Monitoring and Management of Visitor Flows in Recreational and Protected Areas
Conference Proceedings ed by A. Arnberger, C. Brandenburg, A. Muhar 2002, pages 109-114

Resolving Inter-Group Conflict in Winter Recreation: Chilkoot Trail National Historic Site, British Columbia

Siobhan Jackson[1], Wolfgang Haider[2], Tom Elliot[3]

[1] School of Resource and Environmental Management, Simon Fraser University
Burnaby, BC, Canada
Email: siobhan.jackson@shaw.ca
[2] Assistant Professor
School of Resource and Environmental Management, Simon Fraser University
Burnaby, BC, Canada
Email: whaider@sfu.ca
[3] Visitor and Wilderness Management Research, Parks Canada, Parks Canada
Whitehorse, YT, Canada
Email: tom_elliot@pch.gc.ca

Abstract: The Chilkoot Trail National Historic Site, in British Columbia, Canada, is well-known for its summer historic gold rush hiking route, and is popular in the winter with local residents for skiing, snowmobiling and other winter sports. Park managers implemented a strategy of temporal segregation to mitigate known conflicts between motorised and non-motorised winter users. This study evaluated the effectiveness of separating users, by monitoring visitor satisfaction and support for the management strategy, and assessing the key differences between user groups within the theory of asymmetrical conflict. The results show that separating users does increase satisfaction for non-motorised users; however, support for controlled access is moderate to low among all users. This study alerts park managers using direct tools such as controlled access, in that dissatisfaction may shift from those who were most affected by the inter-group conflict (non-motorised users) to the motorised group, who are dissatisfied with increased access limitations and loss of freedom.

INTRODUCTION

Park areas with regionally important winter recreation opportunities attract diverse, and sometimes competing, recreationists. This can present managers and recreationists with a variety of challenges, such as conflicting recreation values, motivations and behaviours that can negatively impact on other visitors' use, satisfaction or safety.

At 140km from Whitehorse, Yukon Territories, Canada, the Chilkoot Trail National Historic Site (CTNHS) is seemingly distant from local populations, however it is a regionally important winter recreation resource to residents of Juneau and Skagway (Alaska), Whitehorse and nearby Northern BC communities (Figure 1). With few roads in the area, this site's good terrain, leeward weather and snow conditions offer some of the region's best, most accessible ski and snowmobile opportunities.

The challenge then is how to provide a quality winter outdoor recreation experience for a diverse, and sometimes competing, range of visitors. Knowledge about what motivates individuals, what factors increase or decrease satisfaction, and testing the effectiveness of conflict management strategies will contribute to the tool-kit for resolving inter-group recreation conflict. This study offered an opportunity to explore all three of these issues, and

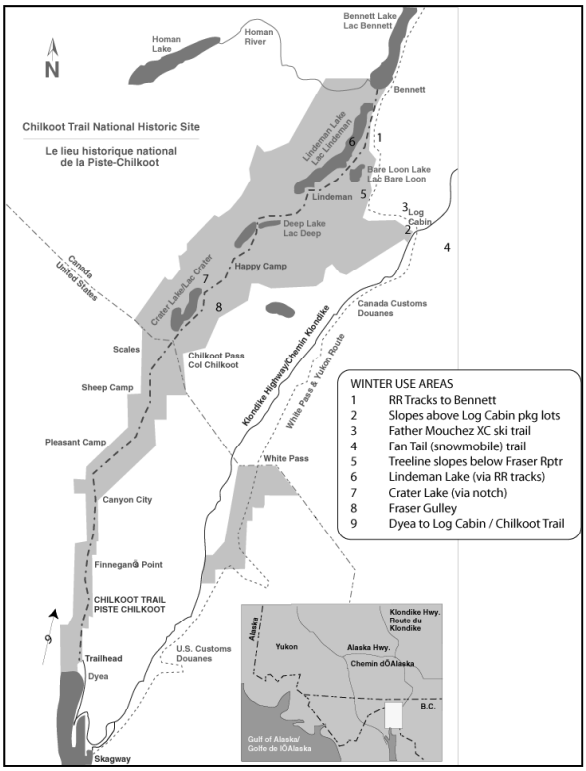

Figure1, Study area: Chilkoot Trail National Historic Site, BC (Parks Canada, modified)

to see where are the greatest chance of achieving balanced allocation of resources and opportunity across competing recreation interests.

Prior to 1997/98 CTNHS park management was aware of dissatisfaction and recreation conflict at the site. Using a multi-stakeholder approach to decision-making, they jointly developed the Winter Recreation Use Strategy (WRUS). The WRUS addressed recreation conflict through designating "non-motorised" only weekends, and proposing separate trails and parking areas. It also contained elements directed at clarifying public safety responsibilities and heritage/artifact protection.

PREVIOUS WINTER RECREATION CONFLICT RESEARCH

Increasing competition for outdoor resources on a limited public land base fuels conflict situations. Combined with a growing population, both participation rates and frequency of participation have steadily increased in almost all outdoor recreation activities (Cordell 1997). As participation in winter recreation increases and evolves, so does the potential for conflict between non-motorised and motorised recreationists (often referred to as simply skier - snowmobiler conflict). Recent changes in snowmobile technology and design enable these machines to travel on steep slopes and through deep snow, terrain formerly accessible only by helicopter or skis.

Several studies have sought to understand the activity specific motivations of skiers and snowmobilers. Jackson and Wong (1982) found three distinct motivational dimensions: natural environment, escapism, and socialization. Cross-country skiers indicated a greater importance on the natural environment, including quiet and undisturbed nature, while snowmobilers perceived a greater importance on escapism and socialization factors, such as adventure, being away from work/TV/home and being with family and meeting others (Jackson and Wong 1982, 57-58).

Similar differences were found in earlier work by McCool and Curtis (1980). Nature learning/ appreciation was the most important and stress release/solitude was the least important dimension for skiers. Affiliation (socialization) was most important for snowmobilers, while competence/ challenge was the least important.

In addition to personal motivation, activity specialisation is also a source of recreation conflict, between activity groups (Muth and Fairey 1995; Devall and Harry 1981). The general hypothesis is that user-perceived crowding results not only from too many users, but also from the mix of various technologies at the site. Additionally, the "low-tech" activities are often characterised by quiet, slow speed, and an appreciation for nature, while the increasingly "high-tech" activities are defined by parallel increases in speed and noise (Devall and Harry 1981).

All of these studies *(and more, see references)* describe distinct differences between the motorised and non-motorised winter recreation groups, equipment and technology, motivation, and sensitivity to others' activities. As many of the skiers' goals are based on physical setting attributes, such as nature and quiet, conflict is likely when an area is shared with snowmobilers. As many of the goals of snowmobilers are based on experiential and social attributes (e.g. adventure and being with family/friends) the presence of skiers during their recreation is unlikely to have a negative impact.

A different angle toward resolving recreation conflict was highlighted in a recent study of winter visitors in Yellowstone National Park (Borrie *et al* 1999). Researchers found that visitor expectations played a large role in visitors' acceptance of encountering other visitors. When visitors expected to encounter others they were generally accepting of those encounters. Similarly, when people had more encounters than they expected, they were less tolerant of the encounters (Borrie *et al* 1999). This outcome suggests that intolerance for encounters may be reduced by ensuring visitors are informed of and prepared for the experiences they will have during their recreation visit. For example, educating visitors that a recreation area is multi-use enables them to arrive with appropriate expectations or to move to a single-use different area.

METHODS

The primary tool for assessing the effectiveness of the WRUS was an on-site visitor survey administered over 10 weeks during the first year of implementation (1997/98). Questions about visitor motivations, achievement and areas of satisfaction and dissatisfaction enabled comparisons with earlier recreation conflict studies done in areas without an active conflict resolution strategy.

Visitor motivations for visiting CTNHS were measured using a modified Recreation Experience Preference (REP) motivation scale (McCool and Curtis 1980, 65). A 26 item motivation scale was used to identify and quantify the relative importance of different psychological and physical outcomes that are desired and expected from recreation participation.

In a related area of investigation *goal achievement* was explored, with visitors asked to rank the extent to which they had achieved each possible REP motivation. This question allows examination of a key element of recreation conflict theory, that of *asymmetrical goal interference*, where the goals of different recreation groups are unevenly affected (Jacob and Schreyer 1980; Horn *et al* 1994; Jackson and Wong, 1982). The approach is derived from Importance-Performance Analysis in the field of marketing research (Martilla and James 1977).

A more direct approach to measuring inter-group conflict was also applied, through asking

respondents how inter-group encounters influenced their recreation experience in different park areas.

Visitors' perception of problems was measured using a list of potential problem items - those related to inter-group conflict were noise associated with motorised or non-motorised users, activities of motorised or non-motorised users.

Finally, this study afforded the unique opportunity to understand if the direct management tool, segregation, was a) supported by visitors; and b) redressed the satisfaction imbalance between activity groups. This was done by asking the degree to which actual visitors (constituents) agreed with the strategy developed *on their behalf* by the stakeholder group and Parks Canada.

SELECTED RESULTS

Motivation - Importance - Achievement

Respondents were asked how important a series of 26 possible motivations were in regard to their current trip. Next they were asked how well they achieved those motivations during their visit. For each group (motorised and non-motorised), the relative performance of an item was compared against that same item's importance, creating a measure of achievement (Figure 2).

Select results demonstrate that non-motorised

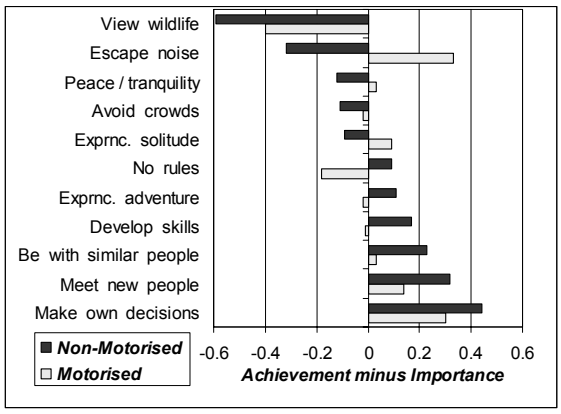

Figure 2. Importance-Performance Matrix (modified from Jackson 2001).

visitors generally "under-achieved" their desire to view wildlife, escape noise, experience peace/tranquillity, avoid crowds and experience solitude. Non-motorised users surpassed their importance values in a number of areas, including making own decisions, meeting new people, being with people who enjoy the same things, develop skills, experience adventure and having "no rules".

Motorised visitors "under-achieved" in viewing wildlife and having "no rules". However, they surpassed their importance values for escaping noise, meeting new people and making own decisions.

Categorizing Visitors by Motivation

The primary difference between motorised and non-motorised visitors is the strength of the nature-based component for non-motorised users (Figure 3). As found in other recreation conflict studies, in both winter and non-winter recreation settings, expectations and goals may lay the foundation for conflict to arise from inter-group encounters (Jacob and Schreyer 1980; Jackson and Wong 1982; Borrie *et al* 1999). Viewed this way, skiers are almost "setting themselves up" for disappointment when venturing into a multi-use area if they are seeking a peaceful, nature-based experience. The moment a snowmobile enters the area, there is the potential for the skier to experience goal-interference. Conversely, the snowmobilers in this study were likely seeking social interaction, and challenge/adventure. The snowmobilers' goals are not apt to be affected by skiers' presence and activities. Hence we see the basis for asymmetrical conflict to occur on-site, and for goal-interference to impede the skiers' enjoyment of the area.

Encounters With Other Users

Encounters with motorised users, in all locations, detracted from recreational experiences for non-motorised users. Conversely, encounters with non-motorised users, in all locations, enhanced recreation experiences statistically significantly more for non-motorised users than for motorised users. This result is unsurprising, in that for both groups encounters with nother similar users enhanced experiences more so than encounters with other types of users.

Perception of Problems

The concept of asymmetrical inter-group conflict is further evident in the problem areas indicated by each group. Non-motorised users found, the noise and activities of motorised users were, respectively, a serious (22%) and very serious (16%) problem. Conversely, no motorised respondents indicated problems with the noise or activities of either motorised or non-motorised visitors. A small number of motorised visitors (about 8%) indicated "too many rules" as a serious problem.

As no other problems were identified from the diverse list of potential issues, this would suggest that the main source of dissatisfaction for any visitors is related to the noise and activities of motorised users.

Support for Strategy

Respondents were asked about the extent to which they opposed or supported each component of the WRUS. There were no statistically

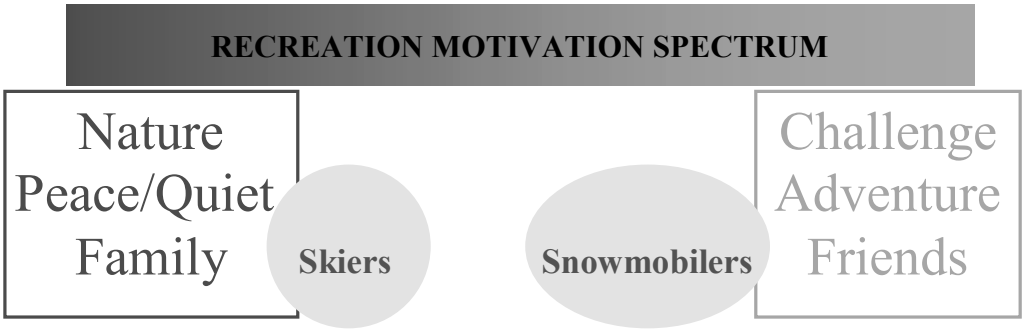

Figure3. Recreation Motivation Spectrum for Winter User Groups on the Chilkoot Trail

significant differences between motorised and non-motorised users with respect to winter users responsible for their own safety, and the construction of a new lot for motorised users. The pattern that was evident however, was that motorised users were significantly more opposed than non-motorised users to all components of the strategy. Simply put, motorised visitors are more likely to object to direct management actions.

CONCLUSIONS AND OUTLOOK

Perhaps the most significant finding of this research is the empirical evidence that separating use, by location and by time of use, does reduce inter-group conflict. As motorised users were earlier identified as causing, not experiencing, conflict, management prohibited their access on every third weekend. On restricted weekends, non-motorised users had sole access to the park without the presence of snowmobiles. This restriction did increase skier satisfaction, both overall and even more so on restricted weekends, by reducing the negative effects of inter-group encounters experienced by non-motorised users. Conversely, motorised users did indicate less support for restrictive measures, although it is notable that motorised user satisfaction is still high overall. As most visitors ski or snowmobile at the CTNHS multiple times each season, knowledge of the restricted use policy will likely improve acceptance over time by all groups by enabling their planning of their recreational activities around the weekend restrictions.

Furthermore, the WRUS strategy was generally supported by all respondents, although it was developed through a stakeholder based participation process. This finding demonstrates that enabling stakeholder representatives to speak, act and make decisions on behalf of their "constituents" is an efficient yet publicly inclusive method of resolving inter-group conflict.

While the strength of support for different winter management strategies differed between activity groups, the general rank preference was similar between the groups. For example, both groups agreed with improved parking lot maintenance and trail signage, and generally disagreed with permanent trail closures. A strong general pattern showed motorised respondents were less supportive of restrictions and closures than of improved facilities. Non-motorised respondents preferences were less black and white; they supported some forms of restrictions but tended not to highly support new facilities or infrastructure, unless it served to separate the two activity groups.

In understanding the basic motivators for each group, this study determined that not all goals differ, although there are key differences between motorised and non-motorised visitors. Both groups were motivated by social interactions, whereas motorised visitors also sought challenge and adventure while non-motorised visitors focused on nature and solitude.

This study's findings regarding motivations, expectations and conflict mitigation align with a recent multi-site Yellowstone winter recreation study (Borrie *et al* 1999), in which it is suggested that expectations of encounters play a major role in the tolerance for or effect of those encounters. There is a high potential that as the winter recreation management strategies for the Chilkoot Trail area become better known amongst local users, winter recreationists will arrive on-site with expectations that are attuned with actual circumstances. Skiers will be able to plan their visit for non-motorised weekends, if that is important to them. If they arrive on multi-use weekends, they will do so expecting to encounter snowmobiles.

FURTHER RESEARCH

As evidenced in this study, there is a clear need to monitor the cumulative effect of conflict resolution strategies across user groups. Do the management actions achieve the desired result of reducing conflict and increasing visitor satisfaction? Are there sufficient alternative areas for all visitors to pursue their activities in the region, or does a single area continue to draw negative inter-group conflict? Are there satisfactory ways for traditionally conflicting activity groups to equitably

share a recreation area? Focusing on adaptive management solutions to conflict enables recreation managers to continue to provide or create high quality recreation experiences.

The nature of a northern Canadian population raises the possibility that the "non-motorised" visitors in this study could in fact be snowmobilers on another day, or in another place. This study did not ask visitors to identify any crossover of activity participation between motorised and non-motorised activities. The nature of the inter-group conflict may in fact be more dramatic than this study showed if "cross-over" participants were filtered during analysis.

Finally, further exploration of the conditions under which asymmetrical conflict becomes symmetrical. It is possible that the source group of conflict, in this study motorised users, might also experience conflict when the affected group becomes active in their efforts to ban or limit the activities of the "causal" group. In this case, it is possible that if skiers become more active and more successful in having limits placed on the activities of snowmobilers, then snowmobilers will develop a negative effect caused by skiers (Horn *et al* 1994).

REFERENCES

Borrie, William T., Wayne A. Freimund, Mae A. Davenport, Robert E. Manning, William A. Vallerie and Ben Wang. 1999. Winter Visit and Visitor Characteristics of Yellowstone National Park. University of Montana, School of Forestry.

Cordell, Ken H. *et al.* 1997. Outdoor Recreation in the United States: Results from the National Survey on Recreation and the Environment. US Forest Service.

Devall, Bill and Joseph Harry. 1981. Who Hates Whom in the Great Outdoors: The Impact of Recreational Specialisation and Technologies of Play. *Leisure Sciences* 4(4): 399-418.

Elliot, Tom W. 1994. *Attitudes Toward Limiting Overnight Use Of Chilkoot Trail National Historic Site*. MSc. Thesis; University Of Montana, MT.

Elliot, Tom W. 1996. Letting the Users Decide: Chilkoot Trail National Historic Site. In A. Davis, S. Jackson and P. Wright. Eds. *Managing Visitors in Wilderness Environments: Parks Canada's Western Workshop*. P. 46.

Gibbons, Shannon, and Edward J. Ruddell. 1995. The Effect of Goal Orientation and Place Dependence on Select Goal Interferences Among Winter Backcountry Users. *Leisure Sciences* 17(3): 171-183.

Gramann, James H., and Rabel J. Burdge. 1981. The Effect of Recreation Goals on Conflict Perception: The Case of Water Skiers and Fishermen. *Journal of Leisure Research* 13(1): 15-27.

Gray, George and Neil Guppy. 1999. *Successful Surveys: Research Methods and Practice*. 2nd ed. Harcourt Brace & Company Canada, Ltd. Toronto, Canada.

Greater Yellowstone Coordinating Committee. 1999. Winter Visitor Use Management: A Multi-Agency Assessment.[WEB: http://www.nps.gov/yell/technical/planning/winteruse/document.pdf] Accessed 15/01/01.

Hendricks, William W. 1995. A Resurgence in Recreation Conflict Research: Introduction to the Special Issue. *Leisure Sciences* 17(3): 157-158.

Holland, Stephen, Don Pybas and Athie Sanders. 1992. Personal Watercrafts: Fun, Speed – And Conflict? *Parks and Recreation* 27(11): 52-56.

Horn, Chrys, Patrick Devlin and David Simmons. 1994. Conflict in Recreation: the Case of Mountain-Bikers and Trampers. Department of Conservation. [WEB: http://www.mountainbike.co.nz/politics/articles/horn/]. Accessed 14/10/00.

Ivy, Mark I., William P. Stewart and Chi-Chuan Lue. 1992. Exploring the Role of Tolerance in Recreational Conflict. *Journal of Leisure Research* 24(4): 348-360.

Jackson, Edgar L. and Robert A. G. Wong. 1982. Perceived Conflict Between Urban Cross-Country Skiers and Snowmobilers in Alberta. *Journal of Leisure Research* 14(1): 47-62.

Jackson, Siobhan A. 2001. Resolving Inter-Group Conflict in Winter Recreation: Chilkoot Trail National Historic Site, BC. Master's Project 275. School of Resource Management, Simon Fraser University, BC, Canada.

Jackson, Siobhan A. 1999. Chilkoot Trail National Historic Site Winter Visitor Survey 1998. Centre for Tourism Policy and Research, Simon Fraser University, Burnaby BC.

Jacob, Gerald R. and Richard Schreyer. 1980. Conflict in Outdoor Recreation: A Theoretical Perspective. *Journal of Leisure Research* 12(4): 368-380.

Keith, John E. 1980. Snowmobiling and Cross-Country Skiing Conflicts. in Utah: Some Initial Research Results. In *Proceedings, North American Symposium on Dispersed Winter Recreation.* University of Minnesota. 154-160.

Knopp, Timothy B. and John D. Tyger. 1973. A Study of Conflict in Recreational Land Use: Snowmobiling vs. Ski-Touring. *Journal of Leisure Research* 5(summer):6-17.

La Pierre, Yvette. 1996. Divided Over Voyageurs. *National Parks* 70(1): 36-40.

Little, Sandra L., and Patricia Farrell. Conflict Resolution Processes for Successful Leisure Service Delivery. *Journal of Parks and Recreation Administration* 7(4): 31-41.

McCool, Stephen F., and Brian Curtis. 1980. Sources of Conflict Among Winter Recreationists. In *Proceedings, North American Symposium on Dispersed Winter Recreation.* University of Minnesota. 73-77.

McLaughlin W. J., and W. E. J. Paradice. 1980. Using Visitor Preference Information to Guide Dispersed Winter Recreation Management for Cross-Country Skiing and Snowmobiling. In *Proceedings, North American Symposium on Dispersed Winter Recreation.* University of Minnesota. 64-72.

Martilla, J.A. and J.C. James. (1977). Importance-Performance Analysis. *Journal of Marketing* 41(l), 77-79.

Moore, Roger L. 1994. Conflicts On Multiple-Use Trails: Synthesis of the Literature and State of the Practice. Report for North Carolina State University, Dept. of Parks, Recreation and Tourism Management. [WEB: http://www.imba.com/resources/bike_management/conflictsfull.html]. Accessed 21/10/00.

Muth, Robert M. and Kenyon Fairey. 1995. Managing Social Conflict in Outdoor Recreation Settings: Implications for Curriculum Development in the Human Dimensions of Leisure. *Trends* 32(4): 4-8

Ramthun, Roy. 1995. Factors in User Group Conflict Between Hikers and Mountain Bikers. Leisure Sciences (17): 159-169.

Ruddell, Edward J., and James H. Gramman. 1994. Goal Orientation, Norms and Noise-Induced Conflict among Recreation Area Users. *Leisure Sciences* 16: 93-104.

Schneider, Ingrid E. and William E. Hammitt. 1995b. Visitor Responses to On-site Recreation Conflict. *Journal of Applied Recreation Research* 20(4):249-268.

Schneider, Ingrid E., and William E. Hammitt. 1995a. Visitor Response to Outdoor Recreation Conflict: A Conceptual Approach. *Leisure Sciences* 17(3):223-234.

Schreyer, R. 1990. *Conflict in Outdoor Recreation: The Scope of the Challenge to Resource Planning and Management*. Chapter 2 in J. Vining, Social Science and Natural Resource Management, Westview Press, Boulder, Colorado, USA.

Shelby, Bo, Thomas A. Heberlein, Jerry J. Vaske and Geraldine Alfano. 1983. Expectations, Preferences, and Feeling Crowded in Recreation Activities. *Leisure Sciences* 6(1): 1-14.

Stynes, Daniel J. 1980. Interrelationships Among Three Outdoor Winter Sports. In *Proceedings, North American Symposium*

on Dispersed Winter Recreation. University of Minnesota. 132-138.

Watson, Alan E., Daniel R. Williams and John J. Daigle. 1991. Sources of Conflict Between Hikers and Mountain Bike Riders in the Rattlesnake NRA. *Journal of Park and Recreation Administration* 9(3): 59-71.

Williams, Peter W., Karim B. Dossa and Andy Fulton. 1994. Tension on the Slopes: Managing Conflict Between Skiers and Snowboarders. *Journal of Applied Recreation Research* 19(3): 191-213.