Northeastern Recreation Research Symposium Policy Statement

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

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Proceedings of the 2002 Northeastern Recreation Research Symposium

April 13-16, 2002

On Lake George in Bolton Landing, New York

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Broad Based Recreation and Resource Management Policy Issues
FUTURE SCENARIOS OF KOREA NATIONAL PARKS: DELPHI SURVEY OF KOREAN PARKS OF EXPERTS

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Abstract: A three-wave Delphi survey of a panel of 40 key experts very knowledgeable of Korean national parks was conducted between February 2001 and March 2002. In Wave 1, park professionals, environmental Non-governmental Organizations (NGOs) managers, and a retiree identified the issues the Korean park system is facing. Findings from Wave 1 of the survey were analyzed and provided the baseline for the subsequent Waves 2 and 3. In Wave 3, four major issues -- Park philosophy not clearly articulated; Inadequate emphasis of ecosystem protection; Widespread deficiency of management tools; and Visitor services needed -- were asked to get the panel's opinions regarding "importance" (1 = most important; 4 = least important) and "possibilities" of resolving (1 = resolved in 5 years; 4 = not resolved in 5 years) of these four issues. In terms of "importance," it seems that Issue 1 ("Park philosophy not clearly articulated"), with its mean rank of 1.9, is considered more important than the other three issues (mean ranks are 2.5 or 2.6). Meanwhile, in terms of the "likelihood" of being resolved, Issue 1 (mean rank = 3.2) would be harder to be resolved than the other 3 issues (mean ranks are between 2.2 and 3.0). It implies that although the management objectives and legislative changes are needed to make the park idea articulated, due to a long-term need to get legislative support, the likelihood of resolving this issue is lower than the others. It implies, in Wave 3, that unclear park philosophy leads to the lack of recognition of national park roles toward ecosystem protection, which in turn results in a deficiency of management tools with little congressonal support such as budget and staff. Finally, three options for the Korea park system are introduced to help the Korea National Parks Authority (KNPA) management to make a balance between preservation and recreational use in national park areas.

Introduction

Benefits for future generations and for current use are always challenging goals for park professionals, including those in Korea. Over the three decades of national park history, the state of the Korean national park system has not been studied in terms of whole perspectives -- threats and opportunities to the parks. Rather, more natural science-oriented disciplines in parks such as forestry and landscape architecture have dominated park research (Korea National Parks Authority, 1999).

Since established in 1987, the Korea National Parks Authority (KNPA) has operated the Korean national parks. However, since the first national park was designated in 1967, management control over the Korean parks has been fairly unstable, although it had suggested that future national parks should be administered by a state agency with authority and means to achieve its standards and goals (Ruhle, 1968). The authority for national parks changed from the Ministry of Construction (1967 - 1991) to the Ministries of Home Affairs (Late Interior, 1991 - 1998), and finally to the Environment (1998 - present). In addition, the management for national parks changed from the local governments (1967 -1986) to the KNPA (1987 to present) (Oh, 1998). These changes may imply that the park system has been unstable and not fully effective in pursuing its objectives. Therefore, it is necessary to conduct a thorough investigation on the overall Korean national park system: what had been suggested in the past, what has been done so far, and what would be achieved in the future.

Economically and politically, earlier Korean national parks (during the 1970s) were established to promote tourism (Korea Ministry of Environment, 2000), while economic benefits of tourism related to recreational use on parks were emphasized to meet both preservation and recreation benefits (International Park Planning Institute et al., 1972). With the resumption of autonomy of local government in 1992, this economic penetration might have led park policy to be use-oriented for economic benefits, resulting in park management being fragmented, unclearly defined, ill-organized and malfunctioned. Threats of over-development by commercial developers, local governments, and even park management itself would be potential causes of national park degradation. Although overall responsibility of the degradation lies with the central government and its administering agency, the central government often gives away parklands to the developers of golf courses, condominiums, ski resorts, hydraulic power plants, and roads, to stimulate local economies. Such problems are even more threatening with a fragmented structure of park administration, shown in Taiwanese national parks (Sung, 1990), and national parks suffering from overuse, and underbudget. Still, visitors must be fairly satisfied with their recreation experiences in order for the overuse to continue -- this seems to be true with Korean national parks (Kim, 1998a). The Korean National Parks Authority (KNPA), a non-governmental agency of the Ministry of Environment, may have a strong mandate but weak authority to both protect and provide for current use (Kim, 1998a). To protect parks' natural resources and increase the quality of visitor experiences, the first steps must be taken by park management. Although relevant laws are somewhat ambiguous and overlapped, the laws imply resource protection and benefits for the future generations in parks. But, the on-going problems of under-budgeting and understaffing are chronic (Korean National Parks Authority, 2001). These disparities have likely caused the KNPA to have a limited law
enforcement ability to protect natural resources and prevented the KNPA from better educating its visitors about norms of good park visitation.

The results of this research would be used for park managers, the legislative body, park-related academics including forestry and ecology, environmental horticulture, tourism industry, environmental NGOs, Korea Ministries of Environment, Agriculture, and Tourism, local governments, locals near the parks, resident in park areas, local tourism industry, Buddhist temples located within and beside the park lands, and teachers, students and their parents. It is also possible to attract North Korean national park management. Actually, a part of a North Korean park becomes a major tourism destination as both South and North Korean governments have had an open discussion of steady Korean reunification (Gungangsan Tour Co. LTD website, http://www.tourgold.net/).

Method

This study has used the Delphi technique, a method used to systematically combine expert knowledge and opinion to reach an informed group consensus about the likely occurrence of future events (Moeller and Shafer, 1987). The assumption of this method is that although the future is uncertain, individuals able to make informed judgments about future contingencies can approximate its probabilities. The method is intended to provide a general perspective on the future rather than a sharp picture. That is, after each survey questionnaire was done, there would be a convergence or a divergence between panelists and, even in the latter, the polarized opinions can be crystallized. In this study, it is assumed that leading park professionals would suggest how to identify/resolve those threats to parks, what opportunities there are, and what should be done, because one way to get a holistic picture of future options, although it is not a sharp but a rough one, will be helpful to understand those problems. Hence, the unit of analysis is individual park professionals who are knowledgeable to Korean parks.

Delphi technique replaces direct open debate with an iterative series of questionnaires, with each subsequent series of questionnaires containing information gathered from those preceding it. Indeed, the Delphi technique has an advantage during administering the survey questionnaires: The panelists of this study can freely describe their opinions without any intervention by others such as their superiors who are also in the same panel (Gordon, 1994). Gordon also points out that due to the number of respondents is usually small, a Delphi study does not necessarily produce statistically significant results. Hence, the results provided by a panel on a Delphi study varies and the panel’s synthesized opinions represent that particular group, neither a larger population nor even a different panel. Mainly, Delphi is in the 1950s and the 1960s stressed making quantitative assessments such as forecasting dates of future events. However, from the 1970s qualitative-oriented Delphi became frequently used (Woudenberg, 1991).

Meanwhile, threats to validity as potential limitations to this study would be a rapid park policy change during the study (history) that affects the study results in ways that cannot be assessed. Examples of this “history” problem are “Natural Parks Law” amended in September 2001 (Korea Ministry of Environment, 2001) and some parklands were re-designated in January, 2002: i.e., some adjacent lands were added to the existing parklands and sizes of some park areas were reduced (Korea Ministry of Environment, 2002). More currently establishing a new marine-based national park in 2004 was proposed.

As a panel study with the same set of sample was studied in each wave, this study did not use a probability sample. Rather, as a nonprobability sampling method, a snowball sample in which panelists were asked to suggest supplementary list of park professionals for survey was chosen. In this case, some of the respondents in the first wave of the survey did not participate in later waves. To prevent it, the dropouts also received the subsequent wave after the wave they had missed. Unless they were not responding, they remained in the Delphi panel to give their opinions. This concerns the problem of “panel attrition.” When some of the respondents studied in the first wave of the survey did not participate in later waves, it was needed to check that whether those who dropout of the study may not be typical in the panel.

Although reliability would be a clearer matter than validity, the aspect of this study requires a special caution about an extra duty the moderator was facing, i.e., translation. The moderator had to double-check between bilingual translation and transcripts.

Other limitations would be the problems associated with the formation of a panel. These “virtual” problems would occur when a Delphi design makes too restrictive a definition for Delphi and/or when an exposure of misrepresentation in a summary is more likely to happen. Although these problems themselves would neither affect the use of Delphi Technique nor be unique to this technique, they should be minimized to balance the communication goals in the context of the objective of the particular Delphi study and the nature of the panel (Linstone and Turoff, 1975).

Formation and Profiles of Panel

A panel of 40 Korean park experts were selected by three different procedures: first, 27 panel members were chosen through a literature review, a list consisting of 90 park professionals provided by the Korea National Parks Authority (KNPA), an expert’s recommendation on the KNPA list and supplementary list, a Ministry of Environment’s recommended list, and two NGO groups’ supplementary lists. In addition, on Wave 1, these 27 panelists were asked to provide a supplement list of possible panelists. 13 more members were added to the panel after the first 27 members recommended them as panelists. Among these added members, 9 members received the Wave 1 questionnaire, while the other 4 did
not have a chance to receive it due to the cut-off date for Wave 1. On Waves 2 and 3, there are 2 non-deliverables. The remaining 38-member contacts consist of 2 environmental NGO managers, 7 park employees, 11 government employees and staff in research institutes, 17 academics, and 1 former park employee. However, their professional backgrounds are not limited to these 5 categories. For example, some panelists were former park employees or NGO managers and some academia are involved in top-level management in NGOs. Among remaining 38 panelists, 16 have responded to the final, Wave 3 questionnaire. However, 2 out of 16 are not valid. Thus, 14 panel members remain in the panel.

Findings

From Wave 1, the panel identified 47 major issues the KNPA faced. On Wave 2, they were organized into 3 clusters: park philosophy/policy, park organization/management, and park visitation/visitor needs. The resulting data of Wave 2 was extracted to the problem statements below, which are the basic framework for Wave 3 questionnaire (Table 1):

- It seems that there is no clear philosophy of what the Korean national park system should be, as evidenced by the panel’s high priority concerns for (a) lack of a national park idea of the Korea National Parks Authority (KNPA) and central government, and (b) the general public’s low awareness of Korean national parks and the park purpose as a pleasure ground.

- Because of the lack of a clear philosophy, there also appears to be a lack of recognition of national park role(s) in environmental protection. This is borne out by (a) a paradigm shift considering national parks as preservation/educational places (b) lack of standards in conservation and lack of public relations/education on ecosystem (c) reclassification of national parks on the basis of preservation/ ecosystem values involved, and (d) conflict between preservation and use including landownership.

- As a consequence, the role of national parks in Korea does not seem to be getting a level of attention in the national agenda that it deserves. It is evidenced that: (a) lack of long-term views/goals in management (b) lack of expertise in KNPA and its budget/staff problems including lack of control of budget (c) need to have a state-run national park agency (d) central government’s active role in natural resources and need to amend the organic act, “Natural Parks Law,” for conservation of parks (e) avoiding inconsistently relevant laws, and (f) lack of character distinction between parks.

- Finally, because of the low priority national parks have in Korea, their management seems to reveal a number of serious deficiencies reflected in the following: (a) management inconsistency of KNPA due to rapid turnover of supervising officials in the Environment Ministry (b) KNPA and central government’s lack of understanding national park management (c) organizational inflexibility of

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<td>Korea National Parks Authority (KNPA) &amp; the central government’s lack of national park idea</td>
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<tr>
<td>KNPA and central government’s lack of understanding national park management</td>
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<td>General public’s low awareness of national parks</td>
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<td>Need to establish state-run &quot;national park bureau&quot;</td>
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<td>Development pressure/ attempts in park area</td>
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<td>Lack of central government active role on natural resources</td>
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<tr>
<td>Inconsistency/overlap of relevant laws</td>
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<td>Attempt of building cable car system in park area</td>
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| **ISSUE--Inadequate Emphasis of Ecosystem Protection** |
| Paradigm shift (need to consider National Parks as preservation/educational places) |
| Lack of public relations/education on ecosystem |
| Inconsistent management of ecosystem |
| Conflict between preservation and use |
| Lack of standards in conservation |
| Need to provide more environmental education programs |
| In order to emphasize conservation, need of amending "Natural Parks Law" |
| Insufficient protection for ecosystem |
| Increased degradation of resources in park area/visitor impacts on natural environment |
| Need to reclassify national parks on the basis of preservation/ ecosystem involved |

| **ISSUE--Widespread Deficiency of Management Tools** |
| Lack of adequate KNPA expertise, budget, staffing, and control |
| Problem of political appointment of KNPA chairman |
| Problem of zoning |
| Organizational inflexibility of KNPA |
| Indiscriminative development and facility deterioration in "mass facility zone" of park |
| Lack of inventory (ecosystem, infrastructure, etc) |
| Inconsistent management system in KNPA (due to rapid turn-over of officials in Ministry of Environment) |
| Unlawful facilities in park area |
| Poaching and illegal picking of herbs (due to lack of law enforcement) |
| Financial difficulty of business in "mass facility zone" |
| Land ownership mixed |
| Infringement on private property rights in park area which cause civil appeal |
| Lack of policy regarding cultural resources (such as eco-villages & Buddhist temples) |
| Management control over parks (possibility of conflict between central & local governments) |
| Conflict with Buddhist temples, which are located in major park areas |
| On-going construction/renovation in Buddhist temples in major park areas |

| **ISSUE--Visitor Services Needed** |
| Lack of visitor management for non-disturbing behavior |

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KNPA and its chairman as a political appointee (d) lack of inventory, inconsistently managed ecosystem, and zoning problems, and (e) property rights, local governments’ interests, and entrance fee issues. Also, deficiencies regarding visitor management include: (f) lack of visitor management including disturbing behavior of visitors (g) need to provide both good quality of recreation experiences and service/education facilities, and (h) insufficient environmental education and interpretation programs.

In Wave 3, four major issues -- Park philosophy not clearly articulated; Inadequate emphasis of ecosystem protection; Widespread deficiency of management tools; and Visitor service needed -- were asked to get the panel’s opinions regarding “importance” (1 = most important; 4 = least important) and “possibilities” of resolving (1 = resolved in 5 years; 4 = not resolved in 5 years) of these issues. In terms of “importance,” it seems like that Issue 1 (“Park philosophy not clearly articulated”), with its mean rank of 1.9, is considered more important than other three issues (mean ranks are 2.5 or 2.6). Meanwhile, in terms of the “likelihood” of being resolved of Issue 1 (mean rank = 3.2), it would be harder than the other 3 issues (mean ranks are between 2.2 and 3.0). It implies that although the management objectives and legislative changes are needed to make the park idea articulated, due to a long-term needed to get legislative support, the likelihood of resolving this issue is lower than others. (Table 2)

Table 2: Mean Ranks of Importance vs. Likelihood of Four Major Issues

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<thead>
<tr>
<th>Issue</th>
<th>Importance</th>
<th>Likelihood</th>
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<td>I: Park philosophy not clearly articulated</td>
<td>1.9</td>
<td>3.2</td>
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<tr>
<td>II: Inadequate emphasis of Ecosystem protection</td>
<td>2.5</td>
<td>2.7</td>
</tr>
<tr>
<td>III: Widespread deficiency of management tools</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>IV: Visitor services needed</td>
<td>2.6</td>
<td>2.2</td>
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From the Waves 1 and 2, it is assumed that the issues identified flow from park philosophy/idea to more detailed management tools and visitor needs. Following this flow, it implies, in Wave 3, that a clear park philosophy is needed to resolve other issues, due to the hierarchical levels among issues. In other words, an unclear park philosophy leads to the lack of recognition of national park roles toward ecosystem protection, which in turn results in a deficiency of management tools with little congressional support such as budget and staff.

On the other hand, the “likelihood” of Issue 4 (“Visitor service needed”) is more feasible than others: Actually, since 2001, some parks have launched ranger-or volunteer-led interpretation/guides programs, providing more services to visitors, as most panelists pointed out.

As a panel, their opinions would represent peoples’ opinions, and the panel’s idea would help management and the future directions of parks. Examples are: what the park missions are and how to achieve it, how to discharge mandate of park system, how to deal with severe constraint of staff and budget in park management, how to deal with relationships between use and resource protection, how to compete/cooperate with other natural resource agencies, and how to deal with meeting visitor needs.

Side Flows

Delbecq et al (1975) point out that the lack of opportunities for social-emotional rewards in problem solving, and for verbal comments on the feedback reports are major characteristics to reduce the decision-making performance in a Delphi study. In our study, the panel has had opportunities to freely provide any concerns on every wave. Interestingly, some panelists added unofficial comments via personal email or letters.

Conclusions and Recommendations

Based on the panel’s rough views that emphasize park philosophy/idea, but consider seeing the advent of improved/increased visitor service needed, besides status quo, there would be 3 options for the Korea national park system:

Option I: state-owned park agency
- would be a non-core sector agency in the Ministry of Environment.
- should have solid mandates/missions and its own budget control.
- should get support by the National Congress and the general public.
- should cooperate with / use of every possible resource.
- should be flexible with time (long-term management-oriented).

Option II: state-owned, fully-subsidized agency
- would be a non-core sector agency under the Offices of the President or the Prime Minister.
- would be solely mission-oriented.
- should provide the general public with no fee entry to the parks.
- should cooperate with / use of every possible resource.

Option III: state-owned, non-core agency
- would be a non-core sector agency with limited budget control.
- should get support from the National Congress and the general public.
- should cooperate with / use of every possible resource.
Option III: state-owned, partially-privatized agency
- would be a mixed legal entity of partial public, partial private under the Ministry of Culture and Tourism.
- would have more tourism-oriented dimensions in implementing its mission
- would prefer meeting visitor needs
- should cooperate with / use of every possible resource.

would be non-flexible with time (short-/mid-term management-oriented)

The policy makers might prefer the status quo, whereas the panel of this study tends to prefer the Option I. In the current situation, Option III would be the most feasible to provide quality experience of visitor needs and protect the resources in park area. The Ministry of Culture & Tourism oversees the Cultural Properties Administration.

Although Option II would have less legislative support, this option would appeal, inviting the high awareness of the general public. It would cover the transition period from Option III to Option I. This option might be the most popular among the three options proposed here, if sufficient budget and staff are provided.

One of the advantages of a public organization is the flexibility of pursuing the general public’s needs with accomplishing its mission. That is, a public organization is corporation-attributive to do business for central or local governments. In particular, a public organization would be derived from the condition that lacks private investments, meets national self-defense/strategies and monopoly/political reasons. For the sake of the general public, the public organization’s budget proposal and appropriation are subject to Congress review and approval. However, due to its corporation-attributive, it needs its budget flexibly proposed and appropriated.

In particular, in Motivation-hygiene Theory (Herzberg et al, 1959), any maintenance factors such as salary, work condition, interpersonal relationships with other employees, and company policy/administration could not motivate an employee in a company. Rather, these factors (“dissatisfiers”) would be prime negatives, if they were lacking.

Motivation factors (“satisfiers”) are the things that could really bring about worker dedication to a job. These satisfiers -- achievement, recognition, advancement, the work itself, the possibility of growth, responsibility -- encourage a worker to do a job worth doing, which produces high-level morale and productivity. Therefore, the first option “state-owned park agency” is preferred. (Figure 1) Further study such as NGOs-initiated study for the general public’s and locals’ opinions regarding parks would meet the needs of Korean parks, enhancing the quality of Koreans’ park experiences.

Figure 1: Three Options for Korea National Park System Associated with Organizational Type and Degree of Subsidy

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COMPETING DEFINITIONS: A PUBLIC POLICY ANALYSIS OF THE FEDERAL RECREATIONAL FEE DEMONSTRATION PROGRAM

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Abstract: Problem definition theory specifies that however controls the definition of a problem is in a unique position to control debate over the issue, influence others, and determine the problem's place on the agenda. This paper uses a rhetorical analysis and a questionnaire survey of congressional aides to examine the federal Recreational Fee Demonstration Program. Results suggest that 3 groups--agencies, environmental organizations, and industry groups--are competing for control of this problem. The questionnaire results suggest that the congressional aides are not strongly committed to any particular ideological position, so that the problem definition remains unresolved.

Introduction

As a rider amendment to the Omnibus Consolidated Rescissions Act of 1996 (P.L. 104-134), section 315 authorized the four major federal land management agencies (Bureau of Land Management, National Park Service, Fish and Wildlife Service, and the U.S.D.A. Forest Service) to begin testing a pilot program designed to charge entrance fees for public recreation at designated sites. Its official title was the Recreational Fee Demonstration Program, and since its inception it has inspired great controversy. Battle lines have been drawn, with groups both supporting and opposing the program. Although largely invisible to the general public, the debate has been furious, opposition has been growing, and the program has frequently inspired acts of civil disobedience.

Proponents of the fee program argue that fees are a management tool that can help recover costs, generate revenue, promote efficiency by controlling overuse at popular sites, maintain better safety standards, and reduce private-sector competition. Opponents argue primarily from a rights perspective and an equity position suggesting that everyone has a right to use and enjoy public lands, that fees restrict use by low-income citizens, constitute double taxation, are inconsistently administered (different sites have different costs), and are intrusive within the context of freedom and leisure.

Most previous research on the fee issue has concentrated on two primary groups: those who use public facilities and parks and/or park administrators/managers responsible for operation of the program at that site. To date, no study has applied a strict political science perspective to the issue, nor has any study examined the attitudes and opinions of legislative aides who advise elected officials about the program. In this paper, I present the results of a study that examined the attitudes of legislative aides within the context of problem definition theory (Rochefort and Cobb, 1994; Stone, 1997). Aides who advise members of Congress on issues play an important role in agenda setting and public policy analysis and can significantly influence program evaluation. Within this framework, problem definition theory suggests that whoever controls the definition of the problem is in a unique position to control the debate over the issue, influence others, and determine the problem's place on the agenda (Rochefort and Cobb, 1994). Different groups compete for the attention of aides and the congressional members they represent. Problem definition, as seen from a political science perspective, concerns the strategic representation of situations. It assumes that individuals, groups, and agencies deliberately and consciously fashion portrayals of problems to promote their preferred course of action. Their representations are designed to persuade people to their side, and gaining leverage over opponents (Stone 1997).

Methods

The present study was divided into two parts: a rhetorical analysis designed to understand how the different groups--agencies, conservation/environmental organizations, and industry groups--defined the issue, and a questionnaire study of congressional aides. The rhetorical analysis was a subjective analysis of agency reports and issue position statements (see below) guided by the tenets of problem definition theory. Rochfort and Cobb (1994) specify six elements of problem definition: causality (the problem's origin), severity, incidence (how widespread it is), novelty, proximity (effects on local populations), and crisis. For example, federal agencies have identified the fee demonstration program as a necessary solution to a management crisis stemming from the deterioration of infrastructure, while opponents point to the negative effects it has on participation by low-income local populations--a proximity effect. Often, those contesting the definition of a problem will weave these various factors into a narrative story that employs symbols, numbers, and language manipulation to dramatize a problem--success stories are an example. These themes are readily evident in the groups' publications.

In Congress, the Recreational Fee Demonstration Program is overseen by the House and Senate Natural Resources Committees. These committees are largely comprised of members from western or southern states, with committee leadership generally from Rocky Mountain states including Colorado, Utah, and New Mexico. A total of 75 aides work on the committees; 52 aides in the House and 23 in the Senate. These aides are responsible for gathering information, developing issue positions, and both defining and representing the issue to the member for whom they work. They also are responsible for the development of
public policy and legislative measures. They come into the policy-making process from a range of backgrounds: government, economic, law, etc., and have different views based on their field of expertise.

In order to examine the attitudes and opinions of congressional aides, a 22-question survey was administered through personal interviews in Washington, DC and telephone conversations. Telephone calls were placed to all 75 aides. Since aides are not generally available directly, telephone messages described the study and its purpose. After multiple telephone calls requesting an interview, 35 aides responded (21 House aides and 4 Senate aides) and 25 of them agreed to participate in the study. The remaining 10 aides declined to participate citing office regulations or their lack of knowledge about the fee program. The majority of interviews were conducted on January 10th and 11th, 2002, while additional interviews took place on January 24th and 25th, 2002. Two interviews were conducted by telephone. The typical interview took 7 minutes after which aides frequently discussed the program informally for a few minutes. Survey questions were designed to elicit information in four areas: knowledge of the program, the information sources relied upon by the aides, attitudes about the program, and independent variables including party affiliation, ideology, and experience. Because of the limited response from Senate aides, and because their responses followed the same patterns as those of House aides, the data from the House and Senate were pooled. The data were tabulated with SPSS and Excel software. Because of the small sample size (n = 25), Fisher's Exact Test (Steele and Torrie 1980) was used to compare attitudes and knowledge level by party affiliation and ideology (liberal, moderate, conservative).

Results

Rhetorical Analysis

The struggle for problem ownership of the fee demonstration program is a fierce battle between three highly motivated sets of groups—agencies, conservation/environmental organizations, and industry groups—each with their own definition of the problem and their own recommended solutions. As the debate over the Recreational Fee Demonstration Program continues, both proponents and opponents assert their own positions on the issue, publishing various materials, reports, or using other methods of communication to strategically define their own interpretation of the issue.

To understand the rhetoric surrounding the issue, I examined three different publications by groups seeking to control the issue. Agency reports were contained in the Recreational Fee Demonstration Program: Progress Report to Congress Fiscal Year 2000, which outlines the U.S.D.A. Forest Service, the National Park Service, the Bureau of Land Management, and the U.S. Fish and Wildlife Service program results. The U.S.D.A. Forest Service issue position statement also is reviewed as a specific example of how an agency defines the program. The environmentalist position was represented by the Sierra club's "Selling Our Birthright." The free market approach favored by industry is outlined by the American Recreation Coalition's issue position statement.

With any federally managed program, agencies must conduct annual program evaluations and file a report to Congress. Usually these reports highlight positive characteristics about the program, possible suggestions for future improvements, and the role Congress can play in developing new policies related to the program. The fee demonstration program progress report, submitted to Congress jointly by both the Department of the Interior and the U.S. Department of Agriculture (Forest Service) in 2000, demonstrates the positions of the four federal land management agencies with relation to the fee program. The progress report is a technical summary of the inner workings of the program, providing statistical information as well as a brief synopsis of the positive outcomes from the fee program. It is designed to be highly persuasive, with supporting diagrams and charts presenting statistical information on the issue. In a letter contained in this report addressed to the Honorable Joe Skeen, Chairman of the House Subcommittee on Interior Appropriations from the Secretaries of the Interior and Agriculture Departments, Secretaries Norton and Veneman clearly identify this program as a management issue, stating, "This report summarizes the most up-to-date information on visitation, revenues, accomplishments, and management issues associated with the fee demonstration projects that were in place at the end of fiscal year 2000." Clearly, the four land management agencies define this issue as a management concern, pointing to the substantial maintenance backlog they currently face (General Accounting Office, 1998). In their reports to Congress, the agencies have identified a "crisis" within the system, and fees collected from visitors to help pay for the maintenance backlog represents their profound solution. They point proudly to new restrooms, visitor centers, boat launches, and trail maintenance as only a few of the positive impacts of fees.

In addition to the 2000 Report to Congress, the U.S.D.A. Forest Service has issued its own position statement designed to educate the public about their definition of the fee program. "The fee demo program is a vital tool for land management agencies to use if the federal government is to continue to offer quality recreation, heritage, and wilderness programs open to the public. It allows the Forest Service to keep trails, campgrounds, lake and river access healthy and safe." (U.S.D.A. Forest Service). The statement further highlights how fees have reduced the maintenance backlog and provided new facilities and security measures within public forests. The Forest Service also addresses the issue of land privatization and keeping public lands open. "With reductions in workforce as forest budgets shrink, an important strategy to keep facilities open has been to permit concessionaires to run campgrounds and

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other facilities with their workforce... The Recreation Fee Demonstration Program helps the Forest Service have a workforce that can clear trails and clean campgrounds, or to contract with the private sector for those services." (U.S.D.A. Forest Service).

The National Park Service and the Bureau of Land Management (BLM) point to similar managerial concerns such as the maintenance backlog and increased public demand. In their Strategic Plan, the Bureau of Land Management states that they will "use funds originating from fees, including fee demonstration areas, to correct deficiencies resulting from deferred maintenance." (Bureau of Land Management). The National Park Services uses park passes to administer the fee program, and has recorded the largest revenues of any agency from the program since its inception, with the 2000 fiscal year netting over $143.7 million dollars from recreation fees. In addition to the technical information contained in the 2000 Report to Congress, a recent letter to the General Accounting Office (GAO) argued that the program was a necessary management issue and should be made permanent. The Department of the Interior supports the Recreational Fee Demonstration Program and believes that Recreational Fee authority allows local managers to respond to visitor needs more effectively and to protect resources under their management.3 As one can see, the National Park Service, like the U.S.D.A. Forest Service, defines the issue as a management concern, giving managers at local sites the opportunity to generate revenue no longer appropriated from Congress to help improve facilities at those sites.

Selling our Birthright: Recreation User Fees on Public Lands (Sierra Club)

The Sierra Club uses a different approach to define and shape the debate over fees. They strongly oppose the notion of user-based recreation fees, and have become an active participant in the debate and in efforts to stop further legislation on the issue. Their publication, "Selling our Birthright," like the agency literature discussed above, presents a highly persuasive argument targeted towards individuals who have little knowledge of the program. The Sierra Club hopes to defeat current and future legislation by garnering grass-roots support and coordinating a mass movement against the fee program. Clearly, the Sierra Club defines the issue in terms of individual rights and sees itself as an advocate for citizen's rights. In many respects, the Sierra Club views the fee program as the land management agencies taking away the rights of individual citizens to use public facilities. For example, the Sierra Club states at the beginning of "Selling our Birthright," "Federal land management agencies are infringing upon the public's right to quiet recreation in these special places by imposing fees to use land we already own and pay taxes on." (Sierra Club). Thus, the Sierra Club quickly targets two key issues identified as appealing to both conservatives and liberals: rights infringement and double taxation.

"Selling our Birthright" discusses another contentious issue: originally, the fee program was passed as a rider amendment to the 1996 Omnibus Interior Appropriations Bill without public debate. "This nationwide experimental user fee program was instituted without public input or comment, via a 'rider' to an appropriations bill funding the Department of the Interior. Riders are substantive policy measures buried in large, complex government funding bills (Sierra Club)." By strategically defining a "rider" amendment, the Sierra Club attempts to demonstrate how the various government actors are more concerned with the "bottom line" than with the general public. They also state, "Corporate lobbying and stealthy congressional actions could be forcing a major policy shift without public oversight and involvement. Aided by the advent of recreational fees, our precious public lands could be headed towards a motorized, product-oriented, market-driven future." (Sierra Club).

As a highly organized and politically mobilized group, the Sierra Club also outlines their solutions to the issues facing national parks and forests, suggesting that the problems can be solved without the fee program. The Sierra Club emphasizes that they support the legislative efforts of congressional leaders to end the fee program, that funding public lands is the responsibility of the federal government, and that charging additional fees for use is unfair. "Full, responsible funding for management of America's public lands is the job of the federal government." (Sierra Club).

American Recreation Coalition

On the opposite side of the issue is the American Recreation Coalition (ARC), an industry lobbying group that strongly supports user-fee-based recreation management programs. Their issue position statement is targeted toward those involved in the legislative development process, both at the state and federal level. ARC defines the problem as one of cutting "red tape," of privatization of public lands, and limiting regulation. By minimizing government interference and opening markets to various groups, the ARC focuses on decision-making and has designed their issue position statement to reflect a more policy-oriented position (as opposed to the Sierra Club's grass-roots campaign to support the issue).

In their issue position statement, ARC identifies the importance of utilizing and promoting fees. "The criteria and specific provisions for fees deserve careful review and a new clear and comprehensive strategy," (ARC). They quickly emphasize the earning potential of public lands through the application of fees, stating: "The 1987 Report of the President's Commission on Americans Outdoors noted that recreation expenditures by Americans exceed $300 million annually and represent a steadily increasing share of consumer discretionary spending." (ARC). In line with their argument for limited government and opening markets, they state: "We believe that certain agency resources, including visitor services and maintenance, should be tied to marketplace changes." (ARC).

3 Assistant Secretary for Policy, Management and Budget, P. Lynn Scarlett, found in GAO-02-10.
The ARC also supports legislation to expand the program and the enactment of new fees related to specific use. They believe individuals should bear the full responsibility of paying for the activities they engage in on public lands, and that recreation fees help to stimulate local economies and communities. "Recreation is also a positive force in bolstering the economies of communities which have undergone reductions in commodity industry activities, including timber, oil, gas, minerals, and grazing." (ARC).

Moreover, the ARC is attempting to gain access to the policy-making process through their own legislative efforts. For example, the ARC issue position statement outlines possible legislation they seek to have introduced entitled Recreation Fees and Public Lands Enhancement Act. "ARC would prefer to see recreation fees considered in a government-wide context, perhaps through a new Recreation Fees and Public Lands Enhancement Act which would replace the fee authorities now found chiefly under the Land and Water Conservation Act." (ARC).

In summary, the rhetorical analysis shows how the different agencies and organizations are attempting to define the problem strategically. The agencies see the program as a management concern and a method to generate revenue to replace falling congressional appropriations. The Sierra Club and the American Recreation Coalition take more rights-based perspective and the American Recreation Coalition arguing that a free market approach is the most appropriate solution. Congressional aides are faced with three competing definitions to choose from, and must determine which definition assists them in the development of public policy.

**Attitudes of Congressional Aides**

One of the 75 potential participants from both houses of Congress, 25 completed interviews (33%) were obtained. Eleven aides identified themselves as Republican, 11 as Democrats, and 3 as Independents. Of all respondents, 40% indicated that their ideology was moderate, while 36% described themselves as conservative and 24% identified themselves as liberal.

When asked if they believed the congressperson for whom they worked shared their views on the issue, 68% felt they did. But 24% were uncertain about their employer's feelings, and 4% felt that they did not share the same views. Fifty-two percent of the aides discussed the issue with their congressperson regularly, but 48% did not. However, while these aides did not actively discuss the issue with their congressperson, they indicated that they would do so if debate in committee was held or a vote on the issue arose. Another question asked directly if aides believed this was a partisan issue; 76% did not believe it was a partisan matter, while 24% believed that it was. A Fisher's Exact Test revealed that Democrats were somewhat more likely than Republicans to view the matter as partisan, although the difference was only marginally significant (p<0.09). During informal conversation following the interview, those aides who did not believe the issue was a partisan matter did mention that they believed it would become one in the future.

To determine their knowledge of the fee program, aides were asked a set of questions about their familiarity with it. First, they were asked to describe their familiarity with the program on a 5-point scale ranging from unfamiliar to extremely familiar. Five respondents (20%) described themselves as either unfamiliar or somewhat familiar with the program, 28% said they were familiar, while 52% said they were either very familiar or extremely familiar with it. Despite these claims, 40% did not know when the current program would expire and, when asked if there was legislation before Congress to make the program permanent, 80% said either yes or that they were uncertain. At the time of the interviews, legislation had been drafted to make the program permanent, but had not been introduced to Congress. Answers to these factual questions cast some doubt on the aides' self-assessment, suggesting they were not quite as knowledgeable as they supposed. In addition, some aides who declined to participate cited lack of familiarity with the program as noted above.

Congressional aides rely on a variety of sources of information when evaluating programs including constituents, non-governmental organizations (NGOs), federal agencies, and research reports. The aides were asked to evaluate the importance of these on a 5-point scale ranging from unimportant to extremely important. This was subsequently collapsed into a 3-point scale ranging from very important to unimportant; the results are presented in Table 1. Clearly, the aides are most attuned to constituents, while they are least reliant on research reports. Of the four major federal land management agencies involved, 36% of aides identified the U.S.D.A. Forest Service as the most contacted agency, while 24% had the most contact with the National Park Service. The Fish and Wildlife Service (8%) and the Bureau of Land Management (4%) had the lowest levels of contact. Twenty-eight percent of those responding felt that they had equal contact with more than one agency.

**Table 1 Level of Contact Between Congressional Aides and Groups Regarding the Recreational Fee Demonstration Program**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Very Important</th>
<th>Important</th>
<th>Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constituents</td>
<td>60%</td>
<td>12%</td>
<td>28%</td>
</tr>
<tr>
<td>NGOs</td>
<td>56%</td>
<td>16%</td>
<td>28%</td>
</tr>
<tr>
<td>Federal</td>
<td>52%</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>Agencies</td>
<td>32%</td>
<td>28%</td>
<td>40%</td>
</tr>
<tr>
<td>Research Reports</td>
<td>32%</td>
<td>28%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Finally, aides were asked a series of questions about the program. When asked if they believed tax dollars, fees, or a combination of the two should be used to pay for public recreation sites and federal lands, 80% of respondents felt that a combination of fees and tax dollars was appropriate, while 16% believed taxes only should be used, and 4% felt fees should fully pay for recreation on public lands. When
asked directly if social equity concerns were relevant to the debate, 92% believed that social equity was important and relevant to the debate.

Aides were then asked about recent media reports that suggest that public use of national parks and forests has been declining due in part to fee increases. When asked if the aides believed this was an important problem, 48% believed it was, while 36% said it was not, and 16% indicated that they were uncertain. And finally, aides were asked about whether recent federal research, which suggests that low-income citizens may have reduced access to public recreation because of the fee program, was important to them when evaluating the program. Ninety-six percent of respondents believed that reduced access to public recreation for low-income people was an important factor in program evaluation, with only 4% indicating that it was not a concern.

As noted, a series of Fisher's Exact Tests compared attitudinal and knowledge questions by Republican and Democrats, and by political ideology (liberal, moderate, conservative). Only two of these tests approached statistical significance. There was some tendency for Democrats to view the issue as more partisan than Republicans (p<0.09). There also was a difference in preferred methods of funding (fees, taxes, combination) with political ideology (p<0.06), but no regular pattern could be discerned. The absence of statistical significance suggests that both support for and opposition to the fee program are broadly based, crossing both party and ideological lines. It also suggests that the opinions and commitments of the aides may not be strongly held.

Discussion and Conclusion

As the rhetorical analysis showed, the three competing definitions of the program provide congressional aides with different perspectives to choose from. The agencies define the issue as a management crisis, using symbols like deteriorating facilities to illustrate their definition and recommend the fee program as the necessary solution to the problem. The Sierra Club, and other groups opposed to the fee program, isolate the issue as a rights-based matter, and use stories to illustrate how people are precluded from using the lands freely. The American Recreation coalition defines the issue as a means of cutting government "red-tape", and applies the proximity argument to show who the fee program will benefit local economies.

The survey of congressional aides revealed three major points. First, there is some question about just how knowledgeable the aides are about the program. Most aides believed themselves to be very familiar with the program. But only half actively discussed the issue with their employer. Forty percent did not know if there was legislation before Congress to make the program permanent, and 40% did not know when the current demonstration program would end. Second, aides rely primarily on constituents (60%) and NGOs (56%) for information about the program. Agencies also were very important (52%), but research reports were relatively unimportant as a direct source of information. Specific research findings are probably most important in shaping the symbols, stories, etc. used by the competing groups. Some aides also mentioned casual discussion with other aides and Congressional Research Service information as important to their understanding.

Third, it is quite clear that aides believe social equity concerns are very important to the debate: 92% indicated that social equity was a very important concern, and 96% believed that the concerns of low-income people must be addressed when evaluating the program. At present, the fee demonstration program uses small fees to supplement agency budget. The aides seemed comfortable with this; most (80%) said they felt a mix of fees and tax dollars was the most appropriate, while relatively few opted for using either all taxes (16%) or all fees (4%) to support recreation on public lands. Although virtually all aides felt that equity and low-income access were important, identifying low-income people on-site is problematic. In Britain, welfare recipients receive identity cards that give them free access to community recreation facilities (Collins and Konnert, 1998). However, in this country, agencies have been reluctant to ask people directly if they are low-income, and many people feel this is demeaning. Consequently, agencies have resorted to the provision of free days to attempt to deal with the low-income problem. Unfortunately, free days are unlikely to provide much relief since low-income people have less vacation time, less sick leave, and less flexible schedules than upper-income people (Heymann, 2000).

How can the success of the fee program be measured? This study suggests that the definition of the problem is not clearly "owned" by any side. Since the four major federal land management agencies define this program as the solution to a management crisis, agencies see the success as money collected which translates into maintenance and other improvements at sites. Although agencies were not the group that aides relied upon most, more than half (52%) of the aides viewed agencies as a credible source of information, suggesting that the aides gave some credence to the idea of a management crisis. The American Recreation Coalition sees success as the movement toward privatization and economically efficient service delivery. Opponents, by contrast, are not interested in program success; they see the program as an infringement on the rights of the individual, with low-income people being excluded from public recreation opportunities. Many aides preferred to stay neutral when asked how our public lands should be financed, saying a combination of fees and tax dollars was appropriate—in effect, the status quo. This is hardly surprising since the aides often seek compromise between competing groups. At some level, this represents a sort of victory for the agencies and the American Recreation Coalition; once the public adjusts to these fees, undoubtedly prices can be raised further.

Yet, while the Sierra Club and other environmental organizations face an uphill fight, the aides lack of firm commitment coupled with their concern about social equity and low-income groups, suggests support for some of the
Sierra Club's powerful argument. Bengston and Fan (2001) suggest that arguments from rights and equity have a greater emotional impact for people, and while utilitarian arguments may be sound, the rights arguments in opposition are stronger and will have a greater lasting impact. "Claims based on rights, fairness, and spiritual values tend to be held with greater intensity and depth of emotion than claims based on utilitarian and pragmatic arguments." (Bengston and Fan, 2001).

Looking at the strategic definitions employed by these groups, one clearly sees how these definitions are geared toward attaining control of the problem and offering a solution to public lands policy. The differing sides recognize that there is a management crisis that must be addressed. The land management agencies see success in relation to money collected from the fees. Since they are interested in the money, they will be most apt to choose a solution that gives them the greatest revenue. They would like to see the program made permanent and expanded to other areas not currently charging entrance fees. However, while the agencies favor the fee program currently, commitment is likely to be marginal in the sense that their position is self-interested rather than ideological (i.e., if the political environment changes, the agencies, too, will change).

While this study provided some insight into the attitudes and opinions of aides on the subject of the fee program, more research is necessary to determine the best policy solution to financing and managing our public lands while ensuring equal opportunity and access to all. As different actors or groups attempt to influence the policy process and future legislation on the fee program, the way the program is defined will become increasingly important. More research on this subject will allow those groups or actors competing for the definition of the problem to understand specifically what those in the policy-making circle are thinking, how these aides shape and define the fee program, and how these competing interests can tailor their definitions to gain control of the debate.

Just as administrators will continue to embrace the notion of charging fees for public lands, the growing opposition to the fee program will continue to be defiant and sponsor acts of civil disobedience. But ultimately congressional aides and policy-makers will be responsible for whether the program is repeated or made permanent. This will depend on how they define the problem and how they see the debate over the issue unfold. Thus, the definition of the problem is vital to not only understanding the issue, but also to the making of effective public policy.

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Demography, Ethnicity, & Culture
ARE NEW HAMPSHIRE "NATIVES" DIFFERENT? A
STUDY OF NEW HAMPSHIRE NATIVES AND THREE
COHORTS OF IN-MIGRANTS TO NEW HAMPSHIRE

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Abstract: Social science research is often used by resource
management agencies to "obtain a balanced view of the
preferences and needs of individuals, communities, and special
interest groups potentially affected by agency activities." This
study explores the extent that those people who are born in New
Hampshire (i.e., natives) are different from persons who moved
to NH prior to 1970 (long time residents), during the 1970s and
those who moved to the state during the 1980s and 1990s across
twenty-one dependent variables of interest to outdoor recreation
resource managers and planners. Five of the dependent
variables were related to importance of and motivation for
outdoor recreation, nine were related to participation in specific
outdoor recreation activity packages, and seven measured
attitudes towards specific outdoor recreation resource
management programs and policies. This topic is investigated
using survey data drawn from a random sample of persons
licensed to drive in New Hampshire (n=928). This study
concurrently considers the effect of the native/in-migrant cohort,
and whether the residents currently live in a metro or non-metro
county through the use of two-way analysis of variance
including age of the respondent as a covariate. The results show
that "natives" differ significantly from the in-migration cohorts
each in eight of the dependent variables. Residents of metro
counties differed significantly from the residents on non-metro
counties across seven of the variables. There were significant
interactions between the native-cohort and metro/non-metro
measure for four of the dependent variables. These results are
interpreted within the context of both earlier/more recent
research observations and outdoor recreation resource
management.

Introduction

State and federal agencies responsible for the management of
public lands are required to estimate and then consider the social
effects of proposed resource planning and management actions.
Outdoor recreation managers and planners in New Hampshire
face some unique challenges in meeting this requirement. Some
of these challenges relate to the fact that a majority of New
Hampshire's outdoor recreation resources are located in the
central and northern portion of the state, while a vast majority of
the states population lies in the southeastern portion of the state.

This puts managers in a difficult spot of trying to manage for
outdoor recreation resources for those citizens who are in close
proximity to the recreation resources and for those citizens who
are in close proximity to the recreation resources and for those
who represent the greatest proportion of the states population.

This challenge is further compounded by the fact that New
Hampshire State Parks, the primary manager of New
Hampshire's public lands, is self-funded (i.e., the Division of
Parks and Recreation can only spend that money which they
generate in fees). Therefore managers are dependent on
recreational users to pay as they go. This represents more of a
challenge for residents of the non-metro part of the state, than it
does for the residents of metro counties. The other major
manager of public lands in New Hampshire, the U.S. Forest
Service, faces a similar challenge. For example, the White
Mountain National Forest is currently revising their ten-year
management plan and a struggling to meet the needs of the local,
while addressing the concerns of those from further away. The
plan revision process is a politically charged one. These
challenges are compounded by the lack of data available on the
needs and expectations of the public.

Outdoor recreation planners and managers want and need to
understand what the public wants. Outdoor recreation
managers, like other managers of natural resources, are used to
dealing with "specific" publics. For example, they know how to
deal with environmental groups, extractive industries, and
organized recreation groups, but they have a more difficult time
of considering the wants and expectations of the more general
public. Outdoor recreation managers have more recently
become more sensitive to "media" generated concerns that
suggest that some segments of the "public" are different from
others in ways that are important to the resource management
process. The concept of "cultural clash" over the management
of natural resources in general and outdoor recreation
opportunities in specific has attracted resource managers
attention. Over the course of a three week period, the author of
this paper received phone calls from representatives of the
White Mountain National Forest, the Appalachian Mountain
Club, the NH Division of Parks and Recreation and the Concord
Monitor, asking essentially the same question, "Does where a
person lives and how long they have lived there affect what they
do in the outdoors and how they think natural resources should
be managed?"

About this same time the Smith and Krannich (2000) article
entitled "Culture Clash" Revisited: Newcomer and Longer-Term
Residents' Attitudes Towards Land Use Development, and
Environmental Issues in Rural Communities in the Rocky
Mountain West," was published in Rural Sociology. I briefly
explained this objectives and findings from this study and each
asked if there was any data available that would shed light on
this question with in the context of outdoor recreation
management in New Hampshire. It happens that I did complete
a statewide assessment of outdoor recreation in New Hampshire
in 1997 and this study offered the potential to take a preliminary
look at this topic. The data available did not allow for a direct
comparison with Smith and Krannich (2000) paper, but their
research did help frame a research question that was of interest
to outdoor recreation managers. They were particularly
interested in the differences between New Hampshire "natives",
"old-timers" and "newcomers" in terms of outdoor recreation
involvements and attitudes. Their primary motivation for
seeking this type of data was an interest in social conflict over
competing and conflicting use of natural resources for recreation
and an interest if the national media portrayal of New
Hampshire "natives" as quirky, eccentric and very conservative
holds true. A growing number of cars have “New Hampshire Native” bumper stickers (this is an addition to the state motto of “live free or die” which is a mantra for many) also served to spur resource managers’ interest in this topic. A debate is underway that centers on the differences between “natives” and in-migrants. Are natives different from in-migrants in terms of the types of their motivations for outdoor recreation? Do natives participate in the same types of recreation activities?

The American Heritage Dictionary defines “native” as “originally” living, growing, or being produced in a certain place; indigenous to an area or region. The association between Are New Hampshire natives different is also common question around town halls where they are debating issues associated with wetlands and a variety of growth related issues in New Hampshire. These questions arise in urban areas as well as rural areas. There has been considerable debate about the differences between those people who live in metro counties (the southeasters tier) and those people who live in the rest of the New Hampshire. This study build on the substantial body of research focused on social conflict in rural in-migration (see Sorfranko and Williams, 1989; Wellmen and Moras, 1983; Williams and Jobes, 1990; Smith and Kramrich, 2000 for a review) and conflict/competition in recreation settings (see Jacob and Schreyer, 1980 and Manning 1986 for a review).

This study concurrently considers the effect of the native/in-migrant cohort, and whether the residents currently live in a metro or non-metro county through the use of two-way analysis of variance including age of the respondent as a covariate. It focuses on identifying differences between persons who were born in New Hampshire and those who moved during three semi-distinct periods of population growth while considering the potential effects if any of whether the respondents primary residence is in a metro or non-metro county. The review of related research has fueled speculation that these groups will exhibit differences in motivations, behaviors, attitudes, values and preferences relative to the management and provision of outdoor recreation opportunities. If present it is possible that eventually these differences would represent competing demands for the management and development of outdoor recreation resources.

Research and Design Approach

Data Collection

Data for this study were drawn from a listing of persons licensed to drive in the state of New Hampshire during the fall of 1998. The sample was designed to be representative of households in New Hampshire and a check was made to ensure that a household address only appeared once in the sample. Sixty-six percent of the questionnaires (n=2,000) were distributed via metered First Class mail. The other thirty-four percent of the questionnaires (n=1,000) were mailed via bulk mail. Both samples included two mailings of the survey and two post card reminders. Both mailings included a postage paid, pre-addressed return envelope. The response rates were consistent for both the First Class (30.75%, n=615) and the Bulk Mailing (31.3%, n=313). Eighty-two (4%) of the surveys were returned as undeliverable from the First Class mailing. The Bulk Mailing did not include the return of the undeliverable. Applying the rate of undeliverable from the First Class mailing to the Bulk Rate Mailing suggested an overall response rate of 33 percent (n=928).

Measures

This study utilized two independent variables measuring a native/in-migration cohort and a measure of the urban/rural nature of the county of current residence.

Native/in-migration. The native/in-migration variables were measured by taking the date of the respondents’ birth by the number of years they have lived in New Hampshire. Those that equaled zero were categorized as natives (n=263), while those with non-zero values were grouped into one of three semi-distinct periods of development. These periods of development were computed by subtracting the year that they arrived in New Hampshire by the year of the survey (1998). This variable was then recoded into one of the following three periods of immigration “moved to New Hampshire prior to 1970 (n=191)”, the “moved to New Hampshire during the 1970s (n=169)” and “moved to New Hampshire during the 1980s and 1990s (n=267)”. The study did not collect the information necessary to make a comparison between those in-migrants from rural versus urban areas. It is fairly clear that the single largest source of in-migrants into New Hampshire were from the Greater Boston Metropolitan area across each of the three cohorts. The period stretching from the post World War Two, through the 1950s and 1960s represented a period of steady growth in New Hampshire. The 1970s represented the period of most rapid growth throughout the state fairly evenly balanced between the in-migration to metro and non-metro counties. Figure 1 presents the number of cases for each of the Native/in-migrant cohort variables and the percent of each sample following into metro/non-metro counties. This figure closely approximates the distribution of native/in-migration into metro/non-metro counties.

![Figure 1. Distribution of Cases for Native/In-migrants and Metro/Non-metro County](image-url)

Urban/Rural. Classifying New Hampshire’s 10 counties as being either urban/metro or rural/non-metro in nature created the urban/rural variable. Hillsborough, Merrimack, Rockingham, Strafford located in the southeastern portion of the state includes 73 percent of the state population and occupy 32 percent of the
land. The average population per square mile of these four counties is 313.25. These respondents from these counties are considered urban/metro residents for the purposes of this study (n=655). Residents of the counties of Belknap, Carroll, Cheshire, Coos, Grafton, and Sullivan counties are considered rural/non-metro counties for the purposes of this study (n=253). The residents of this area occupy 68 percent of the land base of the state of New Hampshire while representing 27 percent of the population. The average population per square mile for this six county region is 69.16. This basic division of New Hampshire into two groups, urban/metro and rural/non-metro, is appropriate for this study since the primary goal of this research is to see if persons living in metro/non-metro counties have similar effects across the Native/In-migrant cohort variable.

Age of Respondent. A variable measuring the age of the respondent was included as a covariate. It was necessary to include age as a covariate since has been shown to influence participation in outdoor recreation and attitudes towards outdoor recreation management policies. Age is also significantly associated with the “prior to 1970” cohort since to move here during that time period required one to be at least 27 years old. Age was measured by asking “What is your age (in years)?”. The respondents mean age was 47.77 years, the median was 47, and the mode was 50, with the standard deviation of 16.77.

Dependent Variables
The study considered five sets of dependent variables measuring different dimensions of the overall outdoor recreation experience. The first was a single measure that focuses on the “overall importance of outdoor recreation”. The second set examined a commonly used set of measures of motivations for outdoor recreation. The third set considered a common set of management objectives for natural resources. The fourth considered two variables measuring spending priorities of interest to the managers and officials. The final set of dependent variables looked at a few specific policy issues identified as important by the managers.

Centrality of Outdoor Recreation. The first dependent variable measured in this study focused on the overall importance of outdoor recreation to the respondents. Respondents were provided with the following instructions “To what extent do you personally agree or disagree with following statements? Please check one box for each statement.” Responses ranged from “strongly agree”, to “agree”, to “neutral”, to “disagree”, to “strongly disagree”. The statement was “Participation in outdoor recreation plays a central role in my life.” The mean score on this statement was 3.688 with a standard deviation of 1.101.

Motivation for Outdoor Recreation. The first sets of independent variable are related to motivations to participate in outdoors recreation. The questionnaire provided the following instructions: “Listed below are a number of reasons why people participate in outdoor recreation activities. Please check the appropriate box for each response.” Listings of fifteen potential motivations were provided to the respondents. Factor analysis of the responses yielded four interpretable and conceptually meaningful factors, which were tested for reliability. The four factors were labeled 1) social and adventure motivations (6-items, alpha=.8101); 2) escape and relaxation motivations (four items, alpha=.757); 3) outdoors with family and friends motivations (4-items, .665); and 4) exercise (1-item).

Participation in Outdoor Recreation Activities. The questionnaire provided the following instructions: “Listed below are a number of recreation activities that you or members of your household may participate in. Please indicate how many time (if any) that you or members of your household participated in these activities.” Categories provided included “not at all”, “1-3 times”, “4-6 times”, “7-10 times” and “over ten times”. Adding the scores on the individual variables for variables that shared a common element (i.e., types of fishing, hunting, equipment, etc.) created the activity type participation variable. The following scoring criteria “not at all” was assigned a zero value, “1-3 times” was assigned a value of one; “4-6 times” was assigned a value of two; “7-10 times” a value of three and “over ten times” a value of four. A total of eight scaled variables were created that captured different groupings of outdoor recreation activities. These were labeled 1) fishing; 2) hunting, 3) hunting and fishing; 4) motor sports; 5) active outdoors, 6) passive outdoors; 7) activities which require development; and total outdoor activities. A description of the groupings, the mean score and standard deviation on the grouping scale follows:

**Fishing.** There were five variables on the survey representing “fishing” activities, these were “freshwater fishing”, “saltwater fishing”, “ice fishing”, “fly fishing” and “shellfish harvesting”. The mean score on the fishing activity scale was 2.16 with a standard deviation of 3.98.

**Hunting.** There were five variables on the survey representing “hunting” activities; these were “bow hunting”, “bird hunting”, “small game hunting”, and “large game hunting”. The mean score of the hunting activity scale was 1.66 with a standard deviation of 3.56.

**Hunting and Fishing.** The hunting and fishing activity scales were added together to create a total hunting and fishing activity scale. The mean score on the hunting and fishing activity scale was 3.69 with a standard deviation of 5.53.

**Motor Sports.** There were five variables on the questionnaire that measure participation in some sort of motorized outdoor recreation activities; these were “off-road vehicle driving”, “motor boating”, “water skiing”, “snowmobiling”, and “atv/ohv”. The mean score on the power equipment” scale was 2.36 with a standard deviation of 3.30.

**Active Outdoors.** There were twenty variables on the questionnaire that measure participation in recreation activities that require active engagement in the outdoors; these were; “day hiking”, “food gathering”, “bicycling”, “mountain biking”, “canoeing, kayaking/rowing”, “rock mountain climbing”, “stream lake swimming”, “ocean swimming”, “sailing”, “sea kayaking”, “surfing”, “diving snorkeling”, “volunteer monitoring”, “cross-country skiing”, “horseback riding”, “snow shoeing”,1 “backpacking”, “gardening”, “jogging/running/walking”, “organized field trips” and “wind surfing.” The mean score on the active in the outdoors scale was 9.73 with a standard deviation of 5.77.
Passive Outdoors. There were seven variables on the questionnaire that measured involvements that outdoor activities that requires some sort of bricks and mortar setting.

The mean score on the "requires development" scale was 5.57 (std. deviation = 4.71). The mean score on the passive outdoors scale was 7.16 with a standard deviation of 4.71.

Requires Development. There were eight variables on the questionnaire that measured participation in recreation activities that requires some sort of bricks and mortar development; these include "snowboarding", "downhill skiing", "camping in National Forest", "camping in State Parks", "canyon trips", "outdoor education camps", and "outdoor spectator sports". The mean score on the "requires development" scale was 5.57 (std. deviation = 4.00).

Total Activities. A total of sixty variables were included on the questionnaire that measured participation in outdoor recreation activities. Fifty of these variables were incorporated into the seven previous recreation participation scales, those and an additional eleven variables were added together to create a total recreation activity scale. The mean score on the total activity scale was 48.15 with a standard deviation of 23.67.

Management Objectives. These sets of independent variables are related to respondents' preferences for specific, but potentially competing, objectives for the management of New Hampshire's natural resources. The respondent was provided with the following instructions: "How important is it to you, personally, that persons responsible for the management of New Hampshire's natural resources develop and maintain areas for the following purposes? Please check the appropriate box for each response." Responses ranged from "not important (0)" to "minor importance (1)" to "important (2)" to "very important (3)" to "most important (4)". A list of nine objectives for the management of New Hampshire's natural resources was provided. Factor analysis of the responses yielded two interpretable and conceptually meaningful factors, which were tested for reliability. Table 1 listed the items included in each factor along with its loading and corresponding alpha value. The two factors were labeled 1) resource protection; and 2) recreation and tourism development. The resource protection variable had a mean score of 3.99 with a standard deviation of 0.6927 and the recreation and tourism development variable had a mean score of 2.718 and a standard deviation of 0.8988.

Topics of Interest
This section included a number of single variables that related to topics that are currently being debated relative to the independent variables. Two variables were drawn in a section of questionnaire focused on spending priorities and four variables were drawn in a section entitled "Issues and Concerns".

Spending Priorities. This section focused on spending priorities. Respondents were provided with the following instructions "If you were to decide how future monies are spent within New Hampshire, would you identify each of the items listed below as a LOW, MODERATE, or HIGH priority? Remember that monies are limited, so if some projects are identified as a HIGH Priority, others must be identified as LOW or MODERATE priorities. (Please check the appropriate box)." Responses ranged from "Low (1)" to "Moderate (2)" to "High (3)." The first of the two topics examined from this section were "Wetland protection". This variable had a mean score of 2.20 and a standard deviation of 0.7125. The second variable was "Establishment/administration of carrying capacity for public lands and waters." This variable had a mean score of 1.733 and a standard deviation of 0.6582.

Issues and Concerns. This section focused on issues and concerns identified by resource managers and planners.
Management Objective

Environmental protection
1. More should be done to protect endangered plant/animal species/habitats.

The mean score of this statement was 3.820 with a standard deviation of 0.9473.

Recreation development
2. Non-resident visitors should be assessed a larger fee than residents to participate in specific outdoor recreation activities.

The mean score of this statement was 3.586 with a standard deviation of 1.5883.

Financial incentive
3. I would be willing to pay higher user fees if the increase would be dedicated to maintenance, acquisition, and development of recreation programs and properties.

The mean score of this variable was 3.223 with a standard deviation of 1.1323.

Sociodemographics. Five social demographic variables were included in the analysis. Age was measured by asking “What is your age (in years)?”. The respondents mean age was 47.77 years, the median was 47, and the mode was 50, with a standard deviation of 16.77. Income was measure by asking the respondent what is your total family income before taxes? (they were provided: $ 0, 25,000, 50,000, 75,000, 100,000). Respondents mean total family income $68,150, with a median of $70,000, and a mode of $80,000, with a standard deviation of $37,534. Education was measured by asking the respondents to “Please circle the highest level of education that you have completed.” They were provided with “HS”, “AD”, “BA”, “BS”, “MA”, “MS”, “Ph.D.”, “JD”, and “MD”. These items were collapsed into five distinct categories, representing “high school=1”, “Associate Degree=2”, “Bachelors degree=3”, “Masters degree=4”, and “Professional or Ph.D.=5”. The mean score on the education variable was 2.305, with a mode of 1, and median of 2, with a standard deviation of 1.28. The number of years living in current residence was measured by asking the respondents “How many years have you lived at your current residence?”. The mean score on the years in residence variable was 13.401, with a mode of 2 and a median of 10 with a standard deviation of 12.87. The number of acres of land currently owned was measured by asking the respondent “How many acres of land do you own? (if any).” The mean score of the acres of land owned variable was 14.638, the mode was 0, the median was 1 and the standard deviation was 26.71. Gender was measured by asking respondents “What is your gender?”. Responses were 55% male and 45% female.

Statistical Procedures

This study uses univariate analysis of variance statistics to consider the unique (as measure by the F-value) effect of the native/in-migration cohort and metro/non-metro residence on a variety of issues of interest to outdoor recreation resource managers while controlling for the effects of age of the respondent.

Results

This section reports the results from a univariate (two way) analysis of the sociodemographic measures (age, income, education, years living in house acreage and gender) that were
The results show that there were significant associations between age and native/migrant cohort variables. Persons moving to NH prior to 1970 were significantly older and lived in their house for more years than the native and other two cohorts. The results also showed that residents of non-metro counties have significantly higher incomes than their non-metro counterparts. The data also suggest that the Native cohort has significantly lower education. Previous research suggested the importance of considering the amount of land owned by the respondents in examining the effects of in-migration. Our data show that respondents from non-metro counties owned more land than their metro counterparts. Table 2 shows the f-values for each of the dependent variables and each of the independent variables (and the interaction term between the independent variables), and the control variable age.

Table 3 presents the results from the univariate analysis of variable for those models that the native/migrant cohort or and metro/non-metro or the interaction between native/migrant and metro/non-metro variables was significant. The results suggest that the interaction between native/migrant and metro/non-metro was significant for the measure of the centrality of outdoor recreation to the respondent's life was significant. A comparison of means shows that outdoor recreation is less central for natives from rural areas and more central to the 1980s and 1990s cohort.
Relative to the motivation measures there were not significant differences for the Native/in-migrant cohort. The only significant difference was that respondents moving to rural areas from the 1970s on were more motivated to “escape” than natives. Table 3 suggests that there were significant differences across the Native/in-migrant cohort for a number of the participation in outdoor recreation variables. For example, hunting, fishing, hunting and fishing, and power equipment all require that development and active measures were all significant. Suggesting that New Hampshire “natives” may be distinct in their selection of recreation participation packages. Each of the significant variables had unique resource or equipment requirements except for the more general measure of overall activity participation. The metro/non-metro variable best explained participation in hunting and the combined hunting and fishing variable. There were no significant interaction effects between the Native/in-migrant cohort variable and the metro/non-metro variable. The metro/non-metro variable had a unique, significant effect for the measure of environmental protection. Respondents from non-metro areas were more supportive than those from metro areas. There was a significant interaction effect between the native/in-migrant cohort and metro/non-metro residence with the native residents in non-metro areas being less supportive than natives from metro areas.

The native/in-migrant cohort variable was significant for the dependent variable measuring support for wetland protection. This chart shows that metro residents are more consistent across the native/in-migrant cohort measure but there is a considerable difference between the native non-metro and the in-migrant cohorts. Relative to the measure of support for carrying capacity programs the results show no significant difference for the Native/in-migrant cohort, but there was a significant difference for the metro/non-metro residence variable. Non-metro residents were more supportive than the metro, with the exception of non-metro natives (this interaction term was significant).

The last set of dependent variables focused on fees for outdoor recreation. With respect to higher fees for non-residents, the Native/in-migrant cohort was significant. Natives were shown to be the most supportive of higher fees for non-residents. There was no significant difference across the metro/non-metro residents variable. The final variable focused on higher fees for outdoor recreation that would be earmarked for support for outdoor recreation programs and development. The Native/in- migrant cohort was significant for this variable. Natives were the least supportive of higher fees. The metro/non-metro variable was significant for higher fees as well. Non-metro residents were shown to be the least supportive for higher fees. There was no significant interaction effect for this variable.

Conclusions

New Hampshire “natives” are different, particularly New Hampshire “natives” from non-metro counties in terms of their outdoor recreation behaviors and attitudes towards specific recreation management policies. The most dramatic differences were between non-metro natives and non-metro in-migrants from 1980s and 1990s. This data suggests the potential for recreation and social conflict around issues associated with specific outdoor recreation participation packages and over issues associated with wetlands and endangered species and fee increases. This data provides some support for “last settlers” with respect to carrying capacity (more recent in-migrants were more supportive of setting limits). It also serves to illustrate the complex nature of the relationships between native/in-migrants and metro/non-metro residents that may be overlooked when using bivariate types of analysis, in that there are a number of significant interactions and the differences between study groups vary considerably across research questions.

Limitations and Recommendations

This research was not able to consider whether in-migrants moved from metro or non-metro locations. Future research should do more to address this issue in order to better understand the “whys?” as well as the “whats.” Recreation planners and managers should be aware of differences across both native/in-migrants and metro/non-metro groups in the outdoor recreation planning process. Some outdoor recreation providers in the Northeast are considering this issue in marketing and fund raising initiatives. The data contained in this report could be used to design public information and education programs.

References


PUBLIC ACCESS TO NEW HAMPSHIRE STATE WATERS: A COMPARISON OF THREE COHORTS OF RESIDENTS ACROSS THREE DISTINCT GEOGRAPHIC

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Abstract: This study was intended to provide New Hampshire agencies with a better understanding of public access-related demand information. Through an analysis of three groups of New Hampshire residents based upon geographic location and length of residency, important issues and attitudes were identified from all over the State. The results of this study will assist in policy-making regarding water-based recreation in the State, allowing for more informed and appropriate decisions to be made.

Introduction
Understanding the recreational access needs of the general public is important to resource managers. In New Hampshire, there has been considerable debate over the criteria that should be considered when making public access development decisions. Lakes and rivers over ten acres within the State are held in public trust, therefore subject to public access. The New Hampshire Fish and Game (NHFG) Department leads the state’s public access program and is charged with insuring that the demand for public access is linked with supply. Also, NHFG is responsible for providing public access with a clear understanding of the demands and needs of the public, as well as allocating limited funds for the development of public access in a way that proves most beneficial to the public.

Land use planners and resource managers want and need to understand the public, thus reinforcing the need for this study. While NHFG is used to dealing with traditional stakeholder groups (fishers, hunters, loggers, etc.), the agency is not sure what and who the public is, or how to consider the planning process associated with the development and management of public access sites. Policy makers and managers in New Hampshire have identified several factors guiding decision-making relating to recreational opportunities, including knowing if they should consider regional areas when making public access development decisions, and understanding and being responsive to constituencies in making these decisions. One group of constituencies that is of great importance in New Hampshire relates to the length of residency, commonly referred to as the distinction between “natives,” “newcomers,” and “old-timers.”

Objectives
The objectives of this study are to investigate a variety of demand and supply issues associated with the development of public access opportunities in New Hampshire between three distinct geographical regions in the State: natives and two distinct in-migration cohorts; and interactions between the geographical regions and native/in-migrant cohorts. This research will look at whether region of residency affects water-based recreation choices, if length of residency affects choices, and if there are any interactions between these groups that influence recreational preferences.

Methods
The data was collected as part of the New Hampshire Public Access Planning Process during 1997-1998. First, a telephone questionnaire was administered to a stratified random sample of 1,566 households throughout New Hampshire, and then a detailed questionnaire was mailed to a self-selected subsample of 563 households. The results of the survey identified three sets of independent variables used in this study: three distinct geographic regions [Metro-Southern Tier (n=753/257), Lakes Region (n=374/150), and Rural North Country (n=376/143)]; native/in-migrants [natives (n=504/165); old-timers—moved to New Hampshire prior to 1980 (n=511/225), and newcomers—moved to New Hampshire in 1980s and 1990s (n=489/160)]; and age, income, and education were all included as a covariate.

Several dependent variables also were used in this study. These include sociodemographic variables (age, income, education); participation (water-based recreation, motorized and non-motorized boat ownership); access (private access, second home on a lake, primary home on a lake); the importance of site attributes was included as a scaled variable (naturalness, access attributes, familiarity, maps); access development (good/fair, preference, need, type of site); and general attitudes and evaluation of public access.

Results
Geographic Region and Native/In-Migrant Cohorts

![Figure 1. Migration levels between geographic regions (chi-square 67.03, sig. 0.000).](image-url)
A chi-square analysis of this variable (67.03) showed that there was a significant relationship (0.000). This indicates that rural New Hampshire has the greatest proportion of persons who were born in New Hampshire and the smallest proportion of those who moved to New Hampshire in the 1980s and 1990s. Also, metro residents have the greatest proportion of residents who moved in the 1980s and 1990s, as indicated in Figure 1.

Sociodemographic Variables and Activities

A summary of the results of sociodemographic differences between geographic regions and native/in-migration cohorts revealed important information about these groups. First, there were three notable differences relating to annual household income: newcomers generally have higher incomes than natives and old-timers; natives generally have lower incomes than in-migrants; and rural residents have the lowest income, whereas metro newcomers and Lakes region migrants (prior to 1980) have the highest income. Also, levels of education varied across cohorts: in-migrants arriving between 1980-1997 are generally the most highly educated; natives are generally the lowest educated; and rural natives and Lakes natives have the lowest level of education. Finally, age varied among the groups: in-migrants moving to New Hampshire prior to the 1980s were the oldest; and rural residents are older than metro residents.

Participation in water-based recreation was another interesting finding of the study. An analysis of the question “Have you participated in water-based recreation in the last 12 months?” indicated a chi-square of 8.9 (0.01), with 62% of rural residents, 66% of metro residents, and 72% of Lakes residents indicating that they had answered “yes.” The relationship for native/in-migrant cohorts was non-significant. Region/in-migration interaction shows that newcomers from the metro region are least likely to participate in water-based recreation, with a chi-square of 5.7 (0.05).

When asked “Does your household own a motorized boat?”, only 22-25% of the respondents said “yes,” and the differences were non-significant. Non-motorized boat ownership, however, had different results. An analysis of regional differences [chi-square: 5.7 (0.06)] shows that 36% of rural and metro respondents, and 44% of Lakes respondents, own non-motorized boats. The differences among native cohorts had a chi-square of 17.7 (0.000), and indicated that 34% of natives, 46% of old-timers, and 33% of newcomers own non-motorized boats. Finally, the interaction between region/in-migration reveals a chi-square of 7.8 for rural residents and 13.6 for Lakes residents. Here, 48% of rural old-timers, 34% of rural newcomers, and 29% of rural natives own non-motorized boats; 57% of Lakes old-timers, 33% of Lakes newcomers, and 41% of Lakes natives own non-motorized boats; and the relationship was non-significant for metro residents (35-40%).

Primary or secondary home ownership along a lake, pond or river in New Hampshire was another aspect that was considered in this study. When asked if their household has a primary home on a waterbody in New Hampshire, the response across regions [chi-square: 9.9 (0.007)] indicated that 14% of rural residents, 10% of metro residents, and 16% of Lakes residents responded “yes.” Only 9% of natives, 14% of old-timers, and 14% of newcomers said that they own a primary home on a lake, pond, or river in New Hampshire [chi-square: 5.94 (0.05)]. The interaction between region/in-migration cohorts [chi-square: 8.3 (0.01)] revealed that only 8% of natives responded “yes” while 21% of old-timers and 18% of newcomers said “yes.” Finally, when asked “Does your household have a second home or camp on a lake, pond or river in New Hampshire?”, there was no significant difference or interaction between cohorts.

Also, private access to New Hampshire waterbodies was examined in this study. Respondents were asked if their household had private access to any rivers, lakes or ponds in New Hampshire. An analysis of the regions [chi-square: 35.5 (0.000)] showed that 26% of rural residents, 21% of metro residents, and 38% of Lakes residents indicated that they did have private access. Differences among natives/in-migrants was non-significant, as well as the region/in-migrant interaction between cohorts.

Preferences for Specific Access Site Attributes

Factor analysis revealed several preferred characteristics of public access sites, as identified by survey respondents, like physical attributes, naturalness, familiarity, and mapping. The physical attributes that were recognized included well-designed and adequate parking, good law enforcement, well-maintained access sites, overall signage of the access facility, a safe area for recreation, and the existence of restroom facilities. Natural attributes that were desired by respondents included undeveloped shorelines, the presence of birds and wildlife, lack of homes/development, the remoteness of the site, and the lack of other people. Also, familiarity of the site was considered important, like familiar surroundings, located within 30 minutes of home, the site’s availability for year-round recreation, and how easy the site is to get to. Finally, the presence of accurate maps to and of the site are highly important to many New Hampshire residents.

![Figure 2 Preferences for physical attributes of access sites.](image-url)
relationship (0.05), region (0.07), age (0.007), and education (0.05). Here, rural respondents identified physical characteristics as not being as important to them when compared to metro residents, and natives responded significantly higher than old-timers (see Figure 2).

The importance of natural characteristics of access sites to the study’s respondents is interesting, as indicated by Figure 3. The model is not significant when including age, level of education, and income (0.08). The model is significant if the only variable used is age (0.04). Respondents’ level of education is significant in both models, but the interaction effect is significant for the age-only model (0.03), and not with education/income (0.09). Here, rural newcomers and Lakes old-timers indicated that natural attributes are of great importance to them, while natives in all regions indicated that natural attributes are not as important to them.

Respondents’ familiarity with an access site was also significant in this study (0.02). The native/in-migrant relationship (0.03) shows that natives indicated a greater importance of familiarity than old-timers. Also, newcomers ranked familiarity significantly higher than old-timers, as shown in Figure 4. Further, education is considered to be a significant (0.05) variable.

Finally, maps of water access sites are quite significant to New Hampshire residents (0.005). An analysis of regions indicates a significance of 0.205, and that rural residents rank maps of lower importance than metro residents (0.076). Also, the native/in-migrant (0.09) relationship shows that natives rank the importance of maps significantly lower than newcomers (0.03), as shown in Figure 5. Additionally, the F-score for the region/in-migrant interaction effect is 2.58 (0.03). The presence of maps is important to all groups of residents, but for different reasons. As indicated by Figure 5, Lakes region natives are outliers, as they want to protect their access sites and prevent other groups from using them by not having maps, while newcomers to the Lakes region indicate a need for maps, as they want to find the access areas.

Access Development Policy

Another important issue examined in this study is whether maintaining the existing character of state waters a “good or bad idea.” The model developed through data analysis is significant (0.01), and identifies income (0.02) and level of education (0.03) as significant covariates. There is a significant interaction between region and native/in-migrants (0.01). The data indicates that a majority of the respondents think that maintaining the existing character of state waters is a very good idea. Also, these respondents scored higher than a four on a five-point scale. It is important to point out that this question identifies very complex interactions between all of the variables, seen most clearly in Figure 6. Education and income both have significant interactions, especially for Lakes region respondents.
Figure 6. Is maintaining the existing character of State waters a good or bad idea?

A related issue is the assurance of public access to state waters in New Hampshire. Survey participants were asked whether this is a good or bad idea, and the resulting model proved significant (0.007). It was also significant to natives/in-migrants (0.001), but it is important to point out that natives are significantly more likely to want insured access than both old-timers and newcomers to New Hampshire, as apparent in Figure 7.

Figure 7. Is insuring public access to State waters a "good or bad idea"?

Another important question that was asked in the study was dealing with management approaches to access sites. The question that is important here is "Given the option between supporting one of these two management approaches, would you support (1) insuring that the existing character of each lake or river is maintained, or (2) insuring that state residents have access to publicly owned lakes and rivers." When analyzed at a regional scale, chi-square revealed 10.17 (0.006), where 60% of the rural respondents, 70% of the metro respondents, and 68% of the Lakes respondents supported maintaining the existing character of access sites. For natives/in-migrants, chi-square was 18.29 (0.000), and 60% of the natives 69% of old-timers, and 73% of newcomers supported maintaining the existing character of access sites. The interaction between these two cohorts showed that for Lakes region residents (0.01), 56% of natives, 74% of old-timers, and 72% of newcomers feel that it is important to maintain the existing character of access sites, while 63% of natives, 71% of old-timers, and 74% of newcomers in metro region residents (0.04) share this belief.

The need for an increase in the number of access sites varied across the cohorts in New Hampshire. Analyses revealed that regional differences were not significant, with 48% of rural residents, 58% of metro residents, and 50% of Lakes residents expressing that there is a need for more access sites in the State. Also, 57% of natives, 51% of old-timers, and 51% of newcomers replied similarly (chi-square: 10.87 (0.004)], whereas there was no significant relationship between the region/in-migrant interaction. Also, when questioned concerning the types of access that should be considered, walk-in received the highest percent by all groups, boat launch received the second highest percent of all groups, and car top received the lowest percentage of all groups. Here, regional comparisons were not significant, but length of residency was. Also, the interaction between Lakes and Metro cohorts was significant.

This study also considered the statement: "The fact that a waterbody is owned by the public does not mean that it must have public access" (strongly disagree to strongly agree). Analyses of the responses to this statement indicated a significant model (0.02), where educational levels were significant (0.000), as well as the interaction between regions and length of residency. Here, rural natives were most likely to disagree with this statement, while Lakes newcomers and Lakes natives were most likely to agree, as indicated in Figure 8.

Figure 8. The fact that a waterbody is owned by the public does not mean that it must have public access (strongly disagree to strongly agree).

One of the main problems with public access sites is the lack of public boat launches. The study looked at the question "I have to drive too far to use a lake or river with a public boat launch area" (strongly disagree to strongly agree). The model is significant (0.000), and well as level of education and income (0.02). Native/in-migrant responses are considered non-significant, but a regional comparison is significant (0.04), where rural residents are significantly less likely to agree with the statement, as seen in Figure 9. Finally, the interaction between regions and
natives is significant (0.006). Here, it can be assumed that newcomers to the Lakes & rural regions do not consider driving distances a problem, as they are more accustomed to travelling longer distances than metro residents.

A point of contention between managers and the public has been the implementation of user fees at access sites, which prevents many residents from using certain facilities. The study looked at this, by asking respondents to rank their attitude of this statement: "I have not used some lakes, rivers or ponds in New Hampshire because of fees charged for access to lakes, rivers and ponds" (strongly disagree to strongly agree). The model is considered significant (0.001), as well as income (0.001). Both length of residency and region of residency are considered to be non-significant variables, but the interaction between the two is statistically significant (0.06), as seen in Figure 10.

![Figure 9](image1.png)

Figure 9. I have to drive too far to use a lake or river with a public boat launch area (strongly disagree to strongly agree).

![Figure 10](image2.png)

Figure 10. I have not used some lakes, rivers or ponds in New Hampshire because of fees charged for access to lakes, rivers and ponds (strongly disagree to strongly agree).

The final statement that was examined for this study was that “New Hampshire will lose the natural quality of some of its lakes, ponds and rivers if more water access is developed” (strongly disagree to strongly agree). This model is considered statistically significant (0.06). Also, income is a significant variable (0.01). Length of residency is considered non-significant, while the region of residence is significant (0.01), where persons from the Lakes region are more likely to agree with the statement, while rural residents are most likely to disagree.

Summary and Conclusions

When looking at the sociodemographic variables considered in this study, it is important to think about several factors. First, when considering “in-migration,” all regions are not created equal. The “rural” region of New Hampshire has the greatest over-proportion of “natives,” while the metro south and Lakes region have the greatest proportion of more recent in-migrants. Also, income and education interact in different ways for different regions and for different cohorts, depending on the topic. Participation in water-based recreation is also an important variable in this study. In New Hampshire, the Lakes region has the highest participation rates, and the newcomers to the metro area have the lowest participation rate. Further, there are no differences across regions in motorized boat ownership, but “old-timers” are most likely to own a non-motorized boat. Another important issue that this study recognizes is the existence of public access areas within the State, and revealed that residents in the Lakes region are more likely to own a primary home on the water, and that natives are least likely to own a home on the water, both of which could partially explain some of the difficulties public agencies face in making public access decisions.

Also, this study recognizes the importance of access site attributes. Factor analysis yielded four conceptually meaningful factors: physical attributes, naturalness, familiarity and maps. It can be assumed that newcomers are looking for naturalness, whereas natives are seeking quality facilities. Also, the Lakes region has an issue with maps, as many landowners fight the listing and publication of access maps, as to protect their private property and preserve the naturalness of their own lakes. This research
amply demonstrates the need that newcomers have for accurate maps of water-based recreation access sites.

This study helps to identify objectives of access development policies. First, all groups support maintaining the existing character of access sites. Next, newcomers to rural regions support these policies more than Lakes region residents. Finally, natives want to insure access more than other groups, as they do not have the resources that "old-timers" and "newcomers" have. Also, this study helps to recognize general attitudes towards specific issues associated with public access to lakes, rivers and great ponds. These include: natives in rural areas are most likely to believe that public waters should have public access, newcomers to the rural and Lakes regions do not have a problem with driving to access sites, newcomers to rural areas avoid some sites due to lack of public access and fees, and that residents of the Lakes region believe that providing more access will impact lake quality.

Recommendations
The results of this study have identified two primary recommendations for the New Hampshire Fish and Game Department. First, NHFG should consider both "region" and "length of residence" in public access development decisions, as it is important to establish a regional advisory committee with a mix of natives, old-timers, and newcomers. Second, there is the need to investigate the relationship between region and supply issues.
AFRICAN AMERICAN AND HISPANIC AMERICAN SPORTSMEN IN THE NORTH CENTRAL REGION

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Abstract: Public forest managers need an awareness and understanding of their clients in order to better address their needs for recreational uses of forest lands. This study examines and characterizes African American and Hispanic American sportsmen (hunters and anglers) in the North Central Region of the United States (IA, IL, IN, MI, MN, MO, WI) and compares them to African American and Hispanic American nonparticipants in the region, as well as African American and Hispanic American sportsmen outside the region. The analysis follows the suggestion of Woodard (1993) that minority groups should not be compared with other groups (as is so often the case), but rather the variation within each group should be examined. This avoids the implication that minority groups should be evaluated in terms of and strive to behave like the majority population. In addition, factors associated with African and Hispanic American participation in hunting and fishing are investigated. The analysis is based on the 1995-1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, and presents implications for management and research.

Introduction
The North Central Region (IA, IL, IN, MI, MN, MO, WI) is diverse in demographic characteristics and wildlife-associated recreation participation patterns. This presents challenges for managers who must allocate funds and manage the natural resources of these states to meet the needs of residents. Managers are interested in identifying all of their clients so that their needs can be better addressed. Although some racial/ethnic groups have a relatively low level of participation in wildlife-associated recreation, the characteristics of the participants and the nature of their participation are important to managers and planners concerned with providing for these groups. However low participation rates tend to result in minority groups being overwhelmed by others in the data when general analyses of the population or participants in particular activities are carried out. A characterization of hunters, for example, provides considerable information about the activity of hunting and its potential effect on resources; but hunter demographics make it highly representative of non-Hispanic American white male hunters because they comprise the vast majority of hunters.

The influence of African American and Hispanic American hunters is small in such an analysis. However, managers are interested in African American and Hispanic American hunters and how to better serve them. The purposes of this paper are to characterize African American and Hispanic American sportsmen (hunters and anglers) in the North Central Region, compare these sportsmen to African American and Hispanic American nonparticipants in the region as well as African American and Hispanic American sportsmen from outside the region, and investigate factors that are correlated with hunting and fishing participation by these important groups in the region.

Methods
The 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation was used in this analysis because it provides an opportunity to work with a substantial sample of African American and Hispanic American sportsmen. The Census Bureau has conducted the survey for the US Fish and Wildlife Service approximately every 5 years since 1955 (U.S. Dept of Interior 1997). The survey actually consists of three surveys that result in three data sets. The screening survey consists of demographic and limited participation data and is considered to be representative of the population of the United States in general. The sportsmen survey consists of detailed participation and expenditure data about hunting and fishing, and is considered to be representative of hunters and anglers residing in the United States. The wildlife watching survey consists of detailed participation and expenditure data about nonconsumptive wildlife-associated recreation activities and is considered to be representative of wildlife watchers residing in the United States. The screening survey was the primary source of data used in this analysis. Although the screening survey contains only limited participation data, it permits comparisons of participants with nonparticipants as well as participation in all wildlife-associated activities (fishing, hunting, and wildlife watching). Participation data collected using the screening survey are for 1995, and most of the data presented in the summary publication (U.S. Dept of Interior 1997), which are collected using the detailed surveys, are for 1996. Because of the methodology used by the Census Bureau to select and adjust the weights for the detailed surveys, and the fact that the data are collected for different years, the total numbers of participants calculated using the screening survey differ slightly from the total numbers of participants calculated using the detailed surveys.

African Americans and Hispanic Americans are identified based on two questions in the screening survey. One question asked if the individual was of Hispanic or Spanish origin. If the response was "yes", the individual was identified as Hispanic/Spanish and is referred to in this paper as Hispanic American. The second question concerned race. Respondents (including those identified as Hispanic) were asked to identify their race, choosing from the following five categories: White; Black; American Indian, Aleut, or Eskimo; Asian or Pacific Islander; or Other. Those who were identified as Hispanic were placed into a sixth race category. Then, those who selected Black
were identified as African American. All analyses are based on respondents 16 years of age and older because participation data are available for only this age range. Data are not presented by state due to the low number of observations.

Analyses are presented as follows: African American hunters in the region are compared to African American non-hunters in the region and then African American hunters in the region are compared to African American hunters outside the region. This approach is repeated for African American anglers and then for Hispanic American hunters and anglers.

Results
Hunters and anglers are placed into two classifications: 1) if they participated in their lifetimes, and 2) if they participated in 1995. This permits comparisons between current (1995) participants and lifetime participants that did not participate in the current (1995) year. However, very few African Americans and Hispanic Americans hunted in 1995. Therefore, comparisons within this activity category are kept to a minimum. For the purposes of this paper, hunters and anglers are considered to be those who have hunted and/or fished in their lifetime, which may or may not have included participation in 1995.

African American hunters
African American hunters in the North Central region tended to be older than African American non-hunters in the region and earned less (Table 1). They were less likely to be working and more likely to be retired. African American hunters were about three times as likely as non-hunters to fish and were also much more likely to observe wildlife around the home and take trips for the purpose of observing wildlife. Although African American hunters tend to live in urban areas, they tend to be slightly more rural than non-hunters.

Table 1. African American Hunters and Nonhunters in the North Central Region (age 16 and older)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Hunted in Lifetime</th>
<th>Hunted in 95*</th>
<th>Non-Hunters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>256,000</td>
<td>41,000</td>
<td>2,383,000</td>
</tr>
<tr>
<td>Age (year)</td>
<td>49</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td>Education (year)</td>
<td>11.2</td>
<td>12.9</td>
<td>12.6</td>
</tr>
<tr>
<td>Income</td>
<td>$28,200</td>
<td>$36,800</td>
<td>$33,000</td>
</tr>
<tr>
<td>Working</td>
<td>53</td>
<td>83</td>
<td>62</td>
</tr>
<tr>
<td>Reside Urban</td>
<td>90</td>
<td>89</td>
<td>97</td>
</tr>
<tr>
<td>Fished</td>
<td>93</td>
<td>100</td>
<td>34</td>
</tr>
<tr>
<td>Observed</td>
<td>19</td>
<td>32</td>
<td>10</td>
</tr>
<tr>
<td>Wildlife Watching</td>
<td>11</td>
<td>20</td>
<td>3</td>
</tr>
</tbody>
</table>

* based on a small number of observations

Those African Americans who have hunted in 1995 tended to be younger, earn more, and be less likely to be retired than those who hunted in their lifetime but not in 1995 (Table 1). Although the 1995 results are based on a limited number of observations, the consistency of these results suggest an aging and possibly a dwindling population of African American hunters in the region. Only about 16% of African Americans who have hunted in their lifetime hunted in 1995. In comparison, 42% of all of the hunters in the region who hunted in their lifetime also hunted in 1995 (Marsinko and Dwyer 2002).

African American hunters in the region are similar in many respects to those outside the region (Table 2). Those in the region earn slightly less, possibly because they are slightly less likely to be working. They are more likely to fish and much more likely to live in urban areas than African American hunters who live outside the region.

Table 2. African American Hunters By Location (age 16 and older)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>North Central Region</th>
<th>Not North Central Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>256,000</td>
<td>1,558,000</td>
</tr>
<tr>
<td>Age (year)</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>Education (year)</td>
<td>11.2</td>
<td>11.8</td>
</tr>
<tr>
<td>Income ($28,200)</td>
<td>53</td>
<td>60</td>
</tr>
<tr>
<td>Working</td>
<td>90%</td>
<td>74%</td>
</tr>
<tr>
<td>Fished</td>
<td>93%</td>
<td>81%</td>
</tr>
<tr>
<td>Observed</td>
<td>19%</td>
<td>22%</td>
</tr>
<tr>
<td>Wildlife Watching Home</td>
<td>11%</td>
<td>9%</td>
</tr>
</tbody>
</table>

African American anglers
African American anglers in the region tended to be slightly older than non-anglers and earned slightly more (Table 3). Although they were more likely than hunters to reside in urban areas, they were less likely than non-anglers to reside in urban areas. The greatest differences between African American anglers and non-anglers are in participation in other wildlife-associated activities, with anglers much more likely to hunt and observe wildlife. Table 3 indicates that 23% of those who fished in their lifetime also hunted. More than 90% of all African American hunters also fished.

Unlike hunters, African Americans who have fished in their lifetime are similar to those who fished in the North Central population reported by Marsinko and Dwyer (2002). African American anglers in the region are almost identical to African American anglers who reside outside the region.
They differ primarily in location of residence, with those in the region more likely to live in urban areas.

### Table 3. African American Anglers and Nonanglers in the North Central Region (age 16 and older)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Fished in Lifetime</th>
<th>Fished in 95</th>
<th>Non-Anglers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>1,040,800</td>
<td>444,300</td>
<td>1,598,200</td>
</tr>
<tr>
<td>Age (year)</td>
<td>45</td>
<td>45</td>
<td>41</td>
</tr>
<tr>
<td>Education (year)</td>
<td>12.4</td>
<td>12.2</td>
<td>12.5</td>
</tr>
<tr>
<td>Income</td>
<td>$34,200</td>
<td>$35,500</td>
<td>$31,200</td>
</tr>
<tr>
<td>Working</td>
<td>61%</td>
<td>63%</td>
<td>61%</td>
</tr>
<tr>
<td>Reside Urban</td>
<td>94%</td>
<td>94%</td>
<td>99%</td>
</tr>
<tr>
<td>Hunted</td>
<td>23%</td>
<td>31%</td>
<td>1%</td>
</tr>
<tr>
<td>Observed Wildlife</td>
<td>15%</td>
<td>18%</td>
<td>8%</td>
</tr>
<tr>
<td>Around Home Wildlife</td>
<td>6%</td>
<td>10%</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Table 4. African American Anglers By Location (age 16 and older)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>North Central Region</th>
<th>Not North Central Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>1,040,800</td>
<td>5,315,600</td>
</tr>
<tr>
<td>Age (year)</td>
<td>45</td>
<td>44</td>
</tr>
<tr>
<td>Education (year)</td>
<td>12.4</td>
<td>12.3</td>
</tr>
<tr>
<td>Income</td>
<td>$34,200</td>
<td>$34,200</td>
</tr>
<tr>
<td>Working</td>
<td>61%</td>
<td>64%</td>
</tr>
<tr>
<td>Reside Urban</td>
<td>94%</td>
<td>83%</td>
</tr>
<tr>
<td>Hunted</td>
<td>23%</td>
<td>24%</td>
</tr>
<tr>
<td>Observed Wildlife</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>Around Home Wildlife</td>
<td>6%</td>
<td>8%</td>
</tr>
</tbody>
</table>

### Hispanic American Hunters

There are few Hispanic American hunters in the region (Table 5). Although the number of observations is small and caution should be exercised in interpreting the data, it appears that hunters are more likely to be working, have higher levels of education, and tend to live in more rural locations than non-hunters among Hispanic Americans in the region. Hispanic American hunters also tend to be much more likely to fish and observe wildlife than non-hunters. Although the number of observations is small, these results are consistent with all of the other results in this paper. It is interesting to note that Hispanic American non-hunters appear to be less likely to fish but much more likely to take wildlife watching trips than African American non-hunters (Tables 1 and 5).

Unlike African American hunters, Hispanic American hunters who have hunted in their lifetime are similar to those who have hunted in 1995 (Table 5). About 45% of those who hunted in their lifetime also hunted in 1995, which is consistent with the North Central population retention rate of 42% reported earlier (Marsinko and Dwyer 2002).

Hispanic American hunters in the region tend to be younger and more likely to be working than those who reside outside the region, but those who reside in the region earn slightly less (Table 6). Unlike African American hunters, Hispanic American hunters in the region appear less likely to live in urban areas than Hispanic American hunters who reside outside the region. Also unlike African American hunters, Hispanic American hunters who reside in the region tend to be much more likely to observe wildlife than Hispanic American hunters who reside outside the region.

### Table 5. Hispanic Hunters and Nonhunters in the North Central Region (age 16 and older)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Have Hunted in Lifetime</th>
<th>Hunted in 95*</th>
<th>Non-Hunters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>76,200</td>
<td>34,500</td>
<td>955,800</td>
</tr>
<tr>
<td>Age (year)</td>
<td>37</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Education (year)</td>
<td>13.1</td>
<td>12.7</td>
<td>10.9</td>
</tr>
<tr>
<td>Income</td>
<td>$34,600</td>
<td>$33,500</td>
<td>$31,300</td>
</tr>
<tr>
<td>Working</td>
<td>90%</td>
<td>87%</td>
<td>66%</td>
</tr>
<tr>
<td>Reside Urban</td>
<td>76%</td>
<td>57%</td>
<td>96%</td>
</tr>
<tr>
<td>Fished</td>
<td>78%</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Observed Wildlife</td>
<td>50%</td>
<td>58%</td>
<td>14%</td>
</tr>
<tr>
<td>Around Home Wildlife</td>
<td>61%</td>
<td>91%</td>
<td>16%</td>
</tr>
</tbody>
</table>

* based on a small number of observations

### Table 6. Hispanic Hunters By Location (age 16 and older)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>North Central Region</th>
<th>Not North Central Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>76,200</td>
<td>1,268,400</td>
</tr>
<tr>
<td>Age (year)</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>Education (year)</td>
<td>13.1</td>
<td>12.6</td>
</tr>
<tr>
<td>Income</td>
<td>$34,600</td>
<td>$42,900</td>
</tr>
<tr>
<td>Working</td>
<td>90%</td>
<td>74%</td>
</tr>
<tr>
<td>Reside Urban</td>
<td>76%</td>
<td>80%</td>
</tr>
<tr>
<td>Fished</td>
<td>78%</td>
<td>81%</td>
</tr>
<tr>
<td>Observed Wildlife</td>
<td>50%</td>
<td>28%</td>
</tr>
<tr>
<td>Around Home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wildlife Watching Trip</td>
<td>61%</td>
<td>19%</td>
</tr>
</tbody>
</table>
Hispanic American anglers
Hispanic American anglers in the region tended to have higher levels of education than non-anglers, were more likely to be working and earned more, and were less likely than non-anglers to reside in urban areas (Table 7). The greatest differences between participants and non-participants in angling among Hispanic Americans in the North Central region are in participation in other wildlife-associated activities, with anglers much more likely to hunt and observe wildlife. Table 7 indicates that 20% of those who fished in their lifetime also hunted. About three fourths of all Hispanic American hunters also fished.

Table 7. Hispanic Anglers and Nonanglers in the North Central Region (age 16 and older)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Have Fished in Lifetime</th>
<th>Fished in 95</th>
<th>Non-Anglers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>298,700</td>
<td>154,700</td>
<td>733,200</td>
</tr>
<tr>
<td>Age (year)</td>
<td>36</td>
<td>32</td>
<td>37</td>
</tr>
<tr>
<td>Education (year)</td>
<td>11.7</td>
<td>12.1</td>
<td>10.8</td>
</tr>
<tr>
<td>Income</td>
<td>$36,000</td>
<td>$37,300</td>
<td>$29,900</td>
</tr>
<tr>
<td>Working</td>
<td>72%</td>
<td>75%</td>
<td>66%</td>
</tr>
<tr>
<td>Reside Urban</td>
<td>90%</td>
<td>87%</td>
<td>97%</td>
</tr>
<tr>
<td>Hunted</td>
<td>20%</td>
<td>23%</td>
<td>2%</td>
</tr>
<tr>
<td>Wildlife</td>
<td>36%</td>
<td>35%</td>
<td>9%</td>
</tr>
<tr>
<td>Around Home</td>
<td>23%</td>
<td>32%</td>
<td>4%</td>
</tr>
<tr>
<td>Watching Trip</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hispanic American anglers who fished in 1995 are slightly younger but otherwise similar to those who fished in their lifetime (Table 7). Those who fished in 1995 were slightly more likely to hunt and take wildlife watching trips. About 52% of those who fished in their lifetime also fished in 1995. This is close to the 50% retention rate for anglers in the North Central region that was reported earlier (Marsinko and Dwyer 2002).

Hispanic American anglers in the region are similar to Hispanic American anglers who reside outside the region except that those in the region earn slightly less (Table 8). Hispanic American anglers in the region are equally likely to live in urban areas as those who reside outside the region. Those in the region are slightly less likely to be hunters but more likely to observe wildlife than those outside the region.

Summary and Conclusions
African American hunters in the North Central region tend to be older, more likely to be retired, earn less, and more likely to reside in rural areas than African American non-hunters in the region. African American hunters are more likely than African American non-hunters to fish and observe wildlife. In fact, more than 90% of the African American hunters are anglers. African American hunters in the region earn less and are more likely to reside in urban areas than hunters outside the region.

African American anglers in the North Central region tend to be older, earn slightly more, and are more likely to reside in rural areas than non-anglers. African American anglers are more likely than non-anglers to hunt and observe wildlife. African American anglers in the region are more likely to reside in urban areas than anglers outside the region; but are otherwise almost identical to African American anglers outside the region.

Table 8. Hispanic Anglers By Location (age 16 and older)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>North Central Region</th>
<th>Not North Central Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number</td>
<td>298,700</td>
<td>4,255,500</td>
</tr>
<tr>
<td>Age (year)</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>Education (year)</td>
<td>11.7</td>
<td>12.2</td>
</tr>
<tr>
<td>Income</td>
<td>$36,000</td>
<td>$39,000</td>
</tr>
<tr>
<td>Working</td>
<td>72%</td>
<td>73%</td>
</tr>
<tr>
<td>Reside Urban</td>
<td>90%</td>
<td>89%</td>
</tr>
<tr>
<td>Hunted</td>
<td>20%</td>
<td>24%</td>
</tr>
<tr>
<td>Observed Wildlife</td>
<td>36%</td>
<td>21%</td>
</tr>
<tr>
<td>Around Home Wildlife</td>
<td>36%</td>
<td>21%</td>
</tr>
<tr>
<td>Watching trip</td>
<td>23%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Hispanic American hunters in the North Central region earn slightly more than non-hunters, and are more likely to reside in rural areas. Hispanic American hunters are more likely to fish and observe wildlife than Hispanic American non-hunters in the region. Hispanic American hunters in the region are younger and earn less than Hispanic American hunters outside the region. They are more likely than Hispanic American hunters outside the region to observe wildlife.

Hispanic American anglers in the North Central region are more likely to be working, earn slightly more, and are more likely to reside in rural areas than non-anglers. Hispanic American anglers are more likely than non-anglers to hunt and observe wildlife. Hispanic American anglers in the region are less likely to hunt and more likely to observe wildlife than Hispanic American anglers outside the region.

Both African American and Hispanic American anglers tend to be anglers and wildlife watchers, considerably more so than non-hunters. African American and Hispanic American anglers tend to be more likely to hunt and observe wildlife than non-anglers.

African Americans and Hispanic Americans in the North Central region are more likely to live in urban environments than the remainder of the population of the North Central region. Furthermore, African Americans and Hispanic Americans in the North Central region are more likely to live in urban environments than African American hunters in the region.
Americans and Hispanic Americans who live outside the region. The substantial portion of African Americans and Hispanic Americans in the North Central region living in urban areas appears to have an important influence on participation patterns. Location of residence is important when identifying these populations as well as when predicting probability of participation. For example, location of residence is the strongest predictor of hunting among African American males in the region. African Americans and Hispanic Americans have lower incomes than the population in general. However, African American hunters in the region have lower incomes than African American non-hunters while Hispanic American hunters have higher incomes than Hispanic American non-hunters, and this is true both within and outside the North Central region. Both African American and Hispanic American anglers have higher incomes than non-anglers (within and outside the region).

The age structure of the African American and Hispanic Americans in the North Central region appears to have an important influence on participation patterns. The difference in age and work status between current and lifetime African American hunters coupled with the relatively low number of African American lifetime hunters who participated in 1995 may indicate a higher than average tendency of African American hunters to drop out of hunting. This matter warrants further study to determine if higher than average attrition is occurring and whether it is a problem from the viewpoint of the African American population. If a higher than average attrition rate is found, the study would allow managers and marketers to know whether they should promote African American participation or simply plan for reduced participation by the African American population.

The profiles presented here as well as the cross-activity relationships are important to managers and others who are interested in identifying participants, particularly among minority groups. The profiles help identify the client groups. They help answer questions such as “Who is the African American hunter in the North Central region and how does this individual differ from the African American non-hunter”? They also help identify how participants in the region differ from those outside the region, which reflects, in part, the characteristics of the region.

Acknowledgment: The research on which this paper is based was funded, in part, under a research joint venture agreement between Clemson University and the USDA Forest Service North Central Research Station.

Literature Cited

POTENTIAL AND PITFALLS OF RESEARCHING ETHNIC COMMUNITIES IN RECREATION: A PUERTO RICAN CASE STUDY

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Abstract: Although the empirical literature on ethnic/racial groups and recreation has been growing, there have been request by researchers for approaches on procuring information from hard-to-reach populations. The purpose of this report is to provide prospective researchers with "lessons learned" in the field when researching ethnic group members. This study observes Puerto Ricans in central Massachusetts. A process for gaining access to, and garnering support from, the Puerto Rican community is discussed. The key elements of the process are bilingualism, key informants, and community involvement. Limitations of the methodological approach and resource lists are discussed.

Introduction

The value of understanding the recreation behavior of ethnic/racial groups has generated considerable interest in the empirical literature (Floyd, 1998; Gramman, 1996; Henderson, 1998; Kivel, 2000; Stodolska, 2000). One reason for this interest in the United States (U.S.) is changing population demographics. According to the U.S. Census (2001), the three largest ethnic/racial groups are Blacks (12.3%), Hispanics/Latinos (12.5%) and Asians/Pacific Islanders (3.7%). By 2050, the U.S. population will be more culturally diverse with less than 53% of the population categorized as non-Hispanic Whites; 15% Black; over 24% Latino; nearly 9% Asian; and about 1% Native American (U.S. Bureau of the Census, 1998). As a result of demographic changes, recreation providers in the U.S. will have tremendous challenges ahead in terms of service delivery, policy-making, and identifying participation patterns of "non-traditional" users.

With a population of 35.3 million people, Latinos comprise the largest ethnic group in the U.S. People of Mexican descent constitute 58.5% of all Latinos in the U.S. People of Puerto Rican origin embody nearly a tenth of all Latinos1 (9.6%), while people of Cuban descent (3.5%) and Other Latinos (28.4%) account for the remainder of the Latino population in the U.S. (U.S. Census Bureau, 22 October 2001).

As population demographics shift, a better understanding of the use of public recreation space by ethnic (non-Caucasian) group members is needed. An ethnic group is defined as a social group set apart on the basis of cultural or nationality characteristics (Floyd, 1999). Earlier work (1970s and 1980s) on ethnicity and recreation utilized the marginality and ethnicity paradigm to explain differences in recreation patterns, with the majority of the focus on Black/White comparisons (Hutchison, 1987; Klobus-Edwards, 1981; Washburne, 1978; Woolard, 1988). Later work (1980s and 1990s) offered general critiques and identification of other factors which may impact ethnic recreation behavior (Allison, 1988; Dwyer & Gobster, 1992; Gramman, 1996; Hutchison, 1988; Johnson, Bowker, English & Worthen, 1997). Recent work on ethnicity and recreation posits acculturation as a notable factor in explaining perceived recreation benefits and outdoor recreation patterns in Asian and Latino groups (Floyd & Gramman, 1993; Heywood & Engelke, 1995; Shawl & Gramman, 1998; Stodolska, 1998; Tierney, Dahl, Chavez, Apt, & Mok, 2000; Yu & Berryman, 1996).

The focus of this study is on Latinos, more specifically, Puerto Ricans. Most studies involving Latinos have concentrated in the U.S. Southwest, or have utilized people of Mexican descent, with some exceptions (Chavez, 1993; Juni, 2000). Relatively little is known about the Latinos in the Northeastern portion of the U.S., and less is known about Puerto Rican recreation behavior. Latinos, in general, tend to concentrate in urban centers. Puerto Ricans are more likely to live in a central city (61.2%) (Therrien & Ramirez, 2001).

A difficulty often encountered in researching ethnic groups is accessibility to the population one wants to study. In an article on researching diverse populations, Henderson (1998) noted that "[methods] are important, but the strategies used to get information are essential. Researchers may need to stray from research protocol to obtain data and create an environment of social support" (p. 164). Scant studies examine, in ample detail, how the ethnic group under study was approached, and how rapport was established. The objective of this study is to illustrate the sample collection procedure and document how rapport was established. Based on this objective and the studies mentioned earlier, the research question developed for this study is the following: How does one gain access to a hard-to-reach ethnic population?

Sample Characteristics

Subjects and Sampling Frame

The ethnic group members selected for this study are Puerto Ricans. Although researchers have examined Latinos in previous studies, little is known about Puerto Ricans as a distinctive subgroup of Latinos. Because of the

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1 This percentage reflects people of Puerto Rican descent in the U.S. mainland. People from Puerto Rico are not included in this percentage. With the inclusion of Puerto Rico's population, people of Puerto Rican descent would constitute 19.9% of the Latino population (Source: U.S. Census Bureau, Census 2000, Summary File 1).

2 The term "ethnic group(s)" or "ethnic group member(s)" is used instead of "minority(s) because of the pejorative connotation affiliated with the term minority. It is similar to Henderson's (1998) use of "diverse populations."

Proceedings of the 2002 Northeastern Recreation Research Symposium GTR-NE-302
relationship between the United States and Puerto Rico (P.R.). Puerto Ricans provide researchers with an opportunity to look at the acculturation process, and to identify their recreation behavior. Rodriguez accentuates this particular point with the Puerto Ricans in New York City.

The experience of Puerto Ricans in New York City points up more clearly than any researched materials the chasm that exists between whites and blacks in the United States and the racism that affects both groups. For within the U.S. perspective, Puerto Ricans, racially speaking belong to both groups; however, ethnically, they belong to neither (1996, p. 25).

Puerto Ricans are the second largest ethnic subgroup within the heterogeneous Latino population in the U.S. It was important to consider this Latino group from the U.S. Northeast for three reasons. First, from a demographic standpoint, Puerto Ricans are most likely to live in the U.S. Northeast (63.9%) than any other Latino subgroup (Therricen & Ramirez, 2001). In New England, Puerto Ricans are nearly 50% of the Latino population (U.S. Bureau of the Census, 2000). Second, earlier U.S. based research regarding ethnicity/race and recreation has focused primarily on African Americans and Mexicans in either the U.S. South or West. Third, the investigator needed to have access to the ethnic group members. Because the investigator is Puerto Rican, and a native of the study area, the investigator had access to the population, and an understanding of the population and its cultural nuances to facilitate participation in the study.  

Geographic profile

This study was conducted in Southbridge, Massachusetts (MA). Puerto Ricans in MA constitute 46.5% of the Latino Population (U.S. Bureau of the Census, 2000). Southbridge is located in Worcester County, MA, and borders northern Connecticut. Southbridge is approximately 60 miles west of Boston, MA. There are five parks in Southbridge, and all the parks are located approximately one mile (1.6 km) from the downtown area.

Demographic and historic profile

According to the 2000 U.S. Census, Southbridge's population was 17,214. According to the 1990 U.S. Census, the median household income for Southbridge residents was $27,834, as compared to $20,918 for Latino households. Southbridge Puerto Ricans constitute the largest ethnic group in Southbridge. Puerto Ricans represent 19.2% (3,472) of the city's population, and 48% of the city's Latino population (U.S. Bureau of the Census, 2000). Over half of the Puerto Rican population (56%) was born in P.R.. Spanish is spoken by nearly 10% of the entire Southbridge population, and by about 75% of all Latinos in Southbridge (U.S. Bureau of the Census, 1990).

The first Puerto Rican family arrived in Southbridge in 1957 (Brown, 1982). Puerto Rico, at the time, was making the transition from an agricultural to an industrial economy. As a result, Puerto Rico's agrarian labor force turned to the U.S. for economic relief. Specifically, Southbridge's Prest-Wheel Company hired many Puerto Ricans in the late 1950s and early 1960s (Brown; 1982; Datz, 1998).

By the late 1960s, Puerto Ricans were attracted to Southbridge because of its need for an unskilled labor force to work in industry. Those Puerto Ricans who arrived in the 1960s paved the way for the next wave in the 1970s. This point is promulgated in the 2000 U.S. Census. The demographics of the Latino population in Southbridge exhibit population growth in the 1960s and mid-1970s. In the mid-1980s and 1990s, Southbridge Latinos experienced another population boom. As of the year 2000, Latinos ages 14 and under constitute 36% of Southbridge's Latinos. The majority of those arriving in Southbridge spoke only Spanish, and knew each other from their barrios (neighborhoods), neighboring towns, or family friends. As a result, an enclave of Puerto Ricans was established in Southbridge that reinforced ethnic cohesion. Strong family ties to P.R. were maintained because families often left siblings and parents behind. Southbridge Puerto Ricans travel to P.R. quite often and send capital and clothing to their extended families in P.R. (Southbridge Puerto Ricans, personal communications, December 1998 - January 1999).

Southbridge Puerto Ricans are particularly suited for this study because of the strong ties to their homeland. The respondents would be emigrant, first, or second generation Puerto Ricans in Southbridge.

Sample population

Subjects were selected from the Puerto Rican population of Southbridge, MA. Subjects were 14 years of age or older. Because high school students are active users of Southbridge parks, it was important to include them in this study. High school students offer a broader age variance which may illustrate generational influences on participation at public recreation sites.

Garnering Support for the Survey

Procedures for high school sample selection

For the selection of Puerto Rican high school students, the investigator met with the superintendent of schools and the

Economical data for municipalities were not available at the time of submission.
high school principal to obtain permission and support for the administration of the questionnaire during home room period. A copy of the questionnaire, the human subjects approval form from Michigan State University, and a letter of introduction were provided prior to administration approval. It was mentioned that participation was strictly voluntary and that collected data would remain anonymous and confidential. Verbal endorsement was granted from both the superintendent and the principal.

The high school liaison was the head of the Social Studies curriculum in the school system. Explanations and instructions were given to him on how to conduct the study. A count of the number of Puerto Ricans in the High School was obtained and questionnaires were provided in both English and Spanish. According to a breakdown by home rooms, there were a total of 135 Latino high school students (W. Gosk & J. P. Bailey, personal communication, January, 1999). All Puerto Rican high school students who were present on the day of the questionnaire delivery were given questionnaires.

Procedures for adult population sample selection

In order to sample the Puerto Rican adult population, key persons in the Puerto Rican community had to be contacted to amass support for the study. These community leaders have access to lists of names, or have contact with Puerto Ricans at Puerto Rican-owned establishments. This process involved tapping into the Puerto Rican community's social capital by utilizing formal and informal networks in order to obtain verbal consent and addresses of prospective respondents.

In addition to the above list, the researcher solicited family, friends, and associates to help "spread the word." A letter explaining the purpose of the study was given to each of the community leaders listed in the above areas, and they were given instructions to ask their clients/parishioners/ coworkers to participate by furnishing their address on an address "sign-up" sheet. The investigator was granted the opportunity to address the Puerto Rican public at one of the most heavily attended masses of the year: Christmas Eve Mass. The priest allowed the investigator to address the congregation in Spanish, and situated a desk at the rear of the church so that parishioners could enlist in the study after mass ended.

Selection of subjects: Problems and solutions to creating a list

While the method for the creation of a list is somewhat unorthodox, it is a function of the population under study based on the researcher's knowledge of the population. Therefore, alternative methods for a list were needed. Researchers call for creative solutions to this problem. For example, Salant and Dillman (1994) suggest creating a list from multiple sources or using a purposive sample design.

Many Puerto Ricans in Southbridge do not have listed phone numbers; therefore, the telephone directory was not a valid tool. Additionally, the Puerto Rican population is very mobile. Often times they will move one or two times a year, move in with extended family, or relocate to P.R. These situations create problems with using the telephone directory as a list source.

Another traditional list source is the city's annual census. The town clerk mentioned that the census is not as accurate as they would like due to a lack of cooperation on the part of Puerto Ricans, general undercounting difficulties, and a lack of Puerto Rican census takers (Helen I. Lenti, personal communication, December 22, 1998). Therefore, traditional sampling techniques were augmented with purposive sampling techniques to increase the possibility of an individual's participation in the study.

It was crucial that social support was created first, in order for the study to be successful in the adult Puerto Rican population. Knowledge of the population is critical to getting enough responses to perform useful analyses. The study population required informal and formal lines of communication. For example, the researcher "informally" solicited names via personal contacts throughout the community in order to make Puerto Ricans aware of the study. It is culturally more acceptable to first "ask" if the subject's name and address can be used for a mailing, and then perform the actual mailing. Watson (1992) noted that conventional sampling methods have been ineffective in reaching ethnic/racial populations. He identified three sampling techniques and the problems associated with ethnic minorities. They are as follows:

1. Random sampling - inadequate as many in the ethnic community have not been on the electoral registers.
2. Quota sampling - insufficient data have existed from the census on which to sample targets and selected sample points may not reflect where ethnic groups actually are.

Although his comments referred to ethnic minorities in the United Kingdom, researchers have encountered similar problems in the United States. Cox (1990), for example, argues for non-traditional designs and unconventional methods for researching minorities in the U.S.

Sutton and Schurman ... note that conventional methodology calls for all respondents and for investigators to refrain from disclosing the details of the research objective to the respondent ... They acknowledge that they made a conscious decision to violate these rules despite the potential effects of

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5 Under Massachusetts (MA) election law, MA cities are required to conduct an annual census. The census provides names, dates of birth, precinct and occupations. The annual census is used mostly for grants and public funding.
bias on the results. They concluded that considerations such as an ability to obtain data and to create an environment of social support in which interviewees will provide responses must sometimes take precedence over traditional notion of scientific "objectivity." I believe that their findings are applicable to other emotionally sensitive topics such as racioethnicity, and that they illustrate the need for new paradigms of research methodology (Cox, 1990, p. 11).

The above quote illustrates several issues related to researching ethnic minorities. First, it is difficult to obtain truly representative samples of ethnic/racial populations. Second, because of the difficulty in obtaining a list, other nontraditional methods are required to augment or create a list. Third, an environment of social support (over objectivity) is needed for participation.

Through contact with community leaders in public programs, agencies, private establishments, and the local church where most Puerto Ricans worshiped, the researcher “spread the word” and Southbridge Puerto Ricans were more responsive. The social support was created along informal lines. Asking Puerto Ricans to fill out the questionnaire when one first visits would be considered improper. An initial house call or visit should be informal. One can talk about business, but not actually conduct business. This is a similar concept to what Winter and Chavez (1998) referred to as taking time to “visit” for successful data gathering.

Conducting personal interviews at the place of residence would require at least two visits. The first visit would be to establish social support. This will typically involve sitting down for a cup of coffee, catch up on social, political, or family events in the community or P.R., and then a discussion on the survey. To talk “just business” or visit quickly would be considered “rude” and would most likely assure a lack of participation. A second visit would be required to conduct the actual interview where it would be considered an “official” visit. As one can surmise, the cost and time for this method of ensuring an adequate sample size and response rate would be quite large.

Methodology

Questionnaire distribution

The final list for the Puerto Rican adult population yielded 690 mailing addresses (539 signed up and 151 addresses were from the phone book and the town census), and 35 additional surveys to be delivered to the Head Start Program. There were 135 potential respondents who were Puerto Rican high school students. The number of questionnaires distributed was 860 (39% of the 2225 resident Latinos over age 14). The aggregate time it took to collect the names and addresses was approximately two and a half months.

The investigator opened “formal” lines of communication. Instead of making a “formal” second visit to individual homes (see earlier comment), adult subjects were contacted by mail. The surveys were mailed to those whose names were solicited. The cover letter was printed on academic department letterhead to convey a sense of importance to the respondents. This was an approach recommended by several community leaders to increase response.

Data Collection

In order to enhance an adequate response rate, the collection process included techniques suggested by Dillman (1978). Dillman’s total design method (TDM) was not followed in entirety due to monetary and time constraints. The basic concepts, however, were applied. The mailing procedure for the collection of the data involved the following steps: (1) mailing the introductory letter and autobiography; (2) mailing the cover letter and questionnaire; and (3) mailing the follow-up letter and replacement questionnaire.

The initial mailing involved the use of a letter and autobiography. The letter acted as an announcement and solicitation for completion of the questionnaire. In addition, a short autobiography of the investigator was included so that the Puerto Ricans had an update on the investigator since the time he left the community. The autobiography acted as a proxy for the investigator’s personal visit, and gave the respondent a glimpse of the investigator’s academic and personal background. This is an extension of the social support concept. The initial mailing was sent by first class mail.

One week after the initial mailing, the cover letter and questionnaire were mailed out. The cover letter provided information on the purpose of the study, what the information will be used for, and how their names were chosen. In order to save on costs, the first wave of surveys was mailed by third class bulk mail. Accounting for a mailing time of 7-10 days, the return window given was approximately two weeks.

There were some problems with the third class bulk mailing. After speaking with the post office in Southbridge, the investigator found that third class mail gets distributed very poorly and is not always sorted the same day it arrives because it is not considered priority mail. The first surveys arrived haphazardly. As a result, the investigator waited an additional two weeks for responses to arrive before mailing the follow-up survey. In-
the cover letter, the investigator tried to convey an understanding of the problem with the mail, while at the same time expressing a necessity for having full participation.

**Survey Response**

A total of 690 questionnaires were mailed to Puerto Ricans in Southbridge. Of the 690 surveys initially mailed, 77 (11%) were returned due to incorrect addresses, thereby reducing the number of mailed questionnaires to 613. The majority (45) of the addresses for the returned letters were addresses from the phonebook. Thirty percent of the phonebook addresses were incorrect, while only five percent of the sign-up list yielded incorrect addresses. This reinforces the notion that purposeful sampling was indeed a better way to identify the desired respondents than using the telephone directory, especially given the mobile nature of the population under study.

A total of 304 Puerto Ricans responded by mail. This produced a response rate of approximately 50%. The level of response was probably affected by the third class postage for the first mailing of the questionnaires. Factors which may have influenced the overall response included the following: (1) lack of priority given to third class mail; (2) lack of current addresses in phone book; and (3) no forwarding address.

Because of problems related to mailing and delivery, the response rate of 50% is a conservative estimate. The amount of actual delivered questionnaires is unknown. In addition to the 304 returned by mail, 29 were received from the community leader at the Head Start Program, and 57 came from Southbridge High School students of Puerto Rican descent. The total amount of usable surveys (N) totaled 384. Of the 384 surveys, 209 (54%) were in Spanish.

**Sample and Population Demographics**

Puerto Ricans constitute 87% of the Latino population in Southbridge. The researcher used Latinos as the reference population when comparing the sample to the population. The 2000 Census does not have a breakdown by Puerto Ricans. According to the 2000 Census, persons over the age of 14, of Latino origin, number 2,225. The median age of respondents in the study is 32, with the youngest respondent being 14 years of age, and the oldest being 80 years of age.

Because there is no precise information on non-response, the sample was compared to population figures from the 2000 U.S. Census to assess representativeness. To assess representativeness, age and gender were compared. Table 1 illustrates the frequencies between age and gender in the sample, and expected frequencies based on population percentages. In both cases, the observed frequencies do not equal the expected frequencies. The chi square for age is 9.45 (χ²critical (α= .05, df = 9) = 16.92). Chi square for gender is 10.75 (χ²critical (α= .05, df = 1) = 3.84). The chi square test for homogeneity indicates that the sample is representative with respect to age, but not with respect to gender. The most under-represented age group is the 20-24 age category (10% in sample vs. 13% in population), and the most over-represented age groups are the 25-29 age category (14% in sample vs. 12% in population) and the 45-49 age category (9% in sample vs. 7% in population).

**Table 1 Age and Gender Breakdown by Sample and Census**

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<thead>
<tr>
<th>Age Category</th>
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<td>25-29</td>
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<td>30-34</td>
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<table>
<thead>
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<tr>
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</tbody>
</table>

- age 14 excluded from analysis due to incomparability with 2000 U.S. Census cohorts
- Survey respondents vs. 2000 U.S. Census

**Data Analysis**

**Ancestry**

In this sample, 73% of Southbridge Puerto Ricans were born in P.R. In addition, 99% of all Puerto Ricans had parents which were born in P.R. There are almost no respondents of mixed ancestry. This finding suggests a homogenously ethnic group. In addition, the majority of respondents are of emigrant or first generation status.

The data also suggest that cultural ties are not only reinforced by familial ties, but by ties to P.R. Nearly 80% of the respondents have lived in P.R. When comparing the average years living in P.R. (M = 18.5, SD = 11.14, Min./Max. = 1yr. / 59 yrs., N = 295) and in the United States (M = 19.5, SD = 10.91, Min./Max. = 0 yr. / 50 yrs, N = 375) the means are very similar. This supports the view that there are strong ties to the island and that Puerto Ricans in Southbridge can be generalized to other Puerto Ricans. In addition, one could speculate that there is continuous migration back and forth between P.R. and Southbridge.

**Discussion**

**Gaining access and establishing rapport**

I found that the sample collection technique used in this study, while somewhat unorthodox, is quite effective in reaching ethnic group members. I recommend that the sample collection technique be used to enhance research participation by other ethnic/racial groups.
Successfully accessing Hispanic research participants demands an understanding of demographic information about Hispanics in general and, in particular, about the communities in which they live that at times is not easily available. Legitimacy can be enhanced if initial contacts are carried out by bilingual Hispanic researchers or interviewers who are more likely to be seen as part of the community and not personally threatening (Marín and Marín, 1991, pp. 45-46).

Because I am bilingual and a member of Southbridge's Puerto Rican community, cultural immersion within the community was possible. This facilitated contact with several key community leaders for the solicitation of research participants. Chavez (2000) challenged recreation professionals to make strategic plans that "invite, include, and involve" (the "I" triad, p. 185) ethnic/racial groups in leisure. I advocate for a similar approach when researching ethnic group members.

Community involvement is recommended. I incorporated this into the study design by using key informants as consultants and establishing a public forum for Puerto Rican community members. I incorporated ethnic group members. I presented a methodological approach to researching ethnic groups that provided an acceptable response rate, and involves the ethnic community in the research process. Critical to the approach are key informants and immersion of the investigator in the ethnic community space (organizations, businesses, churches), and external to the ethnic community space (workplace, schools, city government). Researcher bias was controlled through the research methodology, and is the reason for its inclusion in this study. To reduce researcher bias further, all respondent names were compiled by key informants.

There are some limitations to this approach. Bias may be introduced depending on how and who is asked to help garner support. Key informants need to be selected from within the ethnic community space (organizations, businesses, churches), and external to the ethnic community space (workplace, schools, city government). Researcher bias was controlled through the research methodology, and is the reason for its inclusion in this study. To reduce researcher bias further, all respondent names were compiled by key informants.

In summary, I presented a methodological approach to researching ethnic groups that provided an acceptable response rate, and involves the ethnic community in the research process. Critical to the approach are key informants and immersion of the investigator in the ethnic community.

References


Customer Service and Satisfaction in Recreation and Leisure
A METHODOLOGICAL COMPARISON OF CUSTOMER SERVICE ANALYSIS TECHNIQUES

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Alan Graefe, Pennsylvania State University

Robert Burns, University of Florida

Abstract: Techniques used to analyze customer service data need to be studied. Two primary analysis protocols, importance–performance analysis (IP) and gap score analysis (GA), are compared in a side–by–side comparison using data from two major customer service research projects. A central concern is what, if any, conclusion might be different due solely to the analysis technique employed. Although the results of the methodological comparisons rely on generally similar patterns in the data, strong differences in managerial decision recommendations are shown. This directs researchers’ and managers’ attention to the form of analysis as much as the data gathering instruments themselves. Such a methodological comparison also allows for a deeper understanding of the strengths and weaknesses of the two techniques, and leads to a discussion of the methodological issues underlying customer service analysis.

Introduction

Many recreational visitor studies, particularly those that are customer service focused, have given rise to the use of analysis techniques known as importance–performance analysis (IP) and gap analysis (GA). Methodological work to date has focused on the development of the measurement instruments and not the analysis form and presentation itself. This paper compares these two techniques directly using the same data. This will illustrate how different these two techniques can be for making management decisions and begin a dialogue about the strengths and weaknesses of either method.

The IP concept was brought into recreation management from the broader marketing literature by Guadagnolo (1985) and others (e.g., Hollenhorst, Olson & Fortney 1992). It is closely based on the work of Martilla and James (1977), wherein items are chosen for their relevance to the individual’s experience or as part of a known list of attributes or benefits likely to be part of the recreation visit. Also labeled as “action grid” analysis, the procedure requires two measures of each construct deemed significant. The first measures the importance to the respondent and the second its performance. Importance would ideally be measured pre–visit and the second must be measured post–visit, but in practice it is usually done as a post–experience questionnaire with a cross sectional design. However obtained, results are calculated as mean scores for each item with the IP pair used as a graphical (x,y) pair in a grid with importance and performance axes. The grid is then subdivided based on the scale mid–points (high/low) which then results in grouping the pairs into four action quadrants (1 – 4) with an associated management action (Figure 1). This is the classic IP, or IPc for short.

A variant of IP that has come into common practice is to divide the scale on the grand mean of all items for each axis rather than the numerical mid–point. Although the quadrants are variable in size in the IP grid the analysis and action recommendations follow the original pattern. This is referred to as alternative IP, or IPa for short.

Another variant of IP analysis in practice has been to reverse the axes so that the quadrants 1 and 4 are reversed in sequence to a counter clockwise flow (2 and 4 are reversed in position). This has no bearing on anything substantive and represents only a difference in data presentation. Finally, there have been numerous ways introduced to measure the axes. For instance importance has been variously scaled as expectation, desirability or relevance, and performance has been scaled as satisfaction or outcome. These are significant and substantive variations as they have substantial implications for theory and make different assumptions about the phenomenon of interest and the behaviors in question. They are not the focus of this paper. Even though the data used below only represents one way to measure IP, all of these variant forms are likely to face similar methodological issues and may be considered as co–equal representations of IP analysis.

A second, significant variation of customer service analysis is called Gap Analysis. GA has been also brought into recreation management from the services marketing literature, albeit somewhat more recently, by Crompton, MacKay and Fesenmaier (1991), Wright, Duray and Goodale (1992) and Howat, Absher, Crilley and Milne (1996). It is based on the conceptual work of Parasuraman, Zeithaml and Berry (1985, 1988) which showed that consumers assess service quality through a series of comparisons, notably performance against an expectation or desired standard. GA sacrifices the graphical ease of IP and focuses on the difference in scores between the individual measures of salience (importance, etc.) and performance. These differences are then analyzed, usually in aggregate with a simple arithmetic ranking by size of the “gap,” to obtain results for management recommendations. In practice the largest negative scores are considered the biggest “problems” as these are the ones for which performance is far less than importance. Again, the variations in measurement scales are not the focus herein, only the arithmetic difference (gap) itself as a measure.

In summary, there are two main measurement techniques in use: IP and GA. And IP has two variations of interest as well: means (IPa) versus scale midpoints (IPc) as the graphing “cross hairs.”

Below we compare these two main analysis strategies (IP and GA) by presenting customer satisfaction measures from two rather large scale surveys in order to.
Data were analyzed in the same manner for each survey using SPSS 10.1 software.

Results

The basic data from both importance and performance items for each survey are presented in Table 1. The ACOE survey had 19 attributes representing four main service domains (facilities, service, information and recreation experience) and the MBSA survey included 12 items representing a similar range of experiential attributes. In general the ratings are moderate to high (mid-3s to mid-4s) suggesting that the items are generally very important and that performance levels are high as well. For simplicity the gap scores are also included. These will be addressed after the IP analysis results.

IP results

A classic IP analysis would place these attributes on a grid with quadrant boundaries defined by the scale mid-point of 3.0. Figure 2 shows this basic analysis (IPc) for each survey separately. Clearly the items tend to cluster in the upper right quadrant (Q1), due to the generally high importance and performance ratings. In aggregate, only one of the 31 items falls outside Q1. They are not labeled but it is, in fact, due to MBSA’s accessibility importance rating. Yet even this item is only marginally low on importance. As a result this form of IP analysis would lead overwhelmingly to the management recommendation to “keep up the good work.” Both ACOE and MBSA managers might be led into a false sense of security over how well things were going. In fact, this form of IP analysis supports no recommendation for management change or service quality improvement.
Table 1. Customer service attributes Importance, performance and gap score measures for ACOE and MBSA

<table>
<thead>
<tr>
<th>ATTRIBUTES</th>
<th>Mean Importance</th>
<th>Mean Performance</th>
<th>Gap Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACOE SURVEY (n=1,675 to 2,878)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility for Persons With Disabilities</td>
<td>3.80</td>
<td>3.87</td>
<td>.07</td>
</tr>
<tr>
<td>Availability of Recreation Areas</td>
<td>4.25</td>
<td>4.04</td>
<td>-.21</td>
</tr>
<tr>
<td>Appearance of Recreation Areas</td>
<td>4.47</td>
<td>4.26</td>
<td>-.21</td>
</tr>
<tr>
<td>Value for Fee Paid</td>
<td>4.10</td>
<td>4.19</td>
<td>.09</td>
</tr>
<tr>
<td>Availability of Staff to Answer Questions</td>
<td>3.67</td>
<td>3.97</td>
<td>.30</td>
</tr>
<tr>
<td>Staff Visibility</td>
<td>3.73</td>
<td>4.02</td>
<td>.29</td>
</tr>
<tr>
<td>Safety/Security</td>
<td>4.50</td>
<td>4.28</td>
<td>-.22</td>
</tr>
<tr>
<td>Friendly and Courteous Staff</td>
<td>4.25</td>
<td>4.34</td>
<td>.08</td>
</tr>
<tr>
<td>Opportunity to offer Suggestions to Staff</td>
<td>3.63</td>
<td>3.97</td>
<td>.33</td>
</tr>
<tr>
<td>Adequate Ranger Patrols</td>
<td>4.15</td>
<td>4.20</td>
<td>.06</td>
</tr>
<tr>
<td>General Information about Area</td>
<td>3.58</td>
<td>3.89</td>
<td>.31</td>
</tr>
<tr>
<td>Nature/historical Information</td>
<td>3.32</td>
<td>3.73</td>
<td>.40</td>
</tr>
<tr>
<td>Safety Information</td>
<td>3.99</td>
<td>3.93</td>
<td>-.06</td>
</tr>
<tr>
<td>Ease of Obtaining Information</td>
<td>3.87</td>
<td>4.03</td>
<td>.16</td>
</tr>
<tr>
<td>Current and Accurate Information</td>
<td>3.93</td>
<td>4.04</td>
<td>.11</td>
</tr>
<tr>
<td>Opportunity to Recreate without Crowding</td>
<td>4.22</td>
<td>4.09</td>
<td>-.13</td>
</tr>
<tr>
<td>Opportunity to Recreate without Interference</td>
<td>4.16</td>
<td>4.11</td>
<td>-.04</td>
</tr>
<tr>
<td>Compatibility of Recreation Activities</td>
<td>3.88</td>
<td>4.11</td>
<td>.23</td>
</tr>
<tr>
<td>Places to Recreate without Conflict</td>
<td>4.35</td>
<td>4.26</td>
<td>-.10</td>
</tr>
<tr>
<td><strong>MBSA SURVEY (n=268)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessibility for disabilities</td>
<td>2.86</td>
<td>3.64</td>
<td>.78</td>
</tr>
<tr>
<td>Information about the natural and cultural history</td>
<td>4.00</td>
<td>4.18</td>
<td>.18</td>
</tr>
<tr>
<td>Appearance and maintenance of the area</td>
<td>3.89</td>
<td>4.38</td>
<td>.49</td>
</tr>
<tr>
<td>Value for fee paid</td>
<td>3.56</td>
<td>3.99</td>
<td>.43</td>
</tr>
<tr>
<td>Staff knowledge and ability to answer questions</td>
<td>4.06</td>
<td>4.25</td>
<td>.19</td>
</tr>
<tr>
<td>Safety and security at the area</td>
<td>3.65</td>
<td>4.37</td>
<td>.72</td>
</tr>
<tr>
<td>Information about permits, services and recreation</td>
<td>3.55</td>
<td>4.27</td>
<td>.72</td>
</tr>
<tr>
<td>Staff friendliness and courtesy</td>
<td>4.07</td>
<td>4.49</td>
<td>.42</td>
</tr>
<tr>
<td>Roadside signs and directions</td>
<td>3.84</td>
<td>4.05</td>
<td>.21</td>
</tr>
<tr>
<td>Ease or convenience of paying the fee</td>
<td>3.25</td>
<td>4.16</td>
<td>.91</td>
</tr>
<tr>
<td>Bathroom cleanliness</td>
<td>3.70</td>
<td>4.25</td>
<td>.55</td>
</tr>
<tr>
<td>Information about the fees charged at the area</td>
<td>3.25</td>
<td>3.22</td>
<td>-.03</td>
</tr>
</tbody>
</table>

IP scores are on a five point scale where 1 = "Not at all important" to 5 = "Extremely important." For performance "satisfied" is used instead of "important."

The alternative form of IP analysis (IPa) would lead to a very different outcome. By shifting the quadrant boundaries to the grand mean of each variable (3.99 and 4.07 for ACOE; 3.68 and 4.10 for MBSA) a few items fall outside Q1, notably in Q3, where the low-low combination also suggests that no real change for management is needed. However, it is the off-diagonal items, especially in Q4, where high importance is not being matched with correspondingly high performance ratings, that suggest some managerial action might be in order. For the ACOE setting the two in Q4 are "availability of recreation areas" and "safety information." For MBSA they are "information about permits, services and recreation" and "ease or convenience of paying the fee." In general there are reasons to suggest that this provides better feedback in a relative sense. That is, assuming you want a comparative analysis where the "best/worst" or "top few" are highlighted, IPa gives such a result.

**GA results**

When using GA (see Table 1 again) there will be a somewhat different set of management recommendations than obtained by either IPc or IPa. In general, positive gap scores suggest that the visitor's expectations have been exceeded and other than a possible overkill (as in IP quadrant 2) they are a positive outcome and will not be analyzed here. The negative gap scores are the main concern: they represent conditions that did not meet expectations or led to low achievement ratings relative to their importance. For the ACOE survey seven of the 19 attributes had negative gap scores. Of these, three are significantly large to warrant management attention based
on a statistical test of the scores (details in Graefe, et al. 1999) and are shown in the IP grids as squares. The attributes represented are "availability of recreation areas" (-.21), "appearance of recreation areas (.21), and "safety/security" (-.22). As can be seen in Figure 2 and Figure 3 these would be in the "keep up the good work" quadrant under IP analysis, except for one which would be in Q4 under IPa analysis. Thus, at best, only one of the three gap score identified recommendations would be congruent with an IP analysis. Similarly, in the MBSA data presentation only one attribute would yield a negative gap score ("information about the fees charged at the area," -.03) and it is not statistically significant and thus is indistinguishable from zero or even a small positive gap score. It too is shown as a square on the IP grids in Figures 2 and 3. It would be no problem under IPc (Q1) and in Q3 ("low priority") under IPa action grid. Again, the management recommendations are rather different depending on the form of the analysis.

Conclusions

The three forms of customer service analysis, all from the exact same data, are presented. They yield different, and at times conflicting, outcomes. As a result the form of the analysis alone may be shown to lead to very different management actions. Moreover, there is no consistency in the differences based on the two data sets analyzed. IP and GA are simplified forms of analysis designed to make data reduction easy and lead to results that are useful to managers. Researchers and managers should question both the assumptions about the items being measured and the limitations of the type of analysis used before coming to firm recommendations.

For instance, if the lists of attributes that are selected for inclusion on the questionnaire are known to be of high importance to the surveyed group it is expected that IPc will yield almost all items in Q1 or Q4. In our examples, Q4 was vacant. Perhaps here IPa is a better form of
analysis because it forces some items to be relatively "less important."

However, if the items are variable across subpopulations some differences will be obscured by IPa's use of grand means as an evaluative standard. GA seems better in this case. It will allow for calculations at the individual level if desired, making it easier with GA to check for the homogeneity of subgroups with respect to each experiential or service attribute. As such GA may be better when skewed or other non-normal (e.g., bimodal) distributions are expected.

On the other hand GA relies on a mathematical difference. Because there may be no linear relationship between importance and performance, and without prior testing and benchmarking, GA may lead to a false sense of security when outcome scores are high due to factors not measured by the attributes, or even lead to an emphasis on weakly preferred (less important) items. Management recommendations based on such an analysis may be tragic if truly important attributes are ignored.

Neither method deals well with individual behaviors such as response to setting conditions at a particular place and time. Where such conditions are variable, e.g. weekend crowds, low water, or differential pricing, then repeated IP grid or GA analyses with market segment breakouts will yield better results.

Finally it is often the case that attributes are close to the quadrant boundaries, especially in IPa, due to the use of central tendency as an evaluative standard. More needs to be done to tease out the significant differences beforehand and to look at the effects of variation (e.g., ANOVA, z-score tests) to assess the "true" strength and thus importance of a given IP placement or GA score. In so doing, the use of IP and GA would be more robust and establish better linkages to other concerns such as land management planning, market positioning, product development or communication plans.

References


CUSTOMER SERVICE AND OVERALL SATISFACTION WITH ANGLING EXPERIENCES

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This study explores the relationship between individual customer service items and satisfaction with facilities, services, information, and recreation experience. Results also revealed direct relationships between these variables and overall satisfaction with the fishing experience. Satisfaction with the number of fish a person can catch and the services and information aspects had the most influence on overall satisfaction.

Introduction

Since the 1960s, researchers have been trying to determine what represents quality in outdoor recreation and how satisfied recreation customers are with their experiences. In the recreation field, Wagar (1966) was the first to ask, “What is quality in outdoor recreation?” Service quality is an issue of perception and because individuals have varying past experiences, satisfaction will generally deviate across different customers in different situations. Because there is a varying level of perceived quality among visitors to recreation areas, it is desirable for management to offer a wide variety of activities and to manage for as many different experiences as possible (Wagar, 1966). By managing for a variety of experiences, we are more likely to provide the experiences that people are looking for in their recreation activities.

Consumer behaviorists have conducted similar research related to service quality and customer satisfaction. Parasuraman, Zeithaml, and Berry (1985, 1988) have played the leading role in this area of research. Probably one of the most influential pieces of service quality research came when Parasuraman et al. (1988) developed a 22-item instrument named SERVQUAL. The SERVQUAL scale was designed to measure perceived quality, which is the consumer’s view of excellence or superiority of the organization in question.

In the recreation and leisure field, SERVQUAL was adapted by Mackay and Crompton (1988, 1990) to help researchers and managers better understand how people engaging in recreation activities evaluate quality of service from recreation providers. Mackay and Crompton referred to their satisfaction construct as REQUAL and used similar customer service domains in their investigation of recreation satisfaction. These customer service domains included tangibles, reliability, responsiveness, assurance and empathy.

In an attempt to make satisfaction models more tangible for researchers and managers, Burns et al.'s (1999a, 1999b) work by focusing on key managerial domains rather than general evaluative questions offering little insight into the visitor’s experience and satisfaction. The study examines the internal dimensions of each of these domains, ascertains their relationship with satisfaction within the domains, and identifies the significant predictors of overall satisfaction for anglers. The results of this study will hopefully prove useful for managers in their future planning efforts.

Methodology

A multiple-method approach was used for data collection to obtain a diverse sample of anglers from the New England region.
Several U.S. Army Corps of Engineers project offices provided names of individuals, groups, and club representatives for the researchers to contact by phone. A total of eight groups out of fifteen contacted agreed to provide the names and addresses of their members for a mail-out survey. As a means of increasing the sample size for the study, a stratified random sample of users was contacted on-site at four lakes (Hopkinton-Everett Lake, East Brimfield Lake, Buffumville Lake, and West Thompson Lake). Upon the completion of a brief on-site interview, each respondent was asked if he/she was willing to provide his/her name and address for a follow-up mail-back survey.

In total, 433 addresses were collected for this survey. A modified implementation of Dillman's (1978) multiple mailing process was used (four instead of five mailings). A total of 123 usable surveys were returned from the address database for a response rate of about 33%. Surveys were also sent to two large state bass fishing organizations. By combining the surveys returned from the mail-out portion of the study and the surveys distributed to the state bass organizations, the total sample size for this study increased to 176.

A telephone survey of non-respondents was conducted as a precautionary measure in order to determine if there was a significant difference between non-respondents and respondents in the study. Thirty interviews were completed and the sample means of 13 items were compared with the results in the original mail survey. This comparison between respondents and non-respondents showed little significant difference between the two groups.

### Measurement

Customer service was measured using a list of 12 items patterned after scales developed by Parasuraman et al. (1985), Mackay and Crompton (1990) and Burns et al. (1999a). The domains used in this study include facilities, services, information, and recreation experience. Respondents rated each statement using a five-point Likert-type scale ranging from "not at all satisfied" to "extremely satisfied." The respondents were also asked to rate their satisfaction with each of the customer satisfaction domains (facilities, services, information, and recreation experience) and their overall satisfaction with their fishing experience at the lake they fish most frequently. Similar to the customer service items described previously, respondents rated their satisfaction with each domain using a five-point scale ranging from "not at all satisfied" to "extremely satisfied." The respondents were allowed to respond "not applicable" if the item or domain did not apply at the lake that they fished most frequently. For overall satisfaction with their fishing experience, anglers were asked to rate their experience on a scale of 1-10, with one being the least and ten being most satisfied.

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**Table 1. Results of Multiple Regression of Customer Service Items and Satisfaction with Facilities, Services, Information, and Recreation Experience Domains.**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Satisfaction w/ Facilities</th>
<th>Satisfaction w/ Services</th>
<th>Satisfaction w/ Information</th>
<th>Satisfaction w/ Recreation Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>Beta</td>
<td>r</td>
<td>Beta</td>
</tr>
<tr>
<td>Item 1: Toilet Facilities</td>
<td>.546*</td>
<td>.393***</td>
<td>.568*</td>
<td>.233*</td>
</tr>
<tr>
<td>Item 2: Staff Knowledge</td>
<td>.346*</td>
<td>.009</td>
<td>.501*</td>
<td>.081</td>
</tr>
<tr>
<td>Item 3: Type of Fish</td>
<td>.124</td>
<td>.082</td>
<td>.138</td>
<td>.086</td>
</tr>
<tr>
<td>Item 4: Appearance of Area</td>
<td>.483**</td>
<td>.555***</td>
<td>.431**</td>
<td>.163</td>
</tr>
<tr>
<td>Item 5: Water Safety</td>
<td>.357**</td>
<td>-.380**</td>
<td>.485**</td>
<td>-.005</td>
</tr>
<tr>
<td>Item 6: Staff Friendliness</td>
<td>.457**</td>
<td>-.058</td>
<td>.513**</td>
<td>.069</td>
</tr>
<tr>
<td>Item 7: Parking Availability</td>
<td>.277*</td>
<td>-.184*</td>
<td>.299**</td>
<td>-.020</td>
</tr>
<tr>
<td>Item 8: Number of Fish</td>
<td>.093</td>
<td>-.090</td>
<td>.132</td>
<td>-.024</td>
</tr>
<tr>
<td>Item 9: Ranger Patrols</td>
<td>.408**</td>
<td>.298**</td>
<td>.535**</td>
<td>.260*</td>
</tr>
<tr>
<td>Item 10: Recreation Opportunities</td>
<td>.383**</td>
<td>.023</td>
<td>.514**</td>
<td>.167</td>
</tr>
<tr>
<td>Item 11: Water Quality</td>
<td>.419**</td>
<td>.093</td>
<td>.393**</td>
<td>.022</td>
</tr>
<tr>
<td>Item 12: Roadside Signs</td>
<td>.455**</td>
<td>.217</td>
<td>.432**</td>
<td>.023</td>
</tr>
<tr>
<td>R² Satisfaction w/ four customer service domains</td>
<td>.518**</td>
<td>.443***</td>
<td>.434***</td>
<td>-.293***</td>
</tr>
</tbody>
</table>

***= Significant at .001 **= Significant at .01 *= Significant at .05

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Proceedings of the 2002 Northeastern Recreation Research Symposium  GTR-NE-302
Analysis

A factor analysis was used to examine the dimensions of customer satisfaction. One of the most important characteristics of factor analysis is its data reduction capability. Results of the factor analysis revealed inconsistent factor loadings for individual items representing customer service domains. Therefore, no composite indices were created for the independent variables. Multiple regression was used to examine the relationships between individual items (independent variables) and customer service domains (dependent variables) and overall satisfaction with the fishing experience (dependent variable). The study also used multiple regression to determine the relationship between satisfaction with the four domains (independent variables) and overall satisfaction with the fishing experience.

Results

The first step in the analysis was to examine the relationships between the twelve customer service items and the satisfaction measures related to the facilities, service, information, and recreation experience domains (Table 1). A total of five independent variables were found to significantly predict satisfaction with facilities in the first regression equation. The five-predictor variables were satisfaction with cleanliness of toilet facilities, appearance and maintenance of the area, water safety information, parking availability and ranger patrols. The customer service items explained 52% of the variance in overall satisfaction with facilities.

Overall satisfaction with services was the next dependent variable to be examined with the twelve customer service items. A total of 44% of the variance in the dependent variable was explained, with two significant predictor variables (satisfaction with toilet facilities and satisfaction with ranger patrols). While only two of the independent variables were significant predictors in the regression equation, nine out of twelve independent variables were positively and significantly correlated with the dependent variable (satisfaction with services).

The third regression equation explored the relationship between overall satisfaction with information and the twelve customer service items. While satisfaction with ranger patrols was the only significant predictor variable, eleven out of the twelve items were significantly and positively correlated with overall satisfaction with information. A total of 43% of the variance in the dependent variable was explained in this model.

The next step was to run a regression equation for satisfaction with the recreation experience domain and the twelve customer service items. A total of 29% of the variance in the dependent variable was explained, with two significant predictor variables. Satisfaction with ranger patrols was the strongest predictor, followed by water quality. Similar to the previous analysis, all but one of the twelve independent variables were significantly correlated with overall satisfaction with the recreation experience.

For the last phase of this analysis, multiple tests were conducted to examine the relationships between various independent variables and overall satisfaction with the fishing experience. These tests examined the indirect and direct relationships among the independent variables. The first regression equation examined the relationship between the four customer service domains and overall satisfaction with a person’s fishing experience. Results revealed three significant predictors of overall fishing satisfaction (Table 2). The strongest predictor was satisfaction with services, followed by satisfaction with information and the recreation experience. These significant independent variables accounted for 19% of the variance in overall satisfaction with the fishing experience.

Table 2. Results of Multiple Regression of Satisfaction with Facilities, Services, Information, and Recreation Experience Domains on Overall Satisfaction with Fishing Experience.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Overall Satisfaction</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with Facilities</td>
<td>.308**</td>
<td>.024</td>
</tr>
<tr>
<td>Satisfaction with Services</td>
<td>.387**</td>
<td>.567**</td>
</tr>
<tr>
<td>Satisfaction with Information</td>
<td>.188*</td>
<td>-.359**</td>
</tr>
<tr>
<td>Satisfaction with Recreation Experience</td>
<td>.356**</td>
<td>.194*</td>
</tr>
</tbody>
</table>

\[ R^2 \text{ Overall Satisfaction/w/Fishing Experience} \quad .189*** \]

*** Significant at .001
** Significant at .01
* Significant at .05

The next regression analysis examined the direct relationship between the twelve customer service items and overall satisfaction with the fishing experience. Satisfaction with the number of fish a person can catch and roadside signs and directions were found to be the two significant predictor variables (Table 3). A total of 33% of the variance was explained by the independent variables.

In an effort to determine the direct and indirect relationships between the variables, a final regression analysis was run with the twelve individual items and four domain satisfaction scores (all independent variables) and overall satisfaction with the fishing experience (dependent variable). The same two customer service items (satisfaction with the number of fish a person can catch and roadside signs and directions) remained significant when the domain satisfaction scores for facilities, services, information, and recreation experience were added to the regression equation (Table 4). Satisfaction with services also contributed significantly to this model. The variance explained by the independent variables was 34%. This finding establishes direct relationships between the two customer service items and overall satisfaction with the fishing experience, as well as a direct effect from the services domain.
Table 3. Results of Multiple Regression of Customer Service Items on Overall Satisfaction with the Fishing Experience.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Overall Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
</tr>
<tr>
<td>Item 1: Toilet Facilities</td>
<td>.219*</td>
</tr>
<tr>
<td>Item 2: Staff Knowledge</td>
<td>.101</td>
</tr>
<tr>
<td>Item 3: Type of Fish</td>
<td>.348**</td>
</tr>
<tr>
<td>Item 4: Appearance of Area</td>
<td>.269**</td>
</tr>
<tr>
<td>Item 5: Water Safety</td>
<td>.118</td>
</tr>
<tr>
<td>Item 6: Staff Friendliness</td>
<td>.147</td>
</tr>
<tr>
<td>Item 7: Parking Availability</td>
<td>.021</td>
</tr>
<tr>
<td>Item 8: Number of Fish</td>
<td>.356**</td>
</tr>
<tr>
<td>Item 9: Ranger Patrols</td>
<td>.198*</td>
</tr>
<tr>
<td>Item 10: Recreation Opportunities</td>
<td>.138</td>
</tr>
<tr>
<td>Item 11: Water Quality</td>
<td>.223**</td>
</tr>
<tr>
<td>Item 12: Roadside Signs</td>
<td>-.016</td>
</tr>
</tbody>
</table>

R² Overall Satisfaction w/ Fishing Experience .334***

*** Significant at .001
** Significant at .01
* Significant at .05

Table 4 continued

<table>
<thead>
<tr>
<th>Domain Satisfaction Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with Facilities</td>
</tr>
<tr>
<td>Satisfaction with Services</td>
</tr>
<tr>
<td>Satisfaction with Information</td>
</tr>
<tr>
<td>Satisfaction with Recreation Experience</td>
</tr>
</tbody>
</table>

R² Overall Satisfaction w/ Fishing Experience .337***

*** Significant at .001
** Significant at .01
* Significant at .05

Conclusions

As mentioned before, the individual items representing four customer service domains did not factor load in a logical manner. While somewhat discouraging, this should not be surprising based on the wording of the individual statements. While the items within the various domains were intended to measure a single construct, closer examination of these items suggests they may be tapping different ideas. Thus, it is not surprising that factor analysis did not produce a clean factor structure for inclusion in this study.

The regression models predicting satisfaction within the four customer service domains accounted for 29% to 52% of the variance in domain-level satisfaction. The strongest model was found for the facilities domain, and the weakest for the recreation experience domain. These results seem logical in that the facilities domain is probably the most tangible domain studied and the recreation experience is likely the most nebulous in the minds of the respondents.

Satisfaction with the services, information, and recreation experience domains were all significant predictors of overall satisfaction with the fishing experience. An unusual result of this analysis is the negative Beta value for overall satisfaction with information. It would be expected that as a person's satisfaction with information increased, so too would their overall satisfaction with the fishing experience. This was shown in the bivariate analysis (r=.188), which makes the negative Beta value difficult to interpret. Such a result is most likely an anomaly related to the shared variance among the variables included in the model. Both overall satisfaction with services and the recreation experience behaved as expected (positively influence overall satisfaction with the fishing experience) and the direct relationship between the variables was supported.

The examination of individual customer service items revealed direct relationships between these variables and the dependent variable, overall satisfaction with the fishing experience. When the 12 items were examined simultaneously with satisfaction within the four domains of customer service, satisfaction with the number of fish a
person can catch and roadside signs and directions were found to have a direct relationship with overall satisfaction with the fishing experience. As noted above, a negative Beta value implies that as satisfaction with roadside signs and directions increased, anglers' overall satisfaction with their fishing experience decreased. This result does not seem logical and is probably another anomaly resulting from the combination of variables included in the analysis.

Among the domain satisfaction scores, only satisfaction with services showed a direct relationship with overall satisfaction when the individual items were included in the analysis. Table 5 summarizes the direct and indirect relationships found in the study. Taken together, the results suggest that the customer service items exert the most influence on satisfaction within the customer service domains. Disregarding the anomalous path for roadside signs and directions, overall fishing satisfaction was most strongly influenced by satisfaction with the number of fish available and satisfaction with the services domain.

Table 5 Summary of Direct and Indirect Predictors of Overall Satisfaction with Fishing Experience

<table>
<thead>
<tr>
<th>Customer Service Items</th>
<th>Satisfaction With</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Facilities</td>
</tr>
<tr>
<td>Type of fish</td>
<td></td>
</tr>
<tr>
<td>Toilet facilities</td>
<td>X</td>
</tr>
<tr>
<td>Water safety</td>
<td></td>
</tr>
<tr>
<td>Parking availability</td>
<td>X</td>
</tr>
<tr>
<td>Number of fish</td>
<td></td>
</tr>
<tr>
<td>Appearance of area</td>
<td>X</td>
</tr>
<tr>
<td>Staff friendliness</td>
<td></td>
</tr>
<tr>
<td>Ranger patrols</td>
<td>X</td>
</tr>
<tr>
<td>Water quality</td>
<td>X</td>
</tr>
<tr>
<td>Staff knowledge</td>
<td></td>
</tr>
<tr>
<td>Signs and directions</td>
<td></td>
</tr>
<tr>
<td>Recreation information</td>
<td></td>
</tr>
</tbody>
</table>

1 'X' indicates a direct relationship between customer service item and satisfaction

Implications for Further Research

For the satisfaction items and domains, it may be useful to examine other areas such as a natural resources domain or a more developed recreation experience domain. This study could be replicated in a recreation setting where the specific items and domains were tailored to closely match the facilities, services, information, recreation experiences and natural resources of the area. Certainly this approach could prove valuable for further testing and comparing the results to those of this study.

Researchers should continue to refine the measures that were used in this study and explore their relationships. Using a conceptual model of customer service as suggested by Burns et al. (1999b) may be helpful for managers in providing better visitor experiences in the recreation areas they manage.

Literature Cited


ASSESSING INDICATORS RELATING TO OVERALL TOURIST SATISFACTION OF ECOTOURISM DEVELOPMENTS IN EASTERN NORTH CAROLINA

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Abstract: The Partnership for the Sounds is a non-profit organization based in eastern North Carolina and is in charge of operating a collection of museums and cultural sites including the North Carolina Estuarium in Washington, The Mattamuskeet Lodge in Swan Quarter, and the Columbia Theater Cultural Resource Center in Columbia. A recent survey was conducted at these areas by the Department of Recreation & Leisure Studies at East Carolina University. This survey addressed issues such as personal expenditures, perceptions and satisfaction rankings of various aspects of the facility, demographic information, and finally, a numeric overall rating of the site by the individual. An attempt is made to identify satisfaction indicators in relation to reported satisfaction levels of eco-tourism site visitors. More specifically, there is a need to deconstruct the visitor's overall experience and focus on individual factors that might influence satisfaction, or adversely, have little bearing on overall satisfaction. Three primary relationships will be examined. The first of these will be overall satisfaction in relation to personal expenditures. These expenditures include admission fees, food and lodging, transportation, and other activities and entertainment engaged in while in the immediate area. The second area focuses on specific activity at the site such as how much time was spent at the location, quality of the facility, opportunities to learn new information, and perceptions of safety issues and facility staff. Finally, personal demographic information will be observed to indicate whether overall visitor satisfaction at these areas directly correlates to age, education, race or annual household income.

Introduction

This paper is part of a larger study funded by the Economic Development Administration under the United States Department of Commerce. The initial purpose of this study was to assess the economic impact of ecotourism developments on the Albemarle/Pamlico region of North Carolina. Additional information concerning visitor demographics and satisfaction levels was recorded during the data collection phase of this project. The primary purpose of this study was to explore satisfaction indicators relating to ecotourism sites in eastern North Carolina. Tourism in the United States is continually rising. The World Resources Institute reports that the tourism industry as a whole is roughly increasing at four percent per year (Amaro, 1999). The fastest growing segment of tourism, at ten percent, is nature travel. Nature travel could also be referred to as ecotourism. Several attempts have been made to create a clear and accurate definition of ecotourism. One such definition states that ecotourism is "travel to fragile, pristine, and usually protected areas that strives to be low impact and usually small scale" (Honey, 1999, p. 25). The definition continues by including aspects of travel education, economic development of local communities, and increasing respect for cultural diversity. A simplified definition is offered by the Ecotourism Society as "responsible travel to natural areas which conserves the environment and sustains the well-being of local people" (Amaro, 1999, p. 16).

With tourism come certain negative attributes of a host community such as increased litter and pollution, increased seasonal employment, inflated local economy, and exploitation of natural resources. Positive outcomes could also result from these recreational outlets with proper guidance and direction (Henderson, 1991). The benefits of ecotourism have the potential to reduce these negative consequences through an environmentally educated and enlightened public with the ability to make informed decisions concerning local natural resources, as well as contributing to local economies through lodging, food, or shopping (Anonymous, 2001; Heung & Cheng, 2000).

A primary recreational interest within the baby-boomer population is ecotourism (Lindberg, Wood, & Engeldrum, 1998). With the baby-boomer population nearing retirement, a major influx in the ecotourism segment over the next twenty years could be expected if current trends continue. A present challenge for leisure researchers is how to accurately measure the social experience within ecotourists (Lindberg, Wood, & Engeldrum, 1998). Though the primary goals of ecotourism focus on environmental protection, awareness, and local economic development, the creation of positive social experiences within visitors is also imperative to the longevity of the ecotourism industry. Related to any tourism experience is the level of visitor (customer) satisfaction.

Review of Literature

A study conducted by Kerkvliet and Nowell (1999) focuses on visitor experience in relation to distance traveled and effort required to access a specific location. Time, effort and money required to access a particular location are identified as particularly important by the authors. The allocation time and monetary costs are measured by the travel cost model. Complications have been found with this model relating to the researcher being unable to accurately measure and weigh the costs that are most important to the customer. By identifying indicators relating to overall satisfaction, a specific population segment, such as ecotourists, can be better understood from a social perspective.
Related to travel cost is the variable of site preference. Specific attributes relating to setting have the ability to constrain individuals and thereby influence their destination preferences (Siderelis & Moore, 1998). While recreational sites are selected according to related costs to accessibility, it is questionable as to what level that satisfaction is based on expenditures incurred during participation. Ultimately, Siderelis and Moore conclude that recreational trip planning is a two-part process involving the number of recreational trips to be taken per season, followed by pre-trip decisions relating to destination.

Another important area to tourism service providers is customer loyalty and repeat visitation. Repeat visitation displays a certain level of individual satisfaction and attachment to particular location and/or activity. Tourist attractions have been found to rely heavily on loyal, repeat visitors (Gitelson & Crompton, 1984). A study by Laverie and Arnett (2000) examines recreational attachment and satisfaction in the context of devoted sports fan behavior. Similarities in the population segments of sports fans and ecotourists can be observed through the understanding and utilization of the social identity theory. This theory, similar to the symbolic interaction theory, states that certain groups within society are important to the individual because one’s social networks are formed based on their social identity (Laverie & Arnett, 2000). According to Stryker (1980), the primary purpose of the social identity theory is to determine why an individual selects certain activities over others when given a diversity of available options. This theory could in part explain why some individuals express higher levels of satisfaction than others in an ecotourism setting. While those who seek out ecotourism activities may be highly satisfied, those who are simply accompanying their friends/family in such an activity may display lower satisfaction levels due to a lack of social identity with the present scenario.

Another study concerning tourism destination loyalty was conducted by Opperman (2000) on the lifelong travel patterns of New Zealand residents. Three primary areas were observed by means of a mail-back questionnaire: visitation frequency between 1985 and 1995, past visitation behavior, and predicted visitation rates. By associating sociodemographic, lifestyle, and tourist loyalty variables, specific population segments were identified as having specific desired loyalty types. Ultimately, the study findings suggest that past travel experiences significantly influence future destination selection.

Certain sociodemographic characteristics of recreational and tourism participants have been suggested to have an effect on leisure expenditures. A study by Dardis, Soberon-Ferrer, and Patro (1994) analyzed such leisure expenditures of a sample population by means of data acquired through the U.S. 1988-89 Consumer Expenditure Surveys. A sample of 2,088 households was subjected to a series of interviews regarding a range of personal demographic and expenditure variables. The findings of their study suggest in terms of expenditures, the salary of the head of household and those households who received non-salaried (waged) income had the greatest negative impact on leisure spending (Dardis, Soberon-Ferrer, & Patro, 1994). Demographic variables found to have a significant impact on such expenditures were age, race, and education of the head of household. In terms of age, the older the household, the less money spent on leisure pursuits. Referring to the category of race, an African-American head of household spent significantly less than other races and nationalities. Finally, education was found to be positively influenced with increased leisure spending with higher education levels. While less affluent households were found to participate in leisure spending as well, these households were much more likely to spend money on passive types of leisure activities or social entertainment instead of physically active leisure pursuits. These findings support the previous study of Dardis, Derrick, Leifeld, and Wolfe (1981) in that expenditures increased with increasing levels of income and education and decreased with older aged households.

Tourist satisfaction is significantly related to customer loyalty, repeat visitation, and positive social communications (Beeloo & Prenice, 1997). A difficult question to answer is what exactly constitutes a satisfactory leisure or ecotourism-based experience. Dorfman (1979) attempts to solidify the meaning of satisfaction in the context of recreational camping. He states that satisfaction levels are “maximized when aspiration (desirability) equals perception but only when the desirability is high for that condition” (Dorfman, 1979, p. 486). Desirability for conditions could directly relate back to the social identity theory and the need for personal distinctiveness.

When a tourist is satisfied, the agency is then credited with providing an effective service opportunity (Noe 1999). Customer satisfaction is often contingent upon levels of individual effort and expectations. Customer effort is any physical, mental, or monetary resource expended by the consumer in the acquisition of a service or product (Cardozo, 1965). Customer effort plays a secondary role to customer expectations. Tourists have certain preconceived notions and mental images of a location before they ever visit. Expectations are one of the driving forces for the initial desire to visit a particular location. If customer effort is high and high expectations are met, high customer satisfaction is likely. Adversely, an individual with high expectations who receives a low-value experience will likely report low customer satisfaction, regardless of level of customer effort. This high-value expectation, low-value product is known as the dissonance theory (Cardozo, 1965). To reduce dissonance levels in tourists, it is important as a service provider to offer accurate, realistic information to the public, as to not create heightened expectations that are not likely to be met. It is important to remember that quality tourist experiences result from businesses that know their product, their customers, and their employees (Hayes, 1997).
Study Methods

Study Area

The Partnership for the Sounds (PFS) founded in 1993, is a nonprofit organization that promotes nature-based, ecotourism activities in the Albemarle-Pamlico region of eastern North Carolina. Sites owned and operated by PFS possess a range of natural, cultural, and state historical values. The mission of PFS is to “stimulate sustainable community-driven economic well-being within the Albemarle-Pamlico region through the promotion of responsible eco/heritage tourism, environmental stewardship, and education.” Three PFS establishments were the focus of this study, encompassing five coastal counties: Beaufort, Washington, Bertie, Tyrrell, and Hyde. In creating an overall experience within visitors, two primary themes guide their efforts. The first of these is to create environmental awareness. All PFS establishments have education centers that offer displays, hands-on exhibits, and various individual and group activities relating to the value of local wildlife and resource conservation. Their second primary theme is the promotion of ecotourism activities. These site-specific activities include canoeing, birdwatching, fishing, regional arts and craft tours, and nature hikes.

The first site of observation is the North Carolina Estuarium, located in Washington, NC. This establishment is a nature center/aquarium on the Tar-Pamlico Estuary, which gives it its name. Second, is the Columbia Theater Cultural Resources Center, located in Columbia, NC. This historical structure, originally built in 1938, was converted by the PFS into a cultural history museum in 1995. The establishment directs their displays, exhibits, and excursions toward farming, fishing, and forestry subject matter, which have historically remained the primary industries of the region. The final area of interest is the Mattamuskeet lodge which is located on Lake Mattamuskeet, North Carolina’s largest natural lake. The lake possesses great historical value to the state, originally constructed in the early 1900’s as a pump house in attempts to drain the lake to use the land for agricultural purposes.

The PFS establishments have greatly contributed to the local economies of many less affluent communities in eastern North Carolina. The five counties under observation all place in the bottom third of North Carolina counties for mean household income, and two of the three poorest counties in the state are within the study region (Vogelsong & Ellis, 2001). Additionally, four of the five counties have household incomes 20 percent below the state median of $42,400.

Visitor Survey

Data was collected by means of a combination of brief, on-site interviews followed by mail-back questionnaires, which were given to the participant following the on-site portion. The on-site portion focused on certain demographic information (gender, state and county of residence) and a limited number of core, central question relating to the overall study objective such as primary purpose of visit, distance traveled, and if it was the respondent’s first visit to the area. The mail-back questionnaire addressed more in-depth information on visitor experience and satisfaction. Expenditure and satisfaction variables were measured through fill-in-the-blank questions, as well as five-point Likert scale responses.

Research assistants and PFS personnel approached potential respondents, and briefly introduced themselves and gave a brief synopsis of the project. Permission was then requested to administer a brief 1-2 minute survey to them. At the closing of the on-site portion of the questionnaire, the respondents were asked to participate in a second, mail-back portion of the questionnaire. If the individual complied, they were given the survey in pre-addressed, stamped envelope. Finally, the respondent’s name and address was recorded, with their permission, for follow-up purposes in the event that their questionnaire was not returned. If their questionnaire had not been returned within 7-10 days, a reminder postcard was sent to all participants who agreed to take part in the mail-back questionnaire. If there was still no response, an additional survey was mailed after a two-week period, followed by a final survey mailing after an additional two weeks. This follow-up methodology is based on the Dillman (1978) Total Design Method. The survey yielded an overall response rate of 74 percent.

Data collection for this project was conducted from June through August, 2000 over a period of ten weeks. The data collection process resulted in a total of 338 completed on-site surveys and 251 completed mail-back questionnaires. Sampling by each research assistant was conducted at two sites each weekend and one site during each week. Varying times and days of the week were also incorporated in attempts to gain a more representative population and minimize sample bias.

Study Findings

A profile of the sample population, including age, gender, group size, distance traveled, and first-time visitor status is shown in Table 1. Though gender was evenly proportional, there was marked variance in nearly all demographic categories observed. The overall mean age of sampled visitors was found to be 48.6 years; however, there was less than ten percent of visitors under the age of thirty. Group size ranged from single individuals to elementary school groups with as many as 88 people and had a mean of just fewer than four people (3.98).
Table 1. Visitor Sample Profile

<table>
<thead>
<tr>
<th>Age</th>
<th>People Surveyed</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>23-30</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>31-40</td>
<td>38</td>
<td>18</td>
</tr>
<tr>
<td>41-50</td>
<td>54</td>
<td>23</td>
</tr>
<tr>
<td>51-60</td>
<td>69</td>
<td>29</td>
</tr>
<tr>
<td>&gt;50</td>
<td>46</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Mean age = 48.60</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>People Surveyed</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>157</td>
<td>50</td>
</tr>
<tr>
<td>Female</td>
<td>158</td>
<td>50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group Size</th>
<th>People Surveyed</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Self</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>2 people</td>
<td>120</td>
<td>37</td>
</tr>
<tr>
<td>3-4 people</td>
<td>126</td>
<td>39</td>
</tr>
<tr>
<td>5-6 people</td>
<td>34</td>
<td>10</td>
</tr>
<tr>
<td>&gt;6 people</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Mean Group Size = 3.98</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Travel Distance</th>
<th>People Surveyed</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-60</td>
<td>134</td>
<td>42</td>
</tr>
<tr>
<td>61-120</td>
<td>39</td>
<td>12</td>
</tr>
<tr>
<td>121-180</td>
<td>16</td>
<td>5</td>
</tr>
<tr>
<td>181-240</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>241-300</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>301-360</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>&gt;360</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mean Travel Distance = 76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Median Travel Distance = 30</td>
<td></td>
</tr>
</tbody>
</table>

The primary concern of this paper is to determine overall satisfaction levels in PFS visitors and determine specific attributes that contribute to their level of satisfaction. The survey asked the question: on a scale of 1-10, how would you rate your overall trip to the site (ten being the best possible trip imaginable and one being the worst possible experience you can imagine)? The mean response was found to be very high at 8.39. Differences in satisfaction between categories of different visitor groups were explored using t-tests and analysis of variance. The results of these tests are summarized in Table 2. The only significant differences found between these groups were for repeat visitation ($t = -2.89$). As expected, repeat visitors were significantly more satisfied than first-time visitors. No significant differences were found between genders, education levels, or income categories.

Relationships between satisfaction and interval-scaled visitor characteristics were measured through Pearson correlation. Table 3 summarizes the relationship of satisfaction to these characteristics. Not surprisingly, age was positively correlated with satisfaction ($r = .193$). As visitor age increases, so do levels of reported satisfaction.

Table 2. Differences in Satisfaction Between Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Satisfaction Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Mean</td>
</tr>
<tr>
<td>Male</td>
<td>8.29</td>
</tr>
<tr>
<td>Female</td>
<td>8.50</td>
</tr>
<tr>
<td>Education Level</td>
<td>Mean</td>
</tr>
<tr>
<td>11th grade or less</td>
<td>3</td>
</tr>
<tr>
<td>High School grad.</td>
<td>29</td>
</tr>
<tr>
<td>Some college</td>
<td>68</td>
</tr>
<tr>
<td>College grad.</td>
<td>65</td>
</tr>
<tr>
<td>Post graduate</td>
<td>77</td>
</tr>
<tr>
<td>Repeat Visitor</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>8.23</td>
</tr>
<tr>
<td>Household Income</td>
<td>Mean</td>
</tr>
<tr>
<td>&lt; $10,000</td>
<td>9.00</td>
</tr>
<tr>
<td>$10,000-$19,999</td>
<td>8.33</td>
</tr>
<tr>
<td>$20,000-$29,999</td>
<td>7.81</td>
</tr>
<tr>
<td>$30,000-$39,999</td>
<td>8.77</td>
</tr>
<tr>
<td>$40,000-$49,999</td>
<td>7.95</td>
</tr>
<tr>
<td>$50,000-$75,000</td>
<td>8.14</td>
</tr>
<tr>
<td>&gt; $75,000</td>
<td>8.40</td>
</tr>
</tbody>
</table>

The intervallic variables of expenditures, distance traveled, duration of visit, and group size displayed no significant relationships.

Table 3. Relationship Between Satisfaction and Interval-Scaled Visitor Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>sd</th>
<th>r</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditures</td>
<td>$171.2</td>
<td>455.46</td>
<td>-.114</td>
<td>.075</td>
</tr>
<tr>
<td>Age</td>
<td>48.6</td>
<td>13.261</td>
<td>.193</td>
<td>.003</td>
</tr>
<tr>
<td>Distance</td>
<td>76 miles</td>
<td>129.447</td>
<td>-.045</td>
<td>.497</td>
</tr>
<tr>
<td>Traveled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration of Visit</td>
<td>1.36</td>
<td>0.55</td>
<td>.113</td>
<td>.078</td>
</tr>
<tr>
<td>Group Size</td>
<td>3.98</td>
<td>6.063</td>
<td>.001</td>
<td>.983</td>
</tr>
</tbody>
</table>

The relationship between satisfaction and site-specific characteristics were explored by Pearson correlations. A summary of responses relating to these specific-site attributes can be found in Table 4. All twelve of the identified attributes were significantly related to satisfaction levels. Quality of exhibits ($r = .545$), opportunity to learn something new ($r = .447$), and facility condition ($r = .474$) displayed especially high levels of importance. These relationships seem to suggest the value that visitors place on overall product/service quality. These customer values are consistent across nearly all demographic groups under observation.

Conclusions

Overall, PFS visitors exhibited relatively high satisfaction levels with a mean score of 8.39 out of 10. This may suggest that the PFS is effectively serving their diverse population of visitors. With the exception of age, observed levels of satisfaction remained consistent across different demographic groups. Not surprising, repeat visitors ($t = -2.89$) were found to display significantly higher satisfaction.
levels than first-time visitors. Both group size and distance traveled, displayed no significance in relation to overall satisfaction. Site-specific variables (cleanliness, safety, etc.) displayed a much higher role in overall satisfaction than other variables. PFS visitors seemed especially responsive to these basic service attributes above all other variables in the study.

Table 4. Relationship Between Satisfaction and Site-Specific Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>r</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Exhibits</td>
<td>4.47</td>
<td>.545</td>
<td>.000</td>
</tr>
<tr>
<td>Opp. to Learn</td>
<td>4.56</td>
<td>.447</td>
<td>.000</td>
</tr>
<tr>
<td>Something New</td>
<td>4.52</td>
<td>.407</td>
<td>.000</td>
</tr>
<tr>
<td>Opp. To Relax</td>
<td>4.76</td>
<td>.379</td>
<td>.000</td>
</tr>
<tr>
<td>Facility Cleanliness</td>
<td>4.66</td>
<td>.474</td>
<td>.000</td>
</tr>
<tr>
<td>Facility Condition</td>
<td>4.68</td>
<td>.362</td>
<td>.000</td>
</tr>
<tr>
<td>Availability of Space</td>
<td>4.76</td>
<td>.416</td>
<td>.000</td>
</tr>
<tr>
<td>Personnel Helpfulness</td>
<td>4.67</td>
<td>.344</td>
<td>.000</td>
</tr>
<tr>
<td>Safety</td>
<td>4.61</td>
<td>.285</td>
<td>.000</td>
</tr>
<tr>
<td>Visitor Information Quality</td>
<td>4.56</td>
<td>.371</td>
<td>.000</td>
</tr>
<tr>
<td>Other Local Opps.</td>
<td>3.80</td>
<td>.315</td>
<td>.000</td>
</tr>
<tr>
<td>Shopping and Dining Opps.</td>
<td>3.59</td>
<td>.320</td>
<td>.000</td>
</tr>
</tbody>
</table>

Implications for Application

Although demographic variables were not found to be related to overall satisfaction in this study, they should not be discounted due to the multi-faceted nature of tourist behavior. The overall response rate of the mail-back portion of the project was somewhat low, though initial sample numbers were met and adequate for statistical analysis. It is important for tourism service providers to understand the diversity of their potential customers and attempt to cater to the needs of all population segments. Site-specific variables such as everyday maintenance, cleanliness, safety, and employee friendliness and professionalism are of tremendous value in creating visitor satisfaction. Quality service and employees leave a positive impression on visitors regardless of their overall experience. Quality service delivery also possesses the ability to increase monetary profits. The premise of service quality meanders within all aspects of the tourism experience from promotional materials, on-site personnel, cleanliness of facilities, accessibility, and employee knowledge and courtesy. This should be consistently emphasized to staff and personnel in order to maintain high standards. It is fortunate that these sites have satisfied repeat visitors. However, a creative approach should be taken in the frequent changing of exhibits, programs, and outdoor excursions to offer more reasons for repeat visitation.

References


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