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An Exploratory Study of the Complexities of Coping Behavior in Adirondack Wilderness

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Recreation researchers have considered coping behaviors one possible explanation for wilderness recreationists' high overall satisfaction levels despite reports of visitor overcrowding and other social conditions exceeding acceptable levels. Studies of recreationists' use of behavioral coping and cognitive coping mechanisms have had mixed results. This study used field-based interviews and surveys to identify coping behavior by hikers in the wilderness areas of New York's Adirondack Park. Findings indicate that wilderness hikers develop complex and variable strategies of coping behavior to maintain multiple satisfactions.

Keywords coping behavior, satisfaction, wilderness

Introduction

Increasing use of wilderness areas by recreation visitors in the United States since the 1960s led to a concern among researchers and managers that opportunities to experience desired wilderness conditions such as solitude and infrequent encounters during recreation experiences has diminished, resulting in fewer satisfied wilderness visitors (Dustin & McAvoy, 1982; Schreyer & Knopf, 1984; Cordell, Bergstrom, Hartmann, & English, 1990). However, wilderness visitor satisfaction has generally remained high, despite increasing visitor use levels, reports of crowding, and disparities between the social and environmental conditions visitors expect to find and what they actually encounter (Manning, 1999).

One possible explanation for this phenomenon offered by recreation researchers is that visitors find behavioral and cognitive ways to cope with potentially dissatisfying conditions (Heberlein & Shelby, 1977; Heberlein, 1977; Graefe, Vaske, & Kuss, 1984; Schneider & Hammitt, 1995; Manning, 1999; Iwasaki & Mannell, 2000; Manning & Valliere, 2001). These concepts have included spatial and temporal displacement, product shift, and rationalization. Various studies have documented the issue of crowding and satisfaction, the use of coping mechanisms in wilderness recreation, and the causal factors

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that led to their use (Graefe, Vaske, & Kuss, 1984; Patterson, Williams, & Scherl, 1994; Patterson, Roggenbuck, Watson, & Williams, 1998; Watson & Roggenbuck, 1998; Manning, 1999; Hoss & Brunson, 2000; Schneider, 2000; Schuster & Hammitt, 2000). This study attempts to identify and describe the extent to which Adirondack wilderness hikers use behavioral (i.e., spatial and temporal displacement) and cognitive (i.e., product shift and rationalization) coping mechanisms. The objectives for this study were to determine if four types of coping mechanisms were used by wilderness hikers and measure the association between the type of coping behavior employed and (a) the intensity of wilderness use in the hikers' area of use and (b) hikers' trip satisfactions for 12 attributes.

Coping Behavior Concepts

In this study, we focus on coping as a behavioral and cognitive process that is one of the mechanisms by which wilderness visitors may attempt to obtain overall satisfaction or multiple satisfactions from their recreation experience (Heberlein & Shelby, 1977; Heberlein, 1977; Nielson & Shelby, 1977; Stankey, 1980; Manning & Ciali, 1980; Becker, 1981; Anderson & Brown, 1984; Shelby, Bergenzer, & Johnson, 1988; Hammitt & Patterson, 1991; Kuentzel & Heberlein, 1992; Shafer & Hammitt, 1995; Hall & Cole, 2000; Manning & Valliere, 2001). While there are a variety of theories and conceptualizations (e.g., expectancy, past use history, attitudes and values, benchmarking) about other mechanisms that may explain the weak relationship between crowding and satisfaction, we only focus on coping mechanisms in this study.

An individual who has the motivation to hike in the wilderness will likely have some expectations based on past wilderness trips or information. If the current experience meets their expectations, hikers will likely be satisfied and return for subsequent experiences. However, if a wilderness experience is unable to meet a hiker's expectations, his/her overall satisfaction may be diminished to the point he/she decides to go elsewhere or to not hike in wilderness. Some of those hikers may employ coping mechanisms to maintain some diminished level of overall satisfaction or to achieve higher satisfaction among various attributes of the experience (i.e., multiple satisfactions). If coping mechanisms are effective overall (i.e., enable the visitor to achieve some acceptable level of multiple satisfactions on their trip), the hiker will likely continue to pursue a similar experience.

Past studies and their treatment of the behavioral and cognitive coping mechanisms of spatial and temporal displacement, product shift, and rationalization form the basis for the concepts and research approach used here.

Spatial and Temporal Displacement

The coping behavior of spatial or temporal displacement is the movement of wilderness visitors away from conditions they perceive as dissatisfying (Manning, 1999). Wilderness visitors may use displacement to maintain the number of encounters with other visitors within their zone of comfort or tolerance (Hammitt & Patterson, 1991). While temporal displacement is a change in the time of visit to a particular wilderness setting, spatial displacement is the movement from one setting to an adequate substitute setting. Spatial displacement can be subdivided by movement to a lesser-used or more pristine part of a wilderness area (intra-wilderness) or to a separate wilderness area (inter-wilderness); these also have been referred to as micro-level and macro-level displacement, respectively (Hoss & Brunson, 2000). Recent research has indicated that wilderness visitors use displacement for other reasons as well, such as to avoid management actions (e.g., use limits designed to restore conditions of solitude) that they considered were a hindrance or had a negative effect on their experience (Hall & Cole, 2000). Many studies have attempted

to measure displacement but with varying degrees of success because of methodological difficulties in providing direct empirical evidence for the inverse relationship between displacement and visitor satisfactions (Nielson & Shelby, 1977; Stankey, 1980; Manning & Ciali, 1980; Becker, 1981; Anderson & Brown, 1984; Shelby, Bergenzer, & Johnson, 1988; Hammitt & Patterson, 1991; Kuentzel & Heberlein, 1992; Robertson & Regula, 1994; Shafer & Hammitt, 1995; Shindler & Shelby, 1995; Hall & Cole, 2000).

Product Shift

A wilderness visitor's redefinition of an experience to accommodate the conditions actually encountered and perceived as different from those expected is called "product shift" (Heberlein & Shelby, 1977; Stankey & McCool, 1984). Shelby, Bergenzer and Johnson (1988) found that some whitewater boaters had redefined their expectations for encounters with other boaters on the Rogue River in Oregon. In a subsequent study, Shindler and Shelby (1995) were able to determine that some boaters on the Rogue River had redefined their expectations for a river trip to maintain their satisfaction. Studies documenting the employment of product shift are few and have reported limited evidence, perhaps due to the inherent difficulty of measuring such a cognitive change that may have been made subconsciously or used in conjunction with other coping mechanisms (Shelby & Heberlein, 1986; Shelby, Bergenzer, & Johnson, 1988; Hammitt & Patterson, 1991; Shindler & Shelby, 1995; Hoss & Brunson, 2000).

Rationalization

The cognitive form of coping behavior known as rationalization suggests that individuals will attempt to balance or rectify inconsistencies or incongruity between their expectations for an experience and what they encounter to improve their satisfaction. Central to an understanding of rationalization is the assumption that recreational activities are self-selected and voluntary. For example, a Colorado River boater who has selected a specific trip and has invested time and money into that recreational experience may weigh these things against perceived dissatisfiers and rationalize a satisfactory experience (Heberlein & Shelby, 1977). Manning and Ciali (1980) found no evidence of rationalization among Vermont River users. A potential explanation for this result is that a significant proportion of the study sample were local people who had invested little in their recreation experience. Hammitt and Patterson (1991) found little evidence that Great Smokey Mountains National Park users were rationalizing satisfaction with their recreational experience based on their investment or voluntary selection of the activity, despite potentially dissatisfying encounters or experiences. Hoss and Brunson (2000) were able to document the use of this coping behavior mechanism through qualitative interviews of wilderness visitors and found it to be the most prevalent coping behavior mechanism used by wilderness hikers in the researchers' sample.

Study Area

New York's Adirondack Park includes 16 wilderness areas covering more than one million acres that are managed to provide opportunities for solitude and/or a primitive and unconfined form of recreation. Each area has distinct natural and social characteristics, conditions, and visitor use patterns, making the Adirondack Park a good location to study wilderness visitor behavior. Visitor use intensity levels range from a few hundred visits annually in the

Complex (HPWC), all in relatively close proximity to each other. The Adirondack Park and its wilderness areas are within one day's drive of many of the major urban centers of the northeastern United States and southeastern Canada.

Since one of the objectives of this study was to measure coping behavior at different levels of visitor use, each wilderness area was placed into one of four use-intensity categories: intensive use (over 50,000 visits), heavy use (10,000 to 50,000 visits), moderate use (500 to 9,999 visits), and light use (less than 500 visits). The use categories were based on past research and estimated visitor use obtained from the New York State Department of Environmental Conservation (Alberga & Dawson, 1994).

Methods

This exploratory study used both qualitative and quantitative data collection and analysis techniques to provide information on the use of coping behavior mechanisms by Adirondack wilderness visitors. An in-depth qualitative face-to-face interview on crowding and coping mechanisms and a one-page onsite questionnaire on the satisfaction with twelve trip-related attributes were administered sequentially to hikers in the field (i.e., each hiker selected was interviewed and then asked to complete a questionnaire).

The interview and onsite questionnaire were both administered in the field so that wilderness hikers could be questioned during their recreation activity on that trip. Visitor contacts took place at campsites or popular rest areas along the trails, such as mountain peaks and ponds (i.e., where hikers were more likely to be resting and approachable for an interview). There are some advantages of this field-based approach, including the interviewer is better able to understand and note the situational trip-related responses of the hikers being interviewed and it encourages hikers to respond based on their selection of the location of the current trip. Some of the disadvantages are that: the interviewer must be carefully trained on when and how to approach hikers to minimize the potential intrusion on the wilderness experience of those interviewed; the hikers are responding based on their experience to that point in their trip (as opposed to at the end of their trip); and the interviewer must carefully sort out what relates to the current trip versus the hikers overall strategy for selecting hiking areas in the Adirondacks (i.e., the study results are about the current trip).

Interview

To obtain detailed information about the coping mechanisms used by wilderness hikers, a semi-structured interview protocol was used that included the following questions about the hikers' past wilderness experience, definition of wilderness, expectations for the wilderness experience, definition and perception of crowding, and explanations of how they cope with or react to crowding. Some of the advantages to this methodology are: the ability to allow wilderness visitors to explain their experiences and coping mechanisms (or lack thereof) in their own words; the interviewer can probe responses to questions and increase his/her understanding of the context and meaning the hikers give to their responses; and there is less chance for hikers to misinterpret questions or the researcher to misinterpret responses, as the interviews are conducted face-to-face (Bogdan & Biklen, 1998). Some of the disadvantages are: hikers are immersed in their experience and may not be able to quickly articulate or reflect on what they are experiencing, and interviewers can influence hiker responses in a face-to-face setting by appearing to question the logical sequence a hiker used to select a

Onsite Survey

The single-page quantitative questionnaire asked respondents to rate their relative satisfaction with eight attribute statements of wilderness characteristics and four attribute statements of wilderness conditions. Hikers rated their dissatisfaction or satisfaction with the same attributes on a negative to positive five-point scale (−2 "strongly dissatisfied" to 2 "strongly satisfied") as reported in previous research (Dawson, Oreskes, Kacprzynski, & More, 2002). Some of the advantages of this quantitative approach are that it provides measures from hikers regarding the satisfaction with specific attributes in the wilderness experience and that quantitative comparisons are possible regarding trip attribute satisfaction between those hikers using different coping behaviors (i.e., qualitative and quantitative data complement each other). Some of the disadvantages are that the quantitative survey immediately follows the qualitative interview and may sensitize hikers to the intent of the survey and influence their responses.

Sampling

The interview and survey process was conducted using a quota sample (one person per hour) from Memorial Day weekend to Labor Day weekend of 2000. One person was assigned as a "roving" interviewer to hike across each of the wilderness areas following a systematic schedule that attempted to evenly distribute interview days based on the four use-intensity categories and to distribute interview days among weekdays and weekends or holidays. Hikers were selected randomly as individuals and approached with a short introduction requesting their participation in a brief recorded interview and a questionnaire regarding their selection of this wilderness for their trip; they were told that the whole process was expected to last between 15 and 30 minutes. Interviews were conducted within the designated wilderness area and more than one mile from trailheads to ensure that the current trip (i.e., the subject of the interview) was within wilderness boundaries.

Analysis

Interviews and interviewers' comments and observations were transcribed and analyzed in the qualitative thematic coding tradition, using *The Ethnograph* software package. Interview transcripts were read and analyzed in detail, and selections of text pertaining to a coping strategy or other important thematic elements were marked or coded (Strauss & Corbin, 1998). Data from the single-page questionnaires were entered and analyzed using the *Statistical Package for the Social Sciences* software (SPSS version 10.0 for Windows).

Results and Discussion

During 51 days of interviewing, a total of 104 wilderness hikers were approached for an interview and survey and 102 agreed to participate in both (98%). Many days were spent traveling on what turned out to be less frequently used trails or in multiple days of poor weather with no interview opportunities; thus, the overall sample size was very limited.

Of the 102 respondents, 65% were male and 35% female, ranging in age from 12 to 74 with a mean age of 35 years. Seventy-one percent of the respondents were overnight hikers, camping at least one night in wilderness on the trip they were interviewed. Most were residents of New York State (68%), while 23% were from other states and 9% resided in Canada.

Coping Behavior in Adirondack Wilderness

Fifty-three percent of the respondents (n = 54) used one or more types of coping behavior during their trip to Adirondack wilderness in 2000. Behavioral coping mechanisms were the most prevalent with 28 respondents employing spatial displacement and 35 respondents employing temporal displacement. Cognitive coping behavior mechanisms were used to varying degrees with 33 respondents using product shift and eight respondents using rationalization.

Spatial Displacement: Of the 28 respondents who made use of spatial displacement, eight reported being displaced from other wilderness areas (inter-wilderness), ten reported being displaced from other locations within a wilderness (intra-wilderness), ten reported using both intra- and inter-wilderness displacement. Respondents tended to clearly indicate their use of displacement as a coping behavior and reasons for using it without extensive follow-up questions.

Respondents who used inter-wilderness displacement tended to use light- to moderate-use wilderness after learning of or experiencing crowding in heavy or intensive-use wilderness areas. The following quote illustrates this type of spatial displacement to avoid crowding:

> "Well, it was just like a mini-city and it just seemed wrong to hike in two miles and then be greeted with a whole bunch of people when you are trying to get away from people . . . you couldn't even stop and have lunch. It is a pretty area, kind of, but not when it is so crowded."

Of the 28 hikers employing spatial displacement, 23 reported being displaced from crowded conditions within the HPWC and, in particular, from the intensively used Eastern Zone of that wilderness. Of these 23 respondents, 6 used inter-wilderness spatial displacement and left the HPWC to hike in lesser-used wilderness areas; 14 used intra-wilderness spatial displacement and returned to the HPWC, but chose to avoid more crowded areas; and 3 used both inter- and intra-wilderness spatial displacement. These spatially displaced hikers often mentioned the Marcy Dam-Avalanche Pass-Lake Colden corridor, at the center of the intensively used HPWA Eastern Zone, as a place they avoid and where they would not camp.

Temporal Displacement: Various types of temporal displacement were used more frequently than spatial displacement by study respondents. Of the 35 respondents who reported having altered the time of their visit to a wilderness to avoid conditions of crowding, 19 were hiking on weekdays to avoid crowded weekends, 9 changed the time of year that they hiked to avoid busy summer times, and 7 used both.

Those respondents who were hiking on weekdays to avoid crowded weekends were using temporal displacement as the following two quotes illustrate:

> "Yeah, like Johns Brook, we [are] going to go towards the end of this month and we're not going to start until Monday. Just because I know going up to Johns Brook Pass there will be a lot of weekend warriors and I hope to let them clear out if they are [hiking] on a weekend. And then, on a non-holiday setting for the week, I'm hoping that [it] is going to cut down on traffic."
>
> "We do a lot of our hiking mid-week so that we sometimes have that wonderful feeling of having this whole wilderness all to ourselves because sometimes we'll hardly see a soul. You know, and that is fun."

Notably some respondents (not classified as using temporal displacement) reported that they wanted to use temporal displacement, but their situation did not allow them to do so. For example, nine respondents reported that they would prefer to hike during the week to avoid crowded weekends; however, their work schedules forced them to hike on weekends. Consequently, because of the inability of these respondents to avoid busy weekends they reported that they use other coping mechanisms, such as rationalization, spatial displacement to avoid conditions of crowding, or product shift to redefine their wilderness experience.

Product Shift: The second most prevalent of the coping mechanisms was product shift. A total of 33 respondents reported altering their expectations and experiential definition of wilderness to maintain their satisfaction with their actual wilderness trip experience. Respondents had taken note of visitor use levels, litter, or other characteristics or conditions of Adirondack wilderness that they were not entirely satisfied with, and had adapted their definition of wilderness to accommodate those conditions. For example, one respondent stated how his perception of crowding in one intensively used Adirondack wilderness area had affected his perception of his current experiences there:

> "It's like a joke, because you drive up here and you stare at somebody's heels for six hours and then you pull in [hike to the camping area] and there are tents all around. It's ironic . . . I expect it though."

In similar cases, respondents had come to define what a current Adirondack wilderness experience was for them, and what they expected from a wilderness experience, based on conditions they had encountered on past trips. Consider the following quotes:

> "it's popular because it is nice, so you expect there to be a lot of people. . . . . things like that have really changed my perspective."
> "Sometimes I feel bad when trails have become highways because the middle has become so eroded and I don't want to slog through that either even though I know that is what the best thing to do is . . . I feel bad about stuff like that. I put up with it, I mean we will do it today, on our way up to Marcy we'll do that. I feel bad about it, but that is just the way it is."

These respondents reported using product shift to maintain their satisfaction with their current wilderness trip experience after previously encountering more people than expected, encountering trails eroded from hiker traffic, and other reasons.

Rationalization: Relatively few respondents could be identified as using rationalization to maintain their satisfaction with their Adirondack wilderness trip experience. Analysis of the interview transcripts suggest only 8 of the 102 respondents were rationalizing their investment in their wilderness trip experience against conditions they perceived as dissatisfying to maintain their satisfaction. Respondents placed a greater value on hiking to specific wilderness destinations despite encountering wilderness characteristics or conditions that they disliked, such as crowding. For example, one respondent interviewed on the summit of the most intensively used Mount in the HPWC, said that encountering trail erosion and other human impacts, and large numbers of other hikers did not dissuade him from hiking in the High Peaks because "they are close, they are very accessible, and of course, free."

Another respondent that typified the use of combined rationalization and product shift reported that he had encountered more people on his hike than he expected or cared to see, but he noted he would return to the HPWC since similar opportunities were not available to him near his home and "there is still a lot of good hiking here I haven't done." When asked if the crowding that he had experienced on his hike would factor in his decision to return

to the HPWC or if it would affect his overall satisfaction with the trip, he interrupted the interviewer to respond "no, no not at all."

Hikers' Coping Behavior and Wilderness Use and User Characteristics

Based on coping behavior theory, the use of coping mechanisms should vary among users in more heavily used wilderness areas and among users in less used wilderness areas (e.g., respondents in less heavily used areas may be spatial displaced). If Adirondack wilderness respondents were being spatially displaced to more suitable locations either within a wilderness area (intra-wilderness displacement) or among wilderness areas (inter-wilderness displacement), then displaced respondents may be more concentrated in areas with lower use intensity levels. However, Chi-square tests yielded no statistically significant associations between use intensity for those respondents using no coping mechanisms and those using behavioral coping mechanisms (Table 1), suggesting that respondent use or non-use of behavioral coping mechanisms is not statistically different among the wilderness use intensity levels (Chi-square = 2.8; df = 3; p = 0.42).

The characteristics of respondents were tested to determine their association with the employment of coping mechanisms. Gender was not associated with the respondents' use of coping mechanisms (Chi-square = 3.6; df = 3; p = 0.31). Similarly there was no association between coping behavior among respondents from New York State and respondents of others states and Canada (Chi-square = 1.6; df = 3; p = 0.67). Day hikers were just as likely to make use of coping mechanisms as overnight hikers (Chi-square = 2.2; df = 3; p = 0.53).

Coping Mechanisms as Part of a Complex and Flexible Strategy

Interviews indicate that coping is more than just a singular decision, but a complex process that is part of a larger, flexible user decision-making strategy. Of those 54 respondents reporting that they were using a coping mechanism, 63% used more than one coping mechanism on the trip they were interviewed. Of those respondents reporting that they were temporal displaced, 71% used it in combination with one or more other mechanisms. Of those respondents reporting that they were spatial displaced, 92% used it in combination with one or more other coping mechanisms. Of those respondents reporting that they used product shift, 85% used it in combination with one or more other mechanisms. Rationalization was only identified in combination with other coping mechanisms. Four respondents reported they were using all four coping mechanisms in combination.

For example, one respondent interviewed in the Five Ponds Wilderness said that avoiding crowds in wilderness was his "number one priority," and to do that he was using a strategy involving both spatial and temporal displacement and product shift. This moderately

TABLE 1 Number of Respondents by Coping Behavior Usage and Wilderness Area Use Intensity Categories in Adirondack Wilderness Areas in 2000

Wilderness area use intensity	No coping behavior	Used coping behavior
Light	8	5
Moderate	16	27
Heavy	16	13
Intensive	8	9
Total	48	54

experienced respondent said that he had experienced crowding in the Eastern Zone of the HPWC and would not return there. He chose a wilderness with a moderate use intensity level and shifted his expectations for the experience by saying, "I think it's all part of hiking, you have to adapt to the cards that are dealt to you." In this case, coping allowed this respondent to report that he was satisfied with his trip.

Another respondent described his use pattern as including all four coping mechanisms. This highly experienced respondent was a frequent visitor to the HPWC after he was displaced from another non-Adirondack wilderness due to what he considered unacceptable human impacts. The HPWC was not his ideal wilderness, and he outlined how he rationalized that the HPWC was as close to his definition of wilderness, as he could access easily from his home without a significant investment of time and money, so he used coping mechanisms to diminish conditions and characteristics of the HPWC that troubled him. He used intra-wilderness spatial displacement to avoid the Marcy Dam-Avalanche Pass-Lake Colden corridor and he was hiking in lesser-used parts of that wilderness. He used temporal displacement to avoid what he thought would be high visitor use times in the HPWC. By making use of a complex, flexible and variable strategy of coping, this respondent maintained his satisfaction with his wilderness experience.

Coping and Satisfaction in Adirondack Wilderness

Average satisfaction scores for each of the 12 wilderness characteristics and conditions on the survey were high (Table 2). The highest satisfaction ratings were placed on the quality of the natural environment, on personal and social experiences in wilderness, and on physical activity associated with wilderness travel. The average ratings for all 12 wilderness characteristics and conditions were positive and ranged from 0.8 to 1.6 on a five-point negative to positive scale from −2 to 2.

The mean satisfaction scores of those respondents who had made use of any of the four coping mechanisms were compared with those who used no coping behavior, using independent sample t-tests with a significance level set at alpha = 0.05. Of the 12 satisfaction

TABLE 2 Mean Satisfaction Scores for 12 Wilderness Characteristics and Conditions by 102 Adirondack Wilderness Hikers Interviewed in 2000

Attribute	No coping behavior	Used coping behavior
Wilderness characteristics		
Natural environment	1.6	1.5
Personal and social experiences	1.6	1.3
Physical activity	1.6	1.5
Exploration and remoteness	1.3	0.8
Connections with nature	1.3	1.2
Solitude	1.2	1.0
Wilderness skills	1.1	1.0
Connection with others, inspiration	1.0	0.9
Wilderness conditions		
Litter and waste	1.2	0.5
Management activities present	1.2	0.8
Number of other users	1.0	0.5
Wilderness information	0.8	0.9

attributes, four had statistically significant differences between those making use of some coping behavior and those not using any coping mechanisms. Those respondents making use of coping mechanisms were less satisfied with the amount of litter, number of encounters with other hikers, the sense of exploration and remoteness, and the number and type of management activities present than those not using any coping mechanism.

Discussion and Conclusions

This study identified those Adirondack wilderness hikers who used behavioral (i.e., spatial and temporal displacement) and cognitive (i.e., product shift and rationalization) coping mechanisms during the trip they were interviewed. Coping mechanisms were reportedly used by 54 of the sample of 102 Adirondack wilderness respondents on their trips in 2000. The most prevalent coping mechanisms were spatial displacement (n = 28), temporal displacement (n = 35), and product shift (n = 33), with relatively few respondents identified as using rationalization (n = 8). Nearly two-thirds of those who used a coping mechanism used more than one. Two implications of these results are that: (1) over half of the visitors are using coping mechanisms to avoid certain conditions (e.g., crowding) or to maintain *multiple* satisfactions while on trips in the Adirondack wilderness areas, suggesting that even though visitor displacement is occurring that multiple satisfactions remain positive, and (2) visitors are using coping mechanisms in greater complexity and interaction than was expected, suggesting that they are adapting to maintain a sufficient level of satisfaction across multiple attributes of wilderness to motivate them to return.

One of every two wilderness survey respondents reported altering their use of Adirondack wilderness areas in 2000 to enable them to achieve some acceptable level of multiple satisfactions on that trip. These results of the qualitative interviews suggest that visitors to wilderness areas in the Adirondacks may be using coping mechanisms to accommodate crowding, to avoid degraded wilderness conditions, and to achieve some unique experiences not otherwise available outside these wilderness areas.

Previous research, notably by Manning and Valliere (2001), reported that coping mechanisms are widely used in outdoor recreation and may be symptomatic of stressful conditions in the experience. Therefore, simple measures of visitor satisfaction may not correctly measure the complexity of changes with social settings in a recreational setting. The use of multiple satisfaction measures is recommended when studying coping mechanism use because hiker satisfaction with the number of other users present is one of the lowest ratings and may well detract from overall satisfaction. The use of a single measure of trip satisfaction is not adequate to quantify the impact of the various attributes within the trip experience.

One specific research implication relates to the measurement and definition of rationalization. Our finding of only eight cases of rationalization being employed by wilderness respondents is divergent from the frequency with which recreational visitors employed the behavior in recent studies by Manning and Valliere (2001) and Hoss and Brunson (2000). Differences in the definition of rationalization used in this study compared to Hoss and Brunson's definition (i.e., cost-benefit tradeoffs by visitors) partially explains the difference in report use. An expanded definition of rationalization to include a cost-benefit trade-off by a wilderness hiker may better identify this type of coping mechanism. However, it is likely that recreational visitors often employ rationalization subconsciously or in conjunction with product shift and this phenomenon maybe difficult to document even through qualitative methods. Thus, it maybe necessary to consider cognitive coping as one measure since separating rationalizing from product shift is unclear with the present definitions and

This study measured use of mechanisms for coping with crowding and undesirable conditions in 16 wilderness areas with different levels of visitation. Since these wilderness areas were all within the same geographic region and available to all possible types of visitors, it served as a good location to conduct research on displacement. However, it is noted that additional displacement likely occurs into and out of the Adirondack Park region and this study is a conservative indication of visitor displacement and coping mechanism use. Future research should consider studies of a general population of wilderness hikers and backpackers to estimate the overall use of visitor displacement and coping mechanisms, since users maybe very mobile within a national and international framework of wilderness opportunities (i.e., regional study areas like the Adirondacks are probably too limited in geographic scope to adequately measure the use of coping mechanisms).

Understanding the complex, flexible and variable strategies of coping used by hikers and the process by which they maintain multiples satisfactions with their wilderness experience will require more comprehensive studies of the inter-relationships between: visitor use levels, user behaviors, and the environmental, social, and management conditions. Future studies of coping and multiple satisfaction need to be conducted in conjunction with monitoring of actual visitor use estimations (i.e., use needs to be spatially and temporally related to the measure of coping use) and resource conditions to better understand what factors contribute to the use of coping mechanisms (i.e., are they used in response to actual crowding, degraded social or environmental conditions evident from past use, management conditions, or other factors).

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