# AN EXPLORATORY ANALYSIS OF COPING SCHEMES USED BY PADDLERS WHO CAMPED IN THE ST. REGIS CANOE AREA, NEW YORK

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**Abstract.**—This study addresses requirements in the Adirondack Park State Land Master Plan for developing unit management plans. Recreational paddlers in New York State's St. Regis Canoe Area were surveyed about their perceptions of stress from daily hassles common to outdoor recreation activities, their coping responses to hassles, daily visit satisfaction, and overall trip satisfaction. Most paddlers who camped used coping schemes that combined problem- and emotion-focused strategies to achieve satisfaction. Overall, paddler-campers were either very satisfied or satisfied with their camping trip experience in the St. Regis Canoe Area. Results suggest that current coping efforts are effective in mediating stressful situations, but may not continue to be adequate if frustrating conditions persist or worsen. Managers should consider the amount and type of coping being used to overcome dissatisfaction and achieve trip satisfaction.

## 1.0 INTRODUCTION

When the Adirondack Park Agency was established in 1971, it was required to develop an Adirondack Park State Land Master Plan (SLMP). The SLMP in turn required unit management plans (UMP) for each unit of the park that included three types of information related to visitor use:

- An inventory of the types and extent of actual and projected public use of the area;
- An assessment of the impact of actual and projected public use on the resources, ecosystems, and public enjoyment of the area with particular attention to portions threatened by overuse; and
- An assessment of the physical, biological, and social carrying capacity of the area (New York State Department of Environmental Conservation 2001, p. 10).

Currently, these types of required information are not available for most of the units in the planning process, including the St. Regis Canoe Area (SRCA). Previous studies within the SRCA have provided some of the needed information by addressing issues of wilderness privacy (Fuller and Dawson 1999), perceptions of crowding (Dawson et al. 2000), and visitor satisfaction (Pfaffenbach et al. 2003). This study partially addresses the second UMP planning requirement by adding some key elements to the assessment of the impacts of actual and projected public use on the public enjoyment of the SRCA.

This study was based on transactional stress/coping theory, which assumes that undesirable conditions during outdoor recreation experiences can produce stress and that stress/coping processes influence the outcome of the recreation experience (Schuster et al. 2003). The purpose of this study is to address SLMP planning requirements, and to explore coping schemes used in response to stressors experienced during overnight wilderness paddling trips. Recent stress/coping literature emphasizes the importance of recognizing that coping schemes typically include a combination of problem- and emotion-focused coping mechanisms (Lazarus 2000, Schuster et al. 2006, Schuster et al. 2007). The objectives of this study are to identify factors (i.e., dimensions) of coping response from a set of 14 coping variables and to identify

homogeneous groups of boaters based on factors of coping response.

## 1.1 Stress/Coping Model

The stress/coping model (Fig. 1) developed by Lazarus and Folkman (1984) includes influencing factors, appraisals, coping, and outcomes (Schuster et al. 2006). Influencing factors are conceptualized as daily hassles—everyday irritating, frustrating, and distressing demands (Kanner et al. 1981). The appraisal process involves two stages. In the primary appraisal stage, the recreationist determines if the situation is stressful based on whether it is harmful, threatening, or challenging. In the secondary appraisal stage, the recreationist determines whether the situation can be controlled, what coping strategies to use, and whether the resources necessary to achieve the desired outcome are available (Folkman and Lazarus 1980, Lazarus and Folkman 1984).

Coping is defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus and Folkman 1984, p. 141). Coping occurs in the middle of the process to mediate initial appraisals of stress and to help facilitate desirable outcomes. Lazarus and Folkman (1984) have identified two basic coping strategies: emotion-focused and problem-focused. "Emotion-focused coping occurs when nothing can be done to modify harmful, threatening, or challenging person-environment transactions" (Schuster et al. 2006, p. 100). This strategy serves to lessen emotional distress by employing tactics such as avoidance, distancing, selective attention, positive comparisons, and finding positive value in negative events (Schuster et al. 2006).

Problem-focused coping strategies are utilized when the situation is appraised as changeable. These methods focus on defining the problem, developing and judging the potential effectiveness of various solutions, choosing one, and then employing it (Schuster et al. 2006). Problem-focused coping strategies are intended to influence environmental conditions by altering the source of stress or reducing symptoms associated with the situation (Lazarus and Folkman 1984).

The prime importance of appraisal and coping is that they affect the outcomes of the stress/coping process, which can be short-term or long-term. Similar to the stress/coping model, visitor satisfaction is viewed as an outcome from a process. Satisfaction has been used as an appropriate surrogate for evaluating recreation experience quality (Williams 1989). Research has shown that some satisfaction measures may be appropriate indicators of short-term outcomes (Williams 1989).

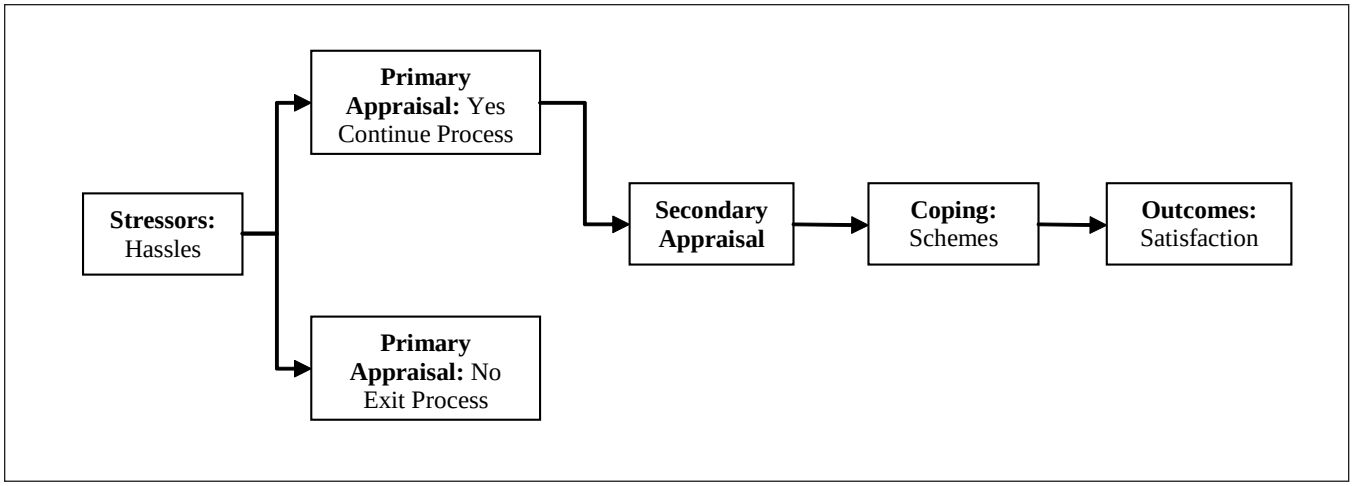


Figure 1.—Theoretical stress/coping model incorporating components of the current study; adapted from Schuster et al. 2006.

## 1.2 Coping Schemes

Recent outdoor recreation stress/coping literature emphasizes the importance of recognizing that coping schemes typically include a combination of problem- and emotion-focused coping mechanisms (Schuster et al. 2006). Researchers have noted a tendency in coping-related research to study problem- and emotion-focused coping separately (Lazarus 2000). Kuentzel and Heberlein (1992) tested a hierarchical coping model in the Apostle Island National Lakeshore (Wisconsin). They hypothesized that people use cognitive (i.e., emotion-focused) coping before using behavioral (i.e., problem-focused) coping. The premise was that cognitive and behavioral coping strategies are mutually exclusive. However, their results did not support their model. In fact, they found that coping mechanisms were not used individually or as mutually exclusive responses.

A study by Schuster et al. (2006) reported on recreationists' coping responses to hassles experienced in outdoor recreation settings. They tested the Lazarus and Folkman transactional stress/coping model, which hypothesized problem-focused and emotion-focused coping as being distinct factors. However, the results of their study indicate that problem-focused and emotion-focused coping were combined to create one overall coping scheme by visitors. "The scheme predominantly consisted of enacting personal behaviors to avoid the problem and exercising self-control" (Schuster et al. 2006, p. 108). Similarly, a study about visitor appraisal of and response to social conditions in the Great Gulf Wilderness (New Hampshire) by Schuster et al. (2007) reported that a typical coping scheme consisted of product shift and rationalization (emotion-focused coping) and to a lesser extent, physical avoidance (problem-focused coping).

The literature does not provide a definition of a coping scheme. For the purposes of this study, a coping scheme is a combination of problem- and emotion-focused coping mechanisms used by an individual to manage the demands of a problem-causing person-environment relationship (Lazarus 2000, Schuster et al. 2006).

## 2.0 METHODS

The field research for this study was conducted in the SRCA between mid-June and early September 2007. The SRCA is located in the central-northern region of New York State's Adirondack Park and covers 18,400 acres, including 1,621 acres composed of 58 different water bodies.

A convenience sample was used to contact visitors at five water access points around the SRCA. All visitors paddling in the SRCA were asked to participate in the on-site questionnaire, which was designed to obtain visitor characteristics and their experiences (not all of the data collected are reported in this manuscript). Paddlers staying at least one night in the SRCA were asked to participate in the daily diary portion of the study. Paddlers carried the diary with them and filled it out each night at their campsite, then returned it in a stamped, addressed envelope to the researchers. The diary was designed to collect information related to hassles, coping, and satisfaction. Hassles were measured using a modified version of the hassle scale developed by Kanner et al. (1981), including 18 items designed to reflect natural, managerial, and social domains of stress. Coping responses were measured using a modified version of Folkman and Lazarus' (1980) Ways of Coping checklist. The scale employed in this study represented 14 problem- and emotion-focused coping responses that were commonly used in other research (Schuster et al. 2006). The daily diary also included measures of satisfaction that parallel similar studies (Pfaffenbach et al. 2003). Computer-assisted analysis was conducted using SPSS.

Data analysis included principle components analysis (PCA) and hierarchical cluster analysis. The current study conducted a PCA similar to that of Fuller and Dawson (1999) using orthogonal varimax rotation to reduce the coping variables to meaningful factors and Kaiser Normalization to reduce statistical error. Factor loading had to be 0.40 or greater, factors had to have an eigenvalue of 1.0 or greater, and the internal reliability of each factor had to have a Cronbach's alpha of 0.60. This study also utilized an agglomerative hierarchical method of cluster analysis

with an average linkage procedure for developing clusters. The average linkage procedure is based on minimum Euclidean distance (Hair et al. 1995).

## 3.0 RESULTS

The interviewer approached 488 paddlers; only six refused to participate for an on-site response rate of 98.7 percent. Of the 482 paddlers who agreed to participate, 189 (39.2 percent) indicated that they would be staying overnight in the SRCA and all except two agreed to participate in the daily diary. One hundred eighty-seven daily diaries were distributed and 104 were returned for a response rate of 56 percent. Paddlers who camped were asked to indicate the intensity of stress perceived from different hassles. The results of this analysis are not reported in detail here; however, 95.7 percent of respondents reported perceiving stress from at least one source.

Paddlers who camped were asked to indicate how frequently they used different coping strategies in response to hassles. They were given the option of indicating that they did not use a particular coping strategy. Each potential coping strategy was used by at least one boater. The percentage of respondents reporting some level of coping strategy use ranged from 2.0 to 36.4 percent with a total of 63.2 percent of the respondents reporting using some level of one or more coping strategies.

PCA was used to identify the factors of paddlers' coping responses. One variable in the analyses, "asked someone for information or assistance," did not meet the inclusion criteria and was not used in the final analysis. Four factors with eigenvalues greater than 1.0 were identified with the remaining 13 coping variables. Three of the four factors met the reliability criterion and were used in the final analysis.

Table 1 shows the results for the final PCA. The first factor contained only emotion-focused coping variables such as making jokes about or ignoring the problem. The emotion-focused variable "tried to view the problem in a positive way" has been conceptualized by other researchers as a more specific category of emotion-focused coping labeled rationalization (Schuster et al. 2006). The variables "tried not to think about it" and "went on as if nothing happened" have been conceptualized as psychological distancing (Folkman and Lazarus 1980, Lazarus and Folkman 1984, Schuster et al. 2006) or rationalization (Schuster et al. 2007). For this study, that factor was labeled "rationalization."

The second factor contained problem-focused coping, such as avoiding areas where problems were expected and emotion-focused coping variables such as accepting the problem. This factor was labeled "acceptance-avoidance coping."

**Table 1.—Factor loadings and means for the variables measuring ways of coping based on factor analysis of 11 coping variables in the St. Regis Canoe Area in the summer of 2007**

| Factors and Questionnaire Items | Factor Loadings | Mean Rating | Factor Mean | Factor Alpha Value |
|---|---|---|---|---|
| **Rationalization** | | | **.53** | **.83** |
| Laughed or made jokes about the problem | .84 | .67 | | |
| Tried to view the problem in a positive way | .86 | .64 | | |
| Tried not to think about it | .76 | .45 | | |
| Went on as if nothing happened | .71 | .35 | | |
| **Acceptance-Avoidance Coping** | | | **.45** | **.72** |
| Avoided campsite areas where I expected the problem to occur | .75 | .50 | | |
| Moved to another campsite in response to the problem | .74 | .16 | | |
| Made a plan to address the problem | .79 | .20 | | |
| Accepted the problem as part of the St. Regis Canoe Area experience | .46 | .70 | | |
| Talked about the problem with people in my group | .65 | .65 | | |
| **Confrontive Coping** | | | **.10** | **.80** |
| Tried to get the person responsible to change his or her behavior | .93 | .14 | | |
| Expressed anger to the person responsible for the problem | .95 | .05 | | |

The third factor contains only problem-focused coping variables. The variables in this factor are intended to directly confront a person responsible for causing a problem. These strategies have traditionally been labeled "confrontive coping" (Schuster et al. 2006) and that label was used in this study.

The results of the PCA give some support to other coping studies and offer some new findings. The rationalization and confrontation coping factors that loaded together are similar to those in a study by Schuster et al. (2006). The acceptance-avoidance factor is unique to this study in that it contains both problem-focused and emotion-focused coping strategies. Other studies have reported problem-focused and emotion-focused strategies loading separately from each other (Miller and McCool 2003, Peden and Schuster 2005, Schuster et al. 2006).

The next part of the data analysis was to identify homogeneous groups of respondents based on the three factors of coping response. Based on practical judgment and theoretical foundations, the results of the cluster analysis indicated that there were four types of respondents (Table 2). However, the solutions do not meet the first two *a priori* criteria typically used in cluster analysis (Jackson 1993). Group one is large enough to contain a majority of respondents and group four is too small to be used in further analysis. The third *a priori* criterion is met, however, because the cluster solutions make intuitive sense.

An important characteristic of cluster analysis is that there is low within-group variance. All of the clusters in this study show low within-group variance (Table 2). Outdoor recreation studies often find homogeneity in respondents (Manning 1999). For this reason, it is not surprising that most of the respondents in this study grouped together.

The analysis also identified the coping schemes used by respondents (Table 3). Based on the cluster analysis grouping of respondents and their average use of the three coping factors, four coping schemes were identified (Table 3):

- Light coping: "Light" refers to the level of use within each coping factor; respondents in this group used a low amount of each factor.
- Rational Coping: Respondents most often used rationalization strategies.
- Passive Coping: Respondents used acceptance-avoidance more than the other factors, but at a medium level of use.
- Coping-Dependent: Respondents used high or medium amounts of each factor.

**Table 2.—Results of cluster analysis and mean use of each coping factor**

| Group | Size | Rationalization | | Acceptance-Avoidance Coping | | Confrontive Coping | |
|---|---|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD | Mean | SD |
| 1 | 72 | 0.20 | 0.35 | 0.19 | 0.27 | 0.06 | 0.26 |
| 2 | 10 | 2.17 | 0.37 | 0.66 | 0.45 | 0.00 | 0.00 |
| 3 | 10 | 0.65 | 0.27 | 1.64 | 0.63 | 0.50 | 0.16 |
| 4 | 4 | 2.12 | 0.25 | 1.45 | 0.55 | 1.13 | 0.48 |

**Table 3.—Frequency of visitor use of each coping factor for each coping scheme**

| Scheme | Size | Rationalization* | Acceptance-Avoidance Coping* | Confrontive Coping* |
|---|---|---|---|---|
| Light Coping | 72 | Low | Low | Low |
| Rational Coping | 10 | High | Low | None |
| Passive Coping | 10 | Low | Med | Low |
| Coping-Dependent | 4 | High | Med | Med |

*Label ranges: 0 = None; <1.0 = Low; 1.0-1.99 = Medium; 2.0-3.0 = High

These results suggest that a majority of paddlers in the SRCA during summer 2007 used a great deal of coping and a variety of strategies.

Paddlers were asked to indicate their level of satisfaction with nine different components of the daily SRCA experience. The detailed results of this analysis are not reported here, but each component of the daily SRCA experience was viewed as either satisfactory or very satisfactory by over half of the respondents. Overall, 77.1 percent of the boaters who camped were very satisfied and 22.9 percent were satisfied with their camping trip experience.

## 4.0 DISCUSSION AND CONCLUSION

This study provides managers with information regarding the second UMP planning requirement. Managers should consider the fact that over half (63.2 percent) of the paddlers who camped were utilizing at least one coping strategy to manage trip stress. If conditions are such that most people need to cope in order to have a high-quality visitor experience, then managers may need to remove or reduce sources of visitor stress. For example, the SRCA UMP (New York State Department of Environmental Conservation 2006) states that currently many campsites are closer together than regulations allow. By adjusting campsite locations, managers may be able to improve the quality of the visitor experience by reducing the need for visitors to cope with the campsite location and conditions.

Managers and planners need to recognize that a majority of the visitors were coping and employing coping schemes (i.e., multiple coping strategies). The evidence suggests that visitors were not able to cope effectively using only one coping mechanism. This finding may suggest that the on-site conditions are degraded to the point that coping schemes are necessary in order to have a satisfying visitor experience on a trip in the SRCA. However, it may also mean that the use of coping schemes is very common, as suggested by published literature on the subject. Managers and planners need to understand the use of coping schemes in order to further assess the impact of stress on visitor experiences.

Additionally, managers and planners need to continually monitor visitor satisfaction. While current coping efforts appear to ameliorate stressful situations (i.e., all respondents reported satisfying trip experiences during summer 2007), they may not continue to be effective if on-site conditions that cause problems persist or worsen. Therefore, significant sources of stress need to be identified and addressed in the SRCA.

More research is needed to complete the assessment required by the SLMP and to understand the stress/coping process and its relationship to visitor satisfaction and quality of experience. This study provides several general suggestions for researchers studying stress and coping in recreation experiences. Future stress/coping studies should conceptualize and measure coping in terms of schemes. This study provides empirical evidence to support the assertion in the literature that coping strategies often combine to create a scheme.

Stress/coping studies often use coping measures that are adapted for that specific study. In so doing, researchers are using measures that do not allow for comparison across studies. For example, Schuster et al.(2006) conceptualized the coping strategies "refused to get too serious about it" and "went on as if nothing happened" as psychological distancing and the strategy "followed established trail etiquette" as self-control. Later, Schuster et al. (2007) conceptualized the same three strategies as rationalization. While both conceptualizations are accurate, future researchers of stress and coping should consider using measures consistent with previous studies, which would increase the comparability and reliability of results.

The current study is part of a larger project. One of the goals of the larger project is to integrate findings from this study with findings of an on-going biophysical impact study. A final recommendation is that future stress/coping studies should also compare their findings to the findings of studies that examine actual biophysical impacts. If researchers can compare perceived and actual social and biophysical impacts, researchers, managers, and planners will significantly

improve their understanding of the relationships among conditions, stress, coping, and satisfaction. Additionally, this type of analysis will allow them to fulfill UMP planning requirements completely by developing an inventory of the types and extent of actual and projected public use of the area and assessing the impact of public use on the resources, ecosystems, and public enjoyment of the area. Research of this type will also help managers and planners assess the physical, biological, and social carrying capacity of the area.

## 5.0 CITATIONS


Dawson, C.P., Newman, P., and Fuller, C. (2000). **User satisfactions and perceptions of crowding in four Adirondack wilderness areas.** In G. Kyle (Ed.), Proceedings of the 1999 Northeastern Recreation Research Symposium (pp. 120-126). General Technical Report NE-269. Newtown Square, PA: USDA Forest Service, Northeastern Research Station.

Folkman, S., and Lazarus, R.S. (1980). **An analysis of coping in a middle-aged community sample.** Journal of Health and Social Behavior, 21, 219-239.

Fuller, C., and Dawson, C. (1999). **A comparison of wilderness privacy within two New York State wilderness environments.** In H. Vogelsong (Ed.), Proceedings of the 1998 Northeastern Recreation Research Symposium (pp. 51-56). General Technical Report NE-255. Radnor, PA: USDA Forest Service, Northeastern Research Station.

Hair, J., Anderson, R., Tatham, R., and Black, W. (1995). **Multivariate Data Analysis with Readings (4th ed.).** Englewood Cliffs, New Jersey: Prentice Hall.

Jackson, E. (1993). **Recognizing patterns of leisure constraints: Results from alternative analysis.** Journal of Leisure Research, 25 (2), 129-149.

Kanner, A., Coyne, J., Schaefer, C., and Lazarus, R. (1981). **Comparison of two modes of stress measurement: Daily hassles and uplifts versus major life events.** Journal of Behavioral Medicine, 4, 1-39.

Kuentzel, W., and Heberlein, T. (1992). **Cognitive and behavioral adaptations to perceived crowding: A panel study of coping displacement.** Journal of Leisure Research, 24 (4), 377-393.

Lazarus, R.S. (2000). **Toward better research on stress and coping.** American Psychologist, 55 (6), 665-673.

Lazarus, R., and Folkman, S. (1984). **Stress, Appraisal, and Coping.** New York: Springer Publishing Company.

Manning, R. (1999). **Studies In Outdoor Recreation: Search and Research for Satisfaction (2nd ed.).** Corvallis: Oregon State University Press.

Miller, T., and McCool, S. (2003). **Coping with stress in outdoor recreation settings: An application of transactional stress theory.** Leisure Sciences, 25, 257-275.

New York State Department of Environmental Conservation. (2001). **Adirondack Park State Land Master Plan.** Raybrook, New York.

Peden, J., and Schuster, R. (2005). **Stress and coping in the high peaks wilderness: An exploratory assessment of visitor experiences.** In K. Bricker, & S. Millington (Ed.), Proceedings of the 2004 Northeastern Recreation Research Symposium (pp. 29-38). General Technical Report NE-326: USDA Forest Service, Northeastern Research Station.

Pfaffenbach, B., Zinn, H., and Dawson, C. (2003). **Exploring satisfaction among paddlers in two Adirondack canoeing areas.** In R. Schuster (Ed.), Proceedings of the 2002 Northeastern Recreation Research Symposium (pp. 222-228). General Technical Report NE-302. Newtown Square, PA: USDA Forest Service, Northeastern Research Station.

Schuster, R.M., Cole, D., Hall, T., Baker, J., & Oreskes, R. (2007). **Appraisal of and response to social conditions in the Great Gulf wilderness: Relationships among perceived crowding, rationalization, product shift, satisfaction, and future behavioral intentions.** Proceedings of the 2006 Northeastern Recreation Research Symposium (pp. 488-496). General Technical Report NE-P-14. Newtown Square, PA: USDA Forest Service, Northeastern Research Station.

Schuster, R.M., Hammitt, W.E., & Moore, D. (2003). **A theoretical model to measure appraisal and coping response to hassles in outdoor recreation settings.** Leisure Sciences, 25, 277-299.

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

Williams, D. (1989). **Great expectations and the limits to satisfaction: A review of recreation and consumer satisfaction research.** In A. Watson (Ed.), Outdoor recreation benchmark 1988: Proceedings from the national outdoor recreation forum assembly (pp. 422-438). General Technical Report SE-52. Asheville, NC: USDA Forest Service, Southeastern Forest Experiment Station.