	6.8	2.3	*1*	36.1	28.9	27.7	3.6	3.6	*2*
Hunting non-native animals	**5.2**	**2.2**	**5.9**	**10.4**	**76.3**	***5***	**20.5**	**13.3**	**28.9**	**14.5**	**22.9**	***3***
Commercial extraction of natural resources	53.0	16.7	22.0	5.3	3.0	*1*	54.9	26.8	12.2	4.9	1.2	*1*
Marketing campaigns to promote visits to National	17.2	25.4	35.1	17.2	5.2	*3*	15.7	19.3	33.7	19.3	12.0	*3*

Parks												
Limits set on the numbers of users	8.0	11.7	31.4	29.9	19.0	*3*	4.8	15.7	36.1	30.1	13.3	*3*
Limits set on the types of access	21.2	13.1	30.7	22.6	12.4	*3*	5.1	10.1	32.9	36.7	15.2	*4*

* Variables presenting statistically significant differences between hunters and hikers at $p<0.01$ level are presented in bold.

Table 3: Place and Activity Attachment (%)

Variables	Hunters						Hikers					
	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	*Median*	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	*Median*
Hunting /Hiking has a central role in my life	**5.1**	**12.4**	**25.5**	**13.1**	**43.8**	***4***	**6.0**	**15.7**	**44.6**	**22.9**	**10.8**	***3***
Participating in hunting/hiking is one of the most enjoyable things that I do	**2.2**	**5.1**	**15.3**	**25.5**	**51.8**	***5***	**1.2**	**2.4**	**30.1**	**48.2**	**18.1**	***4***
I enjoy hunting/hiking on Stewart Island more than in any other place	**2.9**	**11.7**	**36.5**	**19.7**	**29.2**	***3***	**6.0**	**27.7**	**41.0**	**19.3**	**6.0**	***3***
Stewart Island means a lot to me	**0.7**	**2.2**	**19.7**	**19.7**	**57.7**	***5***	**4.8**	**19.3**	**34.9**	**27.7**	**13.3**	***3***

* Variables presenting statistically significant differences between hunters and hikers at $p<0.01$ level are presented in bold.

Table 4: Environmental Values (%)

Variables	Hunters						Hikers					
	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	*Median*	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	*Median*
If access is controlled in any way, there should be no difference between local residents and non-residents	14.2	6.0	17.9	20.9	41.0	*4*	13.8	12.5	18.8	18.8	36.3	*4*
Deer are an exotic animal that should be hunted	**5.2**	**2.2**	**10.4**	**14.2**	**67.9**	***5***	**6.0**	**14.5**	**33.7**	**16.9**	**28.9**	***3***
Humans have the right to modify the natural environment to suit their needs	47.1	26.5	19.1	3.7	3.7	*2*	30.1	42.2	19.3	6.0	2.4	*2*
The earth has plenty of natural resources if we learn how to develop them	9.0	18.8	34.6	17.3	20.3	*3*	15.7	20.5	26.5	24.1	13.3	*3*
There is no point in having a place where plants and animals are preserved, when I never actually see them	**34.3**	**14.9**	**14.2**	**11.2**	**25.4**	***3***	**67.1**	**14.6**	**6.1**	**6.1**	**6.1**	***1***
I am more environmentally conscious when I participate in tramping/hunting than in my everyday life at home	10.4	8.9	19.3	31.1	30.4	*4*	16.9	12.0	20.5	27.7	22.9	*4*
Nature has a value in itself, so preservation should be a priority when managing parks.	**3.0**	**3.0**	**30.4**	**29.6**	**34.1**	***4***	**2.4**	**3.6**	**8.4**	**25.3**	**60.2**	***5***

* Variables presenting statistically significant differences between hunters and hikers at $p<0.01$ level are presented in bold.

Table 5: Motivations for Outdoor Recreation on Stewart Island (%)

Variables	Hunters						Hikers					
	Not at all important (1)	Not important (2)	Neutral (3)	Important (4)	Very Important (5)	*Median*	Not at all important (1)	Not important (2)	Neutral (3)	Important (4)	Very Important (5)	*Median*
Exploring new areas	0.0	2.9	10.3	29.4	57.4	*5*	3.6	2.4	3.6	30.1	60.2	*5*
Challenging your skills	2.9	4.4	19.1	32.4	41.2	*4*	1.2	9.6	26.5	33.7	28.9	*4*
Physical exercise	2.9	5.1	27.9	29.4	34.6	*4*	1.2	2.4	19.3	42.2	34.9	*4*
To be able to tell others about my experience	**3.7**	**7.4**	**20.6**	**25.0**	**43.4**	***4***	**9.6**	**19.3**	**24.1**	**28.9**	**18.1**	***3***
Absence of people	5.9	7.4	23.7	25.2	37.8	*4*	3.6	14.5	31.3	28.9	21.7	*4*
Natural peace and quiet	0.0	1.5	18.4	24.3	55.9	*5*	0.0	1.2	14.5	37.3	47.0	*4*
Being with friends and/or family	**2.2**	**1.5**	**16.3**	**29.6**	**50.4**	***5***	**22.2**	**7.4**	**16.0**	**27.2**	**27.2**	***4***
Meeting people and making new friends	19.9	14.0	24.3	20.6	21.3	*3*	24.1	19.3	28.9	21.7	6.0	*3*
To encounter wilderness/ untouched nature	0.7	3.7	15.4	30.9	49.3	*4*	0.0	1.2	6.0	33.7	59.0	*5*
Self awareness/contemplation	5.2	12.7	35.8	20.1	26.1	*3*	8.4	15.7	26.5	28.9	20.5	*3*
To get away from life's pressure	3.7	8.1	15.4	22.1	50.7	*5*	9.6	10.8	18.1	26.5	34.9	*4*
To learn about and see New Zealand's flora/fauna/natural systems	2.2	14.0	23.5	29.4	30.9	*4*	1.2	3.6	16.9	33.7	44.6	*4*

*Variables presenting statistically significant differences between hunters and hikers at $p<0.01$ level are presented in bold.

Table 6: Reasons for Conflict in Backcountry Areas (%)

Variables	Hunters						Hikers					
	Not at all important (1)	Not important (2)	Neutral (3)	Important (4)	Very Important (5)	*Median*	Not at all important (1)	Not important (2)	Neutral (3)	Important (4)	Very Important (5)	*Median*
Use of motorised transport	**30.1**	**25.0**	**16.5**	**11.0**	**7.4**	***2***	**10.0**	**22.5**	**30.0**	**25.0**	**12.5**	***3***
Noise of people on tracks and in huts	**25.2**	**19.3**	**31.9**	**14.8**	**8.9**	***3***	**6.3**	**20.0**	**31.3**	**27.5**	**15.0**	***3***
Noise of motorised transport (planes, helicopters, boats, etc.)	**30.1**	**24.1**	**27.8**	**13.5**	**4.5**	***2***	**11.1**	**19.8**	**28.4**	**23.5**	**17.3**	***3***
Search and rescue operations	55.6	15.6	11.9	3.7	13.3	*1*	57.0	19.0	19.0	1.3	3.8	*1*
Restricted access to certain forms of recreation (e.g. bikes, horses)	28.8	15.9	20.5	14.4	20.5	*3*	25.3	22.8	22.8	20.3	8.9	*3*
Restricted group size	26.5	15.2	33.3	17.4	7.6	*3*	19.0	31.6	24.1	16.5	8.9	*2*
Air access	35.1	15.7	32.1	8.2	9.0	*2*	17.7	22.8	43.0	8.9	7.6	*3*
Commercial groups	19.7	12.9	24.2	22.0	21.2	*3*	8.8	11.3	36.3	26.3	17.5	*3*
Use of mobile phones	50.4	10.5	22.6	7.5	9.0	*1*	25.0	21.3	30.0	8.8	15.0	*3*
Use of GPS	54.9	8.3	12.8	5.3	18.8	*1*	46.3	26.3	22.5	5.0	0.0	*2*
Littering	3.7	1.5	7.5	17.6	69.9	*5*	2.5	3.8	13.8	16.3	63.8	*5*
Hunting	39.7	14.7	19.9	8.1	17.6	*2*	13.8	22.5	33.8	22.5	7.5	*3*
Crowding	12.6	9.6	23.0	23.7	31.3	*4*	3.8	5.1	15.2	38.0	38.0	*4*
Unsafe behaviours	9.0	11.2	19.4	14.2	46.3	*4*	8.9	10.1	21.5	21.5	38.0	*4*
Visitor behaviour/activity causing track damage	9.6	7.4	20.6	23.5	39.0	*4*	7.5	5.0	23.8	28.8	35.0	*4*
Visitor behaviour/activity causing wildlife disturbance	9.0	9.0	20.9	20.9	40.3	*4*	5.0	5.0	18.8	27.5	43.8	*4*
Visitor behaviour/activity showing disregard to resources	5.2	5.2	16.3	17.8	55.6	*5*	6.3	3.8	13.8	32.5	43.8	*4*

Consumption of alcohol	31.9	16.3	31.1	9.6	11.1	*3*	22.5	17.5	37.5	13.8	8.8	*3*

*Variables presenting statistically significant differences between hunters and hikers at $p<0.01$ level are presented in bold.