

Table of Contents

Ethnicity in Parks and Recreation - Keynote Session

- The Implications of Increased Racial and Ethnic Diversity for Recreation Resource Management and Planning 3
John F. Dwyer and Paul H. Gobster
- How Parks Canada has Responded to the Challenge of Racial and Ethnic Diversity 8
Dick Stanley

Rural and Sustainable Tourism

- A Conceptual Model for Facilitating Rural Tourism Development 15
Steven W. Burr
- The Development of Ecotourism and the Necessity for the Issue of Environmental Auditing in its Planning
Agenda 19
Dimitrios Diamantis
- Seasonal Homes in Berkshire County, Massachusetts: An Exploratory Study 24
Rodney B. Warnick
- Sustainable Tourism Development in the Adirondacks: Using the Internet to Empower Local Communities 31
James F. Casey, Gene L. Brothers, and Stephen Bond

Recreation and Tourism In the Nineties

- Using Ecosystem-Based Management to Develop Community 37
Bill Elmendorf
- Managing Parks for People: An Activity Package Approach 41
Robert S. Bristow, Stanley R. Leiber, and Daniel R. Fesenmaier

Ethnicity in Recreation

- The Influence of Recreationists' Cultural or Ethnic Background Upon Their River Recreation Experiences 49
Katharine A. Pawelko, Ellen B. Drogin, and Alan R. Graefe
- The Role of Multiculturalism in Tourism/Recreation Marketing and Planning Efforts 55
Edwin Gomez
- Ethnicity and its Impacts on Recreation Use and Management: Roundtable Discussion Notes and Bibliography 60
Katherine A. Pawelko, Varma M. Ramaswamy, Benjamin Wang, Jennifer A. Treadwell, and Edwin Gomez

Contemporary Outdoor Recreation Issues

- National Parks: Can the Old Dog Learn New Tricks? 69
James F. Palmer
- An Assessment of Customer Satisfaction at a U.S. Army Corps of Engineers Water-Based Recreation Area:
The Case of Lake Sakakawea, North Dakota 72
Robert C. Burns, Alan R. Graefe, and John P. Titre

Water Based Recreation

- A Comparative Analysis of Value Between Users and Non-Users of the White River. 79
Lesley G. Frymier and Christina Mitchell
- Michigan Recreational Boater Compliance With the Clean Vessel Act in Use of Pumpout and Dump Stations:
Relationships Between Attitudes, Knowledge, Socio-Demographic Factors and Behavior 82
Gail A. Vander Stoep
- Oyster River Watershed Study: A Summary Report 93
Elizabeth Hanratty, Robert A. Robertson, Edmund Jansen, and Mary Robertson

Forest Planning

- Collaborative Planning and the USDA Forest Service: Land Manager Perspectives 101
Steven W. Selin, Michael A. Schuett, and Deborah S. Carr

National Forest Planning: Assessing Public Preferences for Recreation Strategies	105
<i>Donald F. Dennis</i>	
Conceptual Relationships Between Impact Parameters of Social Carrying Capacity and ROS	109
<i>Namjo Kim and Alan R. Graefe</i>	

Featured Speech - Jay Beaman

Recreation Research Past, Future, and the Critical Relationships with Management That Influence the Direction and Success of Research: Views from "Outside" After More Than Two Decades in a Federal Agency	117
<i>Jay Beaman</i>	

Outdoor Recreation Motivations and Norms

Angler Segmentation Based on Motivational Scale Scores	127
<i>Chad P. Dawson</i>	
Where Did You Learn That? An Examination of Visitors' Historical Frame of Reference and the Relationship to Attitudes About Authenticity and Satisfaction	131
<i>John J. Confer, Jr., Deborah L. Kerstetter, Clarissa W. Confer, and Kelly S. Bricker</i>	
Specialized Participants and Their Environmental Attitudes: Re-examining the Role of "Traditional" and Psychological Specialization Dimensions	134
<i>Andrew J. Mowen, Daniel R. Williams, and Alan R. Graefe</i>	
Crowding Norms for the Carriage Roads of Acadia National Park: Alternative Measurement Approaches	139
<i>Robert E. Manning, William A. Valliere, and Charles Jacobi</i>	
Relationships Between Motivations and Recreation Activity Preferences Among Delaware State Park Visitors: An Exploratory Analysis	146
<i>John J. Confer, Jr., Hans G. Vogelsong, Alan R. Graefe, and David S. Solan</i>	

Recreation Resource Management

Updating the Recreation Opportunity Spectrum User Guide - Eastern Region Supplement	157
<i>Joel A. Lynch and Charles M. Nelson</i>	
Evaluating LAC on the Chilkoot Trail, Alaska	160
<i>John J. Lindsay</i>	
Perceptions of and Preferences for Security by Michigan State Forest Campground Campers	164
<i>Paul R. Johnson and Charles M. Nelson</i>	
Issues and Concerns Facing Managers and Owners of Public and Private Campgrounds in New Hampshire and Vermont	167
<i>Michael R. Sciabarrasi and Robert R. Robertson</i>	

Recreation Management Administration

Demarketing in Park and Recreation Management	173
<i>Christopher Groff</i>	
Issues in Developing Effective Measures for Decisions of Use/Attendance/Benefit Changes Over Time	178
<i>Jay Beaman and Ed Thomson</i>	
An Analysis of Vehicle Accidents Involving White Tailed Deer A Geographic Information Systems Case Study	187
<i>Christopher A. Mueller, David L. Wall, and Stuart P. Cottrell</i>	

Festivals and Travel

Motivations for Attending A Family-Centered, Non-Alcoholic Festival An Exploratory Study of A Regional First Night® Event	195
<i>Pamela H. Mowrer and Deborah L. Kerstetter</i>	
Crowding at an Art Festival A Replication and Extension of the Outdoor Recreation Crowding Model	198
<i>Hoon Lee, Deborah L. Kerstetter, Alan R. Graefe, and John J. Confer, Jr.</i>	
The Economic Impact of Conferences and Conventions	205
<i>Stephen C. Grado, Charles H. Strauss, and Bruce E. Lord</i>	

Outdoor Recreation Values

Adding Value to the Outdoor Recreation Experience	213
<i>Glen D. Alexander</i>	
Environmental Values, Environmental Ethics, and National Forest Management: An Empirical Study	216
<i>Robert E. Manning, William A. Valliere, and Ben Minter</i>	
Value Differences Between Consumptive and Nonconsumptive Recreationists	223
<i>Rod Zwick and David S. Solan</i>	
Perceived Constraints on Trapping Among Trappers in Six Northeastern States	227
<i>Tammy J. Larkin and Rod Zwick</i>	

Planning for the Nineties

Resource Based Voluntary Organizations in New Hampshire: Preliminary Investigations of Board Members	233
<i>Laura Pfister and Robert A. Robertson</i>	
A Social Science Research Planning Process for New Hampshire's Coastal Zone: A Working Paper	238
<i>Robert A. Robertson</i>	
Urban Greenway Planning: Tannery Brook, Holyoke, MA	244
<i>Stephanie B. Kelly and Barbara Moser</i>	

Economic and Tourism Issues

A Modified Method for Measuring the Economic Impact of Tourism	249
<i>Stephen D. Reiling, Matthew J. Kotchen, and Jeffrey Michael</i>	
A Triangulation of Economic Impact Assessments and Implications	252
<i>Philip Wang and Rob Bixler</i>	
Economic Impact of Travel and Tourism in Southwestern Pennsylvania	256
<i>Charles H. Strauss, Bruce E. Lord, and Stephen C. Grado</i>	
The Theoretical Analysis of Travel and Tourism Demand	261
<i>Kuan-Chou Chen</i>	
The New England Travel Market: 1980 to 1994 - An Update	264
<i>Rodney B. Warnick</i>	
Understanding the Market for Parks Canada Branded Souvenirs and Gifts	270
<i>Fernando Mata and Dick Stanley</i>	
Diary of a South Pacific Journey to Tahiti: An Exploratory Assessment of Trip Satisfaction	275
<i>Stuart P. Cottrell and Kelly A. Bricker</i>	
County Level Travel and Tourism Impacts - Contrasting Nine Pennsylvania Counties	279
<i>Bruce E. Lord, Charles H. Strauss, and Stephen C. Grado</i>	

1996 Southeastern Recreation Research Symposium Papers

Interstate Impact of Sportfishing	285
<i>Rebecca J. Travnichak and Howard A. Clonts</i>	
Core-and-Buffer Management for Ecotourism in South Carolina's ACE Basin	293
<i>Robert L. Janiske and Peter G. Chirico</i>	
National Survey on Recreation and the Environment: Biasing Effects of Including a Participation Screening Question	296
<i>H. Ken Cordell, Burt R. Lewis, Barbara L. McDonald, and Morgan Miles</i>	
A Conceptualization of the Tourism Entrepreneurial Process	301
<i>Khoon Y. Koh</i>	

Index of Authors	309
----------------------------	-----

Conference Papers Not Submitted to the 1996 Proceedings

If you are interested in getting additional information about any of the papers that were presented at the 1996 NERR Symposium, but were not submitted for publication, please contact the authors directly. A list of those papers below will assist you in identifying the authors.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Computer Simulation for Recreation Management on the Carriage Roads of Acadia National Park *Ben Wang and Robert Manning* (University of Vermont)

Hands on or Hands Off? Disgust Sensitivity and Preferences for Environmental Education Activities. *Rob Bixler* (Cleveland Metroparks) *and Myron Floyd* (Texas A&M University)

Professional Preparations for the Management of Festival Events *J. Zanhar* (City College, Ottawa, Canada) *and J. Kurtzman* (Sports Tourism International Council, Ottawa, Canada)

Historical Perspectives of Festival Events. *J. Zanhar* (City College, Ottawa, Canada) *and J. Kurtzman* (Sports Tourism International Council, Ottawa, Canada)

The Concept of Value in Outdoor Recreation. *Tom More* (USDA Forest Service, Northeastern Forest Experiment Station)

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

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

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

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

Proceedings of the 1996 Northeastern Recreation Research Symposium

March 31 - April 2, 1996



On Lake George in Bolton Landing, New York

Compiled and Edited by:

Walter F. Kuentzel
School of Natural Resources
University of Vermont

Sponsors:

Lyndon State College
Mansfield University
Michigan State University
New Hampshire Division of Parks & Recreation
Pennsylvania State University
Society of American Foresters, Recreation Working Group
SUNY College of Environmental Science & Forestry
University of Massachusetts
University of New Hampshire
University of Vermont
University of Waterloo
USDA Forest Service, Northeastern Forest Experiment Station
Western Illinois University
Westfield State College
West Virginia University

**Planning
For The
Nineties**

RESOURCE-BASED VOLUNTARY

ORGANIZATIONS IN NEW HAMPSHIRE:

PRELIMINARY INVESTIGATIONS OF BOARD

MEMBERS

Laura Pfister

Graduate Student, University of New Hampshire, Department of Resource Economics and Development, 309 James Hall, 56 College Road, Durham, NH 03824.

Rob Robertson

Assistant Professor, University of New Hampshire, Department of Resource Economics and Development, 309 James Hall, 56 College Road, Durham, NH 03824.

Abstract: This study provides preliminary data for developing university-based educational and training programs and to help voluntary organizations in improving their effectiveness and meeting their organizational objectives. This paper reports on the perceptions, attitudes, motivations and intentions of board members toward their organization within a sampling of resource-based voluntary organizations in New Hampshire. Preliminary results show that financial and human resources are two critical issues facing this sample and are target areas for potential educational programs. Board members express a willingness to participate in educational programs, a majority prefer formats that are easily accessible or require low time commitments

Introduction

Voluntary organizations are generally considered to make important contributions to American society. Baumgartner and Walker (1988) have estimated that over one-third of all Americans belong to voluntary organizations and that most people are involved in some voluntary activities during a lifetime. Given this widespread public involvement, developing the capacity and success of these groups becomes an important research consideration. This is particularly true in present times of state and federal government downsizing. More specifically, there is the issue of how to improve the ability of voluntary organizations to meet objectives and goals that will increase their overall contributions and positive impacts upon local communities and regions.

The targets of this study are voluntary organizations in New Hampshire whose missions focus on economic development, natural resources and the environment, historical/cultural resources, recreation and community development. Specifically, the purpose of this study is to target attitudes, perceptions and behaviors of individual board members within these organizations.

The overriding goal in examining these groups is to develop a more refined picture of what role the university community can

play in building effectiveness of voluntary organizations. There are two specific goals in this process. First, data from this study will provide a basis for building education programs and assistance programs that target key needs of voluntary organizations. Second, this information will provide the groundwork for building a database of voluntary organizations to guide the University of New Hampshire's (UNH) and UNH's Agriculture Experiment Station involvement.

Rationale

Voluntary organizations are an important sector to study given the contributions they make to the interests and concerns they represent. For instance, they can enhance community well-being and create a centralized establishment for common interests and concerns. In recent years, these organizations have become increasingly important components of the service sector due to the declining funds received by the public sector (Torres, Zey & McIntosh, 1991). Because of this, more research is needed to understand these groups and their goals and objectives better.

One key aspect of any organization is its leadership. An organization's leadership provides the foundation for setting and achieving goals. Boards are crucial players of an organization's leadership, and are central to both private and public sectors (Houle, 1961, Carver, 1990). Improving board effectiveness is a fundamental method for improving organizational effectiveness (Holland, 1991, Holland, Leslie & Holzhalb, 1993). Because of this, it becomes important to consider individual board member perceptions and attitudes to characterize the concerns better, issues and personal reasons for membership. On a more aggregate level, this can be used to examine commonalities between board members in different organizations to provide a basis for building effectiveness and potential partnerships. Specifically, the questions addressed in this paper include:

- What are some of the most common organizational activities of the sample of organizations, and what activities are perceived as the most effectively accomplished?
- What are some of the most important issues and concerns facing board members?
- Why do board members belong to the organization?
- What are the most important barriers to group problem solving?
- Are board members willing to participate in board education programs?
- If so, what topics and educational formats are most popular?
- What other potential affiliations exist?

Methods

In the fall of 1995, more than 700 resource-based voluntary organizations were identified and invited to participate in the study. Organizations consisted of those related to economic development, community resources, historical/cultural resources, recreation and the environment. This list was derived from a 1991 State of New Hampshire (State Department) publication of voluntary organizations. This resource contains approximately 3000 organizations in all, with names and addresses of each registered group in the state.

An introductory letter was sent to the board president or each selected group, describing the purpose and main objectives of the study. A postage-paid postcard was included with the letter to provide an opportunity to participate. The post card consisted of questions concerning participation, the number of questionnaires needed and the date of the next board meeting. This process was intended to single out organizations interested in taking part. Based upon this, questionnaires have been mailed to board members from 120 organizations. As of May 1996, response consisted of 281 questionnaires representing 89 organizations.

Questionnaire Design

The survey instrument itself is seven pages, containing nine different components. These include sections on activities and effectiveness, issues and concerns, reasons for membership, community and state priorities, barriers to group problem solving, education/training needs and educational formats, organizational affiliations, general opinions toward New Hampshire industries and demographic characteristics. Listed below are detailed descriptions of each component examined in this paper.

Activities and Effectiveness contain a list of 23 variables (potential activities) addressed both as to level of activity and level of effectiveness. Level of activity is on a scale of 1 to 5, ranging from *Not an Issue* (in the state) to *Very Active*. Level of effectiveness is on a scale of 1 to 4, ranging from *Not Effective* to *Very Effective*.

Issues and Concerns provide a mechanism to better understand board member perceptions and attitudes. This section contains a list of 19 variables on a scale of 1 to 5 ranging from *Strongly Disagree* to *Strongly Agree*. Variables range from organization-specific statements, such as contributions of new members, to general issues such as contributions from tourism to the state. An open-ended section also is asking the top three issues and concerns facing their organization.

Reasons for Membership provide context to various reasons for membership, and provide a better understanding of how members are driven to their leadership position. This section contains a list of 22 variables on a scale of 1 to 5 ranging from *Not a Reason* to *Extremely Important*. Potential reasons include personal gains and social opportunities to more altruistic measures such as contributing skills as part of their civic duty.

Barriers to Group Problem Solving characterize why organizations are not as effective as possible. This section includes 14 variables on a scale from 1 to 5, ranging from *Not a Reason* to *Extremely Important*. Potential reasons include organizational problems such as financial resources to interpersonal issues such as biases and prejudice.

Education/Training Needs and Educational Formats has two distinct question areas. The first deals with educational and training needs and demand, and the second deals with potential educational formats. The purpose is to understand past experience and willingness to participate better. The education and training needs section asks both the number and type of past educational sessions and asks both the willingness to attend an educational session and what types of educational needs are most needed. The second section deals with potential educational

formats. This is characterized through a list of 16 variables on a scale of 1 to 4 ranging from *No*, *Probably No*, *Probably Yes* and *Yes*. Statements range from low to high time commitments (i.e., pamphlets, credit courses at the university).

Organizational Affiliations provides an initial look at what other groups or organizations board members belong to or support (within the last 12 months). This section is open-ended with a yes/no response for whether their affiliations are as a leader, active member or inactive member/contributor.

Demographic Characteristics includes general questions to characterize each individual respondent better. Examples include who or what they represent as a board member, years with organization/as a leader, education and time spent each month on duties relating to board functions.

Results

The following represents a summary of the major findings of the project. On average respondents are 53 years old with approximately 55 percent being male, 45 percent female. The group is well educated with approximately 69 percent having at least a Bachelors degree (B.A. or B.S.). Board members tend to represent their own interests (65 percent) rather than that of a government agency or business, and spend a median time of 5 hours per month on board-related duties.

Level of Activity / Level of Effectiveness

This section provides a glimpse into the most popular and most effectively executed activities within this set of organizations. As for level of activity, the most common topics/activities listed as 'most active' include protection of natural resources, promoting the community's historic character' and 'educational programs for membership'. Activities within the 'active' category include image of the organization or association, educational programs for membership and recruitment of new members. Activities listed as 'somewhat active' include image of community/state to outsiders and again, recruitment of new members, making this an important component of most organizations. Those activities considered as 'not active' include improving relationships with financial institutions, development of retirement communities and capital improvement planning. Beyond these indications of organizational activity level, several topics were listed as 'not a topic' of concern in New Hampshire. The top three 'not a topic' responses include transportation issues, development of retirement communities and minimizing regulations on the business community.

Table 1 below, summarizes these responses by percentage response in each category. This component highlights the importance of maintaining the organization through membership retention, improvements and recruitment. The least important topics include those that are somewhat more focused on an issue area, such as transportation or retirement.

The level of effectiveness, based upon the same list of activities is also measured in the questionnaire. Table 2, below, summarizes the level of perceived organizational effectiveness by four categories of very effective, effective, somewhat effective and not effective. Overall, promoting the community's historic character, open space protection and educational programs for membership

are considered most effectively undertaken according to those who responded. The least effective topics include transportation, retirement issues and minimizing regulations. Some moderately to effective issues include image of the community/state to outsiders, improving relationships within the business community and industry recruitment, expansion or retention.

Table 1. Level of organizational activity.

Level of Activity	
<i>“Very Active”</i>	
Protection of natural resources	(27.4%)
Educational programs for membership	(26.9%)
Promoting the community’s historic character	(23.6%)
<i>“Active”</i>	
Image of organization or association	(46.8%)
Recruitment of new members	(40.2%)
Educational programs for membership	(35.2%)
<i>“Somewhat Active”</i>	
Image of community/state to outsiders	(33.8%)
Improving relationships within the business community	(32.7%)
Recruitment of new members	(31.0%)
<i>“Not Active”</i>	
Development of retirement communities	(30.5%)
Improving relationships with financial institutions	(27.2%)
Capital improvement planning	(25.2%)
<i>“Not a Topic”</i>	
Development of retirement communities	(60.2%)
Minimizing regulations on business community	(50.8%)
Transportation issues	(45.1%)

Table 2. Level of perceived effectiveness.

Level of Effectiveness	
<i>“Very Effective”</i>	
Open space protections	(21.8%)
Educational programs for membership	(21.1%)
Promoting the community’s historic character	(21.1%)
<i>“Effective”</i>	
Image of organization or association	(48.4%)
Image of community/state to outsiders	(41.7%)
Educational programs for membership	(40.2%)
<i>“Somewhat Effective”</i>	
Improving relationships within business community	(46.9%)
Industry recruitment, expansion or retention	(46.7%)
Image of community/state to outsiders	(46.6%)
<i>“Not Effective”</i>	
Development of retirement communities	(69.5%)
Minimizing regulations on business community	(40.2%)
Transportation issues	(37.3%)

The total number of responses (N) for each variable in this section varies according to organization, resulting in widely varying total response to each topic. Therefore, the resulting level of effectiveness for each variable is weighted by the sample. For instance, since many respondents are members of historical or cultural organizations, the percentage who listed ‘promoting the community’s historic character’ is relatively high. Moreover, other organizations, such as those that are environmentally or business related, are not active in historical related activities, thus leaving the corresponding level of effectiveness blank. Beyond this, if a board member says that the issue is ‘not a topic’ in the activities section, they subsequently are not included in the effectiveness analysis. For example, ‘transportation issues’ and ‘development of retirement communities’ both have a high frequency of responses in this ‘not a topic’ category. Because of this, there is a correspondingly low total (N) in the effectiveness section for both variables.

Overall, there is a great deal of overlap between level of activity and level of effectiveness throughout the list of 23 variables. Based upon responses from Table 1 and Table 2, the least important activities correspond closely with the least effective activities. Likewise there are some similarities between the more important activities and more effective activities. Image of both the organization and community and educational programs are high on both lists. One notable difference is in recruitment of new members. Approximately 60 percent are active or very active in recruitment, however only 43 percent consider their organizations effective or very effective in this endeavor.

General Issues and Concerns

Answers to issues and concerns provide a framework from which to characterize respondents better. Those answers relating to each respondent’s particular organization can provide a better understanding of their perceptions and attitudes relating to service as a board member. Some key issues contained within this section include the following:

- 67.5% of respondents agree that their organization should form partnerships with other organizations
- 97.1% plan to remain as a member of the organization next year
- 86.7% plan to remain in a leadership position
- 10.5% believe their organization is *not* very effective compared with other organizations

These figures suggest that respondents have a positive opinion toward their respective organization and commit to maintaining their membership, and most likely their leadership position.

The top three critical issues or “most important challenges” facing the organization deal largely with human and financial resources. Money (lack of) and membership concerns (both quality and quantity of members) are the most widely listed organizational concerns. A third subject area, educational programs for the public, is also of concern, though to a much lesser extent than money or membership.

Reasons for Membership

This section details potential reasons for membership, particularly their reasons for service on the board. Table 3 provides a breakdown of the top three responses in the aggregated categories of extremely/very important, not a reason and finally, somewhat / moderately important. Overall, the rationale behind membership is highlighted by what the individual can contribute or give back to the organization / community rather than what benefits accrue through membership. Beyond this altruistic basis, social benefits (i.e., building friendships or acquaintances) are moderately important and should be considered as part of the total explanation behind membership. Based upon this study, factors surrounding personal or financial gains and pressure from outside forces (family or friends) appear as rather unimportant to the overall picture.

Table 3. Perceptions toward reasons for membership.

Reasons for Membership	
<i>"Very or Extremely Important"</i>	
To support this organization's efforts	(84.7%)
To contribute skills to the board	(55.8%)
To encourage long-range planning	(49.5%)
<i>"Somewhat or Moderately Important"</i>	
To meet new people	(55.9%)
To enjoy the social opportunities	(55.2%)
To get acquainted with people	(54.0%)
<i>"Not a Reason"</i>	
To improve the profitability of my business	(76.0%)
To satisfy family or friends	(68.5%)
To enjoy local recognition and prestige	(66.3%)

Barriers to Group Problem Solving

This component centers around identifying key problem areas faced within an organization and its leadership. The purpose in this is to define potential educational and training programs better. Listed in Table 4 is a record of problem areas divided by importance. Lack of financial and human resources is by far the most important issue listed by respondents with lack of group participation and lack of strategy both a distant second. The least important factors involve interpersonal conflicts such as biases, sexism and prejudice and domination by one person or faction. Moderately important factors include lack of knowledge and procedural problems such as solving the problem before understanding of the issue.

Education and Training Needs

One of the clearest indicators of interest is in the responses to education and training needs. Less than 37 percent of respondents have had any formal education or training relating to their responsibilities as a member of the board in the last three years. However, almost 80 percent are willing to attend a training session that would help with their work for the board (see Figure 1). The most popular or called-for subject is in fundraising or grant writing. Similar to prior statements discussed in issue/concerns and barriers to problem solving, financial resources are again in the forefront as central problems/issue areas.

Table 4. Perceptions of barriers to group problem solving.

Barriers to Group Problem Solving	
<i>"Very or Extremely Important"</i>	
Lack of Resources (financial/ human)	(42.6%)
Lack of Group Participation	(23.3%)
Lack of a strategy for Problem solving	(20.7%)
<i>"Somewhat or Moderately Important"</i>	
Tendency to focus on solution before defining problem	(54.2%)
Unrealistic expectations of the process	(53.4%)
An inadequate knowledge of issues	(52.3%)
<i>"Not a Reason"</i>	
Existence of biases, sexism, prejudice	(78%)
Lack of trust among group members	(73.3%)
Dominance of group by one person/faction	(52%)

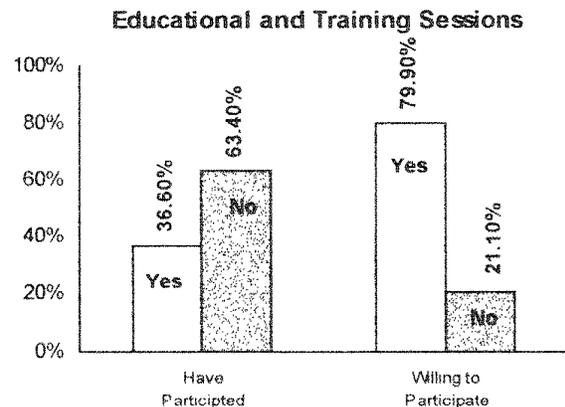


Figure 1. Past participation and willingness to use education or training sessions relating to responsibilities as a board member.

Educational Formats

Beyond the willingness to participate in education or training is the need to understand what types of formats are most likely to be attended or supported. Overall, the most popular educational types are those that do not take much personal time or effort. Pamphlets/books, videos and guest lectures are the most well-received choices. Among the least popular choices are multiple day workshops and university courses (See Table 5). Given this trend, training initiatives should consider limited willingness (e.g., time limitations) when developing programs or materials.

Affiliations

This section provides an initial look at the number and type of each respondent's other organizational affiliations. In a preliminary examination, 230 of 281 respondents listed at least one other group affiliation. Typical organizational types listed include service organizations / charities, town level organizations, schools or youth groups, natural resource organizations and churches. This information is important because it indicates that members are a part of other organizations and provides a potential basis for partnership building and collaboration.

Table 5 Willingness to use/participate in different educational formats.

Educational Formats	
<i>"Yes or Probably Yes"</i>	
Guest expert/lecture	(89.9%)
10 minute video for use at a meeting	(87.3%)
Pamphlets/Books	(83.7%)
30 minute video for home use	(82.3%)
<i>"No or Probably No"</i>	
Credit course at university	(79.2%)
Multiple evening sessions	(70.5%)
Multiple day workshop - weekend	(66.5%)
Night classes at the university	(66.2%)

General Considerations

This study is an initial attempt to reach voluntary organizations within the state. The general goal is to create a clearer picture of how the university can play a role in building educational and training programs to address their major needs. The questionnaire design provides a mechanism to identify and measure these needs. In implementation it becomes clear that voluntary organizations are a somewhat difficult group to reach. The purpose of the initial mailing was to identify interested groups, presumably those who would be most willing to use educational programs. However, even in singling out those who took the initiative to indicate a willingness to participate, there is still a low level of response among board members.

Clearly, board members are a busy group that already volunteer time and effort for the good of the organization. Low responses can partially be attributed to lack of time or the inability to effectively explain the purpose and usefulness of the research. However based upon the responses received, a number of generalities can be formed.

- Overall, majority are willing to receive training relating to their service on the board
- However, this majority still does not want to spend much time in the educational process
- Some general educational needs appear common throughout organizations. These include lack of resources and membership participation and recruitment.
- Universities could address this limitation by focusing on the following topics in producing educational material: Fundraising / Grant writing; Recruiting members; Improving participation of current membership; and Developing strategies for problem solving and goal setting.

Further Research

One research need is in developing a better understanding of current organizational-based affiliations or partnerships.

Specifically, questions might center around types of organizations and the benefits from collaboration. The goal is to broaden the depth of knowledge concerning shared needs and resources

Another avenue to explore is in the differences and similarities between types of organizations. For instance, do different types of groups, such as economic development organizations and environmental organizations, have similar issues and problems or are there any distinct issues that tend to center around different organization types. This type of information is useful in more clearly defining what types of educational programs and/or collaboration efforts are best suited for different organizations.

Finally, work can be done to examine the attitude/behavior consistency between willingness to participate in educational programs and willingness to use various types of educational formats. A majority of board members have indicated that they are willing to participate in some educational programs. However, it is an important to understand how statements of willingness translate into actual intentions to participate in educational programs as part of a board member's function to become more effective. This type of information will provide a basis for exploring the link between individual attitudes or motivations and behavioral intentions toward improving organizational effectiveness.

Literature Cited

- Baumgartner, F., Walker, J.L. 1988. Survey Research and Membership in Voluntary Associations. *American Journal of Political Science*. 32: 908-928.
- Carver, John. 1990. *Boards that Make a Difference. A New Design for Leadership in Nonprofit and Public Organizations*. San Francisco. Jossey - Bass Publishers.
- Holland, Thomas, P. 1991. Self Assessment by Nonprofit Boards. *Nonprofit Management & Leadership*. 2: 25-36.
- Holland, T. P.; Leslie, D.; Holzhalb C. 1993. Culture and Change in Nonprofit Boards. *Nonprofit Management & Leadership*. 4: 141-155.
- Houle, Cyril. O. 1960. *The Effective Board*. New York: Association Press.
- Houle, Cyril. O. 1991. The Structure of the Board. *The Grantsmanship Center Whole Nonprofit Catalog*. 24-29.
- Torres, Cruz C.; Zey, M.; McIntosh, W. A. 1991. Effectiveness in Voluntary Organizations: An Empirical Assessment. *Sociological Focus*. 24: 157-174.

A SOCIAL SCIENCE RESEARCH PLANNING PROCESS FOR NEW HAMPSHIRE'S COASTAL ZONE: A WORKING PAPER

Robert A. Robertson

Assistant Professor, University of New Hampshire, Department of Resource Economics and Development, 309 James Hall, Durham, NH 03824.

Abstract: This paper reports the results from the application of the social science research planning process to the New Hampshire Coastal Zone (NHCZ). The paper identifies, lists and prioritizes critical coastal management issues and social science research needs associated with these issues and the development of the NHCZ.

Introduction

Coastal and tidal waters are important to New Hampshire. These waters and the lands adjacent to these waters, include some of the state's most valuable assets (e.g., important agricultural soils, woodlands, fish and wildlife habitats, tidal marshes, natural areas, urban waterfronts, historic sites, transportation rights-of-way, economic development projects, housing sites, tourist attractions and recreation areas). Management of New Hampshire's valuable coastal resources takes place in an environment of continuous social and ecological change. These changes have posed a number of challenges to the productivity and integrity of the coastal system and processes. A vast majority of these challenges facing the coastal system originate directly or indirectly from human activity.

Coastal resource managers, policy makers, planners and interest groups have responded to the challenges facing coastal and estuarine systems by sponsoring a systematic program of scientific research. This research program has identified and classified the biophysical components of coastal systems, which in turn, has provided a better understanding of the geologic, hydrologic, biological, and ecological processes associated with coastal systems. Similar efforts, however, have not been devoted to sponsoring an organized program of social science research that allows for an understanding of the various social, cultural, and political components of coastal and estuarine systems and their relationships to coastal processes, resources and economic development policies. In response to this information void, the University of New Hampshire's Department of Resource Economics and Development, with grant support from the University of Maine and New Hampshire Sea Grant College program, completed a preliminary Social Science Research Plan for New Hampshire's Coastal Zone.

Social Science Research Plan: Defined

A Social Science Research Plan (SSRP) is an organized, written strategy for acquiring social science information that will assist in the optimal management of coastal and estuarine resources. To be useful, social science must be organized in advance to meet the needs of managers, planners and decision makers (Machlis and

Krumpe, 1984). A well-planned program of applied social science can assist decision makers, managers and researchers in identifying and resolving many of the challenges facing the NHCZ. This research can be defined as research concerned with the management of the human actions and interactions within the context of a specific natural resource setting (Parker, et. al., 1992).

Rationale

Natural resource management has been defined as the interactions between human populations, socio-political organizations, culture, and the biophysical environment (Field, 1987). In recent years, social science research has made significant advancements as an applied discipline relevant to the management of natural resource systems. This has occurred because biologists, ecologists, and hydrologists have increasingly grasped a harsh disciplinary reality: solutions to biological and environmental problems lie in social, cultural and economic systems (Machlis, 1992). In other words, technical solutions to many biological and environmental problems within coastal and estuarine systems are available; but social, cultural and economic obstacles impede their implementation.

The Social Science Research Plan can serve as an advisory document to insure that high priority research is given attention. A planned program of applied social science research can help guarantee that the right information is available at the right time. The resources available for social science research are too scarce and precious to be used in an unplanned way. Staff time, social science expertise, cooperation with other agencies, funds and facilities must be carefully managed throughout the coastal zone. A Social Science Research Plan (SSRP) will minimize costs, increase effectiveness, and assure that results are useful in serving management and policy needs (Machlis, 1991).

Overview of The SSRP

The Social Science Research Plan will

- Identify agencies and organizations within the New Hampshire Coastal Zone (NHCZ) that are potential sponsors and/or users of social science research;
- Review existing social science research completed by the agencies and organizations responsible for the management and/or development of the NHCZ, to include a section that summarizes the findings by population studied, identifies works in progress, and examines the strengths and weaknesses of the social science research;
- Identify and prioritize the critical coastal management issues and social science research needs associated with these issues and the development of the NHCZ.

Limitations of The Plan

The plan presented in this working paper considered social science as those academic disciplines that apply the scientific method to social issues. Social science from this perspective includes economics, sociology, anthropology, geography, psychology, human ecology, community development, recreation management, tourism, and forest management, among others.

This working paper did not attempt to identify the social science research needs associated with New Hampshire's marine fishery resources, only those social science research needs associated with management and development of coastal resources were considered. This plan should be considered as an advisory document and should not preclude the completion of a more comprehensive Social Science Research Plan for the NHCZ.

Description of the New Hampshire Coastal Zone

New Hampshire's Coastal Zone includes three distinct areas: the Atlantic seacoast (i.e., 18 miles of white, sandy beach and rocky shores), Portsmouth Harbor and Piscataqua River (i.e., New Hampshire's only ocean port terminal), and the tidal rivers and estuaries. The Coastal zone also includes the Great Bay Estuary and the Hampton Scabrook Estuary. The Great Bay Estuary was designated as a National Estuarine Research Reserve by the U.S. Department of Commerce in 1989. The Reserve consists of 4,471 acres of tidal waters and mudflats and approximately 48 miles of shoreline (includes the Great Bay National Wildlife Refuge). The Hampton Scabrook Estuary contains approximately 6,600 acres of tidal wetlands and the largest expanse of saltmarsh in New Hampshire's Coastal Zone.

Agencies and Organizations

There are more than 130 agencies and organizations that are involved with or responsible for planning for the use and protection of the market and nonmarket values of New Hampshire's coastal resources (see Figure 1.).

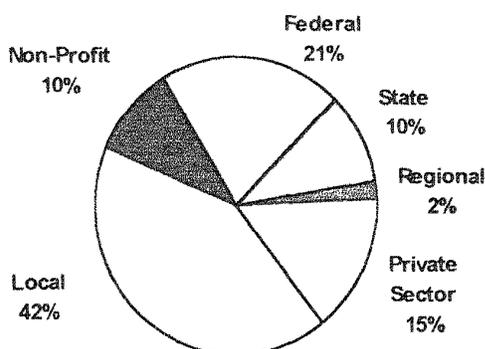


Figure 1: Organizations with responsibility for the management and/or development for the NHCZ.

These organizations, agencies, groups and individuals plan for and take actions directed toward the enhancement, development and protection of coastal resources.

Agency and Interest Group Involvement

This section will identify and provide examples of some of the agencies/organizations active in the coastal zone at each of the following levels: federal, state, and local governments, regional organizations, private sector industries, and nonprofit environmental and economic development groups.

● **Federal Government.** At the federal level, there are more than forty-three departments, agencies and programs that have management or policy responsibilities. Those most active in the NHCZ include the National Oceanic and Atmospheric Administration; the U.S. Environmental Protection Agency (USEPA); the U.S. Army Corps of Engineers; the Federal Emergency Management Agency; Department of Defense (Portsmouth Naval Shipyard), the Department of Transportation (U.S. Coast Guard), the Department of Energy, and U.S. Fish and Wildlife Service (Great Bay National Wildlife Refuge).

● **State Government.** At the state level, there are more than twenty departments, divisions, or programs responsible for the management and/or development of the NHCZ. Those most actively involved include the New Hampshire Coastal Program, the Division of Parks and Recreation, the Department of Fish and Wildlife Resources, the Water Supply and Pollution Control Division, the Wetlands Bureau, the Sea Coast Science Center, and UNH's Jackson Lab and Cooperative Extension.

● **Local Government.** At the local level there are more than eighty-five governmental organizations that are responsible for making decisions that affect the NHCZ. There are seventeen communities that include a portion of the NHCZ within their administrative boundaries. Each community has a number of local government agencies, such as the Boards of Selectmen, Mayors and Town Councils, Planning Boards and Departments, and Conservation Commissions. Boards of Selectman are responsible for the management and administration of local community budgets and town services, facilities and properties; planning boards or departments are responsible for developing and administering land use regulations and the master planning process; and conservation boards make recommendations to planning boards and municipal governments on issues associated with the management, development, and preservation of coastal resources.

● **Regional Organizations.** There are at least four regional organizations responsible for planning for the management and development of New Hampshire's Coastal Resources. Those agencies most active in the NHCZ are the Strafford Regional Planning Commission, Rockingham Planning Commission, Strafford County Conservation District, and Rockingham County Conservation District.

● **Non-Profits.** There are more than twenty nonprofit organizations with interest in various facets of coastal resource management within the NHCZ. Those organizations most active in the coastal zone include the Audubon Society of New Hampshire; New Hampshire Association of Conservation Commissions; the Nature Conservancy; Friends of Odiome Point; Friends of Wentworth By the Sea; Portsmouth Advocates, the New Hampshire Municipal Association; Great Bay Estuarine System and Conservation Trust; Lamprey River Watershed Association; Society for the Protection of New Hampshire Forests; Nature Conservancy; and New Hampshire Trust for Public Lands.

● **Private Sector.** Many different businesses have a vested interest in the social and natural resources of the NHCZ. These business include the Business and Industry Association; New

Hampshire Charterboat Operators; Isle of the Shoals Steamship Company; Sea Coast Council for Tourism; Public Service of New Hampshire; Sprague Energy; Granite State Minerals; Portsmouth; and Hampton Beach Chamber of Commerce. These businesses and professional associations function under a wide variety of mandates dependent upon the focus of the specific industry involved and their link to coastal resources.

Review of Existing Research

This section reviews the existing social science research relevant to the NHCZ. The scope of the review is limited to available social science reports, planning documents and articles that deal directly with management, development and planning activities within the NHCZ.

Methods Used to Conduct Review

A systematic search was made to locate existing research reports within the coastal zone to include those related to the human dimensions of natural and social systems. The scope of the review was limited to available social science reports and articles that deal directly with New Hampshire's coastal and estuarine system. A systematic review of reports held at the New Hampshire Office of State Planning (Coastal Program), the Regional Planning Commissions (Strafford and Rockingham), New Hampshire Division of Parks and Recreation and the New Hampshire Fish and Game Department was completed. Bibliographies of the identified reports were searched for related material as well as Annual Agency Reports. Finally, contact was made with representatives of a selection of local and national not-for-profit organizations, local/regional planning and economic development organizations, state and federal agencies, and others to find out if they had knowledge of additional social science research projects or publications.

- **Existing Research.** A total of 35 social science reports were identified in the review. The earliest report identified was published in 1980. Of the 35 reports, 24 have been published since 1990. Thirty-five different organizations provided support for the social science research projects identified. Local municipalities and regional planning commissions supported fourteen of the research projects identified, Maine/New Hampshire Sea Grant supported seven and the New Hampshire Coastal Program was the primary sponsor of four of the research projects.

- **Research Methods.** Several research methods have been employed within the coastal zone. Figure 2 shows the methodology utilized in the social science research projects identified in the literature review.

A majority of studies identified employed the use of questionnaires. A plurality of these studies utilized telephone surveys or mail questionnaires. Response rates to the studies varied from 4% to 74% (e.g., a community study distributed 3,432 questionnaires by mail and 152 completed questionnaires were returned).

The quality of the research design of the studies varied considerably. The telephone surveys, for the most part, used state-of-the-art telephone interviewing systems that produce very reliable results. However, in one case, the data collected from a

random telephone survey were combined with questionnaires collected from a self-selected sample (i.e., the questionnaire was published in a local newspaper). Other techniques included focus groups or brainstorming sessions with people knowledgeable about specific coastal issues and analysis of local economic and census data.

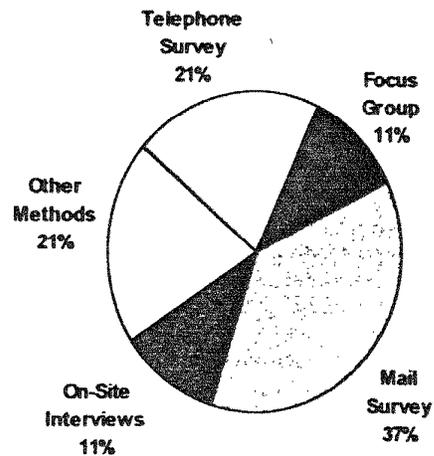


Figure 2: Research methods used to collect social science data within the NHCZ.

- **Strengths and Weaknesses of the Research.** The available social science research relevant to the NHCZ reflects the lack of prior research planning. Many different user groups have been studied, others ignored, and the data have not always been useful in serving the management needs of the NHCZ. One strength is the many different agencies and organizations who have sponsored social science research in the coastal zone—this shows that a number of agencies and organizations value social science research enough to provide fiscal and administrative support for these research efforts. Another strength is the diversity of the social science research—it provides a baseline information that can be used to monitor changes in uses and developmental preferences of the NHCZ.

The concentration of studies of coastal communities is both a strength and weakness. The results from the coastal community studies suggest some general trends, and data have value for the community planning process and for targeting education programs. A major limitation of these research projects is that most of the questionnaires had only a few questions with relevance to the coastal system. Likewise, the data were collected using different methods, at different times, and using different questions and measures. This problem prevents the comparison of management and coastal developmental preferences across the communities and does not allow the results of these studies to be generalizable to the population of the NHCZ.

There are a number of voids in the social science literature. Most noticeable is the lack of data on participation rates and trends in various recreation activities within the coastal zone for residents

of coastal communities and the State of New Hampshire. The literature also lacks economic impact data for a variety of user groups. Vaske and Donnelly (1992) and the Donnelly and others (1992) studies of recreation and commercial fishermen are an excellent starting point, but similar studies should be completed for bird watchers, pleasure boaters, excursionists, and visitors to specific attractions, to name a few.

Finally, there have not been any studies that document the many interdependencies between the protection of coastal resources and the economic benefits derived from those resources. In summary, the social science research completed within the coastal zone was not completed in a systematic fashion and there is a need for more diversity in the units of analysis that are examined.

Critical Issues and Social Science Research Needs

The critical issues and specific social science research projects were identified through personal interviews with individuals with responsibility for the management and/or development of the coastal resources. A total of twenty-two interviews were completed with a broad cross-section of agencies and organizations, to include representatives from New Hampshire Division of Parks and Recreation, Sea Coast Science Center, New Hampshire Audubon, Strafford Regional Planning, Rockingham Regional Planning, US Fish and Wildlife Service, New Hampshire Department of Environmental Services, Office of State Planning, New Hampshire Coastal Program, Hampton Beach Chamber of Commerce, Sea Coast Council on Tourism, Portsmouth Advocates, and others.

Critical Issues

The literature review and interviews with agency staff allowed for the identification of a number of critical issues facing the management and/or development of the NHCZ. Each of the key informants was asked to respond to the following question: "What are the most important issues facing the management of the NHCZ?". This section includes a brief summary of some of the issues identified by the key informants.

Aquaculture: A lack of a comprehensive state policy that guides or controls the development of shell or finfish aquaculture within the New Hampshire tidal areas. State policy toward marine aquaculture is most often a haphazard response to external demands and is primarily reactive. Aquaculture also represents a threat to water quality and the aesthetics of tidal and coastal areas.

Coordination: There are scores of agencies, departments, organizations, divisions and other forms of bureaucracy with regulatory authority over the NHCZ. Lack of coordination and communication between various units and levels of government that have some degree of control over coastal resources and land uses represents a serious threat to the planning and management of the NHCZ. For example, local and regional plans are not completed in conjunction with the management plans for state park areas in the coastal zone.

Economic Development: Use and over development within the coastal zone. Need for an integrated plan that guides coastal development. There are many competing uses that are never addressed in the planning process. For example, residential

developments out-compete more legitimate and traditional uses of the NHCZ.

Education: Environmental conservation and economic development require an understanding of coastal systems and processes. An integrated regional environmental plan must include research and an education/information component that build public awareness and promotes environmental behavior for residents and visitors to the NHCZ. Education must be improved at all levels and for all relevant populations in order to produce a more informed citizenry that can responsibly address environmental problems. Initiatives should enhance environmental awareness and education, as well as to promote waste reduction and the development of environmentally sound industries. There is also a need for an education initiative directed at planners, resource managers and policy makers that facilitates an understanding of the role of social science research in natural resource planning policy and management.

Habitat Conservation: As development of New Hampshire coastal areas continues, habitat loss and fragmentation remain significant problems. Land acquisition and easements by local conservation commissions and nonprofit organizations are important strategies for preserving coastal habitat. There is also a growing recognition of the importance of preserving linkages and corridors between protected lands.

Non-Point Pollution: Runoff from streets, roads and other impervious surfaces pose a serious threat to the quality of coastal waters. Other sources of nonpoint pollution in the NHCZ include leachate from septic systems and sediment runoff from construction sites. There is a need to enlist public support for nonpoint source pollution control measures (i.e., shoreline forest buffers).

Recreation: Coastal growth and development threaten the quality of recreational opportunities and access to coastal resources. Conflict between recreation users groups and other users of coastal resources encompasses a wide variety of resource allocation decisions (i.e., recreational and commercial fishermen, shipping and recreational boaters, etc.). Resource management programs and practices have impacts on the quality of the recreation experience at coastal parks and recreation areas (i.e., trash collection policy, fee structure, etc.). Conflict between participants in various recreation activities is also a concern (i.e., surfers and swimmers, fishermen and pleasure boaters, etc.). Resource managers and planners need to understand the diversity of persons visiting and using New Hampshire's coastal resources, the different needs and goals they are pursuing, the things they need from the resource in order to attain those goals, and the consequences of people interacting with others who have different agendas.

Regulations: Protecting the character and quality of coastal communities is an important issue in the coastal zone. A number of localities have sought to protect community character and the associated coastal resources with design/review standards and regulations. Issues associated with these topics deal with basic property rights as well as techniques with which to regulate the impacts of development (i.e., permitting process, zoning, etc.).

Transportation: Traffic congestion and poor air quality are serious problems within the NHCZ. Both of these problems can be directly attributed to the over-dependence on single passenger vehicles. There is a need for a public transportation network that links various components of the coastal zone. Respondents identified the importance of considering the feasibility of creating a water link between the Sea Coast Science Center and downtown Portsmouth; a bus or trolley that travels the entire length of Route 1a; and the development of a comprehensive trail system that links communities, schools, stores, attractions, beaches and parks.

Tourism: A regional organization with responsibility for the planning, development, and coordination of tourism within the NHCZ does not exist. A regional perspective is essential if tourism is to be developed to maximize its benefits and minimize its costs. Most coastal communities cannot afford tourism planning and development specialists, and lack basic information, and know-how to manage and control tourism development. Many local community leaders do not perceive tourism as economic development, nor do they recognize the importance of environmental protection to the tourism industry. Some local people do not want others visiting their areas. Public access to, and use of, Great Bay Wildlife Refuge is limited. A strong effort to develop the potential of the Refuge as a destination for ecotourism should be investigated.

Wetlands and Coastal Resource Lands: Loss of coastal wetlands has been a significant problem in the NHCZ. Loss of coastal and tidal wetlands have slowed considerably with the policy guidelines that mandate the "maximum degree of protection and preservation of our natural environment" (RSA 483-A 1-b). However, there are a number of initiatives being made at the national level to redefine what legally constitutes a wetland, thus reducing substantially the area over which federal permit control would exist (Beatley, et. al., 1994). While large scale coastal wetland loss is now uncommon there remains a problem of incremental and piecemeal losses and the concern that the "wetland resource base is slowly being nicked and dimed to death" (Reid and Miller, 1989).

Each of the issues identified have substantial social components. In order to make informed, technically-sound decisions on coastal zone management issues, managers and policy makers must understand the social and economic issues as well as the natural processes involved. It is critically important to develop and maintain an adequate data base on the social and economic aspects of coastal zone management. A strong commitment to the social component of coastal resource management will serve to identify emerging problems, help develop appropriate watershed management strategies, assess the applicability in New Hampshire of management strategies developed in other states, monitor the effectiveness of education/ outreach programs, and conduct long-term trend analysis. The next section will highlight some specific social science research needs.

Social Science Research Needs

Each of the key informants were asked to respond to the following question: "What are some specific social science research projects that will assist management in identifying solutions to the problems facing the NHCZ?" Table 1 presents a

summary of these topics and some specific research questions that were identified. These topics were organized into eight groups that best reflected their content.

Table 1. Research Questions identified in the key informant interviews.

Transition Impacts. What are the impacts of shortages in fishery stocks and the expansion of tourism, recreation and retirement industries on the current residents of coastal communities and local governments?

Attitudes and Awareness. What are the attitudes toward and awareness of a variety of water quality problems and land use issues for a broad representative sample of the public living within the watershed of the Estuarine System?

Threats. What are the perceived threats to the scenic, natural, and cultural resources in the NHCZ from the perspective of resource managers and administrators?

Impacts of Tourism. What are the expenditure, employment and tax impacts of tourism within the NHCZ?

Land Acquisition. What information and research will assist in the development of a land classification system necessary to guide land acquisition programs within the NHCZ?

User Conflicts. What conflicts exist between different user groups? What factors are responsible for generating these conflicts? How can these factors be controlled?

Recreation Behavior. To what extent do New Hampshire residents utilize the coastal zone for recreation? How do they use the coastal resources? How much is the public willing to pay for coastal recreation? resource protection?

Cooperation. How are the various governments cooperating on issues affecting the management of coastal resources and planning for economic development? How can this be improved?

Summary Remarks:

This working paper is a preliminary attempt to identify and organize the social science research needs of planners, managers and policy makers with responsibility for the management and development of the NHCZ. The actual contribution that social science can make to the management and development of New Hampshire's coastal resources will depend upon on the willingness of resource managers, decision makers and other scientists to involve social scientists in cooperative management and research programs. It will also depend on the ability of the social science community to contribute valid information in a timely manner in a useable format to the potential users of this social science research (Machlis, 1992).

The conceptual strengths of the social science research planning process should be attributed to the insights and the vision of Dr. Gary Machlis (Sociology Project Leader at the Cooperative Parks Study Unit of the National Park Service at the University of Idaho). Any problems associated with the application of the social science research planning process to the NHCZ should be attributed to the author.

Literature Cited

Beatley T., D.J. Brower and A.K. Schwab. 1994. An Introduction to Coastal Zone Management. Washington, D.C.: Island Press.

Field, D.R. (1987). About the Social Behavior and Natural Resource Series. In: *Social Science in Natural Resource Management Series*, eds. M.L. Miller, R.P. Gale, & P.J. Brown. Westview Press: p. ix.

Machlis, G.E. and Krumpe, E. E., 1984. Solving Park Problems: Developing a Social Science Research Plan. *Trends* 20: 27-29.

Machlis, G. E. (1992). The Contribution of Sociology to Biodiversity Research and Management. *Biological Conservation*, 62: 161-170.

Machlis, G.E. and Sullivan, P. 1991. A Social Science Research Plan for Delaware Water Gap National Recreation Area.

Cooperative Park Studies Unit, University of Idaho, Moscow, Idaho. pp. 75.

Miller, M.L., Gale, R. P. and Brown, P. J. Natural Resource Management Systems. In: *Social Science in Natural Resource Management Systems*. M.L. Miller, R.P. Gale, and P.J. Brown (eds.) Boulder, CO: Westview Press pp. 4-32.

Parker, R., Lime, D. and Thompson, J. 1992. Midwest Identifies Social Issues as Aid in Planning Research Program. *Park Science: A Resource Management Bulletin*, 12: 16-17.

Reid, W.V. and Miller, K. 1989. Keeping Options Alive: The Scientific Basis for Conserving Biodiversity. World Resources Institute.

URBAN GREENWAY PLANNING: TANNERY

BROOK, HOLYOKE, MA

Stephanie B. Kelly

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

Barbara Moser

Research Assistant, Westfield State College, Department of
Geography & Regional Planning, Westfield, MA 01086

Abstract: The purpose of this study is the development of a greenway corridor plan for Tannery Brook in Holyoke, Massachusetts. The steps in the greenway planning process for an urban corridor are presented. The objectives of the study are to design a greenway plan for the upper reaches of Tannery Brook that will: 1) provide the residents of Holyoke and the surrounding communities with passive recreational opportunities, 2) protect the remaining natural riparian corridor from further development, and 3) link the greenway with the Holyoke Community College biking trails which are, in turn, linked to the Metacomet and Manadnock Trail systems.

Introduction

Due to the scarcity of open land and the increased degradation of the natural environment in urban areas, it has become increasingly difficult to develop greenway corridors that offer recreational opportunities for city residents. With escalating pressures to develop land especially along waterways in order to maintain fiscal stability, many watershed areas across the country have been over developed. For these reasons it is critical to designate greenway corridors to protect these areas from further development and provide recreational opportunities.

Tannery Brook, located in the Connecticut River Valley of western Massachusetts, flows from Holyoke Community College south to the Ingleside Mall and into the Connecticut River. While the upper reaches of the brook at the college are in a predominantly stable riparian state, the lower portions of the brook by the mall are severely degraded by erosion and channelization. Extensive development continues with additions to the mall and the surrounding business area.

Due to the existent stream conditions, the greenway planning process for Tannery Brook considered extensive environmental assessment inventory and recommendations for the lower reaches in order to stabilize the stream for recreational use in the upper portion. The methods used in this study to collect data include field site analysis, map inventories, video of existent conditions and engineering techniques, and an overview of historical and cultural attributes of Tannery Brook. Field site analysis data include soil, topographic, landform, and water resource data. A detailed inventory and analysis of the various engineering techniques used to direct streambed flow was taken to determine the effects of the upstream flow on downstream degradation. The

Greenway Plan for Tannery Brook includes maps and recommendations for sites for restoration techniques to stabilize the streambed, and the most appropriate site for the greenway corridor.

The following greenway planning steps include methodological techniques that may be applied to develop a greenway corridor. The planning steps should be considered as a framework for a particular community to follow. If sufficient data exist for some of the steps, the data gathering process should concentrate on the other steps. In this way, the planning model may be tailored to meet the needs of an individual community. For example, if a community recently conducted an extensive environmental assessment, there is no need to focus on this part of the planning process. In this case the planners may proceed to the other areas of research.

Step I: Conduct an Environmental Assessment of the Watershed

An environmental assessment of the watershed includes analyzing data on the following attributes: wetland information, existent land use, topographic features, large areas of impervious surfaces, parcel ownership, existing streambank erosion, channelized areas of streams, culvert characteristics, vegetation, soils and slope. The watershed data are collected in the field and analyzed to assess areas of environmental concerns.

Field work is also conducted to measure and analyze existing stream flow conditions. The data to assess streamflow include base flows from historical records and field observations. After the base flow of the watershed is established from historical review, storm volume impacts and flood elevations from climatic storm patterns in the area are analyzed. Field data that determines storm impacts include flood elevation levels at culverts, roadways, bridges, and channelized areas. When flood levels are determined, bioengineering sites may be proposed.

Water quality analysis for the stream is another component of the watershed assessment. Water quality sampling for turbidity and pH level is conducted. Background water quality sampling is taken at established sites in the watershed. Each site has an upstream and downstream sampling component. The sites focus on water quality above and below: 1) channelized sections of the brook; 2) bordering vegetated wetlands; 3) lawn and landscaped areas; and 4) areas with large impervious surfaces.

Field verification of specific sites recommended for stream restoration BMPs (Best Management Practices) is the final stage of the watershed assessment process. Restoration sites are determined by identifying the areas of erosion, and analyzing the levels of degradation. When the areas of erosion are determined, the most effective methods to stabilize banks and prevent further mass wasting may be recommended.

Step II: Compile and Enter Data to Generate G.I.S. Mapping

Several layers of data are entered into a G.I.S. program to generate map inventories, and identify environmentally fragile areas. The first layer is the delineation of the wetlands in the watershed area. The data collected to determine the boundaries of

the wetlands is based on: delineation from notices of intent and request for determination of applicability filings; floodplain maps; 100 foot buffer to stream bank maps; 100 foot buffer to land under water maps; certified vernal pools maps; and 100 foot setback from vernal pools maps.

The next layers of data include topography (from U.S.G.S. quads, 10 foot intervals), land use (McConnell aerial-residential, commercial, industrial, protected open space, existing zoning, roads, infrastructure), and large areas of impervious surfaces in addition to roads (>1 acre, calculated by parcel and total in watershed). Parcel ownership (from assessor's maps) is an important layer that indicates potential plats for land banks or land trusts to purchase. The two layers of existing streambank erosion (field reconnaissance), and channelized areas of streams (culvert characteristics including size and shape, cement substrate, etc.) indicate potential sites for bioengineering.

Vegetation (from land use and field reconnaissance-including lawns/landscaped, tree cover, bordering vegetated wetland, other), soils (from SCS soil surveys), and slope are the final attributes that are important in the G.I.S. analysis. These physical geographic features are important in determining areas of runoff and drainage problems. Bioremediation techniques may be recommended for areas of environmental concern due to lack of vegetation or steep slopes.

Step III: Identify Attributes of the Watershed

The attributes of the Tannery Brook watershed were identified by conducting a watershed analysis. The first stage in the watershed analysis involves assessing the following characteristics: acreage in impervious surface including roads, parking lots, and buildings; percentage of stream in channel or culverts; build-out analysis specifically addressing increases in impervious surfaces; and potential stream bank erosion sites. These characteristics identified percentages of developed land parcels, and the relationships between developed and nondeveloped land areas.

The second stage of analysis to determine attributes includes a study of sites recommended for bioremediation. The data needed to determine the sites for bioremediation of existing erosion include: degraded wetland sites, potential areas of wetland restoration or construction, specific sites for stormwater best management practices (other than constructed wetlands) on individual parcels, and sites for "dechanneling" stream and anticipated water quality and wetland benefits.

Step IV: Design Public Outreach and Educational Programs

Educating the public about urban corridors is a vital component of a greenway plan. Forums on the environmental concerns of a watershed and proposals for greenways should be conducted during the greenway planning process. The following methods are effective in informing the public about greenway planning, coordinate the various resource groups in the watershed to promote awareness of the Greenway Plan; contact property owners to make them aware of the Greenway Plan and obtain permission to walk on property; and create a citizen advisory committee to participate in data gathering and oversight of any applicable grants.

Audio visual tools such as a video of stream conditions and watershed to be shown at area schools, businesses, and public events are effective techniques to inform the public. Educational materials on watershed management and the greenway planning process should also be prepared for distribution to local businesses and schools. Finally, a future outreach approach should be organized in order to ensure that project recommendations will be monitored and reevaluated in the future.

Step V: Develop a Five-Year Action Plan to Implement the Greenway

The final stage in the urban greenway process involves the development of a matrix of identified watershed management practices. The matrix should include categories such as, Recommended BMPs for creating a more natural stream environment (woodland restoration, "dechannelizing" sections of the stream, culvert widening, bioremediation of existing erosion, on-site stormwater BMPs); Environmental Benefit (reducing and preventing erosion; decreasing stream turbidity; improving woodland health); Implementation (estimated cost, funding sources, steps required to implement, further studies required).

To implement the greenway plan public forums describing the watershed, the greenway planning process, and recommendations for the greenway trails and activities should be held. Prioritized recommendations for implementation for the five-year plan should also be proposed. Trails should be mapped according to slope and terrain conditions. Recreational activities with area educational institutions should be coordinated. Finally, the greenway plan should show, loop trails for hiking, environmental education field trails, and cycling routes based on the erosion and slope stabilization studies.

Conclusions

Watershed assessment analysis and greenway planning studies have several anticipated benefits for municipalities. As a case study in watershed management, the greenway plan promotes a greater understanding of urban stream hydrology and the impacts from development. Comprehensive watershed studies also produce a definitive matrix of solutions to reduce the environmental impacts from past and future land development. The teamwork approach that is undertaken in this study will serve to increase the awareness of urban stream problems at many levels: from individual property owners, developers, and community staff to natural resource agencies. Finally, the results may reduce land use conflicts between neighboring properties and neighboring communities by demonstrating the root causes of erosion, flooding, and water quality impacts.

Literature Cited

- Adams, Lowell W.; Dove, Louise E. 1989. *Wildlife Reserves and Corridors in the Urban Environment: A Guide to Ecological Landscape Planning and Resource Conservation*. Columbia MD: National Institute for Urban Wildlife
- Appalachian Trail Conference. 1988. *Appalachian Trail Local Management Planning Guide*. Harper's Ferry, WV: Appalachian Trail Conference.

- Beard, Christine. 1991. A Preservation Plan for the City of Holyoke. Holyoke, MA: City of Holyoke.
- Citizen's Advisory Committee on Environmental Quality. From Rails to Trails. Washington, D.C.
- City of Holyoke. 1991. Open Space Plan. Holyoke, MA: City of Holyoke.
- Coyle, Kevin. 1988. The Role of the Developer in Greenway Acquisition. National Wetlands Newsletter. September-October: 10-12.
- Dandekar, H. 1982. The Planner's Use of Information: Techniques for Collection, Organization and Communication. Stroudsburg, PA: Hutchinson Ross Publishing Co
- Evans, Craig. 1987. Bringing Walkways to Your Doorstep. Parks and Recreation October: 30-35.
- Flesner, Melanic. 1986. Corridor Spurs Conservation and Renewal. Land Trusts Exchange. 5: 8-9.
- Fogg, George. 1990. Park Planning Guidelines. Alexandria, VA: National Recreation Park Association.
- Goldman, Steven. 1988. Erosion and Sediment Control Handbook. New York, N.Y.: Harcourt, Brace & Co
- Heaney, J.P.; Huber, W.C; Lehman, M.E.. 1981. National Assessment of Receiving Water Impacts From Urban Stormwater Pollution, EPA-600/52-81-025. Washington, D.C.: U.S. Environmental Protection Agency.
- Heimhoff, Steven, H. 1990. The Open Space Police. Planning September:20-22.
- Hutchinson, G.E. 1975. A Treatise of Limnology. Vol.1 Part 2, Chemistry of Lakes. New York: John Wiley and Sons.
- Hynes, H.B.N. 1970. The Ecology of Running Waters. Toronto: University of Toronto Press.
- Kusler, Jon; Southworth, Anne. 1988. Greenways: An Introduction. National Wetlands Newsletter September-October: 2-3.
- Lacy, Jeffrey. 1990. Manual of Build-Out Analysis. Center for Rural Massachusetts. Amherst, MA: University of Amherst Press.
- Lepisto, Tom. 1990. Trail Visions. Appalachian Bulletin October: 25-30.
- Little, Charles. 1990. Greenways for America. Baltimore, MD: Johns Hopkins University Press.
- Massachusetts Executive Office of Environmental Affairs, Division of Conservation Services, Department of Environmental Management. 1991. The Open Space Planner's Workbook. Boston. D.E.M.
- Noss, Reed F. 1983. A Regional Landscape Approach to Maintain Diversity. Bioscience. 33. 700-706.
- Peterson, J. 1992. Linking Bits of Leftover Land to Put Parks Closer to Home. New York Times. January 8, 1992. pp.A1 & B6.
- Soil Conservation Service. 1990. Engineering Field Handbook. Washington, D.C.: Soil Conservation Service.
- Urban, Dean, R.; Shugart, H. 1987. Landscape Ecology. Bioscience 37: 119-127.
- Washington State Department of Ecology. 1992. Stormwater Management Manual for the Puget Sound Basin. Olympia, Washington: State Dept. of Ecology.

**Economic
And
Tourism
Issues**

A MODIFIED METHOD FOR MEASURING THE ECONOMIC IMPACT OF TOURISM¹

Stephen D. Reiling

Professor and Chair, Resource Economics and Policy, University
of Maine, Winslow Hall, Orono, ME 04469-5782

Matthew J. Kotchen

Graduate Research Assistant, Resource Economics and Policy,
University of Maine, Winslow Hall, Orono, ME 04469-5782

Jeffrey Michael

Former Assistant Scientist, Resource Economics and Policy,
University of Maine, Winslow Hall, Orono, ME 04469-5782

Abstract: An economic impact study of tourism was conducted using two modifications. The first involved the use of the Dillman Total Design Method to increase survey response rates, and the second used state sales tax data rather than survey data to estimate total sales of the lodging sector. The modifications resulted in a higher response rate and provided a more defensible assessment of total lodging sales.

Introduction

Maine is "vacationland" and tourism is an important component of the state's economy. Periodically, the Maine Office of Tourism conducts studies to measure the economic impact of tourism on the state. This information is used to inform interested people about the role of tourism in the overall economy of the state and to gain legislative support for initiatives to promote tourism in Maine.

The Department of Resource Economics and Policy in cooperation with the Office of Tourism and Strategic Marketing Research, Inc. (SMRI) conducted a study of the economic impact of tourism in Maine for the summer period of June through August of 1995. One of the purposes of the study was to test a modified approach to estimate the economic impact of tourism. The approach we used differed somewhat from the procedures used to estimate the economic impact of tourism in previous studies. The purpose of this paper is to describe the modified procedures used during the study, and to present results we obtained.

The methods employed in the study are described in the next section and the results are reported in Section III. Conclusions and implications are presented in the last section of the report.

Study Procedures

Measuring the economic impact of tourism involves several steps, including estimating the level of expenditures made by tourists

(called the direct effect), determining the sector of the economy in which the expenditures were made, and using "input-output" or other types of models to determine the indirect and induced effect associated with the tourists' original expenditures. Employment, income and state tax receipts are also estimated from the expenditure data and the models.

This paper concentrates on the procedures used to estimate total tourist expenditures. More specifically, we will discuss the procedures used to estimate the total expenditures made by tourists who use commercial lodging facilities during their visit to Maine. Obtaining an accurate measure of total expenditures is the most problematic part of an economic impact study because it is difficult and expensive to obtain the information needed to accurately estimate the expenditure level of tourists.

Two problems contribute to the difficulty. First, collecting expenditure data that are representative of all tourists who use lodging establishments is both difficult and costly. Complex sampling procedures are required to obtain representative data. Second, one must obtain the information needed to "blow up" the sample data to the population of tourists who use commercial lodging establishments. One must have some measure of the level of use of the lodging sector so that the sample data can be expanded to the total population of all lodging guests. Any errors associated with estimating expenditure levels of the sample of tourists or the appropriate expansion factor will result in inaccurate estimates of total tourist expenditures or the direct effect of tourism. Furthermore, these errors are then compounded in the derivation of indirect and induced effects. Hence, the economic impact of tourism can be grossly over or under estimated if the procedures used do not produce accurate estimates of tourist expenditures and the level of use of the commercial lodging sector.

The study we conducted during the summer of 1995 used two modifications to estimate the economic impact of lodging guests. To illustrate the difference, let me begin by describing the procedures used in previous studies and then compare them to the procedures we used in our study.

Previous studies in Maine and elsewhere involve the use of two surveys. A survey of lodging guests is conducted to obtain the necessary expenditure data and other information required from the lodging guests themselves, including their expenditures in different sectors of the economy. The biggest problem with this survey is that the response rate from tourists who are asked to provide the required information is usually quite low--less than 20 percent in many studies.

The low response rate is problematic because it casts doubt on the representativeness of the respondents. Even if one is confident that the sampling procedures used in the study resulted in a representative sample of lodging guests, the low response rate raises questions about whether the people who actually respond are representative of the entire sample. Survey research indicates that low response rates usually mean that the respondents are not representative of all people in the sample. Therefore, nonresponse bias occurs and one cannot assume that the expenditure pattern obtained from respondents is representative of all tourists.

In our study we used the Dillman Total Design Survey Method to try to improve the response rate of tourists in the sample. Our goal was to obtain a response rate of 70 percent. A response rate in this range substantially reduces the potential for nonresponse bias.

The second survey in the typical tourism study is a survey of the lodging establishments in the state. The purpose of this survey is to obtain the information needed to estimate the total number of parties that used commercial lodging during the period, the total number of "lodging nights" or the total lodging receipts of the lodging sector for the period. This information is needed to expand the sample data to the population. For example, if the sample consisted of 1,000 commercial lodging parties, one must know the total number of lodging parties during the summer in order to expand the sample data to the population. A survey of the lodging sector is usually conducted to provide the information needed to estimate the total number of lodging parties or some other population control figure for expanding the sample data to the population.

Unfortunately, nonresponse bias is also a problem in the lodging sector survey. Typical response rates for the lodging sector survey are quite low--again often less than 20 percent. Firms consider occupancy and room rate data to be highly proprietary, and, therefore, are often unwilling to provide the data for obvious reasons. These problems can cause errors in estimating statewide occupancy and room rates, which ultimately result in an inaccurate expansion factor.

Our modified procedure did not involve a lodging survey. Instead, we used state sales tax data as the population control figure for estimating total tourist expenses. Total tourist expenditures were estimated using the ratio of total tourist expenditures to lodging expenditures from the tourist expenditure survey. For example if the tourist expenditure survey data indicated that lodging expenses accounted for 20 percent of total tourist expenses, total expenses are estimated by dividing state sales tax lodging receipts data by .20. For example, if the state sales tax data indicate \$60 million in lodging sales, then total tourist expenditures during their trip would be \$300,000,000 (\$60,000,000 in lodging sales divided by .20)

Using state sales tax data as the control figure for estimating total tourist expenses has several advantages, including the elimination of the need to conduct the survey of lodging establishments. The money saved can be used to do a better job of conducting the tourist lodging guest survey.

Results for Maine

The procedures described above are illustrated in this section to derive an estimate of the economic impact of lodging guests in Maine for the summer of 1995.

A survey of lodging guests (residents and nonresident) who used commercial lodging during the summer of 1995 was

conducted. About 100 lodging establishments (including hotels/motels, campgrounds, condominiums/cabins, and sporting camps) agreed to recruit guests to participate in the study. More than 1,300 people signed up to participate, and 600 of them were

randomly selected for the sample. Using the total design mail survey method, we achieved a response rate of about 58 percent.

Participants were asked several questions about their trip, including the number of nights spent in Maine and the number of people in the group. They were also asked to indicate the expenditures they made in Maine while on their trip. Expense categories were provided to help respondents recall the types of expenses they may have made during their trip. The average expenditures of lodging guests were determined from the lodging guest survey and the results are reported in Table 1.

The expenditure pattern of lodging guests indicates that lodging is the largest expenditure category, followed by general merchandise which reflects the level of general shopping done by tourists. Other major expenditure categories include restaurant/lounge expenses, commercial transportation, apparel and accessories, and auto-related expenditures (service station, auto repair, rental and tolls). Combined, these categories account for 80 percent of the total expenditures made by lodging guests.

Table 1. Average expenditures per trip, by expense category, for Maine lodging guests during the summer of 1995.

Expense Category	Average Expense
Lodging	\$333.04
Restaurant/Lounges	210.04
Grocery Stores	67.15
Liquor Stores	9.61
General Merchandise	134.56
Apparel and Accessories	64.25
Miscellaneous Retail	51.28
Service Station	56.27
Auto Repair/Service	7.46
Auto Rental	20.10
Highway Tolls	10.60
Commercial Transportation	93.42
Recreation/Entertainment	25.83
Equipment Rental	3.72
Health/Child/Pet Care	2.84
Miscellaneous Expenses	7.23
Other Expenses	45.24
Total Expenses	\$1142.64

In addition to providing a profile of lodging guest expenditures, the data summarized in Table 1 also is used to calculate the ratio needed to expand the sample data to the population. The ratio of total expenditures to lodging expenditures can be calculated directly from the data in Table 1.

$$\begin{aligned} \text{Total Expenditures/Lodging Expenditures} \\ &= \$1142.64/\$333.04 \\ &= 3.43 \end{aligned}$$

This expansion factor is applied to the state lodging sales tax data to estimate total expenditures by lodging guests. Specifically, the state sales tax data for the months of June, July and August indicated that total lodging receipts were \$181 million. Multiplying this figure by the expansion factor of 3.43 yields an estimate of \$621 million for total lodging guest expenditures for the summer months of 1995.

Table 2 Estimated total expenditures, by expense category, for Maine lodging guests during the summer of 1995.

Expense Category	Total Expenses (\$1,000)
Lodging	\$180,999
Restaurant/Lounges	114,151
Grocery Stores	36,496
Liquor Stores	5,225
General Merchandise	73,131
Apparel and Accessories	34,921
Miscellaneous Retail	27,867
Service Station	30,579
Auto Repair/Service	4,054
Auto Rental	10,922
Highway Tolls	5,767
Commercial Transportation	50,767
Recreation/Entertainment	14,039
Equipment Rental	2,022
Health/Child/Pet Care	1,542
Miscellaneous Expenses	3,932
Other Expenses	24,589
Total Expenses	\$621,000

a/ Column may not sum to total due to rounding error.

Based on the expenditure profile presented in Table 1, the total lodging guest expenditures can then be allocated to each expenditure category to estimate the total expenditures for each sector or expenditure category. This is illustrated in Table 2. This provides the information needed to insert the expenditures into an input-output model so that the indirect and induced effects associated with the lodging guest expenditures can be measured. Using a model developed by the Maine State Planning Office, we estimated that the total impact of lodging guest expenses were about \$1.46 billion for the three summer months of 1995.

Evaluation of the Modified Method

The modified method for estimating the economic impact of lodging guests has both advantages and disadvantages. Perhaps the greatest advantage is it eliminates the need to conduct a survey of the lodging sector to determine the average occupancy rate and average daily room rate. As noted, lodging surveys are not only expensive to conduct, the results are often suspect because firms are reluctant to release information they consider to be proprietary. This creates nonresponse bias, which is difficult to assess and correct. Hence, the modified technique is less expensive and probably more accurate, assuming that the lodging firms are accurately reporting sales taxes.

On the other hand, there are some disadvantages to consider. First, the survey of lodging guests takes on added importance because it is used to not only provide the expenditure profile of

tourists, it also is used to provide an important part of the information needed to expand the sample data--the ratio of total expenditures to lodging expenditures. However, one must remember that this ratio varies across different types of lodging establishments.

Consider, for example, the ratio for campers versus hotel users. The calculated ratio is probably much smaller for the latter group than the former. In our study, we found that this ratio varied from 2.35 to 4.61. If one is to develop an accurate estimate of this ratio for the lodging industry as a whole, one must be sure the data are collected or analyzed in a way that assures that all types of lodging guests are surveyed in approximately the same proportion as they exist in the population. If this is not done, the ratio used to expand lodging expenditures to total expenditures will be inaccurate. This problem can be largely avoided by carefully designing the sampling procedures and weighting the data based on the capacity of the different types of lodging establishments in the sample and the population. However, it is an important factor to consider when using the modified method.

Another disadvantage of this approach is that there is a lag period in the reporting of lodging sales tax data. In Maine this lag is about 45 days. This makes it impossible to provide an immediate estimate of economic impact since the researcher must wait for the release of sales tax data to conduct the analysis.

Another potential disadvantage is that the modified method essentially assumes that the different types of lodging establishments have the same occupancy rate. If the occupancy rate varies substantially across the different types of establishments, errors are introduced into the analysis. This was not considered to be a problem in our study because previous work suggested that all types of lodging establishments had about the same occupancy rate during the summer months.

Finally, another factor to consider is that the modified method will usually result in a lower estimate of the economic impact of tourism than the conventional method. We believe this is because the conventional method usually over estimates the economic impact of tourism for reasons discussed above. However, the tourism industry likes to see large economic impact numbers so they can be used to lobby for additional state revenue to promote tourism. Therefore, even though we believe that the modified method is more accurate, the results may not be embraced by the industry itself. On the other hand, we have found that state agencies and even legislators are appreciative of the estimates derived from the modified method because it used sales tax data, which they believe are a good reflection of economic activity in the economy.

A TRIANGULATION OF ECONOMIC IMPACT

ASSESSMENTS AND IMPLICATIONS

Philip Wang

Assistant Professor, Leisure Studies, Kent State University
P.O. Box 5190, Kent, OH 44242

Rob Bixler

Manager, Research & Program Evaluation, Cleveland
Metroparks Administrative Offices, 4101 Fulton Parkway,
Cleveland, OH 44144

Abstract: This paper demonstrates the effects of using various multiplier measurements of economic impact. Results indicated that output multipliers tend to generate larger impact estimates than household income multipliers and normal multipliers. The finding provides empirical evidence to support arguments in the literature that some economic impact measurements are misleading.

Many managers of recreation agencies and tourism attractions seek to document the economic impact resulting from their services. A major reason for measuring economic impact is to demonstrate the financial contribution as well as other benefits (e.g., personal and social) to the community. It is rationalized that a greater economic contribution can be translated into a perception of popularity and legitimacy of the agency which, in turn, can induce more support for budget allotment and tax levies. A political motivation of measuring economic impact is legitimate as long as the measurement is accurate and realistic. There are, however, debates about inflated estimation and misleading calculation of economic impact. The debates often center around the appropriateness (the size and type) of various multipliers (Archer, 1984; Crompton, 1995).

Theoretically, any initial spending will generate subsequent rounds of spending in the community, including direct impact, indirect impact, and induced impact. The latter two are often grouped together as secondary impacts. Each subsequent round of spending is smaller due to leakages, saving, and taxes. The sum of direct and secondary impacts is the total impact of the initial spending. The rippling process of subsequent spending is the multiplier effect, which can be measured by various input-

output models that trace the impact on many industry sectors in a region. Currently, at least four input-output models are available: (a) Regional Input-output Modeling System II (RIMS II) by the U.S. Department of Commerce, Bureau of Economic Analysis, (b) Travel Economic Impact Model (TEIM) by the U.S. Travel Data Center, (c) IMPLAN by USDA Forest Service, and (d) Regional Economic Models Inc. (REMI). Studies have frequently used these models (Bushnell & Hyle, 1985; Mak, 1989; Johnson, Obermiller, & Radtke, 1989; Midwest Research Institute, 1990). In some cases, a single multiplier is used in a study. The selection of any single multiplier is based on "felt reasonableness," but without taking into account regional economic linkages. The legitimacy of this approach has been questioned (Archer, 1984). The discussion about how to realistically measure economic impact continues in the recent literature (Crompton, 1995).

The purpose of this study was to demonstrate the effects of using various multiplier measurements of economic impact. A metropolitan zoo was used as an example. The results provided empirical evidence that the choice of multipliers leads to a wide range of economic impact estimates.

Method and Results

Data for this study were supplied by Cleveland Metroparks Zoo in Ohio. It is one of the largest zoos in North America, with 2,600 animals belonging to 567 species and subspecies, and is accredited by the American Zoo and Aquarium Association. With educational and recreation programs and exhibits, it is a popular destination that attracts more than one million visits each year. As a major employer and visitor attraction, the zoo generates a sizeable initial economic output, including both zoo expenditures and visitor expenditures, to the regional economy.

A nationwide survey of top 26 zoos in the U.S. was conducted by the author to sample economic impact measurements. Of the 13 zoos that replied, ten had not completed an economic impact study. Three had conducted an economic impact study, and a copy of the reports was provided (Cinili Associates, 1989; Midwest Research Institute, 1990; Weinstein, Gross and Andrus, 1992). The multipliers used by these zoo studies are shown in Table 1 (observation 1 for zoo #1 and observation 5 for zoo #4; the third zoo did not specifically explain the multiplier process in the report). Additionally, two zoos in the same state where this study was conducted provided their economic impact studies (observation 2 for both zoo #2 and zoo #3) (Brunner and DeKorte, 1993; Coons, 1994).

Table 1. Various multipliers used.

Observation	Multiplier	Source	Multiplier Type
Obs 1	3.63	zoo #1 (REMI ^a)	output
Obs 2	3.00	zoos #2 & #3	output
Obs 3	2.20	Cleveland Arts	output
Obs 4	2.04	RIMS II (Ohio)	output
Obs 5	2.00 (1.50-2.60)	Walsh (1986) & zoo #4	output
Obs 6	0.62	RIMS II (Ohio)	household income
Obs 7	0.60 (0.40-0.80)	Crompton (1995)	ballpark
Obs 8	0.45	Archer (1984)	Normal, Keynesian

^a/ REMI = Regional Economic Models Inc. (REMI) multiplier for the zoo

A review of the literature revealed that various multipliers have been used for tourism businesses. Table 1 shows the results, arranged by size of the multipliers. A study of the economic impact of arts institutions in Cleveland had a 2.20 multiplier (observation 3). The RIMS II output multiplier for the amusement sector in Ohio was 2.04 (observation 4). Walsh (1986) reviewed the output multipliers for expenditures on recreation goods and services in many regions of the U.S., and concluded that they ranged from 1.5 to 2.6, with an average of 2.0 (observation 5). This multiplier (2.0) also was used by zoo #4 from the survey of zoos mentioned above.

In a study of sporting events, Crompton (1995) argued that a household income multiplier should be used instead of an output/sales multiplier. He suggested that business sales have no impact on residents' standard of living. For the state of Ohio, and according to the RIMS II model, the household income multiplier for the amusement sector was 0.62 (observation 6), which was considerably smaller than the RIMS II output multiplier of 2.04 mentioned above.

Crompton (1995) also suggested that a ballpark multiplier may be considered (e.g., income multipliers fall within a range of 0.4 to 0.8). If the middle point of this range was taken (0.6, observation 7), an additional multiplier can be added to the estimation.

Finally, Crompton (1995) suggested using a "normal" multiplier rather than a "ratio" multiplier based on Archer's (1982) original work. Archer (1982) presented a normal (Keynesian) multiplier coefficient of 0.45 (observation 8). This was included in this study to provide an alternative estimate. Together, these eight multipliers provided the basis of different impact estimations.

After determining multipliers, the next step in the study was to collect the expenditure information. This step was conducted along two lines: zoo expenditures and visitor expenditures. The zoo expenditures include operating expenditures, zoo society expenses, and capital expenditures. The amount was \$10,318,574 in 1994. Applying the different multipliers, eight impact estimates resulting from the total zoo expenditures were calculated and shown in Table 2.

Table 2. Zoo expenditures impacts measurements.

Observation	Zoo Expenditures (Z)	Multiplier (M)	Z x M
Obs 1	10,318,574	3.63	37,456,424
Obs 2	10,318,574	3.00	30,955,722
Obs 3	10,318,574	2.20	22,700,863
Obs 4	10,318,574	2.04	21,049,891
Obs 5	10,318,574	2.00	20,637,148
Obs 6	10,318,574	0.62	6,397,515
Obs 7	10,318,574	0.60	6,191,144
Obs 8	10,318,574	0.45	4,643,358

The second line of measurement pertains to visitor spending on the trip but outside the zoo. Visitor spending was measured by

group expenditures. In 1994, there were more than 1.2 million visitors. Divided by the average group size of 4.7, these were translated into more than a quarter of a million groups. These groups were further categorized by their residence (area groups and out-of-area groups), since distance traveled was believed to result in different spending behavior.

Expenditures were divided into four categories: transportation, retail shopping, food/beverage, and lodging. Total transportation spending by all zoo visitors was estimated to have been \$1,276,027 in 1994. A total of \$921,256 was spent on shopping. Food and beverage expenditures by out-of-area visitors were \$1,098,160. The total lodging expenditures were estimated to be \$1,611,150.

To generate a range of visitor expenditure impact estimates, the eight different multipliers (in Table 1) were applied. The results are shown in Table 3. Table 4 shows the total impact of the zoo that included zoo expenditure impacts and visitor expenditure impacts. The total impact estimates ranged from approximately \$6.9 million to approximately \$55.3 million.

Implications and Conclusions

The range of the total impact estimates appeared broad, with the low end (\$6,851,325) being only 12.4% of the high end (\$55,267,357). The extremely low estimation and extremely high estimation resulted from the different multipliers used. The mean score of the eight estimates was \$27,834,396.

Figure 1 shows the relative positions of the eight estimates. If there are infinite points in the mathematical continuum, there would be an infinite number of estimates, including both the low end and the high end estimates (i.e., 6.85 and 55.27, in millions of dollars). With the range (6.85 to 55.27) and the mean (27.83), estimates within one standard deviation (16.72 in each direction to cover 66% of all cases) would be within 11.11 and 44.55. This indicates that five of the eight estimates calculated above (Table 7) fall outside of one standard deviation, and can be considered extreme cases. Among these five estimates, three are on the lower end, two on the higher end. As seen in Table 1, it appears that household income multipliers, ballpark multipliers, and normal multipliers result in impact estimates toward the lower extreme, while output multipliers tend to generate impact estimates toward the higher extreme. This finding provides empirical evidence to support Archer's (1984) and Crompton's (1995) arguments that some economic impact estimates are misleading due to inappropriate uses of multipliers (e.g., using an output multiplier, especially a large one). Archer's (1984) and Crompton's (1995) suggestions for using household income multipliers, ballpark multipliers, and normal multipliers result in conservative and cautious impact estimations.

Archer (1984) pointed out that inappropriate multipliers (such as ratio multipliers and output multipliers) had no basis in economic theory and are misleading in policy making, but had gained wide usage. It should be pointed out that, as far as scientific discovery is concerned, measurements of economic impact need to be accurate and realistic. This study triangulated alternative

Table 3. Visitor expenditures impact measurements.

	Type of Expenditure	Visitor Expenditure	Multiplier	Total Impact	Visitor Impact
Obs 1	Transportation	\$1,276,027	3.63	\$4,631,978	\$17,810,933
	Shopping	921,256	3.63	3,344,159	
	Food & Beverage	1,098,160	3.63	3,986,321	
	Lodging	1,611,150	3.63	5,848,475	
Obs 2	Transportation	\$1,276,027	3.00	\$3,828,081	\$14,719,779
	Shopping	921,256	3.00	2,763,768	
	Food & Beverage	1,098,160	3.00	3,294,480	
	Lodging	1,611,150	3.00	4,833,450	
Obs 3	Transportation	\$1,276,027	2.20	\$2,807,259	\$10,794,504
	Shopping	921,256	2.20	2,026,763	
	Food & Beverage	1,098,160	2.20	2,415,952	
	Lodging	1,611,150	2.20	3,544,530	
Obs 4	Transportation	\$1,276,027	2.34	\$2,985,903	\$10,841,836
	Shopping	921,256	2.23	2,054,401	
	Food & Beverage	1,098,160	2.29	2,514,786	
	Lodging	1,611,150	2.04	3,286,746	
Obs 5	Transportation	\$1,276,027	2.00	\$2,552,054	\$ 9,813,186
	Shopping	921,256	2.00	1,842,512	
	Food & Beverage	1,098,160	2.00	2,196,320	
	Lodging	1,611,150	2.00	3,222,300	
Obs 6	Transportation	\$1,276,027	0.81	\$1,033,582	\$ 3,510,941
	Shopping	921,256	0.83	764,642	
	Food & Beverage	1,098,160	0.65	713,804	
	Lodging	1,611,150	0.62	998,913	
Obs 7	Transportation	\$1,276,027	0.60	\$765,616	\$ 2,943,956
	Shopping	921,256	0.60	552,754	
	Food & Beverage	1,098,160	0.60	658,896	
	Lodging	1,611,150	0.60	966,690	
Obs 8	Transportation	\$1,276,027	0.45	\$574,212	\$ 2,207,967
	Shopping	921,256	0.45	414,565	
	Food & Beverage	1,098,160	0.45	494,172	
	Lodging	1,611,150	0.45	725,018	

Table 4. Combined zoo and visitor expenditure impact estimates.

Observations	Zoo	Visitor	Total Impact
	Expenditures Impact	Expenditures Impact	
Obs 1	137,456,424	17,810,933	55,267,357
Obs 2	30,955,722	14,719,779	45,675,501
Obs 3	22,700,863	10,794,504	33,495,367
Obs 4	21,049,891	10,841,836	31,891,727
Obs 5	20,637,148	9,813,186	30,450,334
Obs 6	6,397,515	3,510,941	9,908,456
Obs 7	6,191,144	2,943,956	9,135,100
Obs 8	4,643,358	2,207,967	6,851,325
range		low end -	6,851,325 ^a
		high end -	55,267,357
mean			27,834,396
standard deviation			16.72 (\$million)

a/ low end = 12.40% of high end

measurement outcomes by using a real data set. It attempted to only present "what is" rather than "what ought to be." That is, results of the study showed empirical evidence that use of different multipliers resulted in a range of economic impact with extreme estimates, both high and low. It is crucial that users of an economic impact assessment understand how impacts are measured. Recreation agency and tourism attraction managers need to have a working knowledge of the meaning of different multipliers, and determine "what ought to be" an appropriate multiplier process and an acceptable economic impact measurement.

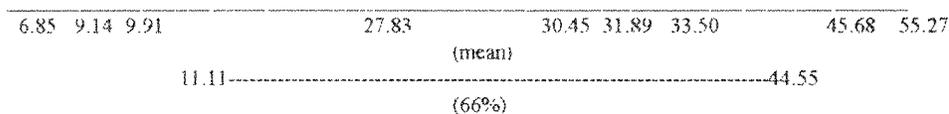


Figure 1. Seven measurement observations and one standard of division

Literature Cited

- Archer, B. 1982. The Value of Multipliers and Their Policy Implications. *Tourism Management*. 3: 236-241.
- Archer, B. 1984. Economic Impact: Misleading multiplier. *Annals of Tourism Research*. 11: 517-518.
- Brunner, J.A. and DeKorte, J.M. 1993. Economic Impact in 1992 of the Toledo Zoo on the Toledo Area Economy. Research and Economic Development Division. The University of Toledo. Toledo, OH.
- Bureau of Economic Analysis 1992. Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II), second edition. U.S. Department of Commerce, Washington, D.C.
- Bushnell, R.C. and Hyle, M. 1985. Computerized Models for Assessing the Economic Impact of Recreation and Tourism, in *Assessing the Economic Impact of Recreation and Tourism*, Propst, D.V. ed. Asheville, NC: Southeastern Forest Experiment Station.
- Ciruli Associates. 1989. Denver Zoo Visitor Survey and Economic Impact Study: July 1988 to June 1989. Denver, CO: Denver Zoological Foundation.
- Coons, J.W. 1994. The Regional Economic Impact of the Columbus Zoo. Huntington National Bank. Columbus, OH.
- Crompton, J. L. 1995. Economic Impact Analysis of Sports Facilities and Events: Eleven Sources of Misapplication. *Journal of Sport Management*. 9:14-35.
- Johnson, R.L., Obermiller, F and Radtke, H. 1989. The Economic Impact of Tourism Sales. *Journal of Leisure Research*. 21: 140-154.
- Mak, J. 1989. The Economic Contribution of Travel to State Economies. *Journal of Travel Research*. 28: 3-5.
- Midwest Research Institute 1990. Economic impact of an Expanded Kansas City Zoo. MRI Project No. 9556-M. Kansas City, MO.
- Walsh, R. G. 1986. Recreation Economic Decisions: Comparing Benefits and Costs. State College, PA: Venture.
- Weinstein, B., Gross, H. and Andrus, S. 1992. Economic Impact of Dallas Zoo. Center for Economic Development and Research, University of North Texas, Denton, TX.

ECONOMIC IMPACT OF TRAVEL AND TOURISM IN SOUTHWESTERN PENNSYLVANIA

Charles H. Strauss

Professor, School of Forest Resources, The Pennsylvania State University, University Park, PA 16802

Bruce E. Lord

Senior Research Assistant, School of Forest Resources, The Pennsylvania State University, University Park, PA 16802

Stephen C. Grado

Assistant Professor, College of Forest Resources, Mississippi State University, Mississippi State, MS 39762

Abstract: The economic impact of travel and tourism was determined for a nine-county region during 1994. Travel and tourism was described on the basis of 28 activities. Total annual attendance from all activities was 22.3 million visitor days, with nonresident visitors accounting for 48% of the total. Total regional expenditures amounted to \$662 million, with 68% coming from nonresidents. An input-output model of the region established the total sales impact from travel and tourism at \$914 million. Total impact also amounted to \$539 million in value added, with \$310 million directed to wages and salaries in support of more than 23,000 jobs

Introduction to the study

Travel and tourism is often identified in terms of the conglomerate of recreational and travel services provided within a particular region. Although this aggregate concept is a common reference point, the specific dimensions of these services are not usually well defined. This problem is further compounded when travel and tourism is the subject of economic investigations.

The U.S. Travel Data Center reported an economic impact of \$17.3 billion for Pennsylvania during 1992 from US and international travelers (USTDC 1994). These impacts were generated from the expenditures made by resident and out-of-state travelers involved in either overnight trips or trips extending 100 miles or more from their homes. The focus of this USTDC study was the travel industry, with tourism avoided due to "its vague meaning" (p 44).

In the following study, the economic impact of travel and tourism was determined for a nine-county region of Pennsylvania on the basis of 26 recreational-based activities. The traveler was considered separate from the tourist and was included as two activities. This approach provided a specific structure for travel and tourism and the basis for analyzing its impact within the region.

Objectives and Procedures

The central objective of this project was to determine the economic impact of travel and tourism within a region including

Bedford, Blair, Cambria, Fayette, Fulton, Huntingdon, Indiana, Somerset and Westmoreland Counties. This would require developing a structure and inventory of travel and tourism activities that focused on nonresident visitors. Each activity would be analyzed in terms of the nonresident expenditures made within the region, with the economic impact of these expenditures determined from a regional input-output model.

Structure of Activities

Travel and tourism was organized into 10 groups that included 28 activities (Table 1). Each activity was further delineated by an inventory of sites and events found within the region. The inventory of sites and events was constructed at the beginning of the project to establish the dimensions of the project and the basis for sampling the various activities.

Sample Design and Procedures

A system of on-site visitor surveys was used to acquire expenditure information within each of the individual activities. The sample design focused on activities having some potential for attracting nonresident visitors and was organized to sample visitors throughout the duration of the various recreational seasons. The selection of survey sites or events within a particular activity was based on the number of sites or events within the activity, their distribution among the nine counties, their general character in depicting the activity, their willingness to cooperate in the study, and an overall desire to maintain an efficient survey program. On-site surveys were conducted by a team of Penn State research interns. The survey form organized information on the respondent's (1) state and county of residence, (2) group size, (3) travel itinerary, and (4) type, amount, and location of expenditures made during their current trip.

Vacation home owners were sampled with a mailed letter and questionnaire. A sample of nonresident vacation home owners was drawn from tax records in three counties. Approximately 150 properties were sampled using a questionnaire and two follow-up letters. A similar effort was also directed to camp-lease holders on State Forests within the region, with 50 lease holders responding to the survey.

Attendance Data

Attendance was identified on a visitor day basis, representing one person's visit at a site or event during some portion of a given day. All sites and events selected for survey purposes provided seasonal attendance data. Nonsurveyed sites and events were also contacted for the purpose of securing their attendance records. More than 400 sites and events provided attendance information to the study.

Activities with an entrance fee typically provided information on gate receipts. For nonfee events, the site managers provided estimated attendances, including both attendees and vendors where appropriate. These estimates were counter compared to similar events or sites in evaluating the relative accuracy of any given estimate.

Attendance on public lands was based either upon the data collected by the management agency or from a modeled expansion of attendance samples. The Pennsylvania Bureau of State Parks has a daily attendance system for more than 20

recreational activities in each of 114 state parks (18 parks are located in the nine-county region). A similar daily attendance system was maintained at four U.S. Corps of Engineer lake sites. The Pennsylvania Fish and Boat Commission has an attendance model for trout fishing on stocked streams (Snyder 1992)

Neither the Pennsylvania Bureau of Forestry nor the Pennsylvania Game Commission had any systematic method for estimating attendance. For purposes of this study, both agencies provided a series of vehicle counts on four study areas involving 30 sample days during 1993. A combination of on-site surveys, postcard surveys, and car counts was used to estimate the total usage and allied user expenditures on any given sample day (Lord, et al. 1996). The data base for any given activity was then extrapolated to nonsurvey dates using the relative attendance levels at nearby state parks. The annual attendance for any given activity on the study areas was then expanded with respect to the agency's total management area in the region

Business and transient usage was developed as overnight attendance within the hotel and lodging sector. Total attendance was obtained from the region's travel lodge inventory and occupancy rate (PKF Consulting 1995). Total attendance was proportioned among recreational tourists, business, and transient travelers on the basis of on-site surveys.

Vacation homes were measured as individual properties rather than recreational use. It was assumed that the owner's recreational pursuits were accounted for in the other activities. Only the regional costs associated with property ownership were included in this activity. This data was recorded on a property unit basis.

Organization of Visitor Expenditures

Average regional expenditures were identified on a visitor day basis for residents and nonresidents and were specific to individual sites or events, with the activity average weighted on the basis of the attendance at the particular sample sites or events. Expenditures were classified by the type of the purchase and their linkages to particular industrial sectors. Total regional expenditures for nonresidents represented the multiplication of average nonresident expenditures by their respective attendance levels.

Economic Impact Modeling

The economic impact of travel and tourism was generated by the Impact Analysis for Planning (IMPLAN) system. IMPLAN is a computerized data base and modeling system that provides a regional input-output analysis of economic activity in terms of 10 industrial groups involving as many as 528 sectors. This input-output model was developed by the USDA Forest Service and the Federal Emergency Management Agency to estimate the regional impact of management plans for national forests (Alward et al. 1985). It is currently maintained by MIG, Inc. and is available to the public on a fee basis (MIG, Inc. 1996).

IMPLAN's data bases are periodically updated. The version used in this study was based upon 1990 economic data. The Pennsylvania data base for the model was updated by this study to include changes in regional employment within key industries.

In addition, various regional purchase coefficients were adjusted to reflect more accurately regional trade relationships.

Results

Survey Effort

Nearly 20,000 on-site surveys were collected during 1993 (n= 13,935) and 1994 (n= 5,948) within the 28 activities. The initial survey effort in 1993 was distributed proportional to the anticipated size of the various activity audiences. Modifications in 1994 increased the sampling effort in: (1) activities showing major impacts but moderate survey numbers (Strauss et al. 1994), (2) two activities added in the second year (Grado et al. 1996a and Grado et al. 1996b), and (3) activities with dispersed audiences, e.g., hunting, hiking

Total Attendance

Total attendance among all activities in 1994 was estimated as 22.3 million visitor days (vd's) (Table 1). The largest portion of attendance was in Other Outdoor Activities, which included 36% of the total. Business and Transient Travel had 12% of the total. Five other activities each had 4 to 6% of the total: Fishing and Boating, Amusement Parks, Golfing, Conferences and Conventions, and Historic Sites. Together, these seven activities represented nearly three quarters of the total regional attendance.

Nonresident attendance was 10.7 million visitor days, representing 48% of the total attendance. Again, Other Outdoor Activities was the lead activity, with 30% of the total. Business and Transient Travel was the second largest, with 23% of the total. Downhill Skiing was third largest (7%); followed by Conferences and Conventions (7%), Heritage Centers and Other Historic Sites (7%), Amusement Parks (5%), and Fishing and Boating (5%). Together, these eight activities accounted for 84% of the nonresident attendance.

Visitor Expenditure Profiles

As might be expected, the average daily expenditure for nonresidents was higher than for residents, largely due to their increased dependence on regional restaurants and lodging services (Table 1). Several exceptions were noted. Resident visitors to Collector Shows tended to buy more "collectable goods" than did their nonresident counterparts. Several of the Outdoor Activities also showed higher expenditures for resident visitors than for nonresidents. These were largely day-use activities, with the resident audiences purchasing most of their food, gasoline, and auxiliary items within the region, whereas the nonresident visitors often made these purchases outside the region.

For the nonresident visitors, activities with the highest expenditure profiles included Conferences and Conventions at \$134/vd, Business Travel at \$79/vd, Golfing at \$67/vd, Downhill Skiing at \$66/vd, and Heritage Centers at \$46/vd. Overall, these activities represented the more affluent tourist and the more expensive recreational pursuits.

At the other end of the financial spectrum were Other Outdoor Activities (camping, hiking, picnicking, swimming) at \$8/vd, Other Winter Activities (cross country skiing, ice fishing, snowmobiling) at \$10/vd, Hunting at \$11/vd, and Amusement

Table 1. Total attendance and average expenditure per visitor day for resident and nonresident visitors by activity, for 1994.

Groups/Activities	Total Visitor Days	Percent Resident	Percent Non Resident,	Resident, Exp./vd	Nonresident, Exp./vd
Amusement Parks	1,183,013	54.7%	45.3%	\$10.72	\$14.95
Antique Centers	278,352	55.1%	44.9%	\$27.82	\$32.47
Conferences and Conventions	1,090,217	31.8%	68.2%	\$72.40	\$134.19
Cultural Events					
College Performances	189,516	71.8%	28.2%	\$16.20	\$21.03
Music and Dance Festivals	164,400	63.9%	36.1%	\$16.35	\$54.97
Private Performances	227,636	79.7%	20.3%	\$26.89	\$40.19
Historical Sites and Museums					
Heritage Centers	578,751	32.6%	67.4%	\$39.30	\$46.03
Other Historical Sites	407,771	24.0%	76.0%	\$10.23	\$35.72
Outdoor Activities					
Downhill Skiing	849,300	11.7%	88.3%	\$56.80	\$66.42
Fishing and Boating	1,255,018	58.9%	41.1%	\$30.49	\$17.40
Golfing	1,175,388	68.8%	31.2%	\$29.40	\$67.07
Hunting	470,624	38.2%	61.8%	\$13.53	\$10.64
Other Outdoor Activities	8,082,126	60.9%	39.1%	\$10.43	\$7.82
Other Winter Activities	218,529	61.5%	38.5%	\$4.28	\$9.83
Shows, Fairs and Festivals					
Agricultural Fairs	596,500	77.9%	22.1%	\$10.93	\$16.53
Animal Shows	9,735	75.3%	24.7%	\$15.88	\$59.80
Art and Craft Festivals	949,866	74.7%	25.3%	\$14.77	\$25.46
Collector Shows	23,500	50.8%	49.2%	\$61.32	\$36.20
Historic Fairs and Festivals	225,595	79.1%	20.9%	\$11.83	\$27.74
Machine Shows	119,405	78.6%	21.4%	\$13.79	\$33.33
Special Interest Events	432,653	77.8%	22.2%	\$8.39	\$24.43
Sporting Events					
Amateur Sports	158,443	78.8%	21.2%	\$6.24	\$36.44
College Sports	173,214	85.6%	14.4%	\$4.15	\$19.64
Indoor Sports	275,000	70.7%	29.3%	\$21.45	\$54.50
Professional Sports	593,500	70.6%	29.4%	\$14.95	\$25.06
Business and Transient Travel					
Business Travel	542,950	5.9%	94.1%	\$64.11	\$78.69
Transient Travel	2,069,188	7.8%	92.2%	\$43.76	\$56.00
Totals	22,340,189	52.0%	48.0%		
Vacation homes *	13,354	24.0%	76.0%	\$2,384	\$2,033*

* - Vacation homes were recorded on a unit property basis.

Parks at \$15/vd. These activities represented the more self-sufficient traveler and involved fewer on-site purchases and were conducted in a shorter time frame.

Total Expenditures

The multiplication of resident and nonresident attendance by their respective average expenditure profiles provided total expenditures of \$662 million within the nine-county region. Sixty-eight percent, or \$451 million, was from nonresident visitors. Among the ten major groups of activities, Business and Transient Travel was the lead activity, with 33% of the total. The second largest group was Outdoor Activities, with 25% of the nonresident expenditures. In third position was Conferences and Conventions with 22% of the total. Historic Sites and Museums were fourth largest, representing 6% of the total. In general, these groups attracted large numbers of nonresident tourists, who, in turn, spent higher average sums on lodging, food services, and their activities.

Economic Impact

The total sales impact from all travel and tourism activities within the nine-county region during 1994 amounted to \$914 million (Table 2). The direct sales impact was \$309 million and the secondary impacts (indirect and induced) were \$605 million. On a value added basis, the net impact was \$539 million. The salary and wage component of value added was \$310 million that, in turn, supported more than 23,000 annual jobs on a full and part-time basis.

The origin of the total sales impacts was identified in terms of the ten groups of travel and tourism activities (Table 2). The relative size of the group impacts followed the same pattern as was evident in their nonresident expenditures. Business and Transient Travel had 33% of the total sales impact, followed by Outdoor Activities, with 26% of the total, and Conferences and Conventions, with 20%. Historic Sites and Museums was fourth largest, with 7% of the total sales impact. The remaining five

Table 2. Total travel and tourism impacts by activity for 1994.

Activity Groups	Direct Sales	Secondary Sales	Total Sales	Value Added	Employee Income	Employment
Amusement Parks	\$6,777,500	\$14,980,300	\$21,757,800	\$12,777,200	\$6,844,700	597.23
Antiques Centers	\$1,812,800	\$3,723,700	\$5,536,500	\$3,342,600	\$1,848,500	148.65
Conferences and Conventions	\$62,650,400	\$124,452,900	\$187,103,300	\$113,005,000	\$65,799,100	4789.69
Cultural Events	\$4,601,300	\$9,855,200	\$14,456,500	\$8,518,700	\$4,953,500	389.30
Historical Sites and Museums	\$21,539,800	\$38,457,000	\$59,996,800	\$33,526,100	\$19,846,500	1430.95
Outdoor Activities	\$77,222,800	\$159,106,000	\$236,328,800	\$143,244,500	\$81,964,800	6302.96
Shows, Fairs and Festivals	\$7,775,100	\$14,469,400	\$22,244,500	\$11,946,300	\$7,071,200	535.16
Sporting Events	\$8,829,400	\$15,247,300	\$24,076,700	\$13,416,200	\$6,914,100	562.46
Vacation Homes	\$14,452,400	\$18,665,300	\$33,117,700	\$18,331,300	\$9,933,800	653.66
Business and Transient Travel	\$103,066,000	\$206,133,100	\$309,199,100	\$180,674,100	\$105,148,900	7996.93
Total	\$308,727,500	\$605,090,200	\$913,817,700	\$538,782,000	\$310,325,100	23406.99

groups, representing sixteen activities, generated less than 14% of the total sales impact.

The placement of the total sales impacts was identified in terms of IMPLAN's ten industrial groups (Table 3). More than 90% of the direct sales impact was in two economic groups: Services (\$195 million) and Wholesale and Retail Trade (\$93 million). The secondary sales impacts were distributed over a wider array of groups, including Finance, Insurance, and Real Estate (24% of secondary), Services (24%), Wholesale and Retail Trade (19%), Manufacturing (12%), and Transportation, Communications, and Utilities (12%).

A more specific delineation of impact recipients was provided in terms of the individual sectors within the various groups. Two sectors received 71% of the direct impacts: Sector 463: Hotel and Lodging Places and Sector 454: Eating and Drinking Establishments. An additional 7% was placed in Sector 488: Amusement and Recreation Services. Further analysis of Sectors 463 and 454 showed 89% of their secondary impacts were induced, with only 11% as indirect. In part, the larger induced impact was due to both sectors being labor-intensive. Employee compensation for the restaurant sector was 53% of the output value and 47% for the lodging sector. By comparison, the average employee compensation for all sectors in the region was 33% of their output. In contrast, intermediate inputs to the restaurant sector were 43% of their output, with only 30% purchased regionally. In the same fashion, intermediate inputs to the lodging sector were 36% of their output, with 50% purchased regionally.

The sector-by-sector listing of secondary sales impacts also portrayed the induced character of these secondary impacts. For the most part, the total sales output from these sectors followed the personal consumption pattern of the U.S. population (BEA 1990).

Conclusions

The sources and placement of the economic impact originating from travel and tourism were identified for a nine-county region of southwestern Pennsylvania. Among the ten major groups of travel and tourism activities, Outdoor Activities attracted the largest number of nonresident visits, representing 48% of the total (Table 4). Next in order were Business and Transient Travel, Conferences and Conventions, and Historic Sites. In terms of the money spent by nonresident visitors to the region, Business and Transient Travel had the lead position, with 33% of the total. Next in order were Outdoor Activities, Conferences and Conventions, and Historic Sites. Total sales impacts followed this same pattern. Of further interest, within the Outdoor Activities group, Downhill Skiing and Golfing provided nearly two thirds of the group's expenditures and impacts.

There was a similarity in the nonresident expenditures within the four lead groups. Basically, most of these visitors were engaged in overnight trips, with the majority of their regional expenses tied to lodging, food, and allied recreational services. As a result, their impacts were generated in a fairly consistent fashion.

Table 3. Total travel and tourism impact by industry for 1994.

Industry	Direct Sales	Secondary Sales	Total Sales	Value-Added	Employee Income	Jobs #
Agriculture, Forestry and Fisheries	\$518,300	\$11,725,400	\$12,243,700	\$3,809,900	\$1,425,700	218.30
Mining	\$512,200	\$2,815,200	\$3,327,400	\$2,523,900	\$744,300	20.45
Construction	\$3,875,700	\$22,328,400	\$26,204,100	\$14,540,200	\$11,047,700	540.92
Manufacturing	\$2,379,200	\$72,611,000	\$74,990,200	\$26,804,500	\$16,799,300	778.78
Transportation, Commun., Utilities	\$4,029,200	\$71,055,500	\$75,084,700	\$41,117,300	\$16,295,600	577.49
Wholesale and Retail Trade	\$93,075,400	\$116,090,700	\$209,166,100	\$131,158,600	\$90,752,300	8221.16
Finance, Insurance and Real Estate	\$969,000	\$147,824,600	\$148,793,600	\$104,718,000	\$17,021,300	945.06
Services	\$194,774,500	\$144,062,300	\$338,836,800	\$197,133,100	\$141,898,400	11619.13
Government Enterprises	\$8,594,000	\$16,577,100	\$25,171,100	\$16,976,500	\$14,340,500	485.70
Total	\$308,727,500	\$605,090,200	\$913,817,700	\$538,782,000	\$310,325,100	23406.99

Table 4. Percentages of nonresident attendance, nonresident expenditures, and total sales impact by activity groups, 1994.

Activity Groups	Non-Resident Attendance	Non-Resident Expenditures	Total Sales
Amusement Parks	5.0%	1.8%	2.4%
Antique Centers	1.2%	0.9%	0.6%
Conferences/ Conventions	6.9%	22.1%	20.5%
Cultural Events	1.5%	1.4%	1.6%
Historical Sites	6.5%	6.4%	6.6%
Outdoor Activities	48.2%	24.9%	25.9%
Shows, Fairs and Festivals	5.2%	3.0%	2.4%
Sporting Events	2.9%	2.3%	2.6%
Vacation Homes		4.6%	3.6%
Business/ Transient Travel	22.6%	32.6%	33.8%

From an economic viewpoint, the region's key recreational attractions are its ski slopes, golf courses, public parks, and historic sites. In addition, the direct sectors that service the nonresident visitors, namely lodging and food services, play a key role in this travel and tourism market. The potential for growth will depend on whether this overall assembly of recreational and service facilities maintains their competitive advantage. This advantage can be described as certain unique resources and attractions, their proximity to outside population centers, and their relative cost of services. Although the assembly is, indeed, complex and has largely evolved through a myriad of decentralized decisions, there is now a regional need for achieving better coordination in order to maximize the region's future potential.

Acknowledgments

This research was sponsored by the Southwestern Pennsylvania Heritage Preservation Commission, Box 565, Hollidaysburg, PA.

Literature Cited

Alward, G. S., H. C. Davis, K. A. Depotakis, and E. M. Lofting. 1985. Regional non-survey input-output analysis with IMPLAN. Paper presented at the Southern Regional Science Association Conference. Washington, DC. May 9-10, 1985. 12p.

Bureau of Economic Analysis, U.S. Dept. Commerce. 1990. Personal Consumption Expenditures in the U.S. IN: The World Almanac and Book of Facts: 1992. Phoros Books. New York, NY. p. 149

Grado, S. C., C. H. Strauss, and B. E. Lord. 1996a. Antiquing as a recreational activity in southwestern Pennsylvania. In C. P. Dawson (ed.) Proceedings of the 1995 Northeastern Recreation Research Symposium. Gen. Tech. Rep. NE-218. Radnor, PA.: USDA Forest Service, Northeastern Forest Experiment Station. pp. 137-140.

Grado, S. C., C. H. Strauss, and B. E. Lord. 1996b. The economic impact of conferences and conventions. Paper presented at the 1996 Northeastern Recreation Research Symposium. Bolton Landing, NY.

Lord, B. E., C. H. Strauss, and S. C. Grado. 1996. The economic impact of state forest recreation in southwestern Pennsylvania. In C. P. Dawson (ed.) Proceedings of the 1995 Northeastern Recreation Research Symposium. Gen. Tech. Rep. NE-218. USDA Forest Service, Northeastern Forest Experiment Station. Radnor, PA. pp. 137-140.

MIG Inc. 1996. IMPLAN News, No. 16. January, 1996. MIG, Inc.

PKF Consulting. 1995. Trends in the Hotel Industry - Pennsylvania. PKF Consulting. San Francisco, CA 2p.

Snyder, R. 1992. Unpublished Pennsylvania Fish and Boat Commission attendance surveys and computer diskette. Pennsylvania Fish and Boat Commission. Pleasant Gap, PA 25 p.

Strauss, C. H., B. E. Lord, and S. C. Grado. 1994. Economic Impact of Travel and Tourism in Southwestern Pennsylvania. Report to Travel Promotion Partnership. Penn State University. University Park, PA 82 p.

U.S. Travel Data Center. 1994. The Economic Impact of Travel on Pennsylvania Counties 1991 & 1992. U.S. Travel Data Center. Washington, DC. 63 p.

THE THEORETICAL ANALYSIS OF TRAVEL AND TOURISM DEMAND

Kuan-Chou Chen, Ph.D.

Assistant Professor, Recreation and Tourism Division
Bowling Green State University, Bowling Green, OHIO 43403

Abstract: One of the most important areas of analysis in travel and tourism planning is the estimation of tourist demand for travel and tourism facilities and services. Indeed, much of the research literature on planning techniques has focused on demand model formulation and use. In this paper, an overview of travel and tourism demand analysis concepts, techniques, and trends is presented. Because the appropriate demand analysis approach for any particular problem context depends on the characteristics and scope of the problem, special attention is given to identifying the types of situations where each approach is most suited.

Introduction

Tourism demand does not represent a homogenous group of people striving to travel pushed by identical motivations. It is a complex of various, and sometimes conflicting, desires, needs, tastes, like and dislikes. Hence, the analysis of tourism demand can help decision makers and planners to figure out the tourists' behavior elements, such as motivation, preference. Because the appropriate demand analysis approach for any particular problem depends on the characteristics and scope of the problem, special attention is given to identifying the types of situations that each approach is most suited.

The purpose of this paper is to review the travel tourism demand concepts, affecting factors, models and trends. This can help travel and tourism planners understand how to establish a demand model and also provide a general knowledge of the assumptions of different models.

The Affecting Factors of Travel and Tourism Demand

According to microeconomics theory, demand means the quantity of a commodity consumers wish to buy and can buy at a given price in a given period. More precisely, demand signifies a functional relationship that reveals the quantity that will be purchased at various prices, at a given time and place. The tourism demand function has several factors that analyze the needs and wants of tourists in establishing the demand of a particular destination. Several factors also affect tourism demand that should be considered when making forecasts. The tourism demand function is divided into five categories that elaborate on the demand of tourists.

Demand = f(price, preference, attractiveness, income, other substitution)

Price

Unlike a commercial product, tourism resources are immobile. The tourist must travel to the destination to enjoy the tourism product. Thus, cost is the major concern for tourists when they make decisions. Usually, costs includes transportation costs,

transportation time opportunity cost, lodging, shopping and equipment, etc. In travel and tourism demand research, the costs are usually measured by travel cost, travel time, travel distance and out-of-pocket cost.

Preference

Tourists' preference is one of the major elements determining demand. However, preference is hard to measure directly. Tourists are motivated in different ways by different stimuli, and not all people react the same way to the same stimuli. Preference has a lot to do with demographic and socioeconomic variables. These variables include age, sex, marital status, educational level, occupation, position, family size, tourism and recreation experience and special recreation training.

Attractiveness

Attractiveness is a psychological reward. Attractiveness is varied for different tourist groups. Basically, attractiveness can be a historical area, weather, special event, natural resources, religious area, theme park, etc. For example, in 1996, the Olympic games will be held at Atlanta GA so sport events will provide the attractiveness for tourism demand. The attractiveness, in essence, is measured by infrastructure and superstructure quality of services, capacity and types.

Income

The household and personal income is a key variable for individuals or family to decide their tourism capability. Meanwhile, that will be one of the important variables for demand analysis. Especially, discretionary income influence the tourists' decision for selection of tourism activities. Discretionary income is income that is left after buying all one's necessities.

Other Substitutions

Substitutions can be separated into two categories: price substitution and resources substitution. The former is concern about the cost for similar tourism resources. The basic assumption is the tourist has the same experience for those resources or never has been to the destination. The latter is related to the destination attractiveness competition if the tourist will pay the same opportunity cost.

Stated as above, there are five fundamental elements for the researchers to establish the tourism demand model from the individual aspect. If the study is the whole market focus, population factors will be important variables for measuring tourism demand. Population factors include the number of people, migration, structure, spatial distribution, and so on.

The Forecasting Methods for Travel and Tourism Demand

The definition of demand forecasting is to predict the most probable level of demand that is likely to occur in light of known circumstances or, when alternative policies are proposed, to show what different levels of demand may be achieved. It is essential that forecasts provide information that is required by decision makers. The forecasts needs to cover the specified time period for which it is designed. Hence, forecasting plays an important role in most organizations since virtually all planning and

decisions must rest on understanding of, or assumptions about, the future (Stynes, 1983). Forecasting models are tools to help us better understand the future, including the role of past and present decisions in shaping it. In this section, four types of forecasting models that have been applied in various studies will be explored.

Time Series or Trend Extension Models

The simplest sort of demand model is estimated by plotting historical demand levels vs. time and then extrapolating the plotted trend into the future. Trend extension is extremely common both within and outside of travel and tourism planning. Whenever growth rates are used to project future growth or whenever past and current experiences are extrapolated into the future, one is either explicitly or implicitly engaging in a trend extension analysis.

Structural or Causal Models

Structural models depend on the identification of the relationship between some measure of travel and tourism demand and a series of causal variables. These relationships are usually identified using multiple regression or analysis of cross-sectional data (Smith, 1993). Once the model has been calibrated, estimates of future values of the causal variables are used in the model to make a forecast of future travel and tourism demand. Since the causal relationships are very vital for using structural models, the theoretical background to support model building should be very precise. Gravity model, multiple regression models, and intervening opportunity models are three types of approaches that have been applied in many studies.

System Simulation Models

System simulation models, in general, are the combination of structural and time series models. Simulation models are characterized by their explicitly dynamic nature and their attempt to replicate key events that occur over time. The typical structure of a simulation consists of a set of information (current population, numbers of visitor, infrastructure capacity, etc.) at some time period stored in a central data bank. Submodels characterizing the actors and their interrelationships draw upon this information as a basis for their actions (manpower management, accessibility, means of transportation, etc.) Given these actions, the data base is updated so that at the end of the period, there exists a new system state that serves as the basis for the decisions to be made in the next simulation period. Finally, from time to time exogenous changes may be imposed on the system (tourism resource development, management style changes, marketing technique changes, etc.)

Trip Distribution Models

With limited time and cost, trip distribution is one feasible method to measure the numbers of visitors. These models assume that under the predicted time period, the visitors' preference is the same, or the quality of the destination will not change. Based on the national trips forecasting values, the trips to each political units (i.e. county, township, etc.) will be allocated in given portions.

Discrete Choice Model --- a Research Trend

The analysis of consumer choice behavior is a major concern in such disciplines as marketing, economics, psychology, transportation science, and public policy analysis. Traditional

microeconomics deals with consumer demand for goods that can be measured as continuous quantities (e.g., gallons of gasoline, pounds of meat). However, many important applications involve categorical, or discrete choice. Examples include choice of a brand of soft drink, type of automobile, mode of transportation for commuting to work, family size, or shopping destination. Discrete choice models are widely used to analyze and predict these types of consumer behavior. Also, the tourism demand research using discrete choice model has become a trend in recent years.

Four types of forecasting models have been discussed above. To achieve a conceptual and analytical formulation of the travel and tourism demand problem, it is necessary to work at a more aggregate level of system representation than that of the individual trip maker. Individuals are, in principal and in fact, exactly that; individual, unique, and for all practical purposes unpredictable with respect to the intricacies of their behavior. Aggregates of people, however, will tend to exhibit common tendencies and behave in similar ways. In other words, in the aggregate, statistical regularities emerge that are sufficiently strong, stable, and theoretically reasonable to be useful in the analysis and prediction of travel and tourism demand.

Conventional microeconomics makes extremely strong assumptions concerning the decision maker's ability to use perfectly all information available and relevant to the decision and to make a completely rational, consistent decision given this information. The basic assumption is the tourist is able to assign at least an ordinal ranking to the alternatives available in terms of their relative desirability (i.e., the alternative's utility). Being a rational person, the decision maker will then choose the alternative with maximum utility (i.e., the one that maximizes the benefits). Probit and logit are two standard discrete choice models have been widely applied in different areas. Probit models cannot be expressed easily in an analytically closed form and hence are computationally cumbersome and expensive to use.

In recent demand studies, due to the easy model calibration and precise predictability, logit model has been widely applied in different demand forecasting. The logit model has a tractable, convenient functional form. In particular, it can calibrate relatively easily and efficiently using fairly standard maximum likelihood techniques.

Due to space limitations, the specific comparison of each discrete choice model cannot be discussed here. The brief review points out the research milestone in the future research.

Conclusion

Tourism demand is diversified and far from being stereotyped in well defined groups. That is the reason why this paper stresses the importance of an objective evaluation of receiving tourism resources in order to establish an approach that would best serve marketing efforts. In recent years, the discrete choice model has gradually become the main stream modeling approach for analyzing tourism demand. However, the discrete choice model, in general, requires a great deal of data. Also, the model parameter calibration is very complicated. So, most research still remain in aggregate level models, which are less costly and more

timely. There will be three directions for the future research. First, effective and efficient data banks will be built for discrete choice modeling. Also, effective computing approaches and techniques will continue to develop. Second, for the purpose of building more precise aggregate models, the theoretical background for the causal relationships must be verified reliably and validly. Finally, supply and demand considerations will be another research direction. To date, demand studies have assumed that supply is constant. But, since the concern over environmental attitudes, the supply side has become a variable issue. So, research from the whole tourism system viewpoint is another trend.

Literature Cited

- Cesario, F. J. 1975. A simulation approach to outdoor recreation planning. *Journal of Leisure Research*. 7: 38-52.
- Cesario, F. J.; Li, K. J. 1976. A recreation site demand and benefit estimation model. *Regional Studies*. 10: 97-104.
- Cesario, F. J. 1969. Operations research in outdoor recreation. *Journal of Leisure Research*. 1: 22-51.
- Ewing, G. O. 1980. Progress and problems in the development of recreational trip generation and trip distribution models. *Leisure Sciences*. 3: 1-24.
- Gunn, C. A. 1988. *Tourism Planning*. 2nd ed. New York: Taylor & Francis.
- Kim, S.; Fesenmaier, D. R. 1990. Evaluating spatial structure effects in recreation travel. *Leisure Science*. 12: 367-381.
- Lin, Y. J. 1983. *Recreation Site Substitution and Urban Recreation Site Choice Models*. Unpublished Ph.D. dissertation, Northwestern University.
- McIntosh, R. W.; Goeldner, C. R.; Ritchie, J. R. B. 1995. *Tourism: Principles, Practices, Philosophies*. 7th ed. New York: John Wiley & Sons, Inc.
- Meyer, M. D.; Miller, E. J. 1984. *Urban Transportation Planning --- A Decision-Oriented Approach*. New York: McGraw-Hill.
- Peterson, G. L.; Stynes, D. J.; Rosenthal, D. H.; Dwyer, J. F. 1984. Substitution in Recreation Choice Behavior. In: *Proceedings, Symposium on Recreation Choice Behavior*. Missoula, Montana: Northwest Science Association.
- Stynes, D. 1983. An introduction to recreation forecasting. In *Recreation planning and management*.
- Stynes, D.; Peterson, G. 1984. A review of logit models with implications for modeling recreation choice. *Journal of Leisure Research*. 16: 295-311.
- Wahab, S. 1975. *Tourism Management*. London: Tourism International Press.
- Walsh, R. G. 1986. *Recreation Economic Decision: Comparing Benefits and Costs*. State College: PA: Venture Publishing, Inc.

THE NEW ENGLAND TRAVEL MARKET: 1980 TO

1994 – AN UPDATE

Rodney B. Warnick

Associate Professor, Department of Hotel Restaurant and Travel Administration, 107 Flint Lab, University of Massachusetts at Amherst, Amherst, MA 01003-2710

Abstract: The purpose of this study was to examine and explore the New England domestic travel market trends, from 1979 through 1994. The existing travel markets, who travel to New England, are changing by age cohorts and geographic markets. Implications and discussion points were provided. **Keywords:** Domestic travel, trends, New England, demographics, geographic markets, and market implications.

Introduction

Evidence suggests that demographic shifts in the population age structure will affect many businesses and activities, especially tourism as the population ages and significant portions of the population have time to travel (Research Alert, 1990). This will be particularly true as baby boomers reach older age cohorts. Recent studies (Warnick, 1992A and 1992B, Warnick 1993, Warnick 1994 and Kuentzel, Robertson and Ramaswamy, 1995) showed domestic travel in the Northeast has become a mature market and also very different in terms of changes by state. The distinct differences in travel-specific behavior and participation rates exhibited by changes over time will likely shape future demand for these activities. The economy of much of New England depends on the travel and tourism industry. Richness of New England's tourism and recreation attraction industry are critical to the increasingly competitive travel market. Therefore, there is a need to monitor these trends carefully and to determine how the region's markets are changing. This study provides an additional four more years of information to update the previous study of travel trends in New England and the Northeast.

Purpose of the Study

The purposes of this research paper are twofold: 1) to examine domestic travel to New England during the 80s and early 90s and to update previous trend studies; and 2) to determine how participation rates in domestic travel to New England and the Northeast within demographic and geographic variables have changed over time.

Method

For the analysis of domestic travel, data for this study were compiled from the annual surveys conducted by Simmons Market Research Bureau, Inc. (1979 through 1994)¹. This research firm annually measures participation rates, demographic composition and media use patterns of a variety of leisure, sport and travel

Permission to use the travel data base was granted by Simmons Market Research Bureau (SMRB), Inc. of New York for the purposes of this study. The interpretation of the data is the author's and SMRB is the source.

activities. The sample sizes range from 15,000 adults sampled in the early 80s to more than 24,000 adults sampled in 1994. The data were analyzed from 1979 through 1994 using an average annual adjusted percentage change rate. Other change rate factors were considered (weighted change rate, moving average, and least squares method); however, this method was selected due to its wide acceptance. Within this study only travelers who said that they traveled to New England were included. Excluded from this analysis were travelers who visited the New England from other countries.

The nature of domestic travel and participation requires the description of three major components of travel demand. First, domestic travel must be defined. "Domestic travel" is defined as "any trip(s) of more than 100 miles (one way) within the continental 48 coterminous U.S. states taken in the previous 12 month period" (Simmons Market Research Bureau, Inc. 1991). This definition of domestic travel includes all types of travel taken which fits the mileage and regional description; but excludes all types of travel taken of distances shorter than 100 miles. Second, "market size" is the "number of people who participate in domestic travel." This statistic by itself is somewhat less meaningful than a statistic that more specifically quantifies demand or travel volume. However, the nature of this data set does not easily allow a projection of the number of travel days to New England. Third, "participation rate" is the percent of total adults by descriptor (total U.S. population or age - such as 18 to 24 year olds) who elected to travel to New England for any reason as a primary destination during the previous 12 months. In this study the geographic region definition of "New England" includes the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

Age cohorts that reflect the demographic patterns of travel include the following categories: 18 to 24; 25 to 34; 35 to 44; 45 to 54; 55 to 64 and 65 and older. Other groupings of age cohorts include young adults -- 18 to 34; middle-aged adults -- 35 to 50; and mature adults -- 50 and older. The highest level of educational status was also examined. It included the following categories: college graduate, some college education, high school education, and did not graduate from high school.

Selected Findings

The participation rates of adults selecting New England as a primary destination of all US adults averaged 3.4% over the last decade and a half (15 years). An adjusted annual change rate showed a 2.4% decline per year in New England travelers. This means New England lost about 141,000 primary destination travelers per year. The peak year was 1984 when 6.9 million destination travelers traveled to New England. The bottom year was 1991 when only 4.2 million destination travelers; however, travel has rebounded in 1992 (5.3 million travelers) and 1993 (5.3 million travelers), but fell off slightly in 1994 (4.7 million travelers).

New England's demographic markets have changed over time. Among the six age cohorts, four declined in participation rates for New England as a primary destination. They included 18 to 24 year olds, who declined by 1.8% (compare to decline of 5.1% in 1993 study), 25 to 34 year olds, who declined by 5.3% (compare to decline of 2.5% in 1993 study), 35 to 44 year olds,

who declined by 1.3% (compare with growth of 1.7% in 1993 study), and 45 to 54 year olds, who declined by 1.5% (compare to decline of 1.0% in 1993 study)

In two age cohorts, participation rates for New England as a primary destination grew. They included 55 to 64 year olds -- growth of 2.7% (compare with decline of 1.1% in 1993 study), and 65 and older -- growth of 1.1% (compare with growth of 4.0% in 1993 study).

New England declined as a destination choice for two of the four geographic markets. Fewer people from the following regions selected New England as a primary destination. They included the Northeast, which declined by 5.0% (compare to decline by 1.2% in 1993 study), and the South, which declined by 1.3% (compare to decline by 1.1% in 1993 study)

New England grew as a destination choice for two of the four geographic markets. More people from these regions selected New England as a primary destination. They included the Midwest, which grew by 4.4% (compare with growth of 3.6% in 1993 study), and the West, which grew by 7.6% (compare to decline by 1.4% in 1993 study). However, these two regions comprised the two smallest portions of the geographic markets for New England. The Northeast comprises 63% of New England's market (down from 66% in 1993 study). Nevertheless, the composition of the New England destination market was comprised more of the more distance travel markets, particularly the Midwest and West and a corresponding loss of Northeast market that appears to be going elsewhere.

Conclusions

New England continues to show signs of a mature destination market since the last review (Warnick 1993). The area has not rebounded to the high market years of the mid- 80s. However, after the Gulf War Year of 1991, there were positive signs that more travelers were returning to New England as travel was up and held steady. Yet the market dropped off slightly in 1994. Although New England is without a doubt one of the United States' most definable or marketable travel destination regions, the decline can be partially attributed to changing demographics and travel preferences of geographic markets.

The demographics suggested that New England has lost some favor with the young adult and middle-aged baby boom markets and gained with the over 55 year old markets. Growth has accelerated particularly for the 55 to 64 year market. While some may be concerned about this, it may be considered very positive as the over 55 market is to swell in the coming years and New England may be very well positioned to attract more of these folks. This is particularly true if they are currently coming in increasing numbers.

Growth in the mature market is a very positive sign for New England. It is also interesting that people more than 50 account for 43 percent of all households and half of all quantitative discretionary income (Morgan and Levy 1993). The big market may continue to be the middle-aged Baby Boomers, but they will soon be retiring and many will becoming empty nesters. Their

travel patterns will change and we do know they are nostalgic. New England should concentrate on attract this market and individual destinations and attractions should be mindful of the aging Baby Boom market. They cannot be overlooked. However, marketing to them will not be like marketing to their parents. They are not likely to want to do the same things the generations before them did when they became older adults. This market has been highly participatory and active and is likely to be much more active into later stages of life. Passive attractions will need to be more participatory and engaging.

The previous trend study painted a not so good outlook on travel to New England largely do to the 1991 year. However, even then caution was noted as 1991 was the Gulf War year and travel was generally off everywhere. In that paper, a cautionary note was expressed regarding the reflection on the turn of events in one year. More patterns were suggested to be followed. Though travel was off in 1991, it did indeed rebound and hold steady in 1992 and 1993 and fell off slightly in 1994. Thus, patterns need to continue to be followed. The 1994 year, although off slightly, is not the significant trend year here. The overall pattern in recent years indicates some stabilization.

While the findings discussed here show an overall decline in the under 55 markets, one should not ignore these markets. They are indeed large markets that require attention and marketing savvy. In Table 1, some statistics seem to counter argument with the growth statement about the over 55 market trends. For example, "other age cohorts" configuration actually suggest a decline in the over 50 market participation rates. This is due in large part to the significant number of people in the 50 to 54 year old age range and relative unchanged pattern among those who are age 65 and over.

Market change over time is another important travel trend issue examined here. People who participate in travel pursuits may change their rates of travel based on their individual household conditions. It is very possible that people who travel frequently one year might not travel as frequently the following year. By carefully monitoring demographics and the changing patterns associated with one can see new patterns developing.

These trends, if they continue may mean some very basic changes in how travelers use the resources in New England. If we assume that the region is losing the more active travelers (younger age cohorts usually have higher participation rates in active recreational pursuits than older cohorts); then, activities that are likely to grow may include hiking, walking, visiting historic places and more passive forms of recreation and entertainment. Activity resource areas that are likely to see declines in participation may include swimming, skiing, and outdoor resource-based activities -- such as hunting, snowmobiling, water skiing, for example. These fundamental uses may not be dramatic changes, but will gradually change.

New England is not the "hot market" it was a decade ago for domestic travel. Other regions appear to have marketed their regions more aggressively and successfully. The Northeast travel market, New England's primary source of travelers, continues to

Table 1. New England Travel Market, 1980-1994

New England Primary Destination Choice																
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
Adult Part Rate	4.3%	4.2%	3.7%	4.1	3.5%	3.8%	3.6%	3.0%	2.8%	3.3%	2.3%	2.9%	2.9%	2.3%	3.4%	-3.7%
#New Eng. Trav. (000)	6,814	6,772	6,122	6,589	5,969	6,581	6,302	5,724	4,915	5,903	4,232	5,307	5,339	4,727	5,865	-2.4%
Age Cohorts																
Adult Overall Rate	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
18 to 24	4.3%	4.2%	3.7%	4.1%	3.5%	3.8%	3.6%	3.0%	2.8%	3.3%	2.3%	2.9%	2.9%	2.5%	3.4%	-3.7%
25 to 34	3.3%	3.4%	3.9%	3.9%	3.7%	2.8%	2.7%	2.5%	1.8%	1.9%	1.6%	2.3%	1.9%	2.0%	2.6%	-1.8%
35 to 44	5.8%	4.7%	4.5%	4.0%	3.8%	4.4%	4.5%	2.6%	2.7%	3.5%	1.9%	1.9%	3.4%	3.0%	3.5%	-5.3%
45 to 54	5.1%	5.5%	3.6%	5.3%	4.3%	3.6%	3.1%	3.0%	2.9%	3.9%	3.0%	3.5%	3.4%	3.0%	3.6%	-1.3%
55 to 64	3.5%	3.4%	3.4%	4.7%	3.3%	3.9%	3.8%	3.9%	4.0%	2.5%	3.2%	3.2%	2.0%	2.6%	3.5%	-1.5%
65 and Older	2.3%	3.7%	2.4%	2.7%	2.5%	3.5%	3.0%	2.1%	2.3%	2.6%	2.0%	3.2%	2.5%	1.8%	2.6%	0.1%
Other Age Cohorts																
Adult Overall Rate	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
18 to 34	4.3%	4.2%	3.7%	4.1%	3.5%	3.8%	3.6%	3.0%	2.8%	3.3%	2.3%	2.9%	2.9%	2.5%	3.4%	-3.7%
35 to 49	5.6%	5.9%	3.4%	4.9%	4.1%	4.3%	3.6%	3.8%	3.1%	4.4%	2.4%	3.4%	3.7%	3.2%	3.1%	-4.5%
50 and Older	3.6%	3.9%	3.3%	4.2%	3.2%	3.7%	3.4%	3.1%	2.9%	2.7%	2.5%	3.4%	2.8%	2.4%	3.2%	-1.5%
Education Status																
College Graduate	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
Attended College	7.8%	7.0%	7.9%	8.7%	7.2%	7.8%	8.9%	4.5%	5.8%	6.3%	4.7%	5.9%	5.7%	5.3%	6.7%	-3.7%
Graduated High School	5.7%	5.2%	5.1%	5.6%	4.5%	4.8%	3.7%	3.5%	3.6%	3.8%	2.1%	3.0%	2.9%	2.1%	3.1%	-4.5%
Not High School Grad.	2.2%	2.4%	1.5%	1.9%	1.4%	1.6%	1.2%	1.2%	1.0%	1.0%	0.9%	1.6%	0.3%	1.1%	1.4%	16.0%
Target Region																
Northwest	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
South	13.9%	13.4%	11.5%	13.1%	10.8%	11.5%	11.1%	8.8%	6.5%	10.2%	6.4%	8.4%	7.2%	5.7%	6.7%	-5.0%
Midwest	1.9%	1.9%	1.2%	1.6%	1.4%	1.5%	1.4%	1.3%	1.8%	1.4%	1.1%	1.3%	1.8%	1.4%	1.5%	-1.3%
West	1.4%	1.5%	1.5%	1.7%	1.8%	2.1%	1.8%	1.7%	1.9%	1.7%	1.4%	1.2%	2.1%	2.6%	1.7%	4.4%
Other Regions	1.3%	1.3%	1.9%	1.2%	1.0%	1.2%	1.5%	1.3%	1.4%	0.9%	1.1%	1.9%	1.1%	1.5%	1.3%	7.6%
Target Region Composition																
Northwest	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
South	72.9%	70.7%	68.5%	70.5%	66.7%	65.6%	65.9%	61.5%	50.1%	66.3%	58.8%	61.3%	51.4%	47.0%	63.3%	-3.0%
Midwest	10.6%	12.0%	8.4%	9.9%	10.1%	9.7%	9.4%	10.7%	15.7%	11.2%	11.2%	10.8%	14.7%	13.2%	11.2%	2.8%
West	6.3%	5.7%	9.5%	5.3%	5.6%	5.8%	7.9%	8.5%	10.0%	5.8%	9.5%	13.5%	8.1%	12.3%	8.0%	13.6%
Total Travel Destinations of Northeast Market (000)																
Total Destinations	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Decade Average	Adj. Annual Change Rate
New England Dest.	130,431	132,419	129,781	126,112	119,659	121,750	125,319	122,738	122,913	130,845	130,494	139,497	125,380	130,938	127,980	0.4%
Mid-Atlantic Dest.	25,426	21,642	25,862	28,141	24,964	22,931	24,620	23,877	20,069	23,285	20,870	19,858	19,436	21,019	22,976	-0.2%
Other Regions Dest.	4,965	4,877	4,788	4,860	3,975	4,318	4,151	3,276	2,460	3,913	2,489	3,252	2,714	2,220	3,775	-4.1%
Total Northeast Dest.	139,822	158,938	160,431	159,113	148,609	150,000	154,100	150,891	145,442	158,043	154,784	162,570	147,530	154,177	164,731	1.1%

Source: Simmons Market Research Bureau, 1980-1994. Study of Media and Markets, Travel Volume. Permission to reproduce these data was granted by SMRB; interpretation is the author's.

reveal more travel tendencies to other parts of the United States as noted in the earlier study (Warnick 1993). The aggressive nature of other regions, the revitalization of market areas, and the overall changing demographic and geographic travel pattern changes may explain the repositioning of the New England Region. Furthermore, it may be that New England is now one of many choices and is losing market share based on a growing diversification in the travel market.

What are the choices for the tourism and travel industry and businesses changing within the New England? Again, it must be noted that there is not high growth in the domestic travel market as defined within the context of this study. It continues to be a mature market. It may be out hustled and repositioned by other more aggressive and perhaps potentially more attractive destination choices elsewhere. Long term, there are signs that market conditions may improve. More retirees and an aging population with more free time should help to increase domestic

travel demand to this region. Agencies' positioning statements and plans and marketplace promotions should consider the family market and the rapid growth in the mature market in the near future. It is a viable market and will be aggressively pursued over the next decade. New England's noteworthy historical, education and medical centers all may combine to attract more of these travelers to the region.

With no strong growth patterns in the domestic market, recreation and tourism businesses should continue to seek to balance market demand through either new markets or return markets. Furthermore, businesses must recognize that travel just does not "happen" anymore. Today's travelers have a diverse menu of national and international travel destinations to chose from during their free time. Heavily discounted airfares may prompt some travelers to go to more distant locales. Baby Boomers are a market who change their loyalties quickly.

Participation Rates for New England Travel by Age: 1980 to 1994

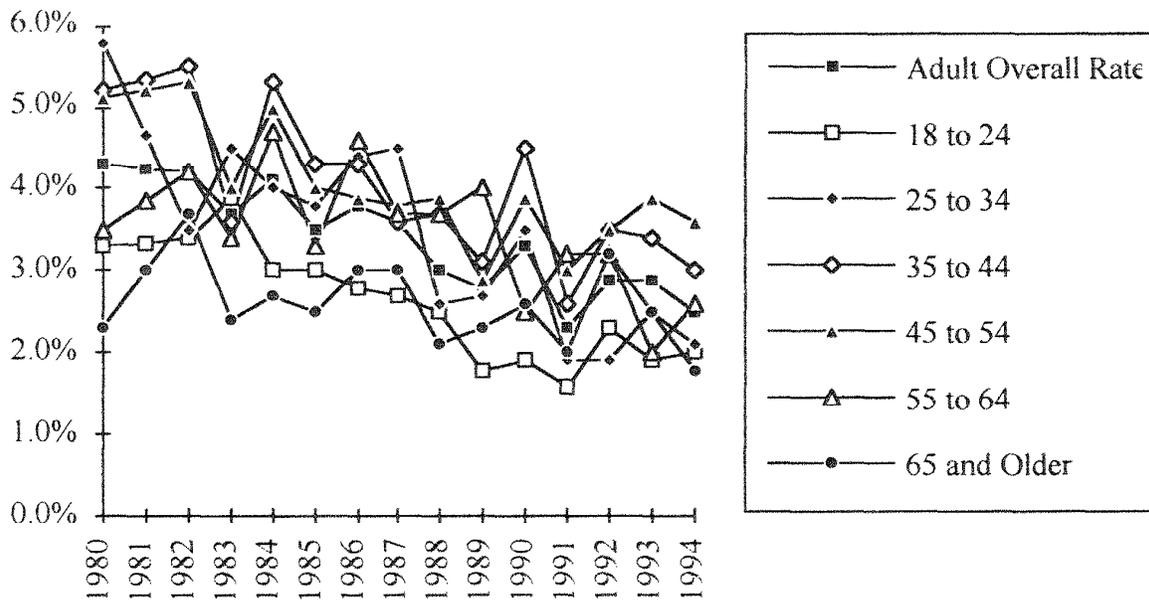


Figure 1. Participation rates for New England travel by age cohorts: 1980 to 1994.

Tourism and recreation businesses can no longer expect to benefit from growth markets where a new customer base is constantly replaced with another customer base. Mature market conditions spur customer retention strategies and market share competitiveness. In other words, these businesses must work hard to retain their current patrons because other firms will be seeking to draw them away. It will simply continue to be a more competitive tourism marketplace in New England in the 90s.

This review of domestic travel to the New England destination area provides new insights and how the market conditions for the

1990s may be evolving. National trends can be misleading within a regional context. The changes in the national travel market were not duplicated in the New England travel market. However, closer and more intense monitoring of travel trends, both domestic and localized, is still needed. Much is still not known about the inner travel patterns within New England or about the travel volume of each of these segments examined here. But, travel patterns have evolved and the New England travel market is much different from what it was just one decade ago.

Participation Rates for New England Travel by Educational Status: 1980 to 1994

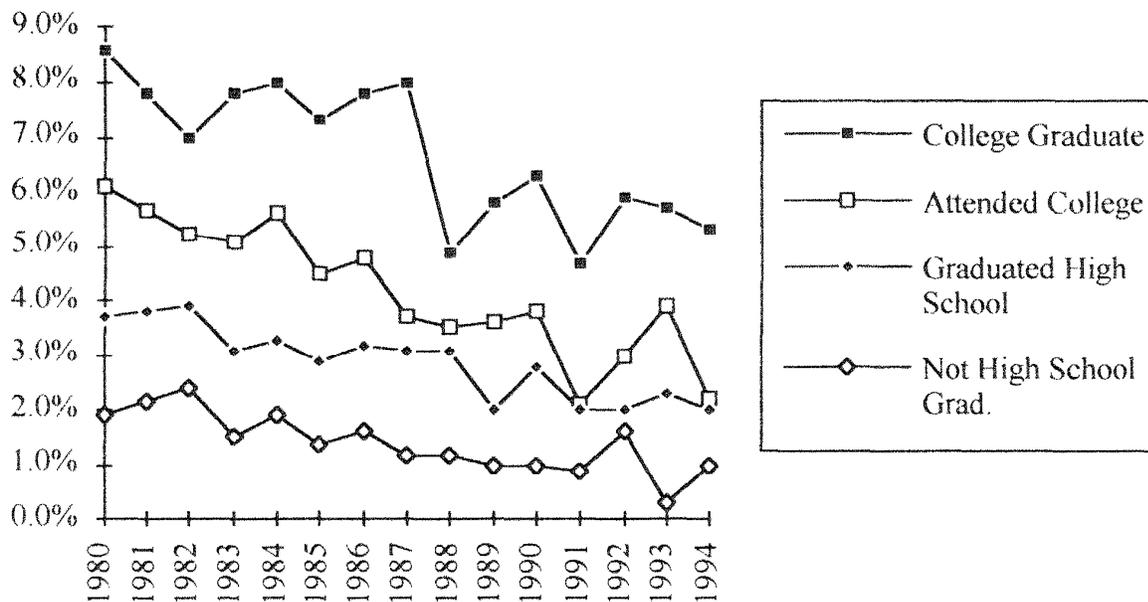


Figure 2. Participation rates for New England travel by educational status, 1980 to 1994.

Participation Rates for New England Travel by Market Area: 1980 to 1994

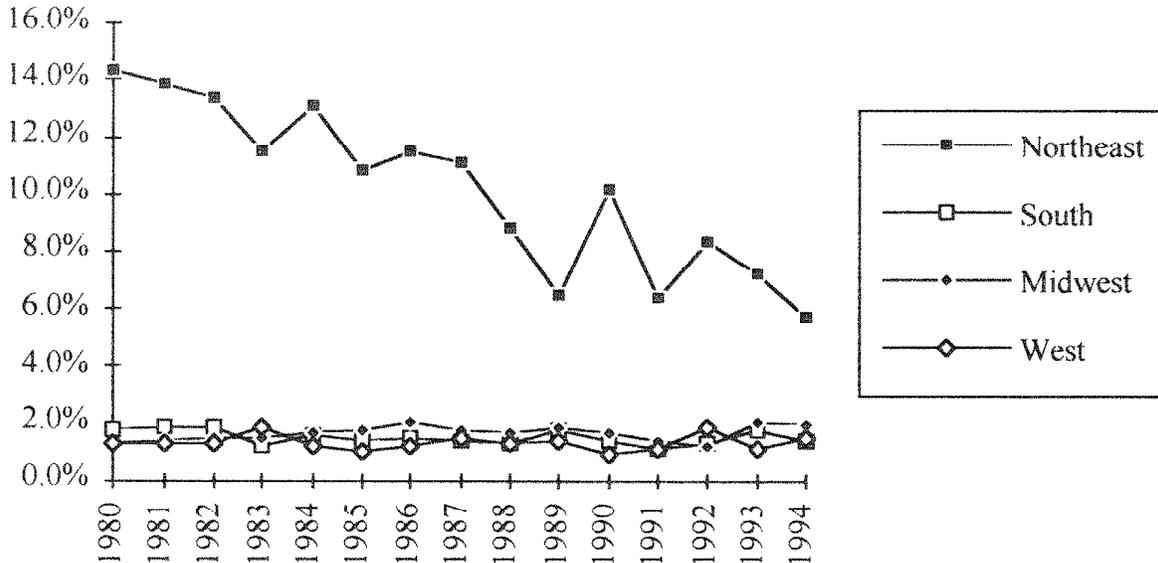


Figure 3 Participation rates for New England travel by market area: 1980 to 1994.

Literature Cited

Kuentzel, W. F., Robertson, R. A., and Ramaswamy, V. M. 1995. "A Time-Series Comparison of Vermont and New Hampshire Travel Trends." Proceedings of the Fourth International Outdoor Recreation and Tourism Trends Symposium and the 1995 National Recreation Resource Planning Conference. St. Paul, MN: Minnesota Extension Service. pp. 167-174.

Morgan C. and Levy, D. 1993. *Segmenting the Mature Market*. Ithaca, New York: American Demographics Press. 363 pp.
 Research Alert. 1990. *Future Vision*. New York: Source Books. 256 pp.

Simmons Market Research Bureau, Inc. 1980-1994. *Study of Media and Markets. Travel Volume*. New York, NY.

Simmons Market Research Bureau, Inc. 1994. *Technical Guide*. New York, NY.

U.S. Travel Data Center. 1994. *Travel Outlook*. Washington, D.C.: U.S. Department of Commerce. Warnick, Rodney B.

1992A. "U.S. Domestic Travel, 1980 to 1989: Hidden Data and Trends" National Recreation and Parks Association Leisure Research Symposium. October 1992. Cincinnati, Ohio.
 Figure 2. Participation rates for New England travel by educational status: 1980 to 1994. Warnick, Rodney B. 1992B. "Northeast Domestic Travel Trends: An Exploratory Study and Analysis, 1986 to 1990" *New England Travel and Tourism Journal*. October 1992.

Warnick, Rodney B. 1993. "New England Travel Market: Demographic and Geographic Markets, 1980 to 1990" 1993 Proceedings of the Northeast Recreation Research Conference. Saratoga Springs, New York. General Technical Report N-185. Radnor, PA: Northeast Forest Experiment Station. pp. 208-218.

Warnick, Rodney B. 1994. "New England Travel Market: Changes in Generational Travel Patterns." Proceedings of the 1994 Northeast Recreation Research Symposium. Saratoga Springs, New York. General Technical Report N-198. Radnor, PA: Northeastern Forest Experiment Station. pp. 116-124.

UNDERSTANDING THE MARKET FOR PARKS

CANADA BRANDED SOUVENIRS AND GIFTS

Fernando Mata

Research Officer, Economic Sector, Strategic Research and Analysis, Department of Canadian Heritage, Ottawa, Canada

Dick Stanley

Chief, Economic Sector, Strategic Research and Analysis, Department of Canadian Heritage, Ottawa, Canada

Abstract. The purpose of this paper is to report and discuss the findings of a segmentation analysis of the market for Parks Canada's branded souvenir and gifts using data from a 1995 national omnibus survey. Potential consumers were classified according to their interest in buying Parks Canada branded products, preferences for a buying locations and the most likely items to be purchased. To identify the characteristics of the market segments, cluster and discriminant analysis were used as data analysis techniques. Four distinct market segments were identified: "loyal," "committed," "uninterested" and "occasional." Each differed as to size, residence, socio-demographic characteristics, spending patterns and propensities to buy specific products. Roughly, the market estimates derived from the data suggest that there may be a potential souvenir market in Canada of \$ 1.6 billion and a potential gift market of \$4.0 billion.

The Market for Parks Canada Branded Products

Parks Canada is now considering the feasibility of licensing the private sector to produce branded gift and souvenir items. This endeavor requires the collection of relevant information on how Canadians view and will most likely consume these products. The segments of this market most likely constitute a heterogeneous population mix. For this reason, it was thought appropriate to break the market by its main socio-demographic and attitudinal constituents and proceed to study them systematically. Having identified market segments, appropriate targeting of communication messages and better development of various lines of products could be significantly facilitated.

Who will be the most likely consumers of branded Parks Canada products? Will they be regular visitors to the Parks or occasional ones? At what shops will they buy them? What kind of products are of special appeal to them? These types of questions became important for Parks Canada in 1995 in order to know the approximate value of the market for souvenirs and gifts and to assess the feasibility of marketing branded gift and souvenir items. The latter figures were thought would convince private entrepreneurs that the licensing of Parks Canada's brand name is commercially attractive.

Data and Methods

Information regarding the potential consumers of Parks Canada branded products came from a national omnibus survey comprising 2,022 Canadians aged 18 years old and over. The

polling firm Environics interviewed them in person between September 16 and October 7, 1995. The socio-demographic and residential characteristics of this sample are presented in Table 1. The survey's interviewing schedule contained questions measuring overall interest in Parks Canada branded products, buying criteria, preferences for buying locations, past spending in gift & souvenirs and items likely to be bought.

Table 1. Socio-Demographic Profiles of the 1995 Environics Survey.

	N	%
Total Sample	2,022	100.0
Gender		
Males	970	48.0
Females	1052	52.0
Age Groups		
18-34	728	36.0
35-54	707	35.0
55+	587	29.0
Marital Status		
Married	1231	60.9
Single	465	23.0
Other	326	16.1
Incomes (\$Can)		
Less than 15,000	411	20.3
15,000-34,999	445	22.0
35,000-49,999	342	16.9
50,000 +	824	40.8
Education		
High School or less	1057	52.3
Some University	643	31.8
Completed University +	322	15.9
Residence		
Ontario	550	23.2
Quebec	488	14.8
Rest of the Country	984	62.0

Identification of the Market Segments

To identify the main market segments a k-means cluster analysis of 8 key attitudinal variables was performed. These questions, which were Likert scaled (1-4 Points), measured the following items:

Overall interest in purchasing items associated with Canada's national parks and historic sites;

Interest in purchasing these items at a Parks Canada gift shop within a national park or historic site;

Interest in purchasing these items at a privately run store located within a national park or historic site;

Interest in purchasing these items at a department store located across Canada;

Interest in purchasing these items through mail order catalogues;

Intentions of buying these items as souvenirs of a trip to a historical park or site;

Intentions of buying these items as a souvenir gift of the trip for someone at home:

Intentions of buying these items as gifts in occasions such as birthdays, anniversaries, etc.

K-means cluster analysis was used as the statistical technique to differentiate cluster memberships. The k-means clustering algorithm allowed to measure the proximity between groups using the Euclidean distance between group centroids. Beginning with an initial selection of k groups, the algorithm placed each respondent within clusters according to his or her distance to the nearest centroid. In total, 10 cluster solutions were tested using the Environics 1995 survey data. To determine the best cluster solution, two criteria were used: the optimality criteria and the upper tail statistic (Mojena, nd). Following the optimality criteria, it was necessary to examine the behavior of the derived proximity measure in the neighborhood of k. The largest jump occurred at step 3 than at previous steps, thus, a 4-cluster solution seemed the most appropriate. The upper tail statistic test also confirmed this also this observation.

The four clusters found were labeled as: "loyals," "committed," "uninterested" and "occasional." These clusters accounted for 29%, 27%, 16% and 28% of the sample respectively. Discriminant analysis of the key eight attitudinal variables provided the information necessary to define cluster memberships and plot a "perceptual map" for segments. A good example of this methodology is found in Shoemaker's (1994) segmentation of the U.S. travel market according to benefits realized. Results of the discriminant analysis are presented in table 2 and the perceptual map appears on figure 1.

A classification procedure using two discriminant functions had a 96.3 % success rate. The high eigenvalue of 6.26 (ratio of the between groups to within groups sum of squares) of the first

function indicated that this linear combination did a fairly good job at separating adequately the groups. Table 2 showed that four variables were important in separating the groups. These were: in function 1, "buy at a PC gift shop," "buy a trip-related souvenir" and "buy a personal souvenir," and, in function 2: "buy at a Department store. The centroid and variables transformations of Table 2 (shown in columns 5 to 19), allowed to produce a "perceptual map" of the consumer behavior for the four segments identified. In this map, segments are plotted as points relative to their attitudinal attributes represented by vectors in the discriminant scores space. The degree to which these attributes separate the groups is indicated by the length of the vector. The vector's proximity to each segment and its direction show how influential a particular attribute is for the respondents in each segment.

Vectors 5 and 8 were relatively shorter than the other vectors suggesting that their associated purchasing intentions did not separate the groups as much as those associated with long vector lengths (particularly v2: the intention to "buy at PC gift shops"). As seen in the map, both the loyal and committed segments were found in the positive axis of function 1 but on different quadrants. The relative lengths of vectors 2 and 6 and their proximity to the spatial location of the "loyal" segment suggest that respondents classified as "loyals" (if intentions are translated into behavior) will be the typical buyers of souvenirs at parks and sites in 1996. The committed segment location was found in the continuation of vector lines 4 and 5. These individuals will buy Parks Canada branded products at different locations including department stores and via mail catalogue orders. Occasional and uninterested segments were found on the negative side of function 1 and positive side of function 2. Their location near the negative continuations of line vectors reflects their little interest shown in purchasing products in contrast with members of the previous segments.

Table 2. Discriminant Analysis Results

Discriminant Function	Eigenvalue	Canonical Correlation	Wilk's Lambda	Chi Squared	Significance
1	6.26	.92	.07	5237.6	.000
2	.98	.70	.48	1413.5	.000
		<i>Function 1</i>		<i>Function 2</i>	
Centroids (Groups Means) *					
Cluster 1 "Loyals"		5237		-902	
Cluster 2 "Committed"		10796		669	
Cluster 3 "Uninterested"		-18638		32	
Cluster 4 "Occasionals"		-4955		290	
Significant Variables **					
Overall Interest in buying PC products		232		-182	
Likely to buy at a PC gift shop		542		-299	
Likely to buy at a PC privately run store		210		-31	
Likely to buy at a Department Store		166		388	
Likely to buy through mail orders		22		87	
Likely to buy a trip souvenir		408		-282	
Likely to buy a personal souvenir		404		-73	
Likely to buy a gift for gift-giving occasions		141		-284	

* - Centroid values multiplied by F values associated with each of the discriminant functions.

** - Correlations between discriminant functions and discriminatory variables multiplied by their univariate F values.

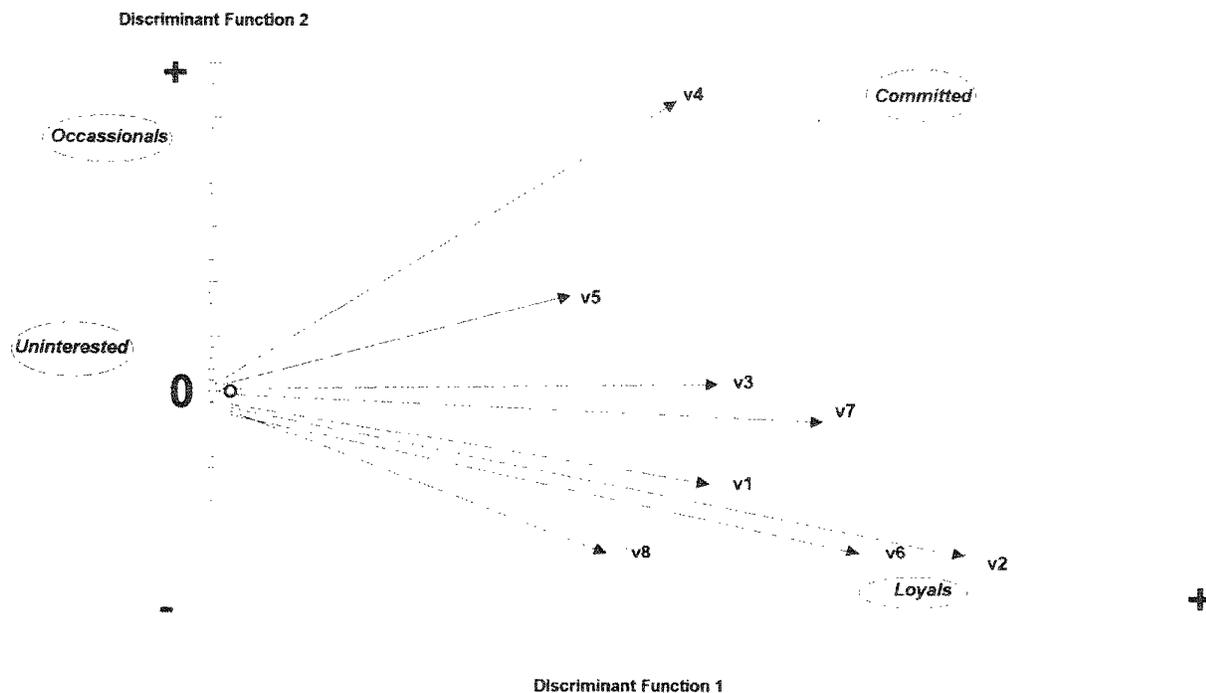


Figure 1. Perceptual Map of Market Segments

Vectors:

- v1 = Overall Interest in purchasing Parks Canada branded products
 - v2 = Intention to purchase at Parks Canada gift shops
 - v3 = Intention to purchase at Parks Canada privately run stores
 - v4 = Intention to purchase at department stores
 - v5 = Intention to purchase through mail orders
 - v6 = Intention to purchase trip related souvenirs
 - v7 = Intention to purchase personal souvenirs
 - v8 = Intention to purchase gifts at giving occasions
- In Circles = Aproximate location of cluster segments

Description of the Market Segments

The "loyals" represent about 5.6 million Canadian adults. Most of them were young married females. This segment contained many "full nest" families: about 47% of them lived with children under the age of 18. It was the most educated segment of the four: 18% have completed university education. Loyals will buy their products at a gift shop or a privately run stores located within a park or a historical site rather than at other places. In this sense, their loyalty is a "place" related one. They will purchase more souvenirs than gifts. As for product preferences, loyals are primarily interested in generic souvenirs (85% preference), clothing items (69%), papergoods (63%) and publications (63%).

The second segment, the "committed," represents about 5.3 million Canadians. These will be the more enthusiastic in buying Parks Canada souvenirs and gifts. Their commitment to purchase these products is shown in the fact they will buy these products

not only while visiting parks or sites but while shopping in a department store or ordering them by mail catalogues. Demographically, they are a relatively young group where married females are the majority. Close to 30% of them live either in Toronto or in places found within the rest of the province of Ontario. The most preferred products of the committed segment are generic souvenirs (88%), clothing items (65%), paper goods (73%), publications (69%) and collectibles (65%).

The third segment, the "uninterested," showed no intentions in buying PC products. They represent about 5.6 million Canadians. The majority comprised males (59%) who were older and/or retired. About 30% of them resided in Montreal or in the rest of the province of Quebec. This segment had the typical characteristics of "empty nest" households: more than two thirds of uninterested do not live with children under the age of 18. It was also the least educated segment: 62% of clients have only

high school completed or less. These individuals will a few souvenirs or gifts during the year.

The last segment, the "occasionals," represents about 5.6 million Canadians. They show little interest in purchasing products although they hinted that they will buy some souvenirs or gifts if they have the opportunity to visit national parks or historic sites. This segment has almost an equal number of males and females represented. Albertans are slightly over represented as occasionals. Like loyals, more than a half of these clients are either full or part-time workers. It has the highest number of high-income earners: about 45% earn wages or salaries equal to \$50,000 or higher. Among the products they say they will be most likely be purchasing, the most mentioned are generic souvenirs (46%) and clothing items (42%).

The Dollar Estimates

Table 3 presents preliminary estimates of the dollar value of the souvenirs and gift markets based on the segmentation of Parks Canada's market. Individuals within the "loyal" and "committed" segments are of particular interest since they were the ones who expressed that they were the most likely to buy gifts or souvenirs. Estimates were based on information collected on the amount spent on trip-related purchases (gifts and souvenirs) made in the past 12 months, the frequency of these purchases and the number of visits made to national parks or historic sites in the last 10 years.

It should be noted that while the segmentation is based on the respondents' announced intentions to purchase, the amount of spending is based on questions about their actual current behavior. In this sense, the total spending of souvenirs and gifts is an estimate of what these people spend on such items in the absence of Parks Canada products. The proportion of spending that will be diverted to PC products was impossible to predict at this time (especially since we do not even know yet what the products are). This amount could be very low or high. The present estimates say is that there is a potential souvenir market in Canada of \$1.6 billion and a potential gift market of \$4.0 billion (the sum of the amounts spent by the loyal and committed segments).

The average annual spending for each segment was multiplied by the number in each group, and the souvenir spending was then reduced by a factor derived from the propensity of the visitor to visit. This propensity was determined by dividing the number of times the respondent had visited a park in the past ten years by

ten, giving a fraction that resembles the probability of a park visit in any one year. The estimates produced this way are recognized as very crude. It is made cruder by the fact that, although the respondent was asked what he or she spent, it is not at all clear that the respondent actually answered for himself alone, or in fact, for the whole family. Added to that the problem of recall, both of expenditures and of number of trips, and the estimate should be treated as an order of magnitude only.

Conclusions

The findings of the consumer segmentation analysis revealed that the market of Parks Canada products can be divided into smaller and more homogeneous groups based on their attitudes toward shopping and potential behavior. Each segment has its own idiosyncrasies with respect the consumption of different lines of products.

The "loyal" and "committed" segments are the most promising because of their market potentials with \$1.6 and \$4.0 billion per year in purchases of souvenirs and gifts respectively. These segments capture the main share of the Parks Canada products market. If their buying intentions are translated into actual behavior in the coming years, their contribution to the stability and growth of a heritage market could be substantial.

In spite of the crudeness of the dollar estimates, the information from this study proved important in the decision to continue with the initiative to licence products. Parks Canada marketers have the empirical evidence to suggest to potential private sector partners that it is worthwhile for them to explore their potential markets with more accurate instruments. Perhaps the most important finding of all, which gives Parks Canada management most confidence, is the fact that there is a significant number of people in Canada who found the idea of Parks Canada marketing itself through merchandise as an acceptable way for a government institution to behave. In the era of small government, when many government organizations are withdrawing from various spheres of activity at the insistence of the voters, this is an important piece of information

Finally, note that the findings of this analysis may be extremely useful in laying the foundation for a variety of marketing strategies aimed at Parks Canada consumer market. The identification of the segment's fundamental characteristics could enable marketers to design and promote programs for specific target markets (which may include "occasional" clients) instead of producing a generic program to fit all needs and wants.

Table 3. Dollar Estimates by Market Segments.

Estimates *	MARKET SEGMENTS				
	Loyal	Committed	Uninterested	Occasional	Loyal + Committed
Size of Segment	5,621,596	5,270,855	3,215,124	5,582,624	
Average Annual Spending for Souvenirs	\$128	\$171	\$31	\$115	
Total Spending for Souvenirs	\$ 719,564,288	\$ 901,316,205	\$ 99,668,844	\$ 642,001,760	\$ 1,620,880,493
Average Annual Spending for Gifts	\$295	\$437	\$232	\$307	
Total Spending for Gifts	\$1,658,370,820	\$ 2,303,363,635	\$ 745,908,768	\$ 1,713,865,568	\$3,961,734,455*

* Based on a sample weight of 9742.8 and a population 18+ of approximately 19.7 Million

Knowing that working age females with children predominate in the "core" segments of the market is valuable information. Programs promoted to these segments should stress these characteristics.

Literature Cited

Mojena, S. Hierarchical Grouping Methods and Stopping Rules: An Evaluation. *The Computer Journal* (20): 359-63.

Shocmaker, S. 1994. *Journal of Travel Research*, Winter: 8-21.

Diary of a South Pacific Journey to Tahiti: An

Exploratory Assessment of Trip Satisfaction

Stuart P. Cottrell

Assistant Professor, Recreation and Tourism, Christopher Newport University, Newport News, VA 23606

Kelly A. Bricker

Doctoral Candidate, Leisure Studies Program, School of Hotel, Restaurant & Recreation Management, The Pennsylvania State University, University Park, PA 16802

Abstract: Recipients of an incentive travel package to Tahiti provided by a California-based adventure travel agency were surveyed on their return flight from Tahiti (n=30) in the South Pacific. The trip consisted of a three-day sail on 50-foot yachts to Bora Bora followed by three days on the island of Bora Bora. Results show that this Portland, Oregon, based group had a terrific experience in their travels to the Society Islands in French Polynesia. Except for meals served on the boats (mean=7.5), the average scores for services provided by the travel agency ranged from 8.0 or higher on a ten-point rating scale. A Pearson correlation analysis showed that the *sailing experience* ($r = .70$; $p < .001$) and *feelings about the overall experience* ($r = .72$, $p < .001$) were significant and positively related to *trip satisfaction*. In addition, the *farewell banquet* was correlated with the *welcome banquet* ($r = .47$; $p < .01$) and the *amount of money spent on the trip* ($r = .44$; $p < .05$) was correlated with the *visitors feelings index*, an index specifically developed for this study. Although, an assessment of the qualitative data supports the quantitative results, the qualitative data also shows that participants were not satisfied with some aspects of the trip.

Introduction

Incentive travel is a growing segment of the overall travel industry and very little research has focused on this niche in travel and tourism, especially as it pertains to those facets that influence the overall experience and trip satisfaction. According to Shiner & Backman (1995), the incentive travel industry is estimated at over US\$17 billion, with predictions of tripling that amount in the next ten years. Because of the unique nature of incentive travel coupled with the enormous impact it has on the overall industry, it is important to understand the elements of an incentive travel program that contributes to the overall satisfaction of its participants.

Satisfaction has many definitions. In Webster's Dictionary (1990) for instance, satisfaction is defined as the "the fulfillment of a need or want, the gratification of an appetite or desire, or as the contentment in possession and enjoyment." Stankey (1972), when describing satisfaction with the quality of a wilderness, wrote that "it can be judged only by examining the extent to which motivations and objectives of the visitor are fulfilled." However, according to Williams (1988), within recreation, the most widely cited definition is that of Bultena and Klesning (1969) which states that "satisfaction is a function of the degree

of congruency between aspirations and perceived reality of experiences." Westbrook (1987) argues that positive emotions such as contentment, delight, pleasure, joy, and interest should be linked to positive disconfirmation and negative emotions such as anger, frustration, disgust, and contempt should be associated with negative disconfirmation. In addition, Westbrook suggests that positive affect is generally linked to the stimulus (i.e., experience or product). Different negative emotions on the other hand, may be attributed to either the product or provider, the individual, or the situation. In recreation and/or tourism experiences, Knopf (1982) and Peterson (1974) both found that it is often the situation (i.e., things over which the provider or individual have little control such as mosquitoes, humidity, seasickness, or other people) that people find undesirable. Situational factors such as those mentioned can enhance or greatly detract from participant satisfaction.

In May 1995, a California-based adventure travel company, organized an incentive travel experience to Tahiti for a radio station in Portland, Oregon. As a *soft adventure* experience, 38 participants spent one night in deluxe accommodations in Tahiti, three nights on board 50 foot charter vessels sailing to Bora-Bora, and two nights at the Hotel Bora Bora. Participants were "given" this travel experience as a value-added package tied to a sales promotion to buy radio advertising. Participants were fully aware that by purchasing so many dollars of advertising, they would then be awarded a trip to Tahiti. Ideally, by creating a unique travel experience, the radio station hopes to solidify relations between the station, sales staff and clients to create client loyalty. The sponsoring radio station tried to attract key decision-makers within the companies represented. Thus, participants included the person buying the advertising, their guest, and the sales staff from the radio station who sold the most advertising because of the incentive package program. Participants ranged in age from 25 to 65 and the number of males equaled the number of females. Several members of the group had participated in prior incentive travel trips with the same radio station and adventure travel firm.

The objective of this exploratory study was to examine peoples perceptions of the quality of their incentive travel program to Tahiti. A second purpose was to determine, through a qualitative approach using open-ended questions, factors affecting their satisfaction with the trip.

Methods

An eight-page survey was completed on the return flight from Tahiti to Los Angeles, California (n=30). There were eight refusals. Many statements, drawn from a spring break survey, developed by the Center for Travel and Tourism at the Pennsylvania State University, were used to measure feelings about the travel experience. Next, a series of statements was used to assess satisfaction with specific elements of the trip (e.g., lodging, nightlife, and air transportation). In addition, several questions asked respondents to rate on a 1 to 5 point Likert agreement scale thoughts about the destination. Several open-ended questions allowed respondents further to clarify their feelings about the experience. A visitor feelings index was computed as the mean of responses to four items measured by a series of 7-point semantic-differential scales (i.e., good-bad, positive-negative, like-dislike, and happy-unhappy). A

satisfaction index, drawn from prior studies in outdoor recreation behavior, was computed as the mean of 5 items measured by a 5-point Likert scale.

Results

The data analysis was conducted in two stages: quantitative and qualitative. The quantitative data was analyzed via SPSS for windows on a personal PC. Factor, reliability, and a Pearson correlation analysis and also measures of central tendency were performed on the data. Results are presented in the next section. A qualitative assessment of the open-ended questions was done using Microsoft Excel. The frequency of comments was assessed and categorized and will be summarized in this paper.

Quantitative inquiry

The survey included several questions designed to be used in an index of overall trip satisfaction. Table 1 shows the reliability analysis conducted on the six items included for the index. In essence, these questions represent different ways of asking participants how much they enjoyed their experience. Combining a variety of questions like these into an overall index provides a more complete and reliable illustration of how travelers perceived trip quality than does single item measures. The reliability analysis (Cronbach alpha = .62) shows that five of six items were internally consistent enough to include in a satisfaction index.

Table 1 Reliability Statistics for the Satisfaction Index (n =30)

	Item Mean	Standard Deviation	Corrected Item-Total Correlation	Alpha If Item Deleted
Satisfaction Index				
My trip to Tahiti was not as enjoyable as ^b expected	4.2	1.34	.01	.62
I cannot imagine a better trip	3.7	.91	.39	.35
This trip was well worth the money I spent to take it	4.6	.56	.19	.46
I would not want to take any more trips ^a like this one	4.6	.46	.30	.50
I was disappointed with some aspects of ^a my trip	3.3	1.36	.51	.20
I thoroughly enjoyed my trip	4.5	.51	.27	.44
Overall Index	4.1			.62

^a/ Scale Item recoded prior to analysis

^b/ Item deleted from the Satisfaction Index to enhance overall reliability of the scale

Table 2. Factor Analysis of Visitor Feelings Index

Item	Factor 1	Factor 2	Factor 3
FACTOR 1 - Visitor Feelings Index ^b			
Unhappy to Happy Scale	.66	.12	-.11
Dislike to Like Scale	.95	-.10	.08
Good to Bad Scale ^a	.95	-.10	.08
Positive to Negative Scale ^a	.91	-.09	-.06
FACTOR 2			
Calm to Excited Scale	.00	.82	.27
Relaxed to Stimulated Scale	-.08	.76	.02
Very Satisfied to Very Dissatisfied Scale ^a	.41	.44	-.41
FACTOR 3			
Aroused to Unaroused Scale ^a	.21	.32	.77
Eigenvalue	3.31	1.60	1.05
Percentage of Total Variance	41.00	20.00	13.20
Reliability (Cronbach alpha of Visitor Feeling Index)	.90		

^a/ Item reverse-coded prior to analysis

^b/ n=30 Scale Mean = 6.8

The statement, "My trip to Tahiti was not as enjoyable as expected," was dropped from the scale to enhance the overall reliability of the other five items. The index was computed as the mean of responses to those five items measured by a 5-point strongly-disagree to strongly-agree Likert scale. The mean score of 4.1 shows that travelers were quite pleased with their experience.

A Principle Components Factor Analysis using varimax rotation was carried out to explore the possibility of creating a *Visitor Feelings Index*. According to Kass and Tinsley (1979, p. 120), "factor analysis is a mathematical technique that permits the reduction of many interrelated variables to a few latent dimensions or factors." The authors of this paper realize that a minimum of 100 cases is necessary normally to conduct a factor analysis, yet we only had 30 cases. Further data collection was planned for the Tahiti incentive trip in November 1995; however, this trip was canceled due to participant concerns about the nuclear tests occurring in that area at the time. Since the study was exploratory in nature and only 30 cases were available a factor analysis was conducted. Eight items measuring feelings about the vacation to Tahiti using Osgood's 7 point semantic differential rating scales were included in the factor analysis that produced three factors (Table 2). This analysis identified similar statements that correlated highly with

each factor recognized. Four items loaded on Factor 1 at .66 or greater to represent 41 percent of the total variance (eigenvalue = 3.31). Factor 2 consisted of three items (eigenvalue = 1.6) contributing to 20 percent of the variance. One item loaded above .40 in Factor 3 which contributed 13 percent of the total variance. Since all four items (unhappy-happy, dislike-like, good-bad, and positive-negative) loaded so strongly in Factor 1, this cluster was selected to represent the *Visitor Feelings Index*.

The next step was to examine the reliability of the four items to use as a *Visitor Feelings Index*. Table 3 shows the results of that analysis providing a reliability of .90. The scale mean of 6.8 on a 1 to 7 point scale shows that visitor feelings about the experience were very positive.

A Pearson correlation analysis was conducted to determine those facets of the trip related to trip satisfaction. As expected, the *Visitor Feelings Index* was correlated with the *Trip Satisfaction Index* ($r = .36$; $p < .05$). In addition, a single item measure of feelings about the trip ($r = .39$; $p < .05$) was positively correlated with *trip satisfaction* at a similar level of correlation.

Travelers were asked to rate the quality of eleven items using a 1 to 10 point scale dealing with certain aspects of the trip. Those items were pre-trip orientation meeting, orientation at the destination, information provided by the travel agency, welcome banquet, farewell banquet, activities during the trip, the sailing adventure, meals served on the boat, other meals, welcome gifts, and pre-trip gifts. The mean scores for all eleven items were 8.3 or greater. Two of eleven items, *The Sailing Adventure* and *Pre-trip Gifts*, were significant correlates of trip satisfaction. Finally, the mean quality score for the *Welcome Banquet* (mean=9.5), held the first night in Tahiti, was significantly correlated with the *Farewell Banquet* (mean=9.6), held at Hotel Bora Bora.

In summary:

- 1) As visitor feelings about the trip increased, satisfaction with the overall experience increased.
- 2) As ratings of the 4-day sailing component of the experience increased, overall satisfaction with the trip increased.
- 3) As ratings of the pre-trip gifts sent to each participant increased, overall satisfaction with the trip increased.

Qualitative Inquiry

A second purpose of this study was to develop a better understanding of participant perceptions of trip quality through

several open-ended questions included in the survey. The questions were:

- 1) What was the best part of this trip?
- 2) What was the worst part of this trip?
- 3) Please describe your contact with local residents
- 4) Please describe anything about this trip that was particularly disappointing to you.
- 5) What recommendations would you have for others going to this destination?

Responses for the question "What was the best part of this trip?" were categorized into the following headings: place, recreation, unique experiences, and services provided. Out of the total responses recorded for this question (n=29), the majority of participants felt that the place (38%), Bora Bora, and the recreational opportunities (30%) (sailing, snorkeling, etc.) were the best part of their trip. Twenty-two percent said that the culture and uniqueness of the place were the best while eight percent commented that services such as accommodations were the best part of their trip.

For the question, "What was the worst part of this trip?," 57% of the responses (n=29) were boat related including statements like boats were too crowded, boats too hot, or meals were not good. Another 16% referred to aspects of travel such as sailing trip was too long, flights too long, or the last night of the trip was disappointing. Eleven percent of the comments were boat staff related including skippers not accommodating and boat cooks not up to par. While the sailing adventure portion of this incentive travel trip rated very high in satisfaction in the quantitative part of the study, most of the responses to the worst part of the trip were about the boats used in the program.

For the question, "Please describe your contact with local residents," 70% of the responses (n=27) were positive: locals were friendly, wonderful, kind, and appear to enjoy tourists. The remainder of the comments (29%) referred to limited or minimal contact with locals.

Participants were asked about disappointing aspects of their trip, which suggested that they had some previous expectation that was not met. Again, the sailboats seemed to be the cause of much of the disappointment. Although 40% of the responses (n=27) were "I am disappointed about nothing," 39% dealt with sailboat accommodations such as sleeping space, food, crew, and being isolated from others in the group. One displeased client said the mosquitoes on the boat were terrible. I brought too many

Table 3. Reliability Statistics for the Visitor Feelings Index (n=30)

Item	Mean	Standard Deviation	Corrected Item-Total Correlation	Alpha If Item Deleted
Visitor Feeling Index				
Unhappy to Happy	6.6	.72	.49	.96
Dislike to Like	6.9	.34	.82	.69
Good to Bad ^a	6.9	.34	.82	.69
Positive to Negative ^a	6.9	.31	.75	.73
Overall Index	6.8			.90

^{a/} Scale Item recoded prior to analysis

clothes, trip related experiences were too costly, and the dive on Bora Bora was disappointing. Most of the recommendations for others going to this destination dealt with pre-trip preparation concerns. For instance, 75% of the total responses to this question (n=26) were such things as pack light, tan before you go, bring snorkeling gear, bring bug repellent & sunscreen, pick your boat mates ahead of time, and bring more spending money. Another 21% of the comments were things like being flexible, asking lots of questions, and seeing more of Bora Bora while you are there. Four percent of the comments were recreation related including exploring the islands, visiting locals, and taking a jeep safari.

Conclusions/implications

In conclusion, taken literally, findings based on the quantitative analysis show that recipients of this trip to Tahiti were very happy with all elements of their experience. However, the qualitative information shows that this is not true for all aspects of the trip. Many people were not satisfied with several aspects of the sailing portion of their experience. Since the three-day sailing trip to Bora Bora from Raiatea was promoted as the trip highlight, that makes the qualitative results even more important. Often, evaluation results are based on quantitative information, which may not give a true depiction of participant satisfaction. For instance, the boats for this trip were chartered from two different companies in the Society Islands; thus, both captains and crew came from two companies. Boat problems incurred may have resulted from inconsistencies between boats/crew from the two charter companies. The boats, overall, from one company were in slightly better shape than boats from the other. Some captains and crew from one company seemed to show a greater concern for participant involvement than the staff from the other company. From a management perspective for future trips to Tahiti, all boats and captains should come from one charter agency to increase consistency between vessels and crew. Secondly, the data shows that services such as good food, banquets, pre-trip planning, onsite orientation, and a variety of activity opportunities are important to carrying out a quality incentive travel experience. Although this trip was free for the participants, they still had a high level of expectations and those expectations must be met with some degree of satisfaction. This trip was a first time experience to Tahiti for the adventure travel firm coordinating this experience. This study showed that a quantitative assessment of trip quality alone would not be sufficient to evaluate this experience to aid planning efforts for future trips. A combination of qualitative and quantitative data is critical to understanding client feelings about their incentive travel program.

In retrospect, this study was a demonstration of the depth of understanding that can be gained through triangulation: data

collection via quantitative, qualitative, and participant observer methods. As investigators for this study, we were also responsible for trip implementation that enhanced our understanding of the study results. Our role as participant observers engaged in trip coordination and interaction with participants provided a third dimension of understanding about trip quality. This trip was exploratory in nature and the methods developed did not include a participant observer methodology - although, in essence, that did occur. A survey of trip coordinators about the trip along with the quantitative and qualitative data from participants would enhance future research efforts in understanding elements of trip quality. Likewise, results could lead to improved trip planning and trip implementation for adventure travel agencies providing incentive travel experiences.

Literature Cited

- Bultena, G.L.; Klessing, L.L. 1969. Satisfaction in camping: A conceptualization and guide to social research. *Journal of Leisure Research*, 1: 348-354.
- Kass, R.A.; Tinsley, H.E. 1979. Factor Analysis. *Journal of Leisure Research*, 11: 120-138.
- Knopf, R.C. 1982. Management problems in river recreation: what river floaters are telling us. *Naturalist*, 33(2): 231-255.
- Peterson, G.L. 1974. Evaluating the quality of the wilderness environment: congruence between perception and aspiration. *Environment and Behavior*, 6: 169-193.
- Shinew, Kimberly J.; Backman, Sheila J. 1995. Incentive travel: an attractive option. *Tourism Management*, 16(4): 285-293.
- Stankey, G.H. 1972. A strategy for the definition and management of wilderness quality. In: Krutilla, J.V. ed. *Natural Environments. Studies in Theoretical and Applied Analysis*. Baltimore: Johns Hopkins University Press, 169-193.
- Webster's Ninth New Collegiate Dictionary. 1990. Merriam-Webster Inc., Publishers. Springfield, Mass.
- Westbrook, R.A. 1987. Product/consumption-based affective responses and postpurchase processes. *Journal of Marketing Research*, 24: 258-270.
- Williams, D.R. 1988. Great expectations and the limits to satisfaction: A review of recreation and consumer satisfaction research. In: *Proceedings of the National Outdoor Recreation Forum*; 1988 January; Tampa, FL: U.S. Department of Agriculture, Forest Service. 422-438.

COUNTY LEVEL TRAVEL AND TOURISM IMPACTS - CONTRASTING NINE PENNSYLVANIA COUNTIES

Bruce E. Lord

Senior Research Assistant, School of Forest Resources, The Pennsylvania State University, University Park, PA 16802

Charles H. Strauss

Professor, School of Forest Resources, The Pennsylvania State University, University Park, PA 16802

Stephen C. Grado

Assistant Professor, College of Forest Resources, Mississippi State University, Mississippi State, MS 39762

Abstract: This paper compares the economic impact of travel and tourism in nine contiguous counties in Southwestern Pennsylvania. Several impact multipliers are developed for each county. The size of these multipliers is related to the size of each county's economy. The relative importance of each county's travel and tourism activity to the local economy is also presented. Finally, the sum of the county impacts is contrasted with the economic impact of travel and tourism for the entire region.

Introduction

The first step in conducting an economic impact study of travel and tourism is the determination of an appropriate region within which to measure the impacts. Tourism is an export activity in which the service is consumed on site. A smaller region allows more of the recreationist to be considered as visitors bringing in new money to the area. However, the smaller the region, the greater the economic leakage as the backward linked economic impacts are calculated. Conversely, a larger region means more of the recreationists originate from within the region and consequently do not represent an export. Hence their activities are not counted as economic impact. Large regions do, however, have a greater ability to internalize the economic impacts. This results in larger multipliers. The overall effects are therefore mixed.

A series of surveys were conducted in a 9-county region of Southwestern Pennsylvania to determine the economic impacts of travel and tourism within that region (Strauss et al. 1994a, 1994b, and 1995). Nearly 20,000 visitors were interviewed to determine their geographic origins, itineraries and expenditures. More than 400 sites and events were included in the study. Visitor expenditures were identified specific to the type and location of the purchase. This allowed the economic impacts to be calculated for each county and also for the entire region.

Objectives

This paper identifies the relative importance of travel and tourism to nine separate counties in Southwestern Pennsylvania.

Particular attention is paid to how the size of each county's gross domestic product (GDP) relates to the size of the multiplier obtained from an input-output model of the travel and tourism activity. Finally, a comparison is made of the sum of the individual county impacts to the net regional impacts.

Procedures

Student interns surveyed visitors to travel and tourism destinations in the 9-county region. For the purposes of this study, travel and tourism was defined as any nonresident visitor using a recreational site in the area. Activities ranged from outdoor recreation to cultural events (Strauss et al. 1994a). In addition, owners of vacation homes, transients staying overnight in local hotels, and attendees of local conventions were also counted as visitors. The visitors were asked about their place of residence, the length of their stay and the types of expenditures occurred during their trip. Each visitor was asked to identify the type and location of all expenditures made during a 24-hour period of their trip. Expenditure data included food, transportation, lodging and activity specific costs. The location of the regional expenditures was specified either as within the county where they were interviewed or as within the remaining 8 counties of the region. No effort was made to measure expenditures incurred outside the nine-county region.

As a parallel effort, visitation levels were attained from more than 400 recreational sites and events. Penn State researchers worked with those sites that did not routinely collect visitation data to estimate their attendances.

The expenditures acquired from the sampled visitors along with the observed proportions of non-county residents were multiplied by the visitation figures to estimate the total expenditures by nonresident visitors in each county of the region. Economic impact models were developed for each county of the region using the IMPLAN input-output model. A similar procedure was used to estimate the overall regional impacts.

Results

The observed nonresident visitation for each county ranged from a low of 610 thousand in Indiana County to a high of 3.8 million in Westmoreland (Table 1). Average county expenditure levels ranged from \$16 per visitor day in Fulton County to \$44 per visitor day Somerset County. The product of these two measures was lowest in Fulton County (\$10 million) and largest in Somerset County (\$89 million). Both the amount of visitation and the average expenditure level were influenced by the range of travel and tourism opportunities found in the individual counties.

The nonresident expenditures represent a gross expenditure level. The amounts entered into the input-output model are identified as direct sales impacts and only include regional expenditures for goods and services actually produced in the county. For example, while a visitor may spend \$20 for fuel at the local service station, most of this pays for the fuel produced elsewhere. Therefore, only the valued added portion of this sale was included as a direct regional impact. From this direct impact, the input-output model estimates secondary impacts. The reported total sales impact is the sum of the direct and secondary impacts. Total sales impacts ranged from a low of \$11 million in

Table 1 The economic impacts of travel and tourism in nine separate counties of Southwestern Pennsylvania.

County	Average Expenditures	Visitors	Non-Resident Expenditures	Direct Sales Impacts	Total Sales Impacts	Value Added
----- (Millions) -----						
Fulton	\$15.93	0.64	\$10.2	\$7.0	\$10.9	\$6.9
Huntingdon	\$18.98	1.63	\$31.0	\$21.3	\$37.4	\$23.1
Bedford	\$29.44	1.50	\$44.1	\$36.0	\$64.6	\$37.4
Somerset	\$44.03	2.01	\$88.6	\$74.8	\$139.5	\$88.3
Fayette	\$25.10	1.12	\$28.0	\$22.7	\$52.6	\$34.8
Indiana	\$26.12	0.61	\$15.9	\$12.6	\$25.9	\$16.0
Blair	\$31.86	1.27	\$40.6	\$34.5	\$76.3	\$46.5
Cambria	\$19.96	1.90	\$38.0	\$27.7	\$64.6	\$40.3
Westmoreland	\$16.87	3.80	\$64.1	\$54.3	\$123.2	\$80.3
County Totals	\$24.89	14.48	\$360.5	\$291.0	\$595.0	\$373.5
Region Totals	\$38.93	9.86	\$383.7	\$265.0	\$779.1	\$463.4
Regional Surplus		-4.63	\$23.2	(\$26)	\$184.1	\$89.9
Percent Surplus		-31.9%	6.4%	-8.9%	30.9%	24.1%

Fulton County, \$26 million in Indiana County and \$37 million in Huntingdon County, to highs of \$123 million in Westmoreland County, and \$140 million in Somerset County. The value added benefits follow the same pattern, with a low of \$7 million in Fulton County and a high of \$88 million in Somerset County.

A series of multipliers was developed for each county's travel and tourism impacts (Table 2). The proportion of nonresident expenditures actually impacting as direct sales was identified retained gross expenditures. The figure ranged from 69% in Huntingdon and Fulton Counties, to around 85% in Blair, Somerset and Westmoreland Counties. The output multiplier, which relates direct sales impacts to total sales impacts ranges from 156% in Fulton County to 233% in Cambria County. The product of these two was identified as the net multiplier. This figure relates the total sales impact to the total nonresident expenditure. A similar pattern was observed as the net multiplier ranged from a low of 108% in Fulton County to a high of 192% in Westmoreland County. The final multiplier developed relates the value added impacts to the nonresident expenditures. The value added multiplier ranges from 68% in Fulton County to 125% in Westmoreland County. This latter multiplier identifies the income benefits to county residents as a percentage of expenditures by nonresident visitors to the county.

Analysis

Multipliers and the Gross Domestic Product

The general profile of visitor expenditures is similar across all activities. Food, lodging and transportation are the dominant categories (Strauss, et. al. 1994, 1995). The single largest factor in explaining the multiplier effect may be the size and complexity of the local economy. The county economy ranged from as small as \$157 million in Fulton County to as large as \$5.5 billion in Westmoreland County. The larger economies have not just higher levels of economic activity, but a wider variety of industries. The latter means that there are more linkages between local businesses. In other words, the more complex the local economy, the more of a business's input requirements can be met locally. This effect will also hold as wage earners spend their income on consumer goods. The ability to retain these induced impacts increases as the local economy's ability to supply these goods and services increases.

The relationship between the GDP and the value added multiplier is displayed in Figure 1. For counties with an economy of over \$1 billion, the value added multiplier was over 100%. This shows that every dollar spent in the region by a nonresident visitor results in greater than a dollar increase in the gross domestic product. Conversely, in economies with less than \$1 billion of gross domestic product, the value added multiplier was

Table 2 Multipliers and relative impacts for travel and tourism in nine separate counties in Southeastern Pennsylvania.

Counties	Retained Gross Expenditures	Output Multiplier	Net Multiplier	Value Added Multiplier	GDP (Millions)	Pct of GDP
Fulton	69.1%	155.6%	107.5%	68.0%	156.92	4.4%
Huntingdon	68.7%	175.5%	120.7%	74.6%	408.90	5.7%
Bedford	81.6%	179.4%	146.4%	84.7%	450.21	8.3%
Somerset	84.4%	186.5%	157.4%	99.6%	901.45	9.8%
Fayette	81.2%	231.3%	187.7%	124.2%	1,372.05	2.5%
Indiana	79.1%	205.9%	162.8%	100.7%	1,516.23	1.1%
Blair	85.1%	220.9%	188.1%	114.5%	2,060.84	2.3%
Cambria	73.0%	233.0%	170.2%	106.0%	2,205.67	1.8%
Westmoreland	84.6%	227.0%	192.1%	125.2%	5,495.40	1.5%
County Totals	80.7%	204.5%	165.0%	103.6%	14,567.67	2.6%
Region Totals	69.1%	204.0%	203.0%	120.8%	14,660.71	3.2%

less than 100%. This latter situation shows that each dollar spent by a nonresident visitor results in less than a dollar gain to the local economy. A logarithmic curve was fit to the data with a 0.66 adjusted R-square. The equation was:

$$\text{Value Added Multiplier} = .1252 \ln(\text{Gross Domestic Product}).$$

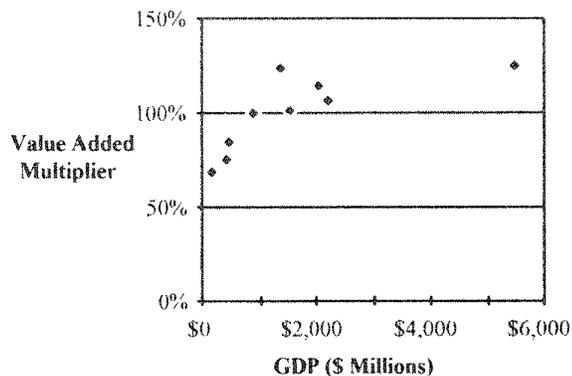


Figure 1. Value added multipliers as a function of the county's gross domestic product.

Relative Impacts

The relative importance of travel and tourism to the local economy depends upon three factors. The first is the absolute size of the nonresident expenditures. This tends to be largest in the larger economies. The next is the value added multiplier that also increases with the size of the local economy. The final factor is the absolute size of the local economy. The larger economies, even with their greater initial activity and larger multipliers, have so many other things happening that travel and tourism represents a relatively small share of the total economy.

The relative importance ranged from 1.1% of the gross domestic product in Indiana County, to 9.8% in Somerset County. The largest economy in the study was Westmoreland, with a \$5.5 billion GDP. Travel and tourism represented only 1.5% of the Westmoreland economy. The next two largest economies were Blair and Cambria Counties (\$2.1 and \$2.2 billion respectively). Here, travel and tourism represented 2.3% and 1.8% of the local economy. In the smallest economy (Fulton, \$157 million) travel and tourism represented 4.4% of the GDP. The next two smallest economies were Huntingdon and Bedford Counties, with GDP's of \$409 million and \$450 million respectively. The relative importance of travel and tourism in these two economies was 5.7% and 8.3%. For some other economies, the relative impacts are mixed. The spectrum of recreational opportunities plays an important part in these differences. For example, Indiana County has a \$1.5 billion economy, but there is very little travel and tourism activity. Therefore, only 1.1% of Indiana's economy is travel and tourism based.

Sum of the Counties vs. Regional Impacts

Besides calculating the individual county impacts, the regional impact of travel and tourism was estimated. Several factors combine to make the regional impact different from the sum of the county impacts. The first is a different definition of the tourist. At the regional level, residents of any of the nine counties

are counted as residents. Consequently, the sum of nonresident visitors to each of the nine counties is greater than that observed on the regional level (Table 1). However, the average expenditure at the regional level is greater than the county average because expenditures in the other 8-counties now count as impacts. Together, these combine for a slightly larger total nonresident expenditure at the regional level. The retained gross expenditure for the region is smaller than the county average (Table 2). This results in a lower regional direct sales impact, in spite of the larger nonresident expenditures. It is hypothesized that the expenditures in the other 8-counties will include more expenditures for fuel and other manufactured goods than was found at the county level where services such as food, lodging and site-related expenditures predominate.

The output multiplier at the regional level is much larger than any of the counties, due to the large size of the regional economy. Therefore, the total sales impact at the regional level exceeds the sum of the counties, in spite of the low direct sales impacts. A similar situation exists with value added.

Conclusions

The specification of a region when conducting impact analysis is critical to the size of the impacts measured. A smaller region will result in more visitors being identified as nonresidents. However, the same smaller region will be less able to retain these nonresident expenditures. This is especially important to consider when adopting multipliers from other studies involving differently structured economies

The relative impacts will depend not only upon the amount and retention of the nonresident expenditures, but also upon the absolute size of the local economy. A smaller economy may not be as efficient in retaining impacts, but the small size of the total economy can result in travel and tourism being a major force in that economy.

The individual impacts of travel and tourism in contiguous areas do not add up to the impacts for the entire region. Factors such as shifting definitions of who is a nonresident, increased regional expenditures, and greater retention of impacts all contribute to the difference.

All of the above effects point to the importance of selecting the proper region for estimating tourism impacts. While this determination is beyond the scope of this paper, let it be noted that the common practice of analyzing impacts by political boundaries may often result in unnatural economic regions (Hamilton et al. 1991). Rather, the ideas of Central Place Theory as developed by Losch (1954) should lead one to selecting impact regions based upon economic centers and their surrounding spheres of influence.

Literature Cited

Losch, August. 1954. *The Economics of Location*, trans. W. H. Woglom and W. F. Stolper. Yale University Press, New Haven, CT.

Hamilton, J. R., Whittlesey, N. K., Robison, M. H. and Ellis, J. 1991. Economic impacts, value added, and benefits in regional

project analysis. *American Journal of Agricultural Economics*. 73:334-44.

Strauss, C. H., Lord, B. E. and Grado, S. C. 1994a. Economic Impact of Travel and Tourism in Southwestern Pennsylvania. The Regional Report - 1993. Tech. Rpt. to Travel Promotion Partnership. Penn State University, University Park, PA. 99 pp

Strauss, C. H., Lord, B. E. and Grado, S. C. 1994b. Economic Impact of Travel and Tourism in Southwestern Pennsylvania. The County Reports - 1993. Tech. Rpt. to Travel Promotion Partnership. Penn State University, University Park, PA. 54 pp.

Strauss, C. H., Lord, B. E. and Grado, S. C. 1995. Economic Impact of Travel and Tourism in Southwestern Pennsylvania During 1994. Tech. Rpt. to Travel Promotion Partnership. Penn State University, University Park, PA. 85 pp.

**1996
Southeastern
Recreation
Research
Symposium**

INTRASTATE IMPACT OF SPORTFISHING

Rebecca J. Travnichek

Regional Consumer and Family Sciences Specialist, Northwest Region, University of Missouri Extension System, Savannah, MO

Howard A. Clonts

Interim Director, Auburn University Environmental Institute, Auburn University, AL

Abstract: Sociodemographics and expenditure levels of recreational anglers were used to determine the economic impact of fresh and saltwater fishing in Alabama. Data collected from mail questionnaires sent to a random sample of 1994 Alabama resident anglers were analyzed using a spending distribution model to determine the expenditure transfers among four regions in Alabama. Results showed that licensed Alabama anglers spent about US\$790 million on boats, fishing equipment, and other fishing-related purchases in 1994. Anglers living in 17 northeastern counties accounted for 36 percent of the total spending. Nearly 15 percent of fishing expenditures occurred outside Alabama. These results clearly show that recreational fishing is an economic asset to the state of Alabama.

Introduction

Surveying anglers, at all levels--local, state, and national, gives fisheries agencies information needed to aid in managing recreational fisheries. Creel surveys have been the traditional instrument used to obtain estimates of angler effort and harvest on specific bodies of water. Now agencies are finding more involved survey techniques (mail and telephone procedures) necessary to evaluate angler attitudes and opinions, and also assess angler numbers, expenditures, and impacts of anglers' fishing "values" on local, regional, and state economies (Pollock, Jones, and Brown 1994).

General information about the number of anglers and their expenditures does not permit fisheries managers to describe anglers well. Recreational activities are offered by a variety of public and private sources. Participation in various recreational activities signifies different tastes and preferences among households/consumers. Each activity provides some form of benefit to a mixed clientele. By having knowledge of specific clientele types, resource managers would be better informed in making allocation decisions.

The 1991 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR) showed that approximately 98 million persons, or 51 percent of the U.S. population 16 years of age or older, participated in some form of fish and wildlife-related recreation (USDI, USFWS, and USBC 1993). By 1991, people who enjoyed fishing were spending \$15.1 billion and \$5 billion for freshwater and saltwater fishing, respectively (USBC 1994). Of the 98 million 1991 FHWAR respondents who enjoyed some form of wildlife-associated activity, 34.8 million persons enjoyed freshwater and/or saltwater fishing, spending \$25.3 billion and

505.1 million days in/with fishing activities, averaging \$728 and 14.5 days per person (USDI et al. 1993).

Annual expenditure data for Alabama anglers were included in previous FHWARs, however, a statewide survey by sources within the State, has not been undertaken since 1986 (Tucker 1996). Various creel surveys conducted at specific lakes and streams around the state were used to obtain trip expenses (Knight and Malvestuto 1991). Information needed to calculate average expenditures for Alabama anglers per year is not currently available. Such information could be used to guide allocation of funds and fisheries management personnel for the management and conservation of Alabama's natural resources (Verburg et al. 1987).

Deavers (1987) stated that user demands and desires, wildlife population dynamics, quantities of available funding, and employment (numbers and locations) of management personnel were factors that lead to a diversity of management policies across the United States. If data are available, policy-makers can develop management policies and make reliable decisions concerning the distribution of monetary and human resources. Such information would also enable policy-makers and managers to distribute resources in a more efficient and effective manner.

Outdoor recreation is often suggested by economic developers and planners as a method for rural communities to increase their economic activity, including increased income and market diversity (Castle 1987, Clonts 1988). Abundant recreational hunting and fishing opportunities, along with nonconsumptive outdoor activities, may become the "lifeline" for many southern rural communities. Wallace (1989) looked at the economic significance of intra- (spending within a community or region of residence) and intercommunity (spending outside a community or region of residence) dollar transfers by Alabama resident and nonresident hunters. He found that while hunter expenditures benefitted Alabama's rural economies, if hunting were eliminated, those hunters would spend their "money" in other, possibly more developed, communities. Therefore, the absence of hunting would be detrimental to Alabama's rural communities.

At present, there is only limited knowledge of Alabama's anglers. There is a need to characterize those who purchase Alabama fishing permits, and to learn additional information on where, when, and how to meet angler concerns, preferences, and needs better. Therefore, the objectives of this paper were to (a) describe Alabama's licensed anglers and (b) present empirical evidence of the importance of angler expenditures among different regions of Alabama. The results specified herein can be useful to policy-makers and fisheries management personnel in the allocation of resources.

Method

Angler Survey

Alabama's resident licensed anglers (rod-n-reel, saltwater, hunting/fish combination, freshwater/saltwater combination, lifetime fishing, and lifetime hunting/fishing) numbered 452,113 in 1994. A list of licensing agents, provided by the Alabama Department of Conservation and Natural Resources (ADCNR), was used in combination with county population to select a stratified random sample of 1,625 fishing license holders.

Additional names were obtained through a telephone interview of Alabama residents. After removing undeliverable surveys the adjusted sample size was 1,750. Usable survey forms were returned by 403 recreational anglers, a 23 percent response rate. Fisher (1996) said that angler surveys might yield low response rates and inaccurate results, partly due to the exclusion of testing for nonresponse bias. Testing for nonresponse bias was undertaken to ensure the representativeness of sample results. Results showed that there was a slight undersampling of nonwhite anglers in the mail survey. However, variable means for all variables were equal to or greater than those of the original sample, but still within one standard deviation. Following guidelines set forth by Dillman (1978), Babbie (1986), and Pollock, et al. (1994), three separate mailings of the questionnaire were used (4 May 1995, 20 June 1995, and 24 July 1995) with a reminder postcard 20 days (24 May 1995) after the first mailing.

Regional Division

The state of Alabama was divided into four regions based on (a) location of river and lake systems, (b) location of metropolitan areas, and (c) county population (Figure 1). The northwest, northeast, and southwest regions each included 17 counties and 37, 25, and 20 percent of Alabama's population, respectively, each with significant metropolitan areas. The southeast region encompassed 16 counties, 18 percent of the population, and slightly fewer metropolitan areas. Each region had abundant freshwater fishing locations. Direct access to saltwater and/or brackish fishing locations is possible only in the southwest.

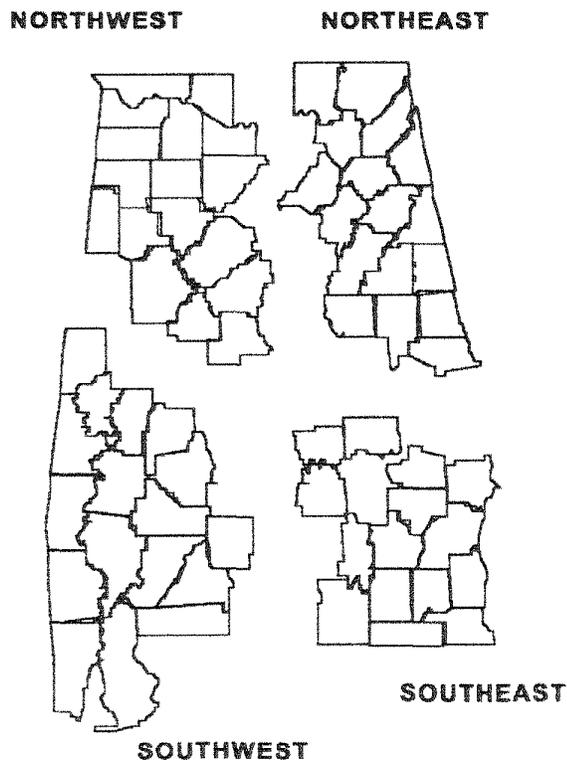


Figure 1. Regional Division of Alabama.

Questionnaire Development

The questionnaire was developed based upon Dillman's (1978) Total Design Method and Pollock et al. (1994) methods in angler survey techniques. The survey focused on types of fishing and fishing harvest; attitudes, opinions, and satisfaction concerning fishing experiences; outdoor recreational activities; and sociodemographic information. Questions dealing with barriers to fishing, preferences for management policies, concerns about fishing areas, fishing expenditure estimates, and fishing license and resource "values" using contingent valuation techniques were also contained within the survey.

Angler Expenditures

The survey instrument included 23 expenditure categories classified into fishing, trip, or miscellaneous expenditures. Respondents indicated the "approximate cost," "percent of time used for fishing," and "county where purchases occurred" for each expenditure category. Expenditures were evaluated and weighted by "source" (region of angler residence) and by "sink" (region where purchase occurred). Expenditure amounts were also weighted based upon frequency of use for fishing and total number of fishing licenses purchased in Alabama. Expenditure items were then grouped into six general categories by source and sink, (a) camper/camping equipment, (b) boat/boating equipment, (c) fishing equipment, licenses, and fees, (d) food and lodging, (e) transportation, and (f) miscellaneous goods and services. Additional aggregation was used to condense spending to two categories, boat and fishing equipment, and other goods and services.

Results and Discussion

Description of Anglers

The typical licensed angler in Alabama is a white, married, middle-aged male (Table 1). Most come from small towns and have completed some college education. Household income was relatively high, \$46,600. Also, fishing was a lifetime, family activity, for which \$2,330 per angler was spent in 1994.

Table 1. Sample Means and Standard Deviations of Selected Sociodemographic Variables for Alabama's Licensed Anglers.

Variables	Sample Mean	Standard Deviation
Age	43 years	13.3 years
Education	13 years	2.7 years
Income	\$46,626	\$30,745.10
Travel Distance (on all fishing trips)	845 miles	1,402.9 miles
Fishing Tournaments	7	7.1
Number of Fishing Days	36 days	46.4 days
Estimate of Dollars Spent		
Fishing in 1994	\$871	\$1,697.2
	Unit	Percent
Fishing License	Rod-n-Reel	62%
Number of Years Fishing	>30 Years	49%
Rural Landownership	Yes	54%
Fish with whom?	Family	61%
Rural/urban residence	Rural	68%
Sex	Male	83%
Race	White	93%

Fish species most sought by respondents were as expected. Favored species included largemouth bass, sunfish (bream), catfish, and crappie (Table 2). Variation in catch was significant, but species other than these 4 were mentioned far less frequently.

Table 2. Freshwater and saltwater species fished for by licensed Alabama anglers and median and mean number caught (n=403).

Fish Species	Number of Anglers	Number Caught	
		Median	Mean
Freshwater:			
Largemouth Bass	276	20	57
Bream	246	50	114
Catfish	232	30	72
Crappie	219	25	80
Striped Bass	101	10	30
Smallmouth Bass	88	6	16
Spotted Bass	65	20	51
Drum	32	8	23
Red-eye Bass	19	10	33
Sauger	6	5	32
Walleye	6	4	25
Saltwater:			
Snapper	47	10	23
Red Fish	47	6	11
Flounder	39	5	18
Mackerel	36	5	16
Grouper	30	3	10
Miscellaneous	29	10	42
Amberjack	29	2	7
Spotted Sea Trout	28	15	41
Cobia	13	3	8

Saltwater species caught by respondents were also as expected. Snapper, red fish, flounder, and mackerel were the most popular

Table 3. Licensed Alabama Angler Usage of Types of Water, Access Points, Fishing Methods, and Baits by Percentage Frequency of Use (n=403)

Type of Usage	Percentage Frequency of Use				
	Always	Often	Sometimes	Hardly Ever	Never
Type of Water:					
Creeks, Swamps, or Small Streams	10.6	29.6	25.3	18.7	15.8
Rivers or Reservoirs	30.8	43.7	14.3	6.0	5.2
Private Man-made Ponds or Lakes <25 Acres	10.1	28.4	24.0	18.6	18.9
Private Man-made Lakes > 25 Acres	5.0	10.9	18.8	26.3	39.1
State, County, or City Owned Public Lakes	9.8	15.8	20.8	24.4	29.2
Brackish Waters	2.5	7.5	10.9	11.5	67.6
Saltwater	4.3	8.1	18.6	17.4	51.6
Types of Access Points:					
Bank	19.1	33.8	24.0	15.5	7.6
Boat	35.2	44.2	11.3	4.4	4.9
Boat Dock	2.6	24.3	30.1	20.9	22.0
Bridge or Pier	2.6	11.8	28.6	27.5	29.5
Float Tube	0.3	0.0	1.5	8.9	89.3
Wading	0.0	5.3	14.6	17.0	63.2
Types of Bait:					
Artificial Lures	42.7	33.3	14.9	6.9	2.1
Live/Cut Bait	33.2	37.1	18.4	8.3	2.9

species (Table 2). Catch rates were also quite variable for the saltwater species.

Alabama has an abundance of water resources available for fishing. There are approximately one million surface acres of rivers and reservoirs considered as public waters. In addition, there are nearly 150,000 surface acres of private impoundments (ADECA 1992). Seventy-five percent of those sampled, fished in Alabama rivers and reservoirs (Table 3). Creeks, swamps, streams, small private ponds, and state, county, or city-owned public lakes were used less frequently. Less than 12 percent of the respondents reported frequent fishing in brackish or saltwater. However, in contacting nonrespondents for bias testing, telephone respondents said that 12 percent may be somewhat conservative. Respondents included in the nonresponse bias testing procedure showed a higher use, 19 percent, of brackish or saltwater fishing. This coincides with similar results determined by The University of South Alabama (Thomas 1996). However, Thomas's (1996) oversampling of counties with direct saltwater access may indicate an overestimation of saltwater usage by recreational anglers in Alabama. Therefore, the use of brackish and/or saltwater fishing may be at a point in the middle.

Finally, most respondents used multiple methods for water access. Over half fished from a bank location, while nearly 80 percent used boats. Wading was selected by 20 percent of the anglers. While fishing, both live/cut bait and artificial lures were popular.

Fishing Location

Having abundant water resources near home apparently was an important factor in fishing decisions. The four regions were relatively similar with respect to public fishing waters and species availability (Figure 2). The same was true with respect to how water areas were accessed and choice of bait. In fact, the homogeneity of anglers across the state was quite high. Thus,

choice of where to fish was largely a matter of personal preference and proximity to residence. A parallel study revealed that individuals with private ponds, lakes, etc. did tend to fish there more often (Travnicek & Clonts 1996). Also, that study revealed that lower income segments of the population were more likely to pay for fishing access. Similarly, higher income

respondents tended to travel more, but they fished public waters more. But, in each situation, there did not appear to be significant differences between regions of the state. Thus, any transfer of funds reported between regions was largely attributable to purchasing fishing items such as boats and boating equipment, not the desire to go to special places to fish.

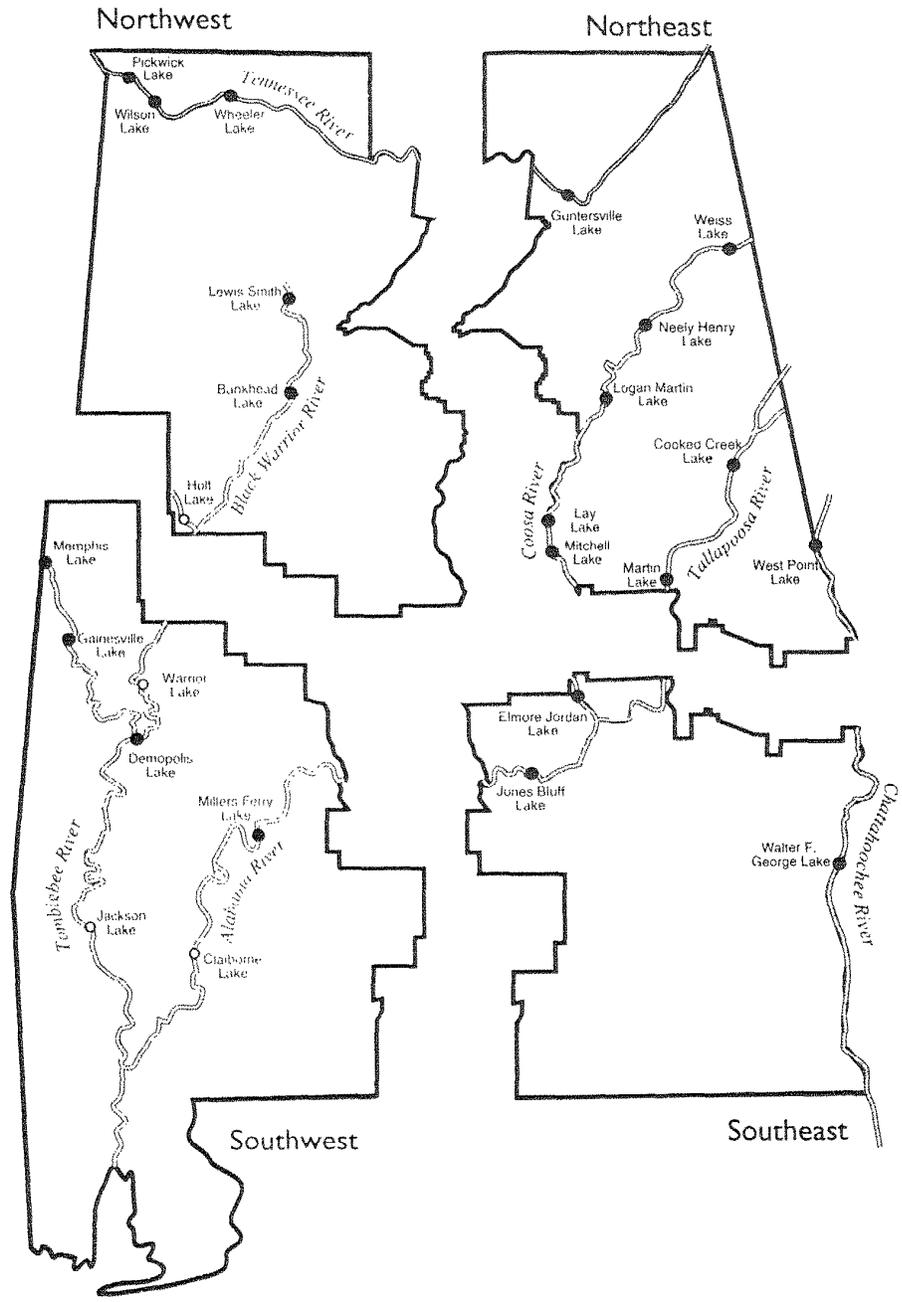


Figure 2--Statewide distribution of Alabama's rivers and reservoirs.

Spending Patterns of Anglers

The total per capita spending reported in the survey was \$2,330 per angler (Table 4). Spending by residents of the four regions varied significantly with respect to where items were purchased. About half of all spending accounted for in the survey occurred in the southern half of the state (Table 4), most of which was spent in the southwestern region. More than 16 percent of funds spent on fishing-related items was for out-of-state purchases, leaving only a third of all spending occurring in the two northern regions.

The concentration of spending in the southern portion of the state and out-of-state purchases suggested a relatively strong travel pattern for respondents (Table 5).

In total, licensed Alabama anglers spent \$790 million in their fishing activities in 1994 (Table 6). Residents in the northeast accounted for most of the total and those in the southeast the least. Overall, northern residents spent more than southern residents.

Table 4. Per Capita Fishing-Related Expenditures of Alabama Licensed Anglers by Source (Region of Angler Residence) and Sink (Region Where Expenditures Occurred) During 1994.

Expenditure	Totals	Region ^a				
		NW	NE	SW	SE	OOS
Source						
Total Expenditures						
\$ Per Capita	2,330	615	670	740	305	NA ^b
Percent	100	26	29	32	13	NA
Sink						
Total Expenditures						
\$ Per Capita	2,330	370	450	755	385	375
Percent	100	16	19	32	17	16

a/ NW = Northwest, NE = Northeast; SW = Southwest; SE = Southeast; OOS = Out-of-State.

b/ NA = Not Applicable (nonresidents were not sampled).

Table 5. Total Estimated Alabama Angler Expenditures. Percentage Distribution by Expenditure Category According to Sink (Region Where Expenditures Occurred) During 1994.

Expenditure Category	NW	NE	Sink SW	SE	OOS
Camping Equipment ^a	2	17	3	3	3
Boat/Boating Equipment ^b	51	43	55	62	50
Fishing Equipment, Licenses, & Fees ^c	21	15	13	17	15
Food and Lodging ^d	11	10	15	8	11
Transportation ^e	14	14	10	9	15
Miscellaneous Goods and Services ^f	1	1	4	1	6
Column Percent	100	100	100	100	100

a/ Camping trailer, pick-up camper, RV, tent, sleeping bags, etc.

b/ Boats, canoes, motors, rental, repairs, gas, oil, accessories, storage, insurance, etc.

c/ Fishing rods, line, bait, clothing, fishing licenses, stamps, access fees, memberships, tournament fees, etc.

d/ Refreshments, motels/hotels, nonconsumption items.

e/ Commercial fares, vehicle rental, charters, gas, oil, tires, repairs, etc.

f/ Magazines, taxidermy costs, photo processing, guides, etc.

Table 6. Total Estimated Alabama Angler Expenditures (mi. \$) and Standard Errors (mi.) by Source (Region of Angler Residence) and Sink (Region Where Expenditures Occurred) During 1994.

	TOTALS	NW	NE	Region		
				SW	SE	OOS
Source						
Total Expenditures						
\$	789.8	261.1	285.9	172.2	70.6	NA ^a
(standard error)	(0.21)	(0.44)	(0.53)	(0.33)	(0.21)	NA
percent	100	33	36	22	9	NA
Sink						
Total Expenditures						
\$	789.8	153.0	196.0	205.0	118.1	117.7
(standard error)	(0.21)	(0.51)	(0.61)	(0.50)	(0.46)	(0.30)
percent	100	19	25	26	15	15

a/ NA = Not Applicable (nonresidents were not sampled)

Generally, anglers tended to "stay home" to make their purchases, but southern residents more so than northerners. About 83 percent of purchases in the southeast and 74 percent of those in the southwestern counties were intraregional. Just over half the spending in northern regions were intraregional. This means there was a net transfer of funds between regions, with the south benefitting.

The strong, obvious income transfer across the state is important. The southern portion of the state with a smaller population base is benefitting significantly from the fishing industry. For example, the southeastern region contained 18 percent of the State population. Resident licensed anglers made most of their purchases within the region (83 percent), but the region also attracted many anglers from other regions to spend their money there. The internal spending (83%) represented only 49 percent of regional fishing-related income. Thus, the region earned 51 percent of its fishing income from other regions (Table 7). Similarly, the southwestern region gained 38 percent of its fishing income from other areas. At the opposite extreme, northwestern counties attracted only four percent of fishing income from other areas of the state.

One explanation for the north-to-south movement of spending was explained by local boat dealers. Presumably boat prices were lower in the south, especially in the Mobile area. Savings on boat and equipment prices are attracting many northern anglers to incur travel costs and still have net savings on their purchases. This explanation would not seem to hold for out-of-state transactions since higher tax rates on boats and equipment would tend to offset the lower prices. Yet, the transactions occurring across state lines indicated that price differentials must be sufficient to make the trips worthwhile.

Economic Impact of Angler Expenditures

Angler Number. --An estimated 65 percent of resident anglers purchase a fishing license in their own state, with only ten percent purchasing a nonresident fishing license to fish out-of-state (USDI et al. 1993). Also, an estimated seven percent are exempt from purchasing a fishing license and another 19 percent failed to purchase a license for activities requiring such (USDI et al. 1993).

Using these national averages, 65 percent of resident anglers were assumed to have purchased a fishing license, whereas 35 percent fished without a license. If 35 percent of resident anglers are nonlicensed, an estimate of 243,445 nonlicensed Alabama resident anglers was obtained. When combined with those licensed, the total number of resident anglers was about 695,600 in 1994.

Expenditures. --By assuming that all nonlicensed residents and out-of-state anglers spent the same for fishing as licensed residents, expenditures for the nonsampled groups were estimated. Thus, nonlicensed Alabama resident anglers contributed an estimated \$425 million to the State economy (Table 8)

Nonresident licensed anglers were estimated to contribute \$44 million to the Alabama economy (Table 8). When the expenditure estimates for all three groups were combined, the total direct spending impact on Alabama's economy was estimated to be \$1.3 billion.

Conclusions

Results of this research suggest that promotional efforts in each fishing region may be beneficial. The flow of money from north to south was largely attributed to the relative prices of boats and fishing equipment. Hence, equipment

Table 7. Total Estimated Alabama Angler Expenditures. Percentage Distribution from Source (Region of Angler Residence) to Sink (Region Where Expenditures Occurred) and from Sink to Source During 1994.

Region	NW	NE	Region		
			SW	SE	OOS
Sink					
			Source (percent)		
NW	56	2	*	*	NA ^b
NE	14	56	*	*	NA
SW	16	12	74	2	NA
SE	3	16	3	83	NA
OOS	11	14	23	15	NA
column percent	100	100	100	100	
Source					
			Sink (percent)		
NW	96	18	21	7	24
NE	4	82	16	40	33
SW	*	*	62	4	33
SE	*	*	1	49	10
OOS	NA	NA	NA	NA	NA
column percent	100	100	100	100	100

a/ Although zero dollars were reported by sample respondents, some amount of spending by southern residents in northern counties is logical. However, based on the survey, transfers from south to north were considered nominal.

b/ NA = Not Applicable (nonresidents were not sampled).

Table 8. Estimated economic impact by resident licensed, resident nonlicensed, and nonresident licensed angler expenditures during 1994 (millions of \$).

	TOTALS	Resident licensed Angler	Resident Nonlicensed Angler ^a	Out-of-State licensed Angler ^b
Camping Equipment	83.0	50.0	26.9	6.1
Boat/Boating Equipment	650.0	407.5	219.4	23.1
Equipment, Licenses, & Fees	199.4	125.8	67.7	5.9
Food and Lodging	137.7	87.6	47.2	2.9
Transportation	152.6	96.5	52.0	4.1
Miscellaneous Goods/Services	36.5	22.3	12.0	2.2
TOTALS	1,259.2	789.8	425.2	44.2

a/ Resident licensed angler expenditures ÷ 0.65 then x 0.35.

b/ Assuming licensed resident anglers in other states spend the same amount out-of-state that Alabama anglers did: (the number of resident licensed Alabama anglers indicating making fishing expenditures / the number of survey respondents {n = 403}) x the number of out-of-state fishing licenses sold in 1994 (n = 99,356) x the mean dollar amount by expenditure category that Alabama resident anglers indicated spending out-of-state.

dealers in northern regions may find more competitive pricing strategies to their advantage.

This study found that about 85 percent of Alabama's licensed anglers were freshwater fishermen, exclusively. The remaining license holders included five percent saltwater (exclusively) and ten percent combination fresh- and saltwater anglers. Also, the fact that public fishing sources (rivers and reservoirs) were used nearly exclusively by nearly three-fourths of reporting licensed anglers, suggests that state fishery administrators should target freshwater fishing sources in managing popular fish species like largemouth bass, crappie, bream, and catfish.

Angler expenditures for fishing-related equipment and activities have a significant impact on the economy of Alabama. In evaluating the 1994 expenditures of licensed Alabama anglers, distinct inferences were gained. Northern counties account for slightly more than 60 percent of Alabama's population and the anglers residing in these counties accounted for nearly three-fourths of total fishing-related expenditures. This shows that northern recreational anglers tend to spend more money on their fishing activities than southern anglers. Southern counties, however, are benefiting from the spending by northern anglers. Not only are recreational anglers in northern Alabama spending more money on fishing-related equipment, they are spending a significant portion of that money in southern counties. A definite pattern of money flow from north to south was recognized.

Unfortunately for Alabama's economy, 15 percent of the fishing-related equipment and activity purchases by Alabama resident anglers were made outside Alabama. This suggests the possibility that (a) manufacturers and businesses may not offer recreational anglers in Alabama the equipment they need at a price competitive with other states, (b) licensed anglers who are fishing outside Alabama would rather purchase fishing equipment, etc. closer to their intended fishing location, or (c) both fresh and saltwater fishing activities were pursued in states other than Alabama. Together anglers in northeast and southwest counties accounted for 66 percent of the total dollars spent in states outside Alabama, each region contributing 33 percent. The lower amounts spent out-of-state by northwest and southeast anglers suggests that these anglers could meet their needs sufficiently to keep their fishing activity dollars within the State.

Surprisingly, relatively little of the expenditures made in Alabama, and the southwest in particular, were specifically for saltwater fishing. Initially, it was hypothesized that expenditures by anglers living in southern counties, especially the southwest with its direct access to saltwater, would be directed toward saltwater fishing activities. However, this was not the case. Expenditures for freshwater fishing activities were dominant in both southern regions, signifying a use of the vast resources available in the Alabama river systems.

The estimated 1994 expenditures of Alabama's 452,113 resident licensed anglers amounted to nearly \$800 million. When combined with estimated expenditures of resident nonlicensed and nonresident licensed anglers, Alabama's economy gained about \$1.3 billion in 1994 from recreational fishing in Alabama. These monies are important for the state of Alabama. They are the livelihood for many businesses and industries in Alabama and other states.

Literature Cited

- Alabama Department of Economic and Community Affairs (ADECA). 1992. Alabama Statewide Comprehensive Outdoor Recreation Plan. Montgomery, AL: ADECA.
- Babbie, E. R. 1986. The practice of social research (4th ed.). Belmont, CA: Wadsworth Publishing Company, Inc.
- Castle, E. N. 1987. Policy options for rural development in a restructured rural economy: An international perspective. pp. 11-27. In: Summers, G. F., Bryden, J., Deavers, D., Newby, H., Sechler, S. eds. Agriculture and beyond: Rural economic development. Madison, WI: University of Wisconsin.
- Clonts, H. A. 1988. Recreation and wildlife as alternative uses of highly erodible lands. pp. 126-134. In: Proceeding of symposium: Alternative uses of highly erodible agricultural land. Muscle Shoals, AL: Office of Agriculture and Chemical Development, Tennessee Valley Authority.
- Deavers, K. L. 1987. Rural economic conditions and rural development policy for the 1980s and 1990s. pp. 113-123. In: Summers, G. F., Bryden, J., Deavers, D., Newby, H., Sechler, S.

- eds. Agriculture and beyond. Rural economic development. Madison, WI: University of Wisconsin.
- Dillman, D. A. 1978. Mail and telephone surveys: The Total Design Method. New York, NY: John Wiley & Sons.
- Fisher, M. R. 1996. Estimating the effect of nonresponse bias on angler surveys. Transactions of the American Fisheries Society, 125, 118-126.
- Knight, S. S.; Malvestuto, S. P. 1991. Comparison of three allocations of monthly sampling effort for the roving creel survey on West Point Lake. American Fisheries Society Symposium, 12, 97-101.
- Leontief, W. 1953. Studies in the structure of the American economy. New York, NY: Oxford University Press.
- Pollock, K. H.; Jones, C. M., Brown, T. L. 1994. Angler survey methods and their applications in fisheries management. American Fisheries Society Special Publication, 25.
- Thomas, J. S. 1996. Determining the ratio of fresh to saltwater anglers in the state of Alabama. Special report prepared for the Alabama Department of Conservation and Natural Resources. Mobile, AL: University of South Alabama.
- Travnicek, R. J.; Clonts, H. A. 1996. Marketing biological resources: Strategies for separating highly homogeneous populations. Manuscript submitted for publication.
- Tucker, B. 1996. Personal Communication. 13th Annual Meeting of the Alabama Fisheries Association. February 15, 1996.
- U.S. Department of Commerce, Bureau of the Census (USBC). 1992. Statistical abstract of the United States: 1992 (112th ed.). Washington, DC: U.S. Government Printing Office.
- U.S. Department of Commerce, Bureau of the Census (USBC). 1994. Statistical abstract of the United States: 1994 (114th ed.). Washington, DC: U.S. Government Printing Office.
- U.S. Department of the Interior (USDI); U.S. Fish and Wildlife Service (USFWS); U.S. Department of Commerce, Bureau of the Census (USBC). 1993. 1991 national survey of fishing, hunting, and wildlife-associated recreation. Washington, DC: U.S. Government Printing Office.
- Verburg, F. W.; Charbonneau, J. J.; Mangun, W. R.; Llewellyn, L. F. 1987. The importance of fish and wildlife values to the professor. pp. 49-54. In: Decker, D. J., Goff, G. R. eds. Valuing wildlife: Economic and social perspectives. Boulder, CO: Westview Press.
- Wallace, M. S. 1989. Socioeconomic research in wildlife. Unpublished master's thesis. Auburn University, Auburn, AL.
- Wallace, M. S.; Stribling, H. L.; Clonts, H. A. 1991. Effect of hunter expenditure distribution on community economics. Wildlife Society Bulletin, 19, 7-14.

CORE-AND-BUFFER MANAGEMENT FOR ECOTOURISM IN SOUTH CAROLINA'S ACE

BASIN

Robert L. Janiskee
Associate Professor, Department of Geography, University of
South Carolina, Columbia, SC, 29212

Peter G. Chirico
Graduate Student, Department of Geography, University of South
Carolina, Columbia, SC, 29212

Abstract: In South Carolina's ACE Basin, resource managers have balanced recreational use and ecosystem protection by fostering landowner cooperation, emphasizing low-impact recreational activities, and adopting a core-and-buffer management model. The ecological integrity of the ACE's wilderness core is protected by a buffer that contains the recreation-tourism infrastructure.

Introduction

Recreational activities in natural areas invariably degrade ecosystems. The hotels, campgrounds, marinas, roads, trails, and other infrastructure elements that support these activities do even more damage (Boo 1990, Gaddy and Kohlsaat 1987). Natural area managers find it difficult to achieve a reasonable balance between protecting resources and providing recreation opportunities, especially in wilderness areas.

One of the most praiseworthy ideas for recreation-tourism infrastructure development in and near wilderness areas is the core-and-buffer model. This approach, which has been used in one form or another in many parts of the world, confines most infrastructure development to an area that surrounds and buffers an inner core of wilderness. The undisturbed habitat of the core is then used by recreationists in transitory, low-impact ways (Wells and Brandon 1993). Despite the popularity of the idea, few empirical studies of the core-and-buffer management approach have been conducted in the United States. This paper reports a case study of core-and-buffer recreation management in the ACE Basin area of South Carolina. Its purpose is to document the low-impact recreational use of a southeastern wilderness area and show how the core-and-buffer approach serves the interests of both high-quality recreation and wilderness preservation.

The ACE Basin

Found approximately 45 miles southwest of Charleston, South Carolina, the 350,000-acre ACE Basin encompasses the combined watersheds of the Ashepoo, Combahee, and Edisto Rivers. Few areas in the eastern United States offer a better resource base for ecotourism (USDC 1991). The ACE's coastal marine, maritime, estuarine, palustrine, and upland habitats are so well-preserved and rich in wildlife--including alligators, otters, bald eagles, ospreys, waterfowl, and sea turtles--that the ACE has been designated a National Estuarine Research Reserve Program (NERRP) site for baseline ecological studies. At least eight federally protected species inhabit the ACE

Land managers in the ACE are committed to a comprehensive environmental management plan that is nationally acclaimed for its creative partnership of federal and state governments, private conservation groups, corporations, and individual property owners. Currently 47,995 acres are held in public property managed by the South Carolina Department of Natural Resources (DNR), the South Carolina Division of Parks, and the U.S. Fish and Wildlife Service. Much of the rest of the area is managed by hunt clubs, the Westvaco timber company, The Nature Conservancy, Ducks Unlimited, and other land owners formally committed to preserving the ACE's natural character.

The Core-and Buffer Management Model

Deep in the ACE's interior are eight sea islands that are uninhabited, roadless, and accessible only by watercraft. A key aspect of the ACE Basin management plan is the federal government's designation of the 11,942-acre core area as a NERRP site, insuring its preservation as undeveloped upland, woodland, wetland, and open water habitat. Surrounding this wilderness core area is a 135,660-acre buffer area of cooperative land holdings designated for traditional land use activities and as sites for educational, interpretive, and recreational structures and facilities. Any ecotourism-related development that takes place in the ACE Basin must conform to the requirements of this plan and pose no threat to the ecological integrity of the wilderness core.

ACE Basin Recreation Providers

Since the end of the plantation era, the ACE Basin has been used primarily for hunting, fishing, and tree farming. Other common activities include boating and paddling, fishing and shellfishing, wildlife observation, and nature photography. These days, much of the recreational activity in the ACE is nonconsumptive in character and takes place under the auspices of eight recreation providers (Chirico 1995). Two of these providers, Coastal Expeditions and A Coastal Adventure, are ecotourism-oriented entrepreneurs who bring visitors into the ACE for purposes of nature appreciation. Two other providers, the Charleston County Parks and Recreation Department and Adventure Carolina, offer a variety of nature-based recreation opportunities for day-trippers from nearby urban centers. The remaining four providers--the DNR, Westvaco, the S.C. Division of Parks, and Edisto Marina Charters--are generalists who serve a broadly defined market that includes both tourists and day-trippers. Two of the facilities operated by these generalists, Hunting Island State Park and Edisto Beach State Park, are especially important because they are highly accessible and heavy visited.

Recreational Modes and Routes

Ecotourists prefer to interact with nature "up close and personal." They also tend to stay on the move, seldom tarrying at any particular place for more than a few minutes. Since they derive their pleasure through travel experiences, the modes and routes selected greatly effect the character and quality of the total experience. There are many routes to choose from in the ACE Basin, and the modes available include motorboating, paddling, and hiking.

Throughout the world, much of what ecotourists want to see and do is on or close to navigable waterways. The ACE Basin is largely a watery domain, and its abundant navigable waterways

make it highly amenable to motorboating. During the 1994 season the two providers that use motorboats brought nearly 1,500 visitors into the ACE on several popular routes. The motorboating option is both a blessing and a curse. While motorboating is fast, convenient, and safe, and can be a godsend for the physically impaired, it is also noisy and can pollute the water with fuel and lubricant residues.

Many waterborne recreationists and providers consider motorcraft too noisy and "unnatural" for wilderness areas. Paddling provides an attractive alternative for these people and for those seeking the physical fitness benefits of more strenuous activities. Canoeing and kayaking, the two main types of paddling, are nearly ideal from the ecotourism perspective. Canoes and kayaks are small and light, create no objectionable pollution, and can traverse waterways too shallow for motorcraft.

There are some excellent paddling routes in the ACE Basin. Overall, canoes are the watercraft of choice in the inland area, which has slow-moving streams and extensive blackwater swamps. Sea kayaks are far safer in the estuarine area, where paddlers encounter strong currents and rougher water.

For many people, canoeing offers the perfect way to see the ACE at its pristine best. The ACE's slow moving rivers and tributaries provide memorable experiences for hundreds of canoeists every year. Existing routes, including the Combahee, Cuckolds-Cumbahee, and Penny-Wiltown, are defined by boat landings that are about one day's paddle apart.

It is the rising popularity of sea kayaking that has ignited interest in ACE Basin paddling excursions. Sea kayaks can go anywhere that canoes go, and can ply the same coastal routes that motorboaters travel. The estuarine area of the ACE has become a magnet for kayakers because its spartina marshes, sea islands, and coastal waters offer interesting scenery and an abundance of watchable wildlife. A kayak is a nearly ideal craft for getting close to waterfowl and marine mammals because it has a very low silhouette and is virtually noiseless. More than 300 kayakers used ACE Basin routes during the 1994 season. The Brickyards Ferry-Bennetts Point, Edisto-Otter, and Botany Bay routes are used almost exclusively by kayakers, and several new kayaking routes are under consideration by ecotourism.

Hiking, another low-impact activity, offers a distinct alternative to motorboating and paddling. It is a strong plus that hiking is low in environmental impact and high in physical fitness value. Hikers move quietly, can stop anytime, and have chances to observe nature in intimate detail. On the other hand, many people find hiking unappealing because it entails discomfort or risk associated with physical exertion and the presence of biting insects, venomous snakes, and other environmental hazards. Another drawback is that hiking is safe and legal only on specified trails, which offer fewer attractive areas than the boating and paddling routes. In the ACE, the only trails that are frequently used are those that are conveniently accessible from the public road system.

The Recreation-Tourism Infrastructure

The volume and character of nature-based recreation in the ACE is clearly dependent largely on the existence and distribution of

facilities serving the needs of recreationists. Motorboaters and paddlers need convenient boat landings, hikers need maintained trails, and tourists require campgrounds or other lodging. Everyone needs roads for access to boat landings, trailheads, and other suitable sites for ingress and egress. In the ACE, these infrastructure elements are confined to the buffer area, which is used as the "staging area" for excursions into the wilderness core.

Roads

Since the road system is the most critical element of the recreation-tourism infrastructure, land managers can use road limitations as a powerful tool for comprehensive planning. In the ACE, road access is limited because of the highly protected nature of many lands. The number and quality of the roads decreases toward the core, which remains roadless. Public roads do reach into the major land holdings in the buffer, but many conservation easements are isolated from the public road system.

Trails

Trails, another important element of the infrastructure, are also limited in number and distribution. There are no maintained trails in the core area, and none is planned. In the buffer, the highly accessible nature trails in the two state parks are used by 200,000 visitors a year, and another 6,100 hikers are accounted for by the trails in the Westvaco properties and the two DNR Wildlife Management Areas.

Public Boat Landings

Since both motorboaters and paddlers require well-located ingress and egress points, public boat landings are a key element of the ACE's recreation-tourism infrastructure. The ACE's existing canoe routes are defined by the supply of landings that are properly spaced for full or half-day trips. Developing new canoe routes is difficult because the public road system offers few opportunities for constructing new landings at convenient locations on rivers or streams.

For motorcraft and sea kayaks, the spacing of the landings is much less important than their proximity to the core area. Most motorboating and sea kayaking in the ACE takes the form of round trips into the core area from landings in the buffer. The Edisto Marina, the Live Oak Landing at Edisto Beach State Park, and the Bennetts Point Landing all play vital roles because each is only a short paddle or quick boat ride from the pristine core. Edisto Marina is currently the only privately-owned boat landing used by ACE Basin ecotourism operators, but others will surely be used as ecotourism grows.

Campgrounds

The lodging component of the ACE's infrastructure primarily consists of camping facilities. Low-impact recreationists often prefer to camp rather than use conventional lodging, so the availability of campsites is an important consideration. Currently, few areas in the ACE offer facilities for a wide range of campers, and only three camping areas are well-situated to serve ecotourists. The best camping opportunities are at Hunting Island State Park, which has an attractive 200-site campground with full hookups for RVs, plus the restrooms and hot showers that tent campers need. Edisto Beach State Park has two small family campgrounds and a primitive camping area. There is also a primitive camping area at DNR's Bear Island WMA, but it is

available only from November 15th to January 20th and is mostly used by hunters.

Conclusions

To balance the interests of natural area protection and recreational use, ACE Basin resource managers have created a comprehensive partnership among landowners, adopted a core-and-buffer management model, and emphasized low-impact recreational activities. Consequently, unlike many other natural areas being exploited by the burgeoning ecotourism industry, the ACE is not in immediate danger of being "loved to death" by hordes of visitors or fragmented and degraded by tourism-related development.

The long-term prospects for a harmonious relationship between ecosystem stewardship and ecotourism development in the ACE Basin seem very good. The ACE's status as a NERRP site, which is conditioned by the presence of protected wildlife species and wilderness habitat, is a tremendous asset because it makes the preservation of high-quality natural areas and healthy wildlife populations in the ACE a matter of federal policy. In addition, three aspects of the ACE's recreation-tourism infrastructure auger well for the long-term viability of the present managerial strategy. First, the limited availability of maintained trails and landings for canoe routes ensures that any deleterious effects of paddling and hiking will be confined to a few narrow corridors rather than spread throughout the buffer. Secondly, the complete absence of road connections to the wilderness core ensures that the typical

tourist or day-tripper will find it relatively inconvenient to visit the one area of the ACE that can least tolerate heavy visitation. Finally, the availability of boat landings close to the pristine core is the key constraint on motorboating and sea kayaking in the ACE, and the state and local governments control this through the permitting processes.

Literature Cited

- Boo, E. 1990. Ecotourism: Problems and pitfalls. 2 vols. Washington, DC: World Wildlife Fund.
- Chirico, P.G. 1995. Ecotourism and low impact recreation in South Carolina's ACE Basin. Masters thesis. University of South Carolina
- Gaddy, L. and T. Kohlsaar. 1987. Recreational impact on the natural vegetation, avifauna, and herpetofauna of four South Carolina barrier islands. *Natural Areas Journal* 7(2):55-63.
- U.S. Department of Commerce NOAA National Ocean Service 1991. Ashepoo-Combahee-Edisto (ACE) Basin National Estuarine Research Reserve in South Carolina: Final environmental impact statement and draft management plan. Washington, DC: Government Printing Office.
- Wells, M. and K. Brandon. 1993. The principals and practices of buffer zones and local participation in biodiversity conservation. *Ambio* 22(2-3):157-162.

NATIONAL SURVEY ON RECREATION AND THE ENVIRONMENT: BIASING EFFECTS OF INCLUDING A PARTICIPATION SCREENING QUESTION

H. Ken Cordell

Project Leader, USDA Forest Service, Athens, GA.

Burt R. Lewis

Graduate Assistant, University of Georgia, Athens, GA.

Barbara L. McDonald

Urban Tree House Coordinator, USDA Forest Service, Athens, GA.

Morgan Miles

Professor, Georgia Southern University, Statesboro, GA

Abstract. National Survey on Recreation and the Environment (NSRE) is an interagency and private sector partnership undertaken to update the country's ongoing series of national recreation surveys. Data collection for the NSRE using phone survey methods was begun in the winter of 1994 and concluded in April of 1995. Upon completion of data collection, a series of diagnostic procedures were conducted in an attempt to identify potential biases in the estimates of the proportion of the U.S. population that participated in outdoor recreation. One principal source of bias identified was a screening question employed to reduce questioning of persons who do not participate in any outdoor recreation activities. In comparison with other outdoor recreation participation surveys and with the 1982-1983 NRS, the NSRE with its screening question seemed to under estimate the proportion of the U.S. population that participated in one or more outdoor recreation activities in the 12 months prior to an interview.

Introduction

The National Survey on Recreation and the Environment (NSRE) is an interagency and private sector partnership undertaken to update the country's ongoing series of national recreation surveys, the first of which was conducted in 1960 (Outdoor Recreation Resources Review Commission 1960). Data collection for the NSRE using phone survey methods was begun in the winter of 1994 and concluded in April of 1995. This data base provides an opportunity to examine and compare participation proportions spatially and temporally. It also provides the United States research community with a timely national measure of the significance of outdoor recreation as a social behavioral phenomena and a priority use of the nation's natural resources. Upon completion of data collection, a series of diagnostic procedures were conducted in an attempt to identify potential

biases in the estimates of the proportion of the U. S. population that participated in outdoor recreation globally in any activity and in individual activities specifically. One principal source of bias identified was a screening question employed to reduce costs of administering phone interviews to persons who do not participate in any outdoor recreation activities. In comparison with other outdoor recreation participation surveys and with the 1982-1983 NRS, the NSRE with this screening question seemed to under estimate the proportion of the U.S. population that participated in one or more outdoor recreation activities in the 12 months prior to an interview.

The National Survey on Recreation and the Environment

For the most part, the NSRE was designed to retain comparability with priority sections of previous National Recreation Surveys (NRS) dating back to 1960. For many different reasons, each successive NRS has been designed slightly differently due to preferences of the investigators, information needs of the sponsors, method of data collection selected and availability of improved technology for conducting surveys. The core of participation, demographic, favorite activities and barriers questions has been retained through all previous NRS studies and was carried forward in the 1994-95 NSRE.

The research lead in designing and administering the NSRE was assumed by the Southern Research Station, USDA Forest Service, Athens, Georgia and the data were collected by the Survey Research Center at the University of Georgia. The NSRE was a random digit dialing (RDD) telephone survey of individuals 16 years and older that included a screening question to determine whether or not respondents participated in any outdoor recreation activities over the 12 months just prior to the interview. If the response was "no," none of the individual activity participation questions was asked.

Methods

After completion of NSRE data collection, including more than 17,000 respondents, estimates of the proportion of the U. S. population reporting participation in at least one activity, and also proportions reporting participation in each individual activity, were compared with estimates from other credible surveys. These other surveys included the 1982-83 National Recreation Survey (USDI-National Park Service 1986). These comparisons revealed that NSRE-derived estimates of the proportion of the population which reported global participation in one or more activities and proportions reporting participation in individual activities seemed to differ from estimates from other samples.

The following steps were pursued in first attempting to determine the likelihood of bias in estimates of population proportions and second to identify suspected sources of any suspected bias.

1. Compare selected, demographically-weighted NSRE estimates of participation proportions with other credible demographically-weighted survey results, including the 1992 NSRE pretest of 786 cases, the 1990-91 USDI National Survey of Hunting, Fishing and Wildlife-Associated Recreation (Wildlife Survey) (USDI-Fish and Wildlife Service 1992), the 1994 Outdoor Recreation in America: A

Survey for the Recreation Roundtable (Roper Starch 1994), and the 1982-83 National Recreation Survey (USD1-National Park Service). Identify NSRE estimates that seem inconsistent with the range of estimates available from the other survey sources. Demographically weighted results were used to lessen the likelihood that observed differences were due to disproportionate sampling among different demographic groups with differing participation rates across American society.

2. The first comparison of interest was between estimates of national participation in fishing and hunting. Because the NSRE weighted estimates of proportions of population participating in hunting and fishing seemed much higher than the Wildlife Survey estimates, a recontact phone survey of persons who refused the NSRE was conducted to examine the potential of avidity bias. Avidity bias suggests that persons who participate in outdoor recreation are more likely to respond to the survey. This is related to the idea of topic differences and their effect on survey response. McDaniel, Madden and Verille (1987) completed a study that concluded that contacts are more likely to participate in a survey if the topic of the survey was of personal relevance to them.
3. Compare "early" and "reluctant" respondents to determine whether reluctant respondents (those who take repeated calls to complete an interview and have been shown to be similar to persons who refuse surveys, Armstrong and Overton 1977) participate at different rates than early respondents (those granting an interview upon the first or second call).
4. Conduct a follow-up phone contact with refusers (persons who refuse to grant an interview) and unknowns (persons in the sample who could never be contacted) to determine if these persons participate at different rates than respondents.
5. Conduct a "validation" survey omitting the screening question to determine that question's potential biasing effect.
6. Compare estimates of participation proportions from the validation survey, the NSRE, and the 1992 NSRE Pilot Survey, as well as with other survey estimates.

It should be noted that inferential statistical methods were not used in the comparisons reported in this paper because weighted participation estimates were derived from published reports. The comparative standard adopted was whether observed differences were viewed as important in the experienced eyes of the survey research team and sponsoring users of the data. A major purpose of this paper is to chronicle the steps taken in attempting to identify and adjust apparent biases in participation proportions estimated from the NSRE and to describe how the above steps ultimately led to isolation of the screening question as one primary factor seeming to introduce bias into the NSRE estimates. Additionally, by sharing the experiences of the NSRE survey research team, it is anticipated that this paper will provide helpful observations for others involved in survey design and administration.

Results

Initial Comparison Among Surveys

From the overall weighted results of the NSRE, it was estimated that 81.8 percent of the U.S. population had participated in one or more outdoor recreation activities in 1994-95. This result is called "global participation," meaning participation in one or more outdoor recreation activities across the full (global) list of all activities. This estimate of global participation was compared with other estimates reported from the 1990-91 National Survey on Hunting, Fishing and Associated Wildlife Activities (which included a screening process, USD1-Fish and Wildlife Service), the 1982-83 National Recreation Survey (no screening question), the 1992 NSRE national pilot (with screening question worded more generally than the NSRE question), and the 1995 Recreation Roundtable survey (without a screening question). Estimates for global participation and for selected individual activities are compared in Table 1.

The results in Table 1 represent some early diagnostic results observed by the NSRE analysis team. Noteworthy is that the NSRE produced an estimate of global participation that was much lower than the 89 percent estimated from the 1982-83 NRS. Comparability of these two estimates is critical because they are the basis for describing the overall trend for outdoor recreation participation for the U.S. population. The NSRE estimate was also lower than the estimate of 93.3 percent derived

Table 1. Estimated percentage of the U.S. population that participated one or more times in 12 months by activity and survey source, 1994-1995.

Activity	Source of estimate				
	1994 NSRE Pilot	1994-95 NSRE	1990-91 Wildlife Survey	1982-83 NRS	1995 Times- Mirror
	(Percent of U.S. population)				
Global (Any activity)	93	82	NA	89	74
Hunting	14	13	7	12	8
Fishing	39	35	19	35	26
Developed camping	30	25	NA	17	25
Family gathering	72	65	NA	NA	NA
Hiking	24	29	NA	14	18
Horseback riding	10	10	NA	9	6

from 1992 NSRE Pilot, a national sample of 786 individuals. The 74 percent reported by the Recreation Roundtable Poll is not comparable because it represents a more limited list of activities.

It is noteworthy that the NSRE participation estimates for individual activities shown in Table 1 are very close to the NSRE pilot estimates, although generally somewhat lower. The NSRE estimates for hunting, fishing, and horseback riding are also similar to the 1982-83 NRS estimates. The NSRE estimates are higher than the 1982-83 NRS for camping and hiking. The Roper-Stark results present a mixture of both higher and lower estimates. The paradox perplexing the research team initially was the observation that while the NSRE estimate of global participation in any activity showed a decrease in per capita participation, estimates for individual activities indicated generally increasing per capita participation. It appeared that one of these two trends was in error.

Recontact Survey

The initial reaction to the results just presented, especially the result that NSRE estimates for hunting and fishing were higher than those from the Wildlife Survey, was to suspect nonresponse bias. The refusal rate for the NSRE phone survey was 45 percent, typical of large-scale generalized phone surveys in contemporary times (Kerin and Peterson 1983). This was virtually the same as the refusal rate for the NSRE national pilot that resulted in 786 useable responses. To test for nonresponse bias, and potentially avidity bias (Alreck and Settle 1995) as one outcome of nonresponse bias, a "Recontact Survey" was conducted by the Survey Research Center at the University of Georgia (the organization that administered the NSRE study). The focus of these recontacts was on global participation in any activity and participation in hunting and/or fishing in particular. A sample of 95 persons who had refused the NSRE was recontacted and asked to participate in a short, 2-3 minute interview. A forty-five percent conversion rate was attained in the recontact effort. Results are found in Table 2.

Table 2. Comparison of participation percentages across 3 surveys asking comparable questions about recreation participation.

	Percent participation in the activity		
	Recontacted Refusers	NSRE Respondents	Wildlife Survey Respondents
Any Activity	69	82	na
Hunting	18	13	7
Fishing	31	35	19

These results suggested potential avidity bias in that a smaller percentage of recontacted refusers indicated participation globally and in fishing. However, a somewhat larger percentage of refusers reported participation in hunting. It appeared that persons participating in outdoor activities were more likely to participate in a survey about outdoor recreation (avidity bias) resulting in over estimation of participation rates for individual activities. This result did not resolve, however, the paradox that the NSRE estimated only 82 percent of the U.S. population had participated globally in any form of outdoor recreation.

Comparison of "Reluctants" with "Early" Respondents

The literature suggests that sampled contacts who are more difficult to convert to respondents tend to be similar to refusers in their overall affinity for the topic of a survey and in profile regarding items in the survey (Armstrong and Overton 1977). To examine further the possibility that nonresponse bias was affecting the NSRE estimates, 4,401 cases from the NSRE data set were analyzed to generate comparisons of sampled contacts who were easy to convert to an interview with contacts who were difficult to convert, that is, reluctant to grant an interview. Of these 4,401 cases, 4,132 were "earlyies" (granted an interview with no more than 2 calls) and 269 were "reluctants" (granting an interview only after more than 2 calls). Percentages reporting participation by activity are found in Table 3.

Table 3. Percentage of respondents participating in outdoor recreation and type of respondent by activity.

	Earlyies	Reluctants	Wildlife Survey
Global	81	84	na
Hunting	13	15	7
Fishing	32	38	19
Family Gathering	62	64	na
Hiking	28	23	na
Horseback Riding	16	12	na

The above estimates of participation rates showed that more reluctant respondents participate globally in any activity and in 3 of the 5 individual activities. This result seems to contradict the Armstrong and Overton (1977) study that showed that "reluctants" are more like refusers than easies. The recontact survey suggested generally that refusers participate at lower rates than respondents.

Phone Follow-up with Refusers and "Unknowns"

In an attempt to learn more about the persons who refused the NSRE and about those in the original sample who could not be reached with repeated calls, the "unknowns," a sample of numbers from both categories of nonrespondents was drawn and repeated calls made until the possibility of making a contact seemed exhausted (up to some limit, of course). In the NSRE, 43 percent of sampled phone numbers resulted in a contact (45 percent of whom refused the survey), 25 percent were never reached and thus constituted the "unknown" category of potential respondents, and 32 percent were ineligible (i.e., businesses, wrong numbers, etc.). A total of (136) the NSRE refusers and unknowns were contacted using a 2-minute survey protocol with a soft persuasion approach. Conversion of calls to useable responses was continued until the interviewers clearly could observe emergence of a pattern of responses to question regarding participation in outdoor recreation and a few selected demographic items.

Results indicated that refusers and unknowns fall into 4 categories:

1. "Shut Ins" who have physical or other disabilities and do not participate in outdoor recreation
2. Persons who did not understand what was meant by outdoor recreation and thus refused the survey feeling it did not

pertain to them, although many of them participate in outdoor activities. Some of these persons can be classified as "Servers," in that they participate in outdoor recreation out of service to some other person or persons, especially in taking children or other dependents on outings. These persons generally did not consider service motivated participation as fitting the NSRE definition of participation.

3. "Hard core" refusers who do not participate in any survey coming to them by phone, but who said they do participate in outdoor recreation and do so at a per capita rate very close to that of the NSRE respondents
4. The "Busies" who are very active in all aspects of modern life and do not answer the phone unless they are expecting a call. These persons tend to be very active in outdoor recreation, family activities, job and outside interests to the point that answering the phone is viewed as an interruption.

A Supplemental Validation Survey

With the above evidence of bias in front of the survey team, it appeared that both response and nonresponse biases were present. Response bias was hypothesized to result from some respondents' misunderstanding of the notion of "outdoor recreation" as it presented in the NSRE introduction and screening question. This misunderstanding resulted in underreporting of global participation. The 1982-83 NRS provided an estimate of 89 percent global participation with no initial screening question. The 1992 Pilot of the NSRE showed that 93 percent of the U. S. population participated in one or more outdoor recreation activities. The Pilot included a screening question, but asked "Did you spend any of your leisure time outdoors in the past 12 months?" The NSRE screening question, developed with the survey team leader for the 1982-83 NRS, was worded: "Did you spend any of your free time participating in outdoor recreation activities in the past 12 months?" For both surveys, interviews were initiated only after defining outdoor recreation as "Any recreational activity which you did outdoors for pleasure. These could be activities you did around the home, on vacations, trips, outings, or during any other free time."

Based on the series of diagnostic steps described above, response bias causing an underestimate of global participation was hypothesized to exist from including an outdoor recreation screening question. For example, respondents who were "servers" and those otherwise not comprehending the intended meaning of outdoor recreation tended to respond "no" to the screening question, though they had participated in some form of activity over the 12-month recall period. This apparently accounted for some underestimation of the global participation rate.

It appeared also that an underestimate of global participation may have resulted because of nonresponse caused by the screening question and the initial provision of a definition of outdoor recreation. Some persons contacted seemed to have refused an interview because they perceived they had not participated in any activities over the past 12 months, although they actually had.

To address these potential sources of bias in the estimate of the global participation rate, a supplemental validation survey was designed and administered to a random national sample of 710

persons. The purpose was to improve the estimate of the percentage of the U. S. population that participates in outdoor recreation and to examine the validity of the percentages estimated for individual activities further. The interview was shortened to approximately 8 minutes, the introduction was streamlined, and only activity participation (yes/no) and selected demographics were asked. The survey is summarized in Table 4 showing "validation" survey percentages followed by NSRE.

Table 4. Conversion and noncontact rates across the random sample of phone numbers for the NSRE by category of contact and survey source.

	Survey Source	
	Recontact Survey	NSRE
<u>Known Households</u>	32.9	(43)
Completed interviews	66.7	(53)
Partial interviews	0.1	(1.6)
Refusals	33.2	(45)
<u>Unknown Households</u>	36.1	(25)
No answer/busy	61.5	(72)
Answering Machine	31.7	(18)
Strange noise in phone	5.6	(8)
Wrong number	1.2	(2)

Eliminating the screening question and shortening the survey virtually eliminated partially completed interviews and substantially reduced refusals. However, it seems that unreachable households are becoming a larger percentage of the potential pool of respondents, especially because of answering machines and inability to obtain an answer to the phone page. Results of the validation survey are summarized in Table 5.

Table 5. Estimates of percentages of the U.S. population participating in outdoor activities from the National Survey on Recreation and the Environment and a supplemental validation survey.

Activity	Percentage of Respondents	
	NSRE (n=17,216)	Validation (n=710)
Any activity	82	94.5
Hunting	13	14.7
Fishing	35	44.7
Family gatherings	65	83.2
Sightseeing	61	77.5
Hiking	29	30.3
Developed camping	26	27.9
Horseback riding	10	10.5
Skiing	12	11.6

The supplemental validation survey seems to confirm that the screening question in the NSRE with its emphasis on outdoor recreation resulted in underreporting of global participation across activities. The supplemental survey without a screening question provided an estimate that 94.5 percent of the U. S. population had participated in some form of outdoor recreation activity in the 12 months preceding being interviewed. Additionally, of the 8 individual activities shown in Table 5, percentage estimates for 5 were very close to those produced from

the NSRE. Higher estimates from the validation survey for generally passive, group-oriented activities, including family gatherings and sightseeing, seem to suggest that persons recreating, but perhaps doing so as a service to others, underreported their participation in the NSRE. These persons apparently did not identify themselves as outdoor recreationists. This observation probably applies as well to elderly and other much less active respondents who likely did not perceive that they had participated in any outdoor activities. In contrast, persons who participated in traditional (hiking and camping) and specialized (horseback riding and skiing) or other more readily identifiable activities can more clearly classify themselves as participants. When read a list of activities, as opposed to asking if one spent any time in outdoor recreation generally, many more respondents identified themselves as participants.

The 1992 NSRE Pilot included a screening question worded differently that did not limit the query to outdoor recreation as a person's use of free time. The estimate of participation across all activities from this Pilot was 93.3 percent. Inclusion of the phrase "outdoor recreation" may have been the major problem leading to a biased estimate of the global proportion of the U. S. population that participated in some form of outdoor recreation.

Conclusions

In designing and conducting the NSRE, many decisions were made to satisfy information and budget needs. The screening question was thought necessary to keep costs down by avoiding asking nonparticipating respondents the many individual activity questions. Post survey analysis suggested however, that the screening question, along with many from the initial sample who refused the survey or who could not be contacted, may have introduced bias into estimates of outdoor recreation participation among the U. S. population. Compared with other outdoor recreation participation surveys, and with the 1982-1983 NRS, the NSRE appears to underestimate the proportion of the U. S. population that participated in one or more activities over the 12 months before being interviewed. This evidence provided at least a partial answer to the paradox noted earlier, that is that while the trend in global participation seemed initially to be downward, the trend for most individual activities seemed to be upward.

The supplemental validation survey designed to address suspected sources of bias provided evidence that the screening question in the NSRE, with its emphasis on outdoor recreation, resulted in substantial underreporting of global participation. The supplemental survey administered without a screening question estimated that 94.5 percent of the U. S. population participated in some outdoor recreation activity in the 12 months preceding the interview. This was a substantially different estimate from the 81.8 percent estimated from the NSRE global screening question. When read a list of activities, as opposed to asking if one spent any time in outdoor recreation generally, many more respondents identify themselves as participants. It is strongly suspected that many persons in stages of life where they cannot participate in activities typically perceived as recreation in the "great outdoors," such as white water rafting, hiking, mountain climbing, etc., will not identify themselves as outdoor

recreation participants although they sightsee by automobile, stroll the local park nature trail, or take the kids to the pool.

Elimination of the screening question and streamlining of the survey agenda in the validation survey reduced refusals (i.e., included some who otherwise would have refused an interview) and enabled identification as recreation participants those who were "servers" and others who in the NSRE had not identified themselves as outdoor recreationists. Therefore, estimates of participation rates for individual activities were similar to or slightly higher than those produced from the NSRE. Higher estimates from the validation survey for passive activities like fishing, family gatherings, and sightseeing, suggest that persons recreating primarily as a service to others, and also the elderly and other much less active respondents, underreported their participation in the NSRE.

The 1992 NSRE Pilot included a screening question, but it was worded differently from the screening question included in the final NSRE and did not limit the query to outdoor recreation as a person's use of free time. The estimate of global participation in all activities from this Pilot was 93.3 percent. Inclusion of the phrase "outdoor recreation" may have been the primary problem leading to an underestimate of the overall proportion of the U. S. population that participated globally in some form of outdoor recreation. Further research and testing of the observations gained from diagnostic evaluation of the NSRE and its associated pilot and validation surveys is needed. However, the conclusion that great care is needed in deciding to use or not use a screening question is clear. It appears that if a screening question should be needed, it should be kept as general and "unloaded" as possible. We recommend avoiding a screening question.

Literature Cited

- Alreck, P.L.; Settle, R.B. 1985. *The survey research handbook*. Homewood, IL: R.D. Irwin.
- Armstrong, J.S.; Overton, T. 1977. Estimating nonresponse bias in mail surveys. *Journal of Marketing*, 14:396-402.
- Kern, R.A.; Peterson, R.A. 1983. Scheduling telephone interviews. *Journal of Advertising Research*, 23(2):41-47.
- McDaniel, S.W.; Madden, C.S.; Verille, P. 1987. Do topic differences affect survey non-response? *Journal of the Market Research Society*, 29(1):55-66.
- Outdoor Recreation Resources Review Commission 1960. *National Recreation Survey*. Washington: U.S. Govern. Printing Office.
- Roper Starch. 1994. *Outdoor recreation in America: a survey for the recreation roundtable*. Washington, DC: Roper Starch.
- USDI-Fish and Wildlife Service. 1992. *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*. Washington, DC: USDI-Fish and Wildlife Service.
- USDI-National Park Service. 1986. *1982-83 Nationwide Recreation Survey*. Washington: U.S. Govern. Printing Office.

A Conceptualization of the Tourism Entrepreneurial

Process

Khoon Y. Koh, Department of Health, Physical Education, and Recreation, University of North Carolina, Wilmington, Wilmington, NC

Abstract: Touristic enterprises can significantly contribute to the economic and social well-being of a community. One practical way to increase the birth of touristic enterprises in a community is to increase the supply of tourism entrepreneurs in the community. The first step to achieve this quest is to understand the touristic enterprise creation process. Once this is accomplished, a community may then develop appropriate policies to stimulate tourism entrepreneurial activities. This paper presents a conceptualization of the process including research and management implications.

Introduction

Touristic enterprises can significantly contribute to the economic and social well-being of a community by creating employment opportunities, earning real income, generating tax revenues, promoting intersectoral linkages. These enterprises also can encourage the preservation and conservation of natural, historic and ethnocultural resources. They can enhance the quality of amenities in the community, increasing the values of real estate, improving the attractiveness of the community as a place for possible relocation by corporations, and may even help elevate the bond ratings of the community.

Thus, it is no surprise that during the last two decades, many communities have enthusiastically embarked on a journey of active tourism development. This is evidenced by the increasing number of tourism offices founded (IACVB 1994) and amount of tourism promotional budgets (Waters 1995). While tourism is thriving in some communities such as Wilmington, NC (Friedman 1996), Rock Hill, SC (Zwerneman 1994), Central City, CO (Stokowski 1992), and Sandpoint, ID (Minnesota Extension Service 1991), there are communities that continue to experience little success--- undeveloped land parcels targeted for touristic enterprises, vacant stores, deserted streets, and low influx of tourists--- despite significant investment of marketing and fiscal efforts.

Why such contrasting scenarios? That is, why are some communities able to enjoy a relatively active level of touristic enterprise birth while others are less able to?

Unfortunately, the tourism literature offers little enlightenment to this question. A comprehensive search of the primary tourism research journals, namely, the *Annals of Tourism Research*, *Journal of Travel Research*, *The Tourism Review*, *Tourism Recreation Research*, *Tourism Management*, and the *Journal of Tourism Studies*, yielded few papers that have addressed the topic of entrepreneurship, and none dealt with the research question. An extensive review of the available tourism text and reference books was not illuminative either. In fact, the *Encyclopedia of*

Hospitality and Tourism (1993) contains no entry of the subject at all.

Since touristic enterprises are created by entrepreneurs, it seems logical that by plotting the touristic enterprise creation process, one would be a step closer to answering the research question. Also, by mapping the touristic enterprise creation process, communities seeking to increase their levels of touristic enterprise birth would have a general framework from which to work.

Purpose of the Paper

Viewed in this light, the purpose of this paper is to share a conceptualization of the tourism entrepreneurial process, and to suggest some research and management implications.

Review of the Literature

Claiming that the enterprise creation process has never been studied would be ignorant. In fact, there are at least five known journals totally dedicated to the publication of entrepreneurship thinking and research: *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, *Journal of Business and Entrepreneurship*, *Entrepreneurship and Regional Development*, and *Frontiers of Entrepreneurship Research*. A careful review of these periodicals showed that more than a dozen writers have addressed the enterprise creation process including Bhava (1994), Gynawali and Fogel (1994), Naffziger, Hornsby and Kuratko (1994), Krueger and Brazeal (1994), Krueger (1993), Krueger and Carsrud (1993), Herron and Sapienza (1992), Learned (1992), Bird (1992), Shaver and Scott (1991), Montanari et al (1990), Greenberger and Sexton (1988), Moore (1986), and Gibb and Ritchie (1982).

Since reviewing the various models here is inappropriate, suffice to state that most of these models attempt to explain entrepreneurial processes in manufacturing and high-tech industries rather than in service and low-tech industries, such as the tourism industry. Moreover, most discussions of the entrepreneurial process seem to stop at the birth of the enterprise (Gynawali and Fogel, 1994; Krueger and Braze et al, 1994; Krueger and Carsrud, 1993; Bird, 1992; Campbell, 1992; and Greenberger and Sexton, 1988).

The model presented in this paper, on the other hand, conceptualizes the entrepreneurial process as a cyclical process, and specifically discusses it in the context of the tourism industry. The model was developed based on this author's synthesis of the salient concepts discussed in the entrepreneurship research literature, and preliminary field research. While the model may be further refined, in the present form, it seems logical: it can explain why not all individuals embark on the tourism entrepreneurship process; and for those who do, it explains why only some will eventually create a touristic enterprise. This model also possesses normative values, and seems testable. As such, it would be a contribution to the growing body of entrepreneurship and tourism literature.

The Conceptual Tourism Entrepreneurial Process Model

Although not all touristic enterprises are created by a single individual (some are created by groups of individuals), conceptualizing the tourism entrepreneurial process as an

individual's process seems more meaningful, and better explains why some individuals pursue an entrepreneurial path, while others remain as employees or unemployed, despite situational similarities. The individual tourism entrepreneurial process is conceptualized as comprising eight interacting stages in which each stage is moderated by unfolding environmental events (Figure 1).

Stage I: Cognitive Orientation

The birth of touristic enterprises cannot be regarded as a product of random events but as the product of decisions (the intent to

create a touristic enterprise) and actions (the launch of a touristic enterprise). While actions may be described as the resulting and

observable element of decisions, decision-making itself is a process significantly influenced by many antecedents.

To illustrate, both X and Y are workers in a small travel agency. X confides in Y that she hopes to open her own travel agency or some related touristic enterprise one day while Y harbors no such interests. When X eventually registers her travel agency, it is the action component of X's decisional process. But X's decision to open the travel agency must have been motivated by some

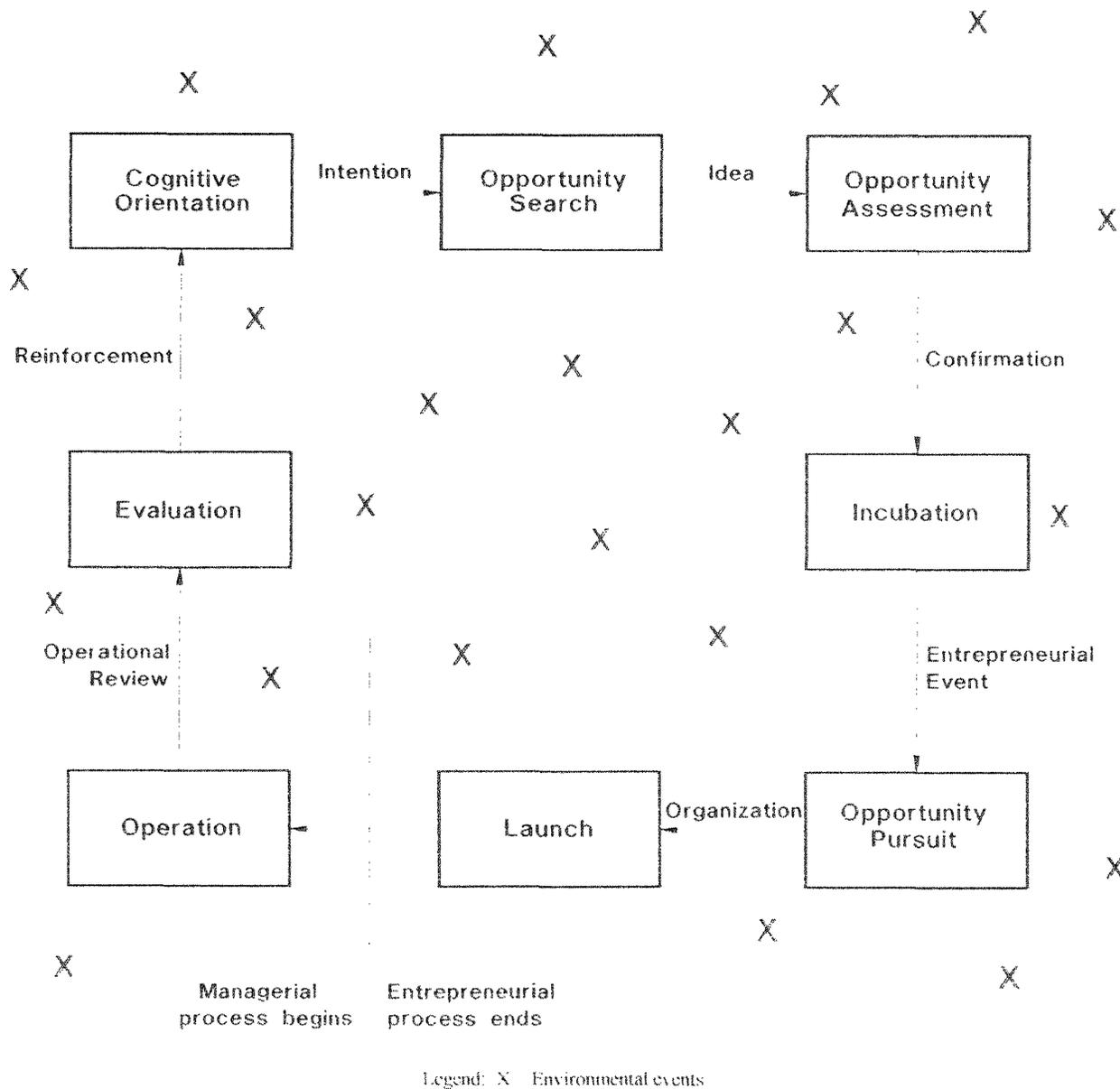


Figure 1: The Conceptual Tourism Entrepreneurial Process

reason(s). To understand why X founded a travel agency while Y stayed put, one must probe into X's "decisional box."

The theorized decisional box consists of five factors including one's attitude toward entrepreneurship, one's readiness to enterprise, one's willingness to enterprise, one's perceived ability to enterprise, and one's level of industry savant.

Attitude toward entrepreneurship. Not everyone views entrepreneurship (founding and operating a business) as a highly desirable career choice. To some people, founding and operating a touristic enterprise may be viewed as a chance to be wealthy and more in control of one's career (positive attributes). However, to others, it may be viewed as stressful and exploitative (negative attributes). How one develops a favorable or unfavorable attitude toward entrepreneurship may depend on psychographic and environmental factors (Krueger and Brazeal, 1994; Krueger, 1993; Bird, 1992; Starr and Fondas, 1992; Shaver and Scott, 1991). For example, if X has a strong need for control of her career and/or seeks economic challenges, X may view entrepreneurship more favorably than if X has a low tolerance for uncertainties or views entrepreneurship as economic exploitation. Concomitantly, if X lives in a society where entrepreneurial behaviors are strongly encouraged, X is more likely to develop a positive attitude toward entrepreneurship than if X lives in a society where entrepreneurial behaviors are viewed with disdain (as in most highly controlled societies).

Readiness to enterprise. However, a favorable attitude toward entrepreneurship is not likely to rouse one to action unless one also feels ready to enterprise. One's readiness to enterprise is a dynamic state contingent on one's lifestage situation. If X feels very content with her status quo, X probably would not have expressed the desire to found an enterprise since it would usurp her status quo. On the other hand, if X is very dissatisfied with her work/workplace (a push situation), or X strongly believes that it is time to challenge herself economically (a pull situation), X may be motivated to consider the possibility of going into business.

Willingness to enterprise. Undoubtedly, the creation and operation of any enterprise requires significant investment of one's time, effort, and money including the risk of possible failures. Thus, unless one is willing to deal with the hassles of enterprise creation and operation (the multitude of tasks that must be performed, incessant decision-making under uncertainty, compromises, etc.) and the risk of an unstable income stream, or loss of leisure and family time, one is unlikely to engage in any entrepreneurial activities even if the preceding two factors are favorable. That is, one will merely be in a "wishful" state.

Perceived ability to enterprise. Of course, one must also believe one possesses the necessary knowledge and skills to enterprise, otherwise, one will probably remain in the wishful state. However, if the preceding three factors are favorable but one perceives a lack of knowledge or skills to enterprise, two routes may be pursued. One, defer engagement until one has acquired an "adequate level" of knowledge and skills. Two, try to recruit others to participate in the venture creation process. The latter perhaps explains why some touristic enterprises are founded by more than one individual.

Industry savant. Industry savant refers to having profound knowledge of a given industry and to one's attitude toward the industry. For tourism entrepreneurship, it is unlikely that X would contemplate founding a travel agency if X has little/no knowledge of how travel agencies operate though X may have a strong desire to own a small business. In this connection, it could be added that unless one has a favorable or neutral attitude toward the tourism industry, one is unlikely to harbor the possibility of creating a touristic enterprise. For example, if one feels strongly that tourists are undesirable in a community, one would probably harbor no thought of owning and operating a touristic enterprise, such as an amusement park.

In short, a person's cognitive orientation toward tourism entrepreneurship determines one's propensity to enterprise in the industry. A person's cognitive orientation toward tourism entrepreneurship may be measured by five indicators including one's attitude toward entrepreneurship, one's readiness to enterprise, one's willingness to enterprise, one's perceived ability to enterprise, and one's level of industry savant. When these five idiographic indicators are favorable in a person, the individual may be described as in a "tourism entrepreneurial mode" or as having a propensity to enterprise in the tourism industry. Consequently, it may be hypothesized that the more intense one's cognitive orientation toward tourism entrepreneurship, the greater the likelihood to engage in touristic enterprise creation behavior, and vice-versa.

Stage 2: Opportunity Search

The possibility of creating a touristic enterprise must begin with a business idea. It seems reasonable then to postulate that when one's cognitive orientation for tourism entrepreneurship is high, one is more likely to search for new touristic enterprise opportunity actively than one whose cognitive orientation for tourism entrepreneurship is low. For example, a person who has a high cognitive orientation for tourism entrepreneurship would tend to seek out relevant people in the industry to talk to, read and research the industry, watch industrial trends, etc. . . . with the hope of finding a new business idea. Conversely, a person with a low cognitive orientation for tourism entrepreneurship would probably not.

Although how entrepreneurs actually find their business ideas remains a relatively unexplored area (Christensen, Madsen and Petersen 1994), this author believes the ability to spot business ideas depends on one's analytical and critical abilities. While some individuals are blessed with these abilities, most develop them over time, from education, experience, and exposure. However, Bhave (1994) found that sometimes, opportunities presented themselves without the entrepreneur's having the intention to search for them. For example, if X is constantly requested by friends/neighbors to help them operate their personal computers, X may eventually entertain the thought that perhaps he or she should run a computer support business - a needed service and an extra source of income. It can be argued, however, that if X has a low cognitive orientation toward entrepreneurship, X probably would not have recognized it as a possible business opportunity as Krueger and Brazeal (1994:92) stated, "Opportunities are seized by those who are prepared to seize them."

In any case, tourism entrepreneurs who are actively looking for possible business ideas will probably explore along the following dimensions: the possibility of new products, new markets, new market structures, new sources of input, new delivery methods, or new price strategies (Christensen, Madsen, and Petersen, 1994; Teach and Swartz, 1994). Perhaps it is this line of approach that explains why many tourism entrepreneurs that this author had interviewed reported that they did not have just one idea but a bag of business ideas before settling on their most preferred business idea. Bhave (1994) reported the same finding in his study of twenty-seven entrepreneurs.

Stage 3: Opportunity Assessment

Not all business ideas identified will be transformed into touristic enterprises as the creation and operation of a touristic enterprise requires a significant investment of money, time, and effort including the stigma of failure. Rather, the tourism entrepreneur is more likely to evaluate the most preferred business idea for its viability and feasibility. While viability refers to the extent to which the idea could be economically sustained (such as, is there sufficient demand and will the enterprise have a competitive advantage), feasibility refers to the ease of transforming the business idea into an economic entity (principally, the quality and quantity of available land, labor, and capital). The literature on opportunity assessment is rich, thus, it does not warrant further discussion here (see Hisrich and Peters, 1995; Brownlie, 1994; Holt, 1992; Vesper, 1990; Robert and Weiss, 1988; Baumbach and Mancuso, 1986).

The type and extent of opportunity assessment activity are posited to vary between tourism entrepreneurs, depending on one's level of experience and the scale of the proposed enterprise. When the tourism entrepreneur is experienced or when the proposed enterprise is small-scaled, the opportunity assessment process is more likely to be an informal process (simple and more intuitive). On the other hand, when the tourism entrepreneur is a neophyte or when the proposed enterprise is large-scaled, the opportunity assessment process is more likely to be a formal process involving a variety of professional advice. It could thus be hypothesized that a first-time tourism entrepreneur is more likely to use a systematic opportunity evaluation method while an experienced tourism entrepreneur is more likely to use an intuitive opportunity evaluation approach. However, when the proposed touristic enterprise is large-scaled, both experienced and inexperienced tourism entrepreneurs will use a more systematic opportunity assessment approach.

Three possible outcomes could be expected from the opportunity assessment phase: no-go, hold, or go. If it is a "no-go" decision, the tourism entrepreneur will probably renew his or her opportunity search activity. If the decision is a "hold," the entrepreneur will probably pursue remedial activities depending on the nature of the obstacles (may be the need to conduct more market research, investigate alternate financing, or find alternate sites). But if it is a "go" decision, the tourism entrepreneur is likely to enter an incubation stage because creating and operating a touristic enterprise is not a routine, but a significant life event.

Stage 4: Incubation

The incubation stage is a period of mulling, and consulting with relevant and significant others to confirm that it is the "right thing

and the right time" to do it. Bear in mind that at this stage, the "go" decision is only a paper assessment of the business idea. Thus, the tourism entrepreneur will carefully consider the personal economic costs and benefits of becoming an employer (or self-employed) versus that of remaining an employee (or unemployed) and also the non-economic benefits and costs of owning and operating a touristic enterprise. Therefore, it may be hypothesized that unless the perceived economic and non-economic benefits exceed the perceived costs, the tourism entrepreneur will not carry out actual touristic enterprise creation activities.

Conceivably, the tourism entrepreneur may go into a state of inertia if relevant or significant others' support is suspect. In such a situation, the tourism entrepreneur is in a state of indecisiveness, and only a triggering event (such as impending threat of a layoff, actual displacement from the job, news of loan approval, news of positive economic forecast) will propel the tourism entrepreneur out of passivity. Hence, it may be further hypothesized that tourism entrepreneurs who are in a state of inertia lack a triggering event.

Stage 5: Opportunity Pursuit

The stage when the tourism entrepreneur is moved into actual enterprise formation activities is described by Shapero (1984) as an "entrepreneurial event." The entrepreneurial event marks the beginning of a no-turning back process. The Rubicon has been crossed and the tourism entrepreneur begins to undertake tangible enterprise creation activities, such as writing the business plan, completing loan papers, registering the company, opening a post office box, signing the lease agreement, conducting renovations and/or hiring activities. At this stage, the tourism entrepreneur is not likely to abandon his or her opportunity pursuit even when faced with seemingly unsurmountable barriers. Any obstacles encountered will be either overcome or bypassed to the extent of engaging in unethical practices. The goal of the tourism entrepreneur is to launch the enterprise as soon as possible.

Sometimes, tourism entrepreneurs may operate a prototype of their proposed enterprise during this stage. A sort of market testing, so to speak, as illustrated by one lady who ran a lodging and tour guiding operation using her house and car. In another case, a souvenir and craft shop owner reported that she began the business part-time from her home before launching a formal enterprise (personal interviews).

Stage 6: Launch

The end product of the opportunity pursuit phase is the birth of a tourism enterprise in the community! The birth of the enterprise represents the successful completion of the tourism entrepreneurial process, a significant personal milestone. For this reason, this symbolic event may be immortalized by some entrepreneurs by framing up the first dollar earned (Bird 1992) while others celebrate with ribbon cutting and toast of champagne or even firecrackers and lion dances.

The birth of the enterprise also marks the end of the entrepreneurial process and the beginning of the managerial process. This is because the tasks of creating the enterprise differ significantly from the tasks of managing the newly created enterprise. In the former, the primary challenge was to make

decisions under uncertainty arising from imperfect information. In the latter, the primary task is to carry out successfully what has been planned. In this context, the management of the newly created enterprise could conceivably be executed by a hired hand, but not in the former (Holt, 1992; Ronstadt, 1984; Casson, 1982).

Stage 7: Operation

Since most touristic enterprises tend to be small-scaled, most tourism entrepreneurs will assume the role of owner-manager in the enterprise's infancy. More specifically, the tourism entrepreneur's primary function becomes one of effectively and efficiently using all tangible and intangible resources of the enterprise to ensure its sustainability: the enterprise's Market (how continuously to attract and retain customers), Manpower (how to motivate and develop workers), Money (how to increase revenue and decrease expenses), Machinery (how to keep equipment performing effectively and efficiently), and Materials (how to maintain an effective and efficient inventory/information system).

In short, the tourism entrepreneur will be compelled to act more in the managerial mode than in the entrepreneurial mode (Churchill and Lewis 1983). However, this does not mean that the tourism entrepreneur has stopped behaving "entrepreneurially." On the contrary, the tourism entrepreneur's analytical and critical juices are directed to a slightly different orientation: innovation (the practice of constant improvement and improvisation). It is posited that the tourism entrepreneur will constantly seek ways to improve the enterprise's operational effectiveness and efficiency. Under this *modus operandi*, more windows of opportunity are possible, which may explain why some tourism entrepreneurs can form new business branches and/or create unrelated new enterprises in a relatively short time after the birth of the first enterprise as with one travel agency owner-manager who subsequently opened a furniture making enterprise, and a dude ranch owner-manager who launched a bookstore specializing in animal books (personal interviews).

Stage 8: Evaluation

Inevitably, the tourism entrepreneur must evaluate the enterprise's performance. At this time, decisions must be made to keep the enterprise as is, expand, diversify, divest, or, if it is not sustainable, fold. Whatever the decision, the experience of creating and operating the enterprise will either positively or negatively reinforce the tourism entrepreneur's cognitive orientation toward tourism entrepreneurship. Interestingly, research has shown that most entrepreneurs continue to create enterprises even if their first brush was not a pleasant one (Bhave, 1994; Vesper, 1990; Ronstadt, 1984).

Environmental events

There are two types of environmental events that influence the tourism entrepreneurial process: exogenous and endogenous events. Exogenous environmental events are unfolding community events that are not within the control of anyone, such as demographic changes, economic changes, political changes, and industrial changes. Endogenous environmental events are also uncontrollable events but they affect one's life more directly, such as one's spouse being laid off, a job promotion, a new job offer, or the death of a significant other.

Each environmental event is subjectively interpreted by the tourism entrepreneur. For example, an exogenous environmental event such as a rise in interest rates may be construed by one tourism entrepreneur as a negative event as it would mean that the cost of capital would be higher and that consumers may be less inclined to spend. Another tourism entrepreneur may construe it as a positive event because it reduces the likelihood of new entries, therefore, less competition. But to a person who has no interest in founding a touristic enterprise, the event is probably viewed as neutral.

Similarly, an endogenous environmental event such as one's spouse being laid off, can be interpreted as either a positive, negative or neutral event. It would be a positive event if one is now more motivated to create a touristic enterprise to provide employment to one's spouse. On the other hand, it would be a negative event if one now feels more inclined to hold on to one's employment as it is the family's only source of income. However, it would be a neutral event if the event has no significant impact on one's decided career path.

Research and Management Implications

The tourism entrepreneurial process has been conceptualized as a conscientious process where each stage is affected by inevitable environmental events. This may or may not be the case. Thus, empirical research needs to be undertaken to determine the validity of this model. In this context, in-depth interviews with a sample of tourism entrepreneurs representing different sectors of the industry would be appropriate. A second research issue is to test the proposition that cognitive orientation is positively correlated to opportunity search behavior. In this regard, test instruments will need to be developed and tested for their psychometric properties. A third research question is to determine how tourism entrepreneurs find their business ideas. Do they practice a systematic or a random approach to seeking out business ideas? Fourthly, simplify the opportunity assessment technique. Presently, most suggested opportunity assessment techniques are general, lengthy and often complicated (Brownlie, 1994; Vesper, 1990; Timmons, Smollen, and Dingee, 1985). Thus, a more compact and industry specific opportunity assessment method, if developed, would be more valuable to aspiring tourism entrepreneurs. Fifthly, are certain feasibility factors more critical than others in influencing the tourism entrepreneur's decisions in the opportunity assessment stage? Answers to this question have significant implications for policies relating to community tourism development. Finally, test the various hypotheses posed throughout this paper.

As for management implications, the conceptual tourism entrepreneurial model presented at least two major areas for possible community intervention. One, since cognitive orientation is the starting block, a community that wants to increase its pool of tourism entrepreneurial talents should try to increase its residents' cognitive orientation score. This could be achieved by propagating the socioeconomic benefits derived from touristic enterprises. Communities could publicly recognize and reward successful tourism entrepreneurs, encourage tourism entrepreneurs to serve as role models and mentors, and promote educational institutions to teach entrepreneurial skills and develop tourism entrepreneurial behaviors in students.

Two, while a community cannot create positive environmental events, it certainly could stimulate tourism entrepreneurial activities by helping tourism entrepreneurs more effectively identify business ideas (stage 2), evaluate them for their sustainability (stage 3), and refer tourism entrepreneurs to relevant authorities or organizations for further assistance in transforming opportunities into reality (stages 5 and 6). Many latent and hesitant tourism entrepreneurs may be incited to act if there are qualified people who are willing to help them at little or no cost to them. These functions can easily be provided for by creating a community tourism entrepreneurship advisory office in the local chamber of commerce or convention and visitor's bureau. The office could be staffed by volunteers comprising relevant educators, professionals, and touristic enterprise owners.

Conclusion

When touristic enterprises are constantly launched in the community or newly created touristic enterprises survive, everyone gains: the entrepreneurs, workers, other businesses, local government, residents and visitors to the community. While there may be other ways to increase a community's level of touristic enterprise birth, one practical way, it seems, is to increase the local supply of tourism entrepreneurs. To achieve this, one needs to map the tourism entrepreneurial process. Once the process is identified and understood, then the plethora of actions that a community could take to facilitate tourism entrepreneurship is limited only by innovative thinking. Hopefully, the conceptual model presented here is a contribution toward this quest.

Literature Cited

Baumbach, C.M. and Mancuso, J.R. (1986). *Entrepreneurship and Venture Management*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Bhave, M.P. (1994). A Process Model of Entrepreneurial Venture Creation. *Journal of Business Venturing*, 9(3):223-242.

Bird, B.J. (1992). The Operation of Intentions in Time: The Emergence of the New Venture. *Entrepreneurship Theory and Practice*, 17(1):11-20.

Brownlie, D. (1994) Market Opportunity Analysis. *Tourism Management*, 15(1):37-45

Bygrave, W.D. (1994). *The Portable MBA in Entrepreneurship*. New York: John Wiley and Sons.

Campbell, C.A. (1992). A Decision Theory Model for Entrepreneurial Acts. *Entrepreneurship Theory and Practice*, 17(1):21-27.

Casson, M.C. (1982). *The Entrepreneur: An Economic Theory*. Totowa, NJ: Barnes and Noble Books.

Churchill, N. and Lewis, V. (1983) The Five Stages of Small Business Growth. *Harvard Business Review*, May-June, pp. 30-50

Christensen, P.S., Madsen, O.O. and Peterson, R. (1994). Conceptualizing Entrepreneurial Opportunity Identification. In Gerald F. Hills (editor), *Marketing and Entrepreneurship: Research Ideas and Opportunities*. Westport, CT: Quorum Books, pp. 61-76.

Encyclopedia of Hospitality and Tourism (1993). Edited by Mahmood A. Khan, Michael D. Olsen, and Turgut Var. New York: Van Nostrand Reinhold.

Friedman, R. (1996). No Room for the Inn? *Sunday Star-News*, April 7, pp. 1F and 3E.

Gibb, A. and Ritchie, J. (1982). Understanding the Process of Starting Small Businesses. *European Small Business Journal*, 1(1):26-45.

Greenberger, D.B. and Sexton, D.L. (1988). An Interactive Model of New Venture Initiation. *Journal of Small Business Management*, 26(3):1-7

Gynawali, D.R. and Fogel, D.S. (1994). Environments for Entrepreneurship Development: Key Dimensions and Research Implications. *Entrepreneurship Theory and Practice*, 18(4):43-62.

Herron, L. and Sapienza, H.J. (1992) The Entrepreneur and the Initiation of New Venture Launch Activities. *Entrepreneurship Theory and Practice*, 17(1):49-55

Holt, D.H. (1992) *Entrepreneurship: New Venture Creation*. Englewood Cliffs, NJ: Prentice Hall.

International Association of Convention and Visitors Bureau (1994). *World Chamber of Commerce Directory*. Loveland, CO.

Krueger, N.F. (1993). The Impact of Prior Entrepreneurial Exposure on Perceptions of New Venture Feasibility and Desirability. *Entrepreneurship Theory and Practice*, 18(1): 5-21

Krueger, N.F. and Brazeal, D.V. (1994). Entrepreneurial Potential and Potential Entrepreneurs. *Entrepreneurship Theory and Practice*, 18(3):91-104.

Krueger, N.F. and Carsrud, A.L. (1993). Entrepreneurial Intentions: Applying the Theory of Planned Behavior. *Entrepreneurship and Regional Development*, 5(4):315-330.

Learned, K.E. (1992). What Happened Before the Organization? A Model of Organization Formation. *Entrepreneurship Theory and Practice*, 17(1):39-48

Minnesota Extension Service (1991). *Rural Tourism Development*. St. Paul, MN: University of Minnesota.

Montanari, J.R., Domicone, H.A., Oldenkamp, R.L. and Palich, L.E. (1990). The Examination of a Development Model for Entrepreneurial Firms: An Empirical Test. *Proceedings of the Academy of Management*, San Francisco, CA, pp.59-63.

- Moore, C.F. (1986). Understanding Entrepreneurial Behavior: A Definition and Model. *Proceedings of the Academy of Management*, Chicago, IL, pp.66-70.
- Naffziger, D.W., Hornsby, J.S. and Kuratko, D.F. (1994). A Proposed Research Model of Entrepreneurial Motivation. *Entrepreneurship Theory and Practice*, 18(3):29-42.
- Robert, M. and Weiss, A. (1988). *The Innovation Formula*. NY, NY: Harper and Row Publishers.
- Ronstadt, R.C. (1984). *Entrepreneurship: Text, Cases and Notes*. Dover, MA: Lord Publishing.
- Shapiro, A. (1984). The Entrepreneurial Event. In Calvin A. Kent (editor). *The Environment for Entrepreneurship*. Lexington, MA: Lexington Books, pp.21- 40.
- Shaver, K.G. and Scott, L.R. (1991). Person, Process, Choice: The Psychology of New Venture Creation. *Entrepreneurship Theory and Practice*, 16(2):23-45.
- Starr, J.A. and Fondas, N. (1992). A Model of Entrepreneurial Socialization and Organization Formation. *Entrepreneurship Theory and Practice*, 17(1):67-76.
- Stokowski, P.A. (1992). The Colorado Gambling Boom: An Experiment in Rural Community Development. *Small Town*, 22(6),12-19.
- Teach, R.D. and Schwartz, R.G. (1994). Pricing for Entrepreneurial Firms. In Gerald E. Hills (editor), *Marketing and Entrepreneurship: Research Ideas and Opportunities*. Westport, CT: Quorum Books, pp. 145-162.
- Timmons, J.A., Smollen, L.E. and Dingee, A.L.M. (1985). *New Venture Creation* (2nd ed.). Homewood, IL: Irwin Professional Publishing.
- Vesper, K.H. (1990) *New Venture Strategies* (revised edition) Englewood Cliffs, NJ: Prentice-Hall
- Waters, S.R. (1995). *Travel Industry Yearbook: The Big Picture*. Rye, NY: Child and Waters, Inc.
- Zwerneman, B. (1994). South Carolina Trip Energizes Brazos 2020 Vision Group. *The Bryan Eagle*, Bryan, TX., November 9, p. 1.

Index of Authors

Alexander, Glen D.	213	Leiber, Stanley R.	41
Beaman, Jay	117, 178	Lewis, Burt R.	296
Bixler, Rob	252	Lindsay, John J.	160
Bond, Stephen	31	Lord, Bruce E.	205, 256, 279
Bricker, Kelly A.	131, 275	Lynch, Joel A.	157
Bristow, Robert S.	41	Manning, Robert E.	139, 216
Brothers, Gene L.	31	Mata, Fernando	270
Burns, Robert C.	72	McDonald, Barbara L.	296
Burr, Steven W.	15	Michael, Jeffrey	249
Carr, Deborah S.	101	Miles, Morgan	296
Casey, James F.	31	Minteer, Ben	216
Chen, Kuan-Chou	261	Mitchell, Christina	79
Chirico, Peter G.	293	Moser, Barbara	243
Clonts, Howard A.	285	Mowen, Andrew J.	134
Confer, Clarissa W.	131	Mowrer, Pamela H.	195
Confer, Jr., John J.	131, 146, 198	Mueller, Christopher A.	187
Cordell, H. Ken	296	Nelson, Charles M.	157, 164
Cottrell, Stuart P.	187, 275	Palmer, James F.	69
Dawson, Chad P.	127	Pawelko, Katharine A.	49, 60
Dennis, Donald F.	105	Pfister, Laura	233
Diamantis, Dimitrios	19	Ramaswamy, Varna M.,	60
Drogin, Ellen B.	49	Reiling, Stephen D.	249
Dwyer, John F.	3	Robertson, Mary	93
Elmendorf, Bill	37	Robertson, Robert R.	93, 167, 233, 238
Fesenmaier, Daniel R.	41	Schuett, Michael A.	101
Frymier, Lesley G.	79	Sciabarrasi, Michael R.	167
Gobster, Paul H.	3	Selin, Steven W.	101
Gomez, Edwin	55, 60	Solan, David S.	146, 223
Grado, Stephen C.	205, 256, 279	Stanley, Dick	8, 270
Graefe, Alan R.	49, 72, 109, 134, 146, 205	Strauss, Charles H.	205, 256, 279
Groff, Christopher	173	Thomson, Ed	178
Hanratty, Elizabeth	93	Titre, John P.	72
Jacobi, Charles	139	Travnichek, Rebecca J.	285
Janiskee, Robert L.	293	Treadwell, Jennifer A.	60
Jansen, Edmund	93	Valliere, William A.	139, 216
Johnson, Paul R.	164	Vander Stoep, Gail A.	82
Kelly, Stephanie B.	243	Vogelsong, Hans G.	146
Kerstetter, Deborah L.	131, 195, 198	Wall, David L.	187
Kim, Namjo	109	Wang, Philip	252
Koh, Khoon Y.	301	Wang, Benjamin	60
Kotchen, Matthew J.	249	Warnick, Rodney B.	24, 264
Larkin, Tammy J.	227	Williams, Daniel R.	134
Lee, Hoon	198	Zwick, Rod	223, 227