SECURITY ALONG THE APPALACHIAN TRAIL

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Abstract: The Appalachian National Scenic Trail (AT) is a public footpath that spans more than 2,000 miles of Appalachian Mountain ridgelines. It stretches from Mount Katahdin in Maine to Springer Mountain in Georgia and passes through twelve other states along the way. It is estimated that the AT lies within a day's drive of over half the country's population. Thus, the AT is in close proximity to some of our nation's most densely populated areas.

Security along the trail has emerged as an important topic for trail managers, at least partially in response to recent high-profile crimes on or near the trail. How safe do visitors feel on the AT? It is a goal of trail managers to provide a safe and secure environment in which visitors can enjoy the natural, scenic, historic, cultural and recreational resources of the Appalachian Mountains. In order to assess the issue of security, managers need to be informed as to what types of security issues are arising, where they occur, and how visitors perceive the issue of security.

A wide-ranging study of visitors to the AT was conducted in the summer and fall of 1999 and included a number of questions about security. Security questions addressed the number and type of incidents encountered, preventative behaviors, and visitor's perceptions of security on and adjacent to the trail. This study presents descriptive findings from these questions and an analysis of the relationships between security and selected independent variables, including respondent gender, age, experience, and race/ethnicity, type of hiker, and location along the trail.

Key Words: Security, Outdoor Recreation, Appalachian Trail

Introduction

Recent high-profile crimes in national parks and related areas have contributed to a heightened awareness of and concern for security in parks and outdoor recreation areas. In 1996 a double homicide occurred near the Appalachian Trail (AT): two women were killed near their campsite in Shenandoah National Park (New York Times, 1996). Similarly, a series of homicides occurred in Yosemite National Park in 1999 and a National Park Service ranger was killed in Honokohau National Historical Park that same year (USA Today, 2000; NPS, 2001). These are only a few examples of violent crime in outdoor recreation settings. While these incidents may be isolated occurrences, they raise the question of how secure visitors feel in parks and related areas.

Outdoor recreation areas serve a distinct function in our society. They are the places we play, enjoy the natural world, and re-create ourselves. They give us the chance to withdraw from society and its problems, if only for a short time. However, incidents like the murders near the AT and in Yosemite give us a stark reminder of the realities of our contemporary world. National parks and related areas are not divorced from the security issues that trouble the rest of society. One of the principle values of these areas is the opportunity they present for escape from daily routines and pressures, and when crimes occur, there is a resonating impact on the recreating public. To what degree is security a problem in parks and related areas? How do crime and security issues affect recreationists? How safe do visitors feel in outdoor recreation settings?

A wide-ranging study of visitors to the AT was conducted in the summer and fall of 1999. The study included several questions about security. Questions addressed the number and type of security incidents encountered, preventative behaviors, and visitors' perceptions of security on and adjacent to the trail. This paper presents descriptive findings from these questions and an analysis of security on the AT in relation to several study variables, including age, gender, race/ethnicity, location, hiker type, experience, and group size.

Security Issues in Outdoor Recreation

Security can have multiple meanings and connotations in a recreation setting. For instance, security may refer to feelings of safety when the possibility of encountering wildlife such as a bear or mountain lion is present. The same can be said for feelings toward inclement weather or other adverse conditions in the recreation setting. Security can also be defined by users' own experience level in a particular activity and whether they are undertaking an activity that is beyond their skill level and therefore produces feelings of discomfort or insecurity. Finally, security can refer to feelings or perceptions of threat from other people. This latter definition was used for the purposes of this study. Respondents were given the following definition of security in the study questionnaire, "Security refers to feeling free from being threatened or attacked by other people on the trail." This paper focuses on security issues along the AT from this perspective.

The issue of security in outdoor recreation can be complex. The types of incidents that take place in outdoor recreation settings are continually diversifying. It is becoming increasingly apparent that parks, forests, and related areas are not devoid of the security problems that exist in society at large. Often the types of security issues that arise in

outdoor recreation settings are identified with urban problems. Chavez and Tynon (2000) identified several categories of criminal activities that take place on areas administered by the US Forest Service in the West, including one category entitled *urban-associated crime*. One common hypothesis is that criminal activity is more prevalent in front-country or urban settings. The thought is that urban problems "spill over" into adjacent recreation settings. However, outdoor recreation settings present a specific context for security issues, and it has been suggested that security in parks and recreation receive more explicit and comprehensive attention (Pendleton, 2000).

Security issues can have a dramatic effect on the visitor experience. For example, Fletcher (1983) found that perceptions of security problems negatively affect visitors' enjoyment of parks. Additionally, a pilot study conducted by Burns and associates (2000) on the AT and several Army Corp of Engineers lakes focused on visitors' perceptions of security and found that perceptions of security varied with visitor characteristics and recreation setting. These studies represent recent attempts to address this issue. Historically, however, little research has been done specifically on the issues surrounding crime and security in outdoor recreation settings. As recreation managers endeavor to provide a safe environment in which visitors may enjoy the out-of-doors and provide quality experiences, it becomes increasingly important to understand how visitors perceive of security in these settings. Clearly, an encounter with a security problem can substantially affect the visitor experience. Initial research suggests that perceived security problems may even displace visitors from parks and related areas (Fletcher, 1983; Burns et al., 2000).

Security on the AT

The AT is a vast and unusual recreation resource. It spans more than 2,000 miles of Appalachian Mountain ridgelines along the eastern third of the United States. It is estimated that over half of the country's population lives within a day's drive of the AT. Thus, the AT is in close proximity to some of our nation's most populated areas. Due in part to recent high-profile crimes on and near the Trail and its proximity to densely populated areas, security issues have increasingly become a concern of trail managers. It is a goal of trail managers and planners to provide a safe and secure environment in which visitors may enjoy the natural, scenic, historic, cultural, and recreational resources of the Appalachian Mountains. In order to meet this objective, managers and planners need to be informed about specific security issues along the AT. Further, if they are to effectively and efficiently address security concerns on the AT, managers will need to be knowledgeable about the frequency, types, and locations of security issues along the trail, and visitor perceptions of trail security.

The AT is also quite unusual in terms of its administration and management. The AT is jointly maintained by volunteer hiking clubs, the US Forest Service and the National Park Service. Such a coordinated effort presents challenges for trail management (Burns et al., 2000). The trail passes through a myriad of jurisdictions ranging from local municipalities to state and federal agencies. Similarly, the trail passes through a wide range of natural landscapes from remote highlands to the roadsides of local communities. Additionally, there are a multitude of access points along the vast expanse of the trail. These characteristics present further challenges to the effective management of security issues.

Study Methods

The primary study method consisted of a survey of randomly selected users along the AT. Sampling took place in the summer and fall of 1999 (84% of the sample was obtained in the summer and the remaining 14% in the fall). Subjects were approached and asked if they would be willing to complete a mail-back questionnaire. A total of 2,847 AT users agreed to participate in the survey and were mailed a questionnaire. Four mailings were sent out; an initial mailing (a questionnaire, a cover letter, and a postage-paid, pre-addressed return envelope), a postcard reminder, a follow-up questionnaire and a final mailing to non-respondents. Nearly 2,000 questionnaires were completed and returned, representing a response rate of 66 percent. The sample was designed to be as representative as possible of all users of the AT over 18 years of age.

For purposes of management, the AT is divided into four geographic regions – New England, Mid-Atlantic, Southwest Virginia, and the Deep South. Four types of visitors were defined in the study population, 1) day users (respondents who reported being "on the trail for one day only", 2) overnight visitors (respondents who reported being "out for more than one day", 3) section hikers (respondents who reported "hiking sections of the Appalachian Trail with the intent of hiking the entire trail over an extended period of time"), and 4) thru hikers (respondents who were "hiking the entire AT in a calendar year"). Thru hikers were purposively sampled to ensure an adequate sample size. Thus, while study data are designed to be representative of thru hikers, thru hikers do not represent as large a proportion of AT visitors as suggested in the tables. Study data are analyzed across the four regions of the trail and the four types of hikers.

Study Findings

Visitor Perceptions of Security on the AT

Respondents were first asked about their perceptions of security. Again, security was defined for respondents as "feeling free from being threatened or attacked by other people on the trail". Security ratings were based on a four-point Likert scale ranging from "Very secure" to "Very insecure". Visitors were asked to rate their perceptions of security at two locations: while on the AT and while leaving the AT (e.g., to go into surrounding towns). The majority of all AT users felt "very" or "reasonably" secure while on the trail (Table 1). However, feelings of security tended to decline when leaving the trail, especially for section and thru hikers. There were no significant regional differences in the responses to this question.

Table 1. Visitor Perceived Security

While you were out on the AT

	Day user	Overnight	Section hiker	Thru hiker	Total
			Percentages		
Very Secure	67.8	64.2	58.8	74.5	66.5
・ Reasonably Secure	30.6	33.6	38.8	24.2	31.7
Somewhat Insecure	1.3	2.0	2.3	1.3	1.6
Very Insecure	0.3	0.2	0	0	0.2

While leaving the AT (e.g., to go into surrounding towns)

	Day user	Overnight	Section hiker	Thru hiker	Total
			Percentages		
Very Secure	64.8	55.9	34.0	26.6	50.3
Reasonably Secure	33.8	40.0	60.9	67.3	46.0
Somewhat Insecure	1.2	4.0	4.3	6.1	3.4
Very Insecure	0.2	0.2	0.8	0	0.2

The next question asked respondents to rate their level of satisfaction with security at trailheads and parking lots, and with assistance from rangers, ridge runners and volunteers. Again, this question had a four-point response ranging from "Very satisfied" to "Very unsatisfied". Most AT visitors were "reasonably satisfied" with the level of security at trailheads and parking lots (Table 2). However, most visitors were "very satisfied" with the level of assistance from rangers, ridge runners, and volunteers along the AT. These findings were generally consistent across hiker types and geographic/administrative divisions.

Number and Types of Security Problems on the AT

The next set of security questions addressed the number and types of security problems encountered. Again, a

distinction was made between two locations, along the trail and at trailheads, parking lots or within a few miles of the trail. Respondents were asked whether they encountered a security problem on or near the trail in the last 12 months, whether the incident involved a personal threat or attack, or vandalism or theft of personal property, and was the incident reported to authorities. A final open-ended question asked respondents to briefly describe any security problems experienced. Study findings are reported in Tables 3 and 4.

Only a small minority of all types of hikers reported experiencing a security problem on the trail in the past 12 months. Section and especially thru-hikers were more likely to have experienced a security problem, probably because they spend considerably more time on the trail.

Table 2. Satisfaction with Level of Security and Assistance

Level of security at trailheads and parking lots

	Day user	Overnight	Section hiker	Thru hiker	Total
			Percentages		
Very Satisfied	35.7	36.3	27.7	29.1	33.6
Reasonably Satisfied	56.4	55.4	60.2	59.9	57.3
Somewhat Unsatisfied	6.9	7.7	9.6	9.7	8.1
Very Unsatisfied	1	0.6	2.4	1.4	1.1

Level of assistance from rangers, ridge runners, and volunteers along the AT

	Day user	Overnight	Section hiker	Thru hiker	Total
			Percentages		
Very Satisfied	56.7	68.9	60.2	46.2	59.3
Reasonably Satisfied	35.9	29.6	33.3	48.2	35.7
Somewhat Unsatisfied	5.4	0.9	5.6	4.6	3.8
Very Unsatisfied	1.9	0.6	0.8	1	1.1

Table 3. Security Problems along the Trail in Last Twelve Months

Security problem along the trail in last 12 months

	Day user	Overnight	Section hiker	Thru hikers	Total
			Percentages		
Yes	2.2	1.4	4.2	13.7	4.3
No	97.8	98.6	95.8	86.3	95.7

Did incident involve personal threat or attack

			Percentages		
Yes	10.0	6.7	33.3	14.6	15.8
No	90.0	93.3	66.7	85.4	84.2

Did incident involve vandalism or theft of personal property

			Percentages		
Yes	5.0	7.1	10.5	27.7	17.0
No	95.0	92.9	89.5	72.3	83.0

Was the incident reported to law enforcement authorities

			Percentages		
Yes	10.5	20.0	23.5	37.8	27.5
No	89.5	80.0	76.5	62.2	72.5

Table 4. Security Problems at Trailheads, Parking Lots and Near Trail in Last Twelve Months

Security problem at a trailhead or parking lot or within a few miles of the trail in last 12 months

	Day user	Overnight	Section hiker	Thru hiker	Total
			Percentages		
Yes	1.6	3.1	5.3	9.4	4.0
No	98.4	96.9	94.7	90.6	96.0

Did incident involve personal threat or attack

			Percentages		
Yes	7.1	5.3	10.5	10.3	8.6
No	92.9	94.7	89.5	89.7	91.4

Did incident involve vandalism or theft of personal property

			Percentages		
Yes	23.1	47.1	27.8	17.2	27.3
No	76.9	52.9	72.2	82.8	72.7

Was the incident reported to law enforcement authorities

			Percentages		
Yes	41.7	70.6	41.7	50.0	52.2
No	58.3	29.4	58.3	50.0	47.8

Only a very small minority of security problems experienced involved a personal threat or attack. The vast majority of respondents did not report the security problem they experienced to law enforcement authorities. The number and types of security problems experienced at trailheads, parking lots or within a few miles of the trail were generally similar to those experienced on the trail. However, visitors tended to report these security problems to law enforcement authorities more often.

While the percentage of all visitors to the AT who experienced security problems may be relatively low (approximately 4%), the absolute number of all visitors to the trail who experience such problems may be relatively high, perhaps startling so. While there are no official counts of the number of visitors to the AT (such counts would be inherently difficult to conduct), the National Park Service estimates that the trail accommodates at least three million visits per year. Even if only a very small

percentage of visitors report a security incident, this represents a potentially large number of such incidents per year!

Most respondents' open-ended descriptions of security incidents can be grouped into three general categories: (1) vandalism or theft of personal property (2) inappropriate behavior (i.e. partying, heckling, and sexual harassment) and (3) perceived risk or threat from others. Vandalism and theft of property tended to be more common at trailheads and parking lots and usually pertained to automobile break-ins. Inappropriate behavior tended to be most common on the trail or in camp. Examples of this problem include loud partiers nearby or illegal activities such as horseback riding and hunting. Examples of perceived risk or threat from others include encountering people acting "strangely" and people who were inebriated.

Visitor Behavior

A final security question concerned visitor behavior in response to security problems. Respondents were asked whether they intentionally hike or camp near other people for reasons of safety or personal security. If they answered positively they were asked to explain in an open-ended format. Most AT users do not hike or camp near other people for reasons of safety or personal security (Table 5). However thru hikers are much more likely to do so than other hikers.

Explanations for this behavior were diverse. Generally, many users hike or camp near others as a precautionary measure. A common theme along this vein is the motto "safety in numbers". Still others were inclined to adopt this behavior as a result of specific encounters with others. AT users who did adopt this behavior tended to do so when camping more than hiking.

Demographic Analysis

As mentioned earlier, the questions about security were part of a larger, wide-ranging study of use and users of the AT. Respondents were queried about several variables including various demographic questions. Data were analyzed to explore for statistically significant associations between responses to security questions and other independent variables. These included gender, age, race/ ethnicity, group size and type, backcountry experience, and place of residence (e.g. rural or urban). Very few significant relationships were found as a result of this analysis. Of the variables tested, gender had the most significant affect on responses to security questions (Table 6). For example, women were more likely to encounter a security problem involving personal threat or attack, were far less likely to report incidents to law enforcement authorities, and were twice as likely to hike or camp near other people for reasons of safety or personal security.

Table 5. Intentionally Hike or Camp for Safety or Security

	Day user	Overnight	Section hiker	Thru hiker	Total
Yes	13.1	13.7	22.5	40.6	19.8
No	86.9	86.3	77.5	59.4	80.2

Table 6. Relationship between Security on the AT and Gender

Did the incident involve a personal threat or attack against you? (N=82; Chi^2=5.53; p=0.02)			
	Female	Male	Total
	Percentages		
Yes	22.2	4.7	8.5
No	77.8	95.3	91.5
Was the incident reported to law enforcement authorities? (N=67; Chi^2=4.15; p=0.04)			
	Percentages		
Yes	29.4	58.0	50.7
No	70.6	42.0	49.3
When traveling on the AT, do you ever intentionally hike or camp near other people for reasons of safety or personal security? (N=1642; Chi^2=43.34; p=0.00)			
	Percentages		
Yes	29.9	15.6	19.6
No	70.1	84.4	80.4

Other variables with significant associations to security questions include group size and type, level of backcountry experience, and type of place currently living in (Table 7). Visitors who were hiking alone felt less secure while leaving the trail than visitors hiking with family, friends, or other types of groups. Similarly, moderate association was found between group size and whether the respondent hiked or camped near others for reasons of security. As group size increased respondents were less likely to adopt such behavior. Likewise, the more backcountry experience a respondent reported having, the less likely they were to hike or camp near others. Finally, visitors who currently live in a medium city or major metropolitan area were slightly more apt to hike or camp near others for reasons of security than respondents from more rural or suburban areas.

Conclusions and Implications

Security issues on the Appalachian Trail affect visitors in varying ways. While the vast majority of visitors do not personally experience security problems on the AT, many visitors do not feel fully secure and often seek out the safety of others. Moreover, this study includes only visitors to the trail. Not included in the sample are people who were fearful enough for their security that they did not hike the trail at all. To what extent this is occurring is uncertain. Nevertheless, we have a sample of visitors who

expected to be relatively safe. Further, it should be noted that data from this study reflect visitor reports and perceptions of security issues on the AT. This may not necessarily reflect the full extent of actual security issues. For example, Tynon and Chavez (2000) surveyed a selected group of resource managers and law enforcement personnel from areas managed by the US Forest Service in the West and found that many crimes that take place in these areas are not reported to the public. One law enforcement officer stated, "if the general public had any idea, they would not go out there." These are powerful words that suggest that visitor and manager perceptions of security issues in outdoor recreation settings may be at odds. Given the length and diverse character of the AT, it may be useful to re-examine the findings reported here with information obtained from other sources as reported by managers, park rangers, volunteers and law enforcement authorities.

Is security a problem on the AT and, by extension, in parks and outdoor recreation more broadly? Inescapably, the answer appears to be "yes". While only a small minority of visitors in this study report encountering a security problem, the absolute number of visitors to the AT and the security incidents this represents may still be high, perhaps even shockingly so. Still more troubling is the degree to which perceived insecurity generated by such incidents – especially those that receive attention in the national news

Table 7. Relationship between Security on the AT and Other Independent Variables

Hike or camp near others for security/ Number of people in group (N=1659; Chi^2=42.33; p=0.00)							
	1	2	3	4	5	More than 5	Total
			(Percentages)				
Yes	26.9	19.4	14.3	12.5	10.2	14.6	19.6
No	73.1	80.6	85.7	87.5	89.8	85.4	80.4

Security while leaving the trail/Type of group (N=1693; Chi^2=44.02; p=0.00)							
	Alone	Family	Friends	Family & Friends	Organized group	Commercial group	Other	Total
			(Percentages)					
Very Secure	39.9	53.6	53.9	62.7	58.8	66.7	40	50.4
Reasonably Secure	55.7	42.8	42.4	37.3	37.1	33.3	56.7	46
Somewhat Insecure	4.1	3.7	3.4	0	4.1	0	3.3	3.4
Very Insecure	0.4	0	0.4	0	0	0	0	0.2

Hike or camp near others for security/Level of backcountry experience (N=1631; Chi^2=10.21; p=0.04)						
	Novice	Intermediate	Skilled	Advanced	Expert	Total
			(Percentages)			
Yes	12.8	15.1	19.3	22.3	20.3	19.6
No	87.2	84.9	80.7	77.7	79.7	80.4

Hike or camp near others for security/ Type of place currently living in (N=1645; Chi^2=8.09; p=0.15)						
	On a Farm or Ranch	Rural or Small Town	Town	Small City	Medium City	Major City or Metropolitan Area	Total
			(Percentages)				
Yes	14.3	13.8	18.7	19.2	21.4	23.2	19.4
No	85.7	86.2	81.3	80.8	78.6	76.8	80.6

media – ripples through the population of trail users. Incipient doubts about personal security seem to have crept into the minds of many trail users, even to the point of seeking the safety of others while hiking and camping.

To be fair, the data reported in this study should be considered within a broader context. Clearly, crime rates are substantially higher in population centers than they are in parks and related outdoor recreation areas. In the words of one of our study respondents, "I go to get away from people. If I wanted to feel insecure, I would stay at home." However, as our study indicates, crime on the AT, and probably in other parks and recreation areas as well, is substantially underreported. And in the words of another respondent, "You just never know".

What should park and recreation managers do about problems of visitor security? Perhaps a first step is to assess and monitor the nature and extent of the problem through studies like the one described here. If security is found to be a significant problem, then management action is warranted. More focus on law enforcement may be called for, especially in the event of serious criminal activity or threats to visitor safety. However, in large parks and dispersed outdoor recreation areas such as the AT, there are obvious limits to the effectiveness of this approach, and it may even be inappropriate if carried to an extreme. Perhaps a more effective approach is to communicate clearly and deliberately with visitors, including an objective assessment of security issues, suggested guidelines for ensuring a safe visit, and encouraging visitors to report security problems encountered. The Appalachian Trail Conference, the organizing body for hiking organizations that manage the AT, has developed such guidelines that are posted on its website. These guidelines may serve as a model for other park and recreation managers.

Information about the number and types of security issues occurring in recreation settings should be an integral part of resource management. Additional research is needed to obtain more detailed information on the number and types of security problems experienced by visitors, how perceptions of security affect visitor behavior and experiences, the most effective and efficient methods for dealing with security issues in outdoor recreation settings, and how these practices might impact visitors.

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