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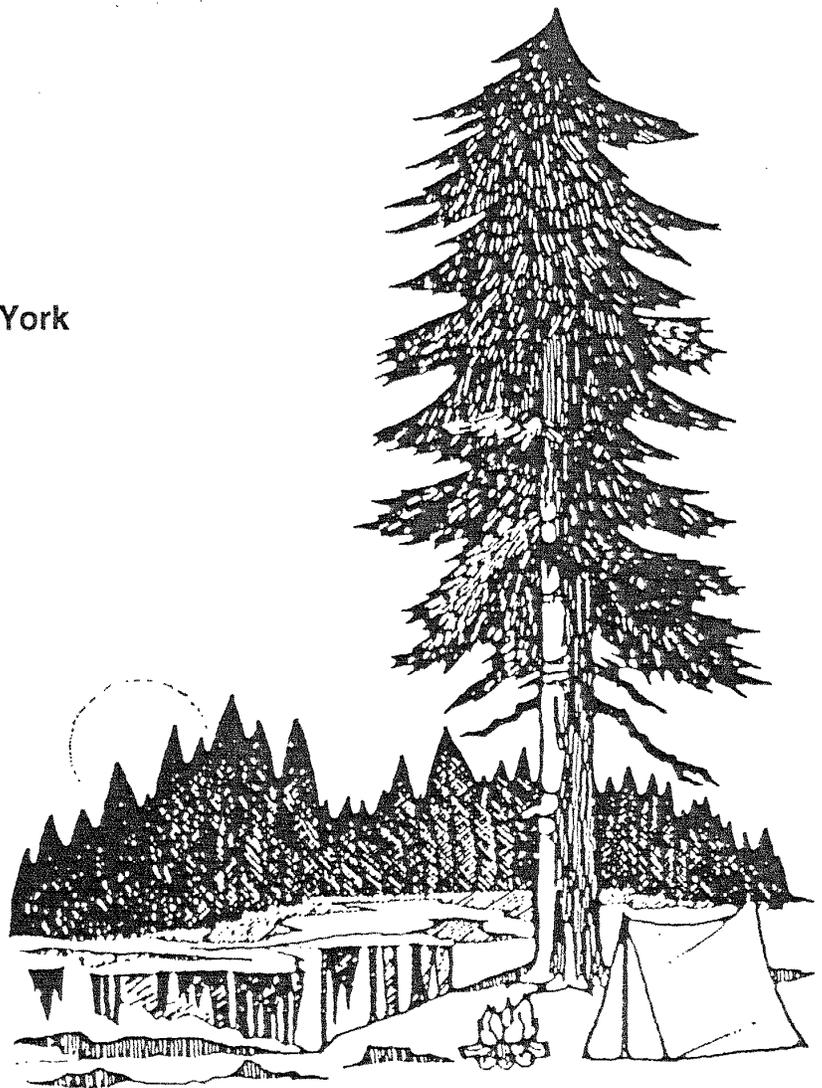
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April 7-9, 1991

Saratoga Springs, New York



NORTHEASTERN RECREATION RESEARCH MEETING POLICY STATEMENT

The Northeastern Recreation Research meeting seeks to foster quality information exchange between recreation and travel resource managers and researchers throughout the Northeast. The forum provides opportunities for managers from different agencies and states, and from different governmental levels, to discuss current issues and problems in the field. Students and all those interested in continuing education in recreation and travel resource management are particularly welcome.

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PROCEEDINGS of the 1991 NORTHEASTERN RECREATION RESEARCH SYMPOSIUM

**April 7-9, 1991
State Parks Management and Research Institute
Saratoga Springs, New York**

Compiled and Edited by:

Gail A. Vander Stoep, University of Massachusetts

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TABLE OF CONTENTS

	Page
<u>KEYNOTES and GENERAL SESSIONS</u>	
Social Science in the National Park Service: An Evolving Mission and Program	3
DR. RICHARD H. BRICELAND, Assistant to the Director for Science and Technology, USDA National Park Service	
Gardening as a Subversive Activity	6
DANIEL L. DUSTIN, Professor, Department of Recreation, Parks & Tourism, San Diego State University	
The Grassroots Reach for the Sky	10
ANNE LUSK, Chair, Vermont Trails and Greenways Council	
<u>OUTDOOR RECREATION</u>	
<i>OUTDOOR RECREATION I</i>	
An Exploratory Study of the Changes in Benefits sought during an Outward Bound Experience	15
STEVEN W. BURR, Instructor, and RICHARD J. GITELSON, Associate Professor, The Pennsylvania State University, Department of Leisure Studies	
Black/White Outdoor Recreation Preferences and Participation: Illinois State Parks	20
JOHN F. DWYER, Research Forester, and PAUL H. GOBSTER, Research Social Scientist, USDA Forest Service, North Central Forest Experiment Station	
The Spiritual Aspect of Nature: A Perspective from Depth Psychology	25
HERBERT W. SCHROEDER, Research Social Scientist, North Central Forest Experiment Station	
The Extent and Types of Recreational Opportunities within the State of Maine for People with Disabilities	31
DEBORAH SUGERMAN, Associate Professor, Outdoor Recreation Department, Unity College	
Implications of Boy Scout Group Use of Public Lands for Natural Resource Managers: A Regional Comparison	36
GAIL A. VANDER STOEP, Assistant Professor, Leisure Studies and Resources, University of Massachusetts	
<i>OUTDOOR RECREATION II</i>	
Recreational Programming in a Family Campground: An Exploratory Study	45
STUART P. COTTRELL, Research Assistant, and ALAN R. GRAEFE, Associate Professor, The Pennsylvania State University, Department of Leisure Studies	
Fear in the Outdoor Environment: Description and Modification through Recreation Programs	51
ALAN EWERT, USDA Forest Service, Pacific Southwest Forest and Range Experiment Station, and ANDERSON B. YOUNG, Professor and Chair, Department of Recreation and Leisure Studies, State University College at Cortland	
Monitoring Visitor Experiences at Buck Island Reef National Monument	55
ALAN R. GRAEFE, Associate Professor, and ROGER MOORE, Research Assistant, The Pennsylvania State University, Department of Leisure Studies	

OUTDOOR RECREATION PLANNING

Shorebird and Boater Impact Management Planning	61
ROBERT D. DEBLINGER, Associate Director for Natural Science, The Trustees of Reservations; JERRY J. VASKE, Associate Professor, Department of Resource Economics & Development, University of New Hampshire; MAUREEN P. DONNELLY, Assistant Professor, Department of Leisure Management & Tourism, University of New Hampshire; RUSS HOPPING, Research Assistant, College of the Atlantic	
Vermont Lakes and Ponds: A Pilot Recreation Planning Process	66
DANIEL T. MALONE, Graduate Student, and JOHN J. LINDSAY, Associate Professor, Natural Resources Planning Program, University of Vermont	
Environmental Glasnost: Protecting a Resource You Do Not Own	70
MALCOLM ROSS, JR., Resource Specialist, Upper Delaware Scenic and Recreation River, National Park Service	
Lakes and Ponds Recreation Management: A State-wide Application of the Visitor Impact Management Process	72
JERRY J. VASKE, Associate Professor, Department of Resource Economics and Development, University of New Hampshire; RODNEY R. ZWICK, Assistant Professor, Department of Recreation Resource Management, Lyndon State College; MAUREEN P. DONNELLY, Assistant Professor, Department of Leisure Management and Tourism, University of New Hampshire	

INNOVATIONS IN OUTDOOR RECREATION

River Recreation Management Opportunities in Hydroelectric Relicensing	81
JAMES R. BERNIER, Assistant Ranger, USDA Forest Service, Cadillac Ranger District	
How the White Mountain National Forest Is Addressing Accessible Recreation Opportunities for Everyone	83
FRED KACPRZYNSKI, Recreation Specialist, White Mountain National Forest	
Maryland Department of Natural Resources Camp Initiatives Program	86
KELLY SCHAEFFER, Graduate Student, The Pennsylvania State University	

STATE PARKS

What Makes Dissatisfied State Park Campers?	91
MALCOLM I. BEVINS, Extension Professor, University of Vermont	
Resident Perceptions of Vermont State Parks	94
HERBERT E. ECHELBERGER and THOMAS A. MORE, Northeastern Forest Experiment Station, USDA Forest Service	
Measuring Users' Response to Higher Recreation Fees	98
STEPHEN D. REILING, Associate Professor; HSIANG TAI CHENG, Assistant Professor; CHERYL TROTT, Graduate Research Assistant, Department of Agricultural and Resource Economics, University of Maine	
Economic Effects of State Park Recreation in Pennsylvania	102
CHARLES H. STRAUSS, Professor, and BRUCE E. LORD, Research Assistant, School of Forest Resources, The Pennsylvania State University	
Impact of User Fees on Day Use Attendance at New Hampshire State Parks	106
ALLISON RECHISKY, Information Officer, New Hampshire Division of Parks & Recreation, and BRAD WILLIAMSON, Assistant Administrator, New Hampshire Division of Parks & Recreation	

MANAGEMENT OF RECREATION RESOURCES

Counting Visitors at National Parks: Concepts and Issues	111
JAY BEAMAN, Director, Socio-Economic Branch, and DICK STANLEY, Chief, Socio-Economic Information Division, Canadian Parks Service	
The Effect of Trends in Forest and Ownership Characteristics on Recreational Use of Private Forests	116
DONALD F. DENNIS, Research Forester, USDA Forest Service, Northeastern Forest Experiment Station	

	Page
Wilderness Management Through Voluntary Behavior Change: An Evaluation of the Pemigewasset Wilderness Management Plan	118
JOHN M. HALSTEAD, Assistant Professor; CINDY M. BROWN, Former Graduate Assistant; and BRUCE E. LINDSAY, Associate Professor, Department of Resource Economics and Development, University of New Hampshire; and ALBERT E. LULOFF, Associate Professor, Department of Agricultural Economics and Rural Sociology, The Pennsylvania State University	
Use of Paired Management Action Grids for Ease in Depicting Differences Between Users' and Managers' Perceptions of Problems	122
R. J. STEELE, Assistant Professor, Department of Recreation and Leisure Services, Springfield College, and JAMES E. FLETCHER, Professor and Chair, Department of Recreation and Park Management, California State University-Chico	

FISHERIES AND WILDLIFE

FISHERIES AND WILDLIFE MANAGEMENT

Anglers' Beliefs About Tag-and-Release Programs	129
MAUREEN P. DONNELLY, Assistant Professor, Department of Leisure Management & Tourism, and JERRY VASKE, Associate Professor, Department of Resource Economics & Development, University of New Hampshire	
Trappers in New York and Vermont: Comparisons of Social Characteristics and Motivations	134
RONALD J. GLASS and THOMAS A. MORE, USDA Forest Service, Northeastern Forest Experiment Station; WILLIAM F. SIEMER and TOMMY L. BROWN, Department of Natural Resources, Cornell University; GORDON R. BATCHELLER, New York State Department of Environmental Conservation; JAMES J. DISTEFANO, Vermont Department of Fish and Wildlife	
New Hampshire Recreational Oyster Harvesters: Profile, Perceptions, and Attitudes	139
ALBERTO B. MANALO, Assistant Professor; BRUCE E. LINDSAY, Associate Professor; and GEORGE E. FRICK, Lecturer, Department of Resource Economics and Development, University of New Hampshire	
Measuring the Economic Value of Wildlife: A Caution	142
THOMAS H. STEVENS, Professor of Resource Economics, University of Massachusetts	

FISHING SPECIALIZATION

Toward a Comprehensive Understanding of Angler Involvement	149
TOMMY L. BROWN, Senior Research Associate, and WILLIAM F. SIEMER, Research Support Specialist, Department of Natural Resources, Cornell University	
The Angler Specialization Concept Applied: New York's Salmon River Anglers	153
CHAD P. DAWSON, Assistant Professor, SUNY College of Environmental Science and Forestry, ; TOMMY L. BROWN, Senior Research Associate, and NANCY CONNELLY, Research Support Specialist, Department of Natural Resources, Cornell University	
A Reassessment of the Angler Specialization Concept	156
CHAD P. DAWSON, Assistant Professor, and MIKLOS GRATZER, Professor, College of Environmental Science and Forestry, and ROBERT BUERGER, Assistant Professor, Department of Recreation and Leisure Studies, SUNY Cortland	
Recreation Specialization and the Analysis of Angler Differences According to Age Cohort	160
DAVID K. LOOMIS, Assistant Professor, and RODNEY B. WARNICK, Associate Professor, Recreation Resources Management Program, University of Massachusetts	

	Page
<u>TRAVEL, TOURISM AND COMMUNITY DEVELOPMENT I & II</u>	
Effects of Alternative Silvicultural Methods on Scenic and Recreational Quality	169
MARK BRUNSON, Graduate Research Assistant, and BO SHELBY, Associate Professor, Department of Forest Resources, Oregon State University	
Opportunity Potential Matrix for Atlantic Canadians	173
GREG DANCHUK and ED THOMSON, Canadian Parks Service, Atlantic Region, Historic Properties	
Family Structure and Its Relationship to Travel	177
CHRISTINE CORNELL MCCREEDY, Graduate Research Assistant, and JOSEPH T. O'LEARY, Professor, Department of Forestry and Natural Resources, Purdue University; and DANIEL FESENMAIER, Associate Professor, Department of Recreation and Park Administration, Indiana University	
Observing the Differences Between West German Overseas Pleasure Travel Markets to the U.S. and Canada through the Novelty vs Familiarity Theory	182
GEORGIA L. O'MALLEY, Research Assistant, and JOSEPH T. O'LEARY, Professor, Purdue University	
The Substantive Knowledge Base for Travel and Tourism: A Systems Model	187
DAVID S. SOLAN, Associate Professor, Tourism Program, Mansfield University	
Outdoor Recreation Activity Trends by Volume Segments: U.S. AND Northeast Market Analyses, 1982-1989	190
RODNEY B. WARNICK, Associate Professor, Leisure Studies and Resources Program, University of Massachusetts	
Rural Community Values and Community Type: A Study of Attitudes Toward Tourism	197
RODNEY R. ZWICK, Assistant Professor, Department of Recreation Resource Management, Lyndon State College	
Tourism Measurements Based on Traffic Volume	203
RODNEY R. ZWICK, Assistant Professor, Department of Recreation Resource Management, Lyndon State College, and MALCOLM I. BEVINS, Extension Professor, Department of Agricultural and Resource Economics, The University of Vermont	
<u>URBAN RECREATION</u>	
Forest Vegetation in Urban Parks: Perceptions of Inner City Children	209
PAUL H. GOBSTER, Research Social Scientist, USDA Forest Service, North Central Forest Experiment Station	
Urban Park Trail Use: An Observational Approach	215
PAUL H. GOBSTER, Research Social Scientist, USDA Forest Service, North Central Forest Experiment Station	
<u>GEOGRAPHIC INFORMATION SYSTEMS (GIS)</u>	
Greenway Planning: An Application of a Geographic Information System	225
ROBERT S. BRISTOW, Assistant Professor, Department of Geography and Regional Planning, Westfield State College	
MassGIS and SCORP Planning Process: The Cape Cod Pilot Project	228
LAWRENCE KLAR, Professor, and RODNEY B. WARNICK, Associate Professor, Leisure Studies and Resources, University of Massachusetts; GAIL SWETT, Corridor Planner, Massachusetts Department of Environmental Management; STEPHEN JOHNSON, SCORP Planner, Massachusetts Executive Office of Environmental Affairs	
The Representation of Error in Visibility Modeling	230
JAMES F. PALMER and JOHN P. FELLEMAN, SUNY College of Environmental Science and Forestry	
<u>AUTHOR INDEX</u>	234

*TRAVEL, TOURISM AND
COMMUNITY DEVELOPMENT
I & II*

EFFECTS OF ALTERNATIVE SILVICULTURAL METHODS ON SCENIC AND RECREATIONAL QUALITY

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Timber stands harvested using different silvicultural regimes were evaluated for acceptability as places for hiking, camping, and scenic viewing. "New Forestry" stands were more acceptable than stands managed using traditional practices. Stands were rated differently for different uses, with camping quality judged lower than hiking or scenic quality.

Introduction

Managers of America's forests increasingly must address concerns over the impacts of prevailing forestry practices. Questions have been raised from within and outside the forestry profession as to whether traditional methods constitute proper land stewardship (Clark and Stankey 1991). Among foresters, much debate has focused on the effects of common forest practices on biodiversity and longterm site productivity. Many foresters advocate a "New Forestry" that augments traditional methods with non-traditional silviculture based on new scientific findings about natural disturbances (Franklin 1989).

The USDA Forest Service has made New Forestry a cornerstone of its "New Perspectives" initiative, an integrated approach to forestry that encompasses ecosystem components beyond those associated with dominant tree species, and values beyond those associated with commodity extraction (Salwasser 1990). Yet distrust of scientific solutions is an important contributor to public skepticism about forestry. New methods cannot gain acceptance if they fail to address social concerns along with scientific ones (Clark and Stankey 1991). Integrated management strategies, especially those to be used on public lands, must therefore address social values.

Among the more significant social values are those related to public enjoyment of forests, especially scenic viewing and outdoor recreation. If the non-traditional New Forestry practices are perceived as detracting from public enjoyment as much or more than current methods, widespread acceptance is unlikely no matter how much those methods benefit biodiversity or site productivity.

This paper describes a pilot study of the scenic and recreational impacts of New Forestry practices. Two questions are addressed:

- 1) How do judgments of the scenic and recreational quality of New Forestry stands in the Pacific Northwest compare to judgments of uncut stands and of stands managed using traditional methods?
- 2) Do judgments of a stand's scenic quality differ from judgments of the same stand as a recreation setting?

Previous Research

Scenic Quality in Managed Forests

Studies of the scenic impacts of forest management have been conducted in the U.S. since the 1960s. One line of inquiry, dominated by researchers trained in landscape architecture, has examined aesthetic quality at the landscape level. One product of this research is the USDA Forest Service's (1974) Visual Management System.

Stand-level studies like the one described in this paper have been conducted largely by social scientists interested in features of forests that influence perceived scenic quality. These "near-view" studies have been conducted in most major U.S. forest types, including eastern hardwoods (Vodak et al. 1985), Southern pines (Hull and Buhyoff 1986), northern hardwoods (Ribe 1990), and Rocky Mountain ponderosa pines (Brown and Daniel 1986), as well as in Europe (Savolainen and Kellomäki 1981). The one major timber-growing region where such research has not been done is the Pacific Northwest.

Many stand-level studies have looked for attributes of managed and unmanaged forests that are linked to scenic quality, often focusing on inventory data could be fit into regression equations resembling growth and yield models (Hull and Buhyoff 1986). A few researchers have examined harvest methods and other practices such as slash piling and burning (Benson and Ulrich 1981; Brown and Daniel 1986). No research has yet examined the recently developed "New Forestry" practices.

Ribe (1989) synthesized stand-level findings in a review of aesthetic research in forests. He found high scenic beauty to be associated with large trees, low stand densities, grass/herb cover, high visual penetrability, and multiple tree species. Low scenic beauty is associated with small stems, dense shrub cover, bare ground, large amounts of woody debris, and evidence of mechanical disturbance (logging, road-building). Partial harvests are preferred over clearcuts, and scenic quality tends to recover quickly in the first few years after logging is completed.

Recreational Quality in Managed Forests

A fundamental premise of outdoor recreation management is that the quality of recreation experiences is linked to setting attributes. The Recreation Opportunity Spectrum (Clark and Stankey 1979), a primary tool in recreation planning, stems from landscape-level research showing that recreationists tend to seek settings with attributes that can help them achieve experience goals.

At the stand level, Scandinavian scientists have analyzed forest attributes to predict their quality for generalized recreation (Hultman 1983; Pukkala et al. 1988). The resulting models are better predictors for some activities than for others, and the distinction between recreational and scenic quality is not always clear.

Research on campsite preferences has identified features of settings that may enhance or reduce camping quality (Brunson and Shelby 1990). In one study, Clark et al. (1984) found that former timber harvest sites are sought out by some campers. These studies generally have not compared impacts of harvest techniques, although Foster and Jackson (1979) did evaluate preferences for various densities of vegetative screening between sites.

Hiking quality has gotten less attention. Axelsson-Lindgren and Sorte (1987) showed that stand heterogeneity increased the quality of hiking trips, but they examined no other stand attributes. Haakenstad (1972) found that hikers and skiers preferred open, forested terrain such as that found in shelterwood stands over the patchy forests produced by group selection systems.

Methods

Quality was evaluated using on-site surveys administered at the Oregon State University research forest in September-October 1990. Study sites included an old-growth Douglas-fir stand with diverse hardwood/softwood understory, and five Douglas-fir stands that had been logged within the past two years.

Representing traditional methods were a 45-acre clearcut logged in 1988, burned, and replanted; and a 16-acre stand of 30- to 40-year old trees thinned in spring 1990. The New Forestry stands, cut from a tract of 100-year-old trees in winter 1989-90, included a "patch cut" stand where one-third of the volume was removed in half-acre units; a 17-acre "snag-retention clearcut" from which the entire volume was removed except for wildlife trees; and a "two-story stand" from which two-thirds of the volume was removed, leaving a residual of 8-10 trees per acre.

In all three stands, wildlife habitat was enhanced by topping 1.5 scattered live trees per acre. Logging debris was left *in situ* except where removal was necessary for replanting. Hiking and/or skid trails crossed all sites except the snag-retention clearcut.

Surveys were completed by 77 student volunteers (forest management, outdoor recreation, and fish and wildlife majors) and 18 non-students from school parents' groups. Respondents rated each stand for scenic quality, as a place to hike, and as a place to camp. Ratings were made by circling the best response on a nine-point scale ranging from -4 (most unacceptable) through 0 (neutral) to 4 (most acceptable).

Based on previous research outside the Northwest, we expected scenic quality to be highest for the old growth stand; moderate for the patch cut and thinned stands; and lowest for the two-story, clearcut, and snag-retention clearcut. Because New Forestry calls for retaining or creating snags and woody debris, we expected those stands to be rated less acceptable than "cleaner"-looking traditionally managed stands having comparable residual volumes.

We did not attempt to predict recreational quality, as prior studies offered little basis for such predictions. However, we did expect ratings to be influenced by non-scenic aspects of stands that could affect one's ability to participate in an activity (e.g., flat ground for camping quality, or trail conditions for hiking quality).

Results

Mean acceptability for each site is shown in Table 1. A positive rating means that, on average, the site is considered acceptable. The old-growth stand was rated most acceptable for

all three uses (scenic viewing, hiking, camping), though the difference in camping quality ratings between the old-growth and patch cut stands was not significant. In general, the New Forestry treatments were judged more favorably than either the thinned or clearcut area, except that the thinned stand was judged more acceptable for hiking than the snag-retention clearcut.

Table 1. Mean quality ratings for different stands

Scenic quality	Mean	Hiking quality	Mean	Camping quality	Mean
Old growth	3.1 ^a	Old growth	3.4 ^a	Old growth	0.4 ^a
Patch cut	1.4 ^b	Patch cut	1.8 ^b	Patch cut	-0.0 ^a
Two-story	0.6 ^c	Two-story	0.5 ^c	Two-story	-0.7 ^b
Snag retention	0.4 ^c	Thinned	0.1 ^{cd}	Snag retention	1.4 ^{bc}
Thinned	-0.4 ^d	Snag retention	-0.1 ^d	Thinned	-1.5 ^c
Clearcut	-1.2 ^e	Clearcut	-1.1 ^e	Clearcut	-2.7 ^d

a,b,c,d,e Ratings with same subscript are not significantly different within uses (Kruskal-Wallis multiple comparison test)

All ratings of scenic and hiking quality were significantly higher those of the same sites for camping ($p < .05$, Wilcoxon signed rank test). The old growth, thinned, and patch cut stands were rated more acceptable as places to hike than as places for scenic viewing, while the snag-retention clearcut was rated more acceptable for scenic viewing than for hiking. Hiking and scenic quality ratings were not significantly different for the traditional clearcut and the two-story stand.

Discussion

Scenic Quality

This study is the first to assess scenic quality at the stand level in the Douglas-fir region of the Pacific Northwest, but the results were not unlike those from other parts of the U.S. and Europe. Acceptability ratings reflect a preference for mature forests over young ones, "natural-looking" stands over ones where human impacts are obvious, and partial-cutting techniques over clearcuts. The old-growth stand was judged most acceptable, the traditional clearcut least acceptable, and partial cutting methods somewhere in-between. Among the latter, the stand with the most residual volume (patch cut) was also the most acceptable. The two-story stand, with its residual of 100-year-old trees, was more acceptable than the thinned 30- to 40-year-old stand.

These results do not reflect the predicted adverse influence of down wood and artificially created snags. Previous studies had found that slash volume is negatively related to aesthetic quality (Arthur 1977; Brown and Daniel 1986), and skeptics often suggest that New Forestry will fail to gain public acceptance because it "looks sloppy."¹ The scenic impact of slash in the study stands is unclear, however.

Large amounts of woody debris existed in the thinned stand, where slash was in small-diameter pieces, and in the two-story and snag-retention stands, where piled and unpiled slash was evident along with the lopped-off tops of created snags and a

¹/Brunson, Mark. 1990. Summary of findings: New Forestry field trip survey. Unpublished report.

few trees blown down in a storm shortly after harvest. Although the two-story and snag-retention stands had greater amounts of down woody debris, the thinned stand was rated less acceptable.

Due to the exploratory nature of the research, we discussed preliminary findings with a group of 38 survey respondents. They attributed low ratings for the thinned stand partly to slash volumes, and partly to a perception that the thinning was poorly done, causing too much damage to residual trees. Conversely, they said the scenic quality of the snag-retention clearcut was enhanced by a timbered slope beyond it. Despite specific instructions to rate stands without judging their surroundings, participants said scenic judgments cannot be made totally independent of the broader context in which they occur.

Recreational quality

The quality of recreation experiences depends not only on setting attributes, but also on the psychological, social, physical, and managerial context (Clark and Stankey, 1979). Accordingly, we expected judgments about the forest environment to vary depending on whether the setting were viewed as a scenic backdrop or as a place to hike or camp. Previous research has found that favored scenic backdrops are not necessarily valued as recreation sites (Zube et al. 1975; Pukkala et al. 1988). In the present study, while the *order* of preference for different stands varied only slightly across activities, there were significant differences in *mean acceptability* depending on the use for which the site was being evaluated.

Three sites (old growth, patch cut, commercial thin) were more acceptable for hiking than for scenic viewing. Each contained a well-defined trail which appeared to have had no recent use by motorized vehicles. The one stand judged more acceptable for scenic viewing than for hiking (the snag-retention clearcut) was the only one with no trail.

Camping quality was judged uniformly lower than hiking or scenic quality. Previous research (Brunson and Shelby 1990) suggests that campsite preferences often are influenced by factors other than site attributes, such as the distance to water or to other recreation activities. Participants interviewed after their visits reported taking such off-site factors into consideration when judging camping quality.

Management Implications

A key finding of this study is that New Forestry stands were rated higher than those where established practices were used. While the results of this pilot study cannot be used to predict judgments of any other stand, it is clear that New Forestry practices are *capable* of producing stands whose scenic and recreational quality is superior to that of clearcuts or commercially thinned stands. A more pertinent question for managers might be: Are New Forestry stands "good enough" from a visitor's standpoint, or simply not quite as bad? Re-examination of the results suggests that the New Forestry treatments may indeed meet visitors' standards.

Figure 1 shows the percentage of respondents calling each stand acceptable (i.e., chose a rating above zero) for each use. A stand may be defined as meeting visitors' standards if judged acceptable by a given proportion of the public. Choosing that proportion is a political decision; for purposes of discussion, let us suppose a simple majority would be sufficient.

For scenic viewing, the old-growth stand and all three New Forestry treatments met the standard, even though the latter

were evaluated within a year after harvest, when scenic quality is typically lowest (Hull and Buhyoff 1986). For hiking, all but the snag-retention and traditional clearcuts met the standard, and a trail across the snag-retention site might be enough to make that site acceptable for hiking. Conversely, only the old-growth stand was acceptable for camping, and it just barely cleared the standard. However, it is quite possible that similar treatments on flatter ground could produce satisfactory levels of camping quality, especially in the patch cut units, which made natural campsite-sized openings.

This study has only begun to explore questions that are likely to become increasingly important. We do not know whether New Forestry stands will be generally acceptable to forest visitors. But it does seem possible to develop silvicultural prescriptions that achieve biodiversity objectives while at the same time meeting visitors' standards for scenic and/or recreational quality. The differences in scenic and recreational quality ratings underscore the need to consider in those prescriptions what kinds of experiences visitors may seek at a given location.

The future of forestry may depend on our ability to successfully integrate economic and biological objectives of forest management with social values, including recreation and aesthetics. The results of this study suggest that this can be done if social values receive the same attention in research and planning given to biological objectives.

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OPPORTUNITY POTENTIAL MATRIX FOR ATLANTIC CANADIANS

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Opportunity for provision of Parks Service benefit to Atlantic Canadians was investigated by mapping travel behaviour into a matrix in terms of origin, season, purpose, distance, time, and destination. Findings identified potential for benefit in several activity areas, particularly within residents' own province.

Introduction

The Canadian Parks Service (CPS) operates seven National Parks and twenty-six National Historic Sites within the four Atlantic provinces. These parks and sites are the primary leisure travel destinations in the region and provide exceptional opportunity for Canadians and foreign visitors to experience Atlantic Canada's rich natural and cultural heritage and to enjoy a variety of outdoor recreational pursuits.

In order to gain additional knowledge and understanding of one primary CPS beneficiary segment, Atlantic region residents, the Atlantic Resident Study (ARS) was undertaken. The purpose of this study was to investigate the level current benefit provided residents of Atlantic Canada in terms of awareness, support, and use of the Canadian Parks Service and, to examine the potential for provision of direct benefits to Atlantic Canadians by the program. This examination of the potential provision of direct benefit led to development of the opportunity potential matrix discussed here.

Current CPS Benefit to Atlantic Canada Residents

Understanding of the current benefit being provided Atlantic Canadians was gained from analysis of the 1988 CPS National Market Study (NMS). Support of the Parks system is generally quite high among Atlantic Canadians as approximately 70% are supportive of protection of natural areas, marine environments, and rivers and over 80% are in favour of increased advertising of national parks.

In terms of awareness, less than 20% of Atlantic Canadians can correctly identify the federal government department, Environment Canada, responsible for management of the National Parks and only 12% concerning National Historic Sites. However, awareness and use of actual parks and sites is very high. Virtually all Atlantic residents are aware of at least one national park or historic site, more than 80% are aware of at least seven national parks or sites and nearly 60% are aware of 10 or more. More than 97% of Atlantic Canadians have visited a national park or site at some time in their lives. During the previous two year period, more than 76% have made at least one visit to either a national park or site and more than 30% of the approximately four million visits made annually to the national

parks and sites in the Atlantic Region are made by Atlantic Canadians.

Awareness and visitation to Atlantic region national parks and sites is affected by the distance required to travel to them, their relative location to the population base, and the need to use ferries to access two provinces. This is particularly evident in the case of Fundy National Park in New Brunswick. Awareness is extremely high within New Brunswick and adjacent provinces of Nova Scotia. However, it is substantially lower in Newfoundland. This distance pattern becomes more pronounced when considering the 'ever visited' results for Fundy. A very high percentage of New Brunswick residents have visited the park, but the proportion of residents of other provinces visiting drops dramatically as distance increases. This pattern is consistent for nearly all of the parks and sites.

Over 62% of trips to the Region's parks by residents are over two hours travelling time one way and 40% are of travelling times of four or more hours one way. Even relatively nearby parks can require substantial time investments, particularly in Newfoundland. However a substantial percentage of the population of the Atlantic provinces is within a two hour travelling distance of the national parks and sites in their home province. In the case of New Brunswick and Nova Scotia, 100% of the population is within a six hour travelling distance. This indicates much visitation to the parks (65%) considering the substantial distance from home should occur within province.

Atlantic Canadians' ability to visit a specific or set of specific parks and sites is conditioned by the number of opportunities available and competing destinations within the time frame of the opportunity. Motivations for visiting must also be considered when attempting to determine potential opportunities for providing CPS benefit. The main reasons for going to parks are to enjoy nature and beautiful scenery. Considering the distances required to travel to many parks or sites, the locations which become competitors to CPS for the shorter opportunity times are destinations close to the potential visitor and those which offer similar experiences. The destinations which become competitors for longer available periods of time are not necessarily other outdoor recreation and historic sites in the region.

Understanding Potential Travel Behaviour

Understanding the level of awareness, support, and general use of the Atlantic region parks and sites is important, but does not provide for complete understanding of the potential opportunities for providing CPS benefits to Atlantic residents. Additional factors influence travel behaviour. Atlantic residents' trips with visits to national parks or historic sites are only one component of the larger phenomenon of travel behaviour.

The factors of perception, awareness, distance to travel, available time, and others must all be considered in an attempt to determine potential opportunity for provision of CPS benefit. However, the process of calculating a conversion rate for each park or site and averaging that conversion rate in comparison to the percentage of the population having made a visit in the past two years leads to the conclusion of a current, low conversion rate for each facility. Considering the high degree of specific park or site awareness, this would indicate a substantial amount of potential. However, such a process neglects other factors operating to influence travel and destination choice.

When compared to the volume of travel generated to either similar destinations, or to travel motivated by seeking to fulfil

a set of similar experiences, a better understanding of potential can be achieved. If studied in terms of potential trips generated and the behaviour and motivation behind those trips in relation to the current CPS market niche, opportunity for potential provision of benefit can be more accurately determined.

Travel behaviour is influenced by several factors. Research regarding travel attempts to understand why people travel and what factors influence decision making processes (Burnett, 1981). Travel generally occurs as a result of people seeking alternative spaces where they can participate in activities. Recreation related travel has long been thought to be particularly influenced by factors such as socio-demographic characteristics, availability of alternative destinations, and the availability of activities sought.

Although socio-demographic characteristics have been considered primary influences of travel behaviour, recent studies have provided support for substantial consideration of activities participated in during travel as strongly dictating destination choice. To understand opportunity to provide CPS benefit to Atlantic Canadians, it is necessary to consider motivations to travel and activities participated in while travelling. In addition, it is key, in investigating potential participation, to consider the market share of trips whose destinations were national parks or sites in comparison to total trips generated.

However, determining potential travel behaviour is, at best, difficult. Researchers make use of numerous methodologies and models attempting to predict or forecast quantities of travel behaviour. Several factors must be considered in attempting to forecast tourism and travel demands and the nature of forecasting can take various forms or models including: trend extrapolation; structural models; simulation models; and qualitative models (Smith, 1989). No single model is best for all criteria and often trade-offs must be considered between models which will provide ideals, the greatest accuracy, and precision and constraints imposed by time, budgets, and other resources.

Forecasting market potential is an essential aspect of market measurement. Forecasting is not, however, an exact science. The objective of forecasting is to guide or assist informed judgements for marketing and development (Jefferson and Liekorish, 1988). That is, identifying potential can indicate possibilities, a range of options, or perhaps orders of magnitude, not necessarily precise figures. Additional procedures exist in examining travel or tourism potential and forecasting in this vein. Kent (1990) discusses opportunity sets concerning people, places, and priorities in regards to their holiday choices. This is a multi-dimensional consideration beginning with a perceived opportunity set which includes those destinations of which a traveller is aware. This set is conditioned by pre-search decisions of the type of holiday and possible destinations able to provide the most satisfying experience. Thus, the search for possible destinations to provide for the desired experience is limited by available information concerning those places.

A consideration set is subsequently formed as the perceived opportunity set is condensed to the number of options worthy of detailed consideration. The perceived set of all known opportunities is thus reduced to a consideration set of the preferred options. The identification of a realisable set of opportunities is further conditioned by an individual's attainment ability. Here, operational models of spatial behaviour can be used to identify more specific predictions or forecasts.

the current CPS market niche is more accurately attainable than precise predictions or forecasted numbers of travellers. The identification of this opportunity potential, in a manner similar that discussed by Kent (1990), is considered in determining the potential for provision of CPS benefits to Atlantic Canadians. Travellers have to be aware of CPS to be considered potential beneficiaries. In order to inform them, CPS must know in advance what their travel behaviour is and what they are doing in order to know what to make them aware of and to develop methods of providing the information.

Methodology

The Canadian Travel Survey (CTS) information for each province, by each quarter of 1988, was analyzed separately. Quarter breakdowns were winter (January through March), spring (April through June), summer (July through September), and fall (October through December). These compare favourably with the CPS peak and shoulder operating seasons. Analysis and discussion here pertain to a breakdown of person trips generated by New Brunswick residents only in the second quarter of 1988. Each person trip generated was broken down by: province of origin; main purpose (pleasure or business/personal); visit to a national park, historic site, or neither; duration (number of nights away from home); distance (travelled one way measured in kilometres); province of destination (including international); and activities participated in.

As a result of this exercise segments of travel behaviour, or patterns of trip generation, were established. Many activities in which travellers participated were recorded and subsequently measured against meeting the current CPS offer of: i) active outdoor recreation; ii) passive recreation; iii) sightseeing; and iv) history or culture. Several activities, and the resulting trips generated, did not match the CPS market niche and were not considered as activity areas for potential. These trips and activities represent many of the alternative activity and destination choices available to travellers.

The volumes of trips and park or site visits were mapped in terms of origin, season, purpose, distance, time, and destination. Trips to national parks and sites were then compared to provide an actual capture rate of total trips generated by residents. Further, the volume, destinations, and purposes of trips in the areas of active outdoor recreation, passive recreation, sightseeing, and history and culture were mapped into a matrix similar, but expanded, as that presented in Figure 1.

Opportunities where benefit from CPS could be provided were subsequently identified and ranked according to actual volume of trips meeting the travel behaviour patterns. Opportunity segments identified by travel behaviour are discussed in actual numbers of person trips qualifying under a trip pattern. CPS could not attract nor service these entire segments. Rather, at an optimistic rate, 10% of these totals would be considered a substantial accomplishment.

Behaviour and Opportunity Potential for New Brunswick Residents - Second Quarter (Spring, 1988) - April Through June

More than 875,000 person trips were generated by New Brunswick residents in the second quarter or spring period. As detailed by information presented in Table 1 just 2.7% and 1.5% of those trips included visits to a national park or historic site, respectively. Nearly 70% of the trips were primarily for pleasure or visiting friends or relatives. Shopping, nightlife and dining and VFR are the most frequently participated activities. 63% and 53% of all trips included these activities respectively.

Sightseeing (21%) and outdoor activities (14%) also are frequently parts of trips.

Table 2 provides information indicating the primary trip patterns which included a visit to a national park during this quarter. All were to a destination within New Brunswick of a distance of 80 to 160 km and included various activities, sightseeing being the most common. No distinct travel patterns were evident for trips including visits to historic sites.

Visit Status: (park, site, neither)						
Trip Purpose: (pleasure, business)						
Dur Night	Dist (km)	Dest. Province	Active Rec.	Cult Hist	Sight See	Pass Rec.
0	< 80	within own adjacent other Atl. other Can. Internat.				
	80-160	within own adjacent ...				
	160-650	within own adjacent ...				
	> 650	within own adjacent ...				
1 ...	< 80 ...	within own adjacent ...				

Figure 1. Opportunity Potential Matrix.

Table 1. Trip purpose and visit status.

Visit Type	VFR %	Pleas %	Pers %	Bus %	Total
No Park /Site	31.7	35.0	14.0	15.3	840,654
Park	1.1	1.5	0.0	0.1	95.8
Site	0.3	1.1	0.0	0.1	24,017
					2.7
					12,658
					1.5
TOTAL	32.5	37.7	14.0	15.5	877,329

Table 2. National Park visit trip patterns.

Purp	Dur	Dist (km)	Dest Rec.	Active Hist	Cult See	Sight Rec	Pass
Pleas	1	80-160	N.B.			X	
Pleas	0	80-160	N.B.			X	
Pleas	0	80-160	N.B.		X		X
Pleas	2-3	80-160	N.B.	X			

Information presented in Table 3 provides an overview of the CPS opportunity segments, based upon travel behaviour, identified for New Brunswick residents travelling in the second quarter of the year. Significant potential exists for national parks in the areas of active outdoor recreation and sightsee.

Table 3. Ranked opportunity segments.

Purp	Dur	Dist (km)	Dest	Active Rec.	Cult Hist	Sight Sec	Pass Rec
Pleas	2-3	160-650	N.B.			27,067	
Pleas	0	80-160	N.B.	26,302			
Pleas	2-3	160-650	N.B.		17,051		
Pleas	0	80-160	N.B.			15,491	
Pleas	2-3	160-650	N.B.	12,011			
Pleas	0	80-160	N.B.		9,530		9,530
Pleas	2-3	160-650	N.B.		9,153		9,153
Total				118,275	129,299	174,776	54,272

The significant travel pattern segments of important consideration for parks are those of 2 to 3 nights in duration, 160 to 650 km. in distance travelled, and those of 0 nights duration and just 80 to 160 km. in distance. 15.5% or 27,000 of the 175,000 trips which included sightseeing were of the 2 to 3 night, 160 to 650 km. nature. An additional 12,000 (10.2%) of the 118,000 trips which included outdoor activities were also of this pattern. The 0 night, 80 to 160 km. travel pattern resulted in over 26,000 trips (22%) including active outdoor activities and over 15,000 (9%) trips including sightseeing. Considering only a small percentage of these trips could be attracted, limited but clear opportunity exists.

As most trips which did include a visit to a national park were of the 80 to 160 km distance, the longer trips were potential exists should be explored. Fundy and Kouchibouguac are within 160 km of Moncton but are farther from the larger centres of Fredricton and Saint John and much of the rest of the province. Potential opportunity for consideration of historic sites primarily rests in the 2 to 3 night duration, 160 to 650 km. travel pattern. More than 13% (17,000) of the trips which included cultural and history related activities were of this nature. Again, this total of person trips provides limited but definite CPS opportunity.

Summary and Conclusions

Opportunities for provision of CPS benefit to New Brunswick residents during the second quarter, and generally for all Atlantic residents, were generally found in the activity areas of active outdoor recreation and sightseeing which can be provided for in the national parks. Opportunities also were identified, but to a lesser extent, in the history and cultural activity area which can be fulfilled by historic sites and parks. Travel patterns varied for the primary opportunity segments, but travel behaviour generally took the form of 2 to 3 nights in duration, within a one day drive in distance from home, and for the primary purpose of pleasure.

The amount of opportunity evident during the summer period must be cautioned as CPS facilities, particularly the national parks, are at or near capacity at various times during the summer season. In understanding the type of travel patterns which could lead to increased visitation, CPS subsequently knows which travel segments to necessarily not attempt to attract.

The domestic, provincial traveller is often a neglected, if not forgotten, market particularly with provincial tourism departments and agencies. Opportunities do exist for provision of direct benefit to Atlantic residents by CPS. Consideration of park or site resource and service capacities must be made at various times of the year. However, at most facilities, such capacities generally could allow for increased provision of benefit. Consideration of opportunity segments and travel behaviour identified here should be made in future marketing and communications strategy development.

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FAMILY STRUCTURE AND ITS

RELATIONSHIP TO TRAVEL

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This paper examines the relationship between family structure and travel to further understand what differences exist between family groups. Results indicate that the absence of a husband delays travel for single mothers and that they are not as well-off as their married counterparts. We examine other travel and leisure studies to make comparisons with these data, begin to construct a picture of parents who travel and comment on the analysis of family leisure. ^{1,2}

Introduction

Kaplan (1974) suggested that leisure, individuals, and family units cannot be understood separately and that a person's leisure is inextricably affected by the family. However, families are changing. In 1970, 40% of America's households were made up of married couples with one or more children under age 18. In 1980, the proportion dropped to 31%. The 1990 census indicates that today only 26% (or one in four) of American households are traditional nuclear families (New York Times 1991). Some view the female headed household and the rising divorce rate as an indication of the demise of the family. The more accepted view of marriage and family scholars is that this new family form is consistent with changing demographics and emerging economic independence of women (McLanahan and Booth 1989). Currently 14% of all family households are headed by single mothers (United States Bureau of Census 1988). The number of families headed by women without a husband is expected to be 12.9 million by the year 2001 (American Demographics 1987). In a study by Norton and Glick (1986), 88% of single parent families were mother-child families. Bumpass (1984) predicts that if present trends continue nearly half of all children born since 1975 will live in

¹The data utilized in this paper were made available by the Indiana Division of Tourism and Film Development. The data were originally collected by National Family Opinion, Inc. Neither the collector of the original data nor the Indiana Division of Tourism bear any responsibility for the analysis or interpretations presented here.

²Support for this paper was partially provided through a cooperative research project, U.S. Forest Service, North Central forest Experiment Station, Chicago, Illinois.

a female headed household during a portion of their youth before they reach age 18. In 1984, 66% of women who had sole custody of their children under 18 years of age were members of the labor force. Approximately one of two single mothers is living below the poverty line, as compared with one in ten married couples with children. (Garfinkel and McLanahan 1986). Economically these families are increasingly holding a disadvantageous position relative to other family groups.

For those involved in planning and providing travel experiences these demographic changes suggest that women who head single parent households and their families may possibly have different travel styles than individuals and families of households where both parents are present. To assume that single parents travel as frequently and in the same manner that parents from husband-wife families do is to assume that the roles, role expectations and everyday demands on members of these families are the same. This mistake could lead to misconceptions about family life, confound the study of family travel and encourage inappropriate management of family or independent travel experiences. Providing professionals with travel data based on the typical notion of the nuclear family encourages the management of family travel counter to demographic trends. In this study we hope to: 1) describe the differences between those parents who travel and belong to husband-wife families and single female headed families; 2) demonstrate the relationship between family structure (single female headed families v.s. husband-wife families) and travel frequency; 3) compare our data to previous studies of family structure and travel; and 4) make recommendations to managers and researchers based on this exploratory study.

Literature Review

Family roles tend to influence leisure decisions through the life course and across social contexts, even when no other family member is present. Shifts in social roles (such as a divorce) and developmental tasks (such as learning to manipulate a ball) could result in a change of leisure motivations and satisfactions (Osgood and Howe 1984). Cornell (1989)³ suggested that family composition (e.g. children present, number of adults and senior citizens within the family group) may provide different opportunities for leisure participation. Most notably, Kelly (1974, 1978 and 1980) has demonstrated the usefulness of using the family life cycle to describe the leisure participation of individuals and families. Others (Bollman, Moxley and Elliot 1975; Buchanan, Christensen and Burdge 1981; Burch 1964; Burch and Wegner 1967) have demonstrated how leisure experiences are effected by the family life cycle and the presence or absence of children. The majority of these studies however have focused primarily on the traditional two parent family. This study seeks to further understand single parent families and leisure.

An additional purpose of this paper is to compare our data with that of other family travel research. While the work that covers this topic is limited, two studies are of interest. What we know about family structure and travel comes largely from Better Homes and Garden (BHG) study conducted by the U.S. Travel Data Center (Mason 1990). The study divided the summer of 1989 travel market into families that consist of married couples with children, married adults 18-44, married adults 45 and up,

³Cornell, C. 1989. Family Composition and activities auxiliary to developed camping. Unpublished Masters Thesis, Purdue University, West Lafayette, IN.

married couples with children and not married, with and without children. It is those who are not married with and without children that may be the most insightful into how family structure influences travel. Of this group 48% of the households included children. The segment had the highest rate of plane travel, rental car usage, travel agent consultations, weekend trips during summer and fall, and travel for outdoor recreation. When we compare them to the married couples with children in the same data set, it is important to note that married couples with children use hotels/motels at a lower rate than singles and had a high usage of camper/RV's/trailers and tents for lodging. Married couples with children were the most affluent group and highest educated. On the other hand not married with and without children were the least affluent, 18-26 % of the segment were divorced or separated, and they were the least educated.

The second study with comparable data is a study of resort motivations for different family life cycle stages by Hill, McDonald and Uysal (1990). Although the study concerns resort motivations and not travel frequency or the propensity to travel, the research does include single parents. However they were not able to place any real emphasis on single parents due to the small sample size. In this work, single individuals with children felt that health and social motivations were important when choosing a resort vacation.

We do not know if the marital status of parents inhibits or encourages leisure. With respect to travel, frequency, style, purpose of travel and/or travel destination may be effected by child care issues, income, custody arrangements and/or other factors which occur due to family structure. Questions remain as to whether or not the structure of the family creates the same leisure opportunities for members of different family types.

Methods

To initiate this investigation, secondary data were obtained from the The National Family Organization (NFO). Each quarter of the year NFO sends questionnaires to a panel of over 30,000 households. The data is household based and details the respondents age, ages of other household members, household income, education level of both male and female adults, family living situation, a number of other demographic items and states visited. A second file details four pleasure trips of one hundred miles or more round trip where the respondent stayed at least one night away from home.

Data for this study are from the summer of 1988 (July, August and September). For comparison purposes distributions of both travelers and non-travelers are presented. Households were divided into family structure categories based on the respondents marital status and the presence of children in the home. This study compares households which consist of two parents and households which consist of single females with children. Households that consist of single males with children are excluded from this study because only about two percent of all single parent households are headed by single fathers. Women who had children and were never married, widowed, divorced or were separated were considered single. Life cycle stages were predefined in the data set. They are: 1) 'young parents'-parents under 45 with children under 6; 2) 'middle parents'-parents under 45 with children 6 and over; and 3) 'older parents'-parents 45 and over with children of any age living in the household. The number of married respondents included 5,362 households and the number of single respondents included 905 households. For respondents who did not travel, married respondents represented 5,734 households and single respondents represented 1,730 households.

Chi-square test and were used to identify unique demographic characteristics of travelers. A multiple analysis of variance (SAS 1985) determined if number of trips were significantly different between the two groups. Demographic variables (identified by Chi-square tests) and marital status were used as independent variables in the model.

Results

Results of the the demographic and economic profile of married parents and single female parents are shown in Table 1 and Table 2. Due to the large number of cases in this sample each of the Chi-square test were significant at the 0.001 level. One of the original goals of this study was to determine if family structure along with other variables would have an effect on travel frequency. After multiple analysis of variance was computed using life cycle, education and income separately with marital status as an independent variable, there were no mean differences in the number of trips taken for either married or single parents. These results were surprising and will be discussed later. Highlighted here are some of the more notable results of the cross-tabulations.

Single women with children who travel, are more often in the middle parental stage, having the youngest child at home between six and twelve years old. Married women with children travel during the early and older parental stages. For married women travel decreases during the middle parent years. These percentages are somewhat similar to non-travelers. However, our population of interest, single parents who travel, show somewhat of a higher incidence during middle parent years and a lower percentage during the early parent years than non-travelers. Being a single parent with preschool children does appear to constrain travel. These single women who had children at home were also slightly older than married women with children. However, this may be due to the life cycle stage during which these women travel.

Table 1. Parental Stage of Travelers and Non-travelers, Summer 1988.

Parental Stage	Travelers		Non-travelers	
	MP ^a	SP	MP	SP
	(%)		(%)	
Early Parent	37.1	15.6	37.5	19.7
Middle Parent	27.7	44.8	28.0	38.9
Older Parent	35.2	39.7	34.6	41.3
Total	100.0	100.0	100.0	100.0

^a/ MP = married parent. SP = single parent.

Household income for single women with children who travel is far less than that of married couples. For married couples with children the percent of families in each increasing income category rises. For single women with children the percentage of families in each increasing income category decreases. For summer 1988 non-travelers however, the percentage of female headed households making \$15K or less is 52.5%, while among summer 1988 travelers incomes of female headed household making \$15K or less is 32%.

Educational attainment for married women with children is higher than single women with children. Slightly more married women with children received college and post-graduate degrees. A majority of single women with children have high school education.

Table 2. Sociodemographics of Travelers and Non-travelers, Summer 1988

	Travelers		Non-travelers	
	MP ^a	SP	MP	SP
	(%)		(%)	
Female Age				
under 30	15.8	11.7	21.1	15.2
30-39	39.8	32.9	38.6	29.7
40-49	27.8	25.8	23.5	22.1
50-59	12.4	13.7	11.5	15.4
60+	4.2	16.6	5.4	17.1
Total	100.0	100.0	100.0	100.0
Household Income (Income in dollars)				
Under \$15K	4.5	31.9	12.5	52.5
\$15-19,999	7.3	22.2	13.0	18.6
\$20K-29,999	16.0	21.0	20.9	14.3
\$30K-39,999	21.0	11.3	19.1	7.2
\$40K-49,999	30.9	8.8	22.8	4.9
\$50K-84,999	13.6	3.4	10.6	2.5
Total	100.0	100.0	100.0	100.0
Female Education (Years)				
8 years or less	0.8	1.1	2.3	4.7
1-3 years H.S.	2.6	5.5	6.6	12.9
High school	33.6	35.0	45.6	41.3
College 1-3 years	33.5	37.5	27.8	29.7
4yr. College	17.3	11.2	10.5	5.9
Post-Grad	14.1	9.6	7.0	5.3
Total	100.0	100.0	100.0	100.0
Race				
White	97.0	90.3	95.3	84.9
Black	1.4	7.9	2.4	11.9
Asian/Pacific	0.5	0.4	0.5	0.4
Other	0.7	0.8	0.9	2.9
Total	100.0	100.0	100.0	100.0
Market Size (Population of Residence)				
Under 50,000	26.0	23.5	34.4	29.4
50,000-499,999	21.0	22.1	19.6	21.5
500,000-1,999,999	18.7	18.1	16.6	19.4
2,000,000 or more	34.5	36.2	29.4	29.8
Total	100.0	100.0	100.0	100.0

^a/ MP = married parent. SP = single parent.

The majority of the NFO sample is white. Of non-travelers two percent of married parents are black and 12 % of single parents are black. Of travelers only around one and a half percent of the

married parents are black and about eight percent are single. Around eight percent of single women with children who travel are black as compared to two percent of married women with children who travel. Hispanic populations were too small in the sample to be measured.

Discussion

Although these data are cross-sectional and the percentages of persons traveling at different life cycle stages may be a function of the number of respondents in each life cycle stage, these data are consistent with today's life cycle trends. Divorce is the primary cause of a white household being headed by a single female. It is important for leisure and travel planners to note that women often become single parents due to divorce soon after their children enter grade school (approximately during the 7th year of marriage). These women will often remarry after 6 years of heading their household alone (Levitan, Richard and Gallo 1988) and become involved in a two parent family again. If travel opportunity providers encounter single parents the the largest majority of them will be in their middle parent years.

Leisure style and frequency have both consistently been shown to be impacted by the development of the family. Classic family life cycle stages are driven by the presence and/or absence of children and spouses. Variables which are based on the age of the oldest child (Bollman et al. 1975; Burr, Nyc and Reiss 1979) stages based on the age of the youngest child (Witt and Goodale 1981), stages based on the number of years married (Orthner 1975) and simple pre-parental, parental and post parental stages (Kelly 1974) have all been used to characterize the development of the family in leisure research. Family scholars however have begun to criticize the traditional family life cycle concept for excluding couples who never have children and one parent families (Nock 1979; Murphy and Staples 1975). We have expanded on the work of leisure scholars (Bollman et al. 1975; Kelly 1974, 1978, 1980; Witt and Goodale 1981) by including marital status which allows for the inclusion of single parents.

The suggestion that travel waxes and wanes according to family structure and family life cycle stage is particularly interesting because of the similarity to Burch and Wenger's (1967) work on three styles of family camping. Burch and Wenger found that the age of children had a significant effect on the camping style in which individuals participated. These data suggest that the age of family members (family stage) and the marital status of parents may influence when travel opportunities will be available to parents.

This research suggest parental travel is either constrained or encouraged by family roles and responsibilities. What is yet to be investigated is how these roles and responsibilities effect the style of travel. For example, the difference in income between single parents and married parents probably influences accommodation choice and activities. A preliminary analysis of the same data indicates that single parents more often will visit family and friends during pleasure trips. With 10.2 million single mothers in the U.S. today (American Demographics 1987) it is crucial that leisure and travel professionals begin to investigate the needs and wants of this market. Currently available data on parental/family travel is limited to an application of the family life cycle to a tourist setting (Kerstetter and Gitelson 1989), family decision making (Jenkins 1980; Nichols and Snepenger 1988), research which includes single parents with single adults (Mason 1990) and work dealing with motivations (Hill et al. 1990). This study has provided a base for comparison of socioeconomic characteristics of single and married parents to future studies.

Now travel research on the family needs to move on and investigate destination and accommodation choice, preferred activities, purpose of trip, booking activities, etc.

When comparing our data to others, results from this study are similar to the BHG study with respect to the economic condition of singles parents. In addition education levels of single and married parents in this study were similar to others. However our preliminary analysis of the purpose of trip for married and single parents showed that single parents more often visit family and friends than travel for outdoor recreation. The differences may obviously be due to the construction of family categories in each data set. The BHG study should be viewed with extreme caution. The category not married with and without children is not mutually exclusive. It is possible that not married individuals without children could skew results, creating an inaccurate travel profile of those who do have children.

Travel data collection needs to be expanded to include single parents and to refine family stages. In particular leisure scholars have been in the habit of using the term 'empty nest'. We are far behind the family scholars who have recognized the stage in a married couples life without their children as not empty but full of life and activity. Retired or older couple might be a more appropriate designation. Not only should travel researchers begin to include the single parent in their analysis of the family but all leisure research needs to consider this family form separate from married parents.

Our analysis found no differences between married and single parents with respect to the number of times traveled during the summer of 1988. This is puzzling, because of what we know about the correlation between income and the propensity to travel. However our analysis is limited to three month periods. We have no way of determining if differences exist between the two groups for an entire year. Our future analysis might further explore the possibility that pleasure travel is different for these populations by examining the number of nights away from home a trip included.

Although this study and the others mentioned are each incomplete and in no way complementary we can begin to sketch a picture of how family structure influences travel. From our analysis it appears as if six stages of family travel exist. These stages of travel will wax and wane along with the family life cycle depending on an individual's marital status. Single women with children over six will be the travel providers main concern. Travel providers will need to be aware that pricing is very important to these women, because of significantly reduced income compared to married couples with children. Singles travelers with and without children are weekend travelers during the summer and fall, they make arrangements through travel consultants and single parents may most often be concerned about health and social motivation when choosing a vacation. These characteristics will have a number of implications for planning activities for family vacationers and for attracting this particular market. Mothers traveling with their grade school children may desire separate programs for children or they may wish travel agents to plan their trips due to time constraints. Single mothers may even perceive different vacation travel as unattainable due to cost or the type of trip available. Further research directed at the motives, perceptions and travel styles of parents will increase our understanding of this new and growing market.

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those surveyed with their reasons for choosing the destinations that they visit. These factors along with the demographic and socioeconomic characteristics of the West German traveller will allow the development of more specific and useful user groups for a greater understanding of the overseas traveller to the United States and Canada.

Methods

In 1989, 1,212 personal in-home interviews averaging 50 minutes in length were conducted in West Germany. Respondents in the country were those 18 years of age or older who took an overseas vacation of four nights or longer by plane in the past three years, or who intended to take such a vacation in the next two years. Overseas travellers include any country outside of Europe (including the United Kingdom) and North Africa. It must be noted that, though all of the West German travellers surveyed are potential visitors to the United States and Canada, they may also travel to the Orient, Australia, Asia, etc.

In applying Cohen's constructs to these data with Kucukkurt's escape category addition, it is important to note that the sample of travellers does not represent the full spectrum of all travellers. These travellers are those who have chosen to take a longer trip away from home in which the proportion of time and money spent would generally be assumed to be much higher than found in other types of tourism travel. In addition, because this travel represents an overseas trip, the barriers to information flow about the destination are greater. Therefore, we would expect the traveller to be more dependent on institutional sources of information.

Determining motivational groups

In order to determine the motivations behind why people travel the way they do, the items in the questions 'importance of reasons for taking an overseas trip' from the West German international travel survey were grouped into seven different classes through factor analysis by using the SPSS-X statistical package.

Factors with an eigen value greater than 1 were selected for examination. Items with factor score coefficients greater than 0.4 were included in the identified factors. With the help of previous literature (Statistics Canada, 1986), Factor 1 could be identified as the 'novelty' group and Factor 3 was identified as the 'escape' group. Other factor groups, such as the 'status' and 'physical activity' groups in the literature from Statistics Canada were excluded from this study. In order to weight the responses of each group accordingly, factor scores were computed for each travel group. The variable 'importance of reasons for taking an overseas trip' has a 4-point scale ranging from very important (a value of one) to not at all important (a value of four). In this case, a low factor score means the items in a factor group are important. The lower the respondent's factor score, the more likely s/he was to identify the reasons in one of the factor groups as being important. Utilizing the two factor groups simultaneously results in four possible categories in which a respondent could be placed:

1. A low factor score (less than 0) for both the novelty and escape factor groups
2. A low factor score (<0) for the novelty factor group, but a high factor score (>0) for the escape factor group
3. A high factor score (>0) for the novelty factor group, but a low factor score (<0) for the escape factor group
4. A high factor score (>0) for both the novelty and escape factor groups.

Variables of interest in the data set

There were several characteristics that Cohen (1972) identified as being important in describing his novelty group. Several of these variables can be found in the international travel data set for West Germany. His explorer category is a good example of how an individual with a high desire for the novel might be characterized. This type of pleasure traveller does not have all plans made in advance, is not always bound to a group, and makes decided efforts to get off the beaten track. This role also tries to communicate with the people of the host country by speaking their language, and arranges the trip alone rather than with an outside agency. Kucukkurt's escape group identifies the desire to seek new and physically thrilling experiences, socialization, and relaxation. The individual who has a high propensity to escape also should express a need for convenience during the trip. All of the above characteristics can be identified as variables from the West German data set.

The four combined factor groups identified at the beginning of the Methods section were utilized to test Cohen's and Kucukkurt's tourist role typologies. The variables that Cohen and Kucukkurt used to identify their typology roles were compared among the four derived categories.

Results

Each of the four categories contained a reasonable sample of individuals. Of the 1,212 respondents in the survey, 384 (31.7%) were described as having a high propensity for novelty and escape, 218 (18.0%) had a high desire for the novel, but low for escape motivations. Conversely, 245 (20.2%) of the respondents expressed a low desire for characteristics in the novel category, but were high on the escape scale, and 365 (30.1%) were described as low on both the novel and the escape scales. For some of the tables provided, the groups are summarized with smaller frequency totals than those specified above. The discrepancy was caused by missing values present in those variables. This does not, however, affect the resulting percentages reported in those tables.

Trip characteristics

There were a few significant differences among the trip types for the four groups. Touring trips were significantly higher for those respondents who were high on the novelty scale, but low on the escape scale. The only other significant trip type was the resort trip. The 'novelty only' group was significantly lower in the percentage of respondents who took this type of trip, while the 'escape only' group was just the opposite, with 42.9 percent of those individuals indicating that they had taken an overseas resort trip in the past year.

All other trip characteristics were not significantly different, and therefore were not listed in a table for the sake of brevity. All four groups seemed to be accompanied by the same people on their trip, with approximately half of each group being accompanied by their spouse. The most important source of information used to plan the trip was also similar among the four groups, with the travel agent as the source used most. The number of nights spent on the trip were also not significantly different among the four groups, ranging from average of 22 nights for the 'escape only' group to 27 nights for the 'novelty/escape' group.

Demographic characteristics

There were greater differences among the demographics, however, as Table 1 shows.

Table 1. Selected demographic characteristics.

Characteristic	Group 1 (%)	Group 2 (%)	Group 3 (%)	Group 4 (%) ^a
Age				
18-24	16.7	12.4	13.1	15.6
25-34	32.3	21.6	27.8	22.2
35-44	22.9	10.6	27.3	17.8
45-54	17.4	23.4	20.8	17.8
55-64	8.3	17.9	8.6	15.1
65+	2.3	14.2	2.4	11.5
Education completed				
Primary	25.5	19.7	31.0	34.8
Junior high	28.9	28.9	33.9	27.1
Technical	8.3	13.3	9.8	7.7
High school	24.7	19.7	17.1	20.5
University	12.5	18.3	8.2	9.9
Marital status				
Single	40.6	28.4	29.4	31.5
Married	44.5	50.9	55.9	48.5
Living together	5.2	3.7	3.7	2.7
Divorced/Separated/Widowed	9.6	17.0	11.0	17.3
Total respondents in each group				
	378	209	243	355

- ^{a/} Group 1 = Individuals who are high on both novelty and escape scales
 Group 2 = Individuals who are high on novelty scale only
 Group 3 = Individuals who are high on escape scale only
 Group 4 = Individuals who are not high on either motivation scale

The average ages were significantly higher in the 'novelty only (45.3 years)' and 'neither reason (42.9 years)' groups than the other two (37.1 years for the 'novelty/escape' group and 38.4 years for the 'escape only' group). The escape aspect of the groups seems to affect the age distribution more than the novelty aspect. Education, on the other hand, seems to be more affected by the novelty motivation. The 'novelty/escape' and the 'novelty only' groups have a significantly greater proportion of individuals who attended a university than those individuals in the groups who are low on the novelty scale. The 'novelty/escape' group contains a greater proportion of unmarried individuals than the other three groups with 40.6 percent of the respondents, compared to 28.4 percent for the 'novelty only' group, 29.4 percent for the 'escape only' group, and 31.5 percent for the 'neither reason' group. A slightly greater proportion of the married individuals were in the 'escape only' group, shown in Figure 3. In general, the income levels were higher when the escape motivation was high.

Travel philosophy

Table 2 lists several travel philosophies in which at least one of the four groups has a significantly different mean score (Student's t-test, $p <= 0.05$).

Interesting characteristics appear in each group from these statements. Group 1 (high novelty and escape scores) had a significantly high proportion of respondents who stated that they enjoy making their own vacation arrangements (75.9% agreed or strongly agreed). Conversely, they were less likely to leave others to do the organizing (25.3% agreed or strongly agreed), or to travel on an all-inclusive vacation (42.6% agreed or strongly agreed).

Group 3, the 'escape only' group, had the opposite set of philosophies. These individuals are significantly more likely

to use a travel agent to decide on the vacation destination (71.0% agreed or strongly agreed with the statement), to prefer leaving others to do the organizing (44.2% agreed or strongly agreed), and to buy vacations with transportation and accommodations included (66.9% agreed or strongly agreed).

Table 2. Distribution of the variable 'Feelings towards international vacations' for the four West German motivation groups (% 'strongly agree' or 'agree somewhat').

Item	Group 1 (%)	Group 2 (%)	Group 3 (%)	Group 4 (%)
Major trip arrangements				
a bother/don't travel	14.4	13.9	16.3	22.5
Rather spend money on				
things besides travel	14.7	13.3	14.7	24.4
Enjoy making own vacation arrangements				
	75.9	66.0	58.8	63.5
Like to stay put at vacation destination				
	31.3	26.6	58.4	47.6
Do not have to travel to enjoy vacation				
	31.6	36.4	32.2	41.7
Like different place on each new vacation				
	79.9	79.3	60.4	60.0
Important that people speak my language				
	29.5	29.8	48.1	46.4
Usually use travel agent to decide place				
	66.3	63.8	71.0	62.1
Prefer leaving others to do organizing				
	25.3	35.9	44.2	37.7
Usually buy vacations with accom./trans. inc.				
	55.6	60.0	66.9	58.0
Prefer travelling place to place				
	62.4	63.7	38.4	46.8
Usually travel on all-inclusive vacation				
	42.6	49.6	53.0	49.8
Total respondents in each group				
	383	218	245	365

The 'novelty only' group was significantly less likely to stay put at one vacation destination (26.6% agreed or strongly agreed). Groups 1 and 2, those groups that had a high novelty score, had a significantly higher percentage of individuals who agreed or strongly agreed that they like to visit a different place on each new vacation (79.9% for Group 1, 79.3% for Group 2, 60.4% for Group 3, 60.0% for Group 4), and that they prefer travelling place to place (62.4% for Group 1, 63.7% for Group 2, 38.4% for Group 3, and 46.8% for Group 4). Groups 1 and 2 were also less likely to agree that it is important that the people at the travel destination speak their language.

Finally, Group 4 indicated a low propensity to travel at all. These respondents were significantly more likely to agree to statements such as 'Major trip arrangements are a bother/don't travel (22.5% agreed or strongly agreed),' 'Rather spend money on things besides travel (24.4%),' and 'Don't have to travel to enjoy vacation (41.7%).'

Activity participation

The activities found to be significantly different among the four groups are listed according to the percentage of participation in Table 3.

Table 3. Distribution of the variable 'Activities participated in during holidays' for the four West German motivation groups (% who responded yes).

Activity	Group 1 (%)	Group 2 (%)	Group 3 (%)	Group 4 (%)
Attending festivals/special events	47.4	50.0	37.5	35.6
Getting to know inhabitants	86.9	78.5	71.9	69.2
Fishing	14.6	3.1	12.5	10.6
Sightseeing in cities	83.6	76.9	60.9	68.3
Sunbathing/beach activities	50.7	52.3	62.5	52.4
Swimming	62.0	55.4	70.3	61.5
Tour countryside	70.9	66.2	64.1	57.7
Visit wilderness areas	49.3	45.4	35.2	35.1
Visit galleries/museums	23.0	32.3	12.5	21.6
Visit mountains	25.8	34.6	19.5	23.5
Visit entertainment places	31.0	22.3	34.4	21.2
Visit places historic	63.4	59.2	32.8	39.4
Visit commemorative places	46.5	55.4	22.7	31.3
Visit archaeological places	38.5	42.3	16.4	23.1
Visit scenic landmarks	71.4	66.2	62.5	52.4
Total respondents in each group	213	130	128	208

Twenty-three of the thirty-seven provided activities were found to be significantly different at the 95% level for at least one of the four groups. Group 1 (the novelty/escape group) is significantly more likely to get to know the inhabitants of the host country (86.9 percent) and to tour the countryside (70.9). This group is very active, participating in many different activities during their overseas trips.

Group 2 (the novelty only group) is more likely to visit the mountains (34.6 percent), but less likely to go fishing (3.1 percent). Again, the novelty motivation in Groups 1 and 2 seems to influence several natural and cultural based activities. These groups were found to be more likely to visit wilderness areas, historic/archeological/commemorative sites, local festivals, and go sightseeing in cities.

Group 3 (the escape only group) seems to be more interested in the sun/surf/sand activities. This group is significantly higher in sunbathing and participating in beach activities (62.5 percent), and swimming (70.3 percent). The escape motivation also increases the likelihood of visiting entertainment places. On the other hand, this group is less interested in cultural aspects of the host country, such as visiting galleries and museums (12.5 percent).

Finally, Group 4 (neither novelty nor escape motivation) is not significantly more likely to participate in any of the listed activities. This group is significantly less likely to visit scenic landmarks (52.4 percent). It is important to note, however, that all four groups had high percentages of participation in eating local foods and dining out, and shopping.

Importance of items when choosing a destination

Several important aspects about each motivational group were also found when considering what each group cites as being important when selecting an overseas destination (Table 4).

Table 4. Distribution of the variable 'Importance of items when choosing an overseas destination' for the four West German motivation groups (% 'very important' or 'somewhat important').

Item	Group 1 (%)	Group 2 (%)	Group 3 (%)	Group 4 (%)
Budget accommodation	84.1	77.1	78.4	74.2
Seaside	65.1	53.2	73.0	59.4
Historic old cities	76.8	84.8	40.4	52.2
Nightlife and entertainment	38.8	25.3	48.2	32.7
Reliable weather	84.9	78.4	92.3	77.2
Local cuisine	91.4	85.3	73.5	72.3
Good beaches for sunning/swimming	78.9	68.8	85.7	72.0
Local festivals	58.8	47.7	45.1	35.9
Museums/art galleries	59.9	67.4	25.0	43.0
Interesting/friendly local people	97.1	93.0	96.8	89.9
Inexpensive restaurants	79.5	69.2	71.5	69.6
Culture different from my own	95.3	96.3	79.6	79.4
Historical/military/archaeological sites	65.6	79.4	29.9	46.6
Opportunity to increase knowledge	92.5	94.9	75.9	77.2
Total respondents in each group	384	218	245	365

Group 1 identifies cost related items as being important, such as budget accommodation (84.1 percent cited it as 'important' or 'very important'), and inexpensive restaurants (79.5 percent). It also follows from earlier findings that this group finds local festivals (58.8 percent) and interesting/friendly local people (97.1 percent) to be important factors as well.

Group 2 also cited several items as being important or very important. Again, these items are consistent with the activities participated in during their most recent overseas trip, and their feelings about such trips in general. For instance, this group is significantly more likely to find historic old cities (84.8 percent), museums/art galleries (67.4 percent), and historic/military/archeological sites (79.4 percent) as being important or very important.

In addition, the novelty motivation in general seems to correlate with an expressed importance of big cities and interesting towns/villages, outstanding scenery, wilderness, open spaces, local cuisine and different cultures, and opportunities to increase knowledge. In other words, a respondent with a motivation for novel experiences literally "wants it all" when taking an overseas trip. These preferences are reflected in the high values of those items for Group 1 and Group 2.

Group 3, on the other hand, is much more interested in the seaside (73 percent identifies it as being important or very important), nightlife and entertainment (48.2 percent), reliable weather (92.3 percent), and good beaches for swimming and sunning (85.7 percent). This escape group is significantly less interested in those things that the novelty group (Group 2) finds to be important, such as museums and historic sites.

Once again, Group 4 finds nothing to be especially important when choosing an overseas vacation destination. It seems that the motivations, activities, and destination features in this study do not capture the special characteristics of this group.

Summary

Some generalizations can be made about the four motivational groups constructed in this study. For instance, respondents in Group 1 (those with high novelty and escape factor scores) are the youngest on average, are well educated, and are more likely to make their own vacation arrangements. In addition they are more likely to participate in a variety of activities, and have a high propensity to stress the importance of destination characteristics such as interesting and friendly local people, and unique cultural groups.

Those respondents in Group 2 (the group with a high novelty motivation score but low escape score) are the oldest on average, are better educated, and take significantly more touring trips when vacationing overseas. This enables them to visit several destinations during one trip, placing a high level of importance on sites such as museums, art galleries and historic places.

The group with a high escape motivation score but a low novelty score (Group 3) contains respondents who are less educated, more likely to take a resort trip, would rather leave others to organize the trip and often take advantage of package deals. These people are more interested in the sun/surf/sand activities, and climatic and entertainment features of a destination.

Finally, Group 4 is the least understood in this study. It is indistinct demographically, and does not seem to be especially interested in pleasure travel. Respondents in this group are less likely to participate in any physical activities, and are less concerned about any specific characteristics that may be important to destination choices.

Conclusions

This study appears to support the travel motivations formulated by Cohen and Kucukkurt in the West German overseas pleasure traveller segment. Though the results of the study are on the right track, it is only a first approximation. Group 4 is especially in need of exploration. For example, if the respondents in this group are not interested in travel, why did they take an overseas vacation in the first place? In addition, no conclusions can be made about travel party interactions, or how the group influences the travel decision making process.

Regardless of outside influences, formulation and analysis of motivation groups such as these aids in effective target market development for either public or private organizations. In this way, a destination is able to direct its attentions on those target markets that the destination can best accommodate.

Finally, further exploration is necessary to determine whether similar groups exist in the United Kingdom, Japan, France, or other important overseas pleasure travel markets. It will also be interesting to identify the changes that will occur in the German market as the East and West come together. Subsequent studies should focus on building and correcting upon previous works and theories in order to improve the understanding of pleasure travel motivation.

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THE SUBSTANTATIVE KNOWLEDGE BASE FOR TRAVEL AND TOURISM:

A SYSTEMS MODEL

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Strategies for education and professional preparation in travel and tourism have generally been based in traditional tourism-related disciplines providing somewhat narrow perspectives of the tourism phenomenon. The need exists for models that provide comprehensive, holistic perspectives of travel and tourism. This paper presents one such systems model showing that travel and tourism is both a complex social phenomenon and also an industry or application area. The model may provide a solid foundation (philosophy) for study and managerial practice in travel and tourism.

Introduction

Mass domestic and international travel has nurtured and is nurtured by a mass industry in service to the needs, wants and desires of people living away from their home quarters. Depending on sources and statistics, some say the travel industry is the world's largest. It has also been shown to be a substantial industry in terms of employment and sales in the United States as well accounting for approximately 12% of our Nation's GNP and 14% of the civilian labor force in 1988 (Waters, 1990).

Such claims notwithstanding, there is little doubt that the travel and tourism industry, considered an export in terms of economic development, generates income and sales taxes, sales receipts, jobs, and other "spill-ins" for local, regional and national economic and social systems alike. Furthermore, the enormous size and comprehensiveness of the industry with the many positive and negative potentialities associated with tourism development, have created many conflicting forces and a complex management milieu with which tourism developers, entrepreneurs, civic leaders, educators and tourism professionals at all levels must deal. It is recognized that tourism development which maximizes economic and social well-being, provides for the proper management and tourism resources, and promotes long-term profitability to owners and managers requires a team of skilled professionals to plan, organize and manage the complex tourism systems.

In response to these needs, there has been an increase in interest in travel and tourism professional education in the United States, Canada, and elsewhere. Generally, most of the educational offerings that have evolved in tourism are included as single courses or concentrations in traditional business, geography/regional planning, recreation/leisure studies, hotel programs have contributed a great deal to professionalism in and forest/recreation resource management programs. These

programs have contributed a great deal to professionalism in travel and tourism; many of the students who have experienced these programs now work in the travel and tourism industry. However, one drawback with these types of programs is that there remains a strong bias in favor of the traditional curriculum at the expense of travel and tourism core content areas (cf. Hawkins and Hunt, 1988). Moreover, few holistic tourism curriculum models exist and concerns are often raised about what core courses to offer, where to "house" the program, the appropriate mix of general education and professional courses, appropriate electives, and so on.

For tourism professionals and travel resource managers in the field, the lineage of thought and philosophy from this current educational approach to tourism sometimes leaves them ill prepared to cope with the comprehensiveness and systemic nature of the tourism phenomenon. Many have understandably limited views of tourism; they do not comprehend the totality of the tourism phenomenon and the many positive as well as negative impacts of tourism. The hotelier does not care to ask how the regional park may relate to his business; the forest manager does not seem to understand how the travel agent or tour packager relates to the efficacy of the resource base and management practice. The need exists for comprehensive, holistic models to provide direction for education, practice, and research in travel and tourism.

This paper deals with these issues by providing a broad systems model of the substantive knowledge base for travel and tourism. The model conceptually structures the total tourism system showing the interrelationships among traditional disciplinary content areas related to the phenomenon.

The Model

The model recognizes that travel and tourism is both a phenomenon and an industry (cf. Hawkins and Hunt, 1988; Riegel, 1987).

The Phenomenon of Tourism

The phenomenon of tourism creates the need for the travel and tourism industry. The tourism phenomenon is comprised of three highly interrelated analytical components: people (demand), place (supply), and activity (what). These components are outlined in Figure 1.

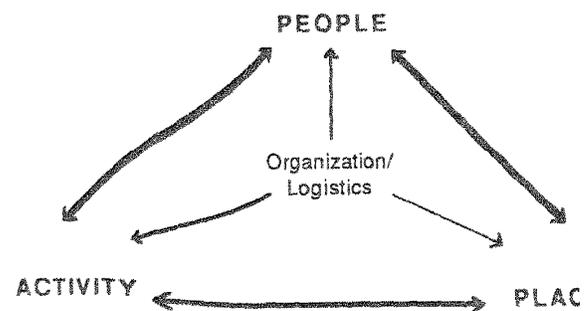


Figure 1. Basic systems model.

1/ The contributions of Neal Cheek and others to the basic analytical framework utilized in this paper are acknowledged.

Knowledge bases related to the "people" component would involve a behavioral orientation focusing on "who" is participating in travel/tourism and the functions (benefits) of tourism to the participants. Three appropriate levels of analysis would involve the individual, the group and the collective (society) at large. At the individual level, the focus is on the "subjective" tourism experience. Some areas of study are: needs/wants/expectations in tourism; leisure attitudes and orientations; psychological states and tourism; psychological outcomes/benefits of travel; motivations for tourism behavior; identify formation/development through tourism; and sex, age, personality, and life-cycle differences in tourism styles. A shift in analysis to the social group level would involve the role of travel behavior as related to primary association bonding and bond maintenance, type of social group and travel choices, tourism decision processes, and the primary group as a deterministic medium for socially constructed motives for travel and regularities in travel behavior. At the collective or societal level, appropriate areas of study would involve the history of travel/tourism; the social and economic impacts of travel; aggregated demand determinants of travel; the study of social circles, occupational groups, class structure and ethno-religious groupings as social structural contexts for travel motives; and the study of the latent functions of tourism/leisure/sport for society including collective identity (solidarity) and others.

The "place" component of the tourism phenomenon involves an analytical approach to the setting where tourism activity occurs including physical, cultural and geographical analysis. Some substantive knowledge areas would involve: the social definition of tourism places (establishment of normative order); image analysis; locational tendencies/spatial distribution of tourism places; ecological/physical impacts of tourism activity; tourist attractions and their classification (historic, memorial, cultural, natural); actual use history of places; ownership/management patterns; and the functions of tourism places involving bonding, solidarity, and fantasy concerns.

The "activity" or participation component is concerned with what tourism participants do in tourism settings. Some content areas would involve the incidence and prevalence of tourist activities across populations/over time (patterns of participation); how patterns emerge, change, stabilize over time; activity and place dependency or non-dependency; activity and social group dependency; activity specialization (travel careers); activity substitutability; structural properties of tourism activities; and the bundling (packaging) of activities and places.

The Travel and Tourism Industry

The broad systems focus also presents travel and tourism as an industry or application area. The application area is called the "organization/logistics" component (Figure 1). This component ties the three primary components (tourist-setting-activity) together as it provides formally organized tourism services to the traveling/touring public. The organization/logistics component is comprised of three interrelated sub-components: (1) distribution systems (travel suppliers and intermediaries), (2) management/administration of the distribution systems, and (3) regulation and support of the components (Figure 2).

(1) Distribution Systems (tourism industry/application area)

Primary Suppliers

- Carriers
- Accommodations/food service
- Attractions/entertainment/destinations

Intermediaries

- Tour operators/wholesalers
- Meetings/conventions planning
- Retail travel agency system

(2) Management/Administration of the Distribution Systems

(3) Regulation/Support of the Distribution System

Tourism Public Policy Issues

Public/Private Sector Support

Figure 2. Organization/logistics subcomponents.

Distribution Systems

Travel distribution systems involve both formally organized travel suppliers and travel intermediaries. Travel suppliers can be further subdivided into carriers, accommodations/food service, and attractions/entertainment. Emphasis on the carriers would involve air, rail and sea transportation as well as private car, motorcoach and car rental services. Emphasis on accommodations/food service would involve study of hotels, motels, condos, campgrounds, resorts, restaurants, and cafeterias. Attractions/entertainment would involve study of contrived attractions of all sorts, forests, parks, lake shores, sea shores, entertainment and planned tourism destinations overall.

Travel intermediaries involve all the various producers, operators and agents in the travel and tourism industry. Travel intermediaries connect the tourist with the primary suppliers. Emphasis would be placed on the study of tour operators/wholesalers, incentive travel companies, meeting/convention planning, and the retail travel agency system overall. The distribution systems sub-components (primary suppliers and intermediaries) provide the range of services necessary for the tourism experience including trip planning, travel to, on site and travel home components.

Management/Administration of the Distribution Systems

Management and administration of the suppliers and intermediaries involves all the activities for the daily, weekly, and long-term survival of these travel/tourism businesses and organizations. This would involve all normal business functions including sales, accounting, personnel, marketing, promotion, finance/budgeting, and overall management of the public and private organizations in the tourism industry. Although many of these functions are universal, it is important to recognize the unique management circumstances involved in the organizational systems of the wide array of tourism suppliers and travel intermediaries that exist. Although they both must consider people, their activities and settings (destinations), the state park and the travel agency each faces certain unique management challenges. The travel agency manager must monitor the challenges of automation, agency to agency competition, and employee motivation. The state park manager, somewhat insulated from the need to maintain profits,

must face equally complex management issues such as establishing appropriate management objectives, selection of appropriate management tools, carrying capacity considerations, crowding and overuse issues, multiple-use, depreciative behavior, ORV use/conflict, and others.

Regulation/Support of the Distribution Systems

The final organization/logistics sub-component involves regulation and support of the travel suppliers and intermediaries. This sub-component is primarily concerned with tourism public policy issues (allocation/regulation issues) that cut-across any particular tourism business or natural resource management agency. The tourism public policy framework includes a complex mixture of public, quasi-public and private sector organizations involved with the allocation and regulation of tourism business, tourism resources, and the movement of people. Emphasis would be placed on the politics of the provision of "public goods" (roads, harbors, airports, forests, parks, museums, water/sewage); the management/regulation of common property resources and tourism "assets"; positive and negative externalities of tourism development; safety, health, sanitation, building, zoning codes and regulations; land use planning, master planning and project planning of tourism concerns by general purpose governmental units; air transport agreements; visa, passport, customs regulations; regulatory agencies (FAA, ICC, etc.); destination marketing organizations (national, state, local); the role of the Airlines Reporting Corporation (ARC); travel/tourism trade associations; and the functions of visitor and convention bureaus and chambers of commerce.

Public/private sector support would involve the unique promotional, educational and service roles of travel writers, guides and maps, travel publications, travel trade associations, travel finance and insurance businesses, and destination marketing organizations as they aid and abet the traveler and the travel business.

Conclusion

Travel and Tourism is an interconnected phenomenon and industry requiring skilled professionals in the planning, organization, and overall management of tourism businesses and travel resources. Many of these professionals have been trained in traditional travel-related disciplines such as hospitality, geography, recreation and parks and others. Oftentimes, the focus in these programs is understandably a somewhat narrow "product" or "functional" one leaving the student without a broad, more liberating orientation to the total travel and tourism system. Presented in this paper is a broad, systems model of one approach to the substantive knowledge base for travel and tourism. The model explains the three primary analytical components of tourism involving people, place and activity. The organization/logistics component (travel suppliers and intermediaries) brings the three primary components together as it provides for a wide range of travel and tourism related services. The model then illuminates in preliminary fashion the importance of basic business skills and role of the public policy framework for tourism allocation and regulation decisions. Overall, the model shows that travel and tourism may represent a discrete body of knowledge that can be codified and communicated.

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OUTDOOR RECREATION ACTIVITY TRENDS BY VOLUME SEGMENTS: U.S. AND NORTHEAST MARKET ANALYSES, 1982-1989

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The purpose of this review was to examine volume segmentation within three selected outdoor recreational activities -- swimming, hunting and downhill skiing over an eight-year period, from 1982 through 1989 at the national level and within the Northeast Region of the U.S.; and to determine if trend patterns existed within any of these activities when the market size and market volume of infrequent and frequent segments were examined. Different trends exist between national and Northeast Regional trends when volume segmentation was examined. Implications and discussion points were provided. Keywords: Volume segmentation, swimming, hunting, downhill skiing, marketing, Northeast U.S., outdoor recreation, and activity trends.

Introduction

With the advancement of the recreation field in the last decade has come the increased interest in the topic of marketing recreation activities and amenities. This interest has also been fueled by the growth in travel and tourism and an increasing variety of recreational products and services. In recent years, there has been substantial growth in a variety of outdoor recreational activities. These include golf, wind surfing, cross country skiing, and fly-fishing plus the introduction of new pursuits such as snowboarding, mountain biking, and "roller-blade skating." However, in other outdoor activities the growth of activity participation has either remained stagnant or actually declined. These activities include swimming, power boating, and snowmobiling to name a few. Furthermore, regional economic downturns, budget and international crises, such as the Persian Gulf Conflict, have had negative impacts upon recreational businesses and tourism areas. Given all of these changing conditions, the implementation of marketing strategies and the monitoring of trends has become critically important for those agencies and businesses which depend on selected outdoor recreational activity pursuits either directly or indirectly. Growth cycles change rapidly and more innovative market approaches are necessary. Kelly (1988) and others (Warnick and Loomis, 1990; Schwanger, 1989) have conducted work which serves to predict future recreation participation. Others have also found that national activity trends are not necessarily reflected at the regional level (Warnick and Vander Stoep, 1990). Nevertheless, more detailed analyses of recreational activity trends are needed at the national, regional and local levels.

To understand the nature of recreational activity trends and participation, two major components of activity demand must be understood. First there is the "number of people who participate in the activity." This statistic is called "market size." Often, much is made of this statistic; however, in and of itself it is somewhat less meaningful than a statistic which more

specifically quantifies demand. "Participation days" or "times played" is a much more meaningful statistic for recreation agencies and businesses. This addresses the actual volume or amount of people who pass through the area or facility or who play the activity any number of times. It is referred to as "market volume." In marketing, business volume when examined by groups is described as a form of user or behavioral segmentation and is called "volume segmentation." Volume segmentation is the examination of usage rate and size of specific markets within an activity or product category. Romsa and Girling (1978) wrote one of the more definitive articles on volume segmentation of recreational activities. Others have alluded to the market concept called the 20-80 rule (which indicates that a small portion of all customers comprise a large portion of all business transactions). Warnick and Vander Stoep (1990) have indicated that there are regional differences for many recreational activities. However, their review of selected activities did not focus on participation volume. Consequently, the review of participation volume within selected activities in the Northeast was undertaken.

Purposes of Study

The purposes of this study were two-fold: 1) to examine volume segmentation within three selected outdoor recreational activities -- swimming, hunting and downhill skiing over an eight-year period, from 1982 through 1989; and 2) to determine if trend patterns exist within any of these activities when the market size and market volume of infrequent and frequent segments were examined.

Methods

For the analysis of volume segmentation of these activities, data were drawn from *Study of Media and Markets* (Simmons Market Research Bureau, Inc., 1982-1989). These annual market studies were stratified, national random probability samples for each year from 1982 through 1989. The methods included the distribution of self-administered questionnaires and follow-up telephone interviews. Sample sizes ranged from approximately 15,000 to 20,000 adults. The sample statistics were then extrapolated to the U.S. adult population of 18 years of age and older. The activities in this review were selected because they represented outdoor seasonal events and the data were available and complete over this period of time by segments and by region for each activity. The data were made available through Simmons Market Research Bureau of New York and the University of Massachusetts Library. Definitions of terms are important here and must be read carefully. The way segments are described can be confusing; so, please read carefully and use caution in use of these data. The terms are explained as follows. First, use segments or volume patterns at the national level were defined by three groups: 1) "Light Users" -- those that participated 1 to 4 days during the 12-month period; 2) "Moderate Users" -- those that participated 5 to 19 days during 12-month period; and 3) "Heavy Users" -- those that participated 20 or more days during 12-month period. These definitions of activity demand as provided by Simmons Market Research Bureau do provide stable trend data on an annual basis; however, they are not linked to demographic or regional distributions of demand.

Simmons Market Research Bureau does provide demographic definition and regional distribution of all activity participants and frequent participants (i.e., "those involved in the activity more frequently based on an activity play level.") However, the detailed definition of this group, the frequent segment or "those involved more frequently," varies from activity to activity. For the purposes of this study, within each activity, frequent and infrequent groups were defined. Knowing the overall national

and regional activity population as detailed by demographics and regional distribution, one can extrapolate to an infrequent user group. In this review for swimming -- frequent swimmers are those who swim 20 days or more per year and infrequent swimmers are those who swim less than 20 days per year. For hunting, frequent hunters are those who hunt 10 days or more per year and infrequent hunters those who hunt less than 10 days per year. For downhill skiing, frequent skiers are those who ski five days or more per year and infrequent skiers those who ski less than five days per year. Please note the use of different terms here -- frequent and infrequent versus light, moderate and heavy users. Infrequent participants are not the same group as light users. For swimming, infrequent swimmers are those who swim less than 20 days per year and light swimmers are those who swim one to four days per year. Differences in these definitions must be carefully considered when reviewing the findings for each of these activities. Light, moderate, and heavy represent volume groups are described at the national level only and are a more refined segmentation of the infrequent and frequent groups. But, it was not possible to examine these segments at the regional level due to the way Simmons Market Research Bureau presented the data.

Other definitions used in this study include: a) "Volume or Participation Days" -- an estimate of the number of activity occurrences, the medians were used from each grouped category (1 to 4 days; 5 to 9; 10 to 14; 15 to 19; 20 to 24; 25 to 29; 30 to 39; 40 to 49; 50 to 59; and 60 or more) times the number of participants who indicated playing at this level; b) "Market Size" -- the total number of adults (18 years of age and older) who played the activity in the previous 12 month period for the year; c) "Average Annual Growth Rate" -- the percent change in terms of the size of the market or participation calculated as a percentage; derived by taking current year number (market size or market volume) subtracting previous year number and dividing by the previous year number; percent change from year to year was then averaged over the study period; d) "Average Size" -- the percent distribution of participants by user group in terms of number of players and number of activity days averaged over the study period; e) "Days Played Per Year" -- the volume or participation days divided by total number of participants per segment; f) Market Share -- percent of all volume played within a specific region (which are defined as Northeast, South, Midwest, and West); g) Northeast Region -- includes the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, and New Jersey; and h) "Moving Average (MA) 3-Point Change" -- a moving average trend calculation based on a three-point moving average where change is calculated based on increments of three year averages (i.e., 1982, 1983, and 1984 would be used to determine a 1983 average; 1983, 1984, and 1985 would be used to determine a 1984 average, etc.). Changes were then determined by developing moving averages for three year periods from 1983 through 1988. Moving averages are used in trend extrapolations to smooth the effects of short-term variation and to provide the opportunity to construct trend patterns (McClave and Benson, 1982).

Selected Findings

The findings from this review are presented by activity with reference first to the national trends and then presentation of the regional findings from the Northeast. The summary of national trends by total participants and participation days; and light, moderate and heavy users for each activity are summarized in Table 1.

Swimming

National Trends. Swimming is an activity which has declined nationally in market size over this time period. Approximately 51 million people swam at least once per year in 1982; but, by 1989 only 47 million swam. The activity has decreased in market size at an average yearly rate of one-half (.5) percent and at a 3-point moving average rate of 1.4 percent. However, swimming was not in a steady decline throughout this period. Swimming, in terms of both numbers of participants (market size) and participation days (market volume) actually grew during the first half of this period. Swimming peaked in market size (53.7 million swimmers) and market volume (1.0 billion swimming days) in 1985. After that year, there was rather steady decline. On average at the national level, the heavy swim segment accounts for 35 percent of the all swimmers, but nearly 73 percent of swimming activity. When light, moderate and heavy segments were examined over time, the only user segment which grew from 1982 through 1989 was the light segment. The number of light swimmers and swimming days among this group grew at an average annual rate of two percent per year.

Northeast Trends. The market size of swimmers in the Northeast has declined also, but at a higher rate. In 1982, 11.8 million swimmers were from the Northeast and in 1989 the number equalled 8.9 million. However, the market size did not continually decline throughout this period. The swimming market actually grew in size in the Northeast from 1982 through 1984 when it peaked at 12.9 million swimmers. Since 1984 it has declined in size. The Northeast market is down 3.6 percent per year at an annual average rate and at a 3-point moving average rate of three percent. Participation days are also declining in the Northeast. At the peak in 1983, nearly 304 million swimming days occurred, but this declined to as low as 182.9 million days in 1987 and in the most recent years examined here (1988 and 1989) settled at approximately 204 to 205 million days. Furthermore, the market share of swimmers who reside in the Northeast has also decline. The Northeast's share of all swimmers peaked in 1983 at 26.2 percent and declined throughout the remainder of the period and in 1989 stood at 18.7 percent.

When the distribution of frequent and infrequent swimmers was examined additional insights into activity trends within the Northeast were found. The distribution of frequent and infrequent swimmers in the Northeast is different than the distribution at the national level. In ever year examined here, the distribution of infrequent swimmers in the Northeast is less than at the national level. For example in 1982, 74 percent of all swimmers at the national level were infrequent swimmers while slightly less than 70 percent (69.6 percent) of all swimmers in the Northeast were infrequent swimmers. At the national level, there was an indication that an increasingly smaller distribution of all swimmers were infrequent participants. In 1982, 74 percent were infrequent swimmers and by 1989 only 64 percent were infrequent swimmers. The trend has been somewhat similar in the Northeast, but the actual distribution is markedly different. Approximately 70 percent of all swimmers in the Northeast were infrequent swimmers in 1982. In 1989, only 53 percent were infrequent swimmers. While this is revealing, the other segment, the frequent swimmer group is accounting for a larger portion of the swimming types and this segment actually grew slightly -- at an average annual rate of about three percent and at a 3-point moving average rate of one-half (.5) percent. The national trends indicate a stronger growth pattern within the frequent segment. This segment grew at an average annual rate of 5.1 percent and at a 3-point moving average rate of three percent.

Table 1. Swimming, Hunting and Downhill Skiing by Light, Moderate and Heavy Volume Segments at the National Level: 1982 through 1989.

Swimming	Distribution of Participants (000) and Participation Days (000) by Volume Segment Levels												Ave. Annual Change (%)					
	1982		1983		1984		1985		1986		1987		1988		1989		Part.	Part. Days
Part.	Part. Days	Part.	Part. Days	Part.	Part. Days	Part.	Part. Days	Part.	Part. Days	Part.	Part. Days	Part.	Part. Days	Part.	Part. Days	Part.		
Volume Segments	10,114	27,814	9,873	27,151	10,985	30,209	12,035	33,098	11,039	30,357	11,740	32,283	11,138	30,630	11,423	31,413	2.0%	2.0%
Light (1-4 days)	20%	3%	21%	3%	21%	3%	23%	5%	23%	4%	25%	4%	27%	4%	24%	3%	3.4%	2.8%
Moderate (5-19 days)	22,558	248,236	19,938	219,106	22,340	241,120	22,742	246,169	21,310	227,840	20,535	222,195	13,206	108,410	19,029	195,732	41.7%	23.5%
Heavy (20+ days)	18,381	712,706	16,581	614,814	18,916	734,762	18,890	730,407	15,775	607,257	14,298	548,262	16,294	657,087	16,975	691,068	0.5%	0.5%
Totals Size and Days (000)	51,053	988,756	46,412	861,070	52,241	1,006,091	53,667	1,009,672	48,124	865,454	46,593	802,742	40,638	796,126	47,427	918,194	-0.5%	-0.4%
Ski (DHRB)	3,376	9,284	3,396	9,339	3,814	10,489	3,691	10,150	4,031	11,035	3,815	10,491	4,086	11,237	4,006	11,017	2.7%	2.7%
Light (1-4 days)	50%	18%	50%	16%	53%	20%	48%	16%	56%	21%	52%	19%	57%	23%	50%	17%	18.5%	3.4%
Moderate (5-19 days)	2,815	27,750	2,654	27,348	3,092	30,869	3,287	34,479	2,707	25,414	2,924	30,188	2,756	23,776	3,363	31,758	3.4%	4.0%
Heavy (20+ days)	544	15,838	762	21,923	330	11,210	660	20,211	444	16,896	543	16,182	370	14,534	628	23,230	15.8%	14.1%
Totals Size and Days (000)	6,735	52,872	6,812	58,610	7,236	52,567	7,638	64,840	7,182	53,395	7,282	56,861	7,212	49,547	7,997	56,005	2.8%	4.7%
Hunting	3,190	8,773	3,929	10,805	3,214	8,839	3,713	10,211	4,574	12,579	3,163	8,704	3,208	8,872	2,924	8,041	0.8%	0.8%
Light (1-4 days)	25%	5%	32%	7%	27%	5%	31%	6%	34%	7%	27%	5%	26%	5%	22%	4%	5.4%	0.1%
Moderate (5-19 days)	6,405	66,425	5,635	61,015	5,695	60,850	5,511	60,097	6,087	65,554	5,930	62,870	5,898	62,595	6,333	63,511	48.0%	35.2%
Heavy (20+ days)	3,000	104,750	2,670	94,339	2,794	103,036	2,650	92,253	2,798	97,702	2,771	106,508	3,101	119,608	3,775	135,161	3.8%	4.1%
Totals Size and Days (000)	12,595	179,947	12,234	166,158	11,703	172,724	11,874	162,561	13,459	175,835	11,866	178,081	12,207	191,025	13,032	206,713	0.8%	2.2%

Source: Simmons Market Research Bureau, Inc. 1982 through 1989; New York.

Table 2. Swimming Trends in the Northeast for Infrequent(a) and Frequent(b) Segments: 1982 through 1989.

Year	Overall		Northeast		Share		Northeast		Part.		National		Northeast		National	
	Size (000)	Ave. Days	Overall	Part.	Overall	Part.	Ave. Days	Part.	Days	Days	Size (000)	% Infreq.	Size (000)	% Freq.	Size (000)	% Freq.
1982	51,053	18.55	947,174	11,870	23.3%	22.97	272,638	37,845	74.1%	8,256	13,207	25.9%	3,614	30.4%	11,598	29.5%
1983	46,412	19.26	893,832	12,150	26.2%	22.23	270,087	34,814	75.0%	8,568	11,598	25.0%	3,582	29.5%	14,310	32.3%
1984	52,241	19.37	1,011,764	12,985	24.9%	23.45	304,510	37,928	72.6%	8,792	14,310	27.4%	4,895	38.0%	15,775	33.2%
1985	53,667	18.81	1,009,872	12,870	24.0%	19.66	253,312	34,778	64.8%	7,975	18,889	35.2%	3,868	33.2%	14,299	30.7%
1986	48,124	17.98	865,454	11,668	24.2%	18.10	211,135	32,349	67.2%	7,800	6,629	66.0%	3,410	34.0%	16,294	34.0%
1987	46,593	17.23	802,742	10,039	21.5%	18.23	182,993	34,294	69.3%	6,612	16,294	61.6%	4,126	38.4%	16,975	47.0%
1988	40,638	19.59	796,126	10,738	22.5%	19.01	204,133	31,382	65.8%	6,612	16,294	61.6%	4,126	38.4%	16,975	47.0%
1989	47,427	19.36	918,194	8,879	18.7%	23.08	304,951	30,451	64.2%	4,707	53.0%	5.1%	3.2%	0.5%		
Ave. Annual Inc./Dec.	-0.5%	0.8%	0.0%	-3.6%	-2.6%	0.7%	-3.3%	-2.9%	-7.0%	-8.0%	3.0%	0.5%				
Moving Average	-1.4%	-0.2%	-1.7%	-3.0%	-2.3%	-1.7%	-4.8%	-6.8%								
3 Point Change																

(a) Infrequent Participants - swim less than 20 days or more per year
 (b) Frequent Participants - swim 20 days or more per year
 (Source: Simmons Market Research Bureau, Inc. 1982 to 1989, Volume P-10, Sports and Leisure.)

The overall Northeast swimming market has declined in size and most of the decline appears to be the result of simply fewer new, infrequent swimmers and a number of infrequent swimmers who have stopped swimming. However, the swimming market in the Northeast has become increasingly configured by a higher distribution of frequent swimmers. The average number of swimming days per swimmers actually increased from 1986 through 1989, from 18.1 days per swimmer to 23.1 days per swimmer -- an increase of nearly five days per swimmer. Compared over the same time period at the national level, the average number of swimming days per swimmer changed only modestly from 17.9 days in 1986 to 19.4 days in 1989 -- an increase of only 1.5 days per swimmer. (See Table 2.)

Hunting

National Trends. Hunting is a relatively stable activity nationwide. The overall market is growing at an annual average rate of less than one percent per year (3-point moving average rate of two-tenths of a percent). Hunting activity days are up though -- nearly two percent per year (3-point moving average rate of 1.3 percent). Approximately 12.5 million people hunted at least once per year in 1982 and by 1989, 13 million hunted. Hunting should not be characterized as a stable activity over this period. In terms of market size, it declined from 1982 through 1984 and has since rebounded in terms of both market size and volume. The number of hunting days alone increased from 162 million in 1985 to 206.7 million days in 1989. On average at the national level, the heavy hunting segment accounts for 24 percent of the all hunters and 59 percent of all hunting activity. When light, moderate and heavy segments were examined over time, the only user segment which grew substantially from 1982 through 1989 was the heavy hunting segment. The number of heavy hunters and hunting days among this group grew at an average annual rate of nearly four percent per year.

Northeast Trends. Hunting in the Northeast is for the most part stable; but, there is evidence of fluctuations both up and down in the activity. The market size for hunters in this region remained at approximately 2 million in 1989 (it was at 2.0 million in 1982). It was as high as 2.4 million in 1983 and as low as 1.6 million in 1988. The average number of hunting days has increased slightly, but remains between 15 and 16 days per year. There were no dramatic changes in the number of frequent and infrequent hunters which reflect strong growth or decline trends. The distribution of hunters in the Northeast reveals a market configured by higher distribution of frequent hunters and a slightly higher average number of hunting days per hunter per year. During this time period, the distribution of frequent hunters at the national level only twice exceeded 50 percent (in 1983 -- 50.1 percent and in 1985 -- 51.7 percent); however, the distribution in the Northeast was substantially different. Only once did the distribution of frequent hunters drop below 50 percent (in 1989 -- 49.2 percent) in the Northeast. The distribution has normally been above 53-54 percent and has been as high as 60 percent (in 1984). Nevertheless, in the Northeast, there has been a decline in the number of frequent hunters. (See Table 3.)

Downhill Skiing

National Trends. Skiing is an activity which has grown modestly for most of the 80s. Approximately 6.7 million people downhill skied at least once per year in 1982 and by 1989, 7.9 million skied. The overall average annual growth rate in market size was 2.6 percent and for participation days 4.7 percent. The growth in skiing appears to be largely accounted for by the growth in the heavy use segment. While, all segments grew in the skiing market, the heavy segment grew

the most. The average annual growth rate for market size was nearly 16 percent and for participation days was slightly over 14 percent. But, these statistics are misleading. The changes were the result of uneven, year-to-year fluctuations and not necessarily sustained, consistent growth. For example, the year-to-year numbers and percent changes for the heavy user ski market for a few years indicate the magnitude of these fluctuations: there were 544,000 heavy skiers in 1982, 762,000 in 1983 -- 40 percent increase from 1982; 330,000 in 1984 -- 56.7 percent decrease from 1983; 660,000 (1985) -- an 100 percent increase from 1984, etc. These fluctuations make it more problematic to monitor and predict trends for downhill skiing. The fluctuations in the activity are most noticeable when the moving average statistics were examined. This statistic reveals little growth in downhill skiing during this period -- a small 1.2 percent growth in market size and a .9 (less than one percent) percent growth in skiing days. On average, the heavy skier segment (those who ski 20 or more times per year) accounts for only 7.4 percent of all skiers and 30.6 percent of all skiing segments. The bulk of skiing is accounted for by the skier who skis 5 to 19 times per year. They comprise 40.6 percent of all skiers and 51 percent of all skiing days.

Northeast Trends. The Northeast downhill ski market was characterized by a large increase in the number of skiers in the last two years of this report period. The overall market size more than double from 1987 to 1988 and even grew more in size in 1989. Here again the moving average statistic is probably a better indicator of the changes in the activity for the region; however, this number also reveals substantial growth of over 5 percent increase in market size per year and 5.5 percent growth per year in market volume (skiing days). The Northeast share of all downhill skiers exceeded 42 percent in 1988 and 1989. However, even though the market size and volume increased due to this surge in the late 80s, the average number of skiing days per skier in the region did not change. The number of skiing days per skier in the region remained around seven to eight days per year.

The distribution of frequent and infrequent skiers in the Northeast is somewhat different from the national distribution. In the Northeast, on average over the time frame examined here the distribution in numbers was about 50-50. About 50.1 percent are frequent skiers and 49.9 percent are infrequent skiers. This compares to 52 percent infrequent skiers and 48 percent frequent skiers at the national level. While both segments of the ski market in the Northeast appear to have grown substantially, this is largely due to the large increases in the 1988 and 1989. The average annual increase for infrequent skiers in the region was 19.9 percent (3-point moving average change of 6.8 percent) and for frequent skiers, the average annual increase was 17.6 percent (a 3-point moving average change of 8.4 percent). (See Table 4.)

Discussion

Trends are evident in these three recreational activities. Furthermore, more insights into an activity may be gained by examining carefully the regional and volume segments of the activity. National trends are not always reflected in the regional statistics. For example, in swimming, the trend patterns were similar in some market conditions at the national and Northeast levels. The infrequent swimmer markets were declining in size and the frequent swimmer markets were increasing in size in both the U.S. and the Northeast. But, the distributions of frequent and infrequent swimmers were very different. The difference between the distribution of frequent and infrequent markets was more distinct in the Northeast than at the national level. There was a higher proportion of frequent swimmers in

Table 3. Hunting Trends in the Northeast by Infrequent(a) and Frequent(b) Volume Segments: 1982 through 1989.

Year	Overall Size ('000)	Overall Ave. Days	Overall Part. Days ('000)	Northeast Share	Northeast Ave. Days	Northeast Part. Days ('000)	Nat. Infreq. Size ('000)	National % Infreq.	NE Infreq. Size ('000)	Northeast % Infreq.	National Size ('000)	National % Frequent	NE Freq. Size ('000)	Northeast % Frequent
1982	12,595	14.29	179,947	2.001	15.9%	30,382	6,481	50.1%	937	46.8%	6,112	49.9%	1,064	53.2%
1983	12,234	13.58	166,158	2,441	20.0%	36,257	6,405	49.9%	1,117	45.8%	5,830	50.1%	1,324	54.2%
1984	11,703	14.76	172,724	1,888	16.1%	31,651	5,849	52.7%	756	40.0%	5,854	47.3%	1,132	60.0%
1985	11,874	13.69	162,561	2,019	17.0%	31,132	6,204	48.3%	874	43.3%	5,670	51.7%	1,145	56.7%
1986	13,459	13.06	175,835	1,798	13.4%	27,254	7,263	56.1%	772	42.9%	6,195	43.9%	1,026	57.1%
1987	11,866	15.01	178,081	1,733	14.6%	28,329	5,892	52.4%	747	43.1%	5,974	47.6%	986	56.9%
1988	12,207	15.56	189,931	1,663	13.6%	28,586	6,001	56.6%	784	47.1%	6,206	43.4%	879	52.9%
1989	13,032	15.86	206,713	2,016	15.5%	31,416	6,456	50.1%	1,025	50.8%	6,576	49.9%	991	49.2%
Ave. Annual Inc/Dec	0.8%	1.8%	2.2%	1.3%	0.9%	0.6%	0.5%		3.3%		1.2%		-0.2%	
Moving Average														
3-Point Change	0.2%	1.3%	1.5%	-2.1%	-2.3%	-1.7%	-0.3%		-1.1%		0.8%		-2.9%	

(a) Infrequent Participants -- hunt less than 10 times per year

(b) Frequent Participants -- hunt more than 10 times per year

(Source: Simmons Market Research Bureau, Inc. 1982 to 1989, Volume P-10, Sports and Leisure)

Table 4. Downhill Skiing Trends in the Northeast by Infrequent(a) and Frequent(b) Segments: 1982 through 1989.

Year	Overall Size ('000)	Northeast Size ('000)	Northeast %	Ave. Days	Northeast Ave. Days	Northeast Part. Days ('000)	Nat. Infreq. Size ('000)	National % Infreq.	NE Infreq. Size ('000)	Northeast % Infreq.	National Size ('000)	National % Frequent	NE Freq. Size ('000)	Northeast % Frequent
1982	6,735	1,622	24.1%	8.40	3.76	13,623	3,376	50.1%	726	64.8%	3,359	49.9%	896	55.2%
1983	6,812	2,396	35.2%	8.16	3.96	19,558	3,396	49.9%	1,285	53.6%	3,415	50.1%	1,111	46.4%
1984	7,236	1,685	23.3%	7.40	3.85	12,462	865	51.3%	865	47.3%	3,422	47.3%	820	48.7%
1985	7,638	1,808	23.7%	8.64	3.692	15,623	849	47.0%	849	47.0%	3,947	51.7%	959	53.0%
1986	7,182	1,874	26.1%	7.70	4.030	14,422	1,006	53.7%	1,006	43.9%	3,151	43.9%	868	46.3%
1987	7,282	1,459	19.9%	7.81	3.816	11,396	764	52.4%	764	47.6%	3,466	47.6%	695	47.6%
1988	7,212	3,055	42.4%	7.60	4.085	23,232	4,085	48.8%	1,491	43.4%	3,127	43.4%	1,564	51.2%
1989	7,997	3,362	42.1%	8.54	4,005	28,721	1,596	47.5%	1,596	49.9%	3,993	49.9%	1,766	52.5%
Ave. Annual Inc/Dec	2.6%	18.0%	0.7%	18.8%	2.7%	19.9%			3.6%		17.6%			
Moving Average														
3-Point Change	1.2%	5.4%	0.0%	5.5%	2.4%	6.8%			0.9%		8.4%			

(a) Infrequent Participants -- ski less than five (5) times year year

(b) Frequent Participants -- ski five (5) or more times per year

(Source: Simmons Market Research Bureau, Inc. 1982 through 1989, Volume P-10, Sports and Leisure)

the Northeast. While there was growth at the national level for downhill skiing, the Northeast experienced a large increase in both market size and volume. The frequent hunter market increased slightly at the national level, but declined in the Northeast. Consequently, regional trends do not necessarily reflect national trends.

It is probably equally important to examine local trends where possible to determine if there are further differences. Local "hot spots" may not reflect the national or even the regional trends. A local market may also be either ahead of or behind the growth or decline curve. However, knowing the characteristics of the national and regional markets will help local agencies better understand and predict local changes. The market statistics do emphasize the need to monitor activities and participation volume carefully.

The causes of these changes in activity user segments are still unknown. The trends were followed and documented here, but no specific reasons were given by responses as to why their interest has changed nor has the study population been continually studied such as in a panel study. Many questions are still unanswered. Why has the swimming market declined in both size and number of swimming days? For example, do distinct differences between heavy and light users exist? How do these markets differ both demographically and psychographically? How depended are activity trends on resource conditions? These data do not address or answer these questions.

There is some evidence as to the factors that contribute to the decline or changes in activity participation. For example, one can see that the major reason swimming has declined in the Northeast is due to the decline in the infrequent swimming market segment. Those people who swim infrequently have either stopped swimming or no new large segments of individuals have taken up swimming. Furthermore, a core group of swimmers, those who swim frequently, remains strong in the Northeast; and, comprises more of the Northeast swim market. The average number of swimming days per swimmer has increased and appears to be fueled by the larger number of frequent swimmers. Swimming appears to have become a mature activity. There is no strong new influx of new swimmers, but a steady, growing market who desire to swim often and who are swimming more frequently. "Segmentation change" over time is an important issue which also must be addressed. People who participate in recreational activities often change their rates of play. It is very possible that people who in one year played an activity very frequently might the following year not play the activity nearly as frequently. There are numerous speculative reasons: poor resource conditions (i. e., no snow for snow skiing); climatic changes for weekend participation; changing social conditions (i.e., adult family members who find participation affected by the presence of young children in the household), etc. Consequently, a decline in the frequent participation segment may be reflected by an increase in the size of the infrequent participation segment. This appears to be the case for hunting in the Northeast. The market size of the frequent hunting segment has declined while the infrequent hunting segment has increased in size. It is doubtful that frequent hunters have simply stopped hunting and new participants have taken up the activity to result in the growth in the infrequent segment. Rather, it is probably more likely that a number of frequent hunters have reduced their frequency of hunting and are now classified as infrequent participants.

While there is limited understanding as to why such conditions exist, a recognition of the strengths and limitations of the Simmons Market Research Bureau's data must be also considered. First, the data are representative of the U.S. adult population and are consistently collected on an annual basis in the same manner. This provides the opportunity to conduct on-going trend analysis. Unlike other activity trend studies which were conducted at best every five to ten years and which often use different methods and questions, the data provided here were collected on an annual basis using the same format and procedures.

Nevertheless, there are limitations to the data. First, the data are only available in summary tables which limits any type of detailed statistical analysis. Data may be manipulated to examine selected segments as was the case in this review; but, individual case-by-case data were not available. Some assumptions must also be made with the data. Statistics are often provided in grouped format in tables. One must assume for example when calculating activity days that the midpoint of a group category is representative of the distribution of activity days in the category. Also, in open-ended categories, the low-end of the category must be used in activity day estimates as the category is not framed by an upper range limit. Consequently, the assumptions made here about activity day participation may actually be conservative and under-estimate the entire size of the activity demand. Furthermore, Simmons draws a new sample each year in their studies. They do not survey the same 20,000 individuals each year or conduct panel surveys to follow individual changes over time. Rather, they project the market based on sample statistics. While their sampling procedures are highly sophisticated by stratification, weighting and over sampling techniques, there is the real likelihood that "sample bounce" may occur. "Sample bounce" is a condition where samples which reflect the true or actual mean of participation appear to fluctuate dramatically when presented over time. Sample means often cluster around the true mean of the population; however, there are times when a more distant or outlying mean is used to represent the actual mean. The selection of certain sample means for each year or an individual year may create a condition referred to as "sample bounce." It is possible to control sample mean estimates if more samples were drawn; but, this is very costly especially with large national sampling techniques.

Recreation participation patterns are complex, dynamic and not always easily understood. This review of three selected activities by volume segmentation within the context of one regional market area sheds some new light on trends. Simply following national trends can be misleading. However, there are still needs for more closely monitoring recreational participation data.

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RURAL COMMUNITY VALUES AND COMMUNITY TYPE: A STUDY OF ATTITUDES TOWARD TOURISM

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Introduction

Distinctive types of Vermont communities have been documented based on population density and relative measures of the type of property within the community. No matter how diverse communities appear, most display remarkably similar value structures. Agricultural communities, however, are somewhat distinct in their values and associated attitudes toward growth and development. A personal orientation in values was found to have a direct relationship with positive attitudes toward growth and development, but value patterns associated with agricultural communities resulted in less favorable attitudes toward growth. Because values are the basic component of the cultural structure of communities, future statewide policy initiatives should address the diversity in values between agricultural communities and the other types of communities within the state.

Rural areas are facing a myriad of changes. Many rural communities are facing economic decline because of downturns in agriculture and forest products industries and the migration of manufacturing to alternative markets. In response, some rural communities have embraced tourism as a means to prevent further erosion of the economic base. The economic benefits of tourism and the cultural diversity visitors bring to a host community are often magnified in the press and by chambers of commerce, and operationalized through economic development efforts. Benefits such as improved services and shopping, increased jobs and taxes, and diversification of the economy are often promoted as the advantages of increased tourism and growth. This optimization of the economic benefits, however, is not without social and environmental costs to the host community (Allen, Long, Perdue, and Kieselbach 1988).

Tourism attractions and recreation amenities have often attracted new residents and resulted in changed demographic profiles for many communities. In some communities, tourism and accompanying growth and development have resulted in congestion, loss of open space, price increases, disruption of the social structure, changes in community values, and negative reactions to increased tourism.

Concomitant with these changes in community, then, have often come changes in resident attitudes (Allen, et.al. 1988), and value systems (Zwick 1990). Values are particularly important because they are at the core of belief systems and a basic component of the cultural structure of communities. Because attitudes are based on values (Heberlein 1981), the study of values may provide insight in differentiating attitudes among individuals and their social aggregates (i.e., communities). Understanding and monitoring the relationship of community values and attitudes toward tourism is particularly

important for those types of communities which embrace or host tourism. The continued success, or the demise of tourism, is often seen as dependant on the tolerance for tourism displayed by the host community

Differentiation of community values and their relationship to resident attitudes toward tourism have been limited to small numbers of communities of different types within a small geographic region (Zwick 1990), however, community value patterns have not been examined nor related to attitudes toward tourism over a large set of communities. The purpose of this research is to expand on this previous regional examination of community values by exploring community value patterns over the entire state of Vermont. Two questions were developed to guide the study. 1) Do different types of communities exhibit different value patterns? 2) Is there a relationship between community value patterns and attitudes toward tourism and community growth and development?

As a basis for differentiating values among different types of communities, the study uses a community typology developed by Bevins and Zwick (1988) and refined by Bevins (1990). The community typology classifies communities into eight types: 1) residential commercial centers, 2) residential limited commercial, 3) residential noncommercial, 4) residential rural, 5) recreation commercial centers, 6) recreation noncommercial, 7) agricultural, 8) lowest population density), and a ninth type which encompasses unclassified communities.

The conceptualization of values developed by Milton Rokeach (1973) provides the framework for the study of community value patterns in this study. By ranking separate sets of 18 terminal values and 18 instrumental values, value patterns of individuals may be discerned. Individual value patterns may be aggregated and correlated to represent a value pattern for a community or community type.

Methods

Data was collected from a random sample of selectmen / selectwomen from all 246 rural towns within Vermont. Selectmen were considered to be "institutional gatekeepers," that reflect shared values of a community (Rokeach 1979). An initial survey was mailed to 500 selectmen/selectwomen and a follow-up reminder was sent. One hundred forty nine useable responses were received from the initial mail survey and reminder. Thirteen selectmen returned surveys declining to participate, and 11 failed to properly complete the questionnaires. Because of monetary constraints, a random sample of only 74 nonrespondents were mailed a second survey. The sixteen respondents from the follow-up were not significantly different in any demographic patterns from the initial respondents and were found to be significantly different ($p \leq .05$) on only one value ranking (i.e., Family Security). As a result, their responses were combined with the initial respondents for analysis.

Instrumentation

The survey instrument consisted of the Rokeach Value Survey (Rokeach 1973), an attitude survey, and demographic questionnaire. Rokeach (1973) maintains that values exist as hierarchical (i.e., ranked) beliefs about end-states of existence (i.e., terminal values) and preferred ways of behaving (i.e., instrumental values). The reliability and validity of the Rokeach instrument have been thoroughly tested and verified (Homant 1967; Feather and Peay 1976; Rokeach 1979). Because terminal values have been found to be more reflective of personal orientations (Park 1971), they were used in the analysis in this study. Value ranks were rescaled with a normal

(z) transformation (Pitts and Woodside 1986) for analysis with nonparametric statistical techniques.

The attitude scale assessed selectmen/selectwomen's attitude toward tourism and growth and development in their respective communities. Attitudes about growth and development impacts were measured through 17 statements which elicited whether growth and development was having a "positive effect," "negative effect," or "neither positive or negative effect." By aggregating over the seventeen responses, an "attitude toward growth and development" score was calculated. An "attitude toward tourism" score for each respondent was determined by aggregating over twelve statements assessing their degree of agreement (ranging from "strongly agree," to "strongly disagree") with specified tourism impacts on their respective communities.

The instrument also queried respondents about demographics, socioeconomic information, and household data. All three parts of the survey instrument were pretested in an earlier study (Zwick 1990) and revised for clarity before being mailed to the statewide sample.

Analysis and Findings

In order to explore whether communities have similar terminal value patterns, mean value rankings on the 18 terminal values were computed for each of the nine types of communities and subjected to correlational analysis. Spearman Rank Order Correlation coefficients indicated that the value hierarchies for all nine community types were remarkably similar (Table 1) except for Residential/Noncommercial type communities and Agricultural type of communities. The weak rho coefficients between Residential/Noncommercial communities and all other community types may be a result of the small respondent sample size (N=4). An examination of correlation coefficients suggests there may be differences between Agricultural communities value hierarchies and those classified as Residential/Commercial (rho=.722), Residential/Limited Commercial (rho=.671), Residential/Rural (rho=.732), and the Unclassified communities (rho=.613). An examination of the ranked means on the 18 terminal values (Table 2) likewise indicate a stability in the top three values and five lowest ranked values across all communities except Residential/Noncommercial and Agricultural types.

Similar to a previous study of communities of a small region of Vermont (Zwick 1990), the values "Health," "Family Security," and "Freedom," were consistently ranked in the top three values for all communities except for those classified as Residential/Noncommercial and Agricultural. At the other end of the rankings, the values "Exciting life," "A World of Beauty," "Salvation," "Pleasure," and "Social Recognition" were consistently ranked low. The Agricultural community respondents were distinguished by their relatively high ranking on the values "A Sense of Accomplishment" (ranked third) and "An Exciting Life" (ranked fourth).

A Kruskal-Wallis test was used to determine whether the communities differed in their value hierarchies. The analysis revealed a generally stable pattern of value rankings across all communities, except for three values "An Exciting Life," "Family Security," and "Self Respect" The Agricultural communities were differentiated from all other types of communities on the value "An Exciting Life." The Agricultural community respondents mean rank on "An Exciting Life" was significantly ($p < .05$) lower (see Table 3). Residential/Noncommercial community respondents were differentiated from all other community types except for Residential/Commercial

(Type 1) and Recreational/Non-commercial (Type 6) respondents on the value "Family Security." The Recreational/Noncommercial respondents were significantly differentiated ($p < .10$) from Residential/Limited Commercial (Type 2) and Low Population Density (Type 8) respondents on this same value. The value "Self Respect" distinguished Residential/Noncommercial (Type 3) communities from Recreational/Noncommercial (Type 6) respondents and Agricultural community (Type 7) respondents. This value also differentiated Recreational/Commercial (Type 5) community respondents from Agricultural (Type 7) and other recreational community respondents (Type 6).

Spearman Correlational (rho) analysis was used to explore the relationship between selectmen/ selectwomen value patterns and their attitudes toward tourism and growth and development. A significant relationship was found between the terminal values "Mature Love," and "Freedom," and respondents' attitudes toward growth and development (Table 4). Respondents who ranked "Mature Love," and "Freedom," high in their value patterns generally had a more favorable attitude toward growth and development. There was an inverse relationship between the value "An Exciting Life," and respondent attitude toward growth and development. The value "Self Respect" was the only value having a significant relationship ($p < .10$) to residents' attitude toward tourism. Both Agricultural and Recreational/Noncommercial community respondents had significantly lower rankings on this value.

Conclusions and Implications

An interpretation of these rankings indicates that Vermont communities display a *personal security* orientation in their top ranked values. Of particular note is the stability inherent in the value rankings on—"Freedom," "Family Security," and "Health." Agricultural community respondents were distinguished by their relatively high rankings on "Exciting Life" (stimulating/active life) and "Sense of Accomplishment" (contribution to life), suggesting a "self fulfilling life," oriented toward initiative or self accomplishment. The significant positive relation of "Mature Love" and "Freedom" combined with the inverse relationship of "An Exciting Life" with attitudes toward growth and development suggest that a *personal orientation* may be driving favorable attitudes toward growth and development in most communities. Similar to a previous study (Zwick 1990), agricultural community respondents have a different orientation in their values (stimulating and active life combined with self accomplishment) that are less favorable toward such growth. The overall consistency of community value patterns suggests that community types do not differ significantly in their basic cultural structure and that Vermont communities, excluding those steeped in agriculture, are becoming relatively homogeneous in their value patterns.

Implications of this study include: 1) the examination of values can provide a clearer understanding of the cultural structure (values) of communities; 2) because it is possible to discern value patterns from "gatekeepers" within a community and a common value pattern that is shared, it is possible to measure changes in values (Rokeach 1979). Examination of long term changes in values (e.g., through longitudinal studies) could provide a clearer understanding of the transformation occurring in communities that are impacted by demographic and socioeconomic expansion related to tourism and growth; 3) understanding of values and value change is seen as a priority in development of rural public policy initiatives needed to improve the quality of life in rural communities (Martin and Luloff 1988); agricultural communities have a distinct value set

and may require policy/planning initiatives to protect and ensure that their unique cultural structures are maintained.

Table 1: Spearman Rank Order Correlation Coefficients for Terminal Values of Vermont Communities

Community Type	Residential/Commercial (Type 1)	Resid't/Lmtd Commercial (Type 2)	Residential/Noncommerc'l (Type 3)	Residential/Rural (Type 4)	Recreational/Commercial (Type 5)	Recreational/Noncommerc'l (Type 6)
Residential/Commercial	1.000					
Resident'l/Lmtd Commercial	0.845	1.000				
Residential/Noncommerc'l	0.569	0.587	1.000			
Residential/Rural	0.918	0.881	0.665	1.000		
Recreational/Commercial	0.913	0.890	0.601	0.958	1.000	
Recreational/Noncommerc'l	0.894	0.802	0.433	0.895	0.908	1.000
Agricultural	0.722	0.671	0.228	0.732	0.823	0.817
Low Population Density	0.922	0.848	0.572	0.939	0.954	0.920
Unclassified	0.615	0.662	0.387	0.729	0.752	0.695

Table 1 (cont.)

Community Type	Low Population		
	Agricultural (Type 7)	Density (Type 8)	Unclassified (Type 9)
Agricultural	1.000		
Low Population Density	0.801	1.000	
Unclassified	0.613	0.779	1.000

Table 2: Community Value Patterns

Statewide Average	Community 1	Community 2	Community 3	Community 4	Community 5	Community 6	Community 7	Community 8	Community 9
Health	Health	Family Security	Self-respect	Health	Family Security	Freedom	Family Security	Family Security	Health
Family Security	Family Security	Health	Wisdom	Family Security*	Freedom	Health	Health	Health	Family Security
Freedom	Freedom	Freedom	Freedom	Freedom*	Health	Family Security	A Sense of Accomplishment	Freedom	Freedom
Self-respect	Wisdom	Self-respect	A Sense of Accomplishment	Wisdom	Self-respect	A Sense of Accomplishment	An Exciting Life	Self-respect	Self-respect
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
Mature Love	A World of Beauty	An Exciting Life	Social Recognition*	National Security*	Mature Love*	A Comfortable Life	National Security	National Security	Pleasure
National Security	A Comfortable Life	A Comfortable Life*	National Security	Salvation	An Exciting Life*	National Security	A World of Beauty	Inner Harmony	Social Recognition
A World of Beauty	Salvation	Equality*	A World at Peace	A Comfortable Life	A Comfortable Life	An Exciting Life	Inner Harmony	An Exciting Life	Mature Love
Salvation	An Exciting Life	A World of Beauty	A Comfortable Life*	An Exciting Life	A World of Beauty	A World of Beauty	Mature Love	Salvation	An Exciting Life
Pleasure	National Security	Social Recognition	An Exciting Life*	Pleasure	Salvation	Pleasure	Pleasure	Social Recognition	A World at Peace
An Exciting Life	Pleasure	Salvation	Pleasure	A World of Beauty	Social Recognition	Social Recognition	Social Recognition	A World of Beauty	Salvation
Social Recognition	Social Recognition	Pleasure	A World of Beauty	Social Recognition	Pleasure	Salvation	Salvation	Pleasure	A World of Beauty

* Tie in mean value rankings within the community.

Table 3: Differences in Community Mean (x) Value Rankings for the Values "Exciting Life," "Family Security," "Self Respect."

Value	Community 1	Community 2	Community 3	Community 4
Exciting Life*	12.400	10.824	12.250	12.765
Family Security [§]	5.400	3.118	9.000	4.118
Self-respect [†]	7.500	6.824	4.500	7.176

Value	Community 5	Community 6	Community 7	Community 8	Community 9
Exciting Life	10.676	11.267	6.834	12.000	12.667
Family Security	4.353	5.667	3.667	3.077	3.667
Self-respect	5.824	9.100	9.250	7.115	6.833

* p < .05 Significant difference between Type 7 and all other types.

§ p < .10 Significant difference- Types 3 vs.2; 3 vs. 4; 3 vs. 5; 3 vs.7; 3 vs. 8; 3 vs. 9; 6 vs. 2; and 6 vs. 8.

† p < .05 Significant difference- Types 3 vs. 6; 3 vs. 7; 5 vs. 6; and 5 vs. 7.

Table 4: Association Between Terminal Values and Attitudes Toward Growth and Tourism
(Spearman Rank Order Correlation—rho)

Terminal Values	Aggregate Tourism Score (rho)		Aggregate Growth & Development score (rho)	
A Comfortable Life	-0.035	p=.339	-0.043	p=.302
An Exciting Life	-0.067	p=.209	-0.171	p=.020**
A Sense of Accomplishment	-0.069	p=.205	-0.042	p=.308
A World at Peace	-0.017	p=.419	-0.086	p=.157
A World of Beauty	0.076	p=.182	0.060	p=.236
Equality	0.097	p=.122	0.026	p=.379
Family Security	0.013	p=.438	-0.033	p=.348
Freedom	-0.017	p=.419	0.114	p=.087*
Health	-0.018	p=.415	0.066	p=.125
Inner Harmony	-0.059	p=.238	-0.025	p=.409
Mature Love	-0.131	p=.354	0.149	p=.037**
National Security	0.089	p=.144	0.031	p=.356
Pleasure	-0.062	p=.229	0.046	p=.291
Salvation	-0.024	p=.386	-0.003	p=.499
Self-respect	0.119	p=.077*	0.016	p=.493
Social recognition	-0.051	p=.224	-0.070	p=.206
True Friendship	0.086	p=.151	0.057	p=.248
Wisdom	0.012	p=.444	-0.028	p=.370

* p < .10

** p < .05

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TOURISM MEASUREMENTS BASED ON TRAFFIC VOLUME

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Traditional tourism barometers require extensive data collection or require aggregation of secondary data that is insensitive to short run change. This paper explores a more parsimonious means of predicting tourism business activity using traffic flow. Analysis of a small sample of Vermont recreation/tourism centers indicates that a moderate to high correlation exists between traffic flow and tourism business volume. Traffic flow may provide a means for determining tourism activity crucial to future regional and state planning efforts.

Where tourism and travel activity is critical to the economic health of a community, some method of monitoring and reporting current activity is essential for planners and policy makers (Hogan and Rex 1984). Several states are currently exploring implementation of a tourism barometer. The NE-163 Northeast Technical Research Committee NE-163 (CSRS 1990) has placed a high priority on the development of a reliable tourism monitoring device.

The New England Governors have officially requested the six New England Land Grant Universities to establish a New England Travel Information System which would include some sort of monitoring device (Clapp 1989). To accomplish this, a task force of University researchers was appointed and given responsibility to address this issue.

Most of the barometers developed to date require either (1) the generation of extensive primary data on a daily or weekly basis (diaries etc), or (2) the aggregation of secondary data over a longer period of time. The first of these two methods is sensitive to short run change, but it is a costly procedure. The second is less sensitive to short run change, but is more cost effective.

The Vermont Department of Highways Research Division monitors traffic volume through a system of automatic traffic recorders--pneumatic tubes and below road surface inductive counters (Bevins and Wilcox 1978). These devices mechanically tally the number of vehicles passing at recorder stations at 15 minute intervals.

In this paper we have analyzed the relationship between traffic volume, as reported monthly by the Vermont Highway Department, and sales volume (rooms, meals, and retail) as reported by the Vermont Tax Department. If there is a significant degree of correlation between the two, traffic volume might be used as a predictor of business activity. Such a procedure would provide a parsimonious alternative to traditional tourism barometers.

A community typology model developed by the authors classifies all Vermont communities into eight types (Bevins and Zwick 1988). Thirty nine communities were classified as "recreational commercial centers". These communities formed the total population from which the study sample was selected.

Methods

Data for this study consisted of average daily traffic (ADT), and sales volume (rooms, meals, and retail receipts). Average daily traffic is collected by the Vermont Agency of Transportation for contiguous segments of all Interstate, U.S. Routes, and state routes within Vermont as part of a sufficiency rating system to schedule highway improvements. While such data provides excellent traffic volume information, it is only collected every three to five years and was last published in 1987. Rooms, meals, and retail receipt summaries are published annually for each Vermont town and county, however, the data has been disaggregated to the town level only since 1988. As a result of this disparity in obtaining congruent dated data, the study became one of process as well as substance (see Fig. 1, next page).

Using a community typology model developed by Bevins and Zwick (1988) and refined by Bevins (1990), the study focused on thirty nine communities classified as recreational/commercial centers. The recreational/commercial centers represent communities with either major ski resort attractions or lakeshore developments. Within these communities there were many second homes, food and lodging establishments, and other components of the service sector. Because of the exploratory nature of this study, the authors felt that the study points should be limited to the more rural sections of the state, excluding Chittenden County where traffic flow is heavily associated with commuting to places of employment. With these limitations, 32 communities were identified as the study sample.

A study of the correlation between sales volume and traffic flow in the 32 communities revealed only a moderate relationship ($r = .569$). This suggested the need for additional or more refined analysis. Two alternatives could be followed: 1) the analysis could be restricted to known or delineated tourist/visitor routes or 2) the time period studied could be extended to smooth out short term variations.

The determination of an appropriate tourism/visitor route for analysis was made by geographically mapping and analyzing tourism sales volume. After eliminating areas where localized traffic volume overshadowed tourism traffic, it became clear the Route 100, which runs the entire length of the state in the highest elevations, would be most appropriate for further analysis. Six communities along Route 100 had 1) major tourism attractions and 2) designated recorder stations for the Vermont Agency of transportation (see Fig. 2).

To address the second alternative, three years of sales volume data was readily accessible on a fiscal year basis for 38 of the 32 recreational/commercial center communities (state fiscal years 1988-90) fiscal years. However, complete traffic flow data was available for only eight of these communities (Table 2). A corresponding total sales volume (fiscal years 1988-90) was also calculated for each of the eight communities.

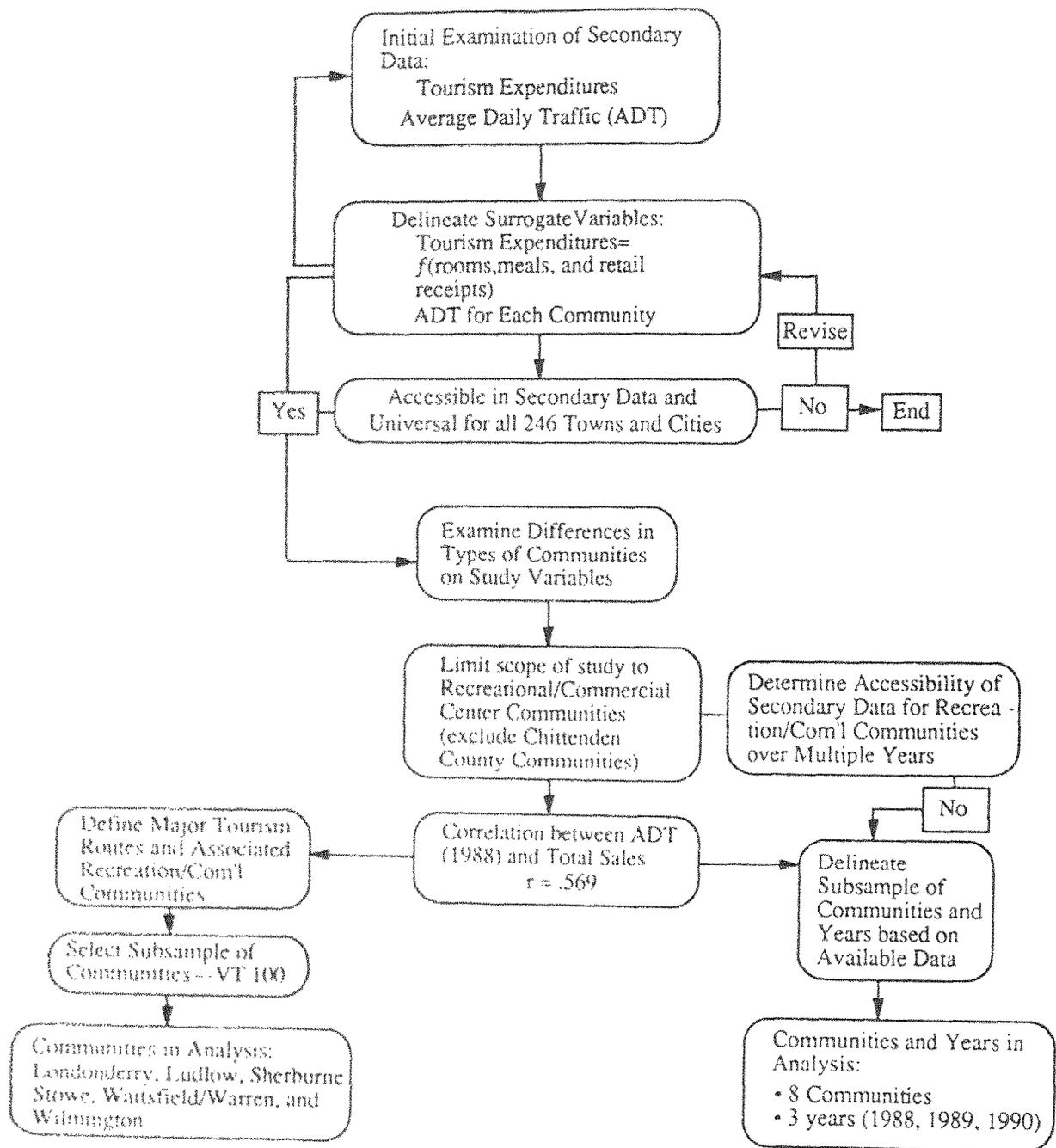


Figure 1. Selection of Variables and Communities for Study

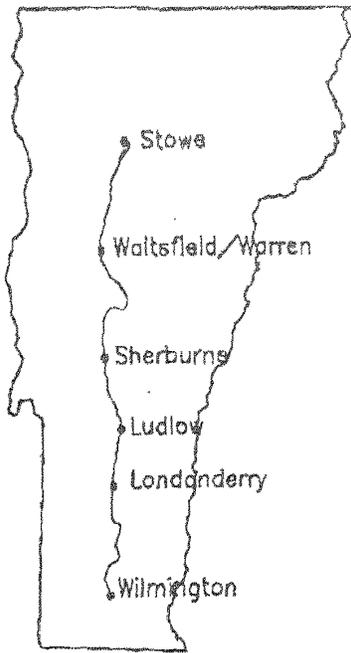


Figure 2. Study Sites for VT. Route 100

Findings

Because the community was used as the unit of analysis and the sample size for each set of analysis was small, nonparametric statistical techniques were used to relate traffic volume to total sales volume.

A Spearman Rank Correlation Coefficient was calculated to determine the strength of the association between ADT and total sales volume for the six VT. Route 100 recreational/commercial center communities (Table 1). The calculated correlation coefficient ($\rho = .943$) indicates a very strong relationship exists between the two variables over these six communities.

Table 1. Spearman rank correlation coefficient for VT Route 100 recreational/commercial centers (ADT and Total Sales).

Community	ADT (1988)*	Total Sales †
Londonderry	2090	\$24,539,349
Ludlow	7390	\$57,495,336
Sherburne	9780	\$93,431,876
Stowe	8260	\$88,877,845
Waitsfield/Warren	6040	\$71,607,295
Wilmington	5910	\$108,403,483

$\rho = .943$

*Source: Vermont Agency of Transportation, Project Planning Division

†Source: Vermont Tax Department.

Spearman Rank Correlation Coefficients were also used to assess the degree of association between sales volume and traffic flow for eight recreational/commercial center communities over the three year period 1988-90 (Table 2, next page). Spearman Correlation Coefficients ranged from $\rho = .643$ to $\rho = .714$ indicating a moderate and stable relationship exists for the eight communities over the time period for which data was available. The stability of the coefficients holds some promise for future research.

Implications

Results of this study indicate that traffic flow (i.e., ADT) can be used to roughly predict rural tourism business volume in certain instances. Urban tourism is more difficult to predict using this method because of the influence of commuting traffic. Despite these limitations, more timely evaluation of tourism activity is now possible. Future technical improvements in remote sensing should improve, even further, the evaluation of tourism from surrogate measures.

The ability to easily create a computerized geographic map of both traffic flow and tourism activity has greatly expanded the information base for sound planning at the regional and state level. Vermont's planning act (Act 200) calls for the identification of areas of "critical mass" where growth in specific economic activities should be encouraged. Hopefully this research has contributed to the planning process for future tourism activity.

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Table 2: Spearman Rank Correlation Coefficients Recreational/Commercial Centers for Years 1988, 1989, and 1990
(ADT and Total Sales)

Community	ADT*	1988 Total Sales†	ADT	1989 Total Sales	ADT	1990 Total Sales
Derby	2710	\$59,994,159	2827	\$70,374,777	2929	\$68,610,024
Grand Isle	2970	\$2,210,807	2435	\$2,630,367	2510	\$2,585,781
Manchester	10820	\$176,821,947	12199	\$184,199,640	12331	\$138,778,004
Sherburne	9780	\$93,431,876	9719	\$94,967,740	9861	\$90,705,843
Swanton	6660	\$108,403,483	6794	\$96,465,205	7200	\$97,635,110
Wilmington	3770	\$39,017,488	3812	\$39,035,086	4092	\$36,510,458
Winhall	3880	\$9,982,891	3746	\$10,554,986	3841	\$9,331,218
Woodstock	8900	\$55,066,102	11063	\$55,611,832	11298	\$55,847,885
	rho = .643		rho = .714		rho = .714	

*Source: Vermont Agency of Transportation

†Source: Vermont Tax Department