

# **Proceedings of the 1995 Northeastern Recreation Research Symposium**

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## MISSING PAPERS

**NOTE:** If you are interested in getting additional information about any of the papers that were presented but were not submitted for publication, please contact the authors directly. A list of those papers is included here to assist you in identifying the authors.

- Manager Perceptions of Mountain Bike Riders: New Users/New Conflicts.** Deborah Chavez (USFS)
- Participants' Assessments of Fairness and Pricing of A Public Leisure.** Ronald McCarville (U. of Waterloo), Stephen Reiling (U. of Maine), Christopher White (ASCI Corporation)
- Shenandoah and Great Smoky Mountains National Park Campsite Monitoring Surveys: Evaluation of Dispersed vs. Designated Site Camping Management Strategies.** Jeff Marion (National Biological Survey)
- What are the Critical Issues Facing the Management of New Hampshire's Coastal Zone?** Kristine Cheetham (New Hampshire Coastal Program), Robert Robertson (U. of New Hampshire)
- Assessing the Impact of the Wilderness Act Upon Tourism.** Steve Jacob, A. Luloff (Pennsylvania State U.)
- Values in Resource Management: A Theoretical Perspective and Critique.**  
Thomas More (USFS)
- The Identification of Criteria for a Trail Rating System and the Development of a Trail Rating System Model.** James Harding, Ki-Joon Yoo, Joanne Tynon, Floyd Newby, (U. of Maine)
- Heritage Tourism in Vermont: Comparing Shelburne Museum Visitors and Nonvisitors.** Walter Kuentzel (U. of Vermont)
- Social Science in the National Park Service: Designing a Research Program.** Robert Manning (U. of Vermont) and Gary Machlis (U. of Idaho and NPS)
- Interpretive Media Plan and Preliminary Facilities Design: Kancamagus Scenic Byway, White Mountain National Forest.**  
Terry Dewan (Dewan and Associates)
- 1994 Outdoor Recreation Resources of New York State Map.** John Fox, Jim McFarland, Lynn Gort (NYS OPRHP)
- A Trail Information System Using Critical Criteria of Trail Settings: A GIS-Based Case Study in Acadia National Park, Maine.** Ki-Joon Yoo, James Harding, Floyd Newby, Joanne Tynon (U. of Maine).
- New York State Snowmobile Trail Mapping with GIS.**  
Randolph Hyatt (NYSPMRI).
- Demographic Changes in New York State's Urban Areas and the Resulting Impact on Urban Recreation.** Wesley Bartlett (NYS OPRHP)
- New York State Open Space Plan.** Robert Reinhardt (NYS OPRHP)

ENVIRONMENTAL  
PERCEPTIONS AND  
RECREATION  
RESOURCE  
MANAGEMENT

# ENVIRONMENTAL ETHICS, VALUES, AND BEHAVIOR: AN EMPIRICAL APPROACH TO DESIGNING NONFORMAL ENVIRONMENTAL EDUCATION PROGRAMS

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Data collected through a visitor survey in the Vermont State Park System were used to define the range of environmental ethics, values, and behaviors which park visitors exhibit and to identify relatively homogeneous subgroups of park visitors. Results were used to develop principles for designing park-based environmental education programs.

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## Introduction

Environmental learning occurs in many formal and nonformal contexts and consists of many different messages, ranging from school-based environmental curricula to mass media conservation education. An individual's set of environmental beliefs and behaviors reflects the integration of these learning experiences.

In this study, sociological research was used to clarify how state parks can more effectively engage in nonformal environmental education. Parks have an important role to play in fostering environmentally responsible behavior because they:

1. are places where people develop concern for nature through contact with natural settings;
2. provide opportunities for learning about natural systems;
3. enable people to experience an alternative to more degraded environments; and,
4. are places where people spend their leisure time and seek out new experiences.

Research can help park-based educators more effectively communicate about environmental issues by understanding the characteristics of their audience. Park-based educational experiences are inherently short in duration and lack follow-up. Under these conditions, imposing inappropriate ideas and expectations that conflict with listeners' values and beliefs may jeopardize communication.

By defining the range of environmental ethics, values, and behaviors which park visitors exhibit, and by identifying relatively homogeneous groups of park visitors based on these characteristics, educational programs can more effectively strive to present stimulating and challenging ideas without inducing counterproductive ideological confrontation.

Educators who seek to increase awareness of environmental issues and motivate people to engage in environmentally responsible behavior need to know about:

1. the ethical perspectives through which park visitors perceive nature (environmental ethics) so they can design programs that will not alienate people, but rather build on their existing belief systems;
2. what brings visitors to parks and what visitors expect from their experience there (values for parks) so they can develop education programs which do not obstruct the realization of park visitors' expectations; and
3. visitors' current levels of environmental awareness and behavior (environmental behavior) in order to assess the types of skills and knowledge which would benefit their audiences.

## Objectives

Survey data were used to construct a profile of Vermont state park visitors. Principles for designing environmental education programs, based on park visitors' range of environmental ethics, values for parks, and environmental behavior indicators were developed.

## Methods

In the summer of 1993, visitors to forty-five Vermont state parks were given questionnaires as they began their visit. Each selected visitor was asked to complete the questionnaire by the end of their park visit and return it via U.S. mail. Questionnaire booklets were postage-paid and pre-addressed to the University of Vermont.

Questionnaires were distributed according to a stratified randomized distribution schedule that indicated which days and times park staff were to offer questionnaires to entering visitors. The one hundred questionnaires allotted to each state park were distributed randomly over 396 time segments of the sampling period (six daily time segments over a sixty-six day sampling period). Some state parks fell short of complete distribution of the one hundred allotted questionnaires due to low visitation or lack of staff. A total of 3547 questionnaires were distributed. Study results are based on 2,164 returned questionnaires, representing a response rate of 61%.

## Background

### Environmental Ethics

Fundamental beliefs regarding humans' relationship with nature are one component of this study's attempt to characterize the audience of Vermont state park visitors. Table 1 presents a

framework for empirical measurement of environmental ethics drawn from the theoretical, historical, and empirical literature (Devall and Sessions 1985, Graber 1976, Hargrove 1989, Kellert and Berry 1979, Kellert 1980, Leopold 1949, Nash 1989, Rolston 1989, Stone 1972, Valliere 1994 and White 1967).

Table 1. Definitions of environmental ethics.

Ethic	Measurement definition
Threat to Survival	Nature can be dangerous to human survival.
Nature as Evil	Nature is sometimes evil.
Storehouse of Raw Materials	Nature is a valuable storehouse of raw materials.
Religious Dualism	Humans were created as fundamentally different from other living things.
Secular Dualism	The ability to think makes humans fundamentally different than other living things.
Anthropocentric Humanitarianism	Cruelty toward animals makes people less human.
Efficiency	The supply of goods and services provided by nature is limited.
Quality of Life	Nature adds to the quality of our lives.
Ecological Survival	Human survival depends on nature and natural processes.
Religious/Spiritual Duty	It is our religious/spiritual duty to take care of nature.
Future Generations	Nature will be important to future generations.
God's Creation	Nature is God's creation.
Mysticism	All living things have a spirit.
Humanitarianism	Animals should be free from needless pain and suffering.
Animism/Pantheism/Organicism	All living things are sacred.
Liberalism - Evolution	Humans are related to other living things through evolution.
Liberalism - Ecological	Humans are related to other living things through ecological processes.

To measure park visitors' environmental ethics, respondents were asked the extent to which they agreed or disagreed with each of the above seventeen statements. This battery of statements and the typology of environmental ethics it represents measures three key concepts:

- 1) *Anthropocentric-biocentric continuum*: Responses can be used to measure whether an individual believes that human moral relationships with nature should be determined by human needs alone or by the intrinsic rights of both humans and non-humans.
- 2) *Ethical extensionism and egalitarian ethics*: Responses can be used to measure the extent to which individuals' subscribe to ethical extensionism – the progressive

extension of moral consideration to an ever-widening spectrum of human and non-human communities – as well as egalitarian ethics – the set of environmental ethics in which non-humans are perceived as the moral equals of humans.

- 3) *Secular, religious, and spiritual beliefs*: Responses can be used to measure the extent to which environmental ethics are based on secular, religious, or spiritual beliefs. Secular environmental ethics are based in rational thought. Religiously-based ethics draw upon institutional religious teachings. Spiritually-based ethics draw upon beliefs regarding spiritual qualities of nature.

### Values for Parks

Documenting the distribution of values for nature among visitors to Vermont state parks clarifies the range of expectations members of this population bring to their park visits.

Many theorists have described the ways that value is assigned to nature (Godfrey-Smith 1979; Kellert and Berry 1979; Manning 1989; Milbrath 1985; Nash 1983; Petulla 1980; Rolston 1989; and White 1967). Based on these descriptions, a typology was developed to assess the prevalence of fourteen values for nature, as they apply to state parks, among sampled park visitors (see Table 2).

Table 2. Park values.

Recreation	Spiritual
Historical	Cultural
Therapeutic	Aesthetic
Ecological	Scientific
Educational	Solitude
Intellectual	Moral/ethical
Economic	Resource

### Environmental Behavior

A number of studies have attempted to understand the development of environmentally responsible behavior and to test the predictive power of associated variables (Hines, Hungerford and Tomera 1987; Hungerford and Volk 1990; Ramsey, Hungerford and Tomera 1981; Sia, Hungerford and Tomera 1986; Sivek and Hungerford 1990). For this study, the model proposed by Hungerford and Volk in 1990, which uses seven key indicator variables to predict level of environmental behavior, was adopted (see Table 3).

According to the model, an individual who exhibits development of many of these variables is more likely to behave responsibly toward the environment (Hungerford and Volk 1990). An environmental education program which promotes these characteristics may be expected to contribute to fostering environmentally responsible behavior.

Table 3. Definitions of environmental behavior indicators.

Indicator	Definition
Environmental sensitivity	Empathy for nature created through long-term contact
Knowledge of environmental issues	Understanding of the dynamics of environmental problems
Personal investment in environmental issues	Commitment to resolving environmental problems
Knowledge of environmental action strategies	Familiarity with mechanisms for preserving environmental quality
Skill in using environmental action strategies	Ability to use mechanisms for preserving environmental quality
Internal locus of control	Belief one's actions will achieve desired results
Intention to act	Intention to engage in environmental behavior

## Results and Findings

### Environmental Ethics

The environmental ethics data gathered for this study suggest that, overall, respondents subscribe to stewardship and conservation ideas based on ethics which acknowledge limits to natural resources and human dependence on nature for diverse benefits, now and in the future. It also appears that most respondents are located near the center of the anthropocentric-biocentric spectrum. Fewer respondents expressed support for strongly anthropocentric or biocentric beliefs than agreed with stewardship and conservation ideas which reflect concern for nature based on self-interest or religious teachings. It is apparent that religion still plays a significant role in many respondents' ethical approaches to nature and that moral consideration for non-humans has been integrated into respondents' environmental ethics, but is not yet as prevalent as more traditional ethical perspectives.

### Values for Parks

Responses to values questions suggest a hierarchy of values for parks. While traditional values, such as recreation and appreciation of natural beauty, are still perceived as most important, less traditional values such as opportunities for learning about, protecting, and respecting nature are also important to many respondents. It seems that most respondents do not perceive parks as places for religious or spiritual experiences, but do largely anticipate that natural park settings will facilitate personal reflection and development of physical and mental well-being.

### Environmental Behavior

Overall, respondents reported significant development of all seven indicators of environmental behavior, although the variable knowledge of environmental issues appeared to be slightly less developed.

In general, there was little variability among responses to environmental behavior questions. This may reflect genuine patterns of strong environmental concern, involvement, and action among respondents, or may indicate insensitive measurement strategies. The environmental behavior component of this study can be considered exploratory research as questionnaire items were designed specifically for this study.

### State Park Visitor Subgroups

The above analysis provides insights into the range of environmental ethics, values, and behavior of respondents and the degree to which these characteristics are more or less dominant among the total population of state park visitors. For the purpose of designing park-based, nonformal environmental education programs, it is useful to identify relatively homogeneous groups of park visitors based on these variables.

Using cluster analysis to group respondents based on the similarity of their responses to environmental ethics questionnaire items, four distinct subgroups were identified. Names were assigned to these subgroups according to their dominant ethical orientation. Table 4 describes the characteristics and the educational approaches recommended for each subgroup.

### Recommendations

Education programs in Vermont state parks may be expected to draw participants who exhibit the full range of environmental ethics, values, and behaviors identified through this study. Consequently, environmental educators need to design programs which accommodate the characteristics of all types of visitors. This can be done by emphasizing points of commonality among park visitors, as well as presenting environmental messages through multiple topics and activities. Comprehensive educational strategies which provide programs oriented toward all four park visitor subgroups may be the most effective mechanism for integrating the greatest number of people into park-based, nonformal environmental education.

#### Emphasize Commonality

Nearly all respondents expressed agreement with four ideas: 1) nature adds to the quality of our lives, 2) nature will be important to future generations, 3) humans depend on nature for survival, and 4) the supply of goods and services from nature is limited. Environmental educators may assume that protecting nature is important to park visitors and that members of their audiences believe it is important to treat nature carefully. Consequently, educational programs can focus on human impacts on natural systems and ways to diminish these impacts without undue concern about alienating participants or presenting inappropriate messages.

There was nearly universal agreement regarding the importance of several park values, suggesting that park-based environmental educators can assume that: 1) ecological and ethical values are important to most park visitors, 2) park visitors would welcome activities which emphasize recreation and appreciation of natural beauty, such as hikes or visits to

Table 4. Characteristics and recommended educational approaches for park visitor subgroups.

Characteristics	Approaches
<b>Spiritually-based stewardship (42%)</b>	
<ul style="list-style-type: none"> <li>• Diverse ethical perspectives: dualistic and egalitarian</li> <li>• Religiously- and spiritually-based ethics</li> <li>• Minimal acceptance of spiritual, cultural, and scientific value of parks</li> <li>• Slightly higher internal locus of control and skill in environmental action</li> </ul>	<ul style="list-style-type: none"> <li>• Biocentric and anthropocentric reasons for environmental behavior</li> <li>• Holistic approach</li> <li>• Opportunities to express care for nature and engage in contemplative activities</li> </ul>
<b>Religiously-based anthropocentrism (25%)</b>	
<ul style="list-style-type: none"> <li>• Dualistic and religiously-based ethics</li> <li>• Minimal acceptance of spiritually-based ethics and natural rights ideas</li> <li>• Minimal acceptance of spiritual, cultural, and scientific park values</li> <li>• Less concern for environment; lower internal locus of control, knowledge of and personal investment in environmental issues</li> </ul>	<ul style="list-style-type: none"> <li>• Anthropocentric reasons for environmental behavior</li> <li>• "Active" programs such as wildlife observation</li> <li>• Explore dynamics of environmental problems</li> <li>• Opportunities for contemplative activities</li> </ul>
<b>Secular ethical extensionism (16%)</b>	
<ul style="list-style-type: none"> <li>• Rejects religious dualism</li> <li>• Some acceptance of secular dualism</li> <li>• Minimal acceptance of religiously- and spiritually-based ethics</li> <li>• Egalitarian ethics</li> <li>• Rejects spiritual and cultural park values</li> <li>• Minimal acceptance of intellectual and scientific value of parks</li> <li>• Higher knowledge of environmental action strategies</li> <li>• Slightly lower intention to act and skill in environmental action</li> </ul>	<ul style="list-style-type: none"> <li>• Biocentric and anthropocentric reasons for environmental behavior</li> <li>• Rational approach</li> <li>• Opportunities for engaging in environmental action</li> <li>• "Active" programs such as wildlife observation</li> <li>• Assume understanding of dynamics of environmental problems</li> </ul>
<b>Spiritually-based biocentrism (16%)</b>	
<ul style="list-style-type: none"> <li>• Rejects anthropocentric and dualistic ethics</li> <li>• Egalitarian ethics</li> <li>• Religiously- and spiritually-based stewardship and biocentrism</li> <li>• Spiritual value of parks</li> <li>• Slightly more development of five environmental behavior indicators</li> </ul>	<ul style="list-style-type: none"> <li>• Biocentric reasons for environmental behavior</li> <li>• Holistic approach</li> <li>• Opportunities to express care for nature and engage in contemplative activities</li> <li>• Investigation of natural phenomena</li> </ul>

scenic overlooks, and 3) park visitors would not respond favorably to programs or activities which emphasize consumptive use of park resources

Based on environmental behavior variables, environmental educators may assume that their audience members exhibit some development of several characteristics associated with environmentally responsible behavior: 1) empathy toward the environment, 2) identification with specific environmental issues, 3) awareness of ways to maintain environmental quality, and 4) a sense of empowerment for achieving desired outcomes. This knowledge can enable environmental educators to focus their efforts on facilitating development of other characteristics which are not as prevalent such as knowledge of environmental issues and skill in using environmental action strategies

#### Offer Diverse Opportunities

In order to develop programs which are appropriate to all types of park visitors, environmental educators may need to present some messages through a variety of topics and activities.

Environmental ethics that revealed considerable polarity among respondents include: 1) nature deserves respect because it embodies a larger spiritual purpose, 2) nature is subordinate to humans based on religious teachings, and 3) nature threatens human survival. To avoid a clash with program participants' beliefs, environmental educators can present messages that are compatible with multiple ethical perspectives. Educators may present both anthropocentric and biocentric reasons for engaging in environmentally responsible behavior. For example, a park sign could remind visitors not to wash their dishes in waterways because of the negative impacts for both aquatic communities and human recreation. With this approach, individuals who respect the integrity of aquatic ecosystems and those who are motivated more by human concerns will both receive messages which make sense to them.

Respondents exhibited diverse beliefs regarding the importance of spiritual, intellectual, scientific, and cultural park values, signaling differences in the types of experiences which they desire during their park visits. Consequently, environmental educators may choose to offer several kinds of educational programs which emphasize different park values. Group hikes designed to explore parks' natural features (recreation, aesthetic), demonstrations of traditional activities of Native Americans and early European settlers (historical, cultural), posted information about park-specific environmental threats (ecological, moral/ethical), nature writing workshops (intellectual) and wildlife observation programs (educational) all provide very different types of experiences. Each of these activities will appeal to some segments of the park visitor population, but not others. By offering a wide range of formats and topics, a greater proportion of park visitors may be included in nonformal environmental education.

The environmental behavior indicator, knowledge of environmental issues, revealed important differences among respondents. Although many respondents appear to be aware of the sources of environmental problems, some seem to be less

knowledgeable in this area, suggesting that an important objective of park-based environmental education should be to emphasize the dynamics of environmental problems. However, since members of their audiences may already be somewhat familiar with major environmental issues, environmental educators may be challenged to design programs which integrate both basic and complex information and ideas about environmental issues.

#### **Address Park Visitor Subgroups**

State park environmental educators can develop comprehensive educational strategies that address specific subgroups of park visitors. These comprehensive plans would ensure that environmental education opportunities appropriate to most types of park visitors are available. Although it isn't possible, or even desirable, to direct members of different subgroups toward specific educational programs, activities that are designed specifically for one of the four park visitor subgroups identified in this study can be expected to attract members of that subgroup, and present opportunities for environmental education that are appropriate for them. Table 4 suggests several recommended educational approaches for each park visitor subgroup.

The religiously-based anthropocentrism subgroup may merit the highest priority for specific attention in environmental education programming because they exhibited the least acceptance of limits to nature's provision of resources and the greatest agreement with human-centered ethical positions. The spiritually-based biocentrism subgroup may not be the highest priority for specialized environmental education offerings because they exhibited considerable development of all seven indicators of environmental behavior, suggesting that they are likely to engage in environmentally responsible behavior.

#### **Conclusion**

Enhanced understanding of the people who visit the Vermont state parks provides an opportunity for environmental educators to develop more focused and potentially effective programs through the selection of more appropriate content and media. Park visitors perceive opportunities for learning about, protecting and respecting nature as important reasons for having parks. This suggests that park management priorities should shift accordingly by expanding the emphasis placed on parks' educational and ecological roles.

Other nonformal environmental education settings may benefit from a similar research effort. Nonformal environmental education already occurs in many settings, often without the benefit of a systematic understanding of its possibilities or impacts. Increased recognition of the potential for nonformal settings to contribute to fostering responsible environmental behavior may lead to more effective use of these opportunities.

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# NEGATIVE PERCEPTIONS OF NATURAL ENVIRONMENTS AND RECREATION ACTIVITY PREFERENCES

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Underlying a lack of interest in wildland recreation activities may be a negative perception of wildland environments. Existing literature, primarily limited to studies of children and adolescents, tends to support this hypothesis. Developing interest in wildland recreation among individuals, from families not involved in outdoor activities, may require attention to increasing comfort levels in wildland environments.

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## Introduction

Perceptions of the setting in which an activity takes place plays a significant role in preference for that activity. In recent years, recreation researchers have made theoretical and empirical links between wildland setting attributes and recreation choice behavior and satisfaction. Conversely, there is some evidence suggesting that perceptions of wildland environments also play a role in lack of interest in wildland recreation. If wildland environments are negatively perceived, the activities that take place in them are also likely to hold little appeal. This paper reviews the evidence that some segments of the population may hold negative perceptions of wildland environments and hypothesizes that these perceptions underlie lack of interest in wildland recreation activities.

Demand studies tell two stories. These studies report participation rates, but they also implicitly report rates of nonparticipation. A review of the available data suggests that few wildland recreation activities are popular with even a simple majority of the population and that some demographic groups are underrepresented in wildland recreation (Dwyer, 1994).

Evidence that wildlands are negatively perceived is quite limited. Although there are several reasons for this, one explanation may be that negative reactions to wildland environments are rarely observed and therefore, have not captured the attention of researchers. In developed societies, contact with wildland environments is almost always through self-selected recreation activities. People who dislike wildland environments simply avoid them.

## Supporting Literature

Although there are literally hundreds of books extolling the virtues of nature and the environment, almost no literature exists addressing negative reactions. Nash (1982), in *Wilderness in the American Mind* provides historical documentation of how wilderness was negatively perceived by European settlers in North America. McPhee (1989), has documented extreme efforts taken to control nature. Tuan (1979), in *Landscapes of Fear* discusses environments that are feared but carefully avoids discussing natural environments. Cohen (1984), in *Prejudice Against Nature* discusses naive notions about nature.

While a few studies, such as LaPage & Cormier (1977), have documented that some adults perceive activities like camping as dirty, empirical evidence of negative reactions to natural environments comes almost exclusively from studies of children taken on school field trips to wildland areas. While there is a difference in maturity between children and adults, these studies are instructive because school children are a cross-section of their communities for their age cohort, and include individuals from both families that do and do not participate in wildland recreation. Attendance at these programs is part of a mandatory school day. Unlike an adult, contemplating which recreation activity they will participate in, students have little choice but to go on the field trip.

Kostka (1976), in an evaluation of nature center programming found urban students held more negative attitudes towards the environment after a school field trip than before, while suburban groups developed more positive attitudes. Falk, Martin, and Balling, (1978) documented that urban students, unfamiliar with woodlands, could not concentrate on ecology labs held in a wood lot. Observations suggested that the strangeness of the environment was overwhelming and students spent their time speculating about the danger of benign natural objects. Wendling and Wuench (1985) found that 21 percent of a group of students who participated in a residential environmental education program reported that they would have preferred to have stayed in school, although no explanation is given for this response. Bixler, Carlisle, Hammitt, and Floyd (1994) collected examples from park naturalists and environmental educators of fear and discomfort reactions they observed from urban students. Twenty-three categories of negative reactions were identified but they could be reduced to fears and anxiety about animals and people, concern about becoming lost, disgust reactions to insects/spiders and the dirtiness of the outdoors, and discomfort

from weather extremes. Using 1,200 middle school and high school students, Bixler, Floyd and Hammitt (1994b) documented that high expectations of encountering feared objects such as snakes and spiders, plus getting lost in the woods were positively related to preference for manicured park environments and negatively related to preference for wildland environments.

With adults, nonparticipation is not necessarily evidence of negative perceptions of the environment, but some studies suggest the need to further explore the link between negative environmental perceptions and recreation activity preferences. Studies by clinical psychologists consistently document that phobias of animals associated with wildland environments, such as snakes and spiders, are over-represented in adult populations (McNally, 1987). Other studies suggest that park usage and landscape preferences may be partially mediated by concerns about safety (Schroeder & Anderson, 1984; Talbot & Kaplan, 1984; Westover, 1986) while wooded environments characterized by dense vegetation and limited visual penetration tend to receive lower preference ratings from most respondents (Ulrich, 1986).

Preliminary unpublished research findings by the authors of this article suggest that people who hold negative perceptions of wildland environments also dislike wildland recreation activities. These studies go beyond preference for recreation activities and document decreased preference for natural resource careers and school science labs as a function of negative perceptions of the environments associated with them.

### **Solutions**

Site managers, faced with crowding and recreation related resource damage, might wonder why anyone would want more people to become interested in wildland recreation. The concern is not so much with quantity of users but with diversity. On-site studies and recreation participation studies suggest that wildland recreationists are more likely to be Anglo, male, college educated, and from a middle class background (Hendee, Stankey, & Lucas, 1990; Young, 1983). Increasing preferences for wildland environments and recreation should translate into increased demand for new parklands, more cultural diversity among employees in natural resource careers, and even shifts in home landscaping tastes (Nassauer, 1993).

Changing negative perceptions of wildland environments may be difficult. For someone lacking extensive direct experiences with wildland environments, interpretations of these often complex environments are more likely to be based on what has been learned indirectly from television (Cantor & Omdahl, 1991) and family and peers. Bixler et al (1994a) reported that urban children on field trips often expressed anxiety about encountering nonindigenous animals (lions, tigers, alligators, bears, monkeys) and concerns about crazy people and movie monsters in the woods. These reactions are based on the acceptance of unrealistic depictions of wildland environments because no other concrete reference point was available. Falk et al (1978) demonstrated that the extreme novelty of wooded

areas overwhelmed students to the point they could not focus on a science lab (see Russell 1973). These studies suggest that it is essential that individuals have contact with wildland environments at an early age so that negative and sensational depictions of wildland environments seen later in life will be rejected as false. The problem of the extreme novelty of wildland environments overwhelming students (Falk et al 1978) suggests that early childhood experiences must be frequent. Natural resource based parks and nature centers may wish to establish day care centers that target preschoolers of families that are not active in the out-of-doors.

Along with frequent experiences, there may be a need for lengthy experiences. Bixler et al identified general discomfort with being out-of-doors because of extreme temperature (too hot, too cold) along with irritation from flying insects as a source of environmental discomfort. Helson (1959) introduced the concept of adaptation level to explain, among other things, avoidance behaviors. Through daily experience, individuals develop a level and tolerance range for any number of ambient environmental factors such as air temperature. When the air temperature is outside a person's comfort zone they become unpleasantly aroused and either adapt (put on a coat) or retreat to a place that is within their comfort range. In many cases, knowing that it is very hot or cold outside may lead someone to choose an indoor activity. Individuals who spend most of their time in places with central heating and air conditioning are less likely to be tolerant of the temperature range in outdoor settings. Lengthy and frequent experiences in wildlands may help individuals develop a wider comfort range.

Providing opportunities for skill development in several wildland recreation activities should help provide a sense of achievement. The latter being an important motivational component in wanting to repeat an experience. More research and curriculum development needs to be done which identifies the hierarchy of skills necessary for someone to both want to, and be able to carry out an activity. For instance, swimming skills combined with a comfort level with natural water bodies (lakes, rivers, and oceans as opposed to swimming pools) may be important prerequisites for developing an interest in canoeing and kayaking. Additionally, developing wayfinding skills may be pivotal in carrying out an activity without assistance. Wayfinding skills include being able to identify a potential recreation location, seek information about the appropriateness of that location, plan an appropriate route with a map, and successfully travel to the site and back (Carlisle, Bixler, & Floyd, 1994). Considering the importance of family socialization into recreation activities (Kelly, 1974), research needs to be done to better understand both the skill and motivational components that are necessary to successfully introduce individuals to wildland recreation, particularly when their family is not already involved. Many of these skills may be subtle and implicitly transmitted by families active in the outdoors.

## Conclusion

Being socialized into wildland recreation is one path to valuing wildland environments. Likewise, feeling comfortable in wildland environments may be a prerequisite for establishing a lifelong pattern of participating in wildland recreation. This paper has asked the question "Why don't some people participate in wildland recreation?" and established through a literature review that one of the many reasons may be negative perceptions of wildland environments. For individuals with limited exposure to wildland environments, these areas are often perceived as dangerous and uncomfortable. A better understanding of the socialization processes inherent in families that are active in wildland recreation can help recreation professionals design programs that increase the sense of security and environmental competencies in those who are less than enthusiastic about wildlands.

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# COMPARING QUANTITATIVE AND QUALITATIVE APPROACHES TO CHARACTERIZING FOREST RECREATION ENVIRONMENTS

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This exploratory study examines the use of qualitative and quantitative data to evaluate forest scenic value. Short, open-ended reactions and rating scales are used as response formats to describe landscape character and recreational behavior. Respondents are unsolicited 1994 New York State Fair-goers who volunteered to complete evaluations of a set of photographs of forested scenes. Analysis of the data looked for possible relationships between a respondent's reported frequency of participation in a recreational activity and their visual characterization of the forested sites. In addition, this study demonstrates a systematic approach for analysis of qualitative data.

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## Introduction

The need to address forest non-market values came to the forefront as more and more people accessed "wilderness areas." The impacts of growth and development began to encroach into the vast expanses of areas once thought of as natural or forever wild. New policies, regulations, and legislation required non-market values, such as recreation and scenic quality, be considered in the management of National Forests and other natural areas. Four primary laws establish this requirement at the federal level. The Multiple-Use Sustained-Yield Act of 1960 requires that National Forests be managed for the full range of forest products, including outdoor recreation. The National Environmental Policy Act of 1969 is more specific, requiring that federal agencies, "identify and develop methods and procedures ... which will ensure that presently unquantified environmental amenities and values may be given appropriate consideration in decision making along with economic and technical considerations" (42 U.S.C. s4332) so as to assure "productive and esthetically ... pleasing surroundings" (42 U.S.C. s4331). The Forest and Rangeland Renewable Resources Planning Act of 1974 and The National Forest Management Act of 1976 reinforce the mandate for

consideration of amenity resources, specifically identifying aesthetic along with wildlife, recreation, and wilderness resources. It emphasizes the evaluation of tradeoffs while comparing feasible management alternatives. The purpose is to protect the aesthetic experience, and not an abstract picture.

However, these acts neither suggest nor endorse any specific guidelines or recommendations for the incorporation of these amenity values into forest management plans. Managers found it necessary to collaborate with researchers to determine how users perceive forest amenities. The analyses of these perceptions are to serve as a basis for the much needed guidelines and recommendations. The interested parties are left to choose from available analytic approaches or devise their own. To date, these methodologies primarily rely on quantitative research approaches that inherently strive to find an average condition represented by a mean value. The mean values are usually arrived at by analysis of the participants as a group. There is limited opportunity to look at individual responses and the significance they may have (Shafer 1969).

The reliance on quantitative methods raises a number of questions, particularly in the area of forest scenic preferences. Is it possible that the use of quantitative to the exclusion of qualitative analysis is obfuscating more intriguing questions (Fish 1995)? This study is a tentative first step toward exploring the application of qualitative analysis to the investigation of forest recreation and visual quality. The researchers supplemented traditional rating scales (Gobster & Chenoweth 1989) with short qualitative responses to find out more about people's experience in the forest and how effective the quantitative scales are in describing this experience. Based on the theories of analytic induction, this study seeks to explore the following questions:

1. Are the pre-determined rating scales provided to respondents for their evaluations definitive enough to inform the research purpose?
2. Do respondents assign similar connotative meanings to the descriptors used at either end of bi-polar scales, and are these meanings similar to those intended by the researchers?
3. Are respondents' evaluations of scenic quality based solely on visual stimuli, or are their responses influenced by other sensory stimuli?
4. Are the concepts represented by a researcher's survey instrument the same concepts attended to by the respondents?

Outdoor recreation management presumes that the quality of recreation experiences is dependent on site attributes. Clark and Stankey (1979) recognized that recreational value is a function of the perceived opportunity of a location to provide for certain activities and experiences. This raises the question whether scenic beauty is a site amenity that contributes to a recreational activity? There are only few studies that consider the relationship between visible forest qualities as site

attributes and their interaction with participation in recreational activities (Levine & Langenau 1979; Brunson & Shelby 1992). This study assumes that there is a relationship and uses both quantitative and qualitative methods to investigate the long standing assertion that perceived diversity contributes to scenic value (Kaplan & Wendt 1972).

### Qualitative Analysis

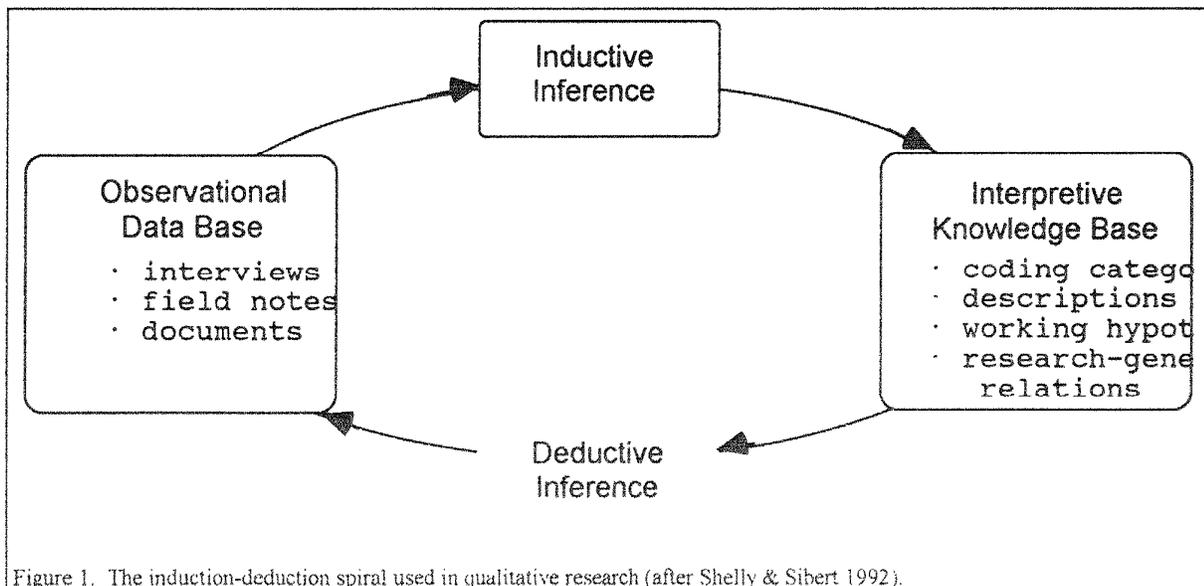
The qualitative approach used in this study is based on the conceptual process called 'grounded theory' (Glaser & Strauss 1967). Shelly (1995) describes this approach as a spiraling process moving from inductive inferences drawn from the data through deductive verifications of those inferences against the data. This is unlike the traditional application of quantitative analysis through the scientific method where the process begins with an abstract hypothesis that directs the investigator's attention, moves to a focused data collection, and ends with the data analysis implied by the original hypothesis. The spiraling process of qualitative analysis typically begins with concrete data representations of the studied phenomena and moves to abstract representation in the form of descriptions, principles, or theories. However, it then requires further data collection to fill in the gaps and continue the analysis to extend the theory. Figure 1 illustrates this process, where the observational data base is text files compiled from interviews, field notes, documents and the like. The interpretive knowledge base is created through coding categories, descriptions, research-generated relations, and working hypotheses.

Researchers employing qualitative analysis techniques often find their results scrutinized for perceived lack of rigor, as measured by reliability and validity. However, it is essential for the reader to realize that "the usual canons of 'good science'...require redefinition in order to fit the realities of qualitative research, and the complexities of social phenomena that we seek to understand" (Strauss & Corbin 1990).

The concept of reliability refers to the consistency or stability of a measure from one use to the next. The reliability of a qualitative analysis is examined across a set of studies to see if similar results are found. In qualitative studies, issues of methodological consistency within a given study become more important. For example, did the researcher use concepts consistently throughout the study? Are the researcher's findings based on a methodical progression through data instances? The researcher must demonstrate that data collection and analysis is systematic. Shelly (1995) contends that the question of reliability in a qualitative study is a question of whether another research could apply the logic of the study to the same data and obtain similar findings.

Validity in qualitative research relates to the similarities between the way the researcher represents the research findings and the way phenomena actually exist in the field (Myers 1994). The validity of generalizations can be ascertained through qualitative analysis techniques. For example, the occurrence of disconfirming data instances would require the researcher to reexamine definitions of constructs to better define the circumstances under which they will occur, therefore improving their validity (Shelly 1995).

With these concepts of reliability and validity in mind, the Qualog computer software program is used in the analysis portion of this study. Qualog provides researchers with the means for keeping a chronological account of conceptual activities and associated mechanical tasks (Shelly & Sibert 1992). It also facilitates hypothesis testing through systematic retrieval of data that operationalize deductive inferences back into the data. As with any other computer application it should be clear that the program cannot actually perform analysis for the researcher. It does however, leave the researcher to concentrate on conceptual rather than mechanical tasks.



### Study Methods

Survey data for this paper were collected at the 1994 New York State Fair in Syracuse, New York. The Fair ran from August 25 through September 5. The photographs to which participants responded were on display at an indoor booth set up by the State University of New York, College of Environmental Science and Forestry.

Five boards were assembled, each displaying four 8-by-10 inch color photographs arranged in random order. The photographs show scenes representative of northern hardwood forests. The scenes are selected to illustrate a broad range for each of five specific forest attributes: species composition, visual penetration, slash, ground cover, and big trees. The boards were displayed one at a time over the 12 days of the fair. Participants in the study are unsolicited fair-goers. All 169 completed surveys are used in the analysis.

Survey booklets, clipboards, and pencils were readily available to participants at a table set next to the photo board on display. Also on the table, and contained within each survey booklet, were an introduction to the study and instructions for completing the survey. The booklets are divided into three parts. The first part gathers background information including age, gender, ethnicity, education, and the type of place they had grown-up (i.e., large city, suburb, country). They also reviewed a list of 20 outdoor recreation activities and identified the frequency in which they participated in them.

The second part of the survey booklets contains a series of seven-point bi-polar rating scales. Participants evaluated each of the four photographs displayed on the photo-board using a set of 24 scales. Every participant applied the 24 scales to each of the four photos.

Open-ended questions comprise the third part of the survey booklet. For the open-ended questions, the participants are told to, "Imagine that you could own some forested land." The questions ask, "What is it about any forest land that makes it especially desirable to you?" and "What is it about any forest land that makes it especially undesirable to you?" Responses to each question are typically a couple of phrases with around 10 to 20 descriptive words.

### Findings

Analysis of the qualitative data began by looking for similarities or patterns in the open-ended responses. It was expected that a review of these responses might yield some interesting patterns. For example, it was thought that since respondents were asked to provide information about their participation in outdoor recreation activities, their open-ended responses would include some reference to forest attributes that either support or detract from their recreational experiences.

Patterns became evident in various forms. There are data instances that include the same word, or group of words, across

many respondents (e.g., "wildlife", "diversity", or "evidence of logging"). There are also instances of responses that include phrases describing what seem to be similar attributes of the forest (e.g., "wide variety of flora and fauna", "the beauty of the different healthy species of trees, plants, etc.", and "a variety of tree species is nice").

### Diversity

The most prominent pattern seen in the open-ended responses is references to diversity and variety. These responses simply state the word diversity or variety, or include them in a phrase describing what the respondents associate with diversity. Examples of this from the desirable characterizations include, "Diversity of plants at all levels", "Diversity of animal habitat", and "Healthy vibrant growth with a lot of diversity". However, the inclusion of diversity is not limited to the desirable files. Many of the undesirable characterizations make reference to the lack of diversity, for example, "no diversity" and "Boring – lack of diversity". It is evident that this group of respondents consider diversity in forested environments a desirable characteristic. Those respondents mentioning diversity are referred to as the Sayers, while the rest are NoSayers.

In the quantitative data, one of the bi-polar rating scales is anchored by diverse and uniform. In the selection of the four photographs for each of the boards there was a conscience effort on the part of the researchers to show a broad range of the forest attribute being tested. This was done to maximize diversity across the four photographs. It was expected that this would show up in the analysis of the diverse-uniform rating scale.

These data provide two ways to determine how sensitive a respondent is to diversity in forested environments. First are those who had and had not used comments about diversity or variety in their open-ended responses – the Sayers and the NoSayers. Sensitivity to diversity can also be investigated through the difference between a respondent's maximum and minimum (i.e., range) diversity ratings. There is a group using a higher range (4, 5 or 6) and another with a lower range (0, 1 or 2) to characterize the four scenes on the board. The researchers expected to find that the group that had written about diversity would have a greater range of uniform-diverse ratings across the four photographs. The cross-tabulation indicates a very weak relation between these two ways of expressing sensitivity to diversity ( $\chi^2 = 2.07, p = .150$ , and a Fisher Exact Test = 0.1739). The lack of a significant relationship may be from differences in connotative meaning assigned to the term diversity by the respondents. Diversity had a rather narrow interpretation relating to just what is seen in the context of the rating scales. However, in the context of the open-ended questions, diversity seemed to be associated with many environmental characteristics.

Table 1 reports for each of the five boards the means and 95% confidence intervals for the diverse-uniform scale and the diversity scale range. Separate values are given for the Sayers and NoSayers. Even with the relatively small sample sizes, there are significant differences between the mean ratings for

Table 1. Means and 95% confidence intervals of diversity and range in diversity ratings from those using and not using diversity to describe the forest.

	Diverse-Uniform		Diversity Range	
	Mean	± 95% CI	Mean	± 95% CI
<b>BOARD 1: Species Composition (15, 5)</b>				
SayDiverse	4.45	0.736	3.60	0.877
NoSayDiverse	3.58	0.603	2.80	1.102
<b>BOARD 2: Visual Penetration (11, 21)</b>				
SayDiverse	3.91	0.523	3.27	0.684
NoSayDiverse	3.73	0.360	3.00	0.604
<b>BOARD 3: Slash (9, 20)</b>				
SayDiverse	4.17	0.528	2.78	0.757
NoSayDiverse	3.45	0.312	2.55	0.707
<b>BOARD 4: Ground Condition (14, 52)</b>				
SayDiverse	3.80	0.495	3.79	0.909
NoSayDiverse	3.84	0.240	3.38	0.404
<b>BOARD 5: Big Trees (3, 23)</b>				
SayDiverse	3.83	1.177	1.33	0.800
NoSayDiverse	3.64	0.313	2.91	0.616

The number of respondents are indicated after the board theme as (SayDiverse, NoSayDiverse).

the scenes representing species composition and slash. The Sayers tend to rate the forest scenes as being less diverse than the NoSayers. The Sayers also use a greater range in the diversity scale than the NoSayers. The single exception is for the Big Tree scenes where the NoSayers are significantly more likely to see a greater range in diversity among the scenes than the Sayers. The researchers are inclined to agree with the Sayers' rating in this case; there are no scenes with really big trees (e.g., 3 foot diameter).

### Visual Quality

The instruction booklet's title and introduction clearly stated that the focus of the study was forest visual quality. The heading of the poster hung beside the photo-boards to introduce the study states, "Come tell us what you see." The researchers anticipated open-ended responses that spoke of aesthetics, scenic beauty, or visual quality. However, very few of the responses contained explicit references to these concepts. Instead, people spoke about the forest in terms of wildlife, diversity, and nature undisturbed by people. This suggests that perhaps the experience of the forest, or at least what people find desirable and undesirable about the forest, is not limited to what they see. "Species variety, shade, terrain variety, sounds (not man made), smells (not man made), hiking trails" and

"Quiet, except for birds and mammals" are examples of responses that include references to other senses contributing to the experience of forest.

Also, the open-ended responses suggest that a description of the forest experience will include attributes other than just the physical ones. A pattern of responses that was coded "ambience" brought together all the responses that wrote about the feelings the forest invoked in them or how they felt when they were in a forested environment. These respondents will again be referred to as the Sensers, and those who did not talk about ambience will be the NoSensers. Examples of ambience data instances include: "Serenity and peaceful," "Relaxing atmosphere away from it all," and "Quiet, serene, and thought-provoking."

The researchers expected to find significant differences between the ratings of the Sensers and NoSensers on some of the quantitative scales. Those of particular interest for this comparison were the connotative scales describing attributes of the forest that influence the ambience experienced in the forest. These included the bi-polar anchors: boring-exciting, beautiful-ugly, diverse-uniform, open-closed, warm colors-cool colors, and dark-light. ANOVAs performed between the Sensers and NoSensers for these scales revealed no significant differences ( $p > .05$ ). However, significant relationships were found for the scales anchored by neat-messy understory, neat-messy forest, and large trees dominant-large trees not dominant in the understory.

### Summary

Earlier in this paper four questions were chosen to investigate in this study. While the study's findings are not conclusive, these researchers feel that this study began the exploration of the relationship between quantitative and qualitative responses. In particular, it helped to find out more about what people experience when in forested environments.

Regarding the question of whether the pre-determined rating scales were definitive enough to inform the research purpose, the analyses described in the diversity section suggest perhaps not. When the researchers developed the quantitative scales the diverse and uniform scale was included to explore how diversity with a scene -- as a spatial attribute -- contributed to forest visual quality. A comparison between the qualitative and quantitative analyses revealed that diversity had a rather narrow interpretation in reference to the rating scales. However, in the context of the open-ended questions, diversity seemed associated with many environmental characteristics. It appears that the term diverse is anything but definitive when used by the public in this context. This leaves inconclusive results about the relationship between the diversity of a scene and its visual quality. The connotative meaning respondents are giving to diversity needs further exploration. It may be necessary to reexamine the anchors of this scale and assign other descriptors that may be more successful at exploring that concept.

Again looking at the qualitative responses associated with diversity, it appears that respondents assign different connotative meanings to the descriptors at either end of bi-polar scales. Within the open-ended responses diversity is mentioned alone with no context, or in other instances it is mentioned in association to wildlife, flora, or topography. There are also instances where variety is mentioned in similar ways.

Those open-ended responses coded for ambience reveal that sensory stimuli other than visual are significant contributors to respondents' experiences in forested environments. These responses included references to sounds, smells, and touch. It may not be possible to isolate each of these to determine the extent they influence the forest experience. However, further study may be able to explore how these factors interact.

The researchers set out to explore the experience of the forest with a focus on visual qualities. It is clear from these results that respondents do not react to just the visual aspects, but a collection of factors. These factors, as expressed in qualitative responses, begin to inform researchers about other concepts to which respondents may attend when asked to relate their forest experiences.

#### **Future Study**

This study did not reveal any strong response patterns relating perceived diversity to scenic value. However, results do suggest that people have more to tell researchers about what they experience in the forest than the more traditional rating scales allow. Also, while the open-ended responses in this study are limited to short answers, this appears to be more a methodological issue than an unwillingness to complete surveys with open-ended questions.

Future studies of this type will concentrate on smaller groups of people to allow for longer, more in-depth interviews. This also permits follow-up interviews, if necessary to get clarification on responses. For example, it would be a great boost to the study described here to meet again with some of the respondents and ask them to elaborate some of their responses, such as the meaning of diversity. This might yield some clarification about what these terms mean to them and also reveal patterns that differentiate among types of recreationists.

The next step is to conduct the data collection portion of a similar study in the field rather than relying solely on slides. Conversations with private forest landowners while visiting with them on their property has provided anecdotal evidence that when in the environment under study -- in this case the forest -- respondents are provided with many more cues for discussion than those provided to them in photographs selected by the researchers. Another possible topic of study is to examine if responses are based solely on the attributes represented in the photograph or is the photograph simply a cue to remind people of their past experiences in similar environments.

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**OUTDOOR  
RECREATION:  
SATISFACTIONS AND  
CONFLICTS**

## INFLUENCES ON PERCEIVED CROWDING AND SATISFACTION ON THE BLUE RIDGE

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This study investigated levels of perceived crowding and satisfaction of visitors to the Peaks of Otter region of the Blue Ridge Parkway. Regression analysis was used to examine the relationship between overall satisfaction of the visitors, the visitors' perception of crowding, and the factors hypothesized to influence perceived crowding. A small but significant correlation between satisfaction and perceived crowding ( $r^2=.01$ ) was found. A second analysis was performed to examine variables related to visitors' perception of crowding. Four variables were used: age, previous visits ( $r^2=.11$ ), tolerance level ( $r^2=.13$ ), and user expectation ( $r^2=.09$ ). Three of the variables were significant at the .05 level; however, age showed no significant correlation to perceived crowding.

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### Introduction

The 470 mile Blue Ridge Parkway is located in the western portions of Virginia and North Carolina. It passes through 29 counties and six congressional districts. Adjacent lands include four national forests, the Cherokee Indian Reservation, and 4,000 to 5,000 parcels of private land along the route. For the purposes of this study a unique portion of the Blue Ridge Parkway was utilized. Specifically, the Peaks of Otter region, a part of the Roanoke Valley District was the focus area of this study. The Roanoke Valley is the closest urban area to the Blue Ridge Parkway in Virginia and introduces a wide visitor diversity to the trail systems and parkway.

During the period from 1979 to 1988, annual visitation to the Blue Ridge Parkway rose from fifteen million to almost twenty six million people. As visitation rises, managers and planners must determine how this phenomenon influences the visitor's experience. This study investigated visitors' perceptions of crowding and how those perceptions influenced overall satisfaction with their visit. The following groups were included in this sample: motorists, hikers, mountain bikers, campers, and nature enthusiasts (bird watchers, wildflowers,

etc). Backpackers were excluded from participation because of the restriction of camping along the trail system.

### Methods

The Peaks of Otter region has a visitors center located at the northern intersection of Route 43 and the Blue Ridge Parkway. Average traffic during the week to the Visitor's Center is approximately 100 people per day. During the weekend, average visitation is between 300 to 400 people and has risen to 1200 in one day. In order to limit the possibility of imposing upon the individuals, visitors were asked at the center if they would like to participate in the survey and only volunteers were accepted. Due to diversity in visitation during the week, subjects were approached during randomly selected time blocks at the Visitor's Center. A total of 435 subjects completed the survey instrument between October 1, 1994 and October 31, 1994. This period is commonly known as the period of peak yearly visitation due to the coloration of the autumn foliage.

Raw data was compiled and entered into The Statistical Package for the Social Sciences (SPSS) for analysis; data were then checked for accuracy. A reliability analysis was performed using the cronbach alpha scale. A series of multiple regression analyses were performed in order to examine significant correlations between variables. A descriptive analysis was then performed to provide general information regarding the population of visitors.

### Results

The following data sets reflect the results of a multiple regression analysis performed using these variables:

#### Analysis I:

dependent variable:	Satisfaction
independent variable:	Perceived crowding

#### Analysis II:

dependent variable:	Perceived crowding
independent variables:	User expectation
	Previous visits
	Tolerance level
	Age

The relationship between perceived crowding and visitor satisfaction (analysis I) was examined with a multiple regression analysis (see table 1). This depicts an inverse relationship between the level of perceived crowding and the level of satisfaction of the visitor. As the visitors' level of perceived crowding increases; their levels of satisfaction with their visit decreases. This finding is consistent with the previous research by Shelby and Heberlein (1981). Analysis II looks at perceived crowding as a dependent variable and tests the significance of the relationship with the following variables:

A) The visitors' expectation of the density level. If the visitors' expectations regarding the number of other users are exceeded there will be an increase in the level of perceived crowding. This hypothesis was supported (see table 2)

- B) The number of previous visits of the users to the region. If the visitor has previously come to the area, the visitors would have a preconceived understanding of what to expect; hence, influencing their opinion of the density level. This hypothesis, however was not supported by the regression analysis (see table 3).
- C) The visitors' level of tolerance proved to be a significant finding (see table 4).
- D) The age of the visitors (no correlation, see table 5).

Table 1. Regression analysis for perceived crowding to satisfaction.

Variable	Multipl e R	R <sup>2</sup>	T Value	Sign.T value
Perceived crowding	.10894	.01187	-2.281	.0231

Table 2. Regression analysis for user expectation to perceived crowding.

Variable	Multipl e R	R <sup>2</sup>	T Value	Sign.T value
User expectation	.30749	.09455	6.724	.0000

Table 3. Regression analysis for previous visits to perceived crowding.

Variable	Multipl e R	R <sup>2</sup>	T Value	Sign.T value
Previous visits	.34419	.11847	3.423	.0007

Table 4. Regression analysis for tolerance level to perceived crowding.

Variable	Multipl e R	R <sup>2</sup>	T Value	Sign.T value
Tolerance level	.36573	.13376	6.189	.0000

Table 5. Regression analysis for age to perceived crowding.

Variable	Multipl e R	R <sup>2</sup>	T Value	Sign.T value
Age	.2117	-.1251		

## Discussion

The purpose of this study was to investigate the relationship of the influences of the visitors' perception of crowding and satisfaction on the Blue Ridge Parkway. The variables hypothesized as being relative to perceived crowding were: (1) the visitors' expectation of the density level of the area, (2) the number of previous visits to the area, (3) the tolerance level of the visitor, and (4) the age of the visitor. With regard to satisfaction, it was the purpose of this study to find out if the

visitors' perception of crowding had a negative influence on the overall satisfaction with their visit.

This study was conducted at a specific location on the Blue Ridge Parkway and to the visitor this area could be perceived as a primary destination. Assuming the visitors had a preconceived idea of how many people they expected to encounter upon arrival, this study measured whether or not that expected density level was exceeded and if this had an effect on their perception of crowding. It was found that in fact, if the expected density level was surpassed then the visitors' perception of crowding was elevated as well.

When the number of previous visits was analyzed with respect to perceived crowding, an unexpected finding was discovered. As the number of previous visits to the area increased, so did the level of perceived crowding. One possible reason for this is that the visitor develops a certain identity or familiarity with the area and this instills a sense of ownership known as "place attachment" (Mowen & Williams, 1994). The visitor then feels encroached upon even if density levels remain the same.

Tolerance level was measured as a third variable in this study, where if the visitors' level of tolerance to various extraneous acts of other people (i.e. generators running) is low, then their level of perceived crowding is high. Carrying capacities for recreation have been difficult to determine because of the tendency to consider the perception of crowding as a generalized human value (Schreyer & Roggenbuck, 1978). This analysis did, in fact, reveal a negative relationship and suggests an individualistic relationship to perceived crowding. This research suggests that from a management stand point one must recognize that all visitors are different and are affected by certain behaviors in varying degrees.

The fourth variable tested for association with perceived crowding was the age of the visitor. It was hypothesized that as the visitor gets older, he/she would be more sensitive to density levels and the level of perceived crowding would increase. This research revealed no significant correlation between the age of the visitor and the level of perceived crowding. As the "baby boom generation" ages, this population of visitors and others should not be more likely to experience crowding.

Finally, the variable perceived crowding was found to have an inverse relationship to overall satisfaction. When the level of perceived crowding increased, the level of satisfaction decreased to a small degree. Although this finding was statistically significant, it is important to consider that density levels are only one factor having an impact on the visitors to the Blue Ridge Parkway. Managers of outdoor recreation sites are faced with a difficult decision as use density continues to increase. Aside from ecological degradation of resources, is visitor satisfaction reason enough to encourage use limits? How many visitors is too many? Can other influences on visitor perceptions be used to maintain satisfaction? The answers to these and other questions are important determinants to the future of outdoor recreation resources and continue to justify the need for further research.

### **Implications for Management**

Implications for management are varied. The finding of a positive relationship between expectation and levels of perceived crowding imply an avenue for improving management. This phenomenon could be used as a management tool for amenity resources and from an advertising standpoint. Information is important to the visitor. A good information system improves personal decision making, promotes general welfare, and protects the resource where the activity takes place (Jubenville & Twight, 1993). If the visitors know what to expect with regard to density prior to their arrival, then possibly the visitors' perception of crowding would decrease or stay the same. Based on the finding of an inverse relationship between perceived crowding and satisfaction; theoretically, the overall satisfaction of the visitor would be heightened.

The measure of tolerance level compared to perceived crowding indicated that as people become less tolerant, they perceive a higher level of crowding, and hence are less satisfied. This finding could play an important role in the field of future park design and development. If parks are designed with relative diversity regarding physical space and reflecting the needs of the visitor, certain behaviors and circumstances could be avoided. Designers could provide plans for areas of remoteness as well as areas for larger gatherings.

The two variables that were not statistically significant in this study were "previous visits" and "age", however; this was an important finding. It is important to recognize that age had no significant correlation with perceived crowding, implying that there should be no difference in the management of parks with respect to the various ages of the visitors. It should also be stated that more research is needed to investigate social paradigms of various age groups. The number of times people previously came to the Peaks of Otter was a significant finding, however, in the opposite direction from the one hypothesized. As the number of previous visits increased, so did the level of perceived crowding. This might simply be an aspect of human nature, the important fact here is that even though the more the visitor frequents the area the higher the level of perceived crowding, the visitor is *still* returning to the area.

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## USER EVALUATION OF ADIRONDACK FOREST

### PRESERVE CAMPGROUNDS

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Campers were surveyed to measure their satisfaction with facilities and conditions at New York State Department of Environmental Conservation campgrounds on Forest Preserve lands within the Adirondack Park during 1993. Respondent ratings of campground facilities and conditions and public recreational access collects information on the effectiveness of management activities to provide the services and facilities sought by users.

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#### Introduction

In 1993, the New York State Department of Environmental Conservation (NYSDEC) requested that a study be conducted to evaluate user experiences at NYSDEC campgrounds within the Adirondack Park. The NYSDEC concerns were that managers should be aware of user ratings of the campground experience and use this information to adjust management and planning at campgrounds rather than managing to minimize user complaints. The NYSDEC was interested in developing a condensed user evaluation survey or "report card" that was easy to use in subsequent years and was modeled after previous research (LaPage and Bevins 1981, Connelly et al. 1986, Alexander 1995).

The facilities at NYSDEC campgrounds are designed for tents, camping trailers, and small truck campers and motor homes. The emphasis is on more rustic facilities without hookups and at a modest price. A wide variety of campsite and campground conditions (e.g., distance between sites, proximity to lakes/streams) exist within the NYSDEC campground system in the Adirondack Park.

The 44 NYSDEC campgrounds in the Adirondack Park on Forest Preserve lands sold 105,318 camping permits in 1993. Total attendance was estimated at 921,533 user days based on an average of 2.5 days per party and 3.5 individuals per party. The total number of camping permits sold at the Adirondack Forest Preserve Campgrounds has fluctuated from 105,318 to 121,509 over recent years depending on weather conditions, economic changes, and other factors (Table 1).

Table 1. Adirondack Forest Preserve campground permits sold during 1987 through 1993.

Year	Number Of Permits Sold
1993	105,318
1992	115,539
1991	121,509
1990	n.a.
1989	118,178
1988	121,414
1987	107,724

The state, county, or province of residence reported by the 1992 camping permit holders for the Adirondack Forest Preserve campgrounds are shown in Table 2. The majority (68%) of permit holders are from New York State. The 14 northern New York and Adirondack counties and the more urbanized counties account for most attendance within the state. Over 37,000 permit holders came from other states or provinces; this represents 32 percent of all permit holders in 1992.

Table 2. Residence area of Adirondack Forest Preserve campground permit holders in 1992.

Residence Area	Number Of Permits Sold
Northern New York 14 Counties	29,330
Eastern New York 16 Counties	24,417
Central New York 15 Counties	11,070
Province Of Quebec	10,506
New York City, Long Island, And New Jersey	9,611
Other U.S.	8,952
Western New York 10 Counties	7,056
Vermont, Connecticut, Massachusetts	6,749
Province Of Ontario	4,868
Unknown	1,858
Other Countries	974
Other Canada	148
Total	115,539

#### Methods

In February, 1994, a random sample of 878 campground registrations was selected from the 105,318 camping permits sold during 1993. These campers were sent a mail survey about their 1993 camping experiences. Forty-nine of those selected were undeliverable due to incomplete addresses or the addressee had moved. Of those deliverable, 485 were returned (59% response rate) and used in the following analysis.

Analysis of the data and statistical tests were conducted using the Statistical Package for the Social Sciences (SPSS/PC).

#### Results

Respondents reported camping an average of 20.5 years in New York State and 18.1 years in the Adirondack Park over their

lifetimes. Only a minority of campers reported camping three years or less in New York State (15%) and in the Adirondack Park (22%).

In 1993, respondents reported taking 4.1 camping trips to the Adirondack Park and the majority of them were to NYSDEC Forest Preserve campgrounds (average 3.5 camping trips). The average length of stay reported by the respondents was 5.2 days in 1993. In 1992, 78 percent of the 1993 campers had camped one or more times in the Adirondack Park (average 4.4 camping trips). In 1991, 76 percent of the 1993 campers had camped one or more times in the Adirondack Park (average 4.2 camping trips). While not every camper returns every year, most do return frequently over a five to ten year period.

The type of camping equipment used in 1993 by the respondents and their group included: tents (73%), camping trailer or "pop-up" (19%), travel trailer (16%), motor home or van camper (14%), and truck camper or pickup truck cover (8%).

The majority of campers rated the NYSDEC campground facilities as good to excellent (Table 3). The cost of camping fees per day was more often rated fair to good. The additional services and facilities reportedly needed at NYSDEC campgrounds were: electrical and water hookups (14%), more showers and toilets (14%), campground grocery and supply store (13%), more recreational activity facilities (7%), and boater access and launch sites (6%). The three things they liked most about staying in a NYSDEC campground in 1993 were: the natural scenery (25%), the condition of the site (19%), and the lack of crowding (19%). The three things they liked the least about staying in a NYSDEC campground in 1993 were: the registration and reservation system (16%), crowding (15%), and the bathrooms and showers (13%).

Overall, campers reported that they were satisfied (44%) to very satisfied (50%) with their 1993 camping experiences at Adirondack Forest Preserve campgrounds. Only a small percentage of the respondents were undecided (4%) or dissatisfied (2%). No respondents reported being very dissatisfied.

All four campground related facility and condition variables (Table 3) were significantly associated (Chi-square > 74, 6 df,  $p < .05$ ) with the overall satisfaction score when the dissatisfied and undecided categories were combined to provide enough cases for analysis of those categories. A discriminant analysis

using these four variables correctly predicted the overall satisfaction rating in 60% of the classifications. The respondent variability and unpredictability in some variables appears to relate to local conditions and situations that indicate the need for some improvements at some campgrounds.

No statistically significant association (Chi-square test with  $p < .05$ ) was found between overall campground facility and condition satisfaction and any of the three following variables: number of years camping in New York State, number of years camping in the Adirondack Park, and the number of camping trips to the Adirondack Park in 1993. Six categories of the number of years of camping was used for this analysis (e.g., the first category was 1 year, second category was 2 to 5 years).

During their 1993 camping trips to the Adirondack Park, respondents reported that they or other members of their group participated in a wide variety of other recreational activities: hiking (79%), fishing (61%), photography (54%), canoeing (54%), nature study (50%), motor boating (42%), biking (31%), swimming (21%), and backpacking (15%).

In general, respondents rated the public recreational access facilities (beyond campgrounds) in the Adirondack Park during 1993 as good (Table 4). The most highly rated facilities were the number and length of trails and public access to the trails. The number of visitor and information centers available received the lowest rating.

Overall, campers reported that they were satisfied (34%) to very satisfied (53%) with the public recreational access facilities and conditions in the Adirondack Park during 1993. Only a small percentage of the respondents were undecided (9%), dissatisfied (3%), or very dissatisfied (1%).

All ten public recreational access facilities and conditions variables (Table 4) were significantly associated (Chi-square > 33, 6 df,  $p < .05$ ) with the overall satisfaction score when the dissatisfied, very dissatisfied, and undecided categories were combined to provide enough cases for analysis of those categories. A discriminant analysis using these ten variables correctly predicted the overall satisfaction rating in 57% of the classifications.

Table 3. Ratings on the New York State public campground facilities and conditions in the Adirondack Park during 1993 by those returning a mail survey

Facilities & Conditions	Excellent	Good	Fair	Poor	Total
The cleanliness and condition of campgrounds	41%	45%	11%	3%	100%
Availability of recreational facilities at the campground (e.g., hiking trails, swimming beaches)	37%	52%	9%	2%	100%
Availability of tent sites or trailer sites	36%	49%	13%	2%	100%
Cost of camping fees per day	21%	46%	26%	7%	100%

Table 4. Ratings on the public recreational access facilities and conditions in the Adirondack Park during 1993 by those returning a mail survey.

Facilities & Conditions	Excellent	Good	Fair	Poor	Total
Length of trails	29%	63%	7%	1%	100%
Number of trails	32%	55%	11%	2%	100%
Public access to trails	24%	64%	11%	1%	100%
Highway directional signs for recreational access & facilities	23%	63%	12%	2%	100%
Trail signs and markers	20%	57%	18%	5%	100%
Public access to waterways	21%	53%	19%	7%	100%
Number of visitor & information centers available	15%	57%	25%	3%	100%
Trail maps & information	17%	55%	20%	8%	100%
Size of parking lots	16%	56%	21%	7%	100%
Number of parking lots	14%	56%	21%	9%	100%

No statistically significant association (Chi-square test with  $p < .05$ ) was found between overall public recreational access facility and condition satisfaction related to the Adirondack Park and either the number of years camping in the Adirondack Park or the number of camping trips to the Adirondack Park in 1993. Six categories of the number of years of camping was used for this analysis (e.g., the first category was 1 year, second category was 2 to 5 years).

Overall satisfaction with Forest Preserve campground facilities and conditions and overall satisfaction with public recreational access facilities and conditions were associated at a statistically significant level (Chi-square = 183, 4 df,  $p < .05$ ).

### Discussion

One of the expected results was that satisfaction would be related to the number of years of camping experience or the number of camping trips to the Adirondack Park in 1993. However, no statistically significant association was found between overall satisfaction and the number of years camping in New York State, the number of years camping in the Adirondack Park, and the number of camping trips to the Adirondack Park in 1993.

Overall campground users at NYSDEC facilities on Forest Preserve lands within the Adirondack Park were satisfied or very satisfied with the facilities and conditions they experienced in 1993. The NYSDEC staff and volunteers are to be credited with well serving the users in 1993. However, some locations do need improvement as indicated by some survey respondents. The sample size did not permit analysis of individual campgrounds but such a future study could measure the specific locations where improvements need to be made (i.e., the variation between responses at different locations in the current study suggests that such an analysis would be an appropriate next step in the evaluation of customer satisfaction). The methodology used in the Ohio State Park system involves sufficient sample size in each park to work as a feedback loop in their statewide commitment to the Total Quality Management approach (Alexander 1995). A similar customer satisfaction "report card" technique could assist campground managers at NYSDEC facilities as well.

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# THE 1994 LAKE GROTON RECREATIONIST SURVEY: POLICY OPTIONS FOR RESOLVING LAKE USER CONFLICTS

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Residents and visitors were surveyed by mail and on-site, respectively, regarding recreation activities, conflicts, and attitudes toward developing additional public access to Lake Groton, a 404-acre lake in northeastern Vermont. Study results concluded that residents were significantly more likely than visitors to have boats at the lake, partake in more boating-related activities, and experience conflicts with other recreationists. Little support was discovered among residents and visitors for increasing public access to the lake, however, some support was discovered for limiting boat horsepower and speed to reduce conflicts among recreationists.

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## Introduction

Water is the focal point of outdoor recreation opportunities for many Vermonters and visitors to the state. Access to many water-based recreational activities is from private camps and homes surrounding the shorelines of lakes and ponds, as well as from publicly owned areas such as state parks and town beaches. While there is a limited number and unequal distribution of lakes and ponds around the state, the demand for lake recreation facilities and access has been projected to increase in the future (Vermont Lakes and Ponds Recreation Management Study, 1990).

This paper addresses resource management issues identified in a study of Lake Groton, a 404-acre lake in northeastern Vermont earmarked as a potential location for developing additional public access. Lake Groton is surrounded by state forest land except for 133 shoreline camps and year-round residences. Two state parks, one a day use area with swimming facilities and the other with 79 camp sites and a boat launch, are located on the northern end of the lake. Four additional campgrounds are located within a few miles drive of the lake shore. Other than through private property and registration at the state parks, there is no additional public access to the lake.

In response to the Vermont State Legislature's request for a management and use study of Lake Groton, the Vermont Department of Forests, Parks and Recreation, in conjunction with the Center for Rural Studies at the University of Vermont, conducted mailed and on-site attitudinal and activity surveys of year-round residents and non-resident recreationists. In addition to the survey, boat counts and on- and off-shore activities were monitored and recorded. This paper focusses specifically on the results of the attitudinal survey.

## Methodology

Surveys were mailed to all lake property owners and resulted in 104 completed surveys, a response rate of 78.2%. Surveys of non-resident recreationists were distributed randomly to 444 campers and 199 day users between August 4 and September 5, 1994. One-hundred and sixty-seven (167) camper surveys and 68 day user surveys were completed and returned, yielding respective response rates of 37.8% and 34.2%. Frequencies were produced for all close-ended survey items and comparisons were made to determine significant differences between responses of residents and non-resident recreationists, including subgroups of campers and day users. Tests for statistical significance included: T-Tests, cross tabulations and accompanying chi-squares, and non-parametric tests of median responses. Answers to open-ended questions were analyzed and grouped into categories of similar responses.

## Findings

### Why Respondents Recreate at Lake Groton

In response to an open-ended question, Lake Groton residents offered a variety of reasons for why they owned or rented a summer home on the lake shore. Family ties to the lake and "tradition" were mentioned by 35 survey respondents: "We have spent over 50 years here and have grown to love the scenery, the lake, and the people we see here. We find our peace here." Amenities offered by the lakes's natural environment were also mentioned frequently with specific references by 46 respondents to the area's natural beauty or scenery, peace and serenity, wildlife, and clean water: "A getaway from a hectic business. We find peace, quiet, and tranquility. Love the sounds of the loons, birds, etc. Refreshes us and gives us the get-up for the next week;" and "We love the quietness, the remoteness, and the beauty of the surroundings." The friendliness of the Lake Groton community was an additional common thread in many explanations for why residents chose to own a camp or home on Lake Groton: "In general, it is a friendly lake and friendly people. We think it is an unspoiled, lovely place."

Non-resident campers and day users were asked to select from a close-ended list reasons why they chose to recreate at Lake Groton. As shown in Table 1, the area's scenic beauty was a top response for why non-residents visited the lake. Camping amenities and the location of the lake also were identified frequently as reasons for recreating at Lake Groton, followed by the quietness there, it was recommended: the area's

environmental quality; tradition; recreation opportunities found there; socializing; and other reasons (Table 1).

Table 1. Why non-resident recreationists decide to visit Lake Groton.

Reason	Total Non-Residents	
	Number	Percent
Scenic beauty	147	62.3
Camping here	142	60.2
Location	125	53.0
Quiet	111	47.0
Friends/family recommended it	74	31.4
Environmental quality	72	30.5
Tradition	68	28.8
Particular recreation available	49	20.8
Socializing	27	11.4
Other	51	21.6

### Lake Groton Recreation Activities

Both residents and non-residents were polled regarding their primary recreation activities while at Lake Groton. Table 2 below compares the mean average activity levels for each group. Frequent activities for residents included swimming from shore, relaxing, motorboat cruising, walking or hiking, and fishing from boats. Frequent activities for non-residents included relaxing, walking or hiking, camping, and picnicking (Table 2).

Table 2. Mean<sup>a</sup> comparison of activities: residents vs. non-residents.

Activity	Residents	Non-residents
Swimming from boat	0.240	0.148
Swimming from shore	1.644	1.182 <sup>b</sup>
Sunbathing	0.894	0.665
Water skiing	0.740	0.110 <sup>b</sup>
Motor boat cruising	1.144	0.191 <sup>b</sup>
Fishing from boat	1.038	0.403
Fishing from shore	0.692	0.364
Rowing	0.442	0.191 <sup>b</sup>
Sailing	0.442	0.059 <sup>b</sup>
Canoeing/kayaking	0.712	0.432
Sailboarding	0.135	0.004 <sup>b</sup>
"Jet"skiing	0.048	0.000
Paddle boat cruising	0.125	0.136 <sup>b</sup>
Snorkeling/scuba diving	0.135	na
Picnicking	0.394	0.814 <sup>b</sup>
Camping	na	1.475
Walking/hiking	1.096	1.271
Nature observation	0.933	na
Wildlife observation	na	0.780
Relaxing	1.385	1.581
Other	0.173	0.263

<sup>a</sup>/ A mean score was derived. "primary"=2, "occasional" or "other"=1, not indicated=0.

<sup>b</sup>/ Significantly different from Resident response (.05 level).

Comparison of resident and non-resident responses yielded a number of significant differences in activity levels. With the

exception of paddle boat cruising, residents reported more frequent levels of recreational boating activity than did non-residents. Resident recreationists reported significantly more frequent motor boat cruising, rowing, and sailing than did visitors. In addition, residents were more apt to water ski and swim from shore and non-residents were significantly more likely to picnic at Lake Groton (Table 2)

### Crowding and Conflicts Among Recreationists

Residents who had lived on Lake Groton in previous years and non-residents who had recreated there previously were asked whether they thought the lake had become more or less crowded or had stayed about the same. As shown in Table 3, residents were more likely to perceive the lake as being more crowded than in past years while non-residents reported that crowding at the lake was "about the same." Statistical analysis of a mean "crowding" score revealed significant differences between residents and non-residents with non-residents scoring the lake as being significantly less crowded (Table 3)

Table 3. Perceived change in crowding at Lake Groton.

Perceived change	Residents		Non-Residents	
	Number	Percent	Number	Percent
More crowded	53	53.5	44	27.5
Same	35	35.4	108	67.5
Less crowded	11	11.1	8	5.0
Total	99	100.0	160	100.0

Mean<sup>d</sup> 424 225<sup>b</sup>

<sup>a</sup>/ A mean score was derived. "more crowded"=1, "about the same"=0, "less crowded"=-1

<sup>b</sup>/ Significantly different from Resident response (.05 level).

Accompanying residents' perception that the lake was becoming more crowded was the reporting of conflicts with other lake users this summer by 33.7% of the resident respondents and 15.1% of non-resident respondents. As shown in Table 4, residents were more likely to report experiencing conflicts than were non-resident recreationists.

Table 4. Recreationists' conflicts with other Lake Groton users.

Did you experience conflicts.	Residents		Non-Residents <sup>a</sup>	
	Number	Percent	Number	Percent
Yes	32	33.7	34	15.1
No	63	66.3	191	84.9
Total	95	100.0	225	100.0

<sup>a</sup>/ Significantly different from Resident response (.05 level)

Thirty residents identified specific conflicts or problems they experienced with other lake users this summer. Reckless boating (N=12), the presence of a water ski course, (N=5) and "jet skiers" (N=4) were identified as specific sources of conflict, along with trespassing on private property (N=4).

Most conflicts regarding boating focused on excessive speeding and boats coming too close to other lake users (swimmers, anglers, and wildlife) and the lake shore. Complaints regarding the water ski course focused on its "permanent" location on the lake, the accompanying wake of the skiers, and noise of motor boats that began at 8 a.m. and continued "from dawn to dusk." One resident suggested that the course be relocated each year while another suggested a later starting time in the morning. The primary concern regarding personal "Jet skis" focused on the noise generated by these machines. Finally, some residents identified specific occurrences of trespassing including littering, using private property to launch boats, unauthorized use of private docks, and people cutting through private property to avoid paying beach entrance fees.

For non-resident recreationists, reckless or "thoughtless" motor boating was a recurring problem. Twelve campers reported conflicts with motor boats. Two reports suggested potentially serious problems: "power boats going way too fast, in too close, and very near our canoe. Also they don't pay enough attention to swimmers..." and "a speed boat capsized a friend's fishing boat losing all of their gear in the lake." Two campers chose not to boat on the lake because of power boat activity: "...we had rented a boat for family fun, but the lake was too crowded to have much fun--too choppy from power boats" and "we felt the lake was used by too many power boats going at high speed, causing large wakes. In view of this we decided not to canoe." Five day users also mentioned conflicts with motor boats being too fast or noisy: "fast motor boats too near canoes" and "...speed boats and jet skis are a serious marring of peaceful environment. There should be limits to motor size/HIP, speed, and hours for motor boating."

Nearly 40% of the Lake Groton residents surveyed (38.7%) reported a need for more law enforcement in the area, while a large majority of non-residents (92.9%) indicated that this was not a need (Table 5). This difference was statistically significant between residents and non-residents including the camper and day user subgroups.

Table 5. Need for more law enforcement on Lake Groton.

More law enforcement needed.	Residents		Non-Residents <sup>a</sup>	
	Numbe r	Percent	Numbe r	Percent
Yes	36	38.7	15	6.9
No	57	61.3	203	93.1
Total	93	100.0	218	100.0

<sup>a/</sup> Significantly different from Resident response (.05 level).

#### Presence of Boats on Lake Groton

Residents were asked if they owned boats, while campers and day users were asked if they had brought boats with them to Lake Groton. Comparison of non-resident to resident responses revealed that residents significantly were more likely to have boats on the lake than were visitors (Table 6).

Table 6. Presence of boats at Lake Groton.

Do you own a boat/Did you bring a boat...	Residents		Non-Residents <sup>a</sup>	
	Numbe r	Percent	Numbe r	Percent
Yes	73	91.3	61	27.0
No	7	8.8	165	93.0
Total	80	100.0	226	100.0

<sup>a/</sup> Significantly different from Resident response (.05 level).

Residents surveyed reported owning a total of 187 vessels, while non-residents reported bringing a total of 65 boats to the lake during the survey period. Motor boats were the most popular boat type reported by residents (N=69), followed by canoes or kayaks (N=45), and rowboats (N=33). Non-motorized boats appeared to be the most popular type of boat for visiting recreationists with a total of 36 non-resident respondents bringing canoes or kayaks, four bringing sailboats, two bringing rowboats, and two bringing paddle boats to the lake. Twenty non-resident respondents reported bringing motor boats and one brought a pontoon boat. While motor boats, canoes or kayaks, and sailboats were the most frequently reported boat types for residents and non-residents alike, residents reported significantly more of each of these vessels than did non-residents.

#### Management Options for Reducing Conflicts

Both residents and non-residents were asked their level of agreement with a variety of proposed recreational use restrictions for Lake Groton. As shown in Table 7, non-residents tended to be more supportive of restrictions than were residents. Residents were significantly more opposed to prohibiting water skiing than were non-residents. Residents and non-residents alike demonstrated some support for limiting motorboat horsepower and boat speed, however, the non-resident respondents were significantly more supportive of these restrictions than were residents (Table 7).

Table 7. Mean<sup>a</sup> ratings by respondents for proposed recreational use restrictions on Lake Groton.

Proposed restriction	Residents	Non-Residents
Limit motorboat horsepower	0.295	1.029 <sup>b</sup>
Limit boat speed	0.385	1.180 <sup>b</sup>
Prohibit personal watercraft	-0.151	-0.415
Prohibit motorized vessels	-1.174	-0.218
Prohibit water skiing	-1.170	-0.198 <sup>b</sup>
Limit amount of use	-0.626	-0.190
Restrict certain uses to specific areas	-0.305	0.534
Restrict certain uses to specific times	-0.229	0.443

<sup>a/</sup> A mean score was derived: "Strongly agree"=2, "Agree"=1, "Neutral"=0, "Disagree"=-1, and "Strongly disagree"=-2  
<sup>b/</sup> Significantly different from Resident response (.05 level).

## Conclusions and Recommendations

Results of the surveys of Lake Groton residents and recreational visitors describe the lake as an important resource, offering respite from busy lifestyles with numerous opportunities to enjoy the natural environment. Lake Groton attracts visitors from around the state of Vermont, and beyond, because of its scenic beauty, quietness, environmental quality, and the recreational amenities that are found there. Similarly, many residents choose to live there year-round, or own camps on Lake Groton, because of its natural beauty and the sense of peace and quiet that can be found there. Access to water resource-based recreation is an attraction for residents and recreationists alike; however, it is also a source for potential conflict.

Reckless boating, excessive speeding, and other safety violations were cited by both residents and visitors to the lake. Visitors to the lake do not appear to be contributing to the majority of motorized boating activity as residents and camp owners own and operate the majority of motorized craft. Neither residents or visiting recreationists supported the prohibition of motorized water craft; however, there was support for limiting boat horse power and speed.

Both residents and visitors to Lake Groton did not support the development of additional public access to the lake. While study participants were not asked specifically why they did not support developing new public access points, one can assume that their concerns relate to what they valued about the lake—its scenic beauty, sense of peace and quiet, and overall natural environment. Without further study, one cannot assess accurately the potential impacts of additional access and subsequent increased usage of the lake—its effects on the natural environment, conflicts between recreationists, and the overall quality of recreational experiences on Lake Groton. Conversely, additional study is necessary to understand better the impacts of *not* developing additional public access to Lake Groton— whether this “inaction” will lead to increased usage and deterioration of recreational experiences at other lakes in the region.

Finally, there stands the issue of alternatives: is the development of additional access the only recourse for addressing latent demand for recreational access to Lake Groton? Currently, the public does have some level of access to the lake—through camper registration at Stillwater Campground or visitor registration at Boulder Beach State Park. Additional information is necessary to identify access alternatives and assess the impact of these alternatives on the lake's environment and the recreational enjoyment of those who live or visit there.

In conclusion, the following recommendations are offered:

- 1) Conduct additional study regarding latent demand for recreation access to Lake Groton. The general public can only access Lake Groton through one of the two state parks, or across private property with permission. As the information obtained through this study included

only shoreline property owners and visitors to Stillwater Campground and Boulder Beach State Parks, additional information is needed about potential users of Lake Groton. A survey should be conducted to assess the potential demand for additional recreational access to Lake Groton.

- 2) Encourage boater education and self-policing through the Lake Groton Association. Many of the answers to the open-ended questions on the survey revolved around boat operators violating Vermont's boating safety laws. The Lake Groton Association should take a proactive role in educating members on boating safety laws, rules and regulations (e.g., the 200-foot safety zone). The Association should work with State Police to offer workshops on boat handling and safety, and common boating courtesy. The Association should also encourage self-regulation of users on Lake Groton by encouraging all members to be responsible for their own actions and to approach those residents and recreationists that do not display appropriate behavior.
- 3) Investigate limits to motorboat horsepower and speed as possible use restrictions. While residents and visitors to Lake Groton did not support the need for additional law enforcement on the lake or for a number of specific use restrictions, there was support for limiting motor boat horsepower and speed. The Lake Groton Association should explore petitioning the Vermont Water Resources Board to promulgate rules for acceptable boat horsepower and speed limits.
- 4) Implement a rotating location and schedule for the water ski course. There were a number of complaints about the location of the water ski course and the time of day when it was used most heavily. The Lake Groton Association should work with those residents involved in water skiing to develop a rotating schedule for moving the placement of the course and the time of day when it would be used. This would relieve specific residents from having to bear the entire burden of the noise and obstacles presented from a “permanently placed” course.
- 5) Consider alternatives for creating additional public access to Lake Groton. Vermont State Parks should examine the feasibility, costs, and impacts of upgrading current boat ramp and parking facilities, and the policy of only allowing campers to use the boat access. If the boat ramp at Stillwater Campground was upgraded and available for day use visitors, additional access to Lake Groton would be facilitated.

Finally, Vermont State Parks should continue its membership in the Lake Groton Association and work with residents to ensure a quality residential and recreational environment for all to enjoy.

## ACTIVITY ORIENTATION AS A DISCRIMINANT VARIABLE IN RECREATION CONFLICT

### RESEARCH

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The validity of previously used dichotomous measures of activity participation is examined in relation to an index measure incorporating an assessment of cross-activity participation and intensity of involvement in each activity. Not only is this type of orientation measure important to future conflict research, providing a more accurate depiction of the groups in conflict and a more precise opportunity to study contributors to conflict, but the development of more accurate orientation measures may contribute to other types of recreation attitudinal research as well.

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### Current Research Topics on Conflict

There has been a renewed interest in recreation conflict research in recent years (Williams 1993). Since 1989, scientists at the Leopold Institute (an inter-agency wilderness management research unit), university cooperators, and others have been involved in a variety of methodology development and application activities dealing with recreational conflict on wildlands. Current research efforts center on 5 important topics.

### Alternative Theoretical Approaches

Jacob and Schreyer (1980) suggested a goal interference framework for defining interpersonal conflict and proposing potential contributors to feelings of conflict. This theoretical framework has persisted as a basis of understanding conflict, even though conflict itself and the potential contributors have not been measured in a consistent way. The model itself has only recently been tested in a comprehensive way (Watson, Niccolucci and Williams 1993, 1994). Recently, efforts to expand this framework through incorporating a normative

component (Ruddell and Gramann 1994; Gibbons and Ruddell in press) promises further refinement of this expanded model. Alternatively, there are efforts to develop different approaches to studying recreational conflict, such as the extensive review of social conflict (versus interpersonal conflict) literature by Kajala (1994). There remains a dilemma associated with the difficulty in assessing recreational conflict at the group or subpopulation level, but this is a viable research problem that will soon be addressed.

### Contributors to Conflict

Some of the potential contributors to conflict proposed by Jacob and Schreyer (1980) have transitioned as these concepts have been explored and efforts have occurred to relate these various items to conflict measures. These factors typically include mode of experience, place attachment, lifestyle tolerance, and activity specialization (Watson et al. 1993). Some variables slightly outside these proposed contributors have been explored independently and as part of model testing. For instance, Watson and Niccolucci (1993) explored the contribution of place of residence (urban vs rural) to understanding conflict reports.

### Effectiveness of Management Interventions

Based on research to understand the contributors to conflict, suggestions have surfaced on how to manage conflict among recreation visitors. For instance, alternative approaches have been proposed to address conflict between hikers and recreational stock users (Watson et al. 1993). Some conflict reports can be traced to behaviors of stock users that could be influenced through education of stock users about the effects of these behaviors, or by subtle changes in facilities or suggested behaviors. There is an additional element of conflict that is more related to perceptions of appropriateness of horses and their impacts in wilderness. It has been suggested that more discussion about the cultural significance of horses in European settlement and Native American society may lessen some conflict feelings. It is believed, however, that some visitors would never accept horses and their impacts in places they recreate, and therefore nothing short of separation of uses would alleviate these feelings of conflict. It is a minority that this action would be required for, but if this is the management goal, it should be effective. No objective evaluations of these potential solutions have been performed. Only recently has a research study been designed specifically to establish baseline conditions, monitor trends in conflict, and assess the success of management applications to influence conflict levels. This research deals with bicycle conflict management and is sponsored jointly by Adventure Cycling, the Lolo National Forest, Recreation Equipment Incorporated and the Leopold Institute.

### Obtrusiveness of Management Interventions

Most recreation conflict research has focussed on determining the amount of conflict expressed by one group toward another, most often an asymmetrical conflict situation, where only one group is expressing conflict. The assumption in this research is that if the conflict is understood some actions can be taken to change behaviors or attitudes that will reduce these conflict feelings. Currently, a project is underway to assess the impacts

of various proposed methods of reducing conflict on the quality of recreation experiences for those thought of as causing the conflict. We are using the term obtrusiveness to indicate the negative emotional response visitors attribute to actions initiated by management. We believe that this impact on legitimate users of the resource must be taken into consideration in all efforts to manage conflict.

#### **Measurement Methods**

In initiating new emphasis on conflict research, one basic step involved re-examining how conflict has been measured in the past. There was, in fact, several ways it has been measured. One real need is to obtain some agreement on what the primary indicator of conflict should be. There has been a tendency to use measures more associated with attraction theory than conflict theory, and only recently have we moved to more conflict theory-based measures (Watson et al. 1994; Kajala 1994; Ruddell and Gramann 1994). Additionally, refinement of measurement of the potential contributors to conflict is a continual evolving process. New theoretical approaches are leading to newly introduced measurement challenges. Where interpersonal conflict models required improved measurement of personal meanings assigned to places and activities, social conflict approaches suggest the need for not only new measures of social conflict, but also the hypothesized determinants of social conflict, such as the social meanings related to a place, an aspect of the resource, or the activity. The other measurement method of interest currently is the challenge of analysis. We have moved beyond descriptive studies of conflict amount and characteristics of the conflict groups to more sophisticated predictive procedures that relate the contributors to actual conflict reports.

While all of these issues are important and ongoing research topics in recreation conflict, this paper is about one specific problem with measurement and analysis methods. The problem centers around how we classify visitors in recreation conflict studies. Classification of visitors into erroneous conflict groups can hinder our ability to achieve understanding of conflict and its determinants.

#### **Problem With Classification of Visitors**

In past recreation conflict research, conflict groups were typically defined based upon the activity individuals participated in on one specific visit to a place. This has been the case in even the most recent studies with little exception. Watson, Williams and Daigle (1991) studied conflict between those who were hiking when they were surveyed, and those who were bicycling when they were surveyed. Watson et al. (1993, 1994) separated groups based upon whether they were hiking or using recreational packstock at the place and time of surveys in Indiana and California. In the past we have seen the same classification method applied to canoeists and power boaters, to skiers and snowboarders, and to walkers, runners, skaters and bicyclists in various studies.

There are two basic problems with this past tendency. Previous research of this kind suggests that many visitors do not strongly

identify with only one of the study groups. It appears that the strength of identification with a single group may vary by activities investigated. For instance, there appears to be substantial overlap between hiking and mountain biking. Mountain bikers also participate in hiking quite often. Hikers may be mountain bikers on other occasions. Hikers and recreation packstock users or skiers and snowmobilers, however, may overlap much less. There is the possibility that visitors are not members of a single group to the extent that we have assumed. This suggests more complex measures of crossover participation will enhance our understanding of reported conflict. Second, recreation conflict research has evolved to incorporation of cumulative measures of conflict, and the most commonly tested contributors to conflict represent cumulative attitudes and perceptions of other groups. Use of these cumulative measures of both dependent and independent variables seems incompatible with the tendency to then discriminate between groups to which we apply the analysis based upon participation in an activity during a single outing. Much as visitors commonly participate in a cluster of activities during a single trip (Daigle, Watson and Haas 1994), they quite likely participate in a cluster of activities over a period of time. Attitudes of visitors toward participants in other activities may be influenced by their own involvement in these other activities.

#### **Methods**

A research project aimed at monitoring conflict between hikers and mountain bike riders in the Rattlesnake National Recreation Area provided the opportunity to develop an improved method of classification of visitors for conflict analysis. Conflict between these two groups was initially studied in 1989 (Watson et al. 1991) at this location. The Rattlesnake National Recreation Area contains about 61,000 acres, with the northern, more remote half protected as wilderness. Two major access points provide the majority of use to the area, and both are served by the same access road with parking only slightly separated. It is easy to make contact with visitors entering or exiting the Rattlesnake along old access roads which provide initial access. The Rattlesnake serves the community of Missoula, on the Lolo National Forest, in Western Montana. Missoula is a mixed community of university services, timber industry and tourism businesses. The Rattlesnake use comes almost entirely from Missoula, some of it quite casual, short-term use, with the majority hiking or mountain biking.

During the summer and fall of 1994, a visitor survey was conducted at the two major trailheads to the Rattlesnake. Sampling replicated days and times from the 1989 sample. In the earlier baseline conflict study, random blocks of days were selected, and for each sample day one of the two access points was randomly assigned for visitor surveying. As visitors exited during a six-hour sample day (randomly selected from three possible 6-hour blocks) each group was asked to provide some basic trip information and if they would be willing to participate in a mailback survey dealing with their perceptions of conditions in the Rattlesnake. Each visitor who agreed to

receive the questionnaire (up to 4 visitors per group) was sent an 8-page survey form, intended to provide basic information on conflict feelings and relevant trip data. A follow-up postcard and a maximum of two replacement mailings of the survey provided a response rate of 71%. 1054 usable questionnaires

The survey was partly a replication of the study done in 1989, in an effort to document changes in conflict levels and serve as a baseline for evaluation of management actions in the future. The portions most relevant to this report included an indication of what activities visitors participated in on this trip, what they had done on previous trips to the Rattlesnake, and the number of times they had done each activity in the Rattlesnake during the last 12 months. Activities listed included bicycling, hiking on trails, and hiking off of trails. From these measures of trip-specific and past activity participation at this one place, an index to orientation toward the two primary activities (hiking and mountain biking) was developed.

Two groups were defined that closely resembled those of other recreation conflict studies. One of these was the hikers. These people had never bicycled in the Rattlesnake. They didn't bicycle on this trip, and they indicated they had never bicycled in the Rattlesnake. A second group consisted of bikers. They had biked in the Rattlesnake but had never hiked there. The other two groups developed from these activity participation variables included one group that had both hiked and biked, on this trip or previous trips, but had hiked more times than they had biked during the last 12 months (introducing an intensity measure to discriminate between categories of visitors) and one group that had both hiked and biked in the Rattlesnake but had biked more times during the past 12 months than they had hiked. Of the original 1054 cases, 924 could be classified in this manner. The rest were either horse riders who used the Rattlesnake for only that purpose or they had hiked and biked with equal intensity during the past 12 months. For the analysis reported here, those who did not fit this four-category classification were dropped. A fifth category of the equal intensity people may be a valuable group to include in future analysis.

A measure of conflict used in the earlier study asked visitors if they enjoyed, disliked or didn't mind meeting each of several different kinds of recreation groups during their visits to the Rattlesnake. They could also indicate they had never met any of a particular type of group. Each person was also asked how big a problem he or she perceived each of several types of visitor behaviors was during the specific trip when they were surveyed. Included in these items were "too many hikers," "too many bicyclists," and "bicycles traveling too fast." The strength of the problem was measured on a scale from "no problem" to "small problem," "moderate problem," and "big problem." "Don't know" was also a possible response. One last set of items included in the analysis reported here was a visitor report of how much various things influence the quality of recreation experiences in the Rattlesnake. "The number of hiking groups seen along the trail" and "the number of bicycles seen along the trail" were among the items evaluated on a 6-point scale from "not at all" to influencing "an extreme amount."

## Results

A very simple test of the value of this more cumulative measure of activity orientation over a simple single-trip participation measure is a comparison of the two measures for this sample (Table 1). For the 924 visitors who could be classified on the more cumulative measure, 56 percent were involved in a hiking visit and 42 percent were biking. The amount of crossover in activity participation, and thus orientation toward the two activities, is evident from the cumulative measure: 19 percent had only biked in the Rattlesnake, 36 percent had only hiked, and 46 percent had done both (26 percent more intensive bikers, 20 percent more intensive hikers). This simple comparison illustrates that using the traditional method of classification would lead to 46 percent of those included in any kind of predictive analysis based upon cumulative measures of conflict and cumulative indications of attitudes toward the other groups would be misclassified.

Table 1 Visitor classification, Rattlesnake National Recreation Area - 1994.

Activity Participation on this trip	Percent
Biked on this trip	42
Hiked on this trip	56
Orientation toward the activity	Percent
Strict biking orientation	19
Strong biking orientation, but hikes	26
Strong hiking orientation, but bikes	20
Strict hiking orientation	36

The purpose of much of the conflict research has been to assess the amount of conflict that is occurring. A second simple test of the value of this more cumulative measure of group orientation is to see if any additional insight is gained from examining conflict reports for the four categories of activity orientation (Table 2). For this sample, the primary conflict report came from those hiking on the trip when interviewed. Twenty-one percent indicated they disliked encounters with bicycle riders, 79 percent either enjoyed meeting them or didn't mind meeting them. This 21 percent was not evenly distributed across those who have a strict hiker orientation to the place and those who participate in both hiking and biking. The conflict for strict hikers is exactly twice the level of those who participate in both activities but most intensively participate in hiking. So, the most intense conflict exists for this identifiable group within the hikers, those who have never bicycled at this place.

Table 2. Conflict measures by activity group, Rattlesnake National Recreation Area - 1994.

	No Conflict Percent	Conflict Percent
<b>Activity participation on this trip</b>		
Biked on this trip (conflict with hikers)	98	2
Hiked on this trip (conflict with bikers)	79	21
<b>Orientation toward the activity</b>		
Strict biking orientation (conflict w/hikers)	98	2
Strong biking orientation, but hikes (conflict w/hikers)	99	1
Strong hiking orientation, but bikes (conflict w/bikers)	86	14
Strict hiking orientation (conflict w/bikers)	72	28

Analysis of the question that asked how much of a problem too many hikers, too many bikers, or bicycles traveling too fast was on this visit revealed very different responses for all four groups (Table 3). The four groups reported significantly different levels of problems (ANOVA,  $P < .05$ ). Those who only hiked evaluated bikers as a greater problem than did those hikers who had also biked. Interestingly, those bikers who had also hiked reported hikers to be more of a problem than the strict bikers did. Nearly the same pattern emerged when asked about factors that influenced the quality of recreation experiences in the Rattlesnake (Table 4). Strict hikers were influenced significantly more by biker encounters than were those who both bike and hike. The two groups who

demonstrated crossover in activities did not evaluate each other at different levels, but strict bikers did evaluate hikers as less of an influence than either hiker group evaluated bikers. The typical asymmetrical relationship holds for this type of evaluation of each other as well as in simple conflict measures.

### Implications

While this study does not include complex modelling using these new categories of activity orientation, this simple, exploratory analysis suggests the values associated with more careful measurement of activity orientation in future studies. The implications of these findings can be summarized in five ways.

### Understanding of Past Research Findings

Watson et al. (1991) found significant differences between hikers and bikers in the earlier study at the Rattlesnake, but speculated that some of the strength of the differences was clouded by lack of accurate perceptions of activity orientation. They speculated that more bikers were also hikers than hikers were bikers, and this difference in crossover extent was important to understanding the conflict between these two groups. In fact, that is exactly what these newer data show. There is a need to acknowledge that there is often crossover between the groups being studied and this crossover needs to be assessed and entered into the analysis. In studies of hikers and recreational stock users by Watson et al. (1993, 1994), it was not considered that some subjects who were hiking at the time of the study may have previously been stock users in the area, and some stock users may have been hikers. Definition of groups in a way that acknowledges this crossover would likely lead to greater understanding of the contributors to conflict achieved by subsequent analysis.

Table 3. Visitor evaluations of strength of problems (1=no problem, 4=big problem), Rattlesnake National Recreation Area, 1994.

Orientation toward the activity	Problem	Score	Significant differences*
Strict biking orientation	Too many hikers	1.37	A
Strong biking orientation, but hikes	Too many hikers	1.69	B
Strong hiking orientation, but bikes	Too many bikers	2.44	C
Strict hiking orientation	Too many bikers	2.61	D

\*Scores with different letters indicate significant differences (ANOVA,  $p < .05$ )

Table 4. Visitor evaluations of encounters (1=no influence, 6=extreme influence) with other groups, Rattlesnake National Recreation Area, 1994.

Orientation toward the activity	Encounter evaluated	Score	Significant differences*
Strict biking orientation	Hikers	3.43	A
Strong biking orientation, but hikes	Hikers	3.67	A B
Strong hiking orientation, but bikes	Bikers	3.81	B
Strict hiking orientation	Bikers	4.19	C

\*Scores with different letters indicate significant differences (ANOVA,  $p < .05$ )

### **Influence on Future Measurement of Discriminant Variables**

While this type of more thoughtful measurement of orientation in recreation conflict research appears a likely change in future studies, the same considerations in other conflict research seems justified. There is a need for studying social conflict in communities dependent or in close interaction with national forests. Some of the factors potentially contributing to the conflict are directly related to the measure of group orientation, the assumed indicator of different values. For instance, in many communities there are people who have lived in the area for a long length of time. These permanent residents have developed a relationship with the land over several generations. Also present in these communities may be seasonal home owners, newly retired arrivals, and new residents from different geographic, and possibly different cultural, orientations. These groups may differ in basic attitudes toward the natural resources in which they interact. One discriminant variable that comes to mind very readily is the rurality (Willits, Bealer and Timbers 1990) of values each group may be expected to have. Previous conflict research suggests that whether a person lives or was raised in an urban or a rural location may influence some conflict situations (Watson and Niccolucci 1993). The research reported here cautions us from merely classifying people as urban or rural, however, suggesting instead that there are multiple levels of orientation that need to be defined and used in the analysis. Rural residents, seasonal home owners, retirees, new arrivals, as well as week-end visitors to an area may vary greatly in this single orientation in values.

### **Increase Success of Discriminant Analysis**

While the re-analysis of previously reported conflict studies has not occurred at this time, the implications of the findings reported here is that if re-analysis was conducted the differences between the four groups as defined by the more cumulative measure of activity orientation would be sufficient enough to influence statistical models used to classify subjects. If the group identified as only hiking at the place is isolated from those who crossover activities, it is hypothesized that an even more successful discriminant model would develop. Whether different variables would surface to explain the conflict is difficult to foresee, but it is possible, making previous conflict analysis results subject to re-examination.

### **Suggests Need to More Accurately Measure Orientation**

This really simple attempt to explore the crossover between activities and reflect it in a discriminant variable, only opens the door to more advanced methods. In future recreation conflict research, there is a need for thought at the planning stage about how orientation will be measured. In a current study at the Leopold Institute, the method reported here is being compared to a visitor self-report of orientation toward the subject activity groups. It seems worthwhile to determine if objective, index measures such as used here are related to the visitor's own perception of how strongly he or she identifies with the particular groups in conflict. There are other methods of measuring orientation and involvement of recreation visitors (for instance see Williams, Patterson, Roggenbuck and Watson 1993) that would give continuous measures of identity strength

for those types of analyses where this type of measurement scale is needed.

### **Helps Managers Understand Visitor Character**

Maybe most importantly this type of categorization of visitors helps managers understand conflict situations better. The results reported here leads us to acknowledge that people are not clearly divided into hikers and bikers at the Rattlesnake National Recreation Area. People can be both, and they bring these past experiences and orientation toward the place to public meetings, personal visits to the District Ranger's office, and in encounters with others on the resource. Understanding that there is a group that only hikes in the Rattlesnake, and they are much more negative about interactions with bicyclists than some other hikers who also bike there, gives management a greater chance of correctly developing management solutions. This analysis demonstrates that there is greater polarization on this conflict issue than initially suggested, with the greatest negative perceptions of bicycle use consistently expressed by a single group of visitors. Previously, inclusion of all hikers in a group, regardless of whether they had biked before or not, masked the depth of feelings for the hiker only group.

### **Acknowledgements**

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## VISITOR USE AND CONFLICT ON THE CARRIAGE ROADS OF ACADIA NATIONAL PARK

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A survey of visitors to the carriage roads of Acadia National Park was conducted in the summer and fall of 1994. Findings from the survey provide baseline information on visitor use and users, including visitor characteristics, use patterns, potential indicators of the quality of the visitor experience, and perceived problems and management issues on the carriage roads such as crowding and use conflicts. A series of conclusions and recommendations are offered.

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### Introduction

Approximately fifty miles of carriage roads were constructed on Mount Desert Island between 1913 and 1940. This system of carriage roads was constructed at the direction of John D. Rockefeller to provide horse and carriage driving access to the scenic resources of the island in an unobtrusive manner. Construction of the carriage roads was in part a response to the admission of automobiles to Mount Desert Island. The carriage roads and most of the lands on which they were built were eventually donated to Acadia National Park.

The carriage road system is significant for its state of the art design and construction, which is exhibited in its sensitivity to the landscape, stone bridges, and broken stone road composition. A carriage road experience is found in only one other national park unit and in a few other locations nationwide. The carriage road system is a National Register

Historic Site set amidst the scenic beauty and natural resources of Acadia National Park.

Not surprisingly, the carriage roads have experienced increasing visitor use over the past several years. Different types of visitor use have also been increasing, including walking, running, and bicycling. Increasing visitor use has resulted in some visitor complaints and has generated concern for the quality of the visitor experience. Concern is focused on the amount of visitor use that can ultimately be accommodated on the carriage roads and conflict which may occur between different types of visitors, particularly bicyclists and pedestrians.

In December of 1993, the park initiated a planning process to address this issue. This planning effort adopted the Visitor Experience and Resource Protection (VERP) process being developed by the National Park Service (National Park Service 1993; Manning et al. 1995; Manning et al. Forthcoming a; Manning et al. Forthcoming b). VERP is a planning process for determining and managing the recreation carrying capacity of national parks. A pivotal part of the VERP process is the identification of indicators and standards of the quality of the visitor experience. Indicators of quality are specific measurable variables which are important in determining the quality of the visitor experience. Standards of quality define the quantitative condition of each indicator variable. Carrying capacity is managed through a monitoring program which ensures that standards of quality are not violated.

The planning team suggested a two-phase program of research to provide necessary information for planning purposes. Phase I research would be primarily a scoping process and would focus on an initial survey of carriage road users. The purpose of the survey would be to learn more about visitor use and users of the carriage roads, including visitor characteristics, use patterns, potential indicators of the quality of the visitor experience, and perceived problems and management issues on the carriage roads such as crowding and use conflicts. Phase II research would focus on setting appropriate standards of quality and other issues identified in Phase I research. This paper reports on Phase I research.

### Study Methods

The study began with the December 1993 workshop. Based on this workshop and continuing consultation with park staff, a visitor questionnaire was designed. The questionnaire had three primary sections. The first section focused on selected characteristics of carriage road visitors and their use patterns. Study variables included residence of visitor, size and type of visitor group, type of use, use history, point of entrance to carriage roads, length of visit, and locations visited along the carriage roads. The second section focused on exploring indicators of quality of the visitor experience. A battery of open-ended questions probed for what visitors found to enhance and/or detract from the quality of their experience on the carriage roads. The third section of the questionnaire focused on a variety of potential management issues and problems.

Respondents were asked to rate the degree to which they considered each of 26 issues to be a problem on the carriage roads. Visitors were also asked several more specific questions regarding potential crowding problems on the carriage roads.

A sampling plan was designed to obtain as representative a sample of carriage road visitors as possible. The objective of the sampling plan was to obtain 900 completed questionnaires during the summer and fall of 1994. This would provide a sufficient sample size to test for statistically significant differences among selected types of carriage road visitors. Sampling was stratified by 1) season, 2) carriage road entrance point, 3) weekday, and 4) time of day.

Questionnaires were administered by interviewers who volunteered or who were employed by the park. Interviewers contacted visitors at the carriage road entrance points according to the sampling schedule described above. A standardized contact script was used. Visitors were contacted as they exited the carriage roads after having completed their visit. One person per group of visitors was asked to complete the questionnaire, but other members of the party were allowed to contribute to answers. Approximately 180 visitor parties refused to participate in the survey, primarily because of lack of time.

### Study Findings

Study findings provide a variety of baseline information about use and users of the Acadia carriage roads, the quality of the visitor experience, perceived management issues and the extent to which these factors vary by type of user. Major study findings are as follows:

1. The primary characteristics of carriage road visitors are as follows:

- A. The vast majority of visitors come from outside of Maine, while a very small percentage are of local origin.
- B. Bicycling is the primary type of carriage road use, while walking/running constitutes nearly one-third of use and equestrian activities comprise less than two percent of use.
- C. The carriage roads are very important to users as the majority report the carriage roads as their primary destination.
- D. Nearly all carriage road visitors come in small groups of family and friends.
- E. Most carriage road users are first-time visitors to the carriage roads.
- F. Visitors use the carriage roads for an average of about two hours.
- G. Use of the carriage roads extends throughout the carriage road system, but tends to be concentrated in two general locations--the Witch Hole Pond/Eagle Lake/Visitor Center area and the Jordan Pond area.

2. The primary qualities of the carriage roads enjoyed by most visitors are the scenic natural beauty of the area and the views

provided by the carriage roads. Secondary qualities which contributed to the enjoyment of the carriage roads include: 1) the quality of the carriage roads themselves, 2) the lack of motor vehicles, and 3) the quiet peacefulness and solitude of the area. Secondary qualities which detracted from the enjoyment of the carriage roads include 1) the steepness of some road sections, 2) road surface too coarse for bicycles, 3) reckless bicyclists, 4) too many people on the carriage roads, and 5) lack of adequate trail signs. Open-ended comments suggest that the vast majority of carriage road users enjoyed their visit.

3. Lack of selected facilities and services along the carriage roads are perceived as the most important management issue by carriage road visitors. Specific facilities and services needed include more parking at major access points, toilets along the carriage roads, and more information/education about carriage road "rules of the road."

4. Behavior of carriage road visitors is probably a more important management issue than sheer number of visitors. Specific behaviors which are problematic include bicycles going too fast, failure of visitors to keep to the right, horse droppings along the carriage roads, and visitors walking or riding off the carriage roads, damaging soils and vegetation.

5. Bicycling is an especially important problem for a substantial percentage of carriage road visitors. Over a quarter of respondents considered bicycling-related issues to be a problem.

6. There are somewhat mixed findings on the issue of crowding on the carriage roads. The sheer number of carriage road users is a problem for a substantial number of carriage road visitors. Over one quarter of respondents reported that too many people using the carriage roads was a problem. However, the vast majority of visitors did not report feeling crowded during their visit. Only a small minority of visitors (8.1%) reported feeling extremely crowded. Moreover, only 13.8% found the carriage roads more crowded than they expected them to be. Visitors saw an average of 39.6 other people during the course of their visit, and the largest group seen averaged 6.5 people.

7. There are important differences between selected types of carriage road users.

A. Local visitors are significantly different than nonlocal visitors in several important ways. While local visitors are a distinct minority of carriage road users, they use the carriage roads much more often and are more likely to consider the carriage roads their primary destination. They are much more likely to be pedestrians, though nearly half use the carriage roads for bicycling. Local visitors tend to consider the peacefulness and solitude of the carriage roads more important than do nonlocal visitors. Finally, local visitors are significantly more sensitive to nearly all carriage road management issues.

B. Pedestrians are significantly different than bicyclists in several important ways. Since a greater proportion of pedestrians are local visitors, these differences are similar to the differences between local and nonlocal visitors described above. Pedestrians visit the carriage roads more often than bicyclists and tend to consider the peacefulness and solitude of the carriage roads more important than do bicyclists. Pedestrians are also more sensitive to many carriage road management issues, especially those concerning the number and behavior of bicyclists.

C. There were few differences between bicyclists who owned their bicycles and those who rented bicycles. Those who owned their bicycles were more sensitive to several carriage road management issues, including the number of bicyclists and overall number of people on the carriage roads.

D. Prior visitors to the carriage roads are significantly different from first-time visitors in several important ways. Prior visitors consider the carriage roads their primary destination more often and consider the peacefulness and solitude of the carriage roads as more important than do first-time visitors. Prior visitors are also more sensitive to many carriage road management issues, including the number and behavior of carriage road visitors.

## Conclusions and Recommendations

Based on the above findings from this study, several conclusions and recommendations are offered.

1. This Phase I study should be followed up by Phase II research as planned. The primary focus of this research should be on developing standards for key indicators of quality. The key indicators of quality identified in the present study are the number of visitors on the carriage roads, including different types of visitors, and the behavior of carriage road visitors, including speed of bicyclists, keeping to the right, and travelling off the carriage roads. This research would involve a second survey of carriage road visitors to determine the normative standards of visitors for these key indicator variables. This second phase of research would allow for continued application of the VERP process to planning and management of the carriage road system.

2. An expanded effort should be undertaken to include other interest groups in the planning and management of the carriage roads. Carriage road visitors constitute an important interest group, but information should be gathered from other interest groups as well, including the local residential and business community, Friends of Acadia, and organized user groups such as bicyclists, runners, and equestrians. This might be done most efficiently and effectively through a series of structured focus groups.

3. As a part of the carriage road planning and management process, the park should consider adding selected visitor facilities and services. Facilities such as parking and toilets should be provided in relation to the amount of use allowed on the carriage roads. Moreover, additional visitor information/education services are likely to reduce visitor behaviors which contribute to resource impacts and conflicts among visitors.

4. Since visitor behavior may be as much of a problem as sheer number of visitors, special attention should be placed on the effectiveness of visitor information and education services. Helpful research would focus on the extent of knowledge of current visitors concerning appropriate behavior and the extent to which alternative types and sources of information are effective in influencing visitor behavior. Some of this research might be designed into Phase II research as described above.

5. The sensitivity of certain types of visitors to the amount and type of use on the carriage roads should be given consideration in carriage road planning and management. It is clear that local visitors, pedestrians, and prior visitors are more sensitive to a variety of carriage road issues arising from the increasing amounts and diversity of carriage road use. Without some management action, the quality of the carriage road experience is likely to diminish for these types of visitors, and some of them may ultimately be displaced. Special carriage road regulations, education programs, zoning, or some other planning/management actions should be considered to deal with this issue.

6. A monitoring program should be designed for the carriage road system. This monitoring program should focus on key indicators of quality. It will be remembered from the earlier description of the VERP process that carrying capacity is managed through monitoring indicators of quality. When standards of quality for key indicator variables have been exceeded, management action is required. A monitoring program for the carriage roads should focus on the number of visitors on the carriage roads, including different types of visitors and the behavior of carriage road visitors, including speed of bicyclists, keeping to the right, and travelling off the carriage roads.

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# TOURISM

## LEGISLATIVE MANDATES FOR TOURISM IN THE 50 STATES

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This study examines the legislatively mandated activities of state agencies responsible for tourism promotion and development. Fifteen reasons for tourism development are identified, in five general categories. The departmental affiliation of tourism agencies and the reasons for government involvement in tourism are examined, and ways in which states can build upon the existing situation are discussed.

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### Introduction

Every state has an agency within the state government that is responsible for tourism promotion and development. When each of these agencies was established, the legislature (or governor if the agency was established by executive order) delineated the responsibilities of the agency, as well as the reasons that the agency was established. Each state legislature assigned responsibilities for various facets of tourism to specific state agencies. This study examines the enabling legislation that the agencies operate under. It will document the reasons that tourism agencies were established, and provides insight into what legislatures see as important reasons for tourism promotion and development. By examining the legislation that the tourism agencies operate under, it is possible to examine the motivations and visions of those responsible for the law (Simpson and McAvoy, 1994). It is important to consider the intent of the legislature in establishing an agency (Davies, 1986; Sigler and Beedee, 1977) because this clearly identifies the reasons that states engage in certain activities, in this case the promotion and development of tourism. This study allows individuals involved in tourism promotion, as well as researchers, to take a step back and examine the reasons that tourism is an important and valid activity of the state. Some state tourism agencies have been criticized for operating without a clear vision -- perhaps revisiting their legislative mandate could serve to provide a clear set of goals and objectives for the tourism agencies.

### Methodology

The agency responsible for tourism was contacted in every state, both by phone and by letter, and was asked to provide a copy of the legislation that established them. All fifty states were contacted; 46 responded to the request for information. However, many of the states responding sent something other than the requested legislation -- items received included annual reports, strategic marketing plans, economic impact studies, and promotional material. This suggests that at least some of the individuals working for state tourism agencies are unaware of the agency's enabling legislation. Twenty-five states responded with legislation, and these states provided the sample for this study.

The states that provided legislation for this study are Alaska, Alabama, Arizona, Arkansas, California, Connecticut, Florida, Illinois, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Tennessee, Vermont, Washington and Wyoming.

The purpose clause of legislation is a short section, near the beginning of the act, that explains what the legislature intend to accomplish with the bill. In order to determine the reasons that tourism agencies were established within state government, the purpose clause was examined, and each reason noted. Reasons were then grouped into categories according to logical connections. Results presented below show the percentage of states in the sample that noted each reason (or category of reasons) in the purpose clause. The legislation was also examined to determine the departmental affiliation of the agencies.

### Results

#### Departmental Affiliation of Agencies

The departmental affiliation of the agency responsible for tourism is important because it shows the overall goals and orientation of the agency. Agencies may be part of a larger department, or may be independent agencies. The departmental affiliation of the agency responsible for tourism is presented in Figure 1. The largest portion of the agencies are in the department of economic development or commerce, with two-thirds of the agencies housed in this department. This clearly indicates that states view tourism as a means of bringing revenue into the state, to be treated as any other type of commerce. Certainly tourism represents a large sector of the economy in many states, and the legislatures recognize the importance of tourism in economic development. In the responding states, one quarter of the agencies responsible for tourism are not housed in any department. The heads of these agencies report directly to the governor, and these organizations generally operate as semi-autonomous. Four percent of the agencies responsible for tourism were housed in the department of natural resources, and four percent were within the department of parks and recreation.

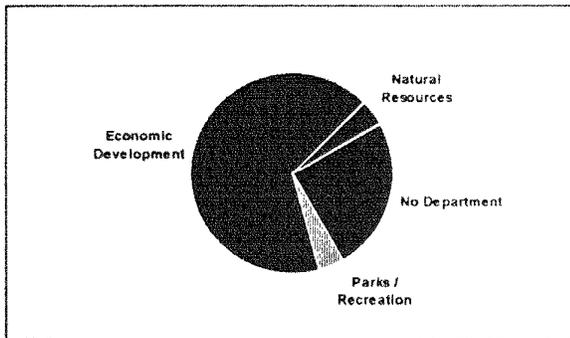


Figure 1. Departmental affiliation of state agency responsible for tourism.

### Reasons for Tourism Legislation

The reasons that states establish tourism legislation are many and varied. After reviewing all of the reasons noted in the purpose clauses of the sampled legislation, five categories were established. These categories are development, economic, amenity, coordination, and general tourism. Figure 2 shows the percentage of states that have noted each of the categories as a reason for establishing tourism agencies. Tourism development was noted by 40% of the states, 44% of the states noted economic reasons as a reason, and 60% of the states noted amenities as a reason for establishing tourism agencies. Coordinating the tourism efforts of various groups was noted as a reason for establishing tourism agencies by 68% of the states sampled, and 88% of the states list general tourism as a reason for establishing a tourism agency. Each of these categories is made up of a number of reasons, specified below. States may have listed more than one specific reason in a category.

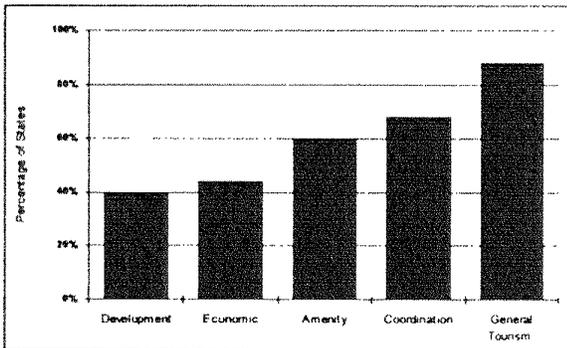


Figure 2. Reasons for tourism legislation

### Development Group

Some of the reasons for establishing an agency to oversee tourism at the state level involve development. Figure 3 shows the percentage of states that note each of the development goals in their legislation. Infrastructure improvement and development is listed by 36% of the states as a reason establishing a tourism agency. Maine, for example, encourages "the development of travel product facilities and activities by locating potential developers, providing market and feasibility analysis, assisting developers in complying with public rules

and laws, and providing technical assistance to location decision making, including site selection, financing, and utilities" (Maine Statutes, 1983). The promotion of professional and amateur sports is noted by 4% of the states, and rural development is a specified goal of tourism legislation in 8% of the states sampled.

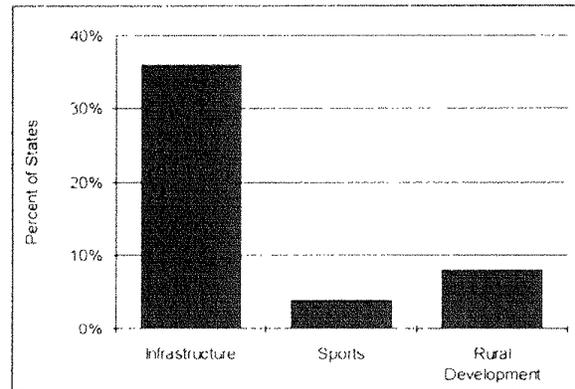


Figure 3. Reasons for tourism development: development group

### Economic Group

Forty-four states have identified economic development as an important reason for government activity in tourism development and promotion. As California notes, "tourism is a major source of jobs, income, and tax revenue... and the expansion of this industry is vital to the overall growth of (the state) economy" (California Government Code, 1984). Three specific economic reasons for promotion of tourism were identified by the states in the sample, shown below in Figure 4. Twenty percent of the states cite retaining economic benefits of tourism for the states as a reason to encourage tourism, the economic benefits of tourism to the states come primarily in the form of lodging taxes, meal taxes, and sales tax. Benefiting citizens of the state was noted by twenty-eight percent of the states, and increasing employment was noted by 40% of the states.

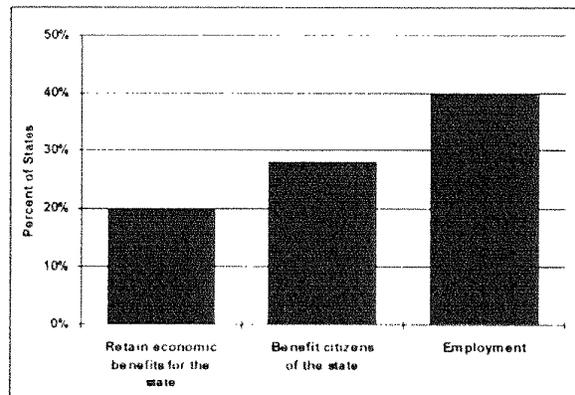


Figure 4. Reasons for tourism development, economic group.

### Amenity Group

Sixty percent of the of the states in the sample identified one or more amenity reasons in the purpose clause of the tourism agency's enabling legislation. Figure 5 shows the amenity reasons that legislatures noted for encouraging tourism. Four percent of the states view ensuring a good visitor experience an important reason for funding a tourism agency. Alaska (Alaska Statutes, 1986), for example, states that the agency should "ensure that the visitor experience is and continues to be satisfactory and leads to word-of-mouth advertising and return visits to the state". Sixteen percent of the states see portraying a positive image of the state to outsiders as a function of the government agency responsible for tourism. Twenty percent of the states view developing international tourism as a job of the government tourism agency, and 36% are responsible for promoting the unique historic, environmental, and/or cultural aspects of the state. The amenity noted by the most states in legislation was improving recreational opportunities for residents of the state, specified in 40% of the legislation reviewed. Oregon, among others, noted this, stating that "tourist facilities and attractions serve the recreational and cultural needs of both visitors and residents" (Oregon Statutes, 1993).

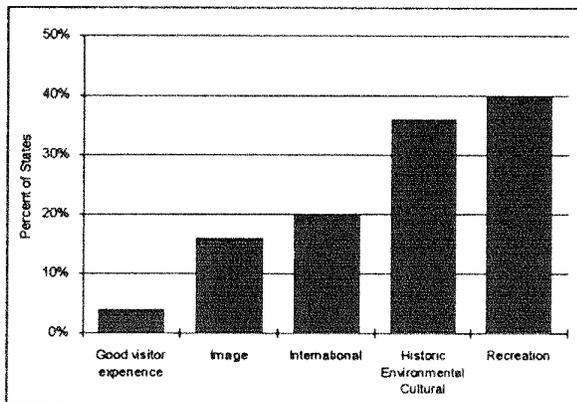


Figure 5. Reasons for tourism development: amenity group.

### Coordination Group

Among the states sampled, 68% of the tourism agencies noted coordination of tourism efforts as a reason for government involvement. The coordination of public and private efforts at tourism promotion was noted in 52 % of the legislation (Figure 6). Forty percent of the states mandated that the tourism agency coordinate local, regional, and state efforts directed toward tourism promotion. Arizona, for example, mandates coordination on a number of levels, stating that the Office of Tourism shall "stimulate and encourage all local, state, regional, and federal governmental agencies and all private persons and enterprises to participate and cooperate in the promotion of tourism and tourism development" (Arizona Statutes, 1982). Interestingly, no states listed coordination with other states as a responsibility of the tourism agency. This may be because states view each other as competition for tourism dollars, and are therefore reluctant to work together.

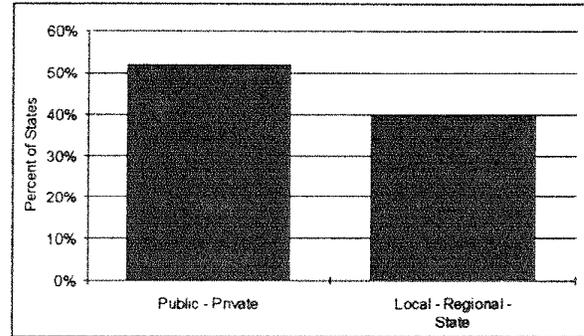


Figure 6. Reasons for tourism development: coordination group.

### General Tourism Group

General tourism promotion was a legislatively mandated responsibility of the tourism agencies in 80% of the states, noted more often than any other reason (Figure 7). While this is certainly a broad statement that encompasses many of the above reasons, states may have made an effort to use this vague term to allow activities not specified in the legislation. The Nevada law is a good example of the legislature granting a vague mandate to the agency, as it requires the Commission on Tourism to encourage "the promotion of tourism and travel in the state" (Nevada Revised Statutes, 1991). Twenty percent of the sample noted tourism research as a responsibility of the agency.

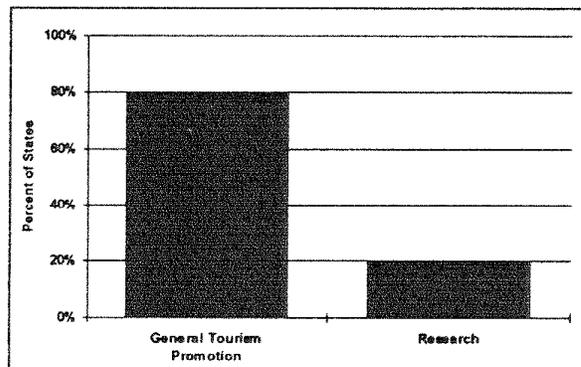


Figure 7. Reasons for tourism development: tourism group.

### Conclusions and Implications

The legislatures of the sampled states identify fifteen distinct reasons for government involvement in tourism. More than any other reason, states are involved in tourism in order to broadly promote tourism in the state. While most states are involved in promotion, there is less involvement in development of the tourism infrastructure. Perhaps states feel that promotion benefits different regions and interest groups in the states equally, while development may benefit one area at the expense of another. Legislatures are viewing tourism with an eye toward the economic benefits that it brings to the state, and

therefore at some point will need to address the issues of infrastructure development -- more and more people cannot be drawn into some states without improvement of the facilities there to serve them.

Few states address the quality of the tourist experience, and this raises a red flag. Certainly every state wants tourist to make return visits -- a loyal customer base is an important part of any business. However, few states mandate that the tourism agency address this issue. By implementing programs that deal with visitor experience, states may be able to address other mandated responsibilities and serve the long-term interests of the state.

Within every state there exist a number of groups, both private and public, that are involved in tourism promotion. Most states address this in some manner, but certainly this is an area where states may be most effective in their involvement in tourism. Resorts, industry groups, regions, towns, cities, museums and others all attempt to lure tourists, and their dollars, through a variety of efforts. This is an area where a state agency could serve as a clearinghouse for information and a way that different groups could cooperate in order to avoid duplication of efforts. No states in the sample are legislatively mandated to coordinate efforts with other states, and given the competitive nature of the tourism industry this is only natural. However, given the realities of modern travel, many tourists visit more than one state on a single trip. For this reason, it may benefit some states to coordinate efforts with their neighbors (bordering states, and perhaps even bordering areas in Canada and Mexico) when the opportunities provided are not in direct competition. Certainly no one would expect Colorado to assist in promoting Utah ski areas, but the two states may be able to join forces in promoting a combined trip to the Colorado Rockies and the Utah desert.

This study serves to add to the discussion on what activities state governments undertake to promote and develop tourism within their states. This work is preliminary and incomplete; the legislation of every state would need to be reviewed in order to obtain an accurate picture of the mandated activities of tourism agencies. Additionally, much could be gained by studying the relationship between the legislative mandates of the agencies and the programs that they actually undertake. The level of funding provided to agencies may also be influenced by the legislative mandates of the agencies. Looking at these three components -- mandates, programs, and funding -- would provide a complete view of the role states play in tourism development.

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## MARKETING RESEARCH FRAMEWORK FOR THE HERITAGE TOURISM INITIATIVE

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The Department of Canadian Heritage is both a supplier of tourism attractions (parks) and a tourism association supporting museums, festivals, etc. These two roles imply two quite different but interconnected research strategies. This paper develops the two strategies to show how a multi-responsibility agency should determine its research needs.

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### Introduction

When the new Department of Canadian Heritage (DCH) was put together out of Parks Canada and the Canadian Federal Government's support and policy programs for Museums, Festivals, the Arts, Sports, and Multi-Culturalism, management realized that much of what attracted tourists to and in Canada was in some way within Departmental responsibility. They realized that the new department could make a useful contribution to Canada's growing tourism industry by developing a coherent tourism strategy and consciously managing its tourism role. The development of a tourism strategy also required tourism research, of course. The purpose of this research framework therefore is to provide users with a tool for developing tourism research plans.

### A Concept Of The Tourism Market Place

To develop a tourism research plan, it is useful to have a concept of the tourism market place in mind. We started with a concept in which there were three components: demand (visitors), supply (tourism products), and the actors who manage the transaction between supply and demand (see Figure 1).

### Demand

Demand is created by visitors. The tourism research literature generally suggests classifying visitors into discrete groups called segments that have a more or less homogeneous behavior (see, for example, Smith 1991, Andereck and Caldwell 1994). The reason for this is that in most cases, visitors are too diverse in their characteristics, behavior, and demands to consider as an undifferentiated whole. On the other hand, they are too numerous to be studied as separate individuals. Grouping them into a few segments according to common characteristics is usually an effective compromise. If the classification is properly done, all members of a particular segment will have similar behavior or similar wants, and will be clearly differentiated from members of other segments.

### Supply

Supply can be thought of as whatever products are offered to the visitor as part of a trip. A visitor, to take a trip, must choose a diversity of products and how this choice is made determines how the supply is structured, at least in the visitor's mind. Most of the literature on visitor choice appears to treat the decision of where to go and what to do as a single event (Woodside and Lysonski 1989). On re-examination, however, it appears more complex than that. Um and Crompton (1990) and Crompton and Ankomah (1993) suggest that visitors go through decision stages from general choice to specific choice, each stage narrowing down the number of choices retained for consideration and requiring more specific information. Both Gunn (1994) and Smith (1991) have suggested that there are distinct differences when planning or developing products at a regional, local or site-specific level, which implies that visitors have different decisions to make at each level. Hodgson (1993) points out that visitors need a certain kind of information when making decisions about general destinations and different information when making specific product choices. Both Prentice (1993) and Tourism Canada (1991) find evidence of the different kinds of information and the different stages at which visitors make decisions.

These results imply that the visitor makes a series of progressively more specific choices as he moves from his initial decision on general destination to his specific decisions about what activity to spend his afternoon at. For example, a potential vacationing family might decide to "go West" this summer to show the children the mountains. This general destination may have been chosen after considering a trip to Europe, a vacation at a rental cottage, or a trip to the Eastern Seaboard of the United States. Once the general destination has been chosen, a particular place within that destination must be identified to go to, since travelers must have a specific point to travel to, and must stay somewhere specific once they get there. "The West" is not a precise enough place to make hotel reservations in. To see "the West", therefore, the family might choose to go to Calgary (one kind of "West"), or Vancouver (another sort of "West"). Having chosen the place, it then becomes necessary to make very specific choices about what services (e.g., restaurants, gas stations, motels) to use and what attractions to spend time at. Some choices might be made before departure (e.g., "If we are going to Calgary, we must make sure to visit the Tyrell Museum"). Others will be made only once there (e.g., "It's a clear day, let's go to the top of the Calgary Tower"). In summary, when you are deciding between a vacation in Europe or the Canadian West, you are not, at the same time thinking of what restaurant to eat in.

There are several levels of supply or product. Following the planning models suggested by Gunn (1994) and Smith (1991, 1995), (although using my own terminology) we will consider three levels: general destination, place, and specific service or attraction.

Table 1 identifies the three product levels and describes the kind of information that the visitor would use to make his choices at that level. The information listed is my interpretation

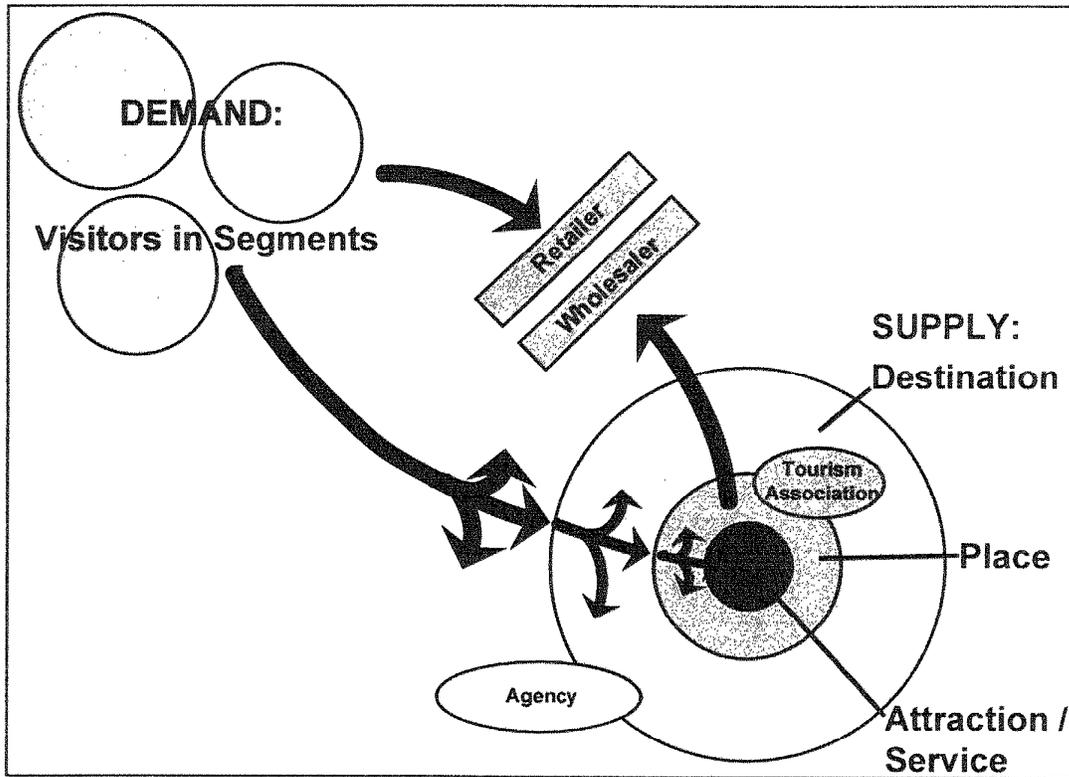


Figure 1. The tourism market place is made up of visitors in segments who consume attractions and services. These are concentrated in specific places which in turn are located in general destinations.

the findings of Fakeye and Crompton (1991), Hodgson (1993), Tourism Canada (1991), Tierney (1993) and Perdue (1986). Table 1 suggests that the information which persuades the visitor to choose a particular product varies from level to level. It is therefore important for the tourism marketer to be aware of the level of product he or she is marketing.

Both destination and place imply a concentration or critical mass of attractions and services (Gunn 1994). It is quite rare that a visitor coming from any significant distance and undergoing any significant expense is motivated completely by only a single attraction or service. The visitor needs a critical mass of attractions and services to attract him to a place or destination. This notion of critical mass is important because it generally means that a supplier of attractions and services cannot act in isolation to attract visitors to a destination or a place. Any research must take this into account.

#### Actors in the Market Place

Visitors create the demand for products. Suppliers of services and attractions create the tourism product to satisfy that demand. The visitor and supplier are therefore the first two actors in the market place.

Table 1. Levels of product.

Level	Description	Information Needed for Visit Decision
Destination	<ul style="list-style-type: none"> <li>more idea than specific location</li> <li>contains several specific places, many attractions</li> </ul>	<ul style="list-style-type: none"> <li>images, impressions</li> <li>awareness of kinds of experience available</li> </ul>
Place	<ul style="list-style-type: none"> <li>specific location visitor stops at</li> <li>concentration of services, attractions</li> </ul>	<ul style="list-style-type: none"> <li>knowledge of services, attractions available</li> <li>knowledge of critical mass of attractions</li> </ul>
Attraction /Service	<ul style="list-style-type: none"> <li>specific product visitor consumes</li> <li>ultimate objective of trip, where experience actually takes place</li> </ul>	<ul style="list-style-type: none"> <li>specific nature of attraction</li> <li>precise details (e.g., location, price)</li> </ul>

Not all visitors set off independently to choose the products they want to consume. Visitors who are unfamiliar with the customs of the destination or place, or who are less adventurous than others, prefer to have many of their products packaged and delivered to them. The market has adapted to this through the

creation of wholesalers and retailers (Tourism Canada 1994). Wholesalers are private companies who purchase bulk quantities of tourism product (thousands of hotel room nights, bus seats, and entry tickets to attractions) and package this product into individual trip opportunities called tour packages. Wholesalers sell their tours through retailers such as travel agencies.

The reason that the existence of wholesalers and retailers is important to the tourism marketer and researcher is that the wholesaler and retailer provide a different way for the visitor to make choices about which tourism product to consume. The fully independent traveler, makes all his own choices, based on the kind of information outlined in Table 1. The tour user makes his choices at all levels all at once, and then is no longer open to influence. Research must take this into account as well.

#### **A Paradox**

The only point at which money transactions take place is the point at which the visitor purchases a service or attraction. Visitors pay for services, and pay for entry or access to most attractions, but do not pay for entry to a place or destination. Therefore, the only actors in the market place to profit from visitors are the suppliers of attractions and services (and, of course, the wholesalers and retailers who are selling attractions and services on behalf of the original suppliers).

If the suppliers of services and attractions are the only ones to profit, then it follows that they are the only ones for whom it is worthwhile to undertake the expense of promotional activities. Unless, however, the visitor is first attracted to the destination, and then to the place, there will be no visitors to use the services or the attractions, or to profit from. It is rare that a single attraction will be large enough in a place to draw visitors all on its own without the interactions of the other services and attractions. So the paradox is that it is in everyone's general interest to promote the place and the destination, but in no one's particular interest, because the promotion costs for a place or destination accrue to an individual (the promoter), but the benefits accrue to the whole group. So who is willing to promote place and destination?

The wholesalers and retailers do some of this, but they really only promote the packages they are selling, not the whole place or destination. There are therefore two other actors who have come to inhabit the market place who, for the purposes of the framework, will be called tourism associations and agencies

#### **Two New Actors**

Tourism associations are alliances of suppliers of attractions and services who undertake joint initiatives which will benefit all of their members (see, for example, Smith 1991, p12). If the association is an alliance of attractions and services which is based in a specific place (e.g., County X Tourism Association), it will undertake promotional campaigns for that place. Associations which are not based in a place, such as the restaurant or hotel associations of Canada do not promote place, but may provide advocacy, support and research. Why is it in their interest to do this? Associations are financed in some way by members (i.e., suppliers). Since all members benefit

from any promotion or research of the place the association represents, it is worth the members' while to finance the joint efforts that the association undertakes.

Promoting destination is a different proposition than promoting place. The notion of a destination is very diffuse, so the effects of the promotional campaign are very diffuse, as is the benefit of such promotion. Since destinations coincide approximately with governmental jurisdictions (e.g., Canada is a destination, British Columbia is a destination), the responsibility for tourism promotion of a destination is often assumed by an agency of the political jurisdiction, such as the Federal Government's new Canadian Tourism Commission or a provincial Ministry of Tourism. These agencies have the role of promoting the interests of the tourism industry in their jurisdiction, and particularly in promoting the jurisdiction as a tourism destination. This promotion is financed out of general tax revenues, which are themselves very diffuse in their incidence.

#### **The Role of Department of Canadian Heritage**

As we have seen, the actors in the market place are connected by a number of roles. These can be summarized in three categories: sales, promotion and advocacy (including support).

The supplier of services and attractions in a place obviously has the role of selling and promotion to visitors in the place where the services and attractions are to be found, as well as to wholesalers. As suggested above, the attraction or service does not, by itself have the job of selling or promotion to potential visitors who have not yet chosen their destination or place. In both these cases, the promotion or attempted sale would be premature, and the visitor is not yet looking for service or attraction information.

The association mainly has a role of promotion and advocacy. It rarely sells tourism product. If the association is an alliance of suppliers of diverse attractions and services linked in a place, one of its most important roles is to promote the place on behalf of its members to visitors who have chosen a destination, but are still deciding place. It can also have the roles of spokesperson, knowledge sharing, coordination, and research.

There are tourism associations which are not linked to a specific place. Instead they represent suppliers of a similar nature (e.g., a restaurant association, or an association of festival organizers). They obviously have no interest in promotion of a place. What the non-place association does is to advocate to the agencies which are promoting destinations to ensure that the agencies recognize the value and contribution of the association's members in drawing visitors to the destination. It can also support the members by information sharing and joint research, and even providing coordination through overall strategic plans for concerted action.

The agency has the role of promoting the destination to the potential visitor choosing a destination. It also has the important role of coordination of the efforts of the tourism industry (both suppliers and associations) in the destination through strategic plans.

What kind of actor is the Department of Canadian Heritage? Obviously, DCH operates National Parks and Historic Sites, so it is a supplier of attractions. Its job as a supplier of attractions is therefore provision of those attractions to visitors in the place (sales) and promotion to those visitors. It may also sell and promote to wholesalers.

DCH, however, is more than individual parks and sites. At a regional and headquarters level, it represents those parks and sites as whole. In addition, it provides operating and development grants to a variety of cultural institutions across Canada, and provides them as well with various forms of policy and technical support, advocates for them and promotes their well being. It is therefore a sort of association. It is not an association attached to a place, so it does not have the role of promotion of place, but it has the other roles of coordination, information sharing and research on behalf of its members.

**The Information Structure**

The kind of tourism information which DCH needs to carry out its role (and therefore the kind of information that research must try to provide) is influenced both by the way in which visitor segments view the product they are being invited to consume, and by the roles that DCH plays in the market place. The information structure reflects these two influences

**Basic Information Needs For Any Enterprise**

Any enterprise, undertaking a complex activity like tourism marketing, follows a rational planning and implementation cycle (see, for example, Gunn 1994). Such a cycle contains an analysis of the current situation, identification of strengths weaknesses and opportunities, development of an action plan, its execution, and a monitoring and evaluation step. These steps have been described using many different terminologies, and the steps can be sub-divided or combined almost infinitely, but they all reflect the same underlying concept. The particular formulation used here has been chosen to highlight the information and research needs of the cycle. Table 2 demonstrates the information needed at each step.

**Information Needs for Different Product Levels**

These information needs will differ in detail depending on whether you are marketing a destination, a place, or an attraction or service ( or, for that matter, any other product levels you might define). For example, at all product levels, we want to identify visitor segments and determine their propensity to consume our product. However, for a place, we might do an auto exit survey of the region surrounding the place, or a household survey of the people resident in the catchment area of the place and ask the sample how likely they are to visit, and try to gauge their sensitivity to the distance from the place. For an attraction, on the other hand, we might only look at the visitor segments that were already present in the place, but not coming to our attraction at present, and try to determine how sensitive they are to the price of admission. The reason for this is that the attraction is unlikely to have sufficient power on its own to draw visitors from outside the place.

Table 2 Information needs in planning and execution cycle

Planning Step	Information Needs
Analysis of Current Situation	<ul style="list-style-type: none"> <li>• what segments are now consuming product, how much consumed</li> <li>• changes in segments, trends in surrounding area</li> <li>• nature, activity of competition, complements in region</li> </ul>
Identifications of Strengths, Weaknesses, Opportunities	<ul style="list-style-type: none"> <li>• interest of non-users in heritage activities</li> <li>• number, activities, needs of non users</li> <li>• attractiveness of tourism product, extent of critical mass</li> </ul>
Determining Action Plan	<ul style="list-style-type: none"> <li>• what means do visitors use to choose product</li> <li>• effectiveness of communications tools available</li> <li>• what kind of products influence target segments</li> </ul>
Execution of Action Plan	<ul style="list-style-type: none"> <li>• no information needs at this stage</li> </ul>
Monitoring and Evaluation	<ul style="list-style-type: none"> <li>• how many of target segment now coming</li> <li>• satisfaction</li> </ul>

Table 2 therefore needs to be elaborated to show different information needs for each level of product. Table 3 illustrates what the information needs would look like for each product level. Furthermore, DCH is both an operator of attractions and a tourist association representing Canada's heritage attractions. Therefore, the manager of a DCH attraction will use Table 3 in a different way from a marketing planner at DCH headquarters.

**Information Needs of DCH as an Operator of an Attraction**

Table 3 lists a comprehensive set of information which it would be ideal to have to develop a tourism action plan. It is clear, however, that no part of the organization is starting from scratch. Indeed, many parts of DCH have many years of tourism research behind them. In addition, there is a great deal that can be filled in by experience, at least until more important pieces of research can be finished. Therefore, the Table should be used as a sort of checklist against which to compare existing information with what we would ideally want and so determine the gaps, and prioritize the information that is lacking.

At the destination level (e.g., marketing Canada as a whole), there is very little role for the managers of an individual DCH attraction. Very few, if any, of the attractions which are part of the responsibility of DCH (directly or as advocate) can be thought of as destinations. Therefore DCH attractions managers will make very little if any use of column 1 of Table 3

At the level of place, however, the research role for a DCH attraction (column 2) is quite important. In some places in

Canada, the DCH attraction dominates the tourism market in the place, and so can act almost as if it were a place, casting its research net very wide. In other places, the attraction is only one component of the critical mass of tourism attractions which draws visitors to a place. In such situations, the association which represents the place is the appropriate level to conduct research, and the attraction becomes one of several partners who together have needs as outlined in column 2.

The main job of the DCH attraction is, of course, to market itself. The DCH attractions manager will therefore use mainly column 3 to develop his research needs.

**Information Needs for DCH as a Tourism Association**

There are three types of research which are appropriate for an association to undertake on behalf of its members. First, it is occasionally appropriate for an association to undertake attraction-specific research as outlined in column 3 of Table 3. Normally, an association (particularly located in a headquarters far away from a site) is too remote from the particularities of a specific attraction to effectively undertake an attraction specific study. It may, however, usefully undertake prototype or pilot studies which would lead to the development of new methods or best practices. These methods or practices can then later be used by many other attractions.

The second type of research which is appropriate for an association to undertake is one that will provide information that is applicable to many attractions at the same time. An example might be information on the effectiveness of a particular promotional tool which has been tested in conditions that are typical of those found at many of our attractions. It is wasteful to rediscover this information at every single site. General studies can provide default values or base information, saving resources for individual sites. This kind of research is reflected in columns 2 and 3 of Table 3.

The third type is information needed by the association to adequately advocate for the members with wholesalers and agencies. This information is somewhat similar to what an agency itself needs. The association must know at least enough about its members relationship to destinations to be able to speak to the agency knowledgeably and credibly. Column 1 lists this kind of research.

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Table 3. Information needs of DCH at all product levels

...and Are at Planning Step...	If You Are Researching a...		
	(1) Destination	(2) Place	(3) Attraction
Analysis of Current Situation	<ul style="list-style-type: none"> <li>• size, characteristics of now coming to dest.</li> <li>• degree of influence heritage products have</li> <li>• trends in use</li> <li>• competition</li> </ul>	<ul style="list-style-type: none"> <li>• what segments found in region</li> <li>• degree to which they are now coming</li> <li>• ability to travel to place</li> <li>• trends/competition in region</li> </ul>	<ul style="list-style-type: none"> <li>• what segments now come to place</li> <li>• how much do segments use attraction</li> <li>• changes in segments</li> <li>• competition, partnership</li> </ul>
Identification of Strengths, Weaknesses, Opportunities	<ul style="list-style-type: none"> <li>• propensity of segment to be motivated by heritage products</li> <li>• use made of heritage</li> </ul>	<ul style="list-style-type: none"> <li>• propensity of segment in region to consume heritage products</li> <li>• activities, needs of segment</li> <li>• attractiveness of place</li> </ul>	<ul style="list-style-type: none"> <li>• interest of non-users in attraction</li> <li>• activities, needs of non-users</li> <li>• attractiveness of product for non-users</li> </ul>
Determining Action Plan	<ul style="list-style-type: none"> <li>• what destination images influence segment</li> <li>• what information does segment use in choosing destination</li> <li>• what promotion methods influence segment</li> </ul>	<ul style="list-style-type: none"> <li>• what information used to choose place</li> <li>• effectiveness of promotional tools</li> </ul>	<ul style="list-style-type: none"> <li>• what information/means used to chose attraction</li> <li>• how effective are means</li> </ul>
Execution of Action Plan	<ul style="list-style-type: none"> <li>• no information needs at this stage</li> </ul>	<ul style="list-style-type: none"> <li>• no information needs at this stage</li> </ul>	<ul style="list-style-type: none"> <li>• no information needs at this stage</li> </ul>
Monitoring and Evaluation	<ul style="list-style-type: none"> <li>• did more people from target segment come to Canada</li> <li>• changes in balance of travel account</li> </ul>	<ul style="list-style-type: none"> <li>• increase in volume of target segment visiting</li> <li>• satisfaction with visit</li> </ul>	<ul style="list-style-type: none"> <li>• how many targeted non-users came</li> <li>• satisfaction</li> <li>• unsatisfied needs</li> </ul>

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## THE INTERPLAY BETWEEN ETHICS AND SUSTAINABLE RURAL TOURISM

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As parks and recreation professionals, we have previously been challenged to develop an environmental ethic of stewardship for our profession (McAvoy, 1990). Within the context of this paper, a natural extension of that challenge might be to assist others with the development of ethics upon which travel decisions can be made which will sustain the ecological, economic, social, and cultural integrity of travel destinations.

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### Introduction

Although the complexities of sustainable rural tourism have received increased attention in recent years, an area which appears to have garnered only marginal investigation is the interplay between ethics and rural tourism development. Proponents of rural tourism development cite not only its economic potential, but also its potential to preserve culture, to fund and preserve both historical sites and natural areas, to stimulate and support other businesses (e.g. retail shops, restaurants, and other service-oriented businesses), to encourage community pride, to increase cross-cultural understanding (Schroeder, 1993), and to generally improve the quality of life experienced by residents of such tourism destinations (Botkin, McGowan, & DiGrino, 1991), as benefits for promoting rural tourism development. On the other hand, the negative impacts (e.g. increased noise and traffic, degradation of environmental quality, rising real estate, increased demand for services, disruption of neighborhoods, increased crime) often associated with such development have also been well documented (cf. Frederick, 1993; Long & Nuckolls, 1992; Stokowski, 1992; Stubbles, 1990). Thus, concern for the sustainability of rural tourism arose as individuals, interested in capturing the benefits associated with tourism were confronted with the negative impacts often associated with such development. These types of situations often result in a complex decision making process which many times is essentially comprised of ethical dilemmas. This paper supports the belief that, given the potential exploitive tendencies of rural tourism development (e.g. Fridgen, 1991; Hunt, 1987; Stubbles, 1990), ethical decision making, at not

only the collective level (i.e. communal or governmental level) with regard to policy-making (Dovers, 1990) but also at the level of the individual (Lea, 1993), is an important component for establishing sustainable rural tourism development.

### Sustainable Rural Tourism

Sustainable tourism can be conceived as consisting of four separate spheres of sustainability, namely, the ecological, economic, social, and cultural integrity of travel destinations (Macbeth, 1994). According to Hill (1992), it is important to understand that rural tourism often interacts with, impacts, and changes the natural, artificial and cultural environments of a travel destination. Therefore, he contended this might necessitate that a "notion of limits of acceptable change" be implemented by tourism planning groups to maintain a continuous integrity of tourism's attractiveness, essentially that translates to "maximize[ing] the benefits and minimize[ing] the costs" of rural tourism development (p. 130).

Although sustainable development has been identified as a buzzword of the 1980s (Burr, 1994; Macbeth, 1994), individuals have cautioned that it might simply be empty rhetoric unless "sustainability" can be delimited into meaningful dimensions (cf. Burr & Walsh, 1994; Dovers, 1990; Gale & Cordray, 1994; Haider & Johnston, 1992). Shearman (1990) has claimed that an inherent problem with the concept of sustainability is that, "sustainability [can] vary in meaning depending upon the perspective taken within each given context (e.g., economic, social, ecological)" (p. 1). Gale and Cordray (1994), examining the sustainability of natural resources, identified four questions which they proposed are helpful in addressing the meanings of sustainability. They believed that answering the question "what is to be sustained" allows one to determine the focus and the practices or policies of sustainability, that determining "why something should be sustained" would reveal "some value attributes associated with what is being sustained" (p. 313), that designing "how sustainability is to be measured" would facilitate the evaluation of whether sustainability is being approached, and that realizing "what the politics of sustainability might be" would help to identify the conflicts and key issues of sustainability. These same questions can also be applied to the sustainability issues of rural tourism and are of the sort identified by other individuals who have questioned the practicality of ultimately reaching a sustainability of tourism (cf. Linden, 1993; Pigram, 1990; Shearman, 1990).

### The Role of Ethics in Sustainability

Both Hill's (1992) discussion of rural tourism and Gale's and Cordray's (1994) four questions, delimiting the concept of sustainability, imply a need for making evaluative decisions on route to the lofty goal of sustainable tourism development. As one attempts to determine why something is to be sustained or to determine acceptable "limits of change" for an environment or community, one is in effect placing a higher value on one component than on another. In an examination and review of various approaches to sustainable development and the

implications of such approaches for sustainable rural tourism, Burr (1994) implicitly and explicitly addressed the role of value judgments and the need for ethical decision making in reaching sustainable rural tourism. He stated that it is crucial "to emphasize the concept of equity..." and, that is it only through following "ethical principles that respect the culture and environment of the host area, the economy and traditional way of life, the indigenous behavior, and the leadership and political patterns" (p. 5) that sustainable rural tourism can be realized. Burr rationally built the argument that the basis of sustainable rural tourism is founded in long term, integrative planning which seeks equity and balance both within and between generations and societies.

Shearman (1990) was perhaps more explicit in his claim "that sustainability is a value-laden concept" (p. 4) in his discussion of the two major positions of the ethical foundations of sustainability. Within that discussion, Shearman pointed out, that anthropocentrists are concerned with meeting the needs of human beings and "fulfill[ing] our moral obligations and duties to each other" and, the nonanthropocentrists "argue that sustainability is desirable because we have an ethical relationship with the environment..." (p. 6). The importance of this argument within the context of this paper is that both of these philosophical positions are essentially based in ethics.

Dovers (1990) also described sustainability as essentially "a value-based concern, it is the moral choice of accepting intergenerational equity as an overriding ethic" (p. 299). From Dovers viewpoint, sustainability is an ethical issue due to the inequities of most production and consumption systems and, as an ethical issue, is comparable to other social goals at the top level of a hierarchy within a policy-making framework. In Dovers' mind, "this policy-making process is initiated when the ethical basis of the social goal is evident across a fair proportion of the population and thus has entered the political decision-making arena" (p. 300). Dovers (1990) claimed that reaching this political arena is crucial in establishing direction and actions aimed at reaching sustainable development because, it is at this point that "existing and new policies can be checked for consistency against the goal of sustainability" (p. 300). An example of this type of framework has been developed by the Dutch and it "relates the economic production system to the resource-environment system" (Ashworth, 1992, p. 328). According to Ashworth, this framework is proactive in terms of setting governmental initiatives, defining specific objectives or targets, and facilitating future evaluation of the success or failure of reaching the goal of sustainability. Given the efforts of various governmental initiatives in the United States (c.f. The Economic Policy Council Working Group on Rural Development 1990; The Federal Task Force on Rural Tourism 1989; Subcommittee on Procurement, Tourism, and Rural Development of the Committee on Small Business 1989; 1990) it would appear that sustainable rural tourism has reached the political decision-making arena. It seems logical to suggest that the sustainability of rural tourism development may have reached the point, in this country, where it might be viewed as an "ethical concern".

While Dovers's (1990) may have presented a reasonable framework in which the ethical issues of sustainable rural tourism can be addressed from a collective perspective (i.e. governments, the tourism industry, associations, organizations), what of the individual's perspective? Collectives, in their simplest form, are groups of individuals (Bennan, 1993). As individuals, it is evident that tourists need to be concerned with their role in establishing sustainable tourism development through their own travel behavior (Stewart & Sekartjakrarini, 1994). And what of those individuals employed in the travel and tourism industry? Might they also be partially responsible for encouraging sustainable tourism development? What obligations do those of us preparing future tourism professionals, outdoor recreationists (e.g. hikers or campers), or individual travelers have towards encouraging those individuals to participate in sustainable tourism behaviors? The general tenor of sustainable tourism literature would seem to suggest that we each have at least some obligation to encouraging ethical decision making which will eventually lead to the development of sustainable tourism, if only in monitoring our individual travel behaviors. Therefore, how can we encourage such individuals make ethical decisions which will lead to sustainability in the ecological, economic, social, and cultural spheres of tourism?

In "an overview of the growing amount of 'responsible tourism' and travel ethics literature ..." (p.701), in which the literature was categorized into three components: Third World development ethics, ethical issues related to the social and physical impacts of the tourism industry, and ethical concerns related to individuals' travel behavior, Lea (1993) offered some direction in answering this question. He also concluded that efforts in the past 20 years focusing on travel ethics have resulted in more recent literature directed towards raising awareness, stimulating thinking, and encouraging individuals to develop more responsible interactions with the cultural and physical environments at travel destinations. This literature attempts to promote three central concerns: encouraging a better understanding of the host culture, encouraging sensitivity and respect for the host population, and encouraging travelers to limit their impacts of the host's physical environment (Lea, 1993). In effect, this promotional literature appears to be informally educating individuals regarding their individual responsibilities and obligations towards the travel destination.

Bulter (1991) has suggested that any movement towards a sustainable development of tourism should include the coordination of policies, proactive planning, acceptance of limitations, education of all groups, and a commitment to long range planning. He identified four possible solutions to reducing the pressure and associated impacts of tourism on destinations, especially with regard to the environment. These solutions included: reducing the number of tourists at overused sites and limiting the visitation to sites before they reach critical levels, changing the type of tourists from "mass tourists" to "alternative tourists", changing the resource to be a more resilient resource, and educating tourists, developers, governments, and local or host populations. In Bulter's opinion the tourism industry is unlikely to regulate itself and the local community cannot alone regulate the industry, therefore, such

regulations must be a collective goal agreed upon by all those involved. For these reasons, Butler believed that the education of tourists, developers, governments, and local or host populations seemed the most promising avenue to reaching sustainable forms of tourism.

Sincox's (1991) claim that "human values towards nature and the environment are enculturated through education systems, parental influence, the media, and other sources" (p. 15) appears to support Butler's (1991) recommendation that education might be one avenue to sustainability. There is also some evidence that individuals are presently being educated about their ethical responsibilities pertaining to their travel behaviors (Lea, 1993). Therefore, the question remains "how might these ethics best be taught and learned?" Advocating the need for further examination of the relationship between sustainable rural tourism development and ethics development, the remainder of this paper focuses on a review of relevant literature paying particular attention to the teaching of ethics.

### **Educational Methodologies and Strategies of Teaching Ethics**

There is a continuous debate about the teaching of professional ethics (Waithe & Ozar, 1990). Knapp (1983) has contended that there is substantial evidence supporting the position that ethics **should** be taught in the educational process. For those accepting this position, a sense of immediacy is implied by Enghagen's (1991a) argument that regardless of whether or not ethics **can** be taught, they are indeed **being included** in educational curricula and therefore, the question essentially becomes "how can these ethics be best taught or learned". Enghagen (1991b) offered two different approaches of defining the "teaching of ethics". The first relates to helping individuals to develop an understanding of concepts such as good and bad, right and wrong, and responsibility, duty, and obligation. The second approach was described as teaching individuals to "do ethics" or act ethically. It is the latter approach that is of interest in this paper, for although the imparting of information regarding ethical travel behavior is important, to hold such knowledge and not act upon it would have little effect on the establishment of sustainable forms of travel behavior as well as little bearing on the development of sustainable rural tourism.

### **Travel and Tourism Literature**

As Lea (1993) has previously stated, it is disconcerting that more space in the tourism literature is not directed towards the importance of ethics to tourism development, given the evidence that tourism can at times lead to "an unacceptable destruction of social structure and cultural values" (p. 704). In fact, the majority of articles and studies dealing with the ethical aspects of tourism and those directed towards ethics education within tourism literature tend to focus on the business perspective of the tourism industry, promoting the need for preparing ethical employees, managers, or administrators (e.g. Enghagen, 1991b). Given the logical tie between rural tourism and rural environments and Lea's (1993) implication of a fairly strong connection between environmental ethics, development ethics, and a need for tourism development ethics, this review

was extended to include relevant environmental ethics and outdoor ethics education

### **Outdoor and Environmental Ethics Education**

Caduto (1983) identified and critiqued eight major strategies (i.e. approaches) found in a review of values education literature which might be applicable to environmental ethics education: laissez faire, moral development, inculcation, values analysis, action learning, confluent education, and behavior modification. Knapp (1983) focused on several of these approaches, namely, the inculcation, values clarification, cognitive moral development, value analysis, and action learning strategies, in his attempt to develop a curriculum model for environmental values education. Both Caduto and Knapp advocated the integration or synthesis of several of these strategies for the purpose of complimenting each other and limiting the negative implications of utilizing a single strategy to "teach ethics". Some research suggests that the traditional approaches to ethics education (e.g. lecture, textbook assignments, excessive moralizing, authoritative direction, and externally derived codes of ethics or behavior), as well as values clarification and moral development approaches, are often ineffective in the "teaching of ethics" when the desired outcome is behavioral change (Matthews & Riley, 1995; Schwaab, 1982).

In a recent report evaluating the effectiveness of outdoor ethics education programs, Matthews and Riley (1995), while quick to point out that values clarification and moral development approaches do indeed have a place and usefulness within an outdoor ethics education framework, also suggested that a character education model may offer greater potential than either approach if it emphasizes consistently responsible action by individuals who have been integrated into a communal context through an interactive process. According to the authors, any such model should be implemented in a setting characterized by:

- an importance of community as the context for developing and nurturing ethical behavior
- teachers as guides rather than as authoritative figures
- a climate of mutual respect
- group consensus-building and ownership of group norms
- the importance of peer teaching, counseling, and support
- the importance of responsible behaviors (p. 18).

In the same report, Matthews and Riley (1995) examined the past and present approaches to outdoor ethics education including: public awareness campaigns and codes of ethics, user education courses, national level programs, role models, mentoring, community clubs, and peer teaching. They concluded that no one single approach appears to be the best for "teaching ethics", but rather "a variety of methods that compliment each other, which together help develop and change ethical behavior" should be implemented (p. 41). Their recommendation was the use of interactive approaches over extended periods of time which "involve building group

consensus, using peer interactions, encouraging action involvement with relevant issues, and taking place in a community setting" (e.g. mentoring programs and community clubs with well-trained instructors or leaders) (p. 41).

### **Implications for Sustainable Rural Tourism Development**

As one reviews the travel and tourism literature, one quickly realizes that the dominant approach utilized in promoting the development of travels ethics today is the use of a diverse array of codes of ethics. Examples of these formal codes of ethics include: codes for ethical travel behavior in a variety of settings, for example, backwoods or backcountry (Waterman & Waterman, 1993, p. 243), ocean settings (Lea, 1993), and Third World environments (Lea, 1993; Stewart & Sekartjakrarini, 1994); codes of ethics for the tourism industry (D'Amore, 1992); codes for employees of the industry (Enghagen, 1991); codes for hospitality and tourism educators (Kwansa & Farrar, 1992); and codes of ethics for activities related to tourism such as angling, hunting, birding, off-highway activities and caving (Matthews & Riley, 1995). The use of such codes, according to Matthews and Riley (1995), is often the "centerpiece" of public awareness and promotional campaigns because disseminating codes of ethics through media sources reaches large numbers of individuals and can potentially increase awareness, perhaps enhancing the possibility for future ethics development. Matthews and Riley (1995) cautioned that such codes should, to the greatest degree possible, be developed through an interactive process where individuals are included in the process and can therefore take "ownership" in the codes, otherwise, research suggests such externally imposed codes often do little to change behavior as stand-alone strategies. Assuming for the moment that these codes of ethics have successfully initiated or increased the public's awareness of the need for ethical decision-making with regard to rural tourism, what is the next step in encouraging or created opportunities for further ethical development?

Hunt and Bullis (1991) believe that many individuals often do not recognize ethical dilemmas they face in everyday life and, often "have not developed a framework for clarifying the [various types of] ethical issues posed to them" (p. 341). If what Hunt and Bullis have contended is true, the implications for sustainable rural tourism development are tremendous. How can one expect a tourist to participate in ethical travel behavior, tourism developers or promoters to make ethical decisions leading to sustainable development, or host communities to make sound decisions leading to the sustainability of their community, especially if, sustainable rural tourism development is essentially a series of ethical dilemmas which many of us can not recognize? Such a situation may account for some of the inconsistencies often identified between attitudes and/or knowledge and actual behavior (Fishbein and Ajzen, 1975).

According to Hunt and Bullis (1991), Gestalt theory provides "a well-recognized, yet non-sectarian model to facilitate the clarification of ethical questions" (p. 341), and therefore

provides a framework for increasing individuals' awareness of ethical issues and decisions. The central premise of Gestalt theory is the belief that an individual's "whole self" (i.e. values, beliefs, motivations, fears, desires, hopes, past experiences, etc.) is involved in the decision making and problem solving processes. Hunt and Bullis (1991) contended that practical experiences with the four principles of perception, co-existence, realization, and the present, would increase or enhance an individual's awareness of ethical decision making. The perception principle relates to values, the emphasis one places on one aspect of an ethical dilemma as opposed to another. For example within the travel and tourism industry, developers have often placed greater emphasis on capturing short-term economic profits than long-range sustainable profit. When individuals base their travel decisions on both cognitive knowledge and affective (feelings/emotions) information, they are evoking the principle of co-existence. If a backpacker knows that the shortest or easiest route to a particular campsite is to travel through fragile areas and acts upon that information, totally disregarding how he/she "feels" about this action, he or she may not be participating in the most ethical manner. Again, Gestalt theory is founded upon all the information the person possesses, not part of the information. Utilizing the realization principle, tourism developers traveling to a tourism destination to experience the indigenous lifestyle will become more intimate with that place and people and therefore be more likely to make ethical choices in their development of the site. Tourists, who justify their unethical behaviors on "the way it has been done in the past" or suggest they will do something more ethical in the future are violating the final principle which enhances their awareness of ethical considerations, acting in the present.

The four remaining principles of Gestalt theory, blind-faith (introjection), shifting-responsibility (attribution), people-pleasing (confluence), and diversion (deflection), were purported by Hunt and Bullis (1991) to inhibit or act as constraints to an increased awareness of ethical dilemmas. To simply accept another's value system without evaluating it (blind-faith), to attribute responsibilities or actions to anything or anyone other than oneself, to base decisions upon another person's approval (people-pleasing), and to somehow avoid confronting the central issue (deflection) each impede one's ability and capability to recognize or deal with decisions which are of an ethical nature. Applying Hunt's and Bullis's argument to a tourism context, when tourism developers and promoters begin to consider other value perspectives in conjunction with their own, begin to take responsibility for their decisions and acts, and directly confront issues they face today from an intellectual and affective perspective, they will begin to act in more ethically.

Hunt's and Bullis's framework of Gestalt theory appears to dovetail nicely with the recommendations of Matthews's and Riley's (1995) to use interactive processes. Interactive approaches involve building group consensus through increased awareness of others perceptions, values, and feelings; encourage immediate, direct action with today's relevant issues, and promote ownership of each individual's responsibilities and moral obligations through peer interaction

(Matthews and Riley, 1995). Such approaches would tend to create a settings of mutual respect within a "community" context and be likely to advocate equity and a sense of equality. These interactive approaches could be implemented at both the communal and individual levels. In a more practical sense, tourism developers and promoters need to interact with one another, host communities and populations, as well as individual tourists in order begin to consider others' value perspectives in conjunction with their own; to begin to take responsibility for their own decisions and acts; and to directly confront, from an intellectual and affective perspective, the issues they currently face. Tourism employees, such as travel agents, should attempt to create opportunities to both formally and informally educate tourists regarding their impacts on travel destinations and, tourists need to interact in more authentic manners with the indigenous people in an attempt to better understand their values and needs.

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## NEW YORK'S CHANGING BED AND BREAKFAST AND INN INDUSTRY: 1987 TO 1993

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Bed and Breakfasts (B&Bs) and inns in New York make up a small but important portion of the state's lodging industry. These businesses differ from other lodging businesses (e.g., hotels) in that they serve breakfast to their guests and are frequently located in a private residence. In 1994, the New York Sea Grant Program carried out a survey of the 1,069 B&B and inn businesses identified in New York, updating a similar survey done in 1987. Survey respondents were asked to respond to the questionnaire for the 1993 calendar year. Data on promotional and marketing strategies, guest demographics, and business management decisions were collected. Results indicate that the number of B&Bs and inns in New York had grown only slightly (6%) between 1987 and 1993. However, the number of room-nights that guests stay at B&Bs and inns has increased 126% from 188,000 in 1987 to 424,660 in 1993. This indicates that as the industry matures, the number of visitors that stay at B&Bs and inns during their travels may continue to increase. Other implications of the research results for business owners and their management, marketing, and promotion decisions are discussed.

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### Introduction

New York State's Bed and Breakfast (B&B) and inn industry developed fairly recently, beginning in the mid 1970s. Since that time, the industry has grown to become an important part of New York's tourism industry. B&Bs and inns in New York typically fall into one of three main categories: private home B&Bs, B&B inns, and country inns. Private home B&Bs are located within private homes, have 1 to 4 guest rooms which can hold up to 9 guests, and serve breakfast to guests only. Bed and breakfast inns differ from private home B&Bs in that they typically have 5 to 24 rooms, and can be located in either a private home or lodging facility. Country inns, the largest of the B&B-type businesses, are located in commercial lodging facilities, have 5 to 24 rooms, and a full-service dining facility that serves breakfast and dinner to both guests and the public.

The first survey of B&B and inn businesses was conducted by New York Sea Grant in 1987 to identify the characteristics of

this industry, which at that time was beginning to establish itself (Dawson and Brown 1987). The 1994 study, which surveyed B&B and inn owners with regard to the 1993 calendar year, was conducted to update the 1987 findings and to establish a data base of marketing information (Kuehn 1995). The objectives of this research paper are: to compare the two surveys to identify changes in the industry since 1987; to identify the current status of New York's B&B and inn industry; and identify the importance of B&B and inn businesses to New York's tourism industry.

### Methods

The 1987 and 1994 surveys were conducted using similar methods. The B&B and inn mailing lists for both years were compiled by obtaining the mailing lists from tourism promotion agencies, chambers of commerce, B&B and inn owner associations, published B&B guidebooks, and reservation services. The survey process consisted of three mailings to all B&Bs and inns: one initial mailing containing the questionnaire and a cover letter; a second reminder postcard mailing; and a third reminder letter mailed with an additional copy of the questionnaire. Unlike the 1987 survey, the 1994 questionnaires were not distributed to B&B reservation services for distribution to their member B&Bs and inns. This approach was found to be an ineffective procedure in the 1987 survey (i.e., lack of cooperation from reservation services). Because of this, B&Bs and inns that are only promoted through reservation services were not included in the 1994 survey. The questionnaire used in the 1994 survey was based on the one used in 1987. While most questions in both surveys were identical, some new questions were added in 1994.

On the 1994 questionnaire, B&B and inn owners were asked to categorize their businesses according to the following categories: private home B&Bs, B&B inns, country inns, and "other B&Bs and inns." Lodgings which did not fit any of the first three categories but which provided guests with both lodging and breakfast were put in the "other B&Bs and inns" category. The 1987 questionnaire did not ask for owners to categorize their businesses according to these categories, mainly because categorizations of B&Bs and inns were unclear at that point in the development of the industry.

Statistically comparisons were made between the category of private home B&B and the combined category of B&B inns and country inns to determine if any differences in business practices or customer characteristics could be identified. The obvious definitional differences in lodging capacity, total room nights of lodging, services available, and similar factors were not compared. Only those variables with management implications and statistically significant results will be presented in the following section.

### Results and Discussion

In 1993, 1,069 B&Bs and inns were identified in New York state (Table 1). Of these, 419 returned questionnaires for a response rate of 39%. By comparison, 339 of the 1,012 B&B

and inns identified in 1987 returned surveys (33% response rate). B&Bs and inns were categorized according to which New York State Department of Economic Development Region they are located in New York. Eleven of these regions exist in New York and they typically consist of three or more adjacent counties having similar geographic characteristics (Table 2).

Table 1. New York State B&B survey comparisons from 1987 and 1993 studies.

Characteristics	1987	1993
Number of B&B and Inn businesses	1,012	1,069
Estimated # rooms available	4,760	5,452
Average double occupancy room fee	\$47	\$67
Estimated number of employees	1,220	2,356
Estimated annual advertising costs	\$1,104	\$2,297
Estimated # room-nights sold	188,000	424,660
Estimated B&B/Inn lodging revenues	\$8.8 million	\$28.5 million

Table 2. Number of B&B and Inn businesses and the number of respondents to the 1993 survey categorized by New York State Department of Economic Development regions.

NYSDED Region (Number of counties)	Number of businesses	Number of responding businesses
Chautauqua-Allegheny (3)	52	17
Niagara Frontier (5)	54	21
Finger Lakes (14)	237	111
Thousand Islands (3)	69	27
Adirondacks (6.5)	175	69
Central Leatherstocking (7.5)	147	66
Capital (6)	55	23
Catskills (4)	165	46
Hudson Valley (6)	84	31
New York City (5)	2	0
Long Island (2)	29	8
TOTAL	1,069	419

In 1993, B&Bs and inns could be classified into the following lodging categories: 65% were private home B&Bs, 18% B&B inns, 12% country inns, and 5% other B&Bs and inns. Eighty-five percent of the B&Bs and inns stated that they operated full time year-round, while 15% stated that they operate part time (weekends only) or were closed during at least one season every year. The season they were closed was often related to the region that the B&B or inn was located in. For example, B&Bs and inns located in the Adirondack Region were often closed during the spring season, while those in the Finger Lakes Region closed during the winter season.

Average occupancy was highest during summer weekends and fall weekends for both B&B inns and country inns combined (75% and 69%, respectively) as well as private home B&Bs (62% and 49%, respectively). The second best period for occupancy was during summer weekdays. The lowest period for occupancy was during spring and winter weekdays. The average occupancy for B&B inns and country inns was

statistically higher compared to private home B&Bs in all seasons and for weekdays and weekends (T-test,  $p < 0.05$ ).

The average opening year for private home B&Bs operating in 1993 was 1987, and most were operated by the current owner an average of 5.4 years. The average opening year for B&B inns and country inns operating in 1993 was 1964, and most were operated by the current owner an average of 8.9 years.

The average charge for a double occupancy room in a B&B and inn increased by \$20 per room between 1987 and 1993. In 1993, private home B&Bs charged an average of \$60 and B&B inns and country inns charged an average of \$82 for a double occupancy room.

Comparisons between the 1993 and 1987 surveys are shown in Table 1. The number of B&Bs and inns in New York has increased slightly (6%) between 1987 and 1993. Likewise, the estimated number of rooms in B&B and inns in New York has also increased (15%). However, large increases in other comparison figures have occurred. For instance, the estimated number of employees hired by B&B and inn owners has increased 93% from 1,220 employees in 1987 to 2,356 in 1993. Likewise, the estimated number of room-nights has increased 126% while the estimated visitor lodging expenditures have increased 224%.

The data comparisons between surveys suggest that the B&B and inn industry is doing well and individual businesses are also becoming more successful. Increases in the amount spent on advertising costs as well as the number of employees hired by B&Bs and inns indicate that individual businesses were more able to spend money on advertising and staff in 1993 than in 1987 (Table 1).

Forms of advertising and promotion and their effectiveness in 1993 are listed in Table 3. Referrals or word-of-mouth advertising is ranked as the most often used category of promotion with a mean effectiveness rating of 2.82. Business brochures, chamber of commerce listings, B&B and inn guidebooks, and tourism promotion agency guidebooks are also ranked high. Newspaper advertisements, which were ranked moderately high in the 1987 survey (1.96 effectiveness rating), were ranked low in 1993 (1.76). While the effectiveness rating of reservation services in 1993 and 1987 was moderate, the percent bookings received from this type of promotion was high in 1993 (12%).

Overall B&B inns and country inns used nine of the 16 types of advertising and promotion more often than did private home B&Bs (Table 3). B&B inns and country inns reported mean effectiveness ratings that were higher for five of the 16 types of advertising and promotion than did private home B&Bs. Private home B&Bs reported mean effectiveness ratings that were higher for B&B reservation services than did B&B inns and country inns (Table 3).

The success of word-of-mouth advertising is an indicator of a growing industry. This form of promotion generally becomes effective after several years of successful business operations. This form of promotion accounted for 35% of the bookings at B&Bs and inns in 1993 (Table 3). Reasons why B&B and inn owners perceive the effectiveness of reservation services to be lower than what is indicated by the percentage of bookings made through them is unclear.

Most of the results from this study indicate that New York's B&B and inn industry is both maturing and stabilizing. Comparison data between the two survey years shows that although the number of B&Bs has only grown slightly (from 1,012 B&Bs and inns in 1987 to 1,069 in 1993), the financial success of the industry as a whole has dramatically increased (Table 1) since 1987 (Dawson and Brown 1988). In 1987, estimated visitor lodging expenditures were \$8.8 million, these increased to \$28.5 million in 1993. The double occupancy room charge increased \$20 per room on average at B&B and inns and that combined with a 126% increase in number of room-nights explains the 224% increase in visitor lodging expenditures.

Part of the reason for the success of B&Bs and inns appears to be their uniqueness. Each B&B and inn provides facilities and amenities suited to specific market groups (e.g., anglers and snowmobilers). The seasons that these businesses are in operation are suited to these market groups. B&Bs and inns in the Adirondack Region remain open during the winter, serving clientele interested in snowmobiling and skiing. Because few tourists visit the Finger Lakes Region during the winter, many B&Bs and inns there are closed then. However, because the

success of B&Bs and inns seems to be dependent on their uniqueness and varied target markets, similar characteristics between successful B&Bs are difficult to identify.

### Conclusions

Many factors indicate that the industry is both stabilizing and maturing. During the economic difficulties in New York in the early 1990s, many tourism businesses showed large declines in occupancy. However, this is not the case for B&B and inn businesses. Travel trends indicate that most travelers were taking shorter trips and traveling less distance during this period of time. Unlike most tourism businesses, these trends were beneficial to B&Bs and inns because they are suited for weekend getaways. Travelers to B&Bs and inns in New York in 1993 were mainly couples (64%), resided within New York state (50%), and remained at B&Bs and inns for 1 or 2 nights (86%). These data indicate that most B&B travelers are seeking weekend getaways within easy traveling distance.

With estimated visitor lodging expenditures of \$28.5 million in 1993, New York's B&B and inn industry has become a viable and important component of New York's tourism industry. New York's B&B industry is not expected to increase greatly in number of businesses over the next several years but the success of the industry as a whole is expected to continue to improve. As word-of-mouth advertising continues to expand in its effectiveness, individual businesses will most likely become more successful. B&Bs and inns will continue to fill unique niches in New York's lodging industry, attracting diverse market groups.

Table 3 Type of advertising and promotion, the mean effectiveness rating, and estimated lodging bookings received by B&B and Inn owners in 1993.

Type of Advertising and Promotion	Mean effectiveness rating*	Percent businesses using	Percent customer bookings
Referrals/word-of-mouth	2.82**	94	35
Brochures of business	2.49	84	14
Chamber of commerce	2.48	73	17
B&B and inn guidebook	2.31	52**	10
Tourism promotion agency guidebooks	2.25**	60	11
Offering package deals	2.17**	26**	6
Direct mail	2.16	31**	8
B&B/Inn sign at business	2.08	70**	9
B&B and inn association	2.04	47	9
Magazines	2.01	28**	7
Television	1.92	04**	2
B&B reservation service	1.91***	28	12
Newspapers	1.76**	43**	8
Travel agents	1.67	27**	2
Radio	1.59**	08**	1
Other types of advertising	2.56	14	22

\* Rating scale: 1, not effective, 2, fairly effective, 3, highly effective  
 \*\* Greater percentage of inns use this type of advertising than private home B&Bs and/or inns report higher effectiveness (Chi-square statistic  $p < 0.05$ )  
 \*\*\* Greater percentage of private home B&Bs report higher effectiveness for this type of advertising than inns (Chi-square statistic  $p < 0.05$ ).

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