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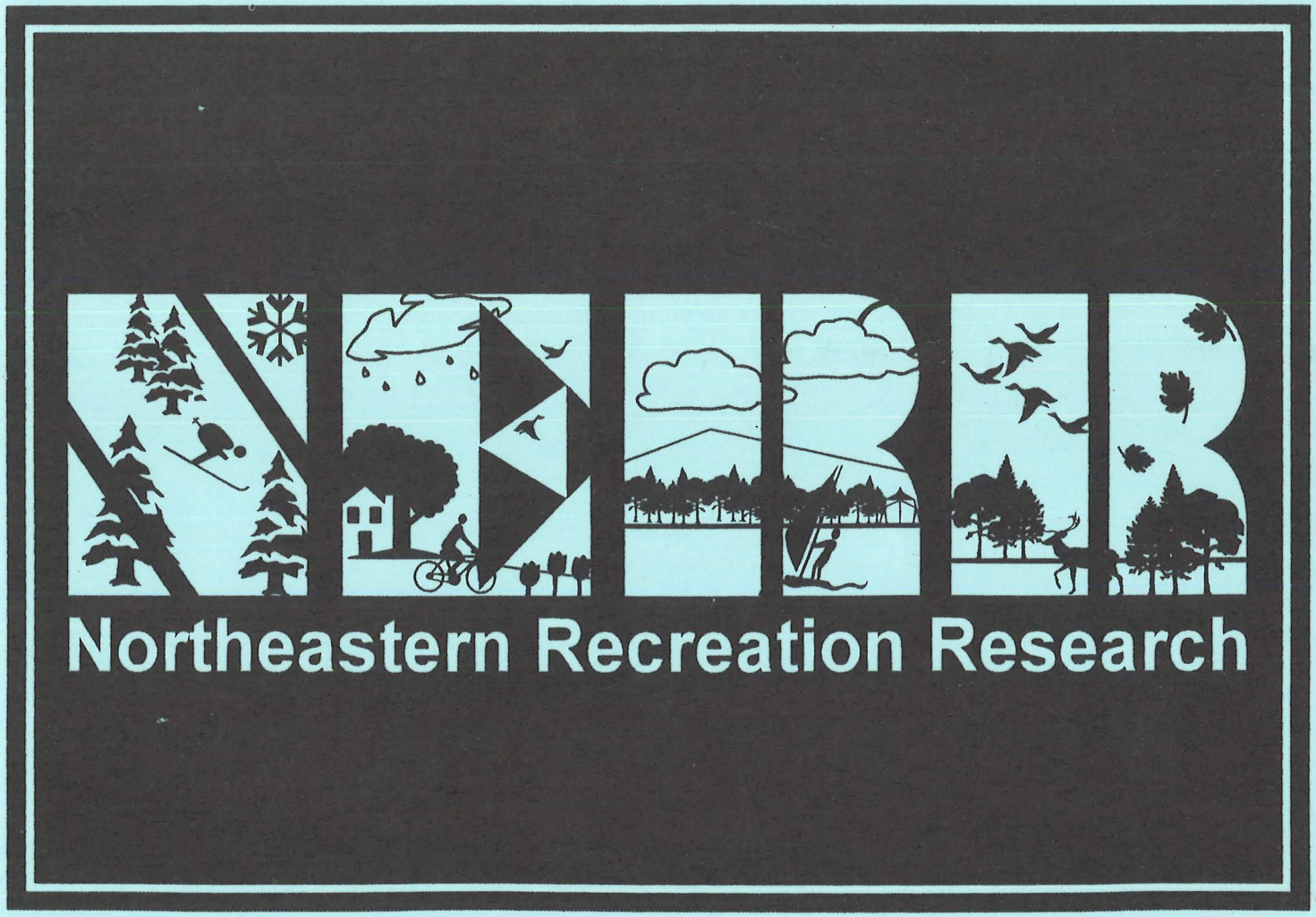
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Proceedings of the 1996 Northeastern Recreation Research Symposium

March 31 - April 2, 1996
Bolton Landing, New York



Northeastern Recreation Research Symposium Policy Statement

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

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Proceedings of the 1996 Northeastern Recreation Research Symposium

March 31 - April 2, 1996



On Lake George in Bolton Landing, New York

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Issues of Ethnicity Among State Park Visitors in the New York Metropolitan Area. *Kieran Quinn* (Palisades Interstate Park Commission)

Managing Recreation Resources to Enhance Regional Cultures. *Francisco Valenzuela* (U.S. Forest Service-Milwaukee)

Barriers to Implementation of Sustainable Tourism Initiatives. *Andrew Holdnak* (University of Florida)

The Tourism Life Cycle and Net Migration in a Vermont Community. *Varna M. Ramaswamy and Walter F. Kuentzel* (University of Vermont)

Outdoor Recreation Activity Preferences: A Geographical Perspective Based on Population Density *A. Williams and Robert A. Robertson* (University of New Hampshire).

The Problems of Movie Induced Tourism. *Roger Riley* (Illinois State University), *C. Van Doren, and D. Baker* (Texas A&M University)

Involvement With New Hampshire Snowmobile Association's Trailmaster Program: A Profile of Volunteer Activities and Motivations. *Michael Provost and Robert A. Robertson* (University of New Hampshire)

Salmon Falls River Greenbelt Plan: A Study in Coordination Between Non-Profits, Municipalities, and States. *P. Schumacher* (Town of South Berwick, ME) *and J. Demetracopolous* (Great Works Regional Land Trust)

Understanding Natural Beauty. *Tom More* (USDA Forest Service, Northeastern Forest Experiment Station) *James Averill, and P. Stanat* (University of Massachusetts)

Locus of Control as a Factor in Hunting and Fishing Participation Among Northeast Kingdom Residents. *Rodney Zwick* (Lyndon State College), *Ron Glass* (USDA Forest Service, Northeastern Forest Experiment Station), *David Solan* (Mansfield University), *and David Tucker* (Northeast Kingdom Community Action)

Sustainable Tourism and Cultural Attractions: A Comparative Study in Ethnic Interpretative Centers in China and Canada. *Y. Li* (University of Western Ontario)

Ethnicity and Recreation: A Case of Korean Immigrants. *W. Jeong and H. Kim* (Pennsylvania State University)

Teaming with Wildlife: A Natural Investment. *N. Edelson* (International Association of Fish and Wildlife Agencies)

The Value of River Protection to Businesses in Vermont. *Kari Dolan* (National Wildlife Federation, Montpelier, VT)

Risk Taking Behavior and the West Virginia Commercial Whitewater Study. *J. Levendorf* (West Virginia University)

Collaborative Planning and the USDA Forest Service: Role of the External Partners. *Rick Beauchesne* (West Virginia University)

Integrating Recreation Into Forest Management Prescriptions with NED. *Mark Twery* (USDA Forest Service, Northeastern Forest Experiment Station)

Bike Paths: Standardizing Design Standards. *Skip Echelberger* (USDA Forest Service, Northeastern Forest Experiment Station) *and Anne Lusk* (The Greenway Connection, Stowe, VT)

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Influence of Intrinsic and Extrinsic Factors on Environmental Concern and Behavior. *Victor Caro* (West Virginia University)

Economic Impacts of Snowmobiling in New Hampshire. *Dan Gardoqui and Robert A. Robertson* (University of New Hampshire)

The Influences of Demographic Factors on Incentive Reward Preferences. *Kimberly J. Shinew, Margie Arnold, and D Tucker* (University of Illinois)

The Coalition for Unified Recreation in the Eastern Sierra (CURES): A Profile of a Cooperative Recreation and Tourism Planning Initiative. *Nancy Myers* (U.S. Forest Service) *and Steve Selin* (West Virginia University)

Ethnicity in Parks and Recreation: Keynote Session

THE IMPLICATIONS OF INCREASED RACIAL AND ETHNIC DIVERSITY FOR RECREATION RESOURCE MANAGEMENT, PLANNING, AND RESEARCH

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Abstract: Increasing racial/ethnic diversity is an important consideration in recreation resource management. Research has provided useful insights into the needs of racial/ethnic minority groups; but a comprehensive understanding of these important groups has yet to be developed. A cooperative approach among researchers, managers, and planners is critical to making significant progress towards meeting the recreation needs of racial/ethnic minority groups.

Introduction

Increasing ethnic and racial diversity presents recreation managers and planners with significant new challenges. Some managers of recreation areas are seeing new users and "nontraditional" activities. Other managers see limited use by some ethnic and racial groups of facilities and programs which they feel should appeal to a more diverse clientele. Some managers have frustrating experiences in reaching out to "minority communities," while others are successful. Recreation planners note differences in outdoor recreation participation patterns across racial and ethnic groups, but are unclear about the implications for policy. In all of these cases, uncertainty on how to proceed is heightened by limited experience serving minority groups, few minority employees, and low minority participation in recreation planning and public involvement efforts.

Research on the recreation preferences and behavior of racial/ethnic groups has provided some insight into how to best serve the needs of these important groups. However, major questions have been left unanswered. After working on these problems for a number of years, we have concluded that significant progress will only come with increased cooperation among managers, planners, and researchers. Hopefully our combined experiences and insights will allow us to move forward in meeting the needs of our increasingly diverse customers. We hope that today's session will be an important step in that important effort. We begin our presentation with this brief overview of research findings that draws on our earlier work (Dwyer and Gobster 1992).

Participation In Activities

A number of studies have identified differences in recreation activity participation between African Americans and whites (e.g., Washburn 1978; Klobus-Edwards 1981; O'Leary and Benjamin 1982; Stamps and Stamps 1985; Dwyer and Hutchison 1990; Dwyer and Gobster 1991; Dwyer 1993, 1995a). Findings generally show lower participation among African Americans in dispersed outdoor recreation activities such as camping and hiking; and higher participation in active, social, and urban oriented activities like ball playing and picnicking. There is a tendency for African Americans to concentrate their recreation participation closer to home than whites (Dwyer and Hutchison 1990; O'Leary and Benjamin 1982; Metro, Dwyer, and Dreschler 1981; Dwyer 1993). There is, however, little agreement on why these differences exist. Continuing debate focuses on whether differences are due to the differing socio-economic backgrounds (the "marginality" explanation) or to culturally based preferences (the cultural or "ethnicity" explanation). Support for one thesis over another varies by group, location, and outdoor recreation activity. This line of research has been extended to Hispanic American and Asian American groups; but the patterns of similarities and differences are less clear (Dwyer 1993). Analysis across a range of racial/ethnic minority groups is complicated by different demographic profiles of groups, and because these groups are sometimes concentrated in different areas. For example, in a random telephone sample of Illinois residents, Hispanic American and Asian Americans were younger than African Americans or whites; Asian Americans tended to have the highest incomes and the largest family sizes; and African Americans were the group most likely to live in Chicago (Dwyer 1995a). Attempts to predict participation in outdoor recreation activities based on demographic variables have met with limited success. For example, models for predicting participation in 31 outdoor activities in Illinois that included variables reflecting race, age, residence, income, gender, and household size explained from 8 to 15 percent of the variation in participation. In the Illinois analysis, race was never the most significant variable in explaining participation; and was the second most useful for only four activities. Results from other studies suggest that the significance of race in explaining participation varies according the activity, the racial/ethnic groups involved, and the area where the study is conducted. In the Illinois study, race was relatively more useful in explaining participation in activities that involve water, snow, and ice.

In contrast to the comparative approach, some researchers have begun to look at the nature and meaning of leisure participation within specific ethnic groups. This focused approach may be helpful in understanding Asian American ethnic groups, who may come from diverse cultures (e.g. Hutchison 1993; Allison and Geiger 1993). For example, Zhang and Gobster (in press) showed that outdoor recreation activity had strong cultural meaning and significance for many Chinese Americans living in Chicago's Chinatown. These cultural ties were evident in participation and preferences for traditional activities such as taiji, but for the most part underlaid activities that were also popular within mainstream Anglo American culture. "Relaxing" was one popular activity in this respect; engaged in on a daily basis, participants in face-to-face interviews found it hard to define relaxing in terms of discrete leisure activities or separate it from the non-leisure part of their lives. A critique of past

approaches to explaining participation, and suggestions for more comprehensive approaches are presented by Taylor (1990), Carr and Williams (1992), Hutchison (1988), and Carr and Chavez (1993).

Environmental and Development Preferences

Studies of site preferences have tended to focus on comparisons between African Americans and whites. These studies have generally shown that both racial groups have a high regard for nature; but that African Americans generally prefer settings with higher levels of maintenance; more open, formal tree plantings; a greater social orientation; and higher levels of facility development (Kaplan and Talbot 1988; Dwyer and Hutchison 1990; Dwyer and Gobster 1991). Studies of urban children's nature preferences and experiences have likewise shown that African American children tend to prefer more open forest settings, and that dense forest areas can be associated with fear or danger (Metro, Dwyer, and Dreschler 1981; Gobster 1991a). Kellert (1984) also reported major differences in the environmental preferences of urban African Americans and whites, including a generally greater interest and emotional attachment to nature and wildlife among whites. There have been some studies of Hispanic American groups (e.g., Chavez 1993; Ewert and Pfister 1992; Irwin et al. 1990), but there has been little work on Asian Americans or other groups. Irwin et al. (1990) found that Mexican American campers favored more closely spaced campsites so they could be near other campers, and placed a higher priority on tangible campground design features such as toilets, camping space, water, and fire rings than did white campers, who tended to emphasize intangible elements. Chavez (1993) found that Central Americans had higher preferences for picnic areas, parking facilities, and other amenities than did other Hispanic Americans or Anglos.

Social Units of Participation

Studies examining the social patterns of park and recreation use show commonalities and differences across racial groups. In Chicago parks, Hutchison (1987) found the social composition of white and African American groups most similar, with Hispanic Americans tending to have larger groups with a higher proportion of adults. Gobster (1991b) reported higher average group sizes among Hispanic, East Asian, and South Asian American users of an urban trail. Studies of national forest recreation settings have also reported large average group sizes among Hispanic American and Native American campers and day users (e.g., Irwin et al. 1990; Chavez 1993). The importance of social group composition of Hispanic American wildland users has been noted by Carr and Williams (1992), who identified the predominance of families, extended families, and groups of adults or children with their comadres and compadres. Simcox and Pfister (1990) found Hispanic Americans using National Forests in Southern California to be more tolerant of crowding than were Anglos.

Within Group Variations

The initial research focus on between-group differences in recreation participation, preferences, and social patterns of use brought the issue of cultural diversity to the attention of managers and planners, and began to suggest how the needs of particular groups might be met. However, these comparative studies also masked the considerable variability within groups, and cursory interpretation could lead to stereotyping (Woodard 1993). Research on variation in the recreation preferences and behavior within ethnic and racial groups developed in response to the above concerns. Woodard (1988) analyzed the leisure behavior of African Americans in a southwest Chicago neighborhood in terms of social class and intragroup regionality. Taylor (1990) examined the leisure behavior of African Americans, Jamaican Americans, Italian Americans, and other whites in New Haven Connecticut. Klobus-Edwards (1981) found that African Americans living in predominately white neighborhoods of Lynchburg, Virginia exhibited different leisure behaviors than African Americans living in predominately African American neighborhoods. Research on Hispanic American ethnicity in outdoor recreation by Carr and Williams (1992) identified three dimensions of ethnicity that potentially influence outdoor recreation behavior: ancestral group membership, generational status, and acculturation. To further investigate these cultural dynamics, Allison (1988) suggests more in-depth, ethnographic approaches as alternatives to surveys.

Trends and Leisure Acculturation

Because of limited research, there is mostly speculation on the extent to which the recreation preferences and behavior of ethnic groups change over time. Some insight on these issues can be gained from an examination of the role of an activity in a particular culture and the acculturation process. In some instances a recreation activity may be one means by which individuals integrate into the predominant culture, and minority individuals may tend to participate in activities that are popular with the majority culture. At the same time, a recreation activity may serve as a means of maintaining the "traditional" culture. Both types of forces are evident in our society as groups partly "melt into" the general population; but at the same time hold on to certain elements of the traditional culture (Floyd and Gramann 1993; Carr and Williams 1992). An example of the latter is the significant attention that is given to ethnic festivals in major cities -- some of which involve "ethnic" recreation activities. These events illustrate how cultural diversity can enrich park and recreation programs for everyone (Dawson 1991).

Projections of Future Participation

Although the limited base of studies constrains our ability to make projections of leisure and ethnicity, demographic models can provide some indication of possible population based trends. Cohort component population projection models have been used to explore the implications of changing age and racial/ethnic structure on future participation in recreational activities. Under the assumption that participation rates in particular outdoor recreation activities by race/ethnicity and age will remain constant over time, the models suggest that with projected changes in the age and racial/ethnic structure of the population there will be significant changes in the number and characteristics of participants in the years ahead. Although the results vary by activity and region of the country, they do point to the significant implications of changes in the racial/ethnic structure of the population for outdoor recreation participation in the future (Murdock et al. 1990, 1991; Dwyer 1995a, 1995b, 1996).

Discrimination and Equity Issues

West (1989) identified prejudice and discrimination (or fear of their occurrence) in recreation areas and programs as significant factors in the recreation behavior of African Americans in the Detroit Metropolitan area. He found African Americans were significantly more likely than whites to have felt unwelcome or uneasy using Detroit regional parks because of interracial factors. Subsequent studies by Chavez (1993), Gobster and Delgado (1993), Blahna and Black (1993), Zhang and Gobster (in press) and others have helped to further define the existence of, sources of, and responses to discrimination, and how it can be dealt with by park and recreation area managers.

Implications for Management and Research

Past research has identified enough differences in recreation participation, preferences, and social patterns of use to suggest that racial/ethnic background is an important factor to consider in park and recreation planning. Observations of recreation areas used by a wide range of groups, and experience with other cultures suggests that the differences may be significant along a number of dimensions of recreation resource planning and management, such as: public involvement efforts, staffing, programs, training, marketing, advertising, and signage.

The differences between racial/ethnic groups can help identify special considerations for particular groups; but it is also important to recognize the considerable variation in recreation preferences and behavior within each group. For example, it may be generally correct to say that urban park managers should provide soccer facilities in areas frequented by Hispanic Americans, but it is incorrect to think that all Hispanic Americans like or play soccer, or that by providing soccer fields the needs of the Hispanic American community have been met. At the same time, managers should recognize that there are significant commonalities in recreation preferences across racial and ethnic groups.

It is important to recognize that current patterns of participation may not fully reflect the preferences of an individual or group. For example, a number of studies have shown that urban African Americans are more likely than other groups to engage in outdoor recreation at developed sites in and near an urban area, and generally travel shorter distances to engage in recreation. This might reflect a preference for an urban or developed environment; but at the same time might also be the result of limited resources for travel, fear of discriminatory behavior, lack of knowledge of more distant resources, lack of experience or equipment, or a number of other factors. We need to explore those factors more fully.

There is a strong need for a sustained and focused research effort targeted on helping managers meet the needs of their increasingly diverse customers. This calls for in-depth studies of racial/ethnic groups that go beyond surveys of the population that include small numbers from minority groups. These in depth studies should also go beyond participation patterns and include other significant dimensions of outdoor recreation to include settings, facilities, programs, staffing, information, public involvement, etc.

Additional quantitative analysis of within-group variations requires heavy sampling in racial/ethnic groups. In most surveys of the general population, racial/ethnic minority groups represent such a small proportion and have such low participation rates that there are few observations on which to base within-group variations in participation patterns.

With the increasing significance of immigration and mounting interest in cultural origins and identity, the role of outdoor recreation in minority cultures is likely to become an increasingly important issue.

While racial/ethnic background of customers is a significant concern of recreation resource managers and planners, it is only one of many dimensions of variation across outdoor recreation preferences and behavior. It is critical that we recognize all of that diversity and provide areas, facilities, programs, and staffing that will meet the diverse needs.

The ties between cultural diversity and recreation vary significantly across locations, and with the limited number and scope of studies completed it is misleading to extend research findings to all situations. No amount of research can or should substitute for maintaining a dialogue with present and potential customers. The results of research are often useful in such a dialogue and approaching the needs of various ethnic groups. Communication with minority communities on such issues appears to be greatly facilitated when the managing agency has a professional workforce that reflects the diversity of the community. The challenges of meeting the diverse recreation needs of Americans in the years will require a cooperative approach that involves researchers, managers, and planners.

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HOW PARKS CANADA HAS RESPONDED TO THE CHALLENGE OF RACIAL AND ETHNIC DIVERSITY

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Abstract: Parks Canada faces the challenge of involving ethnic groups in the commemoration of historic sites, and involving native people in the management of national parks. It has been very successful in the latter and less so with the former. Parks Canada also has considerable experience in providing services in French and English, the languages of its two founding nations.

French Canadians Are Not An Ethnic Group

When Tom More phoned me to invite me to present this paper, I asked him, "Why me?" He replied that he thought we in Canada had a lot of experience in dealing with our large French-Canadian minority.

Well, I was horrified. I didn't know what to say. I looked around to make sure no one had heard, even though we were speaking on the telephone. You see, Tom had inadvertently uttered what to my Canadian federal public servant ears was an unutterable blasphemy.

Now I am not for a moment criticising or reproaching Tom, who does not have a disrespectful or thoughtless bone in his body, let alone a blasphemous one. However, you have to realize that in Canada, the French Canadians are never referred to as an ethnic or racial minority. They are one of our two founding nations, along with the English Canadians. They are part of the mainstream of Canadian life. The French-Canadian is no more a member of an ethnic minority in Canada than an American would be because he or she comes from south of the Mason-Dixon line. There are certainly regional and cultural differences between French and English Canadians but there are regional and cultural differences between people who live in New York and New Orleans. That does not mean they are treated as different ethnic groups.

Therefore, even if I had absolutely no insights to offer about racial or ethnic diversity, and how Parks Canada responds to it, I thought I still had a patriotic and constitutional duty as a Canadian public servant to correct through this paper any notion you might be harboring that French Canadians were an ethnic minority.

For example, both English and French are official languages in Canada. By our constitution, federal laws are always published in both languages and are equally valid in each, our parliament is conducted in both languages, and in the federal law courts, you can have your case tried in whichever of the two languages you choose. Every second prime minister of Canada has been a French Canadian. I don't think ethnic and racial minorities in the United States can say the same about the Presidency.

Nor are they really a minority numerically. Consider some statistics. If you look at language, of 27 million Canadians at the last census, in 1991, about 7 million reported French as their mother tongue. This is about 25 % of the total Canadian population. If you consider ethnicity, about 6 million said they were of exclusively French ethnic origin, and another two million said they were of mixed ethnic origin, for a total of 30% of the Canadian population. So depending on how you measure it, 25 to 30 % of the Canadian population is French Canadian to some extent. Contrast this to your own main minorities. Your census asks slightly different questions, but reported that in 1990, there were about 31 million blacks in a total population of 252 million, or about 12 %. It also asked about Hispanics. 23 million people said they were of Hispanic origin or about 9% of the population. So at 25 to 30 % of the population, French Canadians are a very large group to be a minority. French Canadians are an even bigger proportion when you consider only 60% of Canadians said English was their mother tongue. If you ignore those whose mother tongue is not English, the proportion of French in the population is 40%, almost half. Hardly a minority.

Also, there is no evidence that French Canadians use national parks any differently that anyone else, either more or less. The campgrounds in the parks in Quebec are full every day in the summer, just as the ones in Banff are full. The ski trails are just as well used as the ski trails anywhere else. French Canadians appear to have the same propensity to participate in outdoor recreation activities as the English Canadians.

Since the majority of French Canadians live in Quebec, there have to be participation differences based on supply: French Canadians in Quebec do not mountain climb as much as English Canadians in the west, because there are no mountains in Quebec. On the other hand, French Canadians canoe a lot more than English Canadians in the west, because there are a lot more lakes in Quebec. But English people in Ontario also canoe a lot. So there is no discernable difference.

Does that mean we do nothing in our parks to accommodate French Canadians? Do we treat them exactly like everyone else? Is poor Tom completely wrong?

Well, no, actually. Recall that I said that we are officially a bilingual country. It follows that federal services should be available everywhere is both languages. So in spite of the fact that French Canadians are concentrated in Quebec and the East, there is a policy that there should be at least one person on duty at the visitor centre in all parks that can provide service in both official languages. All pamphlets and publications, such as the main park brochure, should be available in both languages. Interpretive panels should be in both languages. Service signs such as directions to washrooms are usually icons, so they are automatically multi-lingual. There are also supposed to be programs, such as interpretive walks, given in the two languages in every park.

However, the sad reality is that whatever bilingual services have been offered in the past, have probably all become victims of

budgetary cuts in any case. In the first place, the policy was never successfully policed, so even in rich times, there was no guarantee that you would find programs in French in a park in English Canada. You would see French publications, but now, because of budget cuts, you often won't even see English publications, so you certainly won't see French ones. You will still see bilingual interpretive panels, since they last a long time, and were frequently centrally prepared and shipped out to the parks. But you can imagine the position of a manager who has to make a choice between cutting a popular interpretive program attended by large numbers of English speaking people, and an interpretive program in French barely attended by a few and sometimes even cancelled for lack of response. Which one would you cut?

In fact, in Banff today, you will find it easier to get an interpretive event in Japanese than in French. And I see that as the way of the future. As Parks Canada becomes a more and more market oriented, their programs are going to cater to paying customers, and any disadvantaged minorities (of which French Canadians as we have learned are not one) will get short shrift.

Ethnic Minorities and Their Use of Parks

What about the other racial and ethnic groups in Canada? As you can see from the table, when you look at all our ethnic origins, once you get past British and French (and we now know these don't count), you have to go all the way down to the Chinese, at about 2% to get any visible minority at all. And 2% of the population is only about half a million people. You can see, we really do not have any big groups to contrast with your 31 million blacks or 23 million Hispanics.

Table 1. Ethnic origins of Canadians

Origin	Percentage in Population
British	44%
French	31
German	10
Italian	4
Ukrainian	4
Dutch	4
Polish	3
Scandinavian	3
Chinese	2
S.E. Asian	2
Black	1
Portuguese	1
Hungarian	1

Source: Statistics Canada, 1991 Census. The list only shows major groups. Percentages do not add because of multiple responses.

Consequently, there is not much research to tell us about whether there are culturally or ethnically driven differences of tourism behaviour or participation in outdoor activity with these groups. What little evidence I've been able to find (Ontario Ministry of Tourism, 1990) suggests there is very little difference and what difference there is shows up in recently arrived immigrant groups, not in older, established ethnic communities. This would imply that the differences are perhaps better explained by the group's relative newness to the country, rather than to any racial or ethnic preference.,

The real challenge of ethnic diversity for Parks Canada comes from a totally different direction. Parks Canada operates a system of over 100 historic sites, just as the National Parks Service does here. What our historic site planners noticed, however, was that the historic site system was not a particularly comprehensive view of Canadian history. About 1/3 of the sites were military forts, and there were a lot of fur trade sites (which are often also forts) These, however, are only a small part of Canadian history. What was missing was the history of industrial development, the history of agriculture, science, cultural achievement, and three big amorphous areas: women's history, aboriginal peoples' history, and what is called cultural communities history, or the history of how the various waves of immigrant groups arrived in Canada and help to shape the country. This was a particularly glaring gap, as we pride ourselves on being a multi-cultural country. Note that the emphasis here is not on getting ethnic minorities to better appreciate Canadian History but to get Canadian History to recognize the contribution of the ethnic minorities.

This sounds good, but here is what happened. The first site where we tried to commemorate the history of immigration was called Grosse Ile, which means Big Island, in the St Laurence. It was sort of like Ellis island: it was a quarantine station for immigrants. However, 96% of the immigrants who used it were Irish. They came in big waves in the 1830's and later after 1848 and the Irish Potato Famine. Thousands died on the trip to Canada and thousands died on the island. Some reports say that as many as 20,000 are buried there in mass graves.

This seemed to Parks Canada a perfect place to recognize and commemorate the contribution that immigrants made to building Canadian society, particularly since the federal government owned the land. They determined a theme for the park: "Land of hope and welcome". While they recognized the suffering of the many Irish who had died or survived there, they decided not to emphasize it, but to stress the more general and positive aspects of immigration and its contribution. Our Prime Minister Mulroney and your President Reagan, Irishmen both, even presided over some sort of ceremony kicking off the development of the park.

Then the blarney hit the fan. When the plans were announced, the Irish ethnic community rose up in arms. There was the McGill Irish Society from Montreal, there was the Celtic Arts Society from Toronto. There were innumerable briefs presented and protests written to the minister about the disrespect being accorded to the poor souls who had died, the cover-up of the great evil that the British colonialists in Ireland had done to the Irish to force them to flee in the first place. There was even a group created that was called Action Grosse Ile, which sounds like a French right wing terrorist group, who called for the island to be interpreted as a memorial to those who had died as a result of the British government's genocidal policies in Ireland.

Of course the minister responsible for Parks Canada was not the least happy with this storm of protest, and a lot of hasty consultation and compromise took place. The Site is now called "Grosse Ile and the Irish Memorial", and they are working out the way to portray it, a task made easier by the fact that there is so little money for development of new sites that they probably can't do much in any direction.

Lest you think that it is only the Irish that are particularly volatile and sensitive, much the same problem arose in Banff National Park, when historians decided to commemorate the Ukrainian internment camps set up in Banff in the first world war. The Ukrainian Canadian Civil Liberties Association protested vehemently and I don't think it is settled yet.

The point of raising these stories is not to tell you how we have perfected the art of being blind-sided or of stirring up hornets' nests. But we have learned two things.

First, we have learned that ethnic groups are proud, sensitive, and extremely well organized politically. We are therefore going to have to involve the communities and their leaders in our planning from the very start, if we want to commemorate ethnic history and avoid conflict. Second, we have realized is that these communities may be a source of resources and partnership for the development of historic sites, which could make a lot of difference in these times of fiscal constraint.

Native People and the Parks

So far, I've given you the impression that ethnic and racial diversity are not presenting Parks Canada with great challenges, except if we chose to stir controversy up by ourselves. There is, however, one area where diversity is a direct challenge to Parks Canada and particularly to the National Parks: this concerns the native people of Canada.

A bit of background you should know. In Canada, unorganized land belongs to the province, not the federal government. So when the federal government wants a park, which it must own outright, it is necessary to obtain the land from the province. In the eighties, it became increasingly difficult to get provincial approval to have a national park. The provinces simply did not want to cede territory to the federal government without getting a lot of concessions in return, which the federal government could not afford. The upshot was a strategy to concentrate on establishing parks in the far north, which is still Federal territory, and where there are many significant natural areas needing protection.

Great idea, except in 1982, when we patriated our constitution, that is, brought it back from England, where it had been an act of the British parliament since its inception in 1867, the new constitution contained a clause which said that the Government of Canada recognizes the Native People's inherent right of self-government as an existing right within the constitution. This permitted all the first nations to make land claims all across Canada, in particular, in the north.

What is important about this is that it led to the situation where one part of the Federal Government, Dept of Indian and Northern Affairs, was negotiating with Native people about what land they have title to, and what they can do with it, while another part of the Federal Government, Parks Canada, was negotiating with the same native peoples and the administration of the northern territories (the same department of Indian and Northern Affairs) for title to the same land.

Obviously, the land claim and the park had to be part of the same negotiation. Fortunately, the native people and Parks Canada frequently had the same aims, protection of the land and its natural resources. Unfortunately, the native people wanted to continue to harvest the resources to preserve their traditional ways of life, and Parks Canada had always forbidden resource exploitation in the parks.

Parks Canada quickly realized that unless they compromised on the resource exploitation issue, there would be no park negotiation at all. So they compromised and agreed to allow traditional resource use. Suddenly they had allies. Although the native peoples usually wanted their land claims settled before actually finally agreeing to a park, they generally supported a recognition of a national park reserve, where the land could be set aside and earmarked for a park, pending final negotiation of the details.

Inevitably, of course, the devil is in the details. You cannot negotiate with a partner whose support you are counting on without giving a little something away. A few examples will illustrate.

In Ivvavik National Park, negotiated in 1984, Parks Canada created a wildlife management advisory council, made up of park managers and Inuvialuit people to recommend to the minister what should be done to manage the wildlife resources of the park. They also agreed to training programs to transfer skills to the Inuvialuit to permit them to benefit from park jobs.

In Wood Buffalo National Park, which had existed for a long time, the 1986 land claim agreement for that area of the north brought with it guaranteed hunting and fishing rights for the native people, training and employment guarantees, and the creation of a wildlife advisory board. This was much the same arrangement as in Ivvavik park.

In 1989, the Land claim was signed for the area around Mingan National Park Reserve in the St. Laurence, and a management council was created. The council had the right to review everything to do with the management of the park, and park mangers had to regularly submit their operating plans to the council. If the council did not approve the plan, they could advise the minister, who would make a decision. Not quite a veto, but certainly a lot of power.

By 1992, with the negotiations for Aulavik National Park, Parks Canada committed to consultation with the Inuvialuit agencies on all matters related to park management, including archeology, religious and cultural sites. It was still advisory, that is Parks Canada had the final veto, but they were agreeing to a much broader consultation.

In 1993, at the Gwaii Haanas Park Reserve in the Queen Charlotte Islands, the Haida Nation, which claimed the land, were not ready to concede ownership or even sovereignty. As a result, a unique agreement was reached which recognizes that both Canada and the Haida Nation believe they own the land and don't agree that the other one does. However, notwithstanding this disagreement, both agree the area of Gwaii Haanas should be preserved so have agreed to develop a park. The park is managed by something called the Archipelago Management Board, which consists of two government of Canada officials and two Haida

Nation representatives, and one of each being co-chair. Its purpose is to examine all initiatives and undertakings relating to the planning operating and management of the archipelago. They will try to manage by consensus, but if there is a disagreement, then the disagreement will be referred back to the Government of Canada and the Haida Nation for further negotiation. In other words, neither side has a veto. It is complete power sharing. We've come a long way baby, as the ad says.

Of course, the rights of the Haida include harvesting for subsistence and for ceremonial purposes, basically, all their traditional ways.

Most of the other parks in the north, from the long established ones like Auyuittuq to the proposed Tuktut Nogiat, are in the process of negotiation right now. And in all of them there is some sort of management board.

You can see over time a trend is emerging. The first nations are requiring a greater say in how the parks are managed in order to allow them to be created. It is fortunate that there is no fundamental disagreement between the aims of Parks Canada and of the Native people. We seem to be getting along quite well with the management boards and councils and still accomplishing our objectives, although I hear anecdotally that it sometimes takes some getting used to, because the styles of doing business for a native group and a southern bureaucrat are sometimes different.

So I guess what we have learned from both our dealings with ethnic groups and native peoples is that you have to give a little in order to get a little.

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Rural and Sustainable Tourism

A CONCEPTUAL MODEL FOR FACILITATING RURAL TOURISM DEVELOPMENT

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Abstract: This paper examines why some rural communities are able to make substantial progress in their tourism development efforts while others experience problems due to a variety of constraints. Based on in-depth case studies conducted in four rural Pennsylvania counties, a conceptual model for understanding and facilitating rural tourism development is presented.

Introduction and Purpose

Historically, many small towns and rural regions beyond the major cities have provided amenity resources attractive to tourists. Tourism relies on the development and utilization of natural, historical, cultural, and human resources in the local environment as tourist attractions and destinations. Even more so today, there is great interest among a variety of special interest groups in rural tourism development. One of the reasons for this great interest is the potential for positive local economic impact resulting from an in-flow of dollars spent by visiting tourists. Even with both real and potential negative impacts, tourism development is still being promoted as a viable economic development strategy to help stabilize, diversify, and improve local rural economies (Brown 1992; Stokowski 1992).

In many areas worldwide, especially in rural areas, new development initiatives have begun to place more emphasis on the sustainable development of tourism resources. However, such development approaches remain problematic and as policy are certainly not easily implemented (Burr and Walsh 1994; Haider and Johnston 1992). While some rural communities have been able to identify, develop, and utilize their natural, historical, cultural, and human resources successfully as tourist attractions, others have been stymied in such efforts. Why are some rural communities able to make substantial progress in their tourism development efforts while others experience a variety of problems and constraints? Based on in-depth case studies conducted in four rural Pennsylvania counties, this paper presents a conceptual model which is hopefully useful for understanding and facilitating the process of rural tourism development.

Methodology

Four Pennsylvania counties, each having a 1990 population over fifty percent rural, were selected from different geographic regions of the state as part of a larger research project involving in-depth case studies of tourism's role as an economic development tool. Although geographic distribution across the state was an important factor in the selection of the counties, other variables were also of importance. These included some variation among the four counties in total land area, population, population density, population change, percent of the population considered to be rural, age composition of residents, per capita and median income, education, and current unemployment rate. Also of interest were county variations in past and present dependence on tourism, current tourism development efforts, different types of tourism present (e.g., natural resource, outdoor recreation, historical heritage, cultural heritage, special event), and both tourism-related and non-tourism-related economic development activity.

Within each county, key informant interviews were conducted with a wide variety of individuals who could be characterized as leaders in county, city, borough and township government, in a variety of public and private agencies, in different businesses, and in other organizations. Some of these individuals were professionally associated with tourism-related efforts and initiatives, such as an Executive Director of a Tourism Promotion Agency, but most were not. Additionally, a modified "snowball" technique was employed through these key informant interviews to identify other individuals for further contact about local tourism-related efforts. In addition to identifying other key informants, this technique was especially useful in locating individuals involved in a tourism-related business or voluntarily involved in a special initiative or project related in some way to tourism development. Because these individuals were involved with a specific tourism action, they were distinguished as action informants.

An instrument was developed for the purpose of interviewing both key and action informants in the four counties. The interview instrument design was semi-structured and consisted of open-ended questions related to topics of interest which enabled the researcher as an interviewer to probe for elaboration and clarification of informant responses. The instrument was pilot tested in one rural county, and after some minor modification of format was subsequently used in the three other counties. For this study, 43 individual key and action informant interviews were conducted in the four counties over a sampling time frame of approximately five months.

The raw data for this study are the field notes and tape records compiled from the key and action informant interviews conducted in the four rural counties. All field notes and tape records were transcribed into a standardized format in order to facilitate data analysis. These were then qualitatively analyzed through a comparative content analysis by noting certain recurring themes, similarities, and differences which were evident among the responses of different informants.

Findings

Based on informant responses and the perceptions of the researcher, certain differences were evident in the tourism development approaches in each of the four counties. While two counties appeared to be making substantial progress in their tourism development efforts, the other two counties seemed to be experiencing a number of problems due to a variety of constraints. Based on what appears to be working in the two counties making substantial progress, a seven-step model for conceptualizing and facilitating rural tourism development has been developed. This model especially focuses on process and the critical components of interactions and linkages within supportive internal and external structures (Figure 1).

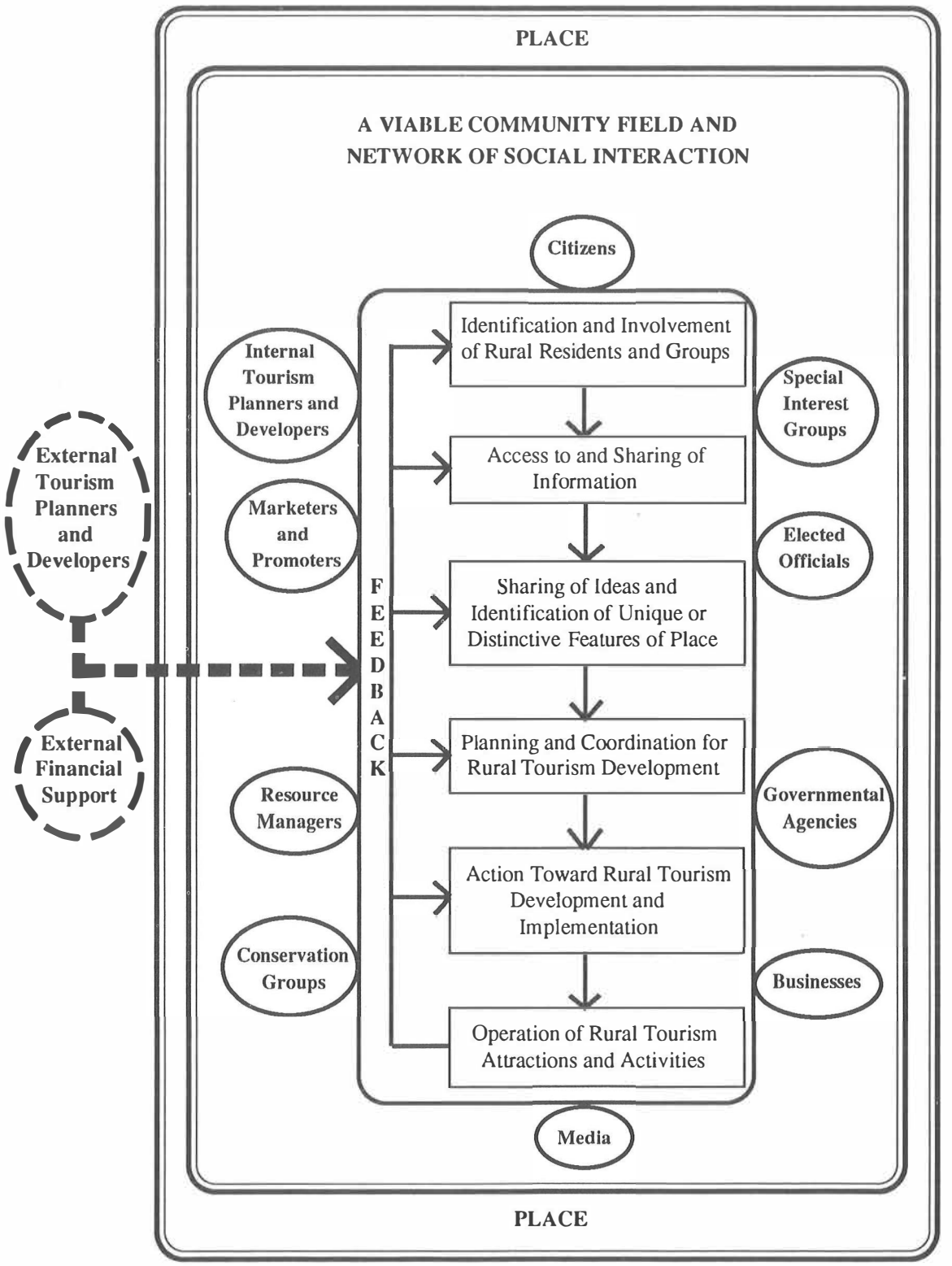


Figure 1. A conceptual model for facilitating rural tourism development.

A Conceptual Model for Facilitating Rural Tourism Development

As a first step in this process, it is necessary to identify and involve rural residents and special interest groups that are supportive of tourism and tourism-related development. In this study rural leaders were generally supportive of tourism and perceived it positively with varying levels of optimism. It is individuals such as these who can provide initial leadership and influence the broader rural populace. However, it is important at a very early stage in the process to be able to demonstrate the value, importance, and benefits of rural tourism. Rural residents must also realize that tourism is not an outright panacea for the economic difficulties being experienced in many rural places. Instead, it should ideally be viewed as one component of an economic development or revitalization strategy for rural areas and communities which may complement other efforts. Perhaps this can be accomplished through the use of illustrative case studies of successful tourism development efforts in other rural areas. Such information, along with hard data on both the direct and indirect benefits of tourism, must be readily available and comprehensible to not only those interested in developing tourism, but also to the general rural populace.

As a second step in the process, people need to have access to and be able to share information in order to make sound judgments for decision-making. If there is not fairly widespread interest in and support for tourism development initiatives in a rural area or community, there is a strong probability that such efforts will not be successful. There will be groups that are non-supportive of tourism. In this study rural leaders perceived opposition to tourism and tourism-related development among some rural residents. Mentioned most often in this respect were elderly residents because of their perceived opposition to change. Yet, rural leaders also had the perception that rural residents were ready for change, realizing that change was necessary in order to create opportunities for a healthy economy. As part of accessing and sharing information, it may be necessary to actively seek out opposition groups, determine why they are in opposition, and then make an active effort to gain their support. In this study, rural leaders perceived increased residential support and willingness to extend hospitality to visitors if awareness could be increased through sharing information about the value and importance of tourism and its real and potential benefits.

It is also important to be able to help rural residents become aware of the potential negative impacts of tourism and tourism-related development, for decisions must be made about the costs of increased tourism that residents are willing to absorb in relation to benefits which may accrue. Social impacts from visiting tourists, more intensive development of natural, cultural, and historical resources, and increased burdens of infrastructural support must be offset by advantages of social and cultural exchange and strengthened economies. Rural communities need to utilize all strategies available to them to increase their awareness about tourism in order to initiate effective actions to deal with tourism development.

As a third step, there must be a sharing of ideas among interested residents about current and potential tourist attractions and activities. This involves the identification of the unique or distinctive features of place—the components of the rural mystique and the natural, cultural, and historical resources—which may possibly be developed for tourism. Although this may be difficult for long-time residents to do, in this study most rural leaders were able to perceive place uniqueness or distinctiveness. If tourism development is to be part of a county-wide economic development plan, then the identification of unique or distinctive features must be included for the entire county. Some of these unique or distinctive features or places may actually be the fields of care or sacred places to which rural residents attach great meaning and sentiment, and as such, they may not want to share these with tourists. Other features or places may be more public symbols, which still have meaning for rural residents in which they take great pride, but may be more appropriate for development as tourist attractions.

Once the unique or distinctive features of place are identified, it may be easier to recognize certain types of tourism already present and types which could be developed more. Informants in this study were able to identify a wide variety of types of tourism present in their county, such as heritage tourism, cultural tourism and the performing arts, outdoor recreation activities, enjoyment of rural scenery and wildlife, sightseeing, antiquing and specialty shopping, bed & breakfast stays, special events and festivals, genealogy, class and family reunions, conventions, and even serving pass-through travelers.

The fourth step in the process is planning and coordination for rural tourism development. The perceived importance of planning and coordination was evident among rural leaders in this study. The question is planning and coordination for what? There were some substantive issues perceived by rural leaders as important for planning and coordination of rural tourism development. Related to an ideal for which to strive in terms of tourism-related development, informants perceived the importance of maintaining a careful balance in development, not degrading valuable tourism resources, and protecting and preserving those resources for the future. These ideals involve substantive planning issues associated with the challenge of implementing sustainable tourism development. Informants also perceived the need to plan for maintaining local involvement and control so that tourism development is not imposed externally. Also perceived was a need to plan for tourism development to directly benefit local residents and communities and insure that residents still have access to important and valuable resources. Informants also identified the need to plan for a focus, goal, or theme for county-wide tourism development in order to have a unified and effective, county-wide marketing effort. Related to these county-wide efforts, was the need to plan for the development and promotion of a variety or mix of better tourist attractions, activities, sites, and points of interest.

Although the then current negative impacts of tourism were perceived to be minor by these rural leaders, they did perceive the need to plan for control of potential negative impacts should the scale of tourism increase in the future. Also necessary was effective planning for the development of a supportive infrastructure and for associated development of hospitality services. Additionally, informants perceived the need to plan for actively seeking out the interest, cooperation, and support of local

businesses, and to increase residential awareness and support for tourism development.

One of the perceived constraints to successful rural tourism development, also mentioned by these rural leaders, was the lack of professional expertise and knowledge at the local level in planning for tourism development. Even though a number of different interest groups were active in certain tourism development efforts, overall coordination and cooperation was lacking. Volunteers were perceived to be the main participants in such efforts and although their participation is important, a consequent lack of professionalism, limited progress, and difficulty in county-wide promotional efforts were all perceived by informants as constraints to successful tourism development.

Depending on the scale of tourism development perceived to be desired or attainable in a rural community or county, the need for the expertise, knowledge, leadership, and organizational skill of professional tourism planners and developers becomes evident. If the scale of development is small, volunteer groups may be able to accomplish tourism planning and development efforts on their own internally, with no or minimal assistance from outside professionals, although this still may be a challenge. If more importance is attached to tourism development as an economic revitalization tool for rural communities and the scale of development becomes larger, the more overwhelming the planning and coordination process can become for volunteer groups working in tourism development. This will inevitably necessitate the employment of full-time, professional planners and developers, either internal or external to place, as illustrated in Figure 1.

Through planning and coordination, the fifth step of action directed toward actual rural tourism development and implementation occurs, followed by the sixth step of the actual operation of rural tourism attractions and activities. Finally, there must be an evaluation or feedback step which loops back to and continuously affects and modifies all of the previous steps, an important characteristic of all closed system models. Although this process of feedback operates internally, all places are interconnected to other places through a system of spatial interaction and transfers within a framework of circulation. Places have unique internal characteristics, an inside, but also have an external connectivity to other locations and situations, an outside. Being able to effectively take advantage of a supportive connectivity with the outside appears to help facilitate the process of rural tourism development.

Discussion and Implications

A major question underlying this conceptual process for facilitating rural tourism development, especially the step of planning and coordination, is where can rural communities or areas turn for the human resources, planning expertise, and financial support and capital necessary for planning, coordination, and development of tourism resources and supporting infrastructure. Although there must be cooperation and support by elected officials and governmental agencies at the local and county level, as illustrated in Figure 1, external financial support from the state and perhaps even federal levels may be important and necessary in order to successfully facilitate rural tourism development. Additionally, the private sector can play an important role in supporting rural tourism development.

What may be key to this whole process is the existence of conditions which facilitate effective social interaction between individuals and special interest groups, enabling a viable community field to develop which integrates a variety of local interests and extra-local support. Local leaders as citizens, elected officials, governmental agency employees, resource managers, business owners, members of conservation groups, individuals in the media, marketers and promoters, along with tourism planners and developers, all play key roles in this process, as members of diverse special interest groups interacting and networking with one another, enabling a viable community field to develop. Efforts here contribute not only to rural tourism development, but to the long-term development and viability of the rural community.

If local, state, and federal governments are truly concerned about improving and sustaining rural economies, improving the quality of life for rural residents, and making a viable contribution to the process of rural community development, resources should and could be allocated for rural tourism development where reasonable. Perhaps as one component of a larger developmental strategy, resources could be directed at removing some of the perceived constraints or barriers to rural tourism development and at the substantive planning issues identified by rural leaders in this study. For example, resources could be aimed at directly involving more rural residents and groups, facilitating their access to and sharing of information, sharing of ideas and identifying place uniqueness, and planning and coordinating for rural tourism development.

The support and involvement of rural leaders are important and vital components in rural tourism development, and their perceptions, efforts, and actions affect the more general perceptions, efforts, and actions of all rural residents. A greater recognition and understanding of these perceptions will hopefully help tourism-related planning and development initiatives be more effective in attaining goals and in the process, benefit rural communities and residents.

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THE DEVELOPMENT OF ECOTOURISM AND THE NECESSITY OF USING ENVIRONMENTAL AUDITING IN ITS PLANNING AGENDA

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Abstract: The concept of ecotourism is seen to be quite synonymous with that of alternative forms of travel. Its development in recent years has proved that further enlargement of ecotourism's segment in the future, is possible. Despite this growth, the definitional approaches of the concept have been misleading and have often created a confusion among practitioners in the industry. The latter confusional stages of theorizing ecotourism have presumably contributed to the prevailing attitude in managing the concept. Taking into consideration the fragility of the environment in conjunction with the sensitivity of ecotourism visits to sites, the use of environmental auditing is important. Environmental auditing concentrates its application on identifying the present and potential environmental impacts on the ecosystems. It lays the grounds for describing the environmental elements (water, waste, etc) and details their impacts through the use of environmental indicators. In overall terms, the technique can assist the resources' managers to safeguard their assets within the sites and to implement their ecotourism strategies. The paper tends to describe and view the concept of ecotourism as a sub-component of natural tourism. It further outlines the need to exercise environmental auditing as a technique which monitors the environmental impacts throughout the tourism life cycle of a site, and to safeguard and sustainably manage the resources.

Introduction

Ecotourism has become one of the most popular concepts of tourism in recent years (Hvenegaard, 1994; Dowling, 1995). The increased awareness of environmental issues, in conjunction with the realization that the concept of over-development in tourism has to be abolished, have placed ecotourism at the forefront of a variety of tourism development actions. Moreover, ecotourism as well as tourism as a whole have to be developed in line with sustainable development programmes. In this respect, the World Travel and Tourism Council and the Earth Council, have presented Agenda 21 especially for the tourism industry. Agenda 21 outlines twelve guiding principles for sustainable tourism development (Table 1). It further specifies nine action steps for the public sector as well as ten priority areas for the private sector. Looking at the public sector, there are two elements which are important for the scope of the current review (WTTC/ WTO/ EC, 1995):

1) Tourism products must contain sustainable elements; and

2) The public sector has to measure the progress of achieving sustainable development.

In line with the two suggested principles of sustainable tourism development, this paper examines the product of ecotourism. An overview of the concept, which includes its definitional perspective, is presented in order to clarify the elements of ecotourism. Additionally, the technique of environmental auditing is outlined by looking at its framework, its methodology and its benefits when applied by the tourism destination authorities. The key recommendation of this review is that environmental auditing is a tool which can measure the scope and the progress of ecotourism development and safeguards and manages the resources sustainably.

Table 1. The guiding principles for tourism - Agenda 21.

1. Travel and tourism assist people in leading healthy and productive lives in harmony with nature.

2. Tourism should contribute to the conservation, protection and restoration of the Earth's ecosystem.

3. Travel and tourism should be based upon sustainable patterns of production and consumption.

4. Nations should cooperate to promote an open economic system in which international trade in travel and tourism services can take place on a sustainable basis.

5. Protectionism in trade in tourism services should be halted or reversed.

6. Tourism, peace, development and environmental protection are interdependent.

7. In order to achieve sustainable development, environmental protection shall constitute an integral part of the tourism development process.

8. Tourism development issues should be handled with the participation of concerned citizens, with planning decisions being adopted at local level.

9. Nations shall warn one another of natural disasters that could affect tourists or tourist areas.

10. Since the full participation of women is necessary to achieve sustainable development advantage should be taken of travel and tourism's capacity to create employment for women.

11. Tourism development should recognize and support the identity, culture and interests of indigenous peoples.

12. International laws protecting the environment should be respected by the worldwide travel and tourism industry.

The Concept of Ecotourism

Ecotourism experts claim that its segment accounts for 10% of international tourism, with an estimate that it will increase by 20-50% per year (Fillion et al, 1994). However, despite the fact that this statistical estimate has not been matched by any common acceptable data, there is a growing concern that its segment accounts for a significant proportion of world travel. Currently,

one of the weaknesses of measuring the number of visitors participating in ecotourism holidays, derives from the breadth of terminology which exists. There are many terms sprinkled throughout the literature such as 'sustainable', 'minimal impact', 'responsible' or 'endemic' tourism. Furthermore, there is enough evidence to support the notion that consumers have shifted away from 'mass tourism' towards experiences that are perceived to be more individualistic and enriching. In contrast, there is a lack of understanding of what is the accurate nature of that experience. Inevitably, this has created a disequilibrium over the theoretical (definitional) approaches of ecotourism. A brief review of a few definitions demonstrates the confusion:

1) Ceballos-Lascurain views ecotourism in the light of experiential and *educational* factors (1991: 33);

2) Boo terms ecotourism quite synonymously with *nature tourism* (1990: 10).

3) Tickell as travel to *natural areas* as well as the enjoyment of human culture without causing damage (1994: ix).

4) Buckley tends to describe it as a *nature-based product*, with *sustainable management and educational components*, with contribution to conservation (1995: 3).

5) Dowling demonstrates five key principles of ecotourism that are *nature based; ecologically sustainable; environmentally educational;* locally beneficial and generates tourism satisfaction (1995: 87).

6) Blamey states that the ecotourism experience is "one in which an individual travels to a relatively *undisturbed natural area* that is more than 40 km from home, the primary intention being to study, admire or appreciate the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas" (1995: 20).

7) Commonwealth Department of Tourism in Australia determines ecotourism in the light of its *natural based, environmentally-educational and sustainable management* components

In order to define ecotourism precisely, it may seem quite difficult because the concept 'ambitiously attempts to describe an activity, set forth a philosophy, and espouse a model of development' (Ziffer, 1989:5). Nevertheless, it is useful to consider that the latter mentioned definitions of ecotourism, contain three common elements: 1) nature-based, b) environmentally-educational, and c) sustainable management.

With respect to these elements limitations arise as to what is the nature-based experience; of whether a particular natural activity includes educational or interpretative components; and what are the criteria of sustainable management (Blamey, 1995).

Moreover taking into consideration that travel to ecotourism sites may increase the environmental deterioration with serious negative environmental impacts on the aspects of the natural environment (Tisdell, 1995: 367-8), then environmental management techniques are needed in order to monitor the application and the progress of a sustainable management programme.

On the other hand, conservation groups have developed guidelines which acknowledge appropriate behavior which travelers should appoint, such as the Audubon society (cited in Valentine, 1992). However, while the codes of behavior can assist with the sustainable management of an area, and that those tourists who respond to these codes are those which hold environmental attitudes, it may be argued that much of the sustainable management of ecotourism sites depends on how to measure the environmental impacts. In this respect, an environmental management technique which could monitor the actual and potential environmental impacts, is the tool of environmental auditing.

Environmental Auditing

Environmental auditing's origin can be traced back to the late 1960s and 1970s in the USA, due to the new legislative requirements such as the National Environmental Policy act (NEPA) in 1969, the Clear Air Act in 1970 and Clear Water Act in 1979. The results of the above legislation had a positive impact on the business environment, which resulted in repeat practices of environmental audits.

The accepted definition of the concept came in 1989 by the International Chamber of Commerce (ICC) as: "A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with an aim of helping to safeguard the environment by: a) Facilitating management control of environmental practices, and b) Assessing compliance with the company policies, which would include meeting regulatory requirements" (UNEP/IEO, 1989:100).

The main purpose of an environmental audit is to measure the actual and potential environmental impacts which occur in companies as well as destinations. It further creates and raises employee awareness of environmental issues; discovers the cost-saving opportunities and waste minimization alternatives; allows management to give credit to employees based on their environmental achievement practices; establishes environmental training programmes; and measures the effective use of resources.

Nevertheless, considering that these benefits can assist companies to a large degree, constraints are also noted. Research conducted in 1990, suggested that the environmental statements of EA were described insufficiently; the information which was evaluated from monitoring programs to check the predictions was misleading; and the timescale framework of some impacts was estimated inadequately (UNECE, 1990).

At the tourism industry level, environmental auditing is " a means to an end-sustaining the viability of the tourism industry" (Goodall, 1994b: 656). Tourism enterprises must exercise procedures to assess their environmental performance, with EA providing that procedure to tourism firms (Goodall, 1992; Stable et al, 1993; Goodall, 1994a, 1994b). Looking at the environmental auditing types for the private sector they can be distinguished into seven types (Goodall, 1994a):

Compliance audits. This type of audit is concerned with checking conformity with current environmental legislation and regulations. An ecotourism facility may check if its activities, noise or waste management, comply with environmental laws.

Site audits. This type of audit concentrates on spot checks on buildings and plants, in order to identify the potential or actual areas with environmental problems. An ecotourism facility may check if its energy efficiency or waste recycling practices, fulfil the appropriate standards.

Product audits. In this category of audits, the products of the companies are reviewed against the criteria of their policies and standards. The tour operator's wildlife package as an example, can

be measured in terms of number of traveler's as well as the facilities surrounding the package, such as the type of accommodation.

Activity audits. A single activity of the company is considered, especially those that cross business boundaries of the company, most often upon the distribution and transportation networks. An example can be seen from a hotel which can assess the public transportation of its staff's travel, in relation to their environmental performance.

Issue audits. An audit of this type usually focuses on how well the company is dealing with specific, highly important environmental issues. A hotel can assess the issue of recycling paper in its operational procedures and to check if its paper can be recycled.

Corporate audits. This audit covers the firm's entire operation in relation to their environmental policy. The main purpose of this audit is to examine the efficiency of a national park's management for instance, and to assess the efficiency of management in implementing the environmental policy, as well as, if the policy is well-known throughout the organization.

Associate audits. Finally, the purpose of this audit is to examine companies' associate agents or suppliers. A tour operator, for example, can assess its suppliers in terms of the number of environmental products which they deliver or trade.

The available types of EA in the private sector show the extent to which companies dealing with ecotourism as well as with any other forms of tourism can commit their activities in an environmental manner. Similarly, tourism destinations also have to demonstrate an environmental auditing procedure for their activities. A destination's environmental auditing is a more complex process in comparison with the private sector. The geographical scale of a tourism resort, its different components as well as the accessibility of monitoring the environmental impacts, demonstrate the difficulties in successfully applying an environmental audit.

Environmental Audits in Ecotourism Destinations

Environmental auditing in the local government or municipality institutions can trace its involvement back to the 1970s, with the development of national and international standards in Canada (Ledgerwood et al, 1992). Currently, public sector organizations claim to be 'land use managers' and 'service providers' for parks and open spaces (Dean, 1991). As a result, their role of exercising an environmental auditing approach can be seen to be "an assessment of the current state of the local environment, the factors affecting it and the environmental impacts of local authority policies. It is to be used as a baseline against which to assess the progress and impact of local environmental policies and practices" (FOE, 1990). Critically, the public sector environmental auditing approach can be considered to differ from the private sector's auditing procedures for two reasons.

First, the authority has to protect and improve the local environment within its territory. In this instance, the first environmental audit type is conducted, the *State of Environment Report*, which concentrates on gathering data for the environmental elements and the environmental quality indicators. Secondly, the public sector has the ability to enforce environmental laws. As an outcome, the local authority or municipality has a regulatory, influential, and management role, absent within the private sector (LGMB, 1991). The roles in the areas of, for instance, environmental health, landfill management and soil management, have to be assessed.
Here, the second type of EA is conducted, the *Internal Audit,* which analyses the authority's functions, through its two sub-audits (LGMB, 1991; Dean, 1991): a) *Policy Impact Assessment*, which reviews and appraises the activities, services and practices of the authority, and b) *Management Audit*, which is an examination of the public sector's departmental procedures and structures from which environmental policies are controlled.

These proactive procedures can aid in the minimization of negative environmental impacts which the local area carries, and at the tourism destination level, audits can assist them to address their environmental commitment. In the context of EA being practiced within the area, the resort's components can be assessed throughout the tourism life cycle of a site (Diamantis and Westlake, 1996).

The use of an audit can monitor the actual and potential environmental impacts of the aspects of the wholistic environment (water resources etc) as well as of the ancillary services (local organization activities), amenities (private sector services etc), access (local transportation services etc), and attractions (Figure 1).

The monitoring process of the components of the destination provides, as an outcome, environmental quality standards for the Aspects of the wholistic environment, ancillary services, access, and attractions. Additionally, it can pressure the amenities component of the resort to exercise environmental audits and to provide their environmental performance standards to local authorities (Stabler and Goodall, 1993; Diamantis and Westlake, 1996).

Moreover, tourism destinations should foresee environmental auditing as an element for their ecotourism planning and development. Considering the fact that "tourism cannot achieve full global and local environmental sustainability in the foreseeable future" (Goodall, 1994b:664), the use of EA needs to be practiced continuously in order to ensure that tourists act as ecotourists and not destroyers of nature, and that tourism management of an area practice their commitment of monitoring the progress of their sustainable management practices. As a result, environmental auditing should be a core element of the conceptual framework for ecotourism activities, in order to support the conservation attitudes of the destination.

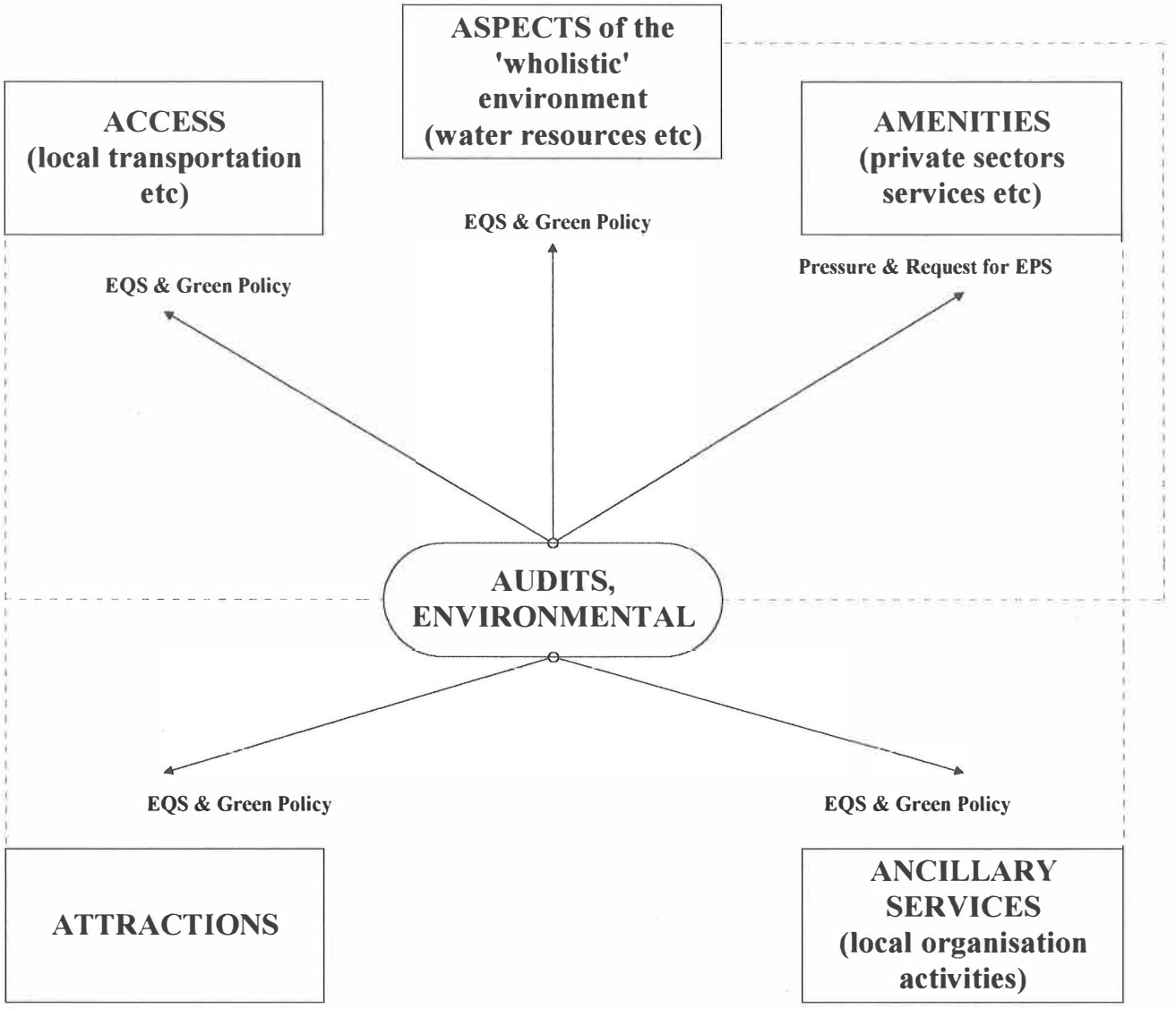


Figure 1. The environmental commitment of destinations.

Conclusion

The successful development of ecotourism at a site or destination needs to be associated with environmental management techniques. Environmental auditing is delivered as a tool, which can monitor the present and potential environmental impacts as well as form the basis of ecotourism development. Given that the tourism and environment relationship has been expressed with antagonistic or negative elements, it is necessary to adopt the latter tool

(Environmental auditing), not only as a way of assessing the base of an ecotourism's development, but most importantly to commit ourselves to this process. Finally, by applying the environmental auditing approach, destinations and specific sites are able to realize their role of managing resources in such a way, in order to achieve sustainable development practices in their activities, and to contribute to the overall high quality of services offered to tourists.

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SEASONAL HOMES IN BERKSHIRE COUNTY, MASSACHUSETTS: AN EXPLORATORY STUDY

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The purpose of this study was to define and describe how the seasonal home market has changed in the last seven years in Berkshire County, Massachusetts and to assess the impact and magnitude of the market. Seasonal home market continue to grow in the county; however, the bulk of the growth occurred in the 80s and growth was confined to the central and southern regions of the county.

Introduction

Berkshire County, Massachusetts has long been a seasonal mecca for vacationers. Residents of metropolitan areas have left the fast pace city life to visit and relax in the rolling hills of Berkshire County. These "guests" often stayed for extended periods of time and could be called "permanent or resident tourists." Unlike the typical traveling tourists, these guests or visitors would stay in the county for extended periods of time and over the years have built, purchased or rented homes or housing units. Some of these housing units are opulent mansions and estates owned by some of the wealthiest people in the world while others are called "camps" and are typically unheated lakeside cabins. Nevertheless, many of the dwelling units in Berkshire County have been owned by second home residents whose primary residence was elsewhere, but who owned, rented and occupied a portion of Berkshire County's housing stock (BCRPC 1988). This study extends the analysis of the seasonal home market from the most recent report completed in 1988 to current estimates of the market in 1995. This study, commissioned by the Town of Adams, looks to further define and describe how the market has changed in the last seven years (the BCRPC Report was completed in 1988), to assess the impact and magnitude of the market, and to assist in the decision-making of the impacts of the Greylock Center Development in Adams. The study was completed by the author through the Center for Economic Development (CED) at the University of Massachusetts.

What is a seasonal or second home? The most accepted definition of a second home usually is stated as such: "housing structure used for recreation and or vacation purposes on a seasonal basis and owned and perhaps rented by a household or other entity who maintains a primary residence elsewhere....." (Stewart and Stynes 1994).

In initially framing this study which was funded by the Town of Adams, Massachusetts, it was hoped to provide an accurate picture of the distribution and impact of seasonal tourism throughout Berkshire County. Missed in the definition of seasonal home markets are those people who stay in a location, but who many not necessarily be tied to a permanent housing structure such as a seasonal home. In this exploratory study of Berkshire County, Massachusetts, it was initially thought that a perhaps more accurate assessment of tourists who come to a region could be gathered. Thus, the term "long term tourist stay market" was coined to examine perhaps a variety of non-permanent residents. This could include seasonal or second home users, but the impact of the use of these structures in some tourist communities may well overlook seasonal residents who actually behave much like seasonal home users but do not necessarily reside in a seasonal home. A county such as Berkshire County, Massachusetts may attract a number of people who rent apartments, stay in homes, rent rooms, stay with family or friends for an extended period. This could also include seasonal workers. Berkshire County attracts a variety of seasonal markets due to its major attractions such as Tanglewood and Jacob's Pillow, which are significant cultural arts and music venues which operate on a seasonal basis. However, the key to unlocking the overall impact was to examine use in more detail and provide insights into the distribution of the patterns of use throughout the county. The study was initiated by the town of Adams in Northern Berkshire County which desired to benefit from more seasonal home type of use through the development of an environmental resort which was proposed to be developed in the Greylock Glen area of the community.

An extension of the definition problems further articulates the seasonal home identification and definition problems based specifically on use. For example, the use of seasonal homes may follow a number of different patterns which were obtained through interviews with local realtors, seasonal home owners, and businesses in Berkshire County. The use of seasonal homes may include the following types: 1) occasional to regular weekenders -- those who come to the county during the seasonal weekends and stay or visit a percentage of this time; probably are physically in the county 40 to 80 days per year; 2) regular weekenders -- those who faithfully come to the county for the majority of years weekends as high as 40 weekends per year and perhaps two full weeks per year and a number of 3 or 4-day weekends per year; probably in the county 80 to 110 days per year; 3) warm weather seasonals -- those who come to the county from roughly June 1 through the end of the fall foliage season or about October 15; probably in the county upwards of 125 to 135 days per year; 4) summer seasonals -- those who come to the county for the summer months of July and August; probably in the county 30 to 60 days per year; and 5) summer rentals -- those who vacation in the county at seasonal units for periods of one to three weeks; probably in the county for 5 to 20 days per year.

Ownership patterns were found to also varied through the initial preparation in framing this study. For example, the following different types of ownership patterns do exist: 1) out-of-state/county ownership -- usually obvious pattern of seasonal home ownership which makes identification easy; 2) local ownership -- individuals, partners, corporations which own seasonal homes and rent them to individuals, families and groups; 3) multiple owners -- collection of families of owners, some which may be local and external to the county; 4) multiple seasonal home owner -- owns more than one seasonal home in a variety of different areas and who may or may not use the home on a seasonal basis and who may employ a year round caretaker

of the property; 5) seasonal home ownership conversion -- converts to primary residence and who once used the home as a seasonal home but due to retirement now uses the home more like a primary residence; 6) seasonal home ownership transition -- telecommuting concept; one who lives in a nearby metropolitan area such as New York City but the nature of their job allows them to occupy the seasonal home on a more permanent basis.

Compounding the problems of identification problems were the state of tax records throughout the county. In exploring the tax records in an initial investigation for this study, it was found that some seasonal homes are difficult to uncover. Furthermore, attempts to uncover the "other market" -- the long term tourist stay market were even more difficult. Thus, although the intentions were good in the initial framing of the study, it was concluded that the best which could be accomplished in this study was to obtain more accurate counts and assessments of seasonal homes throughout the county.

An excellent review of the definition and data collection problems of seasonal homes was presented in "Understanding Seasonal Home Use: A Recommended Research Agenda." by , Susan Stewart and Daniel Stynes (1994). In the preparation of this study, this article was carefully reviewed which included such items as: 1) understanding seasonal home choice and use; 2) seasonal home characteristics; 3) understanding seasonal home owners and users; and 4) measuring the impact of seasonal properties. A serious limitation to this study was the timeframe allowed for data collection and completion of the report. From initial investigation to completion of the report, a one month period was given. The purposes and intentions for completing the report had to be compromised given the restricted timeframe.

Purpose of Study

The purposes of this research paper/project are multiple:
1) to examine and update the seasonal housing market in Berkshire County for the Town of Adams with concerns about economic development impacts;
2) specifically to update the *Survey of Second Home Ownership in Berkshire County* done by the Berkshire County Regional Planning Commission in 1988;
3) to address specific issues specific to the seasonal housing market -- including the count of units; distribution within the county based on a regional distribution of North, Central and South County; examination of the property and personal property tax implications; sales of seasonal housing units and examination of the permanent residence of the Berkshire County seasonal home market.

Methods

To update the counts and impacts of seasonal homes within Berkshire County, the 1988 report formed the starting point combined with data from the with 1980 and 1990 census. This was further supplemented with interviews of town tax assessors. Direct, in-depth comparisons across the county were made by selecting a sample of 9 of the 31 towns, three from each region of the county. Berkshire County is divided into three distinct regions -- North, Central and South County. Key to the identification of seasonal homes in Berkshire County is the *Personal Property Commitment Book* -- which identifies properties which are seasonal and where personal property is indeed taxed. Careful checks of these properties allows for more accurate counts and market identification of seasonal home use. Others sources of secondary data provided useful based line data for comparison and validity on counts. They included: *1995 Berkshires Builders and Buyers Factbook*; *Massachusetts City and Town -- Average Single Family Property Tax Bills* from Massachusetts Department of Tax Revenue (1995); *1990 Census Data* ; and *Lifestyle Market Analyst Data* (1993) -- for examining lifestyles of residences of primary owners. Descriptive analyses were conducted on the count data and contingency table analysis on the regional analysis within the county.

Selected Findings

The Seasonal Housing Count and Update

The bulk of the growth in the seasonal home market in Berkshire County occurred primarily in the 80s. The number of seasonal home units based on direct counts and personal interviews with tax collectors in 1995 for all of Berkshire County was estimated to be 6,968 units; without the cities included in the count, 6,673 units were counted as seasonal. Compared to the same towns used in the 1988 BCRPC Study, 6,648 units are seasonal. From 1976 to 1988, the number of seasonal homes increased 2,651 units and from 1988 to 1995, the number increased 1,017 units. Census data from 1980 to 1990 indicated an increase of 2,268 units. The 1990 census sets the seasonal units in all cities and towns in Berkshire County at 6,454; without the cities -- 6,205 units and when compared to the communities included in 1988 BCRPC Study -- 6,175 units (Table 1).

The Seasonal Housing Distribution within Berkshire County

For all Berkshire communities -- 19.1% were seasonal; for all towns without cities (excluding Pittsfield and North Adams) -- 26.6% were seasonal; and for all comparable towns with the 1988 BCRPC Report (excludes Adams, Florida, Dalton, Pittsfield, North Adams) -- 30.7% were seasonal in 1995 (Table 2). In direct comparison to the 1988 report, it was estimated that about a 3% increase in the overall distribution of the housing stock with the comparable towns occurred while in actual numbers of seasonal units, the increase amounted to approximately 16.4%.

The distribution of seasonal housing was highest in South County, where nearly 58% of the housing stock is seasonal; next highest in Central County where 39% is seasonal, and lowest in North County where only about 3% is seasonal (Table 3). The seasonal share of all housing from 1988 to 1995 has increased the most in Central County (comparisons based on the same set of towns for the 1988 report and the 1995 CED data). There is a relationship with the percent seasonal units and their location. Basically, South County has the highest number of towns with the high concentrations of seasonal units, Central County has the highest number of communities with moderate concentrations of seasonal units and North County has the highest number of communities with low concentrations of seasonal units (Table 4).

Table 1. Estimates of the seasonal home market size in Berkshire County.

Source	Year	Number of Seasonal Homes	Notes
US Census	1960	3,318	Census Estimates
US Census	1970	3,323	Census & BCRPC
BCRPC	1976-77	3,300	BCRPC Counts
US Census	1980	4,186	Census Estimates
BCRPC	1988	5,951	BCRPC Counts
US Census	1990	6,454	Seasonal Units Est.
CED	1995	6,968	Assessor Interviews and Sample Counts
Increase in Units	'60 to '95	3,650	
Increase in Units	'70 to '95	3,645	
Increase in Units	'76 to '95	3,668	
Increase in Units	'80 to '95	2,782	
Increase in Units	'88 to '95	1,017	
Increase in Units	'90 to '95	514	
Increase in Units*	'60 to '70	-18	
Increase in Units	'70 to '76	-23	
Increase in Units*	'70 to '80	863	
Increase in Units	'80 to '88	1,765	
Increase in Units*	'80 to '90	2,268	'88 to '90 -- 503 units
Increase in Units	'90 to '95	514	
BCRPC Inc. in Units	'76 to '88	2,651	
BCRPC/CED Inc. in Units	'88 to '95	1,017	
BCRPC/CED Inc. in Units	'76 to '95	3,668	

a/ Increases are from time period to time period and are not cumulative.
b/ BCRPC estimates and CED estimates based on actual counts/estimates at assessors' offices
* Census estimates based on vacancy rates in April of census year.

In 1995, the communities with the highest share of seasonal housing were: Otis (71%); Sandisfield (68%); Becket (66%); Monterey (62%); Tyringham (56%); Stockbridge (53%); and Alford (52%). North County and communities like Adams have not realized any significant increases in the number of seasonal housing units (Table 2).

Property Tax Implications of Seasonal Housing

Three communities were compared from the 1988 BCRPC Study on seasonal homes with regard to the percent evaluation of seasonal homes. For New Marlborough the percent valuation of seasonal homes in 1988 was 50.3% and in 1995 it was 52.9%; for Stockbridge the percent valuation of seasonal homes in 1988 was 42% and in 1995 it was 52.3% (estimate); and for Great Barrington the percent valuation of seasonal homes in 1988 was 10% and in 1995 it was 10.3% (estimate). Williamstown was added to this sample pool but not compared to 1988 figures -- its percent valuation of seasonal homes in 1995 it was 7.8%.

Personal property tax can be additional source of revenue for towns; however, only New Marlborough and Williamstown had accurate up-to-date summary data available. New Marlborough had an additional personal property tax revenue of $49,481 while Williamstown had tax revenue of $9,266 in 1994.

There is a relationship with the percent seasonal units and tax rate categories. The communities with the highest concentrations of seasonal homes have the lowest tax rates, the communities with moderate concentrations of seasonal homes have moderate tax rates and those communities with the lowest concentration of seasonal units have the highest tax rates (Table 5).

The actual tax rates for each category were:
High Percent Seasonal Units -- average tax rate = 8.134;
Moderate Percent Seasonal Units -- average tax rate = 13.165;
and Low Percent Seasonal Units -- average tax rate = 14.265.
The average housing values for the towns with high percentage of seasonal housing units is $168,848, with moderate percentage is $122,706 and with low percentage is $100,830. However, these figures include all housing values. The average per capita budget was higher in towns with high percent seasonal units: High Percent Seasonal Units -- per capita budget = $2,052.46; Moderate Percent Seasonal Units -- per capita budget = $1,794.70; and Low Percent Seasonal Units -- per capita budget = $1,598.00.

The estimated tax revenue for Berkshire County from seasonal homes is $11.5 million dollars and an estimate of the total valuation is of these units is $984 million with an average tax bill

Table 2. 1995 Seasonal housing unit estimates by town and city in Berkshire County.

Town	Region	City or Town	1995 Seasonal Homes	Single Home Parcels	% Seasonal Homes
Adams	North	Town	1,979		0.0%
Alford	South	Town	120	230	52.2%
Becket	Central	Town	991	1,492	66.4%
Cheshire	North	Town	28	997	2.8%
Clarksburg	North	Town	10	544	1.8%
Dalton	Central	Town	15	1,816	0.8%
Egremont	South	Town	280	656	45.7%
Flordia	North	Town	10	259	3.9%
Great Barrington	South	Town	200	1,874	10.7%
Hancock	Central	Town	125	253	49.4%
Hinsdale	Central	Town	200	700	28.6%
Lanesborough	Central	Town	120	1,134	10.6%
Lee	Central	Town	320	1,667	19.2%
Lenox	Central	Town	420	1,511	27.8%
Monterey	South	Town	395	638	61.9%
Mount Washington	South	Town	60	130	46.2%
New Ashford	North	Town	15	53	28.3%
New Marlborough	South	Town	400	762	52.5%
North Adams	North	City	10	2,509	0.4%
Otis	South	Town	961	1,345	71.4%
Peru	Central	Town	80	268	29.9%
Pittsfield	Central	City	285	10,816	2.6%
Richmond	Central	Town	140	690	20.3%
Sandisfield	South	Town	370	546	67.8%
Savoy	North	Town	30	260	11.5%
Sheffield	South	Town	250	1,083	23.1%
Stockbridge	South	Town	533	1,021	52.2%
Tyringham	South	Town	125	225	55.6%
Washington	Central	Town	70	238	29.4%
West Stockbridge	South	Town	159	588	27.0%
Williamstown	North	Town	121	1,748	6.9%
Windsor	Central	Town	125	409	30.6%
Berkshire County Total			6,968	36,462	19.1%
Total without Cities			6,673	25,116	26.6%
Total Compared to '88 Report			6,648	21,592	30.7%

Table 3. Changes in seasonal housing by region.

Region	1988 Seas. Count	1995 Seas. Count	1988 % of Housing	1995 % of Housing	1988 Seas. Distribution	1995 Seas. Distribution
North	316	204	8%	5.7%	5.3%	3.1%
Central	2,177	2,591	28%	31.0%	36.6%	38.9%
South	3,458	3,853	39%	42.3%	58.1%	57.9%

a/ These figures compare the same number of towns from 1988 BCRPC Report; therefore, not all counted in cities/towns.

Table 4. Location by percent seasonal housing units.

Percent Seasonal--> Region	High (40% and above)	Moderate (19% to 39%)	Low (Less than 19%)
North	0	1	7
Central	5	6	1
South	8	4	0

Table 5. Tax rate categories by percent seasonal housing units.

Percent Seasonal -->	High	Moderate	Low
Tax Rate	(40% and above)	(19% to 39%)	(Less than 19%)
High (14.32 and Above)	0	3	6
Moderate (8.83 to 14.31)	4	6	5
Low (8.82 and Below)	7	1	0

a/ High Percent Seasonal Units -- average tax rate = 8.134
b/ Moderate Percent Seasonal Units -- average tax rate = 13.165
c/ Low Percent Seasonal Units -- average tax rate = 14.265

of $1,664 per seasonal unit (note assumptions in full text of report). The average value of all seasonal units is approximately $141,480 and in communities with greater than 40% of the housing stock categorized as seasonal the average value is $167,848; when Becket and Hancock were removed from the high percent seasonal housing communities, the average housing unit value was over $199,000.

Potential Tax Impacts for Adams

Potential tax impacts for Adams were examined under different development scenarios. Those scenarios were for development of 100, 200, 300 or 400 seasonal housing units. For the purposes of the measures of these tax impacts, the average seasonal housing value was set at $167,848 and the current tax rate of 15.90 per 1000 was used. In addition, a personal property tax revenue was assumed at 5% of total evaluation and set at the current tax rate.

For 100 homes Adams would realize an additional $266,878 in revenue; for 200 homes -- $533,757; for 300 homes -- $800,635; and for 400 homes -- $1,067,513 in revenue; additional costs to service these units were not calculated; an additional $13,000 to $53,000 could be earned through the personal property tax revenue source (Table 6).

Sales of Seasonal Housing Units

Sales of housing units were the highest in communities with a high percentage of seasonal units and the percent change from 1990 to 1994 was 33.9%; 84 units were sold in the high percent seasonal communities which were valued in excess of $200,000 and a total of 268 units valued above $200,000 were sold in Berkshire County in 1994; this represented 13% of all sales in Berkshire County in 1994 according to the *Berkshire Builders and Buyers Guide*.

The Seasonal Housing Market -- Where are They Coming From?

From a sample of nine towns in Berkshire County; it appears that the bulk of the seasonal home owners come from New York. Approximately 50.4% are from New York with 21.6% from Manhattan and another 28.9% from areas outside central New York City. Another 14.8% are from Massachusetts, 10.4% are from New Jersey, 9.1 % are from Florida and 6.5% are from Connecticut. The cost of living in the primary residential market of the seasonal homeowners is 10 to 30% higher than Berkshire County and as much as 115% higher in Manhattan -- a primary market for Berkshire County. This suggest substantial additional income to spend while residing in Berkshire County. Median household incomes range in these primary markets range from $33,000 per year to $60,000 per year. For example, Manhattan has 92,000 households with incomes in excess of $100,000 per year which is one of Berkshire County's primary markets.

Conclusions and Recommendations

Seasonal Housing Trends.

The bulk of the growth in recent years in Berkshire County occurred in the 80s. Non urban Berkshire County as a whole appears to have seen an approximate 3% increase in second homes as an overall part of its single family housing stock during the past seven years. This increase is about half the rate of the previous eight years (1980 to 1988). The largest concentration of seasonal units is in South County with few homes in North County. Not surprisingly, South County has seen the most second home development with an 8% increase, while North and Central counties have seen a 2% and 6% increase respectively when all communities are considered. Those communities which have larger concentrations of seasonal homes have lower tax rates, more spending per capita, and higher housing values. However, when the same towns are compared with the 1988 BCRPC Report, North County has actually experienced a decrease in numbers (32% decrease) while South County has experienced an 11.4% increase and Central County 19.1% increase based on CED counts and estimates. One might surmise that some of the seasonal housing in North County has been converted to permanent housing. However, one should not jump to overwhelming conclusions based on these counts and

Table 6. Tax revenue impacts for Adams with increased level of seasonal homes.

Tax Revenue Scenarios of Increased Number Seasonal Homes*

	Number of Units	Ave. Value	Assessed Value	Tax Rate	Total Additional Tax Revenue
If Adams added:	400 units	$167,848	$67,139,200	15.90	$1,067,513
	300 units	$167,848	$50,354,400	15.90	$800,635
	200 units	$167,848	$33,568,600	15.90	$533,757
	100 units	$167,848	$16,784,000	15.90	$266,878

* Assumes rates, assessments and valuations remain constant.

estimates. It is likely that some of these trends have occurred, but perhaps not at the magnitude found here. In the sample of towns examined in this study, the majority of those who purchase seasonal homes came from New York (over 50%) and other nearby Northeast States. A large portion (22%) are primary residents of Manhattan. The distribution of seasonal units does appear to be spreading northward with Central County gaining a bigger share of all seasonal units. However, North County has not yet seen an increase in the number or share of seasonal units.

Issues of Concern in Seasonal Housing Developments
If a community is to consider the need to attract more seasonal home use then the cautions noted in the 1998 BCRPC Report should be followed and considered. Communities should work to adequately plan for development of seasonal home areas with special regard to potential sewage and water supply problems or other environmental and aesthetic concerns.

There is some concern that a portion of the second homes constructed to marginal development standards in the county years ago are being converted to year-round dwellings. This has resulted, in many instances, of substandard second homes becoming substandard permanent dwellings as noted in the 1988 BCRPC Report. Additional concerns if this type of development is encouraged include: 1) small lot sizes with septic and water supply systems on the same lot; 2) lakefront second home developments; 3) eutrophication of many of Berkshire County's lakes; 4) second home development and affordable housing; and 5) rapidly escalating housing prices.

These were all problems noted in the 1988 BCRPC Study. In addition, communities should be aware that a number of different types of long term seasonal guests are likely to reside within the county for extended periods. The benefits brought to the county are valuable and significant. Increases in tax revenues are clearly evident here. However, the benefits of the seasonal market have not been equally distributed throughout the county. The seasonal housing market has changed and although it is still growing, the growth has been more modest in the decade of the 90s.

As noted in the BCRPC Report, "the real value of this current study lies not so much with analyzing second home trends in the recent past, but in that it provides a reliable data base from which to analyze trends in the future. This will be particularly useful in monitoring an anticipated northward movement of second home development, due to the very high price of real estate in South Berkshire, and the establishing of North Berkshire as a primary tourist destination, once projects such as the Greylock Glen resort in Adams and the Massachusetts Museum of Contemporary Art (Mass MoCA) in North Adams are completed." (BCRPC Report, 1988)

This study found that the seasonal home market has not yet been realized in North County.

This study served to update and provide reference points for decision making. Additional research is needed to provide the most accurate counts possible. The methods of estimating and counting seasonal units are a limitation in this study. Additional research is needed at a larger scale to determine more about the seasonal housing units and to examine further the long term tourist stay market. There is likely a portion of Berkshire County's "guests" who come to the county and stay for long periods of time who are missed in these types of counts and estimates. There are likely people who come and stay and rent apartments, houses and/or college dorm rooms who are missed, but may actually engage in activities and purchases much like a typical seasonal homeowner. Seasonal home owners may also invite a number of guests to stay with them for long periods of time. The original intent of this study was to identify part of this market, too. Unfortunately, there exist no sources of data on the numbers of these types of guests. This is a shortcoming of this study; however, one should be aware that they exist and can have substantial impact within the county and the respective communities in which they visit. Furthermore, it was be worthwhile to more fully examine the seasonal homeowners and the long term seasonal guests to determine such why they purchased in Berkshire County, their spending patterns and visitation patterns to the county and the full economic impact of these units with the respective communities. Recent studies of seasonal home markets conducted by Chase Manhattan Bank and Mediamark Research indicated that the seasonal home market will grow substantially over the next two decades. Adams' tax revenue could benefit from the addition of seasonal units in the community.

Seasonal Housing Market Trends in the Future.
Surveys by Century 21 have found that 20-30% of all second home owners plan to turn their vacation retreats into retirement homes and that number is likely to increase (Mahar 1995). Age 45 is a threshold age for most buyers and 55 is closer to the median age of a buyers according to a Chase Manhattan survey of second home owners. The odds of owning a second home around one's 50th birthday increase. Being between 45 and 54, one is 33% more likely to own one and being between age 55 and 64, one is 65% more likely to own one. It is a fair guess to suggest that the number of boomers who buy vacation or seasonal homes will at least equal the roughly 7% of their parents generation that have done so. If this is the case, then the number of seasonal home owners could swell by 40% in the next decade. (Crispell 1994; Smith et al. 1995; and Mahar 1995).

While only 7% of all Americans own seasonal homes, some 28% of all doctors and lawyers earning over $60,000 or more per year own two to four homes, with the share rising to roughly 33% among those whose primary residence costs over $300,000 according Mahar (1995) and a Chase Manhattan Bank survey.

A Chase Manhatttan Bank study found that nationwide 28% of all seasonal home owners rent out their houses and the average rent is $760 per week. The prime market area for second home buyers could also be measured by the fact that the average homeowners travel 304 miles to reach their seasonal home (Mahar 1995).

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SUSTAINABLE TOURISM DEVELOPMENT IN THE ADIRONDACKS: USING THE INTERNET TO EMPOWER LOCAL COMMUNITIES

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Abstract: Rural tourism development projects are often seen as a remedy for ailing rural economies with unique and breathtaking natural environments. These projects often proceed at the expense of the environment and do not take into consideration the social changes that occur in small communities when large scale tourism becomes the mainstay of the economy. Tourism development facilitated by locally-based decision making is the best hope for developing sustainable tourism.. The Internet is a new tool for opening communication channels between residents, tourists, politicians and business leaders in order to facilitate the discussion necessary for sustainable tourism development.

Introduction

Rural tourism development historically has focused on improving the economy often at the expense of the environment. Tourism development in ecologically significant or fragile areas often destroys the resource which served as the initial attraction. The development of tourism which protects and enhances the environment is an important component of rural economic development. The most important aspect of this process is community involvement in determining the limits of acceptable change to the environment and the level of development which accompanies tourist accommodations and attractions. Without community decision making and total community involvement there is no hope for sustainable tourism development.

The rest of this paper will discuss tourism development strategies which focus on the community aspect. The Adirondack Park is used as an example where these models can be applied to an area searching for economic development, ecological conservation and most importantly locally-based decision making pertaining to what is acceptable to the people of the Adirondacks. Communication between all of the persons involved in developing tourism is critical to the success of any region trying to attract tourists.

The Internet is a powerful new tool which can facilitate this process. The communication channels between residents and between tourism destinations and tourists can be improved with the Internet. This paper will also discuss the role of the Internet as an information, education and marketing tool for sustainable tourism development.

Tourism Development

Communities and tourism destinations around the world have selected development policies that shape their tourism products for better or worse. There are many different approaches to the tourism development process. This paper looks at two common models and then presents a third approach that is based on a community's resources and an active empowerment process of participation. Two common approaches to tourism development include the "sales/promotion" model and the "let it happen" model. The third approach that will be discussed in the paper is a tourism "product development / marketing" model. Positive and negative aspects of each of these models will be discussed as well as the application of the Internet for community participation in the final model

Sales Promotion Model

Several tourism development models have been provided to communities over the years which have included as primary elements sales and promotion components (Fridgen 1991, Gunn 1988, Koth et al. 1991, McIntosh and Goeldner 1990, Weaver 1991). As these models are implemented the focus has been in many cases, on promotion of the existing attractions, and the development of infrastructure to support additional tourists who are attracted to the area as a result of promotional efforts. As suggested by Gunn,

> "Tourists are seen to be simply fried chicken eaters: boat, camera, lot and RV buyers: and a myriad of other specific product consumers." (1972. p8). From this 'tourism myopia' comes a fragmentation of development which has focused on infrastructure rather than on tourists' experiences" (Fridgen 1991).

The models begin with an inventory of existing resources and attractions so that a community or destination has a listing of what there is to sell to the tourists. This inventory consists primarily of existing attractions, infrastructure and services available not only to provide an enjoyable experience to attract the tourists, but also to accommodate their needs. Communities find that once the inventory is complete, their tourism product is defined and sales and promotion can begin. If these efforts are successful then the costs, such as social impacts to the community, can be dealt with when the time comes.

When communities get to this point in the tourism development process there is an organizational effort made to place responsibility for promotion with the community institutions. This organization may be a tourism agency or a division of an existing quasi-government entity, a convention and visitors bureau, tourism authority or part of a chamber of commerce.

Budget mandates for most of these organizations require that activities be limited to sales and promotion.

Promotion comes in a variety of formats and media: promotion, advertisements, brochures, videos, World Wide Web home pages, and sales mission to potential geographic markets. Criteria to measure the effectiveness of the promotional efforts include occupancy rates, retail sales, traffic counts and attraction visitation. Rarely do the promotion organizations (CVBs or tourism authorities) monitor impacts related to the tourism development. Success or failure of tourism development efforts has not historically been measured in terms of changes in community quality of life such as: per capita income, driving time from point to point, availability of goods and services to residents, increases in recreational opportunities, or how people "feel" about living in their community. Inclusion of these "community values" in the planning and development process is an important component of the models cited above, however the promotion and sales efforts seem to, time and time again, take the drivers seat and run the tourism development model.

"Let it Happen" Model

The "let it happen" model is an extreme case of community tourism development suggested in the sales/promotion model, however, there is no effort to coordinate the final tourism product. In communities or destinations where the "let it happen" model is in place, competition drives development. If one type of development seems to be successful then others follow with like development to try to capture market share. To make secondary development or growing competition within the region cost effective, supply costs are kept to a minimum but yet just high enough to capture as much of the demand as possible. In addition to competing for market share of visitors to a destination, communities also see themselves in competition with other destinations to attract a finite travel market. This competitive development model often leads to a development cycle of "more and bigger is better."

Unfortunately for many communities, who have fallen into the "let it happen" model, the market dictates return on investment. Many of the decisions to build have been short lived with heavy costs in terms of loss of community identity, additional investment to redevelop attractions, and resident employment instability. Sometimes businesses and services developed to meet tourists' needs are in conflict with many community values and principles. A good example is the "liquor by the drink" restriction in many Southern and Western states. These restrictive laws are seen by many hotel and restaurant investors as too restrictive to promote good business practices -- giving the tourists what they want.

Proposed tourism developments are often presented for community approval as economic development projects and the benefits to the community are laid out in detail. The social costs to the community however are usually not factored into the decision making process. The investors and developers have everything to gain if they have done their homework and as a result end up with a successful enterprise. The social costs of these developments, on the other hand, are shared by the entire community.

Product Development/Marketing Model

The "product development/marketing" model builds upon those presented as sales promotion models. The models cited above are not unlike most tourism planning models which tend to include similar components of demand and supply linked with transportation and communication systems (Gunn 1988). The models also suggest that there be an "involvement of publics" which allows for review and comment by community stockholders. This involvement task is difficult at best and is usually offered as a token comment opportunity for those well meaning citizens who have an interest in their community. The primary difference in the proposed tourism "product development/marketing" model is that it provides an opportunity for the community involved early in the process and to keep tourism development on the community "agenda." This section will discuss in greater detail, the components of the model and how communities might manage development, realizing that collection and management of information is critical in the decision making process.

As with the previous models, inventories of infrastructure and attractions (supply) are important in the tourism product development / marketing model. This inventory should be gathered, organized and categorized using local knowledge of the destination's residents. These "resources" should be mapped and organized into three categories. The first category is made up of "special places" in the area which only the locals know about and they consider to be held as a local common good. Locals would not consider changes to these places as positive and feel that these should be protected from tourism development. The second category would include resources that are considered prime attractions for tourists. These resources may need to be changed but the local residents feel that these areas could be shared with visitors and changes or development to accommodate the increases in use would be positive. The third category to be mapped would be areas of the destination that are in need of improvement or renovation. These would be the places in the area that are in need of attention so that visitors to the destination would not receive a negative impression.

As the mapping exercise progresses, residents of the community should begin to develop a vision of how they want their community to be in the long run. For example: once special areas have been identified how will they be protected and managed, and who will be responsible for the cleanup and monitoring of areas in need of renovations. Another challenge is to attract investors to enhance the tourism product in a responsible and sustainable manner. Services and improved infrastructure such as transportation and water treatment facilities must also be considered as part of the development process.

As with the other models there needs to be an organization responsible for these efforts. However, the organization's mandate changes from one of promotion and sales to one of integrated planning and marketing. In addition to efforts concentrating on tourist markets, the tourism authority should facilitate the inventory process, provide educational programs focusing on the economics of sustainable development and how the community might set limits of acceptable change. These are all important aspects of the tourism development process. Community stakeholders are empowered with an understanding

of the opportunities and threats that may come with tourism development. Residents acting in their own self interest can foster an integrated planning process rather than a fragmented myopic approach discussed above. All of the members within a community are so interrelated that tourism development of any kind is going to have an impact on how they function. As individuals, enterprises, and tourism developments begin to network through sharing of information, a greater self-interest is fostered, not diminished. The tourism organization has the responsibility to provide information and opportunities for citizens to participate in the process so that through openness and discussions, residents are able to influence decisions that will effect their community.

The "product development/marketing" model can be effectively used in regions looking to improve tourism efforts without the long term destruction of the natural and social environments. One such area is the Adirondack Park in upstate New York.

The Adirondack Park

Created in 1892 by an act of the New York State legislature, The Adirondack Park today covers an area of approximately six million acres. This is an area larger than Glacier, Yosemite, Olympic, Yellowstone and Grand Canyon National Parks combined. The Adirondack Park is a unique mix of public and private land of which 3.4 million acres are privately owned and principally devoted to forestry, agriculture and open-space recreation. The other 2.6 are owned by the State of New York and constitutionally-protected as "forever wild."

The landscape of the Adirondacks is dominated by spruce-fir and beach-birch-maple forests. There are over 70 tree species, 55 species of mammals, 218 species of birds and 86 species of fish. The Adirondacks also form the headwaters for most of five major watershed basins including the Hudson, Mohawk and St. Lawrence rivers. Within the Park there are 2,800 lakes and ponds and more than 1,200 miles of rivers fed by 30,000 miles of brooks and streams. The Adirondack Park offers outdoor recreation opportunities unsurpassed on the East Coast of the U.S., but there is much more to the Park than its natural wonders.

There are more than 130,000 year-round residents living within the bounds of the Park. In addition to these persons there are also 200,000 seasonal residents. Adirondackers are more or less characterized by their strong sense of independence and their connectedness to the land on which they live. The Adirondacks are not an easy place to make a living, as is evident by the low per capita incomes within the Park and high seasonal unemployment rates. The 130,000 year-round residents live within 105 small towns and hamlets inside the Park boundaries. The Park's economy is closely linked to the health of the environment. Forestry and tourism are the two main sectors of the region's economy. In some Adirondack counties travel and tourism related businesses provide almost half of the local jobs. While the Park does not generate the same levels of tourism related sales tax revenue for New York State that are generated on Long Island or the Hudson River Valley, the significance of tourist spending is greater to the Adirondack economy than any other part of New York State.

The importance of tourism to the Adirondack economy is not disputable. However, the ability for future tourism development to meet local economic needs and protect the environment of the Park is something needing further consideration. The "product development/marketing" model offers several improvements over the traditional tourism development models all of which can be enhanced and improved with the Internet.

The Internet

As of January 1996, 36% of all households in the United States had computers and more than half of these computers were equipped with modems (Cyberatlas). Hoffman, Kalsbeek and Novak (1996) estimate that 28.8 million people in the United States, ages 16 and over, have potential or actual access to the Internet. More than 16.4 million people actually use the Internet with 11.5 million accessing the WWW. In addition to this, 1.51 million people have used the WWW to purchase products and services. Within the framework of the "product development/marketing" model this section will discuss opportunities for improving the tourism development process with the Internet.

Community Networks

The development of community based networks provides a "community information infrastructure" with the inclusion of resources such as government information, local happenings, health news, tourism attractions, etc. The overall tourism product is made up of a wide array of organizations offering or assisting in the delivery of the final product which is the travel experience (Perdue and Pitegoff 1990). The linkage of the tourism product with the needs and wants of local residents, whom planning and development of tourism resources is designed to benefit, is typically weak. As a communication vehicle, the Internet will make it easier for local voices to be heard. Establishing links between residents and then communicating the vision of these people to the planners and business leaders of the community improves the chances for developing sustainable tourism.

Inventories

The community networks can also be used as a collection mechanism for data throughout the region and used to disseminate this information to other areas. Through the use of GIS (Geographical Imaging Systems)-based internet applications, residents are able to map specific attributes as they relate to them personally, and graphically view how other residents perceive the region. Specific areas of focus include special places, prime attractions and areas in need of improvement as discussed above. This information is not only valuable in the development of a clearer picture of the desires of residents of a region, but will be beneficial in more accurately representing the region in promotional and planning activities.

Promotion

The connection of all of the information generated by residents with those individuals and groups from outside the region (investors, tourists, etc.) can best be accomplished through the WWW due to its widespread use and multi-media capabilities.. Currently, most destination-based WWW pages are merely computer-mediated brochures, not making full use of the communication capabilities of the medium. The ability for two-

way communication is not being utilized. Destinations need to provide more feedback opportunities for persons currently using the WWW to gather tourism destination information.

Web pages need to be designed to address a wide range of interests and must foster interactivity. At the very least, WWW pages should give the potential tourist the capacity to access information for completely planning their visit to the region. Tourists place more value on informal information sources such as friends and family than they do on formal information designed to convey a specific message about a region (Raitz and Dakhil 1989). Regions, like the Adirondacks, may want to redirect some of their promotional energy to address the potential of informal communication. With the expansion of listservers and chat groups, computer-mediated word-of-mouth information will take on a new level of importance. The Internet offers great potential in the provision of personalized, timely and accurate information for consumers. (Hoffman, Novak and Chatterice 1995)

The Internet, while receiving a huge amount of positive commercial attention, should not be viewed as a cure all, but rather as a tool with unique capabilities for communication, promotion, public relations and education. Development of community networks is complicated and while it can be done, great care needs to be taken in their design and implementation because they will provide the representation of the community to the potential tourists and investors.

Discussion and Implications

Some of the ideas discussed above are already being applied by organizations, both governmental and non-governmental, in the Adirondack Park today. The Adirondack Park Agency is working with the Center for Technology and Government to create easily accessible databases to better serve residents. This activity could be further extended to creating a database for tourism issues, easily accessible to tourists seeking information about the Adirondack Park.

The most unique application underway is being carried out by the Adirondack North Country Association (ANCA). ANCA is currently working on an interactive multimedia kiosk for the Crown Point visitor center. Visitors to the center will be able to locate and receive directions to specific locales and scenic routes within the Adirondack Park. The eventual goal is to have one of these at every visitor center in the Park with a central mapping and updating system at Crown Point. This is an application which serves tourists who have already decided to visit the Adirondacks, but it also points out the potential for reaching people who may not have made the decision to travel, via access to the WWW from the comfort of one's home or business.

The Lake Placid/Essex County Redevelopment Initiative is an excellent example of community involvement and locally-based decision making. Town meetings have taken place from Lake Placid to Crown Point to Ticonderoga in order to determine what types of changes are necessary to improve the economy through tourism promotion in the region while minimizing impacts to the natural and social environments in this area of the Adirondack Park. Chat groups and electronic bulletin boards are one way to keep people involved and continuously update residents about meetings and changes in public policy.

The Internet, specifically the WWW, offers the residents of rural areas many opportunities to communicate their needs and wants when it comes to defining and shaping sustainable tourism development projects. Initially, the communication lines between rural residents can be improved. Then, continued communication with planners, investors, business leaders, etc. will give local residents even more control. And finally, the promotion of the region as seen through the eyes of the people who live there to those who wish to visit the region may be the most attractive feature of all.

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Recreation and Tourism in The Nineties

USING ECOSYSTEM-BASED MANAGEMENT

TO DEVELOP COMMUNITY

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Abstract: Traditionally, community foresters have managed trees for the many benefits they provide communities. By vegetative management, community foresters have created more livable streets and communities. Today, community foresters and other natural resource managers have access to more holistic processes such as Ecosystem-based Management to help integrate not only trees, but viable natural systems into community development. The Ecosystem-based Management process is guided by the principles of conservation, sustainability, diversity, and connectivity which have been defined in both ecological and social terms. But, can the ecosystem-based process work to better integrate natural systems into community development if the traditional land use planning process has failed?

Changing American Landscapes

Since World War II and the prosperous 1950s, American landscapes have been changing— some drastically. Furthermore, there is a great deal of history surrounding the concentration and dispersion of American populations and settlements since the Industrial Revolution and the technological advances of the Civil War (Hawley, 1950 and Warren, 1972). J. P. Jackson (1950) publisher of the journal *Landscape* writes that landscapes are spatial representations of complex social, political, and economic processes, and there is much that can be learned through the seeing of these changing American landscapes. In America, the development of rail, air, auto, and other transportation systems, increases in communications and other technological advance, the change from an industrial-based to service-based economy, an increased division of labor, and the suburbanization of people, commerce, and capital has fueled a different type of development. This development is symbolized by Levit Town type subdivision, the American Strip Mall, and by the spreading urban and rural Blob of suburbia. There has been a change of the traditional nuclear consolidated city, typified by turn of the century Pittsburgh, into the "Galactic Cities" of Boston, New York, Seattle, and the king of Galactic Cities, Los Angeles. In the *Urban Invasion of Rural America*, Pierce Lewis (1994) describes the Galactic City as a city where all the traditional urban elements float in space like stars and planets in a galaxy, held together by mutual gravitational attraction, but with large empty spaces between.

Benefits of Natural Resources to Communities

We are familiar with many of the benefits of natural systems to communities and much research has and is being completed in this area (Albrecht, 1993; King, 1996; National Park Service, 1992). Nature provides the raw materials and areas for forest, agriculture, and recreational businesses. Natural open space increases the value and salability of homes and other real property and attracts new and progressive businesses to areas. By conserving natural landscapes rather than allowing indiscriminate development, local agencies can reduce cost for public services such as sewer, water, flood control, snow removal, trash, roads, and education. Nature has positive impacts on physical and mental health and provide our communities with clean water and air. The Santa Monica Mountains National Recreation Area is refereed to as the "lungs of Los Angeles" In terms of mental health, nature provides opportunities for the expansion of independent and team competency and can help increase the self-confidence and self-esteem of people. Natural systems provide alternative areas where individuals can express their human disposition in a socially responsible fashion through recreation, volunteer work, exploration, self-contrast, self-insight, wonderment, and learning. Aldo Leopold (1949) writes that nature is the perfect norm for the evaluation of our society and natural systems provide opportunities for education and evaluation including research and outdoor classrooms. Natural systems provide wildlife habitat and corridors. They provide opportunities to appreciate and understand our natural world and heritage. Natural systems associated with communities can be the training grounds for the understanding, use, and support of destination parks and forests. The planned use of natural systems can help communities absorb change by the creation of special places and the preservation of structured and shared symbols. Natural systems can help create and maintain the container community occurs in and increase human interaction. The local autonomy of a community can be defined and reinforced through the planned use of open space. This use of open space increases the psychological identification with a local and makes us feel more comfortable and at-home in our communities (Bender, 1987; Hawley, 1950; Warren, 1972). Frederick Law Olmstead wrote that parks and opens spaces where benign magnets for social democratization and recreation (Wilson, 1989). The green infrastructure of nature provides opportunities for people to generalize across interest lines and helps create a social system, or community, that is characterized by experience reinforced by space.

All the benefits provided by natural systems help develop healthy and sustainable communities (Hunter, 1994). But, negative impacts to the quality and quantity of natural systems found in context with changing American landscapes are becoming apparent. Problems associated with the loss, fragmentation, and isolation of natural resources, whether viable agricultural lands, forested lands, watersheds, or recreational opportunities for urban populations, have been described by a number of authors (Boughton et al., 1991; Falk et al., 1992; Harper et al., 1990; Lubka, 1982). There seems to be no evidence that these changes to natural systems associated with communities will be abated in the foreseeable future. Furthermore, some sociologists are of the opinion that the current sprawling, heterogeneous settlement pattern also fuels the destruction of a sense of neighborhood and community (Bender, 1978; Hawley, 1956; Warren, 1972). Perhaps recent migration to rural areas of America is an indication that people are searching for a sense of neighborhood and community that has been lost in modern community design and development, but what is community? As natural resource managers we are familiar with the term community in an ecological sense, but what is a human community?

Community

The notion of community is a fundamental idea and there are hundred of definitions surrounding the concept (Luloff, 1996). Some definitions express heart felt sentiments of safety, security, and comfort including the positive visions of the good life (Bender, 1978). Community has been defined as an aggregate of people who share a common interest in a particular locality. Community has been described as having a number of dimensions including coincidence of service area, psychological identification with locality, supporting institutions, local autonomy in decision making, and strength in the horizontal interaction between residents (Warren, 1972). Community has experiential and local dimensions that allow community to be defined as experience reinforced by space. Some communities are better able to deal with change than others— the competent community (Cottrell, 1983). These communities: collaborate effectively in identifying the needs of the community; achieve a working consensus of goals and priorities; agree on ways and means to implement agreed-upon goals; and collaborate effectively on required actions.

Community Development and Ecosystem-Based Management

In an interactionists' perspective, Kenneth Wilkinson (1979) describes the community development process as actions undertaken with positive regards to community structure. It is the attempts by people to strengthen not only the economic structure of a community, but also environmental, social, and power structures. Working landscapes, and more passive landscapes such as open space can help develop and reinforce community by increasing and stabilizing economic, social, and natural elements (Boughton et al., 1991; Eisner and Gallon, 1986; Harper and Mantell, 1990; McHarg, 1967). As a result, a progressive and sustainable community planning, design, and development philosophy is to design with nature, rather than to continually impose unattractive and unsustainable development in the development of communities (McHarg, 1967).

Little attention has been paid to the use of ecosystem management processes in guiding and understanding community development and growth. Ecosystem-based Management (USDA Forest Service, 1993 and USDA Forest Service, 1994) is a planning and decision making process that has been developed to facilitate the integration of natural and social systems into the community development process. The process is intended to be used for large scale planning efforts such at a watershed scale, but can be used for smaller scale projects such as the restoration of a riparian area. A number of themes revolve around Ecosystem-based Management including ecological boundaries, ecological integrity, data collection, monitoring, adaptive management, interagency cooperation, organizational change, humanity in nature, and social values. These themes are expanded into a number of concepts. Ecosystem-based Management strives to integrate economic, social, and ecological systems and takes a broad view of nature and people. It recognizes natural boundaries such as bio-regions and watersheds rather than jurisdictional boundaries. The processes strives to breach political, generational, and private ownership boundaries. It emphasizes community change agents, empowerment, and interaction and broad-based participation promoted through non-traditional partners working towards mutually agreed upon goals.

Furthermore, it stresses environmental justice which can be defined as the provision of a safe living environment for all people and provision of equal access of all people to nature and healthy natural systems. These concepts have been integrated into a number of guiding principles which have been divided into human and ecological elements— conservation, sustainability, diversity, and connectivity. .

In Ecosystem-based Management, conservation is characterized ecologically by non-degradation of natural systems by use and in human terms by a continuation of involving people in environmental stewardship. Sustainability is characterized ecologically by protecting, restoring, commitment to, and management of natural systems as to be viable and healthy indefinitely. In human terms sustainability is the achievement of a clean, safe environment, guided growth, encouragement of connectivity with the past, a functional city form, an optimum level of public services, and a high degree of interaction and control in local decision making. Diversity is characterized by an increased variety of life and increased inclusiveness, interaction, and empowerment of people. Connectivity is networks of viable natural systems and inter-connecting habitats and cooperating partnerships between individuals and organizations. The ecosystem-based process surrounds a vision and includes such elements as establishing a vision through public involvement, formation of multidisciplinary teams and collection of ecological, economic, and social data including such aspects as congruence of attitudes.

There are some concerns with Ecosystem-based Management and many opinions have been expressed generally about different ecosystem management processes. There has been a barrage of scientific bantering on what ecosystems are, whether boundaries can be placed upon them and on data collection, monitoring, modeling, and other operationalizing aspects. In an anthropocentric view, ecosystem processes are criticized for placing the non-human biological and physical attributes of nature ahead of goals for human attributes. As a process that seeks to understand and monitor land use, Ecosystem-based Management is perceived as a threat to the unlimited use of private property. Furthermore, the ability of Ecosystem-based Management to function in landscapes associated with urban areas has been questioned. In Pennsylvania there are 2500 minor civil divisions and in terms of development and growth they have done what they want when they want. And, there is a greater question in uncoordinated local control over community development— how do we link local autonomy in decision making with larger horizons of planning and decision making such as bio-regions, or even watersheds? Because of perceived inequalities, efforts of data collection and monitoring, and other reasons, many attempts at regional planning and other multi-jurisdictional efforts have been unsuccessful in the past; although there are a number of important models for success. The creation of the Santa Monica Mountains Recreational Area near Los Angeles (Elmendorf, 1993) and Revitalizing Baltimore (Neville, 1996) are examples of citizens, government agencies, and non-profits working towards shared goals in ecological rather than jurisdictional boundaries.

Ecosystem-Based Management and Land Use Planning

Ecosystem-based Management can be contrasted with the land use planning process. Planners through the planning process have been guiding growth and intervening in community development since the 1893 Chicago's World Fair and the "Colombian Exposition" gave impetus to planning in America. Planners are change agents and can help integrate natural systems into community development through plan review and comment; public meetings and forums; zoning, subdivision and other ordinances; and comprehensive planning. In terms of the historical relationship between community development and nature a question can be posed— has the traditional planning process successfully integrated natural systems into community development, or have natural systems been ignored and disregarded? While other authors are more optimistic about the planning process, Warren (1977) is of the opinion that most change that takes place in communities is not the result of deliberate purposive planning, rather it is hard won by some group over hard opposition of another group. He maintains that planning has a number of flaws including: planning discourages major intervention and structural change; planning lulls people into thinking that change is being made; and many times planning constitutes a growth agency. According to McHarg (1967) a progressive and sustainable planning and design philosophy is to design with nature, rather to continually impose unattractive and unsustainable development in the creation of human settlements. Although conceptually acknowledged, McHarg and others conclude that this planning theory continues to be wrongly ignored in ongoing community development.

Ecosystem-based Management can be viewed as a process similar to the land use planning process. But, the ecosystem process mandates broad-based participation, working across jurisdictional boundaries, collecting and monitoring data on a large scale, and other elements not always considered in the traditional land use planing process. Chapin and Kaiser (1979) conclude that a more ecosystem approach to community planning can not yet be regarded as operational for most planning agencies because of stringent demands for data and scientific expertise. Today, it is difficult to assume that a process such as Ecosystem-based Management can be used to integrate natural systems into community development without acceptance and use by the already socialized American planning process.

Bringing People and Nature Together

So can people use Ecosystem-based Management to actually manage ecosystems associated with communities? Perhaps the question should be, can people take care of ecosystems? We have the ability to complete natural resource inventories and comprehensive plans that help understand, adjust, and monitor community development to support natural and social systems. Furthermore, we have Geographical Information Systems and other tools to help us make and monitor land use decisions that better both natural and social systems. But, a more holistic and inclusive process for planning and management is needed to preserve viable natural systems in association with current land use patterns. The importance of a contextual approach to planning and management of natural resources and considering ecological and social elements in development decisions impacting natural systems through sociocultural impact analysis has been described by a number of authors (Gramling and Freudenburg, 1992; Greider, 1993; Freudenburg and Keating, 1985; Walsh and Warland, 1983). By providing a process for a contextual analysis, which considers both social and ecological systems, Ecosystem-based Management attempts to move beyond concentration on system outputs and rates of economic return and helps include and evaluate other considerations besides cost/benefit analysis in land use planning and management.

There are important messages in Ecosystem-based Management which can be used by competent communities to become more planned, pleasant, and progressive. Natural resource inventories can be completed which gather, organize, and monitor information on land use and its impacts. Comprehensive plans and planning can be completed to guide community development. Regional organizations and efforts such as joint-power agreements can be considered. Non-traditional and multi-disciplinary teams can be created. Good leadership that distinguishes between problems and symptoms and implements proper action can be promoted. Local people can be empowered through education and involvement and we can listen to the deep knowledge of local citizens. Education on the benefits of natural systems and the damage being done to them by indiscriminate development can be provided to citizens and leaders. But, will moral suasion be enough to impact the values, attitudes, and momentum behind current land development practices of today? Finally, all our efforts can be supported by regulation and enforcement.

Ecosystem-based Management can be looked at in a simpler light: think ahead, look at the big picture, use all available information, know the condition of the land, know the condition of the people, listen to the deep knowledge of local people, maintain the health of the land, communicate with and educate people, invite all those interested and important to the table, have common goals, fix what's wrong, be humble, and keep in touch with the needs of the land and people. Ultimately, the answer to better integrating natural systems into community development may be found in hearts, minds, signs, and fines (Blanchard, 1996). In the development of community, we should use inclusive processes such as Ecosystem-based Management that help bring people and nature together through the understanding of natural and social systems; planning that understands and guides development; youth, adult, and leader education; and regulation and enforcement.

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MANAGING PARKS FOR PEOPLE: AN ACTIVITY PACKAGE APPROACH

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Abstract: This paper examines the compatibility of recreation activities in several regions in order to establish a framework for managing park resources. The quest to identify recreation activity compatibility has a lengthy history. Originating in the Outdoor Recreation Resource Review Commission report of 1962, activity packages were first defined in terms of activity substitution. Later is was argued that any definition must include a measure of resource dependency. In this study, activity compatibility focuses upon the number of different recreation areas that are visited in relation to choice of activities.

Introduction

Activity package research has been in ebb for several years. Problems with activity definition and intensity have compounded the issue. Early attempts in defining activity packages were based on substitution and complementarity (Proctor 1962; Burch 1969; Bishop 1970; Hendee and Burdge 1974; Baumgartner and Heberlein 1981). Yet, these initial studies were problematic in several ways.

First, a major problem in forecasting recreation demand has been the failure to link recreation participation at recreation resources (Ditton et al. 1975; McCool 1978). This is a fairly important issue for managers, since it the resource that is managed for the provision of the recreation experience (Driver et al. 1987). And second, studies may have incorporated anticipated travel rather than the trends from actual behavior.

This paper aims to highlight three separate activity package studies and compare the results. The first part will review the theoretical framework. Next the basic model will be identified, followed by the results in the three regions. The summary concludes the paper by highlighting the management implications of activity package research.

Literature

Research in outdoor recreation planning and the definition of activity packages has a long history. Proctor (1962) first tried to identify groups of activities that maximized use on scarce lands so that the greatest number of benefits could be obtained and optimal opportunities provided. Other studies followed Proctor's lead in attempting to identify packages of unique activities (Burch 1969; Bishop 1970; Hendee and Burdge 1974; Baumgartner and Heberlein 1981). However, several problems with this earlier research were not resolved.

First, there was a failure to recognize that the chosen activity is undertaken at a specific resource and is therefore intrinsically linked to the resource base. Ditton and others (1975) first considered water-based recreation by investigating the four unique environments in Michigan including Green Bay, Lake Michigan, inland waters and pools. They found the environmental variables were major determinants of travel behavior. For example, "Fishing in a stream is quite unlike trolling in Lake Michigan, and the activity at a beach is quite unlike that of a pool" (Ditton et al. 1975:292). Therefore, specific activities are found at specific resources which in turn, directs recreators to seek alternative destination for alternative activities.

McCool (1978) extends this idea by considering the attractiveness of water-based recreation sites. For example, a household may wish to boat at a reservoir and also fish, swim and picnic. All these activities are intrinsically tied to the particular resource. This further supports the resource dependency needs for certain outdoor recreation activities.

A second problem with activity package studies has been that the measures of the influence of alternative park destinations on travel behavior was typically under estimated and, as a result of this, different travel strategies must be accounted for. This necessitates use of actual behavior and not anticipated travel. Several earlier studies investigated travel and found repetitious visits (e.g., Marble and Bowlby 1968). Hanson and Huff (1988) argue that the repetitious travel behavior was a function of short sampling schemes.

Fesenmaier (1985) examined multidestination and diversified travel behavior for recreationists. He recognized that people may visit several parks and the failure to consider this travel strategy would underestimate participation rates. The participation rates varied depending on the household characteristics as well as park resource availability. The need to consider alternative travel strategies is then apparent.

A recent study by Kemperman and others (1995) found variety seeking travel behavior to be the norm for recreation choice. They reasoned that is was imperative to consider multidestinations in the choice set; otherwise demand would be under-represented.

Model

The basic model incorporates both of these factors (i.e., resource dependency and travel behavior). Fesenmaier and Lieber (1988) evaluated participation in various activities to explain recreation travel. Here, participation in certain pairs of activities significantly increased the number of destinations visited whereas other pairs of activities decreased the number of parks visited. Those pairs of recreation activities increasing the number of park destinations visited by recreators were classified as incompatible and those that decreased the number of destinations visited were

viewed as compatible. They reasoned that compatible activities could be part of an activity package when all pair wise interactions were examined.

Conceptually, one could illustrate this relationship between the number of park destinations visited and the number of recreation activities selected by an individual. Compatible activities should lead to a decrease in the number of alternative destinations chosen relative to the number of activities that are undertaken by the recreator.

When more destination are visited than the number of activities undertaken, one could speculate that the individual is either diversifying travel behavior because of conflicts at the initially chosen site or because of some variety seeking motivations.

Data

Data for this study come from three separate papers utilizing the model described above. The first ground breaking study was conducted in Oklahoma. Fesenmaier and Lieber (1988) explored participation in twelve different recreation activities using SCORP data (State Comprehensive Outdoor Recreation Plan) and found several activities that could be grouped into activity packages. When visitation at different sites was regressed on the number of activities undertaken, a negative coefficient would indicate a decrease in park visits thus implying compatible activities. Several boating and camping related activities were found to be compatible with visiting a state park, logically linking those recreation pursuits to the standard "cookie cutter" type park found in Oklahoma.

The model was next tested in Massachusetts for fourteen different activities (Bristow, Klar, and Warnick 1992). The data were obtained from the most recent SCORP. Again, it was found that visiting parks was compatible with boating and camping, indicating the type of activities managed at the park system level.

The most recent analysis of the activity package model took place in Illinois, where Bristow, Lieber and Fesenmaier (1995), again using SCORP data, queried the compatibility of 20 different activities. In this case however, visiting parks was not a choice, yet several different activities could be considered as reasonable surrogates.

Results

The purpose of this paper is to highlight the three separate activity package studies in Oklahoma, Massachusetts and Illinois and compare the results. A variety of different activities were studied in the three states. Table 1 lists these.

As one can see from Table 1, there are a variety of activities explored in the three states. Common to all three states are hiking/walking, backpacking, boating, and camping. Several other activities may be close in definition, but since subtle differences do occur, they are not considered exactly comparable. A larger group of activities are found when one looks for comparables across two states. Table 2 illustrates that list.

Table 1. List of SCORP activities in three states.

MASSACHUSETTS	ILLINOIS	OKLAHOMA
Court Sports	Canoe Rivers	Backpacking
Biking	Canoe Lakes	Motor Boating
Hike/Walk	Boat < 10HP	Sail Boating
Field Sports	Boat > 10HP	Tent Camping
Swimming	Day Hiking	Veh. Camping
Boating	Overnight Hike	Canoeing
Fresh Fish	Group Camping	Day Hiking
Salt Fish	Camp en Route	Fishing
Camping	Primitive Camp	Hunting
Picnicking	Drive to Camp	Four Wheeling
Visit Parks	Bicycling	Water Skiing
Backpacking	Horse Ride	Visit Parks
Horse Ride	Snowmobiling	
Golf	Off-Road Cycle	
	Of-Road Drive	
	Swimming/Beach	
	Swimming/Pools	
	Lodge w/Kitchen	
	Lodge w/o Kitchen	
	Sailing	

Table 2. Recreation activities found in two of the three states.

ACTIVITY	STATES
Canoeing	Illinois, Oklahoma
Fishing	Massachusetts, Oklahoma
Visiting Parks	Massachusetts, Oklahoma
Off-road	Illinois, Oklahoma
Horseback	Massachusetts, Illinois
Biking	Massachusetts, Illinois
Swimming	Massachusetts, Illinois
Sailing	Illinois, Oklahoma

For the four activities found common to the three states in Table 1, several activity packages were found. These are based on the regression coefficients for participation in pairs of recreation activities that are correlated with concentrated travel and therefore indicate compatible activities for planning purposes. Table 3 summarizes the states' activity packages.

The nest step in the comparison was to classify the activity packages into groups of similar rates of diversification or concentration. A hierarchical cluster analysis was run on the regression coefficients for each of the three state's models. The cluster analysis model incorporated the squared Euclidean measure with average linking between groups. In doing so, it was hoped to group activity packages further and find out which packages were similar across the states. For comparison purposes, each state's activity packages were grouped into four clusters. The results are found in Figure 1 below.

Since these cluster are based on the coefficients of travel diversification, one can interpret the results in the following manner. Each cluster signifies the similarity of the activities based on the related travel strategies. For example, in Oklahoma, the cluster including backpacking, canoe and visiting parks all have positive coefficients indicating the strong propensity to diversify travel. These activities therefore need to be provided

Table 3. Activity packages.

MASSACHUSETTS	OKLAHOMA
Hiking and Biking	Hiking and Hunting
Hiking and Field Sports	Hiking and Four Wheel Driving
Backpacking and Camping	Hiking and Backpacking
Backpacking and Field Sports	Hiking and Sailing
Backpacking and Swimming	Hiking and Tent Camping
Backpacking and Fresh water Fish	Hiking and Visit Parks
Boating and Visit Parks	Hiking and Motor Boating
Camping and Biking	Backpacking and Hiking
Camping and Swimming	Backpacking and Motor Boating
Camping and Fresh water Fish	Backpacking and Sailing
Camping and Picnic	Backpacking and Tent Camping
Camping and Backpacking	Backpacking and Fishing
Camping and Horseback Riding	Backpacking and Hunting
	Backpacking and Four Wheel Drive
ILLINOIS	Backpacking and Water Skiing
Hiking and Snowmobiling	Boating and Visit Parks
Backpacking and Group Camping	Boating and Water Ski
Backpacking and Camping en Route	Boating and Sailing
Backpacking and Lodging w/ Kitchen	Boating and Tent Camping
Backpacking and Lake Canoe	Boating and Vehicle Camping
Boating and Snowmobiling	Boating and Backpacking
Boating and Horseback Riding	Camping and Biking
Boating and Group Camping	Camping and Swimming
Camping and Off-Road Driving	Camping and Fresh water Fish
Camping and Pool Swimming	Camping and Picnic
Camping and Horseback Riding	Camping and Backpacking
Camping and Backpacking	Camping and Horseback Riding
Camping and Beach Swimming	
Camping and Off-Road Motorcycle	
Camping and Sailing	
Camping and River Canoe	

a/ Based on negative coefficients.

across the region since they do not encourage concentrated travel. Sail boating is in a category by itself because the travel associated with that activity is so unique. Sail boating is compatible with most activities yet boaters tend to diversify travel. As for those that hike and water ski, participation in other activities tends to moderately diversify travel, indicating a lack of activity compatibility. The remaining activities are slightly compatible or incompatible but apparently create no strong desire to concentrate or diversify travel.

In Massachusetts the four clusters yield a different configuration. The largest activity cluster (court sports, biking etc.) are those activities that are moderately compatible. The next cluster (field sports, boating and backpacking) are weakly compatible with other activities. Salt water anglers shows the trend of being incompatible with most other activities, an indication of the solitary experience sought by the recreator. Last, cluster four (horse back riding) is both compatible and incompatible with the other activities.

Our last state, Illinois, found four distinctly different activity clusters. The first group yields a compatible package. Cluster 2 (hike, river canoe etc.) has activities that are slightly incompatible with most other recreation activities. The third cluster groups incompatible activities with others and the last group is made up of activities that are incompatible with most other Illinois activities.

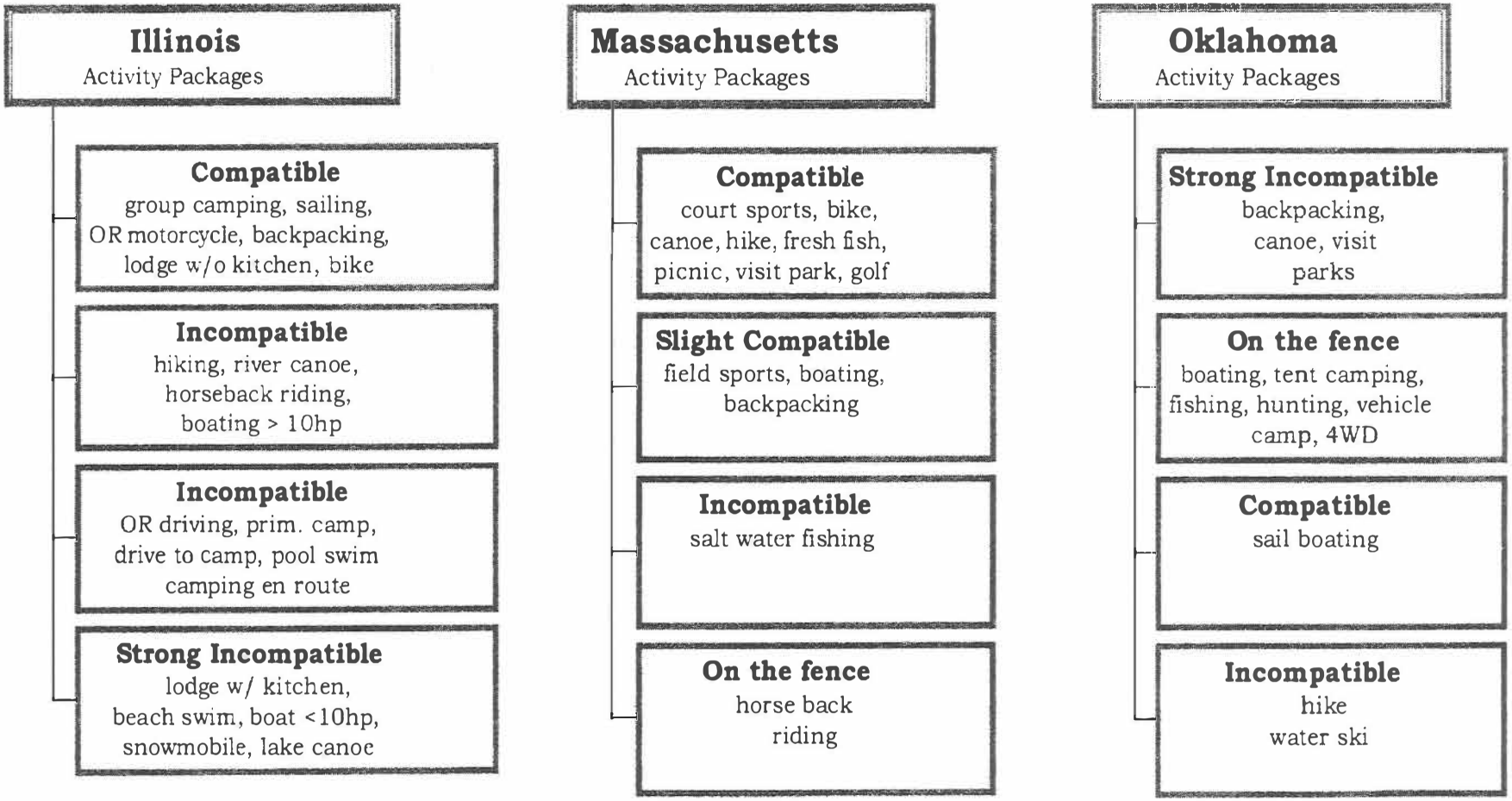
While these results are examples only, the provide some incite into the nature of activity packages in that certain activities can be grouped by the nature of the compatibility with other activities as well as the incompatibility of other recreational pursuits.

Implications for Managers

This research was designed to compare the activity package models in three states: Oklahoma, Massachusetts and Illinois. If some activities are highly incompatible with others, these should be managed differently than those that are compatible. Some recreation activities cannot be provided at all park facilities. If people tend to diversify travel when participating in these incompatible activities, the state could provide for these across the state.

On the other hand, compatible activities can be provided universally with out any undo conflict on site. The research in activity packages still has unresolved questions, but these findings are promising and can serve as a foundation for further studies in the recreation demand.

Activity Packages



Activity package research should look into recreation choice behavior. The influence of the spatial distribution of park resources cannot be underestimated in travel studies. State park managers need to assess the distribution of resources to meet the diversified demand on future recreators.

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Ethnicity in Recreation

THE INFLUENCE OF RECREATIONISTS' CULTURAL OR ETHNIC BACKGROUND UPON THEIR RIVER RECREATION EXPERIENCES

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Abstract: The nature of culturally or ethnically diverse recreationists and the meanings they attach to their Delaware River recreation experiences were examined in this study. More specifically, the influence of recreationists' cultural or ethnic background upon their river recreation experiences was investigated. A phenomenological approach was designed which utilized Glaser and Strauss' (1967) Constant Comparative Method of Qualitative Analysis. Narrative themes were composed to describe the nature and convey the meanings associated with culturally/ethnically influenced river recreation experiences. Themes which illuminated the similarities, differences, and points of conflict among different cultural/ethnic user groups emerged from and were discovered within the data. Additionally, several themes reflecting other attributes of the river experience emerged and were developed. These included the following: culturally/ethnically related recreation behaviors; temporal relationships; and spatial use elements. These grounded themes expand our understanding of the culturally related attributes associated with river recreation experiences. Findings reinforce the notion that recreation experiences are multidimensional. Further research which explores the recreation cultural geography, as well as temporal and spatial recreation related factors associated with diverse cultures and ethnic groups, is suggested to assist in resource management. This research focus is suggested to enhance our understanding of diverse user groups and the dimensions of river and general recreation experiences.

Introduction

Recreation resource managers are not only concerned with the physical sites they are charged to manage, but also need to have an accurate understanding about the recreation user groups they serve. Over time, the recreational use of a particular recreation site may change or evolve due to the introduction of different forms of recreation activities, new recreation technologies, or different cultural or ethnic groups. New or expanded varieties of recreation uses and users provide the potential for new interaction patterns, new conflicts among users, and new problem-solving approaches in recreation resource management. Developing a better understanding about culturally or ethnically diverse user groups may provide resource managers with information necessary to unravel potential conflicts among diverse users and to proactively initiate appropriate management strategies to reduce the occurrence of these conflicts.

While numerous studies have addressed cultural differences with respect to outdoor recreation engagements, many studies have focused on European-Americans and African-Americans. Still fewer studies have addressed Hispanic-Americans and other cultural or ethnic segments of the population. There is a need for a clearer understanding of the elements that contribute to satisfactory and appropriate river recreation experiences among diverse user groups. Additionally, there is a need for alternative research approaches (i.e., qualitative designs) to study the problem.

Purpose of the Study

The purpose of this study included two main components. The first research problem addressed this question: "What is the nature of culturally or ethnically diverse recreationists and the meanings they attach to their Delaware River recreation experiences?" The second research problem focused on the following: "What is the influence of recreationists' cultural or ethnic background upon their river recreation experiences?"

Methods

Research Design

To shed new light on the character, multiple realities, and meanings an expanded recreation user clientele attach to their recreation experiences, a phenomenological based study was designed. This study was conducted in the Northeast at a nationally designated "Scenic and Recreational River" segment under the management of the National Park Service: the Delaware River. This river recreation site is notable since it is situated within a day's drive of the culturally and ethnically diverse New York--New Jersey metropolitan area and the eastern seaboard's "BosWash" megalopolis.

Population and Sampling

The population of this investigation included all river recreation users associated with the National Park's Mid-Atlantic region Delaware Water Gap National Recreation Area. The sample included thirty-one (31) river users drawn from the Smithfield Beach site on multiple sampling visits. A purposive and theoretical sampling plan was used to guide data collection. Data were collected at the river access site on eighteen (18) occasions through the use of observation and interviewing techniques. Thirty-one (31) interviews with recreationists and eighteen (18) observation sessions of recreationists were conducted. Multiple visits were made to the Smithfield Beach study site to account for different times of the day, week, weekend, season, or holidays for sampling purposes.

Instrumentation
A triangulation of observations, structured and open-ended interviews, and a reflexive journal were utilized as the research instruments in this study. The primary study investigator[1] conducted the iterative procedures associated with the ongoing qualitative processes of gathering, coding, and analyzing data. The qualitative standards of credibility, transferability, dependability, and confirmability were adhered to in order to address internal validity, external validity, reliability, and objectivity concerns in conducting research (Lincoln and Guba 1985:189, 219, 300-332). Triangulation, extended observation and exposure in the field, documentation of negative cases, and the cross-referencing of sources contributed to the credibility of the data, while thick, rich description assisted its transferability, and auditing techniques (e.g., transcript and reflexive journal paper trails) supported data dependability and confirmability.

Data Collection and Treatment
Interviews and observations were conducted in an emergent manner and generated insights and answers to the following grounded questions: What types (i.e., the range) of diverse river recreationists use this site?; Who are they (i.e., demographics)?; What are their specific recreational interests and activities?; Where are they recreating on or along the river?; With whom are they recreating?; How are they going about their recreational pursuits?; When do they tend to engage in their chosen recreational pursuits?; Why are they at this site?; What types of recreational styles and behaviors do they exhibit?; What displacement or conflicts are associated with diverse river users' presence and recreational engagements?; and What unique recreational behaviors or activities have diverse users introduced at this site?

Data collection, coding, and analysis phases were conducted in an inductive, iterative manner. Data transcripts were prepared, then subjected to Glaser and Strauss' (1967) Constant Comparative Method of Qualitative Analysis to code, process, and analyze the data. Open, axial, and selective coding techniques were performed on the data (Strauss and Corbin 1990). Grounded, narrative themes emerged from analysis of the concepts, categories, properties, and dimensions discovered within the data. Study themes generated in this manner represented an ideographic and holistic explanation of phenomena versus a nomothetic one. These themes provided a basis for comparability with phenomena occurring at this study site as well as at other river sites.

Findings
Narrative themes were composed to describe the nature and convey the meanings associated with culturally/ethnically influenced river recreation experiences. Themes which illuminated the similarities, differences, and points of conflict among different cultural/ethnic user groups emerged from and were discovered within the data.

Who? What? Where? When?
A large segment of weekend river recreation visitors at the Smithfield Beach site, located within the Delaware Water Gap National Recreation Area, were urbanites with an Hispanic cultural/ethnic background, who resided in the New York--New Jersey metropolitan area. These were riverside recreation users who tended to turn out in large numbers to this site on weekends. They tended to arrive onsite early in the morning, in order to procure one of the limited picnic table spots in the tree shaded strip along the river, before the tables were occupied by other parties. These participants were noted to picnic and play onsite for most of the daylight hours, before making the return drive home in the evening.

Why Recreational Visitors Associated With This Cultural/Ethnic Background Came To This Site?
Hispanic visitors mentioned several factors which were key reasons for their attraction to and attendance at the Smithfield Beach riversite. First, the site was located within what was perceived to be a reasonable day's round-trip distance (i.e., a 1.5 to 2 hour one way drive) from the New York--New Jersey metropolitan area. Second, the scenic and recreational amenities of the Delaware Water Gap area, such as the verdant river valley and its wildlife, the Delaware River, and the local geological features (e.g., the Water Gap, the Poconos), were popular tourism and recreational attractions. Third, this cultural/ethnic group cited the spatial openness of the Smithfield Beach site as being a salient attribute considered in their destination selection. Hispanic river recreation users found the expansive Smithfield Beach site with the attributes of open field spaces, picnic tables, tree shaded areas, a slow river current, comfort facility, mowed lawn, and ranger supervised picnic and swim areas to be versatile resources for accommodating numerous large or small groups and different types of recreational pursuits at the same time. Fourth, Hispanic visitors enjoyed the varied mix of possible river related recreational pursuits available at one place (e.g., picnicking, swimming, tubing, rafting, canoeing, sports/games, fishing, motorboating). Fifth, these visitors perceived Smithfield Beach to have a relaxed, friendly, social atmosphere which was conducive to meeting and interacting with other people onsite.

What Recreational Style And Behaviors Were Exhibited Onsite?
Recreational engagements which involved extended families and friends were prominent onsite. Hispanic cultural attributes infused the site environment with a distinctive ambiance. Cultural elements which were evident included the following: an aural pervasion of Spanish music across the site; outbreaks of Spanish-style dancing in response to the widely broadcast music; the leisurely grilling of ethnic related cuisine items such as plantains; soccer games; and zestful displays of having or putting on a "fiesta" in the park.

Conflicts Among Recreational Users
Some recreational visitors enjoyed the socially enriching qualities of a culturally diverse atmosphere associated with the Smithfield Beach site. Other recreational users, such as local residents and historically longtime users of the site, bemoaned the aural, temporal, and spatial "invasion" of what they referred to as "their" site. Some visitors were discovered to be displaced (e.g., physically, socially, culturally) from this site which had been traditionally used for generations among local residents as a recreation site. For example, some local, longtime Smithfield Beach site users expressed feeling displaced by the newer wave of visitors, who came from a distant city and bumped the locals from their countryside haven, on weekends especially. Local

residents expressed their consternation about this new recreational user dynamic and its impact represented by this statement: "Why do they have to come all the way out here and take over the place and be so loud?...Where else are we supposed to go now?"

Other Hispanic Culture Related Recreational Behaviors

Traditional American recreation pursuits were popular and frequently engaged in onsite by Hispanic visitors: sunbathing; listening to music or the radio; swimming; sandcastle building; floating on a tube or raft; conversing; people watching; outdoor cookery; soccer; "Hackey-sack"; touch football; reading; and playing cards or board games. Hispanic recreational visitors introduced several culturally related pursuits that distinctly put their ethnic influence or imprint on the site atmosphere. These engagements included taking siestas, setting up and lounging in hammocks in the tree shaded areas, and using elaborately designed homemade ring toss games (e.g., "The Frog") transported from home. In particular, the homemade ring toss structures were not only extensive and unique in design, but served as observation and conversation pieces, which also acted to heighten social and cultural interaction onsite among users who were previously strangers to each other.

Temporal Elements

Another dimension of study findings yielded the notion that social scientists and resource managers need to recognize and focus on culturally diverse perceptions and uses of time or leisure (Table 1). For example, different cultures may exhibit different rhythms either during and/or between recreational engagements. Bohannan (1953) pointed out that different cultures vary in their notion of time. To clarify this point, Oriental cultures tend to venerate age and view humans as being closely linked with the cycles of nature. Occidental cultures, on the other hand, tend to value youth, human actions which subdue nature, and a focus on the here and now.

Differences between cultures regarding time perceptions may be explained by the following two premises (Linder 1970; Bammel and Burrus-Bammel 1996: 101). The first premise postulates that mechanical time is influenced by a culture's state of technological development. The second premise posits that with a rise in income, greater demands are placed on time usage. The degree of demand on time will determine whether a culture tends to have a time surplus, sufficiency, or scarcity status (Linder 1970; Bammel and Burrus-Bammel 1996: 101-105).

Table 1. Time use and culture, work, and leisure relationships (Bammel and Burrus-Bammel 1996: 102).

Variables	Time surplus	Time sufficiency	Time scarcity
Economic Status	Poor countries	Some wealth	Rich countries
Production	Low	Middle	High
Time	Time rich	Time adequate	Time poor
Work	Age is revered		Youth is revered
	Low work output		High work output
	Not focused on mechanical time		High focus on mechanical time
	Non-work time plentiful & interspersed		Emphasis on time use and efficiency at work
	Low work-time related induced stress		High incidence of time stress induced illness
Leisure	Many holidays		Few holidays
	Relatively more time spent on meals (e.g., preparing and eating)		Less time spent on meals
	Mainstream recreation pursuits use large segments of time		Mainstream recreation pursuits use small, convenient segments of time
	Participation in leisure pursuits tends to be spontaneous		Participation in leisure pursuits tends to require advanced planning
	Less emphasis on use or consumption leisure equipment and related paraphenalia		More emphasis on use or consumption of leisure equipment and related paraphenalia; some multiple use or consumption may even occur
Countries	Latin America	Western Europe	United States of America
Leisure Pursuits	Complex games, requiring large amounts of time		Less complex games, which fit into short periods of time

Hispanic-American visitors to Smithfield Beach tended to exhibit time adequate to time rich behaviors as influenced by cultural mores and attitudes. These visitors tended to do the following: spend long periods onsite; be leisurely in preparing several meals over the course of a day visit; engage in a day long ebb and flow of numerous physical and social leisure activities interspersed with restful siestas; and come prepared with complex board games to occupy themselves during the day. Recreation resource managers may find it useful to pay attention to visitors' diverse notions of time as they exist within and across cultural/ethnic backgrounds, and the urban or rural residential preferences of cultural/ethnic groups. This may aid in better understanding the elements of recreational users' needs, satisfaction, conflicts, and displacement. It would be interesting to longitudinally track the temporal related preferences and behaviors of recent immigrants from diverse cultures with subsequent generations of their offspring to detect changes in time use and perceptions of time, as they move through the acculturation and assimilation process.

Spatial Elements

Some spatial elements which emerged from the data warrant the further attention of recreation researchers and resource managers alike. These spatial use related themes included visitors' space availability needs, site space reconfiguration by users, and the evolving patterns of movement of recently introduced culturally diverse visitors' through the recreation area were also uncovered.

Observations revealed Hispanic-American spatial needs onsite included areas of sufficient size to host a multiple generation, extended families possibly accompanied by numerous friends or neighbors. This meant that some parties within this cultural/ethnic group had need for a ready supply of additional picnic tables. With only a dozen picnic tables available for the entire site, many groups went without a table, especially during peak use periods such as weekends and holidays. During high use periods, the amount of space availability decreased overall and visitors became creative in arranging or locating a spot to picnic on at an adjacent hillside.

Some visitors reconfigured the recreation site to meet or conform to their needs. For example, Hispanic-American visitors were noticed to enjoy bringing their own hammocks to hang from trees within the picnic table zone. While many of the visitors from this cultural/ethnic group did not initially realize that the Park Service frowned upon hanging items in or on the trees due to concerns of injury to the trees, numerous Park Service personnel may not have realized that the use of hammocks are an integral part of the Hispanic culture, and hence potentially important to their recreation satisfaction. The placement of onsite Park Service Rangers who were bilingual, versed both in English and Spanish, was helpful in cross-cultural exchanges to mediate any potential conflicts through education and information of management expectations, versus heavy-handed directives or miscommunications.

Evolving progressions and patterns of movement associated with the new wave of culturally/ethnically diverse visitors' through the recreation area were also discovered. By word-of-mouth within the New York--New Jersey urban Hispanic-American community, Smithfield Beach quickly gained a positive reputation as a beautiful recreation place in the countryside. After being exposed to the river recreation resource and seeing other people engage in some of the recreational possibilities (e.g., commercially outfitted tubing, rafting, and canoeing trips), Hispanic-American visitors began to try these pursuits themselves. Many of them selected tubing or rafting as activity entry points, since these recreational forms required less skill, experience, and instruction, and were relatively user friendly modes for first-time users when it came to negotiating river rapids. By embarking on a river trip, participants within this cultural/ethnic group were gradually exposed to other sites either upriver or downriver. Knowledge of and experience at these new sites expanded these visitors' destination places on return trips. In this manner, Hispanic-American recreationists branched out and discovered other sites along the river reach. For example, Milford Beach was adopted by some Hispanic-Americans as a less crowded, upriver alternative to Smithfield Beach. Some local Milford Beach area residents and users of this site, subsequently felt somewhat displaced on weekends when large numbers of the "new" visitors showed up. Milford Beach was a smaller site than Smithfield Beach, but because there was a Park Service site manager who took great strides to educate and enforce his code of positive displays of recreational etiquette and a no littering policy, there was less evidence of conflicts among users in comparison.

Discussion and Implications

There was a diverse mix of recreationists, in terms of age, points of origin, type or size of group, different cultural/ethnic heritages, and activities, among those who sought experiences on the Middle Delaware River. While most visitors spatially distributed themselves near the river or at facilities provided onsite, a few recreational visitors preferred to occupy more socially isolated spots at a river site. At Smithfield Beach on weekends, loud music was evident and irritating to some recreationists because the music was pervasive, imposed upon, inescapable, and not necessarily a musical style pleasing to everyone. Recreationists could not get far enough away from the music nor tune it out, and as such it cast a disagreeable influence on some people's onsite experience. This conflict could be avoided if reasonable and respectful sound limits and other related recreational etiquette were introduced and enforced by rangers. Site supervisors or rangers who encouraged a spirit of the greatest range of freedom for all to enjoy within just restraints would help cultivate an environment which promoted satisfying recreational experiences for the broadest range of visitors on a consistent basis. As philosopher Mortimer Adler (1981: 144) pointed out, unlimited action is actually counterproductive to true freedom and enjoyment. That is, as Adler (1981: 144) contends, virtuous personal actions guided by "just restraints" (i.e., etiquette; just laws, rules of order, and policies) result in no loss of personal liberty, but rather have the opposite effect of extending the realm of freedoms one may count on and look forward to enjoying. Recreation satisfaction may be related to understanding how much freedom one has to enjoy something within the parameters of taking responsibility to abide by just and reasonable restraints, so as not to encroach upon someone else's experiences and satisfaction. Longtime, local visitors and the site supervisor at Milford Beach tended to establish and foster this notion of recreational freedom with a "be respectful of others ethic" onsite. People read, conversed, played games and music without causing undesired aural, physical, social interference (i.e., conflict) for

other recreational users. Perhaps aural, physical, and social space are culturally relative entities that need to be further explored with respect to culturally/ethnically diverse user group leisure patterns. Understanding the cultural antecedents of recreational user behavior may provide insight on how to develop bridges or connecting strategies between cultural/ethnic groups.

The large influx of culturally/ethnically diverse recreationists (i.e., Hispanic-Americans) from urban areas occurred mostly on weekends and holidays at Smithfield Beach. This phenomenon began to spread to other nearby river sites, such as Milford Beach, as diverse visitors learned more about the national recreation area and other river recreation opportunities. These culturally diverse river users began to desire experiences at other places along the river. The large representation of a different cultural/ethnic group onsite was viewed as being an educational opportunity by some local recreation users who had an appreciation for people from diverse cultural/ethnic backgrounds. Some people commented that they came from rather homogeneously populated hometowns and enjoyed the chance to experience people from other cultural/ethnic backgrounds firsthand. Some mentioned that they thought the Hispanic-American visitors really knew how to entertain themselves recreationally, and that other people could learn something from watching them. On the other hand, some people perceived differences existing among "newer" visitors which contributed to expressions of consternation, misunderstandings, or disagreements. This was the case with a longtime local user population who felt displaced by the influx of large numbers of non-local visitors at the same site. For the most part, most sources of conflict were determined to be mediated or modified by resource managers through traditional education and interpretive means, and additionally, through "Master" site manager modeling and instruction of other staff and recreation site visitors.

Researchers and recreation resource managers are encouraged to look beyond recreation activity patterns and cultural stereotypes, and to focus on developing a broader understanding and sense of the total dynamic occurring onsite: "What is going on at a recreational place?" Outdoor recreation places and experiences offer the promise of serving as valuable vehicles for interaction among people from diverse cultures/ethnicities in a non-threatening environment. Leisure experiences provide a potentially powerful medium to assist in the acculturation process of new immigrants and citizens at two levels: first, as they engage in the process of assimilation into their new culture; and second, as society is affected by the influences of diverse peoples and the new intercultural blendings that are outcomes of that interaction process. Unique homemade games brought onsite and shared by strangers, cookouts featuring different types of foods, coming to a recreation site early and playing enthusiastically all day, and vivacious dancing to ethnic featured music were a few examples of different recreational styles, ambiance, and fervor which a new cultural/ethnic visitor group interjected at a recreation site: Smithfield Beach. These behaviors provide stark focal points of interest for others to watch and begin to understand something about the "new" groups of recreational users. For example, after these "new" recreation users took part in familiar recreational pursuits such as picnicking, swimming, and playing games, they then gained some experience in easily mastered forms of river recreation, such as tubing and rafting. From there, they branched out in both activity type and location for different experiences. At Smithfield Beach, this leisure assisted acculturation process took place in a hospitable and friendly environment. Furthermore, it should not be overlooked that leisure has the capacity to add meaningful and enriching dimensions of quality to one's life (Iso-Ahola and Weissinger 1984; Iso-Ahola 1980; Neulinger 1974). This point may be all the more critical in the lives of recent immigrants or tourist guests as they endeavor to make the uneven transition from one country and culture to another. Access and exposure to a wide variety of recreational opportunities in the host country, to satisfy individual preferences, can serve as important facilitator in assisting the cultural adjustment process and helping to establish a new cultural identity among recent immigrants.

Recommendations for Further Research

Study findings reinforce the notion that visitor recreation experiences are multidimensional in nature. These grounded, emergent themes expand our understanding of the culturally related attributes associated with river recreation experiences. Further research exploring temporal and spatial recreation related factors associated with diverse cultures and ethnic groups, to enhance our understanding of various user groups and the dimensions of river and general recreation experiences, is suggested to assist in resource management. Additionally, findings from this study suggest that attention should be devoted to the exploration and development of these themes: visitors' physical, aural, and psychological spatial use; interaction patterns of physical, aural, psychological spatial use among culturally diverse visitors; and the spatial distribution and arrangement of users' recreational equipment onsite.

Similar to archeologists who have pieced together our human past from sifting through artifact remnants accumulated over the course of various geological eras, perhaps recreation social scientists and resource managers need to trace and map out the social attributes and patterns associated with various cultures or ethnicities. Cultural mapping may be a useful tool for identifying recreational preference trends among diverse peoples. Over time, distinct cultural core regions could be identified along with cultural overlapping or diffusion areas per historical era (Cielinski, as referenced by Valenzuela 1996). Cultural values, traditions, contributions, literature, land settlement and ownership patterns, and the development of goods and services industries in various human societies could be plotted. From this, recreation resource researchers and managers may find it helpful to study the regional influence of diverse cultures or ethnicities on people's intertwined sense of place, self, and spirituality (Valenzuela 1996).

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THE ROLE OF MULTICULTURALISM IN TOURISM/RECREATION MARKETING AND PLANNING EFFORTS

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Abstract: This research report focuses on Blacks and Hispanics as the dominant minorities; reviews the historical/traditional research on minorities; and summarizes recommendations for marketers and policy planners on characteristics and behaviors, and the impact they have on minorities' travel, recreation, and tourism preferences.

The United States in Transition: Multiculturalism

The "melting pot" paradigm, long a dominant ideology in the United States (U.S.), has been replaced by an emphasis on "multiculturalism." Population demographics in the United States are changing dramatically. In particular, the minority population is increasing. This paper will focus on Blacks and Hispanics as the dominant minorities. As the population becomes more diversified, tourism preferences, attitudes, and perceptions need to be looked at to better assess the planning and direction of tourism (research and marketing) in a multicultural atmosphere.

Blacks and Hispanics, the two largest minority groups in the U.S., are characterized by specific socioeconomic and demographic changes. From 1970 to 1990, the number of Blacks increased from 23 million to 30 million, representing 12% of the total population in 1990 (Bureau of the Census, 1993a). During the same time period, the Hispanic population increased from 9 million to 22 million, representing almost 9% of the total population in 1990 (Bureau of the Census, 1993b). It is important, for marketing purposes, to identify geographic regions in which the majority of minorities are concentrated.

Regions of Black and Hispanic Concentrations

Blacks are concentrated in the U.S. South (South Atlantic, East South Central, West South Central). The counties with the highest portion of blacks remain in a southern region sociologists call the Black Belt. In the 1990s, the South is still home to 53% of America's blacks (Bodovitz, 1991a). Hispanics are concentrated in the U.S. West (Mountain and Pacific), where 45% of the total Hispanic population lived in 1990 (Bodovitz, 1991b). Additionally, Blacks and Hispanics tend to concentrate in urban centers within and outside these regions. It is important to know these areas because they are the core regions for multicultural marketing.

It is also important to identify regions with the highest increases in Blacks and Hispanics because they are growing minority markets. For both Blacks and Hispanics, there are four states (New York, Florida, Texas, and California) that represent not only the largest populations, but also the largest increases in minority populations. Important subregions can be found outside and within the core regions of the South and West.

For example, Chicago, New York, Miami, San Antonio and Los Angeles are cities with large populations and large percentages of minorities. These cities (and the states they are in) should promote their multicultural environment to the core regions identified previously to attract Blacks and Hispanics. Conversely, the core regions should promote themselves specifically to these cities as "minority-friendly" destinations. New York, California, Texas, Florida, and Illinois state travel offices were among the top eight (projected) spenders in advertising in 1991 (Spotts, 1991). According to Wagner & Soberon-Ferrer (1990), these five states contain 73% of the Hispanic population. It is doubtful that the same percentage of the combined advertising budgets of the five states were spent on attracting Hispanics to these states.

Multiculturalism's Emphasis Away from Mass Marketing

Marketers to these regions and those who are trying to target or create a niche (tailored) market realized that advertisements directed at Blacks and Hispanics should be different from the mainstream. However, what marketers sometimes fail to do is research attitudes and perceptions minorities feel towards a destination. Identifying key travel and tourism characteristics is important in understanding travel patterns and future or potential markets within the tourism industry. As the demographics of the population change, so will demand for recreation and travel and the type of recreation and travel will also change.

Discretionary income and time are factors people consider in determining whether or not to participate in an activity or travel to a destination. Other influences include cultural and linguistic differences, perception of a destination as being minority-friendly, and discrimination. The reasons for particular travel or activity decisions are commonly grouped into the marginality theory, and the ethnicity theory. Current literature regarding these theories point to mixed results concerning the causality in tourism/ recreation preferences in Blacks and Hispanics towards a destination (Chavez, 1993; Dwyer, 1994; Stamps & Stamps, 1985.).

The following sections discuss the theories briefly, and how they are used to describe, predict, or explain preferences. Particular attention will be placed on the role research can play in identifying characteristics of Blacks and Hispanic travelers/recreationists. The reader should be wary of overgeneralizing specific studies to the general minority public due to the type of study, area of study, and methodologies employed.

Traditional Research and Alternative Approaches

Traditional recreational/travel research on minorities focuses on the marginality and ethnicity theories (Hutchinson, 1987, 1988; Washburne, 1978). According to Washburne (1978, p.175) marginality theory states "that underparticipation results from preventive factors such as poverty and discrimination." Ethnicity [states] that recreational patterns are based on subcultural -

different from that of the majority - leisure norms and value systems" (Washburne, 1978, p.175, italics added).

The meaning of ethnicity and marginality have changed over the past 20 years, for example, West (1989) describes marginality as the differential incomes between whites and minorities. Furthermore, West noticed that Washburne's use of ethnicity needed clarification because of the change in the usage of the word "ethnicity."

> [The] seminal study by Washburne (1978) used the term "ethnicity" to represent a theory of racial subcultural differences in outdoor recreation preferences, a usage that has now become widespread in the leisure research on racial differences...Because the term ethnicity has other prior meanings in the wider social sciences in general,...we will adopt the term "subcultural" life-style preferences, which more closely reflects the theoretical assumptions of what Washburne had intended in his use of the term "ethnicity" (1989, p.11).

The focus of this traditional research has been on minority-majority differences. In particular, the focus has been on black-white differences and comparisons. This is a limitation of the traditional research because it focuses on one minority group and typically generalizes to others. More recent research has broadened this approach to include comparisons within minority groups (Blacks, Hispanics, Asians, etc.), as well as comparisons between other minority groups that are not Black (Dwyer, 1994; Hutchinson, 1987; Stamps & Stamps, 1985).

The general paradigm shift from melting pot to multiculturalism contributed to a paradigm shift in tourism/recreation research from the theories of marginality and ethnicity to looking at interracial relations, prejudice and discrimination. West notes that "it is a strange irony that this body of research, [marginality and ethnicity], has almost entirely ignored another important potential explanation [to underepresentation]: the problem of interracial relations, [tensions], and prejudice" (1989, p.12). West also noted that the dominant paradigms kept researchers from looking at the discrimination factor.

The ethnicity model has been criticized for its assumption that ethnic groups "have a single value and normative order" (Woodard, 1988, p. 88). In his assessment of future directions for research, Woodard discusses the importance of regionality in marketing recreation (mentioned earlier) and the effect region has on attitudes and behaviors of blacks. Regions can also be expected to impact other minority groups. He hypothesized and showed that differences in travel/recreation preferences exist between Blacks from different regions. He termed this influence as intragroup regionality.

> There are some aspect of their historical circumstance, such as racism and discrimination, that no single Black American can escape in the United States (Kronus, 1971)...To the extent that racial codes were more rigidly enforced in the rural South than in the urban North, then Black Americans reared in the rural South exhibit somewhat different behavioral styles than Black Americans reared in the urban North, independent of socioeconomic differences...Blacks reared in the rural South...socialized by more strict racial codes...leisure patterns vary from those of Blacks reared in the urban North. Thus regionality refers to the geographic region where the Black American respondent was socialized the first sixteen years of his/her life (Woodard, 1988, pp. 89-90).

Researchers who have looked at other subgroups (e.g., Hispanic, Greek, Asian) have arrived at the same conclusions, that is, that minorities' travel and recreation behavior is markedly different from that of the mainstream, and that marketing and planning efforts need to take these differences into account (Chavez, 1993; Morris, 1993; Wagner & Soberon-Ferrer, 1990).

Relevance of Research on Marketing

The recent literature (cited above) has identified the importance of regions and regionality in patterns of tourism/recreation. The relevance of this information to marketing is to unlock a region's potential as a multicultural environment. Wilbur Zilinsky, a cultural geographer, looks at how cultures manifest themselves spatially. He says that contrary to popular superstition, regional cultures are not dying (Edmonson, 1987). This is important to note because it reinforces the notion of multiculturalism and the push-pull factors a region may have on a particular segment of the population.

Advertising to minority markets can help to draw people in those markets to certain regions of the country. For example, Alabama has targeted northern Blacks since 1983 by publishing a brochure highlighting black heritage attractions (Ahmed, 1993). The region's pull to Blacks and the effect of demographic variables were described in the following way:

> Black heritage attractions are already a mainstay of Montgomery's tourist package, and city officials plan to develop them further... [Montgomery is described] as the buckle of a black history tour belt that runs from Selma to Atlanta...Black heritage sites all over the nation are attracting tourists... As the number of middle-class and college educated blacks continues to grow, these sites could become the black equivalents of Gettysburg and Independence Hall. Says Walter Parrish, a member of the National Coalition of Black Meeting Planner, "The black tourist market is a sleeping giant" (Ahmed, 1993, p. 49).

The above quote illustrates the potential a region has for a minority group and how, through target marketing, it can unlock that potential. San Antonio and its 22 surrounding counties are another region which promotes its biculturalism as a key to its success. Tourism is San Antonio's second largest industry, and San Antonio is a top destination for business (convention) and leisure travelers (Satagaj, 1992). San Antonio's marketing efforts targeting Hispanics were described in the following manner:

> Visiting Mexican nationals account for about 30% of mall sales, and leading malls have directly targeted Mexico through advertising and special promotions...The biggest local marketing factor,

> however, is the market's Hispanic population...The city's Spanish-speaking population, cultural ties with Mexico and closeness to the border (about 150 miles) have San Antonio poised to capitalize on increased trade expected under a proposed North American free-trade agreement (Shaffer, 1992, p. 39).

Here, the planning and direction of (potential) tourism catered to the preferences of the large Hispanic population. Discrimination and cultural differences were other factors affecting tourism preferences. Minorities are often discriminated against, making them feel like second-class citizens in American society. A large part of discriminatory acts can be controlled by "sensitivity" training on the part of the employer. "Travel can be difficult for black Americans. They are sometimes asked to carry bags, park cars, and take restaurant orders by others who assume they are employees. Flight attendants sometimes assume that blacks don't belong in the first-class section of an airplane, so black travelers are sometimes confronted when trying to store items in first class closets and bins" (Morris, 1993, p. 49).

Multicultural advertising has to address the nuances of cultural diversity both within and between different cultures. For example, Hispanics are generally distinguished by the fact that they speak Spanish or are of Spanish ancestry. However, within the Hispanic populations, there are different ethnicities (Mexican, Puerto Rican, Cuban, etc.). This is important to note because different Hispanic groups may have different customs. As such, one cannot think of a Hispanic market as being homogenous. Moreover, Hispanics can be subdivided into three major categories with respect to language: (1) Spanish-only speakers, (2) bilingual speakers, and (3) English-only speakers.

Dominant (majority) cultural views do not necessarily correspond to Hispanic cultural views. When M. Isabel Veldes, president of Hispanic Market Connections in Los Altos, California came to America 17 years ago, she was appalled by American dog-food commercials that treated dogs as if they were part of the family. Why? In "Hispanic" America, dogs are usually kept outside. "Hispanic mothers lavish attention on their children, but they often don't have enough left over to pamper pets" (Oliver, 1992, p.14). In much the same way, what might be viewed as a great family get-away by mainstream America, may be viewed differently by a minority.

What then are the tourism/recreation differences between the majority of the population and minorities? Are there similarities? What are the characteristics of the Hispanic and Black markets? The next section will attempt to answer these questions.

Characteristics of Hispanic and Black Markets

There are differences and similarities in the patterns of Black, Hispanic, and White recreation activities. Hutchinson (1987) found that Blacks and Whites tend to be very similar in their patterns of activity. They tended to participate in activities that emphasized individualism and small groups. This pattern was explained by the "greater influence of the dominant culture of individualism among both white and black populations" (Hutchinson, 1987, p. 220).

Hispanic participation in activities, however, tends to emphasize family and large groups made up of family and close friends of the family (e.g., cousins, brothers, god parents). The differences in activity patterns between Hispanics, Blacks, and Whites "appear to be the result of a distinctive ethnic subculture rooted in a more traditional family structure which stresses the importance of the group (rather than the individual) and reinforces specific roles between age and sex groups" (Hutchinson, 1987, p. 220, parentheses added). The implication of this to tourism marketing is that stress should be placed on group and family activities.

There will often be differences between groups, but one must be cautious because there will also be differences within groups. The above study focused on urban recreation in public parks and was specific to Chicago. However, the findings are consistent with the findings in the literature reviewed earlier.

Key characteristics of Hispanic consumers

Hispanics are brand loyal, concerned with quality and are family-oriented (Wagner & Soberon-Ferrer, 1990). Although Hispanics in general are brand loyal, it has been argued that the reason is that they are simply not aware of many mainstream products. "Many ethnic consumers are accustomed to shopping in small stores that offer a few familiar brands, when they go into a supermarket that carries up to 15 brands of certain products, they are overwhelmed" (Oliver, 1992, p. 15). Marketers in general can take advantage of this loyal tendency by marketing their products (travel or otherwise) and "familiarizing" ethnic consumers.

Younger populations, usually means larger households. "Hispanic Americans are a united market in some ways, but not in others. Those who share the same language, culture, religion, and television programs can be approached as a single market, but economic, political and other differences divide the market into several distinct segments" (Braus, 1993, p. 46). The distinct segment Braus refers to are segments along language lines (e.g., Spanish only, English only, Spanish/English). The key characteristic is that family-oriented expenditures are important to Hispanic households and marketers and planners should cater to this interest if marketing and promotion efforts are to be successful.

Some population projections cite immigration from Latin America as a significant factor in the increase of the Hispanic population which is expected to be the largest minority group in the twenty-first century. If this trend continues, we can assume that many Hispanics will be first generation and have strong ties to Latin America. As such, their preferences will be similar to those of Latin Americans. It was found that consumers in some Latin American countries are more likely than U.S. residents to take vacations (four or more days); 14% in Argentina, 8% in Brazil, 19% in Mexico, and 10% in Venezuela, compared to only 6% of U.S. residents (Galceron and Berry, 1995). Recreation and tourism professionals can capitalize on the similarities first generation Hispanic Americans and Latin Americans by offering family vacations of longer than four days.

Key characteristics of Black consumers

Most Black households are headed by females, prefer public transportation over a private car, and because of discrimination,

are less likely to dine-out (Wagner & Soberon-Ferrer, 1990). Respect and acceptance by businesses, for example speaking their language, is a key issue for Blacks. For example, Stove Top Stuffing found that Blacks referred to their stuffing as "dressing." They targeted blacks with a new commercial saying "dressing" and sales improved (Morris, 1993). The importance of this "language" barrier should not be overlooked. Language usage will affect Blacks' choices of destinations or activities. Morris also identifies characteristics specific to Black travelers:

> Blacks are 50 percent less likely than whites to have taken a trip abroad in the last three years...When they do travel outside the U.S., blacks prefer destinations that are both "language comfortable" and "color comfortable," like the Caribbean, where blacks do not get hassled and feel unwanted because of their color. Language and skin color are strong bonds that outweigh cultural differences. As a result, blacks spend $60 to $70 million a year traveling to the Bahamas, according to City Sun.
>
> Blacks heavily concentrate their vacations in the summer. They prefer to travel in groups, not as individuals, and they have a preference for tour packages. Blacks are far less likely than whites to go camping or hunting, however, and they are less likely to engage in adventurous or risky activities....[instead], they prefer to relax and see the sights, shop, or party with friends (p. 49).

Discussion and Implications for Marketing to Minorities

How can tourism companies market to minorities? There are no answers to this question because of the varying differences among and within minorities. However, based on the literature, research, and characteristics identified above, there are certain guidelines and recommendations which marketers and policy planners need to be aware of. They are as follows:

- identify which "cultural" region your tourism product is in (San Antonio - Hispanics, Alabama - Blacks)and market to its constituents;
- identify dominant minority populations and cater specifically to their needs (Miami - Cubans, New York City - Blacks and Puerto Ricans, Los Angeles - Mexicans);
- involve companies in community programs (schools for example) to establish credibility;
- tourist destinations must be both culturally and racially sensitive to promote minority-friendly areas;
- use existing advertising means which cater specifically to a minority population (Ebony, Jet Magazine, Univision, Telemundo);
- for Hispanics, advertise in Spanish when appropriate and promote family oriented events and packages;
- for Blacks, tourism concentrated in urban areas are of interest and should be specific to Black heritage; promote individual growth (e.g., Black Heritage Trail in Boston, and Museum of African-American History in Boston);
- remember that minority markets are not homogenous (urban/north Blacks vs. rural/south Blacks, Mexicans vs. Puerto Ricans);
- target higher income and higher educated minorities who tend to travel more as well as explore more "mainstream" avenues).

The above list is not exhaustive, however, it does identify some critical issues which tourism marketers and planners need to address given the growing minority population.

> The trend is clear. If current conditions continue, the United States will become a nation with no racial or ethnic majority during the twenty-first century...[a] common need is information and entertainment that explains the world to multicultural consumers from their point of view...businesses are going to have to reposition both their content and their advertising to appeal to today's multicultural youth as they become tomorrow's multicultural adults (Riche, 1991, p. 29).

Multiculturalism will play a critical role in the tourism/recreation marketing and planning efforts. As a result, markets need to be understood in term of their diversity. The largest markets are usually found in the largest population concentrations. "Of the 50 most diverse counties, 14 have populations of 1 million or more, and 33 are in metropolitan areas" (Edmonson, 1991, p. 20). Immigrants and minorities tend to settle in and around metropolitan areas. The largest markets in the U.S. are becoming the most diverse markets. Recognition by professionals in the tourism industry is needed in order to consider the potential impact minorities will have in the near future.

Research has indicated "that ethnicity, broadly defined, has a profound impact on the motives and behaviors of certain types of tourists" (Thanapoulos & Walle, 1988, p. 14). As such, more research is needed to understand the differences within and between minority groups in order to create a niche market. Determining minority preferences will planners/marketers satisfy the needs and wants of a growing minority. The ethnicity and race of tourists influence their behaviors and attitudes, and thus have an impact on their travel, recreation, and tourism preferences. Tourism marketers need to make a commitment to serving a diverse population and develop marketable destinations and products for a multicultural environment.

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ETHNICITY AND ITS IMPACT ON RECREATION USE AND MANAGEMENT: ROUNDTABLE DISCUSSION NOTES AND BIBLIOGRAPHY

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Abstract: The subject of "ethnicity and its impact on recreation use and management" is of growing concern today, and thus is the keynote topic of the 1996 Northeastern Recreation Research (NERR) Symposium. These notes were compiled based on the featured roundtable discussion, which was intended to facilitate open and informal dialogue on this sensitive and controversial subject. Three related sub-problem areas were introduced by session moderators/facilitators and discussed among roundtable participants: (1) the current status of ethnicity in recreation; (2) trends toward encouraging ethnic diversity in the work force; and (3) equity issues related to the provision of recreation services for ethnically diverse peoples. A synthesis of key discussion points that emerged during the roundtable forum and a topical bibliography are included herein as resources.

Introduction

This paper documents the proceedings of a roundtable discussion session that addressed the symposium theme: "Ethnicity and Its Impact On Recreation Use and Management" held at the Northeastern Recreation Research (NERR) Symposium Monday, April 1, 1996

The roundtable session was structured into three sub-discussion groups: (1) the current status of ethnicity in recreation; (2) trends toward encouraging ethnic diversity in the work force; and (3) equity issues related to the provision of recreation services for ethnically diverse peoples. Session attendees voluntarily selected a discussion sub-group to participate in. Specific sub-problem questions used to facilitate discussion are included below for review. Sub-groups discussed questions pertaining to their topical area posed by group facilitators. Sub-groups reconvened as a group of the whole and each sub-group served as a panel to share their key discussion outcomes. A synthesis of the range of discussion topics, comments, and other points raised are included below.

The Current Status of Ethnicity in Recreation

The Current Status of Ethnicity in Recreation was facilitated by Katharine A. Pawelko, Western Illinois University, and Jennifer A. Treadwell, University of Vermont. Discussion topics for this sub-group ranged from the following points:

a) Do ethnic minorities have different recreation preferences from the majority?

b) Should recreation practitioners manage for the recreation preferences of people from different ethnic origins?

c) How does ethnicity/cultural background (of majority/minority) influence recreation preferences and choices?

d) Do environmental ethics and values influence recreation choices?

e) Would you expect race and ethnicity to influence ethics and values?

f) What is the influence of race and ethnicity on environmental ethics?

g) Are differing environmental ethics therefore one explanation for variance in recreation choices between ethnic majority and ethnic minority recreation users?

f) What factors may serve as good predictors of different recreation preferences among different ethnic/cultural groups?

g) What constraints exist and serve as barriers to recreation engagement among ethnic minorities?

h) What factors account for the relatively low proportion of minorities in outdoor recreation areas and pursuits?

The question, "Do ethnic minorities have different recreation preferences from the majority?", provided the primary focus for discussion within this sub-group. Highlights of the salient points raised during this session included the following:

I) Much of our understanding about recreation preferences among users is based upon homogeneously styled survey questions. We need to develop survey content which is better able to extract the specific variations in preferences among ethnically/culturally diverse recreation users.

ii) Social class, economic income, and type of job were mentioned as factors which were perhaps more relevant in

influencing recreational preferences than race, ethnicity, or cultural background. Additionally, whether minorities' place of residence is urban, suburban, or rural may have an influence on their recreation preferences.

iii) The spectrum of activities at a recreation site may be rather limited based on historically established patterns of the majority versus more recent diverse minority cultural notions. To what degree are managers aware of the breadth of user needs and planning for the inclusion of a greater range of appropriate activities which reflect a more diverse user population at a site?

iv) Perhaps we need to look at what is the role of education and interpretive specialists in carrying out the mission of a recreation agency and its resource with regard to minority users? Is the focus on legal compliance?, education?, stewardship?, sensitivity training?

v) We need to carefully avoid stereotyping ethnic/cultural groups with reference to their recreation preferences. We need to ask ourselves just how much do we really know about various aspects of different ethnic/cultural groups, their needs, concerns, preferences, and idiosyncracies?

vi) Recreational pursuits may be utilized as a tool to assist people from diverse cultures for assimilation and integration purposes into society.

vii) Managers and researchers should consider these prospects: "When does a minority group become assimilated?"; "When do ethnic/cultural differences matter?"; "When does membership in an ethnic/cultural group provide a significant source of self-identity?"; "How does a sense of community within a minority group influence recreational preferences?"

vii) We need to consider how recreation managers may provide opportunities to ethnic/cultural groups so they may break into new areas of recreational pursuits beyond what was typical in their native culture. Numerous avenues, such as Outward Bound programs and "Life Camps", have been traditionally used to expose urbanites to wilderness settings and experiences. What is the role and responsibility of managers in this process and to what extent? Do we provide summer camp experiences and then have minority group participation drop-off due to marginality factors or insufficient funds which serve as constraints to further involvement? One perspective offered at the session was that it was the responsibility of individuals in an ethnic/cultural group to provide salient feedback to recreation resource managers so they could get their needs met versus managers serving as an assumed outright panacea to the situation.

ix) Within a relatively short passage of time, White ethnic/cultural groups eventually become invisible in the greater fabric of society. How does being a member of a visible minority (i.e., people of color) affect recreational preferences? tensions between groups?

x) An interesting perspective was raised with the question, "What do we know about various ethnic/cultural group outdoor recreation preferences in their native or home country?" Alternatively stated, "What would we prefer or expect if we went to another host country for an outdoor recreation experience?" (e.g., at Mt. Fuji, Japan there may typically be long lines that we would not tolerate in our home setting).

xi) Future demographic projections and their implications for outdoor recreation preferences should also be considered in our planning. For example, what will happen several generations from now, in the year 2050, when today's minorities comprise a major part of the population and become part of the establishment?

xii) It was generally agreed within the discussion sub-group that outdoor recreation resources often serve as central focus points we may hold in common as human beings across cultures. Outdoor recreation areas provide a common ground for humanity to enjoy the aesthetic qualities of outdoor environments, to cultivate an ethical kinship or "topophilia" relationship with a landscape, to develop a sense of place or assimilation in a community or culture, as well as provide the opportunity to participate in a myriad of enriching outdoor pursuits.

Trends Toward Encouraging Ethnic Diversity in the Work Force

This discussion breakout group was led by Varna M. Ramaswamy and Benjamin Wang from the University of Vermont.

Discussion topics for this sub-group ranged along the following points:

a) Should the recreation workforce reflect the current population mix of the general population?

b) Why should establishments hire people of various ethnic and cultural backgrounds?

c) Do multiple perspectives provide insights into management practices?

d) Does (enlarging) increasing (the) ethnic diversity in the mix of researchers and managers lead to multiple perspectives? (& provide insights into management practices?)

This sub-group primarily directed its attention to the question, "Why should establishments hire people of various ethnic and cultural backgrounds?" Numerous reasons which supported an ethnically/ culturally diverse staff emerged during the course of group discussion. One reason reflected the idea that hiring practices should represent the diverse population at-large. A second reason was the existence of legal mandates which need to be implemented. A third reason involved the notion of carrying out this course of action from the position and spirit of moral obligation and justice. A fourth reason specified that the practice of hiring a diverse staff would be helpful in educating co-workers about people from other cultures, since we increasingly operate in a global network and economy. Diversity within the work force could contribute to a diverse team of recreation managers and researchers who would be exposed to multiple ethnic and cultural perspectives firsthand, which would in turn help them develop a

better understanding of the publics they serve. A fifth reason generated was based on the incentives of expanding the tourism industries and general economy, and relatedly, the overall quality of life for all people.

Additional comments related to this topic included a clarification that it was not deemed necessary to place an emphasis on hiring for positions already held by people representing the majority of the population. Furthermore, discussion within the sub-group pointed out that it is not necessary to force minority recruitment on an establishment if minority applicants do not apply for positions of their own volition. Strategies which encourage diversity within hiring opportunities were identified. Some suggested approaches included the following: hire people from within an ethnically/culturally diverse community; seek out minority personnel recommendations from colleagues, community groups, and volunteers; and support the unique qualities which diverse peoples may offer an agency through appropriate training opportunities.

Equity Issues Related to the Provision of Recreation Services for Ethnically Diverse Peoples

The third breakout groups was chaired by Edwin Gomez, Michigan State University.

Discussion topics for this sub-group ranged among the following points:

a) Why and how (How and why?) should recreation managers take into consideration various recreation preferences based on ethnic/cultural differences?

b) Should recreation managers act on best social scientific judgment?

c) Should national managers follow majority opinion, local or national?

d) Should recreation managers try to be equitable by taking into consideration special interest recreation needs and preferences?

e) How are recreation management practices changing in relation to the needs of people of differing ethnicities?

f) The first main point addressed by this sub-group dealt with "Equity in the Provision of Recreation Services."

Discussion among participants yielded recognition that there should be sensitivity to differences among people, but there was a need for consistent enforcement of the rules within the domain of recreation areas and services provision. A question arose concerning whether the rules may be changed to enhance the recreation experience and whether this should take place at the national or local administrative level of recreation areas and services? The response within the sub-group was that it depends on two factors: first, it depends on the recreational user groups being served; and second, it requires taking a look at the mission or purpose statement of a park or similar recreational entity. A series of counterpoints and affirmations emerged concerning this topic. For example, some discussion participants remarked that recreation resource managers need to have some flexibility in how they serve different user groups, but they also need to be aware of what should or can be provided. Furthermore, with respect to equity concerns, some sub-groups members pointed out that regional (cultural) differences needed to be taken into account, so a generic national solution did not seem to be a reasonable approach. Some possibilities for dealing with cultural and language differences and barriers included the following strategies: hire recreation and park personnel from within the local community since they have direct insight and understanding about a specific community, culture or people; recruit a mix of people from diverse backgrounds to serve as volunteers, consultants, or specialists; involve key community members as points of information or input resources; hire and use "magnet" employees (i.e., individuals who are bilingual and speak the language of a local culture) to facilitate effective cross-cultural communication.

An ethical issue came up concerning a question about diversity within the sphere of outdoor recreation areas/facilities and services. Specifically, "Do recreation professionals have an obligation to enforce or promote diversity among and within the outdoor recreation user clienteles?" As is often the case in discussion groups, more questions surfaced in comparison to definitive answers generated. For example, another question arose concerning "Whether or not outdoor recreation resource managers are in the business of creating user demand? Others vocalized the question, "Do we have to be all things to all people?" One member of the sub-group agreed that would be the ideal situation. Another discussion participant voiced the comment, "Are we allowed to have a niche?"

Another main topic raised included, "Are things changing with regard to equity in outdoor recreation?, and How are they changing?" Within the discussion sub-group, it was agreed that things are changing with respect to equity in outdoor recreation services, but members disagreed as to the manner or extent of the change. For example, some individuals said that a backlash of sorts existed. Due to this perceived counterproductive situation, some recreation professionals would prefer to sidestep the diversity issue and would rather see things restored to the way it used to be. Other discussion members questioned the logic of this pattern of thinking since the demographic figures and projections indicate that the outdoor recreation "customer" base is becoming more culturally/ethnically diversified in profile. Another aspect of this discussion pointed out that at least cultural differences among users has been recognized as a noteworthy concern among managers. This occurrence in itself is a major stride, since it signifies that there is less emphasis on "homogenization" among people from different cultures into our society today and a growing awareness about this social phenomenon. With respect to advancing equity in outdoor recreation, someone asked, "Have recreation professionals tended to be reactive or proactive in this venture?" Most people in attendance agreed that recreation professionals have tended to be reactive. The next obvious step to be addressed was "So, how can we be more proactive with regard to equity concerns?" Some recommended strategies were generated by the sub-group. One suggestion was to identify the needs of diverse populations (e.g., perhaps through the use of focus groups to identify meaningful and relevant questions for inclusion on outdoor recreation

surveys). A second discussion outcome, related to outdoor recreation agency missions, was that any indicated changes should complement priorities. The first priority is preservation of the resource; opportunities for outdoor recreation should follow that priority. That is, the former should not be at the expense of the latter. A third suggested strategy included the identification of cultural and historical resources which need to be preserved, with an attendant focus on who decides what gets preserved, and who has access to the overall process.

A final discussion point concluded in agreement that there needs to be a rationale accompanying change for equity purposes as opposed to operating "for the sake of justice." As recreation and park managers, the final decision to implement change will be the complying with the needs and desires of outdoor recreation area users, while staying within the directives of the management agency's guiding mission. As is obvious to resource managers, these two charges are often paradoxical in nature as they are frequently at odds with each other. The present climate and spirit of expanding cultural diversity within the mix of outdoor recreation clientele, adds yet another dimension of challenge to the original mission statements which guide our use and management of our coveted outdoor recreation resources.

Overall, this roundtable discussion yielded a wide variety of contemporary concerns which centered on ethnicity and outdoor recreation use and management issues, as identified by leading recreation resource managers and social scientists. This synthesis of the roundtable session provides a record of potential topics for consideration as possible starting points for future research endeavors.

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Contemporary Outdoor Recreation Issues

NATIONAL PARKS: CAN THE OLD DOG LEARN NEW TRICKS?

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Abstract: This paper considers two special aspects of De Hoge Veluwe, the largest national park in The Netherlands. These are the Kröller-Müller Museum and wit fiets (white bikes). How they might be incorporated into areas managed by the National Park Service is explored.

Introduction

I have sometimes felt the attitude in the United States is that nobody can teach us anything about national parks. After all, we invented them! As founders of the national park idea, America has much to be proud. But this old dog can still learn new tricks. For instance, part of the successful public and private partnership that occurs in mixed ownership parks such as Cape Cod National Seashore comes from a thoughtful consideration of national park management in Great Britain.

This paper suggests that we might benefit from a careful look at two special characteristics of De Hoge Veluwe: the synergy of art and nature, and the use of public bicycles as an alternative to motorized transportation.

De Hoge Veluwe

The Netherlands is one of the West's most densely populated and urbanized countries. Yet it is also one of the most environmentally progressive nations. One area in which this is evident is a national desire to preserve existing natural areas, and even to create 'new nature' where appropriate. Nowhere is far from anywhere else. The De Hoge Veluwe is a short bus ride from Ede, which is 45 minutes by train from Amsterdam. In 1993, 750,000 people visited the park (Jansen 1994:1). In addition to its natural landscape, the primary attractions in the park are the Kröller-Müller Art Museum, the Museonder, a visitor center interpreting nature's underground, and the St. Hubert Hunting Lodge.

The largest natural reserve in The Netherlands is De Hoge Veluwe (Alings 1994). It was established in 1935 by a wealth merchant and his wife, Anton and Helene Kröller-Müller. Their vision was for a synthesis of culture and nature that would be a gift to "the common interest." In many respects this mirrors the early establishment of our National Park Service. It also benefited from the generosity of wealthy industrialists who valued the beauty of both culture and nature, such as John D. Rockefeller and Steven Mather (Foresta 1984).

Figure 1 shows the location of the park and its basic features. It is a pleasant mosaic of forest and heathlands. While natural appearing, this landscape is very much a creation of man. The area was heavily grazed and farmed during the explosive population growth of the Middle Ages. The forest cover was removed; even the turf was harvested as a fertilizer and building material. This history of over use and exploitation is still apparent to the knowledgeable eye. However, today's values have created a refuge from industrial Europe for both wildlife and people.

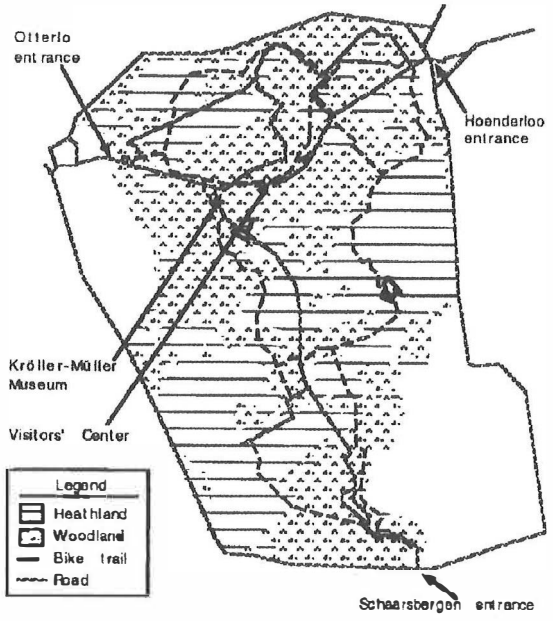


Figure 1. Map of De Hoge Veluwe.

Kröller-Müller Museum

Art is a means to refresh and recreate the soul -- but many Americans' blood pressure rises just thinking about cities like New York or Washington where our greatest art museums are located. It seems reasonable to expect the rejuvenating qualities of art to be enhanced if they could be visited in more restful surroundings. The Kröller-Müller Museum houses a world famous collection of fine art in a sculpture garden and indoor galleries that are closely integrated with the natural environs of the park. While may galleries have only stark white walls, the Kröller-Müller galleries also have walls of glass that let in natural light filtered through trees and provide a refreshing wooded background for viewing art. Walking through the woods and meadows also puts one in the proper frame of mind to appreciate the creative expression of sculpture.

In his study of park visitors, Jansen (1994:70) found that 56 percent went to the Kröller–Müller Museum. Of those not visiting the museum, most indicated that they had been there before or were too engaged with the natural outdoors. Less than 3 percent of these respondents thought a national park was an inappropriate place for an art museum.

How the museum was evaluated by those who visited it is shown in table 2. Half thought that the natural surroundings enhanced their appreciation of art. A few thought it was a little crowded and not of much interest to children. Most expected to return again.

The Smithsonian and the National Gallery have much of their art collection in storage because there is simply no place to display it

Table 1. Reason for not visiting the Kröller–Müller Museum.

Reason for not visiting	Percent
Been there often before	55
Weather too beautiful	26
No time	25
Not interested	10
Museum doesn't fit with a visit to a park	3
Other	18
Total not visiting	44

Source: Jansen 1994:70

Table 2. Evaluation of the Kröller–Müller Museum.

Aspect of the museum	Percent agreeing
The staff is hospitable	73
So much that I'll return often	61
Atmosphere created by the natural surroundings	49
It is not interesting for children	36
It is too busy	22
Didn't meet my expectations	7

Source: Jansen 1994:70

in Washington DC. Think how much better it would be to transfer some of this collection to the green line parks, such as Cayuhoga, or national parks near large metropolitan areas, such as Rocky Mountain or Olympic.

Wit fiets or White Bikes

In the 1960's the Amsterdam White Bicycle Plan was proposed as a solution to the increasingly serious traffic congestion within the city. The idea was to take a large number of basic bikes, paint them white and make them available for free use throughout the city. It failed of course, since Amsterdam has possibly the highest rate of bicycle theft in the world.

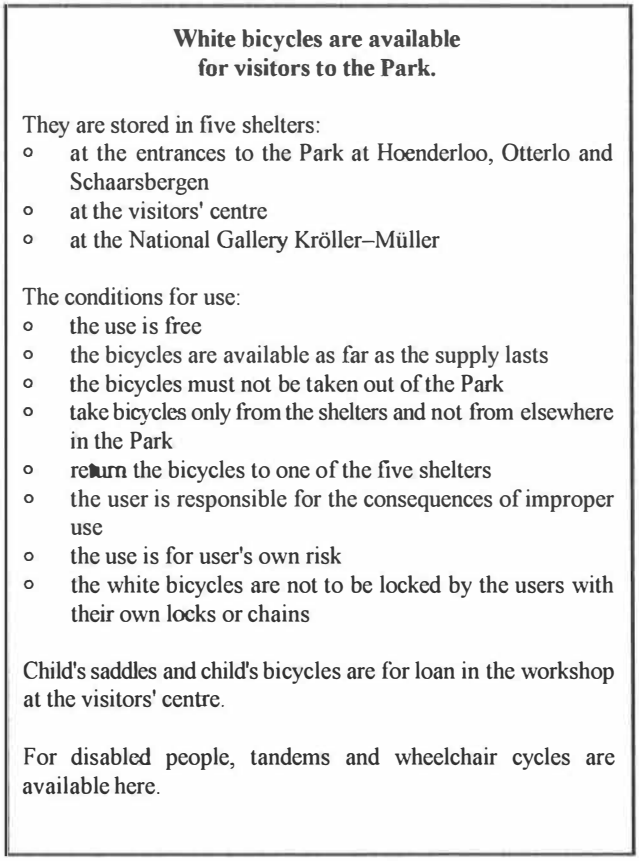
However, white bikes are a marvelous success in De Hoge Veluwe where 800 white bikes are made available at 4 dispersed locations throughout the park. Visitors are asked to follow the common sense rules in figure 2.

It would be difficult for someone on foot to appreciate the diversity of the park's 5,500 hectare (13,000 acres) of woodland, heath, sand dunes and fens. And the special character of this fragile area would be destroyed by extensive motorized access. Bicycles provide the perfect solution. Park visitors can enjoy the landscape's diverse and subtle qualities while leisurely riding along the extensive path system, or stop anywhere along the route for a relaxing rest or picnic.

Jansen (1994:75) found that 38 percent of the visitors used the white bicycles. Table 3 shows their evaluation of the white bikes. These visitors overwhelmingly endorsed the use of white bikes. They see it as one of the special features of the park, and positively evaluate the rules about their use.

Table 4 gives the reasons that 62 percent of the visitors chose not to use white bikes. The most common reason was that they had been used before. Some of these respondents may also have indicated they did not use the white bikes because they brought their own bike.

This sort of intimate interaction of a bicyclist with the landscape is impossible for a public wedded to automobiles, which require wide roads, large parking areas, and disrupt the sanctity of the



White bicycles are available for visitors to the Park.

They are stored in five shelters:
- at the entrances to the Park at Hoenderloo, Otterlo and Schaarsbergen
- at the visitors' centre
- at the National Gallery Kröller–Müller

The conditions for use:
- the use is free
- the bicycles are available as far as the supply lasts
- the bicycles must not be taken out of the Park
- take bicycles only from the shelters and not from elsewhere in the Park
- return the bicycles to one of the five shelters
- the user is responsible for the consequences of improper use
- the use is for user's own risk
- the white bicycles are not to be locked by the users with their own locks or chains

Child's saddles and child's bicycles are for loan in the workshop at the visitors' centre.

For disabled people, tandems and wheelchair cycles are available here.

Figure 2. The posted condition of use for 'white bikes'.

Table 3. Evaluation of the white bicycles.

Aspect of the white bicycles	Percent agreeing
Free bikes are one of the nice things about the Park	99
Good thing to have in the Park	99
It is especially nice for children	89
You can use any bike in the shelters	87
There are enough bikes in the Park	67
The quality of the bikes is good	67
You can use the bike for the whole day	50
It's ok to wait sometimes for a bike after visiting the museum	43
It's important to be able to reserve and pay for a blue bike	40
Rules are strictly observed by visitors	17
Use of the bikes do not appeal to me	7

Source: Jansen 1994:75

experience with noise, exhaust, and inappropriate roadside parking. The secret to the success is that the bike and pedestrian paths are separate from the automobile roads. In addition, these

paths are all internal to the park and do not allow any external access by which thieves might try to remove the bikes.

Table 4. Reason for not using the white bicycles.

Reason for not visiting	Percent
Used them before	43
No time	11
Not interested	3
Didn't know about them	3
Weather too bad	1
Other	37
Total not visiting	62

Source: Jansen 1994:75

The history of the National Park Service is closely tied to the American love affair with automobiles. The first director, Steven Mather, recruited automobile clubs and local tourist industries in his drive to build a system of national parks. While it may have been a stoke of genius at the time, we are paying the price today. The problems of traffic congestion have been recognized for some time. For instance, Foresta (1984: 107) indicates that by the mid-1960's it was clear "that parks and highways mixed poorly." He goes on to quotes Director as saying "The automobile as a recreational experience is obsolete, we cannot accommodate automobiles in such numbers and still provide a quality environment for a recreational experience." However old patterns are hard to break. In their most recent study visitor transportation systems, the NPS limited themselves to mechanized alternatives, such as buses, trams, light railways, and monorails (BRW, Inc. 1994). All of these systems require large capitol investments that have significant environmental impacts. In addition, they all provide a tourist experience where the visitor is sealed away from nature rather than personally interacting with it.

White bicycles are a particularly appropriate solution for Acadia National Park, where there is a system of dirt roads that were developed for the recreational use of horse carriages. Think how pleasant Yosemite Valley would be if white bikes were made available and cars were further restricted. One could also imagine bicycles being used to advantage in national parks such as the Everglades, San Pedro Island or possibly even Fire Island.

Acknowledgment

Tom Slijkerman from the WAU Recreation and Tourism Workgroup assisted in the translation of the tables from Jansen (1994).

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AN ASSESSMENT OF CUSTOMER SATISFACTION AT A U.S. ARMY CORPS OF ENGINEERS WATER-BASED RECREATION AREA: THE CASE OF LAKE SAKAKAWEA, NORTH DAKOTA

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Abstract: Customer satisfaction efforts are underway among virtually all federal outdoor recreation agencies, including the US Army Corps of Engineers. This pilot study was conducted in an effort to understand three market niches -- ramp users, campers, and day-users. Customer satisfaction of the three niches was evaluated at five separate locations through the use of importance-performance scales. Findings highlight the importance of site-specific analysis and the use of satisfaction analysis to provide managers with visitors' perceptions of facilities and services provided.

Introduction

Across the United States, government agencies are increasingly interested in assessing customer satisfaction. President Clinton's September 11, 1993 Executive Order (No. 128620) "required all federal agencies to have a customer service plan in place by September 8, 1994." This paper attempts to explain how US Army Corps of Engineers recreation managers are using customer satisfaction efforts to improve the quality of service to their customers.

Study Methods

Data were collected through a combination of in-depth focus group interviews and short-answer surveys at five recreation sites at Lake Sakakawea, North Dakota (also known as the Garrison Project). Initially, in-depth interviews were recorded with 70 groups of visitors over a thirty day period in June, 1995. These interview responses were used to develop the second phase of the survey, a short survey consisting of open-ended and closed-ended questions.

Data were collected equally through sampling on weekdays and weekends at the same locations. Sampling was conducted between the major summer season holiday weekends of Memorial Day, the Fourth of July , and Labor Day, in the months of June through August, 1995. Data were not collected on these holidays in order to eliminate the bias associated with peak use. The goal of the initial sampling design was to complete a total of 300 on-site interviews in the period of July 5 to August 8, 1995. The actual number of surveys completed (n=203) was less than the original sampling goal due to the low number of visitors, particularly during the weekday period (Monday through Friday). However, the number of surveys completed was sufficient to allow for the site-specific reporting that was called for in the study objectives.

The interviewer conducted surveys on weekend and weekday periods. The weekday period consisted of Monday through Friday, and the weekend period was Saturday and Sunday. The primary method of conducting this survey involved the surveyor walking through campsites and day-use areas, conducting interviews. Although this method was appropriate for four of the five areas, an alternate method was instituted at one site, the Government Bay Boat Ramp Area, because the boaters at this location often did not want to take the time to answer an interviewer's questions while down loading or uploading their boats. A short survey was placed under the wiper blades of the trucks parked at the ramp lot, with a request to place the surveys in the fee box at the ramp exit.

Visitor Satisfaction Indicators

Visitor satisfaction with trips to the Garrison Project was assessed through several sections of the survey. Basic customer service questions were asked about issues of interest to most people, such as condition of the facilities (Table 1), condition of the natural resources (Table 2), cleanliness (Table 3), and safety (Table 4). The scale was based on a five point Likert scale, with "1" being highest, and "5" lowest.

Table 1 shows that just under 50 percent of the visitors surveyed indicated that the condition of the facilities at Garrison Project was excellent. One-third of the visitors felt that the condition of the facilities overall was more than adequate, and 14% percent indicated that the condition of the facilities was adequate. Only three percent rated the overall condition of facilities at the five sites as less than adequate.

Table 1. Condition of facilities.

	Lake Sakakawea State Park	Spillway Pond	Douglas Creek	Wolf Creek	Government Bay
Excellent	40%	70%	54%	34%	64%
More than adequate	35%	23%	31%	46%	24%
Adequate	18%	0%	8%	19%	12%
Less than adequate	7%	7%	7%	1%	0%

Table 2 shows results from a question asking visitors to evaluate the condition of the land, beach, water, foliage, erosion, etc. Over 52 percent of the visitors rated the condition of the natural resources as excellent. One-third of the recreationists rated the conditions of the natural resources as more than adequate. About thirteen percent of the visitors indicated that the area was merely adequate. Less than one percent of the visitors rated the condition of the natural resources as less than adequate.

The question regarding cleanliness pertained to the sanitation of comfort stations, campsites, boat docks, swimming areas, picnic sites, etc. (Table 3). Just under 52 percent of visitors answered excellent in relation to cleanliness. Over 34 percent indicated that the cleanliness was more than adequate. Thirteen percent rated the cleanliness as adequate. Only one percent of the visitors indicated less than adequate or poor.

The question shown in Table 4 asked visitors to indicate their satisfaction level with the safety and security at the recreation site. This included ranger presence, enforcement of leash laws and other rules, safety at the swimming area, etc. About 49 percent of the visitors indicated that they felt the safety/security was excellent, and 30 percent rated the area as more than adequate. Just under 20 percent of recreationists rated the area as adequate, and only three percent felt that the safety/security was less than adequate or poor.

The questionnaire also queried visitors on their satisfaction with the money they had spent on recreating at Garrison Project (Table 5). This question was asked only in the three areas at which fees were charged: Wolf Creek, Government Bay, and Lake Sakakawea State Park. The results indicated that the vast majority of recreationists were satisfied with their value for their dollar. Sixty-six percent of the visitors reported that they felt the value was excellent. The value was rated as more than adequate by 28% of the visitors. Only six percent of the recreationists rated the area as less than adequate or poor.

The questionnaire asked respondents to rate the condition of the campsites at the sites that had camping facilities (Table 6). Areas considered under this heading were foliage, privacy, level sites, access to water, electricity or comfort stations, etc. Only three areas maintained campgrounds; Wolf Creek, Douglas Creek, and the State Park. The majority of campers indicated that the condition of the campsites was excellent (38%) or more than adequate (42%). Eighteen percent of the visitors rated the area as merely adequate, and only a small number of the recreationists listed the area as less than adequate (3%) or poor (1%).

Satisfaction with Ramps and Courtesy Docks

Satisfaction with ramps and docks was measured only at Government Bay, where the ramps and courtesy docks are the primary facilities in that area. Over 61% of the visitors indicated that the ramps and courtesy docks were excellent, and 22% rated the docks/ramps as more than adequate. Only 17% indicated that the docks/ramps were merely adequate, and no visitors rated them as less than adequate.

Site-Specific Implications for Managers

Spillway Pond

The primary users of the Spillway Pond Day Use area are swimmers, who have indicated a high degree of satisfaction with the area. Almost 30% of Spillway visitors who were surveyed were first time visitors, most indicating that they had just recently heard about the positive changes at the site. Many of these visitors were local residents or were camping at other sites along the shores of Lake Sakakawea, and were attracted by a relatively safe, no-cost recreation activity for their children.

Table 2. Condition of natural resources

	Lake Sakakawea State Park	Spillway Pond	Douglas Creek	Wolf Creek	Government Bay
Excellent	51%	70%	69%	36%	67%
More than adequate	36%	25%	23%	45%	22%
Adequate	11%	5%	19%	19%	11%
Less than adequate	1%	0%	0%	0%	0%

Table 3. Cleanliness of the facilities.

	Lake Sakakawea State Park	Spillway Pond	Douglas Creek	Wolf Creek	Government Bay
Excellent	50%	62%	69%	42%	63%
More than adequate	37%	29%	31%	38%	18%
Adequate	10%	9%	0%	20%	19%
Less than adequate	3%	0%	0%	0%	0%

Table 4. Satisfaction with safety/security at the recreation site.

	Lake Sakakawea State Park	Spillway Pond	Douglas Creek	Wolf Creek	Government Bay
Excellent	54%	57%	64%	34%	59%
More than adequate	33%	31%	18%	33%	23%
Adequate	11%	12%	9%	31%	12%
Less than adequate	0%	0%	9%	2%	6%

Table 5. Value for Money Spent

	Lake Sakakawea State Park	Wolf Creek	Government Bay
Excellent	66%	65%	66%
More than adequate	29%	30%	23%
Adequate	5%	5%	11%

Table 6. Safety and security.

	Lake Sakakawea State Park	Wolf Creek	Government Bay
Excellent	42%	39%	33%
More than adequate	36%	46%	47%
Adequate	17%	16%	18%
Less than adequate	3%	0%	1%
Poor	2%	0%	0%

Lake Sakakawea State Park, with a comparable swimming area and beach, is located just a few miles from the Spillway Pond Day Use area, yet the Spillway area rates as high or higher in all areas. A minority of visitors desired major changes, such as the addition of a food stand, but overall, project managers seem to have created the right mix of facilities and recreation opportunities for the market segment that uses the area.

Regarding the correlation between the importance and satisfaction of selected attributes, it again appears that managers and visitors feel that the same issues are important. There is a concern among visitors about the possibility of managers implementing a usage fee for the Spillway Pond area in the coming years, reflected in the relatively low degree of satisfaction with the cost of a no-fee area. Managers need to be sensitive to this concern, as these visitors felt strongly about this issue. Additionally, managers may need to reevaluate their position on water safety, as there was a request for life guards and depth markers at the swimming area.

Staff friendliness and helpfulness was also rated somewhat lower in importance and performance at the Spillway Pond Day Use area, probably because of the expectations of visitors at a day use area. Visitors to the other areas surveyed expect and want to see visible ranger patrols in areas where they are camping. In day use areas, however, there is often the perception that rangers are just there to bother visitors, and make sure that all of the minor (but perhaps important) rules are followed. These rangers are frequently the only staff that many day users meet. Thus, visitors to the Spillway Pond Day Use area seemed to indicate a lowered importance and satisfaction with staff friendliness, which may be noted as an area of concern to managers.

Overall, the Spillway Pond Day Use area seems to be meeting the needs of the visitors that use the area. This seems to validate managers' concerns that the appropriate developments and changes were made to the area to meet the needs of that particular market segment, the family-oriented swimmer, sunbather, and picnicker.

Douglas Creek

Visitors to the Douglas Creek area are difficult to categorize because of the diversity of activities that they participate in and the low number of visitors. The most frequent response when asked the activities they planned on pursuing was a combination of several activities, such as camping and boating, fishing and camping, sunbathing and boating, or any combination of the above.

These visitors seemed to think that the Douglas Creek area compared about the same or better than other similar areas, but never once indicated that the area was best, worse, or worst. This almost neutral response, combined with these visitors using other Garrison Project recreation areas exclusively (100%), and the high number of repeat visitors (77%), leads one to conclude that these visitors are satisfied with the area. Although there was some dissatisfaction noted, these visitors were not at all passionate or extremely concerned about the changes they had seen or changes they desired at the site.

When examining the comparison between the importance of selected attributes and the satisfaction or performance of those attributes, the Douglas Creek area fared somewhat worse. Visitors to this site placed a great deal of importance on the availability of places to enjoy their chosen activity, but their responses to their satisfaction concerning this variable were much less enthusiastic. These responses, combined with the insight gained by conducting focus group interviews, indicate that the Douglas Creek visitors just want to be left alone, without seeing or being at all impacted by other visitors or staff. The only other visitor response that really stood out among the Douglas Creek satisfaction surveys was a concern about the possibility of having to pay a fee to use the area in future years, similar to the concerns noted by Spillway Pond visitors.

In looking at the overall implications of this study to the Douglas Creek recreation area, it appears that managers are meeting the needs of the majority of visitors. The area is becoming more popular, resulting in more and more visitors, which is demonstrated in less than superb ratings when a survey such as this is conducted. The popularity of the area seems to be related to management actions in recent years, such as more consistent mowing and trash removal, and the addition of things such as horse corrals and even a bulletin board to communicate with visitors. All of this has had a positive impact on the recreation area, and should not be construed as inappropriate management actions.

Wolf Creek

At the Wolf Creek recreation area, similar to the Douglas Creek area, there is a very heterogeneous population of recreationists using the site. There are few first time visitors; over 32% visited more than five times in the past year, and the majority of these visitors recreate at many other recreation areas within the region. When trying to pinpoint the changes desired by Wolf Creek visitors, the heterogeneity of the population once again causes a problem because of the many different desires of visitors. Since the area has undergone recent management actions, such as the implementation of a camping fee, the addition of more vault toilets, and a playground, many campers have indicated that they desire more development, such as a fish cleaning station, a dump station, and showers.

The satisfaction level of Wolf Creek recreationists was somewhat less than at the other sites surveyed, and was evident in the visitors' rating of the condition of facilities, natural resources, and other factors. Managers may need to focus attention on the aesthetics of the natural resources and facilities to ensure that the customers' first impression is a positive one, perhaps through the planting of trees and shrubbery between campsites and throughout the area.

The safety and security of recreationists at the area must be a management priority. Visitors were only somewhat satisfied with this, and indicated a desire for more frequent ranger patrols and some method of communicating with emergency authorities in the event of some problem, such as an accident. Ranger patrols have been increased at the Wolf Creek area, but managers may need to look into the possibility of obtaining some sort of public telephone, or even an emergency phone, at the Wolf Creek area.

Wolf Creek recreationists were relatively satisfied with the minimal fee required to camp at the area, and the overall value. Although this is an important factor to these recreationists, the majority seemed willing to spend the money in return for the recent developments at the area. The contingent of recreationists who desired no further changes at the area, and who felt that the recent changes were negative, were unhappy with paying the camping fee, as expected. Camping fees are becoming a reality at Corps recreation sites across the nation, and managers should not be dissuaded from providing more and better services in response to the very vocal minority of visitors who desire no staff interaction, no facility development, and no-fee camping.

The analysis of the importance/performance indicators at the Wolf Creek area indicated much of the same types of results. The area has been modernized in some ways, but is still primitive in others, resulting in dissatisfaction by many. Managers will continue to feel the effects of the disparity between visitors who desire modern camping and those who desire primitive camping until a true identity is established for the area. Managers may want to invest in modernizing some portions of the Wolf Creek area to meet those needs, while leaving a segment of the area primitive, similar to the method used by the Lake Sakakawea State Park.

Wolf Creek visitors suggested that privacy was not very important as a satisfaction attribute when compared to the other sites surveyed, indicating a desire for social interaction. Many campers at Wolf Creek desire to park several campers together on one large site and recreate together. Managers have accommodated this desire by creating group camp sites in addition to the individual camping sites, further meeting visitors' needs.

Other importance/performance indicators at the Wolf Creek area seemed to correlate surprisingly well, given the dissatisfaction with some of the above issues. Managers will need to continue to monitor the Wolf Creek area to ascertain additional reactions to the developments at the recreation area.

Government Bay

The majority of Government Bay visitors, similar to Spillway Pond visitors, are a homogenous group, differing only in the form of recreation most often pursued. Over 95% of Government Bay visitors surveyed were involved in fishing from a boat, and seemed very satisfied with the recreation opportunities provided by local managers. These visitors are more concerned with the lake water level than any other attribute, an issue that is not within the locus of control of local managers.

Government Bay visitors had the highest percentage of repeat visitors, and the highest number of repeat visits in the past year. The area is known by anglers to have excellent facilities, and managers seem to strive to maintain the area as such. The recent addition of a daily or annual fee to use the boat ramps caused a great deal of vocal opposition. There seemed to be consensus that only minor changes were needed at the recreation area, and that the fluctuating water level was the issue of greatest concern.

Overall, managers seem to be meeting the needs and desires at Government Bay very well. The area is known among anglers to have excellent, clean facilities, and is regarded as worth paying a fee to use.

Lake Sakakawea State Park

The majority of visitors to the Lake Sakakawea State Park tend to seek out general rest and recreation and a combination of fishing, boating, camping, and swimming. Like the visitors from the other areas that were surveyed, the majority of visitors are repeat visitors, with a high percentage of visitors who had used the area numerous times in the past year.

When asked to indicate what changes these visitors had seen and desired, the largest majority of visitors wanted to see major changes, such as renovated comfort stations, upgraded electricity and water service, and shore development (cottages, fishing docks, etc.). This is indicative of aging facilities and a population that has been coming to the area for many years who want to see something new at the park. Many of these issues are beyond the local manager's control, and are noted only as information to the manager. Changes noted in recent years were not significant or important to Lake Sakakawea State Park visitors.

The conditions of the natural resources at the park were rated somewhat low, mainly because of a desire for the lake to remain at a lower water level and a desire to see more trees at the park. Many trees have been planted in recent years, so one would assume that the visitors will reap the benefits in a few years. Safety and security, cleanliness, the condition of ramps/docks, and other satisfaction issues were typical, with no real problem areas, with the exception of the availability of water safety information. The primary cause of this seems to be the lack of a life guard at the swimming area, and the high degree of family boating.

The managers of the Lake Sakakawea State Park seem to be meeting the needs and desires of the visitors, and have no extreme issues to address. Overall the campers and other recreationists indicate a moderately high degree of satisfaction with very few specific problems.

Discussion/Conclusion

This study examined numerous variables in an effort to measure customer satisfaction. The results of this study indicate that the

majority of Garrison Project visitors are satisfied with their visits to the lake. When looking at the Garrison Project as a whole, visitors to the project appear to be a homogenous group, predominately from the local area or one of the two cities within 60 miles of the lake: Bismarck and Minot. However, when site-specific analyses are done, distinct, heterogeneous populations emerge, which is an important management consideration.

The majority of recreation use is on weekends, and many visitors come in groups of two, although visits by larger groups are not uncommon. Adults make up about 60% of visitors, children 40%. The typical customer visits the lake six times or less per year, and almost 80% were repeat visitors. When asked to compare the specific Garrison Project area that they were currently visiting with the other areas they visit, the majority indicated that the site rated best or better than the others.

Upon examining basic customer satisfaction issues, the vast majority of Garrison Project visitors indicated that they were extremely satisfied or more than satisfied with areas such as staff friendliness, boat ramps, paying a fair price, the privacy of campsites, the availability of human and natural history about the area, the availability of places to enjoy themselves without bother from other incompatible recreation activities, the availability of water safety information, and swimming areas.

Garrison Project visitors were also asked to rate specific areas regarding importance to the visitor and his/her level of satisfaction with that area. The correlations between the importance and the satisfaction with individual items are important management indicators. These provide the manager with a *visitor's* perspective of how important certain issues are, such as the availability of history information about the area, the condition of facilities, natural resources, campsites, boat ramps, the level of cleanliness, and value for their dollar spent. With the exception of the availability of human and natural history issues, visitors indicated for the most part that the areas managed are important, and that they are satisfied with those areas.

Water Based Recreation

A COMPARATIVE ANALYSIS OF VALUE BETWEEN USERS AND NON-USERS OF THE WHITE RIVER

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Abstract: There has been on-going debate determining whether Vermont rivers should be protected for in-stream uses, or whether they should be diverted for uses such as snowmaking and the generation of hydroelectricity. The economic benefits associated with protecting natural river flows are more difficult to quantify than the benefits associated with withdrawing the river water for out-of-stream uses, and, therefore, are often overlooked. This study used a contingent valuation mail survey of 3,000 Vermont households to quantify the total economic value of maintaining natural river flows in the White River. Survey results indicate that White River users spend a significant amount of money on expenditures associated with their use of the River. Users and non-users are willing to pay to maintain the current natural river flow, which they allocated to both use and non-use values, such as the ability to bequeath the river in its natural state to future generations. These results should encourage policies which protect in-stream uses of Vermont rivers in order to ensure the long-term health of river recreation in Vermont.

Introduction

Recently, there has been substantial controversy surrounding water withdrawal and diversion from Vermont rivers. The benefits associated with consumptive river uses are easily quantified through the market. There are also values associated with maintaining rivers in their natural state. For example, values derived from using the river for recreation, and/or values derived from just knowing the river exists, regardless of being able to see or experience it. However, these values are not traded in the market and are therefore more difficult to quantify monetarily than are the benefits associated with withdrawing the river water for other uses, such as snowmaking and hydroelectric generation. It is important to value non-market benefits because it demonstrates the importance of non-consumptive river uses (uses which do not divert water out of the river). In addition, identifying these benefits can help to ensure that these values are accounted for by policy-makers deciding how to best allocate our water resources among competing uses.

The objective of this research was to measure the total economic value associated with protecting the natural river flow levels in the White River in order to guide public decisions on how to best manage water resources in Vermont. The White River was selected for this study because it is one of the only free-flowing rivers remaining in the state and is a popular recreational destination for canoeing, fishing, tubing and swimming, and nature and wildlife observation.

Methods

Survey Development and Administration

The White River Study used the contingent valuation method to measure the changes in value associated with hypothetical river flow reductions. Contingent valuation is a method commonly used to by resource economists to impute economic value for natural resources. Respondents are asked their willingness to pay (WTP) for an increase in, or to prevent a decrease in, the quantity or quality of an environmental good. The survey was sent to a stratified sample of 3,000 Vermont households -- those in towns bordering the river (regional stratum) and those in all other Vermont towns (state stratum). A modified version of Dillman's Total Design Method was used, which included two survey mailings and a post card reminder. In addition, a follow up phone survey of 10% of the non-respondents was performed to verify that the results could be extrapolated to the target population.

The first section of the survey included questions regarding the frequency of river use (# trips/year), the quality rating of the river in its current state to users, the importance of the river flow level to users, and the amount of money spent by users on non-durable and durable goods. Non-durable expenditures elicited from respondents included money spent by users during their last trip to the White River. Durable expenditures included money spent by users on goods attributed to recreation on the White River within the last year.

The second section of the survey described a reduction in river flow level to two different water levels (water level I and water level II, where water level II is lower than water level I). The hypothetical reductions in river flow level would occur due to two different development proposals, a hydroelectric facility, and a ski/golf resort (Table 1).

Table 1. Hypothetical resource scenarios.

Type of Development	Hypothetical Reduction
Hydroelectric Facility	Water Level I
Hydroelectric Facility	Water Level II
Ski and Golf Resort	Water Level I[a]
Ski and Golf Resort	Water Level Ii[b]

a/ Water level one is identical to the reduction under the hydroelectric facility proposal.
b/ Water level two is identical to the reduction under the hydroelectric facility proposal.

In the elicitation section of the survey, respondents were asked in an open-ended format for their maximum willingness to pay (WTP) to prevent a reduction in water level under both the hydroelectric facility and the ski and golf resort. A dichotomous choice question immediately preceded the open-ended question to more closely simulate a market situation. Finally, the fourth section of the survey inquired about respondents' socio-demographic characteristics and their general attitudes toward the environment.

Estimation Procedures
The estimated totals were calculated using the following equations:

Equation 1: Non-durable expenditures
Total = mean $/trip * mean # trips/year * (% users in stratum * # households in stratum population).

Equation 2: Durable expenditures
Total = mean $/year * % attributed to White River use * (% users in stratum * # households in stratum population).

Equation 3: WTP
Total WTP/year = mean WTP/year * (# households in stratum population).

Results
Fifty-four percent of the regional respondents and 14% of the state respondents indicated that they had used the river in the past five years. Of these users, regional and state respondents used the river an average of 34 and 7 days per year, respectively. Over 70% of all users rated the current river quality as "good", "very good", or "perfect". In addition, approximately 80% of all users responded that the river flow level was "important" or "very important" to their recreational enjoyment on the White River.

The mean and estimated total expenditures on non-durable and durable goods by river users are presented in Table 2. In general, state respondents spent more, on average, than regional respondents. Overall, users spent an estimated total $33 million on non-durable goods per trip to the White River. In the year preceding the survey, users spent an estimated $2.5 million on durable goods attributed to recreation on the White River.

Table 2. User non-durable and durable expenditures.

	Non-durable		Durable	
	Mean $/trip	Total $/year	Mean $/trip	Total $/year
State	$106	$19.9M	$76	$2.1M
Region	$46	$13M	$28	$237,000

The mean and estimated total WTP values for users and non-users to prevent a reduction in river flow level and maintain natural river flow levels in the White River are presented in Table 3. Overall, respondents were willing to pay more to prevent a reduction to flow level II (the lower flow level) than they were to prevent a reduction to flow level I and regional respondents were willing to pay more than state respondents. Together, users and non-users were willing to pay an estimated $5.7 million per year to prevent a reduction from the current natural flow level to water level I and an estimated $6.7 million per year to prevent a reduction to water level II.

Two sample t-tests revealed that users were willing to pay significantly more than non-users to prevent a reduction in flow to both water levels, under both developments. The only exception was that there was not a significant difference in the amount state users and non-users were willing to pay to prevent a reduction to water level II (Table 4).

Table 3. Willingness to pay to prevent a reduction in river flow level.

	Water Level I		Water Level II	
	Mean	Total	Mean	Total
State				
User	$45	$1.3M	$49	$1.4M
Non-user	$22	$3.7M	$27	$4.5M
Region				
User	$62	$531,000	$70	$595,000
Non-user	$25	$183,000	$26	$194,000
Total	N/A	$5.7M	N/A	$6.7M

Table 4. Two sample t-tests for significant difference in WTP values between users and non-users.

	Mean WTP Water Level I	Mean WTP Water Level II
State Stratum		
Users	$46.39	$49.72
Non-users	$22.21	$26.67
p-value	.003*	.051
Regional Stratum		
Users	$62.91	$70.90
Non-users	$24.00	$26.00
p-value	.004*	.001*

a/ * $p < .05$.

Regardless of whether they used the river or not, respondents allocated only a portion of their total value (WTP to prevent a reduction in White River flow levels) to the ability to use the river now for recreational purposes (Table 5). Instead, they allocated the majority of their WTP to non-use values, including option, existence, bequest, and altruistic values. Option value is the value of knowing that one has the ability to use the river at some future time. Existence value is the value of simply knowing the river exists in its natural state. Bequest value is the ability to leave the river in its natural state for future generations. Altruistic value is the value associated with the knowledge that the river is protected for others to use. Respondents allocated the majority of their WTP to bequest value.

Table 5. Breakdown of WTP by regional and state users and non-users.

Region	Users	Non-users	State	Users	Non-users
Use	20%	8%	Use	17%	8%
Option	20%	13%	Option	14%	11%
Existence	16%	21%	Existence	16%	19%
Bequest	30%	35%	Bequest	31%	38%
Altruistic	12%	14%	Altruistic	14%	15%

Discussion and Implications
Although a larger percentage of regional respondents used the White River for recreation, state users spent more on durable and non-durable goods than regional users. This is probably due to the fact that state users travel further distances to recreate on the White River and rely more on, for example, local hotels and restaurants than do regional users. It is also important to note that in general, users were willing to pay significantly more than non-users. This is not surprising because a reduction in river flow level would inhibit users' ability to enjoy the river for

recreation. In addition, regional respondents were willing to pay more than state respondents. Again, this was expected because a larger percentage of regional respondents use the river for recreation, they live closer to the river, and as a result, may be more directly affected by allocation decisions concerning the White River.

The results of this study emphasize that the White River in its natural state is valuable to Vermont residents and the state and local economies. Through the purchase of durable and non-durable goods and services, White River users contribute a significant amount of money to the Vermont economy, and are willing to pay to ensure that natural river flows are protected. However, non-users also derive value from the river in its natural state, and are also willing to pay to prevent flow level reductions. Both users and non-users attributed the majority of their value to the ability to bequest the unaltered river onto future generations.

It is important that managers consider all of the benefits associated with river flow protection when deciding how to best allocate our water resources among competing uses. Policies which take into account the economic benefits of non-consumptive river uses will help ensure the long-term health of water-based recreation in Vermont.

MICHIGAN RECREATIONAL BOATER COMPLIANCE WITH THE CLEAN VESSEL ACT IN USE OF PUMPOUT AND DUMP STATIONS: RELATIONSHIPS BETWEEN ATTITUDES, KNOWLEDGE, SOCIO-DEMOGRAPHIC FACTORS AND BEHAVIOR

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Abstract: Attitudes have been debated as a contributing factor to behavior for decades. If this is the case, people's behavior in recreational settings should be partially influenced by their attitudes. Because many recreation activities occur in natural or other outdoor settings, environmental attitudes should be at least partially influential. A scale to measure a "new environmental paradigm" (NEP) has been developed to assess people's environmental attitudes. Using the NEP scale, this study assesses the influence of environmental attitudes as well as water pollution-related knowledge and two sociodemographic factors on Michigan recreational boaters' use of pumpout and dump facilities. Based on the Clean Vessel Act and state regulations, boaters are not allowed to dump sewage, treated or untreated, directly into inland or Great Lakes waters.

Introduction

For decades social psychologists and other researchers have been interested in the concept of attitudes: what are attitudes, how they are developed, how attitudes are changed, and what the relationships are between attitudes and other variables such as knowledge and behavior. A plethora of attitude work was conducted in the 1920s and 1930s, but by the 1950s the concept of group dynamics had overshadowed attitude research. However, attitudes received renewed attention beginning in the 1960s. Some research looked at differences and relationships between attitudes and other variables, such as values, opinions and knowledge. Much of the research focused on identifying factors that contribute to the development of attitudes and how attitudes could be changed by manipulating a variety of factors, including genetic factors, physiological factors, and interaction or communication factors. (McGuire, 1969) More recently, many of the factors identified as contributing to attitude development and change (e.g., information source factors such as characteristics, similarities between the source and information receiver, credibility of the source, familiarity with and degree of "liking" of the source; power relationships or positions; message channel type [e.g., personal, print, mass media]; message characteristics such as type of appeal [e.g., fear vs. explanatory request], style of presentation, order of presentation of message elements [including primacy and recency effects], and time at which information is received, especially relative to the time in which the behavior is engaged; and message receiver factors such as degree of active participation; and use of other strategies such as incentives or threatened sanctions) have been incorporated into studies about persuasion and the effectiveness of communication and other factors in guiding recreation behavior (Manfredo, 1992; McGuire, 1969; Vander Stoep and Roggenbuck, in press; Wang, Theresa L., Anderson, Dorothy H., and Lime, David W., 1996 draft).

For many years there has been considerable debate about if and how much influence attitudes have on behavior. Conceptually it seems to make sense that a person would tend to behave in concert with personal attitudes about specific objects, people, events and behaviors rather than behaving in ways inconsistent with those attitudes. As theories have developed, however, researchers have proposed that other factors contribute to, interact with, or overshadow the direct impact of attitudes on behavior. A variety of situational factors can screen, alter or otherwise affect the influence of attitudes on behavior. Additionally, several attitudes about different elements of a situation may be invoked at any given time. For example, a person may believe that protecting the environment is a good thing in general and, in many situations, would behave in a manner protective of environmental resources. However, in a given situation that person may not know that a certain behavior is damaging to the environment (e.g., hanging a lantern from a nail pounded into a tree) or may feel he/she has no alternative to a destructive behavior in a given circumstance (e.g., being caught above tree line on a mountain when a lightning storm begins, then racing straight down the mountain, disrupting fragile tundra vegetation on steep slopes and encouraging rapid erosion rather than staying on the longer trail route composed of many switchbacks).

In the first of the two scenarios presented above, the camper did not have the knowledge that heat from a lantern can damage the cambium layer of a tree or that a nail pounded into a tree, particularly if removed, could provide entry for destructive insects. Therefore, that person would not feel he/she had done anything in discord with personal pro-environmental beliefs. In the second scenario, even if the hiker knew that trail cutting across switchbacks would contribute to vegetation damage and erosion, and even if the hiker held resource-protective attitudes, attitudes about personal safety were more salient at that time. Thus, the hiker trail cut to get to more protected lower elevations to minimize the chances of being struck by lightning.

In his norm activation model, Schwartz (1977) states that a person's general cognitive structure (which includes their beliefs) influences behavior. He posits that socially developed behavioral norms create moral obligations to behave in ways consistent with those beliefs. Beliefs, he states, are influenced by 1) a person's awareness of the consequences of specific behaviors, and 2) placement of responsibility (themselves vs. other people or circumstances) for the behaviors. It is possible that, while a person may accept personal responsibility for behavior in many situations, external conditions or constraints may "force" them to behave in non-normative ways in other situations. In such cases, they deny personal responsibility and project it elsewhere, either to some other person or a situational factor. Heberlein (1972)

supports the notion that certain intervening factors such as perceived low choice in selecting behaviors or situational constraints can affect the ultimate behavior. Therefore, attitude influence could be circumvented or blocked by these other factors or conditions.

Ajzen and Fishbein, in their theory of reasoned action (1980), proposed a model that indicates that some behaviors are "reasoned," or the result of conscious thought. Antecedent variables, which influence a person's intentions to behave in certain ways, include the person's 1) attitude toward a specific behavior (composed of two factors, including their beliefs that certain behaviors lead to specific results, and the person's evaluation of the outcomes) and 2) a subjective norm, which is composed of two additional factors: beliefs about what is normative behavior, particularly about what others who are important to them think about them for behaving in certain ways, and their motivation to comply with those perceived expectations of others. The person's behavioral intentions, then, should be highly correlated with the actual behavior. In this model, attitudes are based at least partially on the person's beliefs.
Ajzen (1985) later expanded the Theory of Reasoned Action to a new model called the Theory of Planned Behavior. The new model includes behaviors not totally under volitional control, acknowledging that a person's actions sometimes are influenced by a variety of internal and external factors which may inhibit or change the intended behavior. Again, attitudes could be blocked, and thus have little correlation with the actual behavior.

Others (Vande Kamp et al., 1994) have suggested that not all behaviors result from conscious, rationale decision-making processes. They contend that behaviors may be the result of cognitive "scripts" or simple decision rules that simplify decision-making. These scripts may be based on repetitive reaction to similar situations over time, or may simply be in response to broad personal rules for behaving. While not specifically stated, attitudes very well could be a part of the early development of such cognitive scripts.

Based on historical philosophical perspectives, supported by subsequent research, McGuire (1969) states that the human condition is comprised of three primary constructs: the cognitive component (knowledge, information, and perception); the affective component (feelings and emotions, likes and dislikes); and the conative component (action and behaviors). These three elements are woven into a variety of attitude/behavior models even though they may not be labeled as such. This suggests that both knowledge (cognitive element) and attitudes, to which feelings, emotions, and beliefs may contribute (affective element), be assessed for their relationships with behavior (conative element).

The above represent only some of the theories and models developed to describe variables influencing behavior. While early models proposed fairly direct links between attitudes and behavior, more recent models indicate much more complexity in the decision making process. Ajzen and Fishbein (1973), in their research to develop their models, noted that much of the research assessing the relationship between attitudes and behavior was conflicting and often inconclusive. Some studies indicate that attitudes are comprised of several factors or constructs; others indicate that attitudes are only one of the factors that influence behavior.

In the recreation literature, results also have been varied, thereby indicating the importance of other variables in influencing behavior in specific situations. In various situations, the following have been shown to have some influence on behavior: characteristics of the message sender (particularly if the message is delivered in person); characteristics of the message itself; characteristics of the message channel (personal, print, electronic, audio); timing of the message; visitor characteristics and motivations; characteristics of the social context; and use of incentives or threatened sanctions (Vander Stoep and Roggenbuck, in press). While few of these specifically assess attitudes, it is likely that attitudes (e.g., about authority, about other people, about recreation motivations and experience expectations, about the recreation environment) have some degree of influence. However, the importance or role of the attitudes in predicting behavior or developing targeted messages to guide recreation behavior has not been determined.

In this study, the relationships of environmental attitudes, specific environmental knowledge (in this case, related to knowledge about water resources and pollution), and sociodemographic variables with a specific behavior (use of dumps and pumpout stations for disposable of recreational boating sewage) is assessed.

Study Context

Michigan's extensive water resources, both inland lakes and rivers as well as 3,200 miles of Great Lakes shoreline, annually attract thousands of recreational visits by residents and visitors from across the country. Among them are thousands of boaters. For years, Michigan has been identified as one of the top two or three states for boating activity. In 1994 Michigan had 555,000 active registered boaters (of 770,000 total unexpired registrations) who reported 4.8 million boat days on the Great Lakes and 8.6 million boat days on inland lakes (Stynes, Wu and Mahoney, 1995). With this much boating use, the potential exists for extensive water quality degradation resulting from improper disposal of boat sewage. Unlike recreational boaters operating in ocean or gulf waters, Great Lakes boaters are not allowed to dump sewage, treated or untreated, anywhere in inland lakes or the Great Lakes, even beyond three miles from shore.

In 1992 the federal government passed the Clean Vessel Act (PL 102-587) as part of an effort to reduce boat sewage pollution in United States coastal and Great Lakes waters. The Act provides federal money to increase the availability of sewage pumpout and dump stations for boats having Type III marine sanitation devices (either installed holding tanks or portable toilets). To access this money, states are required to submit a plan for providing sufficient numbers of pumpout and dump stations to meet boaters' needs, to increase access to and ease of use of these stations, and to otherwise facilitate their use by boaters.

Before federal legislation and/or state legislation of many coastal and Great Lakes states was passed, Michigan designated its coastal waters in 1987 as "no discharge areas" in response to the US Environmental Protection Agency's (EPA) Clean Water Act (under Sections 312(f)(3) and 312(f)(4)A & B). Michigan

required all marinas with a capacity of 15 boats or more either to provide a pumpout facility or to have an agreement with a nearby marina to provide those services. Currently, that program and the Clean Vessel Act (CVA) Pumpout Grant Program are administered in Michigan by the Michigan Department of Natural Resources' Land and Water Management Division. Through these programs, Michigan is attempting to provide additional pumpout facilities where needed and better facilitate boaters' use of those facilities. However, even with increased availability of dump and pumpout facilities, boaters' still assume personal responsibility for appropriate disposal of their sewage.

Factors critical to a successful CVA program of facility provision, boater education, and increased used of the facilities include 1) boaters' awareness of relevant regulations, location of pumpout and dump stations, and how to use them; 2) boaters' current use of and need for pumpout and dump stations; and 3) boaters' use and preferred sources for boating information, including information about pumpouts and dump stations. In developing a plan for increased use of dumps and pumpout stations, hopefully resulting in decreased boat sewage pollution of Michigan waters, it may be helpful to understand boaters' attitudes toward the environment in general and their role in contributing to clean or polluted water. Specific knowledge and sociodemographic factors may also influence or help predict sewage dumping behavior.

Purpose of the Study

This study is part of a much larger Michigan recreational boater study, which included boat use patterns, boating-related expenditure patterns and economic impacts, a marina inventory, a transient boater survey, and a boater information/education/environmental attitude study. The purpose of this paper is to assess the relationships between Michigan recreational boaters' environmental attitudes, their knowledge of water-related environmental issues, sociodemographic variables and their use of sewage pumpout and dump stations.

Related hypotheses are:

As respondents' environmental attitudes become more positive toward the environment (higher NEP scale scores), they will more often dump boat sewage appropriately.

As respondents' knowledge of water and water pollution issues increases (higher knowledge scale scores), they will more often dump boat sewage appropriately.

Age will have no effect on respondents' boat sewage dumping behavior.

As respondents' income increases, they will more often dump boat sewage appropriately. (This is based on previous studies that indicate income and education level are usually highly correlated.)

Methods

The environmental attitude and knowledge assessments were incorporated into the information/education portion of the larger Michigan recreational boater study. The information/education/environmental attitude study used both a mail survey and a series of three focus groups to solicit boater responses. Results presented here will be restricted to those of the mail survey.

Mail Survey

The information/education/environmental attitude mail survey, which used a sub-sample of respondents from the general Michigan boater survey, was conducted in November and December of 1994 after responses from the general Michigan boater survey (boat use patterns and boating-related expenditures) were received. (The general boater survey used a stratified random sample of 6,000 from the total Michigan boater registration list of 901,000. This sample was stratified by geographic region (10 regions) and boat size class (four size classes), with coastal boaters and owners of large boats being more heavily sampled.) The target sample size for the information/education/environmental attitude survey was 2,000. Because this sample was stratified only by boat size class and not by county or region, the smaller sample size was sufficient. The actual sample of 1,949 boaters was drawn from respondents to the general boater survey who indicated willingness to participate in a second survey.

The information/education/environmental attitude survey was not included with the general boater survey because the combined length, which would have been extensive, probably would have reduced the response rate on both parts of the survey. The sub-sample strategy rather than a separate sample was used so that some responses from the general boater survey (such as those dealing with sociodemographic variables) could be linked with those of the information/education/environmental attitude survey so they did not have to be repeated.

The mail survey was administered using a modified Dillman procedure (Dillman, 1978). Reminder postcards were sent to all respondents within 10 days of the original mailing. No second survey was sent unless the respondent requested one after the postcard prompt.

The sample was stratified by boat size class, with more heavy sampling of boaters owning large boats (those in the two boat size classes of 21-28 feet and $\geq$ 29 feet) because they are more likely to have installed and/or portable toilets than small boats, for whose owners the questions might have seemed irrelevant. The final sample size of 1,949 was less than the target sample size of 2,000 because not enough general boater survey respondents owning boats in Class Size C (21 to 28-foot boats) indicated willingness to complete a second survey. Of the 1,949 surveys mailed, thirteen were undeliverable, three were returned and noted as "irrelevant" by the respondents, and two were marked with "respondent deceased," resulting in a final sample size of 1,931 (see Table 1).

The overall response rate, based on the original boat size classification scheme upon which the sample was drawn, was 62%. Within class sizes, the response rates ranged from 58% to 66% (see Table 2).

Table 1. Sample sizes by boat size class.

Boat Size	Original Sample Size	Sample Size Adjusted For Undel/Irrel
< 16'	400	400
16-20'	400	395
21-28'	549	541
≥ 29'	600	595
TOTAL	1,949	1,931

Table 2. Response rates by boat size class.

Boat Size	Response Rate[a]
< 16'	63.0
16-20'	63.0
21-28'	58.0
≥ 29'	66.0
OVERALL	62.0%

a/ Prior to removal of 56 unusable surveys

Before analysis, 56 questionnaires were removed from the database either because the respondent indicated owning multiple boats (rather than the single boat corresponding with the registered boat upon which the sample selection was based) or because some other factor rendered the data unusable. Thus, the final number of usable questionnaires was 1,210. Of this total, the number and percent of the total respondents within each boat class size (before weighting) was as indicated in Table 3.

Table 3. Percent of sample for each boat size class.

Boat Size	Sample Size	Percent [a]
< 16'	254	21.0
16-20'	248	20.5
21-28'	312	25.8
≥ 29'	396	32.7
TOTAL	1,210	100.0

a/ After 56 unusable surveys were removed.

Because there are many more small boats than large boats registered in Michigan, and because the original sampling scheme over-sampled large boats, responses were weighted to more accurately reflect the profile of boats of different sizes in Michigan. Based on the boat size profile weights, the percent of respondents with boats in each class size is listed in column A below. However, because some respondents own more than one boat and completed the information/education/ environmental attitude survey based on a different boat from the one for which they were sampled, an adjustment to the weighted percent had to be made. in Table 4 below, Column B shows the revised weighting for each boat size class which was used for the analysis of survey data.

In this paper, some results will be presented for weighted as well as unweighted data for two reasons: 1) weighted data creates the equivalent of a huge sample size, thus rendering many results apparently significant when they really may not be; and 2) weighting greatly reduces the influence of the larger boat owners during analysis, which may create an erroneous understanding of large boat owners, who comprise the primary sample target group. Responses from large boat owners are important because they are more likely to represent sewage dump and pumpout station use patterns because larger boats are more likely to have portable toilets or installed heads.

Table 4. Weighted sample size for each revised boat size class (used for weighted analysis, though some analysis is conducted with unweighted data).

Boat Size	A Original Boat Size %	B Revised Boat Size %
< 16'	58.5	54.5
17-20'	21.4	25.9
21-28'	15.4	15.8
≥ 29'	4.7	3.8
TOTAL	100.0	100.0

To check for response bias, several variables for the respondents to the information/education/ environmental attitude survey were compared with those of respondents who did not receive this survey (e.g., by boat type, boat class, region of residence, place where boat is kept, and whether or not the boat has any type of toilet on board). Minimal differences exist, and all of them can be explained by the over-sampling of large boat owners for the environmental attitude/information survey. Therefore we can be reasonably confident that no major non-response bias exists across those who responded to the general boater survey.

Scales Used in the Survey Instrument

Environmental Attitude Score. A scale, used previously (Cottrell and Graefe, 1993, 1995; Dunlap and Van Liere, 1978; Noe and Hammitt, 1992) to describe respondents' attitudes with regard to the "new environmental paradigm" (NEP), was modified for use in this study. Due to constraints of survey instrument length, the scale was reduced from 12 to nine items, which has been shown previously to adequately measure environmental attitudes of park users (Noe and Hammitt, 1992; Noe and Snow, 1990). The scale is a five-response Likert scale, with responses ranging from "strongly agree" to "strongly disagree." This scale is the same as that used by Cottrell and Graefe with Chesapeake Bay boaters (1993) and Noe and Hammitt (1992), but is a slight modification of the original scale used by Dunlap and Van Liere (1978), which was a four-response Likert scale not having an "undecided" or "don't know" response option.

Three items in the scale ("plants and animals exist primarily to be used by humans," "mankind was created to rule over the rest of nature," and "humans have the right to modify the natural environment to suit their needs") were reverse coded prior to analysis so the pro-environmental responses would reflect the same end of the scale as for the other items.

Reliability coefficients for entire scale and for three subscales were calculated prior to additional analysis using the environmental attitude score based on the NEP scale items. The overall reliability for the nine-item scale used in this study was alpha = .79 (for unweighted data), which is comparable to the .82 alpha level obtained by Cottrell and Graefe (1993) using the full 12-point scale with Chesapeake Bay boaters. Reliability

coefficients for each of the subscales also were similar to those reported by Cottrell and Graefe (1993), as shown in Table 5.

The greatest discrepancy exists for the "limits to growth" subscale, but this is expected when only two items are in a subscale. (Reliability coefficients for the subscales, based on weighted data, are comparable to those for unweighted data, except for the "limits to growth" subscale, which is .48 for weighted data as compared with .51 for unweighted data.)

An overall NEP score was calculated for each respondent by summing responses to all nine items (using reverse coding for the three items in the "humans over nature" subscale). The range of NEP scores is from 9 - 45, with the median being 27. The higher the overall NEP score, the more pro-environmental the attitudes expressed by the respondent.

Table 5. Results of scale reliability analysis, comparing those of this study's 9-item scale with those of Cottrell and Graefe's (C & G) 12-item scale.

Subscale	Reliability Coefficient* (this study)	Reliability Coefficient (C & G)
Balance of Nature	.76 (4 items)	.72 (4 items)
Humans over Nature	.67 (3 items)	.65 (4 items)
Limits to Growth	.51 (2 items)	.62 (4 items)

a/ * for unweighted data

Knowledge Score. A series of seven questions regarding Great Lakes water quality, laws related to recreation boat sewage disposal, and effects of sewage contamination on water plants, fish and other animals, and humans was used to develop a knowledge score for each respondent. While the specific questions are different, the scale is patterned after a 15-item knowledge score on more general environmental issues developed by Maloney et al. (1975). In this study, for six items respondents could select "true," "false," or "don't know." Correct responses were recoded as correct; incorrect and "don't know" responses were recoded as incorrect. For the seventh item, respondents were asked to indicate their belief about changes in Great Lakes water quality in the past 10 years. "Improved a lot" and "improved a little" were considered accurate responses; all others were considered inaccurate. The knowledge score was obtained by summing the correct responses. (Analyses were conducted using only the first six items, but there were no obvious differences between analyses using six or seven items.)

Sociodemographic Variables. Two sociodemographic variables were used in this study: income and age. Because previous studies repeatedly have indicated high correlations between income and education, it was decided that both variables would not be included in the survey. The five income categories were "under $20,000," "$20,000 - $39,999," "$40,000 - $59,999," "$60,000 - $99,999." and "$100,000 and over."

Respondents were divided into seven age categories, the same as those used by Dunlap and Van Liere (1978): 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, and 75 and more years of age.

Dumping Behavior. Dumping behavior by boaters was used as the dependent variable. Respondents were asked to indicate the number of times during the 1994 boating season they dumped their boat sewage in one of seven places, including at pumpout stations, dumps, in public restrooms, at home or cottage, directly into the water, or at some other place. Based on the assumption that the primary degradation to water quality would be dumping directly into the water, that response originally was intended for use as the "inappropriate or polluting" dumping behavior. However, only a small number of boaters admitted dumping directly in the water (less than 1% of all boaters). With this small a group in the "inappropriate dumping behavior" category, it would be impossible to run any meaningful analyses.

Therefore, an alternative definition was used to classify boaters as "appropriate" or "inappropriate" dumpers of sewage. For this definition, only use of pumpout stations and dumps designed for that purpose are included as "appropriate" behavior. All other dumping actions (whether directly in the water, in public restrooms, at home/cottage, or other places) were considered "inappropriate." This definition focuses the behavior on use of facilities designed specifically for sewage disposal rather than on whether the sewage dumping behavior immediately threatened water quality. However, other negative impacts could result from non-dump/pumpout station dumping. Dumping at places other than directly in the water or at provided facilities could pose the threat of unsanitary conditions for boaters doing the actual dumping or for others using facilities afterward for other purposes (such as using public restrooms), or potential soil and groundwater contamination for sewage spilled during the dumping process. However, caution must be used in interpreting results using this definition.

The percentage of total sewage dumps done appropriately and inappropriately for each boater was calculated. Boaters then were classified in one of three categories: "dumping appropriately 100% of the times they dumped boat sewage," "dumping inappropriately 100% of the times they dumped boat sewage," or "any mix of appropriate and inappropriate sewage dumping." Because 51% of the respondents (unweighted) indicated that they did not dump boat sewage at all (either because they did not have portable or installed heads or because they simply did not use them), the number of responses available for further analysis is restricted. (When data is weighted for actual percent of boats in each size class in the total Michigan recreation boat fleet, the percentage of non-dumpers rises to 85%. This jump probably is due to the much higher percentage of small boats in the fleet, which are less likely to have either installed or portable heads, and which are more likely to take relatively short excursions on the water. Consequently, unweighted data will be used for many of the reported results since they more adequately represent the larger boats, those more likely to be involved with sewage dumping.)

Results

Demographics

As indicated in the general Michigan recreation boating survey, trends show that Michigan boat owners are aging (Stynes, Wu and Mahoney, 1995). In this study, nearly one third of responding boat owners are of retirement age, 65 years and older. Another approximately 60% are of mid-career age (35-64 years). Table 6 shows the respondents by age category. The first column shows ages for the actual sample (unweighted data); the second column shows the expected age category breakdown for all owners of Michigan recreational boats (weighted data). The weighted data places a slightly higher percentage of boat owners in the retirement age categories (≥ 65 years) and the young boater categories (18-34 years).

Table 6. Michigan recreation boat owners by age category.

Age Category	Valid Percent of Sample (unweighted)	Valid Percent MI Boat Owners (weighted)
18 - 24 years	1.2	.6
25 - 34 years	6.4	9.0
35 - 44 years	16.7	19.3
45 - 54 years	26.1	19.5
55 - 64 years	21.6	19.3
65 - 74 years	19.7	21.3
≥ 75 years	8.3	11.0
Young (28 - 34)	7.6	9.6
Mid-career (35 - 64)	64.4	58.1
Retirement Age (≥ 65)	28.0	32.3

a/ Only .4% of responses missing
b/ Total N = 1210

When boat owners in the actual sample are categorized by income, nearly two thirds have an annual household income of at least $40,000 (62.1%). However, when the data is weighted for the actual boat owner profile, that percentage drops to 49.6%. Thus, of all Michigan boat owners, about half earn more than $40,000 per year and about half earn less than $40,000. This shift is due to the much greater number of small boats in the Michigan recreation boat fleet. (Recall that this sample was heavily weighted for owners of large boats, those most likely to be in the higher salary categories.) See Table 7 for complete results.

Table 7. Michigan recreation boat owners by annual household income.

Annual Household Income	Valid Percent of Sample (unweighted)	Valid Percent MI Boat Owners (weighted)
< $20,000	10.3	18.3
$20,000 - $39,999	27.6	32.1
$40,000 - $59,999	24.7	25.6
$60,000 - $99,999	24.3	17.9
≥ $100,000	13.1	6.1
< $40,000	37.9	50.4
> $40,000	62.1	49.6

a/ 6.0% of responses missing
b/ Total N = 1210

Environmental Attitude Score

A single environmental attitude score was calculated by summing the responses to nine items in a Likert scale (New Environmental Paradigm), ranging from "strongly agree" to "strongly disagree." Three items were reverse coded so all items reflected a pro-environmental attitude at the same end of the scale. All responses then were recoded to reflect the same scale as used by other researchers (Cottrell and Graefe, 1993; Dunlap and Van Liere, 1978; Noe and Hammitt, 1992), with the higher scores representing a more pro-environmental attitude. The range of possible scores was from nine to 45. On all but one item, a fairly small percent of respondents answered "don't know" (ranging from 2.7% to 12.8%). The one exception was for the item "we are approaching the limit on the number of people the earth can support." Nearly one fourth (23.7%) of the respondents said they did not know. Overall, a large majority of respondents indicated a pro-environmental attitude as assessed by the modified NEP scale. For the actual sample (unweighted data), 83.3% have a total NEP score greater than the median score of 27. For the weighted data, 86.2% of boaters have a NEP score greater than 27. Calculated for both weighted and unweighted data, approximately one third of respondents exhibit strong pro-environmental attitudes (NEP score greater than 36). See Table 8.

Table 8. Overall NEP scores of Michigan recreational boaters, indicating environmental concern.

Total NEP Score a/ (Σ of 9 items)	Valid Percent of Sample (unweighted)	Valid Percent MI Boat Owners (weighted)
9 - 17	1.3	1.3
18 - 26	12.5	10.9
27 (median)	3.0	1.7
28 - 36	46.0	53.8
37 - 45	37.3	32.4
Anti-environmental (score < 27)	13.8	12.2
Pro-environmental (score > 27)	83.3	86.2

a/ NEP scores can range from 9 to 45; three items were reverse-coded.
b/ Total N = 1210; 6.8% (unweighted) and 5.9% (weighted) of responses were missing.

For responses to each of the nine items of the NEP scale, see Table 9. Results are presented only for the actual survey sample (unweighted data) because differences between weighted and unweighted data were minimal. Items are grouped by the same subscales identified by Cottrell and Graefe (1993).

Knowledge Score

The knowledge score used for analysis was the sum of seven items related to respondents' knowledge about water organisms and the effects of sewage pollution on those organisms as well as humans. Additional items addressed respondents' knowledge of boat sewage dumping laws and the change in Great Lakes water quality over the past 10 years. Responses were coded as "incorrect" if the answers were wrong or the respondents indicated they did not know the answer. Using the seven items,

Table 9. Frequency of responses to individual items of environmental concern based on actual sample (values in valid percent).

NEP Scale Individual Items	Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree	Mean [b]
Balance of Nature						
The balance of nature is very delicate and easily upset.	1.2	12.5	4.4	44.9	37.0	4.04
Mankind is severely abusing the environment.	3.1	17.5	9.2	42.6	27.5	3.74
When humans interfere with nature, it often produces disastrous consequences.	1.9	16.9	5.8	49.2	26.1	3.81
Humans must live in harmony with nature in order to survive.	1.1	3.4	2.7	48.4	44.4	4.32
Humans Over Nature						
Plants and animals exist primarily to be used by humans. [a]	19.8	47.4	8.4	18.8	5.6	3.57
Mankind was created to rule over the rest of nature. [a]	26.9	38.8	12.8	15.7	5.8	3.65
Humans have the right to modify the natural environment to suit their needs. [a]	16.9	41.9	11.3	27.2	2.7	3.43
Limits to Growth						
To maintain a healthy economy, we will have to develop a steady-state economy where industrial growth is controlled.	7.1	23.6	12.8	41.1	15.4	3.34
We are approaching the limit of the number of people the earth can support.	6.6	24.5	23.7	29.9	15.3	3.23

a/ These three items were reverse coded prior to further analysis so that the high end of the scale (scores of 4 and 5) would indicate the pro-environmental attitude.

b/ The mean scores indicated here represent means after the data have been recoded, so the higher the mean the more pro-environmental the attitude.

c/ For each item, the missing data is less than 3%.

d/ N = 1210, unweighted data

the majority (62%) of respondents answered five, six or seven of the items correctly (54% for weighted responses), while less than 4% answered none, one or two correctly (5.5% for weighted responses). See Table 10.

Table 10. Overall knowledge scores of Michigan recreational boaters.

Number of Correct Responses	Valid Percent of Sample (unweighted)	Valid Percent MI Boat Owners (weighted)
0	.1	.2
1	.9	1.4
2	2.7	3.9
3	12.9	16.5
4	21.6	24.4
5	33.4	29.7
6	27.7	23.4
7	.7	.6

a/ Total N = 1210

b/ 3.7% (unweighted) and 5.4% (weighted) of responses missing.

The numbers of correct responses for each knowledge item are indicated in Table 11 (see below).

The statement about sewage contamination making fish sick was the item with which respondents had the most difficulty. This may be due to confusion caused by the modifier "very," which is subjective. Also, it is unclear whether "sewage" is treated or raw sewage, which may further confound this item. The item for which respondents were most correct was that "bacteria from sewage can cause humans to become ill." This issue has been well covered in the press in Michigan and was particularly salient in 1994 when several beaches and water bodies (including Lake St. Claire near Detroit) were closed to swimming due to fecal coliform contamination. While a high percentage of Michigan boaters (92% unweighted / 87% weighted) were aware that it is illegal to dump sewage from portable or installed heads into the Great Lakes, many fewer respondents (54% unweighted / 44% weighted) were aware of federal regulations restricting dumping of boat sewage (i.e., Clean Vessel Act).

Dumping Behavior

The number of times Michigan boaters dumped during the 1994 season ranged from zero to 45 times. The majority, however, did not dump at all. For the actual sample, 51% of respondents did not dump at all. When weighted for owners of boats of varying size categories as represented by the actual Michigan recreational boat fleet (increasing the number of small boats included), the percentage of non-dumpers increased to 85%. Because the unweighted data more accurately reflect dumping behavior of boats more likely to have heads (larger boats), unweighted data will be used for most of the dumping behavior analyses.

Table 11. Overall knowledge scores of Michigan recreational boaters.

Knowledge Item	Valid Percent Correct (unweighted)	Valid Percent Correct (weighted)
Fish are very susceptible to contamination from sewage.	5.7	5.3
Phosphorous and nitrogen from sewage in the water trigger algae blooms which decrease available oxygen for plants and animals.	75.4	74.0
It is illegal for boaters to dump waste from portable toilets or holding tanks into the Great Lakes.	91.5	86.8
Bacteria from sewage can cause humans to become ill.	97.6	97.4
Bacteria from sewage can cause fish and other animals to become ill and, if eaten by humans, can make humans ill.	72.7	74.5
Currently there are no federal laws restricting boaters from dumping sewage into the water.	56.4	44.3
Over the past 10 years, how has the quality of water in the Great Lakes and its tributaries changed (improved, stayed the same, gotten worse, don't know)?	70.2	67.0

a/ Total N = 1210

b/ For all items, both weighted and unweighted, 3% or less of responses are missing.

Only about 4% of respondents did not answer the question. The mean number of times that portable or installed heads were dumped, for those boaters who dumped at least once, was 6.3 (unweighted data). Just over half (52.6%) of boaters who dumped did so four or fewer times. As seen in Table 12, the vast majority of dumping is done by pumping out holding tanks for installed heads at pumpout stations. About one fifth of boaters dump at their homes or cottages.

Table 12. Locations where Michigan recreational boaters dump sewage from portable toilets or installed holding tanks.

Location of Dumping	Valid Percent a/
Pumping out holding tank at pumpout facility	69.9
Dumping portable toilet at pumpout facility	3.4
Dumping portable toilet at dump station	5.1
Dumping in a public restroom facility	6.5
Dumping at home or cottage	20.4
Dumping at some other place	1.2
Dumping directly into the water	1.4

a/ Unweighted data, N = 565

Because so few boaters dumped directly into the water (1.4% of those who dumped at least once), inappropriate behavior was redefined as dumping of sewage at any place other than a dump or pumpout station provided for that purpose. Based on this definition, boaters were classified by those who dumped appropriately 100% of the time, those who dumped inappropriately 100% of the time, and those whose dumping behavior was mixed, with at least one dump being at a provided facility and at least one dump being at some type of alternative location. Of those boaters who dumped at least once during the 1994 season, about three quarters (74%) dumped appropriately (see Table 13). Using weighted data, of those who dumped at least once in 1994, about half dumped 100% appropriately and slightly less than half dumped 100% inappropriately, with about 4% reporting mixed dumping behavior.

Table 13. Sewage dumping behavior of Michigan recreational boaters.

Dumping Behavior	Valid Percent
100% of 1994 boating season dumps occurred at dumps and pumpout stations designed for that purpose	74.0
100% of 1994 boating season dumps occurred at places other than at dumps and pumpout stations designed for that purpose	22.7
Mixed dumping behavior, with some at dumps and pumpout stations and some at other places	3.4

a/ N = 565; unweighted data

Hypothesis Testing

Regression analysis was used to determine the influence of each of the independent variables (environmental attitude, knowledge, age and income) on the dependent variable (dumping behavior).

When "dumping directly in the water" was used as the dependent variable (for all cases, using weighted data), it was negatively correlated with all independent variables except income, which was positively correlated. However, all correlations were extremely weak, as was the R^2s and beta weights for each of the variables. Therefore, this analysis provides no insight. Much of this probably is due to the extremely small number of boaters who "dump directly in the water."

When the alternative definition for inappropriate dumping behavior (anywhere other than dumps and pumpout stations provided for that purpose) was used, dumping behavior was negatively correlated with all independent variables except age category. However, again all the correlations were extremely weak, even though significance levels were indicated at .000. This probably is due to the high theoretical sample size obtained by weighting the data, so relationships probably are not as significant as they appear. The R^2s and beta weights were extremely small. Again, results are not meaningful; there is no explanatory or predictive ability shown for any of the independent variables in the model or for the entire model.

When unweighted data were used and the cases filtered to exclude all those who did not dump at all during 1994, results were slightly different. Dumping behavior (inappropriate) was positively correlated with environmental attitude and age, and is negatively correlated with knowledge score and income. Only the two negatively correlated variables were significant at $p = .05$. Inappropriate dumping was associated with lower knowledge scores ($p = .016$) and lower incomes ($p = .000$).

When the independent variables were entered stepwise into a regression analysis, income and knowledge variables were the only two included, with income accounting for most of the variance. The R^2 for income was .043 and $\beta = -.207$ (significant at $p = .000$). For the knowledge variable, $R^2 = .051$ and $\beta = -.091$, significant at $p = .037$.

Based on these results:

Hypothesis 1 (more positive environmental attitudes will be associated with more appropriate sewage dumping behavior) was rejected;

Hypothesis 2 (higher knowledge scores will be associated with more appropriate sewage dumping behavior) was supported, but weakly;

Hypothesis 3 (age will have no effect on respondents' boat sewage dumping behavior) was supported;

Hypothesis 4 (higher income will be associated with more appropriate dumping behavior) was supported.

Discussion and Recommendations

While three of the four hypotheses were supported (resulting in only income and knowledge being associated with sewage dumping behavior), the primary hypothesis of interest (H_1) regarding the association between environmental attitudes and dumping behavior was not supported. This result is consistent with much previous research that fails to show a strong or consistent direct relationship between attitudes and behavior. Attitudes certainly do not seem to predict behaviors. This may be particularly true when the measured attitudes are rather general (in this case, general attitudes about the environment and human relationships with it) and the behavior variable is highly specific (in this case, appropriate or inappropriate dumping of boat sewage). Other studies (such as reported by Cottrell and Graefe, 1993, who conducted a similar study with Chesapeake Bay boaters) have indicated that behavioral intentions are much more closely associated with actual behavior than attitudes or other antecedent variables. Their research supports the Ajzen and Fishbein (1973, 1980) theory of reasoned action, showing a relationship between behavioral intention and actual behavior even though all components of this theory was not specifically assessed. This study (Michigan recreational boaters), due to its broader scope, different focus, and length, was unable to include behavioral intention variables or some of the other scales, such as measures of general responsible environmental behavior, verbal commitment to environmental actions, and education level, that were included in the Cottrell and Graefe study. Perhaps these variables would have contributed to a better predictive model.

The knowledge score used in this study was developed from a series of actual knowledge items related to the specific behavior variable. This is different from the single-item, self-reported, self-perception score of environmental knowledge used by Cottrell and Graefe (1993). Perhaps the topic-specific consistency between the knowledge variable and behavior variable permitted the level of correlation shown in the analysis.

Despite the association between dumping behavior and two of the independent variables, much of the variance in dumping behavior is not explained by any of the independent variables used in analysis. That would indicate that other factors possibly are having more influence on boaters' dumping behavior. Consistent with the idea presented in Ajzen's theory of planned behavior (1985), boaters' dumping behavior may be influenced by a variety of internal and external factors which may inhibit or change boaters' intended behavior, intentions that might have been more consistent with their general environmental attitudes and knowledge. In this case, factors such as availability of dumps and pumpout stations, convenience of access and use, cost of sewage disposal, location where boats are used and/or kept (on inland or Great Lakes waters), and whether the boats are kept at personal homes/cottages or marinas may have more impact on the actual dumping behavior of boaters. Some of these variables will be analyzed in a future study.

Another confounding factor may be the dependent variable itself. It is possible that boaters may perceive that dumping in public restrooms, at their homes/cottages, or places other than dumps/pumpout stations may be "appropriate." If they are not dumping directly in the water, they may believe they are properly disposing of their sewage, regardless of potential spilling that might leach into ground or surface water, or contamination of non-designated disposal sites. This perception would render the alternate definition, as used in this study, unacceptable. Because too few boaters reported dumping directly into the water, this original definition was rendered impractical as a dependent variable for analysis.

In comparing dumping behavior of Great Lakes boaters with that of boaters in the Chesapeake Bay (or other ocean/gulf waters of the United States), boaters have fewer options for sewage handling; they may not dump any sewage, treated or untreated, anywhere in the Great Lakes. Ocean/gulf water boaters are allowed to have Y-valves on their installed heads and are permitted to dump when offshore at least three miles. Thus, their illegal behavior might include dumping within the three-mile limit, dumping untreated sewage, and dumping in bays, thereby providing a wider range of possibilities for analysis.

It may also be the case that most Michigan boaters simply are not dumping inappropriately or illegally, at least in the Great Lakes. The knowledge scale indicated that nearly 100% of respondents knew that it is illegal to dump in Great Lakes waters. Also, Michigan waters have been designated as no-dump zones since 1987, five years prior to passage of the federal Clean Vessel Act restricting boat sewage dumping across the country. Therefore, it is possible that a higher percentage of Michigan boaters are aware of the legislation. Additionally, since 1987, all Michigan marinas supporting 15 boats or more have been required to provide a pumpout station on-site or to have an agreement for

sewage disposal at a nearby facility. While gaps in availability of sewage disposal sites, especially dump stations, still exist along the 3,200 miles of Great Lakes shoreline (Talhelm and Vander Stoep, 1996), pumpout facilities are readily available in most areas.

The greater problem seems to exist for inland boaters, where marinas are much more scarce and boaters are much more likely to keep their boats at their homes or cottages or trailer to boating sites than on the Great Lakes. Fewer pumpout and dump facilities are located at these sites. Additionally, smaller boats (those less likely to have portable toilets or installed heads) are more likely to be boating on inland waters. As expressed in open-ended questions on the survey and in three focus groups, most boaters (inland and Great Lakes) would prefer to use land-based toilet facilities whenever possible. Boaters keeping boats in marinas or on the water at private homes are likely to have such access. Many other boaters, however, may have limited access to land-based toilet facilities. Yet even this group did not report dumping directly into the water to more than a minimal extent. It is impossible to know whether this is due to lack of or under-reporting, response bias, or reality. Additionally, it would seem that, for these boaters, situational factors such as availability of pumpout facilities would be more influential than attitudes and knowledge in affecting dumping behavior.

In summary, there appears to be no relationship between boaters' environmental attitudes and their sewage disposal behavior, although there is some relationship between their knowledge of sewage impacts on water quality and income with sewage disposal behavior. Further analysis is needed to determine if other identifiable factors are more likely to influence dumping behavior in any regular or predictable manner.

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OYSTER RIVER WATERSHED STUDY: A SUMMARY REPORT

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Abstract: This paper reports the results from a study to collect baseline information necessary to plan and develop programs to abate and prevent nonpoint pollution within the Oyster River Watershed in Coastal New Hampshire.. The information will assist in planning, implementing and evaluating nonpoint pollution control, remediation initiatives and education policies necessary to protect environmental quality, recreation and other amenity values.

Introduction

The Oyster River and adjacent lands are important resources for New Hampshire. Most of the challenges facing the Oyster River Watershed originate directly or indirectly from human activity. Some of these activities adversely affect water quality (i.e., residential and commercial development, road maintenance, lawn care), while other activities (i.e., recreation, tourism, sport fishing) are adversely affected by water quality. Technical solutions to many land use and water quality problems affecting the NH coastal waters are available, but obstacles exist to their implementation. These obstacles include the public's lack of understanding or appreciation of the complexity of water quality problems/land use issues, and local governments lack the fiscal and administrative resources to implement corrective or remedial actions. This is particularly true for nonpoint pollution, where numerous unrelated actions and management decisions have significant impacts on the watershed system. Increased awareness and positive public attitudes will be necessary to control or minimize the impacts of nonpoint pollution.

In response to this need, a preliminary assessment of the "human dimensions" of the Oyster River Watershed was completed by the University of New Hampshire's Department of Resource Economics and Development. This assessment was completed in cooperation with Strafford Regional Planning Commission, local government officials and concerned citizens from watershed communities (Durham, Madbury, Lee, Barrington and Dover). The assessment was completed with support from the UNH College of Life Sciences and Agriculture and the NH Coastal Program.

Study Objectives

The objectives of this research were to collect information on the attitudes, behaviors, knowledge and perceptions of Oyster River Watershed residents in regard to nonpoint pollution. More specifically, the data collected from the project (1) identified perceptions of the magnitude of nonpoint pollution in the watershed; (2) measured awareness and knowledge of the various causes and potential consequences of nonpoint pollution; (3) determined current behaviors with relevance to nonpoint pollution and the use of coastal resources; and (4) determined preferences for various nonpoint pollution management practices.

Description of Study Area

The Oyster River Watershed is located in Southeastern New Hampshire and encompasses the land surrounding the Oyster River, an offshoot of the Great Bay. The entire University of New Hampshire campus and agricultural lands are included in the watershed. Approximately seventy-five percent of the town of Durham is located within the watershed, including the town's water plant which provides its primary source of drinking water. Approximately seventy percent of Lee is within the watershed, including the Lee Traffic Circle and surrounding businesses. The watershed extends to Barrington, including those portions roughly adjacent to Hall Road. Seventy-five percent of Madbury and a small sliver of Dover near Route 108 are also included in the watershed.

Survey Methods

The survey questionnaire was distributed to a stratified random sample of households within the Oyster River Watershed. The sample was stratified in order to adequately represent the residents of the Watershed. The number distributed to each community was based upon the total number of households within the watershed (3262) and their distribution. For example, eighteen percent of the households within the watershed are in the town of Lee so 18% of the completed surveys should be from Lee in order to be representative. The survey was developed with input and suggestions from members of a steering committee composed of local officials and concerned citizens. Surveys were distributed and collected door to door within the watershed. A total of 385 completed surveys were collected for a response rate of 63%.

Profile Of Survey Respondents

Table 1 represents a demographic profile of those individuals who completed the survey. This information provides important estimates of the watershed community makeup. Citizens of the Oyster River Watershed are well educated, informed individuals, who have lived in the community for a relatively long time, with a predominance of single family homes.

Table 1. Summary of demographic information of respondents.

Age	47.9 years(mean)
Gender	56.3% male
	43.7% female
Years in residence	14.6 years (mean)
Type of home	67.1% single family home
	10.1% condominium
	8.7% apartment
	8.1% trailer/mobile home
	6.1% duplex/townhouse
Own/rent	79.6% own their home
Run business from home	9.8%
Registered to vote	88.6%
Employment	70.2% employed
	20.8% retired
Education	24% high school
	37% college
	20% masters
	18% Ph.D. / professional

Table 2 provides summary information on residents behaviors, activities, and household characteristics. The average respondent recycles, uses low phosphate detergents and composts. The primary source of drinking water is from a well on their property with a septic system as the method of waste water disposal. The average respondent has 2.2 bathrooms, 1.7 showers, a dishwasher and a washing machine in their home. Overall membership in specific organizations was only moderate but the majority of respondents participate in both community and volunteer activities.

Results

Community Issues Within the Oyster River Watershed

This section addresses the communities' general concerns with local issues. Table 3 presents the results from a question that asked respondents to indicate the severity of potential community problems (not, small, medium, or serious). Residents were provided a list of 23 community issues. The results to this question are interpreted through an examination of the community issues which received the greatest proportion of responses within each of the categories.

Nonpoint Pollution Issues within the Oyster River Watershed

This section addresses the perceptions of residents and what sources of information are utilized.

Size of nonpoint pollution problem. Figure 1 indicates the percentage of respondents who feel there is a nonpoint pollution problem in the country, state, and town, along with their own drinking water. Residents' perceptions of the size of the nonpoint pollution problem varied based on proximity to their homes (i.e., the closer the issue was to their own drinking water, the less serious they perceived the problem).

In a related question, 50% of respondents disagreed with the statement "the severity of the nonpoint pollution problem in the New Hampshire coastal zone is exaggerated." This suggests that many residents consider there to be a problem in the region.

Table 2. Information on behaviors, activities and household characteristics of Oyster River Watershed residents

Behaviors	
Participate in volunteer activities	84.3%
Participate in community activities	86.0%
Recycle	99.7%
Compost	62.1%
Use low phosphate detergents	90.6%
Test home water quality	49.6%
Household Characteristics	
Primary source of drinking water:	
well on property	45.8%
municipal water	34.6%
bottled water	9.4%
filtered tap water	6.7%
do not know	1.3%
Method of Water Disposal	
public sewer system	40.1%
septic system	51.7%
do not know	8.2%
Number of bathrooms in home	2.2 (mean)
Number of showers in home	1.7 (mean)
Dishwasher in home	74.8%
Average times run per week	3.2 (mean)
Washing machine in home	89.7%
Average times run per week	4.5 (mean)
Activities	
Membership in environmental groups	
Nature Conservancy	12.0%
Society for Protection of NH Forests	8.3%
NH Audubon	5.4%
Sierra Club	3.1%
Friends of Seacoast Science Center	3.1%
NH Lakes Association	1.4%
Strafford Rivers Conservancy	1.1%
Great Bay Conservation Trust	6.0%
NHDES Volunteer River Program	0.3%

Levels of knowledge. Figure 2 illustrates the breakdown of responses in regard to their levels of knowledge. When asked how knowledgeable they are about nonpoint pollution, the majority responded that they were "somewhat knowledgeable" about nonpoint pollution.

Sources of knowledge. The results show that there are several primary sources of nonpoint pollution information. The data indicates 32.2% of respondents receive information on nonpoint pollution from newspaper articles, 13.6% have gained their knowledge from work or other professional experience, and 8.9% gather information from television. Conversations with other individuals and books are also important sources of information for Oyster River Watershed residents. Professional journals and Public Radio are ranked the highest in level of trust of information sources. State and federal government officials prompted the lowest level of trust from the respondents.

Table 3. Challenges Facing Oyster River Watershed Communities

"Serious" problem	
Safe paths for bike riders	27.7%
Lack of support for schools	14.3%
Quality of drinking water	11.1%
"Medium-sized" problem	
Lack of citizen participation in community decision making	35.3%
Safe paths for bike riders	34.0%
Lack of long range community planning	28.0%
"Small-sized" problem	
Litter in streets and parks	58.0%
Repair of local roads	47.9%
Radon	44.8%
"Not" a problem	
Unsightly/smelly garbage dumps	67.8%
Winter snow removal	58.9%
Lack of parks and green space	58.5%

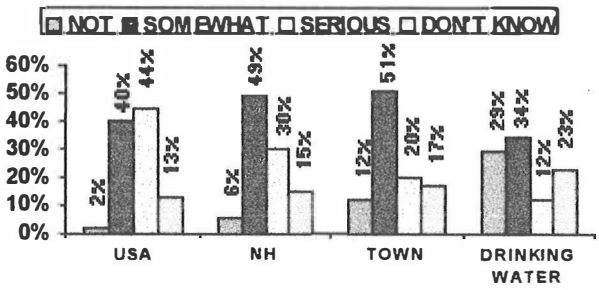


Figure 1: Residents' perception of nonpoint pollution problems

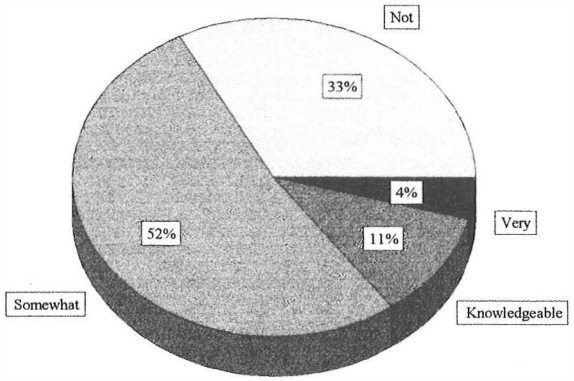


Figure 2: Residents level of knowledge about nonpoint pollution.

The survey itself was an important public education tool. For example, the survey required that 385 residents think about the nonpoint pollution issues in their watershed in answering the questions. In addition, of the persons completing the survey, twenty five percent expressed a need for more information about the nonpoint pollution and related topics.

Residents' perceptions and attitudes are shaped to some extent by these various sources. Town officials need to examine the possible sources for the best avenue for public education. When asked in related attitudinal questions, 59% of respondents feel if there is continual pollution of our lakes, streams and air, nature's processes will purify the system and 82.3% feel they do not need to be concerned about reducing nonpoint pollution because other people are doing so.

Nonpoint Pollution Impacts in the Oyster River Watershed.
This section presents the perceived negative impacts nonpoint pollution can have on a watershed. The sample of residents were asked to indicate their level of concern for potential impacts from nonpoint pollution (not, slightly, concerned, or very). The sample of residents were provided a list of 13 negative impacts of nonpoint pollution. The results to this question are interpreted through an examination of the negative impacts which received the greatest proportion of responses within each of the categories (Table 4). Concerns voiced by residents centered on personal health and safety. This is evident by the top three responses in both the "very concerned" and "concerned" categories. The residents were not as concerned with loss of tourism revenue, diminished property values, and closed shellfish areas.

Table 4: Perceived impacts of nonpoint pollution and residents' level of concern - top three from each response category.

"Very Concerned"	
• Health threats	48.4%
• Chemicals in water	38.3%
• Contaminated drinking water	36.4%
"Concerned"	
• Excess nutrient supplies(algae blooms)	43.7%
• Bacteria in water(swimming warnings)	41.6%
• Contaminated fish and game	39.3%
"Slightly Concerned"	
• Loss of tourism revenues	37.8%
• Diminished property value	33.7%
• Loss of recreational opportunities	31.0%
"Not Concerned"	
• Loss of tourism revenues	31.0%
• Diminished property value	20.9%
• Closed shellfish areas	12.8%

Potential Nonpoint Pollution Sources and Potential Local Contributors.
This section addresses residents' perceptions of local nonpoint pollution contributors and potential sources. The potential local contributors of nonpoint pollution the Oyster River Watershed are numerous. Residents perceived the UNH campus, home septic systems, and automobiles as top contributors in the area.

Residents indicated several which they feel do not contribute to nonpoint pollution within the Oyster River Watershed. The Lee Traffic Circle created the least concern with 14% of respondents feeling it "does not contribute". Industrial parks and commercial agriculture were not considered serious contributors to nonpoint pollution within the Oyster River Watershed.

In a related question, residents were given a list of 32 possible sources of nonpoint pollution and asked to rank the level they think each affects the Oyster River Watershed. Acid rain, oil spills and home septic systems were identified as contributing to nonpoint pollution within the Oyster River Watershed. Logging and timber harvesting, medical waste and mining were not considered contributors by residents of the Oyster River Watershed. Medical waste and mining also had the highest percentage of individuals who responded that they do not know the degree to which the Oyster River Watershed is affected by these potential sources.

Septic Systems

This section addresses the issue of septic system maintenance and responsibility. Septic system users. Fifty percent of survey respondents have septic systems. Of the respondents who have septic systems, 93.1% know the location of the septic system. The average year of installation for the septic systems in the Oyster River Watershed was 1980.

The use and maintenance of these systems was identified as a potential nonpoint source by survey respondents, therefore the actual maintenance practices of those with systems are of interest. Septic system owners, for the most part, are willing to take responsibility for maintenance. When asked for an acceptable cost sharing scheme between homeowner, town, county, state and federal, to finance the upgrade or replacement of the system, on the average homeowners felt a cost sharing scheme of 63.3% for homeowners, with the remaining distributed between various levels of government. Seventy-seven percent of respondents felt homeowners should carry all of the cost associated with upgrading and/or replacing septic systems.

When asked what would motivate them to regularly maintain their septic system, 51.7% of respondents stated they already maintain their system. Figure 3 demonstrates how often residents check the level of sludge and scum in their septic system. Other motivations favored by respondents include: to avoid having to replace the system (52%), a property tax discount (35%), and more information (31%). Regulations were thought to be the least effective method of motivation (13%), as were cash coupons (20%).

Impact Behaviors and Conservation Behaviors.

This section addresses resident behaviors which lead to potential nonpoint pollution , as well as conservation behaviors.

Watershed resident behaviors. Many individual behaviors will impact the extent that nonpoint pollution impacts water quality in an area. There are a number of behaviors that need to be monitored or controlled to prevent misuse and subsequent pollution. For example, twenty-seven percent of respondents use salt on their driveways "sometimes", "often" or "very often". When it comes to outdoor maintenance, 35% apply lawn chemicals or fertilizer, 22% apply garden pesticides or chemicals, 50% water their lawn and 61% water their gardens. A vast majority (93%) of the respondents felt that every person is responsible for protecting the quality of the natural environment.

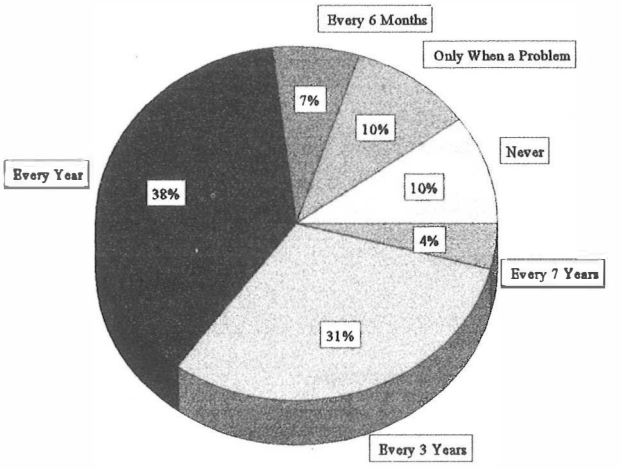


Figure 3: How often residents check the sludge and scum in their septic systems

Conservation behaviors. Only 12% of residents feel voluntary measures are adequate in controlling nonpoint pollution. This is reflected in the voluntary conservation behaviors of residents. The conservation measures currently being utilized in the Oyster River Watershed include the installation of low flow showerheads (55.6%), watering lawns less often (51.8%), stopping running water while shaving (48.2%), and washing cars less often (44.2%). The conservation measures least practiced in the Oyster River Watershed include recycling grey water onto gardens (6.4%), installing low flow taps (12.3%), and turning off the shower while soaping (16.1%). When asked about possible conservation solutions, 75% feel effective long range solutions to environmental problems depend upon changing lifestyles to fit nature.

Conclusions

This research provides insights into the characteristics, behaviors and knowledge of watershed residents. Oyster River Watershed residents are, for the most part, highly educated and are open to gaining more information on what they can do to contribute to local issues. Any state or local policies mandating abatement of nonpoint pollution should include mechanisms to insure compliance and to promote teamwork between the units of government and the respective communities. The approach should foster cooperation and cohesion between communities within the watershed. More specifically this research suggests:

- Eighty percent of residents feel lack of participation in community decision making is a problem in their community. It is important to involve the residents of the Oyster River Watershed as much as possible in the process

of creating and enforcing a nonpoint pollution program. Residents realize that some changes in lifestyle are necessary. Therefore, the solution to protecting the Oyster River Watershed rests on the responsible and active participation of the people living within the watershed.

- A faucet aerator is a simple device which costs less than $4 and can be installed on kitchen and bathroom faucets to save on water use. Aerators cut use by as much as 280 gallons a month for a typical family of 4. Although the flow is reduced, it seems stronger because air is mixed with the water as it leaves the tap. Only 12% of responding households have installed any type of low flow taps; if 50% of respondents, 193 households, installed them it would result in roughly 635,250 gallons of water saved every year.

- Homeowners use up to ten times more toxic chemicals per acre than farmers. Sixty percent of responding households in the Oyster River Watershed have used lawn chemicals at least one time. If even 10% of lawn-owners used organic pesticides, it would remove 2.5 to 5 millions pounds of toxic chemicals from the environment every year.

- Each time a toilet flushes it uses 5-7 gallons of water. This amount can be reduced by 15%-40% by installing a plastic bottle, displacement bag or toilet dam in the toilet tank. In the Oyster River Watershed 23% of respondents have installed some type of low flow toilets. If the average toilet is flushed about 8 times a day, that means a saving of 8-16 gallons every day....2,900-5,800 gallons a year per household, for 50% of respondents, 193 households, that means a savings of 559,700-1,119,400 gallons a year.

Septic systems are perceived as a primary contributor to nonpoint pollution. Based on this research, 87% of system owners feel more regulations would not motivate them to maintain their system, while avoiding replacing the system (53%) and more information(32%) would provide motivation

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Forest Planning

COLLABORATIVE PLANNING AND THE USDA FOREST SERVICE: LAND MANAGER PERSPECTIVES

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Abstract: The natural resource profession is at a watershed moment regarding how it will handle citizen participation and resolving conflicts in land management policy and decision making. The purpose of this paper is to describe a survey of Forest Service employees examining how participatory or collaborative methods are being implemented at the forest level and to explore those managers' perceptions regarding the future application of collaborative methods. This study presents results from nearly every national forest in the country. It overwhelmingly shows strong support for collaborative planning with forest staff personnel, particularly those most likely to work with the public. Collaborative planning appears to be well integrated into day-to-day management and decision making. It is used for a variety of purposes, the most frequent being to resolve conflicts and develop a shared vision of future resource conditions. Collaborative planning appears to be an investment in the Forest Services' future. By building partnerships, networks, and trust with the publics it serves, the Forest Service has found a powerful key to accomplishing its mission of caring for the land and serving people.

Introduction

The natural resource profession is at a watershed moment regarding how it will handle citizen participation and resolving conflicts in land management policy and decision making. A number of external and internal forces have driven the profession to this moment (Selin and Chavez, 1995). Increasingly, resource managers face a crisis of control as natural resource disputes are resolved by Congress or in the courts. The authority of resource management agencies is challenged by the emerging county supremacy movement. Government downsizing creates a climate of fiscal stress for all public resource management agencies. And, perhaps most importantly, the American people--owners of the vast federal estate--are debating the role of these lands and the appropriate balance between commodity production and preservation of ecological values.

These forces have combined to create a turbulent social and political landscape where, either voluntarily or induced by public pressure, public land management agencies are experimenting with a number of new approaches to involving the public in natural resource policy and allocation decisions. While citizen participation in national forest management is mandated by the National Environmental Policy Act of 1970, the Forest and Rangeland Renewable Resources Planning Act of 1974, and the National Forest Management Act of 1976, traditionalists believe that forest managers replete with specialized training and agency mandates should assume primary control over natural resource decisions (Wellman and Tipple, 1990). However, this traditional view is being assaulted on many fronts. Increasingly, citizen groups are exercising their legal right to participate fully in natural resource policy-making and management decisions. And, resource managers are realizing that participatory approaches to involving the public may be their best and only chance to influence the direction of natural resource policy and management plans.

Much of the work on how participatory or collaborative methods have been incorporated into natural resource management has been anecdotal. Reports from the field have described "bridging activities" (Wondolleck and Yaffee, 1994) or innovative cases such as the Yellowstone Coalition (Lichtman and Clark, 1994) or the Montezuma County Federal Lands Program (Preston, 1995), often touting how these approaches might be applied in other resource settings. What has been lacking is a systematic examination of how these methods are being implemented across the national forest system. Therefore, the purpose of this paper is to describe a survey of Forest Service employees examining how participatory or collaborative methods are being implemented at the forest level and to explore those managers' perceptions regarding the future application of collaborative methods.

Defining Collaborative Planning

Collaborative planning was the umbrella term used in the study to describe these participatory approaches to public involvement. More specifically, collaborative planning was explained to study participants as a, "collective process for resolving conflicts and advancing shared visions involving a set of diverse stakeholders" (Gray, 1989). Respondents were told that collaborative planning was characterized by face-to-face dialogue, mutual learning, and voluntary participation. Examples provided included task forces, coalitions, advisory groups, and partnerships. Collaborative planning, so defined, pulls together related work on transactive planning (Ashor, McCool, and Stokes, 1986), open decision making (Sirmon, Shands, and Liggett, 1993), and comanagement models (Rao and Geisler, 1990). By linking these participatory approaches under the umbrella of collaborative planning, a more integrated approach can be taken to the redesign of traditional public involvement methods.

Study Methods

The population for this study on collaborative planning in national forest planning and management were the 155 national forests of the national forest system managed by the USDA Forest Service. In total, 115 Forest Service employees, representing all 155 national forests, were contacted by telephone and asked to participate in the study (Some managers contacted

represented more than one national forest such as the National Forests in Alabama). The names of the Forest Service personnel contacted were obtained by an initial telephone call to the Public Affairs Officer (PAO) responsible for each national forest. The PAOs were asked for the name of one person with the "most knowledge or experience" with collaborative planning on their forest. The purpose and scope of the study was explained to the potential respondents in order to verify their experience and proceed with the interview. In cases where the potential respondent was not interviewed (e.g., unavailable), an alternate was contacted. Of the 115 managers asked to participate in the study, 113 consented to being interviewed for a response rate of 98 percent. The five page questionnaire included a number of items that varied from Likert scales to open-ended questions. The questionnaire included items pertaining to the following issues: Respondent's job title; extent of participation in collaborative planning; benefits; constraints; level of support; suggested policy and organizational changes; and the future role of collaborative planning.

Profile of Respondents

The 113 Forest Service employees participating in the study represented all 10 Forest Service regions and 153 national forests. Table 1 shows the breakdown of job titles represented in the study.

Table 1. Profile of respondents.

Job title	n	%
Forest Planner	66	58.4
PAO's	22	19.5
Resource Staff Officer	5	4.4
Ecosystem Team Leader	4	3.5
NEPA Coordinator	3	2.7
Other	13	11.5

A majority of respondents (58.4%) identified themselves as planners and another 19.5 percent were Public Affairs Officers for various national forests. It is notable that when referred to the most knowledgeable or experienced in collaborative planning on the forest, the final sample was dominated by staff rather than line officers. In fact, only three line officers participated in the study, two District Rangers and a Forest Supervisor.

Participation in Collaborative Planning

Overall, respondents indicated that collaborative planning was being integrated into national forest planning and management. When asked whether their national forest had engaged in collaborative planning, almost all (91.2%) indicated that their National Forest had or is presently engaged in collaborative planning activities. Common reasons given for lack of participation included the expressed need for training, lack of supervisor support, lack of resources or incentives, and concerns over violating the Federal Advisory Committee Act (FACA).

Respondents were also asked what issues had been addressed through collaborative planning approaches. Findings presented in Table 2 reveal several key points.

They suggest that collaborative planning has already been well integrated into national forest management's day-to-day activities at the forest level. Collaborative planning approaches are being used most widely to resolve conflicts and advance a shared vision of future resource conditions. General comments from this section also indicate that collaborative planning is regularly employed in project level planning and management. According to one manager, collaborative planning is used, "in coordinating day-to-day resource management activities with adjacent landowners." Finally, these findings suggest that collaborative planning has not yet been fully integrated into the formal forest planning process.

Table 2. Application of collaborative planning within National Forest System.

Item	%
Resolving conflicts	76.1
Goal setting	74.3
Allocating forest resources	69.0
Scoping procedures	67.3
Formal forest planning process	61.9
Monitoring forest uses	48.7

Managers were also asked through a series of questions to indicate the level of support within the Forest Service for collaborative planning. These results are shown in Table 3 and confirm the high level of support found for collaborative planning in study respondents, primarily staff officers at the forest level.

Table 3. Perceived level of support for collaborative planning.

Item	$\bar{X}$
Personally support	6.75
Forest supervisor support	5.77
Regional support	5.19
Washington Office support	4.54

a/ Item measured on a seven point Likert scale from 1; don't support at all to 7; strongly support.

However, perceived support was seen as dropping off through the Agency ranks from the Forest Supervisor, to the Regional, and Washington Office levels. While the survey questions do not suggest the reason for this drop off in the perceived level of support, several comments provide insight into this underlying sentiment. One manager commented, "I see a lot of collaborative planning material on the Data General and publications, but little support for implementation and training offered at the Regional and Washington level."

Benefits of Collaborative Planning

Another focus of the study was to determine the range of benefits managers attribute to collaborative forms of planning. Table 4 presents these findings.

Many of the expressed benefits focused upon communication issues or constituency building. Others emphasized practical outcomes such as reducing appeals and lawsuits. One common thread to emerge from respondent comments was the assertion that the actual process of collaborative planning and the intangible benefits resulting from it may outweigh the more tangible benefits associated with it. As one planner aptly put it, "The indirect benefits--the partnerships, networks, trust, and

information sharing--is more beneficial than the actual collaborative planning effort itself."

Table 4. Perceived benefits of collaborative planning.

Item	$\bar{X}$
Better understanding of alternative forest values	4.54
Improved communications	4.51
Establishes informal networks	4.48
Builds sense of forest ownership	4.16
Improved cooperation	4.12
More political support for agency	3.89
Decreased polarization	3.45

a/ Items measured on five point Likert scale from 1; strongly disagree to 5; strongly agree.

Barriers to Collaborative Planning

The study also examined managers' expressed concerns about collaborative planning and perceived barriers to its full integration into national forest planning and management. These findings are presented in Table 5.

Table 5. Perceived barriers to collaborative planning.

Item	$\bar{X}$
CP initiatives constrained by personal agendas	4.00
FACA constrains application of CP	3.76
CP lacks full support of line officers	3.39
CP initiatives become too politicized	3.25
CP is an inefficient method	2.82
Little incentive for USFS managers	2.40
CP requires too much time and effort	2.30
Lead to decreased federal authority	2.10
Little public support for CP	2.00

a/ Items measured on five point Likert scale from 1; strongly disagree to 5; strongly agree.

Not surprising from earlier results, the constraints of FACA and lack of line officer support were seen as barriers to fully integrating collaborative planning. Also, the danger of collaborative forums being sidetracked by personal agendas and becoming politicized was raised. Beyond these concerns, managers tended to disagree with statements that there was little incentive for Forest Service managers, that collaborative planning required too much time and effort, that collaborative planning would lead to decreased federal authority, and that there was little public support for collaborative forms of planning. One theme to emerge from the comments was the sentiment that the biggest barrier to integrating collaborative planning was the Forest Service organization itself--the institutionalized funding, rewards, and policy structures that constrain the adoption of collaborative methods.

Suggested Policy and Organizational Changes

A key question in the study asked respondents to identify changes needed to more fully integrate collaborative planning into National Forest planning and management. A summary of these suggestions is presented in Table 6.

Managers were clearly frustrated with constraints on collaborative initiatives imposed by the Federal Advisory Committee Act (FACA). In fact, if the change FACA and eliminate FACA items are combined, over 53 percent of those managers interviewed had grave reservations about FACA. Many of the related comments stressed building more flexibility into the act, allowing the Forest Service to convene advisory meetings without requiring the meeting to be open to "everyone." A common concern voiced by several managers was that FACA limits collaborative forums to information gathering and mutual learning activities, where the real potential lies in forums for consensus building and developing alternatives.

Table 6. Suggested policy and organizational changes.

Suggested Changes	n	%
Change FACA	53	46.9
More flexibility	27	23.9
Integrate into all existing rules and regs	14	12.4
More training	8	7.1
Allow Forest Service to convene groups	12	10.6
Eliminate FACA	5	4.4
No change	5	4.4
Forest Service retains final decision	4	3.6

There was also general sentiment among respondents that provisions for collaborative planning be more completely integrated into policy and procedure guidelines for NEPA, NFMA, and the RPA. A number of managers voiced a concern that many advocacy organizations lack an incentive to participate in collaborative forums, preferring to achieve their objectives through litigation and appeals. According to one planner, "Presently, there is no political mechanism to force people to sit down; we have to create a process sanctioned by the legislature that when an agreement is reached there can be no end runs." Another controversial subject among managers interviewed was the degree of control that should be retained by the Forest Service over final decisions. Most managers were skeptical of collaborative forums where decision-making is shared and power is equally distributed among the participating stakeholders. Most preferred viewing collaborative planning as an advisory function where the Forest Service retains primary control over final decisions.

Finally, a question was asked regarding the future role of collaborative planning in national forest planning and management. Seventy-seven percent of respondents felt collaborative planning will play a larger role in the future, 10.6 percent felt the role would stay about the same, and only 2.7 percent indicated the role of collaborative planning would decrease. General comments reveal that while most managers realize collaborative planning approaches are not a panacea and must be selectively applied, most agree with the planner who relates, "It's not a matter of whether collaborative planning will be used, but only how." Clarke and Stankey (1994) expressed these same concerns in analyzing the FEMAT's social assessment, " We must fashion responsive decisionmaking structures built around a core of participative management. Failure to do so will lead to a loss of professional influence" (p. 35).

Conclusions

This study presents results from nearly every national forest in the country. It overwhelmingly shows strong support for collaborative planning with forest staff personnel, particularly those most likely to work with the public. Using their experience and perceptions, one can draw several conclusions about collaborative planning in the Forest Service. Two of the major conclusions are discussed here.

Collaborative planning appears to be well integrated into day-to-day management and decision making. It is used for a variety of purposes, the most frequent being to resolve conflicts and develop a shared vision of future resource conditions. These purposes lend themselves equally well to the long-term strategic forest planning process. The majority of national forests are in some stage of revising their forest plan. It is, therefore, critical that the lessons learned about collaborative planning be transferred into this realm.

If collaborative planning is to reach its full potential as a citizen participation and conflict resolution tool, several barriers need to be addressed. While it is difficult to imagine the Agency effecting the external changes identified by respondents (e.g., changing FACA), it is within the Forest Services' control to evaluate the internal barriers identified. First, the perception that collaborative planning is not supported by line officers at all levels of the organization, with support decreasing the further one gets from on-the-ground management, bears further examination. If this is a misperception on the part of survey respondents, then simple clarification of support is all that is necessary. However, if ambiguous messages are being sent to those attempting collaborative planning, or if there is outright resistance to it, this must be dealt with in a more thorough manner.

Second, if collaborative planning is to be done at all, it must be done well. Those involved in it must approach it in the same professional manner that the Forest Service approaches all its responsibilities. This requires training. Methods for providing training in a cost effective manner and recognition of the importance of this training (by line officers in particular) is critical to successfully implementing collaborative planning. Related to the first two barriers, the Forest Service must look critically at any institutional barriers that inhibit or prevent the use of collaborative planning. Are employees not rewarded for innovations? Or worse, do they risk being penalized for innovations that do not go smoothly? Do budget practices or agency culture constrain interactions with citizens? Finally, all Forest Service employees, including those currently engaged in collaborative planning, must ask themselves what they hope to accomplish by using this process. If managers wish to retain primary control over final decisions and use outcomes from collaborative planning activities in an advisory capacity, is this truly collaborative planning?

In summary, it is apparent from the results of our study that collaborative planning is here to stay in the Forest Service. Nearly all personnel surveyed felt that it was likely to play an ever increasing role in Agency policy and management activities. Collaborative planning appears to be an investment in the Forest Services' future. By building partnerships, networks, and trust with the publics it serves, the Forest Service has found a powerful key to accomplishing its mission of caring for the land and serving people.

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NATIONAL FOREST PLANNING: ASSESSING PUBLIC PREFERENCES FOR RECREATION STRATEGIES

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Abstract: Conjoint techniques were used to assess and analyze public preferences associated with multiple-objective decisions involving timber harvesting, wildlife habitats, and three recreational opportunities: hiking, snowmobile use, and all-terrain-vehicle access on the Green Mountain National Forest in Vermont. The empirical results obtained from focus groups composed mostly of USDA Forest Service personnel illustrate the survey design and analytical capabilities.

Introduction

Increasing demand for outdoor recreation on national forests coincides with a growing appetite for wood products as well as an increased ecological awareness that recognizes the need to preserve biodiversity, fish and wildlife habitats, scenic beauty, and other ecological values. The role of forests in enhancing the biological, economic, and spiritual quality of our lives makes their management and use of great social concern.

In making decisions that allocate resources to meet recreation, commodity, and ecological objectives, national forest managers and planners must consider public values and preferences. Because such desires vary widely and cannot be met simultaneously, a means of assessing relative values and acceptable tradeoffs is needed. This research explores the use of conjoint analysis to solicit and analyze public preferences associated with multiple-objective decisions on the use of our national forests.

The empirical portion of this study addresses the solicitation and assessment of public preferences for various levels of timber harvesting, wildlife habitats, and three recreational opportunities: hiking, snowmobile use, and all-terrain-vehicle (ATV) access, on the Green Mountain National Forest (GMNF) in Vermont. Although the public involvement phase of the study is underway, focus groups composed mostly of research and support staff at the Northeastern Forest Experiment Station and GMNF were assembled to test survey techniques. The empirical results of these focus groups illustrate the survey design and analytical capabilities. However, they should not be construed as representing public preferences.

Analytical Technique

Marketing researchers use conjoint techniques, which are designed to measure psychological judgments, to measure consumer preferences (Green et al. 1988). In conjoint studies, respondents choose between alternate products or scenarios that display varying levels of selected attributes. These comparative evaluations, which outline a respondent's preferences or the tradeoffs he or she is willing to make, can be used to solve for the partial utilities for each attribute that are imputed from the overall tradeoffs. These partial utilities can be combined to estimate relative preference for any combination of attribute levels. Thus, the analyst obtains high leverage between the options actually evaluated by respondents and those that can be evaluated after the analyses.

Conjoint techniques are well suited for soliciting and analyzing the preferences of stakeholders in environmental decisions that frequently involve tradeoffs between costs and benefits that are not efficiently represented in market transactions. Asking respondents to make choices between alternatives mimics the real choices that managers must make and, can provide feedback to stakeholders with respect to the consequences of their choices. For example, Opaluch et al. (1993) described an approach that used paired comparisons to rank potential noxious facility sites in terms of social impacts.

Choice experiments can be designed and analyzed in many ways. Respondents may be asked to reveal their preferences by choosing one of two or more options, ranking several options, or assigning numerical ratings to each option. Numerical ratings provide the most information but also place the greatest cognitive demands on respondents. Green (1974), Green and Srinivasan (1978), Louviere and Woodworth (1983), and Louviere (1988) provide information on experimental design within the context of conjoint analysis.

The Green Mountain National Forest

The 360,000-acre GMNF comprises approximately 5% of the total land area and half of all public forest land in Vermont (USDA, For. Serv. 1992). Because of its remoteness and relatively large size, the GMNF provides unique opportunities for backcountry recreation and wildlife habitats in a region characterized by nonindustrial private forests and high population density. Public desires for forest related benefits are intense and cannot always be met simultaneously, so a means of assessing preferences and values must be incorporated into the planning process.

National forest planning occurs on three broad levels: national, regional, and forest. The Forest Plan for the GMNF (USDA, For. Serv. 1992) sets goals, objectives, standards, and guidelines that fit within broader direction specified at the national and regional levels. Forest goals are accomplished through management actions that occur on Ranger Districts and subunits of these districts. Although public input and assessment of human values are important throughout the planning process, this study addresses public preferences for actions that occur below the district level. Techniques and experience developed during this study will be useful in developing broader goals for the next Forest Plan.

The 18,600-acre study area located on the Manchester Ranger District includes two adjacent units known as Greendale and Utley. The area contains one developed campground (14 sites) and land classified in the Forest Plan as Management Area's (MA) 2.1, 3.1, 4.1, 6.2, and 8.1. The first three listed MA's include opportunities for roaded natural recreation and emphasize uneven-age silviculture (2.1), even-age silviculture (3.1), and

winter deer habitat (4.1). MA 6.2 emphasizes opportunities for semiprimitive recreation while producing high-quality sawtimber by growing trees to an old age. MA 8.1 is the White Rocks National Recreation Area where the emphasis is on protecting wild values. Timber harvesting and roaded recreation are permitted, but restricted. Broad management prescriptions, standards, and guidelines are contained in the Forest Plan. Specific management actions need to be developed for the Greendale and Utley units. The goal of this research is to develop a procedure for assessment and analysis of public preferences and acceptable tradeoffs for various levels of timber harvesting, wildlife habitats, and three recreational opportunities: hiking trails, snowmobile use, and ATV access.

Timber harvesting on the GMNF is controversial. Some publics argue against the environmental disturbance that accompanies the harvesting of wood products. However, proponents argue that harvesting timber generates revenue for local and regional economies through the creation of jobs and cash payments for wood products exported from the area. It also is used to meet objectives related to wildlife habitat, silviculture, and recreation.

The Greendale/Utley area supports a high species richness with a diverse late successional community of northern hardwoods, hemlock, and spruce. There are opportunities to enhance habitats for a variety of wildlife species through harvesting practices, and the creation and maintenance of permanent openings, but it is not clear which species the public would like to see favored. If the public prefers species associated with early succession habitats, then management can be tailored to meet these needs. Similarly, management can be structured to favor species associated with mature, contiguous habitats.

Recreational concerns center around opportunities for and potential conflicts between motorized and nonmotorized trail uses. There are opportunities to feature cultural resources (e.g., old roads, bridges, and farm sites) and to view wildlife (sightings of bear, moose, beaver, and birds are common). There are several opportunities to expand the system of hiking trails. Currently, 16 miles of travelway are available for snowmobile use, and there is public interest in expanding the available travelway. However, some users are concerned that increased snowmobile access will disrupt other recreational activities and disturb wildlife. ATVs are not permitted on travelways, but there is public interest in obtaining ATV access to the area and several potential opportunities have been identified. Those in opposition cite ecological damage and disturbances to wildlife or other recreationists as reasons to deny ATV access.

Survey Design

A conjoint ranking survey was designed to solicit preferences for five forest-related attributes: timber, wildlife habitat, hiking trails, snowmobile use, and ATV access. Three levels covering the range of reasonable alternatives for the Greendale and Utley units were selected for each attribute (Table 1). Eighteen alternatives, each depicting a unique bundle of attribute levels, were chosen using an orthogonal design that allows estimation of all linear and quadratic main-effect components as well as the interactive effect of the timber and wildlife attributes, over the entire range of possible attribute combinations, with the least number of trials (Addelman 1962a, b).

Table 1. Choice attributes and levels.

TIMBER
1 Do not harvest timber
2 Harvest timber on 5-10% of the planning area
3 Harvest timber on 20-25% of the planning area
WILDLIFE
1 Favor wildlife preferring contiguous unbroken forests
2 Favor wildlife preferring a mix of young forests and contiguous unbroken forests
3 Favor wildlife preferring open lands and young forests
HIKING TRAILS
1 Maintain existing hiking opportunities
2 Extend the hiking trail system to include 2 additional miles
3 Extend the hiking trail system to include 6 additional miles
WINTER MOTORIZED
1 Do not permit snowmobile use
2 Maintain existing 16 miles of travelway for snowmobile use
3 Extend the travelway available for snowmobile use to 23 miles
SUMMER MOTORIZED (e.g. ATV's, motorized trail bikes)
1 Do not permit ATV's on travelways
2 Provide approximately 5 miles of travelway for ATV use
3 Provide approximately 8 miles of travelway for ATV use

The survey was designed to be presented during public meetings conducted by USDA Forest Service personnel. The initial focus groups were gathered to determine the suitability of the survey instrument. They were given an explanation describing concerns and alternatives for the Greendale/Utley area and an overview of the nature and purpose of the conjoint study. To familiarize respondents with the ranking task, a practice survey was presented. Respondents were asked to imagine that they were considering the purchase of a new vehicle and to rank in overall preference nine hypothetical vehicles possessing varying levels of five attributes: gas mileage, horsepower, cargo space, length of warranty, and country where the vehicle was manufactured. After this task was completed, respondents were provided with a brief verbal explanation of the attributes and levels depicted in Table 1 and given the opportunity to ask questions. Additional information, such as expected volume of timber harvests for each level of the timber attribute and lists of species favored for each level of the wildlife attribute, was provided. Forest Service personnel were available to respond to questions concerning any of the attributes or levels. Respondents then ranked 18 sample cards, each depicting a unique bundle of forest-related attributes for the Greendale/Utley area. Two of the 18 sample cards are shown in Table 2. Respondents also completed a series of attitudinal and demographic questions.

Empirical Analysis

An ordered probit model was used to analyze data obtained from 30 respondents participating in focus groups assembled to test survey techniques. See Dennis (in press) for a detailed discussion of the underlying theoretical and statistical models. Each

Table 2. Two illustrative sample cards.

Alternative #8	*Alternative #14*
Harvest timber on 20-25% of the planning area	Harvest timber on 5-10% of the planning area
Favor wildlife preferring a mix of young forests and contiguous unbroken forests	Favor wildlife preferring a mix of young forests and contiguous unbroken forests
Extend the hiking trail system to include 6 additional miles of trails	Extend the hiking trail system to include 6 additional miles of trails
Maintain the existing 16 miles of travelway available for snowmobile use	Do not permit snowmobile use
Do not permit ATV's on travelways	Provide approximately 5 miles of travelway for ATV use
RANK ___	RANK ___

respondent ranked 18 alternatives, providing 540 observed preferences. Selected results of this empirical test are shown in Table 3. The dependent variable is the ordinal ranking of the alternatives, coded from 0 to 17; higher scores being associated with greater utility. Following the orthogonal survey design, attribute levels (1, 2, 3 in Table 1) for the independent variables were coded, respectively, -1, 0, 1 for the linear form, and 1, -2, 1 for the quadratic form. Because these data are used only for illustrative purposes, detailed analyses and validation of the model are not undertaken.

Table 3. Ordered probit results (N=540).

Variable	Linear effect	Quadratic effect
Constant	+**	
Timber	+**	-**
Wildlife	+	-**
Hiking trails	+	-
Snowmobile	-*	-*
ATV access	-**	-

** Significant at 1% level.
* Significant at 5% level.

General inferences about the preferences of the focus-group respondents can be made from the results in Table 3. Only the signs of the estimated coefficients and significance levels are provided due to the illustrative nature of the data. The positive sign estimated for the timber attribute indicates that increased levels of timber harvesting will result in a higher estimated probability of a response score falling within the ranges associated with higher utility. Therefore, higher preference and greater utility were associated with increased levels of timber harvesting. However, the significance of the quadratic timber variable indicates nonlinearity in the relationship. The nature of the overall relationship will depend on the signs and relative magnitudes of the estimated coefficients. The estimated negative sign for the quadratic timber variable indicates that there are decreasing marginal benefits associated with increased harvesting. Additional information on the nature of this relationship is provided by examining the relative magnitudes of the estimated linear and quadratic effects, as discussed below.

The estimated negative signs for the variables representing snowmobile and ATV access indicate that respondent's preferred lower levels of these activities. The coefficients for the linear form of the wildlife variable and both the linear and quadratic forms of the hiking trail variable were not significantly different from zero. However, the significance (1% level) of the quadratic form of the wildlife variable indicates nonlinearity. It appears that respondents favored a mix of young and contiguous unbroken forests over either extreme. Discussions with members of the focus groups revealed that wildlife habitat was important, and many respondents addressed their preferences for habitat manipulation by weighting timber harvesting heavily in their ranking of the alternatives. The estimated coefficient for a variable expressing the interaction of the timber and wildlife attributes was not significantly different from zero and dropped from the model.

Interpretation of the coefficients for the polychotomous probit model is complicated. The estimated probability that a response will fall within each of the ranges is determined by the estimated coefficients and levels of the associated variables. Because the probabilities across the ranges must sum to 1, the effect of a unit change in an independent variable is to increase the estimated probability that an alternative will fall within some ranges while decreasing the probability of falling within others. The magnitude of the estimated changes in probabilities depends on the values for all the coefficients as well as the values of the other independent variables at which the change is evaluated. The expected change in the probability of an alternative falling within any of the ranges resulting from a discrete change in an independent variable can be calculated. For example, varying the timber attribute over levels 1, 2, and 3 while holding the other attribute levels constant at the mean values yields increases in the estimated probability that this alternative will be ranked highest of 0.007, 0.034, and 0.041, respectively. The probability of it being ranked lowest was 0.114, 0.032, and 0.027, respectively, for the three levels of timber harvesting. The greatest magnitude of change occurs between levels 1 and 2, illustrating the decreasing marginal benefits of timber harvesting discussed previously. Similar calculations can be performed for any change in individual attributes or combinations of attributes that is of interest to the analyst. For example, one could calculate the estimated probability that a given alternative would be ranked within the highest or lowest quintile.

Summary

Resource managers need a means to solicit and analyze human preferences and values. Conjoint techniques are well suited for coping with this task. A conjoint ranking survey was designed

for use in soliciting public preferences for various levels of timber harvesting, wildlife habitats, hiking trails, snowmobile use, and ATV access on the GMNF. The survey was tested on focus groups composed mostly of research and support staff at the Northeastern Forest Experiment Station and GMNF. No significant problems were identified by the focus groups.

An ordered probit model was used to estimate linear and quadratic main effect components from the empirical information collected during the focus group meetings. Although the results do not represent public preferences, they illustrate the analytical capabilities. The results indicate a preference for higher levels of timber harvesting and that there are decreasing marginal benefits associated with additional harvest. Lower levels of snowmobile and ATV access were preferred, while respondents appeared to be indifferent toward varying levels of hiking trails. The quadratic effect was particularly useful in explaining preferences toward wildlife habitats. Respondents appeared to prefer a mixture of young and contiguous unbroken forests over either extreme for wildlife habitat. Several respondents indicated that wildlife habitat was an important attribute but also recognized that the diversity they desired would be achieved by higher levels of timber harvesting. Public preferences will be solicited during upcoming public involvement meetings. Additional work will include estimation of the effects of socioeconomic variables on preferences.

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CONCEPTUAL RELATIONSHIPS BETWEEN IMPACT PARAMETERS OF SOCIAL CARRYING CAPACITY AND THE RECREATION OPPORTUNITY SPECTRUM

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Abstract: The purpose of this study is to establish conceptual relationships between impact parameters of social carrying capacity and the ROS. Findings suggest social carrying capacity has low acceptable social norms for primitive recreational settings, while the social norms increase as you move to more urban recreational settings. There is a negative relationship between density and encounter norms for primitive recreational settings, while there is a positive relationship for more urban recreational settings.

Introduction

Tastes in outdoor recreation among the public are diverse (Manning 1985). The tastes can be changed depending on physical characteristics, social attributes, and management goals. The need for diversity has led to classification systems for recreation areas such as the Recreation Opportunity Spectrum (ROS). The ROS is based on the idea that there is a continuum of opportunity (Driver and Brown 1978), which is defined by six factors: access; other non-recreational resource uses; on site management; social interaction; acceptability of visitor impacts; and acceptable level of regimentation (Clark and Stankey 1979). These factors are combined in alternative arrangements to describe diverse recreation experiences. The distinguishing characteristic of the ROS is the degree to which it has been formalized and translated into management guidelines (Manning 1985).

Driver, Brown, and Stankey (1987) identified further research needed to explain the relationships among activities, settings, and experiences in the ROS framework. Natural variations such as topography, vegetation patterns, and management actions can greatly influence the actual level of contact among people. The number of people, the perceived crowding, visitor satisfaction, and how they are distributed in space and time are important elements in determining the appropriate social carrying capacities along the opportunity spectrum. Appropriate levels of interaction can vary along the ROS.

Many studies have focused on density, perceived crowding, and visitor satisfaction in recreation settings. Few studies about the relationships between perceived crowding/visitor satisfaction and use level have been researched in light of the ROS. The purpose of this study is to review the relationships between important impact parameters related to social carrying capacity, and to establish conceptual relationships between impact parameters and the ROS.

Relationship Between Social Setting and Physical Setting

As one moves from primitive to modern settings, the physical environment becomes progressively less natural and smaller, whereas user concentrations become progressively higher. This implies that there is a direct relationship between the physical environment's naturalness and the social environment's user density. Such a direct relationship can be described as being linear (Brown, Driver, and McConnell 1978; and Driver and Brown 1978). To test the direct relationship, Heywood, Christensen, and Stankey (1991) collected data from campers in seven developed campgrounds during the late summer 1989 camping season. They found that there are multiple linear and non-linear relationships between biophysical and social setting conditions.

Heywood (1991) studied the subjective user responses to the objective ROS setting categories for easy-access car campers during the summer 1989 and 1990 camping seasons. He used three similar formats to measure the biophysical, social, and managerial setting preferences. He considered the relations between subjective perceptions of ideal natural conditions (five categories; primitive, nature dominant, nature modified, nature highly modified, and modern), and ideal social density (five categories; continually meet others, frequently meet others, occasionally meet others, meet few others, and meet no one). Analysis of the data showed that multiple linear and non-linear relationships are present in the campers ratings of ideal naturalness and social density.

In conclusion, there seem to be some conceptual relationships between the physical setting and social setting, though the relationships are not based on the results of empirical studies, nor are they simple.

Relationship Between Use/Encounter Level and Physical Setting

The efforts to define social norms suggest that there are many ways normative factors enter into crowding problems. In Jackson's returned potential model, personal norms refer to individual standards, while social norms refer to collective standards. The range of tolerable contacts defines the scope of acceptable encounter levels, intensity shows how strongly norms are held, and crystallization is a measure of group agreement.

The relationship between encounter level and physical setting can be found in the studies of three rivers: Grand Canyon (Colorado River), Rogue River, and Brule River (Shelby 1981). River encounters per day in Grand Canyon averaged 0.9 at wilderness setting, 2.4 at semi-wilderness setting, and 4.0 at undeveloped recreation setting. River encounter norm the crystallization, was

2.4 at wilderness setting, 3.0 at semi-wilderness setting, and 5.1 at undeveloped recreation setting. As one moved from the primitive to the undeveloped setting, the river encounters per day and crystallization increased. This trend emerged with the same pattern for the Rogue River and Illinois River except for crystallization in the Illinois River study. In the study of the Rogue River, river encounters per day were 1.5 at wilderness setting, 2.9 at semi-wilderness setting, and 4.4 at undeveloped recreation setting; crystallization was 3.3 at wilderness setting, 4.5 at semi-wilderness setting, and 7.5 at undeveloped recreation setting. In the Illinois River study, encounters per day were 0.7 at wilderness setting, 2.0 at semi-wilderness setting, and 2.7 at undeveloped recreation setting; crystallization was 2.3 at wilderness setting, 2.9 at semi-wilderness setting, and 2.8 at undeveloped recreation setting.

In Whittaker and Shelby's research (1988) about the Deschutes River in Oregon, the relationship between encounter level and physical setting was found. In their research, river encounters (observed to median) were 1.8 at the lower use and development level setting, and 2.2 at the highest use and development level setting. Crystallization of river encounters was 0.85 at the lower use and development level setting, and 1.08 at the highest use and development setting. Camp encounters were 1.4 at the lower use and development level setting, and 1.9 at the highest use and development setting. Crystallization of camp encounters was 1.13 at the lower use and development level setting, and 1.26 at the highest use and development level setting.

In Roggenbuck, Williams, Bange, and Dean's research (1991) for the presence of norms for encounters with other groups at New River Gorge National River in West Virginia, the acceptable number of boats was estimated. In their research, a wilderness whitewater trip was defined as "a trip through a scenic gorge with little evidence of man, many opportunities for solitude, and chance for challenge and for you to battle the waves." A scenic whitewater trip was "a trip through a scenic gorge with some evidence of man, fewer opportunities for solitude, and guidance when running wild rapids." A social recreation trip was "a trip on a scenic river with much evidence of man, exciting rapids, and seeing other people on the river makes the trip more fun." Fifty percent of respondents would accept 5 boats for a wilderness whitewater trip, 15 for a scenic whitewater trip, and 25 for a social recreation trip. Seventy-five percent of respondents would accept the followings: acceptable number of boats was 2 for a wilderness whitewater trip, 8 for a scenic whitewater trip, and 10 for a social recreation trip. Crystallization was 12.3 for the wilderness whitewater trip, 21.6 for the scenic whitewater trip, and 34.5 for the social recreation trip.

The relationship between use level and recreation places also appeared in Manning and Ciali's study (1981). Manning and Ciali's study also focused on rivers, and closely defined the resource base of which rivers are comprised. They examined if there were differences in the nature and intensity of recreation use by six river types. The first variable examined was the number of recreation users found on each river type. The number of users on each river type was divided by the number of miles of stream in each river type to determine use intensity. This factor is similar to the density concept. Results showed that there was great diversity in the intensity of recreation use by river type. Use intensity is least on the primitive torrent river type (0.5) and greatest on the urban meander river type (32.1). These results can be used to induce the relationship between use level/encounter level and the ROS. Use level and the ROS have a positive relationship. This implies that use levels are low in primitive recreation settings, while moving into more urban recreation settings, the use level increases. Visitors' perception of each recreation setting was considered in terms of relationship between use level and the ROS. Encounter norms reflect the visitor perception of the recreation settings. Visitors seem to prefer little evidence of people and many opportunities for solitude at primitive recreation settings, while they seem to accept much more evidence of people, and sociable activities in more modern settings. Visitors' perceptions of each recreation setting were not considered in Manning and Ciali's study, because recreation intensity just included the concept of density. With these results, it is impossible to find whether use level and the ROS show a linear or non-linear relationship. Only simple relationships between use level and the ROS can be induced from these results.

Relationship Between Crowding/Satisfaction and Use Level, and Physical Settings

Crowding refers specifically to numbers of people, so it is at least potentially a better evaluative standard than satisfaction (Shelby and Heberlein 1986). Though crowding and satisfaction have a negative and statistically significant relationship, the correlations are generally quite small. Crowding plays a demonstrable but small role in satisfaction with recreation experiences. As one of the purposes of this paper is to find the relationships between impact parameters and recreation settings, satisfaction was considered despite little correlation with crowding.

In Manning and Ciali's study (1981), one of the clearest differences found between river types concerned *desired use density* levels, that is, social carrying capacity. Manning and Ciali included in the survey questionnaire a series of questions that asked each respondent to rate on a scale of 0 (least satisfied) to 10 (most satisfied) how satisfied they would be in encountering various numbers of other recreation users. In their research results, users of the primitive torrent river type were highly sensitive to density with satisfaction falling from 8.3 to 1.2 as the number of users increases from 0 to 5. Users of the village meander river type showed considerable tolerance for crowding as satisfaction remained constant through 10 other users, and remains above 1 on the satisfaction scale even at a use level of 150. The urban meander river type showed a convex curve. This results can be used to induce the relationship between visitor satisfaction and use level in light of the ROS. Satisfaction and use level have a negative/positive relationship at a recreation setting. This implies that visitor satisfaction is great when use level is low in primitive settings. As use level is increasing, satisfaction is decreasing. This negative relationship is more sensitive in primitive recreation settings. Moving into more urban recreation settings, the relationship seems to change to a positive one, because those who visit the urban recreation setting are more tolerant of use levels.

As to moving into urban recreation settings, there seems to be a threshold for social norms (I. e., satisfaction, perceived crowding). In Manning and Ciali's study, the urban meander river type seems to have a threshold – as use levels increase, visitor satisfaction increases to a point; then as user level increases more, visitor satisfaction decreases. This view corresponds to previous research. In previous studies, it was suggested that the relationship between amount of use and user satisfaction is a curvilinear relationship (Nielsen, Shelby, and Haas 1977). Though the results of Manning and Ciali's study did not show the threshold for any river type except the urban meander river type, it is possible to make the supposition that each recreation setting has a threshold to tolerate visitor satisfaction and use level to a point. As recreation settings become more urban, tolerance is greater. Similar results also can be derived from the Jackson's return potential model to describe the hypothetical encounter preference curves for wilderness hiking, a cocktail party in a small room, and walking on a city sidewalk (Heberlein and Shelby 1986). The range of tolerable contacts was zero to five contact for the wilderness hiking experience; five to twenty-five for the cocktail party; fifty-four to two hundred and fifty for the sidewalk. Tolerance may be regarded as the range of tolerable contacts and threshold may be regarded as the neutral line in Jackson's model. From the some studies, it may be possible to explain theoretically that there is a negative relationship between social norms and use level in primitive recreation settings because visitors' tolerance is very low. The relationships become positive for urban recreation settings to a point because visitors' tolerance is high.

Conceptual Relationship between Impact Parameters of Social Carrying Capacity and the ROS

There seems to be some relationships between impact parameters of social carrying capacity and various recreation settings. In previous research, it was found that the relationships are not simple ones, but multiple ones or non-linear ones in relation to the ROS. As to reviewing previous studies, some findings were explored to establish the relationships between impact parameters and the ROS. The following are some relationships between impact parameters:

1) Crowding and density have a positive relationship, but density is not very powerful to predict crowding responses.

2) Most of the pertinent articles found no relationship between actual density and satisfaction. But there is at least some relationship between visitors satisfaction and crowding, based on the traditional crowding model, though some investigations in backcountry and wilderness found no relationship between satisfaction and crowding.

3) Use level and preferences for contacts (crowding) have a negative relationship in backcountry and wilderness.

4) There seem to be some conceptual relationships between physical setting and social setting. These seem not to be simple relationships but to be multiple relationships or non-linear relationships in terms of the recreation opportunity spectrum.

5) Use/encounter level and recreation settings of the ROS can take a linear or non-linear relationship.

6) Satisfaction and use level have a negative relationship at a recreation setting. This negative relationship is more sensitive in a primitive recreation setting; while moving into more urban recreation settings, the tolerance of this relationship becomes greater.

Based on previous findings, conceptual relationships between impact parameters of social carrying capacity and the ROS were established. The following are the basic concepts of these relationships:

1) Use level and the recreation settings of the ROS have a positive linear or non-linear relationship (Figure 1).

2) Use level (number of encounter) and social norms (e.g., perceived crowding) have a positive/negative linear/curvilinear relationship in light of recreation settings of the ROS (Figure 2). These have negative relationships close to primitive recreation settings and positive relationships close to urban recreation settings. Social norms have low tolerance in a primitive setting, and higher tolerance when moving toward an urban setting. These relationships have thresholds–the social norm increases to a point, then as use level increases more, the social norm decreases. The thresholds may or may not exist for primitive settings, while these appear more clearly close to urban settings. The relationships imply that those who visit primitive recreation settings are sensitive to increasing use levels, while those who visit urban recreation settings have much more tolerance to increasing use level. This means social carrying capacity has a low acceptable social norm close to primitive recreation settings, while it has a high acceptable social norm close to urban recreation settings.

Implications/Limitations

Social carrying capacity requires a value judgment. When defining a carrying capacity, sometimes two aspects must be considered: visitor satisfaction and environment impact. Social norms such as crowding, number of encounters, and satisfaction (though sometimes inappropriate) are used to measure visitor satisfaction. Environmental impact includes natural resource deterioration such as visible erosion, loss of ground cover, and area of bare ground. The ROS has been employed as an efficient management framework in outdoor recreation management. The ROS is a conceptual framework for encouraging diversity in outdoor recreation opportunities (Manning 1985). In wilderness recreation it is important to consider what classes of recreation opportunities are being provided in an area, whether several classes can be provided, and how these classes should be distributed on the ground (Hammitt and Cole 1987). Conceptually, toward the primitive end of the ROS, recreation impacts are less acceptable, and management objectives are more likely to stress low-impact conditions.

Regarding the relationships between impact parameters of social carrying capacity and the ROS, it is possible for park managers to establish reasonable standards or social norms as a tool of park management. The relationships are different depending on

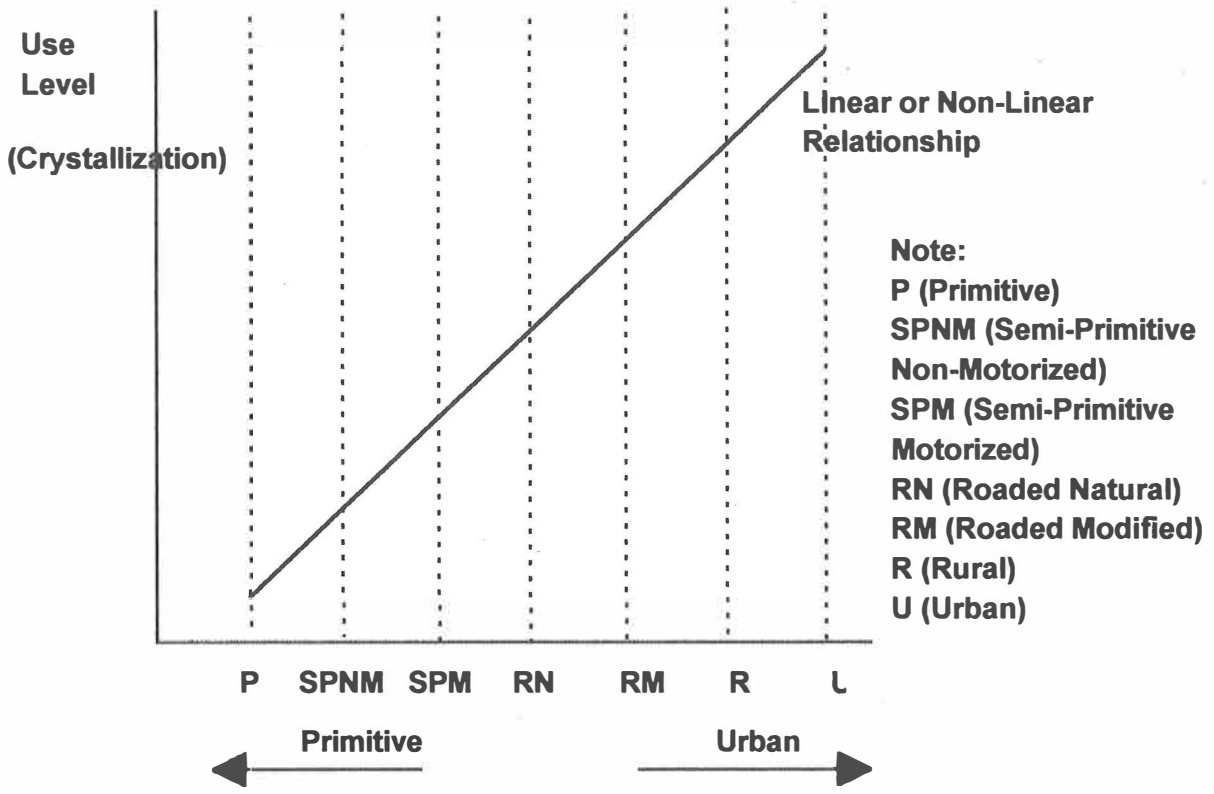


Figure 1. Conceptual relationships between use level and recreation settings

classes of the ROS; for example, the relationships between social norms and the primitive settings are negative, while the relationships between social norms and urban settings are positive to a point. Additionally, the social-psychological behavior of the recreationist is considered in deriving these relationships; that is, those who visit primitive settings have low tolerance while those who visit urban settings have high tolerance.

Few studies have been done about relationships between impact parameters and the ROS. To make matters worse, there is no study about urban/rural recreation settings of ROS; most studies have focused on wilderness recreation settings. Further research in more diverse settings is needed to verify the relationships suggested in this paper.

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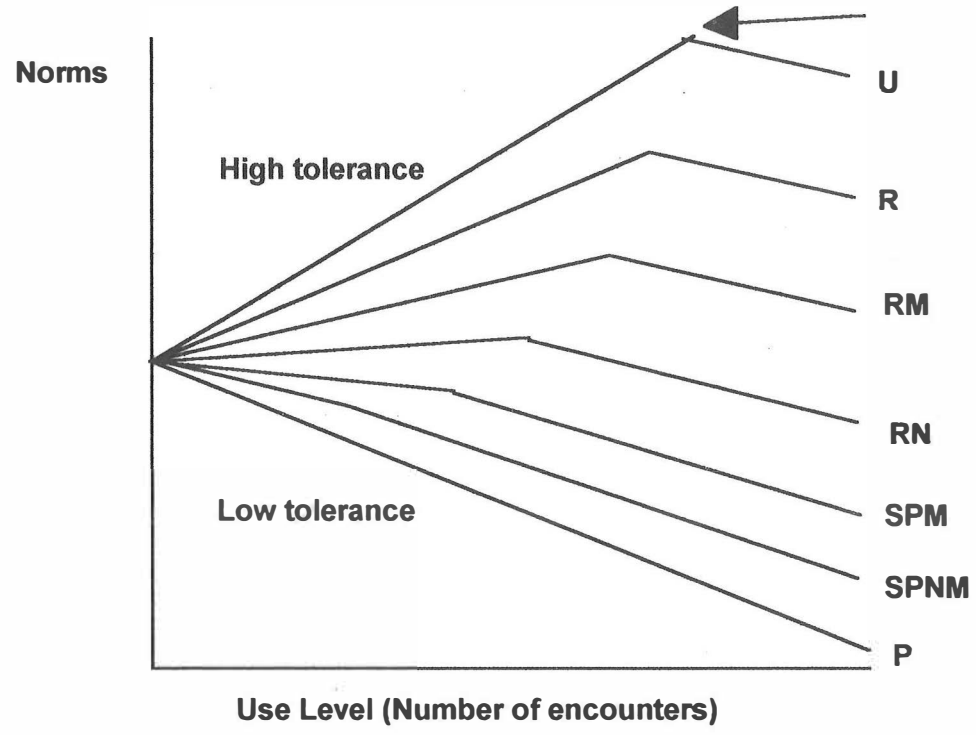


Figure 2. Conceptual relationships between norms and use level in the ROS

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Featured Speech By Jay Beaman

Recreation Research Past, Future and Critical Relationships with Management That Influence the Direction and Success of Research: Views From "Outside" After More Than 2 Decades in A Federal Agency

Jay Beaman, Ph.D.

Adjunct Professor Colorado State, Lakehead & University of Waterloo; Auctor Consulting Associates, Ltd.

Introduction

What follows is not the exact text of the "featured speech" but an adaptation of the speech for the NERR Proceedings. There was an introductory statement to the presentation in which NERR was thanked for inviting the presentation and in which Jerry Vaske, Maureen Donnelly, Alan Graefe, Tom More and Orin Layman were thanked for having fostered NERR thus providing the opportunities that it has for research to be presented and for researchers and managers to meet. The presenter used overheads and had numerous props to add life to the presentation. This paper incorporates much of the overhead material into the text.

This text uses the first person in places because it, in my view, preserves some of the flavor of being a presentation. What is included in it is based on my speech notes but does not generally follow the same order. Points have been consolidated and reorganized. Some material omitted in the presentation has been included. However, I believe that this text and the presentation cover the same ground and present the same message. I provide very few references since as one can see by the Stanley, Perron and Beaman 1996 discussion of "Parks Canada's Economic and Business Models" hundreds of references could be provided. Beaman and Meis (1987) is a discussion that complements this one. There one finds references to a variety of literature.

A Perspective on Research and Its Application to Planning and Management

Having been trained in physics (BA & started Ph.D.), mathematics (MA), statistics (MA Thesis & courses) and Sociology (Ph.D.), I bring a particular approach to leisure research. Figure 1 identifies areas of concern to me. I have no use for the claim that something is justified by its benefits (re benefits see Driver, Brown and Peterson 1991) unless those benefits are measurable in a meaningful way. Qualitative research certainly has value. However, *justification* should mean something. α is justified because it has one benefit and β has none is a quantitative statement. α is justified because of its benefits exceed those of β is meaningless if benefits can't be measured. α is justified because of its benefits is a statement that raises questions. Is everything that offers the benefits that α does justified? Why not? Unfortunately, much that now passes for justification is not. Bureaucrats and politicians are following marketers in describing programs as optimal and themselves as encouraging efficiency when the benefits of services are neither compared nor measured. The words are meaningless without measurement.

The quotation from R. A. Fisher in Figure 1 actually recognizes two points. Even with a growing emphasis on the distinction between concept and observable variables (Hayduk 1987), importance, performance, substitutability, benefit, remain poorly conceptualized (Beaman 1976; Vaske, Beaman, Stanley and Grenier 1996; Mannell and Stynes 1991). If one does not have a really clear idea of what something is, it is no surprise that one does not measure it accurately or use it (e.g., attendance) in a consistent way. Still, not measuring, not being able to measure, is a good excuse to keep planning and management in the verbal and advocacy arena. In that milieu status, prestige, aggressiveness and power are key to getting things done. Research, on the other hand, sometimes requires people to recognize reality. Yes, numbers are misused but the alternative is decisions based on personal preferences, power, personality, eloquence, etc.



I guess that my abhorrence of bureaucratic game playing, lying and verbal gymnastics is why evaluation in a very traditional and rigorous version (Theobald 1979) has been an important part of how I addressed problems. I don't mean formal evaluation, I mean building evaluation into planning and management so that costly problems are recognized and corrected. However, I'm led to believe that evaluation isn't too popular. Bill Theobald assures me that his book sold as many copies as his family bought. We do not like having our pretentious claims for use of facilities, education of the public, etc. examined rigorously. Making claims to get resources is fine. Too often the next exercise is seeing that the discrepancy between plan and achievement does not become a public or bureaucratic issue. Of course, we avoid such problems

most easily by not defining measurable objectives. We deal with values and intangibles. Furthermore our managers "don't understand" so professional judgment is "key." Sometimes it is convenient not to understand. Sometimes we can manipulate managers by seeing that they do not understand. I accept Brent Ritchie's view provided in Figure 1. Addressing a problem in the detail and with the rigor that its theoretical or practical importance justifies, does cause communication and other problems. So does addressing problems simplistically or incorrectly.

I used to cringe when, as part of my job, I had to listen to planners, managers, and researchers talk about knowing their users (or their potential market, market or public) and then have them give average age and other demographic parameters. Is most of the use of a park by visitors from Canada if 60% of the *person visits* are from Canada? Or, if 60% of the *person visit days* are from the USA, is most of the use from the USA (see Beaman and Redekop, 1990)? Regardless, if planners and managers who know their clients and who require data ±5% do not know, some don't care, if they get visits or person visit days, there is a problem. Still, for planning and management I have long seen a more serious problem in that users and potential users were not broken down to segments with different needs and wants as part of analysis for planning and management.

I have a long standing concern with segmentation (Leicester and Beaman 1964 and 1976; Beaman 1976; Beaman and Lindsay 1975; Vaske, Beaman, Stanley and Grenier 1996). People who do not recognize the significance of identifying segments look at average figures on satisfaction, performance and other survey variables. But, these averages are not appropriate information for decisions. Why wouldn't averages be appropriate? Well, look at Figure 2 (Beaman and Vaske 1995) which depicts the attitudes of several user groups. Most of us know that many recreational areas are used by groups that seek different benefits, that have conflicting values, that favor different development options and that displace each other based on how what they want is influenced by planning and management. An average across such groups, failing to consider that they exist, can show that planning and management options should be pursued that are contrary to the interest of all groups. ROS and other systems offer one way to recognize the needs of different groups. The ultimate way is to recognize the groups, their values and to plan knowing how the groups are going to be impacted on. Public participation and other processes can then seek plans in which optimizing benefits really means something.

Aspects of the Link Between Research, Planning and Management

The last paragraph may sound impractical. Many people are only aware of my methodological work. However, I spent most of more than two decades with Parks Canada being very practical. In the early 1970's I started pushing planners, managers and researches to recognize segments and the implications of their existence for what they said they wanted to achieve: optimal experiences, satisfaction, effectiveness (i.e., see Beaman and Lindsay 1975). These people were preparing or reviewing plans and projects. Some of us controlled approval of the dollar resources for work so review was taken seriously. I measure part of my success while with Parks Canada in improvements that I saw in using research. I also measure it in the tens of millions of dollars of projects that never saw the light of day because when people tried to show their merits they couldn't. I am also proud that there were hundreds of projects that were improved by constructive dialogue, often outside the review process as colleagues.

I (me and my staff) prepared formal directives on research in support of planning and management. There were also less formal criteria that I circulated in the early 1980's for socioeconomic review of Parks Canada's plans and capital projects. I believe that these show a concern with knowing the "business" of Parks and doing research/analysis to see that this is properly reflected in what is done. The points covered below are paraphrased form a 1980 note from Beaman to relevant Parks Canada staff that included 20+ professional socioeconomic researchers and 40+ planners, a 100 or so managers and 30+ research support staff. The criteria are as relevant now as then. What applied researchers are being asked to do/check provides a partial definition of their needs and a template for theoretical research needed to support them. I just asked that in reviewing people use substantiation or in preparing submissions for review, the submission be examined in relation to the following:

- There should not be an appeal to standards as the basis for writing off capital and/or for creating new high-priced alternatives.

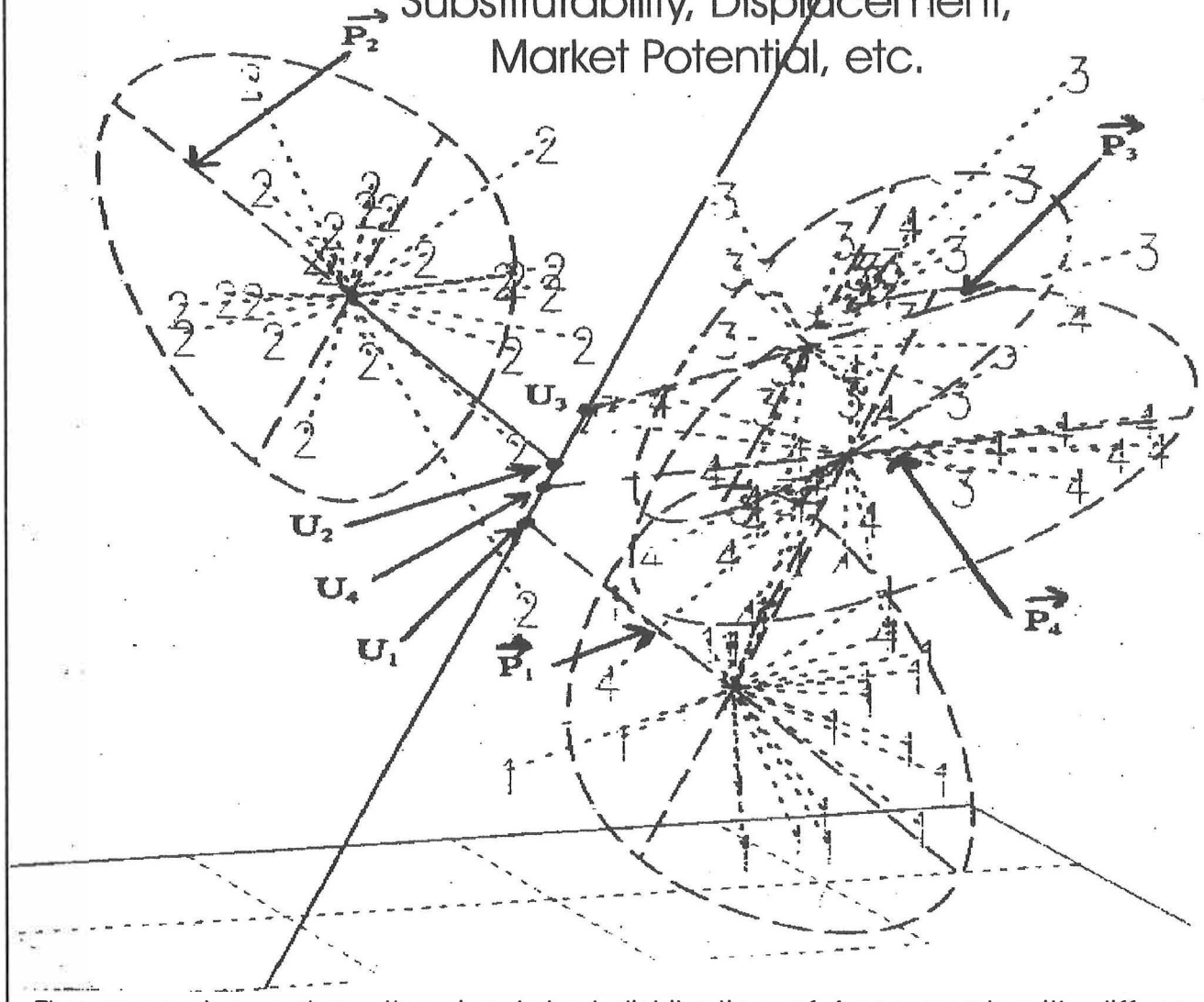
It is my position that standards are not the justification for something but, as implied in Figure 3, they are a point of reference. The more that they are specific to a segment with homogeneous behavior the more readily one can use them in planning and evaluation. ROS gives a way of describing a resource. It provides a useful starting point for research. The problem comes when there isn't *research* but rather "ROS experiences" are attributed to users of an area with a given classification and the "hypothetical experiences" of "hypothetical users" become the basis for a real plan. The *bottom line* that researchers must address for planners and managers is what is being achieved for whom at what total and unit costs. In some sense, in most societies, the rightness of the "price" and of who is served is resolved politically.

- There must be a clear indication of people objectives (who will be served, a segment definition, why and some clear indication that success can be measured).

Unless a project proponent can say who is to be served and how there is a problem! *The project has not been adequately supported by research!* Again, when I know that a park serves repeat local visitors on the weekends and also for some family holidays; and that it serves a variety of non local special interest and general tourist markets, I expect *research-based* quantitative statements about the existence of these and how they are being served to be part of a plan. Figure 4 presents a situation that I saw all too often. It's great to say we listen, we care and we serve. I to often saw that we also do what we want and spend money trying to convince publics that it is what they or most publics want! This is not to say that managers should do what some

Figure 2: Segment Structure:

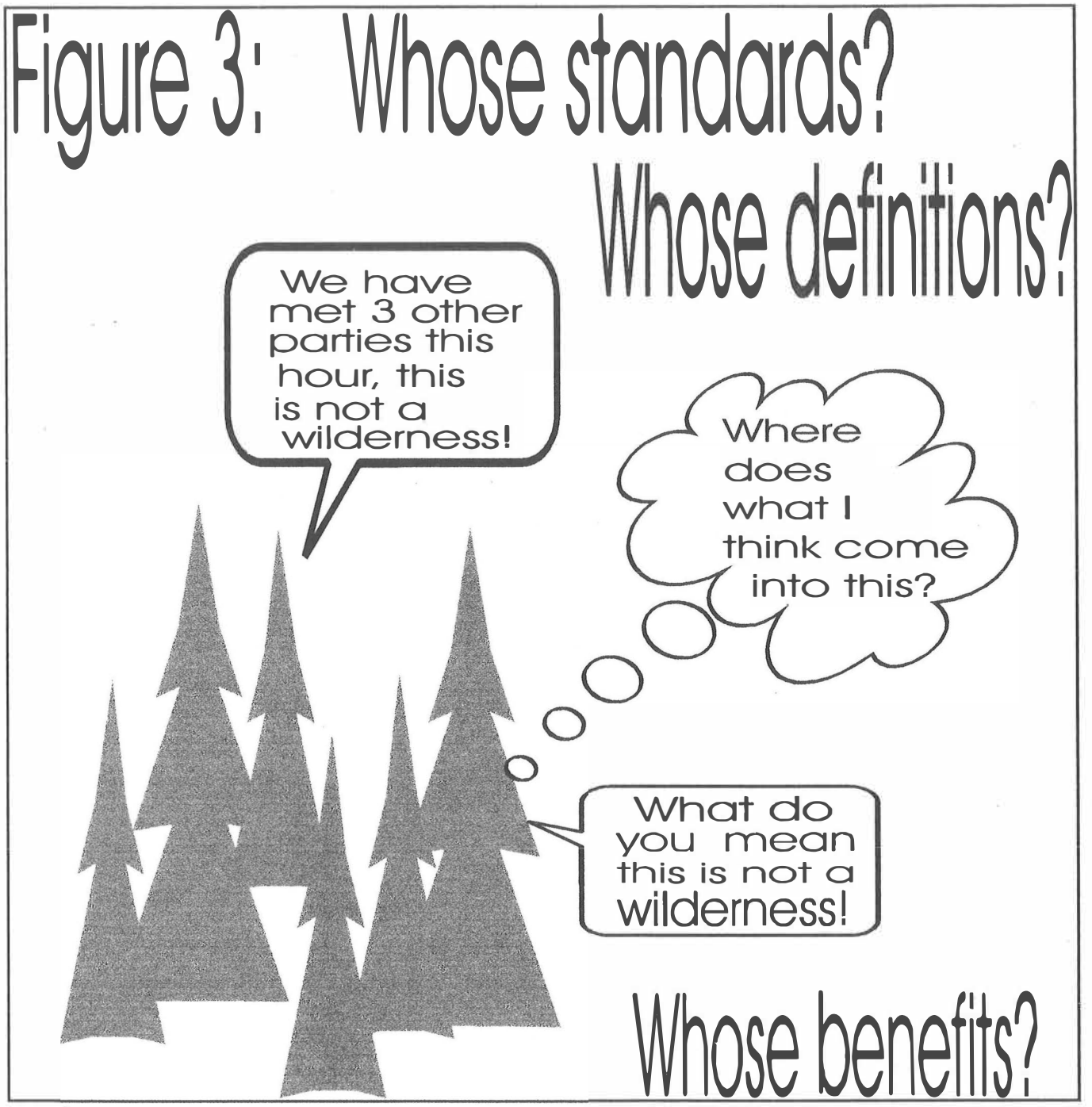
the Key to Understanding Equity, Substitutability, Displacement, Market Potential, etc.



The axes above show the simulated distribution of 4 segments with different values and needs. These are segments that "substitute" differently and in an importance-performance study show conflicting values resulting in decisions that displace one segment in favour of another(for segment estimation see Beaman and Vaske 1995 and for this structures behavioral implications see Vaske, Beaman, Stanley and Grenier 1996). The figure is an adaptation of a figure that appears in the articles cited.

publics want. Managers have responsibilities for resources and other mandates. It is where there is real discretion that *research* should be done to really understand what will be achieved by what we propose to do and by alternatives.

- There should not be statements of visitor preferences when there is no clear indication that real/valid segment specific information has been obtained.



Even with clear statements of who is to be served and how, I often found by my own research (re fees, alternatives and behavior see Beaman, Hegmann and DuWors 1991) that the people to be served were not there to be served in the numbers planned for or were there but not interested in the service given alternatives. Now, in some cases project proponents simply assumed that people would come if a service was offered (as they assume that more will come if fees are lowered), in some cases their estimates of use were invalid but, most often, said/wrote what it was considered important to say, namely that something was needed. Claims were that research would take too long, wasn't needed, couldn't be done, was too costly, etc. Statements of justification of needs too often rested on the likes of: professional judgment, status in the organization and organizational politics. I lost in opposing many "bogus justifications" but I then saw that proceeding on poor or invalid justification does not pay.

- Justifying an option should not be based on appeals to results of "public participation" when it is not clear that (a) such results exist or (b) that the results that exist are valid/reasonable in the context used.

Figure 4: NEEDS, CLIENTS AND PLANNING



There was a continuing problem with public opinion records and focus group results being used as survey data. There was also a reluctance "because of cost and time pressure" to consult the real market (to do valid research) as opposed to focus groups and the publics that *participated in meetings*. It is fascinating how people can talk about benefits and claim to use public participation and focus group results to determine expenditures on services. Publics and focus groups only raise valid issues about why something should or should not be done. However, where something is to be built that is to be used, public opinion

or focus group views about use level are as valid for setting scale and scope as Ford's research was in support of the Edsel! Unfortunately, government requirements to involve the public is encouraging invalid use of information obtained. When will we learn that what some special people say is not what most will do!

- All alternatives to the "best" one are straw men; the analysis is an advocacy presentation with good substantiation for one alternative and negatives for the rest

One of the reasons that I am really glad that I have left the government is that what I considered to be dishonesty was getting me down. Obviously, managers and planners win, in a way, by getting what they want. Consultants do *research* to tell you what you want to hear don't they? Set up a system to encourage valid understanding of optimization, social processes and effectiveness. Then you can spend your time finding out how people are trying to manipulate the rules to get what they want. The use of "straw men" is obvious to a researcher but it can allow a project proponent to plead to management that alternatives are not really understood. Then managers can argue with managers about who has what authority; and for the wrong reason we can have yet another "pink elephant."

I could comment on the following as I have commented above, however, why I might be concerned and that research is needed is quite obvious.

1) Benefit statements must not refer to vague or general classes of visitors, too general for benefits to be assessed and compared

2) There should be a statement of number of units of different types of service to be delivered to each of the client groups that benefits and places demands on the services (i.e., repeat weekend visitors, short term 1-time visitors)

3) Unit costs for service should be estimated and compared to those of other similar services, benefits or alternative delivery

4) Estimates of use that are optimistic or sensitive to large error should be identified, probabilities of over or under development and high unit cost because of "high risk" should be estimated and considered among other factors as a negative factor for project approval

5) If what is proposed is part of a bigger plan with outcomes dependent on the success of the "other" elements which may or may not "go," probabilities associated with this "risk" should be estimated and considered a negative factor for the project's approval

By the way, I believe that the review process worked reasonably well. There were case studies, guidebooks, training courses, etc. (most not cited in Stanley, Perron and Beaman 1996 or other readily available sources) that facilitated good work. I am reviewing that material along with other material Parks Canada created to encourage good planning and management of park use to determine what I may wish to make available. My boss for much of my career was from GE and knew what business is. We did not necessarily agree on what should be done but he knew that when I (me and my staff) gave a case against something being viable (business wise) the case was solid. In the 90's I was optimistic that the "new rhetoric" of more with less, of reduced staff, leaner and meaner, would foster good research. I now see it as encouraging people to say the right words. There is now a focus in Parks Canada on it making more money (the focus is on its balance sheet). A good analysis of options to Parks making more money should consider the net economic benefits of tourism to Canada, Parks Canada's education and enjoyment mandate, its role in meeting Canada's regional development goals and other government priorities. For many years I have advocated viewing the balance sheet of Parks Canada from Canada rather than an agency perspective. This is not simple even in terms of measuring net tourism benefits that should be considered as due to Parks Canada but is necessary to optimize agency benefits to Canada! You might consider how that applies to your agency and if there is any chance of getting your government to accept *the right accounting level.*

Has Research Really Progressed: How Should It Contribute to Planning and Management in the 21st Century?

The preceding section has had little specific to say about research and research capabilities. The following is very general since I want to cover more than 30 years in half a page. For references, people, etc. I refer you to *Journal of Leisure Research* starting with Vol. 1, Num. 1. The proliferation of other journals tells part of the story of research growth. When I look back, I see research that in the 40's to mid-50's was of a different nature than it is today. The emphasis was on concept and philosophy. There was excellent and, in some cases provocative, thinking. However, with the ORRRC Reports of the 50's, one saw quantitative research take on a new role. By the late 60's and 70's, supply inventories, travel flow regression models, input-output etc.economic models (see Archer 1994), system models (even with alternative factors), econometric models, linear programming models, demand functions and consumer surplus, cluster and factor models were common (e.g. see chapters, sections and over 200 references in the Ontario Research Council on Leisure's 1977 publication Analysis Methods and Techniques for Recreation Research and Leisure Studies).

The 1980's saw the coming of age of the microcomputer. It also was the time that conjoint analysis and other market research models became established. Big Surveys and extensive scaling were facilitated by the availability of computing power. Econometric models and path/causal modeling became a part of an integrated body of theory and programs. LISREL caused a flood of "causal" analyses. This was also the decade when time series analysis, geographic information systems, large survey analysis and database systems became key research tools (e.g. see references in Ritchie and Goeldner 1994-first published in 1987). Unfortunately, research tools often became black boxes, a crank for turning out research. What to optimize for and how, too often, was not conceptualized. Frequently, problems were defined so that data could be collected to meet the requirements of new analysis tools. Poorly conceptualized models, pretentious claims and late delivery of results dulled the impact on clients of new research capabilities. As commented on below credibility problems were created.

The 1990's and toward 2000 will hopefully be known for a move from data collection; and from using, improving and developing methods and uses of technology to a focus on good models of choices and decisions (e.g. see Louvier and Timmermans 1990). With improved models comes the capability to build decision support systems, DSS, that allow effective used of distributed/networked databases, use of incredible computing power, use of AI and creation of "context sensitive" analysis in support of decisions. Certainly the challenge of the 90's is interpreting policy principles so that benefits, access, or other criteria can be validly considered and optimized. Given my concern that good evaluation is rarely done and that much of the work on benefits is going into advocacy "planning and management" , there is *a very serious research related problem* to be addressed between 96 and 2000! That is creating good models of behavior and validly operationalizing optimization criteria so that good DSS's are implemented.

Where Research Should Be Going And What Its Contribution Should Be

My point about research in the 90's is that it has not done particularly well at making the move from large and technically sophisticated analyses to providing the basis for DSS that acknowledges societal principles of access to recreation. One sees an evolution in ROS that allows me to explain my view. Originally ROS was a great idea to identify supply and allow discussion of allocation policies. Computer capabilities available in the 80's have brought GIS and thus sophisticated resource classification to the desk top. Large surveys have brought participation data to the desk top. Models have related these (see Beaman and Do, 1983) but so what? Most people are not where most of the supply is. Many people do not want a wilderness experience as provided by certain ROS zones. Other people presumably want more experiences than they are entitled to. But, what is anybody entitled to? How should demand be regulated by price? What subsidies are appropriate to meet tourism, education, or other objectives? Equity is a fine term but how is it to be applied in allocation problems?

Research does not tell one what values should be. In some political systems the system actually dictates most values. However, in the typical "democratic" societies, research has a major role to play in planning and management. The "myths" cited in Westfall and Hoffman (1983) give comfort to some managers and planners. I, however, believe that they need to be recognized as giving false impressions of what can and should be happening. Certainly, in 1983 US agency people had good reason to be concerned with models and surveys as the basis for comprehensive long-range planning. In the 90's quantitative planning should be (Myth 1-it shouldn't be) the ideal. Much work remains to be done for models to be valid and reasonably accurate but the alternatives of intuition, personal preference, etc. are worse. The fact is that in democracies political considerations should come into play after technical considerations. The issue in the 90's is not that politics invariably decrease the quality of decisions (Myth 2).The goal of the 90's should be getting politicians, planners and managers to take their technical support and DSS as credible. Having such tools means that they take decisions with reasonable confidence of the consequences. In the 90's we must realize that optimization models are the most effective tool for agencies to use in policy and planning (Myth 3-aren't). If you give lip service to efficiency, effectiveness, equity, etc. and do not know how to operationalize these and test options, planning and management is a hollow shell built on meaningless words! Myth 4 of Westfall and Hoffman was that managers can/will conceptualize and will communicate about decisions. In the 80's much research lacked credibility, was too late for decisions or presented other problems. AI, artificial intelligence, systems and DSS offer the capability for managers to have "context sensitive" help in support of decisions. Of course, if government hires people who won't learn or ask and citizens will tolerate this, communication problems will continue. Informed citizens, access to information and public participation are all working against poor communication. Myth 5 implied that researchers wanted to do basic research when more data collection was needed. Well, the 80's provided tools to bury us in data but didn't do too much to improve basic understanding for planning and management. Too much of total research resources was spent on data collection, cleaning and ad hoc tabulations. More resources needed to go to research design and purposeful analysis. Each year of the 80's more and more useless cross tabulations and volumes of graphs that have no point but to impress by quantity were produced. The 80's was truly an era of too much data gathering and too little well thought out analysis. There is still time in the 90's to improve.

There are other myths that could be commented on. However, my point should be clear. I believe in models, optimization and secondary analysis as critical to good decisions. I really do not see the merits of bureaucrats taking decisions which they describe as optimizing, increasing efficiency, etc. when they can't tell you what is being optimized or how. Much of BBM, benefits based management, has degenerated into advocacy planning. "Researchers" look up benefits in books and count and list them to justify budgets. My project has 17 benefits so it is better than yours with 13! We'll cut this because it has fewer benefits listed than that! Whose benefits are being traded off? Based on what? Yes, I can feel powerful if I say which project is better, but is my decision any more than expression of my place in a political process? Decisions can be more rational if the right research is done and packaged in AI and DSS systems for use by planners, managers, politicians and interested publics.

Conclusion

It may appear that there is not much in the way of coherent threads in this presentation. Well, as I see it the are. A key area for research is knowing our clients. If planners and managers are serving the clients they must, at least, be able to predict behavior and reactions that influence determining what action should be taken. Optimization and evaluation are key areas for research. If we select action based on optimization, is optimization actually being achieved? Well, evaluation tells you that if measurable and meaningful goals were set. However, goals are often poorly set and evaluation tools "blunt", one could say of questionable relevance, yet freequently costly. Improvement is needed. That improvement will only come with an effective interface with management. Research is too easily seen as irrelevant or a threat to management.

So, what does the preceding suggest for research. Better, conceptually more sound, segmentation (Beaman and Vaske 1995)and better understanding of benefits and decisions (of substitution within and between segments-e.g. re decisions see Crompton and Ankomah 1993 and Um and Crompton 1992) is needed. This relates to choice models, contingent valuation and an understanding of economic and other impacts of actions on groups. The goal must be valid tradeoff/optimization considering value and behavioral differences as part of planning and managing. Developing better concepts and tools for estimating who benefits and who tradeoffs, getting benefit measures that are comparable between segments and considering the effects of "constraints" and supply availability all require research.

I see real value in the use of an evolution of ROS such as BBM to provide a communication framework. BBM can facilitate managers and researchers agreeing on measurable objectives. This is critical to establishing DSS systems using AI and databases so that a manager can keep informed with information tailored to objectives. These ideas are not new they largely address the practical application of BBM (address solving problems noted by Mannell and Stynes 1991).

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Outdoor Recreation Motivations and Norms

ANGLER SEGMENTATION BASED ON MOTIVATIONAL SCALE SCORES

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Abstract. This study tested the concept that distinct angler subpopulations could be further segmented into groups based on their response patterns to motivational questions. Three previously published salmon and trout angler studies were selected to explore the relationship between angler motives: Lake Ontario anglers using private boats; Lake Ontario anglers hiring charter boats; and Salmon river anglers. The intent for this exploratory study was to hold the target species and geographic area as constant as possible to compare the differences in motivational profiles for different angler subpopulations. Ten motivational variables were used to cluster similar cases together via a hierarchical agglomerative clustering technique. Four types of angler cluster groups were segmented within these three studies according to their motivational response patterns.

Introduction

Research on the attitudinal dimensions of the angling experience suggests that motivational variables and angler segments need to be considered in fishery management so that managers provide the experiences and conditions sought by anglers or so that managers can anticipate angler reactions to changes in fishery abundance (Siemer and Brown, 1994). Five categories of angler motivations have been identified by Fedler and Ditton (1994) in their review of 17 angler motivation studies: general psychological and physiological, natural environment, social, fishery resource, and fishing skill and equipment. Fedler and Ditton (1994) report that their comparisons of published angler studies on motivations found two types of noticeable differences: (1) between general statewide angler populations and subpopulations based on mode of fishing or target species; and (2) between subpopulations based on mode of fishing or target species. Fedler and Ditton recommend that fishery researchers and managers need to look at subpopulations of anglers based on mode of fishing and target species to avoid the incorrect inference that all anglers are homogeneous or similar to statewide mean statistics reported on motivational variables.

The purpose of this study is to extend the conclusions of Fedler and Ditton and explore the hypothesis that further subgroups or market segments can be identified within an angler subpopulation that is using the same mode of fishing and targeting the same fish species. The angler subgroups identified need to have significantly different motivational characteristics with management or research implications to make such classifications valuable and worthwhile to pursue.

Methods

Three existing angler studies were selected for analysis in this exploratory study based on the criteria that all three were conducted on: (1) angler subpopulations seeking similar target species (salmon, steelhead, and trout); (2) angler subpopulations fishing in a similar geographic area (Lake Ontario and the Salmon River, a major tributary of Lake Ontario); and (3) angler studies using similar research methodologies and data collection techniques (mail surveys), response rates (56% to 62%), and conducted within a one or two year period (1991-92). The studies selected were: (1) an unpublished 1992 study of Salmon River salmon and trout anglers (n= 220); (2) a 1992 study (Dawson, 1995) of Lake Ontario boat anglers seeking salmon and trout (n= 193); and (3) a 1991 study (Dawson and Buerger, 1993) of Lake Ontario charter boat anglers seeking salmon and trout (n= 111).

The 10 motivational variables were the same in each of the three mail surveys with anglers asked to use a 5-point scale of importance (5= extremely important; 4= very important; 3= important; 2= somewhat important; and 1= not important) to respond to each of the items. These unstandardized variables were used to cluster similar cases together with a hierarchical agglomerative clustering technique and the average linkage between groups method for combining clusters (UPGMA) in the SPSS for Windows (6.1) PC program (Norusis, 1994). The clustering analysis used euclidean distance measures with the UPGMA method (Everitt, 1993). The cluster results were evaluated using a complete linkage dendrogram analysis of cases and case clusters. A minimum cluster size of 12 or more cases was specified.

Results and Discussion

The rank order of the mean importance of the 10 angler motives was similar for the three studies with the exception of charter boat anglers rating family togetherness higher than the challenge and excitement of fishing (Table 1). Psychological and natural resource related motives were generally ranked higher than social motives. Fishery resource and fishing skill related motives were generally ranked as less important than other motives when compared by mean scores between the angler subpopulations.

Table 1. Rank order of motivational variables for 3 angler studies of salmon and trout fishing.

Motives	Salmon River Bank Anglers	Lake Ontario Private Boat	Lake Ontario Charter Boat
Psychological			
For challenge/excitement	1	4	7
For relaxation	2	1	1
To get away	4	2	4
Natural environment			
To enjoy nature/river/lake	3	3	2
Social			
For companionship	6	5	5
Family togetherness	9	7	3
Fishery resource			
To catch a trophy fish	5	6	6
To catch many fish	7	8	8
To catch fish to eat	10	10	9
Fishing skills			
To improve fishing skills	8	9	10

Four angler motivational clusters were identified using the euclidean distance measures and the 196 cases that had responded to all 10 motive items for the study on salmon and trout fishing on the Salmon River. These four clusters included 180 of those 196 cases (92%) with cluster size ranging from 16 to 73 cases (Table 2). The difference between overall mean scores for each motivational item and the cluster analysis group mean scores were calculated (group mean - overall mean score) to descriptively represent each cluster group (SR1 to SR4) that was identified in the analysis as a distinct cluster of similar angler motive scores (Table 2). While Group SR3 mean scores tended to be less than the overall mean scores, Group SR2 mean scores tended to be greater than the overall mean scores. The three motive categories of psychological, natural environment, and social were more important to Groups SR2 and SR4 than it was to Groups SR1 and SR3. The two motive categories of fishery resource and fishing skills were more important to Group SR2 than it was to Groups SR3 and SR4; Group SR1 had a mixed response for those two categories.

Three angler motivational clusters were identified using the euclidean distance measures and the 147 cases that had responded to all 10 motive items for the study on salmon and trout fishing from a private boat on Lake Ontario. These three clusters included 114 of those 147 cases (78%) with cluster size ranging from 35 to 44 cases (Table 3). The difference between overall mean scores for each motivational item and the cluster analysis group mean scores were calculated (group mean - overall mean score) to descriptively represent each cluster group (LPB1 to LPB3) that was identified in the analysis as a distinct cluster of similar angler motive scores (Table 3).

Table 2. Mean scores[a] for 10 angler motives for salmon and trout fishing on the Salmon River and the differences between the group and overall mean scores (group mean - overall mean score) for four cluster analysis groups.

Motives	Mean Score (N=196)	Group SR1 (n=29)	Group SR2 (n=62)	Group SR3 (n=73)	Group SR4 (n=16)
Psychological					
For challenge/excitement	4.4	0.2	0.3	-0.5	0.3
For relaxation	4.1	-1.0	0.4	-0.1	0.6
To get away	3.8	-1.8	0.4	0.1	1.0
Natural environment					
To enjoy nature/river	4.1	-0.8	0.5	-0.1	0.5
Social					
For companionship	3.2	-1.1	0.5	-0.4	1.2
Family togetherness	2.4	-1.1	0.5	-0.7	2.0
Fishery resource					
To catch a trophy fish	3.4	1.3	1.0	-0.9	-1.3
To catch many fish	2.9	0.5	0.2	-0.3	-0.5
To catch fish to eat	2.1	-0.2	0.4	-0.5	-0.2
Fishing skills					
To improve fishing skills	2.9	-0.3	0.7	-0.4	-1.4

a/ Response scores: 5= extremely important; 4= very important; 3= important; 2= somewhat important; and 1= not important.

Table 3. Mean scores[a] for 10 angler motives for salmon and trout fishing from a private boat on Lake Ontario and the differences between the group and overall mean scores (group mean - overall mean score) for three cluster analysis groups.

Motives	Mean Score (n=147)	Group LPB1 (n=35)	Group LPB2 (n=44)	Group LPB3 (n=35)
Psychological				
For relaxation	4.2	-0.3	0.4	-0.2
To get away	3.9	-0.1	0.8	-0.2
For challenge/excitement	3.6	-0.1	0.4	-0.9
Natural environment				
To enjoy nature/lake	3.8	-0.9	0.6	0.1
Social				
For companionship	3.5	-0.4	0.7	-0.3
Family togetherness	2.8	-0.5	0.8	0.0
Fishery resource				
To catch a trophy fish	2.9	1.0	0.0	-1.4
To catch many fish	2.6	0.9	0.1	-1.0
To catch fish to eat	2.1	-0.2	0.0	-0.4
Fishing skills				
To improve fishing skills	2.5	-0.3	0.9	-0.8

a/ Response scores: 5= extremely important; 4= very important; 3= important; 2= somewhat important; and 1= not important.

While Group LPB3 mean scores tended to be less than the overall mean scores, Group LPB2 mean scores tended to be greater than the overall mean scores. The three motive categories of psychological, natural environment, and social were more important to Group LPB2 than it was to Groups LPB1 and LPB3. The two motive categories of fishery resource and fishing skills were more important to Group LPB2 than it was to Group LPB3; Group LPB1 had a mixed response for those two categories.

Three angler motivational clusters were identified using the euclidean distance measures and the 98 cases that had responded to all 10 motive items for the study on salmon and trout fishing from a charter boat on Lake Ontario. These three clusters included 67 of those 98 cases (68%) with cluster size ranging from 14 to 35 cases (Table 4). The difference between overall mean scores for each motivational item and the cluster analysis group mean scores were calculated (group mean - overall mean score) to descriptively represent each cluster group (LCB1 to LCB3) that was identified in the analysis as a distinct cluster of similar angler motive scores (Table 4). While Group LCB2 mean scores tended to be less than the overall mean scores, Group LCB1 mean scores tended to be greater than the overall mean scores. The three motive categories of psychological, natural environment, and social were more important to Groups LCB1 and LCB3 than it was to Group LCB2. The two motive categories of fishery resource and fishing skills were more important to Group LCB1 than it was to Groups LCB2 and LCB3.

While these cluster analyses identified three or four angler motivational cluster groups within each of the three studies, this was not forced since the only specification for accepting a delineated cluster of similar cases was that it contain a minimum of 12 cases. There was no limit on the number of clusters that could be identified. The similarity between the cluster groups found within each study was evaluated by compiling a summary table of the differences between group and overall mean scores for five categories of angler motives (Table 5). The conclusion was that four different types of angler motivational groups (Type A to Type D) were evident in the 10 cluster analysis groups identified in the three angler studies. The characterization presented in Table 5 is meant to summarize the differences and similarities between the four types of angler motivation groups and show that these motivational response patterns can be identified within what was previously considered homogeneous angler subpopulations.

Table 4. Mean scores[a] for 10 angler motives for salmon and trout fishing from a charter boat on Lake Ontario and the differences between the group and overall mean scores (group mean - overall mean score) for three cluster analysis groups.

Motives	Mean Score (n=98)	Group LCB1 (n=18)	Group LCB2 (n=35)	Group LCB3 (n=14)
Psychological				
For relaxation	4.2	0.6	0.0	0.4
To get away	3.7	0.2	-0.4	0.9
For challenge/excitement	2.9	0.3	-1.5	1.5
Natural environment				
To enjoy nature/lake	4.0	0.2	0.2	0.3
Social				
Family togetherness	3.9	0.8	0.1	-0.3
For companionship	3.5	0.6	0.0	0.4
Fishery resource				
To catch a trophy fish	3.0	1.6	-0.3	-1.4
To catch many fish	2.4	0.7	-0.7	-1.0
To catch fish to eat	2.4	0.3	-0.4	-0.6
Fishing skills				
To improve fishing skills	2.3	1.1	-0.5	0.1

a/ Response scores: 5= extremely important; 4= very important; 3= important; 2= somewhat important; and 1= not important.

Table 5. Characterization of the differences[a] between group and overall mean scores for five categories of angler motives for the 10 cluster analysis groups identified in the three angler studies.

Motive Categories	Type A (SR1, LPB1)	Type B (SR2, LPB2, LCB1)	Type C (SR3, LPB3, LCB2)	Type D (SR4, LCB3)
Psychological	-	+	-	+
Natural environment	-	+	=	+
Social	-	+	- or =	+ or =
Fishery resource	+	+	-	-
Fishing skills	-	+	-	- or =

a/ Differences: "-" means that the cluster group score for each motive category is less than overall mean score; "=" means that the cluster group score for each motive category is equal to the overall mean score; and "+" means that the cluster group score for each motive category is greater than overall mean score.

Conclusions

This exploratory study tested the concept that distinct angler subpopulations could be further segmented into groups based on their response patterns to motivational questions. The three studies used in this analysis were selected to keep the target species and geographic area as constant as possible and then to compare the differences in motivational profiles for cluster groups identified in the three different angler subpopulations. This study extends the conclusions of Fedler and Ditton (1994) and suggests that further subgroups or market segments can be identified within an angler subpopulation (i.e., anglers using the same mode of fishing and targeting the same fish species). Four types of angler cluster groups were identified within these three studies with significantly different motivational response patterns. Further research is needed to explore the research and management implications of such angler motivational classifications. A suggested improvement to the cluster analysis approach in this study (i.e., clustering analysis using euclidean distance measures with the UPGMA method) would be to use case standardized variables and cosine resemblance measures with the UPGMA method as suggested by Beaman and Vaske (1995).

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WHERE DID YOU LEARN THAT? AN EXAMINATION OF VISITORS' HISTORICAL FRAME OF REFERENCE AND THE RELATIONSHIP TO ATTITUDES ABOUT AUTHENTICITY AND SATISFACTION

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Abstract: Various authors have argued that tourists are on a search for unique, traditional, authentic experiences. Historically, heritage attractions have offered tourists these features. However, there is growing concern that individuals' perception of the authenticity of an experience as well as its relevance to them may impact their level of satisfaction with their experience. Thus, the primary purpose of this study was to examine the role that visitors' educational background, knowledge, motivations for visiting, and general travel behavior played in their perceived authenticity and how these interactions influenced level of satisfaction. The results indicated that there were significant relationships between level of education and perceived authenticity, and level of satisfaction and perceived authenticity.

Introduction

A primary motivational force for travel is curiosity. Tourists want to see other people, other places, and other cultures; they want to experience a destination's history and traditions. According to Kinnaird, Kothari and Hall (1994), tourists are on a search for the unique, the traditional, the authentic—something "which is perceived to reflect or give access to the true and unadulterated nature of everyday living in the destination" (Valee, 1987, p. 27). Despite tourists' insatiable curiosity and the considerable tourism potential this has generated for some destinations, Boorstin (1975) has argued that modern tourists seldom experience a living culture because the continuous development of tourism has led to a loss of "authenticity" in the travel experience. Despite Boorstin's pessimistic view of tourism, Goffman (1959) believes that tourists have come to accept degrees of "inauthentic" experiences but ultimately are motivated to travel in the hopes that they will achieve a truly authentic experience.

Pearce and Moscardo (1986) have argued that individuals' perception of the authenticity of an experience as well as its relevance to the tourists are two important mediating variables affecting their level of satisfaction. While their argument appears sound there is little supportive empirical evidence, especially with respect to industrial heritage destinations. Therefore, the primary purpose of this study was to examine visitors' attitudes and perceptions about historic tourist destinations. A secondary purpose was to examine the role that visitors' educational background, site knowledge, source of knowledge, motivations for visiting, and general travel behavior played in their perceived authenticity and how these interactions influenced level of satisfaction.

The Study Area

The study was conducted throughout a nine-county region in Southwestern Pennsylvania. The agency that oversees the nine-county region, The Southwestern Pennsylvania Heritage Preservation Commission (SPHPC), was established in 1987. It's charge was initially to: a) develop, enhance, and interpret iron and steel making, coal and historical transportation themes within the nine-county region; b) incorporate these and other industrial heritage themes into "cooperative regional tourism promotion efforts"; and, c) retain and enhance the region's quality of life.

Methodology

The individuals sampled for this study were visiting industrial heritage sites located along the *Path of Progress* (POP), a heritage route managed by the SPHPC. A systematic sample of visitors was interviewed on-site from June through October, 1995. Upon completion of the on-site interview respondents were asked if they would complete a more comprehensive follow-up survey. If they agreed, they were given a questionnaire packet comprised of a cover letter, a questionnaire, and a pre-addressed postage paid return envelope. They were also asked to provide their name and address for follow-up mailings. The on-site response rate was 99% (n=1776). A post-card reminder/thank-you was sent to all study participants the week following the initial contact. If a survey was not received two weeks after the initial contact, a replacement survey was sent to the respondent. The overall response rate was 59% (n=1047).

Results

Nearly one-half of the individuals who visited POP sites during the 1995 season traveled more than 100 miles to visit a historic destination. They reported an average of 5.8 pleasure trips and an average of 3.9 trips to historic sites in the last 12 months. In addition, when asked about their motivations for travel, 21% indicated an interest in culture/heritage/ethnicity and 85% suggested it was "somewhat" or "very" important to learn something new. Nearly all respondents (91%) documented that it was "somewhat" or "very" important to experience "authentic"

elements in a historic destination, and 81% indicated the site's historic character was "somewhat" or "very" important.

Level Of Education And Perceived Knowledge

Respondents were highly educated. Nearly thirty percent of the respondents had completed some post-graduate work or a graduate degree. An additional 22% were college graduates (Table 1). While highly educated, more than one-half (53%) indicated that they had "limited" knowledge of the sites they were visiting. Only seven percent thought their knowledge to be "extensive." (See Table 2). Those who reported having some level of site knowledge were also asked to note their sources of site knowledge. More than one-half (54%) suggested that they had obtained some knowledge about a site along the POP from books or magazines. Previous visits and discussions with friends/relatives were also important sources of site knowledge for 36 to 37% of the sample (Table 2).

Table 1. Educational level of respondents.

Level of education	
Less than high school	3%
High school	21%
Business/technical school	10%
Some college	16%
College graduate	22%
Some post graduate work	9%
Post graduate degree	20%

Table 2. Site knowledge.

Perceived level of site knowledge	
None	4%
Limited	53%
Fairly extensive	36%
Extensive	7%
Sources of site knowledge	
Books/magazines	54%
Previous visit	37%
Discussions with friends/relatives	36%
School	25%
Promotional literature/pamphlet	23%
Other sources	17%
Television	3%

Authenticity

Individuals were also asked to indicate how accurate or authentic items were at the site they visited. Most items were perceived to be authentic; however, the items receiving the lowest marks were souvenirs, re-enactments, and architecture. (See Table 3). In order to measure the relationship between perceived authenticity and miscellaneous independent variables, an authenticity index was created. The 10 items measuring authenticity (refer to items listed in Table 3) were combined to create an overall perceived authenticity index. The scale mean was 1.74 and had an alpha reliability coefficient of .95. All items were highly correlated (0.4 to 0.8) and were significant at the .001 level.

Level Of Satisfaction

Respondents' were very satisfied with their experience. On a 10-point Likert scale, visitors had an 8.2 mean satisfaction rating. Approximately one-fourth (24%) were completely satisfied (10 on a 10-point scale). Nearly one-half (52%) were very satisfied (8-9 on a 10-point scale). And, only four percent rated their level of satisfaction four or below on the ten-point scale.

Table 3. Perceived historical accuracy/authenticity.

Item	Level of Authenticity
Photographs	1.49*
Historic objects	1.55
Displays	1.57
Museum	1.64
Video	1.68
Historic restorations	1.75
Interpretive signs	1.78
Architecture	1.85
Re-enactment	1.91
Souvenirs	2.49

*Mean response as measured on a Likert scale ranging from 1 "Very accurate/authentic" to 5 "Very inaccurate/inauthentic."

Relationship Between Level Of Education And The Authenticity Index

Using Analysis of Variance (ANOVA) a significant relationship was observed (p=.02). Individuals with lower levels of education and those with a college degree or some post graduate experience were more likely to perceive historical accuracy/authenticity in the site they visited (Fig. 1).

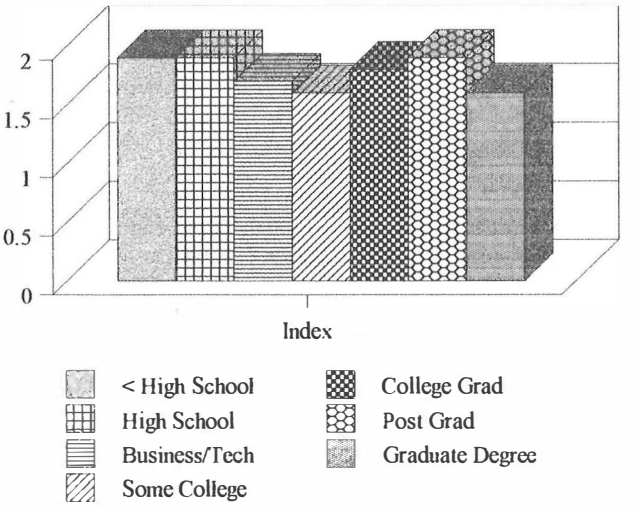


Figure 1. Authenticity index by level of education.

Relationship Between Level Of Satisfaction And The Authenticity Index

A significant relationship (p=.00) was noted via ANOVA between level of satisfaction and authenticity. Individuals reporting the highest level of satisfaction were also the most likely to perceive that their experience was "authentic." (See Fig. 2).

Discussion And Implications

Overall visitors appear to be very satisfied with their experience at a POP site. They believe the sites they've visited are authentic and accurate and these features appear to be very important to

them. Of interest is the fact that visitors are willing to indicate that the sites they've visited are authentic and accurate while at the same time suggesting that they have limited knowledge about them. Perhaps MacCannell (1976) was correct when he argued that it has become very difficult for tourists to know if their experience is authentic and, in fact, it may be necessary for them to discount the existence of authenticity or inauthenticity in normal touristic experiences in order to be satisfied. Like MacCannell, Boorstin (1985) would have us believe that during the last decade tourists have become much more accepting of pseudo events-- the inauthentic-- as reality. What does this suggest for managers of heritage destinations? Managers must decide how much effort they want to put in to the preservation of truly authentic artifacts. If tourists don't know what is authentic or inauthentic, is there a point at which the investment of time, money and effort doesn't pay off? Or, will heritage attraction managers simply have to live with the role in which they've been cast-- "...balancing visitors' demands to provide entertaining authentic interpretation and the more stringent requirements of their role as guardians of the nations heritage"? (Stevens, 1995, p. 207).

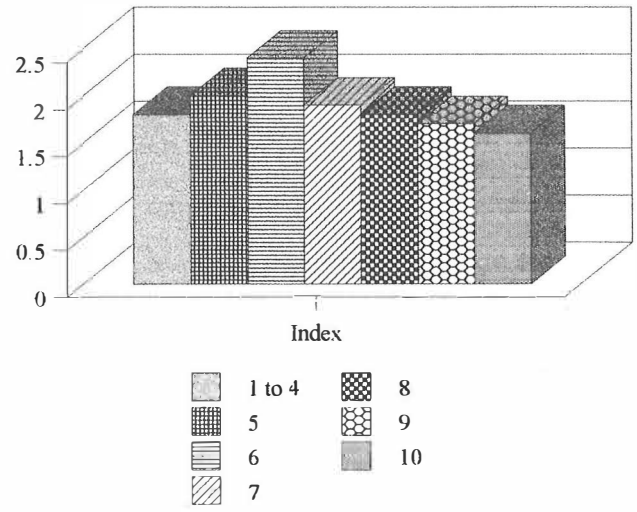


Figure 2. Authenticity index by level of satisfaction.

Satisfaction and education appear to be significantly related to visitors' perceptions of historical accuracy and perceived authenticity. People expect to see a true, authentic depiction of an historic event or facility. According to these results, if they perceive it to be authentic they will be satisfied. The POP did not let these tourists down. Again, however, are these results depicting the reality of the POP or are they profiling a trend among heritage tourists? Are people simply accepting of a "fake reality" or inauthentic experience because it is what they have come to expect?

While the majority of respondents indicated little to no knowledge about the POP site(s) they were visiting, 43% suggested they had "fairly extensive" or "extensive" knowledge. This select group documented that their primary source of information about heritage attractions is books and magazines. This is important data for managers who want to capture the attention of an interested, knowledgeable market.

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SPECIALIZED PARTICIPANTS AND THEIR ENVIRONMENTAL ATTITUDES: RE-EXAMINING THE ROLE OF "TRADITIONAL" AND PSYCHOLOGICAL SPECIALIZATION DIMENSIONS

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Abstract: Two key issues continue to be debated in the recreation specialization literature. The first of these issues involves the measurement of specialization. The second issue is the relationship between specialization and conservation attitudes. The present study sought to concurrently examine these issues. Results indicated that a psychological measure of specialization was more predictive of environmental attitudes than the more traditional cognitive measure. Specialization was also more predictive of a site specific environmental attitude than a broader "world view" ecological concern. Findings suggest that managers measure specialization across a variety of domains and that they consider not only level of specialization, but how activity types could be grouped according to site specific setting relationships.

Introduction

A common proposition in outdoor recreation research is that recreation participants are becoming an increasingly diverse clientele. They are not only diverse in terms of demographic profiles, but also their preferences for natural resource management (Dwyer, 1994). Market segmentation has emerged as a potential framework to manage for such diversity by classifying diverse participants according to homogenous characteristics. Such a framework not only offers the opportunity to provide more satisfying opportunities for distinct and important sub-groups, but also may re-allocate incompatible groups and reduce conflicts (Wellman, Roggenbuck, and Smith, 1982, Jacob and Schreyer, 1980). Initial applications of segmentation have focused on generic categories such as activities, geographic site choice, and demographics. More recently, however, managers have suggested that an effort to assess the public's expectations for settings, facilities, programs, and habitats be expanded (Dwyer, 1994; Carr and Williams, 1993). Such an effort may require an understanding of not only cognitive evaluations and preferences, but also more deeply held psychological and sociological attitudes about recreation activities and environmental settings where those activities occur.

The concept of recreation specialization provides a useful vehicle that may segment diverse clientele according to homogenous behaviors, setting preferences, and conservation attitudes. This concept was first introduced by Bryan (1977) and was defined as, "a continuum of behavior from the general to the particular, reflected by equipment and skills used in the sport and activity setting preferences". Under such a framework, participants would begin an activity as "occasionals" with a minimal of experience, expertise and involvement. Over time, these recreationists would progress through that activity and become socialized into technique-setting specialists with the highest level of experience, expertise, and involvement. Recreation specialization has proven to be an intuitively attractive management framework and many studies have examined its role toward a variety of managerial characteristics (Virden, 1986; Graefe, Donnelly, and Vaske, 1986; and Williams and Huffman, 1986).

While recreation specialization has been well studied and integrated into management frameworks, several issues remain problematic for managers and researchers. First, when Bryan developed his specialization typology, he noted the important role of an affective response toward activities and settings. As its conceptualization was further developed, however, Bryan and others placed a much heavier emphasis on observable characteristics such as self-described skill levels, equipment owned, and estimates of prior experience. As a result, a psychological or affective attachment toward activities has been a under-emphasized measure . Some researchers have argued that affective measures provide a useful means to understand the nature of specialization (McIntyre and Pigram, 1992; Buchanan, 1985).

Second, while specialized participants have been purported to exhibit a more conservation-oriented stance (Katz, 1981), the focus of this orientation has been limited to settings/environments associated with the activity in question. Thus, assuming that specialized participants are environmentally sensitive may depend on the nature of the activity with its norms and required setting attributes. Furthermore, Bryan's classification suggests that, at the highest level of the specialization continuum, participants place a high value on manipulating the environment themselves than having management do it for them (Williams, 1988). Such values may indicate that specialized participants hold an increased sensitivity to the environment when those attitudes are directed at settings where they conduct their activities. Whether highly specialized users place an increased orientation to a large scale ecological concern remains unresolved. Previous empirical research implies that specialized participants would be more concerned with activity specific environment attributes rather than a general concern for the environment.

If specialization is to continue its role as a useful framework to address user diversity, it should be expanded to include deeper psychological meanings and affective responses. Managers may

however be unfamiliar with how to measure such traits and may not be convinced that they are as useful as the other, more traditional measures (expertise levels, participation history, equipment owned). Past research on specialization and conservation attitudes may also lead managers to believe that a highly specialized clientele automatically will hold higher attitudes toward the environment. Such attitudes, however, may be limited to activity types dependent on pristine and natural areas. Comparing how well specialized users relate to site specific vs. broad environmental attitudes may begin to resolve this issue by defining the extent and nature of environmental concern among specialized recreationists.

Purpose of the Study

The purpose of this study will be to explore two problematic areas associated with recreation specialization. First, an attempt to validate the utility of psychological specialization measures will be pursued. This will be accomplished by examining the relative predictability of a psychological measure and a more "traditional measure" toward explaining environmental attitudes. Second, the nature of environmental concern among specialized participants will be further explored by comparing whether specialization is more strongly related to a site specific or a general world view environmental concern.

1). Based on McIntyre's (1992) study demonstrating the importance of a psychological component and Buchanan's (1985) contention that a psychological commitment is more basic than behavioral manifestations, a psychological measure of specialization should be as or more predictive than "traditional" measures in relation to key management variables.

2). Based on Bryan's (1979) and Katz's (1981) contention that specialized participants are more likely to emphasize the character of environmental settings as they facilitate activities, site-specific environmental concerns should be more strongly related to specialization than a general ecological concern for the world's entire ecosystem.

Findings should implicate the importance of measuring specialization across all domains (cognitive, behavioral, and psychological). Results may also suggest whether specialized participants are more concerned with the environment for its intrinsic value or for its functional value. The latter implication may, in turn, provoke managers to consider contextual factors other than level of specialization such as the nature and norms of the activity (appreciative vs. consumptive). Considering a specialization vis a vis a host other interacting variables may provide managers with more realistic and effective segmentation strategies.

Methods

The data for this study was obtained from a comprehensive research project conducted at the Mount Rogers National Recreation Area from May through October 1993. Funding was provided by the USDA Forest Service. Research objectives for the larger project included gathering information pertaining to current users, use patterns, economic expenditures, and preferences for management. The sampling frame was constructed to include the diversity of activity types and settings found within the National Recreation Area. The Mount Rogers National Recreation Area, named for Virginia's highest peak, includes over 115,000 acres of National Forest Land available for public use and enjoyment. Its location in the mountainous regions of Southwest Virginia make it an excellent setting which to enjoy a variety of outdoor experiences. These activities range from various levels and types of hiking, nature study, auto touring, and camping.

Data Collection Procedures

The study utilized both a brief on-site interview and a mail survey. Visitors who were contacted within a randomized time block were asked to participate in the study. Those who agreed to participate provided answers to a few brief questions. These questions dealt with trip variables and requested the respondent's address for the purpose of mail-back follow-ups. A mail survey was then given to respondents to be completed and returned after the completion of the visit. Postcard reminders were sent out 10 to 15 days after the initial on-site contact. Participants who did not respond within one to two weeks of the postcard mailings were then sent a second copy of the questionnaire with a cover letter explaining the importance of their participation. As a final request, a postcard reminder was sent in order to encourage participation among previous non-respondents. The response rate for Mount Rogers trail users was 67% for a sample size of 528. Data collection started in mid May, 1993 and ended in mid October, 1993. Specific sampling times and locations were chosen in a systematic way to obtain, as representative as possible, a sample of users. Total sampling time was 790 hours.

Instrumentation

While a variety of demographic and behavioral variables were assessed in the larger survey, the present study emphasized two measures; specialization and environmental attitudes. Psychological or "affective" specialization was assessed through a three item involvement instrument. This instrument was adapted according to the work of McIntyre (1990) and included Attraction, Centrality to Lifestyle, and Self-Expression sub-components. Respondents were asked to respond on a 5 pt. semantic differential scale (strongly disagree to strongly agree) how they felt about a variety of activity related statements. These statements were positioned toward the participant's most important activity and including items such as, "This activity has a central role in my life" and "This activity says a lot about who I am." The reliability of this scale was acceptable with Cronbach's Alpha at .74. Traditional measures of specialization have usually been directed toward the cognitive and behavioral domain (McIntyre and Pigram, 1992). The present study utilized a cognitive measure which asked participants to rate their skill level in their most important activity. Respondents rated themselves from 1 (Beginner) to 7 (Expert).

Environmental attitudes were also assessed in two manners. The first of these is a site-specific concern for the setting. A four item instrument was utilized to assess the site specific environmental concern. It asked respondents to rate the importance of environmental quality indicators at Mount Rogers from 1 (Not at all important) to 5 (Extremely Important). Items such as "Little evidence of land management activities" and "High degree of naturalness" were examples used in this instrument. Reliability was marginal at .69. A broad or "world view" environmental

concern was measured through a modified New Environmental Paradigm Scale developed by Dunlap and Van Liere (1978). This instrument assesses attitudes toward the earth's entire eco-system and is positioned around the appropriateness of human interactions upon the environment. The eight item scale used in this study had a high internal consistency with a Cronbach's Alpha of .90.

Analysis

Two analyses serve as the focal point for this study. The first analysis was conducted in order to assess the relative predictability of a traditional vs. a psychological (affective) specialization measure. Since specialization has often been compared with attitudes regarding conservation, environmental attitudes served as the dependent variable to which specialization was compared against. Multiple regression analyses were conducted in order to examine significant correlations between the variables and to compare the relative strengths between traditional and psychological predictor variables. A comparison of adjusted partial r square values was utilized for this purpose.

The second analysis was conducted in order to assess whether specialization was more predictive of a site specific environmental concern or a broader world view ecological concern. This analysis was conducted in the same manner of the first analysis except that adjusted r square values of similar specialization predictors were compared against the two levels of environmental attitude. The framework for both analyses is presented in Table 1.

Table 1. Analysis framework: two multiple regression equations.

Dependent Variables	Independent Variables
Site Specific Environmental Attitudes	Traditional Specialization + Psychological Specialization
Broad "World View" Ecological Concern	Traditional Specialization + Psychological Specialization

Results

Both regression equations were statistically significant at the .00 level. Thus some variance in environmental attitudes (both site-specific and broad world view) could be contributed to specialization. When the predictability of a traditional specialization was compared to psychological specialization, it was found that psychological measures had higher adjusted r square values and thus were stronger and more significant predictors of either dependent variable. While r square values were much higher for psychological specialization predictors, their magnitudes were still small with adjusted r square values ranging from .023 to .071 (Table 2). The strength of specialization predictors in both equations was suspect, suggesting that a variety of other factors impact the variance in environmental attitudes. The purpose of this paper, however, was to assess the relative performance of a psychological specialization vs. a traditional measure. Results do indicate that the psychological specialization measure was more predictive toward environmental attitudes than a traditional measure.

Table 2. Results of multiple regression analysis.

Dependent	Independent	Summary
Broad "World View" Ecological Concern	Traditional Measure	adj. r^2 =.003 sig. F=.098
	Psychological Measure	adj. r^2 =.023 sig F=.000
Site Specific Environmental Attitude	Traditional Measure	adj. r^2 = .008 sig. F=.022
	Psychological Measure	adj. r^2 =.071 sig. F=.000

The second analyses compared whether specialization was more strongly predictive of a site specific environmental attitude or a broader world view concern. Since, in the first analysis, traditional specialization measures were found to be non-significant, this variable was dropped as a predictor of environmental attitudes. While the significance of specialization in relation to environmental attitudes was established in the first analysis, it appears as though specialization was a stronger predictor of site specific attitudes vs. the broader ecological concern. Again, adjusted r square values were low (.023 vs. .071).

The exploratory nature of this study is subject to a few limitations which serve as caveats for a broad acceptance. The first of these limitations is that environmental attitudes are difficult to define and measure. The comparability of environmental attitudes was limited since site specific items asked respondents to rate the importance of attributes while broader items asked respondents the appropriateness of human dominance over nature. Secondly, the study only compared specialization with visitor attitudes and not their actual behavior. Behaviors may have been better predicted by traditional specialization, especially if those measures were in the behavioral domain. Finally, the sample for this study included a variety of front country users engaging in wide array of activities. Some mediation between activity types could have occurred since specialized backpackers and specialized RV campers may intuitively have different attitudes about the environment. Perhaps further segmenting specialized users into consumptive and appreciative activity groups may provide a more meaningful scheme for addressing user diversity (Jackson, 1987).

Discussion and Implications

The results of this study provide continuing evidence that psychological measures of specialization can as useful as traditional measures in understanding attitudes of a diverse clientele. They deserve inclusion as a component of an individual's specialization profile. While past researchers and managers have eschewed the use of psychological measures due to complexities of measurement, this study has demonstrated that operationalizing psychological specialization need not be difficult. Secondly, results suggest that highly specialized participants may be more concerned with the environment of their activity setting rather than larger eco-systems. Managers should, therefore, be careful in assuming that attracting specialized participants will also yield a more environmentally friendly user. As previously discussed, the nature of the activity may also

influence attitudes about the environment. If area is concerned with attracting a new activity clientele, it should consider social norms particular activity forms. For example, specialization in some activities may mean using less equipment or lower impact equipment. Other activities such as motor boating or RV camping could involve an increased emphasis on a higher number of high impact equipment and accessories. If an activity and its social norms calls for a behavior that is not in the best ecological interest, its participants may not concern themselves with environmental quality and sustainability. Clearly, further inquiries into defining activity type, specialization norms, and relationships to environments may assist in managing a diverse clientele.

The results do offer tentative evidence that recreation specialization can be significantly related to variables of interest to natural resource managers. Moreover, internal psychological meanings attached to outdoor activities are just as relevant for understanding attitudes toward the environment. Our recommendations for managers are that they continue to assess the specialization of their visitors. We would suggest they use a multi-dimensional, multi-system measurement which evaluates not only their behavioral patterns and cognitions, but also their psychological involvement with outdoor activities. This study has also demonstrated a greater linkage between site specific environmental attitudes than broader ecological concerns. These site specific attitudes seemed closely related to the appreciative goals of most Mount Rogers visitors. Specialized users at other recreation areas may, however, be of a more consumptive or mechanized nature. Since specialized users position value on settings for their functional or "means to an end" utility, their user behavior may not always be environmentally friendly. Given this concern, we recommend that managers go beyond assessing levels of specialization within an activity. Perhaps it would be more wise to consider specialization across a set of activities with similar norms regarding environmental attitudes (Williams, 1988). Such a framework may better address user diversity while also considering the potential impact on the natural environment.

The present study has uncovered as many questions as it resolved. Replicating this study across a variety of settings using more congruent and expansive measures may help resolve such questions. For example, it would be interesting to see how specialized participants acted with respect to environmental attitudes. In other words, what would their actual use behavior be? Examining the role of place relationships may also provide insights into environmental behaviors as well. As with any theory or concept, recreation specialization cannot stand alone in explaining and managing for recreation behavior. Many other concepts are being developed, scrutinized, and integrated into management frameworks. To address the increasingly diverse outdoor recreation user, management strategies should assess a fuller definition of specialization while jointly considering other salient segmentation variables. The perspicacious manager will consider fashionable theoretical advances while not forsaking those proven concepts which have provided satisfactory recreation experiences.

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CROWDING NORMS FOR THE CARRIAGE ROADS OF ACADIA NATIONAL PARK: ALTERNATIVE MEASUREMENT APPROACHES

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Abstract: Research on standards of quality has increasingly focused on personal and social norms of visitors. However, alternative norm measurement approaches may yield different findings. This study developed, applied, and compared alternative measurement approaches for crowding norms on the carriage roads of Acadia National Park.

Introduction

Crowding constitutes a long-standing issue in the field of outdoor recreation. This issue is often addressed within the context of carrying capacity. In its most generic form, carrying capacity refers to the amount and type of visitor use that can be appropriately accommodated within a park or recreation area.

Recent experience with the concept of carrying capacity suggests that it can be applied most effectively through formulation of indicators and standards of quality (National Park Service 1992; Shelby et al. 1992; Stankey et al. 1985; Graefe et al. 1990; Stankey and Manning 1986). This approach to carrying capacity focuses principal emphasis on defining the type of visitor experience to be provided and maintained. Indicators of quality are specific, measurable variables which serve as quantifiable proxies for management objectives. Standards of quality define the desired condition of indicator variables.

By defining indicators and standards of quality, crowding and carrying capacity can be determined and managed through a monitoring program. Indicator variables can be monitored over time, and if standards of quality have been violated, management action is required. This approach to crowding and carrying capacity is central to contemporary park and outdoor recreation management frameworks, including Limits of Acceptable Change (LAC) (Stankey et al. 1985), Visitor Impact Management (VIM) (Graefe et al. 1990), Carrying Capacity Assessment Process (C-CAP) (Shelby and Heberlein 1986), Quality Upgrading and Learning (QUAL) (Chilman et al. 1992), Recreation Management Planning Process (Manning 1986), and Visitor Experience and Resource Protection (VERP) (National Park Service 1993).

Not surprisingly, one of the most problematic issues in this contemporary approach to carrying capacity has been setting standards of quality. Such standards may be based on a variety of sources, including legal and administrative mandates, agency policy, historic precedent, expert judgement, interest group politics, and public opinion, especially that derived from outdoor recreation visitors. This latter source has special appeal as it involves those most directly interested in and affected by carrying capacity decisions and related management actions.

Research on visitor-based standards of quality has increasingly focused on personal and social norms. Developed in the fields of sociology and social psychology, norms have attracted considerable attention as an organizing concept in outdoor recreation research and management. In particular, normative theory has special application to setting standards of quality for the recreation experience. Norms are generally defined as standards that individuals and groups use for evaluating behavior and social and environmental conditions (Vaske et al. 1986; Donnelly et al. 1992; Shelby and Vaske 1991). If visitors have normative standards concerning relevant aspects of recreation experiences, then such norms can be studied and used as a basis for formulating standards of quality. In this way, carrying capacity can be determined and managed more effectively.

Application of norms to standards of quality in outdoor recreation is most fully described by Shelby and Heberlein (1986) and Vaske et al. (1986). These applications have relied heavily upon the work of Jackson (1965), who developed a methodology--return potential curves--to measure norms. Using these methods, the personal norms of individuals can be aggregated to test for the existence of social norms or the degree to which norms are shared across groups. Normative research in recreation has focused largely on the issue of crowding (e.g., Vaske et al. 1996; Shelby 1981; Heberlein et al. 1986; Patterson and Hammitt 1990; Williams et al. 1991; Whittaker and Shelby 1988), but also has been expanded to include other potential indicators of quality, including ecological impacts at wilderness campsites (Shelby et al. 1988), wildlife management practices (Vaske and Donnelly 1988), and minimum stream flows (Shelby and Whittaker 1990).

As research on normative standards has proceeded, several approaches to measuring norms have developed. Moreover, several issues surrounding norm measurement and application have likewise arisen. The purposes of this study were to apply and compare alternative approaches to measuring crowding norms and to identify and explore several issues surrounding measurement and application of crowding norms.

Issues in Measuring Crowding Norms

Traditionally, crowding norms have been measured through a numerical approach. That is, respondents are asked to evaluate the acceptability of alternative use densities, such as 0, 5, or 10 encounters with other groups per day along trails. Resulting data are aggregated and graphed to produce a norm curve from which social norms can be derived. This numerical approach is often shortened to reduce respondent burden by simply asking respondents to state the maximum acceptable number of encounters per day. These two approaches might be called the "long" and "short" versions of this measurement technique.

More recently, visual approaches to measuring crowding norms have been developed (Hof et al.1994; Manning et al. 1995; 1996a; 1996b). In this technique, computer software is used to manipulate photographs to depict alternative use densities. As with the numerical approach described above, long and short versions of this measurement technique can be used. The long version asks respondents to evaluate and rate the acceptability of each in a series of photographs. The short version asks respondents to select the photograph that illustrates the highest use density acceptable.

A third set of norm measurement and application issues concerns how survey questions are formulated and worded. For example, questions often use the word "acceptability" to probe for respondents' personal norms. But how is this word interpreted by respondents and how should such study findings be applied? Do such questions reveal the preferences of respondents or their true tolerance or something in between? Secondly, are personal norms of respondents influenced by knowledge of the management implications of such norms? In other words, if respondents understood more explicitly that their expressed norms would lead to management actions to exclude or otherwise regulate visitors, would they express more tolerance for greater use levels? Third, how do personal norms, as conventionally measured in recreation research, relate to norms as externally imposed by others? The sociological literature suggests that norms involve constraints on individual behavior as imposed by the views of a larger group. Therefore, do respondents feel that their personal norms are similar or dissimilar to the norms of "others"? Finally, the literature on crowding in outdoor recreation suggests that norms can be influenced by characteristics of both the respondent and those who are encountered (Manning 1985; 1986). From an empirical standpoint, how do such variables influence crowding norms?

Study Methods

The issues identified above were incorporated in a study of crowding norms on the carriage roads of Acadia National Park, Maine. Fifty-six miles of carriage roads were constructed on Mount Desert Island between 1913 and 1940 at the direction of John D. Rockefeller, Jr. Most of the roads and associated lands were donated to Acadia National Park. Visitor use of the carriage roads has increased dramatically and changed character over the past decade. For most of their history, the carriage roads accommodated pedestrians, equestrians, and bicyclists in relatively low numbers. Since development of the mountain bike in the early 1980s, and recent reconstruction of the carriage roads, all uses of the carriage roads have increased with bicycling emerging as the dominant use. These changing use patterns have given rise to concern over the levels and types of use that should ultimately be accommodated on the carriage roads.

To deal with this concern, the park adopted the Visitor Experience and Resource Protection (VERP) process under development by the U.S. National Park Service (National Park Service 1993; Hof et al.1994; Manning et al. 1995; 1996a; 1996b). A central component of VERP is the formulation of indicators and standards of quality. An initial phase of research identified perceived crowding as an important indicator of quality (Jacobi et al. 1996). A second phase of research was designed to measure crowding norms to help formulate standards of quality.

This phase of research was conducted as a survey of a representative sample of 500 carriage road visitors during the summer of 1995. A questionnaire incorporating the norm measurement issues described earlier was developed and administered by means of personal interviews. Since visitor use of the carriage roads is relatively heavy, the number of visitors at one time along a generic 100 meter section of the carriage roads was used as the measure of use density. The carriage roads were designed so that approximately 100 meters is the average viewscape along the road system. Several alternative approaches were used to measure crowding norms as follows:

1. A visual approach was used by developing a series of photographs of a generic 100-meter section of carriage roads showing varying levels and types of use. Types of use were restricted to hikers and bikers since these are the predominant uses. Nineteen photographs were developed using the study design shown in Table 1. This study design allowed development of crowding norms for many different mixes of uses and for exploring the effects on crowding norms of both the type of respondents and type of visitor encountered. Sample photographs are shown in Figure 1. A "long" version of the visual approach to measuring crowding norms was used by asking respondents to rate the acceptability of each of the 19 photographs using a scale from -4 ("very unacceptable") to 4 ("very acceptable"). A "short" version of the visual approach was used by asking respondents "Which photograph shows the highest pattern of visitor use you think would be acceptable to see on this section of carriage roads?" Respondents were given the option of indicating that all of the photographs were acceptable.

Table 1. Study Design (Bicyclists/Hikers)

Number of Visitors					
0	5	10	15	20	30
All photographs					
0/0	0/5	0/10	5/10	0/20	10/20
	2/3	3/7	8/7	10/10	15/15
	3/2	5/5	10/5	20/0	20/10
	5/0	7/3			
		10/0			
Even distribution					
0/0	2/3	5/5	8/7	10/10	15/15
	3/2				
Bicyclists only					
0/0	5/0	10/0		20/0	
Hikers only					
0/0	0/5	0/10		0/20	
2:1 distribution (bicyclists: hikers)					
0/0	3/2	7/3	10/5		20/10
1:2 distribution (bicyclists/hikers)					
0/0	2/3	3/7	5/10		10/20

2. A "short" version of the numerical approach to measuring crowding norms was used by asking respondents, " What do you think is the maximum number of visitors that would be acceptable to see at any one time on the section of the carriage roads shown in the photograph?" Respondents were asked to answer this question for three mixes of use: 1) all visitors are

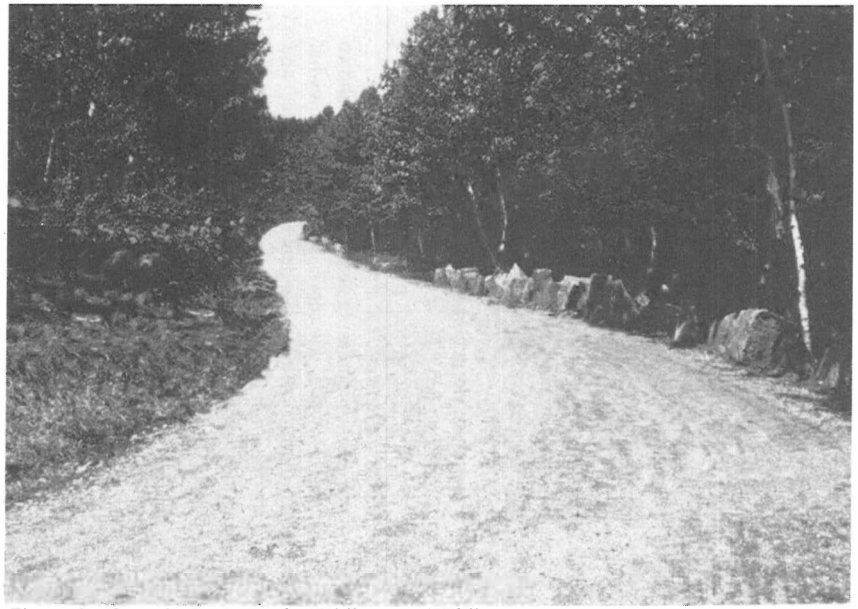


Figure 1a. Sample photograph - 0 bikers and 0 hikers.



Figure 1b. Sample photograph - 0 bikers and 10 hikers.



Figure 1c. Sample photograph - 10 bikers and 10 hikers.



Figure 1d. Sample photograph - 15 bikers and 15 hikers.

hikers, 2) all visitors are bikers, and 3) half of visitors are hikers and half are bikers. Respondents were given the option of indicating that the number of visitors seen did not matter or that the number of visitors seen mattered, but that they could not report a maximum acceptable number.

3. Using the photographs, respondents were asked, "Which photograph shows the pattern of visitor use that is so unacceptable that you would no longer use the carriage roads or would shift your use of the carriage roads to a different location or time?" Respondents were given the option of indicating that none of the photographs represented this condition. This question was designed to explore the relationship between "acceptability" and "true tolerance."

4. Using the photographs, respondents were asked, "Which photograph shows the highest pattern of visitor use that the National Park Service should allow on this section of the carriage roads? In other words, at what point should visitors be restricted from using the carriage roads?" Respondents were given the option of indicating that visitor use should not be restricted at any point represented in the photographs. This question was designed to explore the influence of management implications on crowding norms.

5. Using the photographs, respondents were asked, "Which photograph shows the highest pattern of visitor use that you think most other visitors would find acceptable to see on this section of the carriage roads?" Respondents were given the option of indicating that most visitors would find all of the photographs acceptable. This question was designed to explore the relationship between personal norms and externally applied social norms.

Study Findings

Study findings are illustrated and summarized in Table 2 and Figure 2. Table 2 summarizes crowding norms for all of the measurement approaches used in this study. All of the crowding norms included in Table 2 are calculated using the sample as whole, not just a single type of respondent. Crowding norms for the long version of the visual approach are the points at which the respective regression lines cross the threshold from acceptable to unacceptable (the neutral point). All other crowding norms are mean values.

The first three norms shown in Table 2 are derived using the long version of the visual approach. The first norm, 14, is calculated using the seven photographs that show equal distribution of hikers and bikers. The second and third norms, 17 and 12, are calculated using two series of four photographs that show hikers only and bikers only, respectively. Since personal norms cannot be calculated from these data, it is not possible to test for statistically significant differences among these three norms.

However, the apparent differences among these norms are in the expected direction. That is, carriage road visitors have the highest tolerance or norm for hikers only, and the lowest tolerance or norm for bikers only, with the tolerance or norm for an even distribution of hikers and bikers midway between these norms.

Table 2. Alternative Crowding Norms.

Measurement Approach	Norm
Visual Approach (Long Version)	
Even distribution of hikers and bikers	14
Hikers only	17
Bikers only	12
Numerical Approach (Short Version)	
Even distribution of hikers and bikers	18
Hikers only	16
Bikers only	13
Visual Approach (Short Version)	
a. Acceptability	11^{1bcd}
b. True Tolerance	25^{2acd}
c. Acceptability for most visitors	15^{3abd}
d. Management implications	18^{4bcd}

1/ "All of the photographs would be acceptable" = 40
2/ "None of the photographs represent this condition" = 29
3/ "All of the photographs would be acceptable to most visitors" = 34
4/ "Visitor use should not be restricted" = 184
a, b, c, d = statistically significant difference

The second three norms in Table 2 are derived from the short version of the numerical approach. These norms are quite similar to the comparable norms derived from the long version of the visual approach. The numerically-based norms for encountering hikers only is 16 compared to 17 for the visually-based approach. The numerically-based norm for encountering bikers is 13 compared to 12 for the visually-based approach. However, the numerically-based norm for an even distribution of hikers and bikers is 18 compared to 15 for the visually-based approach.

The final four norms in Table 2 are derived using the short version of the visual approach. However, these norms are measured using different normative concepts and related wording. The concepts addressed include "acceptability," "true tolerance," "acceptability for most visitors," and norms as explicitly informed by "management implications" as described earlier. Since personal norms can be calculated from these data, t-tests were calculated to determine if there were any statistically significant differences among these norms. As indicated, all four norms differed from one another to a statistically significant degree. The concept of "acceptability" resulted in the lowest norm, while the concept of "true tolerance" resulted in the highest norm. "Acceptability for most visitors" and "management implications" were located within this range.

Figure 2 shows a series of norm curves developed from the long version of the visual approach. These are regression lines relating the number of people in each photograph to acceptability ratings. These norm curves take the shape expected, as acceptability declines with increasing numbers of visitors shown in each photograph. However, the curves shown vary somewhat depending upon both the type of respondent (hiker or biker) and the type of visitor shown in the photographs (hikers or bikers). It is clear, for example, that hikers are less tolerant of bikers than other hikers. Bikers show the same pattern.

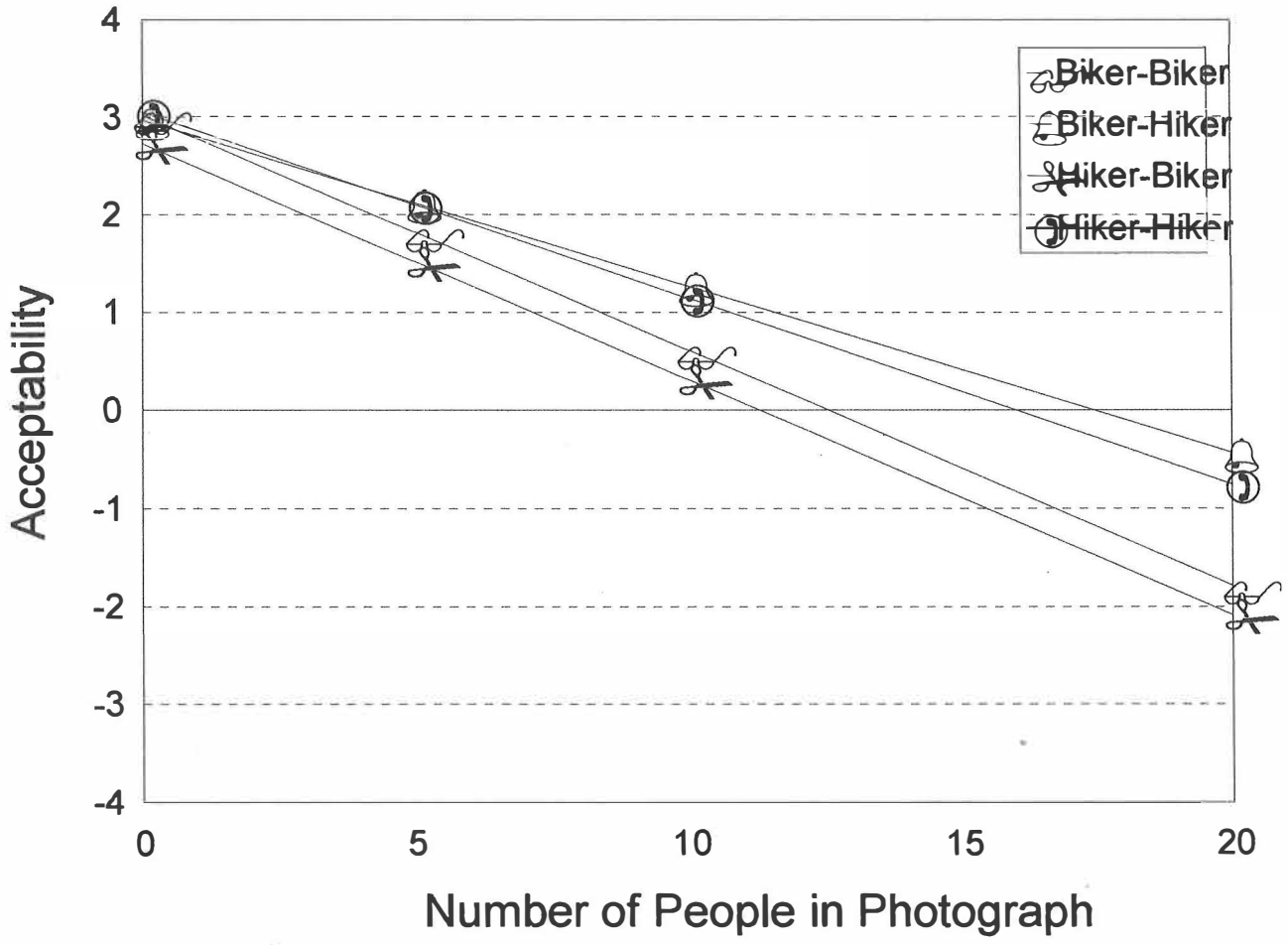


Figure 2. Norm Curves Based on Long Version of the Visual Approach

Conclusions

Research on visitor norms for crowding and other recreation-related impacts have become an important focus for formulating standards of quality. However, a number of issues have arisen regarding alternative norm measurement approaches. This study explored several alternative approaches to measuring crowding norms and found that different approaches can lead to different study findings. Specific conclusions which can be drawn from this study are as follows:

1. "Short" and "long" versions of norm measurement questions may lead to somewhat different findings. In this study, the short and long versions of the visual approach led to norms of 11 and 15 people per viewscape, respectively. Because personal norms cannot be calculated from the long version of the question, a statistical test of the difference between these norms is not possible. However, the norm of 15 is 36% higher than the norm of 11, and this difference appears substantive.

2. Visual and numerical approaches to norm measurement led to nearly identical findings in this study. However, this should be qualified in two ways. First, an earlier study (Manning et al. 1996) found relatively large differences between these two measurement approaches. These differences were attributed to the relatively high use levels that were studied which ranged up to 108 people at one time at attraction sites. It may be that the visual and numerical approaches yield similar results only when use levels are relatively low. Second, findings from the visual approach yielded results which appear more consistent than those from the numerical approach. That is, visually-based norms reflected increasing tolerance as use conditions changed from bikers only to equal distribution of bikers and hikers to hikers only. Numerically based norms were less consistent.

3. The underlying concept and related wording of norm measurement questions can substantially influence the norms derived. The questions addressing "acceptability" and "true tolerance" yielded very different norms of 11 and 25 persons per viewscape, respectively.

4. Visitor norms may be affected through more explicit understanding of the management implications of such judgements. That is, if visitors understand that the norms they express will be used to formulate standards of quality, and that these standards of quality may in turn limit or otherwise regulate visitor access to park attractions and facilities, then they may

express more tolerance in their normative judgements. This study found the norm for persons per viewscape to be 18 using the question including management implications. This number was statistically and substantially higher than the norm (11) derived from the question which addressed acceptability only. Moreover, the norm of 18 is artificially low because an additional 184 visitors (over one-third of the sample) responded that visitor use should not be restricted at any point represented by the photographs.

5. There may be a difference between the personal norms of visitors and social norms as derived from "other visitors." These two approaches to norm measurement resulted in statistically significant differences. Most visitors apparently feel that their personal norms are more sensitive (or less tolerant) than those of other visitors.

6. Crowding norms can be influenced by both the type of respondent and the type of visitor encountered. In this study, hikers and bikers expressed different crowding norms, and these norms were influenced by the type of visitor encountered (hikers only, bikers only, or equal distribution of both). These findings are consistent with the literature on crowding.

It is likely that visitor norms will play an increasingly important role in helping to formulate standards of quality by which park and outdoor recreation areas will be managed. However, the ways in which norms are measured and applied have important implications. Based on findings from this study, this issue warrants more research and management attention.

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RELATIONSHIPS BETWEEN MOTIVATIONS AND RECREATION ACTIVITY PREFERENCES AMONG DELAWARE STATE PARK VISITORS: AN EXPLORATORY ANALYSIS

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Abstract: This paper examines the relationship between visitors' motives or benefits sought and activity choices among visitors to Delaware state parks. Respondents were asked to rank the importance of 22 reasons for visiting a state park. Factor analysis was then used to reduce these 22 possibilities to five general motivation factors. Additionally, subjects were asked to report their preferences for 18 activities available at Delaware state parks. Cluster analysis was used to place respondents into activity preference groups. Significant differences between these clusters were found in relation to how they ranked the importance of the five motivation factors. This study demonstrates that activity preferences at state parks related to motives for visiting the park. Managers should attempt to offer a diverse array of programs and activities that are appropriate for and appeal to a variety of different users.

Introduction

Management of natural resources for outdoor recreation involves decisions regarding the allocation, regulation and utilization of these resources in society. The overriding reason for resources committed to outdoor recreation purposes is that outdoor recreation experiences provide some value or benefit to the public. An important management goal, therefore, is to maximize the provision of the public good while maintaining the integrity of the resource base for future generations (Driver and Tocher 1970; Brown 1977; McCool et al. 1984).

The "public good" assumption for committing resources for outdoor recreation purposes remains at the level of plausibility until proven empirically. Important research and management questions relate to the study of: the individual and societal benefits of outdoor recreation; the specific relationships among activities, experiences and setting attributes in relation to outcomes and benefits; and management techniques that provide for the different types of experiences demanded by the public. One management model consistent with the system-wide recreation resources development perspective and able to provide a conceptual framework to deal with some of the research concerns noted here is the Recreation Opportunity Spectrum (ROS) (Driver et al. 1987). The ROS model suggests that managed recreation resources provide opportunities for recreationists with varied preferences/motives to choose recreation activities and activity-based experiences that satisfy needs/wants for the individual/public good.

The components and interrelationships established in the ROS model have singly and in combination generated much research interest. The concept of "activity" has been studied extensively with regard to classifications systems for activities. Initial attempts at "typing" the domain of leisure activities relied on intuitive/implicit differences among activities (Kaplan 1960; Burch 1969; Hendee et al. 1981). Further taxonomic attempts typed activities based on frequencies of participation data and importance ratings of selected activities (Ditton et al. 1975; Gudykunst et al. 1981).

With the conceptualization of outdoor recreation as human experience, motivational dimensions were combined with participation rates and importance ratings to produce taxonomies of activities based on "reasons" or "why" people participated in selected activities (Crandall 1980; Tinsley and Johnson 1984). Another line of research, the "outcomes" track, focused on classifying the benefits or satisfactions achieved while participating in outdoor recreation. Initially, lists of satisfactions/outcomes of participation in selected activities were developed (Driver 1977). Later, taxonomies of leisure activities based on psychological "benefits" of participation were developed by Pierce (1980), Graefe et al. (1981), and others. Some researchers found variation in outcome "types" within activities (Brown and Haas 1980); others found similarities in psychological outcomes across settings (Graefe et al. 1981; Knopf et al. 1983).

A third line of research focused on the human use of parks as leisure "places" or "settings". Field and Cheek (1974) note that recreation places are not activity-specific; recreation activities pursued by people in such settings are more defined by the participation unit (human group) than by setting attributes or the specific activities for which the parks were designed. Williams et al. (1992) suggest that the recreation place, not the activity, is the repository of human meaning/value for outdoor recreation behavior.

Past research efforts tend to suggest the existence of some relationships among user groups, activity choices, and leisure

settings as postulated by the ROS management model. However, the relationships are complex and ambiguous; anomalies and inconsistencies have been found within and across conceptualization and classification schemes (Williams and Knopf, 1985; Virden and Knopf, 1989; Yuan and McEwan, 1989). Moreover, few researchers have examined an important assumption of the ROS model-that of the variably motivated recreationist choosing activities in a motive consistent fashion. If motives are efficacious in their ability to direct and channel behavior, then variably motivated recreationists should choose different recreation activity packages as suggested by the model.

Some of the studies discussed above are site-specific descriptive studies relating motives of participants to chosen recreation activities at specific sites. This study takes an alternative approach by examining the motive-activity choice link across all users of a common resource classification: state parks. This type of analysis controls for any site-specific self-selection bias in motive and activity structures at specific sites.

Given the myriad of approaches, conceptualizations and findings in relation to the ROS model, further research is needed to test the postulated relationships. The purpose of this study is to further examine the motive-behavior link as delineated in the ROS model. The objectives are three-fold:

(1) Identify the motive structure of users of a common resource class-state parks.

(2) Identify segments of state park visitors based on their activity participation and preferences.

(3) Ascertain any relationships between varied motive structures and choices of recreation activities at the state park sites.

Methods

This study examined visitors to the Delaware State Park system and included all of the State Parks that charged entrance fees (11 of the 13 parks). Data were collected through a combination of on-site interviews and follow-up mail questionnaires sent to a sample of those interviewed at the parks. The follow-up questionnaire was designed to collect more in depth information regarding park visitors' attitudes and characteristics.

Sampling for the survey was designed to obtain a data base that would accurately describe visitors to each park individually as well as the overall system of State Parks (Table 1). To avoid problems of low response rates, mailing addresses were obtained from those completing onsite interviews and several reminder mailings were pursued, as per Dillman (1978). The follow-up questionnaires were sent within two weeks of their park visit. A reminder/thank you post card was sent seven to ten days later. Those not returning the questionnaires within another two weeks were sent a full follow-up questionnaire packet, and a final full follow-up was sent to those who had not responded after two more weeks.

Sampling was conducted from May through October, 1993, according to a detailed sampling schedule. Sampling was limited to weekends for the months of May, September and October.

Table 1: Survey response rates by site for Delaware State Park visitors.

State Park	Onsite Interviews	Mail Questionnaires Mailed	Returned	Response Rate
Cape Henlopen	256	11	76	68%
Fort Delaware	213	115	77	67%
Bellevue	284	168	105	63%
Trap Pond	227	87	52	60%
Brandywine Creek	196	123	73	59%
Holts Landing	96	66	38	58%
Delaware Seashore	320	206	115	56%
Walter S. Carpenter	181	114	63	55%
Lums Pond	267	117	64	55%
Fenwick Island	236	172	91	53%
Killens Pond	301	248	116	47%
Total	2577	1528	870	57%

During June, July and August, each park was sampled once each weekend and one week day per week. Interviewers were instructed to conduct about ten interviews on any given sampling day. Sampling times were rotated between the morning and afternoon to ensure a representative sample of users to each park. The interviews were generally conducted at the entrance stations, where visitors who entered during the sampling periods were asked to participate in the survey after they had paid their entrance fee.

Questionnaires were sent to 1,528 of 2,577 visitors interviewed in all of Delaware's State Parks (59%). Use of the mailing procedures described above resulted in 870 completed questionnaires, representing an overall response rate of 57% to the mail survey portion of the study.

Data analysis procedures included factor analysis, cluster analysis, and one-way analysis of variance. Factor analysis was used to examine the underlying dimensions within both the motivations and activity participation data. Cluster analysis identified distinct segments of park visitors based on the activity preference scores. Analysis of variance tests were conducted to analyze the relationship between motive factors and activity preference clusters.

Results

Motivations

Respondents were asked to rank the importance of 22 possible reasons for visiting a Delaware State Park. Overall, the respondents indicated that fun and escape related motivations such as "to have fun", "to have a good time", and "to escape pressure" and "get away from their daily routine" played a prominent role in their decision to visit a State Park. On the other hand, very few respondents indicated that they were motivated through educational or learning reasons (Figure 1).

Factor Analysis with varimax rotation was used to reduce these 22 items to the five general motivation factors of Escape/Solitude, Nature/Harmony, Nature/Learning, Fun/Recreate, and Social/Interaction. The Escape/Solitude factor included the largest number of variables (eight) with a reliability alpha of 0.88. The fun factor consisted of only two variables

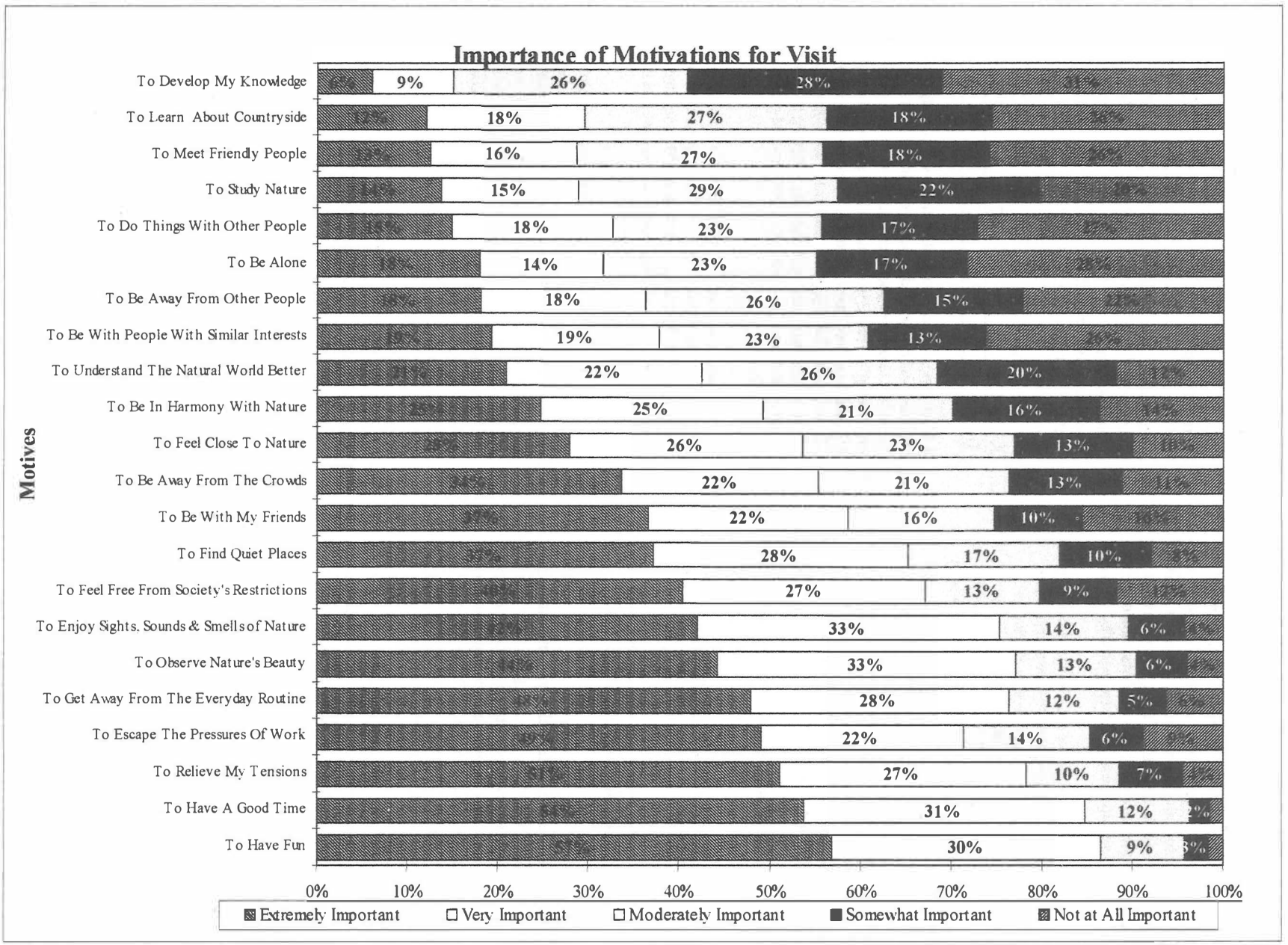


Figure 1. Motivations for visit summary chart.

with an alpha of 0.80. The remaining three factors, Nature/Harmony, Nature/Learning, and Social, consisted of four variables each, with alphas ranging from 0.85 to 0.88. The factor analysis explained just under 70% of the variance in the importance ratings (Table 2).

Activity Preferences

In addition to answering questions on what motivated them to visit Delaware State Parks, subjects were also asked about their activity preferences. Respondents were shown a list of 18 activities available for participation at Delaware State Parks, and asked to indicate which activities they participated in (or planned to participate in) during their visit. They were also asked to rank in order of importance the three activities that represented the most important reasons why their group had come to the state park (Figure 2). Swimming (45%), and Sunbathing (41%) were the two activities reported most often by the subjects, reflecting the large number of beach park respondents. The third most popular activity was walking for exercise, participated in by a third (33%) of the respondents, followed by picnicking (28%) and fishing (27%).

We attempted to factor analyze the activity importance ratings to determine if there were "Activity Dimensions". This analysis identified five activity factors; however, the low factor loadings, inter-item correlations and weak reliabilities lead us to discard these factors in favor of a clustering approach. Cluster analysis was then used to group subjects into activity preference clusters based on how they ranked the available activity choices. Activity scores were recoded such that 0 = no participation, 1 = participated but not ranked in top three preferences, 2 = third most important activity, 3 = second most important activity, and 4 = top ranked activity. Table 3 provides the mean activity preference scores of the eight variables which best defined the clusters for four separate analyses, representing three, four, five, and six cluster solutions

The two primary clusters classified as the Passives and the Superactives remained throughout all 4 cluster solutions. Accounting for over half of the respondents, the Passive group did not rank any activities highly, but preferred picnicking over more active pursuits, with the exception of the six cluster solution where picnickers formed a separate cluster. While this group remains large throughout all solutions, nearly a third of its members shift to other groups when going from a three to a six cluster solution On the other hand, while small, the Superactive group ranked all activities high, and contains the same number of subjects through each cluster solution.

Table 2. Factor scores for Deleware State Park visitors' motivations/reasons for visiting the park.

Questionnaire Statement	Variable Name	Factor 1 Escape/ Solitude	Factor 2 Nature/ Harmony	Factor 3 Nature/ Learning	Factor 4 Fun/ Recreate	Factor 5 Social/ Interaction
To get away from other people	AWAY	0.806				
To be away from the crowds	NOCROWDS	0.774				
To be alone	ALONE	0.758				
To find quiet places	QUIET	0.660				
To get away from the everyday routine of life	ROUTINE	0.598				
To relieve my tensions	TENSIONS	0.588				
To escape the pressures of work	PRESSURE	0.562				
To feel free from society's restrictions	FREE	0.515				
To observe the beauty of nature	OBSERVE		0.810			
To enjoy the sights, sounds and smells of nature	SIGHTS		0.802			
To feel close to nature	FEELCLOS		0.765			
To obtain the feeling of harmony with nature	HARMONY		0.678			
To develop my knowledge	KNOWLEDG			0.847		
To learn about the country side	LEARN			0.792		
To understand the natural world better	NATWORLD			0.638		
To study nature	STUDY			0.599		
To have fun	FUN				0.822	
To have a good time	GOODTIME				0.803	
To do things with other people	DOTHINGS					0.855
To be with people with similar interests	SIMILAR					0.813
To be with my friends	FRIENDS					0.766
To meet friendly people	FRIENDLY					0.608
	# of Items	8	4	4	2	4
	Alpha	0.88	0.88	0.85	0.86	0.80
	Eigenvalue	7.52	2.68	2.5	1.49	1.03
	% Variance Explained	34.2%	12.2%	11.3%	6.8%	4.7%
	Total % Variance Explained	69.2%				

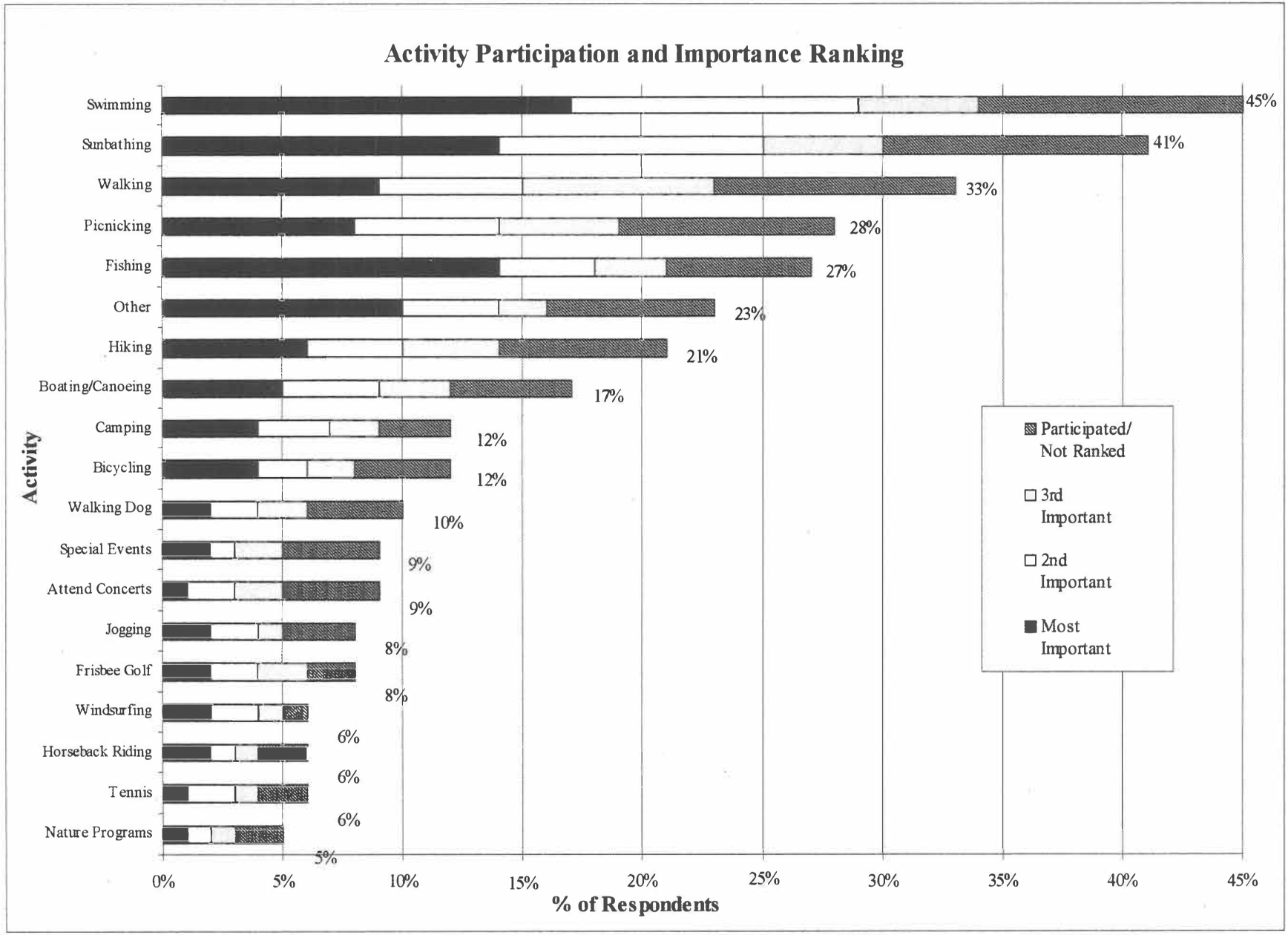


Figure 2: Activity participation and ranking summary chart.

Table 3: Visitor activity rankings by cluster.

Activity Cluster Analysis

3 Cluster Solution

Cluster #	*n*	*Boating*	*Fishing*	*Hiking*	*Sunning*	*Swimming*	*Walking*	*Camping*	*Picnicking*	*Name*
1	*1914*	0.4	0.6	0.7	0.3	0.2	0.7	0.2	0.8	*Passive*
2	*20*	3.3	3.9	3.7	3.9	4.0	3.6	3.4	3.8	*Superactive*
3	*640*	0.4	0.5	0.4	1.9	3.3	0.6	0.0	0.8	*Beachgoers*

4 Cluster Solution

Cluster #	*n*	*Boating*	*Fishing*	*Hiking*	*Sunning*	*Swimming*	*Walking*	*Camping*	*Picnicking*	*Name*
1	*606*	0.2	0.1	2.1	0.1	0.2	2.0	0.1	1.0	*Walkers/Picnic*
2	*1564*	0.3	0.1	0.2	1.0	1.3	0.3	0.1	0.8	*Passive*
3	*20*	3.3	3.9	3.7	3.9	4.0	3.6	3.4	3.8	*Superactive*
4	*384*	1.2	3.3	0.4	0.6	0.8	0.4	0.9	0.5	*Anglers*

5 Cluster Solution

Cluster #	*n*	*Boating*	*Fishing*	*Hiking*	*Sunning*	*Swimming*	*Walking*	*Camping*	*Picnicking*	*Name*
1	*629*	0.2	0.4	0.3	2.1	3.2	0.5	0.2	0.8	*Beachgoers*
2	*365*	0.1	0.3	1.1	0.3	0.2	3.3	0.1	0.8	*Walkers*
3	*1255*	0.1	0.4	0.7	0.2	0.2	0.1	0.1	0.9	*Passive*
4	*305*	2.6	1.9	0.6	0.4	0.7	0.3	1.3	0.6	*Boaters/Anglers*
5	*20*	3.3	3.9	3.6	3.9	4.0	3.6	3.4	3.8	*Superactive*

6 Cluster Solution

Cluster #	*n*	*Boating*	*Fishing*	*Hiking*	*Sunning*	*Swimming*	*Walking*	*Camping*	*Picnicking*	*Name*
1	*426*	0.3	0.1	1.0	0.4	0.5	0.8	0.0	3.4	*Picnic/Walkers*
2	*295*	1.0	3.7	0.4	0.6	0.7	0.4	0.3	0.4	*Anglers/Boaters*
3	*1207*	0.2	0.1	0.7	0.3	0.1	0.8	0.0	0.1	*Passive*
4	*504*	0.3	0.2	0.4	2.1	3.5	0.6	0.1	0.5	*Beachgoers*
5	*20*	3.3	3.9	3.6	3.9	4.0	3.6	3.4	3.8	*Superactive*
6	*122*	1.1	1.2	0.8	0.5	1.1	0.5	3.7	0.5	*Camper/Boaters*

The third cluster in the three cluster solution was the Beachgoers. This group, which ranked sunning and swimming as preferred activities, disappeared in the four cluster solution and reappeared in the five and six cluster solutions. Another noteworthy group was the Walkers/Picnickers who first emerged in the four cluster solution. This group ranked walking and hiking highly, and picnicking moderately. This cluster ranged in size from 365 to 606 and was most closely related to the Passive cluster.

The four cluster solution also included the first of the Angler groups. The anglers, consisting of 384 respondents in the four cluster solution, ranked fishing as their favorite activity. This group decreased to 305 respondents and changed into the Boater/Angler group in the five cluster solution, and further decreased to 295 due to the emergence of a Camper/Boater cluster in the six cluster solution. Note that the Anglers also rated boating relatively high in the five and six cluster solutions. The final group was the Camper/Boaters who emerged in the six cluster solution. This group of 122 respondents were similar to the various Angler groups because of their interest in fishing and boating. However, they also reported a high preference for camping which set them apart from the previous Angler/Boater group.

Motivation/Activity Preference Relationship

Analysis of variance was used to determine whether or not there was a relationship between what motivates people to attend a Delaware State Park and their activity preferences while at the setting. Differences were identified between the various clusters in relationship to their mean scores for each motivation factor (Table 4). Significant differences between mean scores were found for at least three of the five motive factors for all four cluster solutions. While no clear motive pattern emerged, the Fun/Recreate factor contained significant differences in all cluster

Table 4: Comparison of Motive Factor Means across Activity Clusters

Motive Factor Means for Each Activity Cluster Solution						
		Factor 1	Factor2	Factor 3	Factor4	Factor 5
		Escape/Solitude	*Nature/Harmony*	*Nature/Learning*	*Fun/Recreate*	*Social/Interaction*
Overall sample mean values		3.56	3.70	2.94	4.33	2.98
Cluster #	**3 Cluster n Cluster Name**	**Factor 1**	**Factor2**	**Factor 3**	**Factor4**	**Factor 5**
		Escape/Solitude	*Nature/Harmony*	*Nature/Learning*	*Fun/Recreate*	*Social/Interaction*
1	565 *Passive/Picnickers*	*3.49*	3.74	*3.01*	*4.26*	2.95
2	10 *Superactive*	*3.68*	3.63	*2.84*	*4.75*	3.44
3	194 *Beachgoers*	*3.75*	3.61	*2.74*	*4.50*	3.04
	Sig.	*0.009*	*ns*	*0.011*	*0.001*	*ns*
Cluster #	**4 Cluster n Cluster Name**	**Factor 1**	**Factor2**	**Factor 3**	**Factor4**	**Factor 5**
		Escape/Solitude	*Nature/Harmony*	*Nature/Learning*	*Fun/Recreate*	*Social/Interaction*
1	219 *Walkers*	3.46	*3.90*	3.08	*4.10*	*2.77*
2	424 *Passive/Picnickers*	3.60	*3.62*	2.88	*4.42*	*3.03*
3	10 *Superactive*	3.68	*3.63*	2.84	*4.75*	*3.44*
4	114 *Anglers*	3.58	*3.67*	2.90	*4.38*	*3.14*
	Sig.	*ns*	*0.016*	*0.144*	*0.000*	*0.007*
Cluster #	**5 Cluster n Cluster Name**	**Factor 1**	**Factor2**	**Factor 3**	**Factor4**	**Factor 5**
		Escape/Solitude	*Nature/Harmony*	*Nature/Learning*	*Fun/Recreate*	*Social/Interaction*
1	187 *Beachgoers*	3.72	3.62	*2.72*	*4.50*	*2.00*
2	146 *Walkers*	3.52	3.80	*3.06*	*4.04*	*2.70*
3	341 *Passive/Picnickers*	3.47	3.67	*2.95*	*4.34*	*3.02*
4	83 *Boaters/anglers*	3.61	3.88	*3.18*	*4.35*	*3.20*
5	10 *Superactive*	3.68	3.63	*2.84*	*4.75*	*3.44*
	Sig.	*ns*	*ns*	*0.006*	*0.000*	*0.006*
Cluster #	**6 Cluster n Cluster Name**	**Factor 1**	**Factor2**	**Factor 3**	**Factor4**	**Factor 5**
		Escape/Solitude	*Nature/Harmony*	*Nature/Learning*	*Fun/Recreate*	*Social/Interaction*
1	128 *Picnic/walkers*	*3.58*	3.87	3.01	*4.45*	*3.23*
2	90 *Boaters/anglers*	*3.59*	3.58	2.84	*4.43*	*3.05*
3	347 *Passive/Picnickers*	*3.44*	3.70	3.01	*4.18*	*2.81*
4	158 *Beachgoers*	*3.78*	3.64	2.77	*4.49*	*2.99*
5	10 *Superactive*	*3.68*	3.63	2.84	*4.75*	*3.44*
6	34 *Camping/boaters*	*3.59*	3.74	3.04	*4.28*	*3.36*
	Sig.	*0.020*	*ns*	*ns*	*0.001*	*0.001*

solutions, followed by the Social/Interaction factor which contained significant differences in the four, five, and six cluster solutions. The Nature/Harmony factor revealed the least amount of variance by showing significant differences only for the four cluster solution. Both the Escape/Solitude and Nature/Learning factors held significant differences between clusters in two separate solutions.

This analysis demonstrates that people who have different activity preferences also have different motivations for visiting a Delaware State Park. For example the Escape/Solitude motivations were much more important to the Beachgoers than the Social/Interaction and Nature/Learning motivations were. Similarly, resource based groups such as anglers and walkers reported high means for the Nature/Harmony and Nature/Learning motivations. While all groups sought "fun", the Passives and Walkers groups tended to attach less importance to this motive dimension. These results suggest that not all sites are well suited for all visitors and that what motivates people to visit a site may also determine what activities they participate in during their visit.

Conclusions

It was possible to place state park visitors into groups based on what general type of activities they prefer. However, the structure of the resulting groups is dependent on the number of clusters specified in the solution. Two main groups emerged and were stable across all the different cluster solutions - Superactives and Passives - with other tertiary groups emerging that are more dependent on the number of activity clusters derived. There was no clear "correct" solution to the segmenting of park visitors. Each of the four solutions examined provided a few more insights into the types of visitors that use Delaware State Parks.

Addressing the question "Are motivations for visiting a State Park related to activity preferences of visitors?", we found that there were significant differences between activity preference groups in relation to their motivations to visit a Delaware State Park. Put more simply people who visit recreation areas for different reasons (motivations) prefer to participate in different types of activities.

Managers must recognize that people visit parks and recreation areas for different reasons and therefore they need to offer a wide variety of activity opportunities. Furthermore, it should be noted that specific recreational settings may dictate who will visit and what they will do there. The extent of these relationships suggests managers have a direct and pivotal role in meeting visitor needs and desires in ways that can lead to higher levels of visitor satisfaction.

More research is needed to examine various visitor attribute and behavior variables such as: distance visitors traveled, first time visitors vs. repeat visitors, type of park (e.g. resource/setting variables), overnight versus day uses, as well as other visitor characteristics and setting opportunities.

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Recreation Resource Management

UPDATING THE RECREATION OPPORTUNITY SPECTRUM USER GUIDE - EASTERN REGION SUPPLEMENT

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Abstract: The Recreation Opportunity Spectrum User Guide - Eastern Region Supplement supplies USFS managers with criteria used in the planning and management of recreation in Eastern Region National Forests. This supplement was examined and three problems were identified. These include vague parameters, direct inconsistencies, and facilities lacking standards. Revisions are proposed.

Introduction

The Recreation Opportunity Spectrum (ROS) is a USDA U.S. Forest Service (USFS) planning and management framework that was developed to resolve the dilemma of integrating recreation with other forest resources into multiple-use Land and Resource Management Plans (LRMP). The concept of ROS originated with Driver, Brown and associates (1978), while the planning and management framework eventually adopted by the USFS in 1980 was developed by Clark and Stankey (1979). The underlying premise of this framework is that recreationists realize satisfactory experiences by engaging in preferred activities in desired settings (Driver and Brown 1978). By combining activity and setting characteristics, a spectrum of six recreational opportunity classes is defined, each specifically characterizing a distinct, probable experience. These classes include primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban. Each class is characterized by a combination of physical, biological, social, and managerial criteria.

The ROS User Guide (USDA-FS 1982), which is based upon the characteristics of western forests, was developed to provide USFS managers with criteria defining the range of recreational activities, experiences, and settings for each opportunity class. In Eastern Region National Forests, ROS was employed as one of the tools in the development of each of the LRMP. These forests are often fragmented by a high percentage of private in-holdings, many that have been intensively developed and managed during the early part of this century. In contrast, western forests are predominately under USFS ownership with diverse recreational settings from highly managed and accessible to unmanaged remote areas. Because of this disparity, the ROS User Guide - Eastern Region Supplement (USDA-FS 1985) was developed to augment the criteria set forth by the ROS User Guide (USDA-FS 1982). The Eastern Supplement is used to assist in land and resource planning and management the delineation of ROS classes, conducting trade-off analysis among multiple-use resources, defining conditions of recreation settings and facilities, guiding non-recreational management activities, and directing the development of management standards. Successful integration and management of recreation in eastern National Forests is influenced by the extent that each class's criteria are used in land and resource planning and management. However, this implies that the criteria are understandable and encompass the range of setting and activities.

In 1993 Michigan State University entered into a cooperative agreement with the USFS to assess their management practices on non-wilderness semi-primitive areas in Michigan's Hiawatha National Forest (Lynch and Nelson 1995). As part of this study, the ROS Use Guide - Eastern Region Supplement for semi-primitive non-motorized (SPNM) and semi-primitive motorized (SPM) classes was closely examined. Semi-primitive areas are defined as natural appearing forested landscapes providing solitude, without highly visible evidence of management activities. They are particularly important in eastern forests as opportunities at the primitive end of the spectrum are rare (Table 1). Betz and Cordell (1989) also predict expansion in dispersed outdoor recreation activities in undeveloped settings for the coming years.

Table 1. Percentage of ROS class allocation in the Eastern Region National Forests.

ROS Class	% Allocation
Primitive	1.7
Semi-Primitive Non-Motorized	19.3
Semi-Primitive Motorized	10.4
Roaded Natural	67.4
Rural	1.1
Urban	0.0

a/ Source: Leefers, L. A., M. McDonough, & D. K. Smith. Allocating our National Forests for recreation opportunities. Unpublished Report. Department of Forestry, Michigan State University, East Lansing, MI.

Analysis and Corrections

The examination of the standards and guidelines, provided in the ROS User Guide - Eastern Region Supplement, revealed three principal problems:

1. Vague, poorly defined standards that are not specific, measurable parameters
2. Direct inconsistencies and contradictions
3. Selected recreation facilities lacking standards and guidelines

The use of faulty criteria in planning and management of recreation has negative consequences. First, deficient criteria lead to ambiguous opportunity settings that may not meet user expectations or severely impair their ability to achieve a positive recreational experience. Moreover, management actions may be contrary to the spirit and letter of the ROS designation, creating conflict between managers and the public.

Specific, Measurable Parameters
The following is a listing of the standards and guidelines where specific, measurable parameters are absent.

1) Limited car/truck access and mobility is one of the defining characteristics of semi-primitive areas. According to the ROS User Guide (USDA-FS 1982), motorized use is intended to be restricted to specific recreation sites in SPNM areas, while in SPM areas road access is somewhat less limited. For roads in SPNM, the Eastern Region Supplement (1985:6) specifies "roads and trails (are) normally closed to public motor vehicle travel" while in SPM areas, (1985:8) "roads and trails may be open or closed to public motor vehicle travel." Both standards and guidelines, while stating a purpose, do not establish the conditions under which a road would be open or closed. Furthermore, in SPNM areas, this standard is not adequate because of the flexibility created by the word "normally." To rectify this we suggest, that motorized access in both SPNM and SPM areas be restricted to only long-term roads. All Traffic Service Level D roads should be eliminated or gated only to be used for management purposes. Exceptions to this should be limited to only those Level D roads that lead to specific recreation sites, for in-holders to reach their property, or where appropriate seasonal activities are dependent on motorized vehicles.

2) The Eastern Region Supplement states (1985:6) "trails are maintained for foot and/or horse use" in SPNM and (1985:8) "for specific motorized use" in SPM. This does not appear to address mountain biking or dog sledding. Further, there is no discussion of the standards for foot or horse trails such as treadway width, shoulder height width, etc. or reference to them in another applicable standards document. We suggest the following revision: In SPNM areas trails are maintained for foot (including hiking, cross country skiing, or snowshoeing), mountain bike, dog sledding, and/or horse use as appropriate. SPM area non-motorized trails are maintained for foot (including hiking, cross country skiing, or snowshoeing), mountain bike, dog sledding and/or horse use as appropriate. SPM area motorized trails are maintained for off-highway vehicle and/or snowmobile use as appropriate. Standards for trail design and maintenance will be those contained in (cite appropriate reference).

3) The Eastern Region Supplement states (1985:6 & 8) "trail maintenance is for the protection of resources and public safety." What are the key concerns about resource protection and public safety? Do resource concerns revolve around erosion and littering, or are there other concerns? For public safety, are the concerns related to law enforcement actions, facilities that could cause injury if not properly maintained, or are there other concerns? There appear to be no objectives for satisfaction, visitor enjoyment, environmental education, or other possible benefits as part of a maintenance program. We suggest the following revision for both SPNM and SPM areas: Trail maintenance should be conducted to protect resources from impairment and provide for visitor safety and enjoyment, noting the above concerns.

4) The Eastern Region Supplement (1985:7 & 9) states "native materials will be used in the construction of facilities." What constitutes native materials? Is dimensional lumber a native material? Is dimensional lumber that is pressure treated to allow long term ground contact without rotting native material? With the safety of the public a major concern, facilities constructed of durable materials based on natural substances may be highly appropriate. Further, some facilities such as composting toilet buildings and synthetic fabrics for steep, erodible trail slopes, which definitely protect the environment, are clearly not constructed of native materials, yet may be warranted to safeguard the environment. We suggest the following revision: Natural materials should be used where consideration for natural appearance outweighs concerns for maintenance efficiency and environmental protection. Natural materials are defined as those normally found within that forest situation and may include logs, gravel, sand, and similar substances. They also include materials whose base is found in the forest such as dimensional pressure treated lumber. All materials, whether classified as natural or not, will be used in a manner that blends into the landscape.

Direct Inconsistencies
Direct inconsistencies within the ROS User Guide - Eastern Region Supplement occur regarding appropriate levels of campground development and visual quality.

1) One of the defining characteristics of these areas pertains to appropriate Recreation Development Levels and facility capacities. The Recreation Development Level specifically defined for both semi-primitive classes is Level 2 (USDA-FS 1986). However, the standard in Chapter Two of the Eastern Region Supplement states (1985:6 & 8) for SPNM and SPM, "developed camping facilities will contain no more than 10 sites and are Development Level 1." The Guide then asks the reader to see Figure 8 in the document for facilities compatible with these management designations. When the reader goes to Figure 8, it indicates that Development Levels 1 - 3 are appropriate for SPM and Development Levels 1 - 2 are appropriate for SPNM areas. This is a direct contradiction. Additionally, there is confusion in the total facility capacities in these areas. The written Eastern Region Supplement standard limits the total number of sites to ten in both areas, while a subsequent figure in Chapter Three of the Guide specifies a range from ten to twenty-five sites. In keeping with the general goal of these areas, we suggest the following revision: for SPNM areas developed camping facilities will contain no more than ten sites and are Development Level 1 - 2. These sites are typically suitable for tent camping. In those areas of unique environments where site hardening is essential, provisions for limited facility development of Level 2, including pit toilets, manufactured fire rings, and trash receptacles, should be made. This development should be made only for protection of the environment, such as controlling impacts to specific areas and limiting the impacts created at these sites. As for SPM areas, we suggest that the Recreation Development Level should be limited to Level 2 with developed camping facilities containing no more than twenty sites. These sites allow vehicle access and are suitable for camping in tents, tent trailers, pickup campers, and small travel trailers. Figure 8 should be eliminated. These revisions clearly distinguish these sites from sites managed under Roaded Natural standards and show a progression along the recreation spectrum from SPNM to SPM to Roaded Natural.

2) A second major discrepancy of the Eastern Region Supplement is in Visual Quality Objectives. Specifically, a contradiction arises between the stated standards for visual quality and the

wording used to explain ROS and the Visual Management System in Chapter Three of the Guide.

Visual quality objectives in the Eastern Region Supplement (1985:7) are stated for SPNM as "preservation and retention are normal; objectives of partial retention are incompatible." For SPM (1985:9) "Visual Quality Objectives of preservation and retention are normal; with the objective of partial retention normal from sensitive roads and trails." These two statements are in direct contradiction to the Eastern Region Supplement (1985:21), where it states for semi-primitive areas (both motorized and non-motorized), the range is retention and partial retention with specific areas managed within modification. A number of problems are noted here. First, for SPM, why is the initial standard less for areas near sensitive roads and trails? It appears more rational that the standard be higher near those sites and more relaxed in those locations more remote from the public who draws perceptions of "natural" primarily by what they see from a road or trail. Second, the statements on page 21 clearly authorize significantly more alteration to the forest than the earlier statements. They appear more compatible with a more active, working forest where wood products are regularly and visibly harvested from clearly delineated locations. We suggest the following revision: retain the initial language of the statement on page 7 for SPNM and eliminate reference to SPNM in the statement on page 21. For SPM, it is suggested that the wording of the statement on page 21 be used to explain visual quality objectives with one exception: SPM areas would be managed for preservation to partial retention with specific areas of modification allowed away from sensitive roads and trails. The initial statement concerning SPM from page 9 should be stricken.

Lacking Standards and Guidelines

Specific standards for facilities such as boat launches and trails for cross country skiing, horse, and mountain bike use appear to be lacking. While cross country skiing, dog sledding and other non-motorized trail uses could conceivably be part of hiking trail use, activities such as ski skating, and dog sledding would not be possible on typical foot trails. Also, the sharp twists and turns that often characterize a hiking trail may not be suitable for these activities and could even pose a dangerous situation.

1) Mountain bikes are totally omitted from the discussion in any standard. Are they an appropriate use of non-motorized trails in semi-primitive areas? Ignoring this already existing and likely growing use, and allowing it to escalate without management attention, puts the Forest Service in a reactive rather than a proactive position. This may cause problems in future years. We suggest the following addition: mountain bikes are allowed on SPM and non-wilderness SPNM non-motorized trails designated open to mountain bikes. Determination of whether to designate trails as open to mountain bikes will be based on protection of resources, maintaining the semi-primitive character of the area, compatibility with other known trail uses and suitability for mountain biker enjoyment and safety.

2) Boat launches appear to have a standard of development level 1 or 2. However, creating boat launches encourages car/truck traffic within the semi-primitive area. It may also encourage motorized boating activities which may change the character of a semi-primitive area. We suggest the following addition: designated boating access sites in SPNM areas will be limited to access for car top/carry-in boats. Boating access in SPM areas will provide, where appropriate, direct access to the water for small trailered boats, in addition to car top/carry-in craft.

Conclusion

As most Eastern National Forests enter the second iteration of their LRMP, it is imperative that the supplement that guides this planning in relation to ROS be clear, current and inclusive of the range of forest recreation activities. The suggested revisions in this paper seek to meet these qualities and to facilitate the application of ROS throughout the Eastern Region.

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EVALUATING LAC ON THE CHILKOOT TRAIL, ALASKA

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Abstract: Testing the utility of the Limits of Acceptable Change (LAC) management procedure on the Chilkoot Trail resulted in the selection of a simple, inexpensive, "change indicator" involving the capacity of a strategically placed campground along the trail. Other indicators, while potentially useful, were not practical or cost effective.

Introduction

The Limits of Acceptable Change (LAC) procedure described by Stankey et al. (1985) is a management tool for sustaining desired environmental and social conditions in outdoor recreation settings. The procedure consists of nine steps: identifying issues and recreation opportunities, selecting change indicators, identifying issues and recreation opportunities, defining standards, identifying alternatives, analyzing costs and benefits, selecting a chosen alternative for each opportunity class, implementing the chosen alternative, and monitoring for LAC compliance.

The LAC approach was used for planning visitor use of the Chilkoot Trail, Gold Rush National Historic Park, Skagway, Alaska. The planning effort was performed in cooperation with the Chilkoot Trail National Historic Park, Canadian Parks Service, Bennett, British Columbia.

The Resource

The Chilkoot International Historic Trail is the famous route of the 1897-1898 gold rush from Alaska's southeast coast through the Chilkoot Pass to Bennett, B.C. and on to the gold fields of the Klondike. Not only is the trail rich in Indian and gold rush history but it crosses spectacular natural resources. These include Pacific Coast tidal flats and sitka spruce rain forests at the trail head on the Lynn Canal and high mountain passes adorned with glaciers, snowfields, river gorges, cascading waterfalls, and glacial lakes feeding the headwaters of the Taiya and Yukon Rivers (Neufeld 1993).

The recreation experiences that take place in this rich setting include day and overnight hikes from the trail head at Dyea, Alaska to various mile posts along the Chilkoot Trail. The most popular, however, is the 33 mile end-to-end hike from Dyea over the Chilkoot Pass to Lake Bennett and the head waters of the Yukon River. Most hikers return from Bennett to Skagway via the White Pass-Yukon Rail Road, a route that was also a primitive foot and pack trail during the gold rush era, providing an alternate but much more difficult and dangerous path to the Klondike (Canadian and U.S. Park Services, CUSPS 1990).

The Chilkoot is classified as a semiprimitive, historical trail that contains an abundance of gold rush artifacts abandoned along much of its length when it was in use as the pioneers' gateway to the Klondike. The trail is located in a relatively narrow land corridor (1/4 to 7 miles wide) owned and managed by several federal and state agencies and includes native claims acreage. The southern half (16.5 miles) of the trail is located in the United States and the northern half in Canada. There are ten campgrounds along its 33 mile length that can accommodate from 10 to 80 campers. Pit toilets are provided at all campgrounds and warming cabins and shelters at selected sites. Ranger stations are located at strategic points along the trail on both the Canadian and U.S. sides of the border. Other facilities include interpretive signs, foot bridges and natural drinking water supplies.

Why LAC for the Chilkoot Trail?

Most national historic sites are located in more populated parts of the country and serve many thousands of visitors each year. The Chilkoot Historic Trail is quite unique in that it is remotely located in semi-primitive backcountry, 33 miles long, located in two countries, and administered by the Canadian and U.S. Park Service (CUSPS). The abundant artifacts abandoned by the gold seekers along this historic route create a major preservation and protection challenge for CUSPS. While entertaining a growing number of visitors drawn by the trail's fascinating history, management must simultaneously protect a diverse, high quality, semiprimitive natural environment.

In 1972, about 1000 people hiked the Chilkoot Trail. By 1994, that figure doubled. Visits to all the Alaskan units of the Park (Skagway, The Chilkoot Trail, Dyea, and the White Pass) have increased an average of 4 percent annually since 1986 to a record high of almost 160,000 in 1994 (KLGO GMP 1995). Managers expect another substantial increase in use during the Trail's 1997 centennial year.

To cope with the potential changes that these and future increases in use pose for the Trail and its environs, CUSPS included the LAC approach in their 1994 environmental assessment planning for the Park. The objectives of the study were to identify limits of acceptable change in the trail's natural and social environments and to institute appropriate management actions if those limits were approached. The following describes how the LAC procedure was applied in this planning effort and includes an evaluation of its utility under the Trail's particular circumstances.

Change Indicators

Key to the successful use of LAC is the identification and measurement of change indicators in the trail's physical, biological, and social environments. A decision is then made whether change has reached unacceptable levels. Each indicator is linked to an acceptable change limit previously set by park managers. If the limit of change is reached, managers respond by implementing prearranged management alternatives to cope with the identified problems (Stankey et al. 1985).

The following were initially chosen as LAC indicators for the Chilkoot Trail: visitor numbers and attitudes, number and condition of campsites and shelters, condition and adequacy of pit toilets, purity of water supplies, trail tread conditions, demand for alternate side trails, the Taiya River stream bed, and changes in the corridors flora and fauna. The next tasks were to set limits

for each of these indicators and then determine how each would be measured.

Visitor Numbers and Attitudes
The CUSPS staffs have been collecting continuous data on the Chilkoot Trail since 1989, including the annual number of hiking permits. Most hikers use the trail during the months of June, July, and August. The average number of hikers per party is three, so a fairly accurate estimate of total hiker numbers was available. The problem with this measurement, however, is that, although it candidly presents past and current user numbers, it does nothing to fix a limit on the number of hikers that can use the trail at one time while maintaining a quality outdoor recreation experience. To achieve this goal, park managers were committed to defining use limits. But the question remained: what should those limits be?

A recent attitude study of Chilkoot Trail users (Elliot 1994) determined that hikers displayed an indifference to current trail impacts and that they did not support limiting trail use at the time the study was completed. Study participants were not opposed to limiting use in the future if "...the park's natural and cultural or visitor resources were threatened." The CUSPS staffs however, have documented several occasions when the use of key campgrounds was at or over capacity and were convinced that use limits should be considered. Park planners recommended that Elliot's study, or one like it, be conducted every 5 years to see if hiker attitudes toward the trail experience changed.

Number and Condition of Campsites
Campsite space is limited along the trail because of restrictive terrain and self-imposed, uneven deployment of campers along the trail. The number of campsites vary in each campground from a minimum of 6 to a maximum of 26. The majority of hikers spend their first night at Canyon City campground (7.8 miles from the trailhead) and then hike to the last campground (Upper Sheep Camp) before climbing the Chilkoot Pass, some 4 miles distant, on the following day. Sheep Camp has long served as a popular staging area before hikers (and historically, gold rushers) ascend the pass. As a result, this campground, and consequently the first Canadian campground (Happy Camp) on the north side of the pass, receive the heaviest use and are the first to reach capacity (Elliot 1992). The options for dealing with campground crowding were simply to allow congestion to continue (deemed unacceptable), redesign the campgrounds for greater capacity, or impose use limits. Proposed limit indicators ranged from documenting a 25 percent increase in soil and vegetation impacts to campgrounds being filled to capacity 50 percent or more of the time.

Shelter Capacity and Condition
Log cabins and canvas shelters are available for emergency purposes at selected campgrounds. Excessive wear and vandalism were identified as the use limitation indicators. Possible management options were to allow the shelters to deteriorate and remove them, maintain and eventually replace them, or increase their numbers if warranted. At minimum, the park would monitor their condition and take periodic photographs to document changes in their structural soundness.

Sanitary facilities
The current number and condition of pit toilets serving each campground (average one per campground) seem to be adequate to meet present needs during most of the season. If increased use resulted in an adequate number of units, unsanitary conditions or visitor inconveniences, either more units would be added, maintenance increased, or demand decreased by reducing visitor numbers.

Water supplies
Surface water supplies are abundant along most of the Trail's length. Creeks and streams running beside campgrounds are popular water supply sources. Potential source contamination, particularly where hikers are concentrated in campgrounds, was an issue although not a past occurrence. Personal treatment of all water collected along the trail is strongly advised by park management. Water borne disease infections could result in increasing prevention awareness programs, water quality testing, and treatment using captured water supply facilities. The number of visitors could also be limited, thereby reducing the potential for surface water contamination.

The Trail
The trail tread changes from a two foot wide path to the width of an old haul road and then simply to a way marked by carñons over surface rock. Ample foot bridges of varying construction take hikers over creeks and steams. The trail has developed mud pools from hikers walking around wet soil sections. Rock rubble obstructions and occasional washouts also present recurring problems. Change indicators proposed by the planning team included increased visitor complaints of deteriorating trail conditions to dangerous conditions caused by over use. Trail impacts could be diminished through redesign and construction measures or limiting hiker traffic.

Demand for Alternate Side Trails
Two side trails at Canyon City and the "Cut-Off" offer alternate hiking experiences for visitors. Other potential side trail opportunities include routes to adjacent mountain valleys, overviews of river canyon scenery, and exploring historical sites. Side trails constructed at key locations could engage hikers as they waited for campsites to open at Sheep Camp before climbing the Pass. Park officials have been reluctant to develop new side trails, however, reasoning that these trails would reduce the focus on the park's major attraction, the historical Chilkoot Trail. Other potential problems might include the undue exposure of historical artifacts, increasing costs, and environmental impacts. The planning team suggested "demand-for-alternative-trail-indicators" ranging from hikers venturing off the main trail and creating "pioneer pathways" to the public requesting that more side trails be built from the Chilkoot.

The Taiya River
The Taiya River is a fast-running, high volume river that discharges melt water from the Chilkoot Pass south to the Pacific Ocean into the Lynn Canal. It is a geologically active river that deepens its canyon, cuts its banks, and changes its stream channel. Past attempts at river bank stabilization to prevent road washouts and damage to bridges, campgrounds and the trail have proven less than successful. The LAC issue raised was how much, if at all, the free flowing river should be altered to protect

human-made facilities in a semi-primitive, backcountry setting. Could threatened facilities be relocated allowing the river to continue its natural flow dynamics? Public pressure to alter the river's channel may be seen as an encroachment on the Taiya River's wild river characteristics and as the further development of the semi-primitive river valley. Proposed limits of acceptable changes ranged from stream bank stabilization using natural materials to prohibiting artificial structures. A visitor interpretation program involving the stream flow characteristics of the river was suggested for greater public understanding of what seems to be its naturally destructive behavior. The role the river has played in carving an access way to the Klondike could be emphasized.

Flora and Fauna

The Chilkoot Trail corridor lies at the northern extreme of the maritime hemlock-spruce-cedar temperate rain forest. The vegetation is a mosaic of old growth conifers, peatlands, alpine vegetation, and successional communities growing in recently disturbed sites. Plant diversity is high in this transitional zone that includes maritime and continental species. Because of large differences in elevation, precipitation, light conditions and soils, there is a rich variety of vegetation and wildlife that uses the corridor at least some time during the year (Paustien et al. 1994). The area around Sheep Camp, for example, has been identified as quality bear habitat (ADFW 1993).

The 1897-1899 gold rush years saw almost total destruction of forest cover and wildlife populations along a broad corridor of the Chilkoot Trail. Trees were felled by the pioneers for badly needed construction material and fuel (Neufeld 1993). Several indigenous wildlife species were heavily used for food and fur. In the 100 years since the gold rush converted the Chilkoot Trail to a heavily-used road of commerce, forest cover has reestablished itself and wildlife has returned to the Taiya River valley.

Some vegetation loss results from clearing trail sides and campsites and the use of a small amount of wood materials for bridge construction. As campgrounds reach capacity, there is a tendency for them gradually to increase in size as campers create new sites in which to pitch their tents during crowded conditions. Limits of acceptable change suggested by the planning team included documented heavy vegetation loss along the trail and in campgrounds because of overflow conditions.

Practical Limitations of LAC on the Chilkoot

The KLGO park managers and planners considered each proposed indicator of change for practicality of implementation. Factors included cost of measuring and monitoring the indicator, ease of carrying out the chosen management alternatives, public acceptance of management's initiatives to control change within acceptable limits and Park Service guidelines. Inflated user volumes can be associated with overcrowding, environmental impacts, and decrease in user satisfaction. If limits were to be set on the number of visitors using the trail, park management considered where to set the limits, how would access be rationed, and what would be the cost of operating the visitor management system? Each LAC indicator was evaluated against these considerations.

The first indicator, visitor numbers, is dependent on and set by the results from monitoring other change indicators. If impacts are deemed unacceptable, use limits are set and maintained for future implementation. Visitor attitude monitoring had a fortunate start with Elliot's 1993 survey of hikers on the Chilkoot. Periodic replication of his survey by the Park Services would be useful but expensive. Budget constraints on available personnel to gather data periodically from hikers is a limitation with this indicator.

Shelter capacity and condition involves user demand, maintenance, and construction costs. The few log cabins along the trail are old and deteriorating. Replacement costs are high. The canvas/platform shelters are new, in good condition, and will probably be retained for hiker safety reasons. Rapid deterioration or vandalism will force a replacement cost decision by management. If user caused impacts mount too rapidly, this indicator would suggest visitor number control. How unacceptable impacts would be measured and when deterioration would demand structural replacement is subject to opinion, and therefore, this indicator is weak in that regard. Sanitary facilities (pit toilets) also have direct maintenance, replacement, and increase in unit costs. If restricted budgets dictate adequate maintenance levels and funds are limited to replace or add more units per campground, then hiker numbers need to be kept at levels that do not demand greater investment in these facilities. Measuring or observing the inadequacy and degradation of sanitary facilities at campgrounds is time demanding on a limited staff and is subject to public and management opinion, making this indicator a difficult one to measure.

Monitoring surface water quality would be an almost impossible task. Even if water sampling was restricted to the vicinity of campgrounds, length of season, water volumes, flow rates, and the dynamics of organism contamination, would make the task technically complex and cost prohibitive. This indicator was, therefore, deemed infeasible.

The physical condition of the trail itself seemed to be an obvious LAC indicator, but how does one define acceptable condition and measure those components? Trail width would have to be measured at close intervals along the trail. Poor drainage areas and wash outs would have to be periodically mapped and their condition documented. Such mapping efforts require large commitments in staff time, equipment, record keeping, and analysis. But if current trail conditions are going to be compared with acceptable, predefined limits then accurate measurements are necessary.

The demand for alternate side trails, as a LAC indicator, involves changing the recreational, natural, and historical environments of the Chilkoot corridor. The benefits of such development are offering more hiking opportunities and taking pressure off existing campgrounds along the Trail; particularly Sheep Camp, the last campground before hikers ascend to the summit. The costs of adding new side trails are in construction, the impacts associated with visitors spending more time in the corridor, and lessening the importance of the historical Chilkoot Trail route to the Klondike. The "demand-for-alternate-side-trails" indicator may or may not be associated with real demand for use of the main trail. Small special interest groups might be the source of

such development pressures so this indicator was also thought to be unacceptable.

The LAC indicator involving the Taiya River considered the stream's flow characteristics and attempts to protect facilities using stream bank stabilization. This indicator was thought not to be directly associated with visitor demand, but potential river channel changes could be affected by special interest groups.

Changes in flora and fauna indicators were recognized as directly associated with visitor impacts but technically complex and expensive to measure. To determine if resident or migratory animals were affected by increased human use of the Trail is difficult, even when using scientific study methods. Plant destruction is perhaps easier to show, and yet, periodic mapping and measurement would have to be conducted along the 33 mile trail. Under present operating restrictions, park management felt the LAC flora and fauna monitoring procedures were not feasible.

So the question remained: how could the historically significant Chilkoot Trail be managed to guard against unacceptable changes that would seriously affect its value? The solution suggested by CUSPS management was simple, inexpensive to carry out, and directly related to the natural carrying capacity of the Trail. The indicator chosen to represent the limits of acceptable change for the Chilkoot Trail was the number and condition of campsites in existing campgrounds. Because of the strategic location of Sheep Camp on the south side of the border, and the fact that more than 90 percent of visitors hike the trail from south to north (Elliot 1994), it was recognized as the key site for LAC monitoring (Elliot 1992). The restrictive nature of its terrain results in a finite number of campsites, and therefore numbers of hikers, that can be accommodated at this pivotal campground proximate to the Chilkoot Pass. The campsite build out planned for this location is 28 sites. Happy Camp, the first campground on the Canadian side of the Pass, has used all feasible campsite terrain and is at development capacity of 25 sites.

While all seven LAC indicators would probably have proved useful for managing the Chilkoot Trail, all but one had technical, economic, or policy limitations associated with their use. Environmental factors are usually complex and costly to measure, and current budget constraints do not encourage sophisticated LAC data collection. The most efficient method of managing a LAC program for the Chilkoot Trail was identified as limiting camping facilities based on terrain limitations. Visitor permits will be allotted based on campground capacity. Because of current terrain restrictions, the system's capacity will not be increased. The simplicity, efficiency, and low cost of the campground capacity indicator made good sense to CUSPS management and will result in maintaining quality visitor experiences on the Chilkoot Trail.

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PERCEPTIONS OF AND PREFERENCES FOR SECURITY BY MICHIGAN STATE FOREST CAMPGROUND CAMPERS

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Abstract: A 1995 survey of registered campers in Michigan state forest campgrounds supported granting limited law enforcement authority and providing enforcement training to campground managers, who currently lack both. This supports the recommendation of a statutorily established state forest recreation citizen advisory committee and input received at public information meetings concerning this recommendation. Management implications include clientele support for safety and security efforts and needs to select managers compatible with this new responsibility.

Introduction

The Michigan State Forest campground system provides rustic camping experiences at 148 campgrounds in the mostly rural northern two-thirds of Michigan. The campgrounds are small, with a mean of 22 sites and all are found next to an inland lake, Great Lake or river. Visitation at the campgrounds annually is approximately 125,000 camp nights (1 party camped on 1 site for 1 night). The system is managed by the Michigan Department of Natural Resources (MDNR) Forest Management Division (FMD). Campground managers manage a "circuit" of campgrounds that they visit a couple of times a week to conduct maintenance, collect fees from the self-registration fee pipe and make public contact (Nelson 1996).

One major management challenge for natural resource recreation providers is visitor, facility and resource security. With few enforcement personnel, large acreages, expensive equipment and a sense of freedom inherent in recreation behavior, the challenge of policing natural resource-based recreation environments is substantial (Nelson 1995). The challenge for the FMD in providing an acceptable measure of security in its campgrounds is that its campground managers lack the legal authority to enforce campground rules. This authority is vested with state conservation officers. Conservation officers patrol the campgrounds on a limited, as-time-permits basis. Other competing uses of their time such as fish, wildlife and environmental law enforcement often take precedence. For violations of state law beyond state forest land use rules (e.g., serious misdemeanors and felonies), campground managers must rely on certified police officers from local units of government, the state police or conservation officers. The lack of authority for campground managers and perceived lack of patrol by those with legal authority, has led some to flaunt the law, gambling that a conservation officer will not be present to ticket a person who refuses to pay a nightly camping fee or disregards quiet hours.

In 1991, the Michigan State Forest Recreation Advisory Committee (FRAC) was created by statute (Michigan Public Act 115 of 1991). It was established to provide citizen input to the MDNR and the Michigan legislature on forest recreation matters and to develop a strategic plan for state forest recreation. Committee members were selected by the director of the MDNR. They included representatives of forest recreation, hunting and fishing, conservation, preservation, tourism and forest products interests. In addition, representatives from other land managing entities such as the Michigan State Parks and the US Forest Service were available as resource persons and to ensure coordination.

As part of FRAC's draft strategic plan, first publicized in 1994, the committee proposed to improve visitor, facility and resource security in the campgrounds. This would be done by providing training and law enforcement authority similar to that of Michigan State Park rangers for selected FMD employees who manage state forest campgrounds. This would allow them to enforce a set of state forest land use rules including those that regulate use of state forest campgrounds. The rules cover campers paying the nightly camping fee (all of which is used to fund campground operations), protection of campground facilities, enforcement of quiet hours, and limiting the number of vehicles on a site. Powers granted to those with limited law enforcement authority would include the ability to cite violators for a civil infraction and to evict. Campground managers would not have the authority to detain or search. Training would consist of 200 hours of training focused on understanding authority and proper procedures in citation and eviction, diffusing confrontations, heightening awareness of potentially serious law enforcement situations and procedures to take in such instances, use of communication equipment and relationships with local and state law enforcement agencies. All law enforcement agencies currently involved with law enforcement within state forest campgrounds will continue in their current roles, therefore providing an overall increase in visitor, resource and facility security (State Forest Recreation Advisory Committee 1995).

The public comments at a series of 9 public information meetings held by FRAC in early 1995 across Michigan were very positive toward the limited law enforcement proposal. However, relatively few of the more than 500 people who attended the meetings stated that they were state forest campground campers. Therefore, as part of marketing study of state forest campers proposed for summer 1995, a series of questions related to camper support for the proposal and security overall were included.

Objectives

The principal objective of this study is to determine if the state forest camping public supports this proposal for limited law enforcement authority for selected campground managers over the current situation of managers having no legal law enforcement authority. Secondly, it is to determine if there is an association between the perceptions of campers regarding their current sense

of security and other campers obeying the rules with their level of support for limited FMD campground rule enforcement authority.

Methods

The data for this study was gathered as a part of a summer 1995 study of Michigan state forest campground campers. That comprehensive study was designed to assess trends in the state forest campground camper market since comparable studies in 1983 and 1987 and a report is currently available (Nelson 1996). It was also designed to explore camper preferences for alternative courses of management action, including visitor security issues, issues related to the Americans with Disabilities Act and willingness to pay fees for selected facilities and services.

A self-administered 29-item, 78-variable questionnaire was used to elicit data from registered campers. A registered camper is the individual on a campsite who registers his or her party. Sampling was done in 24 geographically stratified campgrounds, with 12 in the Upper Peninsula and 12 in the Lower Peninsula. Survey administrators distributed the survey to a maximum of 10 registered campers (if that many sites were occupied and the registered camper was present) systematically selected with a random start. Sampling was done when campers were most likely to be present and available, during lunch or dinner times.

The protocol was, after a brief introduction to the research project, the survey administrator would leave the questionnaire with a pencil and a promise to return to collect the completed questionnaire. Typically, respondents reported the survey took about 20 minutes to complete. After distributing the other questionnaires to the rest of the sample for that campground, the researcher would return to collect the completed instrument, check it for omissions, clarify any points on which the camper was unsure and receive any comments. Those sampled who had not completed the questionnaire were given the option to place it, when completed, in the campground fee pipe.

Data when gathered were entered onto diskette and analyzed using the Statistical Package for the Social Sciences. The data was weighted to correct for 2 potential biases. The first was campground use bias. There were sizeable variations between the number of camp nights in the sample campgrounds. Large, busy campgrounds were often undersampled due to the upper limit on the number of those sampled in a given day. Conversely, lesser used campgrounds could be oversampled. To correct this bias, responses were weighted by the proportion of camp nights in the sample campground compared with the other campgrounds sampled for the previous year.

A second bias was the length of stay. Those who stay many nights were more likely to be sampled than those who stayed one night. Accordingly, the data was weighted to correct for the length of stay bias. This was done by weighting with the reciprocal of the length of stay. For instance, if a camper stayed 3 nights, the camper's responses were weighted by 1/3, whereas a camper who stayed 1 night was weighted by 1/1 (Lucas 1963). The purpose behind both weights was to follow a basic principle of one person gets one vote.

Results

During the summer of 1995, 998 registered campers were sampled. Of those, 872 (87%) returned completed questionnaires. When asked:

> "Currently, only conservation officers have the authority to enforce state forest recreation rules such as nighttime quiet hours, payment of fees, restrictions on vandalism and littering, etc. in campgrounds. These officers typically number 2 per county. They also have other duties including natural resource, fish and game and environmental law enforcement on all lands. The State Forest Recreation Advisory Committee, a citizen advisory group required by law, has recommended that selected state forest campground managers be trained and certified as rangers (similar to Michigan state park rangers) with legal authority to enforce state forest recreation rules and also maintain the campgrounds. The committee's rationale is to increase efficiency and public service. Campground managers would not be involved in natural resource, fish and game or environmental law enforcement. Conservation officers would still enforce state forest recreation rules as their other duties permit. Do you support this proposal?"

This proposal was supported by 72% of the respondents, opposed by 12% and 16% were undecided. When asked to rate their current sense of safety and security in the campground where they were sampled, 80% of respondents replied that it was either good or very good, 16% said that it was average, and only 4% replied that it was either poor or very poor. When asked to rate their perceptions of others obeying campground rules in the campground where they were camped, 72% rated rule compliance by others as good/very good, 22% as average and 6% as poor/very poor.

Pearson's chi-square was used to test for association between support for the proposal and the sense of security and others obeying the rules. Those with a sense of security rated good or very good were significantly more likely to support the proposal for limited law enforcement authority than those with an average, poor or very poor sense of security ($X^2 = 8.193$ 1df $p = .004$). There was no significant difference between those with a good or very good perception of others obeying the rules versus those who perceived rule compliance as average, poor or very in their support for the proposal ($X^2 = .052$ 1df $p = .819$).

Management Implications

The results of this study show that Michigan state forest campground campers strongly support state forest campground managers being trained and certified as rangers, with the authority to enforce campground rules. This is noteworthy as a sizeable majority already have a good sense of security and perceive that other campers generally comply with the rules. This suggests that campers who already perceive a favorable security situation want to keep that sense of security in the future. It also suggests that campers are willing to have more enforcement of the existing rules, showing support overall for the existing set of rules. Finally, the public input gathered by the 9 public informational meetings appears to have been a relatively accurate reflection of the support for the proposal, although few

participants directly identified themselves as state forest campground campers.

For this proposal to be most effectively carried out by FMD, employee selection criteria need to be revised to include an increased emphasis on human relations and communication skills (Sampier 1990). The public must also be informed of this change in campground management and the authority of campground ground managers to encourage compliance rather than confrontation. One key way that recreation law enforcement differs from traditional policing is that it emphasizes compliance over sanctions. This means the focus is proactively on the prevention of illegal behavior, not the apprehension of those who have already committed an offense (McLane 1992).

Implementation of limited law enforcement authority

Following the public information meetings, FRAC presentations and this study, the Michigan Natural Resource Commission, the policy making body of the MDNR, unanimously approved Forest Recreation 2000 as official MDNR policy in November of 1995. The legislation necessary to carry out limited law enforcement authority and some other provisions of the strategic plan was introduced in the Michigan House and Senate during January 1996. At this writing (May 21, 1996), the legislation in slightly differing forms had passed the House and the Senate. An acceptable compromise and the governor's signature are expected within days. In both chambers, there was agreement with the limited law enforcement segment of the bills. In anticipation of the bills becoming law, the FMD has sent many of the campground managers to the existing Michigan state park ranger training program.

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ISSUES AND CONCERNS FACING MANAGERS AND OWNERS OF PUBLIC AND PRIVATE CAMPGROUNDS IN NEW HAMPSHIRE AND VERMONT

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Abstract: A survey of campground owners and managers was conducted to identify priority issues for future university research and educational outreach efforts. Owners and managers of parks in New Hampshire and Vermont ranked high issues related to campground and facility cleanliness, quality of park environment, camper behavior toward each other, visibility of park entrance, and local linkages.

Introduction

Campgrounds are an important part of the natural resource and tourism industries in New Hampshire. In 1993, the New Hampshire Campground Owners' Association (NeHaCa) estimated total camper expenditures in the State at $64.1 million with site nights rented exceeding one million.

Very little recent information regarding campground operators' assessments of business and industry well-being exist for New Hampshire. In 1995, Cooperative Extension and the Department of Resource Economics and Development at the University of New Hampshire initiated a study to understand the issues and concerns facing the owners and managers of private and public campgrounds.

A primary objective of the study was to gain a better understanding of campground operators' views on business operations, surface water quality, visitor complaints and business ownership. The results will provide extension educators and department faculty with information for identifying educational outreach and research needs.

Methods

The data to examine these issues were obtained from a 1995 survey of campground owners and managers. The survey was developed with the assistance of the Executive Director of NeHaCa. Although the questionnaire was not pretested, the questions reflected concerns, issues, and complaints addressed in similar work done by universities and agencies in other states (Holdnak 1994, Penaloza 1988, and Rollins and Chambers 1990).

The questionnaire was divided into seven sections as follows: Business description, business operations, surface water, visitor complaints/concerns, ownership/management concerns, personal information, and general concerns/comments about the industry. The business description and personal information sections were included to provide a profile of the respondents and their campgrounds. Respondents were asked to indicate the importance of statements related to business operations to assess owners-managers' opinions of business and industry well-being. They were also asked their agreement with statements related to surface water issues, to ownership/management concerns, and the frequency of visitor complaints/concerns.

Mailing lists of 206 private and public (state and county) New Hampshire campgrounds and 68 private Vermont campgrounds were obtained from NeHaCa. The list of private campgrounds in New Hampshire included members and non members of the association. The private campgrounds in Vermont were association members only.

In the second week of September, 274 questionnaires and explanatory letters were mailed to the campgrounds in the two states. A postcard reminder was sent to non respondents in early October. In late October, an additional 25 surveys were mailed to the US Forest Service in New Hampshire.

As of December, 101 usable surveys were received. Eighty-six of the responses were from New Hampshire campgrounds, 13 were from Vermont and two failed to identify their addresses. Eight surveys were returned by the postal service due to improper addressing or expired forwarding orders.

Profiles of Respondents and Campgrounds

Table 1 provides a profile of respondents. At least 70% of the respondents own the campground, consider managing the business as a primary occupation, reside at the campground, and involve family members in business operations. Most have earned a college degree or professional certificate and are actively involved with at least one professional or business association. The average length of time respondents owned or managed a campground is 10 years.

Table 1. Respondent profile

Own the campground	80%
Managing a campground is primary occupation	79%
Campground earnings are principal source of family income	54%
Family residence at campground	71%
Spouse/children involved in business	73%
Earned a college degree or professional certificate	60%
Active member of any professional or business association	72%
Years owned or managed the campground	
Five or less	38%
Six to 10	23%
More than 10	39%

When asked to indicate the importance of 12 various aspects of owning and managing a campground, the statements receiving the highest ranking were providing a quality experience, enjoy

meeting campers, and sense of control or independence. The least important aspects of owning a campground were managing and supervising people.

Many respondents (42%) intend to expand the size of the business in the next five years; however, 90% of respondents do not plan to extend the number of months that their campgrounds are open during the year. Eighty-seven percent of campgrounds opened in May with nearly the same percent (85%) closing in October.

Table 2 shows selected characteristics of the respondents' campgrounds. The means for number of campsites and acres of recreation area are 101 and 368, respectively. Respondents gave campers access to an average of 6.4 different services and 5.7 different recreational facilities. Services such as flush toilets, firewood, telephones, showers and dump stations were available at 75% of the parks. At least half the parks provided recreational facilities identified as playgrounds, game rooms, beach or water fronts, hiking or nature trails, and multipurpose sports fields. More than 70% of campgrounds were near a lake, pond, river, or brook available for recreational use.

Table 2. Characteristics of campgrounds

Average number of campsites by type	
Developed with hookups	72 sites
Modern, no hookups	16 sites
Primitive	6 sites
Other	7 sites
Average recreation area	368 acres
Most common services provided	
Flush toilets	90%
Firewood	90%
Showers	84%
Telephones	81%
Sanitary dump station	76%
General store	64%
Laundromat	53%
Most common recreational facilities provided	
Playground	73%
Game room	60%
Beach/water front	56%
Hiking/nature trails	54%
Multipurpose sports field	53%
Campgrounds adjacent to surface water available for recreational use	72%
Business organization of private parks	
Sole proprietorship	44%
Partnership	13%
Corporation	24%
Publicly owned parks	18%
Campgrounds hiring employees	
Part-time, seasonal	58%
Full-time, seasonal	46%
Part-time, year round	17%
Full-time, year round	20%

Most of the respondents were private parks operated as sole proprietorships. Private corporations were the second most common form of business organization. Only 18% of respondents managed publicly owned parks. Nearly 60% of respondents hired part-time seasonal employees, while 46% hired seasonal employees on a full-time basis.

Business Operation Issues

Respondents indicated the importance of 25 different statements concerning business operations. Table 3 lists the three issues with the highest percentage responses in each of the four categories.

Table 3. Important business operation issues

Very Important
- Cleanliness of campground facilities
- Camper respect for other campers
- Quality of environment at campground

Important
- Activities available to campers in the local community
- Recycling of waste
- Camper convenience

Somewhat Important
- Participation in local government
- Industry wide programs
- Links with other businesses in the state

Not Important
- Availability of funds from local banks
- Family involvement in business
- Commercial/residential encroachment

Issues emphasizing the quality of the park environment and campers' behavior toward others were *very important* to campground owners-managers. The three business operation concerns most often checked as *important* by respondents were related to local activities, waste recycling, and camper convenience. Statewide networking and involvement in local government were only considered *somewhat important.*

Many park owners-managers downplayed the significance of available local bank funds, family involvement, and intrusion from development. These issues labeled as *not important* may not be a concern rather than not being an important concern. For instance, funds may be readily available from local banks or funds from local banks may not be needed. This distinction should be kept in mind when interpreting survey results.

Surface Water Issues

Respondents with water frontages on a lake or pond (approximately 48%) were asked to what extent they agreed with 12 statements related to surface water. Table 4 classifies each statement in one of three categories according to the majority of survey responses. The percent is the portion of respondents, with a lake or pond available for recreational use, classifying the statement as designated in the table subheading.

For the most part, campground owners perceive the water quality of lakes and ponds to be good with limited problems. Targeted regulation may be warranted on a limited basis, e.g., banning jet skis at selected sites; however, there is no consensus that additional surface water use restrictions need to be put in place.

Table 4. Agreement with surface water issues

Strongly Agree or Agree	
- The fisheries are very good	65%
- Timely solutions exist for water quality problems	46%
- Jet skis should be banned	42%
Neither Agree nor Disagree	
- Zebra mussels are a problem	50%
- Number of boats need to be limited	43%
- Size of boat motors should be reduced	38%
Disagree or Strongly Disagree	
- Campground run-off contributes to water quality problems	83%
- Additional boat mooring and/or docking facilities are needed	57%
- Algae and "scum" are a problem	50%
- Drunk or rowdy boaters are a problem	50%
- Milfoil is a problem	41%
- The levels of non point pollutants need to be reduced	37%

Visitor Complaints

Respondents were asked how often they heard 25 different visitor complaints. The top three complaints for each survey category are shown in Table 5.

Level of insects and visibility of campground signs are two complaints frequently reported by park visitors. Two other common visitor complaints were cleanliness and pets not on leashes. Complaints seldom heard by park owners-managers involved other campers being inconsiderate, noise level, and campsite prices.

Complaints with respect to litter, water clarity, and garbage pick-up were among the least reported by visitors. The frequently reported complaint about cleanliness may not be related to trash such as paper, but rather to other measures of cleanliness such as toilet sanitation.

Table 5. Visitor complaints and concerns

Very Often	
	- Cleanliness
	- Amount of insect pests
	- Visibility of campground sign or entrance
Often	
	- Amount of insect pests
	- Pets not on leashes
	- Visibility of campground sign or entrance
Seldom	
	- Inconsiderate campers
	- Level of noise
	- Price of campsites
Never	
	- Litter
	- Clarity of water
	- Garbage or trash pick-up

Ownership/Management Concerns

In this section, respondents indicated to what extent they agreed with 16 statements about campground ownership/management. Responses were viewed as either supporting or refuting prior observations.

Expectedly, owners-managers strongly agreed or agreed with statements recognizing the significance of campgrounds to the tourism industry and the importance of campers to the local economy. A strong majority also recognized the need to cooperate with adjacent property owners and local businesses.

With respect to prior observations related to visitor complaints, more than 90% of park owners-managers agreed or strongly agreed with the need for well designed welcoming signs to attract campers. Nearly 90% felt that campsite rental fees were fair.

Regarding surface water, most respondents neither agreed nor disagreed with the statement that surface water quality is deteriorating. Also, most park owners-managers neither agreed nor disagreed with the position that campground operations are restricted by environmental regulations. The only concern with which most of the respondents disagreed or strongly disagreed stated that the quality of the environment at campgrounds had been reduced because of pressure from use.

With respect to other issues, the campground owners-managers tended to agree with the statement that professional tourism efforts are cost effective, but neither agreed nor disagreed with the cost effectiveness of State efforts. Most neither agreed nor disagreed that the lack of available bank loans has prevented expansion, development of local communities has reduced visitors, or insufficient demand has prevented business expansion or facility improvement. These later positions support earlier observations about business operations.

Conclusions

Through this survey, campground owners and managers have shared their views of business and industry concerns. As important, owners and managers have also shown their indifference to certain issues.

The issues identified as important concerns related to improving the cleanliness of campgrounds and facilities, maintaining the high quality of the surrounding park environment, instilling camper respect for other campers, improving the visibility of campground entrances and use of signage, and establishing better links with local businesses and communities. These issues need further attention in terms of research and/or educational outreach efforts. Strategies to address these issues will be relevant if they are developed with assistance from a cross section of industry representatives.

Several issues were unimportant to campground owners and managers. Availability of funds from local banks and involvement of family members were not important operational concerns. Also, park owners-managers were indifferent with respect to issues about local development and residential encroachment. Lastly, operators were positive about the quality of the surface water and the environment.

The results reported were a combination of opinions from operators of both public and private campgrounds. Further analysis by type of ownership may show different results for the

two groups. In addition, size of business may influence outcomes. Managers of smaller campgrounds may have different concerns than those overseeing larger parks.

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Recreation Management Administration

Demarketing in Park and Recreation Management

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Abstract: Demarketing can occur at all levels government, i.e., federal, state, and municipal, and also in the private sector. Demarketing is a viable way to reduce the demand of a product, service, program or park area. A demarketing plan consists of steps that will complete the mission to reduce demand, and if chosen as a demand-reducing option, should be part of the organization's or agency's strategic plan.

Marketing and Demarketing

The popular conception of marketing is that it deals with the problem of furthering or expanding demand. Whether one takes the traditional view that marketing in parks and recreation is finding customers for existing products or the more recent view that it is developing new products for unmet consumer wants, it is seen as a management technology that brings about increases in visitors and facility use and, in turn, an increase in how much money the facility takes in. The marketing professional in parks and recreation should use product, price, place, and promotion variables. Marketing is seen by some as a "fair weather" profession, one that seems important during periods of excess supply. In this respect, marketing differs from other business functions that are critical during all stages of the economy, i.e., accounting, manufacturing, and human resource elements.

But this is not accurate. True, if marketing professionals are seen as responsible for finding customers and drumming up demand, they seem unnecessary when demand becomes great. However, in practice, excess demand is as much of a marketing problem as excess supply. A park and recreation agency may need to reduce total demand or the level of demand in a certain demand state without damaging the visitor experience, the relationships with the various users, and the image of the agency. Philip Kotler coined the term "creative demarketing" in the early 1970's. Reviving his ideas about marketing management is appropriate. This idea can be easily adapted by parks and recreation managers. More formally he defines demarketing as, "*that aspect of marketing that deals with discouraging customers* (visitors, users) *in general or a certain class of customers* (visitors, users) *in particular on either a temporary or permanent basis.*" The same marketing principles that deal with shrinking demand or deliberately discouraging segments of the market call for all the major marketing tools. As such, marketing is just as relevant to the problem of reducing demand as it is to the problem of increasing demand. Kotler identifies three types of demarketing (Kotler 1971), two of which are directly applicable to park and recreation managers:

1. *General demarketing*, which is required when an organization wants to shrink the level of total demand.

2. *Selective demarketing*, which is required when a company wants to discourage the demand coming from certain customer classes.

3. Ostensible demarketing, which involves the appearance of trying to discourage demand as a device for actually increasing it.

Demarketing and Demand States

Before I describe and explain the two types of demarketing that park and recreation managers should focus on, defining the various demand states is necessary. Since demand is usually the focal point of demarketing, the relationship between demarketing and demand states is crucial.

Demarketing can be described as marketing in reverse (Mahoney 1995). One of marketing's main goals is to influence the level, timing, and character of demand in a way that will achieve an organization's objectives. The same can be written about demarketing in park and recreation management.

Eight different demand states have been described in the literature (Kotler 1982). Each demand state presents different implications for marketing. I deal with the states of demand that are more relevant to demarketing strategies in greater length however.

1. *Negative demand.* A market is in a state of negative demand if a major part of the market dislikes the product and pays a price to avoid it. In some situations, customers may be willing to pay additional fees or costs to avoid facilities they dislike, i.e., paying more for a cleaner park to avoid a polluted one.

2. *No Demand.* In this demand state, target consumers are disinterested in the service or facility, i.e., some markets are not interested in an existing or new type of recreation activity.

3. *Latent Demand.* Many consumers share a strong desire for something that is not being satisfied by an existing facility or service. Latent demand deals with a situation where there are no close substitutes, i.e., an urban population's desire to run a raging river is unsatisfied because there is no river or water park in the area.

4. *Falling Demand.* Falling demand is reflected in the product life cycle. It is generally characterized by lower visitation numbers and lower use levels documented by a decrease in reservations, gate counts, enrollees in programs and services, etc.

5. *Irregular Demand.* Many organizations face demand that varies on a seasonal, daily, or even hourly basis, causing problems of idle capacity and over-full capacity. Managers and marketing personnel will want to include demarketing strategies in their marketing plans. Irregular demand reveals problems associated with fixed costs and budgets, regardless of use or visitation. Fixed costs are analyzed by looking at the overall operation cost per user or visitor.

6. *Full Demand.* Full demand occurs when a park, facility, or program's social and/or biological carrying capacity has been reached. Managers are focused on maintaining use without deterioration of the resource or visitor experience. The

organization strives to maintain the demand level while maintaining quality and consumer satisfaction.

7. *Overfull Demand.* Some organizations face a demand level that is higher than they can handle. Many US national parks are currently in this state. Resource depletion, crowding and decreased levels of visitor satisfaction are common problems during periods of overfull demand. A demarketing solution is the rationing of recreation experiences, i.e., river rafting permits that allow access on the Colorado River.

8. *Unwholesome Demand.* Unwanted demand in most cases. Types of user behaviors or facility-related uses considered damaging to the resource, the facility, or the user, i.e., graffiti, vandalism, ORV use in non-designated areas, and the operation of a snowmobile while under the influence of alcohol or drugs. Demarketing can be useful in trying to reduce an activity or behavior that constitutes unwholesome demand.

I have added a sub-level to unwholesome demand- incompatible demand. Generally, incompatibility is judged by the parks and recreation professional and it addresses activities that are not suitable to the sustainibility of the resource, or recreational activities that are not compatible with each other for environmental or safety reasons.

Demarketing in Parks and Recreation

Many of our national parks, public lands and natural resource areas are facing excess demand for one or more types of recreation or visitor experiences. In a responsible parks and recreation organization, however, attempts are made to act in a framework that respects the marketing concepts of parks and recreation--i.e., visitor satisfaction in harmony with resource protection. It is possible to distinguish at least three different situations that may lead to general demarketing by a Park and Recreation agency or organization. Let us consider each situation briefly.

Temporary Shortages

Many park and recreation agencies find themselves in a situation where the programs or the experiences that they have to offer are in excess demand. Sometimes the excess demand can be a direct result of the management's underestimation of demand for that park or program offering. In other cases, it is attributable to the lack of supply, i.e., national park lands in the peak tourist season. The following are examples of reactions to supply shortages:

1. The National Park Service has determined that the extremely high demand to run the Colorado River over the last 20-30 years during the spring and summer months must be apportioned by permits. The high demand has not only created a shortage of available river space that affects navigability and safety, but has created a shortage of solitude in the river basin. The permitting system allocates permits to commercial and noncommercial users to navigate the river. About 24,000 permits were given out in 1995. The waiting list for a noncommercial permit is from seven to ten years (Aler and Glick 1994).

2. The amount of off road vehicle use for recreational purposes is increasing every year. ORVs, however, can damage landscapes and interfere with other types of recreational activities, so they are designated to specific "open zones" by the BLM and other public land management agencies. The problem with this designation process is that many of these open areas are becoming overused, and are further damaging what is left of the landscape. This problem is a result of open land scarcity. A demarketing solution would be issuing a limited number of licenses based on the geographical area's carrying capacity on a parcel by parcel basis.

Steps can be taken to encourage reduced consumption and overall demand by setting up the classic marketing instruments in reverse (Kotler 1971). To cause a reduction in resource consumption, overuse, and program demand, marketers and managers can:

1. Decrease advertising and promotion for the park, facility, program, or recreational activity.

2. Create a rationing program, apportionment, or permitting program. Managers can meet demand on a proportionate level. The park or facility can satisfy x% of total demand. The supply can also be allocated to a favored public(s), much like the National Park Service does Colorado River permits. About 70% of the permits are allocated to commercial users as compared with noncommercial users (Wilderness Public Rights v. Kleppe 1979).

3. Increase entrance fees, license fees, permit costs, and program fees.

4. Change the allocation system to a "first come first serve" basis until biological and social carrying capacities have been reached.

Policies for allocating supply and reducing demand should be made by park and recreation managers with marketing professionals playing a major role in advising what impact the alternatives would have on the visitors, users, and participants. Each general solution must keep in mind some degree of public disappointment.

Chronic Overpopularity

There are some situations where a recreation area or program is over popular. The management of the facility or program is geared toward lowering demand levels. Two situations can be distinguished in the field. The first, is when the popularity of a particular park area may be posing a serious threat to the quality of the recreation experience, and also damaging the actual resource that attracts the visitors. The National Park Service has attempted to reduce demand in some of our national parks by implementing management innovations that focus on resource and visitor experience protection. The management plan is officially called the Visitor Experience and Resource Protection Plan. Arches National Park in Utah has been working with the VERP plan since the summer of 1995. One of the main problems that park managers face is crowding. The NPS wants to keep the visitor happy by managing for a quality recreation experience, which comes hand in hand with resource protection and sustainibility. The National Park Service used social research studies evaluating visitor preferences and experiences as a base for the development of VERP. They were inclined by the results to provide for a better quality recreation experience and protect the resources that attracted the visitors. The NPS also used biological indicator studies to develop indicator species, develop biological carrying capacities for particular park areas, and park

zones that mirrored the Forest Service's Recreational Opportunity Spectrum zones. The VERP plan is in part a demarketing management technology. The plan is aimed at reducing visitor levels in certain zones of Arches National Park to preserve the quality of the visitor experience and the park's resources.

According to Park Service figures, visitation increased system-wide by 30% in the 1970's and climbed another 35% in the 1980's. Officials predict that by the end of the century, another 60 to 90 million people, above and beyond today's record 275 million, will annually visit the National Parks (Wilkinson 1995). From 1974 to 1984, annual visitation at Arches National Park grew from 238,000 to 345,000. In the last ten years, visitation has doubled to 777,000. There is no reason to believe that this number will not double again over the next two decades.

After decades of ignoring the warning signals, park managers are realizing the hurdles that they must clear to protect the natural resources, preserve park aesthetics and maintain the quality of the visitor experience. The popularity of our national parks has become a product of their own demise. VERP is being pioneered by the Park Service, charting a promising new course for visitor management and biological stability. Before the decade is over, VERP may be used to save many of America's crown jewels from problems attributable to overuse and crowding. The VERP program at Arches and other participating parks is a pilot-test in park management because it will define how many people can be doing what, when, where, and how within the park.

In the second situation, overuse and crowding are results of the managers and policy makers inability to plan for and cope with a high level of demand. Parks are attractive to visitors for a variety of reasons ranging from aesthetics to recreation. With some parks instituting limits on visitors and hours of use, lines of cars and crowded parking lots and fringe areas become frequent occurrences. This type of congestion detracts from the park's solitude and natural beauty and is probably not what the visitor intended to see on his trip to the park. Demarketing would be helpful in this situation. The parks could simply turn away the "extra" visitors, or offer a substitute area or activity. Raising the entrance fees, parking fees, or concession prices is also a demarketing alternative. However, price increases may be viewed as inequitable. The problem with most state and federal parks is that they are scarce resources related to the problem of limited supply. Decreasing demand for a resource when the resource is scarce is difficult and there are no close substitutes.

High demand can lead to overuse and crowding. The NPS already recognizes it has problems related to overuse at many national parks. Rainbow Bridge National Monument is a good example of these problems. Rainbow Bridge was remote and only accessible by foot until the construction of the Glen Canyon Dam in 1963. The dam backed up the flow of the Colorado River into the Glen Canyon, turning the chasm into an artificial lake (Dodge 1991). Some major use-related problems at Rainbow Bridge are graffiti, vandalism, litter, trampled vegetation, crime, noise, and congestion caused by the large number of boats in the canyons leading to the bridge. These use-related problems have increased over the last 25 years and are a direct threat to the visitor experience and resources in the park. Decreasing the frequency of these problematic occurrences related to overuse may only be possible by demarketing to decrease demand. By decreasing the demand the occurrence of these problems **should** decrease proportionally.

Visitation can be decreased in several ways. Charging fees to enter the area by foot, and also a "toll" fee to enter the canyon by boat may discourage some visitors. Besides a fee system, a social and biological carrying capacity could be set for boaters and "on foot" visitors. When one of the carrying capacities is reached, no more visitors will be allowed into the monument area. Although this seems as if it is depriving some visitors of a desired experience, it may be a necessary tactic to maintain the ecological balance of the resource and the quality of the visitor experience.

Demarketing can go one step further. The congestion problem in the artificial lake can be addressed by the NPS by demarketing the use of small boats in the canyon. The NPS could market the use of a charter boat or ferry boat system, thus decreasing smaller boat traffic on the lake, which in turn would lower the frequency of problems associated with small boats. Besides the congestion in the lake area, the rock climbing, graffiti, and "joyriding" in speedboats could be demarketed by increasing the supervision or law enforcement in the area by installing an NPS floating station or small marine safety patrols.

Rainbow Bridge's crowding problems are a direct result of its geography. It shares a border with Glen Canyon National Recreation Area that is no more than a short motorboat ride away. An objective in the demarketing plan would be to form a partnership with Glen Canyon. Pamphlets or flyers could be given to the recreation area's visitors that would inform and educate them on the differences in conduct and use rules between the Glen Canyon Recreation Area and the Rainbow Bridge Monument Area.

Product or Service Elimination

Demarketing is sometimes called for when a park or recreation organization would like to eliminate a program or the use of a particular facility. Examples of demarketing strategies are personally informing the enrollee why the program is being dropped, offering a full refund and a discount to another program offering, and offering substitutes outside the department. These strategies are warranted where the same residents or friends and family will enroll in other programs that the recreation department offers.

Preparing a Demarketing Plan

I have listed a set of steps that will serve as an outline for preparing a demarketing plan, and I will examine each of them by using the "crowded park" as the demarketing theme. Decreasing visitors to the park during peak hours of the peak season is our objective.

1. *Situation Assessment*. The situation assessment is made up of the following components: External analysis; Internal analysis; Facility, Product, Program, and Service audits; and Marketing audits. The situation assessment should result in the following: the identification and understanding of the strategic factors of the organization; the identification of the organization's strengths, weaknesses, opportunities, and threats; the identification of strategic issues; a portfolio analysis; and the creation of a

framework for alternatives. The NPS conducts 'State of the Parks' reports every five years or so. This is the closest thing to a situation analysis that I have found in my research. The NPS needs to create a demarketing plan for the overuse problems that occur during the busy season-the first step is a thorough situation analysis.

2. *Creation of Demarketing Objectives*. Marketing objectives are the guides to the overall demarketing strategy. They should suggest constant evaluation and they should be easily measured. A demarketing objective is no good if it cannot be measured. Setting demarketing objectives is a major determinant of sustainable success. The demarketing objectives must be concurrent with the focus, coordination, and the entrepreneurial views of the agency. There must be a hierarchy of coordinated and measurable objectives known to the staff. Demarketing objectives should specify what is to be achieved, not how it will be achieved. They should focus on affecting and servicing target publics and specify relevancy target markets. Demarketing objectives should be consistent with the expected future environment and capitalize on organizational strengths and situation opportunities. They should also recognize and address relevant organizational weaknesses and situational threats. Demarketing objectives should generate and evaluate alternative marketing mix elements for accomplishing the organization's strategic objectives. A realistic time frame should be specified for objective accomplishment. Demarketing objectives should suggest measurement criteria and methodology and also help identify partners and partnerships. Demarketing objectives may include decreasing "first-time" visitors by three percent, decreasing the number of seasonal visits, decreasing automobile travel to the park, or decreasing visits by families with young children. Alternatives to objectives are management by extrapolation, managing by crisis, managing by subjective objectives, or managing by hope.

3. *Identifying and Segmenting the Target Market*. Choosing the target market in which you are seeking to shrink demand. The segmentation process starts with the bases of segmentation . . . on what variables are you segmenting? Common segmentation questions are: Are the segmentation variables measurable? Are the segments homogeneous? Are the segmentation bases practical? Are the segmentation bases relevant to the Facility-Products-Programs-Services? After the bases have been chosen, the actual grouping takes place based on a univariate analysis, cross-tabs, clustering, or a discriminant analysis. The groups are then profiled using other variables in a multivariate analysis. Finally, an assessment is done of the market segment. The assessment involves an examination of the relationships between the market segment and the mission and objectives, the return on investment, and the feasibility or capability of sustainable service and sustainable resources.

4. *Create Target Market Objective*. Relevant objectives must be established for the target market segments. These are objectives that need to be accomplished within your target market. They should be consistent with your marketing objectives, i.e., decreasing visits during prime visiting hours for families with two or more children within a 50 mile radius.

5. *Positioning Your Program, Facility, or Service*. Organizations must be concerned with how they are perceived by their priority publics and target markets. How they perceive the mission, competence, park or program, facility, or service is vital. The image of an organization is the sum of beliefs, ideas and impressions that individuals and organizations have about the organization. Images are built on perceptions and equal the function of deeds and communications, but rely more on what the customers' perceive and what an organization does, not what it says it does. What images do the different publics have of my organization? What has most influenced these images? Is the image consistent with how you perceive yourself or how you want to be perceived? How can you go about establishing the desired image in the minds of your publics? These are image management questions that are helpful to ask at this stage in the demarketing process. Positioning should be relevant to the mission statement and to the organization's objectives. The organization should be proactive and constantly concerned about its image. Different publics need different positioning strategies. Your position can be mapped on a positioning grid, which will graphically illustrate where your organization is positioned in the eyes of your priority publics. Your position should be constantly monitored and assessed. Positioning must be consistent with an organization's marketing mix to accomplish accurate positioning.

6. *Create Demarketing Mix Objectives*. The demarketing mix objectives must coincide with overall objectives of the demarketing plan and strategic plan. Demarketing mix objectives are centered around the target market(s) or publics. They guide the demarketing mix by giving shape to the type of mix that will be used and by helping to define some elements of the mix.

7. *Develop the Demarketing Mix*. The role of each element of the marketing mix- product, price, promotion, and distribution-should be examined for its contribution to an integrated demarketing strategy. The elements of the mix should support and complement each other to develop differential advantages in each of the selected target audiences or publics. A different demarketing mix is usually necessary for each target market.

8. *Monitoring and Evaluation*. The demarketing plan must be evaluated and monitored. Managers should assess the demarketing plan and ask questions such as: Is the program achieving its objectives? What can be done better? Should we maintain, subtract, or add to our current mix? Besides internal assessment, social, biological, and economic research can test the success of a demarketing plan. Examples of this research in parks and recreation are visitor impact studies, spending patterns, trip lengths, visitor profiles, visitor and user preferences, and evaluation surveys. The data collected from scientifically sound research can be valuable to someone involved with demarketing.

The Need for Demarketing: Practical Examples

Demarketing campaigns for any organization must have clear, attainable, and measurable objectives. In park and recreation management there are some common problems, usually linked to a particular demand state, that demarketing attempts to solve. I have researched some problems that exemplify the need for demarketing. Sometimes, demarketing techniques are already being carried out, but they are not recognized as demarketing.

Conflicting Use
A parks and recreation agency must decide what is the primary use of its fields, trail system, beaches, facility, etc. Manager's decisions are linked to user safety, the compatibility of use with available resources (sometimes non-renewable or scarce), and the different uses and programs demanded by that agency's publics.

Problems arise in policies of allocation, rationing, and apportionment. A little physics comes to mind . . . "every action has an equal and opposite reaction." Demarketing can help solve the conflict between recreation seekers by shrinking demand in one type of activity and marketing the demand for another. Questions will arise such as: Which activity should be chosen as the activity that will be demarketed and why? What will be the mix for marketing this "secondary" activity?

A park and recreation administrator will face situations with a high demand for certain activities that conflict with other activities due to safety or facility and land-use, and in cases where there is a resource compatibility conflict. A solid demarketing plan will attempt to lower the demand in the target publics to help solve the conflicting use problem.

Overuse
Crowding and overuse in our national parks, state parks, and at other facilities is a large problem for recreation managers. Crowding of a park can lead to a decrease in the quality of the visitor experience, traffic and parking problems, resource damage, law enforcement problems, and general safety concerns.

Referring to VERP, the plan has goals to set visitor limits for specially zoned park areas by determining a carrying capacity for each zone that follows the objectives of the NPS- providing a quality visitor experience and protecting limited resources (supply). The NPS is trying to shrink demand (visitor numbers) by setting limits on the amount of visitors allowed to enter certain areas of the park. The NPS is using the VERP plan to decrease and manage demand states at levels determined through the Service's research of the biological impacts of people on the park and the effects of crowding on the visitor experience. Studies that have focused on the social carrying capacity of recreational lands and crowding regarding the visitor experience have been conducted before VERP's inception as a management plan (Manning and Lime, 1993; National Parks and Conservation Association. et al. Colorado State University, 1995).

Vandalism, Graffiti, and Litter
Detrimental acts committed by deliberate offenders such as vandalism, graffiti, and litter are common problems that managers must prepare for and attempt to discourage. However, the ever-increasing amount of visitors and the increasing demand for various kinds of activities in already troubled areas places the responsibility of prevention on the park managers, policy makers, planners, local law enforcement, and field staff. Managing and controlling visitors while the park is closed has become just as important as managing the park while it is open.

The demarketing mix to handle each type of unwanted demand will be different. Decreasing vandalism at a park facility could include a mix of increased law enforcement, Public Service Announcements that warn against certain activities, and a brochure aimed at educating the target groups on the costs of their actions and the legal penalties that await them if they are caught and prosecuted. The mix for graffiti would be similar, but the creative addition of a graffiti wall or graffiti stone that would let the vandals "vent" on a targeted area may result in a decrease of incidents in other areas.

Littering can be demarketed by using a promotion campaign--i.e., the nationwide campaign featuring Woodsy Owl and other characters with the famous tag slogan, "Give a hoot, don't pollute." The mix to promote this program was mostly via the radio and the TV. A promotional campaign made up of Public Service Announcements, brochures, and leaflets was developed to discourage littering in our forests and parks. Besides the media, the Forest Service used educational and interpretive programs to help fight the littering problem.

Each demarketing mix has different target markets in mind, different objectives to follow, and different communication elements. Demarketing to decrease unwholesome or unwanted activities/actions requires a mix that changes according to the type of activity you are trying to abate or eliminate entirely.

Discussion and Implications
Demarketing is a management tool that can be used to help alleviate demand-related problems in park and recreation settings. There is a need for market research to identify the problems that visitors perceive in the parks, to determine social and biological carrying capacities, and to determine limits of acceptable change. These types of studies need to be conducted usually before demarketing strategies can be applied or included in the strategic plans of an organization or agency. Researchers and managers therefore need to work together to solve these demand-related problems through carefully planned research and planning.

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Issues in Developing Effective Measures for Decisions of Use/Attendance/Benefit Changes Over Time

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Abstract: There are different perspectives from which one can address accuracy and appropriateness of annual, monthly and daily use counts and even dollar receipts. This paper shows why accurate monthly figures from fiscal accounts and visitor use are not generally the most appropriate statistics to compare performance between years. The link between concept and "accuracy" is examined based on factors contributing to variability in certain data. Better trend measures are presented. It is argued that good measures should not exhibit confounding influences of weather and the way the calendar is structured. A way that such measures can be computed with minimal added cost is given.

Purpose

This paper is to show that typical "performance" measures such as trends in monthly attendance figures that are being used by managers and politicians for taking or supporting decisions and to report on trends in consumption of leisure services are often not, from a logical and mathematical statistics perspective, the most reliable or most appropriate statistics to employ given how they are being used. It is also to show that there are alternatives that are better and that are not costly.

Introduction

Given the recognition as early as the 70's (e.g., see Theobald 1979) that funding for leisure services was in trouble without justification for the money being spent, one finds many volumes of statistics on leisure service provision. There are many types of statistics. These are tied to funding and used in policy, planning and other management documents (i.e., see Knudson 1984 or Zinser 1995). How much time is spent comparing attendance for this month to "comparable" figures for other years? If a difference is found what does it really imply? Does it imply that one year a month had 5 weekends and in the other it had 4? How often has the weather been given as the cause for differences between two years with no clear idea how much effect the weather really has on the statistic?

To understand what the issue is here consider that a recreational visit has been defined by Parks Canada and the US Park Service, as "A recreational visit is a person entering (a site, facility, etc.) to participate in an appropriate recreational activity." Assume that all visitors to a service/facility/park must buy a $1.00 entry ticket good for the day of their visit and that it is understood that if the person comes on another day then that will be a different visit. Given that accurate records of cash are kept then one has both cash and a visits figures that are 100% accurate for a day, week, month or year. It might seem that comparing a monthly total for July 1995 to that for July 1996 or comparing a 1995 total to that for 1996 would give a "perfectly" accurate %-change figure. In a way it does. However is there 100% accuracy when a difference of up to 20% can occur because the month compared has 5 weekends in one year and 4 in the other? Was there different weather ? Or, is a change that is observed actually a reflection of a fundamental change in client behavior? Given the possibilities one must suspect that any change observed could reflect any of the influences noted and possibly other ones. Just by avoiding errors introduced by the way the calendar is structured, one can improve on %-change computed from "raw" monthly figures. The monthly visit and cash data clearly are "crude" for estimating some trends that are important to decisions.

The accuracy problem with changes in attendance has actually been recognized by Parks Canada since soon after systematic attendance reporting began in the 70's (Stanley and Beaman 1990). From the mid-70's until 1995, attendance at a park or site was computed by multiplying various visual and mechanical counts by conversion factors and adding up the results. It was also in the 70's that Parks Canada adopted a 20% rule for reporting why attendance in a given month differed from that for the same month a year previously. Now, as occurs elsewhere (Knudson 1984 p. 350) some parks do not use accurate information to estimate their attendance. In other cases, for practical purposes, counts and multipliers used are 100% accurate. Given the accuracy of some of the attendance figures Parks Canada has questioned the reasonableness of the 20% rule. For some locations, it seemed that even a 5% decline or increase in attendance should not occur by chance. Regardless of what seemed reasonable, two studies by statisticians[1] failed to establish a better operational criterion than the 20% rule for identifying "significant" enough change that a reason for the change should be provided by a park.

Problem Statement

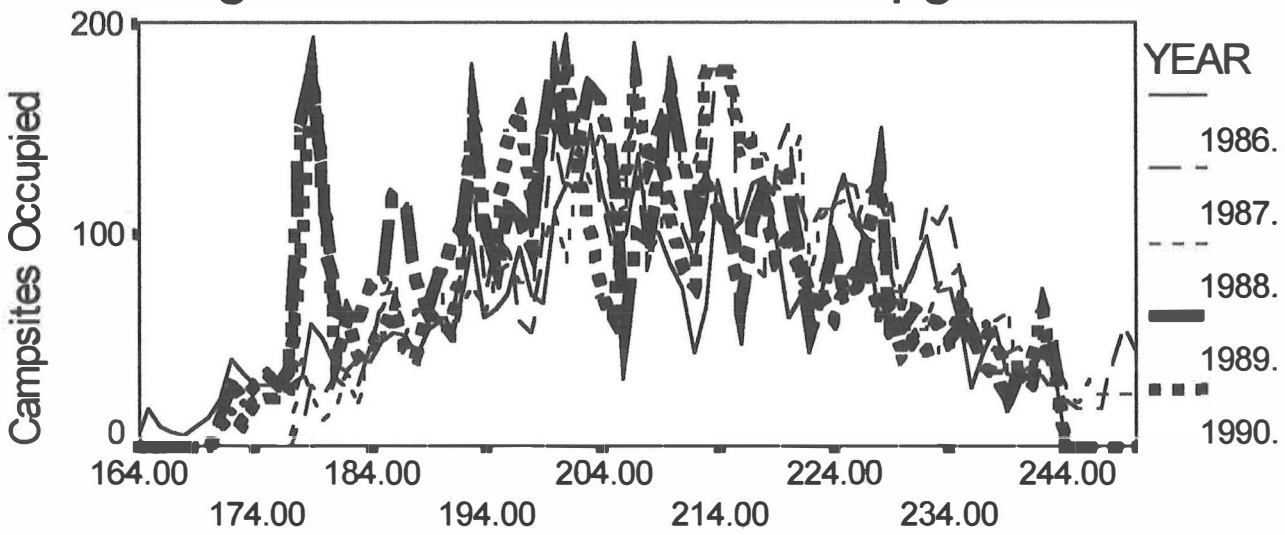
The preceding has made the point that having well collected and accurate statistics about what an organization does on a day to day basis, good operational statistics, does not assure having good information for decisions in relation to trends in use or revenue. Collecting counts and revenue for many services; counts for various entries (pool, theater, park); and counts for trails and roads, whether or not easily done as part of operations, is not generally costly and is seen as providing justification for the resources being used. The obvious question is: How can better use be made of financial, use count and other daily data that it is common for leisure service organizations to have?

Figure 1 shows daily data for two campgrounds for the summer seasons of 1986 to 1990. Basically, what one sees are counts that increase to midsummer and then decline and that also fluctuate weekly. The nature of "date" (X-axis) on the figure may seem

[1] With limited accesses to computer (one in the 70's and one in the early 80's- reports cannot be found) of extensive time series of attendance data.

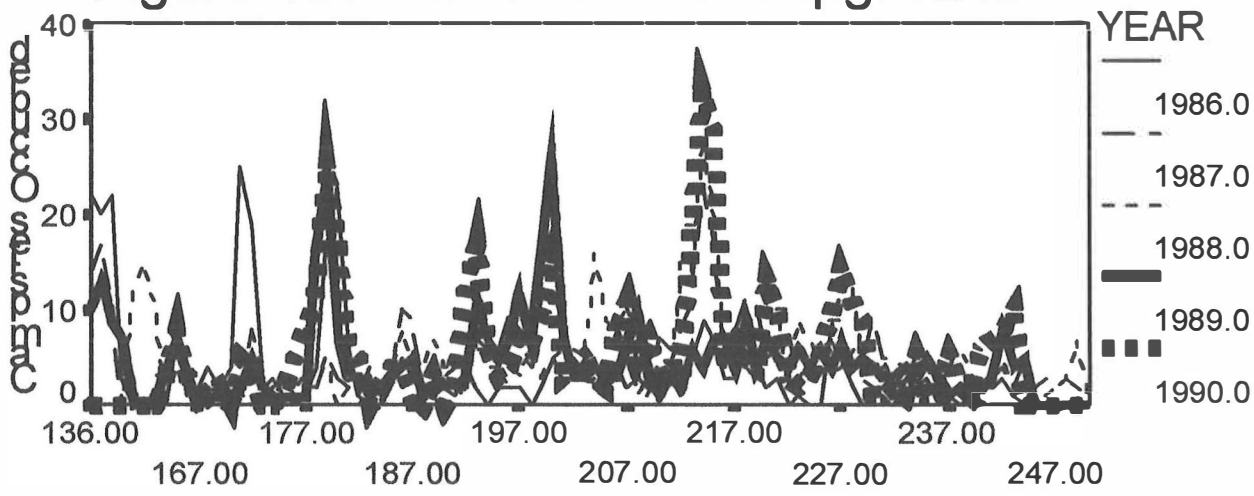
Figure 1: Site Use for 2 Fundy National Park Camprounds

Figure 1A: Point Wolfe Campground



GDAY: For explainations see part B of the figure and the article.

Figure 1B: Wolfe Lake Campground



GDAY(Day of the year adjusted. See the text for details)

The peak at roughly 179 is the Canada Day weekend peak while 214 is the Aug. 1 weekend. 166 is roughly 15 June while 245 is roughly 1 Sept.

odd in that one may have expected to see dates. However, when several years of data are displayed their weekly cycles for different years must be shifted. The variable "gday" shown on the x-axis gives the number of days in the year up to the day for which a datum is plotted, however, there is a year specific "shift" imposed to cause Saturdays, Sundays etc. to coincide between the years.[2] In the figure 1986 is a base so one sees markers showing 15 June 86, 1 July 1986, Canada Day; and similar days up to 1 September 1986. The other years are shifted the smallest amount possible to get days of the week to align (87 is shifted 1 day, 88 is shifted 2 days and because of leap year 89 is shifted 3 days in the opposite direction rather than 4 days in the same direction as 87 and 88, etc.). The big "bulge" for Canada Day seems to be in June because July 1 was a Tuesday in 1986 resulting in the emphasis being on the weekend before. Superimposed on the general pattern are peaks and hollows which are clearly not associated with holidays. Some of these show the influence of weather and some show the influence of large groups traveling together. In summary in Figure 1 one can recognize:

I. Special events
   a) Festivals/celebration in or otherwise influencing a park
   b) Unique unexpected events like a bridge or road closure or even a large group of users coming together

II. Calendar based cyclical patterns
   a) Annually events that recur on the same date (e.g., Canada Day and 4th of July)
   b) Annually events that are moved to create a 3 day weekend (August long weekend)
   c) A general annual pattern (i.e., an increase from spring to a summer peak and then a drop to zero in the fall).
   d) Excluding holidays, a weekly cycle with the day of the week, at least for July and August for nonwinter activities.

III. Calendar based administrative patterns (beginning and end of operation, change from weekend only, capacity adjustment etc.)

IV. Weather related variation.

In the figure one sees large fluctuations from day to day and year to year. One might conjecture that these related to the weather. Actually, after that conjecture it was discovered that part of them related to "windstream" caravans. Some almost certainly relate to large groups of other types coming together. What is not obvious from the figure is what happens when the data shown are aggregated so as to report on performance in July or August. Both July and August have a holiday and both have 31 days. However, some years July has 5 weekends including a high volume holiday while in other years it has 4 and August has 5 weekends. The point is that for services that load heavily on the weekend, data totaled for July or August, or any other month, of one year is not really comparable to a month's data totaled for another year. *The number of weekends is a potentially major cause of any difference observed.* Comparing the same months between years should really involve some kind or general "standardization" such as used in demography to correct fertility rates for differences in age distributions of populations being compared (e.g., see Barclay 1959, Kitagawa 1964). To compare two different months like July and August, not only is there the factor of weekends and weekdays, one probably does not expect the same total even if numbers of days in the month and numbers of weekends are "controlled." Having a basis for comparison so that a difference is zero if there is "no underlying change between the months" is desirable. What one really needs is an unbiased and efficient estimate of the real rate of growth or decline in use or revenue. One needs a rate like a seasonally adjusted unemployment rate.

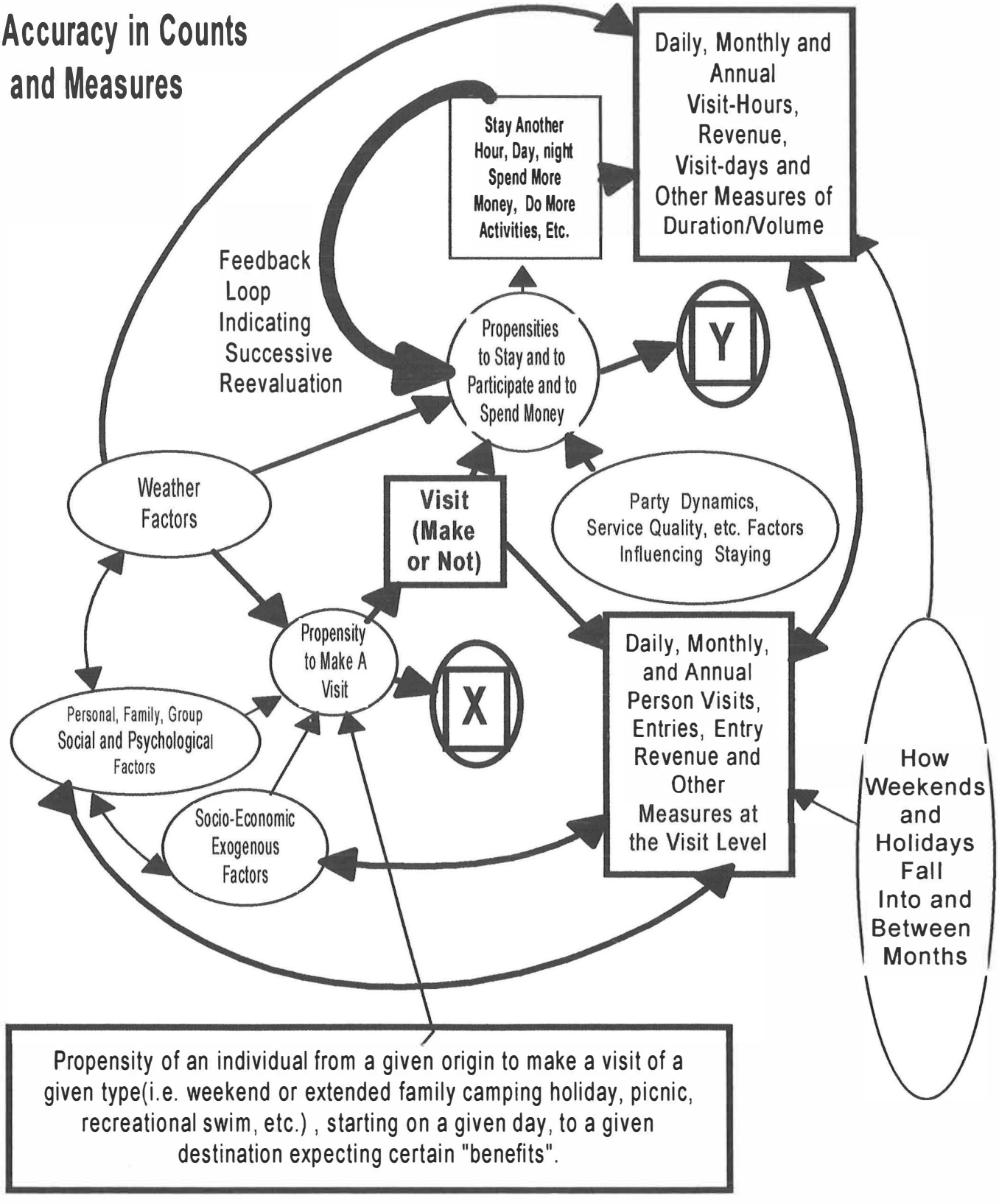
One scientific approach to developing an understanding of what one sees in Figure 1, which should lead to better measures, is to determine which variables contribute to the variability that one sees and how. If there were 1) no anomalies caused by special events or administrative action, 2) no random variation, 3) no variation due to factors like weather, and 4) no year to year trends, then all of the curves seen in Figure 1 should fall on top of each other. However, there are the kind of factors listed above causing variation. Though Figure 2 follows some conventions for defining "causal" models (Hayduk 1987), it is just meant to give a general perspective on causality. To the right in rectangular "output variable" boxes numbered 1) and 2) one sees reference to the kind of "operational data" shown in Figure 1 and to the monthly and annual aggregates of these data that one frequently sees published. Also on the right of the figure one sees an elliptical shape connected to the output rectangles 1) and 2) by arrows. The note in the ellipse specifies sources of variance already noted: how holidays fall in a month, how many weekends there are in a month, when there were special events and administrative factors. The arrows indicate that these should all be viewed to "cause" the outputs to have the values that they exhibit.

The figure is indicating that values of variables like revenue and related visitor counts that are literally 100% accurate are caused to vary by a variety of variables. As already noted, having 5 weekends in a month can have real consequences for monthly totals. But, does a user of the data want to think that use is growing when a large %-change is caused by comparing a 5 weekend month to one with 4 weekends? As for nonrecurring special events, including attendance associated with these in monthly or annual totals along with usual use counts and then making comparisons is not logical. No pattern or trend is to be expected in totals for nonrecurring events. If the kinds of unwanted sources of variation between months noted can be corrected for non-trend factors, for example, by dropping problem days in one month and similar problem days in the other month prior to getting totals and calculating rates of change based on a "standard" 28 day month of 4 weeks, then leisure service agencies can be making decisions based on better information.

When one examines Figure 2 one sees that it implies that weather causes changes in "propensities" to behave in certain ways. Propensities are indicated as defining the likelihood that a visit of a given type is made starting on a given date and what or how much is consumed. According to Figure 2, weather influences propensities and propensities determine the magnitudes of

[2] A formula based on the date arithimetic used in computers can be used to without problem up to 2000 when the lack of a leap year causes a 1 in 400year adjustment to the formula.

Figure 2: **Causal Paths and Correlations Related to Accuracy in Counts and Measures**



outputs such as those listed in rectangles 1) and 2). But then isn't it propensities or, e.g., use and revenue based on these and how they are changing that should really be used in much planning and management decision making? In the figure one finds an X and a Y in a rectangle surrounded by an ellipse. An X-type measure for July 1986 would, for example, be an estimate of total visits or entry fee revenue for "good" weather with no special events and with Canada Day and the August 1 holiday related use adjusted based on a long-term average pattern. The X-type and Y-type measures can be thought of as the leisure science equivalent of the seasonally adjusted unemployment rate.

Theoretical Formulation

Beaman and Smith (1976, Beaman 1985) defined a model based on a smooth function and a peaked function which, when added together, yielded the kinds of patterns that one sees in Figure 1. Figure 3 provides examples of both smooth functions and peaked functions. The Functions are for a hypothetical service for different years between 1986 and 1990. The functions are given for 5 years so that one has a feeling for how year to year growth might result in a new smooth or peaked function that is shifted up or down. Figure 3A for peaked functions may appear cluttered and complicated, however, all that one really sees are two peaked functions, one for 1986 and one for 1990. The peaks are based on a pattern that repeats every seven days. It is convenient to think of this pattern as defined by effects that range in value from 0 to 1. The pattern actually shown has the value of 0 for Tuesday, Wednesday and Thursday while the largest value is for Saturday and can be considered to be 1. The magnitude of the Sunday, Monday, or other effect on a particular day in a particular year is shown in the figure as the product of the value of an envelope function and the day effect, say a Monday-effect that applies to the particular day. The envelope value is shown in the smooth curves that go through the tops of the peaks for 1986 and 1990. They display the general pattern that peaks follow. Peaked functions are not shown for 1987 to 1989 because the figure became too cluttered.

In Figure 3 the shifting upward of envelope functions and smooth curves shows an increase in use counts. If two curves are shifted showing a 10% growth then every point on the upper curve is at a count that is 1.1 times the value on the lower curve. For the peaked functions the envelopes get closer and closer together as the years approach 1990. The first curve is determined by .5 times 1990 use counts while the other curves are determined by multipliers of .7, .85 and .95. In the case of the smooth functions the growth multipliers used to generate values for other years based on use counts in 1988. The multipliers are .8, .9, 1, 1.1 and 1.2 for 87 to 90 respectively.

In Figure 4 one sees sums of smooth and peaked functions illustrating estimates for a particular service. This figure would look more like Figure 1 if weather data were used to make it less regular in its shape. However, the goal of modeling is to derive a pattern from which influence of certain factors has been removed so far as possible so one gets better measures of what is really going on without the influence removed. The pattern is what would be expected if there were no administrative perturbations, standard weather, no special events and no holidays and special days. How to model holidays is not pursued here as there are two types 1) a standard long weekend (e.g., Monday off) and 2) irregular holidays like July 1 in Canada and July 4 in the USA that move around in the week. The later requires a multi-year design matrix and a variety of assumptions to estimate a model. If one has estimated generic curves' relative amplitudes such as the .8, .9, 1, 1.1 and 1.2 series for Figure 3B %-growth trends in amplitudes can be calculated. An increase in amplitude in the peaked function can be taken to reflect increased use by a local/regional weekend user segment. A decrease in amplitude in the smooth function can be attributed to 1) decreased local/regional holiday use or 2) to decreased use by any of several out of region segments. Data identifying user segments is obviously cheap in some cases and allows estimates of more detail about the behavior observed.

Modeling Using Nonlinear Regression

Regardless of the success of the research that was done by Beaman (1985), it was achieved using a rather large, complicated and somewhat costly to run program on a mainframe computer. That program, without intervention by a knowledgeable analyst, did not necessarily produce valid estimates. Getting valid estimates was costly in both dollars and analysts' time. The 90's have brought incredible computing power to the desktop at low cost along with software that makes the computing power readily useable. Rather than trying to estimate smooth and peaked functions as were done by Beaman (1985) in the 80's, one can specify very general functions and estimate them. Consider Equation 1 below.

The commentary above indicates that the equation is only being estimated for "regular" days (not holidays, special events, etc.). Because administrative changes between 86 and 90 influenced the use counts for June and September for Point Wolfe and Wolfe Lake campgrounds in Fundy National Park, estimation has been restricted to data for "regular" days in July and August for 1986 to 1990. Use counts and related date and min., max. and mean temperature information (purchased by Parks Canada from AES, Canada's Atmospheric Environmental Service) from two AES weather stations proximate to the two campgrounds were the inputs to the SPSS nonlinear regression procedure (SPSS 1993, ch. 7) to estimate Equation 1. It was estimated with some or all of the various functions defining it as specified below:

- PAMP* $\delta(dayofweek)$ is defined by dummy variables and their coefficients ((bsuneft*suneft + bmoneft*moneft + btueeft*tueeft + bthueft*thueft + bfrieft*frieft + bsateft*sateft)) so that coefficients estimated takes on different values for each day of the week and are included in estimated for a date based on Equation 1. This means that an effect for the date is multiplied by other functions for the Peaked function and then this result is added to the result for the smooth function. In this regard each value for a day indicates the relative contribution of that day count compared to other days. The value for Wednesday was arbitrarily set to zero, and effects for other days forced to be >0. Saturday as the peak day was forced to have an effect of 1. Causing these effects to range from 0 to 1 allows the amplitude of the peaked function PAMP to have a unique value that can be estimated.

- PAMP is a constant that is estimated and that, based on how estimation is defined, expresses the amplitude of the envelope of

Figure 3A: Peaked Functions With A Weekly Cycle And Envelopes For 1986-1990

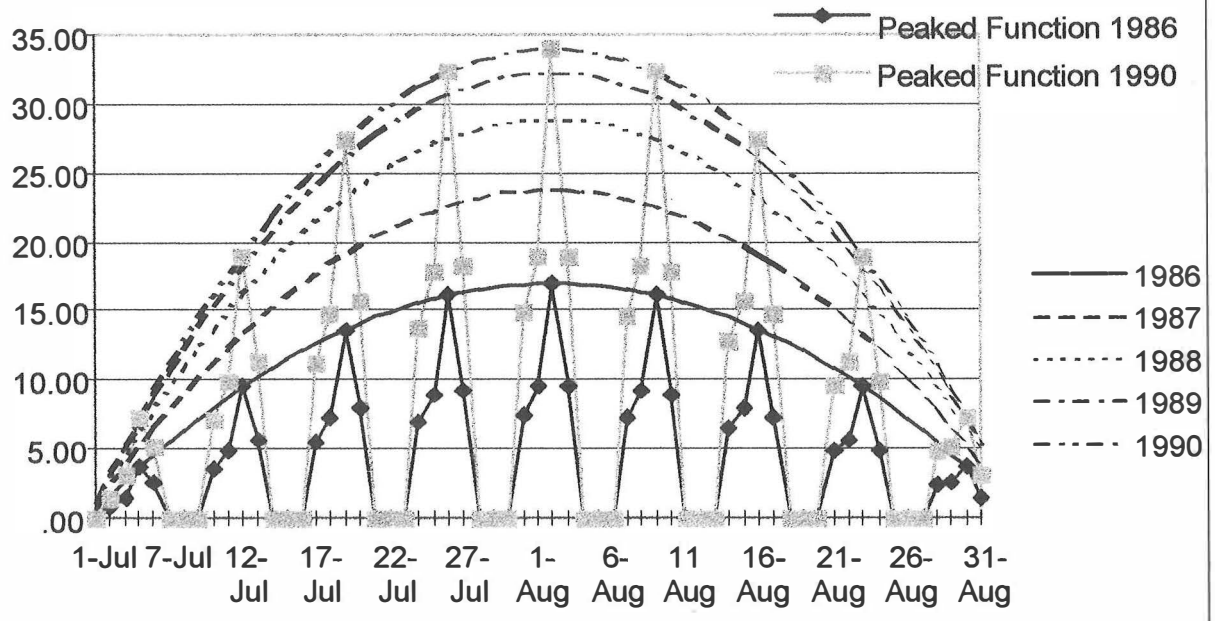


Figure 3B: Smooth Functions for 1986 to 1990 with Growth Based on a Linear Function of Calendar Year

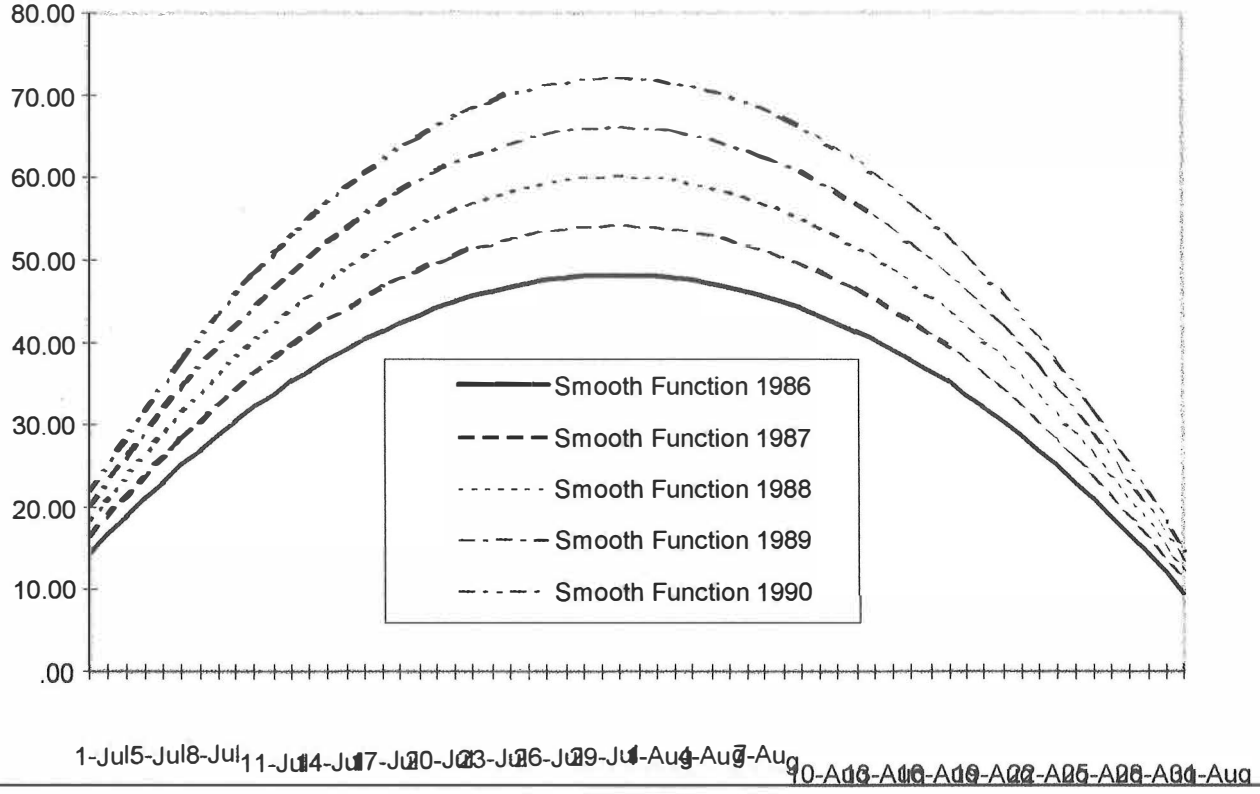
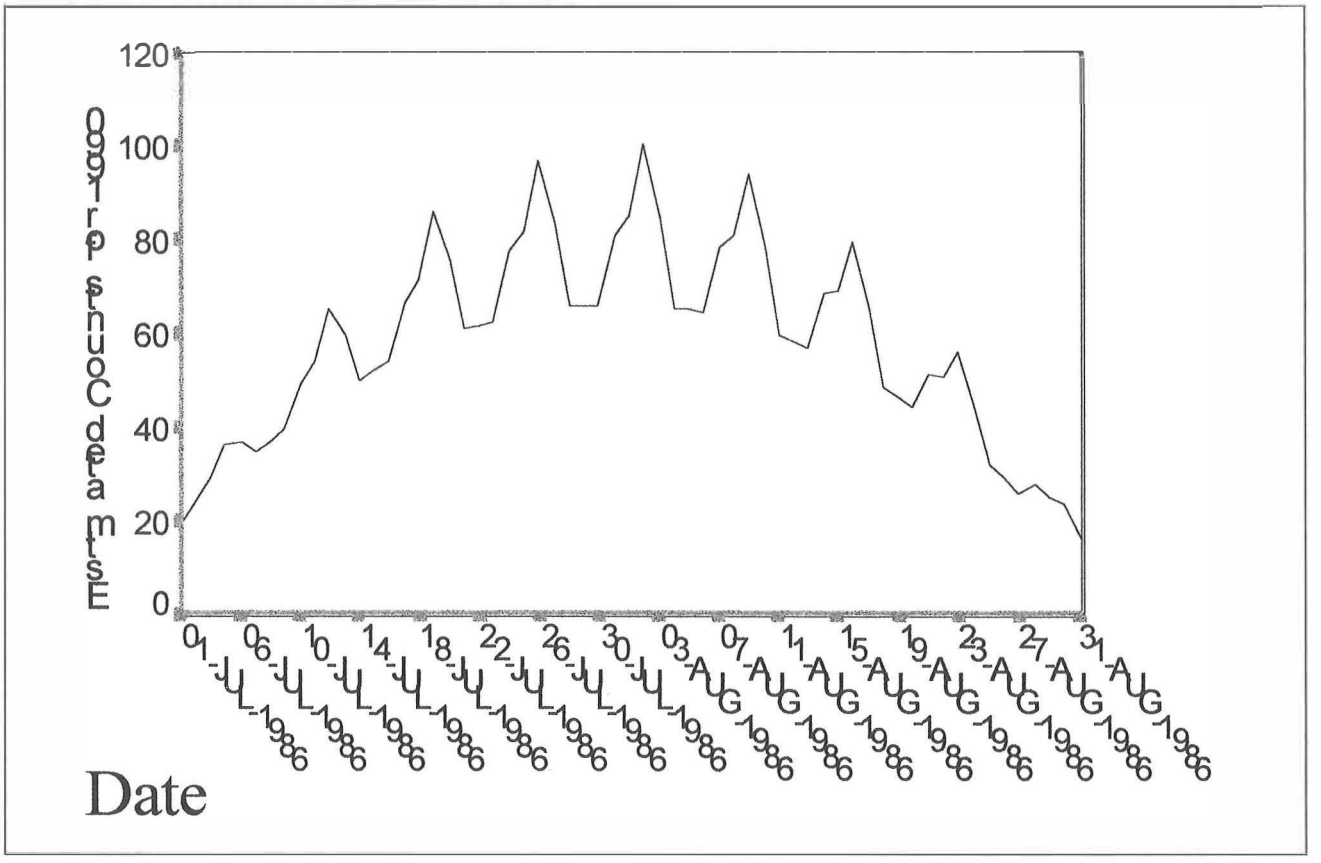


Figure 4: An Estimated Use Count Function Based on the Sum of the 1990 Smooth and Peaked Functions



the peaked function to that of the smooth function in use count units for a particular year.

- μ P(gdate)= 1+pfn1*cntgday+pfn2*cntgday**2 allows for change of amplitude during the season(PAMP being a value applying to day 207)where cntgday is a shifted day of year measured relative to day 207. The peaked function could reflect more weekend use in the spring and fall.
- $\tau P(year)$ =1+pt1*cntyear+pt2*cntyear**2 is the peaked function trend factor where cntyear is the actual calendar year minus 1988. For this study the use of cntyear as defined relates any trend to 1988, the central year in the range of years studied.
- $fP(\overset{\rho}{w})$ =1+ pw1*temp2day+pw1t*temp2mro where temp2day is the high temperature today and temp2mro is the high temperature the next day(other functions were used but limited effort went to getting a good model with just temperature).
- $\mu S(gdate)$ = sfn0+sfn1*cntgday+sfn2*cntgday**2+sfn3* cntgday**3+sfn4*cntgday**4+sfn5*cntgday**5 where cntgday is a shifted day of year measured relative to day 207(cntgday=gday-207).
- $\tau S(year)$ =1+st1*cntyear +st2*cntyear**2 where is centered year as defined for $\tau P(year)$.
- $fS(\overset{\rho}{w})$ =1+sw1*temp2day+sw1t*temp2mro where temp2day is the high temperature today and temp2mro is the high temperature the next day.
- ε (date) is a random variable expressing random variation in an observation for a given date that could be expected to occur by chance.

Equation 1.

$$Count(pca, date) = \tau P(year)\mu P(gdate)\delta(dayofweek)fP(\overset{\rho}{w}) + \tau S(year)\mu S(gdate)fS(\overset{\rho}{w}) + \varepsilon$$

The Results of Estimation: Implications for Better Estimates for Trends

Many regressions were run as part of the general project of defining and deriving better trend estimates. No details on these regressions are presented here as the only purpose of this presentation was to elucidate the problem, to establish feasibility and to identify matters that need to be considered. However, in general terms, one reason for making many runs was that 1) there are many problems involved in specifying functional forms, initial parameter estimates and constraints on parameters to be estimated and 2) the initial results achieved were not in accord with what was expected. From the beginning any version of Equation 1 used produced a regression that was highly significant with a variety of coefficients identified as significant beyond the .001 level (meaning that even with multiple tests they were significant beyond the .01 level). Unfortunately, significant results can be deceiving. A first interesting result was that there was a highly significant trend to increased weekend activity. Examination of residuals showed that a few observations were causing the "trend." The mention earlier of "windstream caravans" arises because determining why there was a trend to weekends allowed one to recognize that in the mid-80's caravans arrived during the week and in the late-80's they arrived more on the weekend. Their arrival made the days that they were present special since they caused 30 or more sites than would ordinarily have been occupied to be occupied. Days that they impacted on had to be identified and eliminated from the analysis as special. Whether a special event arranged by a park, a local special event, a bridge or road closure, etc. causes anomalous use, these influences should be identified so a trend analysis of regular use does not utilize data for such days. It should also be noted that by having records of different types of special days a park's plans for and budgets for special events can be related to "attendance targets." How much these targets exceed expected regular attendance is a measure of what is being achieved for what is spent.

Having realized that for the early regressions the distribution of residual error (observed-predicted) was not random, a simple model of what error should be expected was developed. This model was based on all parties using a campground behaving independently. Even with the days of caravan use removed the residuals exhibited more than twice the variability predicted. The obvious reason was that in many cases several sites are occupied by parties who are traveling (visiting) together. Unfortunately, no data were available from parties about other parties that are part of their visit "group." Such data are easily collected as part of campground registration. With it one can determine if residual variance exceeds what is expected thus showing structural problems with the model. In this regard for attendance expressed in person visit days, since average party size may be 2.5 for parties visiting by car standard deviations in attendance figures can be expected to be at least $(2.5)^{1/2}$ times as large as if individuals traveled independently. With bus tours and other large party size influences considered, very large variability in attendance can be expected compared to nieve expectations.

Multiple nights of stay have been specified as differing between the visits associated with the peaked function and the smooth function. However, starting to sort visitors by segments is now recognized as only a step toward recognizing that the autocorrelation between Friday and Saturday for the peaked function may be around .9 in some parks while low in others. As well, for the smooth function, long length-of-stay produces autocorrelation between days yet when heavy "turnover" is associated with the weekend, the highest autocorrelation probably occurs during the week. For parks that load for the week, loading on days of a particular week would be highly correlated with random variation being between the weeks.

The kinds of factors just cited have implications for estimation and for the determination of the structural adequacy of a model estimated. Though it may seem that there are many problems, it now also seems clear that with data from campground registrations (Thomson has extensive data for the 80's) and some special information collection on parties traveling together, a version of Equation 1 can be easily estimated and can really be considered to eliminate the effect of weather. Such an equation can be used to produce estimated regular attendance for 28 day months of 4 weeks with no "special" days. Comparing such figures for July 96 and July 95 either for the peaked and smooth function separately or together will then give trend data that has the influence of weather and varying numbers of weekend and special days removed. One can truly claim that for the types of regular users covered one is getting better information to plan and manage by. Furthermore, one can see that there is no need for extensive and expensive data. The problem is getting the computations done. From the work done it is possible to see that problems addressed like getting initial parameter estimates and constraints that were close enough to likely true values so that the estimates converged can be automated. Graphic output will generally allow a nontechnical person to see any serious problem in the fit to observed data. So, what is needed is a database that links weather and use so that queries made to a DSS can result in appropriate estimates. For routine publications "usual" attendance figures would come from accounting type records where as trend figures, which could be confused with rates computed from raw attendance, would be calculated for specific user segments for which it is meaningful using some equation like the one introduced above.

Managerial and Research Implications

This research has produced results that are important for decision makers. Clearly the finding that certain statistics that are currently being used are not really good for part of what they are being used for is an important finding. The positive message is that the kinds of data needed for better trend estimates are readily available to or easily collected by leisure service organizations. They are also easily managed in modern data bases and they can be used to produce better statistics cheaply. Modern DSS, decision support systems, can facilitate managers having and using this more appropriate information in taking their decisions.

This research is important to researchers in several ways. Firstly, it has only opened a highly practical line of research. It leaves a plethora of interesting and challenging problems to be pursued. Basically, it is a feasibility study and thus was restricted to a special "case" (non-holiday days of the peak summer season)for which the chances of success with available data were recognized to be good. Conjectures that standardization/corrections can be made for more complicated "cases" (e.g., the August Civic Holiday 3-day weekend or the July 1/4 Canada/US national

birthday) remain conjectures until somebody proves or disproves them. For those who are mathematically/statistically inclined, this research has only been suggestive. The data and model development possibilities have been identified for numerous research projects. For example, fascinating stochastic process estimation problems need to be solved to get a really good model to correct for the effects of weather. For those whose bent is more toward DSS, AI/Expert Systems and MIS the paper offers a challenge to implement systems. Systems can facilitate/encourage/force users of information to consider the values of what are currently judged to be a best statistics for a decision or, where there is not consensus, systems can present the decision maker with measures that different experts suggest leaving the decision taker to make an assessment of the merits of experts as well as deciding how values of particular measures will/should influence their decision.

Conclusion

In this paper concerns with reliability/effectiveness and concept appropriateness have come together resulting in what the authors see as a unique and useful perspective. Something special happened with a new look at an old problem. Furthermore, one does not need to abandon simple reporting of attendance and financial data with which people are familiar to have better trend statistics. Also there need not be new expensive data collection. Some Parks Canada locations should collect some information on parties traveling together but the most important matter is keeping what is already or readily and cheaply collected in a usable form. Readers may recognize that for many services detailed data by day, origin, etc. are collected and but are aggregate in collection or manually later. The process destroys the "raw" data that would allow good estimates to be made.

Correct accounting figures on dollars received can appear in publications while appropriate detailed data are used to produce trends corrected for weather and weekends in a month. Numbers from which trend estimates are derived need not be published. Given the technology now available, one would hope that soon an MIS/DSS system will query a user about purpose and, without the client having to be aware of how the computation is done, will produce appropriately corrected %-change figures and provide appropriate titling of these so that the user knows what the results are for and that they are not derived directly from "raw" data that the user may have in a published report.

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AN ANALYSIS OF VEHICLE ACCIDENTS INVOLVING WHITE TAILED DEER: A GEOGRAPHIC INFORMATION SYSTEMS CASE STUDY

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Abstract: This paper is an analysis of vehicle accidents involving the Virginia white-tailed deer (Odocoileus virginianus) in the city of Newport News, Virginia over three years using a personal computer based Geographic Information Systems (GIS). The study was a pilot project to identify capabilities of a PC based vector GIS software in an educational and management setting. GIS capabilities were used to create a map of accidents per mile to specifically identify the most dangerous stretches of roadway. The maps were used to make decisions on implementation of resource management actions to prevent and reduce the numbers of future incidents resulting in property damage and death of members of the species.

Introduction

Resource management presents a number of unique and difficult challenges, especially for those parks located in largely urban environments. One means to deal with these complex relationships is via computer technology through the use of geographic information systems (GIS). GIS allows resource manager(s) to collect a wide variety of data on both the natural and human environment to use as alternative sources of information to enhance planning and land use management decisions. As a management tool, GIS provides the resource manager with visual and analytical abilities, combined with archival data storage access and retrieval methods to create visual maps of the land area in question; thus, showing the unique characteristics of the land (Burrough 1992, Huxhold 1991, Powers 1994, Star and Estes 1990).

Historically, maps have been used for navigation to and through unfamiliar terrain. This concept can be applied in today's information driven society to help park and recreation administrators navigate their way through an ocean of data (Wicks, Backman, Allen, and Blaricom, 1993). The purpose of this paper is to demonstrate the useful application of GIS in decision making as it pertains to safety of park patrons and wildlife resources.

Case Study in Newport News, Virginia

This study was undertaken as a pilot project to evaluate the usefulness of a moderately priced PC based GIS software in an urban-resource management environment. Within the legal boundaries of the city of Newport News, Virginia, are a number of traditional urban green space parks (e.g., predominately grassy areas), as well as several parks maintained in a more natural environment (i.e., predominantly wooded areas with a mix of hardwood and evergreen native species). It is those parks preserved in a more natural environment that present a more interesting challenge to resource managers. These more natural environments require some of the same management techniques, including GIS, as those areas generally considered more wilderness like in nature (Friel and Haddad 1992; Bruce 1992). Of concern for this study is the relatively large population of Virginia white-tailed deer (Odocoileus virginianus) supported in these parks. With areas surrounding these parks being urban in nature, consisting of residential subdivisions, high-speed highways, and low density industrial parks, the interactions between humans and deer present safety concerns for the resource manager. This type of problem, traffic management and resource management, is one faced by a number of US National Parks (Spear and Cottrill 1993).

This study was initiated by one of the co-authors while enrolled in a GIS course at Christopher Newport University. In that course each student had to develop and execute a GIS based analysis. The impetus for this study was a letter from the Newport News City Engineer sent to both the Director of Parks and Recreation and the Director of Waterworks, concerning the problem of traffic accidents involving deer. According to the City Engineer's letter, there were only 34 traffic accidents involving deer between October 1990 and September 1993. This number seemed low in relation to personal experiences of park rangers in Newport News who were tasked with the investigation and removal of carcasses resulting from deer/vehicle accidents. This was one reason for continued study of the issue. A reply to the City Engineer's letter from the Director of Waterworks (Mueller 1994) made excellent points concerning the difficulty of controlling the deer population. This letter inspired the investigator to use GIS to address this issue to provide information through visual analysis that might indicate methods to reduce the number of vehicle/deer accidents.

The abilities of GIS to combine different types of data (i.e., area, line, and point), seemed particularly well suited to this study. The area data necessary included location, size, type, and shape of Newport News parks. Linc data includes streets, roads, and highways found within the city, while point data consisted of the locations of vehicle/deer accidents. First, it was necessary to gather data concerning deer strikes, then enter that data into a database. Next, the data was analyzed to create interpretative maps. Then, to better understand the situation and present the information in a more visual manner, site photographs and aerial photographs were incorporated.

Data Acquisition and Entry

The first step was to gather data concerning traffic accidents involving deer, more specifically termed as deer strikes. Dates and location of deer strikes were gathered from Newport News Park Department records. There were a total of 125, including the 34 discussed above, beginning February 1990 and ending December 1993. The raw data was not extremely accurate in terms of geographic information. For some of the deer strikes, exact street addresses were given. For most, only estimations of where accidents occurred, by yard and foot measurements to landmarks near their locations, were given. For example, strikes that were difficult to plot were: 1) May 25, 1990, Route 143 just North of campsite entrance; and 2) June 15, 1990, Route 105 just West of golf course entrance. In this case study, since many of the locations were not given either as a street address or with latitude and longitude, locations were estimated visually from within GIS.

Under ideal conditions, data on the location of deer strikes would be given either as an exact street address or with the exact latitude and longitude of the deer strike. If the location of the deer strike was given as an exact street address then most GIS programs can geocode that particular address. That is, given an address the software provides an accurate estimation of the latitude and longitude of that address. That data (latitude and longitude) then becomes part of the database. Alternatively, and with the relatively low cost of hand held GPS (global positioning system), accurate estimates of longitude and latitude can be obtained. The margin of error for most hand held GPS devices provide the necessary degree of accuracy for the construction of such a database useful for this type of analysis.

Visual Analysis of Deer Strikes

After the data was entered it was visually analyzed. It was obvious, even prior to visual presentation, that the majority of the accidents would be plotted on or near park land, in particular, Newport News Park, located in the northern part of the city. This park is 8,500 acres of mostly natural vegetation. Figure 1 is a map that indicates the location of the deer strikes (gray areas are parks). While an inspection of the data prior to being mapped lead to the belief that most strikes would occur near Newport News Park, this was a function of the relatively small number of total points in this pilot database. For large databases, and in particular those where the data can be geocoded with the computer, such obvious patterns would not emerge until after the data had been put into a database and displayed with GIS.

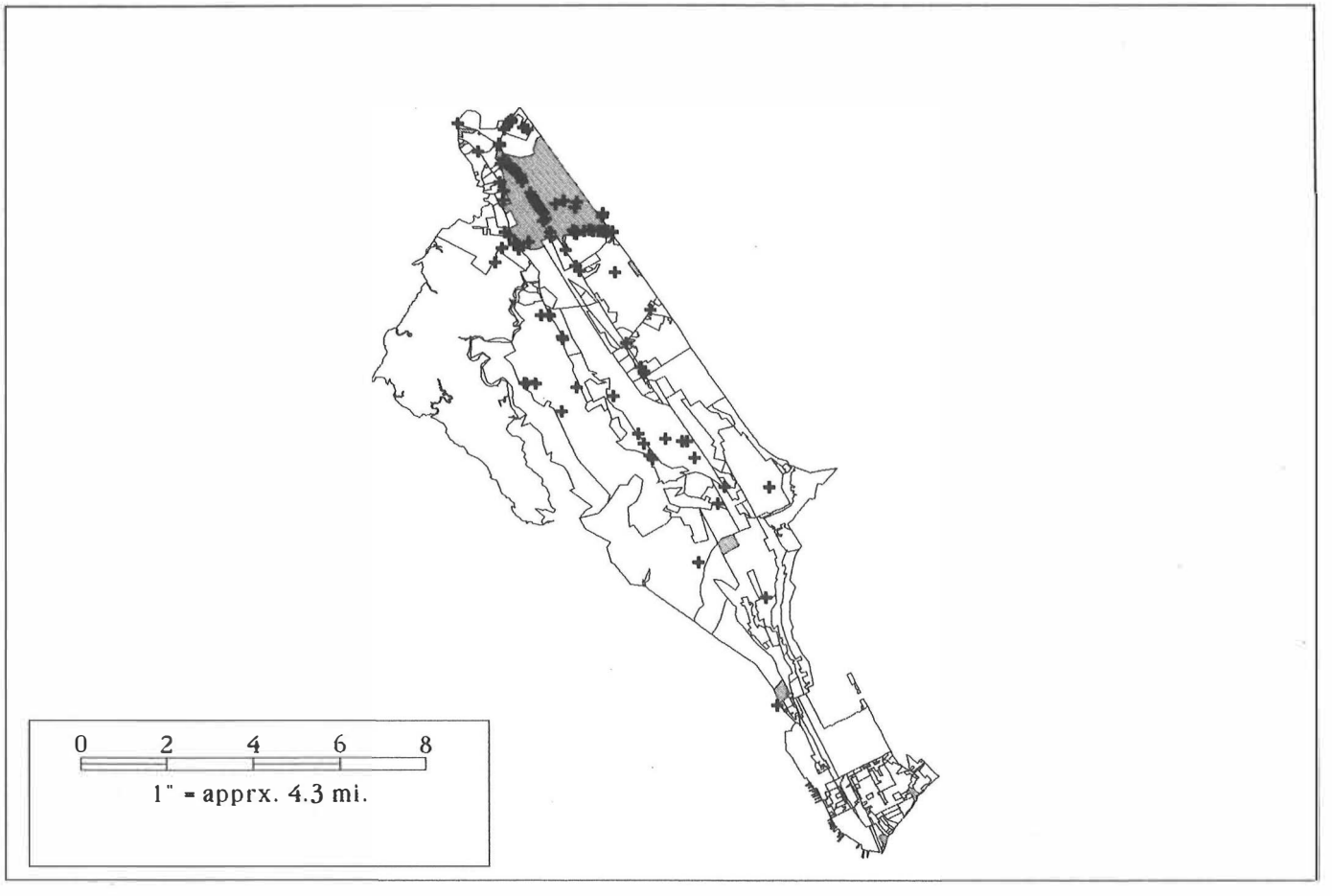


Figure 1. Deer strikes and land use in Newport News.

A second map (Figure 2), Deer Strikes Per Mile, both shows those areas that are most problematic, and utilizes some of the true analytical operations of the GIS, ones that are virtually impossible to perform without a GIS. The GIS capability employed to produce this map provides the user with the ability to calculate new data values on the basis of information contained in different databases or map layers. In this case, data from the point database or layer (deer strikes), is utilized to create a new variable within the line database for streets and roads. The line database on streets and roads contains several variables on each street segment. The information can include such variables as, length of line segment, speed limit, type of road, number of lanes, etc. Utilizing the GIS we calculate a new variable, the number of deer strikes per mile. Then using the mapping capabilities of the GIS, the width of road segments are made proportional to the number of deer strikes per mile. Obviously the wider the road segment the higher the number of deer strikes per mile. As indicated, those areas that are most problematic are closest to the park areas, in particular Newport News Park in the northern part of the city. This map and the subsequent one show the concentration around Newport News Park, with Route 143 (Jefferson Avenue) and Route 105 (Fort Eustis Boulevard), both four lane, high speed roadways, being the worst in the city. In addition, certain intersections were also revealed to be problematic.

A final map (Figure 3), is a larger-scale map in contrast to Figure 2, and focuses in on the area in and around Newport News Park.

Additional Visual Information

In order to better understand the data that was gathered and to further incorporate some of the capabilities of the particular software, GisPlus, (Caliper Corporation) additional information, in photographic form was also gathered. The additional visual data included photographs of sites and areas that had reported accidents, topographical maps, and Virginia Department of Transportation aerial photographs.

The site photographs were, simply, color photographs scanned as PCX image files. These image files were, then, linked in the database to their actual locations. The user can, upon request, view a photo image that is associated with selected locations. Most of the photos show that the areas through which the roads run are heavily wooded on one or both sides. The use of topographical maps and aerial photographs presented several

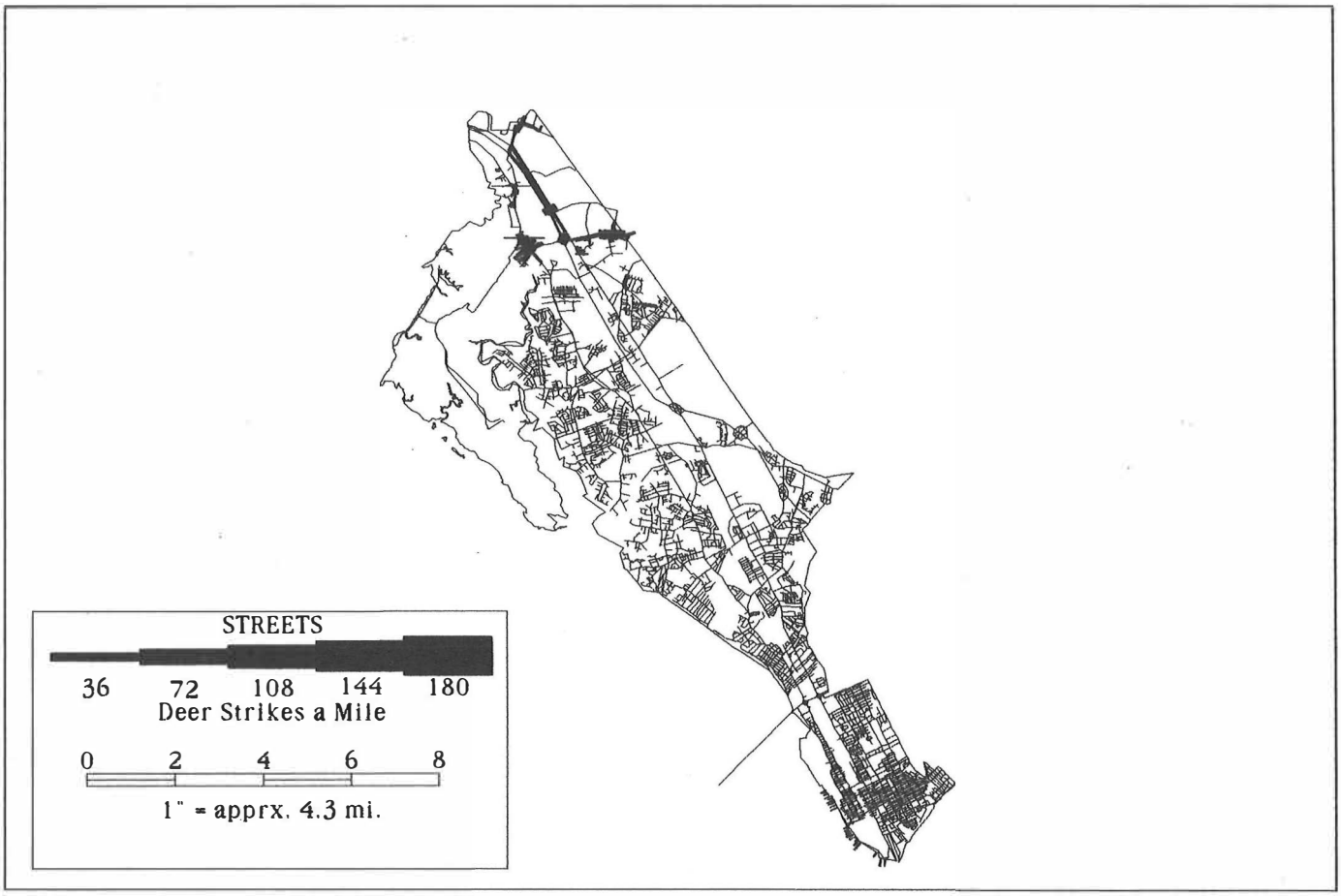


Figure 2. Deer strikes per mile: Newport News streets.

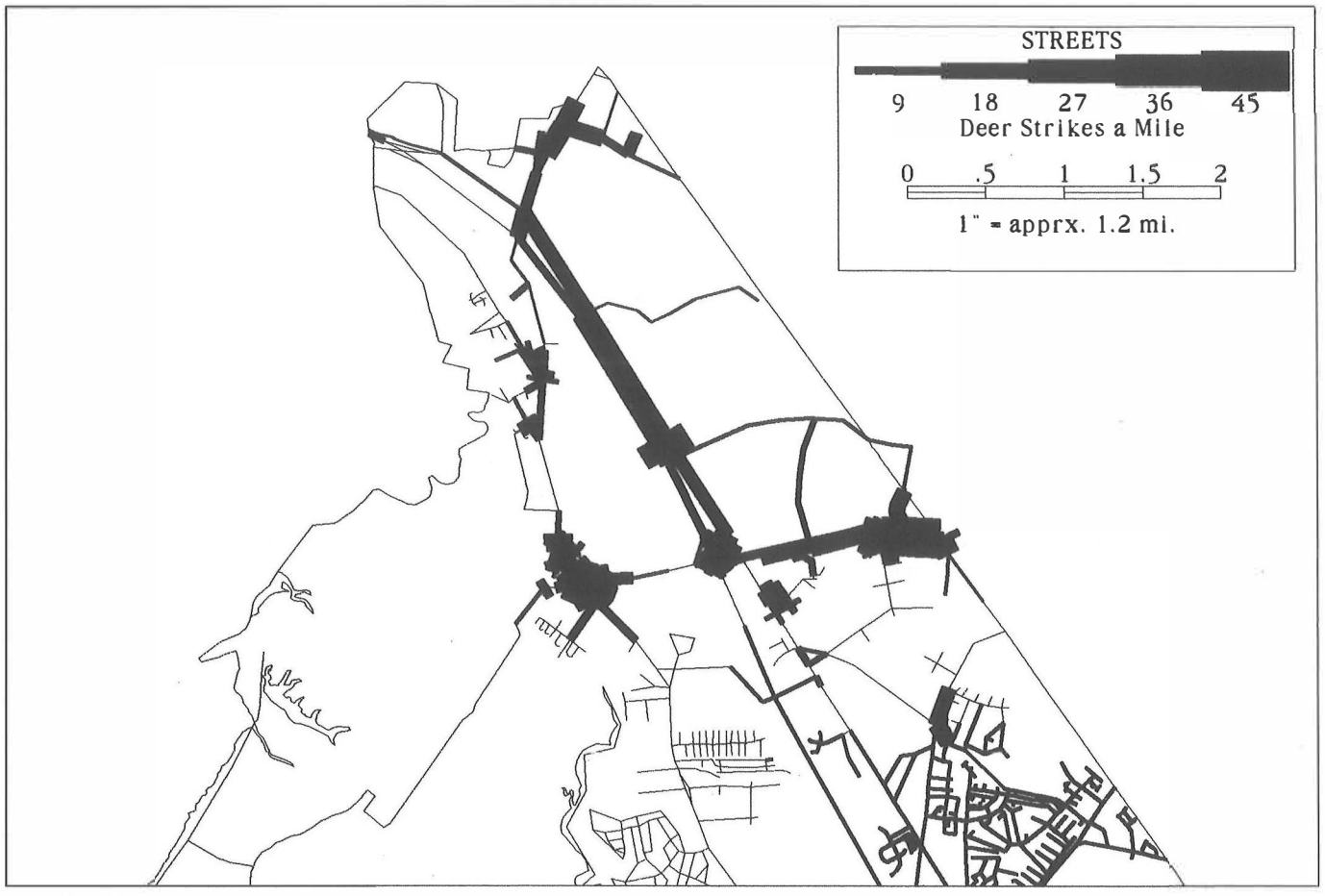


Figure 3. Concentration of deer strikes near Newport News park.

problems. The following discussion will discuss the difficulties incurred.

In addition, both topographical maps and aerial photographs were scanned as PCX image files. The GisPlus software provides for the capability of displaying these image files as background to the map. This should provide the user with the ability to visually inspect the map of the location of deer strikes (Map 1) and to display at the same time as background the aerial photograph of the area. In our particular case this was not entirely successful. Matching the aerial photographs to an existing electronic map requires matching three points from the photograph to three points in the existing map. The street map that we utilized was the 1990 U.S. Census Topologically Integrated Geographic Encoding and Referencing System (TIGER) files. TIGER files can be purchased through the U.S. Census Bureau. There are some inaccuracies in the street maps meaning that street locations are not always exact. Thus, there was a slight mis-match between any three known points on the aerial photograph and three known points on the street map. More accurate TIGER files can be purchased from third party vendors and would easily solve this problem. A lack of funding meant this was not an option for this study.

Recommendations and Management Implications

In summary, there is a deer/vehicle accident problem in the Newport News Park area. The original information gathered by the engineering division was incomplete mentioning only 34 of 125 accidents for the period and does not give a true representation of the extent and clustering effect of deer strikes. The few GIS maps generated in this project give a good indication of where further management should be taken. From the analysis, two actions were recommended to aid in the prevention of accidents in the Newport News Park area. Because Newport News Park is an excellent habitat for the white tailed deer indigenous to the area, vehicle-deer accidents will continue in the foreseeable future. We recommend further public education to include more visual signage and lower speed limits in the most dangerous areas to increase driver reaction time. Secondly, we encourage the need for further study to include additional information about each deer strike.

Recommendations for further study are to add speed limits to the street database, and time and season to each deer strike to the point database. This would provide additional information for analysis as well as enhance the knowledge gained from that analysis. With regard to the speed limit variable, the speed limit in areas of highest concentration of accidents is generally forty-five miles an hour or greater. This information is based on observations during site visitations and not from the data available in the street database utilized in the GIS study. This would have provided further refinement of the relationship between locations of deer strikes and street conditions if the data had been available for computer manipulation.

The second variable not studied was the time of day the deer strike occurred. This data was not available at the time of the study, but it was recorded in incident reports written by members of the park service. The study that engineering completed in late 1993 showed that, of the information gathered concerning 34 accidents, 76 percent occurred after dark. If this was true for the rest of the accidents it could support a hypothesis concerning the need for better warning signs or lower speed limits in the area after dark.

The final variable not included was season of the accident. Because a male deer drops its guard during mating season while pursuing a female, a condition of sexual excitement known as rut, the hypothesis is that there is a greater occurrence of accidents during the fall mating season. This would provide consideration for increased public education during that dangerous season.

Although deer strikes are not an overwhelming problem in the city of Newport News, it is one of the many problems that park managers must deal with on a day to day basis. This pilot project demonstrates one way that GIS can be incorporated into management practices in an urban-resource management environment. The prevention of deer strikes would help the city by lowering the cost of law enforcement calls to the prevented accidents, decrease damage to personal property, prevent possible injuries, and allow for more sensible management of the deer population.

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Festivals and Travel

MOTIVATIONS FOR ATTENDING A FAMILY-CENTERED, NON-ALCOHOLIC FESTIVAL: AN EXPLORATORY STUDY OF A REGIONAL FIRST NIGHT® EVENT

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Abstract: The purpose of this study was to investigate the motivations of individuals attending a First Night® event and whether they differed with respect to socio-demographic characteristics. Four primary dimensions of motivations, "entertainment," "family fun," "alcohol free," and "sense of community" were uncovered. Specific age groups and income groups differed with respect to the importance they placed on two of the four dimensions. Festival managers should heed this information and use it in their program planning.

Introduction

Throughout history celebrations and festivals have offered communities the opportunity to mark special occasions through art, ritual and festivity (Uysal & Gitelson, 1994). They have the potential of strengthening a feeling of oneness and expressing the social norms and values of the community (Chacko & Schaffer, 1993). Celebrations and festivals "help people re-discover their city, learn about diverse cultures and get acquainted with old traditions..." (Earls, 1993, p. 32).

While researchers have a "sense" of the importance of festivals and special events to communities and visitors, they have continued to study their meaning. For example, in 1991 Getz provided a demographic profile of a typical festival attendee. Hebler (1988) and Holloway (1985) both hypothesized that the resurgent popularity of festivals and events was a result of changing social patterns. The vast majority of research conducted on festivals and special events, however, has dealt with the economic impacts of these functions to the host community. These studies have looked at festivals and special events in terms of their economic contribution to the local community. Only recently have researchers begun to focus on why people attend festivals and special events and what this suggests to marketers, festival managers, and host communities (c.f., Gitelson, Kerstetter & Kiernan, 1993; Lee & Kerstetter, 1995; Mohr, Backman, Gahan & Backman, 1993; Wicks & Fesenmaier, 1993). However, to the knowledge of these researchers, no research has focused on the motivations of individuals who attend a family-centered, non-alcoholic festival, First Night®. Thus, the purpose of this study was to investigate the motivations of individuals attending the inaugural First Night® State College and whether these motivations differed with respect to socio-demographic characteristics.

The Festival

Eighteen years ago in Boston, some residents were concerned about a degenerating sense of community in their city. This was most apparent around the holidays when the people of Boston would celebrate New Year's Eve anywhere but in the city. These people, led by Zaren Earls, developed First Night®. It is the intention of First Night® celebrations to be a community/family-centered, non-alcoholic alternative to traditional New Year's Eve revelry. Earls wanted to use this celebration to "help people re-discover their city, learn about diverse cultures and get acquainted with old traditions..." (1993, p. 32). This concept has been very successful, not only in Boston, but in the 160 plus communities that also were host to First Night® events in 1995.

Methodology

Data for the study were collected from a sample of 337 individuals who visited First Night® State College between 10am and 8pm on December 31, 1994. Individuals were asked to complete an on-site interview and, if they agreed, a follow-up questionnaire at home. The follow-up questionnaire contained questions about the visitor's motivations for attending First Night® State College and also more specific questions about the respondent's demographic characteristics. A postcard was sent approximately one week after the Festival to the entire sample reminding them of the study and thanking them for their involvement. A second-follow-up questionnaire was sent to nonrespondents two weeks later. Seventy-four percent (n=251) of the sample responded.

Descriptive statistics were employed to show the frequency distribution of responses and the mean of each item. To find out whether there were specific types of motivations for attending First Night®, principal axis factor analysis with a varimax rotation was employed. The relationships between types of motivations and socio-demographic variables were determined via multiple and one-way analyses of variance.

Results

The overall factor analysis specified a four-factor solution that accounted for 57% of the variance (Table 1). Coefficient alphas for the factors were .81 or higher. Given the items that loaded on the first factor, the investigators chose to call it "Entertainment." Factor 2 was named, "Family Fun" and Factor 3 was given the title, "Alcohol Free." The final and fourth factor was titled, "Sense of Community."

The relationship between the four motivation dimensions (factors) and socio-demographic characteristics (i.e., age, education, gender, income) was tested using MANOVA and oneway analysis of variance. MANOVA revealed that there were significant differences between three of the four socio-demographic characteristics, age, education and income and the motivation dimensions. Gender was not significantly

Table 1. Results of the principal axis factor analysis of motivation statements.

	F1 Entertainment	F2 Family Fun	F3 Alcohol Free	F4 Sense of Community	Communalities
To experience the performing arts	.8872				.8533
Because I enjoy the performances	.8000				.7320
To see or hear the entertainment	.7544				.5906
I like the variety	.5038				.5120
Because the family would enjoy it		.8657			.8459
The family can do something together		.7776			.6632
To help bring the family together		.7405			.7190
It sounded like a fun thing to do		.4472			.6330
Because I expected it to be fun		.4122			.5844
Because [it] is an alcohol-free event			.8374		.8395
To support alcohol-free events			.7912		.7651
So I can show support for the community				.8067	.7655
To be a part of a community celebration				.7655	.6433
Because I am a member of this community				.7333	.6231
Eigenvalue	6.535	1.858	1.438	1.081	
% of variance	34.4%	9.8%	7.6%	5.7%	
Cumulative variance	34.4%	44.2%	51.7%	57.4%	
Standardized item alpha	.84	.86	.81	.84	

related to the dimensions. However, follow-up analyses using oneway analysis of variance with the Scheffe test as a criterion indicated that only age and income were significantly related to the motivation dimensions (Table 2).

Individuals comprising the older age group (40 years of age or older) were more inclined than the younger age group to agree that the "Entertainment," "Family Fun," and "Alcohol Free" dimensions were important reasons for choosing to attend a First Night® event. In addition, people who fell into the highest household income bracket ($60,000+) were significantly more likely than those who reported their household incomes to be less than $39,999 to feel that the notion of this being an alcohol free event (Factor 3) was an important reason for their attendance at First Night®.

Conclusions and Implications

The motivation dimensions found through this study partially support previous research conducted on festivals and special events. These researchers did find that people place importance on, and are motivated by, their need for entertainment and family fun at festivals. However, many individuals were also motivated by the fact that First Night® contributed to a "sense of community" and offered people an option to the traditional New Year's Eve drinking festivities.

The fact that this research uncovered two motivations previously unrecognized in the literature brings up a couple of implications. First, is the emergence of an alcohol free motivation dimension. This may lend

Table 2. Relationship between socio-demographic characteristics and motivation types using oneway analysis of variance.

Socio-demographic characteristics	F1 Entertainment	F2 Family Fun	F3 Alcohol Free	F4 Sense of Community
Age				
18-39	4.49	4.56	3.93	not sig.
40 and older	5.05	5.24	4.79	
Income				
Under $39,999	not sig.	not sig.	4.04[a]	not sig.
$40-59,999			4.48	
$60,000+			4.94a	

a/ Similar superscripts indicate significant difference at the .00 level. For example, respondents who reported earnings less than $40,000 per year were less likely to have been motivated to attend First Night® State College for the alcohol-free environment than individuals who reported earnings greater than $59,999 per year.

credence to recent societal campaigns against all forms of substance abuse. Many people surveyed in this study were motivated to attend First Night® because of its alcohol free aspect. This may be because we live in a very litigious society and the inherent risks of alcohol consumption are becoming too great. Secondly, these findings may suggest that there is a viable market niche for alcohol free, community and family-oriented events such as First Night®.

Festival and event professionals should note that individuals are motivated to attend events like First Night® for various reasons. They should use this information in program planning to reach the audiences attracted to their events. In addition, should they be able to promote to the various segments of their market, they would be wise to do so. They should create campaigns that would appeal, for example, to the individual who is motivated to attend the event for its "alcohol-free" nature and simultaneously promote to the individual who is coming for "family fun."

Further research needs to be conducted to determine the generalizability of the results from the State College First Night® to other First Night® communities. In the future, research should investigate whether the motivation dimensions uncovered in this study are applicable to other types of festivals and special events. It would also be interesting to try to learn why individuals are motivated to attend these types of events for the reasons stated.

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CROWDING AT AN ART FESTIVAL: A REPLICATION AND EXTENSION OF THE OUTDOOR RECREATION CROWDING MODEL

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Abstract: The purpose of this paper was to apply the perceived crowding model developed in backcountry settings to a festival setting. Festival participants in an urban area may have different characteristics from individuals exploring natural areas. Thus, the applicability of the social carrying capacity theories to defining the quality of a festival experience needs to be tested. Only three of the six independent variables were significant predictors of perceived crowding. Eleven percent of the variance in the perceived crowding measure was explained by three independent variables. However, it is worth nothing that individuals who had some comparative experience felt more crowded at the festival. The expectation of crowding variable was also found to influence perceived crowding strongly. In addition, estimated density was directly related to perceived crowding. This finding supports the results of past research that has suggested a positive relationship between actual density and perceived crowding. Among the independent variables, only perceived crowding influenced overall satisfaction significantly. Individuals' perception of crowding negatively influenced their overall satisfaction.

Introduction

Festivals and special events play many important roles-- as attractions, image makers, animators of static attractions, and catalysts for other developments. Increasingly, they are also viewed as "part of the new wave of alternative tourism, which minimizes negative impacts, contributes to sustainable development, and fosters better host-guest relations" (Getz, 1991, p. 5).

To date, researchers interested in festivals and special events have predominantly focused on descriptive analyses and profiles of visitors. Thus, many individuals including contributors to the journal, *Festival Management and Event Tourism* (*FM&ET*), have recommended application of different or new theories/techniques, methods, and approaches/perspectives to the festival and event tourism area.

One theory that these researchers feel has application to the festival and event management area is social carrying capacity. The concept of social carrying capacity has been linked with the notion of crowding (Stankey & McCool, 1989).

People participate in leisure and recreation activities with the expectation that their action will lead to certain rewards (Driver & Tocher, 1970; Graefe et al., 1984; Vroom, 1964). Expectancy could be defined as the belief that a certain act will be followed by a certain outcome (Schreyer & Roggenbuck, 1978). The specific expectations are influenced by personal and environmental factors such as situational variables, personality characteristics, and the type and amount of previous experience (Graefe et al., 1984; Lawler, 1973; Schreyer & Roggenbuck, 1978). Expectancy theory has several important implications for the theory of social carrying capacity. First, most people take part in leisure and recreation activities to satisfy a variety of expectations (Driver & Tocher, 1970; Graefe et al., 1984; Hendee, 1974). Second, particular expectations tend to be associated with particular activities. Nevertheless, considerable variation in expectations may be expected among individuals engaged in the same activity or using the same environment, or even within a given individual at different times (Graefe et al., 1981; 1984; Schreyer and Roggenbuck, 1978).

Expectations

Graefe et al (1984) believe that expectations influence the perception of a recreation experience. Participants of leisure and recreation may have expectations about particular aspects of their experience. The weak relationships often found between actual encounters and perceived crowding can be increased by adding expectations and preferences for encounters to the predictive model (Roggenbuck, 1992). Andereck and Becker (1993) studied perceived crowding by applying social interference and stimulus overload theories at Fort Sumter National Monument in Charleston, South Carolina. In their study, path analysis with decomposition of correlation was used to model the relationships between the independent variables of density, expectations, preferences for density, and the dependent variable of perceived crowding. The results showed expectations for density at the Fort contributed substantially and directly to perceived crowding at Fort Sumter. Shelby, Heberlein, Vaske, and Alfano (1983) explored the effects of expectations on perceived crowding in six different recreation settings. Their results showed strong and consistent support for the expectations hypothesis. In each setting, seeing more people than expected caused people to feel more crowded. However, the strength of the effect varied across settings. When individuals saw fewer or the same number of people as expected, crowding levels were extremely low (3% and 4%, respectively). When more people than expected were encountered, crowding increased to 42%.

Prior Experience

Environmental perceptions may be influenced by when the recreationist first visits a particular area (Vaske et al., 1980), or by the frequency of visitation (Bryan, 1979; Graefe, 1981; 1984). Recreation experience has been related to crowding in some studies (c.f., Ditton et al, 1983; Vaske et al. 1980), but not in others (Absher and Lee 1981; Roggenbuck, 1992; Stankey 1980; West 1981). There is some evidence to suggest that "first-time users have little or no expectations of the activity, but they then begin to evaluate future engagements against past experience" (Schreyer et al., 1976). Vaske et al. (1980) found this to be the case among boaters. The boaters who first experienced the Apostle Islands years ago when use levels were low felt much more crowded at current use levels. Heberlein and Dunwiddie (1979) observed that more experienced campers tended to choose campsites farther from other campers (in Roggenbuck, 1992). However, Vaske et al (1994) did not find the different crowding perceptions between repeat and first time visitors. Hammitt and Patterson (1991) also showed a weak relationship between past experience and coping behavior.

Situational Elements

Graefe et al. (1984) argue that geographic features of resources may reduce the number of contacts between visitors and thereby lessen the impact of use levels. Human responses, especially psychological consequences, were commonly correlated with weather matrixes (Persinger, 1980). Both Holdnak (1990) and Graefe and Fedler (1986) found situational variables, such as temperature and weather, affected respondents' overall satisfaction. Density, the actual number of visitors per unit area, has been shown by many to be related to perceived crowding. The relationship between density and satisfaction has not been well established. The so called "satisfaction model," where density predicts satisfaction, is weak at best and in many studies density was an insignificant predictor of visitor satisfaction.

Social Group and Group Size

Social groups can be categorized as the family group, friendship group, and family-friendship group. In addition, the social aggregate groups can be defined based on occupation, education, income, sex, age, marital status, size of town, ages of family members, and size of family (Field & O'Leary, 1973). Graefe et al (1984) suggested that group size can be the cue for determining the extent of perceived similarity between different user types. Differences in responses have been reported for encounters with groups of different sizes. Lime (1972) showed that most users felt seeing large parties reduced the perceived quality of the experience (in Graefe et al, 1984, p. 416).

Satisfaction

Satisfaction represents the quality of a recreation experience, and is a major goal of leisure and recreation management. "Besides investigating satisfaction derived from leisure activities, a tradition that dates back to the 1930s, researchers have explored satisfaction with marital relationships, family relationships, health care services, jobs, communities, and life in general" (Shelby & Heberlein, 1986, pp. 43-44). Overall satisfaction has been influenced most strongly and most directly by subjective evaluations of specific aspects of the experience. And, situational outcomes influence overall satisfaction in an indirect manner as they are filtered thorough various subjective evaluations (Graefe & Fedler, 1986). One of the most important and thoroughly investigated relationships has been the effect of crowding on satisfaction (Williams, 1988). Stankey and McCool (1989) suggested reconsidering the utility of user satisfaction as a criterion for the measurement of capacity. Although there may be a limited relationship between use level and satisfaction, satisfaction remains a major focus of concern.

Stankey and McCool (1989) concluded several things about social carrying capacity. First, social carrying capacity is a complex phenomenon. Second, although there is a great diversity among recreationists in the kinds of use conditions, there are patterns in what is sought. Third, although people are apparently extremely versatile in their ability to cope with a wide range of use conditions and still report satisfactory experiences, it is also apparent that they have strong preferences for the kinds of experiences they seek. In a recent article, Confer et al (1995) tried to apply the satisfaction and crowding models developed for low density back country and wilderness research to a developed, high density front country setting. They found support for the models; however, the amount of variance explained was somewhat lower for their beach user study than is typically found in backcounty studies.

The rapid and widespread growth of special events is unlikely to continue unabated. According to Wicks and Fesenmaier (1993), "the rate of growth in numbers of events will diminish as demand for these recreational and tourist activities is fulfilled" (Wicks & Fesenmaier, 1993). To minimize loss of demand, Rosenow and Pulsipher (1979) suggest that tourism become more environmentally and culturally responsible and developed to increase both the quality of experience of visitors and the quality of life of residents. In addition, capacity to absorb tourism has to be considered, and limits imposed where necessary (in Getz, 1991). Thus, the purpose of this study is to apply the perceived crowding model to a festival setting and to define the quality of a festival experience.

Hypotheses

The notion of social carrying capacity is usually incorporated in outdoor recreation settings. While festival participants in an urban area may have different characteristics from individuals exploring natural areas, the social carrying capacity theory will be useful in defining the quality of a festival experience. In this study, the expectancy theory underlying the notion of social carrying capacity has been adopted to explain perceived crowding.

The hypotheses for the study are as follows:

H1: Comparative experience, prior experience, situational elements, group size, estimated density and expectations will influence perceptions of crowding at an arts festival.

H2: Perceived crowding, comparative experience, prior experience, and group size will influence overall satisfaction.

Methods

Data Collection

The Central Pennsylvania Festival of the Arts (CPFA) was created in 1967 with the primary objective of stimulating the local economy in the downtown area of State College, Pennsylvania during the summer. A random sample of individuals attending the 1995 festival was selected over a four day period. Upon completion of a one-page on-site survey, respondents were asked to complete a more extensive follow-up questionnaire. If they agreed, they were asked to write their mailing address on a form and were given a follow-up survey. A total of 969 individuals completed the on-site questionnaire. Five days after the last day of the Festival, a reminder postcard was mailed to individuals who had agreed to complete the follow-up survey. The postcard reinforced the value of the study and encouraged recipients to send in their questionnaire if they had not already done so. A second follow-up questionnaire was mailed two weeks later to individuals who had not responded. Five-hundred ninety-one individuals completed both the on-site and follow-up questionnaires, resulting in a response rate of sixty-one percent.

Path Analysis

Path analysis was developed by Wright (1925) as a method for studying the direct and indirect effects of variables taken as causes of variables taken as effects. "Path analysis is a method of decomposing structural relationships between variables in a structural equation model to distinguish that part of the relationship consisting of what the researcher believes to be the causal effect from that part that is spurious or irrelevant" (Keane, 1994, p.160).

Path analysis has three advantages over the conventional regression technique. First, one can use the intercorrelations to obtain better estimates of the effects of other variables on the dependent variable, by forcing the researcher to specify a model of the interrelationships between the explanatory variables. Second, it has the opportunity to assess which variables in the model have the strongest causal relationship with the dependent variable. Third, one can model the specific ways in which this causal relationship is brought about and assess the relative strengths of each (Breen, 1983; in Keane, 1994).

Path Model

To determine peoples' perception of crowding (X7), six exogenous variables (X1 to X6) were introduced into the model. Three exogenous variables (X1, X2, X6) and the perceived crowding variable (X7) were introduced to determine the impact on overall satisfaction (X8) (See Figure 1).

Variables used in the analyses were classified into two categories. First, exogenous variables were variables whose variability was assumed to be determined by causes outside the causal model. Comparative experience, whether or not individuals have visited a nearby, less crowded festival was the first exogenous variable. First visit/repeated visit and expectation of crowding comprised the second and third exogenous variables. Respondents were asked if the number of people encountered was more than, less than, or about the same as they expected. Estimated density was the fourth exogenous variable. The fifth exogenous variable, hourly temperature record, was obtained from the local airport, University park airport. Lastly, group size was included.

Endogenous variables, whose variation is explained by exogenous or endogenous variables in the system, included perceived crowding and overall satisfaction. This study used five Likert type questions for perceived crowding with "not at all crowded" and "extremely crowded" as the end points to measure perceived crowding. Overall satisfaction was measured on a seven-point scale with 1="low" and 7="high."

Results

Among the Festival participants, above one third had visited a nearby, less crowded festival (yes="33.2%," no="66.8%"). About 80% of the participants also had attended this festival before (yes="83.0", no="17.0"). In the expectation of crowding, 53.9 % of participants answered "as many as I expected." Only 9.6 % of participants had met more other visitors than they expected. During the four-day festival, about fourteen thousand people took part in the Festival per day. Average temperature and group size were about 87° and three people respectively. The Festival participants' feeling of crowding was below "moderately crowded" (mean score="2.17"). In addition, their overall satisfaction was fairly high (mean score="5.45") (See Table 1).

Table 1. Descriptive analysis results for variables included in the path models.

Variable Name		%
Comparative Experience (*X1*)[a]		33%
Prior Experience (*X2*)[a]		83%
Expectation of Crowding (*X3*)[b]		10%
Variable Name	**Mean**	**Std. Dev.**
Estimated Density (*X4*)[c]	14200	5190
Temperature (*X5*)[d]	87°	5°
Group Size (*X6*)[e]	3.1	2
Perceived Crowding (*X7*)[f]	2.2	0.9
Overall Satisfaction (*X8*)[g]	5.4	1

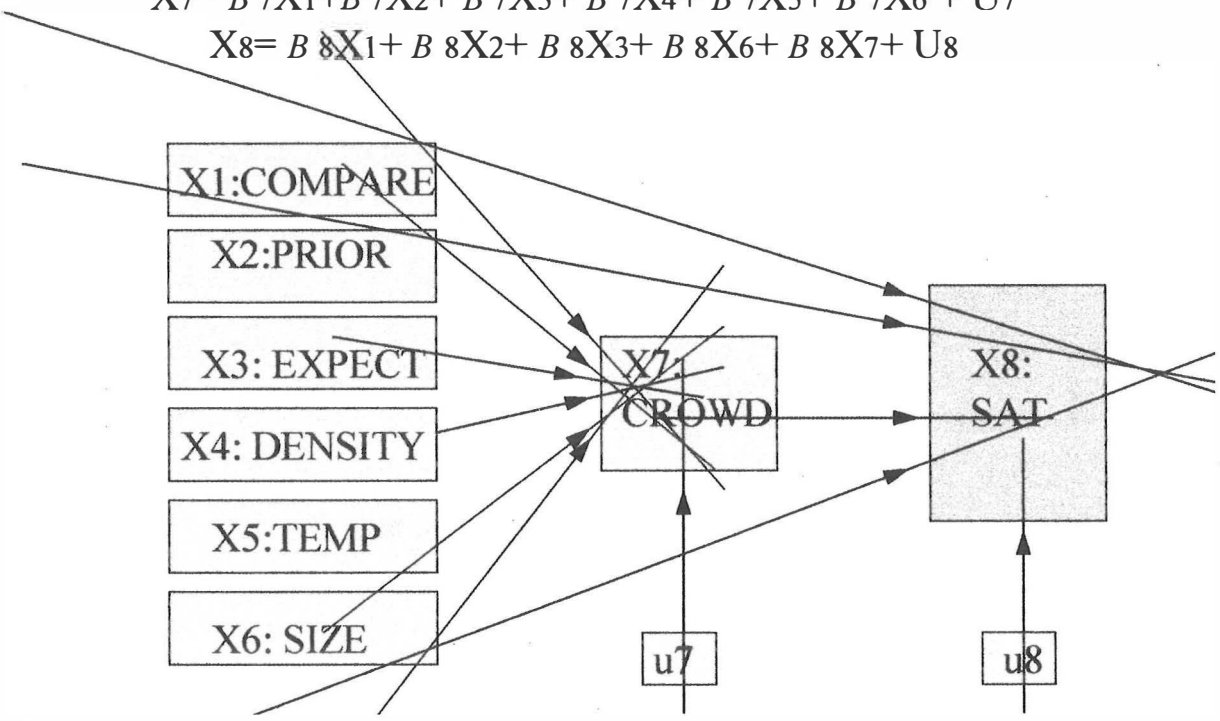
a/ Percentage of respondents answering yes.
b/ Percentage of respondents indicating they saw more people than expected.
c/ Total daily estimated attendance
d/ Average daily air temperature in degrees Fahrenheit
e/ Average size of group in number of people
f/ Measured on a 5-point Likert scale where 1=not at all crowded to 5=extremely crowded
g/ Measured on a 7-point Likert scale where 1=low to 7=high

With respect to the first hypothesis (H1), only three of the six independent variables (X1, X3, and X4) were significantly related to perceived crowding (X7). Eleven percent of the variance in perceived crowding was explained by the three independent variables. The temperature was a not significant predictor. Perhaps the four days of the festival were not enough to get the wide range of temperature change. Prior experience and group size were also not significant in this festival setting.

The percent of variance explained is less than has typically been reported through research in outdoor recreation settings (Heberlein, et al. 1979; Vaske, et al. 1982). However, it is worth noting that individuals who had some comparative experience

$$X_7 = B_{7}X_1 + B_{7}X_2 + B_{7}X_3 + B_{7}X_4 + B_{7}X_5 + B_{7}X_6 + U_7$$

$$X_8 = B_{8}X_1 + B_{8}X_2 + B_{8}X_3 + B_{8}X_6 + B_{8}X_7 + U_8$$



Where:

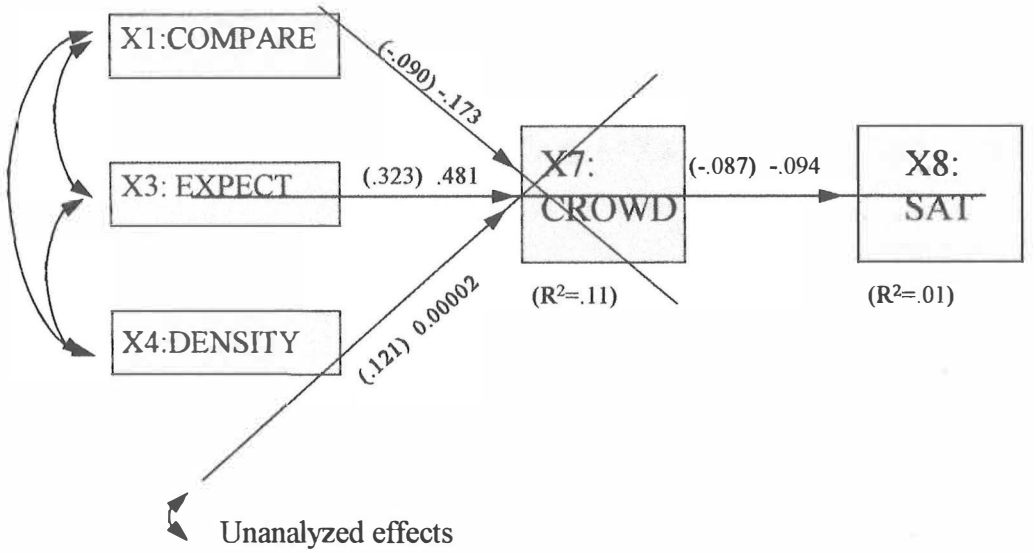
X1: Comparative Experience
X2: Prior Experience
X3: Expectation of Crowding
X4: Estimated Density
X5: Situational elements
X6: Group Size
X7: Perceived Crowding
X8: Overall Satisfaction
U7,U8: error term

Figure 1: The Initial Path Model

(X1) felt more crowded at the Festival. The expectation of crowding (X3) was also found to influence perceived crowding strongly. For example, when visitors saw more people than they expected, they felt more crowded at the Festival. This result could be explained by the expectancy theory. In addition, estimated density (X4) was related to perceived crowding (X7). This finding supports the results of past research that suggested a positive relationship between actual density and perceived crowding (c.f. Absher, 1980; Absher and Lee, 1981; Ditton et al., 1982; Graefe, et al., 1984; Hammitt et al., 1982; Heberlein and Baumaartner, 1978; Heberlein et al., 1982; Heberlein and Vaske, 1977; Lee, 1975; Randall, 1977; Shelby, 1976, 1980; Shelby and Covin, 1979).

Among the independent variables, only perceived crowding (X7) influenced overall satisfaction (X8) significantly. Individuals' perception of crowding negatively influenced their overall satisfaction (R^2=.008). The aim of path analysis is to decompose the zero order correlation between two such variables into components due to these various effects. The basic theorem of path analysis can be stated as $r_{ij} = \sum p_{ik} \cdot r_{jk}$, where k is an index referencing those variables having a direct impact on X_i and the subscript i referencing the dependent variable in the pair (Keane, 1994). In this study's model, two types of effects, direct and indirect effects on overall satisfaction (X8) were found. (Figure 2).

The variables X1, X3, and X4 had some indirect effects on overall satisfaction (X8). However, perceived crowding, X7, was the only variable found to have a direct effect, although the overall strength of the relationship was weak. Although some correlation coefficients had a fair amount of spurious effects, X1 (.048) and X4 (.068), in the model, their path coefficients still had a significant total causal effect of 0.008 and 0.011 for X1 and X4, respectively (See Table 2).



( ) *B*'s : Path coefficient, standardized coefficient

b's : Path regression coefficient, unstandardized coefficient

$X7 = -0.090X1 + 0.323X3 + 0.121X4$ $\quad R^2 = .113$

$t = -2.14 \quad t = 7.70 \quad t = 2.93$

$p < .033 \quad p < .000 \quad p < .004$

$X8 = -0.087X7$

$t = -0.94 \quad p < .040 \quad R^2 = .008$

Figure 2: Modified Model with Insignificant Paths removed

Table 2. Path analysis results: path effects on overall satisfaction (X8).

Explanatory Variable	Direct Effects	Indirect Effects	Total Causal Effect	r
X1	-	.008	.008	.048
X3	-	-.027	-.027	.047
X4	-	-.011	-.011	.068
X7	-.087	-	-.087	-.070

Conclusion

Enhancing the quality of a visitor's experience is the main purpose of festival management. Past research on outdoor recreation has shown that the quality of a visitor's experience may be influenced by his or her perception of crowding. This study was conducted to apply the theory of perceived crowding to a regional festival.

Though this study was conducted within a festival setting, the explanatory variables were not much different from those found through outdoor recreation research (c.f. Graefe et, al., 1984; Stankey & McCool, 1989). Perceived crowding was influenced by individuals' expectation of crowding, estimated density, and their comparative experience. Expectation of crowding had the most significant impact on perceived crowding, supporting the theory of expectation. Heberlein (1992), and Werner and Kaminoff (1983) suggested appropriate information could reduce the density and perception of crowding in a recreation or tourism destination. Based on the results of this study managers should not worry if photographs used in promotional channels (e.g., newspaper stories, brochures, festival guides) depict crowds because the percent of variance explained was not strong and visitors did not feel much crowding in this festival setting. However, the manager should continue to monitor visitors' responses to crowding because "comparative experience" was related to perception of crowding. As people continue to have more experience with similar/other festivals their expectations of "what is crowded" may change. In time, people may begin to perceive large numbers of other visitors at the festival as dense and as such feel crowded.

Although the relation between perceived crowding and satisfaction was significant, the direct and indirect influences were weak. This may because there are different motivations in a festival setting such as to have fun, to do different things, and to buy art crafts. In addition, the relationship generated between perceived crowding and satisfaction suggests that an alternative model may need further attention, such as Herzberg's two-factor theory of satisfaction. Satisfaction and dissatisfaction are conceptually distinct and independent (Dorfman, 1979; McCool & Peterson, 1982; Stankey & McCool, 1989). Generalizations about perceived crowding at tourism destinations such as festivals would be inappropriate at this time; thus, it is hoped that future research will be conducted at other destinations with

different festivals and using similar methodology (e.g. path analysis, logit model, etc.).

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THE ECONOMIC IMPACT OF CONFERENCES AND CONVENTIONS

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Abstract: A 1993 study in southwestern Pennsylvania, based upon 25 travel-related activities, was used to determine the economic impact of travel and tourism. Expenditures from conferences and conventions were included in a business and transient travel activity. A 1994 study established conferences and conventions as a separate travel activity. Annual visitation totaled 970,051 for the activity. Nonresident visitors spent an average of $134.20 per activity day. The value-added component of the economic impact totaled $98.4 million and 4,188 jobs were supported.

Introduction

In recent years the conference and convention trade has been expanding at a rapid rate (Listokin 1985; Braun 1992). Many communities and states have planned strategies to attract more of these events to their areas. Not only is the conference and convention activity considered an economic windfall for these communities but it is also viewed as a mechanism to accelerate the overall travel and tourism trade further (Rutherford and Kreck 1993). The result is more business for those commercial and industrial sectors capable of absorbing conference and convention delegate spending (Braun 1992). One way of evaluating the contribution of these events to an area is to assess the economic impact of this activity.

A 1993 study of travel and tourism in southwestern Pennsylvania was based upon 25 travel-related activities. The study was used to determine the economic impact of travel and tourism in a nine-county region of southwestern Pennsylvania (Strauss, Lord, and Grado 1994). The region consisted of Bedford, Blair, Cambria, Fayette, Fulton, Huntingdon, Indiana, Somerset, and Westmoreland counties. Participants in these activities included visitors to tourist and recreational sites and events throughout the region, and also business and transient travelers. Visitor expenditure profiles, total expenditures, and nonresident expenditures were identified for each activity. The expenditure profiles included entrance fees, lodging, transportation, food, and related trip purchases such as souvenirs. Initially, in 1993, expenditures from conferences and conventions were included in the business and transient travel activity. In a 1994 repeat of the overall study, conferences and conventions were established as a separate travel activity to evaluate their economic contribution to the region's travel and tourism trade.

Objectives

All of the study objectives were directed toward the conference and convention trade in the nine-county region. The first objective was to identify the major conference and convention facilities for each county. The second objective sought to identify and define the types of conferences and conventions attended by visitors and vendors. The third objective was to determine the attendance for the activity. The fourth objective was to establish conference attendee residence and their trip-related expenditures within the nine-county region. The final objective was to use the survey data to determine the economic impact of conferences and conventions.

Procedures

A sequence of procedures was used to achieve each of the above objectives. First, a list of conference facilities was compiled from various sources including brochures, tourism publications, and research publications on southwestern Pennsylvania. Additionally, the area's travel promotion agencies were consulted. As a result there was a total of 37 host facilities in 8 of the 9 counties of the region. During this process it was decided to categorize the hosts into three facility types; hotels/motels, colleges/universities, and resorts.

Conferences and conventions were categorized by this study into four main types: 1) Business /Professional, 2) Academic, 3)Heritage-Related, and 4) Special Interest. These categories were identified because they describe individuals and the primary activities taking place at each event. Business/Professional conferences are those events attended by business executives or professionals organized to recognize achievements, share ideas, learn more about the workplace, and meet fellow professionals. Academic conferences are attended to gain or share further knowledge about a particular educational subject. These conferences are generally held on college campuses. Heritage-Related conferences are attended to gain further knowledge about the culture or history of a particular time, event, or heritage-related attraction. Additionally, many heritage-related groups hold their monthly or annual meetings in the region. Special Interest conferences include all events not previously defined by the above categories.

Each facility offering conferences and conventions was then contacted by telephone to establish a contact person (e.g., conference coordinator) and confirm a mailing address. During the telephone interview, a list of the number of conference rooms and the visitor capacity per room was established for each facility throughout the region. Also, the number of operating days per year for each host facility was established. From this information the total potential conference capacity in visitor days per year for the facility could be determined. This potential capacity was identified by this study as the facility capacity.

Next a survey form with a list of instructions and a cover letter was developed and mailed to the conference coordinator at each facility to gather data on actual conferences and conventions

hosted during 1994. The conference coordinator was asked to provide (for each conference type) the average daily attendance and the length in days of each event. In many incidences this information was not known or the coordinator felt they could not reveal the information. As an alternative, the conference administrator could provide the name and phone number of a conference organizer so that attendance could be more directly acquired by our staff. Once collected, this data was used to calculate the actual attendance in visitor days for conferences and conventions at each facility.

A sequence of tasks was followed to determine the total number of visitor days by attendees in the region. The visitor days for each conference event were calculated by multiplying the average daily attendance times the length of the conference in days. For all facilities responding to the survey, total attendance was the summation of the visitor days from the individual events. A summation of known visitor days divided by the facility capacity equaled the capacity utilization for respondents. Estimates were then made for nonrespondents. Capacity utilization of facilities responding to the survey could be used to estimate visitor days of nonrespondent facilities. Estimates were developed for each conference facility type; hotels/motels, colleges/universities, and resorts. Visitor days for all conference facilities were then totaled. A listing of the regional visitor days for conferences by conference facility type can be located in Table 1.

Interviews of the public were also conducted at host facilities for each conference type to identify the residence, travel itinerary, and trip-related expenditure profiles of conference attendees. On-site expenditures and regional expenditures included registration fees, lodging, food, transportation, and other trip related purchases (e.g., exhibit costs, souvenirs).

Economic Impact

Expenditures by residents did not represent an influx of new money to the region and were excluded from the impact analysis. Nonresident expenditures, identified by type of purchase during the interview process, were further classified by the industrial sector producing the good or service. This reorientation facilitated data entry into the Impact Analysis for Planning (IMPLAN) model. IMPLAN is a computerized data base and modeling system for constructing regional economic accounts and regional input-output tables. An input-output analysis assesses the change in the overall economy that results from a corresponding change in some activity (e.g., conference and convention activities). The model relies on two sets of data. The first is a 528 sector input-output transaction table based upon the Bureau of Economic Analysis' National Input-Output table (USDC 1984). This describes the utilization and production of commodities by 528 manufacturing, commercial, and government sectors in the United States economy. The second is the county-level data to be used for developing a regional input-output structure that describes total output, employment, and the components of final demand and value-added for the sectors within the region.

The IMPLAN model of the region was then used to derive the direct and secondary (indirect and induced) impacts resulting from these conference and convention expenditures. The combination of direct, indirect, and induced impacts were measured as the total value of goods and services produced regionally, value-added to the regional economy, and annual employment.

Direct sales represent the portion of regional expenditures by nonresident that are retained by regional businesses. These sales are final demands on the regional industries producing the good but do not include the value of the good produced outside the region. Direct sales were further analyzed by IMPLAN for their secondary impacts. Indirect sale impacts result when regional businesses sell their products. These businesses then turn around and purchase inputs such as labor and materials from other sectors of the regional economy (Johnson and Moore 1993). The induced sales impacts occur from household consumption generated by the employment tied to direct and indirect sales. An example would be the contributions to the regional economy from the wages spent by hotel and lodging employees. Value-added represents that portion of the total sales impact directed to employment income, capital use, taxes, and profit.

Results

Facility and Visitor Surveys

Survey forms were sent out to 37 conference facilities in the region. The survey forms were followed up by a telephone inquiry for those not responding. Ultimately,

Table 1. Conference/Convention frequency and attendance estimates by type.

Conference/Convention Type	Number Of Events	Average Event Days	Annual Visitor Days	Visitor Day Distribution
Business/Professional	1708	2.89	693,861	71.5%
Academic	342	2.78	52,893	5.5%
Heritage Related	104	1.91	9,210	0.9%
Special Interest	573	2.82	214,087	22.1%
Total	2727		970,051	100.0%

a 41% return was achieved from this procedure. There were returns from 3 of 7 resorts, 5 of 7 colleges/universities, and 7 of 23 hotels/motels.

A total of 132 on-site visitor surveys were completed during ongoing conferences. These interviews were undertaken at hotel/motel, college/university, and resort settings covering all four conference types.

In the region there were 2,727 conferences in total. The average length was 2.82 days (Table 1). Business/Professional events dominated the activity (71.5%), followed by the Special Interest category (22.1%). A total of 61.1% of the events were held at resorts, 33.4% at hotels/motels, and 5.5% at colleges/universities.

Residence and Visitor Days

The conference facilities responding to the survey represented 59% of the estimated annual visitor days. The total number of visitor days in the nine-county region for conferences totaled 970,051 (Table 1). Of these, 8,295 visitor days were attributed to vendors. Participant visitor days totaled 961,756. Most visitors coming to the area for conferences were from outside the region. The out-of-region attendance to regional conferences by participants was 655,642 visitor days (68.2%). A total of 306,114 attendees lived in the region (31.8%). Among all participants, 22% visited other recreational sites on the day of the on-site interview.

Visitor Trip-Related Expenditures

Average expenditures for conference and convention participants were identified on a visitor day basis. All visitors averaged $114.53 per activity day with nonresidents spending 85% more than residents. Most of the difference can be attributed to lodging expenses and additional meals at the lodging facility. Table 2 provides the total expenditures by type in the region for resident and nonresident attendees during the conference.

Most trip expenditures by all visitors were spent at the host facility on food, lodging, souvenirs, parking fees, and conference registration fees. For nonresidents 76.9% of the on-site expenses were spent on lodging, food, and fees. Souvenirs and vendor purchases were 23.1% of the total on-site expenses. Conference attendees also spent additional money in the region while their conference was in session. Among off-site expenditures the next highest totals for all visitors were attributed to goods and services (e.g., shopping), food (e.g., restaurants and groceries) and transportation costs. Overall, lodging expenses were incurred primarily at the hotel/motel, college/university, or resort at which the conference was located. For residents there were no off-site lodging expenses. This category was minimal for nonresidents as well.

Economic Impact

Regional expenditures made by nonresident visitors to conferences and conventions resulted in total sales impacts of $163.3 million among regional businesses (Table 3). The direct sales accounted for 33.3% of this activity, with secondary impacts representing the remaining 66.7%. The value-added component of total sales provided $98.4 million to the local economy. Employee income constituted $57.3 million of this regional benefit and was distributed more than 4,188 full and part-time jobs.

The regional economic impacts were summarized by industry groups (e.g., Mining) (Table 3). Each industry group in the table represents an aggregation of industrial sectors in the regional economy. For example, Mining represents those businesses providing ores, sand, stone, and gravel. Services include the Hotel and Lodging Places and the Automobile Repair and Services sectors. Government includes federal, state, and local enterprises.

The Services group was the main beneficiary of conference activity with a value-added to the economy of $44.5 million. The Finance, Insurance, and Real Estate group and the Wholesale and Retail Trade Group were the next two largest recipients, with value-added of $18.8 million and $17.7 million, respectively. The total sales impact realized by the Finance, Insurance, and Real Estate group ($26.7 million) was exclusively from secondary sources. The Services group had the next highest secondary sales impact at $25.9 million. This impact represented business and household demands for financial services and household investment in personal real estate. Jobs were found primarily in the Services group (63.0%) and the Wholesale and Retail Trade group (23.2%).

Table 2. Total expenditures of vendors and visitors by residence and type of purchase.

Residence	Resident	Resident	Nonresident	Nonresident
Expenditure Type	**$**	**%**	**$**	**%**
On-site	17,901,270	80.2	79,887,574	89.8
Transportation	920,554	4.1	2,228,617	2.5
Lodging (off-site)	0	0.0	93,796	0.1
Food	1,207,077	5.4	2,522,111	2.8
Goods and Services	2,288,461	10.3	4,186,315	4.7
Total	22,317,362	100.0	88,918,413	100.0

Table 3. Total regional economic impacts of visitors to conferences and conventions.

Industry	Direct Sales	Secondary Sales	Total Sales	Value-Added	Employee Income	Jobs #
Agriculture, Forestry, Fisheries	$9,600	$1,791,000	$1,800,600	$587,000	$235,500	33.76
Mining	$40,500	$514,700	$555,200	$420,600	$133,300	3.57
Construction	$0	$4,618,500	$4,618,500	$2,719,200	$2,053,000	98.92
Manufacturing	$35,200	$12,247,100	$12,282,300	$4,469,700	$2,842,100	132.89
Transportation, Commun., Utilities	$179,200	$13,389,800	$13,569,000	$7,420,100	$2,895,800	100.19
Wholesale and Retail Trade	$4,469,800	$20,525,400	$24,995,200	$17,691,900	$11,590,700	970.98
Finance, Insurance, Real Estate	$0	$26,737,800	$26,737,800	$18,812,700	$3,053,500	170.50
Services	$49,613,900	$25,920,700	$75,534,600	$44,512,600	$33,182,100	2,637.72
Government Enterprises	$99,200	$3,131,300	$3,230,500	$1,797,600	$1,337,000	39.55
Total	$54,447,400	$108,876,300	$163,323,700	$98,431,300	$57,323,000	4,188.08

The ratio of the total sales impact to direct sales impact is called the Type II multiplier. This multiplier identifies the strength of the regional economy in providing indirect linkages within the business community and in meeting the induced demands of those people employed by the direct and indirect sectors. For the conference and convention activity the multiplier was 3.0.

Conclusions

Most of the conference and convention attendees were nonresidents. This infusion led to a substantial influx of money into the region as they spent an average of $134.20 per activity day. When nonresidents spend money, it creates an economic impact within lodging facilities, restaurants, gas stations, and for other local merchants. The total sales impact was $163.3 million creating a value-added of $98.4 million. The key beneficiaries of the activity were the Service sectors, the Wholesale and Retail Trade sectors, and the Financial, Insurance and Real Estate sectors. The Services group includes Hotel and Lodging Places that delivered most of the value-added ($44.5 million) to the region.

Often the indirect sale impacts overshadowed the direct sale impacts for a particular sector grouping (e.g., Manufacturing). Direct sales in the Hotel and Lodging Places sector require utilizing inputs from other sectors in their production systems. Inputs that are regionally produced generate additional indirect economic impacts. Therefore, there was a larger indirect impact in the Manufacturing group. Local businesses produce items consumed during the conference and convention trade (e.g., pencils, paper products, etc.) that need to be produced and supplied to the lodging industry.

The expenditures tied to the conference and convention activity also supported 4,188 full and part-time jobs. This was a result of both direct and indirect sales within the region. The economic impact in the region also reflects the spending of salaries by this employment base on regional products and services. For example, both the Hotel and Lodging Places sector and the Eating and Drinking Establishments sector are labor intensive. The employees in these sectors are going to spend their salaries on services in the region where they live. Illustrating this was the Financial, Insurance, and Real Estate group that received all of its impact from secondary expenditures in the region, mostly from household incomes.

There was a link between conference and convention sales and types of employment. For certain industry groups the results suggest that higher wage jobs, largely supported by secondary sales, were created in addition to the low wage jobs usually associated with travel and tourism. For example, in the Transportation, Communications, and Utilities group the average employee income per job sustained was almost $29,000 per year.

The conference and convention activity was an important component of travel and tourism in the region. The off-site expenditures by attendees match, in many cases, the total trip-related expenditures for other tourists in the region participating in recreational activities (Strauss, Lord, and Grado 1995). A comparison was made between the 1994 conference and convention activity and the travel and recreation related activities in the 1994 impact study (Strauss, Lord, and Grado 1995). The total expenditures and total sales impacts tied to conferences and conventions were greater for this activity than for any of the other recreational activities. The only activities that measured higher were the combined activities of business and transient travel.

The Type II multiplier for conferences and conventions was 3.00. This was among the higher multipliers for all travel and tourism related activities in the region. The average ratio among all activities was 2.96 (Strauss, Lord, and Grado 1995). The higher ratios identified activities aligned with sectors that were labor intensive and used greater proportions of regional production inputs. As an example, recreational activities with higher on-site entrance fees or lodging expenses tended to have higher

Type II multipliers. Conferences and conventions certainly followed this path.

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Outdoor Recreation Values

ADDING VALUE TO THE OUTDOOR

RECREATION EXPERIENCE

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Abstract: Ohio State Parks has focused its operational direction toward giving its customers services and experiences that extend beyond the customer's original expectations. This paper explains how the idea of added value has helped to increase fee revenues, improve customer satisfaction, and build upon our visitation and market share.

The parks and recreation business has entered a new era of fewer tax dollars available for operating facilities and programs. There is a growing trend toward "self sufficiency" - that is covering a greater and greater percentage of operating costs with fee revenues. Most park systems are also working on ways to work "harder and smarter and do more with less" through cost-cutting programs.

Whether an organization concentrates on just cutting costs, or ventures into the revenue generation realm, it needs to keep the compass point concept of "adding value to the outdoor recreation experience" ever before it. We define adding value as: the **surplus or deficit of perceived value** the customer receives from any service modification over the value he tenders for it. The concept of added value applies to services that are free and those one pays for.

Whether the customer receives a cut in services from a cost cutting program or pays increased fees due to a revenue generation initiative, the customer's reception of the change depends upon his or her perception of the "added value" which results. Remember that we have defined "added value" such that it can be either positive or negative. The support or resistance of your customer base to any given revenue generating or cost cutting initiative depends upon their perception of the added value attached to it.

Ohio State Parks has achieved excellent results by paying attention to "adding value" in its revenue generation initiatives. Ohio State Parks have increased revenues from $12,000,000 in 1992 to a projected $20,500,000 in 1996 (Fiscal year ending June 30, 1996). Today, 41% of its operating funds come from revenues, versus 23% just four years ago. These results were possible because our customers perceived that, as we increased fees, added new fees, and implemented cost cutting program changes, the value they received from the services we provide increased to a greater degree. Our customer resistance to these changes has been quite manageable, and support for our initiatives has been increasing, as evidenced in our customer satisfaction survey and by increasing visitation and units sold.

Graphical representation of customer satisfaction levels is shown in a four-year history of our customer satisfaction survey in Figure 1. A graphic of our last ten years history of revenue generation success is shown in figure 2 and Table 1.

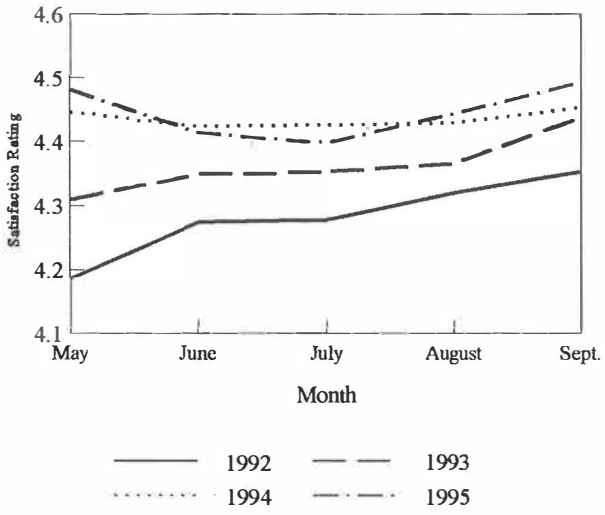


Figure 1. Ohio State Parks customer satisfaction rating.

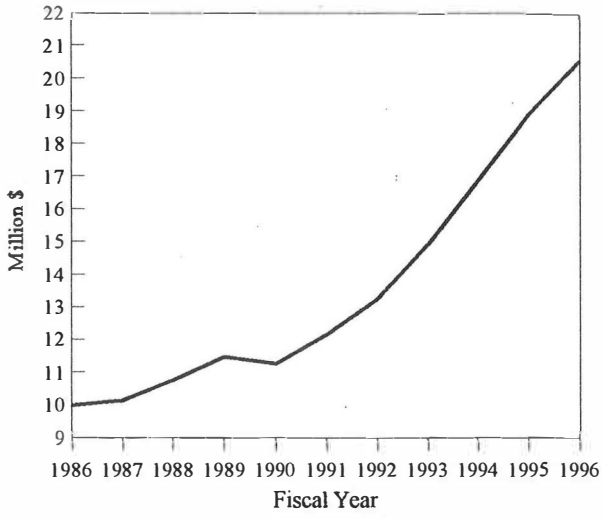


Figure 2. Ohio State Parks revenues received and deposited.

The discussion of our application of the concept of "added value" to achieve these two goals breaks down into six topic areas:

1. Adding value with new services for a profitable fee.

2. Adding value to existing free services while placing a new, first-time charge on them.

3. Adding value to services while implementing cost cutting programs.

4. Adding value with increased prices while boosting the perception of increased value for the customer.

5. Adding value to existing services to increase market share and use levels.

6. Adding value to the shoulder seasons as a marketing tool to attract customers in slack periods and increase sales volume.

Table 1. Ohio State Parks total revenue and percent annual change.

Fiscal Year	Total Revenue	Inc/Dec Amount	Percent Change
1986	$9,986,938	$490,059	5.2%
1987	$10,122,514	$135,576	1.4%
1988	$10,747,947	$625,433	6.2%
1989	$11,460,785	$712,838	6.6%
1990	$11,261,846	($198,939)	-1.7%
1991	$12,154,618	$892,772	7.9%
1992	$13,244,099	$1,089,481	9.0%
1993	$14,909,566	$1,655,467	12.6%
1994	$16,859,550	$1,949,984	13.1%
1995	$18,877,786	$2,018,236	12.0%
1996	$20,500,000	$1,622,214	8.6%[a]

a/ This reflects closure of facilities for major remodeling.

Adding value with new services for a profitable fee.
One of our best examples of this effort is the addition of Rent-a-RVs to our campgrounds. There is a market out there for a fully set up, air-conditioned, carpeted, micro-waved, TV'd, fully outfitted RV for rent. The market may be, in part, seniors and also families who want to experience camping without the hassle of tents, mosquitos, smokey fires, heat and humidity, and the like. Another part of this market is folks who want to try out RV camping before they purchase their own RV.

This is a thin market and locations must be chosen next to large urban areas in our larger campgrounds. Any given location will only support from three to six of these units. We purchase 28-foot RV trailers and connect them on a campsite to all utilities. We calculate our return of investment on a minimum of 100 nights per season and plan to have the RVs fully depreciated within 15 to 30 months. Their life expectancy is five to seven years, at which time we will sell them in the after market and recover part of our original investment to defray the cost of their replacement.

Customers love them - especially single-parent families. They fill a niche in the marketplace and generate new business for us.

We have also purchased bicycles and paddle boats for rental in many campgrounds and day use small lake areas. Sometimes the park manager purchased used equipment and fixed it up to keep investment low in case theft became a problem. Theft has been almost negligible. Kids seem to like running around on an eclectic collection of kids bikes, and used equipment is preferred sometimes. We do buy some new bicycles and a nice new tandem bike for the adults. This gives our customers "something to do." "Something to do" is a request that comes through on our customer satisfaction survey strongly. It also more than pays for itself.

Adding value to existing free services while placing a new, first-time charge on them.
Our picnic shelters were free to all, and in many locations they had experienced low levels of use. We established a reservation system and a fee for reserving many of them, up to a year in advance. We experienced increased usage often as people found out that they did not have to have "grandpa" get up at 4:00 a.m. to go sit at a picnic shelter so they could be assured of having it for a family gathering.

There has been virtually no customer resistance, since most appreciate the idea that they can now plan for family reunions and the like at our picnic shelters. Our maintenance crews also like the reservation system because they can assure customers a freshly-cleaned shelter for their reserved time. Customer satisfaction has increased on two counts.

Many of our campgrounds have experienced "curiosity drive throughs" by people who do not wish to stay there but want to see what is going on. There are also many people and vehicles who want to "visit" someone in the campground. We put a $1.00 or $2.00 fee on these drive-throughs, extra and visiting vehicles to attempt to cut down the traffic. Amazingly, we encountered very little customer resistance. The people who were not our customers would not pay the nuisance fee. Those with legitimate business seemed not to mind and understood what we were trying to do.

The best example of customer reception was in one park's campground whose manager had some real misgivings about an added fee for something before which had been free. He was personally approached by, and received a number of letters from, mothers who had real concerns about child safety with as many vehicles as had been driving around the camp ground before the fee went into effect. After the fee went into effect they were pleased with the decrease in unnecessary campground traffic and increased child safety.

Adding value to services while implementing cost-cutting programs.
Check in procedures for our cabins and campsites, until recently, entailed the completion of three different forms that had to be filled out by hand. Cash was kept in a cash drawer or even a "cigar box."

We consolidated the forms down to one universal form and installed cash registers and computers as appropriate. Now we use the cash register receipt for the customer rather than a hand receipt. Check in times have significantly speeded up and the number of attendants needed in check stations has decreased to some extent. Customers, of course, like the much shorter check in procedures, employees like the automation (once they got used to it), and we have saved some labor costs.

The same idea applies to the timing of restroom cleaning. In many locations, cleaning was scheduled for the busiest times so that customers got as clean a restroom as possible. In too many other locations, restroom cleaning was scheduled for after the

busiest times so that there would little conflict with customers and the resultant mess could be most efficiently cleaned up.

If, in fact, cleaning is scheduled before these busiest times, the conflict with customers is reduced and restrooms can be cleaned much faster, with much greater customer satisfaction and with the most cost effective use of employee time.

Adding value with increased prices while boosting the perception of increased value for the customer.
The idea of adding value through differential pricing is one that customers tend to like. It seems inherently fair that if someone gets something extra, there should be an appropriate fee for it. We have installed differential pricing in a variety of situations quite successfully. Slightly higher fees for campsites or cabins that have direct water access or a special view, holiday times when we have to pay time-and-a-half to all employees, amenities such as electricity at campsites and fireplaces in cabins all have relatively high levels of customer acceptance. Sometimes, customers routinely ask for the higher priced offerings, and use levels have actually gone up for some higher priced locations.

We have found that modest price increases are reasonably well accepted when they are tied to the perceived added value of improved amenities or general improvements in physical plants such as repainting, repaving, or fixing up generally.

Adding value to existing services to increase market share and use levels.
In response to customer requests, we initiated the sale of firewood, ice, and camper food and sundries at most campground check in stations. We did not add any extra physical plant nor any additional check in personnel. This idea, like the acceptance of credit cards for payment of fees, enables the camping or cabin or boat dock customer to stay longer without having to travel some distance outside the park. It provides convenience to our customers. This has helped to extend our length of stays and has generated profits from sales of goods.

In response to requests in our customer surveys for "something to do," we have started "free game boxes." These large boxes or cabinets are full of both outdoor items like horse shoes, soft balls and bats, volleyballs, basket balls and soccer balls and indoor games like Monopoly, Scrabble, and children's games. All of our customers can check out these games free of charge. We have already installed horse shoe pits, sand volleyball courts and basketball hoops, and provide large, mowed areas for soccer and softball. The reception to this has been quite positive among our customers. Many parents appreciate the indoor games for rainy days with their children. Theft has also been negligible.

One of our most innovative park managers got a slightly used, portable, 9-hole miniature golf course for a very reasonable price. Rather than charge a fee, he set it up for free use in a beautiful pine shaded area of his campground. He sold 2,000 more campsites this past summer than he had sold the previous summer. There is surely some relationship there.

Our park naturalist program is, of course, the most traditional example of adding value to the existing services within state parks. Regrettably, in today's cost-cutting atmosphere, naturalist-led programs are the first to go. We have restored our naturalist programs to levels that are the greatest in the history of the system. As my long time naturalist manager put it: "the good old days are today" for park naturalists. This example of adding value to existing services is what differentiates state parks from all other outdoor recreation offerings.

Adding value to the shoulder seasons as a marketing tool to attract customers in slack periods and increase sales volume.
The shoulder season provides one of the best opportunities for us to use the idea of "added value" to deliver higher customer satisfaction, generate more business, and better use our existing physical plant. Park operation is a fixed-cost business. Once a park is open, it generates over 80 percent of its costs in utilities and labor. Our season has historically been the Memorial Day to Labor Day 100-day period. May and September have had some shoulder use depending upon weather conditions and holiday dates.

The fall season in the Midwest, up through mid November, is usually a period of sunshine, low humidity, and pleasant temperatures. It is an ideal time to be outdoors. However, the press of work schedules and school attendance leaves a limited amount of time for recreation for which we have to compete. The only way we can effectively compete for people's limited leisure time during this most ideal time of year is to add value to their stays with us beyond what they expect during the summer season. We have begun doing that with harvest festivals, Halloween campouts, and a great variety of special events that we can use to add value to the customers' stay with us in the fall.

We have found that price cutting is **not** an answer in this period to attract business. People will not accept services they do not want even if they are offered free of charge. If the service is something they desire, they will pay a reasonable price for it. The answer is using added value to compete for people's scarce leisure time successfully. Each year Ohio's state parks have seen their greatest increase in usage during the fall months as more parks carry out special fall programs.

A Closing Comment
The idea of "adding value to the outdoor recreational experience" is a thread that pulls together three program areas in which we have some success. The areas of increasing fee revenues, improving customer satisfaction, and building visitation and marketshare are all positively affected by application of added value initiatives. Adding value is also supported by our employees, who like the idea of being part of a team that is recognized for the high quality services it provides.

ENVIRONMENTAL VALUES, ENVIRONMENTAL ETHICS, AND NATIONAL FOREST MANAGEMENT: AN EMPIRICAL STUDY[1]

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Introduction

Management of the national forests is an important public policy issue in the environmental arena. Specific natural forest management issues are highly diverse and include clear cutting, preservation of endangered species and biodiversity, wilderness designation and management, sustainability, and tradeoffs between competing uses. Often, these issues are highly controversial.

Information on public attitudes toward such issues can be useful in helping to guide appropriate national forest management, and many such studies have been conducted (e.g., Dunlop 1992; Dennis 1988; Shindler et al. 1993). However, it may equally useful to explore the underlying ideas that may drive such attitudes. We think the environmental values and ethics of the public may help explain attitudes toward national forest management. Thus, this study focused on three primary variables.

Environmental Values

Nature can be seen to carry many values that may be important to humans. These values can be understood as the functions or products of nature from which humans derive material or nonmaterial benefits. Examples include nature as a place for outdoor recreation and nature as a source of raw materials for economic development. Some values in nature may accrue directly to individuals, while others may be more indirectly diffused through society as a whole.

Environmental Ethics

It is inevitable that humans interact with nature, but what ideas govern or structure this interaction? What is the appropriate relationship between humans and nature, and how is this determined? For the purposes of this study, environmental ethics are defined as the diversity of ideas that drive human-nature relationships. Examples include stewardship of nature as a religious duty and natural rights of nature.

Attitudes Toward National Forest Management

As noted above, national forest management issues are diverse. Moreover, public attitudes toward these management issues have been found to vary. However, a unifying theme among many of these management issues concerns the degree to which national forests should be managed for material or nonmaterial uses. Thus, this general issue was used in this study as the focus of public attitudes toward national forest management.

Study Objectives and Methods

The overall purpose of this study is to explore the variables described above empirically. For example, what are the environmentally-related values and ethics of the public? Moreover, how are these values and ethics related to attitudes toward national forest management? To answer these questions, three objectives were defined for this study:

1. Conceptualize and classify environmental values and ethics.
2. Develop scales to measure environmental values and ethics.
3. Analyze relationships between environmental values and ethics and attitudes toward national forest management.

The first objective was pursued through literature review. There is a rich literature in history, philosophy, and a variety of environmentally-related fields regarding environmental values and ethics. Much of this literature is reviewed in contemporary texts, including Bailes (1985), Calicott (1995), Des Jardins (1993), Elliot and Gare (1983), Glacken (1956), Hargrove (1989), Merchant (1993), Nash (1983;1989), Petulla (1988), Simmons (1993), Taylor (1986), Rolston (1988), Van De Veer and Pierce (1994), Worster (1977; 1993), and Zimmerman (1993). Based on this literature, 11 potential values of national forests were identified as shown in Table 1, and 17 environmental ethics were identified as shown in Table 2. The 17 environmental ethics were further classified into five broad categories. We do not necessarily suggest that these broad categories of ethics are ideas that clustered together within segments of society. These categories represent groups of ideas that we feel have some conceptual commonality.

The second study objective involved development of scales to measure the values and ethics outlined above. Values were measured by means of a battery of statements describing the 11 potential values of national forests. Respondents were asked to rate the degree of importance they attached to national forests as a place to attain these values. A six-point response scale was used, ranging from "not-at-all important" to "extremely important."

Ethics were measured by means of a battery of statements that attempted to capture alternative dimensions of each of the 17 environmental ethics. Two components of support for each statement were measured. The first measured the extent to which respondents agreed with the statement. An eleven-point response scale was used, anchored at "strongly agree" and "strongly

[1]This study was supported though a cooperative agreement with the USDA Forest Service, North Central Forest Experiment Station, and the McIntire-Stennis Forestry Research Program.

disagree." The second component measured the importance respondents placed on each statement in influencing their attitudes toward natural resource and environmental issues. A six-point response scale was used, anchored at "not-at-all important" and "extremely important." An initial battery of 104 statements was pretested on a group of 150 undergraduate students who were asked to comment on any problems, ambiguities, or other difficulties in interpreting and responding to the statements. Based on this pretest, 42 statements were retained. Each environmental ethic was measured with between two and four statements. Representative statements are shown in Table 2.

Table 1. Environmental Values.

Value	Average Importance Rating*
Aesthetic	5.55
Education	5.15
Recreation	5.07
Therapeutic	5.07
Ecological	4.56
Scientific	4.44
Intellectual	4.34
Historical/cultural	4.31
Moral/ethical	3.84
Spiritual	3.54
Economic	2.36

* 1= "not at all important," 6= "extremely important."

The third study objective was accomplished by means of a survey of a representative sample of Vermont households. The values and ethics scales were incorporated into a written questionnaire. In addition, a third battery of questions was developed to measure attitudes toward management of the Green Mountain National Forest, in Vermont. These questions were directed at the general issue of material versus nonmaterial values as described earlier. A series of 15 statements was constructed, and respondents were asked the extent to which they agreed with each statement. A five-point response scale was used, anchored at "strongly agree" and "strongly disagree." The 15 statements are shown in Table 3.

The study questionnaire containing the above measures was administered to a representative sample of 1500 Vermont households chosen from telephone directories covering the state. The questionnaire was administered in the spring of 1995 following procedures recommended by Dillman (1978). Two-hundred seventy-two questionnaires were returned as undeliverable, reducing the sample size to 1228. Six hundred twelve completed questionnaires were returned, yielding a response rate of 50 percent.

Study Findings

National Forest Values

Findings regarding the values associated with the Green Mountain National Forest are shown in Table 1. Most values were judged relatively important by respondents. In fact, 8 of the 11 values received an average rating of at least "moderately" important. Three values in particular were rated very highly: aesthetic, ecological, and recreation. Five values--educational, moral/ethical, historical/cultural, therapeutic, and scientific--make up a second tier of importance. A third tier of forest values drew relatively low importance ratings and included intellectual, spiritual, and economic values.

Table 2. Environmental ethics.

Environmental Ethics		
Category	Ethic	Representative statement
Anti-environment	Threat to survival	Nature is a threat to human survival.
	Spiritual evil	Nature is evil.
Benign Indifference	Storehouse of raw materials	Nature is a valuable storehouse of raw materials
	Religious dualism	Humans were created as fundamentally different from the rest of nature.
	Intellectual dualism	The ability to think makes humans fundamentally different from the rest of nature.
Utilitarian Conservation	Anthropocentric humanism	Human cruelty toward animals is wrong because it could lead to cruelty toward other humans.
	Efficiency	Humans should manage nature as efficiently as possible.
	Quality of life	Nature is important because it adds to the quality of our lives.
	Ecological survival	Protecting ecological processes is important to human survival.
Stewardship	Religious/spiritual duty	It is our religious/spiritual duty to take care of nature.
	Future generations	Nature should be protected for future generations.
	God's creation	Humans should protect nature because it is God's creation.
	Mysticism	All living things had a spirit.
Radical environmentalism	Humanitarianism	Humans should not cause needless pain and suffering to animals
	Animism/organicism	Nature should be protected because it is sacred
	Pantheism	Nature should be protected because all living things are interconnected
	Liberalism/natural rights	Nature should be protected because all living things have a right to exist.

Table 3. Attitudes toward National Forest Management

Statement	Mean Score
Management of the Green Mountain National Forest should emphasize production of timber and lumber products.	3.28
Clearcutting should be banned on the Green Mountain National Forest.	1.77
Mineral exploration and extraction should be encouraged on the Green Mountain National Forest	3.76
Greater protection should be given to fish and wildlife habitats on the Green Mountain National Forest.	1.86
Some existing wilderness areas on the Green Mountain National Forest should be open to logging.	3.37
Greater efforts should be made to protect the remaining undisturbed forests on the Green Mountain National Forest.	1.83
Endangered species laws should be set aside on the Green Mountain National Forest to preserve jobs.	3.87
More wilderness areas should be established on the Green Mountain National Forest.	2.37
The economic well-being of timber workers and their families is more important than preservation of undisturbed forests on the Green Mountain National Forest.	3.81
Management of the Green Mountain National Forest should emphasize a wide range of benefits and issues rather than timber and wood products alone	1.84
The economic vitality of local communities should be given highest priority when making Green Mountain National Forest decisions	3.24
Management of the Green Mountain National Forest should focus on the forest as a whole and not on its individual parts (such as bears and trees)	2.20
Logging on the Green Mountain National Forest should not be allowed to disrupt the habitats of animals such as bears	2.18
Logging on the Green Mountain National Forest should be allowed even if it diminishes the scenic beauty of the area	4.07
Ski areas should be allowed to with-draw water from streams on the Green Mountain National Forest even if there are some ecological impacts	3.73

a/ 1 = "strongly agree"; 5 = "strongly disagree"

Environmental Ethics

Findings regarding environmental ethics are shown in Figures 1 and 2. As these figures illustrate, most environmental ethics received some degree of support and importance from respondents. Nearly all ethics elicited mean agreement responses on the positive side of the scale, and most drew at least "moderate" importance ratings.

Some environmental ethics enjoy relatively high levels of agreement and importance. All four environmental ethics in the utilitarian conservation category received high mean agreement and importance ratings. Stewardship ethics were also widely embraced by respondents, with three of the four ethics in this category receiving strong support. In addition, three environmental ethics in the radical environmental category enjoyed high mean agreement and importance scores. Respondents tended to be largely equivocal toward environmental ethics in the benign indifference category, as evidenced by relatively low agreement scores associated with these three environmental ethics. Lastly, environmental ethics making up the anti-environment category were generally rejected by respondents and considered relatively unimportant in influencing respondents' attitudes toward natural resource policy.

Attitudes Toward National Forest Management

Findings regarding attitudes toward national forest management are shown in Table 3. Considerable diversity in attitudes among statements is evident. However, usually, statements that emphasized material values in national forest management met with more disagreement than agreement. Conversely, statements that emphasized nonmaterial values in national forest management met with more agreement than disagreement.

Relationships Between Environmental Values and Ethics and National Forest Management

The final objective of this study was to analyze the relationships between environmental values and ethics and attitudes toward national forest management. This required several statistical operations. First, respondent scores on the 15 national forest management statements were aggregated in a composite index. Respondents received an overall index score ranging from 1 to 5, with 1 representing a strong materially-oriented attitude toward natural forest management and five representing a strong nonmaterially-oriented attitude.

Second, a factor analysis was performed on the environmental ethics data. As a data reduction technique, this permitted the identification of a relatively small number of variables that could be used in a multiple regression analysis. It also facilitated the identification of underlying relationships among the environmental ethics statements that might not otherwise have been directly observable. This was important as it provided a statistical test of the validity of the classification of environmental ethics upon which this portion of the study was conducted.

Responses on the agreement and importance scales for each of the 42 environmental ethics items were multiplied and the products were subjected to factor analysis using Alpha extraction and Varimax rotation. Items with a rotated loading score of .35 or greater were considered significant and determined to be a part of the resulting factors.

Ten environmental ethics factors were produced from the 42 scale items. Overall, factor analysis of scale item statements produced environmental ethics similar to those constructed through literature review and described earlier in this paper. There were, however, several differences. Figure 3 presents the resulting environmental ethics factors, with revised titles, and their relationships to the originally conceptualized environmental ethics. Mean index scores for the resulting environmental ethics were created through averaging the scores for each statement contained within each environmental ethic factor. This index score ranged from -30 to 30, following the multiplication of the original agreement (-5 to 5) and importance (1 to 6) scales.

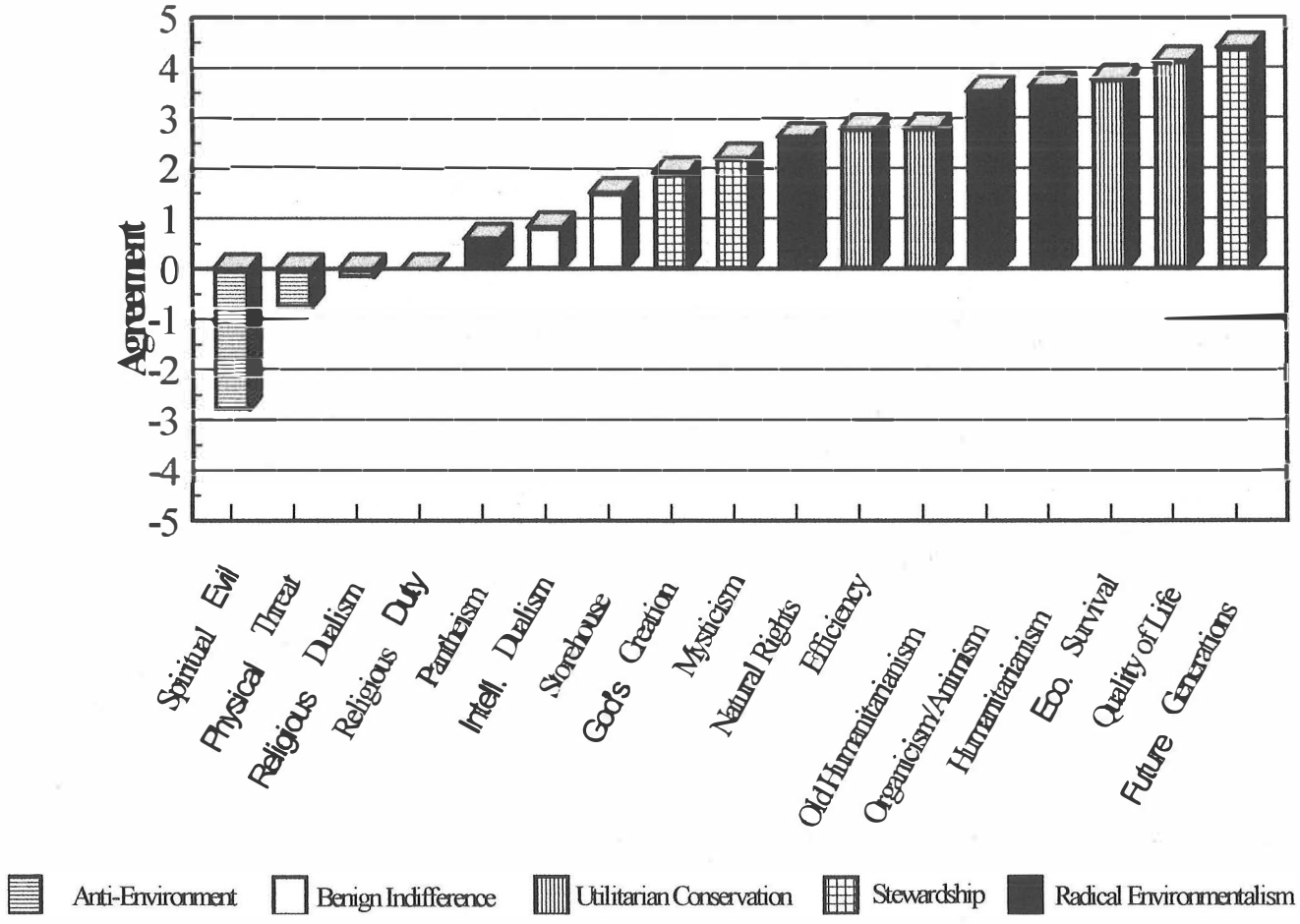


Figure 1. Environmental ethics - agreement.

Third, a series of three regression analyses was performed. This analysis was conducted to determine the amount of variation in attitudes toward national forest management explained by forest values and environmental ethics. Results are presented in Tables 4 through 6.

Table 4 presents the results of the multiple regression analysis for attitudes toward national forest management and forest values. Six forest values entered into the regression equation at a statistically significant level. These six values produced an R^2 of .4896, indicating that they explained approximately 49% of the variation in attitudes toward national forest management.

Table 5 presents the results of the multiple regression analysis performed for attitudes toward national forest management and environmental ethics. Six environmental ethics entered into the multiple regression analysis at a statistically significant level. Moreover, these six environmental ethics produced an R^2 of .4664, explaining approximately 47% of the variation in attitudes toward national forest management.

Table 4. Regression analysis between forest values and attitudes toward National Forest management.

Independent Variables	B	Beta	S.E.
Ecological value	-.1130	-.2364	.0186
Aesthetic value	-.0578	-.1187	.0195
Spiritual value	-.0282	-.0960	.0115
Moral/ethical value	-.0452	-.1182	.0161
Economic value	.1883	.5089	.0117
Scientific value	-.0399	-.0960	.0154
R^2	.4896		

Table 5. Regression analysis between environmental ethics and attitudes toward National Forest management.

Independent variables	B	Beta	S.E.
Liberalism/natural rights	-.0039	-.0823	.0022
Dualism	.0053	.1174	.0021
Religious duty	.0056	.1045	.0024
Organic sustainability	-.0240	-.3199	.0036
Storehouse	.0211	.4165	.0022
Quality of life	-.0129	-.2045	.0027
R^2	.4664		

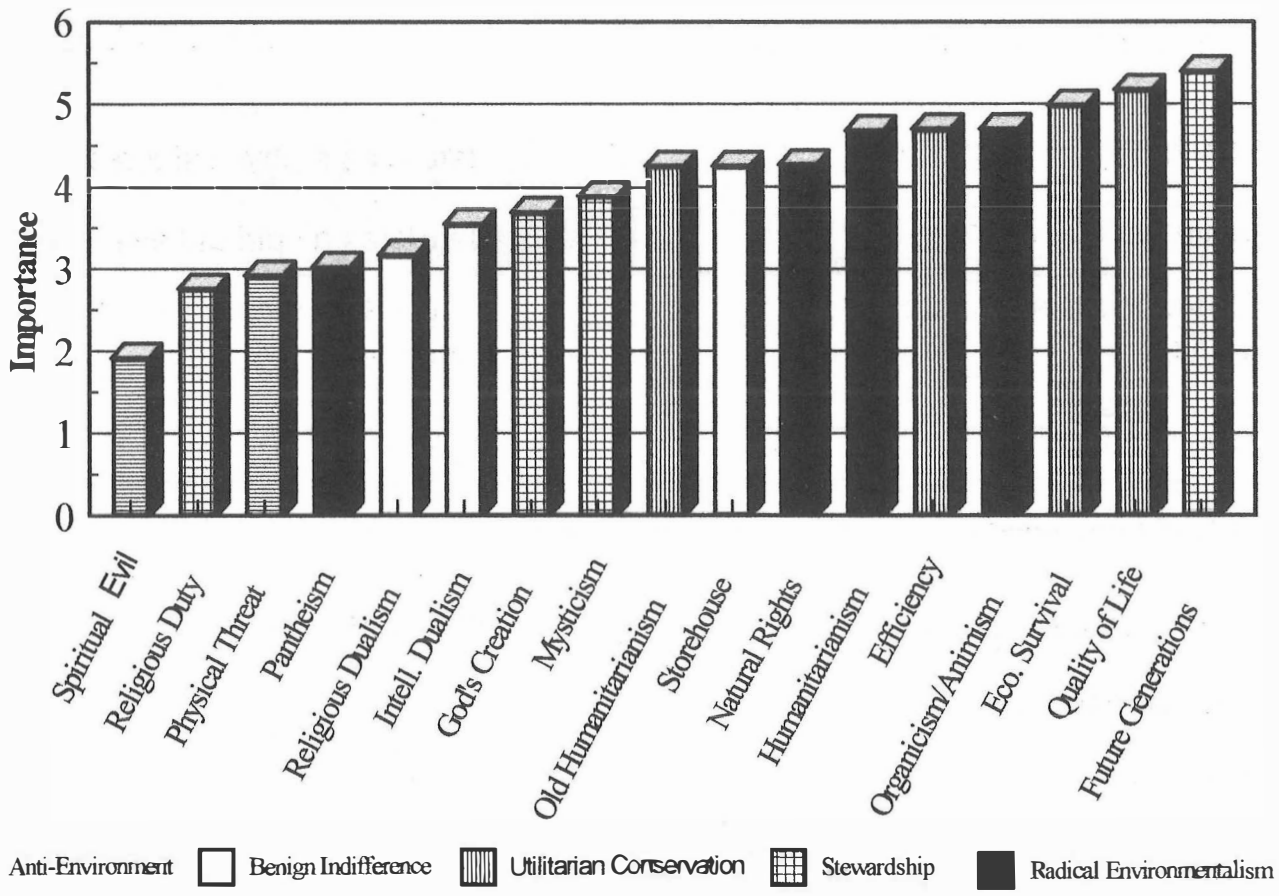


Figure 2. Environmental ethics - importance.

Table 6 presents the results of the regression analysis performed for attitudes toward national forest management and environmental values and ethics. Four forest values and five environmental ethics entered into the analysis at a statically significant level. These nine independent variables produced an R^2 of .5999, explaining approximately 60% of the variation in attitudes toward national forest management.

Table 6. Regression analysis between forest values, environmental ethics, and attitudes toward National Forest management.

Independent variables	B	Beta	S.E.
Ecological value	-.0758	-.1604	.0195
Spiritual value	-.0367	-.1231	.0131
Moral/ethical value	-.0431	-.1139	.0168
Economic value	.1315	.3582	.0138
Dualism	.0038	.0834	.0018
Religious duty	.0065	.1222	.0023
Organic sustainability	-.0148	-.2004	.0032
Storehouse	.0105	.2083	.0021
Quality of Life	-.0098	-.1576	.0024
R^2	.5999		

Conclusions

Several conclusions might be drawn from this study. First, environmental values and environmental ethics can be isolated and measured. Traditionally, such environmentally-related values and ethics are treated primarily at a conceptual level. However, these intellectual notions can be defined more explicitly, classified, and measured through scale development and associated survey and statistical techniques. While the values and ethics-related classification and measurement scales are subject to continued refinement, they suggest that an empirical approach can be potentially productive and useful.

Second, the descriptive study findings provide some direct insights into environmentally-related values and ethics of the public and how these values and ethics apply to the national forests. Respondents value national forests for many reasons. While more direct or individually-related values, such as recreation and aesthetics, are rated as most important, less direct of more societally-oriented values, and also more abstract values, such as ecological protection and expression of moral/ethical obligations, are also rated as important. The public also subscribes to a diversity of environmental ethics, including those that might be generally described as anthropocentric (including stewardship and utilitarian ethics) and bio/ecocentric (including radical environmental ethics).

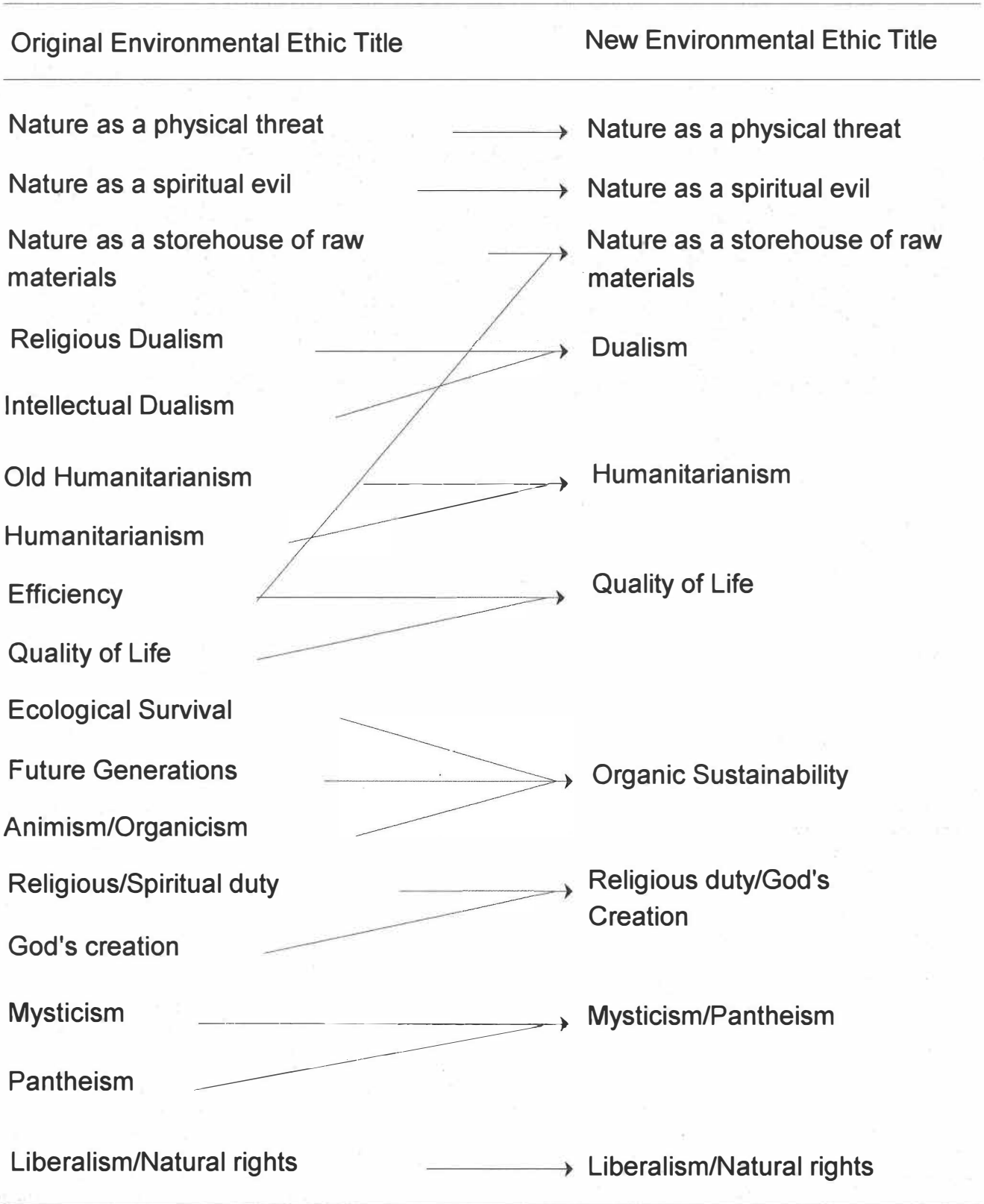


Figure 3. Environmental Ethics: Revised Titles from Factor Analysis.

Third, descriptive findings also provide insight into public attitudes toward national forest management. While a diversity of attitudes was represented, respondents tend to favor nonmaterial benefits of national forests over material benefits.

Finally, the analytical findings from this study provide insights into the relationships between environmental values, environmental ethics, and national forest management. Taken together, values and ethics explain approximately 50 percent of the variation in respondent scores on the overall national forest management scale. These statistical relationships mean that beliefs in selected environmental values and ethics are associated with certain attitudes toward national forest management. These types of relationships may help establish an empirical basis for comprehensive national forest management. For example, some national forests (or areas within national forests) may emphasize selected environmental values and ethics and adopt associated national forest management policies. This approach may allow national forest managers to more effectively meet the diverse and sometimes competing values and ethics of the public while avoiding potential conflicts.

An important limitation of this study is that it focused specifically on the Green Mountain National Forest and the residents of Vermont. Future studies should broaden this geographic base.

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VALUE DIFFERENCES BETWEEN CONSUMPTIVE AND NONCONSUMPTIVE RECREATIONISTS

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Abstract: This paper explores personal value differences and similarities between consumptive and nonconsumptive recreationists (hunters/anglers vs. nonhunters/nonanglers). A Mann-Whitney μ revealed that hunters differed from nonhunters on 10 of the 18 Terminal Values of the Rokeach Value Survey; anglers and nonanglers exhibited almost an identical differentiation on the same values. Consumptive recreationists displayed a more personal security orientation in their value patterns as compared with nonconsumptive recreationists. Nonconsumptive recreationists were characterized by a societal orientation in their value patterns compared with those engaged in consumptive activities. An examination of the basic or "core" personal values may provide a greater understanding of conflict among groups or individuals over policies related to wildlife or natural resource management.

Introduction

A theory of behavioral and environmental setting choices in the leisure sciences continues to enjoy a popular appeal. Much of the research has focused on individual manifestations of such behavior--motive systems (accounts) for activity and setting choices, satisfactions in recreation, leisure attitude, psychological outcomes, and activity choice classification and typology systems (London et al. 1977; Crandall 1980; Brown and Haas 1980; Samdahl and Kleiber 1981; Graefe et al. 1981). Although much progress has been made, Schreyer et al. (1984) note that the capacity to predict activity or setting choices has not been widely demonstrated--many managerial and theoretical questions remain.

In the search for more predictive understanding, one subset of individual/intersubjective level variables that offers promise is that of human/personal values. Although enjoying a rich history in the broader social sciences, values have been somewhat but not totally neglected in the leisure sciences. Value formation has been associated with camping, surfing, and fishing social worlds (Etzkorn 1964; Bryan 1977; Cheek et al. 1976); different value systems between users and resource managers have been noted (Clark et al. 1971); users holding different values have been associated with nontraditional uses of national parks (White and Schreyer 1981); and values successfully differentiated travel personality types and independent versus group travelers (Madrigal 1995). Jacob and Schreyer (1980) noted that values as cultural evaluations influence definitions of natural resources and the establishment of a normative order of behavior for such places. In more theoretical discussions, Klausner (1969), Burch (1969, 1970), Cheek and Burch (1976), Burdge and Field (1972), Schreyer et al. (1984) suggest that personal values influence choice of recreation activities and settings to obtain desired leisure experiences.

These research efforts suggest the broad applicability of the concept of personal values to the leisure sciences. The purpose of this paper is a further application of the study of personal values to outdoor recreation activity choice decisions as they relate to consumptive and nonconsumptive users of natural resources. Specifically, this study explores:

1) value differences between those recreationists who engage in natural resources harvesting activities and those who do not (hunters/anglers vs. nonhunters/nonanglers).

2) value similarities between those recreationists who engage in natural resource harvesting activities and those who do not (hunters/anglers vs. nonhunters/nonanglers).

3) research and managerial implications of any differences or similarities.

Methods

The purpose of this study was to explore values and value patterns of residents of rural communities, and to examine if basic personal values could be discerned which differentiate between those who engage in natural resource harvesting activities and those who do not (i.e., differences between consumptive and nonconsumptive groups)

Data was collected using a mail survey of a stratified random sample of residents selected from 48 different towns within the Northeast Kingdom of Vermont, and eight communities in central western Massachusetts. A nonduplicative sample frame was constructed for each Vermont community using their respective tax roles and voter registration lists; in Massachusetts, town clerks supplied lists of the resident population for each community surveyed. The sample of residents selected from each community was based on a proportional representation of the total population across the sample communities; no fewer than 20 residents were selected from any single community. An initial survey was sent to 970 Northeast Kingdom residents and 1099 Massachusetts residents from the eight communities. Eight hundred eight (887) usable questionnaires were received, 443 usable surveys were received from the Northeast Kingdom . Four hundred forty-four (444) surveys were received from Massachusetts residents.

The effective response rate for the Northeast Kingdom was 50.2%; the response rate for Massachusetts was 43.6%. A follow-up sample of 150 of the original nonrespondents (83 usable responses) was sent a reduced set of questions to check on non response bias. No statistically significant differences were found in gender, educational level, participation in hunting or fishing, or age. The Massachusetts sample was, however, significantly different in three communities regarding income. The follow-up mail survey of nonrespondents also revealed no

difference in ($p \leq 05$ on all 18 terminal values) value patterns from the initial sample of respondents

Instrumentation

The framework for empirically studying patterns of values was built on Milton Rokeach's work (1973). Rokeach (1973) maintained that values exist as hierarchical (ranked) beliefs about end-states of existence (terminal values) and preferred ways of behaving (instrumental values). Using a reduced set of 18 terminal and 18 instrumental values, individual value patterns may be discerned or aggregated to represent a value pattern of a community or community type. The reliability and validity of the Rokeach instrument have been thoroughly tested and verified (Homant 1967); value patterns and value domains have been seen to be more reliable and effective predictors of attitudes and behaviors than single values. Because terminal values have been more reflective of personal orientations (Park 1971) they were used for analysis in this study.

Rokeach Value Survey (Form D) was used to ascertain value hierarchies of individuals. Form D of the Value Survey uses gummed labels, allowing the respondent to arrange the values in a hierarchical pattern without having to physically having to write a rank next to the value. Besides the Rokeach Value Survey, each respondent also received a 45-question instrument that asked them about their harvesting activities. Using a method developed by Feather and Peay (1975), values were rescaled using normal (z) transformation to be used in analysis with both parametric and nonparametric statistical techniques. Both instruments were pretested with 28 residents across the two states; the activity/demographic questionnaire was subsequently revised and retested until a final instrument was developed.

Analysis and Findings

A Mann-Whitney μ was employed to explore the differences in values between those who engage in selected resource harvesting activities and those who don not. The results revealed a significant difference between hunters and nonhunters on 10 of the 18 terminal values (See Table 1). Hunters' mean scores on the values "Comfortable Life," "Exciting Life," "Family Security," "Freedom," and "Pleasure" were significantly lower, suggesting a higher ranking. Conversely, nonhunters had significantly higher mean rankings (lower means) on "Equality," "Inner Harmony," "Wisdom," "World at Peace," and "World of Beauty." An interpretation of these values suggests that hunters display a *personal security* orientation versus a more altruistic or *societal* value pattern of nonhunters.

Differences in value patterns between anglers and nonanglers depicted in Table 2 showed remarkably similar patterns to those of hunters and nonhunters—10 of 18 values were ranked significantly different. Value pattern differences between anglers and nonanglers only varied from the hunter versus nonhunters on the value "Mature Love" and the value "Wisdom." Value patterns were very similar. Anglers had a significantly lower mean score on the value "Mature Love" (ranked 6th compared with 11th for nonanglers), and showed no differentiation on the mean value ranking of "Wisdom." Again, the *personal security* versus *societal* value orientation emerged.

Table 1: Differences in terminal value means for hunters and nonhunters

Value	Hunters	Nonhunters	Significance (p)
Comfortable Life	8.75	10.79	<.001**
Equality	10.32	9.17	.001**
Exciting Life	11.40	12.44	.003**
Family Security	3.52	4.67	<.001**
Freedom	5.11	6.46	<.001**
Health	3.93	4.07	.412
Inner Harmony	10.43	8.32	<.001**
Mature Love	8.83	9.35	.240
National Security	11.57	12.41	.077
Pleasure	11.27	12.34	.002**
Salvation	13.12	13.19	.188
Self-Respect	7.20	6.67	.081
Accomplishment	9.56	9.36	.649
Social Recognition	14.12	14.08	.231
True Friendship	8.37	7.83	.095
Wisdom	9.37	8.44	.010**
World at Peace	10.54	9.09	<.001**
World of Beauty	13.22	11.87	<.001**

* Significant at alpha $\leq$ .025

Table 2: Differences in terminal value means for anglers and nonanglers

Value	Anglers	Nonanglers	Significance(p)
Comfortable Life	9.64	10.77	.002**
Equality	10.00	8.95	<.001**
Exciting Life	11.65	12.64	.001**
Family Security	4.04	4.69	.012**
Freedom	5.68	6.49	.005**
Health	4.19	3.91	.211
Inner Harmony	9.31	8.48	.014**
Mature Love	8.73	9.69	.005**
National Security	12.09	12.24	.845
Pleasure	11.57	12.51	.002**
Salvation	13.39	13.01	.848
Self-Respect	6.81	6.93	.388
Accomplishment	9.70	9.13	.065
Social Recognition	14.01	14.17	.911
True Friendship	7.91	8.07	.615
Wisdom	8.92	8.45	.126
World at Peace	10.35	8.64	<.001**
World of Beauty	12.59	11.87	.017**

** Significant at alpha $\leq$ .025

A further disaggregation of the data to harvesters (i.e., those who hunt or fish, or engage in both) and nonharvesters, exhibited similar patterns to those of hunters vs. nonhunters and anglers vs. nonanglers. The exception was that the value "Sense of Accomplishment" emerged as differentiating harvesters from nonharvesters, while the value "Wisdom" did not (See Table 3). Values of harvesters were differentiated from nonharvesters on 11 of the 18 Terminal Values.

An examination of the total sample, state, and hunter and angler rankings in Table 4 indicate consistent high rankings for the top three values of "Health," "Family Security," and "Freedom," and similar low rankings across groups on "Social Recognition" and "Salvation." Hunters and anglers are distinguished, however, by

their higher rankings on "A Comfortable Life," "Exciting Life," and "Pleasure," suggesting a greater concern for an enjoyment/excitement or hedonistic domain; and higher rankings on the interpersonal domain characterized by the values "Family Security" and "Mature Love."

Table 3: Terminal value differences between harvesters and nonharvesters.

Value	Harvesters	Non Harvesters	Significance(p)
Comfortable Life	9.71	10.80	.002**
Equality	9.93	9.02	.003**
Exciting Life	11.67	12.69	<.001**
Family Security	3.97	4.80	<.001**
Freedom	5.59	6.60	<.001**
Health	4.16	3.93	.378
Inner Harmony	9.26	8.45	.015**
Mature Love	8.85	9.62	.027*
National Security	12.06	12.28	
.649Pleasure	11.63	12.51	.004**
Salvation	13.36	13.01	.798
Self-Respect	6.93	6.69	.344
Accomplishment	9.76	9.06	.021**
Social Recognition	14.10	14.08	.371
True Friendship	7.91	8.03	.691
Wisdom	8.95	8.39	.066
World at Peace	10.31	8.63	<.001**
World of Beauty	12.56	11.83	0.017**

* Significant at alpha ≤ .05
** Significant at alpha ≤ .025

Table 4: Rank of terminal value means for selected samples.

Value	Total	VT	Mass.	Hunters	Anglers
Comfortable Life	12	12	12	6	9
Equality	10	11	9	10	11
Exciting Life	15	16	15	14	14
Family Security	2	2	2	1	1
Freedom	3	3	3	3	3
Health	1	1	1	2	2
Inner Harmony	7	7	6	11	8
Mature Love	8	9	8	7	6
National Security	16	13	16	15	15
Pleasure	13	15	14	13	13
Salvation	17	14	17	16	17
Self-Respect	4	4	4	4	4
Accomplishment	9	8	10	9	10
Social Recognition	18	18	18	18	18
True Friendship	5	5	5	5	5
Wisdom	6	6	7	8	7
World at Peace	11	10	11	12	12
World of Beauty	14	17	13	17	16

Discussion

The study findings showed a relatively stable pattern of the top three ranked values across regions and respondent harvest status. Personal values, however, did differentiate between those who engaged in consumptive recreational activities such as hunting and fishing and those who did not. Moreover, there was a similarity in the values that differentiated between these groups.

An examination of the value patterns revealed that respondents who were classified as consumptive recreationists (or harvesters) displayed a more personal security orientation than those who were classified as nonconsumptive recreationists. Conversely, nonconsumptive recreationists were characterized by a more societal value pattern (i.e., respondents ranked "Equality," "Inner Harmony," "Wisdom," "World at Peace," and "World of Beauty" higher in their value patterns). Of particular significance to natural resource managers is the higher ranking for the value "World of Beauty" by nonharvesters (ranked 13th by both nonanglers and nonhunters) compared with harvesters ("World of Beauty" was ranked 16th by anglers and ranked 17th by hunters). Many studies have found this value to be highly correlated with positive environmental attitudes and consistently ranked in the 13th or 14th position in value hierarchies. This present study suggests that anglers and hunters may possess different attitudes toward environmental concerns or nature and suggests further study of their attitudes toward the natural environment.

The results of this study imply that natural resource managers and policy makers should consider personal values when considering policy change, mitigating conflict, and developing or planning communication strategies for building consensus. Such knowledge of values would be important in developing ways to carry out or communicate policy change and provide an understanding of the needs and motives of conflicting groups.

Policies that threaten the core values of personal/family security and freedom, such as a reduction in property rights or perceived rights to use of resources may be met with strong resistance in these rural areas by traditional wildlife harvesters. Even more specifically, hunter and angler concerns with "Family Security" "Mature Love," "A Comfortable Life," "Exciting Life," and "Pleasure" as compared to nonhunters and nonanglers suggest that such interpersonal and apersonal factors of enjoyment/excitement could very well conflict with the more external orientation of nonutilitarian users who are concerned with equality and more global world views. An examination of these two differing core value patterns may be at the heart of differences between utilitarian and nonutilitarian groups on single issues such as animal rights or posting of land, and strongly suggest that mediation may be much more difficult than simply dealing with the single issue, because they are "core" values affecting the entire belief system.

Personal values, thus, are an important segmentation variable for distinguishing among groups or social aggregates. The idea of value systems comprising different value domains or hierarchical patterns is also important because most situations in life activate multiple values. Often these multiple values are in conflict both internally within the individual and externally between groups, requiring they be resolved by the individual's value system or between value systems of groups. The latter is a more difficult task.

Determination of values relation to specific issues or specific demographic/socioeconomic criteria remain to be explored. We are now in that process, examining the value—value orientation —attitude— behavior relationship. For managers and others wanting to assess core or deep values, a reduced set of the Rokcach, or the more parsimonious List of Values (LOV) may be

administered in a relevant setting. These require little effort or time, but can provide critical linkages between values and the choices and behavior they drive.

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PERCEIVED CONSTRAINTS ON TRAPPING AMONG TRAPPERS IN SIX NORTHEASTERN STATES

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Abstract: With the decline in trappers, this study examined the reasons trappers may quit trapping. Principle component factors resulted in five dimensions of constraints. These factors included the loss of opportunity to trap, economic constraints, personal reasons, antitrapping interference, and social conflict. Subsequent cluster analysis resulted in four types of trappers: steadfast; antitrapping; social conflict; personal constraint.

Introduction

Wildlife officials and other resource managers have joined researchers in calling for applied research that provides understanding of the sociocultural aspects of wildlife use. They emphasize the need to determine what people do and why they do it. Social scientists have made considerable strides in the understanding of why people participate in wildlife related activities such as: hunting, fishing, and activities that have nonconsumptive interactions with wildlife (e.g., wildlife viewing, camping, backpacking). Understanding of other wildlife related activities, such as trapping, have received less attention. Moreover, little research has focused on why there has been attrition in some of these traditional consumptive activities related to wildlife and the motivations associated with the cessation of these activities. The purpose of this study was to identify some social, cultural, and political (i.e., policy) constraints that influence the cessation of trapping activities.

In the United States, the number of active trappers has been estimated to have declined from 480,000 to 160,000 since the mid 1980's (Todd and Boggess 1987, Hamilton et al. 1994). Regionally, in the late 1980's, New York and Vermont experienced a threefold decrease in licensed trappers from the early 80's (Glass et al. 1991). Economic market conditions may have influenced the decline in trappers during this period, as the European demand for pelts declined. There remains, however, a core group of active northeastern United States trappers who continually engage in the activity for reasons related to recreation and social relationships (Daigle et al. 1996).

This core group of trappers has been the focus of animal rights groups who have coalesced into political organization to restrict or prohibit trapping in many states (Daigle 1996). These animal rights groups also have influenced furbearer pelt markets through their social activism. Concomitant with these organizations' influence on public policy and economic markets, is the continued industrialization and development that, in many areas, has eroded the availability of traditional trapping lands. Because of these social, economic, and opportunity constraints, the question remains to what extent these deterrents may influence this current core group of trappers to discontinue trapping.

Understanding the motives to quit trapping to wildlife managers is critical because trappers serve a useful management function for keeping furbearer and other wildlife species in check. Abundant populations exist even in face of increased human development, often resulting in human and wildlife conflicts. For example, agricultural commodities can be destroyed by wildlife; road and property damage may result from beaver damage; domestic livestock and pets may be killed; and diseases such as rabies may spread. Wildlife managers, thus, have a stake in stemming the loss of this valuable management tool - the trapper.

Methods

The purpose of this study was to explore licensed trappers' perceptions of constraints that would influence them to cease trapping, and develop a typology of trappers based on these perceptions.

The data were collected in a six-state study by researchers from the University of Massachusetts and Lyndon State College, Vermont. The sample consisted of: 1) licensed trappers of four northeastern states (Maine, Massachusetts, New York, and Vermont), 2) licensed furbearer takers in Pennsylvania, and 3) licensed trappers of the West Virginia Trapping Association. A self-administered questionnaire consisting of 165 questions was mailed to a random sample of 3936 trappers. This study focused on 17 questions related to perceived constraints that would influence trappers to cease trapping. A total of 2279 usable surveys were returned after three survey waves and a postcard reminder. This represented an effective return rate of 65% across the six states.

A principal components factor analysis was used to reduce the data to manageable dimensions. Five perceived constraint factors were extracted including the loss of opportunity to trap, economic constraints, personal reasons, antitrapping interference, and social conflict. All states appeared to have similar factors that would motivate trappers to discontinue trapping.

The factor scores from the reduced scales were then used in a nonhierarchical cluster analysis to group respondents typology. Clusters of individuals in these types can be characterized as having common reasons for discontinuing from trapping.

Results

Seventeen variables were examined with a principal components method. A total of 1921 cases were used to generate the five factor solution. The number of factors extracted for the final solution was based on the convergence of eigenvalues ($\geq$ 1.00) and a scree test. The results of the five factor Varimax rotation are shown in Table 1.

Table 1. Perceived Constraint Factors: Trapping.

Perceived Constraints	Factor 1 Loss of Opportunity	Factor 2 Economic Constraint	Factor 3 Personal	Factor 4 Anti Trapping	Factor 5 Social Conflict
Decline in furbearer (development)	0.839				
Decline in furbearer (pollution)	0.882				
Low furbearer population-over trapped	0.696				
Pelt prices too low		0.772			
Costs too much to trap		0.561			
No one to trap with			0.576		
Family/personal reasons			0.613		
Lost interest in trapping			0.573		
Avoiding conflict with antitrappers				0.687	
Possible antitrapping legislation				0.655	
Places to crowded-with trappers					0.618
Places to crowded-with other users					0.747
Adequate furbearer-areas to developed					0.688

Factor labeling was based on a minimal significant loading (≥ .550). The first factorial dimension was labeled "loss of opportunity to trap." Three of the 17 variables loaded on this factor including "decline in furbearer population due to development," "decline in furbearer population due to pollution," and "furbearer populations are too low because of over trapping." Two variables loaded significantly on the second factor. This factor reflected the economic constraints on trapping. The third factor reflected personal constraints such as declining health, no one to trap with, loss of interest. The fourth factor was an antitrapping constraint. Two of the 17 variables in the analysis loaded on this factor including "avoidance of conflict with people opposed to trapping," and "possible antitrapping legislation." The fifth factor was a social conflict/social carrying capacity dimension. Respondents in this factor said they would leave trapping because of social conflicts and crowding.

A non hierarchical cluster analysis (k-means) was then applied to the factor scores to partition trappers into groups (types). After a series of seven cluster runs from, 8 clusters to 2 clusters, a four-cluster solution was selected as optimal based on a modified scree test and interpretability of the factors. Three of the five perceived constraint factors appeared to be significant in distinguishing four types (i.e., clusters) of trappers. An examination of the factor means of the first cluster (731 cases) suggested that no single factor could be identified as interpreting the cluster. Negative means indicated that these trappers would remain steadfast in trapping despite the negative constraints. The second cluster of 441 cases had a moderately high mean associated with the fourth factorial dimension, (antitrapping pressure). This cluster was labeled as antitrapping. The 458 cases of the third cluster were defined by the social conflict/social carrying capacity factor, suggesting this cluster should be labeled as social conflict. Loss of interest and declining personal/family health of the personal constraint factor defined cluster four (291 cases). This suggests a personal constraints cluster. This typology of trappers may be used in subsequent analysis to examine if other empirical variables may be distinguished.

Implications

Natural resource management agencies face multiple constituencies in dealing with the furbearer resource. These constituents include licensed trappers (commercial and recreational; consumptive and nonconsumptive), people opposed to trapping, people affected by nuisance animals, and those who wish to view wildlife. All have needs and demands, yet those who are better organized and articulate have greater influence over public policy. In addressing the management of such furbearer resources, managers must entertain elements and meanings that elude the public eye (e.g., sustainable populations of furbearers, nuisance animal damage, disease control, loss of habitat due to development, increased costs of trapping, and social meanings of trapping). Often, however, managers have little or no empirical information about these elements and meanings that induce trappers to remain in the activity. Yet, the trappers are ultimately responsible for implementing furbearer management to maintain a sustainable population. Moreover, their license fees contribute to the operating income of agencies.

By understanding trapping constraints, management agencies can do a better job of promoting it as a management tool, and assure that it will remain as a viable opportunity in a pluralistic society.

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Planning For The Nineties

RESOURCE-BASED VOLUNTARY ORGANIZATIONS IN NEW HAMPSHIRE: PRELIMINARY INVESTIGATIONS OF BOARD MEMBERS

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Abstract: This study provides preliminary data for developing university-based educational and training programs and to help voluntary organizations in improving their effectiveness and meeting their organizational objectives. This paper reports on the perceptions, attitudes, motivations and intentions of board members toward their organization within a sampling of resource-based voluntary organizations in New Hampshire. Preliminary results show that financial and human resources are two critical issues facing this sample and are target areas for potential educational programs. Board members express a willingness to participate in educational programs, a majority prefer formats that are easily accessible or require low time commitments.

Introduction

Voluntary organizations are generally considered to make important contributions to American society. Baumgartner and Walker (1988) have estimated that over one-third of all Americans belong to voluntary organizations and that most people are involved in some voluntary activities during a lifetime. Given this widespread public involvement, developing the capacity and success of these groups becomes an important research consideration. This is particularly true in present times of state and federal government downsizing. More specifically, there is the issue of how to improve the ability of voluntary organizations to meet objectives and goals that will increase their overall contributions and positive impacts upon local communities and regions

The targets of this study are voluntary organizations in New Hampshire whose missions focus on economic development, natural resources and the environment, historical/cultural resources, recreation and community development. Specifically, the purpose of this study is to target attitudes, perceptions and behaviors of individual board members within these organizations.

The overriding goal in examining these groups is to develop a more refined picture of what role the university community can play in building effectiveness of voluntary organizations. There are two specific goals in this process. First, data from this study will provide a basis for building education programs and assistance programs that target key needs of voluntary organizations. Second, this information will provide the groundwork for building a database of voluntary organizations to guide the University of New Hampshire's (UNH) and UNH's Agriculture Experiment Station involvement.

Rationale

Voluntary organizations are an important sector to study given the contributions they make to the interests and concerns they represent. For instance, they can enhance community well-being and create a centralized establishment for common interests and concerns. In recent years, these organizations have become increasingly important components of the service sector due to the declining funds received by the public sector (Torres, Zey & McIntosh, 1991). Because of this, more research is needed to understand these groups and their goals and objectives better.

One key aspect of any organization is its leadership. An organization's leadership provides the foundation for setting and achieving goals. Boards are crucial players of an organization's leadership, and are central to both private and public sectors (Houle, 1961; Carver, 1990). Improving board effectiveness is a fundamental method for improving organizational effectiveness (Holland, 1991; Holland, Leslie & Holzhalb, 1993). Because of this, it becomes important to consider individual board member perceptions and attitudes to characterize the concerns better, issues and personal reasons for membership. On a more aggregate level, this can be used to examine commonalties between board members in different organizations to provide a basis for building effectiveness and potential partnerships. Specifically, the questions addressed in this paper include:

- What are some of the most common organizational activities of the sample of organizations, and what activities are perceived as the most effectively accomplished?
- What are some of the most important issues and concerns facing board members?
- Why do board members belong to the organization?
- What are the most important barriers to group problem solving?
- Are board members willing to participate in board education programs?
- If so, what topics and educational formats are most popular?
- What other potential affiliations exist?

Methods

In the fall of 1995, more than 700 resource-based voluntary organizations were identified and invited to participate in the study. Organizations consisted of those related to economic development, community resources, historical/ cultural resources, recreation and the environment. This list was derived from a 1991 State of New Hampshire (State Department) publication of voluntary organizations. This resource contains approximately 3000 organizations in all, with names and addresses of each registered group in the state.

An introductory letter was sent to the board president or each selected group, describing the purpose and main objectives of the study. A postage-paid postcard was included with the letter to provide an opportunity to participate. The post card consisted of questions concerning participation, the number of questionnaires needed and the date of the next board meeting. This process was intended to single out organizations interested in taking part. Based upon this, questionnaires have been mailed to board members from 120 organizations. As of May 1996, response consisted of 281 questionnaires representing 89 organizations.

Questionnaire Design

The survey instrument itself is seven pages, containing nine different components. These include sections on activities and effectiveness, issues and concerns, reasons for membership, community and state priorities, barriers to group problem solving, education/training needs and educational formats, organizational affiliations, general opinions toward New Hampshire industries and demographic characteristics. Listed below are detailed descriptions of each component examined in this paper.

Activities and Effectiveness contain a list of 23 variables (potential activities) addressed both as to level of activity and level of effectiveness. Level of activity is on a scale of 1 to 5, ranging from *Not an Issue* (in the state) to *Very Active*. Level of effectiveness is on a scale of 1 to 4, ranging from *Not Effective* to *Very Effective*.

Issues and Concerns provide a mechanism to better understand board member perceptions and attitudes. This section contains a list of 19 variables on a scale of 1 to 5 ranging from *Strongly Disagree* to *Strongly Agree*. Variables range from organization-specific statements, such as contributions of new members, to general issues such as contributions from tourism to the state. An open-ended section also is asking the top three issues and concerns facing their organization.

Reasons for Membership provide context to various reasons for membership, and provide a better understanding of how members are driven to their leadership position. This section contains a list of 22 variables on a scale of 1 to 5 ranging from *Not a Reason* to *Extremely Important*. Potential reasons include personal gains and social opportunities to more altruistic measures such as contributing skills as part of their civic duty.

Barriers to Group Problem Solving characterize why organizations are not as effective as possible. This section includes 14 variables on a scale from 1 to 5, ranging from *Not a Reason* to *Extremely Important*. Potential reasons include organizational problems such as financial resources to interpersonal issues such as biases and prejudice.

Education/Training Needs and Educational Formats has two distinct question areas. The first deals with educational and training needs and demand, and the second deals with potential educational formats. The purpose is to understand past experience and willingness to participate better. The education and training needs section asks both the number and type of past educational sessions and asks both the willingness to attend an educational session and what types of educational needs are most needed. The second section deals with potential educational formats. This is characterized through a list of 16 variables on a scale of 1 to 4 ranging from *No, Probably No, Probably Yes* and *Yes*. Statements range from low to high time commitments (i.e., pamphlets, credit courses at the university).

Organizational Affiliations provides an initial look at what other groups or organizations board members belong to or support (within the last 12 months). This section is open-ended with a yes/no response for whether their affiliations are as a leader, active member or inactive member/contributor.

Demographic Characteristics includes general questions to characterize each individual respondent better. Examples include who or what they represent as a board member, years with organization/as a leader, education and time spent each month on duties relating to board functions.

Results

The following represents a summary of the major findings of the project. On average respondents are 53 years old with approximately 55 percent being male, 45 percent female. The group is well educated with approximately 69 percent having at least a Bachelors degree (B.A. or B.S.). Board members tend to represent their own interests (65 percent) rather than that of a government agency or business, and spend a median time of 5 hours per month on board-related duties.

Level of Activity / Level of Effectiveness

This section provides a glimpse into the most popular and most effectively executed activities within this set of organizations. As for level of activity, the most common topics/activities listed as 'most active' include protection of natural resources, promoting the community's historic character' and 'educational programs for membership'. Activities within the 'active' category include image of the organization or association, educational programs for membership and recruitment of new members. Activities listed as 'somewhat active' include image of community/state to outsiders and again, recruitment of new members, making this an important component of most organizations. Those activities considered as 'not active' include improving relationships with financial institutions, development of retirement communities and capital improvement planning. Beyond these indications of organizational activity level, several topics were listed as 'not a topic' of concern in New Hampshire. The top three 'not a topic' responses include transportation issues, development of retirement communities and minimizing regulations on the business community.

Table 1 below, summarizes these responses by percentage response in each category. This component highlights the importance of maintaining the organization through membership retention, improvements and recruitment. The least important topics include those that are somewhat more focused on an issue area, such as transportation or retirement.

The level of effectiveness, based upon the same list of activities is also measured in the questionnaire. Table 2, below, summarizes the level of perceived organizational effectiveness by four categories of very effective, effective, somewhat effective and not effective. Overall, promoting the community's historic character, open space protection and educational programs for membership

are considered most effectively undertaken according to those who responded. The least effective topics include transportation, retirement issues and minimizing regulations. Some moderately to effective issues include image of the community/state to outsiders, improving relationships within the business community and industry recruitment, expansion or retention.

Table 1. Level of organizational activity.

Level of Activity	
"Very Active "	
Protection of natural resources	(27.4%)
Educational programs for membership	(26.9%)
Promoting the community's historic character	(23.6%)
"Active"	
Image of organization or association	(46.8%)
Recruitment of new members	(40.2%)
Educational programs for membership	(35.2%)
"Somewhat Active"	
Image of community/state to outsiders	(33.8%)
Improving relationships within the business community	(32.7%)
Recruitment of new members	(31.0%)
"Not Active"	
Development of retirement communities	(30.5%)
Improving relationships with financial institutions	(27.2%)
Capital improvement planning	(25.2%)
"Not a Topic"	
Development of retirement communities	(60.2%)
Minimizing regulations on business community	(50.8%)
Transportation issues	(45.1%)

Table 2. Level of perceived effectiveness.

Level of Effectiveness	
"Very Effective"	
Open space protections	(21.8%)
Educational programs for membership	(21.1%)
Promoting the community's historic character	(21.1%)
"Effective"	
Image of organization or association	(48.4%)
Image of community/state to outsiders	(41.7%)
Educational programs for membership	(40.2%)
"Somewhat Effective"	
Improving relationships within business community	(46.9%)
Industry recruitment, expansion or retention	(46.7%)
Image of community/state to outsiders	(46.6%)
"Not Effective"	
Development of retirement communities	(69.5%)
Minimizing regulations on business community	(40.2%)
Transportation issues	(37.3%)

The total number of responses (N) for each variable in this section varies according to organization, resulting in widely varying total response to each topic. Therefore, the resulting level of effectiveness for each variable is weighted by the sample. For instance, since many respondents are members of historical or cultural organizations, the percentage who listed 'promoting the community's historic character' is relatively high. Moreover, other organizations, such as those that are environmentally or business related, are not active in historical related activities, thus leaving the corresponding level of effectiveness blank. Beyond this, if a board member says that the issue is 'not a topic' in the activities section, they ,subsequently, are not included in the effectiveness analysis. For example, 'transportation issues' and 'development of retirement communities' both have a high frequency of responses in this 'not a topic' category. Because of this, there is a correspondingly low total (N) in the effectiveness section for both variables.

Overall, there is a great deal of overlap between level of activity and level of effectiveness throughout the list of 23 variables. Based upon responses from Table 1 and Table 2, the least important activities correspond closely with the least effective activities. Likewise there are some similarities between the more important activities and more effective activities. Image of both the organization and community and educational programs are high on both lists. One notable difference is in recruitment of new members. Approximately 60 percent are active or very active in recruitment, however only 43 percent consider their organizations effective or very effective in this endeavor.

General Issues and Concerns

Answers to issues and concerns provide a framework from which to characterize respondents better. Those answers relating to each respondent's particular organization can provide a better understanding of their perceptions and attitudes relating to service as a board member. Some key issues contained within this section include the following:

- 67.5% of respondents agree that their organization should form partnerships with other organizations
- 97.1% plan to remain as a member of the organization next year
- 86.7% plan to remain in a leadership position
- 10.5% believe their organization is *not* very effective compared with other organizations

These figures suggest that respondents have a positive opinion toward their respective organization and commit to maintaining their membership, and most likely their leadership position.

The top three critical issues or "most important challenges" facing the organization deal largely with human and financial resources. Money (lack of) and membership concerns (both quality and quantity of members) are the most widely listed organizational concerns. A third subject area, educational programs for the public, is also of concern, though to a much lesser extent than money or membership.

Reasons for Membership

This section details potential reasons for membership, particularly their reasons for service on the board. Table 3 provides a breakdown of the top three responses in the aggregated categories of extremely/very important, not a reason and finally, somewhat / moderately important. Overall, the rationale behind membership is highlighted by what the individual can contribute or give back to the organization / community rather than what benefits accrue through membership. Beyond this altruistic basis, social benefits (i.e., building friendships or acquaintances) are moderately important and should be considered as part of the total explanation behind membership. Based upon this study, factors surrounding personal or financial gains and pressure from outside forces (family or friends) appear as rather unimportant to the overall picture.

Table 3. Perceptions toward reasons for membership.

Reasons for Membership	
"Very or Extremely Important"	
To support this organization's efforts	(84.7%)
To contribute skills to the board	(55.8%)
To encourage long-range planning	(49.5%)
"Somewhat or Moderately Important"	
To meet new people	(55.9%)
To enjoy the social opportunities	(55.2%)
To get acquainted with people	(54.0%)
"Not a Reason"	
To improve the profitability of my business	(76.0%)
To satisfy family or friends	(68.5%)
To enjoy local recognition and prestige	(66.3%)

Barriers to Group Problem Solving

This component centers around identifying key problem areas faced within an organization and its leadership. The purpose in this is to define potential educational and training programs better. Listed in Table 4 is a record of problem areas divided by importance. Lack of financial and human resources is by far the most important issue listed by respondents with lack of group participation and lack of strategy both a distant second. The least important factors involve interpersonal conflicts such as biases, sexism and prejudice and domination by one person or faction. Moderately important factors include lack of knowledge and procedural problems such as solving the problem before understanding of the issue.

Education and Training Needs

One of the clearest indicators of interest is in the responses to education and training needs. Less than 37 percent of respondents have had any formal education or training relating to their responsibilities as a member of the board in the last three years. However, almost 80 percent are willing to attend a training session that would help with their work for the board (see Figure 1). The most popular or called-for subject is in fundraising or grant writing. Similar to prior statements discussed in issue/concerns and barriers to problem solving, financial resources are again in the forefront as central problems/issue areas.

Table 4. Perceptions of barriers to group problem solving.

Barriers to Group Problem Solving	
"Very or Extremely Important"	
Lack of Resources (financial/ human)	(42.6%)
Lack of Group Participation	(23.3%)
Lack of a strategy for Problem solving	(20.7%)
"Somewhat or Moderately Important"	
Tendency to focus on solution before defining problem	(54.2%)
Unrealistic expectations of the process	(53.4%)
An inadequate knowledge of issues	(52.3%)
"Not a Reason"	
Existence of biases, sexism, prejudice	(78%)
Lack of trust among group members	(73.3%)
Dominance of group by one person/faction	(52%)

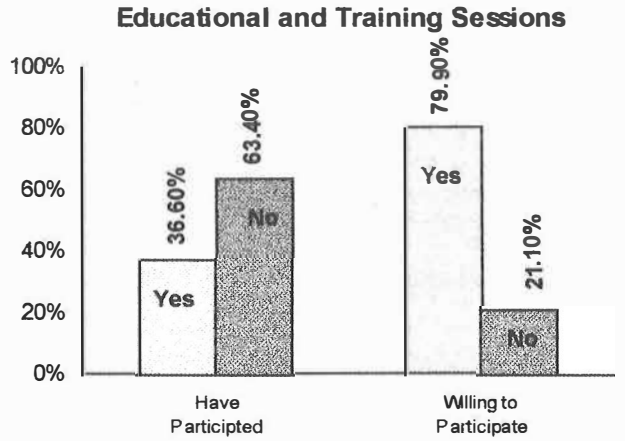


Figure 1. Past participation and willingness to use education or training sessions relating to responsibilities as a board member.

Educational Formats

Beyond the willingness to participate in education or training is the need to understand what types of formats are most likely to be attended or supported. Overall, the most popular educational types are those that do not take much personal time or effort. Pamphlets/books, videos and guest lectures are the most well-received choices. Among the least popular choices are multiple day workshops and university courses (See Table 5). Given this trend, training initiatives should consider limited willingness (e.g., time limitations) when developing programs or materials.

Affiliations

This section provides an initial look at the number and type of each respondent's other organizational affiliations. In a preliminary examination, 230 of 281 respondents listed at least one other group affiliation. Typical organizational types listed include service organizations / charities, town level organizations, schools or youth groups, natural resource organizations and churches. This information is important because it indicates that members are a part of other organizations and provides a potential basis for partnership building and collaboration.

Table 5. Willingness to use/participate in different educational formats.

Educational Formats	
"Yes or Probably Yes"	
Guest expert/lecture	(89.9%)
10 minute video for use at a meeting	(87.3%)
Pamphlets/Books	(83.7%)
30 minute video for home use	(82.3%)
"No or Probably No"	
Credit course at university	(79.2%)
Multiple evening sessions	(70.5%)
Multiple day workshop - weekend	(66.5%)
Night classes at the university	(66.2%)

General Considerations

This study is an initial attempt to reach voluntary organizations within the state. The general goal is to create a clearer picture of how the university can play a role in building educational and training programs to address their major needs. The questionnaire design provides a mechanism to identify and measure these needs. In implementation it becomes clear that voluntary organizations are a somewhat difficult group to reach. The purpose of the initial mailing was to identify interested groups; presumably those who would be most willing to use educational programs. However, even in singling out those who took the initiative to indicate a willingness to participate, there is still a low level of response among board members.

Clearly, board members are a busy group that already volunteer time and effort for the good of the organization. Low responses can partially be attributed to lack of time or the inability to effectively explain the purpose and usefulness of the research. However based upon the responses received, a number of generalities can be formed.

- Overall, majority are willing to receive training relating to their service on the board
- However, this majority still does not want to spend much time in the educational process
- Some general educational needs appear common throughout organizations. These include lack of resources and membership participation and recruitment.
- Universities could address this limitation by focusing on the following topics in producing educational material: Fundraising / Grant writing; Recruiting members; Improving participation of current membership; and Developing strategies for problem solving and goal setting.

Further Research

One research need is in developing a better understanding of current organizational-based affiliations or partnerships. Specifically, questions might center around types of organizations and the benefits from collaboration. The goal is to broaden the depth of knowledge concerning shared needs and resources.

Another avenue to explore is in the differences and similarities between types of organizations. For instance, do different types of groups, such as economic development organizations and environmental organizations, have similar issues and problems or are there any distinct issues that tend to center around different organization types. This type of information is useful in more clearly defining what types of educational programs and/or collaboration efforts are best suited for different organizations.

Finally, work can be done to examine the attitude/behavior consistency between willingness to participate in educational programs and willingness to use various types of educational formats. A majority of board members have indicated that they are willing to participate in some educational programs. However, it is an important to understand how statements of willingness translate into actual intentions to participate in educational programs as part of a board member's function to become more effective. This type of information will provide a basis for exploring the link between individual attitudes or motivations and behavioral intentions toward improving organizational effectiveness.

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A SOCIAL SCIENCE RESEARCH PLANNING PROCESS FOR NEW HAMPSHIRE'S COASTAL ZONE: A WORKING PAPER

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Abstract: This paper reports the results from the application of the social science research planning process to the New Hampshire Coastal Zone (NHCZ). The paper identifies, lists and prioritizes critical coastal management issues and social science research needs associated with these issues and the development of the NHCZ.

Introduction

Coastal and tidal waters are important to New Hampshire. These waters and the lands adjacent to these waters, include some of the state's most valuable assets (e.g., important agricultural soils, woodlands, fish and wildlife habitats, tidal marshes, natural areas, urban waterfronts, historic sites, transportation rights-of-way, economic development projects, housing sites, tourist attractions and recreation areas). Management of New Hampshire's valuable coastal resources takes place in an environment of continuous social and ecological change. These changes have posed a number of challenges to the productivity and integrity of the coastal system and processes. A vast majority of these challenges facing the coastal system originate directly or indirectly from human activity.

Coastal resource managers, policy makers, planners and interest groups have responded to the challenges facing coastal and estuarine systems by sponsoring a systematic program of scientific research. This research program has identified and classified the biophysical components of coastal systems, which in turn, has provided a better understanding of the geologic, hydrologic, biological, and ecological processes associated with coastal systems. Similar efforts, however, have not been devoted to sponsoring an organized program of social science research that allows for an understanding of the various social, cultural, and political components of coastal and estuarine systems and their relationships to coastal processes, resources and economic development policies. In response to this information void, the University of New Hampshire's Department of Resource Economics and Development, with grant support from the University of Maine and New Hampshire Sea Grant College program, completed a preliminary Social Science Research Plan for New Hampshire's Coastal Zone.

Social Science Research Plan: Defined

A Social Science Research Plan (SSRP) is an organized, written strategy for acquiring social science information that will assist in the optimal management of coastal and estuarine resources. To be useful, social science must be organized in advance to meet the needs of managers, planners and decision makers (Machlis and Krumpe, 1984). A well-planned program of applied social science can assist decision makers, managers and researchers in identifying and resolving many of the challenges facing the NHCZ. This research can be defined as research concerned with the management of the human actions and interactions within the context of a specific natural resource setting (Parker, et. al., 1992).

Rationale

Natural resource management has been defined as the interactions between human populations, socio-political organizations, culture, and the biophysical environment (Field, 1987). In recent years, social science research has made significant advancements as an applied discipline relevant to the management of natural resource systems. This has occurred because biologists, ecologists, and hydrologists have increasingly grasped a harsh disciplinary reality: solutions to biological and environmental problems lie in social, cultural and economic systems (Machlis, 1992). In other words, technical solutions to many biological and environmental problems within coastal and estuarine systems are available; but social, cultural and economic obstacles impede their implementation.

The Social Science Research Plan can serve as an advisory document to insure that high priority research is given attention. A planned program of applied social science research can help guarantee that the right information is available at the right time. The resources available for social science research are too scarce and precious to be used in an unplanned way. Staff time, social science expertise, cooperation with other agencies, funds and facilities must be carefully managed throughout the coastal zone. A Social Science Research Plan (SSRP) will minimize costs, increase effectiveness, and assure that results are useful in serving management and policy needs (Machlis, 1991).

Overview of The SSRP

The Social Science Research Plan will:

- Identify agencies and organizations within the New Hampshire Coastal Zone (NHCZ) that are potential sponsors and/or users of social science research;
- Review existing social science research completed by the agencies and organizations responsible for the management and/or development of the NHCZ, to include a section that summarizes the findings by population studied, identifies works in progress, and examines the strengths and weaknesses of the social science research;
- Identify and prioritize the critical coastal management issues and social science research needs associated with these issues and the development of the NHCZ.

Limitations of The Plan

The plan presented in this working paper considered social science as those academic disciplines that apply the scientific method to social issues. Social science from this perspective includes economics, sociology, anthropology, geography, psychology, human ecology, community development, recreation management, tourism, and forest management, among others.

This working paper did not attempt to identify the social science research needs associated with New Hampshire's marine fishery resources, only those social science research needs associated with management and development of coastal resources were considered. This plan should be considered as an advisory document and should not preclude the completion of a more comprehensive Social Science Research Plan for the NHCZ.

Description of the New Hampshire Coastal Zone

New Hampshire's Coastal Zone includes three distinct areas: the Atlantic seacoast (i.e., 18 miles of white, sandy beach and rocky shores), Portsmouth Harbor and Piscataqua River (i.e., New Hampshire's only ocean port terminal), and the tidal rivers and estuaries. The Coastal zone also includes the Great Bay Estuary and the Hampton Seabrook Estuary. The Great Bay Estuary was designated as a National Estuarine Research Reserve by the U.S. Department of Commerce in 1989. The Reserve consists of 4,471 acres of tidal waters and mudflats and approximately 48 miles of shoreline (includes the Great Bay National Wildlife Refuge). The Hampton Seabrook Estuary contains approximately 6,600 acres of tidal wetlands and the largest expanse of saltmarsh in New Hampshire's Coastal Zone.

Agencies and Organizations

There are more than 130 agencies and organizations that are involved with or responsible for planning for the use and protection of the market and nonmarket values of New Hampshire's coastal resources (see Figure 1.).

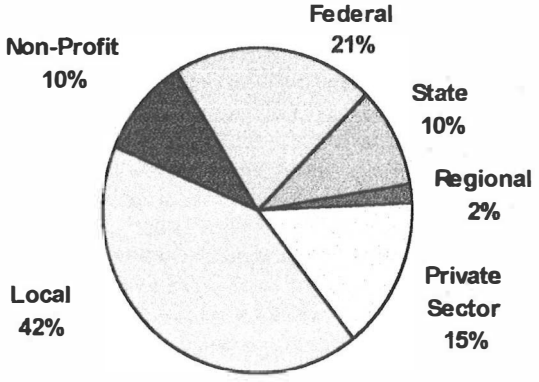


Figure 1: Organizations with responsibility for the management and/or development for the NHCZ.

These organizations, agencies, groups and individuals plan for and take actions directed toward the enhancement, development and protection of coastal resources.

Agency and Interest Group Involvement

This section will identify and provide examples of some of the agencies/organizations active in the coastal zone at each of the following levels: federal, state, and local governments, regional organizations, private sector industries, and nonprofit environmental and economic development groups.

- **Federal Government**. At the federal level, there are more than forty-three departments, agencies and programs that have management or policy responsibilities. Those most active in the NHCZ include the National Oceanic and Atmospheric Administration; the U.S. Environmental Protection Agency (USEPA); the U.S. Army Corps of Engineers; the Federal Emergency Management Agency; Department of Defense (Portsmouth Naval Shipyard), the Department of Transportation (U.S. Coast Guard), the Department of Energy, and U.S. Fish and Wildlife Service (Great Bay National Wildlife Refuge).

- **State Government**. At the state level, there are more than twenty departments, divisions, or programs responsible for the management and/or development of the NHCZ. Those most actively involved include the New Hampshire Coastal Program, the Division of Parks and Recreation, the Department of Fish and Wildlife Resources, the Water Supply and Pollution Control Division, the Wetlands Bureau, the Sea Coast Science Center, and UNH's Jackson Lab and Cooperative Extension.

- **Local Government**. At the local level there are more than eighty-five governmental organizations that are responsible for making decisions that affect the NHCZ. There are seventeen communities that include a portion of the NHCZ within their administrative boundaries. Each community has a number of local government agencies, such as the Boards of Selectmen, Mayors and Town Councils, Planning Boards and Departments, and Conservation Commissions. Boards of Selectman are responsible for the management and administration of local community budgets and town services, facilities and properties; planning boards or departments are responsible for developing and administering land use regulations and the master planning process; and conservation boards make recommendations to planning boards and municipal governments on issues associated with the management, development, and preservation of coastal resources.

- **Regional Organizations**. There are at least four regional organizations responsible for planning for the management and development of New Hampshire's Coastal Resources. Those agencies most active in the NHCZ are the Strafford Regional Planning Commission, Rockingham Planning Commission, Strafford County Conservation District, and Rockingham County Conservation District.

- **Non-Profits**. There are more than twenty nonprofit organizations with interest in various facets of coastal resource management within the NHCZ. Those organizations most active in the coastal zone include the Audubon Society of New Hampshire; New Hampshire Association of Conservation Commissions; the Nature Conservancy; Friends of Odiorne Point; Friends of Wentworth By the Sea; Portsmouth Advocates; the New Hampshire Municipal Association; Great Bay Estuarine System and Conservation Trust; Lamprey River Watershed Association; Society for the Protection of New Hampshire Forests; Nature Conservancy; and New Hampshire Trust for Public Lands.

- **Private Sector**. Many different businesses have a vested interest in the social and natural resources of the NHCZ. These business include the Business and Industry Association; New

Hampshire Charterboat Operators; Isle of the Shoals Steamship Company; Sea Coast Council for Tourism; Public Service of New Hampshire; Sprague Energy; Granite State Minerals; Portsmouth; and Hampton Beach Chamber of Commerce. These businesses and professional associations function under a wide variety of mandates dependent upon the focus of the specific industry involved and their link to coastal resources.

Review of Existing Research

This section reviews the existing social science research relevant to the NHCZ. The scope of the review is limited to available social science reports, planning documents and articles the deal directly with management, development and planning activities within the NHCZ.

Methods Used to Conduct Review

A systematic search was made to locate existing research reports within the coastal zone to include those related to the human dimensions of natural and social systems. The scope of the review was limited to available social science reports and articles that deal directly with New Hampshire's coastal and estuarine system. A systematic review of reports held at the New Hampshire Office of State Planning (Coastal Program), the Regional Planning Commissions (Strafford and Rockingham), New Hampshire Division of Parks and Recreation and the New Hampshire Fish and Game Department was completed. Bibliographies of the identified reports were searched for related material as well as Annual Agency Reports. Finally, contact was made with representatives of a selection of local and national not-for-profit organizations, local/regional planning and economic development organizations, state and federal agencies, and others to find out if they had knowledge of additional social science research projects or publications.

- **Existing Research**. A total of 35 social science reports were identified in the review. The earliest report identified was published in 1980. Of the 35 reports, 24 have been published since 1990. Thirty-five different organizations provided support for the social science research projects identified. Local municipalities and regional planning commissions supported fourteen of the research projects identified, Maine/New Hampshire Sea Grant supported seven and the New Hampshire Coastal Program was the primary sponsor of four of the research projects.

- **Research Methods.** Several research methods have been employed within the coastal zone. Figure 2 shows the methodology utilized in the social science research projects identified in the literature review.

A majority of studies identified employed the use of questionnaires. A plurality of these studies utilized telephone surveys or mail questionnaires. Response rates to the studies varied from 4% to 74% (e.g., a community study distributed 3,432 questionnaires by mail and 152 completed questionnaires were returned).

The quality of the research design of the studies varied considerably. The telephone surveys, for the most part, used state-of-the-art telephone interviewing systems that produce very reliable results. However, in one case, the data collected from a random telephone survey were combined with questionnaires collected from a self-selected sample (i.e., the questionnaire was published in a local newspaper). Other techniques included focus groups or brainstorming sessions with people knowledgeable about specific coastal issues and analysis of local economic and census data.

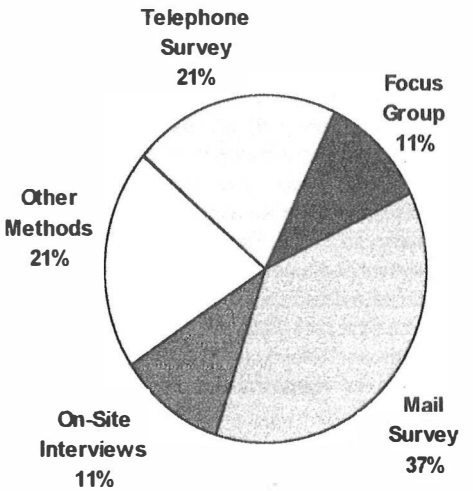


Figure 2: Research methods used to collect social science data within the NHCZ.

- **Strengths and Weaknesses of the Research**. The available social science research relevant to the NHCZ reflects the lack of prior research planning. Many different user groups have been studied, others ignored, and the data have not always been useful in serving the management needs of the NHCZ. One strength is the many different agencies and organizations who have sponsored social science research in the coastal zone--this shows that a number of agencies and organizations value social science research enough to provide fiscal and administrative support for these research efforts. Another strength is the diversity of the social science research--it provides a baseline information that can be used to monitor changes in uses and developmental preferences of the NHCZ.

The concentration of studies of coastal communities is both a strength and weakness. The results from the coastal community studies suggest some general trends, and data have value for the community planning process and for targeting education programs. A major limitation of these research projects is that most of the questionnaires had only a few questions with relevance to the coastal system. Likewise, the data were collected using different methods, at different times, and using different questions and measures. This problem prevents the comparison of management and coastal developmental preferences across the communities and does not allow the results of these studies to be generalizable to the population of the NHCZ.

There are a number of voids in the social science literature. Most noticeable is the lack of data on participation rates and trends in various recreation activities within the coastal zone for residents

of coastal communities and the State of New Hampshire. The literature also lacks economic impact data for a variety of user groups. Vaske and Donnelly (1992) and the Donnelly and others (1992) studies of recreation and commercial fishermen are an excellent starting point, but similar studies should be completed for bird watchers, pleasure boaters, excursionists, and visitors to specific attractions, to name a few.

Finally, there have not been any studies that document the many interdependencies between the protection of coastal resources and the economic benefits derived from those resources. In summary, the social science research completed within the coastal zone was not completed in a systematic fashion and there is a need for more diversity in the units of analysis that are examined.

Critical Issues and Social Science Research Needs

The critical issues and specific social science research projects were identified through personal interviews with individuals with responsibility for the management and/or development of the coastal resources. A total of twenty-two interviews were completed with a broad cross-section of agencies and organizations, to include representatives from New Hampshire Division of Parks and Recreation, Sea Coast Science Center, New Hampshire Audubon, Strafford Regional Planning, Rockingham Regional Planning, US Fish and Wildlife Service, New Hampshire Department of Environmental Services, Office of State Planning, New Hampshire Coastal Program, Hampton Beach Chamber of Commerce, Sea Coast Council on Tourism, Portsmouth Advocates, and others.

Critical Issues

The literature review and interviews with agency staff allowed for the identification of a number of critical issues facing the management and/or development of the NHCZ. Each of the key informants was asked to respond to the following question: "What are the most important issues facing the management of the NHCZ?". This section includes a brief summary of some of the issues identified by the key informants.

Aquaculture: A lack of a comprehensive state policy that guides or controls the development of shell or finfish aquaculture within the New Hampshire tidal areas. State policy toward marine aquaculture is most often a haphazard response to external demands and is primarily reactive. Aquaculture also represents a threat to water quality and the aesthetics of tidal and coastal areas.

Coordination: There are scores of agencies, departments, organizations, divisions and other forms of bureaucracy with regulatory authority over the NHCZ. Lack of coordination and communication between various units and levels of government that have some degree of control over coastal resources and land uses represents a serious threat to the planning and management of the NHCZ. For example, local and regional plans are not completed in conjunction with the management plans for state park areas in the coastal zone.

Economic Development: Use and over development within the coastal zone. Need for an integrated plan that guides coastal development. There are many competing uses that are never addressed in the planning process. For example, residential developments out-compete more legitimate and traditional uses of the NHCZ.

Education: Environmental conservation and economic development require an understanding of coastal systems and processes. An integrated regional environmental plan must include research and an education/information component that build public awareness and promotes environmental behavior for residents and visitors to the NHCZ. Education must be improved at all levels and for all relevant populations in order to produce a more informed citizenry that can responsibly address environmental problems. Initiatives should enhance environmental awareness and education, as well as to promote waste reduction and the development of environmentally sound industries. There is also a need for an education initiative directed at planners, resource managers and policy makers that facilitates an understanding of the role of social science research in natural resource planning policy and management.

Habitat Conservation: As development of New Hampshire coastal areas continues, habitat loss and fragmentation remain significant problems. Land acquisition and easements by local conservation commissions and nonprofit organizations are important strategies for preserving coastal habitat. There is also a growing recognition of the importance of preserving linkages and corridors between protected lands.

Non-Point Pollution: Runoff from streets, roads and other impervious surfaces pose a serious threat to the quality of coastal waters. Other sources of nonpoint pollution in the NHCZ include leachate from septic systems and sediment runoff from construction sites. There is a need to enlist public support for nonpoint source pollution control measures (i.e., shoreline forest buffers).

Recreation: Coastal growth and development threaten the quality of recreational opportunities and access to coastal resources. Conflict between recreation users groups and other users of coastal resources encompasses a wide variety of resource allocation decisions (i.e., recreational and commercial fishermen, shipping and recreational boaters, etc.). Resource management programs and practices have impacts on the quality of the recreation experience at coastal parks and recreation areas (i.e., trash collection policy, fee structure, etc.). Conflict between participants in various recreation activities is also a concern (i.e., surfers and swimmers, fishermen and pleasure boaters, etc.). Resource managers and planners need to understand the diversity of persons visiting and using New Hampshire's coastal resources, the different needs and goals they are pursuing, the things they need from the resource in order to attain those goals, and the consequences of people interacting with others who have different agendas.

Regulations: Protecting the character and quality of coastal communities in an important issue in the coastal zone. A number of localities have sought to protect community character and the associated coastal resources with design/review standards and regulations. Issues associated with these topics deal with basic property rights as well as techniques with which to regulate the impacts of development (i.e., permitting process, zoning, etc.).

Transportation: Traffic congestion and poor air quality are serious problems within the NHCZ. Both of these problems can be directly attributed to the over-dependence on single passenger vehicles. There is a need for a public transportation network that links various components of the coastal zone. Respondents identified the importance of considering the feasibility of creating a water link between the Sea Coast Science Center and downtown Portsmouth; a bus or trolley that travels the entire length of Route 1a; and the development of a comprehensive trail system that links communities, schools, stores, attractions, beaches and parks.

Tourism: A regional organization with responsibility for the planning, development, and coordination of tourism within the NHCZ does not exist. A regional perspective is essential if tourism is to be developed to maximize its benefits and minimize its costs. Most coastal communities cannot afford tourism planning and development specialists, and lack basic information, and know-how to manage and control tourism development. Many local community leaders do not perceive tourism as economic development, nor do they recognize the importance of environmental protection to the tourism industry. Some local people do not want others visiting their areas. Public access to, and use of, Great Bay Wildlife Refuge is limited. A strong effort to develop the potential of the Refuge as a destination for ecotourism should be investigated.

Wetlands and Coastal Resource Lands: Loss of coastal wetlands has been a significant problem in the NHCZ. Loss of coastal and tidal wetlands have slowed considerably with the policy guidelines that mandate the "maximum degree of protection and preservation of our natural environment" (RSA 483-A:1-b). However, there are a number of initiatives being made at the national level to redefine what legally constitutes a wetland, thus reducing substantially the area over which federal permit control would exist (Beatley, et. al., 1994). While large scale coastal wetland loss is now uncommon there remains a problem of incremental and piecemeal losses and the concern that the "wetland resource base is slowly being nickeled and dimed to death" (Reid and Miller, 1989).

Each of the issues identified have substantial social components. In order to make informed, technically-sound decisions on coastal zone management issues, managers and policy makers must understand the social and economic issues as well as the natural processes involved. It is critically important to develop and maintain an adequate data base on the social and economic aspects of coastal zone management. A strong commitment to the social component of coastal resource management will serve to identify emerging problems, help develop appropriate watershed management strategies, assess the applicability in New Hampshire of management strategies developed in other states, monitor the effectiveness of education/ outreach programs, and conduct long-term trend analysis. The next section will highlight some specific social science research needs.

Social Science Research Needs

Each of the key informants were asked to respond to the following question: "What are some specific social science research projects that will assist management in identifying solutions to the problems facing the NHCZ?" Table 1 presents a summary of these topics and some specific research questions that were identified. These topics were organized into eight groups that best reflected their content.

Table 1. Research Questions identified in the key informant interviews.

Transition Impacts. What are the impacts of shortages in fishery stocks and the expansion of tourism, recreation and retirement industries on the current residents of coastal communities and local governments?
Attitudes and Awareness. What are the attitudes toward and awareness of a variety of water quality problems and land use issues for a broad representative sample of the public living within the watershed of the Estuarine System?
Threats. What are the perceived threats to the scenic, natural, and cultural resources in the NHCZ from the perspective of resource managers and administrators?
Impacts of Tourism. What are the expenditure, employment and tax impacts of tourism within the NHCZ?
Land Acquisition. What information and research will assist in the development of a land classification system necessary to guide land acquisition programs within the NHCZ?
User Conflicts. What conflicts exist between different user groups? What factors are responsible for generating these conflicts? How can these factors be controlled?
Recreation Behavior. To what extent do New Hampshire residents utilize the coastal zone for recreation? How do they use the coastal resources? How much is the public willing to pay for coastal recreation? resource protection?
Cooperation. How are the various governments cooperating on issues affecting the management of coastal resources and planning for economic development? How can this be improved?

Summary Remarks:

This working paper is a preliminary attempt to identify and organize the social science research needs of planners, managers and policy makers with responsibility for the management and development of the NHCZ. The actual contribution that social science can make to the management and development of New Hampshire's coastal resources will depend upon on the willingness of resource managers, decision makers and other scientists to involve social scientists in cooperative management and research programs. It will also depend on the ability of the social science community to contribute valid information in a timely manner in a useable format to the potential users of this social science research (Machlis, 1992).

The conceptual strengths of the social science research planning process should be attributed to the insights and the vision of Dr. Gary Machlis (Sociology Project Leader at the Cooperative Parks Study Unit of the National Park Service at the University of Idaho). Any problems associated with the application of the social science research planning process to the NHCZ should be attributed to the author.

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URBAN GREENWAY PLANNING: TANNERY BROOK, HOLYOKE, MA

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Abstract: The purpose of this study is the development of a greenway corridor plan for Tannery Brook in Holyoke, Massachusetts. The steps in the greenway planning process for an urban corridor are presented. The objectives of the study are to design a greenway plan for the upper reaches of Tannery Brook that will: 1) provide the residents of Holyoke and the surrounding communities with passive recreational opportunities, 2) protect the remaining natural riparian corridor from further development, and 3) link the greenway with the Holyoke Community College hiking trails which are, in turn, linked to the Metacomet and Manadnock Trail systems.

Introduction

Due to the scarcity of open land and the increased degradation of the natural environment in urban areas, it has become increasingly difficult to develop greenway corridors that offer recreational opportunities for city residents. With escalating pressures to develop land especially along waterways in order to maintain fiscal stability, many watershed areas across the country have been over developed. For these reasons it is critical to designate greenway corridors to protect these areas from further development and provide recreational opportunities.

Tannery Brook, located in the Connecticut River Valley of western Massachusetts, flows from Holyoke Community College south to the Ingleside Mall and into the Connecticut River. While the upper reaches of the brook at the college are in a predominantly stable riparian state, the lower portions of the brook by the mall are severely degraded by erosion and channelization. Extensive development continues with additions to the mall and the surrounding business area.

Due to the existent stream conditions, the greenway planning process for Tannery Brook considered extensive environmental assessment inventory and recommendations for the lower reaches in order to stabilize the stream for recreational use in the upper portion. The methods used in this study to collect data include field site analysis, map inventories, video of existent conditions and engineering techniques, and an overview of historical and cultural attributes of Tannery Brook. Field site analysis data include soil, topographic, landform, and water resource data. A detailed inventory and analysis of the various engineering techniques used to direct streambed flow was taken to determine the effects of the upstream flow on downstream degradation. The Greenway Plan for Tannery Brook includes maps and recommendations for sites for restoration techniques to stabilize the streambed, and the most appropriate site for the greenway corridor.

The following greenway planning steps include methodological techniques that may be applied to develop a greenway corridor. The planning steps should be considered as a framework for a particular community to follow. If sufficient data exist for some of the steps, the data gathering process should concentrate on the other steps. In this way, the planning model may be tailored to meet the needs of an individual community. For example, if a community recently conducted an extensive environmental assessment, there is no need to focus on this part of the planning process. In this case the planners may proceed to the other areas of research.

Step I: Conduct an Environmental Assessment of the Watershed

An environmental assessment of the watershed includes analyzing data on the following attributes: wetland information, existent land use, topographic features, large areas of impervious surfaces, parcel ownership, existing streambank erosion, channelized areas of streams, culvert characteristics, vegetation, soils and slope. The watershed data are collected in the field and analyzed to assess areas of environmental concerns.

Field work is also conducted to measure and analyze existing stream flow conditions. The data to assess streamflow include base flows from historical records and field observations. After the base flow of the watershed is established from historical review, storm volume impacts and flood elevations from climatic storm patterns in the area are analyzed. Field data that determines storm impacts include flood elevation levels at culverts, roadways, bridges, and channelized areas. When flood levels are determined, bioengineering sites may be proposed.

Water quality analysis for the stream is another component of the watershed assessment. Water quality sampling for turbidity and pH level is conducted. Background water quality sampling is taken at established sites in the watershed. Each site has an upstream and downstream sampling component. The sites focus on water quality above and below: 1) channelized sections of the brook; 2) bordering vegetated wetlands; 3) lawn and landscaped areas; and 4) areas with large impervious surfaces.

Field verification of specific sites recommended for stream restoration BMPs (Best Management Practices) is the final stage of the watershed assessment process. Restoration sites are determined by identifying the areas of erosion, and analyzing the levels of degradation. When the areas of erosion are determined, the most effective methods to stabilize banks and prevent further mass wasting may be recommended.

Step II: Compile and Enter Data to Generate G.I.S. Mapping

Several layers of data are entered into a G.I.S. program to generate map inventories, and identify environmentally fragile areas. The first layer is the delineation of the wetlands in the watershed area. The data collected to determine the boundaries of

the wetlands is based on: delineation from notices of intent and request for determination of applicability filings; floodplain maps; 100 foot buffer to stream bank maps; 100 foot buffer to land under water maps; certified vernal pools maps; and 100 foot setback from vernal pools maps.

The next layers of data include topography (from U.S.G.S. quads, 10 foot intervals), land use (McConnell aerial-residential, commercial, industrial, protected open space, existing zoning, roads, infrastructure), and large areas of impervious surfaces in addition to roads (>1 acre, calculated by parcel and total in watershed). Parcel ownership (from assessor's maps) is an important layer that indicates potential plats for land banks or land trusts to purchase. The two layers of existing streambank erosion (field reconnaissance), and channelized areas of streams (culvert characteristics including size and shape, cement substrate, etc.) indicate potential sites for bioengineering.

Vegetation (from land use and field reconnaissance-including lawns/landscaped, tree cover, bordering vegetated wetland, other), soils (from SCS soil surveys), and slope are the final attributes that are important in the G.I.S. analysis. These physical geographic features are important in determining areas of runoff and drainage problems. Bioremediation techniques may be recommended for areas of environmental concern due to lack of vegetation or steep slopes.

Step III: Identify Attributes of the Watershed

The attributes of the Tannery Brook watershed were identified by conducting a watershed analysis. The first stage in the watershed analysis involves assessing the following characteristics: acreage in impervious surface including roads, parking lots, and buildings; percentage of stream in channel or culverts; build-out analysis specifically addressing increases in impervious surfaces; and potential stream bank erosion sites. These characteristics identified percentages of developed land parcels, and the relationships between developed and nondeveloped land areas.

The second stage of analysis to determine attributes includes a study of sites recommended for bioremediation. The data needed to determine the sites for bioremediation of existing erosion include: degraded wetland sites, potential areas of wetland restoration or construction, specific sites for stormwater best management practices (other than constructed wetlands) on individual parcels, and sites for "dechanneling" stream and anticipated water quality and wetland benefits.

Step IV: Design Public Outreach and Educational Programs

Educating the public about urban corridors is a vital component of a greenway plan. Forums on the environmental concerns of a watershed and proposals for greenways should be conducted during the greenway planning process. The following methods are effective in informing the public about greenway planning: coordinate the various resource groups in the watershed to promote awareness of the Greenway Plan; contact property owners to make them aware of the Greenway Plan and obtain permission to walk on property; and create a citizen advisory committee to participate in data gathering and oversight of any applicable grants.

Audio visual tools such as a video of stream conditions and watershed to be shown at area schools, businesses, and public events are effective techniques to inform the public. Educational materials on watershed management and the greenway planning process should also be prepared for distribution to local businesses and schools. Finally, a future outreach approach should be organized in order to ensure that project recommendations will be monitored and reevaluated in the future.

Step V: Develop a Five-Year Action Plan to Implement the Greenway

The final stage in the urban greenway process involves the development of a matrix of identified watershed management practices. The matrix should include categories such as: Recommended BMPs for creating a more natural stream environment (woodland restoration, "dechannelizing" sections of the stream, culvert widening, bioremediation of existing erosion, on-site stormwater BMPs); Environmental Benefit (reducing and preventing erosion; decreasing stream turbidity; improving woodland health); Implementation (estimated cost, funding sources, steps required to implement, further studies required).

To implement the greenway plan public forums describing the watershed, the greenway planning process, and recommendations for the greenway trails and activities should be held. Prioritized recommendations for implementation for the five-year plan should also be proposed. Trails should be mapped according to slope and terrain conditions. Recreational activities with area educational institutions should be coordinated. Finally, the greenway plan should show; loop trails for hiking, environmental education field trails, and cycling routes based on the erosion and slope stabilization studies.

Conclusions

Watershed assessment analysis and greenway planning studies have several anticipated benefits for municipalities. As a case study in watershed management, the greenway plan promotes a greater understanding of urban stream hydrology and the impacts from development. Comprehensive watershed studies also produce a definitive matrix of solutions to reduce the environmental impacts from past and future land development. The teamwork approach that is undertaken in this study will serve to increase the awareness of urban stream problems at many levels; from individual property owners, developers, and community staff to natural resource agencies. Finally, the results may reduce land use conflicts between neighboring properties and neighboring communities by demonstrating the root causes of erosion, flooding, and water quality impacts.

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Economic And Tourism Issues

A MODIFIED METHOD FOR MEASURING THE ECONOMIC IMPACT OF TOURISM[1]

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Abstract: An economic impact study of tourism was conducted using two modifications. The first involved the use of the Dillman Total Design Method to increase survey response rates, and the second used state sales tax data rather than survey data to estimate total sales of the lodging sector. The modifications resulted in a higher response rate and provided a more defensible assessment of total lodging sales.

Introduction

Maine is "vacationland" and tourism is an important component of the state's economy. Periodically, the Maine Office of Tourism conducts studies to measure the economic impact of tourism on the state. This information is used to inform interested people about the role of tourism in the overall economy of the state and to gain legislative support for initiatives to promote tourism in Maine.

The Department of Resource Economics and Policy in cooperation with the Office of Tourism and Strategic Marketing Research, Inc. (SMRI) conducted a study of the economic impact of tourism in Maine for the summer period of June through August of 1995. One of the purposes of the study was to test a modified approach to estimate the economic impact of tourism. The approach we used differed somewhat from the procedures used to estimate the economic impact of tourism in previous studies. The purpose of this paper is to describe the modified procedures used during the study, and to present results we obtained.

The methods employed in the study are described in the next section and the results are reported in Section III. Conclusions and implications are presented in the last section of the report.

Study Procedures

Measuring the economic impact of tourism involves several steps, including estimating the level of expenditures made by tourists (called the direct effect), determining the sector of the economy in which the expenditures were made, and using "input-output" or other types of models to determine the indirect and induced effect associated with the tourists' original expenditures. Employment, income and state tax receipts are also estimated from the expenditure data and the models.

This paper concentrates on the procedures used to estimate total tourist expenditures. More specifically, we will discuss the procedures used to estimate the total expenditures made by tourists who use commercial lodging facilities during their visit to Maine. Obtaining an accurate measure of total expenditures is the most problematic part of an economic impact study because it is difficult and expensive to obtain the information needed to accurately estimate the expenditure level of tourists.

Two problems contribute to the difficulty. First, collecting expenditure data that are representative of all tourists who use lodging establishments is both difficult and costly. Complex sampling procedures are required to obtain representative data. Second, one must obtain the information needed to "blow up" the sample data to the population of tourists who use commercial lodging establishments. One must have some measure of the level of use of the lodging sector so that the sample data can be expanded to the total population of all lodging guests. Any errors associated with estimating expenditure levels of the sample of tourists or the appropriate expansion factor will result in inaccurate estimates of total tourist expenditures or the direct effect of tourism. Furthermore, these errors are then compounded in the derivation of indirect and induced effects. Hence, the economic impact of tourism can be grossly over or under estimated if the procedures used do not produce accurate estimates of tourist expenditures and the level of use of the commercial lodging sector.

The study we conducted during the summer of 1995 used two modifications to estimate the economic impact of lodging guests. To illustrate the difference, let me begin by describing the procedures used in previous studies and then compare them to the procedures we used in our study.

Previous studies in Maine and elsewhere involve the use of two surveys. A survey of lodging guests is conducted to obtain the necessary expenditure data and other information required from the lodging guests themselves, including their expenditures in different sectors of the economy. The biggest problem with this survey is that the response rate from tourists who are asked to provide the required information is usually quite low--less than 20 percent in many studies.

The low response rate is problematic because it casts doubt on the representativeness of the respondents. Even if one is confident that the sampling procedures used in the study resulted in a representative sample of lodging guests, the low response rate raises questions about whether the people who actually respond are representative of the entire sample. Survey research indicates that low response rates usually mean that the respondents are not representative of all people in the sample. Therefore, nonresponse bias occurs and one cannot assume that the expenditure pattern obtained from respondents is representative of all tourists.

[1] Maine Agricultural and Forest Experiment Station Publication number 2012.

In our study we used the Dillman Total Design Survey Method to try to improve the response rate of tourists in the sample. Our goal was to obtain a response rate of 70 percent. A response rate in this range substantially reduces the potential for nonresponse bias.

The second survey in the typical tourism study is a survey of the lodging establishments in the state. The purpose of this survey is to obtain the information needed to estimate the total number of parties that used commercial lodging during the period, the total number of "lodging nights" or the total lodging receipts of the lodging sector for the period. This information is needed to expand the sample data to the population. For example, if the sample consisted of 1,000 commercial lodging parties, one must know the total number of lodging parties during the summer in order to expand the sample data to the population. A survey of the lodging sector is usually conducted to provide the information needed to estimate the total number of lodging parties or some other population control figure for expanding the sample data to the population.

Unfortunately, nonresponse bias is also a problem in the lodging sector survey. Typical response rates for the lodging sector survey are quite low--again often less than 20 percent. Firms consider occupancy and room rate data to be highly proprietary, and, therefore, are often unwilling to provide the data for obvious reasons. These problems can cause errors in estimating statewide occupancy and room rates, which ultimately result in an inaccurate expansion factor.

Our modified procedure did not involve a lodging survey. Instead, we used state sales tax data as the population control figure for estimating total tourist expenses. Total tourist expenditures were estimated using the ratio of total tourist expenditures to lodging expenditures from the tourist expenditure survey. For example if the tourist expenditure survey data indicated that lodging expenses accounted for 20 percent of total tourist expenses, total expenses are estimated by dividing state sales tax lodging receipts data by .20. For example, if the state sales tax data indicate $60 million in lodging sales, then total tourist expenditures during their trip would be $300,000,000 ($60,000,000 in lodging sales divided by .20)

Using state sales tax data as the control figure for estimating total tourist expenses has several advantages, including the elimination of the need to conduct the survey of lodging establishments. The money saved can be used to do a better job of conducting the tourist lodging guest survey.

Results for Maine

The procedures described above are illustrated in this section to derive an estimate of the economic impact of lodging guests in Maine for the summer of 1995.

A survey of lodging guests (residents and nonresident) who used commercial lodging during the summer of 1995 was

conducted. About 100 lodging establishments (including hotels/motels, campgrounds, condominiums/cabins, and sporting camps) agreed to recruit guests to participate in the study. More than 1,300 people signed up to participate, and 600 of them were randomly selected for the sample. Using the total design mail survey method, we achieved a response rate of about 58 percent.

Participants were asked several questions about their trip, including the number of nights spent in Maine and the number of people in the group. They were also asked to indicate the expenditures they made in Maine while on their trip. Expense categories were provided to help respondents recall the types of expenses they may have made during their trip. The average expenditures of lodging guests were determined from the lodging guest survey and the results are reported in Table 1.

The expenditure pattern of lodging guests indicates that lodging is the largest expenditure category, followed by general merchandise which reflects the level of general shopping done by tourists. Other major expenditure categories include restaurant/lounge expenses, commercial transportation, apparel and accessories, and auto-related expenditures (service station, auto repair, rental and tolls). Combined, these categories account for 80 percent of the total expenditures made by lodging guests.

Table 1. Average expenditures per trip, by expense category, for Maine lodging guests during the summer of 1995.

Expense Category	Average Expense
Lodging	$333.04
Restaurant/Lounges	210.04
Grocery Stores	67.15
Liquor Stores	9.61
General Merchandise	134.56
Apparel and Accessories	64.25
Miscellaneous Retail	51.28
Service Station	56.27
Auto Repair/Service	7.46
Auto Rental	20.10
Highway Tolls	10.60
Commercial Transportation	93.42
Recreation/Entertainment	25.83
Equipment Rental	3.72
Health/Child/Pet Care	2.84
Miscellaneous Expenses	7.23
Other Expenses	45.24
Total Expenses	**$1142.64**

In addition to providing a profile of lodging guest expenditures, the data summarized in Table 1 also is used to calculate the ratio needed to expand the sample data to the population. The ratio of total expenditures to lodging expenditures can be calculated directly from the data in Table 1:

Total Expenditures/Lodging Expenditures
= $1142.64/$333.04
= 3.43

This expansion factor is applied to the state lodging sales tax data to estimate total expenditures by lodging guests. Specifically, the state sales tax date for the months of June, July and August indicated that total lodging receipts were $181 million. Multiplying this figure by the expansion factor of 3.43 yields an estimate of $621 million for total lodging guest expenditures for the summer months of 1995.

Table 2. Estimated total expenditures, by expense category, for Maine lodging guests during the summer of 1995.

Expense Category	Total Expenses ($1,000)
Lodging	$180,999
Restaurant/Lounges	114,151
Grocery Stores	36,496
Liquor Stores	5,225
General Merchandise	73,131
Apparel and Accessories	34,921
Miscellaneous Retail	27,867
Service Station	30,579
Auto Repair/Service	4,054
Auto Rental	10,922
Highway Tolls	5,767
Commercial Transportation	50,767
Recreation/Entertainment	14,039
Equipment Rental	2,022
Health/Child/Pet Care	1,542
Miscellaneous Expenses	3,932
Other Expenses	24,589
Total Expenses	**$621,000**

a/ Column may not sum to total due to rounding error.

Based on the expenditure profile presented in Table 1, the total lodging guest expenditures can then be allocated to each expenditure category to estimate the total expenditures for each sector or expenditure category. This is illustrated in Table 2. This provides the information needed to insert the expenditures into an input-output model so that the indirect and induced effects associated with the lodging guest expenditures can be measured. Using a model developed by the Maine State Planning Office, we estimated that the total impact of lodging guest expenses were about $1.46 billion for the three summer months of 1995.

Evaluation of the Modified Method

The modified method for estimating the economic impact of lodging guests has both advantages and disadvantages. Perhaps the greatest advantage is it eliminates the need to conduct a survey of the lodging sector to determine the average occupancy rate and average daily room rate. As noted, lodging surveys are not only expensive to conduct, the results are often suspect because firms are reluctant to release information they consider to be proprietary. This creates nonresponse bias, which is difficult to assess and correct. Hence, the modified technique is less expensive and probably more accurate, assuming that the lodging firms are accurately reporting sales taxes.

On the other hand, there are some disadvantages to consider. First, the survey of lodging guests takes on added importance because it is used to not only provide the expenditure profile of tourists, it also is used to provide an important part of the information needed to expand the sample data--the ratio of total expenditures to lodging expenditures. However, one must remember that this ratio varies across different types of lodging establishments.

Consider, for example, the ratio for campers versus hotel users. The calculated ratio is probably much smaller for the latter group than the former. In our study, we found that this ratio varied from 2.35 to 4.61. If one is to develop an accurate estimate of this ratio for the lodging industry as a whole, one must be sure the data are collected or analyzed in a way that assures that all types of lodging guests are surveyed in approximately the same proportion as they exist in the population. If this is not done, the ratio used to expand lodging expenditures to total expenditures will be inaccurate. This problem can be largely avoided by carefully designing the sampling procedures and weighting the data based on the capacity of the different types of lodging establishments in the sample and the population. However, it is an important factor to consider when using the modified method.

Another disadvantage of this approach is that there is a lag period in the reporting of lodging sales tax data. In Maine this lag is about 45 days. This makes it impossible to provide an immediate estimate of economic impact since the researcher must wait for the release of sales tax data to conduct the analysis.

Another potential disadvantage is that the modified method essentially assumes that the different types of lodging establishments have the same occupancy rate. If the occupancy rate varies substantially across the different types of establishments, errors are introduced into the analysis. This was not considered to be a problem in our study because previous work suggested that all types of lodging establishments had about the same occupancy rate during the summer months.

Finally, another factor to consider is that the modified method will usually result in a lower estimate of the economic impact of tourism than the conventional method. We believe this is because the conventional method usually over estimates the economic impact of tourism for reasons discussed above. However, the tourism industry likes to see large economic impact numbers so they can be used to lobby for additional state revenue to promote tourism. Therefore, even though we believe that the modified method is more accurate, the results may not be embraced by the industry itself. On the other hand, we have found that state agencies and even legislators are appreciative of the estimates derived from the modified method because it used sales tax data, which they believe are a good reflection of economic activity in the economy.

A TRIANGULATION OF ECONOMIC IMPACT ASSESSMENTS AND IMPLICATIONS

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Abstract: This paper demonstrates the effects of using various multiplier measurements of economic impact. Results indicated that output multipliers tend to generate larger impact estimates than household income multipliers and normal multipliers. The finding provides empirical evidence to support arguments in the literature that some economic impact measurements are misleading.

Many managers of recreation agencies and tourism attractions seek to document the economic impact resulting from their services. A major reason for measuring economic impact is to demonstrate the financial contribution as well as other benefits (e.g., personal and social) to the community. It is rationalized that a greater economic contribution can be translated into a perception of popularity and legitimacy of the agency which, in turn, can induce more support for budget allotment and tax levies. A political motivation of measuring economic impact is legitimate as long as the measurement is accurate and realistic. There are, however, debates about inflated estimation and misleading calculation of economic impact. The debates often center around the appropriateness (the size and type) of various multipliers (Archer, 1984; Crompton, 1995).

Theoretically, any initial spending will generate subsequent rounds of spending in the community, including direct impact, indirect impact, and induced impact. The latter two are often grouped together as secondary impacts. Each subsequent round of spending is smaller due to leakages, saving, and taxes. The sum of direct and secondary impacts is the total impact of the initial spending. The rippling process of subsequent spending is the multiplier effect, which can be measured by various input-output models that trace the impact on many industry sectors in a region. Currently, at least four input-output models are available: (a) Regional Input-output Modeling System II (RIMS II) by the U.S. Department of Commerce, Bureau of Economic Analysis, (b) Travel Economic Impact Model (TEIM) by the U.S. Travel Data Center, (c) IMPLAN by USDA Forest Service, and (d) Regional Economic Models Inc. (REMI). Studies have frequently used these models (Bushnell & Hyle, 1985; Mak, 1989; Johnson, Obermiller, & Radtke, 1989; Midwest Research Institute, 1990). In some cases, a single multiplier is used in a study. The selection of any single multiplier is based on "felt reasonableness," but without taking into account regional economic linkages. The legitimacy of this approach has been questioned (Archer, 1984). The discussion about how to realistically measure economic impact continues in the recent literature (Crompton, 1995).

The purpose of this study was to demonstrate the effects of using various multiplier measurements of economic impact. A metropolitan zoo was used as an example. The results provided empirical evidence that the choice of multipliers leads to a wide range of economic impact estimates.

Method and Results

Data for this study were supplied by Cleveland Metroparks Zoo in Ohio. It is one of the largest zoos in North America, with 2,600 animals belonging to 567 species and subspecies, and is accredited by the American Zoo and Aquarium Association. With educational and recreation programs and exhibits, it is a popular destination that attracts more than one million visits each year. As a major employer and visitor attraction, the zoo generates a sizeable initial economic output, including both zoo expenditures and visitor expenditures, to the regional economy.

A nationwide survey of top 26 zoos in the U.S. was conducted by the author to sample economic impact measurements. Of the 13 zoos that replied, ten had not completed an economic impact study. Three had conducted an economic impact study, and a copy of the reports was provided (Ciruli Associates, 1989; Midwest Research Institute, 1990; Weinstein, Gross and Andrus, 1992). The multipliers used by these zoo studies are shown in Table 1 (observation 1 for zoo #1 and observation 5 for zoo #4; the third zoo did not specifically explain the multiplier process in the report). Additionally, two zoos in the same state where this study was conducted provided their economic impact studies (observation 2 for both zoo #2 and zoo #3) (Brunner and DeKorte, 1993; Coons, 1994).

Table 1. Various multipliers used.

Observation	Multiplier	Source	Multiplier Type
Obs 1	3.63	zoo #1 (REMI[a])	output
Obs 2	3.00	zoos #2 & #3	output
Obs 3	2.20	Cleveland Arts	output
Obs 4	2.04	RIMS II (Ohio)	output
Obs 5	2.00 (1.50-2.60)	Walsh (1986) &	output
	2.00	zoo #4	
Obs 6	0.62	RIMS II (Ohio)	household income
Obs 7	0.60 (0.40-0.80)	Crompton (1995)	ballpark
Obs 8	0.45	Archer (1984)	Normal, Keynesian

a/ REMI = Regional Economic Models Inc. (REMI) multiplier for the zoo

A review of the literature revealed that various multipliers have been used for tourism businesses. Table 1 shows the results, arranged by size of the multipliers. A study of the economic impact of arts institutions in Cleveland had a 2.20 multiplier (observation 3). The RIMS II output multiplier for the amusement sector in Ohio was 2.04 (observation 4). Walsh (1986) reviewed the output multipliers for expenditures on recreation goods and services in many regions of the U.S., and concluded that they ranged from 1.5 to 2.6, with an average of 2.0 (observation 5). This multiplier (2.0) also was used by zoo #4 from the survey of zoos mentioned above.

In a study of sporting events, Crompton (1995) argued that a household income multiplier should be used instead of an output/sales multiplier. He suggested that business sales have no impact on residents' standard of living. For the state of Ohio, and according to the RIMS II model, the household income multiplier for the amusement sector was 0.62 (observation 6), which was considerably smaller than the RIMS II output multiplier of 2.04 mentioned above.

Crompton (1995) also suggested that a ballpark multiplier may be considered (e.g., income multipliers fall within a range of 0.4 to 0.8). If the middle point of this range was taken (0.6, observation 7), an additional multiplier can be added to the estimation.

Finally, Crompton (1995) suggested using a "normal" multiplier rather than a "ratio" multiplier based on Archer's (1982) original work. Archer (1982) presented a normal (Keynesian) multiplier coefficient of 0.45 (observation 8). This was included in this study to provide an alternative estimate. Together, these eight multipliers provided the basis of different impact estimations.

After determining multipliers, the next step in the study was to collect the expenditure information. This step was conducted along two lines: zoo expenditures and visitor expenditures. The zoo expenditures include operating expenditures, zoo society expenses, and capital expenditures. The amount was $10,318,574 in 1994. Applying the different multipliers, eight impact estimates resulting from the total zoo expenditures were calculated and shown in Table 2.

Table 2. Zoo expenditures impacts measurements.

Observation	Zoo Expenditures (Z)	Multiplier (M)	Z x M
Obs 1	10,318,574	3.63	37,456,424
Obs 2	10,318,574	3.00	30,955,722
Obs 3	10,318,574	2.20	22,700,863
Obs 4	10,318,574	2.04	21,049,891
Obs 5	10,318,574	2.00	20,637,148
Obs 6	10,318,574	0.62	6,397,515
Obs 7	10,318,574	0.60	6,191,144
Obs 8	10,318,574	0.45	4,643,358

The second line of measurement pertains to visitor spending on the trip but outside the zoo. Visitor spending was measured by group expenditures. In 1994, there were more than 1.2 million visitors. Divided by the average group size of 4.7, these were translated into more than a quarter of a million groups. These groups were further categorized by their residence (area groups and out-of-area groups), since distance traveled was believed to result in different spending behavior.

Expenditures were divided into four categories: transportation, retail shopping, food/beverage, and lodging. Total transportation spending by all zoo visitors was estimated to have been $1,276,027 in 1994. A total of $921,256 was spent on shopping. Food and beverage expenditures by out-of-area visitors were $1,098,160. The total lodging expenditures were estimated to be $1,611,150.

To generate a range of visitor expenditure impact estimates, the eight different multipliers (in Table 1) were applied. The results are shown in Table 3. Table 4 shows the total impact of the zoo that included zoo expenditure impacts and visitor expenditure impacts. The total impact estimates ranged from approximately $6.9 million to approximately $55.3 million.

Implications and Conclusions

The range of the total impact estimates appeared broad, with the low end ($6,851,325) being only 12.4% of the high end ($55,267,357). The extremely low estimation and extremely high estimation resulted from the different multipliers used. The mean score of the eight estimates was $27,834,396.

Figure 1 shows the relative positions of the eight estimates. If there are infinite points in the mathematical continuum, there would be an infinite number of estimates, including both the low end and the high end estimates (i.e., 6.85 and 55.27, in millions of dollars). With the range (6.85 to 55.27) and the mean (27.83), estimates within one standard division (16.72 in each direction to cover 66% of all cases) would be within 11.11 and 44.55. This indicates that five of the eight estimates calculated above (Table 7) fall outside of one standard division, and can be considered extreme cases. Among these five estimates, three are on the lower end, two on the higher end. As seen in Table 1, it appears that household income multipliers, ballpark multipliers, and normal multipliers result in impact estimates toward the lower extreme, while output multipliers tend to generate impact estimates toward the higher extreme. This finding provides empirical evidence to support Archer's (1984) and Crompton's (1995) arguments that some economic impact estimates are misleading due to inappropriate uses of multipliers (e.g., using an output multiplier, especially a large one). Archer's (1984) and Crompton's (1995) suggestions for using household income multipliers, ballpark multipliers, and normal multipliers result in conservative and cautious impact estimations.

Archer (1984) pointed out that inappropriate multipliers (such as ratio multipliers and output multipliers) had no basis in economic theory and are misleading in policy making, but had gained wide usage. It should be pointed out that, as far as scientific discovery is concerned, measurements of economic impact need to be accurate and realistic. This study triangulated alternative

Table 3. Visitor expenditures impact measurements.

	Type of Expenditure	Visitor Expenditure	Multiplier	Total Impact	Visitor Impact
Obs 1	Transportation	$1,276,027	3.63	$4,631,978	
	Shopping	921,256	3.63	3,344,159	
	Food & Beverage	1,098,160	3.63	3,986,321	
	Lodging	1,611,150	3.63	5,848,475	$17,810,933
Obs 2	Transportation	$1,276,027	3.00	$3,828,081	
	Shopping	921,256	3.00	2,763,768	
	Food & Beverage	1,098,160	3.00	3,294,480	
	Lodging	1,611,150	3.00	4,833,450	$14,719,779
Obs 3	Transportation	$1,276,027	2.20	$2,807,259	
	Shopping	921,256	2.20	2,026,763	
	Food & Beverage	1,098,160	2.20	2,415,952	
	Lodging	1,611,150	2.20	3,544,530	$10,794,504
Obs 4	Transportation	$1,276,027	2.34	$2,985,903	
	Shopping	921,256	2.23	2,054,401	
	Food & Beverage	1,098,160	2.29	2,514,786	
	Lodging	1,611,150	2.04	3,286,746	$10,841,836
Obs 5	Transportation	$1,276,027	2.00	$2,552,054	
	Shopping	921,256	2.00	1,842,512	
	Food & Beverage	1,098,160	2.00	2,196,320	
	Lodging	1,611,150	2.00	3,222,300	$ 9,813,186
Obs 6	Transportation	$1,276,027	0.81	$1,033,582	
	Shopping	921,256	0.83	764,642	
	Food & Beverage	1,098,160	0.65	713,804	
	Lodging	1,611,150	0.62	998,913	$ 3,510,941
Obs 7	Transportation	$1,276,027	0.60	$765,616	
	Shopping	921,256	0.60	552,754	
	Food & Beverage	1,098,160	0.60	658,896	
	Lodging	1,611,150	0.60	966,690	$ 2,943,956
Obs 8	Transportation	$1,276,027	0.45	$574,212	
	Shopping	921,256	0.45	414,565	
	Food & Beverage	1,098,160	0.45	494,172	
	Lodging	1,611,150	0.45	725,018	$ 2,207,967

Table 4. Combined zoo and visitor expenditure impact estimates.

Observations	Zoo Expenditures Impact	Visitor Expenditures Impact	Total Impact
Obs 1	137,456,424	17,810,933	55,267,357
Obs 2	30,955,722	14,719,779	45,675,501
Obs 3	22,700,863	10,794,504	33,495,367
Obs 4	21,049,891	10,841,836	31,891,727
Obs 5	20,637,148	9,813,186	30,450,334
Obs 6	6,397,515	3,510,941	9,908,456
Obs 7	6,191,144	2,943,956	9,135,100
Obs 8	4,643,358	2,207,967	6,851,325
range		low end =	6,851,325[a]
		high end =	55,267,357
mean			27,834,396
standard deviation			16.72 ($million)

a/ low end = 12.40% of high end

measurement outcomes by using a real data set. It attempted to only present "what is" rather than "what ought to be." That is, results of the study showed empirical evidence that use of different multipliers resulted in a range of economic impact with extreme estimates, both high and low. It is crucial that users of an economic impact assessment understand how impacts are measured. Recreation agency and tourism attraction managers need to have a working knowledge of the meaning of different multipliers, and determine "what ought to be" an appropriate multiplier process and an acceptable economic impact measurement.

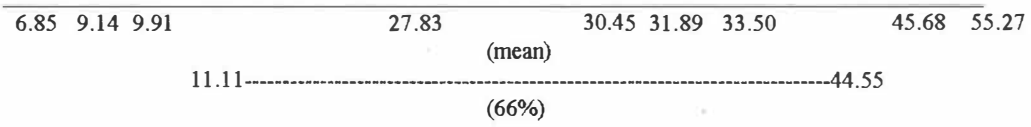


Figure 1. Seven measurement observations and one standard of division

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ECONOMIC IMPACT OF TRAVEL AND TOURISM IN SOUTHWESTERN PENNSYLVANIA

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Abstract: The economic impact of travel and tourism was determined for a nine-county region during 1994. Travel and tourism was described on the basis of 28 activities. Total annual attendance from all activities was 22.3 million visitor days, with nonresident visitors accounting for 48% of the total. Total regional expenditures amounted to $662 million, with 68% coming from nonresidents. An input-output model of the region established the total sales impact from travel and tourism at $914 million. Total impact also amounted to $539 million in value added, with $310 million directed to wages and salaries in support of more than 23,000 jobs.

Introduction to the study

Travel and tourism is often identified in terms of the conglomerate of recreational and travel services provided within a particular region. Although this aggregate concept is a common reference point, the specific dimensions of these services are not usually well defined. This problem is further compounded when travel and tourism is the subject of economic investigations.

The U.S. Travel Data Center reported an economic impact of $17.3 billion for Pennsylvania during 1992 from US and international travelers (USTDC 1994). These impacts were generated from the expenditures made by resident and out-of-state travelers involved in either overnight trips or trips extending 100 miles or more from their homes. The focus of this USTDC study was the travel industry, with tourism avoided due to "its vague meaning" (p 44).

In the following study, the economic impact of travel and tourism was determined for a nine-county region of Pennsylvania on the basis of 26 recreational-based activities. The traveler was considered separate from the tourist and was included as two activities. This approach provided a specific structure for travel and tourism and the basis for analyzing its impact within the region.

Objectives and Procedures

The central objective of this project was to determine the economic impact of travel and tourism within a region including Bedford, Blair, Cambria, Fayette, Fulton, Huntingdon, Indiana, Somerset and Westmoreland Counties. This would require developing a structure and inventory of travel and tourism activities that focused on nonresident visitors. Each activity would be analyzed in terms of the nonresident expenditures made within the region, with the economic impact of these expenditures determined from a regional input-output model.

Structure of Activities

Travel and tourism was organized into 10 groups that included 28 activities (Table 1). Each activity was further delineated by an inventory of sites and events found within the region. The inventory of sites and events was constructed at the beginning of the project to establish the dimensions of the project and the basis for sampling the various activities.

Sample Design and Procedures

A system of on-site visitor surveys was used to acquire expenditure information within each of the individual activities. The sample design focused on activities having some potential for attracting nonresident visitors and was organized to sample visitors throughout the duration of the various recreational seasons. The selection of survey sites or events within a particular activity was based on the number of sites or events within the activity, their distribution among the nine counties, their general character in depicting the activity, their willingness to cooperate in the study, and an overall desire to maintain an efficient survey program. On-site surveys were conducted by a team of Penn State research interns. The survey form organized information on the respondent's (1) state and county of residence, (2) group size, (3) travel itinerary, and (4) type, amount, and location of expenditures made during their current trip.

Vacation home owners were sampled with a mailed letter and questionnaire. A sample of nonresident vacation home owners was drawn from tax records in three counties. Approximately 150 properties were sampled using a questionnaire and two follow-up letters. A similar effort was also directed to camp-lease holders on State Forests within the region, with 50 lease holders responding to the survey.

Attendance Data

Attendance was identified on a visitor day basis, representing one person's visit at a site or event during some portion of a given day. All sites and events selected for survey purposes provided seasonal attendance data. Nonsurveyed sites and events were also contacted for the purpose of securing their attendance records. More than 400 sites and events provided attendance information to the study.

Activities with an entrance fee typically provided information on gate receipts. For nonfee events, the site managers provided estimated attendances, including both attendees and vendors where appropriate. These estimates were counter compared to similar events or sites in evaluating the relative accuracy of any given estimate.

Attendance on public lands was based either upon the data collected by the management agency or from a modeled expansion of attendance samples. The Pennsylvania Bureau of State Parks has a daily attendance system for more than 20

recreational activities in each of 114 state parks (18 parks are located in the nine-county region). A similar daily attendance system was maintained at four U.S. Corps of Engineer lake sites. The Pennsylvania Fish and Boat Commission has an attendance model for trout fishing on stocked streams (Snyder 1992).

Neither the Pennsylvania Bureau of Forestry nor the Pennsylvania Game Commission had any systematic method for estimating attendance. For purposes of this study, both agencies provided a series of vehicle counts on four study areas involving 30 sample days during 1993. A combination of on-site surveys, postcard surveys, and car counts was used to estimate the total usage and allied user expenditures on any given sample day (Lord, et al. 1996). The data base for any given activity was then extrapolated to nonsurvey dates using the relative attendance levels at nearby state parks. The annual attendance for any given activity on the study areas was then expanded with respect to the agency's total management area in the region.

Business and transient usage was developed as overnight attendance within the hotel and lodging sector. Total attendance was obtained from the region's travel lodge inventory and occupancy rate (PKF Consulting 1995). Total attendance was proportioned among recreational tourists, business, and transient travelers on the basis of on-site surveys.

Vacation homes were measured as individual properties rather than recreational use. It was assumed that the owner's recreational pursuits were accounted for in the other activities. Only the regional costs associated with property ownership were included in this activity. This data was recorded on a property unit basis.

Organization of Visitor Expenditures

Average regional expenditures were identified on a visitor day basis for residents and nonresidents and were specific to individual sites or events, with the activity average weighted on the basis of the attendance at the particular sample sites or events. Expenditures were classified by the type of the purchase and their linkages to particular industrial sectors. Total regional expenditures for nonresidents represented the multiplication of average nonresident expenditures by their respective attendance levels.

Economic Impact Modeling

The economic impact of travel and tourism was generated by the Impact Analysis for Planning (IMPLAN) system. IMPLAN is a computerized data base and modeling system that provides a regional input-output analysis of economic activity in terms of 10 industrial groups involving as many as 528 sectors. This input-output model was developed by the USDA Forest Service and the Federal Emergency Management Agency to estimate the regional impact of management plans for national forests (Alward et al. 1985). It is currently maintained by MIG, Inc. and is available to the public on a fee basis (MIG, Inc. 1996).

IMPLAN's data bases are periodically updated. The version used in this study was based upon 1990 economic data. The Pennsylvania data base for the model was updated by this study to include changes in regional employment within key industries. In addition, various regional purchase coefficients were adjusted to reflect more accurately regional trade relationships.

Results

Survey Effort

Nearly 20,000 on-site surveys were collected during 1993 (n= 13,935) and 1994 (n= 5,948) within the 28 activities. The initial survey effort in 1993 was distributed proportional to the anticipated size of the various activity audiences. Modifications in 1994 increased the sampling effort in: (1) activities showing major impacts but moderate survey numbers (Strauss et al. 1994), (2) two activities added in the second year (Grado et al. 1996a and Grado et al. 1996b), and (3) activities with dispersed audiences, e.g., hunting, hiking.

Total Attendance

Total attendance among all activities in 1994 was estimated as 22.3 million visitor days (vd's) (Table 1). The largest portion of attendance was in Other Outdoor Activities, which included 36% of the total. Business and Transient Travel had 12% of the total. Five other activities each had 4 to 6% of the total; Fishing and Boating, Amusement Parks, Golfing, Conferences and Conventions, and Historic Sites. Together, these seven activities represented nearly three quarters of the total regional attendance.

Nonresident attendance was 10.7 million visitor days, representing 48% of the total attendance. Again, Other Outdoor Activities was the lead activity, with 30% of the total. Business and Transient Travel was the second largest, with 23% of the total. Downhill Skiing was third largest (7%); followed by Conferences and Conventions (7%), Heritage Centers and Other Historic Sites (7%), Amusement Parks (5%), and Fishing and Boating (5%). Together, these eight activities accounted for 84% of the nonresident attendance.

Visitor Expenditure Profiles

As might be expected, the average daily expenditure for nonresidents was higher than for residents, largely due to their increased dependence on regional restaurants and lodging services (Table 1). Several exceptions were noted. Resident visitors to Collector Shows tended to buy more "collectable goods" than did their nonresident counterparts. Several of the Outdoor Activities also showed higher expenditures for resident visitors than for nonresidents. These were largely day-use activities, with the resident audiences purchasing most of their food, gasoline, and auxiliary items within the region, whereas the nonresident visitors often made these purchases outside the region.

For the nonresident visitors, activities with the highest expenditure profiles included Conferences and Conventions at $134/vd, Business Travel at $79/vd, Golfing at $67/vd, Downhill Skiing at $66/vd, and Heritage Centers at $46/vd. Overall, these activities represented the more affluent tourist and the more expensive recreational pursuits.

At the other end of the financial spectrum were Other Outdoor Activities (camping, hiking, picnicking, swimming) at $8/vd, Other Winter Activities (cross country skiing, ice fishing, snowmobiling) at $10/vd, Hunting at $11/vd, and Amusement

Table 1. Total attendance and average expenditure per visitor day for resident and nonresident visitors by activity, for 1994.

Groups/Activities	Total Visitor Days	Percent Resident	Percent Non Resident,	Resident, Exp./vd	Nonresident, Exp./vd
Amusement Parks	1,183,013	54.7%	45.3%	$10.72	$14.95
Antique Centers	278,352	55.1%	44.9%	$27.82	$32.47
Conferences and Conventions	1,090,217	31.8%	68.2%	$72.40	$134.19
Cultural Events					
College Performances	189,516	71.8%	28.2%	$16.20	$21.03
Music and Dance Festivals	164,400	63.9%	36.1%	$16.35	$54.97
Private Performances	227,636	79.7%	20.3%	$26.89	$40.19
Historical Sites and Museums					
Heritage Centers	578,751	32.6%	67.4%	$39.30	$46.03
Other Historical Sites	407,771	24.0%	76.0%	$10.23	$35.72
Outdoor Activities					
Downhill Skiing	849,300	11.7%	88.3%	$56.80	$66.42
Fishing and Boating	1,255,018	58.9%	41.1%	$30.49	$17.40
Golfing	1,175,388	68.8%	31.2%	$29.40	$67.07
Hunting	470,624	38.2%	61.8%	$13.53	$10.64
Other Outdoor Activities	8,082,126	60.9%	39.1%	$10.43	$7.82
Other Winter Activities	218,529	61.5%	38.5%	$4.28	$9.83
Shows, Fairs and Festivals					
Agricultural Fairs	596,500	77.9%	22.1%	$10.93	$16.53
Animal Shows	9,735	75.3%	24.7%	$15.88	$59.80
Art and Craft Festivals	949,866	74.7%	25.3%	$14.77	$25.46
Collector Shows	23,500	50.8%	49.2%	$61.32	$36.20
Historic Fairs and Festivals	225,595	79.1%	20.9%	$11.83	$27.74
Machine Shows	119,405	78.6%	21.4%	$13.79	$33.33
Special Interest Events	432,653	77.8%	22.2%	$8.39	$24.43
Sporting Events					
Amateur Sports	158,443	78.8%	21.2%	$6.24	$36.44
College Sports	173,214	85.6%	14.4%	$4.15	$19.64
Indoor Sports	275,000	70.7%	29.3%	$21.45	$54.50
Professional Sports	593,500	70.6%	29.4%	$14.95	$25.06
Business and Transient Travel					
Business Travel	542,950	5.9%	94.1%	$64.11	$78.69
Transient Travel	2,069,188	7.8%	92.2%	$43.76	$56.00
Totals	22,340,189	52.0%	48.0%		
Vacation homes *	13,354	24.0%	76.0%	$2,384	$2,033*

a/ * - Vacation homes were recorded on a unit property basis.

Parks at $15/vd. These activities represented the more self-sufficient traveler and involved fewer on-site purchases and were conducted in a shorter time frame.

Total Expenditures

The multiplication of resident and nonresident attendance by their respective average expenditure profiles provided total expenditures of $662 million within the nine-county region. Sixty-eight percent, or $451 million, was from nonresident visitors. Among the ten major groups of activities, Business and Transient Travel was the lead activity, with 33% of the total. The second largest group was Outdoor Activities, with 25% of the nonresident expenditures. In third position was Conferences and Conventions with 22% of the total. Historic Sites and Museums were fourth largest, representing 6% of the total. In general, these groups attracted large numbers of nonresident tourists, who, in turn, spent higher average sums on lodging, food services, and their activities.

Economic Impact

The total sales impact from all travel and tourism activities within the nine-county region during 1994 amounted to $914 million (Table 2). The direct sales impact was $309 million and the secondary impacts (indirect and induced) were $605 million. On a value added basis, the net impact was $539 million. The salary and wage component of value added was $310 million that, in turn, supported more than 23,000 annual jobs on a full and part-time basis.

The origin of the total sales impacts was identified in terms of the ten groups of travel and tourism activities (Table 2). The relative size of the group impacts followed the same pattern as was evident in their nonresident expenditures. Business and Transient Travel had 33% of the total sales impact, followed by Outdoor Activities, with 26% of the total, and Conferences and Conventions, with 20%. Historic Sites and Museums was fourth largest, with 7% of the total sales impact. The remaining five

Table 2. Total travel and tourism impacts by activity for 1994.

Activity Groups	Direct Sales	Secondary Sales	Total Sales	Value Added	Employee Income	Employment
Amusement Parks	$6,777,500	$14,980,300	$21,757,800	$12,777,200	$6,844,700	597.23
Antiques Centers	$1,812,800	$3,723,700	$5,536,500	$3,342,600	$1,848,500	148.65
Conferences and Conventions	$62,650,400	$124,452,900	$187,103,300	$113,005,000	$65,799,100	4789.69
Cultural Events	$4,601,300	$9,855,200	$14,456,500	$8,518,700	$4,953,500	389.30
Historical Sites and Museums	$21,539,800	$38,457,000	$59,996,800	$33,526,100	$19,846,500	1430.95
Outdoor Activities	$77,222,800	$159,106,000	$236,328,800	$143,244,500	$81,964,800	6302.96
Shows, Fairs and Festivals	$7,775,100	$14,469,400	$22,244,500	$11,946,300	$7,071,200	535.16
Sporting Events	$8,829,400	$15,247,300	$24,076,700	$13,416,200	$6,914,100	562.46
Vacation Homes	$14,452,400	$18,665,300	$33,117,700	$18,331,300	$9,933,800	653.66
Business and Transient Travel	$103,066,000	$206,133,100	$309,199,100	$180,674,100	$105,148,900	7996.93
Total	$308,727,500	$605,090,200	$913,817,700	$538,782,000	$310,325,100	23406.99

groups, representing sixteen activities, generated less than 14% of the total sales impact.

The placement of the total sales impacts was identified in terms of IMPLAN's ten industrial groups (Table 3). More than 90% of the direct sales impact was in two economic groups; Services ($195 million) and Wholesale and Retail Trade ($93 million). The secondary sales impacts were distributed over a wider array of groups, including Finance, Insurance, and Real Estate (24% of secondary), Services (24%), Wholesale and Retail Trade (19%), Manufacturing (12%), and Transportation, Communications, and Utilities (12%).

A more specific delineation of impact recipients was provided in terms of the individual sectors within the various groups. Two sectors received 71% of the direct impacts; Sector 463: Hotel and Lodging Places and Sector 454: Eating and Drinking Establishments. An additional 7% was placed in Sector 488: Amusement and Recreation Services. Further analysis of Sectors 463 and 454 showed 89% of their secondary impacts were induced, with only 11% as indirect. In part, the larger induced impact was due to both sectors being labor-intensive. Employee compensation for the restaurant sector was 53% of the output value and 47% for the lodging sector. By comparison, the average employee compensation for all sectors in the region was 33% of their output. In contrast, intermediate inputs to the restaurant sector were 43% of their output, with only 30% purchased regionally. In the same fashion, intermediate inputs to the lodging sector were 36% of their output, with 50% purchased regionally.

The sector-by-sector listing of secondary sales impacts also portrayed the induced character of these secondary impacts. For the most part, the total sales output from these sectors followed the personal consumption pattern of the U.S. population (BEA 1990).

Conclusions

The sources and placement of the economic impact originating from travel and tourism were identified for a nine-county region of southwestern Pennsylvania. Among the ten major groups of travel and tourism activities, Outdoor Activities attracted the largest number of nonresident visits, representing 48% of the total (Table 4). Next in order were Business and Transient Travel, Conferences and Conventions, and Historic Sites. In terms of the money spent by nonresident visitors to the region, Business and Transient Travel had the lead position, with 33% of the total. Next in order were Outdoor Activities, Conferences and Conventions, and Historic Sites. Total sales impacts followed this same pattern. Of further interest, within the Outdoor Activities group, Downhill Skiing and Golfing provided nearly two thirds of the group's expenditures and impacts.

There was a similarity in the nonresident expenditures within the four lead groups. Basically, most of these visitors were engaged in overnight trips, with the majority of their regional expenses tied to lodging, food, and allied recreational services. As a result, their impacts were generated in a fairly consistent fashion.

Table 3. Total travel and tourism impact by industry for 1994.

Industry	Direct Sales	Secondary Sales	Total Sales	Value-Added	Employee Income	Jobs #
Agriculture, Forestry and Fisheries	$518,300	$11,725,400	$12,243,700	$3,809,900	$1,425,700	218.30
Mining	$512,200	$2,815,200	$3,327,400	$2,523,900	$744,300	20.45
Construction	$3,875,700	$22,328,400	$26,204,100	$14,540,200	$11,047,700	540.92
Manufacturing	$2,379,200	$72,611,000	$74,990,200	$26,804,500	$16,799,300	778.78
Transportation, Commun., Utilities	$4,029,200	$71,055,500	$75,084,700	$41,117,300	$16,295,600	577.49
Wholesale and Retail Trade	$93,075,400	$116,090,700	$209,166,100	$131,158,600	$90,752,300	8221.16
Finance, Insurance and Real Estate	$969,000	$147,824,600	$148,793,600	$104,718,000	$17,021,300	945.06
Services	$194,774,500	$144,062,300	$338,836,800	$197,133,100	$141,898,400	11619.13
Government Enterprises	$8,594,000	$16,577,100	$25,171,100	$16,976,500	$14,340,500	485.70
Total	$308,727,500	$605,090,200	$913,817,700	$538,782,000	$310,325,100	23406.99

Table 4. Percentages of nonresident attendance, nonresident expenditures, and total sales impact by activity groups, 1994.

Activity Groups	Non-Resident Attendance	Non-Resident Expenditures	Total Sales
Amusement Parks	5.0%	1.8%	2.4%
Antique Centers	1.2%	0.9%	0.6%
Conferences/ Conventions	6.9%	22.1%	20.5%
Cultural Events	1.5%	1.4%	1.6%
Historical Sites	6.5%	6.4%	6.6%
Outdoor Activities	48.2%	24.9%	25.9%
Shows, Fairs and Festivals	5.2%	3.0%	2.4%
Sporting Events	2.9%	2.3%	2.6%
Vacation Homes		4.6%	3.6%
Business/ Transient Travel	22.6%	32.6%	33.8%

From an economic viewpoint, the region's key recreational attractions are its ski slopes, golf courses, public parks, and historic sites. In addition, the direct sectors that service the nonresident visitors, namely lodging and food services, play a key role in this travel and tourism market. The potential for growth will depend on whether this overall assembly of recreational and service facilities maintains their competitive advantage. This advantage can be described as certain unique resources and attractions, their proximity to outside population centers, and their relative cost of services. Although the assembly is, indeed, complex and has largely evolved through a myriad of decentralized decisions, there is now a regional need for achieving better coordination in order to maximize the region's future potential.

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THE THEORETICAL ANALYSIS OF TRAVEL AND TOURISM DEMAND

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Abstract: One of the most important areas of analysis in travel and tourism planning is the estimation of tourist demand for travel and tourism facilities and services. Indeed, much of the research literature on planning techniques has focused on demand model formulation and use. In this paper, an overview of travel and tourism demand analysis concepts, techniques, and trends is presented. Because the appropriate demand analysis approach for any particular problem context depends on the characteristics and scope of the problem, special attention is given to identifying the types of situations where each approach is most suited.

Introduction

Tourism demand does not represent a homogenous group of people striving to travel pushed by identical motivations. It is a complex of various, and sometimes conflicting, desires, needs, tastes, like and dislikes. Hence, the analysis of tourism demand can help decision makers and planners to figure out the tourists' behavior elements, such as motivation, preference. Because the appropriate demand analysis approach for any particular problem depends on the characteristics and scope of the problem, special attention is given to identifying the types of situations that each approach is most suited.

The purpose of this paper is to review the travel tourism demand concepts, affecting factors, models and trends. This can help travel and tourism planners understand how to establish a demand model and also provide a general knowledge of the assumptions of different models.

The Affecting Factors of Travel and Tourism Demand

According to microeconomics theory, demand means the quantity of a commodity consumers wish to buy and can buy at a given price in a given period. More precisely, demand signifies a functional relationship that reveals the quantity that will be purchased at various prices, at a given time and place. The tourism demand function has several factors that analyze the needs and wants of tourists in establishing the demand of a particular destination. Several factors also affect tourism demand that should be considered when making forecasts. The tourism demand function is divided into five categories that elaborate on the demand or tourists.

Demand = f(price, preference, attractiveness, income, other substitution)

Price

Unlike a commercial product, tourism resources are immobile. The tourist must travel to the destination to enjoy the tourism product. Thus, cost is the major concern for tourists when they make decisions. Usually, costs includes transportation costs, transportation time opportunity cost, lodging, shopping and equipment, etc. In travel and tourism demand research, the costs are usually measured by travel cost, travel time, travel distance and out-of-pocket cost.

Preference

Tourists' preference is one of the major elements determining demand. However, preference is hard to measure directly. Tourists are motivated in different ways by different stimuli, and not all people react the same way to the same stimuli. Preference has a lot to do with demographic and socioeconomic variables. These variables include age, sex, marital status, educational level, occupation, position, family size, tourism and recreation experience and special recreation training.

Attractiveness

Attractiveness is a psychological reward. Attractiveness is varied for different tourist groups. Basically , attractiveness can be a historical area, weather, special event, natural resources, religious area, theme park, etc. For example, in 1996, the Olympic games will be held at Atlanta GA so sport events will provide the attractiveness for tourism demand. The attractiveness, in essence, is measured by infrastructure and superstructure quality of services, capacity and types.

Income

The household and personal income is a key variable for individuals or family to decide their tourism capability. Meanwhile, that will be one of the important variables for demand analysis. Especially, discretionary income influence the tourists' decision for selection of tourism activities. Discretionary income is income that is left after buying all one's necessities.

Other Substitutions

Substitutions can be separated into two categories: price substitution and resources substitution. The former is concern about the cost for similar tourism resources. The basic assumption is the tourist has the same experience for those resources or never has been to the destination. The latter is related to the destination attractiveness competition if the tourist will pay the same opportunity cost.

Stated as above, there are five fundamental elements for the researchers to establish the tourism demand model from the individual aspect. If the study is the whole market focus, population factors will be important variables for measuring tourism demand. Population factors include the number of people, migration, structure, spatial distribution, and so on.

The Forecasting Methods for Travel and Tourism Demand

The definition of demand forecasting is to predict the most probable level of demand that is likely to occur in light of known circumstances or, when alternative policies are proposed, to show what different levels of demand may be achieved. It is essential that forecasts provide information that is required by decision makers. The forecasts needs to cover the specified time period for which it is designed. Hence, forecasting plays an important role in most organizations since virtually all planning and

decisions must rest on understanding of, or assumptions about, the future (Stynes, 1983). Forecasting models are tools to help us better understand the future, including the role of past and present decisions in shaping it. In this section, four types of forecasting models that have been applied in various studies will be explored.

Time Series or Trend Extension Models

The simplest sort of demand model is estimated by plotting historical demand levels vs. time and then extrapolating the plotted trend into the future. Trend extension is extremely common both within and outside of travel and tourism planning. Whenever growth rates are used to project future growth or whenever past and current experiences are extrapolated into the future, one is either explicitly or implicitly engaging in a trend extension analysis.

Structural or Causal Models

Structural models depend on the identification of the relationship between some measure of travel and tourism demand and a series of causal variables. These relationships are usually identified using multiple regression or analysis of cross-sectional data (Smith, 1993). Once the model has been calibrated, estimates of future values of the causal variables are used in the model to make a forecast of future travel and tourism demand. Since the causal relationships are very vital for using structural models, the theoretical background to support model building should be very precise. Gravity model, multiple regression models, and intervening opportunity models are three types of approaches that have been applied in many studies.

System Simulation Models

System simulation models, in general, are the combination of structural and time series models. Simulation models are characterized by their explicitly dynamic nature and their attempt to replicate key events that occur over time. The typical structure of a simulation consists of a set of information (current population, numbers of visitor, infrastructure capacity, etc.) at some time period stored in a central data bank. Submodels characterizing the actors and their interrelationships draw upon this information as a basis for their actions (manpower management, accessibility, means of transportation, etc.) Given these actions, the data base is updated so that at the end of the period, there exists a new system state that serves as the basis for the decisions to be made in the next simulation period. Finally, from time to time exogenous changes may be imposed on the system (tourism resource development, management style changes, marketing technique changes, etc.)

Trip Distribution Models

With limited time and cost, trip distribution is one feasible method to measure the numbers of visitors. These models assume that under the predicted time period, the visitors' preference is the same, or the quality of the destination will not change. Based on the national trips forecasting values, the trips to each political units (i.e. county, township, etc.) will be allocated in given portions.

Discrete Choice Model --- a Research Trend

The analysis of consumer choice behavior is a major concern in such disciplines as marketing, economics, psychology, transportation science, and public policy analysis. Traditional microeconomics deals with consumer demand for goods that can be measured as continuous quantities (e.g., gallons of gasoline, pounds of meat). However, many important applications involve categorical, or discrete choice. Examples include choice of a brand of soft drink, type of automobile, mode of transportation for commuting to work, family size, or shopping destination. Discrete choice models are widely used to analyze and predict these types of consumer behavior. Also, the tourism demand research useing discrete choice model has become a trend in recent years.

Four types of forecasting models have been discussed above. To achieve a conceptual and analytical formulation of the travel and tourism demand problem, it is necessary to work at a more aggregate level of system representation than that of the individual trip maker. Individuals are, in principal and in fact, exactly that; individual, unique, and for all practical purposes unpredictable with respect to the intricacies of their behavior. Aggregates of people, however, will tend to exhibit common tendencies and behave in similar ways. In other words, in the aggregate, statistical regularities emerge that are sufficiently strong, stable, and theoretically reasonable to be useful in the analysis and prediction of travel and tourism demand.

Conventional microeconomics makes extremely strong assumptions concerning the decision maker's ability to use perfectly all information available and relevant to the decision and to make a completely rational, consistent decision given this information. The basic assumption is the tourist is able to assign at least an ordinal ranking to the alternatives available in terms of their relative desirability (i.e., the alternative's utility). Being a rational person, the decision maker will then choose the alternative with maximum utility (i.e., the one that maximizes the benefits). Probit and logit are two standard discrete choice models have been widely applied in different areas. Probit models cannot be expressed easily in an analytically closed form and hence are computationally cumbersome and expensive to use.

In recent demand studies, due to the easy model calibration and precise predictability, logit model has been widely applied in different demand forecasting. The logit model has a tractable, convenient functional form. In particular, it can calibrate relatively easily and efficiently using fairly standard maximum likelihood techniques.

Due to space limitations, the specific comparison of each discrete choice model cannot be discussed here. The brief review points out the research milestone in the future research.

Conclusion

Tourism demand is diversified and far from being stereotyped in well defined groups. That is the reason why this paper stresses the importance of an objective evaluation of receiving tourism resources in order to establish an approach that would best serve marketing efforts. In recent years, the discrete choice model has gradually become the main stream modeling approach for analyzing tourism demand. However, the discrete choice model, in general, requires a great deal of data. Also, the model parameter calibration is very complicated. So, most research still remain in aggregate level models, which are less costly and more

timely. There will be three directions for the future research. First, effective and efficient data banks will be built for discrete choice modeling. Also, effective computing approaches and techniques will continue to develop. Second, for the purpose of building more precise aggregate models, the theoretical background for the causal relationships must be verified reliably and validly. Finally, supply and demand considerations will be another research direction. To date, demand studies have assumed that supply is constant. But, since the concern over environmental attitudes, the supply side has become a variable issue. So, research from the whole tourism system viewpoint is another trend.

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THE NEW ENGLAND TRAVEL MARKET: 1980 TO 1994 -- AN UPDATE

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Abstract: The purpose of this study was to examine and explore the New England domestic travel market trends, from 1979 through 1994. The existing travel markets, who travel to New England, are changing by age cohorts and geographic markets. Implications and discussion points were provided. Keywords. Domestic travel, trends, New England, demographics, geographic markets, and market implications.

Introduction

Evidence suggests that demographic shifts in the population age structure will affect many businesses and activities, especially tourism as the population ages and significant portions of the population have time to travel (Research Alert, 1990). This will be particularly true as baby boomers reach older age cohorts. Recent studies (Warnick, 1992A and 1992B, Warnick 1993, Warnick 1994 and Kuentzel, Robertson and Ramaswamy, 1995) showed domestic travel in the Northeast has become a mature market and also very different in terms of changes by state. The distinct differences in travel-specific behavior and participation rates exhibited by changes over time will likely shape future demand for these activities. The economy of much of New England depends on the travel and tourism industry. Richness of New England's tourism and recreation attraction industry are critical to the increasingly competitive travel market. Therefore, there is a need to monitor these trends carefully and to determine how the region's markets are changing. This study provides an additional four more years of information to update the previous study of travel trends in New England and the Northeast.

Purpose of the Study

The purposes of this research paper are twofold: 1) to examine domestic travel to New England during the 80s and early 90s and to update previous trend studies; and 2) to determine how participation rates in domestic travel to New England and the Northeast within demographic and geographic variables have changed over time.

Method

For the analysis of domestic travel, data for this study were compiled from the annual surveys conducted by Simmons Market Research Bureau, Inc. (1979 through 1994)[1]. This research firm annually measures participation rates, demographic composition and media use patterns of a variety of leisure, sport and travel activities. The sample sizes range from 15,000 adults sampled in the early 80s to more than 24,000 adults sampled in 1994. The data were analyzed from 1979 through 1994 using an average annual adjusted percentage change rate. Other change rate factors were considered (weighted change rate, moving average, and least squares method); however, this method was selected due to its wide acceptance. Within this study only travelers who said that they traveled to New England were included. Excluded from this analysis were travelers who visited the New England from other countries.

The nature of domestic travel and participation requires the description of three major components of travel demand. First, domestic travel must be defined. "Domestic travel" is defined as "any trip(s) of more than 100 miles (one way) within the continental 48 coterminous U.S. states taken in the previous 12 month period" (Simmons Market Research Bureau, Inc. 1991). This definition of domestic travel includes all types of travel taken which fits the mileage and regional description; but excludes all types of travel taken of distances shorter than 100 miles. Second, "market size" is the "number of people who participate in domestic travel." This statistic by itself is somewhat less meaningful than a statistic that more specifically quantifies demand or travel volume. However, the nature of this data set does not easily allow a projection of the number of travel days to New England. Third, "participation rate" is the percent of total adults by descriptor (total U.S. population or age - such as 18 to 24 year olds) who elected to travel to New England for any reason as a primary destination during the pervious 12 months. In this study the geographic region definition of "New England" includes the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

Age cohorts that reflect the demographic patterns of travel include the following categories: 18 to 24; 25 to 34; 35 to 44; 45 to 54; 55 to 64 and 65 and older. Other groupings of age cohorts include young adults -- 18 to 34; middle-aged adults -- 35 to 50; and mature adults -- 50 and older. The highest level of educational status was also examined. It included the following categories: college graduate, some college education, high school education, and did not graduate from high school.

Selected Findings

The participation rates of adults selecting New England as a primary destination of all US adults averaged 3.4% over the last decade and a half (15 years). An adjusted annual change rate showed a 2.4% decline per year in New England travelers. This means New England lost about 141,000 primary destination travelers per year. The peak year was 1984 when 6.9 million destination travelers traveled to New England. The bottom year was 1991 when only 4.2 million destination travelers; however, travel has rebounded in 1992 (5.3 million travelers) and 1993 (5.3 million travelers), but fell off slightly in 1994 (4.7 million travelers).

New England's demographic markets have changed over time. Among the six age cohorts, four declined in participation rates for New England as a primary destination. They included 18 to 24 year olds, who declined by 1.8% (compare to decline of 5.1% in 1993 study), 25 to 34 year olds, who declined by 5.3% (compare to decline of 2.5% in 1993 study), 35 to 44 year olds,

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who declined by 1.3% (compare with growth of 1.7% in 1993 study), and 45 to 54 year olds, who declined by 1.5% (compare to decline of 1.0% in 1993 study)

In two age cohorts, participation rates for New England as a primary destination grew. They included 55 to 64 year olds -- growth of 2.7% (compare with decline of ".1"% in 1993 study), and 65 and older -- growth of ".1"% (compare with growth of 4.0% in 1993 study).

New England declined as a destination choice for two of the four geographic markets. Fewer people from the following regions selected New England as a primary destination. They included the Northeast, which declined by 5.0% (compare to decline by 1.2% in 1993 study), and the South, which declined by 1.3% (compare to decline by ".1"% in 1993 study)

New England grew as a destination choice for two of the four geographic markets. More people from these regions selected New England as a primary destination. They included the Midwest, which grew by 4.4% (compare with growth of "3.6"% in 1993 study), and the West, which grew by 7.6% (compare to decline by ".4"% in 1993 study). However, these two regions comprised the two smallest portions of the geographic markets for New England. The Northeast comprises 63% of New England's market (down from 66% in 1993 study). Nevertheless, the composition of the New England destination market was comprised more of the more distance travel markets, particularly the Midwest and West and a corresponding loss of Northeast market that appears to be going elsewhere.

Conclusions

New England continues to show signs of a mature destination market since the last review (Warnick 1993). The area has not rebounded to the high market years of the mid- 80s. However, after the Gulf War Year of 1991, there were positive signs that more travelers were returning to New England as travel was up and held steady. Yet the market dropped off slightly in 1994. Although New England is without a doubt one of the United States' most definable or marketable travel destination regions, the decline can be partially attributed to changing demographics and travel preferences of geographic markets.

The demographics suggested that New England has lost some favor with the young adult and middle-aged baby boom markets and gained with the over 55 year old markets. Growth has accelerated particularly for the 55 to 64 year market. While some may be concerned about this, it may be considered very positive as the over 55 market is to swell in the coming years and New England may be very well positioned to attract more of these folks. This is particularly true if they are currently coming in increasing numbers.

Growth in the mature market is a very positive sign for New England. It is also interesting that people more than 50 account for 43 percent of all households and half of all quantitative discretionary income (Morgan and Levy 1993). The big market may continue to be the middle-aged Baby Boomers, but they will soon be retiring and many will becoming empty nesters. Their travel patterns will change and we do know they are nostalgic. New England should concentrate on attract this market and individual destinations and attractions should be mindful of the aging Baby Boom market. They cannot be overlooked. However, marketing to them will not be like marketing to their parents. They are not likely to want to do the same things the generations before them did when they became older adults. This market has been highly participatory and active and is likely to be much more active into later stages of life. Passive attractions will need to be more participatory and engaging.

The previous trend study painted a not so good outlook on travel to New England largely do to the 1991 year. However, even then caution was noted as 1991 was the Gulf War year and travel was generally off everywhere. In that paper, a cautionary note was expressed regarding the reflection on the turn of events in one year. More patterns were suggested to be followed. Though travel was off in 1991, it did indeed rebound and hold steady in 1992 and 1993 and fell off slightly in 1994. Thus, patterns need to continue to be followed. The 1994 year, although off slightly, is not the significant trend year here. The overall pattern in recent years indicates some stabilization.

While the findings discussed here show an overall decline in the under 55 markets, one should not ignore these markets. They are indeed large markets that require attention and marketing savvy. In Table 1, some statistics seem to counter argument with the growth statement about the over 55 market trends. For example, "other age cohorts" configuration actually suggest a decline in the over 50 market participation rates. This is due in large part to the significant number of people in the 50 to 54 year old age range and relative unchanged pattern among those who are age 65 and over.

Market change over time is another important travel trend issue examined here. People who participate in travel pursuits may change their rates of travel based on their individual household conditions. It is very possible that people who travel frequently one year might not travel as frequently the following year. By carefully monitoring demographics and the changing patterns associated with one can see new patterns developing.

These trends, if they continue may mean some very basic changes in how travelers use the resources in New England. If we assume that the region is losing the more active travelers (younger age cohorts usually have higher participation rates in active recreational pursuits than older cohorts); then, activities that are likely to grow may include hiking, walking, visiting historic places and more passive forms of recreation and entertainment. Activity resource areas that are likely to see declines in participation may include swimming, skiing, and outdoor resource-based activities -- such as hunting, snowmobiling, water skiing, for example. These fundamental uses may not be dramatic changes, but will gradually change.

New England is not the "hot market" it was a decade ago for domestic travel. Other regions appear to have marketed their regions more aggressively and successfully. The Northeast travel market, New England's primary source of travelers, continues to

Table 1. New England Travel Market, 1980-1994.

New England Primary Destination Choice	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
Adult Part. Rate	4.3%	4.3%	4.2%	3.7%	4.1	3.5%	3.8%	3.6%	3.0%	2.8%	3.3%	2.3%	2.9%	2.9%	2.5%	3.4%	-3.7%
#New Eng. Trav.('000)	6,814	6,793	6,772	6,122	6,889	5,960	6,581	6,302	5,324	4,915	5,903	4,232	5,307	5,339	4,727	5,865	-2.4%

Age Cohorts	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
Adult Overall Rate	4.3%	4.3%	4.2%	3.7%	4.1%	3.5%	3.8%	3.6%	3.0%	2.8%	3.3%	2.3%	2.9%	2.9%	2.5%	3.4%	-3.7%
18 to 24	3.3%	3.4%	3.4%	3.9%	3.0%	3.0%	2.8%	2.7%	2.5%	1.8%	1.9%	1.6%	2.3%	1.9%	2.0%	2.6%	-1.8%
25 to 34	5.8%	4.7%	3.5%	4.5%	4.0%	3.8%	4.4%	4.5%	2.6%	2.7%	3.5%	1.9%	1.9%	2.5%	2.1%	3.5%	-5.3%
35 to 44	5.2%	5.4%	5.5%	3.6%	5.3%	4.3%	4.3%	3.6%	3.7%	3.1%	4.5%	2.6%	3.5%	3.4%	3.0%	4.1%	-1.3%
45 to 54	5.1%	5.2%	5.3%	4.0%	5.0%	4.0%	3.9%	3.8%	3.9%	2.9%	3.9%	3.0%	3.5%	3.9%	3.6%	4.1%	-1.5%
55 to 64	3.5%	3.9%	4.2%	3.4%	4.7%	3.3%	4.6%	3.7%	3.7%	4.0%	2.5%	3.2%	3.2%	2.0%	2.6%	3.5%	2.7%
65 and Older	2.3%	3.0%	3.7%	2.4%	2.7%	2.5%	3.0%	3.0%	2.1%	2.3%	2.6%	2.0%	3.2%	2.5%	1.8%	2.6%	0.1%

Other Age Cohorts	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
Adult Overall Rate	4.3%	4.3%	4.2%	3.7%	4.1%	3.5%	3.8%	3.6%	3.0%	2.8%	3.3%	2.3%	2.9%	2.9%	2.5%	3.4%	-3.7%
18 to 34	4.7%	4.1%	3.5%	4.3%	3.6%	3.5%	3.7%	3.8%	2.5%	2.4%	2.9%	1.8%	2.0%	2.3%	2.1%	3.1%	-4.5%
35 to 49	5.3%	5.6%	5.9%	3.4%	4.9%	4.1%	4.3%	3.6%	3.8%	3.1%	4.4%	2.4%	3.4%	3.7%	3.2%	4.1%	-0.6%
50 and Older	3.2%	3.6%	3.9%	3.3%	4.2%	3.2%	3.7%	3.4%	3.0%	2.9%	2.7%	2.5%	3.4%	2.8%	2.4%	3.2%	-1.5%

Education Status	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
College Graduate	8.6%	7.8%	7.0%	7.8%	8.0%	7.3%	7.8%	8.0%	4.9%	5.8%	6.3%	4.7%	5.9%	5.7%	5.3%	6.7%	-2.4%
Attended College	6.1%	5.7%	5.2%	5.1%	5.6%	4.5%	4.8%	3.7%	3.5%	3.6%	3.8%	2.1%	3.0%	3.9%	2.2%	4.2%	-8.0%
Graduated High School	3.7%	3.8%	3.9%	3.1%	3.3%	2.9%	3.2%	3.1%	3.1%	2.0%	2.8%	2.0%	2.0%	2.3%	2.0%	2.9%	-3.6%
Not High School Grad.	1.9%	2.2%	2.4%	1.5%	1.9%	1.4%	1.6%	1.2%	1.2%	1.0%	1.0%	0.9%	1.6%	0.3%	1.0%	1.4%	16.0%

Target Region	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
Northeast	14.3%	13.9%	13.4%	11.5%	13.1%	10.8%	11.5%	11.1%	8.8%	6.5%	10.2%	6.4%	8.4%	7.2%	5.7%	10.2%	-5.0%
South	1.8%	1.9%	1.9%	1.2%	1.6%	1.4%	1.5%	1.4%	1.3%	1.8%	1.4%	1.1%	1.3%	1.8%	1.4%	1.5%	-1.3%
Midwest	1.3%	1.4%	1.5%	1.5%	1.7%	1.8%	2.1%	1.8%	1.7%	1.9%	1.7%	1.4%	1.2%	2.1%	2.0%	1.7%	4.4%
West	1.3%	1.3%	1.3%	1.9%	1.2%	1.0%	1.2%	1.5%	1.3%	1.4%	0.9%	1.1%	1.9%	1.1%	1.5%	1.3%	7.6%

Target Region Composition	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
Northeast	72.9%	71.8%	70.7%	68.5%	70.5%	66.7%	65.6%	65.9%	61.5%	50.1%	66.3%	58.8%	61.3%	51.4%	47.0%	63.3%	-3.0%
South	10.6%	11.3%	12.0%	8.4%	9.9%	10.1%	9.7%	9.4%	10.7%	15.7%	10.2%	11.2%	10.8%	14.7%	13.2%	11.2%	2.8%
Midwest	10.3%	11.0%	11.6%	13.6%	14.2%	17.6%	18.9%	16.8%	19.3%	24.2%	17.8%	20.6%	14.4%	25.7%	27.5%	17.6%	10.8%
West	6.3%	6.0%	5.7%	9.5%	5.3%	5.6%	5.8%	7.9%	8.5%	10.0%	5.8%	9.5%	13.5%	8.1%	12.3%	8.0%	13.6%

Total Travel Destinations of Northeast Market ('000)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
Total Destinations	130,431	131,425	132,419	129,781	126,112	119,659	121,750	125,319	122,738	122,913	130,845	130,494	139,497	125,380	130,938	127,980	0.4%
Total Northeast Dest.	25,426	23,534	21,642	25,862	28,141	24,064	22,931	24,620	23,877	20,069	23,285	20,870	19,858	19,436	21,019	22,976	-0.2%
New England Dest.	4,965	4,877	4,788	4,335	4,860	3,975	4,318	4,151	3,276	2,460	3,913	2,489	3,252	2,744	2,220	3,775	-4.1%
Mid-Atlantic Dest.	7,135	7,600	8,064	8,205	8,307	7,276	6,268	6,632	6,978	6,094	5,772	4,853	4,435	4,330	4,210	6,411	-3.6%
Other Regions Dest.	13,326	11,058	8,790	13,322	14,974	12,813	12,345	13,837	13,623	11,515	13,600	13,528	12,171	12,362	14,589	12,790	3.5%

Source: Simmons Market Research Bureau. 1980-1994. Study of Media and Markets, Travel Volume.

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reveal more travel tendencies to other parts of the United States as noted in the earlier study (Warnick 1993). The aggressive nature of other regions, the revitalization of market areas, and the overall changing demographic and geographic travel pattern changes may explain the repositioning of the New England Region. Furthermore, it may be that New England is now one of many choices and is losing market share based on a growing diversification in the travel market.

What are the choices for the tourism and travel industry and businesses changing within the New England? Again, it must be noted that there is not high growth in the domestic travel market as defined within the context of this study. It continues to be a mature market. It may be out hustled and repositioned by other more aggressive and perhaps potentially more attractive destination choices elsewhere. Long term, there are signs that market conditions may improve. More retirees and an aging population with more free time should help to increase domestic travel demand to this region. Agencies' positioning statements and plans and marketplace promotions should consider the family market and the rapid growth in the mature market in the near future. It is a viable market and will be aggressively pursued over the next decade. New England's noteworthy historical, education and medical centers all may combine to attract more of these travelers to the region.

With no strong growth patterns in the domestic market, recreation and tourism businesses should continue to seek to balance market demand through either new markets or return markets. Furthermore, businesses must recognize that travel just does not "happen" anymore. Today's travelers have a diverse menu of national and international travel destinations to chose from during their free time. Heavily discounted airfares may prompt some travelers to go to more distant locales. Baby Boomers are a market who change their loyalties quickly.

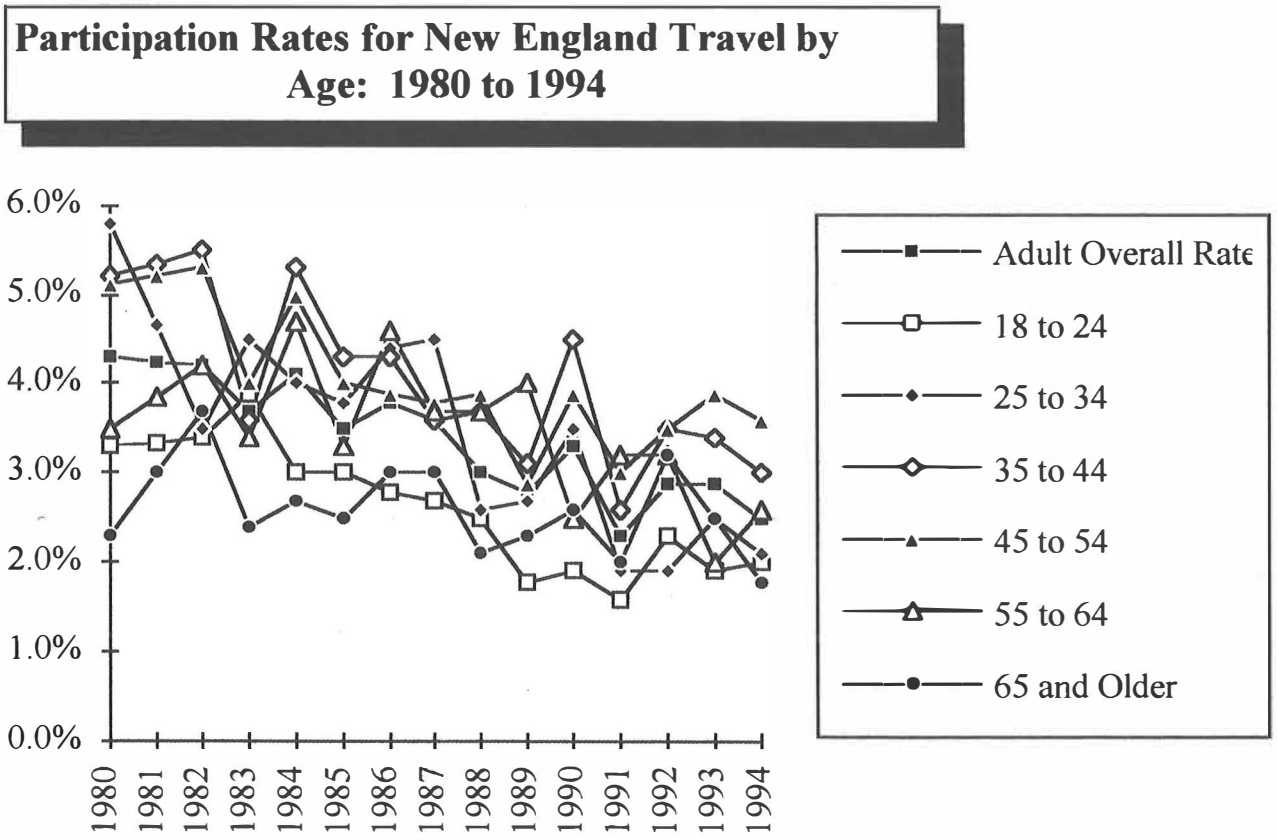


Figure 1. Participation rates for New England travel by age cohorts: 1980 to 1994.

Tourism and recreation businesses can no longer expect to benefit from growth markets where a new customer base is constantly replaced with another customer base. Mature market conditions spur customer retention strategies and market share competitiveness. In other words, these businesses must work hard to retain their current patrons because other firms will be seeking to draw them away. It will simply continue to be a more competitive tourism marketplace in New England in the 90s.

This review of domestic travel to the New England destination area provides new insights and how the market conditions for the 1990s may be evolving. National trends can be misleading within a regional context. The changes in the national travel market were not duplicated in the New England travel market. However, closer and more intense monitoring of travel trends, both domestic and localized, is still needed. Much is still not known about the inner travel patterns within New England or about the travel volume of each of these segments examined here. But, travel patterns have evolved and the New England travel market is much different from what it was just one decade ago.

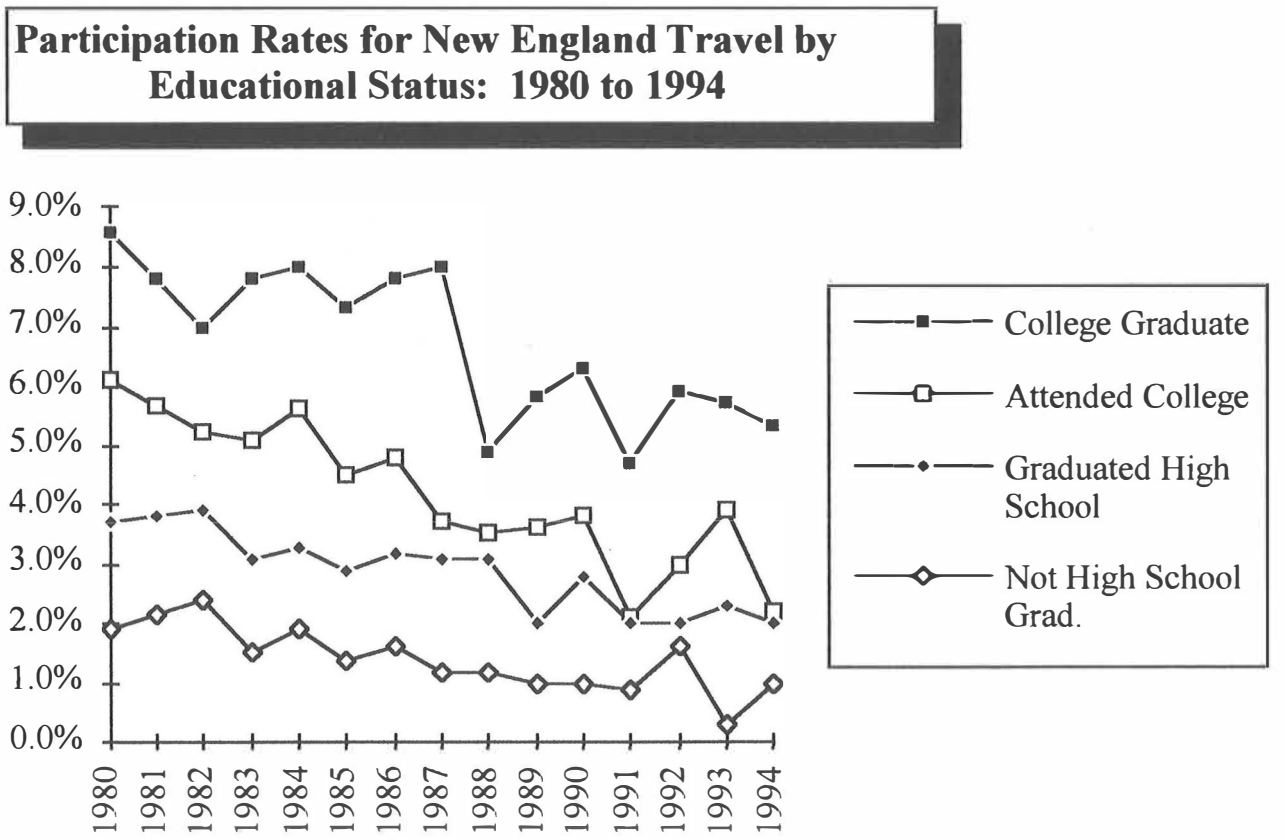


Figure 2. Participation rates for New England travel by educational status: 1980 to 1994.

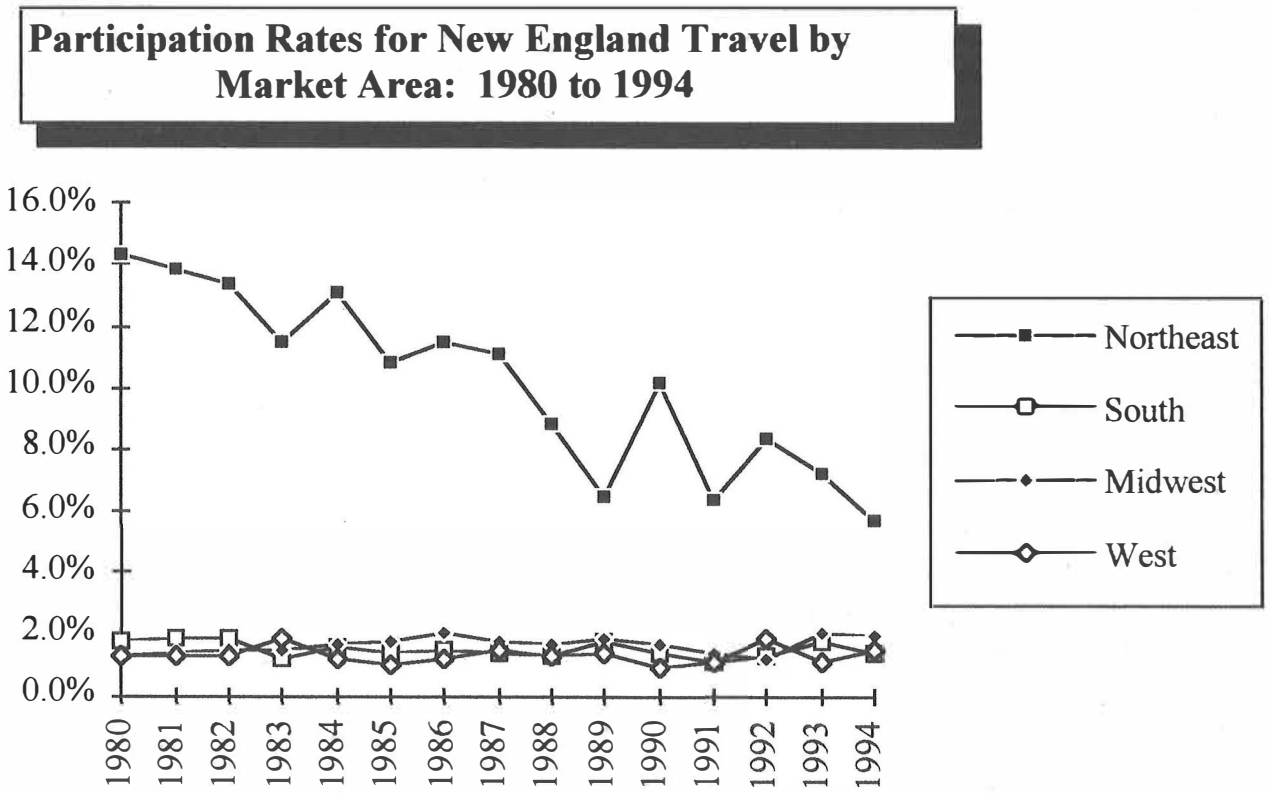


Figure 3. Participation rates for New England travel by market area: 1980 to 1994.

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UNDERSTANDING THE MARKET FOR PARKS CANADA BRANDED SOUVENIRS AND GIFTS

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Abstract: The purpose of this paper is to report and discuss the findings of a segmentation analysis of the market for Parks Canada's branded souvenir and gifts using data from a 1995 national omnibus survey. Potential consumers were classified according to their interest in buying Parks Canada branded products, preferences for a buying locations and the most likely items to be purchased. To identify the characteristics of the market segments, cluster and discriminant analysis were used as data analysis techniques. Four distinct market segments were identified: "loyal," "committed," "uninterested" and "occassional." Each differed as to size, residence, socio-demographic characteristics, spending patterns and propensities to buy specific products. Roughly, the market estimates derived from the data suggest that there may be a potential souvenir market in Canada of $ 1.6 billion and a potential gift market of $4.0 billion.

The Market for Parks Canada Branded Products

Parks Canada is now considering the feasibility of licensing the private sector to produce branded gift and souvenir items. This endeavor requires the collection of relevant information on how Canadians view and will most likely consume these products. The segments of this market most likely constitute a heterogeneous population mix. For this reason, it was thought appropriate to break the market by its main socio-demographic and attitudinal constituents and proceed to study them systematically. Having identified market segments, appropriate targeting of communication messages and better development of various lines of products could be significantly facilitated.

Who will be the most likely consumers of branded Parks Canada products? Will they be regular visitors to the Parks or occasional ones? At what shops will they buy them? What kind of products are of special appeal to them? These types of questions became important for Parks Canada in 1995 in order to know the approximate value of the market for souvenirs and gifts and to assess the feasibility of marketing branded gift and souvenir items. The latter figures were thought would convince private entrepreneurs that the licensing of Parks Canada's brand name is commercially attractive.

Data and Methods

Information regarding the potential consumers of Parks Canada branded products came from a national omnibus survey comprising 2,022 Canadians aged 18 years old and over. The polling firm Environics interviewed them in person between September 16 and October 7, 1995. The socio-demographic and residential characteristics of this sample are presented in Table 1. The survey's interviewing schedule contained questions measuring overall interest in Parks Canada branded products, buying criteria, preferences for buying locations, past spending in gift & souvenirs and items likely to be bought.

Table 1.Socio-Demographic Profiles of the 1995 Environics Survey.

	N	%
Total Sample	2,022	100.0
Gender		
Males	970	48.0
Females	1052	52.0
Age Groups		
18-34	728	36.0
35-54	707	35.0
55+	587	29.0
Marital Status		
Married	1231	60.9
Single	465	23.0
Other	326	16.1
Incomes ($Can)		
Less than 15,000	411	20.3
15,000-34,999	445	22.0
35,000-49,999	342	16.9
50,000 +	824	40.8
Education		
High School or less	1057	52.3
Some University	643	31.8
Completed University +	322	15.9
Residence		
Ontario	550	23.2
Quebec	488	14.8
Rest of the Country	984	62.0

Identification of the Market Segments

To identify the main market segments a k-means cluster analysis of 8 key attitudinal variables was performed. These questions, which were Likert scaled (1-4 Points), measured the following items:

Overall interest in purchasing items associated with Canada's national parks and historic sites;

Interest in purchasing these items at a Parks Canada gift shop within a national park or historic site;

Interest in purchasing these items at a privately run store located within a national park or historic site;

Interest in purchasing these items at a department store located across Canada ;

Interest in purchasing these items through mail order catalogues;

Intentions of buying these items as souvenirs of a trip to a historical park or site;

Intentions of buying these items as a souvenir gift of the trip for someone at home;

Intentions of buying these items as gifts in occasions such as birthdays, anniversaries, etc.

K- means cluster analysis was used as the statistical technique to differentiate cluster memberships. The k-means clustering algorithm allowed to measure the proximity between groups using the Euclidean distance between group centroids. Beginning with an initial selection of k groups, the algorithm placed each respondent within clusters according to his or her distance to the nearest centroid. In total, 10 cluster solutions were tested using the Environics 1995 survey data. To determine the best cluster solution, two criteria were used: the optimality criteria and the upper tail statistic (Mojena, nd). Following the optimality criteria, it was necessary to examine the behavior of the derived proximity measure in the neighborhood of k. The largest jump occurred at step 3 than at previous steps, thus, a 4-cluster solution seemed the most appropriate. The upper tail statistic test also confirmed this also this observation.

The four clusters found were labeled as: "loyals," "committed," "uninterested" and "occasional." These clusters accounted for 29%, 27%, 16% and 28% of the sample respectively. Discriminant analysis of the key eight attitudinal variables provided the information necessary to define cluster memberships and plot a "perceptual map" for segments. A good example of this methodology is found in Shoemaker's (1994) segmentation of the U.S. travel market according to benefits realized Results of the discriminant analysis are presented in table 2 and the perceptual map appears on figure 1.

A classification procedure using two discriminant functions had a 96.3 % success rate. The high eigenvalue of 6.26 (ratio of the between groups to within groups sum of squares) of the first function indicated that this linear combination did a fairly good job at separating adequately the groups. Table 2 showed that four variables were important in separating the groups. These were: in function 1, "buy at a PC gift shop," "buy a trip-related souvenir" and "buy a personal souvenir," and, in function 2: "buy at a Department store. The centroid and variables transformations of Table 2 (shown in columns 5 to 19), allowed to produce a "perceptual map" of the consumer behavior for the four segments identified. In this map, segments are plotted as points relative to their attitudinal attributes represented by vectors in the discriminant scores space. The degree to which these attributes separate the groups is indicated by the length of the vector. The vector's proximity to each segment and its direction show how influential a particular attribute is for the respondents in each segment.

Vectors 5 and 8 were relatively shorter than the other vectors suggesting that their associated purchasing intentions did not separate the groups as much as those associated with long vector lengths (particularly v2: the intention to "buy at PC gift shops"). As seen in the map, both the loyal and committed segments were found in the positive axis of function 1 but on different quadrants. The relative lengths of vectors 2 and 6 and their proximity to the spatial location of the "loyal" segment suggest that respondents classified as "loyals" (if intentions are translated into behavior) will be the typical buyers of souvenirs at parks and sites in 1996. The committed segment location was found in the continuation of vector lines 4 and 5. These individuals will buy Parks Canada branded products at different locations including department stores and via mail catalogue orders. Occasional and uninterested segments were found on the negative side of function 1 and positive side of function 2. Their location near the negative continuations of line vectors reflects their little interest shown in purchasing products in contrast with members of the previous segments.

Table 2. Discriminant Analysis Results

Discriminant Function	Eigenvalue	Canonical Correlation	Wilk's Lambda	Chi Squared	Significance
1	6.26	.92	.07	5237.6	.000
2	.98	.70	.48	1413.5	.000
		Function 1		***Function 2***	
Centroids (Groups Means) *					
Cluster 1 "Loyals"		5237		-902	
Cluster 2 "Committed"		10796		669	
Cluster 3 "Uninterested"		-18638		32	
Cluster 4 "Occasionals"		-4955		290	
Significant Variables **					
Overall Interest in buying PC products		232		-182	
Likely to buy at a PC gift shop		542		-299	
Likely to buy at a PC privately run store		210		-31	
Likely to buy at a Department Store		166		388	
Likely to buy through mail orders		22		87	
Likely to buy a trip souvenir		408		-282	
Likely to buy a personal souvenir		404		-73	
Likely to buy a gift for gift-giving occasions		141		-284	

* - Centroid values multiplied by F values associated with each of the discriminant functions.

** - Correlations between discriminant functions and discriminatory variables multiplied by their univariate F values.

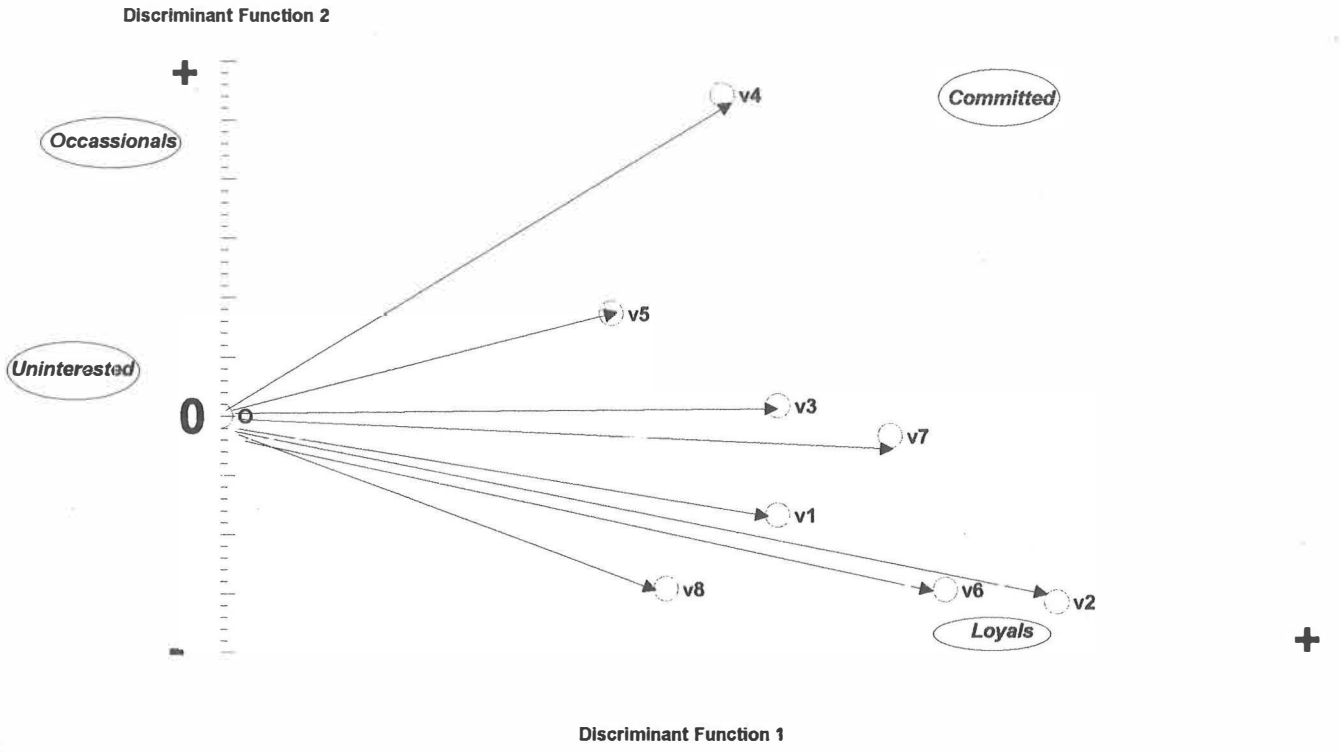


Figure 1. Perceptual Map of Market Segments

Vectors:
v1 = Overall Interest in purchasing Parks Canada branded products
v2= Intention to purchase at Parks Canada gift shops
v3 = Intention to purchase at Parks Canada privately run stores
v4 = Intention to purchase at department stores
v5 = Intention to purchase through mail orders
v6 = Intention to purchase trip related souvenirs
v7= Intention to purchase personal souvenirs
v8 = Intention to purchase gifts at giving occasions
In Circles = Aproximate location of cluster segments

Description of the Market Segments

The "loyals" represent about 5.6 million Canadian adults. Most of them were young married females. This segment contained many "full nest" families: about 47% of them lived with children under the age of 18. It was the most educated segment of the four: 18% have completed university education. Loyals will buy their products at a gift shop or a privately run stores located within a park or a historical site rather than at other places. In this sense, their loyalty is a "place" related one. They will purchase more souvenirs than gifts. As for product preferences, loyals are, primarily, interested in generic souvenirs (85% preference), clothing items (69%), papergoods (63%) and publications (63%).

The second segment, the "committed," represents about 5.3 million Canadians. These will be the more enthusiastic in buying Parks Canada souvenirs and gifts. Their commitment to purchase these products is shown in the fact they will buy these products not only while visiting parks or sites but while shopping in a department store or ordering them by mail catalogues. Demographically, they are a relatively young group where married females are the majority. Close to 30% of them live either in Toronto or in places found within the rest of the province of Ontario. The most preferred products of the committed segment are generic souvenirs (88%), clothing items (65%), paper goods (73%), publications (69%) and collectibles (65%).

The third segment, the "uninterested," showed no intentions in buying PC products. They represent about 5.6 million Canadians. The majority comprised males (59%) who were older and/or retired. About 30% of them resided in Montreal or in the rest of the province of Quebec. This segment had the typical characteristics of "empty nest" households: more than two thirds of uninterested do not live with children under the age of 18. It was also the least educated segment: 62% of clients have only

high school completed or less. These individuals will a few souvenirs or gifts during the year.

The last segment, the "occassionals," represents about 5.6 million Canadians. They show little interest in purchasing products although they hinted that they will buy some souvenirs or gifts if they have the opportunity to visit national parks or historic sites. This segment has almost an equal number of males and females represented. Albertans are slightly over represented as occasionals. Like loyals, more than a half of these clients are either full or part-time workers. It has the highest number of high-income earners: about 45% earn wages or salaries equal to $50,000 or higher. Among the products they say they will be most likely be purchasing, the most mentioned are generic souvenirs (46%) and clothing items (42%).

The Dollar Estimates

Table 3 presents preliminary estimates of the dollar value of the souvenirs and gift markets based on the segmentation of Parks Canada's market. Individuals within the "loyal" and committed' segments are of particular interest since they were the ones who expressed that they were the most likely to buy gifts or souvenirs. Estimates were based on information collected on the amount spent on trip-related purchases (gifts and souvenirs) made in the past 12 months, the frequency of these purchases and the number of visits made to national parks or historic sites in the last 10 years.

It should be noted that while the segmentation is based on the respondents' announced intentions to purchase, the amount of spending is based on questions about their actual current behavior. In this sense, the total spending of souvenirs and gifts is an estimate of what these people spend on such items in the absence of Parks Canada products. The proportion of spending that will be diverted to PC products was impossible to predict at this time (especially since we do not even know yet what the products are). This amount could be very low or high. The present estimates say is that there is a potential souvenir market in Canada of $1.6 billion and a potential gift market of $4.0 billion (the sum of the amounts spent by the loyal and committed segments).

The average annual spending for each segment was multiplied by the number in each group, and the souvenir spending was then reduced by a factor derived from the propensity of the visitor to visit. This propensity was determined by dividing the number of times the respondent had visited a park in the past ten years by ten, giving a fraction that resembles the probability of a park visit in any one year. The estimates produced this way are recognized as very crude. It is made cruder by the fact that, although the respondent was asked what he or she spent, it is not at all clear that the respondent actually answered for himself alone, or in fact, for the whole family. Added to that the problem of recall, both of expenditures and of number of trips, and the estimate should be treated as an order of magnitude only.

Conclusions

The findings of the consumer segmentation analysis revealed that the market of Parks Canada products can be divided into smaller and more homogeneous groups based on their attitudes toward shopping and potential behavior. Each segment has its own idiosyncrasies with respect the consumption of different lines of products.

The "loyal" and "committed" segments are the most promising because of their market potentials with $1.6 and $4.0 billion per year in purchases of souvenirs and gifts respectively. These segments capture the main share of the Parks Canada products market. If their buying intentions are translated into actual behavior in the coming years, their contribution to the stability and growth of a heritage market could be substantial.

In spite of the crudeness of the dollar estimates, the information from this study proved important in the decision to continue with the initiative to licence products. Parks Canada marketers have the empirical evidence to suggest to potential private sector partners that it is worthwhile for them to explore their potential markets with more accurate instruments. Perhaps the most important finding of all, which gives Parks Canada management most confidence, is the fact that there is a significant number of people in Canada who found the idea of Parks Canada marketing itself through merchandise as an acceptable way for a government institution to behave. In the era of small government, when many government organizations are withdrawing from various spheres of activity at the insistence of the voters, this is an important piece of information

Finally, note that the findings of this analysis may be extremely useful in laying the foundation for a variety of marketing strategies aimed at Parks Canada consumer market. The identification of the segment's fundamental characteristics could enable marketers to design and promote programs for specific target markets (which may include "occasional" clients) instead of producing a generic program to fit all needs and wants.

Table 3. Dollar Estimates by Market Segments.

	MARKET SEGMENTS				
Estimates *	Loyal	Committed	Uninterested	Occasional	Loyal + Committed
Size of Segment	5,621,596	5,270,855	3,215,124	5,582,624	
Average Annual Spending for Souvenirs	$128	$171	$31	$115	
Total Spending for Souvenirs	$ 719,564,288	$ 901,316,205	$ 99,668,844	$ 642,001,760	$ 1,620,880,493
Average Annual Spending for Gifts	$295	$437	$232	$307	
Total Spending for Gifts	$1,658,370,820	$ 2,303,363,635	$ 745,908,768	$ 1,713,865,568	$3,961,734,455

* Based on a sample weight of 9742.8 and a population 18+ of approximately 19.7 Million

Knowing that working age females with children predominate in the "core" segments of the market is valuable information. Programs promoted to these segments should stress these characteristics.

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Diary of a South Pacific Journey to Tahiti: An Exploratory Assessment of Trip Satisfaction

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Abstract: Recipients of in an incentive travel package to Tahiti provided by a California-based adventure travel agency were surveyed on their return flight from Tahiti (n=30) in the South Pacific. The trip consisted of a three-day sail on 50-foot yachts to Bora Bora followed by three days on the island of Bora Bora. Results show that this Portland, Oregon, based group had a terrific experience in their travels to the Society Islands in French Polynesia. Except for meals served on the boats (mean=7.5), the average scores for services provided by the travel agency ranged from 8.0 or higher on a ten-point rating scale. A Pearson correlation analysis showed that the *sailing experience* ($r = .70$; $p. < .001$) and *feelings about the overall experience* ($r = .72$; $p. < .001$) were significant and positively related to *trip satisfaction*. In addition, the *farewell banquet* was correlated with the *welcome banquet* ($r = .47$; $p < .01$) and the *amount of money spent on the trip* ($r = .44$; $p < .05$) was correlated with the *visitors feelings index*, an index specifically developed for this study. Although, an assessment of the qualitative data supports the quantitative results, the qualitative data also shows that participants were not satisfied with some aspects of the trip.

Introduction

Incentive travel is a growing segment of the overall travel industry and very little research has focused on this niche in travel and tourism, especially as it pertains to those facets that influence the overall experience and trip satisfaction. According to Shinew & Backman (1995), the incentive travel industry is estimated at over US$17 billion, with predictions of tripling that amount in the next ten years. Because of the unique nature of incentive travel coupled with the enormous impact it has on the overall industry; it is important to understand the elements of an incentive travel program that contributes to the overall satisfaction of its participants.

Satisfaction has many definitions. In Webster's Dictionary (1990) for instance, satisfaction is defined as the "the fulfillment of a need or want, the gratification of an appetite or desire, or as the contentment in possession and enjoyment." Stankey (1972), when describing satisfaction with the quality of a wilderness, wrote that "it can be judged only by examining the extent to which motivations and objectives of the visitor are fulfilled." However, according to Williams (1988), within recreation, the most widely cited definition is that of Bultena and Klessing (1969) which states that "satisfaction is a function of the degree of congruency between aspirations and perceived reality of experiences." Westbrook (1987) argues that positive emotions such as contentment, delight, pleasure, joy, and interest should be linked to positive disconfirmation and negative emotions such as anger, frustration, disgust, and contempt should be associated with negative disconfirmation. In addition, Westbrook suggests that positive affect is generally linked to the stimulus (i.e., experience or product). Different negative emotions on the other hand, may be attributed to either the product or provider, the individual, or the situation. In recreation and/or tourism experiences, Knopf (1982) and Peterson (1974) both found that it is often the situation (i.e., things over which the provider or individual have little control such as mosquitoes, humidity, seasickness, or other people) that people find undesirable. Situational factors such as those mentioned can enhance or greatly detract from participant satisfaction.

In May 1995, a California-based adventure travel company, organized an incentive travel experience to Tahiti for a radio station in Portland, Oregon. As a *soft adventure* experience, 38 participants spent one night in deluxe accommodations in Tahiti, three nights on board 50 foot charter vessels sailing to Bora-Bora, and two nights at the Hotel Bora Bora. Participants were 'given' this travel experience as a value-added package tied to a sales promotion to buy radio advertising. Participants were fully aware that by purchasing so many dollars of advertising, they would then be awarded a trip to Tahiti. Ideally, by creating a unique travel experience, the radio station hopes to solidify relations between the station, sales staff and clients to create client loyalty. The sponsoring radio station tried to attract key decision-makers within the companies represented. Thus, participants included the person buying the advertising, their guest, and the sales staff from the radio station who sold the most advertising because of the incentive package program. Participants ranged in age from 25 to 65 and the number of males equaled the number of females. Several members of the group had participated in prior incentive travel trips with the same radio station and adventure travel firm.

The objective of this exploratory study was to examine peoples perceptions of the quality of their incentive travel program to Tahiti. A second purpose was to determine, through a qualitative approach using open-ended questions, factors affecting their satisfaction with the trip.

Methods

An eight-page survey was completed on the return flight from Tahiti to Los Angeles, California (n=30). There were eight refusals. Many statements, drawn from a spring break survey, developed by the Center for Travel and Tourism at the Pennsylvania State University, were used to measure feelings about the travel experience. Next, a series of statements was used to assess satisfaction with specific elements of the trip (e.g., lodging, nightlife, and air transportation). In addition, several questions asked respondents to rate on a 1 to 5 point Likert agreement scale thoughts about the destination. Several open-ended questions allowed respondents further to clarify their feelings about the experience. A visitor feelings index was computed as the mean of responses to four items measured by a series of 7-point semantic-differential scales (i.e., good-bad, positive-negative, like-dislike, and happy-unhappy). A

satisfaction index, drawn from prior studies in outdoor recreation behavior, was computed as the mean of 5 items measured by a 5-point Likert scale.

Results

The data analysis was conducted in two stages: quantitative and qualitative. The quantitative data was analyzed via SPSS for windows on a personal PC. Factor, reliability, and a Pearson correlation analysis and also measures of central tendency were performed on the data. Results are presented in the next section. A qualitative assessment of the open-ended questions was done using Microsoft Excel. The frequency of comments was assessed and categorized and will be summarized in this paper.

Quantitative inquiry

The survey included several questions designed to be used in an index of overall trip satisfaction. Table 1 shows the reliability analysis conducted on the six items included for the index. In essence, these questions represent different ways of asking participants how much they enjoyed their experience. Combining a variety of questions like these into an overall index provides a more complete and reliable illustration of how travelers perceived trip quality than does single item measures. The reliability analysis (Cronbach alpha = .62) shows that five of six items were internally consistent enough to include in a satisfaction index.

The statement, "*My trip to Tahiti was not as enjoyable as expected*," was dropped from the scale to enhance the overall reliability of the other five items. The index was computed as the mean of responses to those five items measured by a 5-point strongly-disagree to strongly-agree Likert scale. The mean score of 4.1 shows that travelers were quite pleased with their experience.

A Principle Components Factor Analysis using varimax rotation was carried out to explore the possibility of creating a *Visitor Feelings Index*. According to Kass and Tinsley (1979, p. 120), "factor analysis is a mathematical technique that permits the reduction of many interrelated variables to a few latent dimensions or factors." The authors of this paper realize that a minimum of 100 cases is necessary normally to conduct a factor analysis, yet we only had 30 cases. Further data collection was planned for the Tahiti incentive trip in November 1995; however, this trip was canceled due to participant concerns about the nuclear tests occurring in that area at the time. Since the study was exploratory in nature and only 30 cases were available a factor analysis was conducted. Eight items measuring feelings about the vacation to Tahiti using Osgood's 7 point semantic differential rating scales were included in the factor analysis that produced three factors (Table 2). This analysis identified similar statements that correlated highly with

Table 1. Reliability Statistics for the Satisfaction Index (n=30)

Satisfaction Index	Item Mean	Standard Deviation	Corrected Item-Total Correlation	Alpha If Item Deleted
My trip to Tahiti was not as enjoyable as[b] expected	4.2	1.34	.01	.62
I cannot imagine a better trip	3.7	.91	.39	.35
This trip was well worth the money I spent to take it	4.6	.56	.19	.46
I would not want to take any more trips[a] like this one	4.6	.46	.30	.50
I was disappointed with some aspects of[a] my trip	3.3	1.36	.51	.20
I thoroughly enjoyed my trip	4.5	.51	.27	.44
Overall Index	4.1			.62

a/ Scale Item recoded prior to analysis

b/ Item deleted from the Satisfaction Index to enhance overall reliability of the scale

Table 2. Factor Analysis of Visitor Feelings Index

Item	Factor I	Factor 2	Factor 3
FACTOR 1 - Visitor Feelings Index)[b]			
Unhappy to Happy Scale	.66	.12	-.11
Dislike to Like Scale	.95	-.10	.08
Good to Bad Scale[a]	.95	-.10	.08
Positive to Negative Scale[a]	.91	-.09	-.06
FACTOR 2			
Calm to Excited Scale	.00	.82	.27
Relaxed to Stimulated Scale	-.08	.76	.02
Very Satisfied to Very Dissatisfied Scale[a]	.41	.44	-.41
FACTOR 3			
Aroused to Unaroused Scale[a]	.21	.32	.77
Eigenvalue	3.31	1.60	1.05
Percentage of Total Variance	41.00	20.00	13.20
Reliability (Cronbach alpha of Visitor Feeling Index	.90		

a/ Item reverse-coded prior to analysis.

b/ n=30 Scale Mean = 6.8

each factor recognized. Four items loaded on Factor 1 at .66 or greater to represent 41 percent of the total variance (eigenvalue = 3.31). Factor 2 consisted of three items (eigenvalue = 1.6) contributing to 20 percent of the variance. One item loaded above .40 in Factor 3 which contributed 13 percent of the total variance. Since all four items (unhappy-happy, dislike-like, good-bad, and positive-negative) loaded so strongly in Factor 1, this cluster was selected to represent the *Visitor Feelings Index*.

The next step was to examine the reliability of the four items to use as a *Visitor Feelings Index*. Table 3 shows the results of that analysis providing a reliability of .90. The scale mean of 6.8 on a 1 to 7 point scale shows that visitor feelings about the experience were very positive.

A Pearson correlation analysis was conducted to determine those facets of the trip related to trip satisfaction. As expected, the *Visitor Feelings Index* was correlated with the *Trip Satisfaction Index* ($r=.36$; $p<.05$). In addition, a single item measure of feelings about the trip ($r=.39$; $p<.05$) was positively correlated with *trip satisfaction* at a similar level of correlation.

Travelers were asked to rate the quality of eleven items using a 1 to 10 point scale dealing with certain aspects of the trip. Those items were pre-trip orientation meeting, orientation at the destination, information provided by the travel agency, welcome banquet, farewell banquet, activities during the trip, the sailing adventure, meals served on the boat, other meals, welcome gifts, and pre-trip gifts. The mean scores for all eleven items were 8.3 or greater. Two of eleven items, *The Sailing Adventure* and *Pre-trip Gifts,* were significant correlates of trip satisfaction. Finally, the mean quality score for the *Welcome Banquet* (mean=9.5), held the first night in Tahiti, was significantly correlated with the *Farewell Banquet* (mean=9.6), held at Hotel Bora Bora.

In summary:

1) As visitor feelings about the trip increased, satisfaction with the overall experience increased.

2) As ratings of the 4-day sailing component of the experience increased, overall satisfaction with the trip increased.

3) As ratings of the pre-trip gifts sent to each participant increased, overall satisfaction with the trip increased

Qualitative Inquiry

A second purpose of this study was to develop a better understanding of participant perceptions of trip quality through several open-ended questions included in the survey. The questions were:

1) What was the best part of this trip?
2) What was the worst part of this trip?
3) Please describe your contact with local residents.
4) Please describe anything about this trip that was particularly disappointing to you.
5) What recommendations would you have for others going to this destination?

Responses for the question "*What was the best part of this trip*?" were categorized into the following headings: place, recreation, unique experiences, and services provided. Out of the total responses recorded for this question (n=29), the majority of participants felt that the place (38%), Bora Bora, and the recreational opportunities (30%) (sailing, snorkeling, etc.) were the best part of their trip. Twenty-two percent said that the culture and uniqueness of the place were the best while eight percent commented that services such as accommodations were the best part of their trip.

For the question, "*What was the worst part of this trip*?," 57% of the responses (n=29) were boat related including statements like boats were too crowded, boats too hot, or meals were not good. Another 16% referred to aspects of travel such as sailing trip was too long, flights too long, or the last night of the trip was disappointing. Eleven percent of the comments were boat staff related including skippers not accommodating and boat cooks not up to par. While the sailing adventure portion of this incentive travel trip rated very high in satisfaction in the quantitative part of the study, most of the responses to the worst part of the trip were about the boats used in the program.

For the question, "*Please describe your contact with local residents*," 70% of the responses (n=27) were positive: locals were friendly, wonderful, kind, and appear to enjoy tourists. The remainder of the comments (29%) referred to limited or minimal contact with locals.

Participants were asked about disappointing aspects of their trip, which suggested that they had some previous expectation that was not met. Again, the sailboats seemed to be the cause of much of the disappointment. Although 40% of the responses (n=27) were "I am disappointed about nothing," 39% dealt with sailboat accommodations such as sleeping space, food, crew, and being isolated from others in the group. One displeased client said the mosquitoes on the boat were terrible, I brought too many

Table 3. Reliability Statistics for the Visitor Feelings Index (n=30)

Visitor Feeling Index	Item Mean	Standard Deviation	Corrected Item-Total Correlation	Alpha If Item Deleted
Unhappy to Happy	6.6	.72	.49	.96
Dislike to Like	6.9	.34	.82	.69
Good to Bad[a]	6.9	.34	.82	.69
Positive to Negative[a]	6.9	.31	.75	.73
Overall Index	6.8			.90

a/ Scale Item recoded prior to analysis

clothes, trip related experiences were too costly, and the dive on Bora Bora was disappointing. Most of the recommendations for others going to this destination dealt with pre-trip preparation concerns. For instance, 75% of the total responses to this question (n=26) were such things as pack light, tan before you go, bring snorkeling gear, bring bug repellent & sunscreen, pick your boat mates ahead of time, and bring more spending money. Another 21% of the comments were things like being flexible, asking lots of questions, and seeing more of Bora Bora while you are there. Four percent of the comments were recreation related including exploring the islands, visiting locals, and taking a jeep safari.

Conclusions/implications

In conclusion, taken literally, findings based on the quantitative analysis show that recipients of this trip to Tahiti were very happy with all elements of their experience. However, the qualitative information shows that this is not true for all aspects of the trip. Many people were not satisfied with several aspects of the sailing portion of their experience. Since the three-day sailing trip to Bora Bora from Raiatea was promoted as the trip highlight, that makes the qualitative results even more important. Often, evaluation results are based on quantitative information, which may not give a true depiction of participant satisfaction. For instance, the boats for this trip were chartered from two different companies in the Society Islands; thus, both captains and crew came from two companies. Boat problems incurred may have resulted from inconsistencies between boats/crew from the two charter companies. The boats, overall, from one company were in slightly better shape than boats from the other. Some captains and crew from one company seemed to show a greater concern for participant involvement than the staff from the other company. From a management perspective for future trips to Tahiti, all boats and captains should come from one charter agency to increase consistency between vessels and crew. Secondly, the data shows that services such as good food, banquets, pre-trip planning, onsite orientation, and a variety of activity opportunities are important to carrying out a quality incentive travel experience. Although this trip was free for the participants, they still had a high level of expectations and those expectations must be met with some degree of satisfaction. This trip was a first time experience to Tahiti for the adventure travel firm coordinating this experience. This study showed that a quantitative assessment of trip quality alone would not be sufficient to evaluate this experience to aid planning efforts for future trips. A combination of qualitative and quantitative data is critical to understanding client feelings about their incentive travel program.

In retrospect, this study was a demonstration of the depth of understanding that can be gained through triangulation: data collection via quantitative, qualitative, and participant observer methods. As investigators for this study, we were also responsible for trip implementation that enhanced our understanding of the study results. Our role as participant observers engaged in trip coordination and interaction with participants provided a third dimension of understanding about trip quality. This trip was exploratory in nature and the methods developed did not include a participant observer methodology - although, in essence, that did occur. A survey of trip coordinators about the trip along with the quantitative and qualitative data from participants would enhance future research efforts in understanding elements of trip quality. Likewise, results could lead to improved trip planning and trip implementation for adventure travel agencies providing incentive travel experiences.

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COUNTY LEVEL TRAVEL AND TOURISM IMPACTS - CONTRASTING NINE PENNSYLVANIA COUNTIES

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Abstract: This paper compares the economic impact of travel and tourism in nine contiguous counties in Southwestern Pennsylvania. Several impact multipliers are developed for each county. The size of these multipliers is related to the size of each county's economy. The relative importance of each county's travel and tourism activity to the local economy is also presented. Finally, the sum of the county impacts is contrasted with the economic impact of travel and tourism for the entire region.

Introduction

The first step in conducting an economic impact study of travel and tourism is the determination of an appropriate region within which to measure the impacts. Tourism is an export activity in which the service is consumed on site. A smaller region allows more of the recreationist to be considered as visitors bringing in new money to the area. However, the smaller the region, the greater the economic leakage as the backward linked economic impacts are calculated. Conversely, a larger region means more of the recreationists originate from within the region and consequently do not represent an export. Hence their activities are not counted as economic impact. Large regions do, however, have a greater ability to internalize the economic impacts. This results in larger multipliers. The overall effects are therefore mixed.

A series of surveys were conducted in a 9-county region of Southwestern Pennsylvania to determine the economic impacts of travel and tourism within that region (Strauss et al. 1994a, 1994b, and 1995). Nearly 20,000 visitors were interviewed to determine their geographic origins, itineraries and expenditures. More than 400 sites and events were included in the study. Visitor expenditures were identified specific to the type and location of the purchase. This allowed the economic impacts to be calculated for each county and also for the entire region.

Objectives

This paper identifies the relative importance of travel and tourism to nine separate counties in Southwestern Pennsylvania. Particular attention is paid to how the size of each county's gross domestic product (GDP) relates to the size of the multiplier obtained from an input-output model of the travel and tourism activity. Finally, a comparison is made of the sum of the individual county impacts to the net regional impacts.

Procedures

Student interns surveyed visitors to travel and tourism destinations in the 9-county region. For the purposes of this study, travel and tourism was defined as any nonresident visitor using a recreational site in the area. Activities ranged from outdoor recreation to cultural events (Strauss et al. 1994a) In addition, owners of vacation homes, transients staying overnight in local hotels, and attendees of local conventions were also counted as visitors. The visitors were asked about their place of residence, the length of their stay and the types of expenditures occurred during their trip. Each visitor was asked to identify the type and location of all expenditures made during a 24-hour period of their trip. Expenditure data included food, transportation, lodging and activity specific costs. The location of the regional expenditures was specified either as within the county where they were interviewed or as within the remaining 8 counties of the region. No effort was made to measure expenditures incurred outside the nine-county region.

As a parallel effort, visitation levels were attained from more than 400 recreational sites and events. Penn State researchers worked with those sites that did not routinely collect visitation data to estimate their attendances.

The expenditures acquired from the sampled visitors along with the observed proportions of non-county residents were multiplied by the visitation figures to estimate the total expenditures by nonresident visitors in each county of the region. Economic impact models were developed for each county of the region using the IMPLAN input-output model. A similar procedure was used to estimate the overall regional impacts.

Results

The observed nonresident visitation for each county ranged from a low of 610 thousand in Indiana County to a high of 3.8 million in Westmoreland (Table 1). Average county expenditure levels ranged from $16 per visitor day in Fulton County to $44 per visitor day Somerset County. The product of these two measures was lowest in Fulton County ($10 million) and largest in Somerset County ($89 million). Both the amount of visitation and the average expenditure level were influenced by the range of travel and tourism opportunities found in the individual counties.

The nonresident expenditures represent a gross expenditure level. The amounts entered into the input-output model are identified as direct sales impacts and only include regional expenditures for goods and services actually produced in the county. For example, while a visitor may spend $20 for fuel at the local service station, most of this pays for the fuel produced elsewhere. Therefore, only the valued added portion of this sale was included as a direct regional impact. From this direct impact, the input-output model estimates secondary impacts. The reported total sales impact is the sum of the direct and secondary impacts. Total sales impacts ranged from a low of $11 million in

Table 1. The economic impacts of travel and tourism in nine separate counties of Southwestern Pennsylvania.

County	Average Expenditures	Visitors	Non-Resident Expenditures	Direct Sales Impacts	Total Sales Impacts	Value Added
				(Millions)		
Fulton	$15.93	0.64	$10.2	$7.0	$10.9	$6.9
Huntingdon	$18.98	1.63	$31.0	$21.3	$37.4	$23.1
Bedford	$29.44	1.50	$44.1	$36.0	$64.6	$37.4
Somerset	$44.03	2.01	$88.6	$74.8	$139.5	$88.3
Fayette	$25.10	1.12	$28.0	$22.7	$52.6	$34.8
Indiana	$26.12	0.61	$15.9	$12.6	$25.9	$16.0
Blair	$31.86	1.27	$40.6	$34.5	$76.3	$46.5
Cambria	$19.96	1.90	$38.0	$27.7	$64.6	$40.3
Westmoreland	$16.87	3.80	$64.1	$54.3	$123.2	$80.3
County Totals	$24.89	14.48	$360.5	$291.0	$595.0	$373.5
Region Totals	$38.93	9.86	$383.7	$265.0	$779.1	$463.4
Regional Surplus		-4.63	$23.2	($26)	$184.1	$89.9
Percent Surplus		-31.9%	6.4%	-8.9%	30.9%	24.1%

Fulton County, $26 million in Indiana County and $37 million in Huntingdon County, to highs of $123 million in Westmoreland County, and $140 million in Somerset County. The value added benefits follow the same pattern, with a low of $7 million in Fulton County and a high of $88 million in Somerset County.

A series of multipliers was developed for each county's travel and tourism impacts (Table 2). The proportion of nonresident expenditures actually impacting as direct sales was identified retained gross expenditures. The figure ranged from 69% in Huntingdon and Fulton Counties, to around 85% in Blair, Somerset and Westmoreland Counties. The output multiplier, which relates direct sales impacts to total sales impacts ranges from 156% in Fulton County of 233% in Cambria County. The product of these two was identified as the net multiplier. This figure relates the total sales impact to the total nonresident expenditure. A similar pattern was observed as the net multiplier ranged from a low of 108% in Fulton County to a high of 192% in Westmoreland County. The final multiplier developed relates the value added impacts to the nonresident expenditures. The value added multiplier ranges from 68% in Fulton County to 125% in Westmoreland County. This latter multiplier identifies the income benefits to county residents as a percentage of expenditures by nonresident visitors to the county.

Analysis

Multipliers and the Gross Domestic Product

The general profile of visitor expenditures is similar across all activities. Food, lodging and transportation are the dominant categories (Strauss, et. al. 1994, 1995). The single largest factor in explaining the multiplier effect may be the size and complexity of the local economy. The county economy ranged from as small as $157 million in Fulton County to as large as $5.5 billion in Westmoreland County. The larger economies have not just higher levels of economic activity, but a wider variety of industries. The latter means that there are more linkages between local businesses. In other words, the more complex the local economy, the more of a business's input requirements can be met locally. This effect will also hold as wage earners spend their income on consumer goods. The ability to retain these induced impacts increases as the local economy's ability to supply these goods and services increases.

The relationship between the GDP and the value added multiplier is displayed in Figure 1. For counties with an economy of over $1 billion, the value added multiplier was over 100%. This shows that every dollar spent in the region by a nonresident visitor results in greater than a dollar increase in the gross domestic product. Conversely, in economies with less than $1 billion of gross domestic product, the value added multiplier was

Table 2. Multipliers and relative impacts for travel and tourism in nine separate counties in Southestern Pennsylvania.

Counties	Retained Gross Expenditures	Output Multiplier	Net Multiplier	Value Added Multiplier	GDP (Millions)	Pct of GDP
Fulton	69.1%	155.6%	107.5%	68.0%	156.92	4.4%
Huntingdon	68.7%	175.5%	120.7%	74.6%	408.90	5.7%
Bedford	81.6%	179.4%	146.4%	84.7%	450.21	8.3%
Somerset	84.4%	186.5%	157.4%	99.6%	901.45	9.8%
Fayette	81.2%	231.3%	187.7%	124.2%	1,372.05	2.5%
Indiana	79.1%	205.9%	162.8%	100.7%	1,516.23	1.1%
Blair	85.1%	220.9%	188.1%	114.5%	2,060.84	2.3%
Cambria	73.0%	233.0%	170.2%	106.0%	2,205.67	1.8%
Westmoreland	84.6%	227.0%	192.1%	125.2%	5,495.40	1.5%
County Totals	80.7%	204.5%	165.0%	103.6%	14,567.67	2.6%
Region Totals	69.1%	294.0%	203.0%	120.8%	14,660.71	3.2%

less than 100%. This latter situation shows that each dollar spent by a nonresident visitor results in less than a dollar gain to the local economy. A logarithmic curve was fit to the data with a 0.66 adjusted R-square. The equation was:

Value Added Multiplier = .1252 ln (Gross Domestic Product).

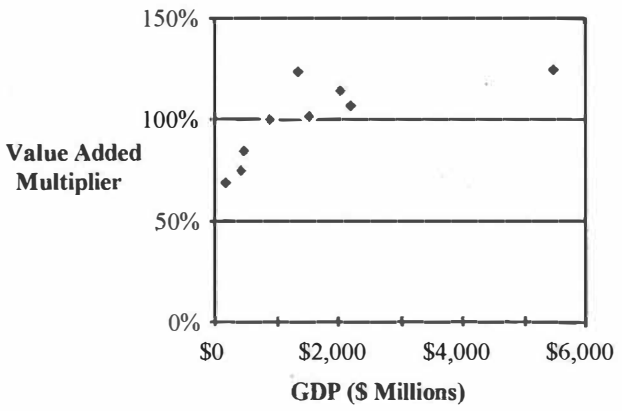


Figure 1. Value added multipliers as a function of the county's gross domestic product.

Relative Impacts

The relative importance of travel and tourism to the local economy depends upon three factors. The first is the absolute size of the nonresident expenditures. This tends to be largest in the larger economies. The next is the value added multiplier that also increases with the size of the local economy. The final factor is the absolute size of the local economy. The larger economies, even with their greater initial activity and larger multipliers, have so many other things happening that travel and tourism represents a relatively small share of the total economy.

The relative importance ranged from 1.1% of the gross domestic product in Indiana County, to 9.8% in Somerset County. The largest economy in the study was Westmoreland, with a $5.5 billion GDP. Travel and tourism represented only 1.5% of the Westmoreland economy. The next two largest economies were Blair and Cambria Counties ($2.1 and $2.2 billion respectively). Here, travel and tourism represented 2.3% and 1.8% of the local economy. In the smallest economy (Fulton, $157 million) travel and tourism represented 4.4% of the GDP. The next two smallest economies were Huntingdon and Bedford Counties, with GDP's of $409 million and $450 million respectively. The relative importance of travel and tourism in these two economies was 5.7% and 8.3%. For some other economies, the relative impacts are mixed. The spectrum of recreational opportunities plays an important part in these differences. For example, Indiana County has a $1.5 billion economy, but there is very little travel and tourism activity. Therefore, only 1.1% of Indiana's economy is travel and tourism based.

Sum of the Counties vs. Regional Impacts

Besides calculating the individual county impacts, the regional impact of travel and tourism was estimated. Several factors combine to make the regional impact different from the sum of the county impacts. The first is a different definition of the tourist. At the regional level, residents of any of the nine counties are counted as residents. Consequently, the sum of nonresident visitors to each of the nine counties is greater than that observed on the regional level (Table 1). However, the average expenditure at the regional level is greater than the county average because expenditures in the other 8-counties now count as impacts. Together, these combine for a slightly larger total nonresident expenditure at the regional level. The retained gross expenditure for the region is smaller than the county average (Table 2). This results in a lower regional direct sales impact, in spite of the larger nonresident expenditures. It is hypothesized that the expenditures in the other 8-counties will include more expenditures for fuel and other manufactured goods than was found at the county level where services such as food, lodging and site-related expenditures predominate.

The output multiplier at the regional level is much larger than any of the counties, due to the large size of the regional economy. Therefore, the total sales impact at the regional level exceeds the sum of the counties, in spite of the low direct sales impacts. A similar situation exists with value added.

Conclusions

The specification of a region when conducting impact analysis is critical to the size of the impacts measured. A smaller region will result in more visitors being identified as nonresidents. However, the same smaller region will be less able to retain these nonresident expenditures. This is especially important to consider when adopting multipliers from other studies involving differently structured economies.

The relative impacts will depend not only upon the amount and retention of the nonresident expenditures, but also upon the absolute size of the local economy. A smaller economy may not be as efficient in retaining impacts, but the small size of the total economy can result in travel and tourism being a major force in that economy.

The individual impacts of travel and tourism in contiguous areas do not add up to the impacts for the entire region. Factors such as shifting definitions of who is a nonresident, increased regional expenditures, and greater retention of impacts all contribute to the difference.

All of the above effects point to the importance of selecting the proper region for estimating tourism impacts. While this determination is beyond the scope of this paper, let it be noted that the common practice of analyzing impacts by political boundaries may often result in unnatural economic regions (Hamilton et al. 1991). Rather, the ideas of Central Place Theory as developed by Losch (1954) should lead one to selecting impact regions based upon economic centers and their surrounding spheres of influence.

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INTRASTATE IMPACT OF SPORTFISHING

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Abstract: Sociodemographics and expenditure levels of recreational anglers were used to determine the economic impact of fresh and saltwater fishing in Alabama. Data collected from mail questionnaires sent to a random sample of 1994 Alabama resident anglers were analyzed using a spending distribution model to determine the expenditure transfers among four regions in Alabama. Results showed that licensed Alabama anglers spent about US$790 million on boats, fishing equipment, and other fishing-related purchases in 1994. Anglers living in 17 northeastern counties accounted for 36 percent of the total spending. Nearly 15 percent of fishing expenditures occurred outside Alabama. These results clearly show that recreational fishing is an economic asset to the state of Alabama.

Introduction

Surveying anglers, at all levels--local, state, and national, gives fisheries agencies information needed to aid in managing recreational fisheries. Creel surveys have been the traditional instrument used to obtain estimates of angler effort and harvest on specific bodies of water. Now agencies are finding more involved survey techniques (mail and telephone procedures) necessary to evaluate angler attitudes and opinions, and also assess angler numbers, expenditures, and impacts of anglers' fishing "values" on local, regional, and state economies (Pollock, Jones, and Brown 1994).

General information about the number of anglers and their expenditures does not permit fisheries managers to describe anglers well. Recreational activities are offered by a variety of public and private sources. Participation in various recreational activities signifies different tastes and preferences among households/consumers. Each activity provides some form of benefit to a mixed clientele. By having knowledge of specific clientele types, resource managers would be better informed in making allocation decisions.

The 1991 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR) showed that approximately 98 million persons, or 51 percent of the U.S. population 16 years of age or older, participated in some form of fish and wildlife-related recreation (USDI, USFWS, and USBC 1993). By 1991, people who enjoyed fishing were spending $15.1 billion and $5 billion for freshwater and saltwater fishing, respectively (USBC 1994). Of the 98 million 1991 FHWAR respondents who enjoyed some form of wildlife-associated activity, 34.8 million persons enjoyed freshwater and/or saltwater fishing, spending $25.3 billion and 505.1 million days in/with fishing activities, averaging $728 and 14.5 days per person (USDI et al. 1993).

Annual expenditure data for Alabama anglers were included in previous FHWARs, however, a statewide survey by sources within the State, has not been undertaken since 1986 (Tucker 1996). Various creel surveys conducted at specific lakes and streams around the state were used to obtain trip expenses (Knight and Malvestuto 1991). Information needed to calculate average expenditures for Alabama anglers per year is not currently available. Such information could be used to guide allocation of funds and fisheries management personnel for the management and conservation of Alabama's natural resources (Verburg et al. 1987).

Deavers (1987) stated that user demands and desires, wildlife population dynamics, quantities of available funding, and employment (numbers and locations) of management personnel were factors that lead to a diversity of management policies across the United States. If data are available, policy-makers can develop management policies and make reliable decisions concerning the distribution of monetary and human resources. Such information would also enable policy-makers and managers to distribute resources in a more efficient and effective manner.

Outdoor recreation is often suggested by economic developers and planners as a method for rural communities to increase their economic activity, including increased income and market diversity (Castle 1987, Clonts 1988). Abundant recreational hunting and fishing opportunities, along with nonconsumptive outdoor activities, may become the "lifeline" for many southern rural communities. Wallace (1989) looked at the economic significance of intra- (spending within a community or region of residence) and intercommunity (spending outside a community or region of residence) dollar transfers by Alabama resident and nonresident hunters. He found that while hunter expenditures benefitted Alabama's rural economies, if hunting were eliminated, those hunters would spend their "money" in other, possibly more developed, communities. Therefore, the absence of hunting would be detrimental to Alabama's rural communities.

At present, there is only limited knowledge of Alabama's anglers. There is a need to characterize those who purchase Alabama fishing permits, and to learn additional information on where, when, and how to meet angler concerns, preferences, and needs better. Therefore, the objectives of this paper were to (a) describe Alabama's licensed anglers and (b) present empirical evidence of the importance of angler expenditures among different regions of Alabama. The results specified herein can be useful to policy-makers and fisheries management personnel in the allocation of resources.

Method

Angler Survey

Alabama's resident licensed anglers (rod-n-reel, saltwater, hunting/fish combination, freshwater/saltwater combination, lifetime fishing, and lifetime hunting/fishing) numbered 452,113 in 1994. A list of licensing agents, provided by the Alabama Department of Conservation and Natural Resources (ADCNR), was used in combination with county population to select a stratified random sample of 1,625 fishing license holders.

Additional names were obtained through a telephone interview of Alabama residents. After removing undeliverable surveys the adjusted sample size was 1,750. Usable survey forms were returned by 403 recreational anglers, a 23 percent response rate. Fisher (1996) said that angler surveys might yield low response rates and inaccurate results, partly due to the exclusion of testing for nonresponse bias. Testing for nonresponse bias was undertaken to ensure the representativeness of sample results. Results showed that there was a slight undersampling of nonwhite anglers in the mail survey. However, variable means for all variables were equal to or greater than those of the original sample, but still within one standard deviation. Following guidelines set forth by Dillman (1978), Babbie (1986), and Pollock, et al. (1994), three separate mailings of the questionnaire were used (4 May 1995, 20 June 1995, and 24 July 1995) with a reminder postcard 20 days (24 May 1995) after the first mailing.

Regional Division

The state of Alabama was divided into four regions based on (a) location of river and lake systems, (b) location of metropolitan areas, and (c) county population (Figure 1). The northwest, northeast, and southwest regions each included 17 counties and 37, 25, and 20 percent of Alabama's population, respectively, each with significant metropolitan areas. The southeast region encompassed 16 counties, 18 percent of the population, and slightly fewer metropolitan areas. Each region had abundant freshwater fishing locations. Direct access to saltwater and/or brackish fishing locations is possible only in the southwest.

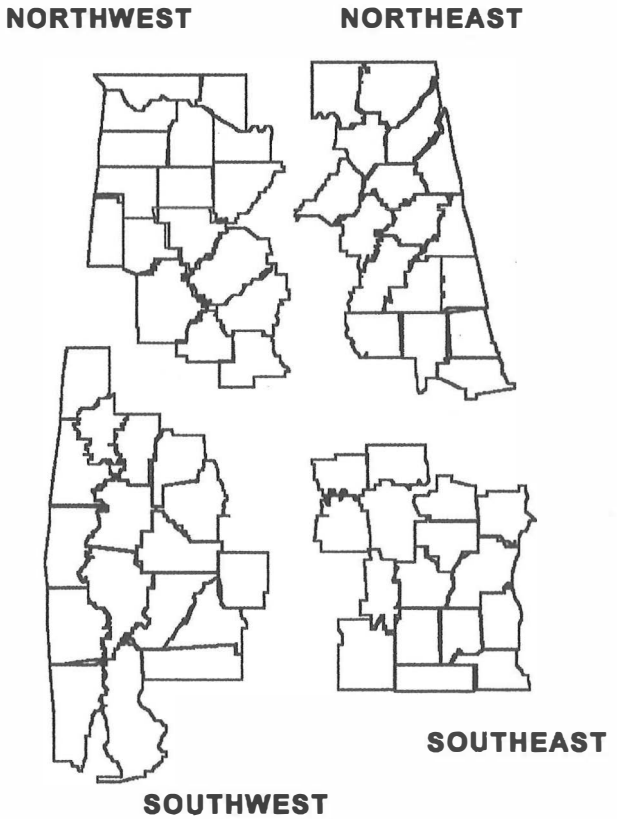


Figure 1. Regional Division of Alabama.

Questionnaire Development

The questionnaire was developed based upon Dillman's (1978) Total Design Method and Pollock et al. (1994) methods in angler survey techniques. The survey focused on types of fishing and fishing harvest; attitudes, opinions, and satisfaction concerning fishing experiences; outdoor recreational activities; and sociodemographic information. Questions dealing with barriers to fishing, preferences for management policies, concerns about fishing areas, fishing expenditure estimates, and fishing license and resource "values" using contingent valuation techniques were also contained within the survey.

Angler Expenditures

The survey instrument included 23 expenditure categories classified into fishing, trip, or miscellaneous expenditures. Respondents indicated the "approximate cost," "percent of time used for fishing," and "county where purchases occurred" for each expenditure category. Expenditures were evaluated and weighted by "source" (region of angler residence) and by "sink" (region where purchase occurred). Expenditure amounts were also weighted based upon frequency of use for fishing and total number of fishing licenses purchased in Alabama. Expenditure items were then grouped into six general categories by source and sink, (a) camper/camping equipment, (b) boat/ boating equipment, (c) fishing equipment, licences, and fees, (d) food and lodging, (e) transportation, and (f) miscellaneous goods and services. Additional aggregation was used to condense spending to two categories, boat and fishing equipment, and other goods and services.

Results and Discussion

Description of Anglers

The typical licensed angler in Alabama is a white, married, middle-aged male (Table 1). Most come from small towns and have completed some college education. Household income was relatively high, $46,600. Also, fishing was a lifetime, family activity, for which $2,330 per angler was spent in 1994.

Table 1. Sample Means and Standard Deviations of Selected Sociodemographic Variables for Alabama's Licensed Anglers.

Variables	Sample Mean	Standard Deviation
Age	43 years	13.3 years
Education	13 years	2.7 years
Income	$46,626	$30,745.10
Travel Distance (on all fishing trips)	845 miles	1,402.9 miles
Fishing Tournaments	7	7.1
Number of Fishing Days	36 days	46.4 days
Estimate of Dollars Spent Fishing in 1994	$871	$1,697.2
	Unit	Percent
Fishing License	Rod-n-Reel	62%
Number of Years Fishing	>30 Years	49%
Rural Landownership	Yes	54%
Fish with whom?	Family	61%
Rural/urban residence	Rural	68%
Sex	Male	83%
Race	White	93%

Fish species most sought by respondents were as expected. Favored species included largemouth bass, sunfish (bream), catfish, and crappie (Table 2). Variation in catch was significant, but species other than these 4 were mentioned far less frequently.

Table 2. Freshwater and saltwater species fished for by licensed Alabama anglers and median and mean number caught (n=403).

		Number Caught	
Fish Species	Number of Anglers	Median	Mean
Freshwater:			
Largemouth Bass	276	20	57
Bream	246	50	114
Catfish	232	30	72
Crappie	219	25	80
Striped Bass	101	10	30
Smallmouth Bass	88	6	16
Spotted Bass	65	20	51
Drum	32	8	23
Red-eye Bass	19	10	33
Sauger	6	5	32
Walleye	6	4	25
Saltwater:			
Snapper	47	10	23
Red Fish	47	6	11
Flounder	39	5	18
Mackerel	36	5	16
Grouper	30	3	10
Miscellaneous	29	10	42
Amberjack	29	2	7
Spotted Sea Trout	28	15	41
Cobia	13	3	8

Saltwater species caught by respondents were also as expected. Snapper, red fish, flounder, and mackerel were the most popular species (Table 2). Catch rates were also quite variable for the saltwater species.

Alabama has an abundance of water resources available for fishing. There are approximately one million surface acres of rivers and reservoirs considered as public waters. In addition, there are nearly 150,000 surface acres of private impoundments (ADECA 1992). Seventy-five percent of those sampled, fished in Alabama rivers and reservoirs (Table 3). Creeks, swamps, streams, small private ponds, and state, county, or city-owned public lakes were used less frequently. Less than 12 percent of the respondents reported frequent fishing in brackish or saltwater. However, in contacting nonrespondents for bias testing, telephone respondents said that 12 percent may be somewhat conservative. Respondents included in the nonresponse bias testing procedure showed a higher use, 19 percent, of brackish or saltwater fishing. This coincides with similar results determined by The University of South Alabama (Thomas 1996). However, Thomas's (1996) oversampling of counties with direct saltwater access may indicate an overestimation of saltwater usage by recreational anglers in Alabama. Therefore, the use of brackish and/or saltwater fishing may be at a point in the middle.

Finally, most respondents used multiple methods for water access. Over half fished from a bank location, while nearly 80 percent used boats. Wading was selected by 20 percent of the anglers. While fishing, both live/cut bait and artificial lures were popular.

Fishing Location

Having abundant water resources near home apparently was an important factor in fishing decisions. The four regions were relatively similar with respect to public fishing waters and species availability (Figure 2). The same was true with respect to how water areas were accessed and choice of bait. In fact, the homogeneity of anglers across the state was quite high. Thus,

Table 3. Licensed Alabama Angler Usage of Types of Water, Access Points, Fishing Methods, and Baits by Percentage Frequency of Use (n=403).

	Percentage Frequency of Use				
Type of Usage	Always	Often	Sometimes	Hardly Ever	Never
Type of Water:					
Creeks, Swamps, or Small Streams	10.6	29.6	25.3	18.7	15.8
Rivers or Reservoirs	30.8	43.7	14.3	6.0	5.2
Private Man-made Ponds or Lakes <25 Acres	10.1	28.4	24.0	18.6	18.9
Private Man-made Lakes > 25 Acres	5.0	10.9	18.8	26.3	39.1
State, County, or City Owned Public Lakes	9.8	15.8	20.8	24.4	29.2
Brackish Waters	2.5	7.5	10.9	11.5	67.6
Saltwater	4.3	8.1	18.6	17.4	51.6
Types of Access Points:					
Bank	19.1	33.8	24.0	15.5	7.6
Boat	35.2	44.2	11.3	4.4	4.9
Boat Dock	2.6	24.3	30.1	20.9	22.0
Bridge or Pier	2.6	11.8	28.6	27.5	29.5
Float Tube	0.3	0.0	1.5	8.9	89.3
Wading	0.0	5.3	14.6	17.0	63.2
Types of Bait:					
Artificial Lures	42.7	33.3	14.9	6.9	2.1
Live/Cut Bait	33.2	37.1	18.4	8.3	2.9

choice of where to fish was largely a matter of personal preference and proximity to residence. A parallel study revealed that individuals with private ponds, lakes, etc. did tend to fish there more often (Travnichek & Clonts 1996). Also, that study revealed that lower income segments of the population were more likely to pay for fishing access. Similarly, higher income respondents tended to travel more, but they fished public waters more. But, in each situation, there did not appear to be significant differences between regions of the state. Thus, any transfer of funds reported between regions was largely attributable to purchasing fishing items such as boats and boating equipment, not the desire to go to special places to fish.

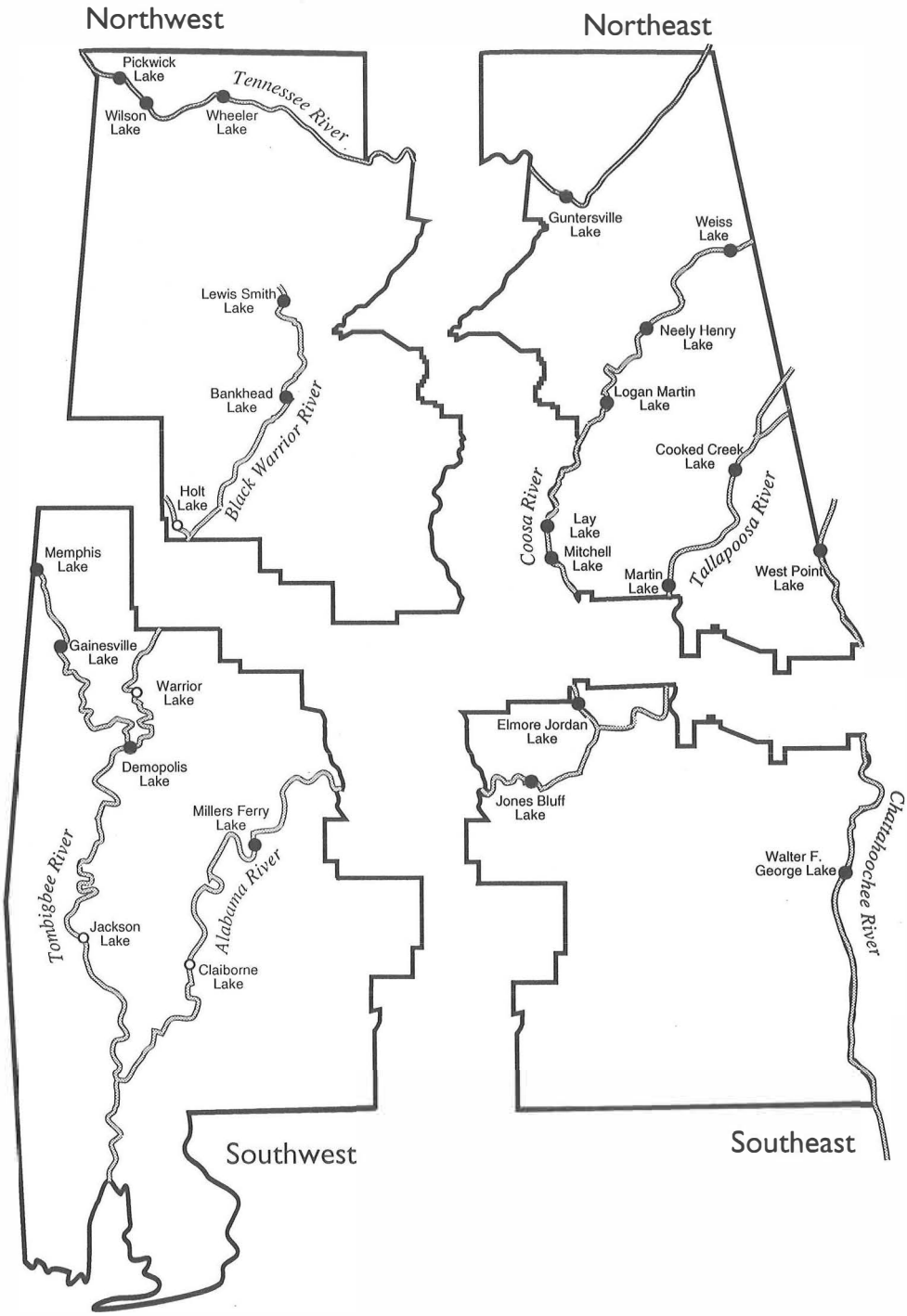


Figure 2--Statewide distribution of Alabama's rivers and reservoirs.

Spending Patterns of Anglers

The total per capita spending reported in the survey was $2,330 per angler (Table 4). Spending by residents of the four regions varied significantly with respect to where items were purchased. About half of all spending accounted for in the survey occurred in the southern half of the state (Table 4), most of which was spent in the southwestern region. More than 16 percent of funds spent on fishing-related items was for out-of-state purchases, leaving only a third of all spending occurring in the two northern regions. The concentration of spending in the southern portion of the state and out-of-state purchases suggested a relatively strong travel pattern for respondents (Table 5).

In total, licensed Alabama anglers spent $790 million in their fishing activities in 1994 (Table 6). Residents in the northeast accounted for most of the total and those in the southeast the least. Overall, northern residents spent more than southern residents.

Table 4. Per Capita Fishing-Related Expenditures of Alabama Licensed Anglers by Source (Region of Angler Residence) and Sink (Region Where Expenditures Occurred) During 1994.

		Region[a]				
Expenditure	Totals	NW	NE	SW	SE	OOS
				Source		
Total Expenditures						
$ Per Capita	2,330	615	670	740	305	NA[b]
Percent	100	26	29	32	13	NA
				Sink		
Total Expenditures						
$ Per Capita	2,330	370	450	755	385	375
Percent	100	16	19	32	17	16

a/ NW = Northwest; NE = Northeast; SW = Southwest; SE = Southeast; OOS = Out-of-State.
b/ NA = Not Applicable (nonresidents were not sampled).

Table 5. Total Estimated Alabama Angler Expenditures. Percentage Distribution by Expenditure Category According to Sink (Region Where Expenditures Occurred) During 1994.

	Sink				
Expenditure Category	NW	NE	SW	SE	OOS
Camping Equipment[a]	2	17	3	3	3
Boat/Boating Equipment[b]	51	43	55	62	50
Fishing Equipment, Licenses, & Fees[c]	21	15	13	17	15
Food and Lodging[d]	11	10	15	8	11
Transportation[e]	14	14	10	9	15
Miscellaneous Goods and Services[f]	1	1	4	1	6
Column Percent	100	100	100	100	100

a/ Camping trailer, pick-up camper, RV, tent, sleeping bags, etc.
b/ Boats, canoes, motors, rental, repairs, gas, oil, accessories, storage, insurance, etc.
c/ Fishing rods, line, bait, clothing, fishing licenses, stamps, access fees, memberships, tournament fees, etc.
d/ Refreshments, motels/hotels, nonconsumption items.
e/ Commercial fares, vehicle rental, charters, gas, oil, tires, repairs, etc.
f/ Magazines, taxidermy costs, photo processing, guides, etc.

Table 6. Total Estimated Alabama Angler Expenditures (mi. $) and Standard Errors (mi.) by Source (Region of Angler Residence) and Sink (Region Where Expenditures Occurred) During 1994.

				Region		
	TOTALS	NW	NE	SW	SE	OOS
Total Expenditures				Source		
$	789.8	261.1	285.9	172.2	70.6	NA[a]
(standard error)	(0.21)	(0.44)	(0.53)	(0.33)	(0.21)	NA
percent	100	33	36	22	9	NA
Total Expenditures		Sink				
$	789.8	153.0	196.0	205.0	118.1	117.7
(standard error)	(0.21)	(0.51)	(0.61)	(0.50)	(0.46)	(0.30)
percent	100	19	25	26	15	15

a/ NA = Not Applicable (nonresidents were not sampled).

Generally, anglers tended to "stay home" to make their purchases, but southern residents more so than northerners. About 83 percent of purchases in the southeast and 74 percent of those in the southwestern counties were intraregional. Just over half the spending in northern regions were intraregional. This means there was a net transfer of funds between regions, with the south benefitting.

The strong, obvious income transfer across the state is important. The southern portion of the state with a smaller population base is benefitting significantly from the fishing industry. For example, the southeastern region contained 18 percent of the State population. Resident licensed anglers made most of their purchases within the region (83 percent), but the region also attracted many anglers from other regions to spend their money there. The internal spending (83%) represented only 49 percent of regional fishing-related income. Thus, the region earned 51 percent of its fishing income from other regions (Table 7). Similarly, the southwestern region gained 38 percent of its fishing income from other areas. At the opposite extreme, northwestern counties attracted only four percent of fishing income from other areas of the state.

One explanation for the north-to-south movement of spending was explained by local boat dealers. Presumably boat prices were lower in the south, especially in the Mobile area. Savings on boat and equipment prices are attracting many northern anglers to incur travel costs and still have net savings on their purchases. This explanation would not seem to hold for out-of-state transactions since higher tax rates on boats and equipment would tend to offset the lower prices. Yet, the transactions occurring across state lines indicated that price differentials must be sufficient to make the trips worthwhile.

Economic Impact of Angler Expenditures

Angler Number.--An estimated 65 percent of resident anglers purchase a fishing license in their own state, with only ten percent purchasing a nonresident fishing license to fish out-of-state (USDI et al. 1993). Also, an estimated seven percent are exempt from purchasing a fishing license and another 19 percent failed to purchase a license for activities requiring such (USDI et al. 1993).

Using these national averages, 65 percent of resident anglers were assumed to have purchased a fishing license, whereas 35 percent fished without a license. If 35 percent of resident anglers are nonlicensed, an estimate of 243,445 nonlicensed Alabama resident anglers was obtained. When combined with those licensed, the total number of resident anglers was about 695,600 in 1994.

Expenditures.--By assuming that all nonlicensed residents and out-of-state anglers spent the same for fishing as licensed residents, expenditures for the nonsampled groups were estimated. Thus, nonlicensed Alabama resident anglers contributed an estimated $425 million to the State economy (Table 8).

Nonresident licensed anglers were estimated to contribute $44 million to the Alabama economy (Table 8). When the expenditure estimates for all three groups were combined, the total direct spending impact on Alabama's economy was estimated to be $1.3 billion.

Conclusions

Results of this research suggest that promotional efforts in each fishing region may be beneficial. The flow of money from north to south was largely attributed to the relative prices of boats and fishing equipment. Hence, equipment

Table 7. Total Estimated Alabama Angler Expenditures. Percentage Distribution from Source (Region of Angler Residence) to Sink (Region Where Expenditures Occurred) and from Sink to Source During 1994.

Region	NW	NE	Region SW	SE	OOS
Sink			Source (percent)		
NW	56	2	*[a]	*	NA[b]
NE	14	56	*	*	NA
SW	16	12	74	2	NA
SE	3	16	3	83	NA
OOS	11	14	23	15	NA
column percent	100	100	100	100	
Source			Sink (percent)		
NW	96	18	21	7	24
NE	4	82	16	40	33
SW	*	*	62	4	33
SE	*	*	1	49	10
OOS	NA	NA	NA	NA	NA
column percent	100	100	100	100	100

a/ Although zero dollars were reported by sample respondents, some amount of spending by southern residents in northern counties is logical. However, based on the survey, transfers from south to north were considered nominal.

b/ NA = Not Applicable (nonresidents were not sampled).

Table 8. Estimated economic impact by resident licensed, resident nonlicensed, and nonresident licensed angler expenditures during 1994 (millions of $).

	TOTALS	Resident licensed Angler	Resident Nonlicensed Angler[a]	Out-of-State licensed Angler[b]
Camping Equipment	83.0	50.0	26.9	6.1
Boat/Boating Equipment	650.0	407.5	219.4	23.1
Equipment, Licenses, & Fees	199.4	125.8	67.7	5.9
Food and Lodging	137.7	87.6	47.2	2.9
Transportation	152.6	96.5	52.0	4.1
Miscellaneous Goods/Services	36.5	22.3	12.0	2.2
TOTALS	1,259.2	789.8	425.2	44.2

a/ Resident licensed angler expenditures ÷ 0.65 then x 0.35.

b/ Assuming licensed resident anglers in other states spend the same amount out-of-state that Alabama anglers did: (the number of resident licensed Alabama anglers indicating making fishing expenditures / the number of survey respondents [n = 403]) x the number of out-of-state fishing licenses sold in 1994 (n = 99,356) x the mean dollar amount by expenditure category that Alabama resident anglers indicated spending out-of-state.

dealers in northern regions may find more competitive pricing strategies to their advantage.

This study found that about 85 percent of Alabama's licensed anglers were freshwater fishermen, exclusively. The remaining license holders included five percent saltwater (exclusively) and ten percent combination fresh- and saltwater anglers. Also, the fact that public fishing sources (rivers and reservoirs) were used nearly exclusively by nearly three-fourths of reporting licensed anglers, suggests that state fishery administrators should target freshwater fishing sources in managing popular fish species like largemouth bass, crappie, bream, and catfish.

Angler expenditures for fishing-related equipment and activities have a significant impact on the economy of Alabama. In evaluating the 1994 expenditures of licensed Alabama anglers, distinct inferences were gained. Northern counties account for slightly more than 60 percent of Alabama's population and the anglers residing in these counties accounted for nearly three-fourths of total fishing-related expenditures. This shows that northern recreational anglers tend to spend more money on their fishing activities than southern anglers. Southern counties, however, are benefitting from the spending by northern anglers. Not only are recreational anglers in northern Alabama spending more money on fishing-related equipment, they are spending a significant portion of that money in southern counties. A definite pattern of money flow from north to south was recognized.

Unfortunately for Alabama's economy, 15 percent of the fishing-related equipment and activity purchases by Alabama resident anglers were made outside Alabama. This suggests the possibility that (a) manufacturers and businesses may not offer recreational anglers in Alabama the equipment they need at a price competitive with other states, (b) licensed anglers who are fishing outside Alabama would rather purchase fishing equipment, etc. closer to their intended fishing location, or (c) both fresh and saltwater fishing activities were pursued in states other than Alabama. Together anglers in northeast and southwest counties accounted for 66 percent of the total dollars spent in states outside Alabama, each region contributing 33 percent. The lower amounts spent out-of-state by northwest and southeast anglers suggests that these anglers could meet their needs sufficiently to keep their fishing activity dollars within the State.

Surprisingly, relatively little of the expenditures made in Alabama, and the southwest in particular, were specifically for saltwater fishing. Initially, it was hypothesized that expenditures by anglers living in southern counties, especially the southwest with its direct access to saltwater, would be directed toward saltwater fishing activities. However, this was not the case. Expenditures for freshwater fishing activities were dominant in both southern regions, signifying a use of the vast resources available in the Alabama river systems.

The estimated 1994 expenditures of Alabama's 452,113 resident licensed anglers amounted to nearly $800 million. When combined with estimated expenditures of resident nonlicensed and nonresident licensed anglers, Alabama's economy gained about $1.3 billion in 1994 from recreational fishing in Alabama. These monies are important for the state of Alabama. They are the livelihood for many businesses and industries in Alabama and other states.

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CORE-AND-BUFFER MANAGEMENT FOR ECOTOURISM IN SOUTH CAROLINA'S ACE BASIN

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Abstract: In South Carolina's ACE Basin, resource managers have balanced recreational use and ecosystem protection by fostering landowner cooperation, emphasizing low-impact recreational activities, and adopting a core-and-buffer management model. The ecological integrity of the ACE's wilderness core is protected by a buffer that contains the recreation-tourism infrastructure.

Introduction

Recreational activities in natural areas invariably degrade ecosystems. The hotels, campgrounds, marinas, roads, trails, and other infrastructure elements that support these activities do even more damage (Boo 1990, Gaddy and Kohlsaat 1987). Natural area managers find it difficult to achieve a reasonable balance between protecting resources and providing recreation opportunities, especially in wilderness areas.

One of the most praiseworthy ideas for recreation-tourism infrastructure development in and near wilderness areas is the core-and-buffer model. This approach, which has been used in one form or another in many parts of the world, confines most infrastructure development to an area that surrounds and buffers an inner core of wilderness. The undisturbed habitat of the core is then used by recreationists in transitory, low-impact ways (Wells and Brandon 1993). Despite the popularity of the idea, few empirical studies of the core-and-buffer management approach have been conducted in the United States. This paper reports a case study of core-and-buffer recreation management in the ACE Basin area of South Carolina. Its purpose is to document the low-impact recreational use of a southeastern wilderness area and show how the core-and-buffer approach serves the interests of both high-quality recreation and wilderness preservation.

The ACE Basin

Found approximately 45 miles southwest of Charleston, South Carolina, the 350,000-acre ACE Basin encompasses the combined watersheds of the Ashepoo, Combahee, and Edisto Rivers. Few areas in the eastern United States offer a better resource base for ecotourism (USDC 1991). The ACE's coastal marine, maritime, estuarine, palustrine, and upland habitats are so well-preserved and rich in wildlife--including alligators, otters, bald eagles, ospreys, waterfowl, and sea turtles--that the ACE has been designated a National Estuarine Research Reserve Program (NERRP) site for baseline ecological studies. At least eight federally protected species inhabit the ACE.

Land managers in the ACE are committed to a comprehensive environmental management plan that is nationally acclaimed for its creative partnership of federal and state governments, private conservation groups, corporations, and individual property owners. Currently 47,995 acres are held in public property managed by the South Carolina Department of Natural Resources (DNR), the South Carolina Division of Parks, and the U.S. Fish and Wildlife Service. Much of the rest of the area is managed by hunt clubs, the Westvaco timber company, The Nature Conservancy, Ducks Unlimited, and other land owners formally committed to preserving the ACE's natural character.

The Core-and Buffer Management Model

Deep in the ACE's interior are eight sea islands that are uninhabited, roadless, and accessible only by watercraft. A key aspect of the ACE Basin management plan is the federal government's designation of the 11,942-acre core area as a NERRP site, insuring its preservation as undeveloped upland, woodland, wetland, and open water habitat. Surrounding this wilderness core area is a 135,660-acre buffer area of cooperative land holdings designated for traditional land use activities and as sites for educational, interpretive, and recreational structures and facilities. Any ecotourism-related development that takes place in the ACE Basin must conform to the requirements of this plan and pose no threat to the ecological integrity of the wilderness core.

ACE Basin Recreation Providers

Since the end of the plantation era, the ACE Basin has been used primarily for hunting, fishing, and tree farming. Other common activities include boating and paddling, fishing and shellfishing, wildlife observation, and nature photography. These days, much of the recreational activity in the ACE is nonconsumptive in character and takes place under the auspices of eight recreation providers (Chirico 1995). Two of these providers, Coastal Expeditions and A Coastal Adventure, are ecotourism-oriented entrepreneurs who bring visitors into the ACE for purposes of nature appreciation. Two other providers, the Charleston County Parks and Recreation Department and Adventure Carolina, offer a variety of nature-based recreation opportunities for day-trippers from nearby urban centers. The remaining four providers--the DNR, Westvaco, the S.C. Division of Parks, and Edisto Marina Charters--are generalists who serve a broadly defined market that includes both tourists and day-trippers. Two of the facilities operated by these generalists, Hunting Island State Park and Edisto Beach State Park, are especially important because they are highly accessible and heavy visited.

Recreational Modes and Routes

Ecotourists prefer to interact with nature "up close and personal." They also tend to stay on the move, seldom tarrying at any particular place for more than a few minutes. Since they derive their pleasure through travel experiences, the modes and routes selected greatly effect the character and quality of the total experience. There are many routes to choose from in the ACE Basin, and the modes available include motorboating, paddling, and hiking.

Throughout the world, much of what ecotourists want to see and do is on or close to navigable waterways. The ACE Basin is largely a watery domain, and its abundant navigable waterways

make it highly amenable to motorboating. During the 1994 season the two providers that use motorboats brought nearly 1,500 visitors into the ACE on several popular routes. The motorboating option is both a blessing and a curse. While motorboating is fast, convenient, and safe, and can be a godsend for the physically impaired, it is also noisy and can pollute the water with fuel and lubricant residues.

Many waterborne recreationists and providers consider motorcraft too noisy and "unnatural" for wilderness areas. Paddling provides an attractive alternative for these people and for those seeking the physical fitness benefits of more strenuous activities. Canoeing and kayaking, the two main types of paddling, are nearly ideal from the ecotourism perspective. Canoes and kayaks are small and light, create no objectionable pollution, and can traverse waterways too shallow for motorcraft.

There are some excellent paddling routes in the ACE Basin. Overall, canoes are the watercraft of choice in the inland area, which has slow-moving streams and extensive blackwater swamps. Sea kayaks are far safer in the estuarine area, where paddlers encounter strong currents and rougher water.

For many people, canoeing offers the perfect way to see the ACE at its pristine best. The ACE's slow moving rivers and tributaries provide memorable experiences for hundreds of canoeists every year. Existing routes, including the Combahee, Cuckolds-Cumbahee, and Penny-Wiltown, are defined by boat landings that are about one day's paddle apart.

It is the rising popularity of sea kayaking that has ignited interest in ACE Basin paddling excursions. Sea kayaks can go anywhere that canoes go, and can ply the same coastal routes that motorboaters travel. The estuarine area of the ACE has become a magnet for kayakers because its spartina marshes, sea islands, and coastal waters offer interesting scenery and an abundance of watchable wildlife. A kayak is a nearly ideal craft for getting close to waterfowl and marine mammals because it has a very low silhouette and is virtually noiseless. More than 300 kayakers used ACE Basin routes during the 1994 season. The Brickyards Ferry-Bennetts Point, Edisto-Otter, and Botany Bay routes are used almost exclusively by kayakers, and several new kayaking routes are under consideration by ecotourism

Hiking, another low-impact activity, offers a distinct alternative to motorboating and paddling. It is a strong plus that hiking is low in environmental impact and high in physical fitness value. Hikers move quietly, can stop anytime, and have chances to observe nature in intimate detail. On the other hand, many people find hiking unappealing because it entails discomfort or risk associated with physical exertion and the presence of biting insects, venomous snakes, and other environmental hazards. Another drawback is that hiking is safe and legal only on specified trails, which offer fewer attractive areas than the boating and paddling routes. In the ACE, the only trails that are frequently used are those that are conveniently accessible from the public road system.

The Recreation-Tourism Infrastructure

The volume and character of nature-based recreation in the ACE is clearly dependent largely on the existence and distribution of facilities serving the needs of recreationists. Motorboaters and paddlers need convenient boat landings, hikers need maintained trails, and tourists require campgrounds or other lodging. Everyone needs roads for access to boat landings, trailheads, and other suitable sites for ingress and egress. In the ACE, these infrastructure elements are confined to the buffer area, which is used as the "staging area" for excursions into the wilderness core.

Roads

Since the road system is the most critical element of the recreation-tourism infrastructure, land managers can use road limitations as a powerful tool for comprehensive planning. In the ACE, road access is limited because of the highly protected nature of many lands. The number and quality of the roads decreases toward the core, which remains roadless. Public roads do reach into the major land holdings in the buffer, but many conservation easements are isolated from the public road system.

Trails

Trails, another important element of the infrastructure, are also limited in number and distribution. There are no maintained trails in the core area, and none is planned. In the buffer, the highly accessible nature trails in the two state parks are used by 200,000 visitors a year, and another 6,100 hikers are accounted for by the trails in the Westvaco properties and the two DNR Wildlife Management Areas.

Public Boat Landings

Since both motorboaters and paddlers require well-located ingress and egress points, public boat landings are a key element of the ACE's recreation-tourism infrastructure. The ACE's existing canoe routes are defined by the supply of landings that are properly spaced for full or half-day trips. Developing new canoe routes is difficult because the public road system offers few opportunities for constructing new landings at convenient locations on rivers or streams.

For motorcraft and sea kayaks, the spacing of the landings is much less important than their proximity to the core area. Most motorboating and sea kayaking in the ACE takes the form of round trips into the core area from landings in the buffer. The Edisto Marina, the Live Oak Landing at Edisto Beach State Park, and the Bennetts Point Landing all play vital roles because each is only a short paddle or quick boat ride from the pristine core. Edisto Marina is currently the only privately-owned boat landing used by ACE Basin ecotourism operators, but others will surely be used as ecotourism grows.

Campgrounds

The lodging component of the ACE's infrastructure primarily consists of camping facilities. Low-impact recreationists often prefer to camp rather than use conventional lodging, so the availability of campsites is an important consideration. Currently, few areas in the ACE offer facilities for a wide range of campers, and only three camping areas are well-situated to serve ecotourists. The best camping opportunities are at Hunting Island State Park, which has an attractive 200-site campground with full hookups for RVs, plus the restrooms and hot showers that tent campers need. Edisto Beach State Park has two small family campgrounds and a primitive camping area. There is also a primitive camping area at DNR's Bear Island WMA, but it is

available only from November 15th to January 20th and is mostly used by hunters.

Conclusions

To balance the interests of natural area protection and recreational use, ACE Basin resource managers have created a comprehensive partnership among landowners, adopted a core-and-buffer management model, and emphasized low-impact recreational activities. Consequently, unlike many other natural areas being exploited by the burgeoning ecotourism industry, the ACE is not in immediate danger of being "loved to death" by hordes of visitors or fragmented and degraded by tourism-related development.

The long-term prospects for a harmonious relationship between ecosystem stewardship and ecotourism development in the ACE Basin seem very good. The ACE's status as a NERRP site, which is conditioned by the presence of protected wildlife species and wilderness habitat, is a tremendous asset because it makes the preservation of high-quality natural areas and healthy wildlife populations in the ACE a matter of federal policy. In addition, three aspects of the ACE's recreation-tourism infrastructure auger well for the long-term viability of the present managerial strategy. First, the limited availability of maintained trails and landings for canoe routes ensures that any deleterious effects of paddling and hiking will be confined to a few narrow corridors rather than spread throughout the buffer. Secondly, the complete absence of road connections to the wilderness core ensures that the typical tourist or day-tripper will find it relatively inconvenient to visit the one area of the ACE that can least tolerate heavy visitation. Finally, the availability of boat landings close to the pristine core is the key constraint on motorboating and sea kayaking in the ACE, and the state and local governments control this through the permitting processes.

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NATIONAL SURVEY ON RECREATION AND THE ENVIRONMENT: BIASING EFFECTS OF INCLUDING A PARTICIPATION SCREENING QUESTION

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Abstract. National Survey on Recreation and the Environment (NSRE) is an interagency and private sector partnership undertaken to update the country's ongoing series of national recreation surveys. Data collection for the NSRE using phone survey methods was begun in the winter of 1994 and concluded in April of 1995. Upon completion of data collection, a series of diagnostic procedures were conducted in an attempt to identify potential biases in the estimates of the proportion of the U.S. population that participated in outdoor recreation. One principal source of bias identified was a screening question employed to reduce questioning of persons who do not participate in any outdoor recreation activities. In comparison with other outdoor recreation participation surveys and with the 1982-1983 NRS, the NSRE with its screening question seemed to under estimate the proportion of the U.S. population that participated in one or more outdoor recreation activities in the 12 months prior to an interview.

Introduction

The National Survey on Recreation and the Environment (NSRE) is an interagency and private sector partnership undertaken to update the country's ongoing series of national recreation surveys, the first of which was conducted in 1960 (Outdoor Recreation Resources Review Commission 1960). Data collection for the NSRE using phone survey methods was begun in the winter of 1994 and concluded in April of 1995. This data base provides an opportunity to examine and compare participation proportions spatially and temporally. It also provides the United States research community with a timely national measure of the significance of outdoor recreation as a social behavioral phenomena and a priority use of the nation's natural resources. Upon completion of data collection, a series of diagnostic procedures were conducted in an attempt to identify potential biases in the estimates of the proportion of the U. S. population that participated in outdoor recreation globally in any activity and in individual activities specifically. One principal source of bias identified was a screening question employed to reduce costs of administrating phone interviews to persons who do not participate in any outdoor recreation activities. In comparison with other outdoor recreation participation surveys and with the 1982-1983 NRS, the NSRE with this screening question seemed to under estimate the proportion of the U.S. population that participated in one or more outdoor recreation activities in the 12 months prior to an interview.

The National Survey on Recreation and the Environment

For the most part, the NSRE was designed to retain comparability with priority sections of previous National Recreation Surveys (NRS) dating back to 1960. For many different reasons, each successive NRS has been designed slightly differently due to preferences of the investigators, information needs of the sponsors, method of data collection selected and availability of improved technology for conducting surveys. The core of participation, demographic, favorite activities and barriers questions has been retained through all previous NRS studies and was carried forward in the 1994-95 NSRE.

The research lead in designing and administering the NSRE was assumed by the Southern Research Station, USDA Forest Service, Athens, Georgia and the data were collected by the Survey Research Center at the University of Georgia. The NSRE was a random digit dialing (RDD) telephone survey of individuals 16 years and older that included a screening question to determine whether or not respondents participated in any outdoor recreation activities over the 12 months just prior to the interview. If the response was "no," none of the individual activity participation questions was asked.

Methods

After completion of NSRE data collection, including more than 17,000 respondents, estimates of the proportion of the U. S. population reporting participation in at least one activity, and also proportions reporting participation in each individual activity, were compared with estimates from other credible surveys. These other surveys included the 1982-83 National Recreation Survey (USDI-National Park Service 1986). These comparisons revealed that NSRE-derived estimates of the proportion of the population which reported global participation in one or more activities and proportions reporting participation in individual activities seemed to differ from estimates from other samples.

The following steps were pursued in first attempting to determine the likelihood of bias in estimates of population proportions and second to identify suspected sources of any suspected bias.

1. Compare selected, demographically-weighted NSRE estimates of participation proportions with other credible demographically-weighted survey results, including the 1992 NSRE pretest of 786 cases, the 1990-91 USDI National Survey of Hunting, Fishing and Wildlife-Associated Recreation (Wildlife Survey) (USDI-Fish and Wildlife Service 1992), the 1994 Outdoor Recreation in America: A

Survey for the Recreation Roundtable (Roper Starch 1994), and the 1982-83 National Recreation Survey (USDI-National Park Service). Identify NSRE estimates that seem inconsistent with the range of estimates available from the other survey sources. Demographically weighted results were used to lessen the likelihood that observed differences were due to disproportionate sampling among different demographic groups with differing participation rates across American society.

2. The first comparison of interest was between estimates of national participation in fishing and hunting. Because the NSRE weighted estimates of proportions of population participating in hunting and fishing seemed much higher than the Wildlife Survey estimates, a recontact phone survey of persons who refused the NSRE was conducted to examine the potential of avidity bias. Avidity bias suggests that persons who participate in outdoor recreation are more likely to respond to the survey. This is related to the idea of topic differences and their effect on survey response. McDaniel, Madden and Verille (1987) completed a study that concluded that contacts are more likely to participate in a survey if the topic of the survey was of personal relevance to them.

3. Compare "early" and "reluctant" respondents to determine whether reluctant respondents (those who take repeated calls to complete an interview and have been shown to be similar to persons who refuse surveys, Armstrong and Overton 1977) participate at different rates than early respondents (those granting an interview upon the first or second call).

4. Conduct a follow-up phone contact with refusers (persons who refuse to grant an interview) and unknowns (persons in the sample who could never be contacted) to determine if these persons participate at different rates than respondents.

5. Conduct a "validation" survey omitting the screening question to determine that question's potential biasing effect.

6. Compare estimates of participation proportions from the validation survey, the NSRE, and the 1992 NSRE Pilot Survey, as well as with other survey estimates.

It should be noted that inferential statistical methods were not used in the comparisons reported in this paper because weighted participation estimates were derived from published reports. The comparative standard adopted was whether observed differences were viewed as important in the experienced eyes of the survey research team and sponsoring users of the data. A major purpose of this paper is to chronicle the steps taken in attempting to identify and adjust apparent biases in participation proportions estimated from the NSRE and to describe how the above steps ultimately led to isolation of the screening question as one primary factor seeming to introduce bias into the NSRE estimates. Additionally, by sharing the experiences of the NSRE survey research team, it is anticipated that this paper will provide helpful observations for others involved in survey design and administration.

Results

Initial Comparison Among Surveys

From the overall weighted results of the NSRE, it was estimated that 81.8 percent of the U.S. population had participated in one or more outdoor recreation activities in 1994-95. This result is called "global participation," meaning participation in one or more outdoor recreation activities across the full (global) list of all activities. This estimate of global participation was compared with other estimates reported from the 1990-91 National Survey on Hunting, Fishing and Associated Wildlife Activities (which included a screening process, USDI-Fish and Wildlife Service), the 1982-83 National Recreation Survey (no screening question), the 1992 NSRE national pilot (with screening question worded more generally than the NSRE question), and the 1995 Recreation Roundtable survey (without a screening question). Estimates for global participation and for selected individual activities are compared in Table 1.

The results in Table 1 represent some early diagnostic results observed by the NSRE analysis team. Noteworthy is that the NSRE produced an estimate of global participation that was much lower than the 89 percent estimated from the 1982-83 NRS. Comparability of these two estimates is critical because they are the basis for describing the overall trend for outdoor recreation participation for the U.S. population. The NSRE estimate was also lower than the estimate of 93.3 percent derived

Table 1. Estimated percentage of the U.S. population that participated one or more times in 12 months by activity and survey source, 1994-1995.

	Source of estimate				
Activity	1994 NSRE Pilot	1994-95 NSRE	1990-91 Wildlife Survey	1982-83 NRS	1995 Times-Mirror
	(Percent of U.S. population)				
Global (Any activity)	93	82	NA	89	74
Hunting	14	13	7	12	8
Fishing	39	35	19	35	26
Developed camping	30	25	NA	17	25
Family gathering	72	65	NA	NA	NA
Hiking	24	29	NA	14	18
Horseback riding	10	10	NA	9	6

from 1992 NSRE Pilot, a national sample of 786 individuals. The 74 percent reported by the Recreation Roundtable Poll is not comparable because it represents a more limited list of activities.

It is noteworthy that the NSRE participation estimates for individual activities shown in Table 1 are very close to the NSRE pilot estimates, although generally somewhat lower. The NSRE estimates for hunting, fishing, and horseback riding are also similar to the 1982-83 NRS estimates. The NSRE estimates are higher than the 1982-83 NRS for camping and hiking. The Roper-Stark results present a mixture of both higher and lower estimates. The paradox perplexing the research team initially was the observation that while the NSRE estimate of global participation in any activity showed a decrease in per capita participation, estimates for individual activities indicated generally increasing per capita participation. It appeared that one of these two trends was in error.

Recontact Survey

The initial reaction to the results just presented, especially the result that NSRE estimates for hunting and fishing were higher than those from the Wildlife Survey, was to suspect nonresponse bias. The refusal rate for the NSRE phone survey was 45 percent, typical of large-scale generalized phone surveys in contemporary times (Kerin and Peterson 1983). This was virtually the same as the refusal rate for the NSRE national pilot that resulted in 786 useable responses. To test for nonresponse bias, and potentially avidity bias (Alreck and Settle 1995) as one outcome of nonresponse bias, a "Recontact Survey" was conducted by the Survey Research Center at the University of Georgia (the organization that administered the NSRE study). The focus of these recontacts was on global participation in any activity and participation in hunting and/or fishing in particular. A sample of 95 persons who had refused the NSRE was recontacted and asked to participate in a short, 2-3 minute interview. A forty-five percent conversion rate was attained in the recontact effort. Results are found in Table 2.

Table 2. Comparison of participation percentages across 3 surveys asking comparable questions about recreation participation.

	Percent participation in the activity		
	Recontacted Refusers	NSRE Respondents	Wildlife Survey Respondents
Any Activity	69	82	na
Hunting	18	13	7
Fishing	31	35	19

These results suggested potential avidity bias in that a smaller percentage of recontacted refusers indicated participation globally and in fishing. However, a somewhat larger percentage of refusers reported participation in hunting. It appeared that persons participating in outdoor activities were more likely to participate in a survey about outdoor recreation (avidity bias) resulting in over estimation of participation rates for individual activities. This result did not resolve, however, the paradox that the NSRE estimated only 82 percent of the U.S. population had participated globally in any form of outdoor recreation.

Comparison of "Reluctants" with "Early" Respondents

The literature suggests that sampled contacts who are more difficult to convert to respondents tend to be similar to refusers in their overall affinity for the topic of a survey and in profile regarding items in the survey (Armstrong and Overton 1977). To examine further the possibility that nonresponse bias was affecting the NSRE estimates, 4,401 cases from the NSRE data set were analyzed to generate comparisons of sampled contacts who were easy to convert to an interview with contacts who were difficult to convert, that is, reluctant to grant an interview. Of these 4,401 cases, 4,132 were "earlies" (granted an interview with no more than 2 calls) and 269 were "reluctants" (granting an interview only after more than 2 calls). Percentages reporting participation by activity are found in Table 3.

Table 3. Percentage of respondents participating in outdoor recreation and type of respondent by activity.

	Earlies	Reluctants	Wildlife Survey
Global	81	84	na
Hunting	13	15	7
Fishing	32	38	19
Family Gathering	62	64	na
Hiking	28	23	na
Horseback Riding	16	12	na

The above estimates of participation rates showed that more reluctant respondents participate globally in any activity and in 3 of the 5 individual activities. This result seems to contradict the Armstrong and Overton (1977) study that showed that "reluctants" are more like refusers than easies. The recontact survey suggested generally that refusers participate at lower rates than respondents.

Phone Follow-up with Refusers and "Unknowns"

In an attempt to learn more about the persons who refused the NSRE and about those in the original sample who could not be reached with repeated calls, the "unknowns," a sample of numbers from both categories of nonrespondents was drawn and repeated calls made until the possibility of making a contact seemed exhausted (up to some limit, of course). In the NSRE, 43 percent of sampled phone numbers resulted in a contact (45 percent of whom refused the survey), 25 percent were never reached and thus constituted the "unknown" category of potential respondents, and 32 percent were ineligible (i.e., businesses, wrong numbers, etc.). A total of (136) the NSRE refusers and unknowns were contacted using a 2-minute survey protocol with a soft persuasion approach. Conversion of calls to useable responses was continued until the interviewers clearly could observe emergence of a pattern of responses to question regarding participation in outdoor recreation and a few selected demographic items.

Results indicated that refusers and unknowns fall into 4 categories:

1. "Shut Ins" who have physical or other disabilities and do not participate in outdoor recreation

2. Persons who did not understand what was meant by outdoor recreation and thus refused the survey feeling it did not

pertain to them, although many of them participate in outdoor activities, Some of these persons can be classified as "Servers," in that they participate in outdoor recreation out of service to some other person or persons, especially in taking children or other dependents on outings. These persons generally did not consider service motivated participation as fitting the NSRE definition of participation.

3. "Hard core" refusers who do not participate in any survey coming to them by phone, but who said they do participate in outdoor recreation and do so at a per capita rate very close to that of the NSRE respondents.

4. The "Busies" who are very active in all aspects of modern life and do not answer the phone unless they are expecting a call. These persons tend to be very active in outdoor recreation, family activities, job and outside interests to the point that answering the phone is viewed as an interruption.

A Supplemental Validation Survey

With the above evidence of bias in front of the survey team, it appeared that both response and nonresponse biases were present. Response bias was hypothesized to result from some respondents' misunderstanding of the notion of "outdoor recreation" as it presented in the NSRE introduction and screening question. This misunderstanding resulted in underreporting of global participation. The 1982-83 NRS provided an estimate of 89 percent global participation with no initial screening question. The 1992 Pilot of the NSRE showed that 93 percent of the U. S. population participated in one or more outdoor recreation activities. The Pilot included a screening question, but asked "Did you spend any of your leisure time outdoors in the past 12 months?" The NSRE screening question, developed with the survey team leader for the 1982-83 NRS, was worded: "Did you spend any of your free time participating in outdoor recreation activities in the past 12 months?" For both surveys, interviews were initiated only after defining outdoor recreation as "Any recreational activity which you did outdoors for pleasure. These could be activities you did around the home, on vacations, trips, outings, or during any other free time."

Based on the series of diagnostic steps described above, response bias causing an underestimate of global participation was hypothesized to exist from including an outdoor recreation screening question. For example, respondents who were "servers" and those otherwise not comprehending the intended meaning of outdoor recreation tended to respond "no" to the screening question, though they had participated in some form of activity over the 12-month recall period. This apparently accounedt for some underestimation of the global participation rate.

It appeared also that an underestimate of global participation may have resulted because of nonresponse caused by the screening question and the initial provision of a definition of outdoor recreation. Some persons contacted seemed to have refused an interview because they perceived they had not participated in any activities over the past 12 months, although they actually had.

To address these potential sources of bias in the estimate of the global participation rate, a supplemental validation survey was designed and administered to a random national sample of 710 persons. The purpose was to improve the estimate of the percentage of the U. S. population that participates in outdoor recreation and to examine the validity of the percentages estimated for individual activities further. The interview was shortened to approximately 8 minutes, the introduction was streamlined, and only activity participation (yes/no) and selected demographics were asked. The survey is summarized in Table 4 showing "validation" survey percentages followed by NSRE.

Table 4. Conversion and noncontact rates across the random sample of phone numbers for the NSRE by category of contact and survey source.

	Survey Source	
	Recontact Survey	NSRE
Known Households	32.9	(43)
Completed interviews	66.7	(53)
Partial interviews	0.1	(1.6)
Refusals	33.2	(45)
Unknown Households	36.1	(25)
No answer/busy	61.5	(72)
Answering Machine	31.7	(18)
Strange noise in phone	5.6	(8)
Wrong number	1.2	(2)

Eliminating the screening question and shortening the survey virtually eliminated partially completed interviews and substantially reduced refusals. However, it seems that unreachable households are becoming a larger percentage of the potential pool of respondents, especially because of answering machines and inability to obtain an answer to the phone page. Results of the validation survey are summarized in Table 5.

Table 5. Estimates of percentages of the U.S. population participating in outdoor activities from the National Survey on Recreation and the Environment and a supplemental validation survey.

	Percentage of Respondents	
Activity	NSRE (n=17,216)	Validation (n=710)
Any activity	82	94.5
Hunting	13	14.7
Fishing	35	44.7
Family gatherings	65	83.2
Sightseeing	61	77.5
Hiking	29	30.3
Developed camping	26	27.9
Horseback riding	10	10.5
Skiing	12	11.6

The supplemental validation survey seems to confirm that the screening question in the NSRE with its emphasis on outdoor recreation resulted in underreporting of global participation across activities. The supplemental survey without a screening question provided an estimate that 94.5 percent of the U. S. population had participated in some form of outdoor recreation activity in the 12 months preceding being interviewed. Additionally, of the 8 individual activities shown in Table 5, percentage estimates for 5 were very close to those produced from

the NSRE. Higher estimates from the validation survey for generally passive, group-oriented activities, including family gatherings and sightseeing, seem to suggest that persons recreating, but perhaps doing so as a service to others, underreported their participation in the NSRE. These persons apparently did not identify themselves as outdoor recreationists. This observation probably applies as well to elderly and other much less active respondents who likely did not perceive that they had participated in any outdoor activities. In contrast, persons who participated in traditional (hiking and camping) and specialized (horseback riding and skiing) or other more readily identifiable activities can more clearly classify themselves participants. When read a list of activities, as opposed to asking if one spent any time in outdoor recreation generally, many more respondents identified themselves as participants.

The 1992 NSRE Pilot included a screening question worded differently that did not limit the query to outdoor recreation as a person's use of free time. The estimate of participation across all activities from this Pilot was 93.3 percent. Inclusion of the phrase "outdoor recreation" may have been the major problem leading to a biased estimate of the global proportion of the U. S. population that participated in some form of outdoor recreation.

Conclusions

In designing and conducting the NSRE, many decisions were made to satisfy information and budget needs. The screening question was thought necessary to keep costs down by avoiding asking nonparticipating respondents the many individual activity questions. Post survey analysis suggested however, that the screening question, along with many from the initial sample who refused the survey or who could not be contacted, may have introduced bias into estimates of outdoor recreation participation among the U. S. population. Compared with other outdoor recreation participation surveys, and with the 1982-1983 NRS, the NSRE appears to underestimate the proportion of the U. S. population that participated in one or more activities over the 12 months before being interviewed. This evidence provided at least a partial answer to the paradox noted earlier, that is that while the trend in global participation seemed initially to be downward, the trend for most individual activities seemed to be upward.

The supplemental validation survey designed to address suspected sources of bias provided evidence that the screening question in the NSRE, with its emphasis on outdoor recreation, resulted in substantial underreporting of global participation. The supplemental survey administered without a screening question estimated that 94.5 percent of the U. S. population participated in some outdoor recreation activity in the 12 months preceding the interview. This was a substantially different estimate from the 81.8 percent estimated from the NSRE global screening question. When read a list of activities, as opposed to asking if one spent any time in outdoor recreation generally, many more respondents identify themselves as participants. It is strongly suspected that many persons in stages of life where they cannot participate in activities typically perceived as recreation in the "great outdoors," such as white water rafting, hiking, mountain climbing, etc., will not identify themselves as outdoor recreation participants although they sightsee by automobile, stroll the local park nature trail, or take the kids to the pool.

Elimination of the screening question and streamlining of the survey agenda in the validation survey reduced refusals (i.e., included some who otherwise would have refused an interview) and enabled identification as recreation participants those who were "servers" and others who in the NSRE had not identified themselves as outdoor recreationists. Therefore, estimates of participation rates for individual activities were similar to or slightly higher than those produced from the NSRE. Higher estimates from the validation survey for passive activities like fishing, family gatherings, and sightseeing, suggest that persons recreating primarily as a service to others, and also the elderly and other much less active respondents, underreported their participation in the NSRE.

The 1992 NSRE Pilot included a screening question, but it was worded differently from the screening question included in the final NSRE and did not limit the query to outdoor recreation as a person's use of free time. The estimate of global participation in all activities from this Pilot was 93.3 percent. Inclusion of the phrase "outdoor recreation" may have been the primary problem leading to an underestimate of the overall proportion of the U. S. population that participated globally in some form of outdoor recreation. Further research and testing of the observations gained from diagnostic evaluation of the NSRE and its associated pilot and validation surveys is needed. However, the conclusion that great care is needed in deciding to use or not use a screening question is clear. It appears that if a screening question should be needed, it should be kept as general and "unloaded" as possible. We recommend avoiding a screening question.

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A Conceptualization of the Tourism Entrepreneurial Process

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Abstract: Touristic enterprises can significantly contribute to the economic and social well-being of a community. One practical way to increase the birth of touristic enterprises in a community is to increase the supply of tourism entrepreneurs in the community. The first step to achieve this quest is to understand the touristic enterprise creation process. Once this is accomplished, a community may then develop appropriate policies to stimulate tourism entrepreneurial activities. This paper presents a conceptualization of the process including research and management implications.

Introduction

Touristic enterprises can significantly contribute to the economic and social well-being of a community by creating employment opportunities, earning real income, generating tax revenues, promoting intersectoral linkages. These enterprises also can encourage the preservation and conservation of natural, historic and ethnocultural resources. They can enhance the quality of amenities in the community, increasing the values of real estate, improving the attractiveness of the community as a place for possible relocation by corporations, and may even help elevate the bond ratings of the community.

Thus, it is no surprise that during the last two decades, many communities have enthusiastically embarked on a journey of active tourism development. This is evidenced by the increasing number of tourism offices founded (IACVB 1994) and amount of tourism promotional budgets (Waters 1995). While tourism is thriving in some communities such as Wilmington, NC (Friedman 1996), Rock Hill, SC (Zwerneman 1994), Central City, CO (Stokowski 1992), and Sandpoint, ID (Minnesota Extension Service 1991), there are communities that continue to experience little success--- undeveloped land parcels targeted for touristic enterprises, vacant stores, deserted streets, and low influx of tourists--- despite significant investment of marketing and fiscal efforts.

Why such contrasting scenarios? That is, why are some communities able to enjoy a relatively active level of touristic enterprise birth while others are less able to?

Unfortunately, the tourism literature offers little enlightenment to this question. A comprehensive search of the primary tourism research journals, namely, the Annals of Tourism Research, Journal of Travel Research, The Tourism Review, Tourism Recreation Research, Tourism Management, and the Journal of Tourism Studies, yielded few papers that have addressed the topic of entrepreneurship, and none dealt with the research question. An extensive review of the available tourism text and reference books was not illuminative either. In fact, the Encyclopedia of Hospitality and Tourism (1993) contains no entry of the subject at all.

Since touristic enterprises are created by entrepreneurs, it seems logical that by plotting the touristic enterprise creation process, one would be a step closer to answering the research question. Also, by mapping the touristic enterprise creation process, communities seeking to increase their levels of touristic enterprise birth would have a general framework from which to work.

Purpose of the Paper

Viewed in this light, the purpose of this paper is to share a conceptualization of the tourism entrepreneurial process, and to suggest some research and management implications.

Review of the Literature

Claiming that the enterprise creation process has never been studied would be ignorant. In fact, there are at least five known journals totally dedicated to the publication of entrepreneurship thinking and research: Entrepreneurship Theory and Practice, Journal of Business Venturing, Journal of Business and Entrepreneurship, Entrepreneurship and Regional Development, and Frontiers of Entrepreneurship Research. A careful review of these periodicals showed that more than a dozen writers have addressed the enterprise creation process including Bhave (1994), Gynawali and Fogel (1994), Naffziger, Hornsby and Kuratko (1994), Krueger and Brazeal (1994), Krueger (1993), Krueger and Carsrud (1993), Herron and Sapienza (1992), Learned (1992), Bird (1992), Shaver and Scott (1991), Montanari et al (1990), Greenberger and Sexton (1988), Moore (1986), and Gibb and Ritchie (1982).

Since reviewing the various models here is inappropriate, suffice to state that most of these models attempt to explain entrepreneurial processes in manufacturing and high-tech industries rather than in service and low-tech industries, such as the tourism industry. Moreover, most discussions of the entrepreneurial process seem to stop at the birth of the enterprise (Gynawali and Fogel, 1994; Krueger and Braze et al, 1994; Krueger and Carsrud, 1993; Bird, 1992; Campbell, 1992; and Greenberger and Sexton, 1988).

The model presented in this paper, on the other hand, conceptualizes the entrepreneurial process as a cyclical process, and specifically discusses it in the context of the tourism industry. The model was developed based on this author's synthesis of the salient concepts discussed in the entrepreneurship research literature, and preliminary field research. While the model may be further refined, in the present form, it seems logical; it can explain why not all individuals embark on the tourism entrepreneurship process; and for those who do, it explains why only some will eventually create a touristic enterprise. This model also possesses normative values, and seems testable. As such, it would be a contribution to the growing body of entrepreneurship and tourism literature.

The Conceptual Tourism Entrepreneurial Process Model

Although not all touristic enterprises are created by a single individual (some are created by groups of individuals), conceptualizing the tourism entrepreneurial process as an

individual's process seems more meaningful, and better explains why some individuals pursue an entrepreneurial path, while others remain as employees or unemployed, despite situational similarities. The individual tourism entrepreneurial process is conceptualized as comprising eight interacting stages in which each stage is moderated by unfolding environmental events (Figure 1).

Stage 1: Cognitive Orientation

The birth of touristic enterprises cannot be regarded as a product of random events but as the product of decisions (the intent to create a touristic enterprise) and actions (the launch of a touristic enterprise). While actions may be described as the resulting and observable element of decisions, decision-making itself is a process significantly influenced by many antecedents.

To illustrate, both X and Y are workers in a small travel agency. X confides in Y that she hopes to open her own travel agency or some related touristic enterprise one day while Y harbors no such interests. When X eventually registers her travel agency, it is the action component of X's decisional process. But X's decision to open the travel agency must have been motivated by some

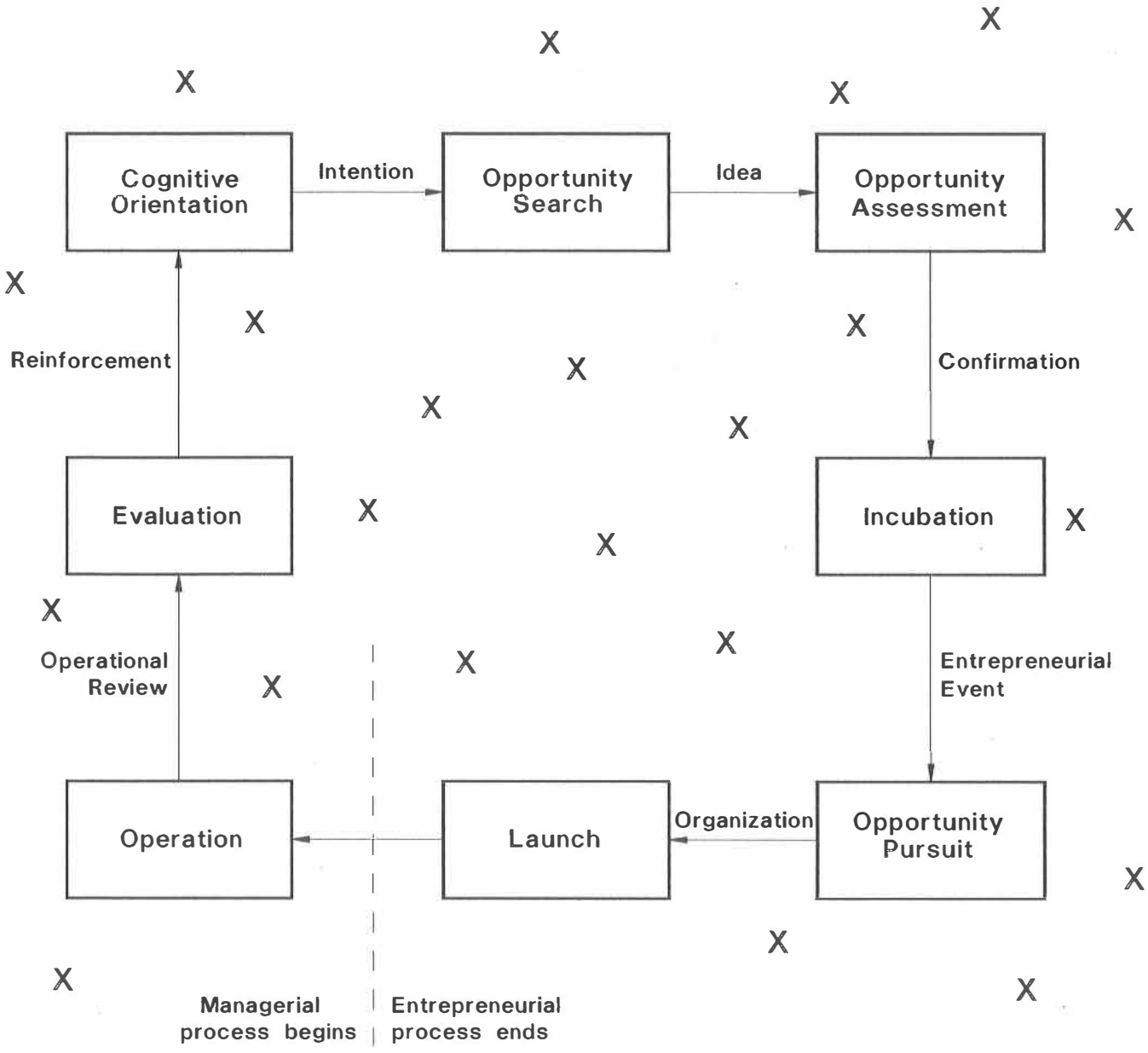


Figure 1: The Conceptual Tourism Entrepreneurial Process

reason(s). To understand why X founded a travel agency while Y stayed put, one must probe into X's "decisional box."

The theorized decisional box consists of five factors including one's attitude toward entrepreneurship, one's readiness to enterprise, one's willingness to enterprise, one's perceived ability to enterprise, and one's level of industry savant.

Attitude toward entrepreneurship. Not everyone views entrepreneurship (founding and operating a business) as a highly desirable career choice. To some people, founding and operating a touristic enterprise may be viewed as a chance to be wealthy and more in control of one's career (positive attributes). However, to others, it may be viewed as stressful and exploitative (negative attributes). How one develops a favorable or unfavorable attitude toward entrepreneurship may depend on psychographic and environmental factors (Krueger and Brazeal, 1994; Krueger, 1993; Bird, 1992; Starr and Fondas, 1992; Shaver and Scott, 1991). For example, if X has a strong need for control of her career and/or seeks economic challenges, X may view entrepreneurship more favorably than if X has a low tolerance for uncertainties or views entrepreneurship as economic exploitation. Concomitantly, if X lives in a society where entrepreneurial behaviors are strongly encouraged, X is more likely to develop a positive attitude toward entrepreneurship than if X lives in a society where entrepreneurial behaviors are viewed with disdain (as in most highly controlled societies).

Readiness to enterprise. However, a favorable attitude toward entrepreneurship is not likely to rouse one to action unless one also feels ready to enterprise. One's readiness to enterprise is a dynamic state contingent on one's lifestage situation. If X feels very content with her status quo, X probably would not have expressed the desire to found an enterprise since it would usurp her status quo. On the other hand, if X is very dissatisfied with her work/workplace (a push situation), or X strongly believes that it is time to challenge herself economically (a pull situation), X may be motivated to consider the possibility of going into business.

Willingness to enterprise. Undoubtedly, the creation and operation of any enterprise requires significant investment of one's time, effort, and money including the risk of possible failures. Thus, unless one is willing to deal with the hassles of enterprise creation and operation (the multitude of tasks that must be performed, incessant decision-making under uncertainty, compromises, etc.) and the risk of an unstable income stream, or loss of leisure and family time, one is unlikely to engage in any entrepreneurial activities even if the preceding two factors are favorable. That is, one will merely be in a "wishful" state.

Perceived ability to enterprise. Of course, one must also believe one possesses the necessary knowledge and skills to enterprise, otherwise, one will probably remain in the wishful state. However, if the preceding three factors are favorable but one perceives a lack of knowledge or skills to enterprise, two routes may be pursued. One, defer engagement until one has acquired an "adequate level" of knowledge and skills. Two, try to recruit others to participate in the venture creation process. The latter perhaps explains why some touristic enterprises are founded by more than one individual.

Industry savant. Industry savant refers to having profound knowledge of a given industry and to one's attitude toward the industry. For tourism entrepreneurship, it is unlikely that X would contemplate founding a travel agency if X has little/no knowledge of how travel agencies operate though X may have a strong desire to own a small business. In this connection, it could be added that unless one has a favorable or neutral attitude toward the tourism industry, one is unlikely to harbor the possibility of creating a touristic enterprise. For example, if one feels strongly that tourists are undesirable in a community, one would probably harbor no thought of owning and operating a touristic enterprise, such as an amusement park.

In short, a person's cognitive orientation toward tourism entrepreneurship determines one's propensity to enterprise in the industry. A person's cognitive orientation toward tourism entrepreneurship may be measured by five indicators including one's attitude toward entrepreneurship, one's readiness to enterprise, one's willingness to enterprise, one's perceived ability to enterprise, and one's level of industry savant. When these five idiographic indicators are favorable in a person, the individual may be described as in a "tourism entrepreneurial mode" or as having a propensity to enterprise in the tourism industry. Consequently, it may be hypothesized that the more intense one's cognitive orientation toward tourism entrepreneurship, the greater the likelihood to engage in touristic enterprise creation behavior, and vice-versa.

Stage 2: Opportunity Search

The possibility of creating a touristic enterprise must begin with a business idea. It seems reasonable then to postulate that when one's cognitive orientation for tourism entrepreneurship is high, one is more likely to search for new touristic enterprise opportunity actively than one whose cognitive orientation for tourism entrepreneurship is low. For example, a person who has a high cognitive orientation for tourism entrepreneurship would tend to seek out relevant people in the industry to talk to, read and research the industry, watch industrial trends, etc . . . with the hope of finding a new business idea. Conversely, a person with a low cognitive orientation for tourism entrepreneurship would probably not.

Although how entrepreneurs actually find their business ideas remains a relatively unexplored area (Christensen, Madsen and Petersen 1994), this author believes the ability to spot business ideas depends on one's analytical and critical abilities. While some individuals are blessed with these abilities, most develop them over time, from education, experience, and exposure. However, Bhave (1994) found that sometimes, opportunities presented themselves without the entrepreneur's having the intention to search for them. For example, if X is constantly requested by friends/neighbors to help them operate their personal computers, X may eventually entertain the thought that perhaps he or she should run a computer support business - a needed service and an extra source of income. It can be argued, however, that if X has a low cognitive orientation toward entrepreneurship, X probably would not have recognized it as a possible business opportunity as Krueger and Brazeal (1994:92) stated, "Opportunities are seized by those who are prepared to seize them."

In any case, tourism entrepreneurs who are actively looking for possible business ideas will probably explore along the following dimensions: the possibility of new products, new markets, new market structures, new sources of input, new delivery methods, or new price strategies (Christensen, Madsen, and Petersen, 1994; Teach and Swartz, 1994). Perhaps it is this line of approach that explains why many tourism entrepreneurs that this author had interviewed reported that they did not have just one idea but a bag of business ideas before settling on their most preferred business idea. Bhave (1994) reported the same finding in his study of twenty-seven entrepreneurs.

Stage 3: Opportunity Assessment

Not all business ideas identified will be transformed into touristic enterprises as the creation and operation of a touristic enterprise requires a significant investment of money, time, and effort including the stigma of failure. Rather, the tourism entrepreneur is more likely to evaluate the most preferred business idea for its viability and feasibility. While viability refers to the extent to which the idea could be economically sustained (such as, is there sufficient demand and will the enterprise have a competitive advantage), feasibility refers to the ease of transforming the business idea into an economic entity (principally, the quality and quantity of available land, labor, and capital). The literature on opportunity assessment is rich, thus, it does not warrant further discussion here (see Hisrich and Peters, 1995; Brownlie, 1994; Holt, 1992; Vesper, 1990; Robert and Weiss, 1988; Baumback and Mancuso, 1986).

The type and extent of opportunity assessment activity are posited to vary between tourism entrepreneurs, depending on one's level of experience and the scale of the proposed enterprise. When the tourism entrepreneur is experienced or when the proposed enterprise is small-scaled, the opportunity assessment process is more likely to be an informal process (simple and more intuitive). On the other hand, when the tourism entrepreneur is a neophyte or when the proposed enterprise is large-scaled, the opportunity assessment process is more likely to be a formal process involving a variety of professional advice. It could thus be hypothesized that a first-time tourism entrepreneur is more likely to use a systematic opportunity evaluation method while an experienced tourism entrepreneur is more likely to use an intuitive opportunity evaluation approach. However, when the proposed touristic enterprise is large-scaled, both experienced and inexperienced tourism entrepreneurs will use a more systematic opportunity assessment approach.

Three possible outcomes could be expected from the opportunity assessment phase: no-go, hold, or go. If it is a "no-go" decision, the tourism entrepreneur will probably renew his or her opportunity search activity. If the decision is a "hold," the entrepreneur will probably pursue remedial activities depending on the nature of the obstacles (may be the need to conduct more market research, investigate alternate financing, or find alternate sites). But if it is a "go" decision, the tourism entrepreneur is likely to enter an incubation stage because creating and operating a touristic enterprise is not a routine, but a significant life event.

Stage 4: Incubation

The incubation stage is a period of mulling, and consulting with relevant and significant others to confirm that it is the "right thing and the right time" to do it. Bear in mind that at this stage, the "go" decision is only a paper assessment of the business idea. Thus, the tourism entrepreneur will carefully consider the personal economic costs and benefits of becoming an employer (or self-employed) versus that of remaining an employee (or unemployed) and also the non-economic benefits and costs of owning and operating a touristic enterprise. Therefore, it may be hypothesized that unless the perceived economic and non-economic benefits exceed the perceived costs, the tourism entrepreneur will not carry out actual touristic enterprise creation activities.

Conceivably, the tourism entrepreneur may go into a state of inertia if relevant or significant others' support is suspect. In such a situation, the tourism entrepreneur is in a state of indecisiveness, and only a triggering event (such as impending threat of a layoff, actual displacement from the job, news of loan approval, news of positive economic forecast) will propel the tourism entrepreneur out of passivity. Hence, it may be further hypothesized that tourism entrepreneurs who are in a state of inertia lack a triggering event.

Stage 5: Opportunity Pursuit

The stage when the tourism entrepreneur is moved into actual enterprise formation activities is described by Shapero (1984) as an "entrepreneurial event." The entrepreneurial event marks the beginning of a no-turning back process. The Rubicon has been crossed and the tourism entrepreneur begins to undertake tangible enterprise creation activities, such as writing the business plan, completing loan papers, registering the company, opening a post office box, signing the lease agreement, conducting renovations and/or hiring activities. At this stage, the tourism entrepreneur is not likely to abandon his or her opportunity pursuit even when faced with seemingly unsurmountable barriers. Any obstacles encountered will be either overcome or bypassed to the extent of engaging in unethical practices. The goal of the tourism entrepreneur is to launch the enterprise as soon as possible.

Sometimes, tourism entrepreneurs may operate a prototype of their proposed enterprise during this stage. A sort of market testing, so to speak, as illustrated by one lady who ran a lodging and tour guiding operation using her house and car. In another case, a souvenir and craft shop owner reported that she began the business part-time from her home before launching a formal enterprise (personal interviews).

Stage 6: Launch

The end product of the opportunity pursuit phase is the birth of a tourism enterprise in the community! The birth of the enterprise represents the successful completion of the tourism entrepreneurial process, a significant personal milestone. For this reason, this symbolic event may be immortalized by some entrepreneurs by framing up the first dollar earned (Bird 1992) while others celebrate with ribbon cutting and toast of champagne or even firecrackers and lion dances.

The birth of the enterprise also marks the end of the entrepreneurial process and the beginning of the managerial process. This is because the tasks of creating the enterprise differ significantly from the tasks of managing the newly created enterprise. In the former, the primary challenge was to make

decisions under uncertainty arising from imperfect information. In the latter, the primary task is to carry out successfully what has been planned. In this context, the management of the newly created enterprise could conceivably be executed by a hired hand, but not in the former (Holt, 1992; Ronstadt, 1984; Casson, 1982).

Stage 7: Operation

Since most touristic enterprises tend to be small-scaled, most tourism entrepreneurs will assume the role of owner-manager in the enterprise's infancy. More specifically, the tourism entrepreneur's primary function becomes one of effectively and efficiently using all tangible and intangible resources of the enterprise to ensure its sustainability: the enterprise's Market (how continuously to attract and retain customers), Manpower (how to motivate and develop workers), Money (how to increase revenue and decrease expenses), Machinery (how to keep equipment performing effectively and efficiently), and Materials (how to maintain an effective and efficient inventory/information system).

In short, the tourism entrepreneur will be compelled to act more in the managerial mode than in the entrepreneurial mode (Churchill and Lewis 1983). However, this does not mean that the tourism entrepreneur has stopped behaving "entrepreneurially." On the contrary, the tourism entrepreneur's analytical and critical juices are directed to a slightly different orientation: innovation (the practice of constant improvement and improvisation). It is posited that the tourism entrepreneur will constantly seek ways to improve the enterprise's operational effectiveness and efficiency. Under this modus operandi, more windows of opportunity are possible, which may explain why some tourism entrepreneurs can form new business branches and/or create unrelated new enterprises in a relatively short time after the birth of the first enterprise as with one travel agency owner-manager who subsequently opened a furniture making enterprise, and a dude ranch owner-manager who launched a bookstore specializing in animal books (personal interviews).

Stage 8: Evaluation

Inevitably, the tourism entrepreneur must evaluate the enterprise's performance. At this time, decisions must be made to keep the enterprise as is, expand, diversify, divest, or, if it is not sustainable, fold. Whatever the decision, the experience of creating and operating the enterprise will either positively or negatively reinforce the tourism entrepreneur's cognitive orientation toward tourism entrepreneurship. Interestingly, research has shown that most entrepreneurs continue to create enterprises even if their first brush was not a pleasant one (Bhave, 1994; Vesper, 1990; Ronstadt, 1984).

Environmental events

There are two types of environmental events that influence the tourism entrepreneurial process: exogenous and endogenous events. Exogenous environmental events are unfolding community events that are not within the control of anyone, such as demographic changes, economic changes, political changes, and industrial changes. Endogenous environmental events are also uncontrollable events but they affect one's life more directly, such as one's spouse being laid off, a job promotion, a new job offer, or the death of a significant other.

Each environmental event is subjectively interpreted by the tourism entrepreneur. For example, an exogenous environmental event such as a rise in interest rates may be construed by one tourism entrepreneur as a negative event as it would mean that the cost of capital would be higher and that consumers may be less inclined to spend. Another tourism entrepreneur may construe it as a positive event because it reduces the likelihood of new entries, therefore, less competition. But to a person who has no interest in founding a touristic enterprise, the event is probably viewed as neutral.

Similarly, an endogenous environmental event such as one' spouse being laid off, can be interpreted as either a positive, negative or neutral event. It would be a positive event if one is now more motivated to create a touristic enterprise to provide employment to one's spouse. On the other hand, it would be a negative event if one now feels more inclined to hold on to one's employment as it is the family's only source of income. However, it would be a neutral event if the event has no significant impact on one's decided career path.

Research and Management Implications

The tourism entrepreneurial process has been conceptualized as a conscientious process where each stage is affected by inevitable environmental events. This may or may not be the case. Thus, empirical research needs to be undertaken to determine the validity of this model. In this context, in-depth interviews with a sample of tourism entrepreneurs representing different sectors of the industry would be appropriate. A second research issue is to test the proposition that cognitive orientation is positively correlated to opportunity search behavior. In this regard, test instruments will need to be developed and tested for their psychometric properties. A third research question is to determine how tourism entrepreneurs find their business ideas. Do they practice a systematic or a random approach to seeking out business ideas? Fourthly, simplify the opportunity assessment technique. Presently, most suggested opportunity assessment techniques are general, lengthy and often complicated (Brownlie, 1994; Vesper, 1990; Timmons, Smollen, and Dingee, 1985). Thus, a more compact and industry specific opportunity assessment method, if developed, would be more valuable to aspiring tourism entrepreneurs. Fifthly, are certain feasibility factors more critical than others in influencing the tourism entrepreneur's decisions in the opportunity assessment stage? Answers to this question have significant implications for policies relating to community tourism development. Finally, test the various hypotheses posed throughout this paper.

As for management implications, the conceptual tourism entrepreneurial model presented at least two major areas for possible community intervention. One, since cognitive orientation is the starting block, a community that wants to increase its pool of tourism entrepreneurial talents should try to increase its residents' cognitive orientation score. This could be achieved by propagating the socioeconomic benefits derived from touristic enterprises. Communities could publicly recognize and reward successful tourism entrepreneurs, encourage tourism entrepreneurs to serve as role models and mentors, and promote educational institutions to teach entrepreneurial skills and develop tourism entrepreneurial behaviors in students.

Two, while a community cannot create positive environmental events, it certainly could stimulate tourism entrepreneurial activities by helping tourism entrepreneurs more effectively identify business ideas (stage 2), evaluate them for their sustainability (stage 3), and refer tourism entrepreneurs to relevant authorities or organizations for further assistance in transforming opportunities into reality (stages 5 and 6). Many latent and hesitant tourism entrepreneurs may be incited to act if there are qualified people who are willing to help them at little or no cost to them. These functions can easily be provided for by creating a community tourism entrepreneurship advisory office in the local chamber of commerce or convention and visitor's bureau. The office could be staffed by volunteers comprising relevant educators, professionals, and touristic enterprise owners.

Conclusion

When touristic enterprises are constantly launched in the community or newly created touristic enterprises survive, everyone gains: the entrepreneurs, workers, other businesses, local government, residents and visitors to the community. While there may be other ways to increase a community's level of touristic enterprise birth, one practical way, it seems, is to increase the local supply of tourism entrepreneurs. To achieve this, one needs to map the tourism entrepreneurial process. Once the process is identified and understood, then the plethora of actions that a community could take to facilitate tourism entrepreneurship is limited only by innovative thinking. Hopefully, the conceptual model presented here is a contribution toward this quest.

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