

Northeastern Recreation Research Symposium Policy Statement

The Northeastern Recreation Research Symposium seeks to foster quality information exchange between recreation, tourism, and resource managers and researchers throughout the Northeast. The forum provides opportunities for recreation and tourism research managers from different agencies, states, and government levels, as well as those in the private sector to discuss current issues, problems, and research applications in the field. Students and all those interested in continuing education in recreation and tourism management are particularly welcome.

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Proceedings of the 1997 Northeastern Recreation Research Symposium

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Compiled and Edited by:

Hans G. Vogelsong
The Pennsylvania State University

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An Examination of Recreation Boating Site - Specific Impact Parameters

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Chad Dawson



**Wildland
Recreation**



The Role of "Outdoor Capital" in the Socialization of Wildland Recreationists

Robert D. Bixler, Ph.D.

Manager of Research and Program Evaluation,
Cleveland Metroparks, 4101 Fulton Parkway,
Cleveland OH 44144

Beverly Morris, Ph.D.

Post-Doctoral Research Associate, Cleveland
Metroparks, 4101 Fulton Parkway, Cleveland OH
44144

Interviews were conducted with canoeists and kayakers to identify key socialization experiences that led to involvement in these activities. Nonparticipants were also interviewed as a comparison group. Family involvement, both direct and through delegation to institutions such as summer camps and scouting, were key factors. While there was tremendous variation in socialization experiences, canoeists and kayakers had "accumulated" large numbers of outdoor experiences by the time they had reached their teens. This "outdoor capital" provides a solid experiential foundation for adopting water-based wildland recreation activities.

This study, using comparative biographical methods, investigated the differences in socialization experiences between young adults who are, and are not, involved in canoeing or kayaking. Results illustrate the importance of many and varied childhood experiences in later adopting wildland recreation activities. Practitioners may want to mimic some of these socialization forces in programming for youth from families uninvolved in outdoor recreation.

Literature Review

How people do or do not become involved in wildland recreation activities is still unclear, although experiences during childhood seem to be important. Kelly's (1974, 1977) work on socialization suggests that about half of all recreation activities, whether outdoor activities or not, are learned during childhood. Scott and Willits (1989) provided longitudinal data showing that adults enrolled in high school in 1947 still exhibited many of the same patterns of leisure involvement 37 years later. O'Leary, Behrens-Tepper, McGuire, & Dottavio (1987) found that 83% of hunters began hunting before the age of 18. Other studies have found varying degrees of relationship between childhood introduction to an activity and later adult participation (Sofranko & Nolan, 1972; Yoesting & Burkhhead, 1973; Yoesting & Christensen, 1978). Using frequency of recreation participation data, Miles et al (1993) noted that

participation rates in some wildland recreation activities increase during parenthood, and speculated that parents are purposefully introducing their children to these activities during this period. While these studies document the significant relationship between childhood experiences and later adult participation, none of them attempted to identify the specific socialization processes which occur during childhood.

Scattered research suggests there are significant precursors to establishing interest in many wildland recreation activities. First, studies of adult risk recreationists indicate a high degree of personal involvement in the activity, suggesting multi-faceted involvement over a long period (Schuett, 1993). Decker, Purdy, & Brown (1986) found that exposure to hunting during childhood included accompanying other family members on hunts before the child was of legal hunting age, sharing hunting stories, helping clean game, and eating game. Dargitz (1988) found that urban youth, living with adults who fished, were significantly more likely to be involved in fishing, and reported enjoying fishing more than those without adult anglers at home. Brandenburg, Greiner, Hamilton-Smith, Scholten & Webb (1982) included opportunity for a recreational apprenticeship with a close acquaintance as a key component of a model explaining adoption of recreation activities.

Research has also documented the importance of childhood experiences in the development of attitude and skills which are, at least peripherally, important to being able to participate in some wildland recreation activities. For instance, studies of significant life experiences of prominent conservation leaders and environmental educators have consistently identified childhood play in natural environments as helping shape later interest in natural environments and conservation careers (Chawla, 1988; Chawla, 1997; Chawla & Hart, 1988; Palmer, 1993). Similar work has identified childhood play and unsupervised exploration as important in developing wayfinding competencies necessary for exploring unstructured environments (e.g. wildlands) (Bixler, Carlisle, & Floyd, 1995; Kaplan, 1976; Moore & Young, 1978). In contrast, three studies have documented the range of negative perceptions of wildland environments held by children or adolescents who have limited exposure to wildland environments (Bixler, Carlisle, Hammitt, & Floyd, 1994; Bixler & Floyd, 1997; Bixler, Floyd, & Hammitt, 1995).

The existing literature documents the importance of childhood as a period for adopting many recreation activities. It also suggests that seemingly unrelated outdoor childhood experiences are important for learning basic skills and developing attitudes that increase the appeal of the sociophysical environments in which wildland activities occur.

There are many possible approaches to begin documenting the specific socialization processes that are part of adopting a wildland recreation activity.

Life-span development and social-network strategies are two approaches. However, more exploratory work is needed before implementing these approaches.

In this study, the general concept of “cultural capital” (Bourdieu, 1986) is transformed to the concept of “outdoor capital” which refers to the accumulation of outdoor experiences within social groups. These experiences result in the development of outdoor skills, vocabulary, values, social networks, accumulation of outdoor equipment and clothing, and outdoor-related references and even art.

Cultural capital is a concept traditionally used to explain achievement in economic life domains such as education, career attainment and social status, but it describes a non-economic process. Cultural capital has been used to study development of interest and skills related to high-brow cultural activities. Individuals growing up in a family and community with a high degree of cultural capital will accumulate knowledge, skills and experiences, objects, and social and institutional networks, that allow them to function more effectively in higher social strata. Used in research, measures of cultural capital have added to the ability of human capital and social class variables to predict educational and economic success (DiMaggio, 1982).

Bourdieu (1986) argues that cultural capital is accumulated in three states: embodied, objectified, and institutionalized. Embodied cultural capital refers to attitudes and knowledge which are either implicitly or purposefully learned. Cultural capital cannot be transmitted instantaneously the way economic assets can be. Embodied cultural capital is assimilated through interacting with cultured people from a high social strata. Objectified cultural capital is material objects and media which can be transferred or purchased with economic capital. To actually use the objects in their intended way, the individual must have embodied capital either in person or by proxy. Institutionalized cultural capital is credentials or restricted memberships symbolic of cultural competence, from organizations that have widely-recognized cultural standing, independent of the persons receiving degrees or membership.

In this paper, we present data organized around the concept of “outdoor capital” in which families accrue wildland recreation-related knowledge, skills, and experiences that are transmitted to children. Children in social environments with a high degree of accumulated outdoor capital should tend to view wildland recreation as normative behavior and be able to quickly learn and perform a wide variety of wildland recreation activities.

Method

In-depth interviews lasting approximately one hour, were conducted with ten dedicated canoeists and kayakers, four casual water-sports participants, and ten

individuals not involved in these activities (n=24). Participants included six professionals working as outfitters, park naturalists, or in scouting. The remaining non-professionals were recruited at a canoeing event, and through a screening questionnaire given to seasonal employees working at a zoo in a large metropolitan area. Non-participants were recruited from a park district employee list or from the same pool of seasonal zoo employees. All participants were between 18 and 33 years of age with equal numbers of males and females. The questions were designed to elicit from the participants a description of outdoor experiences they had during childhood, teenage and early-adult years. Follow-up questions dealt with the social circles from which interest in wildland recreation evolved. A series of questions at the end of the interview focused on respondents' perceptions of 12 different motorized and non-motorized, water-based activities.

Results

Involvement in canoeing and kayaking among informants ranged from those heavily involved in water-based wildland recreation to those with absolutely no interest in such activities. Life histories of two informants are contrasted, followed by a discussion of different wildland socialization factors.

Life Histories

Brief life histories of two individuals interviewed illustrate the differences in accumulated experiences between those active or inactive in boating. Both the informants were unmarried males, 25 years of age, who grew up in stable, two-parent families in older suburbs of Cleveland.

Carl is an avid boater who described his parents as “outdoor-type people” and his white-collar father as being at heart “a farmer who is most happy out-of-doors.” His mother grew up in a city, but was the “adventurous sort who is always willing to try anything.” His parents were active members of a canoeing organization and took the children on extended trips, tent camping and canoeing together. Since his mother was a swimming instructor, Carl learned to swim at an early age, becoming a certified life guard and had many experiences swimming in pools, lakes and the ocean.

He became a Cub Scout, at a time when he believes Cubs were allowed to do things that today might be considered “a little bit dangerous.” While his parents “pushed” him towards scouting, he felt it was also his choice to get involved. The only outdoor activity he was involved in that was not directly tied to parents or scouting was his rock climbing in junior high. He and his friends climbed in a nearby ravine and bought rock climbing equipment that they “kept hidden from our parents so that they wouldn’t wonder where we were going.” During family rafting trips, Carl admired the dexterity of the kayakers sharing the river, and became fascinated with the sport. By age 14, he had

purchased his own kayak and his parents bought him the accessories. In his teens, he continued to take extended canoeing trips with his parents and by 15 was teaching canoeing at a scout camp.

Carl credits his father as the source of his outdoor interests. If his father didn't have the needed skills, the two of them learned together. His scouting experiences were also important because "it was completely and totally done by us (scouts)." As an adult, he continues to be active in camping, backpacking, kayaking, and professionally instructs wildland recreation activities and leads commercial trips.

In contrast, Jim is uninvolved in wildland recreation of any kind. He grew up in a blue collar family. His father neither hunted nor fished but was "a bookworm, a real reader." His parents took the family on carefully-planned trips to amusement parks, zoos, Las Vegas and Florida. Closer to home, the family's outdoor activities were primarily picnics at local parks.

His only tent camping experience was in the backyard and failed when it started to rain. He believed he could successfully camp if he wanted to, but "I like to have my davenport, my television and my commode right there if I need it. I don't need to be out in the middle of nowhere I have nothing to prove."

He stated that as a child he was "hydrophobic" for a long time. Around age ten, his parents saw his lack of swimming skills as a safety issue and sent him for swimming lessons to a "German (type) instructor ... no systematic desensitization ... just threw me in the deep water." He maintains he is "an okay swimmer ... I know what I have to do in deep water even if I can't. It's not my favorite thing in the world, but it's good exercise." He really likes "to look at water, more than being in it."

He was never a Boy Scout and his canoeing experiences were limited to two trips during adolescence. These were commercial ventures on a river that was "two feet of water, no challenge" in "the middle of nowhere. There's no K-Mart or McDonald's." He currently does no "traditional hiking," but plays basketball and football.

The contrast between the two is striking. Carl was raised in a family that had numerous outdoor experiences. The parents viewed outdoor and wildland activity as normal, valued activities. They taught their son skills and encouraged him to develop additional outdoor interests and skills beyond their abilities. In contrast, Jim was a member of a family lacking in outdoor experiences and found few opportunities to participate in wildland recreation.

Swimming

During the interviewing, it became obvious that the canoeists and kayakers were mostly swimmers and that many non-participants were either non-swimmers

or their swimming experiences were limited to pools. Strong swimming skills probably increase the appeal of paddling unstable boats such as canoes and kayaks. Motivation for learning swimming skills frequently came from parents who wanted the child to learn to swim for safety and recreational reasons. Some informants started swimming at such a young age that they cannot recall any details: "I was practically born in the water." "Started swimming lessons before I could walk." "I don't remember ever not being able to swim." Some informants were taught to swim by their parents, others had formal swimming lessons. Many informants credited their parents' concern for their welfare as the motivation for swimming lessons. "I think it was my parents' desire that I learn to swim because my dad works in shipping and we were always around water. We'd go on the tug boats. You would hear stories of people that work on the boats that fell overboard. One guy drowned ... he didn't know how to swim." From another informant: "My mother said 'I want you kids to learn how to swim because I didn't know and now I'm afraid and I'm trying to do things like sail in a boat and I'm scared to death.'"

Among the group of avid canoeists and kayakers there was a respect for the dangers of water. One kayaker thought it "incredibly bizarre" that whitewater rafting is so popular because she is "sure they have no idea how dangerous it is." A male kayaker stated "Doing whitewater kayaking you have to know how to swim and you have to be able to work with the current to get somewhere if you do come out of your boat. You have to have a healthy fear of the water."

Perception of Natural Bodies of Water

The experiences of swimming in pools and in natural bodies of water were perceived to be quite different. Many were less enamored of natural bodies of water; other swimmers preferred natural bodies of water. These statements are typical of the dialogue: "Yucky bottom? It didn't really bother me." "When I'm out on watercraft clinics with my dad I have no problem jumping into the water. I don't mind that, but I just don't like that part when you have to go from shore out to open water. Once you get past the stones, there is slippery algae and I just don't like that."

Parents and Other Relatives

Introduction to wildland recreation was frequently by the parents or other relatives by actually taking the child to natural areas, teaching them skills or telling stories about their own childhood experiences: "I learned camping from my dad. Survival in the woods - - my dad. Building traps, hunting, canoeing, boating, all from my dad." "Both my parents are very interested in nature and wildlife, but my mom in particular. She was always looking at plants with me when I was young." "I have real strong memories of going to Arizona. It was an uncle, we went out into the desert and looked for creatures. Hiked around, looked for petrified wood and animals in the deserts."

"I heard stories about my dad's dad in Ireland, who spent a lot of time outdoors."

Institutions

Institutions often expanded the range of activities a child was introduced to, particularly the traditional outdoor-oriented organizations such as Boy Scouts and Girl Scouts and summer camps. Several girls participated in scouting activities through the Boy Scouts. These "closet Boy Scouts" were girls who had tried Girl Scouts, but for various reasons dropped out. "I was in Brownies for a week. I was a tomboy and all the girls wanted to do macramé and I wanted to go out and play in the mud. My brother was in Boy Scouts and my dad was the leader and my mom was the den mother so I hung out with the guys. I did a lot of camping with them."

Other institutions included school clubs and summer camps, which provided opportunities to go on backpacking, boating and skiing trips. Summer camp was enthusiastically mentioned by one individual as an institution that practically replaced her parents: "I went to boarding school when I was 13. I haven't spent two weeks with my parents since I was 13. I loved summer camp. We did all the activities." While some mention was made of school camping programs in the outdoors, these were never acknowledged by our informants as significant developmental influence.

Residential and Summer Homes

The childhood residential home selected by the parents provided a setting for childhood play and exploration. A few of the informants mentioned natural or undeveloped areas close to home that were available for play during childhood. For some informants, vacation homes were mentioned as a significant influence. These ranged from tent camping on a privately-owned wooded area to cottages on lakes.

Peers

Peers had either a positive or negative effect. Some informants reported ridicule from peers not involved in wildland recreation. This was a problem particularly in adolescence. "When you're a Girl Scout in high school, you're a geek anyway." Some of the informants used effective counter responses: "Someone comes up to you and sees you in a Boy Scout uniform and says, 'Oh, man, I had no idea,' and starts to give you a hard time, and you say, 'I was in Australia over Christmas break because of it. Where were you?'"

Active wildland recreationists positively influenced their friends who might otherwise have had few experiences. One informant whose family was active in wildland activities and owned a summer cottage and much outdoor equipment said, "I remember doing outdoor activities with my parents and then in high school I organized it for my friends." Also, peers with

mutual enthusiasm for wildlands reinforced each other's interests. An informant who had parents with few outdoor skills but who were supportive of her interests, described in rich detail the experiences she and a friend had as children and adolescents planning bike trips to the parks: "We'd plan it for days in advance and we didn't care about getting wet and we didn't care about getting dirty ... Sometimes we would invite the boys to go with us, but we'd do all the planning for them." The girls also shared stories which expanded each other's outdoor horizons: "She belonged to her school's outing club ... I remember her telling me about some of the things she did with them, things I had never really done. I never would have thought about snowshoeing until she told me what a good time she had snowshoeing ... she adventured with me."

Discussion and Conclusion

While there were many types of socialization forces identified in this project, the interviews suggest those active in wildland recreation had accumulated many direct and vicarious experiences during their childhood and teen years. Parental influences included: supporting involvement in scouts, choosing traditional outdoor summer camps for their children, telling stories of their outdoor experiences, owning property that was wild or near parks or other undeveloped areas, visiting relatives who involved the children in outdoor activities, teaching specific wildland skills, traveling substantial distances for summer vacations to parks, access to outdoor equipment and being interested in learning new outdoor activities along with their children. Positive peer influences included: sharing equipment with others, providing friends access to familial resources such as summer cottages and outdoor equipment, and having friends to plan and go on adventures. Institutions provided many opportunities to learn activities that required considerable investment in equipment and specialized knowledge. Choice of institutions often reflected the parents' outdoor values.

Childhood play experiences in natural environments were explored with informants because of the consistent findings in socialization studies of conservation leaders that outdoor play was a significant formative experience. Play experiences also reflect the concept of outdoor capital in both an embodied and objectified sense. Parents either chose a more natural place to live or a home near a natural area, or took regular trips to parks. Any of these choices would allow their children to accumulate unsupervised play and exploration experiences. Data from this study were less than conclusive, failing to mirror the findings of other studies on the importance of childhood play. Some wildland recreation enthusiasts had play experiences in natural areas and recalled them with positive feelings, but others did not. This area needs further investigation. Informants who were boaters had different styles of participation

in their favorite sport. The informants who described canoeing primarily as a means to experiencing riparian environments and wildlife did have memorable childhood play experiences, but they were also all in their early thirties. Canoeing as a means of observing nature may tend to emerge later in life, with younger adults focusing on skill development, taking trips, and risk taking. It is also possible that water-based wildland recreationists, lacking childhood play experiences in wildland environments, are less likely to evolve from skill- and risk-oriented canoeing or kayaking toward boating as a means to natural-area experiences.

Both boaters and nonparticipants had varying levels of perceived swimming abilities, but only the non-participant informants contained non-swimmers. Informants tended to describe their parents' motivation for wanting them to learn to swim in terms of "drown proofing." Non-participants in water-based wildland recreation had done little or no swimming except in swimming pools, while the wildland recreationists reported childhood swimming in some combination of pools, lakes, ponds, rivers, and oceans. Swimming seems to be an important prerequisite for developing a lasting interest in recreation activities that involve maneuvering a watercraft that is easily capsized. Swimming skills represent embodied outdoor capital to the extent this skill provides confidence in wildland boating and institutionalized outdoor capital in the form of Red Cross swimming certification.

Strong swimming skills may not be sufficient. Most informants viewed natural water bodies differently than swimming pool. There was indication that harmless fish, insects, mud and algae were either feared or disgusting to nonparticipants. These differences suggest that both the perception of adequate swimming skills (psychomotor skills) and tolerance for full-body contact with natural bodies of water (environmental socialization) are necessary prerequisites for being an active canoeist or kayaker. Developing a positive attitude towards natural bodies of water is probably a function of parents or peers helping a person make appropriate interpretation of the things in natural bodies of water and repeated contact with water through swimming and wading.

The family was often the source of much learning about wildland environments. While only some families had backyard wild areas for play, most families of water-based wildland recreationists were involved in frequent trips to parks, vacations that tended to involve visiting natural resource-based parks, and visiting relatives who either lived in rural areas or took their visiting nieces or nephews to their favorite natural areas. There was some evidence of parents sharing outdoor adventures with children through telling about outdoor experiences they had growing up. The notion of multi-generational

accumulation of outdoor capital was evident in discussions of visits with grandparents (or aunts and uncles) who consistently involved the informants in outdoor activities to their farm, wooded area or visits to rivers or oceans during family visits.

The introduction to canoeing or kayaking was either by the parent, a peer, scouts or camping. Participants consistently reported encouragement from their parents, and sometimes had friends who were also enthusiastic about the activity. Institutions such as Boy Scouts, Girl Scouts or summer camps were where canoeing or kayaking were typically learned. Parents sought institutions that reflected their outdoor values and their desire for their children to be exposed to additional wildland recreation activities. Belonging to scouting programs or attending summer camp are examples of institutionalized outdoor capital.

This project strongly suggests that adults who are enthusiastic about wildland recreation have had a large number of outdoor experiences growing up. Nonparticipants have few wildland experiences. The amount of accrued outdoor capital during childhood seems to be predictive of involvement in wildland recreation activities as adults. Unfortunately, outdoor capital provides little help in defining the style of participation in a wildland recreation activity.

In terms of application, the data supports current educational strategies of teaching canoeing or kayaking skills (paddle strokes, portaging) and safety, but only for children from families with outdoor capital. In contrast, the results present a disquieting look at the effort which may be needed to effectively introduce youth from families with no outdoor capital to wildland recreation activities. For canoeing and kayaking, it may be necessary to help youth develop: excellent swimming skills and comfort in being in natural bodies of water, tolerance for the negative aspects of wildland environments through frequent contact with wildlands, trip planning and wayfinding skills plus the usual skills necessary to canoe or kayak. Helping these youth to establish a peer group that is enthusiastic about these activities may also be an essential strategy to counter negative peer pressure.

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PROTECTING AND MANAGING TRADITIONAL ALLAGASH WILDERNESS WATERWAY RECREATION ACTIVITIES

Thomas J. Cieslinski
Maine Department of Conservation
Bureau of Parks and Lands

Abstract: The statute creating the Allagash Wilderness Waterway in 1966 specified several outdoor activities traditionally participated in along the watercourse. Additionally, there are other outdoor activities traditional to the watercourse. The identification and provision of opportunities for these activities, consistent with maintaining wilderness character, is central to long-term protection and management of the Waterway. An Advisory Committee has been created by the Bureau of Parks and Lands to assist the Bureau in identification of suitable opportunities for traditional outdoor activities and preparation of a plan to guide management of the Allagash into the 21st Century.

Introduction

The Allagash Wilderness Waterway is located within 24 unorganized townships and one organized town in northwestern Maine, in an area referred to in Maine as the "North Maine Woods."

It is almost entirely surrounded by privately owned land managed exclusively for forest products. The major private landowners include Bowater, International Paper Company, Seven Islands Land Company, Prentiss and Carlisle, and Irving Pulp and Paper.

Since 1990, the average annual summer use of the Allagash has been 43,540 visitor days. Summer day use has increased approximately 17% annually, while camping use has declined approximately 7% annually.

In the same time period, the average annual winter use was 11,000 visitor days. Winter use has increased an average of 9% annually. Winter use fluctuates widely based upon how early there is sufficient snow cover for snowmobiling and ice for ice fishing.

The Allagash Waterway was created by state acquisition of 22,840 acres of land between 1966 and 1970. The state-owned land is contained within a 500 foot strip of land, known as the Restricted Zone, along either side of the 92-mile long watercourse.

The "Waterway" however, is not just this state-owned strip of land; it also encompasses a New Construction Area, the One-Mile Area, and "Visible Areas."

The **New Construction Area** extends one-quarter mile from the outer boundary of the Restricted Zone. Within this area all development must be approved by the Bureau of Parks and Lands. The Bureau has approved 26 development projects in the New Construction Area,

primarily for road construction for timber harvesting. In addition, three state camps were constructed for administration purposes by other state agencies.

The **One-Mile Area** extends one mile from the high water mark of the shoreline of the watercourse. The Bureau of Parks and Lands must be notified of all timber harvesting operations and herbicide applications within this area. In addition, the Bureau must approve harvest operations and herbicide applications within **Visible Areas** in the One-Mile Area north of Churchill Dam.

In addition, there are several Public Reserved Land units located within the One-Mile Area totaling 34,155 acres, which are managed for remote recreation, wildlife habitat, natural features, and forest products. Many of these Public Reserved Lands are adjacent to the state-owned Restricted Zone.

These Public Reserved Lands are managed by the Bureau of Parks and Lands, the same agency that manages the Allagash Waterway.

The Allagash was dedicated as the first state-administered component of the national wild and scenic river system in 1970. A management plan for the Waterway was prepared by the Bureau in 1973. The Bureau is in the midst of updating that plan with the assistance of a 22-member Advisory Committee. In addition to three Advisory Committee meetings, there have been two field trips to the Waterway and an additional winter trip by staff. Two major tasks of the planning effort are to determine and provide for the recreation activities that were traditional at the time the Waterway was created, and to identify the policies, objectives, and strategies necessary to maintain or enhance opportunities for these traditional activities.

Traditional activities

Activities traditional at the time of creation of the Allagash Waterway in 1966 include:

- Canoeing and river fishing with and without the use of outboard motors;
- The use of watercraft with outboard motors on the larger lakes of the watercourse, primarily for fishing;
- Remote camping along the watercourse;
- Hunting along and on the watercourse;
- Hiking from the shoreline to several fire towers on nearby mountain summits;
- The use of float and ski planes to bring "sports" to favorite places on the watercourse; and
- Snowmobiling.

Overnight stays in rustic cabins at several sporting camps was also traditional. The Bureau was required by statute to purchase and remove most of the sporting camp cabins. Two however, were allowed by statute to remain: Nugent's on Chamberlain Lake and Jalbert's on Round Pond. These two sporting camps were acquired by the state and are leased for management. Major use periods for the camps are May through October and January through March. Use of these camps accounts for approximately 8% of the total Allagash use.

Non-traditional uses

Over the years, several activities that did not exist or were not common prior to 1966, have become common in the north woods of northern Maine. These include:

- The use of all terrain vehicles on trails, plowed roads, and frozen lakes in the winter;
- Camping overnight in recreational vehicles;
- Camping overnight in ice shacks;
- Moose hunting in October; and
- Day use of the watercourse from non-traditional access points or routes.

ATV summer use is prohibited by North Maine Woods, Inc., A landowner consortium which manages road access control gates to the north Maine woods area from May through November. The Bureau is a member of this consortium.

Management planning

To protect and manage traditional Allagash Wilderness Waterway recreation activities the Bureau and the Advisory Committee first had to define "wilderness," which was not defined in the Allagash statute.

Wilderness Character Concept

- Opportunities Are Provided For Traditional Recreational Activities Including Canoeing, Primitive Camping, Stream And Lake Fishing From Canoes And Small Boats, Shoreline Fishing, The Use Of Small Motors On Canoes And Boats, Hunting, Hiking To Mountain Summits, Day Use, Limited Float Plane Access For Canoeing And Fishing Parties, Snowmobiling, And Ice Fishing.
- Limitations Are Placed On The Number Of Motor Vehicle, Float Plane, Boat, And Snowmobile Watercourse Access Points.
- Water Quality And Quantity Are Maintained At Sufficient Levels For Traditional Recreation Activities And Water Dependent Resources.
- Historical Structures And Cultural Artifacts Are Protected And Interpreted.
- Rare, Unusual, Or Special Natural And Geological Features Are Protected.
- Opportunities Are Provided For Secluded Watercourse Travel And Camping.
- Limitations Are Placed On The Amount And Impact Of Recreation Use.
- Administrative Structures Are Unobtrusive From The Watercourse.

Seven policies will provide direction for management of the state-owned Restricted Zone, the natural setting of the New Construction Area, and the land and waters of the One

Mile Area. These policies will be pursued by the Bureau, landowners, and other resource management agencies.

Allagash Management Policies

1. Enhance The Wilderness Character Of The Restricted Zone.
2. Prevent Development In The New Construction Area That Is Incompatible With The Wilderness Character Of The Restricted Zone.
3. Protect And Manage Areas Visible From The Watercourse, In The Restricted Zone And The One Mile Area, To Maintain The Appearance From The Watercourse Of A Largely Undisturbed Forest Cover.
4. Identify And Manage Important Natural, Historical, Cultural, Wildlife, And Fishery Resources Within The Restricted Zone.
5. Identify And Manage Natural, Historical, Cultural, Wildlife, And Fishery Resources Located In The One Mile Area, Outside Of The Restricted Zone, That Are Visited By Waterway Users Or That Contribute To Waterway Character.
6. Provide A High Quality Recreation Experience For Traditional Uses Of The Watercourse.
7. Maintain Watercourse Water Quality And Ensure Sufficient Quantity For Wildlife And Recreation Uses.

With the wilderness concept and seven policies in mind, here is how we are addressing the traditional and non-traditional activities that currently occur in the Allagash.

Primitive camping:

- * Is allowed only at 80 authorized campsites (142 camping cells).
- * We will sample campsite use to determine which campsites are often filled to capacity or "crowded."
- * We will determine the physical condition of campsites and the degree of solitude available at each campsite cell.
- * We will develop a plan for creating new campsites and/or replacing or renovating existing campsites based upon daily use and physical condition findings.

Winter camping

- * Is allowed in two parking lots located outside of the Restricted Zone near Chamberlain Bridge, at authorized campsites, and in ice shacks.
- * We will continue to allow winter camping at the Chamberlain Thoroughfare and Kellogg Brook parking areas, but will not increase capacity beyond what it is today.
- * We will not allow overnight camping in ice shacks located either on the ice or in the Restricted Zone.

Sporting camp use

- * We will allow continued use of Nugent's and Jalbert's Sporting Camps. However, the number of cabins and

capacity at those camps cannot be increased beyond the number existing in 1966.

- * The repair, improvement, and replacement of existing camps and structures will be allowed using design and materials that are as consistent as possible with the original housing.
- * No motor vehicle access will be allowed except for administrative or emergency purposes.

Watercraft outboard motors and watercraft

- * Use of outboards will not be allowed on Allagash Lake and Stream. Use of outboards of 10 horsepower or less allowed on Eagle Lake north. In all likelihood unlimited horsepower will continue to be allowed on Chamberlain and Telos Lakes.
- * Personal watercraft, racing boats, and party boats will not be allowed in the Waterway.

Hiking

- * Authorized land trails to the watercourse will be listed in the Allagash rules.
- * Trails to nearby mountain summits will be maintained by the Bureau.
- * Traditional foot access routes to the watercourse will be maintained and promoted. No other walking trails in the Restricted Zone will be allowed by the Bureau.

Snowmobiling

- * Currently allowed on all lakes and ponds except Allagash Lake and Stream.
- * Authorized snowmobile routes to the watercourse will be listed in the rules. These will include several existing trails.

All terrain vehicles

- * All terrain vehicles will continue to be prohibited in the Waterway from April 1 through December 31, except for emergency and administrative purposes.
- * All terrain vehicles will be prohibited within one mile of Allagash Lake and Stream.

Float plane and ski plane landings

- * There will be 7 authorized float plane landing sites.
- * Lakes and ponds within the One-Mile Area where float planes may land will be listed in the rules.
- * Ski planes will continue to be allowed on frozen lakes and ponds within the One-Mile Area, except for Allagash Lake.

Canoeing

- * Only canoes will be allowed on Allagash Lake and Stream, and on the watercourse north of Lock Dam.
- * The size of canoeing/camping parties will continue to be restricted to 12 or less.

Day use

- * Day use has increased over the years while camping overnight has decreased. We will study the amount and impact of summer and winter day use to help determine if a day use fee system should be implemented, and we will consider other methods to manage day use, such as limiting the number of users in certain areas.

Hunting

- * Moose hunting in the Restricted Zone and on the watercourse will continue to be prohibited.
- * Other types of hunting will be allowed between October 1st. and April 31st.

Fishing access

- * Motor vehicle access to the watercourse will continue to be available at seven locations. Other motor vehicle access locations will be considered.

Historical structures

- * The tramway/locomotives and boarding house will be restored and educational displays will be provided at these locations.
- * Other important structures and features will be identified, protected, and managed according to interpretive plans for each.
- * Educational displays will be provided at the boarding house.

Enhancing the wilderness character of the Restricted Zone and the watercourse

In addition, there are many additional proposed strategies that will maintain or enhance the wilderness character of the Restricted Zone and the watercourse. These include the following.

- * Motor use of any kind, including powered ice augers, will continue to be prohibited on Allagash Lake and Stream, except for administrative purposes.
- * Power saws will continue to be prohibited in the Restricted Zone and on the watercourse, except for administrative purposes and at sporting camps.
- * Generators for winter camping will be allowed only at the Chamberlain Thoroughfare and Kellogg Brook parking areas and at sporting camps.
- * The discharge of wastes, including soaps and detergents, into the watercourse will continue to be prohibited.
- * The harvesting of live trees within the Restricted Zone will be allowed only for the construction of new or replacement administrative structures and associated roads.
- * Insect infestations will be allowed to occur in the Restricted Zone without suppression or control.
- * All wildfires will be suppressed immediately.

Conclusions

Providing suitable opportunities for the traditional recreation activities of the Allagash will be a difficult task. Even more difficult will be the task of limiting or prohibiting non-traditional activities. The Bureau is up to the challenge, but limited funding, reduced staffing, priorities elsewhere within the State Park and Historic Site system, and the demands of a society becoming more accustomed to utilizing new technology and new recreation equipment will be formidable obstacles to achieving the strategies identified for the Allagash. The Bureau will rely more and more on friend's groups, other volunteers, donations, and dedicated revenue to achieve our Allagash strategies.

NEW ENGLAND'S NORTHEAST RECREATION ACTIVITY MARKETS: TRENDS IN THE 90S

Rodney B. Warnick

Associate Professor of Hotel, Restaurant and Travel
Administration, University of Massachusetts at Amherst,
203B Flint Lab, Amherst, MA 01003-2710

Abstract: The purpose of this study was to examine activity markets within three major geographic areas in the Northeast for the period of 1994-1996. The activity markets examined included travel activities; recreation/sport activities; outdoor activities; interest in fitness activities and cultural/historic interests. The geographic markets of each activity group were examined by primary, secondary and tertiary markets of Central New England. Findings here indicated that the activity markets with potential to travel to New England show signs of growing; however, there exists considerable variation between the different geographic areas.

Introduction

Recent studies have examined trends in the activity and geographic markets for New England's travelers and recreation participants (Warnick 1993, 1994, 1995, 1996 and Kuentzel, Robertson and Ramaswamy, 1995). These studies have indicated that domestic travel in the Northeast has become a mature market and also very different in terms of changes by state within the Northeast. This paper examines activity markets by their major metro areas and groups these areas into primary, secondary and tertiary markets to examine how trends within the activity markets and by geographic locale may affect the travel potential to New England.

In Warnick's previous studies of geographic markets, the markets were examined by large geographic regions and their travel behavior in selecting New England as a primary destination. Specifically, all of the Northeast was considered as one major market and compared to other regions (the South, Midwest and West) when individuals indicated travel to New England as a primary destination choice. These studies indicated that New England was considered to be a mature destination region for domestic travel. The region had not rebounded to the peak market demand of the mid-80s. However, the most recent study (Warnick 1996) indicated some rebound in the travel patterns. The Vermont and New Hampshire travel study (Kuentzel, Robertson and Ramaswamy, 1995) showed domestic travel to these states had also become mature, but they also found very different changes in travel patterns by state residence and primary destination of the visitors. Therefore, evidence does suggest that the future of travel and recreational pursuits in New England are changing and need further attention and review. Specifically, it may be helpful to examine activities and changes within these activities by geographic subregions of the Northeast to further assess the market potential of New England.

Purposes of Study

The purposes of this research paper are two-fold: 1) to examine and update recreation activity markets for New England in the 90s by specifically examining activity trends for 1994, 1995 and 1996; and 2) to continue to identify changing patterns in these activity trends by examining the geographic markets by primary, secondary and tertiary regions of those who may potentially visited New England.

Method

A limitation of Warnick's studies and justly noted is the lag time in monitoring the trends. The data are usually two to three years behind the current publication time. This was simply a result of the release time of the Simmons Market Research Bureau's activity data to universities for research and teaching purposes. However, other data sets exist which now allow more timely review of the travel and recreational trend analysis.

Standard Rate and Data Service's (SRDS) *Lifestyle Market Analyst* has been published on a yearly basis since the early 90s and provides perhaps the most recent and timely data available of selected markets. In addition to profiling the market for the activity, SRDS provides data specific to over 200 major markets areas. These data are provide at the local, regional and national levels and provide three distinct ways of identifying who one's customers are, how they differ from market to market and how they spend their time in over 60 different lifestyle activities.

SRDS' data are based on information collected from more than 20 million households collected on an annual basis. This includes extensive information on the interests, hobbies and activities popular in each geographic and demographic market. The data come from a joint venture of SRDS and NDL (National Demographic and Lifestyles, Inc., a subsidiary of R.L. Polk and Company). The demographic and lifestyle profiles collect in this data set are updated annually and the release of the 1990 census information enables NDL to summarize, weight and update the profiles to be reflective of the U.S. population and their respective markets. NDL uses a variety of sources to derive its estimates including Claritas for its household counts and demographic estimates.

NDL collects the data from U.S. household by inserting consumer information questionnaires into the packaging of a variety of consumer goods. From the large 20 plus million household surveys a sample of over 10 million, which represents data collect over one year, from November to November, are weighted and adjusted to reflect the entire U.S. population and its respective regional locations. The data are collected and represent 211 DMAs (designated market areas) as compiled by the Nielsen Company. These markets, DMAs, are more commonly known as TV or broadcast markets and are largely groupings of counties with commercial stations located in metro/central areas. DMAs are non-overlapping areas used for planning, buying and evaluating television audiences. Lifestyle markets and activities are created by NDL in conjunction with product consumption and media data compiled by Mediamark Research, Inc. Respondents to NDL's questionnaire are asked to report their participation in each of 69 different activities. Households are

considered to be involved in an activity if at least one adult member is a regular or frequent participant within the previous year. An adult is any person over 18 years of age or older living in the household. The activities are assembled into home life; good life; investing and money; sports, fitness and health; great outdoors; hobbies and interests; and high tech activity groupings with individual statistics reported on each individual activity and by each geographic market. Data is also collected on 40 different demographic variables.

For this study, three major groupings of geographic markets were developed: primary, secondary and tertiary markets. Markets were based on their location relative to the center of New England and respective drive times. Primary markets were those major markets which are located within a three - five hour drive time of Central New England and include the metro areas of Albany, New York; Bangor, - Maine; Boston, Massachusetts; Hartford/New Haven, Connecticut; New York City; Portland/Auburn, Maine; Providence, Rhode Island/New Bedford, Massachusetts; and Springfield, Massachusetts. These geographic areas are likely to make-up an estimated 50-60% of the travel market to the region. Secondary markets were those major markets which are located from a five to eight hour drive time of Central New England and include the metro areas of Harrisburg; Philadelphia; and Scranton-Wilkes Barre, Pennsylvania and Syracuse, New York. These geographic areas are considered to make-up an estimated 20-30% of the travel market to the region. Tertiary markets were those major markets which are located over an eight hour drive time of Central New England and include the metro areas of Baltimore, Maryland; Cleveland, Ohio; Pittsburgh, Pennsylvania and Washington, DC. These geographic areas are considered to make-up an estimated 10-20% of the travel market to the region.

For the purposes of this study, activity groupings included travel activities; recreation/sport activities; outdoor activities; interest in fitness activities and cultural/historic interests. Specifically within each groupings include travel activities -- domestic travel and travel for vacation; recreation/sport activities -- golf, tennis, ski and biking; outdoor activities -- interest in wildlife and the environment, camping/hiking, hunting and fishing; interest in fitness activities -- fitness walking and fitness and exercise programs; and cultural/historic interests -- attending cultural activities and interest in history and America's heritage. "Travel" in this study is believe to represent those households with individuals who have traveled over 100 miles one-way, overnight to an away-from-home destination. "Vacation travel" represents those households with individuals who traveled away from home for vacation purposes with no mileage restrictions.

Participation rates of households within major metro markets were developed by activity and geographic market and summed to reflect the primary, secondary and tertiary areas and compare to national, regional and internal geographic markets. When the primary, secondary and tertiary areas are combined, they are considered to be the total Northeast market for New England. An average

annual adjusted percentage change rate and descriptive statistics were used to examine each of the activity markets. The change rates were compared by indexing metro rates to the national rates. Each trend year reflects the average participation for the previous three years. This serves to be a three point moving average for each activity market. For example, 1994 data would reflect the average for 1992, 1993 and 1994 data on activity participation. Thus, this study's data actually covers a moving average of participation for activities from 1992 through 1996. In tables which follow, activity trends for the years 1994 through 1996 are described on one of five different patterns -- decline trend (declining more than 1% per year); stable trend (no change); growth trend (increasing more than 1% per year); stable/decline trend (declining less than 1% per year) and stable/growth (increasing less than 1% per year) .

The tables presented in this study provided information which can be compared three ways. Comparisons can be made from: 1) New England's total northeast markets to national rates; 2) the primary, secondary and tertiary rates compared to the overall New England Northeast rates; and 3) the metro rates within each of the primary, secondary and tertiary areas.

Selected Findings

Discussions here will address each of the activity markets with specific data presented in each of the following tables. Only key findings are discussed, but readers are encouraged to examine in detail the subregion and metro specific trends and rates.

Table 1. Geographic Markets for New England Destinations for Travel Activities.

Geographic Region	Travel	Vacation Travel
National Rates	34.5% (D)*	37.6% (S)
All New England Mkts (Prim., Sec., Tert.)	34.8% (D)	38.4% (D)
1. Primary Markets	34.7% (D)	38.5% (D)
Albany	34.8 (S)	38.4 (D)
Bangor	29.0 (D)	31.6 (D)
Boston	35.9 (D)	40.2 (D)
Hartford/New Haven	36.6 (D)	39.5 (D)
New York City Metro	36.6 (D)	40.6 (D)
Portland/Auburn	31.7 (D)	35.7 (D)
Providence/New Bedford	33.8 (D)	38.0 (D)
Springfield	34.2 (D)	38.0 (G)
2. Secondary Markets	34.5% (G)	38.3% (S)
Harrisburg, PA	32.8 (G)	37.2 (S)
Philadelphia	35.5 (S)	39.5 (S)
Scranton-Wilkes Barre	30.7 (S)	34.2 (S)
Syracuse, NY	35.5 (G)	38.4 (G)
3. Tertiary Markets	35.4% (SG)	38.2% (S)
Baltimore	33.8 (D)	38.0 (S)
Cleveland	36.2 (G)	38.0 (D)
Pittsburgh	33.1 (G)	36.5 (S)
Washington, DC	36.9 (D)	39.9 (S)

*Participation rate noted is for most recent year, 1996. Indicates trend of 1994- 1996: D=Decline; S=Stable; G=Growth; SD=Stable/Decline and SG=Stable/Growth. Source. SRDS. 1994-1996. *Lifestyle Market Analyst.*

Travel Activities. Nationally, domestic travel is declining at a rate of slightly greater than one percent per year; however, vacation travel has remained relatively stable. Within all of New England major markets (primary, secondary and tertiary), the rate of participation who travel and travel for vacation purposes are declining. However,

the rates for these markets are higher than the national rates. Overall, the primary market metro areas when combined are declining for both travel activities. Secondary and tertiary markets were growing for travel and stable for vacation travel participation. Table 1 contains these data.

Table 2. Geographic Markets -- Key Markets for Recreation and Sport Activities.

Geographic Region	Golf	Tennis	Ski	Bike
National Rates	19.6% (G)*	5.4% (D)	7.1% (D)	16.7% (D)
All New England Mkts	20.2% (SD)	6.4% (D)	8.1% (D)	16.0% (G)
1. Primary Markets	16.5% (D)	6.7% (D)	9.1% (D)	16.0% (D)
Albany	22.2 (D)	5.5 (D)	12.2 (S)	17.2 (G)
Bangor	14.1 (D)	3.3 (D)	11.6 (G)	15.8 (G)
Boston	20.6 (D)	6.7 (D)	13.1 (D)	18.0 (G)
Hartford/New Haven	20.8 (D)	6.5 (D)	9.8 (D)	15.4 (G)
New York City Metro	15.1 (D)	7.6 (S)	7.8 (D)	16.2 (G)
Portland/Auburn	16.5 (D)	4.5 (D)	14.4 (D)	16.7 (S)
Providence/New Bedford	19.2 (D)	5.3 (D)	8.8 (D)	17.0 (S)
Springfield	20.0 (D)	4.7 (D)	10.1 (D)	17.5 (G)
2.Secondary Markets	18.7% (S)	5.3% (D)	7.0% (S)	14.9% (G)
Harrisburg, PA	18.8 (D)	4.6 (D)	5.3 (G)	12.9 (D)
Philadelphia	18.2 (S)	6.1 (D)	7.0 (S)	15.9 (G)
Scranton-Wilkes Barre	16.5 (G)	3.2 (D)	6.3 (G)	11.0 (S)
Syracuse, NY	24.9 (D)	4.4 (D)	10.2 (D)	16.4 (G)
3.Tertiary Markets	20.1% (G)	5.9% (G)	6.5% (G)	15.6% (G)
Baltimore	16.1 (D)	6.2 (D)	6.5 (D)	15.9 (G)
Cleveland	25.5 (S)	4.3 (G)	5.3 (G)	15.9 (G)
Pittsburgh	22.5 (G)	4.0 (G)	6.1 (G)	11.7 (G)
Washington, DC	16.7 (G)	8.0 (D)	7.6 (S)	17.5 (G)

*Participation rate noted is for most recent year, 1996. Indicates trend of 1994- 1996: D=Decline; S=Stable; G=Growth; SD=Stable/Decline and SG=Stable/Growth. Source. SRDS. 1994-1996. *Lifestyle Market Analyst*.

Table 3. Geographic Markets -- Key Markets for Outdoor Activities.

Geographic Region	Wildlife	Camp/Hike	Hunt	Fish
National Rates	16.2% (S)*	22.7% (G)	15.2% (G)	23.3% (G)
All New England Mkts (Prim., Sec., Tert.)	16.2% (SG)	16.5% (SG)	10.4% (SG)	16.4% (G)
1. Primary Markets	16.1% (SD)	15.4% (SG)	7.9% (SG)	14.6% (G)
Albany	18.6 (D)	26.1 (G)	16.3 (G)	20.3 (D)
Bangor	21.2 (D)	35.0 (D)	28.7 (D)	33.3 (D)
Boston	17.5 (G)	20.2 (G)	8.1 (G)	14.9 (G)
Hartford/New Haven	16.5 (D)	19.1 (G)	9.4 (G)	17.2 (G)
New York City Metro	16.0 (S)	12.0 (S)	6.5 (D)	13.5 (G)
Portland/Auburn	21.4 (D)	32.0 (G)	20.2 (G)	25.4 (D)
Providence/New Bedford	15.9 (D)	17.5 (G)	7.4 (G)	16.3 (G)
Springfield	18.0 (S)	22.5 (G)	11.9 (G)	19.6 (G)
2.Secondary Markets	17.0% (G)	17.6% (S)	14.6% (S)	19.4% (G)
Harrisburg, PA	17.3 (G)	21.8 (D)	22.3 (S)	21.2 (D)
Philadelphia	16.7 (G)	14.8 (G)	10.2 (G)	17.0 (G)
Scranton-Wilkes Barre	16.8 (G)	21.1 (D)	25.2 (D)	26.1 (D)
Syracuse, NY	18.5 (D)	25.4 (G)	17.9 (S)	22.8 (G)
3.Tertiary Markets	16.5% (G)	16.5% (S)	10.4% (G)	16.5% (G)
Baltimore	16.8 (S)	16.6 (G)	10.2 (G)	17.7 (G)
Cleveland	15.2 (G)	19.5 (S)	11.9 (G)	20.0 (S)
Pittsburgh	15.2 (G)	18.6 (S)	19.2 (D)	20.5 (D)
Washington, DC	16.7 (S)	17.5 (G)	10.8 (G)	15.6 (G)

*Participation rate noted is for most recent year, 1996. Indicates trend of 1994- 1996: D=Decline; S=Stable; G=Growth; SD=Stable/Decline and SG=Stable/Growth. Source. SRDS. 1994-1996. *Lifestyle Market Analyst*.

Recreation and Sport Activities. Nationally, for three of the four recreational sport activities, household participation rates are declining. They include the activities of tennis, skiing and bicycling. Only golf was growing at the national level. Within all of New England major markets (primary, secondary and tertiary), the rates of participation for tennis and skiing were declining. Golf was declining only slightly and contrary to national rates the participation rate for biking was growing. But, golf, tennis and skiing participation rates were higher than national household participation rates. Overall, the primary market metro areas held rates which were declining for all four activities. Secondary markets were more stable with decline in only tennis; stable for golf and skiing and experienced growth in biking. Growth across all these activities were found in the tertiary markets. Table 2 contains these data.

Outdoor Activities. Nationally, for three of the outdoor activities, household participation rates are growing -- camping/hiking, hunting and fishing. Interest in wildlife and the environment were found to be stable. Within all of New England major markets (primary, secondary and tertiary), the rates of participation for each of these activities were growing with the rate of growth the strongest for fishing. However, the rates for each of the growth activities are significantly below the national rates. The rates are as much as five to seven percent below the national rates. For the primary, secondary and tertiary markets for each of these activities the household participation rates are either stable, slightly growing or growing overall. Only the primary market has experienced a slight decline for interest in wildlife and the environment. Table 3 contains these data.

Table 4. Geographic Markets -- Key Markets for Fitness Activities.

Geographic Region	Fitness Walking	Fit/Exercise Programs
National Rates	34.1% (D)*	34.1% (D)
All New England Mkts	33.7% (SD)	34.2% (D)
1. Primary Markets	34.7% (S)	34.6% (D)
Albany	35.8 (D)	36.5 (D)
Bangor	36.8 (SG)	29.0 (D)
Boston	36.8 (G)	37.2 (D)
Hartford/New Haven	35.1 (SD)	35.5 (D)
New York City Metro	33.8 (S)	36.5 (S)
Portland/Auburn	37.5 (SG)	32.4 (D)
Providence/New Bedford	38.5 (SG)	33.8 (D)
Springfield	36.1 (S)	33.4 (D)
2.Secondary Markets	34.4% (D)	30.4% (D)
Harrisburg, PA	34.1 (SD)	31.0 (S)
Philadelphia	34.1 (S)	35.5 (G)
Scranton-Wilkes Barre	36.1 (D)	27.6 (G)
Syracuse, NY	34.1 (S)	34.1 (S)
3.Tertiary Markets	33.0% (SD)	36.0% (S)
Baltimore	31.7 (SG)	35.1 (D)
Cleveland	32.7 (D)	33.8 (SD)
Pittsburgh	33.3 (SD)	34.3 (G)
Washington, DC	32.1 (SG)	40.2 (D)

*Participation rate noted is for most recent year, 1996. Indicates trend of 1994- 1996: D=Decline; S=Stable; G=Growth; SD=Stable/Decline and SG=Stable/Growth. Source. SRDS. 1994-1996. *Lifestyle Market Analyst*.

Fitness Activities. The rates for fitness walking and participation in fitness and exercise programs/activities were declining at the national level. Within all of New England major markets (primary, secondary and tertiary), interest in fitness walking is declining slightly and fitness and exercise participation is declining more. The primary market for fitness walking is stable and for exercise and fitness participation rates are stable within the tertiary market. All other markets are either declining or declining slightly for these two activities. Table 4 contains these data and comparisons.

Cultural and Historical Activities. Attending cultural activities at the national level is declining and interest in history and America's heritage is increasing. Interest in history within all of new England markets is growing and above the national average. Attending cultural events within New England's major markets is declining slightly but above the national average. Participation is growing over all market areas for interest in history and America's heritage. In only the tertiary market is the household participation for attending cultural events stable. Table 5 contains these data.

Table 5. Geographic Markets -- Key Markets for Attending Cultural Activities and Interest in history and America's Heritage.

Geographic Region	Attend Cultural Events	Interest in History and America's Heritage
National Rates	13.9% (D)*	4.8% (G)
All New England Mkts	15.8% (SD)	5.1% (G)
1. Primary Markets	16.5% (SD)	4.9% (G)
Albany	14.5 (D)	5.9 (SG)
Bangor	14.8 (G)	5.9 (G)
Boston	16.3 (D)	5.1 (G)
Hartford/New Haven	15.6 (D)	4.8 (D)
New York City Metro	17.8 (D)	4.7 (D)
Portland/Auburn	12.6 (D)	5.6 (G)
Providence/New Bedford	12.8 (D)	4.8 (G)
Springfield	13.8 (G)	4.5 (D)
2.Secondary Markets	13.4% (D)	5.4% (SG)
Harrisburg, PA	12.1 (D)	5.9 (D)
Philadelphia	14.5 (D)	5.3 (G)
Scranton-Wilkes Barre	9.7 (D)	5.2 (G)
Syracuse, NY	13.6 (SG)	5.2 (D)
3.Tertiary Markets	16.0% (S)	5.6% (G)
Baltimore	15.2 (D)	5.3 (D)
Cleveland	13.3 (D)	4.9 (S)
Pittsburgh	13.8 (G)	5.0 (G)
Washington, DC	19.9 (D)	6.6 (SG)

*Participation rate noted is for most recent year, 1996. Indicates trend of 1994- 1996: D=Decline; S=Stable; G=Growth; SD=Stable/Decline and SG=Stable/Growth. Source. SRDS. 1994-1996. *Lifestyle Market Analyst*.

Conclusions and Implications

Earlier studies have indicated that New England was a mature travel destination. However, this examination of the data by activities and primary, secondary, and tertiary markets with the potential to travel to New England provide different findings. Market orientation is also

helpful in examining the trends within various activities. The early studies examined the Northeast as a total market area. But, there exists considerable variation within the Northeast when activities are examined by the primary, secondary and tertiary markets of New England. Furthermore, even though an activity may show a decline at the national level, activity trends within selected regions can be and are different. Also, regional trends can also vary greatly from the national participation rates.

Examining trends within the Northeast at the subregion or primary/secondary/tertiary level provides clearly different insights about the potential markets for the Northeast. There is variation within these subregions and between these regions and the national rates. When travel participation is examined, for example, participation rates of New England's markets as a whole are declining. However, the secondary market area (including such cities as Philadelphia, Pennsylvania and Syracuse, New York) and tertiary market area (including such cities like Baltimore, Maryland and Washington, DC) are actually growing. In addition, although there is a decline, the participation rates are higher than the national averages.

While the Simmons data are somewhat dated by the time research can be undertaken, the SRDS data are more current. However, even these data suffer from another problem which does not allow a highly accurate picture of the more precise travel indicators to New England provided by the data from Simmons. These data only provide information on whether or not the markets actually traveled and/or participated in various activities by their residential locale. There is no indication in the data that people within these households actually engaged in travel and recreational activities which were undertaken at New England destinations. This is a significant limitation of this data set and analysis. The data merely show the what people are doing specific to their home area. Also, these data are unlike the Simmons and other data sets in that participation is measured at the household level. What is measured here is the residential market demand for activities and not the actual participation in travel and related activities while visiting New England. However, part of marketing is persuading motivated markets to travel to New England. Identifying these markets and trends within the respective markets is essential in the targeting and promotional effort.

The subregional analysis also provides information about how trends may affect regional marketing efforts. For example, if travel within New England's primary market is declining; then, it would seem reasonable to more aggressively pursue those markets within the secondary and tertiary metro areas which are growing.

Within recreational and outdoor markets, even further market savvy may be necessary. On a positive note, the traditional outdoor activities of camping, hiking and fishing are enjoying a rebound within new England's major markets. However, even within these markets, the rates are dramatically below the national rates. Those businesses which seek to attract these traditional activity markets should enjoy rebounding market activity, but also recognize that there are more distant markets (e.g., the

South and Midwest) which may have markets with participation rates which are substantially higher than the national averages and the averages for New England's Northeast markets. Recreation businesses and attractions with longer term stay potential may benefit from marketing to these more distant locations.

While variations were noted within the Northeast by primary, secondary and tertiary markets, the variations also extend to intra-regional markets. For example, household participation rates in 1996 for golf vary by as much as eight (8) percent between Albany, New York (household golf participation rate - 22.2%) and Portland, Maine (household golf participation rate - 14.1%). On the other hand, the household participation rate for hunting for Portland, Maine (28.7%) is over four times higher than the rate for New York City metro area (rate of 6.5%). In other activities, hunting for example, those metro areas closer to more abundant hunting areas (Albany, New York's proximity to upstate New York) and Bangor, Maine's proximity to the Great Northern Woods) all have much higher household participation rates. Albany's participation rate for hunting in 1996 was 16.3% and Bangor's 28.7% in 1996 as compared to the primary region rate of 7.9%.

The impact of a large metropolitan area should also not be overlooked within these findings. The New York City metro area is comprised of over 6.9 million households in 1996. The household density may actually limit participation in some activities such as camping, hiking, hunting and even others like interest in viewing wildlife due to the proximity to the resources and lack of opportunities. The impact of the New York City metro area must be acknowledged in that it comprises 56.4% of the primary market. Due to this size factor, activity trends within this metro area may well mask changes within other metro areas when the primary market is considered in total. For example, New York City metro area has the lowest participation rate for skiing in 1996 of all the major metro areas in the primary market areas. The household participation in 1996 for skiing was 7.8%. However, it comprises 48.4% of all households ski markets within the primary market area and 30.5% of all households throughout the three regions. Portland, Maine's ski participation rate of 14.4% is nearly double that of New York City, but it comprises only 4.5% of the household ski market in New England's primary geographic market in 1996. Attracting skiers from New York metro area may be easier even though the rate is much lower and the distribution of these skiers is likely more dispersed. However, reaching these skiers with advertising messages may be more cost effective because of media can be used in the metro area which has further reach. On the other hand, New York City has the highest household participation rate (7.6%) for tennis in 1996 of all cities within the primary and secondary markets. The New York metro tennis market comprises 64.1% of all primary market tennis households and 38.3% of all three markets for New England. In addition, the New York metro is one area not to over look for travel marketing. Of all the metro areas examined here, it has the highest participation rates for household which travel for vacation purposes -- a rate of 40.6%.

It is also likely that variations in participation are occurring within the New York Metro Area. This is a large area which includes 26 different sub-areas/counties. The New York Metro area extends from Southwestern Connecticut through Central City New York to Northern and Central New Jersey. A quick examination of skiing participation rates in 1994, when the rates were the highest doing this period finds that the household participation rate for skiing in Fairfield County, Connecticut, part of the greater New York metro area, was 14.6% while the rate of participation in Bronx County, New York, also part of the New York metro area, was 3.3%. SRDS data does provide the opportunity to further examine trends within the large metropolitan areas. Sub-metro analysis can be conducted on such cities as Boston, New York, Philadelphia, Baltimore and Washington, DC.

This review of activity markets within geographic proximity of New England gives us new perspectives. The markets in the 90s are changing and evolving. It is clear that a simple examination of national and even regional trends can be misleading and may not provide the total picture for marketing and targeting purposes. Nevertheless, more intense monitoring of travel and recreational activity trends is needed if New England is to continue as a major destination region.

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TRENDS IN PARTICIPATION RATES FOR WILDLIFE-ASSOCIATED OUTDOOR RECREATION ACTIVITIES BY AGE AND RACE/ETHNICITY: IMPLICATIONS FOR COHORT-COMPONENT PROJECTION MODELS

John F. Dwyer

Project Leader/Research Forester, USDA Forest Service, North Central Forest Experiment Station, 845 Chicago Avenue, Suite 225, Evanston IL 60202-2357

Allan Marsinko

Associate Professor, Department of Forest Resources, School of Natural Resources, Clemson University, Box 341003, Clemson SC 29634-1003

Abstract: Cohort-component projection models have been used to explore the implications of increased aging and growth of racial/ethnic minority groups on number of participants in outdoor recreation activities in the years ahead. Projections usually assume that participation rates by age and race/ethnicity remain constant over time. This study looks at trends in activity participation rates by age and race/ethnicity and explores their implications for projections made by cohort-component projection models.

Introduction

Outdoor recreation resource planners, managers, and policy makers often ask what levels of participation in outdoor recreation activities can be expected in the years ahead. They find these projections useful for planning facilities, staffing, and programs; as well as for predicting revenues from licenses, permits, and user fees. Their questions are increasingly about the implications of changing population demographics, particularly increased aging of the population and growth of racial/ethnic groups, for participation in outdoor recreation activities in the years ahead.

The U.S. Bureau of the Census (1989, 1992) provides projections of future populations by age and racial ethnic background which indicate that older Americans and individuals from particular racial/ethnic backgrounds will make up an increasing proportion of the population. There is ample evidence of significant differences in participation in outdoor recreation activities among individuals of different ages and racial/ethnic backgrounds (Dwyer 1995a, 1994a, 1994b, 1993; Nadkarni and O'Leary 1992). This has prompted recreation resource planners, managers, and policy makers to seek information about implications of these demographic changes for recreation participation in the years ahead.

Use of the Cohort-Component Projection Model

In an effort to answer these questions, cohort-component projection models have been developed to predict the number of participants in selected recreation activities in the years ahead based on projected changes in the size, age, and racial/ethnic structure of the population (Dwyer 1996, 1995b; Murdock 1990, 1991, 1996). The cohort-component projection model is based on estimates of the population in the years ahead by age and race/ethnicity (i.e., number of African Americans age 20 to 24) and the probability of an individual in an age and racial/ethnic category participating in an activity (i.e., the participation rate). The number of individuals projected to be in an age and racial/ethnic category is multiplied by the probability of an individual in that group participating in the activity to get an estimate of the number of participants from that group. The total number of participants in the activity is the sum of the participants across all groups in the population.

While projections of the population by age and race/ethnicity are available from the U.S. Bureau of the Census and individual States, projections of participation rates in outdoor recreation activities by age and race/ethnicity (i.e., proportion of the group that participates in the activity one or more times per year) are seldom made. Consequently, most applications of the cohort-component projection model have used activity participation rates by age and race/ethnicity from a single year to project number of participants in future years. This assumes that individuals in an age and racial/ethnic group (i.e., whites age 20-24 years) have the same likelihood of participating in an activity in each of the years ahead. This means that the projected number of white participants age 20-24 will change over time only with the projected number of individuals in that population group. Under these circumstances the cohort-component projection model predicts changes in the number of participants in a given activity based on changes in the size of the population and its distribution by age and race/ethnicity. All else is assumed to remain constant.

Extending the Model

In reviewing the results of cohort-component projection models; planners, managers, policy makers, and researchers often suggest that participation rates by age and racial/ethnic group might change over time, and ask about the implications of such changes for the projected number of participants. Some speculate that the participation rates of particular racial/ethnic groups might converge in the years ahead as groups become assimilated in a dominant culture (i.e., "the melting pot"). An alternative view is that recreation and leisure are among the means by which cultures maintain their identity, consequently we would not expect participation patterns of various groups to converge over time. The likelihood of either of these expectations materializing may vary with activity, racial/ethnic group, and age class. Others suggest that with improved health and changing attitudes towards recreation and leisure, older

Americans might tend to increase their participation in many activities -- acting more like their younger counterparts. The likelihood of this happening may also vary by activity and racial/ethnic group.

An absence of data on trends over time in activity participation rates by age and race/ethnicity makes it difficult to investigate these questions. However, data from the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation presents a unique opportunity to investigate these trends. Participation data have been gathered at 5-year intervals since 1955. Information on race/ethnicity has been included in the survey since 1990, using the same definitions as the U.S. Bureau of the Census.

In order to maintain consistent definitions of activities and ethnic groups over time, we limited the present analysis to three activities and three years 1980, 1985, and 1990. The activities included in our analysis are hunting, fishing, and observing wildlife around the home. Following the U.S. Bureau of the Census protocol, the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation breaks down the population into four racial groups: White; African American; American Indian, Eskimo, and Aleut; Asian and Pacific Islander; as well as by Hispanic and non-Hispanic. An individual in any of the four racial groups can be Hispanic or non-Hispanic. In this study we categorized all individuals who reported that they were Hispanic into a single group, regardless of race. Consequently all other groups included only individuals who reported that they were non-Hispanic. In order to match with the Census classifications we dropped the racial category "other" from the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation data. The implications were minimal since nearly all of those who selected "other" as their race also selected "Hispanic."

Differences in Activity Participation by Racial/Ethnic Group

Depending on the activity, we found different patterns of change in participation rates over time by racial/ethnic group (Tables 1, 2, and 3). Hunting had the smallest changes in participation rates over time and the most diverse pattern of changes by racial/ethnic group. No group showed consistent trends in hunting participation rates between 1980-1985 and 1985-1990. The overall trend 1980-1990 was for a slight increase in hunting participation rates for Whites, American Indians, and Asian Americans; but a slight decrease for African Americans and Hispanic Americans. With fishing there were consistent increases in participation rates from 1980-1985 and 1985-1990 for all racial/ethnic groups except Asian Americans where there was a slight decrease 1980-1985, and then an increase 1985-1990, resulting in an overall increase 1980-1990. With wildlife observation around the home there were substantial and consistent increases in participation rates for all racial/ethnic groups over the periods 1980-1985 and 1985-1990.

Table 1. Percent of Individuals Participating in Hunting by Racial/Ethnic Background and Year

Racial/Ethnic Group	1980	1985	1990
White	9.7	9.1	9.9
African American	2.6	2.2	2.4
American Indian	11.4	11.4	12.0
Asian American	0.9	1.2	1.2
Hispanic American	2.9	2.7	2.7

Table 2. Percent of Individuals Participating in Fishing by Racial/Ethnic Background and Year

Racial/Ethnic Group	1980	1985	1990
White	26.7	27.6	32.1
African American	12.4	13.1	15.9
American Indian	25.0	27.8	35.5
Asian American	16.3	15.4	16.9
Hispanic American	13.9	15.2	16.7

Table 3. Percent of Individuals Participating in Wildlife Observation Around the Home by Racial/Ethnic Background and Year

Racial/Ethnic Group	1980	1985	1990
White	17.0	22.9	32.7
African American	6.0	7.7	11.2
American Indian	11.3	16.6	30.6
Asian American	6.0	7.3	10.9
Hispanic American	7.1	9.8	13.5

Differences in Activity Participation Rates by Age Class

There was not a clear pattern of differential change over time in activity participation rates across the age classes. With some racial/ethnic groups the changes in participation rates stayed quite uniform across age classes over time, while in others there seemed to be no pattern of change across age classes. The similar changes across age classes tended to be for groups with fairly large sample sizes, suggesting that perhaps small sample sizes were contributing to the widely-varying patterns observed with smaller groups. With relatively small sample sizes for minority groups in some age classes and substantial weighting of individual cases, it is possible to get a wide variation in results across age classes within a racial/ethnic group.

Results from the Cohort-Component Projection Model

To test the implications of changes in activity participation rates by age and race/ethnicity for cohort-component projection models, we developed a model based on the distribution of the U.S. population by age and race/ethnicity for 1992. Projections of the number of participants in each of three activities were made for that year based on the participation rates by age and race/ethnicity in 1980, 1985, and 1990. This resulted in three sets of predictions for 1992, using 1980, 1985, and 1990 as the base years (Tables 4, 5, and 6). The prediction

using 1980 participation rates, for example, assumed that participation rates for 1980 by age and race/ethnicity remained constant through 1992, and calculated projected number of participants based on the population mix in 1992. These three sets of estimates represent the estimates that would be made using participation rates by age and race/ethnicity for that particular year (1980, 1985, or 1990) and population projections for 1992; and assuming that participation rates by age and race/ethnicity from that base year would be the same for 1992, a common practice with previous applications of the model.

Differences in Predictions by Activity

Estimating the number of hunting participants in 1992 based on 1980 participation rates by age and race/ethnicity produced a higher estimate (+5-6 percent) of the total number of hunters than were derived using the rates from 1985 or 1990 (which produced similar estimates). The 1980 participation rates produced the highest estimated number of White, African American, and Hispanic American hunters, while the 1985 participation rates predicted the highest estimates of American Indian and Asian American hunters. For no group did the 1990 participation rates produce the highest estimate of the number of hunters for 1992. The three sets of predictions reflect only slightly different proportions of hunters by racial/ethnic group. Over the periods 1980-1985 and 1985-1990 there are successively lower proportions of African American and Hispanic American hunters and a larger proportion of White hunters.

Table 4. Projected Number of 1992 Participants in Hunting by Racial/Ethnic Group, Based on 1992 Population and 1980, 1985, and 1990 Activity Participation Rates by Age and Race/Ethnicity

Racial/Ethnic Group	Base Year 1980	Base Year 1985	Base Year 1990
<i>Numbers are in thousands of participants projected for 1992</i>			
White	(90.7) 17,965	(91.4) 16,989	(92.1) 17,291
African American	(4.2) 835	(3.6) 662	(3.4) 638
American Indian	(1.1) 210	(1.2) 214	(1.0) 198
Asian American	(0.4) 72	(0.5) 96	(0.4) 86
Hispanic American	(3.6) 715	(3.4) 636	(3.0) 560
Total	(100) 19,797	(100) 18,597	(100) 18,773

(X.X) = Percent of projected participants by racial/ethnic group. Numbers do not add up to 100 percent due to rounding.

Table 5. Projected Number of 1992 Participants in Fishing by Racial/Ethnic Group, Based on 1992 Population and 1980, 1985, and 1990 Activity Participation Rates by Age and Race/Ethnicity

Racial/Ethnic Group	Base Year 1980	Base Year 1985	Base Year 1990
<i>Numbers are in thousands of participants projected for 1992</i>			
White	(84.6) 49,569	(84.8) 51,788	(85.4) 57,014
African American	(6.6) 3,864	(6.5) 3,979	(6.4) 4,300
American Indian	(0.8) 460	(0.8) 519	(0.9) 610
Asian American	(2.2) 1,283	(2.0) 1,199	(1.8) 1,234
Hispanic American	(5.8) 3,382	(5.9) 3,612	(5.4) 3,573
Total	(100) 58,558	(100) 61,097	(100) 66,731

(X.X) = Percent of projected participants by racial/ethnic group. Numbers do not add up to 100 percent due to rounding.

Table 6. Projected Number of 1992 Participants in Wildlife Observation Around the Home, by Racial/Ethnic Group, Based on 1992 Population and 1980, 1985, and 1990 Activity Participation Rates by Age and Race/Ethnicity

Racial/Ethnic Group	Base Year 1980	Base Year 1985	Base Year 1990
<i>Numbers are in thousands of participants projected for 1992</i>			
White	(88.8) 32,238	(88.7) 42,231	(88.8) 57,826
African American	(5.0) 1,800	(4.7) 2,249	(4.7) 3,046
American Indian	(0.2) 79	(0.6) 300	(0.8) 523
Asian American	(1.3) 461	(1.2) 551	(1.2) 804
Hispanic American	(4.7) 1,721	(4.7) 2,257	(4.5) 2,908
Total	(100) 36,299	(100) 47,579	(100) 65,107

(X.X) = Percent of projected participants by racial/ethnic group. Numbers do not add up to 100 percent due to rounding.

Estimating the number of fishers in 1992 based on participation rates by age and race/ethnicity for 1980, 1985, and 1990 produced successively higher projections overall.

Projections of the number of fishers in 1992 based on 1990 participation rates yielded estimated numbers of participants that were 14 percent higher than those based on 1980 rates and 4 percent higher than those based on 1985 rates. The 1990 rates produced the highest estimated 1992 number of White, African American, and American Indian fishers compared to numbers from these groups based on the 1980 and 1985 rates. Estimates of 1992 Hispanic fishers were highest when 1985 rates were used in the projections. The projections of Asian American fishers were similar across all three years, and the projections of Hispanic American fishers were similar for 1985 and 1990. Over the periods 1980-1985 and 1985-1990 there were successively higher proportions of fishers who were white and successively lower proportions who were African American.

The 1990 participation rates by age and race/ethnicity produced higher estimates of the number of individuals engaged in wildlife observation around the home than did the 1985 or 1980 rates. The 1990 estimates were 31 percent higher than those for 1985 and 79 percent higher than those for 1980. The 1990 rates generated the highest estimated number of participants for each group, with the 1980 rates producing the lowest estimates for each group. The 1990 rates generated a higher proportion of American Indian participants and a lower proportion of Hispanic American participants than did the 1985 or 1980 rates.

Conclusions

With the analysis limited to three points of data, our efforts to identify trends were limited. However, we feel that the results are useful, and expect to extend the analysis to other years as the data become available.

The results show that participation rates by age and racial/ethnic background for hunting, fishing, and wildlife observation around the home do change over time, and the changes can have implications for the projections made by cohort-component projection models. Depending on which year's participation rates were used in the projections of number of participants in 1992, the estimates varied. In some instances the activity participation rates by age and race/ethnicity dropped or stayed the same over time, while in others they increased. Using 1980 participation rates by age and race/ethnicity for predicting number of participants in hunting, fishing, and wildlife observation around the home in 1992 would, in comparison to using 1990 rates, have overestimated the number of hunters by 5 percent, underestimated the number of fishers by 14 percent, and underestimated the number engaged in wildlife observation around the home by 79 percent. These results are based on an assumption that participation rates by age and race/ethnicity would remain constant for up to 10 years. The changes in predictions implied by the changes in rates reported here could have significant implications for management, planning, and policy. Those implications

could be even greater in those instances where projections are made for periods longer than 10 years, which is often the case.

The participation rates by age and racial/ethnic groups in an activity tended to follow the same general pattern over time. Consequently use of the rates from different years (i.e., 1980, 1985, 1990) and applying them to the same population (i.e., 1992) did not have major implications for the racial/ethnic or age mix of projected participants. These results suggest that forces for change in participation rates in an activity appear to be operating similarly across age and race/ethnicity. Examining trends in activity participation rates by age and race/ethnicity over the 10 year time span, we did not see evidence of participation rates becoming more similar across racial/ethnic groups or that older individuals are beginning to behave more like their younger counterparts. Further testing for changes in the relative patterns across racial/ethnic groups will require data for additional years and the inclusion of additional explanatory variables in the models for predicting the number of participants. In the meantime it may be useful to monitor changes in participation rates over time and explore their implications for future participation.

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COGNITIVE DIMENSIONS OF RECREATIONAL USER EXPERIENCES IN WILDERNESS: AN EXPLORATORY STUDY IN ADIRONDACK WILDERNESS AREAS.

Chad P. Dawson

Professor, SUNY College of Environmental Science and Forestry, Marshall Hall, Syracuse, NY 13210-2787

Peter Newman

M.S. Student, SUNY College of Environmental Science and Forestry, Marshall Hall, Syracuse, NY 13210-2787

Alan Watson

Social Scientist, Aldo Leopold Wilderness Research Institute, P. O. Box 8089, Missoula, MT 59807

Abstract: This exploratory study involved identifying the dimensions of a wilderness experience sought by users based on the available literature and on input from wilderness users. Input was collected using focus group interviews with members of four groups that were primarily involved in wilderness use and preservation in recent years. Positive and negative dimensions are proposed for further research.

Introduction

Wilderness researchers and managers have tended to emphasize that the National Wilderness system must provide "opportunities for solitude". Researchers and managers have struggled with defining and measuring solitude for the last several decades (e.g., Graefe et al. 1984, Shelby et al. 1989). Many of the indicators used to measure solitude have been based directly or indirectly on the number of users, user density, and relative user distribution in a wilderness area. Using solitude as the distinguishing characteristic of wilderness and measuring it by the number of users or encounters has many advantages (e.g., direct physical measurement of numbers of users) for researchers, planners, and managers. However, there is increasing evidence to support the concept that solitude is more difficult and subjective to measure than originally anticipated and that recreational use of wilderness includes many other dimensions beyond solitude.

For example, another approach to evaluating user experiences and solitude was developed with the multi-dimensional concept of privacy (Lee 1977, Twight et al. 1981, Hammitt 1982, Hammitt and Brown 1984, Hammitt and Madden 1989, Priest and Bugg 1991, Hammitt 1994). While solitude is generally defined as being alone or being apart from usual associates, privacy implies more of a place or state of freedom from unwanted intrusion or observation by others. Privacy research includes solitude as well as

other components, such as the natural environment of the place, within a multi-dimensional approach that is more representative of the multiple motivations and satisfactions sought by a variety of users. However, the natural environment dimension has been ranked by Adirondack wilderness users as more important than the more traditional privacy items such as those related to cognitive freedom, intimacy, and individualism (Dawson and Hammitt 1996).

Research that redefines the concept of solitude as an opportunity for personal growth and development (Hollenhorst et al. 1994) has also raised questions about whether solitude was previously operationalized correctly in research on wilderness users and whether previous research results were valid as measured. Hollenhorst and others (1994) note that solitude achievement is hierarchical in nature and includes physical, emotional, intellectual, and spiritual components. Furthermore, they conclude that "the most effective predictors of solitude achievement were not physical characteristics of the setting, but rather predispositional factors that the visitor brings to the wilderness experience" (Hollenhorst et al. 1994).

These research issues about solitude and privacy raise many questions about whether privacy or solitude are the most important single dimensions of a wilderness experience and whether there are other important dimensions that have not been traditionally measured about wilderness users. Such potential dimensions could include user challenge and risk, sense of spiritual experience and unity with nature, recreational skill building and testing, and others.

The Wilderness Act (1964) mostly defined solitude as the primary human experience of wilderness but did mention some other positive aspects of wilderness (i.e., it mostly defined wilderness by what it was not). The Eastern Wilderness Act (1975) defined more positive human values of wilderness as including: solitude, physical and mental challenge, scientific study, inspiration, and primitive recreation. We are concerned about the need to better identify and understand all of the basic dimensions of human recreational experiences in wilderness (i.e., beyond solitude and privacy). The identification and quantification of these dimensions will aid wilderness planners and managers in better understanding and providing for users.

Wilderness and recreation literature on the attributes of the user experience have been widely published (e.g., Manfredi et al. 1996, Dawson and Hammitt 1996, Hollenhorst et al. 1994, Roggenbuck et al. 1993, Scherl 1990) but no comprehensive wilderness experience attribute scale has been proposed. Some of the dimensions suggested in the literature on recreation experiences, wilderness values, and wilderness users indicates that dimensions could be categorized in many ways with both positive (e.g., psychological, social, skills and equipment use, and natural environment) and negative (e.g., user impacts, user - user conflicts) oriented dimensions. One approach to organizing these positive and negative

attributes is suggested in labor and management literature on Herzberg's two factor theory (Herzberg 1987) which includes attributes that are mostly negative (i.e., dissatisfiers) and those that are positive (i.e., satisfiers). According to Herzberg, the negative factors must be mitigated and there must be some measure of multiple positive attributes before an employee is satisfied in the work place. The extension of Herzberg's theory to wilderness user dimensions may be helpful to conceptualize and make distinctions between the positive and negative dimensions when constructing future studies.

The purpose of this study was to further explore the dimensions of wilderness user experiences using the New York's Adirondack wilderness system as a region to develop and test a new survey instrument. The objective of this paper is to identify the dimensions of a wilderness experience sought by users in Adirondack wilderness areas as a starting point for a future project that will quantitatively measure the dimensions of the wilderness experience for users in three Adirondack wilderness areas (i.e., with different user densities).

Methods

This exploratory research process involved identifying the dimensions of a wilderness experience sought by users based on the available literature and on input from wilderness users. Input was collected using focus group interviews with members of groups that are primarily involved in wilderness use and preservation in recent years. The qualitative research technique of focus group interviews has been used successfully by the author with other recreational groups in New York State (Dawson, Connelly and Brown 1993). Focus group interviews were held by invitation to various groups and took place in public meeting rooms. Four different locations were chosen in upstate New York and were to include 6-18 participants in each session. Each focus group discussion section lasted two hours and followed the methodology recommended by Krueger (1988).

The intent was to broadly sample the different types of users and identify the full range of wilderness user experiences sought in wilderness areas (i.e., dimensions of the user experience). Focus group interviews were conducted during the spring of 1997 and were intended as input to a field interview and mail survey process that was to be conducted in three Adirondack Wilderness areas in the summer of 1997. The use of the Adirondack Wilderness System for this study allows for a more directed discussion in the focus group sessions and later survey process in the summer of 1997. The value of this from a research design perspective is that all Adirondack wilderness areas have similar situational factors (e.g., geographic region, user residence areas, information available for user access, environmental settings, and weather patterns).

Results and Discussion

Four focus group interviews were conducted in the spring of 1997 with wilderness user groups of: (1) recreation

planners and managers at the Northeastern Recreation Research Symposium (24 participants); (2) Adirondack researchers and educators at the Adirondack Research Consortium Annual Conference (7 participants); (3) members of the central New York Chapter of the Adirondack Mountain Club (7 participants); and (4) undergraduate and graduate students at the SUNY College of Environmental Science and Forestry (9 participants).

The focus group interviews were very similar in the dimensions discussed even though the groups were from very different wilderness user segments (e.g., age, experience level, residence area). The written notes and audio tapes of the group discussions were used to compile the dimensions and some of the attributes that represent each dimension. Participants were relatively clear about the hierarchical difference between what was a dimension versus what constituted attributes within a dimension. Based on the focus group discussions and literature review, there was a distinction made between positive (satisfier) and negative (dissatisfier) dimensions and attributes of the wilderness experience.

A summary of the positive dimensions and some examples of the attributes are shown in Tables 1. These positive attributes represent the items that participants were most interested in discussing because these were the motivating force for them to seek out and experience wilderness. The total list of attributes discussed is very lengthy and could not be presented here in its entirety; these attributes are representative of those discussed.

A summary of the negative or dissatisfier dimensions and some examples of the attributes are shown in Tables 2. These attributes represent the items that participants were most concerned about because these were the issues that had (or could) lead to their dissatisfaction with a wilderness experience but which could be potentially mitigated by wilderness managers. The negative items that could not be affected by managers (e.g., ethics of the public) were dropped during the discussion as were factors that were outside the wilderness area (e.g., economic health of a region).

The listings in Tables 1 and 2 are qualitative in nature and no ranking between dimensions is implied (or appropriate) since all discussion was initiated by a participant and then discussed by the group as they wished to contribute to the group process. The next phase of this study will use the listing of positive and negative attributes from this process in a survey of Adirondack wilderness users who will be contacted on site during their trip in the summer of 1997. The intent of the overall project is to develop a list of positive and negative attributes that can be used in quantitative studies of wilderness users to measure their experiences. We think that the identification and quantification of these dimensions will aid wilderness planners and managers in better understanding and providing for users.

Table 1. Examples of cognitive dimensions of satisfiers and related attributes during recreational experiences in wilderness.

Psychological

- to relax
- sense of self confidence
- get away from daily routines
- sense of self-sufficiency
- sense of status and identity with others who share wilderness

Social

- freedom of choice
- to experience places I read about or heard about from others
- to be with friends and family
- to experience group solitude and intimacy
- to have a story to tell others later

Solitude

- enjoy being alone by myself in a natural setting
- enjoy being with a small group of friends and no other people around
- sense of getting in touch with myself
- to allow personal freedom and choice

Spiritual

- sense of oneness with nature
- feelings of mortality and fragility of life
- reflections on life and living
- to get in touch with my true self

Exploration

- to feel connected to a place that is important to me
- to explore a natural environment
- to feel like I was one of the first people to experience a place
- sense of remoteness from cities and people

Inspirational

- to feel a sense of an earlier and rugged time in history
- celebrate wilderness as a symbol of naturalness
- to stimulate creativity

Physical and Physiological

- physical challenge and risk
- for the excitement
- get away from daily physical routine
- physical exercise and health
- sense of oneness with the rhythm of the recreational activity

Skills

- to improve low impact camping skills
- to gain an understanding of or knowledge about wilderness use
- to test recreational equipment use
- to appreciate and improve wilderness travel skills
- to learn how to deal with unpredictable natural situations

Natural Environment

- to observe and hear wildlife
- learn to respect the forces of nature
- to see different and dramatic landscapes
- to see spectacular views and unique places
- to experience mature and natural forests
- to observe and appreciate the complexity of an ecosystem

Table 2. Examples of cognitive dimensions of potential dissatisfiers and related attributes, that could be managed or mitigated by wilderness managers, during recreational experiences in wilderness.

User and Management Impacts

- to see evidence of management activities
- to experience burdensome user regulations
- to see too many physical structures (e.g., bridges, signage)
- to see litter on trails or campsites
- to hike on heavily used trails
- to experience a lack of adequate trail maintenance
- to hear aircraft closeby

User - User Encounters

- to experience conflicts with other users
- to hear many other people
- to see many other people
- to experience congestion at scenic vistas and summits
- to experience congestion at campsites

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**Poster
Sessions**



THE INFLUENCE OF INVOLVEMENT AND OUTCOME MESSAGES ON CONSUMER REFERENCE PRICES

Gerard Kyle

Graduate Student, The Pennsylvania State University
201 Mather Building, University Park, Pa 16802

Dr Ercan Sirakaya

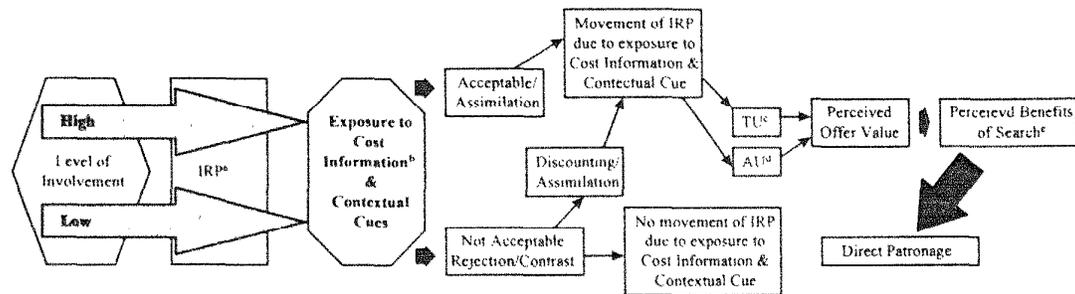
Assistant Professor, The Pennsylvania State University
201 Mather Building, University Park, Pa 16802

As public leisure and recreation services become more accountable for their service's fiscal independence, service providers dependence on user fees continues to be a contentious issue. Annually, service managers are required to recommend price changes for services offered the following year in order to maintain

existing service quality. Despite the emergent role of price, reactions of consumers to price changes in publicly funded leisure and recreation services are not well understood.

In marketing literature, the term "reference price" has often been used in research concerned with measuring consumers' reactions to price. Reference price is most commonly operationalized as an internally held standard that consumers use to evaluate new price information, and within the context of this study, is conceptualized as the "expected price" consumers anticipate paying for a product or service (Winer, 1988). Figure A, presents a revised process model, originally developed by Urbany, Beardon, and Weilbaker (1988) concisely illustrating reference price effects within the context of this study. It is important to note that this study is primarily concerned with analyzing consumer behavior to the point where there is a shift (or in fact, no shift) in consumers' internal reference price after the provision of contextual cues and sale price. It is assumed that consumers behavior will continue as the remainder model suggests and as Urbany et al. (1988) research confirms.

Figure 1. Revised process model for reference price effects. Adapted from "The Effect of Plausible and Exaggerated Reference Prices and Consumer Perceptions and Price Search," by J.E. Urbany, W.O. Beardon, and D.C. Weilbaker, 1988, *Journal of Consumer Research*, 15, p.108.



^aIRP = internal reference price.

^bERP = external reference price (Cost information).

^cTU = transaction utility and is based upon a comparison of the sales price and the internal reference price.

^dAU = acquisition utility and is based upon a comparison with the sale price and what the consumer is willing to pay for the utility.

^eBenefits of search based upon a comparison of the sale price to the lowest expected market price.

Little research can be found in marketing literature analyzing the effects of involvement on reference price. In these studies (Biswas, 1992; Herr, 1989) involvement has often been operationalized as brand familiarity, where brand familiarity is defined as "the number of brand-related experiences that have been accumulated by the consumer" (Biswas, 1992, p.253). This definition shares some similarities with Rothschild's (1984) definition of involvement, in that it also implies that consumers express a level of interest or motivation in their product search behavior. It also implies that consumers possess a certain level of "experience", where brand familiar (or highly involved) consumers are more knowledgeable than unfamiliar (or low involved) consumers (Biswas, 1992; Urbany et al., 1988).

In leisure literature, two studies (McCarville, 1991; McCarville, Crompton & Sell, 1993) can be identified that specifically examine involvement as an independent variable and its impact on reference price, the dependent variable. In each of these studies, high-involved subjects expressed greater understanding of the leisure program's content, and responded more favorably in terms of shifting their internal reference price, when additional program information was provided.

Therefore, in terms of the model presented in Figure A, it is assumed that consumers will have some general price expectation which is held with varying degrees of certainty, dependent on level of involvement. Previous research (McCarville, 1991; McCarville et al., 1993) suggests that highly involved subjects will exhibit lower initial price

expectations. Upon exposure to both the sale price and the contextual cues, the consumer will judge the acceptability of the sale price. The research of McCarville et al. (1993), illustrates the importance of providing contextual cues when attempting to alter consumer reference prices. This research examines whether positive or negative prospects resulting from subjects' own actions are likely to influence reference price. As contextual variables change, so to will the level of expectation (i.e., price expectation). There are three possible outcomes concerning consumers' judgments of price acceptability. First, the external reference price (ERP) may be judged acceptable, and therefore assimilated, causing an adaptation (or movement) of the internal reference price (IRP) toward the ERP. This increases perceived transaction and acquisition utility which, in succession, increases the overall perceived offer value, reduces the perceived benefits of search, and increases the likelihood of direct patronage. The other two possible outcomes deal with an ERP judged unacceptable. The second outcome occurs when the ERP may be judged not believable, but may be discounted and assimilated into the range of expected prices, still causing a shift in the IRP. This behavior was observed in Urbany et al. (1988) study, and whilst not guaranteeing direct patronage, there was a shift in individuals' IRP. The third outcome occurs when the external reference price is not judged acceptable and is truly contrasted and rejected (Monroe & Petrosius, 1981). The subsequent effects of this outcome are not favorable for the service provider: no shift in consumers' IRP, no improvement of perceived transaction utility or acquisition utility, and potentially negative attributions about the service provider (Urbany et al., 1988).

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AN INTERACTIVE INFORMATION KIOSK FOR THE ADIRONDACK PARK VISITOR INTERPRETIVE CENTER, NEWCOMB, NY

Lien Alpert

Graduate Research Assistant, SUNY College of Environmental Science & Forestry
Syracuse, NY 13210

Lee P. Herrington

Professor of Information Resources Management, SUNY College of Environmental Science & Forestry
Syracuse, NY 13210

Abstract: Kiosks have traditionally been non-electronic, but today kiosks are being developed as interactive, electronic information centers to transmit information about government services, commercial products and recreational experiences. This project's objective was to develop and evaluate the usefulness of a user-friendly information interface for kiosks in the Adirondack Park Visitor Interpretive Center in Newcomb, NY.

Introduction:

Kiosks "provide users with access to community and local information in an easily understandable format. Kiosks are defined to be used by the average user who has little or no experience with computer or information systems" (comp.infosystems.kiosks newsgroup, 1996). Kiosks have become a popular venue for delivering information to non-technical users such as tourists, campers, hikers, cross-country skiers, etc. Kiosks started out as bulletin boards, but in the past decade have moved into the electronic realm, by utilizing software such as Rocky Mountain Multimedia's *Kiosk-in-a-Box*. This project will develop a user-friendly information kiosk to enhance the recreational experience of visitors to the Adirondack Park Visitor Interpretive Center in Newcomb, NY.

Recreational experiences consist of five phases:

1. *Anticipation:* The period of foreseeing and awaiting a trip or occasion involves imagination and develops enthusiasm. This includes the planning, or actual preparation for the event as well as gathering equipment and supplies, packing and preparing other logistics.
2. *Travel to:* Travel to the activity site is important, regardless of whether travel time is short or extended. Although anticipation is a separate phase, travel to the activity site includes anticipation of the activity.
3. *Participation:* The activity and the events surrounding it extend from departure to return. It is the core of the experience, the time of encounter with the resource and activity opportunities.
4. *Travel back:* Travel from the site may be different from the travel to the activity site; actual routes traveled may be different. The memories that are different from the anticipation of the activity, which influence the travel back home.
5. *Recollection:* After participation, an experience is not usually over. Participation is relived through pictures, stories, and memories. (Clawson & Knetsch, 1966).

The temporal definition of a recreational experience suggests that information, maps, and pictures are an important element of a recreational experience (Knudson, 1984).

People seek information for two reasons: 1) as an end in itself to increase their knowledge about some particular subject of interest (i.e., learning about Mt. Marcy through images and written information) and 2) as a means to an end (i.e., planning the hiking route through the High Peaks in the Adirondacks) (Jubenville & Twight, 1993). One group of non-technical users, such as those who are unfamiliar with computer or information systems, is the non-local recreationists who wish to find information relating to their interests. Non-local and local recreationists seek different types of information through different channels; local recreationists don't need formal information programs because they are probably informed about the area in which they live. (Jubenville & Twight, 1993).

Regional information systems are designed to enhance macro-level decision making by providing base data on available recreational opportunities (Jubenville & Twight, 1993). People who are interested in a region and its available activities would use a regional information system. This information would be generalized so as not to overwhelm people with too much information. Conversely, area information systems are designed for micro-level decision making. Area information systems allow finer detail so participants can make informed choices (Jubenville & Twight, 1993). Local recreationists who are familiar with the area would probably find an informal area information system more useful, whereas non-local recreationists could use an area information system/kiosk to find trails that offer beautiful overlooks or to find a 'hot' fishing spot.

This kiosk application is a type of area information system that can be used to satisfy both types of information needs mentioned above. It would allow non-local recreationists to query for information such as put-in points, trail-heads, or picnic areas, as well as provide information to local recreationists about different trees and mammals in the area. Kiosks can be used to select opportunities as well as view images and information as a form of participation. Selecting opportunities is distinctly different from planning an outdoor recreation experience because the visitor is already at the destination and is participating in the recreation experience. The user interface of the kiosk could be an interactive map allowing users to select an outdoor recreation opportunity to find out detailed textual information about trails, swimming areas, etc. The query

structure would be based upon available spatial data and its attribute information. Customizing a GIS to perform the necessary queries could be accomplished through the use of an HTML hypertext browser (e.g., Netscape Navigator or Microsoft Internet Explorer).

Background:

Information signs can help apportion use evenly between similar facilities if users are informed about opportunities, liabilities, and/or limitations. Information signing has been shown to be an instrument by which managers can control visitor use and movement (Brown and Hunt, 1969). In Michigan, Travel Information Centers along the interstate highways have been shown to have an impact on the travel and spending decisions of those who receive information there (Beckon, et al. 1981).

Recreational opportunity guides or other printed materials are useful for areas that receive more non-local users than local users (see above). Placing these recreation opportunity guides in public areas help users make decisions and increase access to other informational programs (Jubenville and Twilight, 1993). Jubenville and Twilight recommend that the following types of communication should be provided by agencies:

1. Information to users on available recreational opportunities and feedback from users on the quality of the experience;
2. Information to users on existing activity patterns and feedback;
3. Information and feedback on major problems or proposed plans being considered by agencies; and
4. Information from continuous interchange through open channels.

In 1993, one of the recommendations from the National Performance Review (NPR) was to create an electronic infrastructure that would meld services from all levels of government for one-stop access by citizens. As a result the Government Information Technology Services Customer Service Improvement Team was established. Furthermore, an Interagency Kiosk Committee was instituted to create a kiosk plan for national implementation (Interagency Kiosk Committee, 1995). The resulting report, *The Kiosk Network Solution: An Electronic Gateway to Government Service*, describes a model for implementing the NPR's recommendations, development costs, and current examples in the US.

Plan:

The kiosk developed from a desire to work on a thesis or project that used GIS as a tool to deliver outdoor recreation information. Originally, the idea centered around an Internet HTML query structure that would allow users to obtain existing digital maps and spatial data, and connect to other sites that have similar types of data and maps. After a meeting with John Banta and John Barge (APA¹), Sandy

Bureau (VIC²), and Dr. Herrington, it was decided that the project would concentrate on a more interactive kiosk for one of the VICs rather than a website.

The plan was driven by the APA's request for such a kiosk application. In addition to the APA and the VIC, the Town of Newcomb, one of the few local government's using GIS in the North Country, wanted to be involved. These parties were all convinced that such a kiosk will stimulate recreational use of nearby facilities. Upon meeting with the interested parties, the VIC in Newcomb, NY was chosen as the prototype location for the development of the kiosk; primarily because of the amount of data available and the interest of Newcomb town officials and the AEC in providing available digital data.

The kiosk was designed primarily to provide information about outdoor recreation activities, forest types and bird species at the request of the VIC. The information provided was selected on the basis of the spatial data available as well as the needs of the VIC and the APA. The kiosk was designed to encourage outdoor recreation use and nature interpretation. Ideally, these two types of information (outdoor recreation information and nature interpretation) would be developed as separate kiosks. However, the monetary constraints do not allow for this. A sample of information is provided in what would ideally be provided in a the final version of the kiosk. Examples of outdoor recreation activities, trees, wildlife, and forest management practices have been selected that illustrate the type of information that could be provided. Copyright permission from the Adirondack Mountain Club was obtained for trail information, as well as permission from several organizations for use of their images. Based on user's comments concerning the useability of the kiosk, the system was modified.

Several types of information provided were:

Outdoor recreation information –

- Trail systems in and around the VIC, AEC, and Newcomb;
- Campgrounds and lean-tos in Newcomb;
- Cross-country (Nordic) ski trails
- Picnic areas and other day use areas; and

Interpretive information –

- A forest management practice called the shelterwood method on Huntington Forest will be illustrated through pictures of representative forest types and management schemes with text.
- Fauna and flora identification information such as pictures and text will be accessed similarly to the forest management & forest management information.

General information –

- Text on the history of the Adirondack Park, Newcomb, NY, VICs, and the AEC will be included.

Four outdoor recreation activities were selected and illustrated through map images and text. The maps were developed using ArcView; the map images were exported

¹Adirondack Park Agency

²Visitor Interpretive Center

as bitmaps and then imported into Canvas 5.0 (graphics package) as gifs or jpeg files. Trail information was used with copyright permission by the Adirondack Mountain Club. This information was accessible by clicking on certain parts of the map images.

The trees and wildlife were illustrated through images and text as well. Much of the information came from *Adirondack Mammals* by D. Andrew Saunders and *Adirondack Ecology: Common Trees, Shrubs and Herbaceous Plants of Central Adirondack Forests* by Michele Deisch and Richard Sage, Jr. The images were borrowed with permission from their respective owners, primarily from webpages found through Netscape Navigator.

The shelterwood method section was developed with the help of Dr. Ralph Nyland. He helped develop the short summary of forest management practices, as well as the bulleted statements that will accompany each image. The images were scanned slides provided by Dr. Nyland.

The last section of general information was copied directly from websites of the organizations if one existed. However, if the organization did not have a website, information and brochures were used to develop a webpage for the kiosk.

The users see a screen that is divided in two parts; the left part of the screen shows the table of contents. If users click on one of the words in the table of contents, the right part of the screen reflect that change. The table of contents remains visible at all times; this was done to orient the user and to make sure that the user always has an 'escape route' from any section of the kiosk to another section. The

opening screen gives options as to what part of the kiosk users can access, as well as a section for acknowledgments and a section requesting users to fill out a questionnaire when they're done using the kiosk.

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MONITORING APPALACHIAN TRAIL CORRIDORS: AN EXAMPLE OF VOLUNTEER LAND MANAGEMENT

Robert S. Bristow

Associate Professor of Geography & Regional Planning,
Westfield State College, Westfield, MA 01086.

Greg Knoettner

New England Field Assistant, Appalachian Trail
Conference, 18 On the Common, Unit 7, Lyme, NH 03768

Rick Wagner

Appalachian Trail Committee Chair, Berkshire Chapter,
Appalachian Mountain Club, 105 Windigo Road,
Cummington, MA 01026

Abstract: The management relationship between the Appalachian Trail Conference (ATC) and various land management agencies such as the National Park Service (NPS) is a prime example of the Partnerships prescribed by the President's Commission on Americans Outdoors. The Appalachian Trail is one success story of bringing public and private resources together to help plan and manage public protected areas. The monitoring program initiated by the ATC has saved taxpayers many thousands of dollars by enlisting the help of volunteers to serve as the eyes and ears of the National Park Service and other agencies for the public AT lands. This paper illustrates the essential elements of public land monitoring including the steps necessary to implement such a program. It will identify the problems and pitfalls, as well as highlight the successes and enjoyment offered to the volunteer monitor.

Keywords: Volunteer Land Management, Appalachian Trail, Monitoring

Introduction

"The men and women of the National Park Service are wizards at doing more with less, but even they are reaching their limits" (AMC Outdoors, 1997). This quotation by Paul Pritchard, President of the National Parks and Conservation Association rings in the dire need to expand partnerships. One such partnership that exemplifies cooperation to the fullest potential is the working relationship between the Appalachian Trail Conference and the National Park Service. The Appalachian National Scenic Trail (or AT as it is commonly known) is the longest continuously maintained foot trail in the world. It stretches along the Appalachian Mountains some 2100 miles between Springer Mountain in Northern Georgia and Mt. Katahdin in Central Maine.

The AT was the inspiration of regional planner Benton MacKaye, who wrote "The Appalachian Trail: A Project in Regional Planning" in the *Journal of the American*

Institute of Architects (MacKaye 1921). The trail was constructed over the 1920s and 30s and has evolved over time, changing the route and even the southern terminus (Foster 1987). The original plan was further expounded in MacKaye's seminal work, *The New Exploration: A Philosophy of Regional Planning* (MacKaye 1962) and sought to build a "dam" to the encroaching urban landscape.

In 1968, the National Trails System Act recognized the importance of the trail and through an amendment of the Act in 1978, provided funds to secure a permanent right of way (ROW) that would preserve the route and character of the corridor. The law enhanced the working relationship between the Appalachian Trail Conference (ATC) and federal land management agencies, principally the National Park Service. In 1984, the NPS took an equally historic step by delegating the ATC and its member trail maintaining clubs the responsibility for managing NPS-acquired AT lands. This formalized a long term relationship that has made the AT one of the premier hiking experiences available to the American public and a model for other long distance trails (Burch 1979).

Support for outdoor recreation was widespread during the environmental 1960s and 70s, but waned during the economic slump of the 1980s. In the mid Eighties, the President's Commission on Americans Outdoors (PCAO 1986) re-introduced the need to develop partnerships in order to maintain and protect outdoor recreation opportunities in America. Organized and well informed volunteer initiatives in the area of public land monitoring will play a pivotal and crucial role within this framework of public and private partnerships. This paper seeks to highlight some of the issues necessary to undertake recreation trail corridor monitoring.

Background

Monitoring recreation lands is a recognized form of planning and management. As an important part of any planning process, monitoring recreation resources is necessary since conditions change over time, and as a result of these changes, managers must adapt policies to meet administrative mandates. For example, the Limits of Acceptable Change, or LAC, is a planning model utilized by the US Forest Service (Stankey et al. 1985). Monitoring is a part of the LAC planning process. Another planning model found to be successful for land managers is the Quality Updating and Learning (QUAL) model that has been utilized in many recreation resources (Chilman et al. 1991). In this model, monitoring is a dynamic process including all the individuals responsible for land management, from the backcountry ranger to the park superintendent. Yet both of these processes are inherently dependent on paid personnel, something becoming scarce on public recreation lands. A more sustainable arrangement in the tradition of the PCAO mandate, is the long time partnership that has already been in place along the Appalachian Trail since 1984.

The purpose of AT monitoring is to provide regular field inspections of corridor lands. The volunteer monitors are

the eyes and ears for the ATC and NPS. And like any land manager, whether public or private, the main concern is protection of the land against unwanted uses including timber theft, dumping, overuse and misuse (Berkshire Chapter, Appalachian Mountain Club 1991). Further, there is a need to be aware of natural changes in the landscape such as insect deforestation, storm damage or unnecessary erosion.

In Massachusetts, the AT travels over 80 miles between the Vermont and Connecticut borders along the Berkshire Mountains. The Massachusetts AT corridor or greenway is anchored by Mt. Greylock in the north and Mt. Everett in the south. Details of the route can be found in the Appalachian Trail Guide for Massachusetts-Connecticut (ATC 1988). There are essentially two landowners of AT lands in Massachusetts: the National Park Service and the Commonwealth of Massachusetts Department of Environmental Management (DEM). Both agencies participate in the land acquisition effort. State Forest lands make up a third land management type, where the AT corridor traverses more expansive areas of public ownership.

For purposes of trail monitoring, 37 sections of two to three trail miles (approximately 1000+/- acres of land) have been allocated amongst an armada of volunteers. These individuals are solicited from ATC and/or Appalachian Mountain Club (AMC) members and share a common interest in protecting the Appalachian Trail. Three Section Coordinators (Northern, Central and Southern segments of AT in Massachusetts) help organize and assist the monitors in their task. The Chair of the AT Committee, Berkshire Chapter, AMC, oversees the group of volunteers and reports to the AMC and ATC.

Methods

The ATC has classified corridor lands in terms of priority. This ranking is necessary since the frequency of monitoring visits varies according to the level of threat. High priority lands are areas where access or past problems make abuse most likely while less accessible lands rank lower. Sections of newly cut trails or relocations are particularly vulnerable to impacts and thus are placed in this category. These properties need to be inspected twice a month to twice a year. Table 1 lists the characteristics that make a parcel of high priority.

Table 1. Hot Spot Factors that make corridors high priority.

Easement
Special Use Permits
Ungated Powerline crossing
Ungated dirt roads
NPS owned structures
adjacent development, logging, or mineral extraction
adjacent active ATV/ORV area, rifle range or car park
Conflicting use of the land (ORVs, horse back riding etc.)
trespass (dumping camping, timber theft)

Moderate priority lands are threatened by only moderate infractions. For example, tracts that have no hot spots (Table 1.) can be considered moderate unless they are very remote. An annual inspection will probably be enough.

Low priority lands have low risks and can be inspected once every two or three years. These lands may be remote or have minimal land impact infractions. Boundaries on steep or other inaccessible areas can be thought as having a low priority. However initial and thorough inspections should still take place. A minimum level of monitoring should be established for each priority category. Exceeding the minimum levels is desirable and should be encouraged if program participation and enthusiasm is strong.

Once the corridor has been classified as to its priority, field inspections can take place. This is the real fun part of AT monitoring. Depending on the presence of known or suspected problems and the priority of need, monitors can determine what type of inspection is appropriate. More often than not, a combination of methods may be necessary.

Types of Inspections

Boundary hike. The most comprehensive type of inspection and required for initial inspections. It is important to walk the entire boundary during one visit, if possible, and to get the big picture of the properties. This will aid in subsequent inspections, especially if a hot spot is discovered that will need constant monitoring. Extensive note taking and photography will support and document the findings.

Trail hike with some boundary walking. This type of monitoring is useful for sections that have a combination of high/medium priority boundaries and low priority sections. The monitor will follow the trail through the low priority sections and concentrate on parcels threatened by outside use. It also allows the monitor to get a feel for the interior of the corridor.

Trail hike. In the winter, the monitor can view the corridor up to 600 feet on either side of the trail in deciduous forests. A simple trail hike may suffice to narrow corridors.

Doing the Inspection

This requires some basic map and compass work. This paper will not go into the details of map and compass work; interested readers are referred to Kjellstrom's (1976) work titled Be Expert with Map and Compass. The monitor must be comfortable with map and compass since they will be traversing property lines away from the trail and other well traveled ways. Essentially it is also important to remember to account for magnetic declination when following legal boundary descriptions contained in deeds since the bearings are typically based on True North. However this is not always so. Attention to the northern reference is prudent.

Appalachian Trail corridor lands are presently being surveyed and blazed to provide monitors with up to date

and accurate information about the properties. One must then visit the property with the AT segment map, the survey map and compass. Under ideal conditions, the monitor may follow the survey blazes fairly easily, but experience tells us that the path is often obscured by plants (especially bushes with thorns) and survey blazes fade over time. Initial inspections may take all day, but once the monitor becomes familiar with the corridor, the inspections will take less time. The monitor may need only visit the "hot spots" on the majority of future visits. Shortcuts along old logging roads can reduce travel time to a particular area.

However, some sections of the AT remain unsurveyed and the monitor has only the deed information to follow in conducting the inspection. This requires a little more skill and patience, since the corridor is not as clearly marked. Fortunately for some AT segments is the fact that old landmarks may still exist and make the job easier, or at least possible. An old stone wall may mark a boundary, or even the edge between a field and the woods. The monitor will soon realize it may be easier to walk parallel to the property line, especially in steep or heavily vegetated terrain.

Since the monitor will be walking off from the trail, it may appear strange to adjacent landowners. Introducing oneself, as the AT section monitor to the neighbors, will ease their suspicion. And once the neighbors understand the role of protecting the corridor, the monitor may even enlist the landowner to become additional "eyes and ears" for the AT. A good neighbor is better than an angry one.

Report Preparation

A necessary component of monitoring is the record keeping. While paper work may be considered to be a hassle by those monitors that just want to get outside and bushwhack through the woods, it is vital for tracking the history of problem areas and getting this information into the hands of professional land managers. The documentation may also become legal information in the prosecution of crimes committed on corridors lands. Besides the monitor report (see Appendix A), sketch maps, photographs and other support evidence will provide the best information for trail monitors. It is important to keep copies of all reports submitted, since they may become lost or misplaced

Lessons Learned From the Field

Periodic and regular field inspections can be fun and provide excellent exercise to the monitor. The best time of the year to undertake the monitoring is between the Fall and Spring, when the leaves are off the trees and visibility is maximized. Care should be exercised during hunting season, so check with local regulations about dates in the Fall. Late Spring may be muddy and since the monitor may be bushwhacking through the woods, be careful about trampling on young plants. However, the best thing about this season is the lack of insects, cooler temperatures and the private experience one finds walking in the Appalachian woods.

While the field inspections can be done solo, it is highly recommended that teams of volunteers group to assist one another with the monitoring. Besides being safety conscious, this is especially useful, since pairs of hikers can cover ground faster with a "Leap Frog" type of coverage. That is, one can set a compass bearing while the other heads off in that direction. Once a hundred feet is paced out (or some other distance, still within sight of the compass bearer), the first can "leap" ahead of the other and maintain a correct bearing.

Future

There are tremendous opportunities for this type of land management to continue in the future. As additional lands become protected for open space, traditional land management agencies will become strapped to properly oversee these properties. The partnership described in this paper is one way that the public can become involved in the management of public lands. Besides the obvious savings of public tax dollars, there are two distinct advantages to this partnership. First, it strengthens the bond between public and private agencies and provides an opportunity for all parties to better understand the needs and issues related to protecting our natural resources. And second, the satisfaction one gets by bushwhacking in the woods, knowing that they can have fun, exercise and yet still help protect the Appalachian Trail.

As more and more parks establish citizen partnerships, we can expect the ties to strengthen even further. These "Friends of the AT" become advocates to insure the continued protection of public open space and greenways.

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VALUING IMPACTS OF FOREST QUALITY CHANGE: RECREATION AND NEW YORK'S ALLEGANY STATE PARK

James F. Booker

Assistant Professor of Economics and Environmental Studies, College of Business, Alfred University, Alfred, NY 14802.

Russell Patterson

Undergraduate Research Assistant, Powell Box 0852, Alfred University, Alfred, NY 14802.

Abstract: Allegany State Park in southwestern New York State attracts visitors from across western New York State, and neighboring states and Canada, while providing a variety of valuable ecological, social, and recreational benefits. Proposed management of forested park land has generated considerable controversy. Conflicting values regarding older growth versus mixed age forests, conflicting needs of alternative recreational activities, and the potential benefits of harvesting valuable timber underlie this controversy. There has to date been no attempt to estimate direct economic impacts of the proposed changes on the 1.2 million visitors who annually travel to the park. Using existing surveys of park users, a benefit transfer methodology is applied to value present park activities including camping, picnicking, sightseeing, fishing, and hunting. Second, an approach to estimating recreation economic impacts of alternative forest management plans including selective logging is developed.

Introduction

Valuation of non-priced goods is increasingly looked to as an essential component in weighing costs and benefits of alternative actions (see Costanza et al., 1997, for an heroic application). New York's Allegany State Park provides an example of such a good, used to providing ecological, social, and recreational benefits for over one million visitors annually, and an undetermined number of non-users. Despite the significance of the Park as a recreational resource there has been little work on systematically valuing the benefits enjoyed by visitors. This paper has the dual objectives of establishing baseline valuation of visitor benefits, and introducing one framework for estimating impacts on visitor benefits of changes in forest quality for recreation.

Visitor benefits are measured as the willingness-to-pay for the enjoyment of the recreational experience. The purpose is to establish the economic value of the experience to the visitor. These visitor benefits are distinct from both expenditures by visitors (e.g. costs of travelling to the Park), and the resulting local and regional economic activity generated by visitor expenditures. No attempt is made to estimate these latter impacts of Park visitation.

Study Setting

Allegany State Park in southwestern New York State attracts visitors from across western New York State, and neighboring states and Canada. At approximately 100 square miles in size, it is the largest New York State Park (though the Adirondack and Catskill Forest Preserves are much larger). Visitors engage in a wide variety of year-round recreational activities. Visitors view the relative "naturalness" of the Park as a critical attribute (Palmer, 1988). The Park is heavily forested, with only 6% of current land in alternative uses (e.g. roads, campgrounds, etc.) It is dominated by second growth forest, much of which is nearing 100 years in age. Some areas of older growth are also present, though their extent is limited. A new park management plan is presently being developed, including study of forest management (timber harvesting) on Park land. Considerable controversy has arisen (see, for example, Empire State Report, 1995) surrounding the proposed forest management alternatives. Conflicting values regarding older even aged growth versus mixed age forests, conflicting needs of alternative recreational activities, and the potential benefits of harvesting valuable timber underlie this controversy. A user survey (Palmer, 1988) shows that typical Park visitors do not support harvesting timber for commercial purposes, and are wary of any form of active forest management.

There are no available estimates of visitor benefits under either existing or proposed forest conditions. Providing such estimates is addressed here by first developing an estimate of the non-priced value of visitation by park visitors under existing management. Using a previously completed survey of park users (Palmer, 1988), the benefit transfer methodology is applied to present park activities including camping, picnicking, sightseeing, hiking, fishing, and hunting. An approach to valuing quality changes from proposed management alternatives is then presented.

Benefit Transfer: The Application of Existing Studies

The need to provide cost-effective estimates of non-priced recreation benefits has spurred discussion of differing benefit transfer methodologies. In each approach, benefit estimates from existing studies are applied to a target, or policy site where time or monetary costs preclude developing primary benefit estimates. Boyle and Bergstrom (1992) describe the process as "simply the application of secondary data to a new policy issue." The most promising benefit transfers, applicable when use data for the policy site is available, may be those focusing on average benefit per user day (Loomis, et al., 1995). Such an approach is possible for Allegany State Park visitation, where detailed data on Park attendance and activities is available. Benefit estimates reported by Bergstrom and Cordell (1991) are used here. Alternative representative values are also available (see, for example, Walsh, Johnson, and McKean, 1988).

In addition to a benefit transfer methodology, estimation of unit day benefits for Allegany State Park visitors requires a methodology for treating the diverse activities present within the Park. Benefit transfers for each of the thirteen distinct activities identified in Palmer's (1988) survey of visitors are

used. A weighted average based on participation rates was then developed to provide unit day benefit estimates for typical user groups (e.g. campers and visitors). Because these estimates are derived from all activities reported by each user group, they are not a benefit estimate for a typical visitor, but are rather an average across all visitors within the group.

Visitors to Allegany State Park report that they typically engage in a variety of recreational activities. Casual observation, and the range of available facilities confirm that multipurpose visits to Allegany State Park are typical. The degree to which recreational activities outside the Park are also engaged in during a typical day for a Park visitor is not known. Because of the substantial travel involved for visitors from surrounding metropolitan regions, their recreational activities outside the Park may be quite limited. In contrast, the literature from which the relevant primary studies are drawn focuses almost exclusively on single uses such as fishing, hunting, hiking, and swimming. The approach used

here was to use reported participation in different activities by Allegany State Park visitors (Palmer, 1988) to develop a unit day profile. Because benefit estimates are typically reported based on a full day's participation, it was necessary here to allocate portions of the day to differing activities. Participation rates were not directly available, but were inferred from the percentage of visitors reporting participation in each activity. Let the percentage of Park visitors participating in activity i be given by p_i , and the consumer surplus in the i th activity (estimated by benefit transfer) be V_i . Then the unit day consumer surplus estimate (for each user group) V is given by

$$V = \sum_i w_i V_i$$

where $w_i = p_i / \sum_i p_i$. Table 1 shows the use of this approach using standard values developed by Bergstrom and Cordell (1991). Adjusted to 1997 dollars using the GDP deflator, visitor benefits are approximately \$16 per visitor day under existing conditions.

Table 1. Contribution of recreational activities to total benefits of camping at Allegany State Park.

Activity	Standard Value	Participation	Weighted %	Weighted Value
	(\$)	(%)	(%)	(\$)
Hiking	16.52	89.3	15.0	2.48
Scenic (pleasure) driving	12.95	87.9	14.7	1.90
Nature trails (study)	13.12	83.3	13.9	1.82
Swimming	19.89	78.4	13.1	2.61
Picnicking	15.90	63.3	10.6	1.69
Canoeing and kayaking	17.00	59.2	9.9	1.68
Fishing	16.82	58	9.7	1.63
Bicycling	17.85	43.5	7.3	1.30
Big game hunting	16.20	9.8	1.6	0.26
Small game hunting	16.08	6.3	1.1	0.18
X-country skiing	12.84	15.6	2.6	0.33
Horseback riding	15.30	2.6	0.4	0.06
			<i>Total benefits</i>	15.95

Units are 1997 dollars per visitor day.

Towards Valuing Visitor Preferences for Forest Management

Quality of recreation sites is one factor in visitor demand (Bergstrom and Cordell, 1991). Quality is a function of the specific recreation activity, however. In Allegany State Park visitors engage in a broad range of activities: their valuation of alternative forest management is similarly a function of their specific recreation preferences. Applying Bergstrom and Cordell's estimated coefficients across the range of recreation uses provides one approach to valuing changes in recreation quality in Allegany State Park.

In the absence of detailed empirical data on the impact of forest management on site quality by recreational activity, sensitivity analysis is instead used to estimate the likely range of impacts of forest management. It is hypothesized that

forest management negatively impacts Park visitors engaging in hiking and nature study, and positively impacts small and large game hunting by increasing suitable habitat and forage. Site quality for other Park uses is assumed unaffected by initiation of forest management. The value of site quality changes is estimated by applying impacts of quality changes (Figure 1, after Bergstrom and Cordell, 1991) to the specific visitor activities in Table 1. The site quality index used by Bergstrom and Cordell ranges from 1 (least suitable) to 10 (most suitable). Using a range of changes in site quality of ± 1 to ± 5 , Table 2 shows the resulting change in visitor benefits. The resulting aggregate change in visitor benefits across all activities ranges from -3% to -14% of the existing value. The reduction in benefits is thus about 40 cents to \$2 per visitor day.

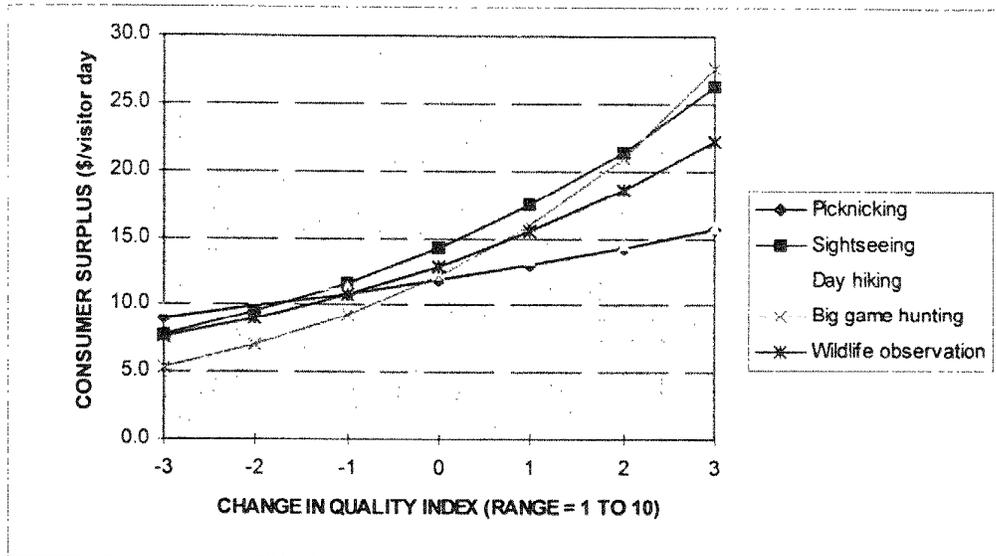


Figure 1. Sensitivity of visitor benefits to recreation site quality (after Bergstrom and Cordell, 1991).

Table 2. Potential impacts to recreational benefits at Allegany State Park with forest quality change.

Activity	Existing Value	Impact of change in quality index on existing value			Impact on final weighted value with change in quality index		
		±1	±2	±5	±1	±2	±5
Hiking	16.52	-1.37	-2.74	-6.86	-0.21	-0.41	-1.03
Scenic (pleasure) driving	12.95						
Nature trails (study)	13.12	-2.38	-4.75	-11.88	-0.33	-0.66	-1.65
Swimming	19.89						
Picnicking	15.90						
Canoeing and kayaking	17.00						
Fishing	16.82						
Bicycling	17.85						
Big game hunting	16.20	+4.47	+8.94	+22.35	0.07	0.14	0.36
Small game hunting	16.08	+2.80	+5.59	+13.99	0.03	0.06	0.15
X-country skiing	12.84						
Horseback riding	15.30						
<i>Total change in benefits</i>					-0.43	-0.87	-2.17
<i>Final total benefit</i>					15.51	15.08	13.78
<i>Change in total benefits</i>					-3%	-5%	-14%

Units are 1997 dollars per visitor day

Discussion

Using a benefit transfer methodology, baseline estimates of visitor benefits at Allegany State Park under existing conditions can be developed. These non-priced benefits are the willingness-to-pay of Park users for their recreational experiences, and thus capture the economic value of the Park resource to its users. With 1.2 million visitors annually (New York State Office of Parks Recreation and Historic Preservation, 1992), Allegany State Park generates almost \$20 million (1997 dollars) in non-priced benefits annually.

Changes to the quality and hence value of recreational experiences at Allegany State Park would likely occur with the initiation of forest management. Under one hypothetical set of impacts, annual benefits to Park visitors would decline

by 3 to 14%. The potential annual loss in benefits of \$0.6 million to \$2.8 million (1997 dollars) would represent the economic cost to Park users initiating forest management for timber production. These estimates do not include impacts to non-users, or valuation of ecological impacts (e.g. biodiversity gains or losses). In the context of a benefit cost approach to forest management activities, it would be appropriate to contrast potential stumpage values to these annual loss estimates.

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RECREATIONAL USER ATTITUDES TOWARDS MANAGEMENT STRATEGIES OF ALLEGANY STATE PARK

Michael Nisengard

Graduate Student, State University of New York College of Environmental Science and Forestry, Faculty of Forestry, 211 Marshall Hall, 1 Forestry Drive, Syracuse, New York, 13210.

Miklos Gratzler

Distinguished Professor, State University of New York College of Environmental Science and Forestry, Faculty of Forestry, 211 Marshall Hall, 1 Forestry Drive, Syracuse, New York, 13210.

Abstract: This project examines attitudes towards management strategies of four Allegany State Park recreational user groups: cabin users, recreational vehicle users, tent users, and day users. It investigates recreational user group attitude differences, and attitude change over a ten year time period, in regard to the following park management strategy categories: park attributes, recreation issues, forest management and diversity issues, preservation issues, oil and gas development issues, and nuisance wildlife control issues. Data analysis of the study results indicate that there is a statistically significant difference in recreational user group response to 5 of 49 variables. Comparisons are made between this study and a similar study conducted in 1986 in order to assess change in user attitude over time. From 1986 to 1996, user attitude, evaluated in terms of management significance and not statistical significance, changed in response to only 3 of 46 issues.

Introduction

Cattaraugus County in southwestern New York State. It is bordered on the west, north, and east by the Allegheny River, and to the south by the State of Pennsylvania. The park is 60,325 acres in size, and the topography consists of lakes, rivers, streams, and hills over 2300 feet in altitude. ASP is visited by 1.4 million park patrons each year.

Allegany State Park is administered for outdoor recreation by the Allegany Region of the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP). ASP is a four season recreational facility, and provides recreational opportunities such as camping, swimming, hiking, horseback riding, cross-country skiing, hunting, and boating. In addition to the recreational resources of the park, ASP is rich in natural resources such as timber and subsurface hydrocarbons.

Due to the broad range of possible uses of these park resources, the resulting range of management options, increased pressure for both the utilization and preservation

of the park resources, as well as projected demand increases for recreational activities, the OPRHP initiated a master forest management planning process for ASP in the early 1970's. "Forest management is interrelated with facility development, trails, recreation program components, oil and gas, and other issues" (Palmer 1988). A comprehensive ASP forest management plan can help ensure appropriate and wise use and development of the park resources.

Surveys of park users regarding attitudes towards the management of ASP were conducted by James Palmer in 1986 in order to assess attitudes of the park users towards management strategies of ASP. This research was particularly useful in bridging the gap between ASP recreationists and ASP management. The park user - park manager gap is common, as recreation managers frequently misjudge what recreationists seek, and have inaccurate perceptions of their recreational attitudes (Buerger 1983). Information on recreationists' attitudes towards facilities and services is very desirable in formulating recreational policies which can improve visitor satisfaction, and create a high quality outdoor recreational experience.

Palmer's research examined the attitudes of park users based upon a sample of campers drawn from the list of camping permits. This information has been furthered by this research endeavor, which has assessed the differences in attitudes towards park management strategies in regard to four different recreational user groups. This information is valuable because different recreationists have different attitudes (Weaver 1988). Park managers must possess an understanding of the similarities and differences between user groups in order to formulate management plans and policies which can assure minimal user conflict, as well as maximize total recreational satisfaction (Buerger 1983).

Six categories of ASP management strategies are examined: 1) park attributes, 2) recreation issues, 3) forest management and diversity issues, 4) preservation issues, 5) oil and gas development issues, and 6) nuisance wildlife control issues. The park users are segregated into four user groups: cabin users, recreational vehicle (RV) users (inclusive of motor homes, pull along trailers, and pop ups), tent users, and day users.

This research will not only build upon the current literature base, but will also be useful to ASP managers. The ASP forest resources management plan has not yet been completed, and this research has updated the information of ASP managers as to the attitudes of ASP recreationists. This research has also determined significant differences in attitudes between the four major peak time park user recreational groups (cabin, RV, tent, day). The attitudes of these four user groups are important because they represent the majority of ASP users, and therefore the main recreational user focus of ASP management strategies.

Theoretical Foundation

Jubenville and Twight (1993) state six relationships between the visitor, the natural resource base, and the management organization: 1) the resource affects the visitor; 2) the visitor affects the resource; 3) the resource

situation affects management programs; 4) the management programs affect the resource situation; 5) the visitor affects management programs; and 6) the management programs affect the disposition of the visitor. This research endeavor will focus on exploring the relationship between the recreational user (visitor) and the management organization in regard to recreational user attitudes towards the management organizations' management strategies of the natural resource base.

The theoretical foundation of this study is based upon the goal of recreation management, which is to maximize visitor satisfaction (Lucas and Stankey, 1974). This goal is accomplished through management strategies, and the structure of this study was created in order to work within the existing ASP management framework.

The literature base has many examples of how attitudinal differences occur between distinct recreational user groups, and how recreational managers are unaware of, and inaccurately predict, recreational user attitudes. This research was designed in order to bridge the gap between the recreation manager and the recreationist, and to hopefully define distinct recreational user groups based upon attitudes toward park management strategies.

The results of this research will not only be beneficial to the amelioration of the literature base, but will also greatly serve ASP managers in further refining the ASP forest resources management plan in order to maximize both recreational user satisfaction and responsiveness to the public purpose.

Research Methodology

From June 19 through August 30, 1996, 194 ASP recreationists completed a hybrid interview/on-site survey. This survey established the user group category of the respondent (cabin, RV, tent, or day) through an oral interview question. The respondent was then asked to complete a survey which ascertained the importance that the respondent placed on 20 park attributes, and the extent of agreement or disagreement that the respondent placed on 3 recreation issues, 12 forest management and diversity issues, 3 preservation issues, 5 oil and gas development issues, and 6 nuisance wildlife control issues. The responses were valued on a 9 point Likert scale, in which one signified very unimportant or strong disagreement, 5 signified neutral, and 9 signified high importance or strong agreement.

The data collection dates were selected via a judgmental sample, and a systematic sampling method was employed to sample the four recreational user groups during the sampling days.

The research methodology allowed for a statistical comparison between the four user groups. While this study used a nearly identical survey as Palmer's 1986 study, differences in data collection designs between the two studies disallowed a statistical analysis of user attitude change over time. Change in attitude over time is evaluated in terms of management significance and not statistical

significance. Management significance is defined as a change in user opinion greater than 10% (difference > 0.9).

Recreational User Group Attitude Differences

This study employed the Tukey-Honestly Significant Difference (Tukey-HSD) one-way analysis of variance (ANOVA) post-hoc test in order to determine statistically significant differences among the four user group. Three park attributes, one recreation issue, and one oil and gas development issue, were found to have significant attitude differences among the user groups at a significance level of 0.05.

TABLE 1 summarizes the user group differences in regard to opportunities for outdoor activity such as swimming, games, and picnics. The Tukey-HSD test found that tent users to statistically differ only from day users.

Table 1. Recreational User Group Differences In Regard To Opportunities For Outdoor Activity (Swim, Games, Picnic, Etc.)

Test (P-Value)	User Group (Mean)	User Groups (Mean)
Tukey-HSD (.05)	Tent (7.5)	Differs From Day(8.6)

key: 1.0 = very unimportant, 5.0 = neutral, 9.0 = very important

Day users highly value opportunities for outdoor activity such as swimming, games, and picnics, because these activities fill an afternoon and thus are the primary park attraction for day users. In comparison, while tent users are also drawn to ASP for outdoor activity, it can be assumed that such activities as games and picnics do not serve as the focus of their recreational activities, and therefore these activities do not draw tent users specifically to ASP.

TABLE 2 summarizes the statistically significant difference between day users and cabin, RV, and tent users in response to the provision of overnight facilities.

Table 2. Recreational User Group Differences In Regard To The Provision Of Overnight Facilities

Test (P-Value)	User Group (Mean)	User Groups (Means)
Tukey-Hsd (.05)	Day (5.9)	Differs From Cabin(8.2) Rv(7.8) Tent(8.1)

key: 1.0 = very unimportant, 5.0 = neutral, 9.0 = very important

It is expected that day users would find the provision of overnight facilities to be of lower importance than overnight users because day users do not use the overnight facilities, nor do they have a need for them.

TABLE 3 illustrates user group differences in regard to organized programs such as performing arts, concerts, and fairs. The results of the Tukey-HSD test sound tent users to statistically differ from cabin users and day users in response to this park amenity.

Table 3. Recreational User Group Differences In Regard To Organized Programs (Performing Arts, Concerts, Fairs, Etc.)

Test (P-Value)	User Group (Mean)	User Groups (Means)	
Tukey-Hsd (.05)	Tent (4.4)	Differs From	Cabin (5.9) Day (5.7)

key: 1.0 = very unimportant, 5.0 = neutral, 9.0 = very important

A possible explanation of the difference for this park amenity may be a result of the recreational attraction to the park of the user group. A majority of cabin users stay in the park for one week, thus organized programs provide them with a new and different activity; it gives cabin users something else to do beside swim, hike, or boat. Most day users travel between ten and sixty minutes to get to the park, and organized programs provide an attraction which encourages day users to take a quick drive to ASP. In contrast to cabin and day users, most tent users visit the park for one to three nights, where the main purpose of their recreational use is focused upon the natural resource base and not structured programs.

One recreational issue, that amenities such as electricity, running water, and separate sleeping areas should be provided in the cabins, was found to have a statistically significant difference among recreational user groups at a significance level of 0.05. TABLE 4 illustrates that the Tukey-HSD test found a difference only between day and cabin users.

Table 4. Recreational User Group Differences In Regard To The Provision Of Cabin Amenities (Electricity, Running Water, Separate Sleeping Areas)

Test (P-Value)	User Group (Mean)	User Groups (Mean)	
Tukey-Hsd (.05)	Day (5.4)	Differs From	Cabin (6.6)

key: 1.0 = strongly disagree, 5.0 = neutral, 9.0 = strongly agree

A possible explanation of the statistically significant difference between day users and cabin users is a result of these two user groups representing the polar extremes of this recreation issue. Day users are neutral in response to issues regarding overnight facilities, while cabin users respond higher than all other user groups in response to both the importance of overnight facilities and the provision of cabin amenities. Cabin users' recreational activities revolve around their overnight facilities, while day users recreational activities are absent of any overnight facilities. This is why cabin users respond more favorably to overnight recreation facility importance and cabin amenity provision, while day users are neutral in response to such issues.

One oil and gas development issue, that the state should consider the acquisition of privately owned subsurface rights under park land, was found to have a statistically significant difference among user groups at a significance level of 0.05. The Tukey-HSD found a statistically

significant difference between RV users and tent users. TABLE 5 summarizes this difference.

Table 5. Recreational User Group Differences In Regard To The State Considering The Acquisition Of Privately Owned Subsurface Oil And Gas Rights Under Allegany State Park Land

Test (P-Value)	User Group (Mean)	User Groups (Mean)	
Tukey-HSD (.05)	RV (4.4)	Differs From	Tent (6.0)

key: 1.0 = strongly disagree, 5.0 = neutral, 9.0 = strongly agree

It may be inferred from this management strategy that if the state did acquire privately owned subsurface oil and gas rights, that these resources would not be developed. RV users, whose mobile homes consume mass amounts of gasoline, may see this resource conservation as an indirect contributor to an increase in their cost of recreational activity (less gasoline, higher gasoline prices, higher cost of recreation). Therefore RV users are less in favor of state acquisition of these resources than tent users.

Study Comparison

This section will compare the results of this study to the results of the study conducted by James Palmer in 1986 titled *Attitudes Toward The Management of Allegany State Park*. Knowing attitude change over time is important information to park managers because it is their responsibility to continually be aware of shifting user attitudes. Examining attitude change can often not only demonstrate previous change in attitude, but more importantly can help managers predict future change in attitude. Sound foresight is a fundamental component of any long term management plan. The attitude change over time will be examined in terms of management significance. Management significance is defined as change in user attitude greater than 10% (change > 0.9).

TABLE 6 summarizes the comparison of the study results in regard to twenty park attributes. Courtesy of the park staff has the biggest difference, as 1996 overnight park users rated it as 0.7 less important than did park users in 1986. 1996 park users feel that opportunities to fish, the presence of law and order, and solitude while in the park are 0.6 less important than did 1986 park users. The natural park environment, opportunities to see wildlife, organized programs (performing arts, concerts, fairs, etc.), opportunities for socializing with family, friends, and others, and the provision of overnight facilities (cabins, camping) were all rated 0.5 less important by 1996 recreationists. 1996 recreationists rated the lake's water condition (clarity, color, litter, etc.) and the provision of trail opportunities to be 0.4 less important than 1986 recreationists did, and the provision of concessions and opportunities to hunt to be 0.3 less important than 1986 recreationists did. 1996 ASP recreationists feel that handicapped facilities are 0.3 more important than did recreationists in 1986. 1996 recreationists rate maintenance of the park (litter, repair, restrooms, etc.), opportunities for outdoor activity (swim, games, picnic, etc.), and scenic

features and overlooks to be 0.2 less important than 1986 ASP recreationists did, but feel that opportunities for nature interpretation were 0.2 more important than did 1986 ASP recreationists. 1996 ASP recreationists regard safety while in the park to be 0.1 less important. There was no change in opinion over time in regard to opportunities to passively watch people and activities.

None of these differences in recreational user attitude over time are large enough to constitute a significant change in user opinion over time for ASP managers.

Table 6. Comparison Of Study Results In Regard To Park

Park Attribute	Attributes		
	Year Of Study		Difference 1996 - 1986
	1996	1986	
Courtesy of Park Staff	7.5	8.2	-0.7
Opportunities to Fish	5.0	5.6	-0.6
Presence of Law and Order	7.5	8.1	-0.6
Solitude While in the Park	7.1	7.7	-0.6
Natural Park Environment	8.2	8.7	-0.5
Opportunities to See Wildlife	7.9	8.4	-0.5
Organized Programs	5.1	5.6	-0.5
Opportunities for Socializing	6.9	7.4	-0.5
Provision of Overnight Facilities	8.0	8.5	-0.5
Lake's Water Condition	8.1	8.5	-0.4
Provision of Trail Opportunities	7.2	7.6	-0.4
Provision of Concessions	5.5	5.8	-0.3
Handicapped Facilities	6.2	5.9	0.3
Opportunities to Hunt	2.9	3.2	-0.3
Maintenance of the Park	8.4	8.6	-0.2
Opportunities for Nature Interpretation	7.3	7.1	0.2
Opportunities for Outdoor Activity	7.9	8.1	-0.2
Scenic Features and Overlooks	7.8	8.0	-0.2
Safety While in the Park	8.1	8.2	-0.1
Opportunities to Passively Watch	5.3	5.3	0.0

key: 1.0 = very unimportant, 5.0 = neutral, 9.0 = very important

TABLE 7 summarizes the comparison of the study results in regard to three recreation issues. The largest change in opinion over time is in regard to developing trail bike and all-terrain vehicle trails within the park, as 1996 ASP recreationists feel that this is 2.2 more important than did

1986 ASP recreationists. 1996 recreationists feel that building swimming pools in addition to the park's two existing beaches is 0.3 less important, and that providing cabin amenities such as electricity, running water, and separate sleeping areas is 0.1 more important, than 1986 ASP recreationists did.

Table 7. Comparison Of Study Results In Regard To Recreation Issues

Recreation Issues	Year Of The Study		Difference 1996 - 1986
	1996	1986	
Develop Trail Bike and All-Terrain Vehicle Trails	4.6	2.4	2.2
Build Swimming Pools	4.8	5.1	-0.3
Provide Cabin Amenities	6.4	6.3	0.1

key: 1.0 = strongly disagree, 5.0 = neutral, 9.0 = strongly agree

Only one recreation issue, that trail bike and all-terrain vehicle trails should be developed within the park, has a change over time large enough to constitute a significant management difference in user attitude towards management strategies of ASP. User attitude toward such development in 1986 was strong disagreement, but changed to neutral during the ten years between 1986 and 1996. This is a result of a sharp increase in the popularity of trail bikes and the sport of trail bike riding.

TABLE 8 summarizes the comparison of study results in regard to the forest management and diversity issues. One issue, that no action should be taken to affect diversity, cannot be compared between the two studies because of differences in the survey question. Conducting the controlled cutting of trees to generate money for other public purposes has the largest difference in user attitude over time, as 1996 park recreationists are 1.0 more in agreement of such action. 1996 ASP recreationists are 0.8 less agreeable with conducting the controlled cutting of trees to provide wood for facility rehabilitation, 0.7 less agreeable with conducting the controlled cutting of trees for firewood, and 0.5 less agreeable with conducting the controlled cutting of trees for facility rehabilitation. 1996 park users agree 0.4 more than 1986 park users that diversity is not important to their recreation. 1996 ASP recreationists feel 0.1 less agreeable towards conducting the controlled cutting of trees to generate money for ASP, conducting the controlled cutting of trees to improve scenic vistas, and conducting the controlled cutting of trees to improve wildlife observation. However, 1996 ASP recreationists are 0.1 more agreeable towards conducting the controlled cutting of trees to improve hunting and to increasing diversity via the cutting of trees. There is no change in user opinion over time in regard to conducting the controlled cutting of trees to improve bird watching.

Only one of these differences is large enough to constitute a significant change in user opinion over time for ASP managers. This difference is in regard to the controlled cutting of trees to generate money for other public purposes. As the state and national debt increases, and

people are becoming more aware of possible impending economic disaster for our governments, perhaps park users are more inclined to sacrifice our natural resource base in an attempt to reverse our nations current economic trend. It may also be that there is a lesser fear of cutting abuse as compared with ten years ago.

Table 8. A Comparison Of Study Results In Regard To Forest Management And Diversity Issues

Forest Management/ Diversity Issues	Year Of The Study		Difference 1996 - 1986
	1996	1986	
No Action to Affect Diversity	5.4	N/A	N/A
Cut trees to generate money for other public purposes	3.2	2.2	1.0
Cut Trees to Provide Wood for Facility Rehabilitation	4.5	5.3	-0.8
Cut Trees for Firewood	3.5	4.2	-0.7
Cut Trees to Improve Trails	5.5	6.0	-0.5
Diversity is Not Important to Recreation	4.9	4.5	0.4
Cut Trees to Generate Money for ASP	4.0	4.1	-0.1
Cut Trees to Improve Scenic Vistas	5.5	5.6	-0.1
Cut Trees to Improve Wildlife Observation	5.3	5.4	-0.1
Cut Trees to Improve Hunting	2.8	2.7	0.1
Increase Diversity by Cutting Trees	3.8	3.7	0.1
Cut Trees to Improve Bird Watching	4.9	4.9	0.0

key: 1.0 = strongly disagree, 5.0 = neutral, 9.0 = strongly agree, N/A = not applicable

TABLE 9 summarizes the comparison of study results in regard to three preservation issues. 1996 park users are 0.6 less agreeable with preserving portions of the park where any changes that occur are primarily the result of natural processes or events, and 0.6 more agreeable that no preserve areas are needed in the park. 1996 park users are 0.2 less in favor of preserving areas for unique environmental features (e.g. wetlands, geologic features, rare or endangered habitats) than were 1986 park users.

Table 9. Comparison Of Study Results In Regard To Preservation Issues

Preservation Issues	Year Of The Study		Difference 1996 - 1986
	1996	1986	
Preserve Areas for Natural Processes or Events	7.6	8.2	-0.6
No Preserve Areas Needed	2.3	1.7	0.6
Preserve Areas for Unique Environmental Features	8.3	8.5	-0.2

key: 1.0 = strongly disagree, 5.0 = neutral, 9.0 = strongly agree

None of these differences in attitude regarding the three preservation issues are large enough to constitute a significant change in user opinion over time for ASP management.

TABLE 10 illustrates the comparison of study results in regard to five oil and gas development issues. The issue with the greatest difference in user opinion over time is in regard to developing oil and gas resources in order to generate money for other public purposes, as 1996 park users feel 1.2 more in agreement with this issue than did 1986 park recreationists. 1996 park users feel 0.9 less agreement with developing oil and gas resources to heat buildings within the park, 0.6 less agreement that the state should consider the acquisition of privately owned subsurface rights under the park land, and 0.4 less agreement with developing oil and gas resources to generate revenue for ASP operations and development than did 1986 park users. 1996 park users are 0.4 more in agreement that there should be no oil or gas exploration, development, or extraction within the park than did 1986 park users.

Table 10. Comparison Of Study Results In Regard To Oil And Gas Development Issues

Oil And Gas Development Issues	Year Of The Study		Difference 1996 - 1986
	1996	1986	
Develop Oil and Gas for Public Revenue	3.2	2.0	1.2
Develop Oil and Gas to Heat Buildings	4.0	4.9	-0.9
State Should Acquire Oil and Gas Rights	5.3	5.9	-0.6
Develop Oil and Gas for ASP Revenue	4.1	4.5	-0.4
No Oil and Gas Development	6.5	6.1	0.4

key: 1.0 = strongly disagree, 5.0 = neutral, 9.0 = strongly agree

Only one of these differences is large enough to constitute a significant management change in user opinion over time for ASP managers; this issue is the development of the oil and gas resources beneath ASP land in order to generate revenue for other public purposes. As with the forest management and diversity issues, this difference may be the result of 1996 park users being more inclined to develop our natural resource base in an attempt to mitigate what is perceived to be a negative national economic trend. It may also be a result of low salience of this issue. Oil and gas development, and its threat of massive ecological degradation, was a big issue in the media during the mid-1980's. This is no longer the 'hot topic' it once was, and therefore may have influenced change in user opinion response.

TABLE 11 summarizes the comparison of study results in regard to nuisance wildlife control issues. Two issues cannot be compared between the two studies because of differences in the wording of the questions. They are the controlled hunting of raccoons should be allowed when

they become a nuisance or threat to park patrons, and that the controlled hunting of bear should be allowed when they become a nuisance or threat to park patrons. The trapping of raccoons when they become a nuisance or threat to park patrons has the greatest difference in user attitude over time, as 1996 park users are 0.8 more in agreement with this nuisance wildlife control issue. 1996 park users are 0.2 more in favor of trapping beaver to control flooding of buildings and roads. 1996 park recreationists are 0.1 less in agreement that trapping should not be conducted in the park under any circumstances, and 0.1 more in agreement to trap beavers to control adverse impacts on forests and trout streams.

Table 11. Comparison Of Study Results In Regard To Nuisance Wildlife Control Issues

Nuisance Wildlife Control Issues	Year Of The Study		Difference 1996-1986
	1996	1986	
Hunt raccoons when nuisance or threat to patrons	6.5	N/A	N/A
Hunt Bear When Nuisance or Threat to Patrons	5.8	N/A	N/A
Trap raccoons when nuisance or threat to patrons	6.6	5.8	0.8
Trap beaver to control flooding of buildings and roads	5.7	5.5	0.2
No trapping should be conducted	4.4	4.5	-0.1
Trap beaver for adverse impacts on forests and trout streams	5.5	5.4	0.1

key: 1.0 = strongly disagree, 5.0 = neutral, 9.0 = strongly agree, N/A = not applicable

None of these differences are large enough to constitute a significant change in user opinion over time regarding nuisance wildlife control issues for park management.

Conclusions

This descriptive study examined differences in recreational user group attitudes in regard to park management strategies and change in user attitude over a ten year time

period. This study found statistically significant attitude differences among user groups in response to 5 of 49 issues. Change in user attitude over time, evaluated in terms of management significance, was found in regard to 4 of 46 issues.

These findings are important to the ASP management staff in their completion of the forest resources management plan. Further research on this topic may want to explore attitudes of other user groups such as overnight backpackers, hunters, or non-peak time park users. Additionally, it may be valuable to repeat this survey in another ten years in order to assess attitude change between 1986, 1996, and 2006. If such a project is undertaken, it would be useful to reproduce the methodology or either this research or Palmer's so that statistical comparisons can be made between the two studies.

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INTEGRATING TECHNICAL ROCK CLIMBING INTO PROTECTED AREA MANAGEMENT: A CASE EXAMPLE OF MINNEWASKA STATE PARK PRESERVE, NEW YORK STATE

Jennifer A. Cairo

Climbing Ranger, Minnewaska State Park Preserve
P.O. Box 893, New Paltz, NY 12561

Thomas L. Cobb
Park Preserve Manager, Minnewaska State Park Preserve
P.O. Box 893, New Paltz, NY 12561

Abstract: In the fall of 1996, technical rock climbing was introduced as a regulated outdoor recreation activity in Minnewaska State Park Preserve, situated in the Shawangunk Mountain region of New York State. It is the first instance in which rock climbing has been sanctioned by the New York State Office of Parks, Recreation and Historic Preservation. This paper identifies key issues and associated environmental, legal and operational measures incorporated into a climbing plan, offering one model for including this type of activity in protected area management.

Background

The Shawangunk Ridge is one of the most important sites for biodiversity protection in the northeastern United States, and has been an important focal point for conservation and research for over 100 years. The Ridge forms a long, narrow corridor between the Catskill Mountains and the Hudson River in New York State, and runs southwest through New Jersey to the Susquehanna River in Pennsylvania. About 150,000 acres of this mountain ridge have been protected for conservation and recreation purposes.

Minnewaska State Park Preserve, administered by the Palisades Interstate Park Commission and the New York State Office of Parks, Recreation and Historic Preservation, is the largest publicly-owned landholding in the northern Shawangunks.

Consistent with Article 20 of the New York State Parks, Recreation and Historic Preservation Law, the overall management goal of Minnewaska is to preserve and protect the natural and cultural resources of the Park Preserve while making compatible recreational and educational opportunities available to the public.

The Park Preserve contains examples of an estimated 40 rare plant and animal species and over 20 natural communities, including the ecologically significant pitch pine (*Pinus rigida*) and unique cliff and talus vegetation. The New York Natural Heritage Program has given the Shawangunks a biodiversity rank of B1, the highest possible within the international rating system used by the program.

Statement of the Problem

Rock climbing has been a recreational activity in the Shawangunks since the 1930's. The Mohonk Preserve, Inc., a private landholding of over 6,300 acres adjacent to Minnewaska State Park Preserve, has long been one of the premier rock climbing areas in the United States.

As the sport has grown in popularity over the past few decades, the number of climbers using the cliffs of "The Gunks" each season has significantly increased, leading to greater demand for new climbing areas in the Shawangunks. The Mohonk Preserve has found it difficult to accommodate these demands; cliffs suitable for climbing are limited, and heavy climbing use has resulted in environmental degradation in some areas. Minnewaska's neighboring, relatively untouched and scenic cliffs, which offer a diverse selection of climbing opportunities, are an attractive expansion alternative.

To accommodate rock climbing within the legal framework of the Park Preserve, however, a climbing plan was needed to address an array of environmental, legal and operational concerns.

Key Issues of the Planning Process

The management plan for rock climbing at Minnewaska addresses three key issues. These are:

1. Resource Protection -- Maintaining the ecological integrity of the designated climbing area.
2. Safety and Rescue -- Accident prevention and preparation for emergency situations.
3. Administrative Operations -- Devising a management system for administering the program.

Resource Protection

Environmental conservation of the climbing area was addressed through site designation, a monitoring and mitigation program, and by encouraging low-impact climbing techniques.

A special use area known as the Peter's Kill was selected for rock climbing for three reasons:

1. An estimated 100 climbing routes of varying degrees of difficulty had been determined providing diverse and attractive climbing opportunities;
2. The site had been previously disturbed by use as a small alpine ski and camping area.
3. The area was readily accessible from the highway which intersects the Park Preserve.

"Limits of Acceptable Change" methodology has been used to develop standards for environmental monitoring and mitigation of impacts in the area (Table 1). A base line ecological survey of the area completed prior to introducing the special activity served as a frame of reference for a program of monitoring and environmental mitigation. Monitoring is conducted on a continuous basis by Park Preserve staff. A 100-car parking lot capacity and a maximum allowance of 50 climbing permits per day were designed to further control potential adverse impact on the resource.

Table 1: Potential Adverse Impacts and Mitigation Steps (PIPC/ OPRHP, 1996)

Impact	Limit of Acceptable Change (LAC)	Mitigation Step 1	Mitigation Step 2	Mitigation Step 3	Mitigation Step 4
Disturbance of raven nesting	No disturbance during nesting season	Patron education and voluntary seasonal closure of nesting area	Seasonal closure of nesting area	Permanent closure of nesting area	Reduce public access to Peter's Kill Area
Decline of protected flora	No decline	Patron education and voluntary change of behavior	Close areas supporting declining species on rotating basis	Close areas until plants recover to LAC level	Reduce public access to Peter's Kill Area
Injury to Pinus rigida from use as anchors at cliff summits	No loss of bark/ exposure of cambium; some "wear" permissible	Patron education and voluntary change of behavior	Protective material around impacted trunks	Install fixed anchors as recommended anchor alternatives	Reduce number of climbing passes
Decline of local fauna populations	No significant change in population sizes	Patron education and voluntary change of behavior	Voluntary closure of areas of concern	Closure of affected areas until populations return to LAC level	Reduce public access to Peter's Kill Area
Archeological resource degradation	No further disturbance of sites	Patron education and voluntary change of behavior	Use areas re-designed to avoid resource areas	Close affected areas	Reduce public access to Peter's Kill Area
Undesignated trails	Less than 3 informal trails on previously disturbed areas; none in undisturbed areas	Patron education and site restoration or re-design	Restoration and natural barricades put in place ("brushing in")	Close affected areas	Reduce public access to Peter's Kill Area
Accidents	Minor injuries; no life-threatening injuries or death	Patron safety education	Reduce access to or modify areas identified as dangerous	Close areas identified as dangerous	Reduce public access to Peter's Kill Area
Adverse visual impacts	No compacted soil/ denuded areas. No excessive visible chalk. No litter.	Patron education and voluntary change of behavior	Enforce designated trail use, restoration, clean-ups	Close affected areas	Reduce public access to Peter's Kill Area
Other impacts	Dependant upon impact type	Patron education and voluntary change of behavior	Area closure(s)	Reduce public access to Peter's Kill Area	

Climbers are asked to use minimum- impact climbing practices which preclude permanent anchors or similar fixed protection, vegetation removal, hold chipping, rock trundling, and excessive use of chalk.

Safety and Rescue

Several policy measures have been established to promote patron safety.

1. Climbers are advised to wear helmets.
2. Sport rappelling (repeated high speed rope descent) is not permitted due to the high incidence of injury associated with this activity.
3. Climbing access trails are off limits to users other than climbers to deter injuries involving untrained and inexperienced patrons attempting technical rock

climbing, and from falling rock and equipment.

4. Park Preserve ranger staff are involved with regularly scheduled emergency response training in cooperation with local and regional emergency medical and rescue agencies.
5. While a policy was adopted to restrict dangerous or environmentally damaging practices, general climbing style and techniques are left to individual preference.

Administrative Operations

1. Climbers are required to pay a \$5.00 fee for a climbing permit and sign an "Acknowledgement of Risk". A parent or guardian assumes this responsibility for climbers under eighteen years of age.

2. Climbing guides and instructors are required to obtain permits involving proof of insurance, accreditation by the American Mountain Guides Association (AMGA), NYS guide license, and attendance at a climbing orientation session conducted by Park Preserve staff.
3. Additional climbing rangers and support staff are employed to monitor climbing activities and to assist with educational and maintenance needs.
4. Informational kiosks with regulations, emergency contact numbers, interpretive information, and maps of the area are being developed. These will be located at primary access points such as trail heads.
5. Climbing regulations are consistent with those used elsewhere in the Shawangunks whenever possible. Consistent policy could reduce enforcement needs.
6. A volunteer technical rock climbing committee has been retained to advise on policy and program development.

Conclusion

Based upon the initial (1996) season of climbing operations in the Peter's Kill Area, the area management plan has been found to be satisfactory. Only minor

modifications, such as the addition of staff, increases in the amount and types of staff training, trail revisions, and use area demarcations, have been necessary to date. At present, no major management plan changes are anticipated. The program for the Peter's Kill will continue to be monitored through 1997 and future seasons.

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Contains articles presented at the 1997 Northeastern Recreation Research Symposium. Contents cover recreation; protected areas and social science; water based recreation management studies; forest recreation management studies; outdoor recreation management studies; estimation of economic impact of recreation and tourism; place meaning and attachment; tourism studies; nature-based tourism planning and development; park and customer management; values; historic, heritage, and cultural tourism; volunteers and partnerships; recreation and natural resource planning; and wildland recreation.

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