

**Assessing Nature-based Recreation Demand in Population Cores of the
Southeastern US: The Outlook for Recreation Development on Private Lands**

by

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Abstract

This study was conducted to meet a need for empirical assessment of outdoor recreation demand specific to non-industrial private lands in the southeastern United States. The survey was designed to measure preferences, motivations, and constraints of individuals for outdoor recreation away from home in rural settings. Economic, social, and ecological forces are driving urbanization in this region of the country. Interest is turning to non-industrial private property, which comprises 70% of the land in this region, for meeting outdoor recreation demand of urban dwellers. Utilization of private lands for providing nature-based outdoor recreation opportunity has economic and environmental implications for landowners as well as the potential for benefiting southeastern residents. Results are presented from a modified Tailored Design Method used to survey a total random sample of 7,200 residents in 8 Metropolitan Statistical Areas (MSA) of the southeastern United States. Favorite activities, setting preferences, motivations, constraints, and demographic variables were analyzed.

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Chapter 1

Introduction, Research Methods, Response Information, and Summary

Introduction

A variety of current economic, social and ecological issues in the southeastern U.S. have sparked interest in understanding changes in the region and implications for its human and wild inhabitants. Issues include urbanization, land use change related to economic drivers, and the unique demographic make-up of this region of the country. In the southeastern U.S., the majority of lands are privately owned and population growth is higher than the national average (U.S. Dept of Commerce, 2001). The rapid increase in population is predominantly seen in urban cores and surrounding areas. Much of the population growth over the past half century has been occurring in the Southeast (Brown, Johnson, Loveland, & Theobald, 2005). The population is not only growing – it is also becoming more diverse. The U.S. Census Bureau data projects that the nation will be more racially and ethnically diverse, as well as much older by 2050 (Bernstein & Edwards, 2008).

One important function of outdoor and nature recreation (ONR) studies is to assess people's preferences for activities, settings, motivations, and other components of the recreation experience. The largest national outdoor recreation study indicated that urban residents in the southeastern U.S. prefer participating in non-consumptive activities [such as wildlife observation and birding] (Cordell, Betz, & Green, 2008). Population growth in the region may accentuate these urban preferences. Public lands available are not sufficient to meet these needs (Overdevest & Cordell, 2001; Teasley, 1999), therefore interest has turned to private property which comprises 70% of the land in this region. Private landowners have the opportunity to benefit economically by providing outdoor and nature recreation opportunities to residents of the increasingly dense population cores

in the region. Understanding preferences of this diverse population is crucial to providing scientifically sound advice to private landowners looking to develop nature based recreation opportunities on their lands.

Outdoor Recreation Trends

There are three main studies currently that examine recreation use, demand trends, and impacts. The first study is the National Survey on Recreation and the Environment (NSRE) (Cordell H. , 2004); it addresses broad scale demand for multiple recreation activities and has more recently incorporated research on environmental attitudes (Cordell, Green, Leeworthy, Stephens, Fly, & Betz, 2005). It has been conducted nationally about every 5 years since 1960, and has provided the content for numerous books about recreation use and trends (Cordell, 2004; Cordell, Betz & Green, 2002; Cordell et al., 2005; Moore & Driver, 2005). The NSRE does not differentiate between recreation on public or private lands (Teasley, 1999). In addition, it does not target urban demand for private land recreation.

The second study is the National Survey of Fishing, Hunting and Wildlife-Associated Recreation (NSFHWR) (U.S. Fish & Wildlife Service, 2006). It analyzes trends over time and began assessing wildlife recreation in 1955. Wildlife related activities include hunting, fishing and more recently wildlife viewing. The survey gathers information on the number of wildlife-related recreation activities and participants. It also looks at economic impacts and trip expenditures at national, regional and state levels. It divides wildlife watching activities into two categories; ‘around the home’ and ‘away from home’. The issue of urban demand for recreation on private land remains unaddressed with this survey.

The third study is the National Private Landowner Survey (NPLOS) (Teasley, 1999). The NPLOS was designed to estimate the amount of private land used for recreation and to understand landowner practices and attitudes related to recreation. This survey was conducted twice and included landowners nationwide who owned greater than 10 acres. In 1986 and in 1996 the survey looked at land ownership motivations, management, attributes, recreational use and leasing as well as questions about future access of recreation. The NPLOS showed that the main reasons private landowners offer recreation opportunity on their lands were the desire to maintain good relations with neighbors and to help control trespassing (Teasley, 1999).

Definition of Problem

While each of the studies mentioned above is uniquely comprehensive, each also has limitations. Information on urban recreation preferences at the regional and national scales is available, however, it is unclear if the demand represented applies to recreation opportunities and settings offered by individual private landowners. Consumptive tourism demands (such as for hunting) are well studied, however, studies related to non-consumptive recreation demands are few (Benson, 2001; Lovelock, 2007; Zhang, Hussain, & Armstrong, 2006). Even less represented are non-consumptive recreation preferences of urbanites at the regional scale. Hunting is generally a rural recreation activity, and does not necessarily illustrate urban demand (Cordell, Betz, & Green, 2002). More information is needed specific to preferences of diverse groups of current and potential recreationists. Cultural differences are linked to differences in outdoor recreation participation and environmental attitudes and it is therefore important to

deliberately consider diversity in recreation and environmental planning (Cordell, Betz, & Green, 2008).

Significance of the study: Economic, Ecological, and Social Implications

There are several economic, social, and ecological implications for the sustainable development of nature based recreation enterprises by individual private landowners. This development should be based on scientific foundations. By collecting empirical preference information representing the current population and region, we are giving private landowners the tools that they need for development. In addition, this also means that recreationists throughout the southeast may have potential for increased access to recreation opportunities.

Economic. Private landowners who provide access to recreation opportunities on their lands may have the opportunity to benefit economically. Recreation has become a more important objective of landownership and timber production, as a primary ownership objective, has decreased (Pan, Zhang, & Butler, 2007). According to the 2006 National Survey on Fishing, Hunting, and Wildlife Associated Recreation (FHWAR) this survey, there are a total of 5,510,000 wildlife watching participants, age 16 years or older in the three state region of our study site (Alabama, Georgia, and Tennessee) (Table 1). At the national scale, there were \$45.7 billion in direct expenditures by wildlife watching participants in 2006 (U.S. Fish & Wildlife Service, 2006). The FHWAR report 2006-1 declares that this consumer spending is a substantial in its impact on economic activity, employment, and household income across the nation. Alabama, Georgia, and Tennessee in 2006, reflected these impacts with a total of nearly 60,000 jobs and two billion dollars in salaries, wages and business owner's income (U.S.

Fish & Wildlife Service, 2006). In addition, state and local tax revenues amounted to around \$400,000, as did federal tax revenue (Table 2). The economic incentives for developing ONR opportunities have ecological implications due to the relationship with wildlife and the habitat that it requires.

Ecological. As the number of landowners in a region increases, so too can the number of management objectives for the land that becomes fragmented. If demand exists for the wildlife viewing opportunities, then this may incentivize private landowners to conserve wildlife habitat; this may lead to benefits for the wild inhabitants on and around their lands. At the community level, this impact could be even greater through the creation of biological corridors. Sinha (2001) claims that there is a need for measurement of non-economic benefits and determination of benefits of wildlife tourism that accrue to biodiversity and conservation of wildlife. While this was not a main focus of this study, information related to demand for certain natural characteristics may in fact help to understand potential positive ecological impacts of ONR on private lands.

Social. A challenge that faces researchers is trying to understand how past, current, and future populations differ in their recreation demands (Cordell, Betz, & Green, 2008). There are a number of studies that have looked at social issues in ONR from both empirical and theoretical perspectives. National surveys have shown that African Americans are significantly less likely than white Americans to engage in forest-based activities such as camping and hiking or water-related activities other than fishing (Johnson, Bowker, & Cordell, 2001). This is important because approximately twenty-five percent of the population in the SE United States is African American (US Census Bureau, 2007). Among non-participants, African Americans were more likely than white

Americans to say that non-participation in their favorite activities was because of a lack of awareness of opportunities available (Johnson, Bowker, Green, & Cordell, 2007). In 2008, Floyd et al. published a review of research on race and ethnicity in leisure studies from five major journals (Floyd, Bocarro, & Thompson, 2008). They found that although the number of peer-review articles related to race and ethnicity has shown a substantial increase over time (relative to the entire literature), they represent only a sub-topical area of research. They suggest that there is limited understanding of basic constructs from different racial and ethnic group perspectives. Floyd, Taylor, and Whitt-Glover (2009) explore several studies that show that park-use patterns, recreation setting preferences, and constraints to park use vary by race and ethnicity. They stress the importance of research on recreation activity and setting preferences in low-income communities of color (Floyd, Taylor, & Whitt-Glover, 2009).

Johnson et al. (2001) found significant differences in gender when examining constraints among ONR participants – they found that women were more likely to describe ‘personal safety’, ‘inadequate facilities’, ‘inadequate information’, and ‘outdoor pests’ as constraints to participation in ONR than were men. Henderson (1994) suggested that leisure can be further understood by analyzing and interpreting it within the context of gender, as it is a common construct of human behavior (Henderson, 1994). Race and gender are important factors of leisure research and must be integrated in analyses of leisure behavior, motivations, and constraints; differences cannot only be viewed from any one aspect alone.

Specific Study Objectives

The three main objectives of this study were:

1. to describe Southeastern urban recreationists' ideal recreation experience (through preferences for favorite primary and secondary activities, setting preferences, benefits sought, and constraints to participation) and to quantify those willing to participate in that experience on private lands owned by individuals and families;
2. to evaluate the effect of favorite primary activity on secondary activities, setting preferences, benefits sought, and constraints of Southeastern urbanites;
3. to evaluate the main and interactions effects of race (African American and Caucasian) and gender (female and male) on favorite activity, setting preferences, benefits sought, and constraints.

The purpose, implications and main objectives of this study have been outlined. In the sections ahead, the framework of investigation utilized will be explored beginning with a brief description of conceptual frameworks from recreation and leisure sciences. Next, variables that were used for understanding the components of individual's 'ideal recreation experience' will be discussed as well as survey instrumentation and sampling procedures. Finally, data collection, interpretation, and analysis are explained. The results of the study will be included in two publication-ready manuscripts and the conclusion section of this thesis (chapters 2 & 3). The investigation reported in this thesis began in the Fall of 2008 and terminated in the spring of 2010. The research team consisted of the Principal Investigator, Dr. Wayde Morse, and Graduate Research Assistant, Leslie Grill (author of thesis).

Conceptual Framework and Variables

This section will provide a summary of the conceptual framework and variables used in the study. Recreation and leisure sciences literature contributes useful frameworks for comprehensively and systematically examining the human experience in nature. The main objective of the study was to understand individuals' preferences for 'Ideal Recreation Experience' and determine if they were willing to achieve that experience on private lands. The Outdoor Recreation Experience Model was adopted for the research design. This model is based on expectancy theory which proposes that 'people engage in particular behaviors with the expectation that the activity will meet their particular needs and help them to achieve what they desire' (Moore & Driver, 2005 p. 15). Moore and Driver (2005) explain that, when seen from a social psychological perspective, outdoor recreation behavior can be understood as a means to receive some reward/outcome called recreation experiences. This model is useful for this study because it targets why people do what they do and what they hope to gain (Moore & Driver, 2005). This information is valuable for land managers, recreation planners, and researchers working in the southeastern United States as a foundation for management. The model can be seen in Figure 1. Outdoor recreationists combine their own motivations and preferences with activities, settings, and companions to produce benefits/outcomes.

The Recreation Experience Preference (REP) scales were developed through empirical testing to identify and measure a specific desired and/or realized recreation experience. A Meta-Analysis of the REP scales as measures of leisure motivations can be found in Manfreda, Driver, and Tarrant (1996). A 'motivation' can be thought of as a

desired outcome that moves individuals to participate in activities in particular settings to achieve a particular benefit or set of benefits. In a sense, the benefits appear at the beginning and the end of the total recreational experience; first as motivations to engage in outdoor recreation and at the end in terms of the fulfillment of the desired outcome. The REP scales were used to develop the following twelve indicators of the motivation variables for this study. Manfredi, Driver, & Tarrant (1996) suggest that for any given study, scale items should be selected according to objectives of the research. The specific items to understand motivations in this study were selected from the large scale list with the goal of representing a cross section of indicators. They were: (1) to be close to nature, (2) to escape noise and crowds, (3) to experience excitement/adventure, (4) to be with friends, (5) to do something with family, (6) to get away from the usual demands of life, (7) to explore the area and learn about nature, (8) to learn about the history/culture of an area, (9) to promote physical fitness/exercise, (10) to develop personal/spiritual values, (11) to depend on/develop skills and abilities, and (12) to enjoy the sounds and smells of nature.

The Recreation Opportunity Spectrum (ROS) is a system to identify and classify the outdoor recreation opportunities currently and potentially available on tracts of land (Moore & Driver, 2005). Moore and Driver explain that the ROS system, when combined with demand studies or other information, can be used to assist in making decisions related to managerial allocation of resources. By estimating user demand for recreation opportunities and comparing it against the capabilities of the resource, in this case private lands, a planning framework can be achieved. Although it has its origins in the US, ROS is increasingly being used beyond US borders and has expanded to include

many types of recreation (Perez-Verdin, Lee, & Chavez, 2008). This general framework is used to organize ONR setting preference measures into three main categories: physical, social, and managerial (Table 3). Setting attributes used in this study were classified into three main groups: (1) biophysical, (2) managerial/social, and (3) physical/facilities.

In leisure sciences, a constraint is “anything that inhibits people’s ability to participate in leisure activities, to spend more time doing so, or to take advantage of leisure services, or to achieve a desired level of satisfaction” (Jackson & Henderson, 1995; Shinew, Floyd, & Parry, 2004). The ‘Hierarchical Model of Leisure Constraints’ divides constraints in to three main categories; interpersonal, intrapersonal, and structural (Crawford, Jackson, & Godbey, 1991). In their paper entitled, “Testing a Constraints Model within the Context of Nature-Based Tourism”, Pennington-Gray and Kerstetter (2002) provide empirical support for Crawford and Godbey’s notion. White (2008) notes that more recent studies have focused on constraints with respect to the other aspects of the total recreation experience like motivations, activity participation, and desired experience. Most recently, attention has turned to understanding the way that people overcome leisure constraints through negotiation (White, 2008). Six indicators of constraints were chosen to address issues specific to this research. For this study, it was found important to test reports that public lands are *overcrowded* and that there were *not enough places near* to do favorite activity (Overdevest & Cordell, 2001; Teasley, 1999); that a lack of information exists for some groups and that some groups are constrained by feeling unwelcome or threatened (Johnson, Bowker, & Cordell, 2001); and *lack of time and money* continue to be important constraints as shown in each of the above mentioned studies. Constraints were not a main focus of this study - only intrapersonal and

structural constraints were examined and final constraints included: (1) not enough money, (2) not enough time, (3) not enough places near me to do this activity, (4) felt unwelcome or threatened, (5) didn't know where to go, and (6) preferred destination was too crowded.

Demographics variables represent a window into learning about who our study participants are. Demographic information was a necessary component for understanding differences among variables related to gender, race, and socioeconomic status. Standard variables were selected to match US Census data as well as other recreation studies and included: (1) age, (2) gender, (3) household makeup, (4) student status, (5) retiree status, (6) active duty status, (7) race and ethnicity, (8) education level, (9) employment details, and (10) household income. Other variables were: *years lived in home city* and *language other than English spoken at home*.

Research Methods

This section will focus on research methodology used to meet the study objectives. The research methods used can be organized by the four phases of investigation seen in Figure 2. The quantitative empirical study was conducted over a period of 18 months beginning in August of 2008 and ending in March of 2010. Conceptualization and operationalization were thoroughly examined in prior sections. Sampling is discussed here as well as other three phases of the study (data collection, information management, and analysis).

Sample and Data Sources

Target Population and Sampling Frame. The target population for this study consisted of eight interior population cores of over one hundred thousand people in the interior southeastern United States. Coastal zones and mountainous zones were excluded from the research area based on the potential effects of recreational, social, and economic differences of those areas. Simple random samples of 1000 records each of eight population cores in the interior southeastern United States including their Metropolitan Statistical Areas (MSA) were purchased from Survey Sampling International (SSI), a sampling firm based in Connecticut, USA. This company was chosen for its reputation of having current and valid data sets derived from multiple data sources. They are utilized by a multitude of both commercial and nonprofit organizations and institutions.

The sampling frame that was utilized for this study is the Directory Listed database from SSI. This database is an updated version of the residential white page listings. This includes all households in the country that are listed in the residential white pages. The sample was generated randomly using an nth selection method across each of the eight Metropolitan Statistical Areas of interest (Survey Sampling International LLC, 2010). MSAs include the counties containing the core urban area as well as adjacent counties having a high degree of social and economic integration with the urban core. Including the entire MSA of each population core in the study allowed the capture of individuals that identify themselves as living in ‘the city’, but may not actually live within the political boundaries of the urban area.

Sample. For this study, the eight random samples from the population cores in the southeastern region were pooled. The cities were selected based on having

populations of over 100,000 residents and for their geographic positioning in a circle of approximately 300 miles in diameter (Figure 3). The desired precision for sampling error was calculated both at the MSA level and regional level. Sample size was based on the following formula as recommended in Dillman, Smyth, & Christian (2009):

$$N_s = \frac{(N_p)(p)(1-p)}{(N_p - 1)\left(\frac{B}{C}\right)^2 + (p)(1-p)}$$

Where,

- N_s** = the completed sample size needed for the desired level of precision.
- N_p** = the size of the population.
- p** = the proportion of the population expected to choose one of the two response categories.
- B** = margin of error (i.e., half of the desired confidence interval width):.03 = ± 3% .
- C** = Z score associated with the confidence level (1.96 corresponds to the 95% level).

This formula is particularly appropriate for yes/no questions. The yes/no equation for sampling error was used as suggested by Dillman, Smyth, & Christian (2009) to determine representativeness for our primary binary research question: If recreationists were willing to participate in their favorite recreation activity on private land. For each MSA, a desired precision of 10% required that 96 subjects participate in the study. For the larger regional perspective, 1067 subjects were needed (details can be seen in Table 4). Since the study focused on individuals of the general population rather than a salient population of ‘known outdoor recreationists’, a large sample was used to ensure the desired number of participants at both MSA and regional scales, even with response rates

as low as 10% (although a much higher response rate is desired in order to minimize nonresponse bias). In addition, the urban cores of the southeastern United States have high heterogeneity; therefore, a larger sample size was desired. It was concluded that a sample of 900 residents per MSA for a total regional sample size of 7,200 individuals would meet these criterion. The sample size was sufficient to generalize to the entire population within each city so that comparisons can be made across cities for future analyses.

As mentioned above, the sample list purchased from SSI, Inc. contained 1000 records from each of the eight MSAs. The records included residents' name, addresses, city, state, 10 digit zip codes, MSA code, phone number, and time zone. Only 900 records were used for each MSA. Extra records were purchased in order to replace bad addresses found in a valid address check. The records needed to be reduced to a smaller number so one hundred records were removed from each MSA by selecting each 10th record and moving it to separate worksheet maintaining distinction between MSAs. The remaining 900 records from each MSA were pooled into the Master list to create a list of 7,200 records.

The master list was sent to a printing company (Walker Printing in Montgomery, AL) for a National Change of Address (NCOA) review to check for bad addresses. This company printed a portion of the study materials and the NCOA service was offered as a courtesy. The NCOA service is only offered through those that hold a license to perform this operation. For this reason, it made sense to use an intermediary in this process. Confirmation of confidentiality of the sample data was made through electronic communication and saved. The report yielded 333 address changes and supplied new

addresses. Subjects that were determined to have moved within their original MSA were kept and those that had moved outside were eliminated. Records where no new address was supplied were also eliminated (174 records were determined to have no change of address information). The eliminated records were replaced with the number of records needed to reach the 900 mark from the list of subjects that were separated for each MSA. For example, if there were 25 records eliminated by the address check in Atlanta, they were replaced with the first 25 records from the list of the one hundred records previously removed from Atlanta list. The resulting records used were a product of this cleaning process. The new record lists of 900 records per MSA (n=7200) were then pooled together and imported into a table in a Microsoft Access Database entitled "Recreation Mail Tracking System". The table was titled "Master List" and from this list, tables, queries, forms, and reports were developed to track the mailing process.

Data Collection

In order to achieve our three main objectives, a quantitative mail survey instrument was used. Survey methodologies of Creswell (2009) and Dillman, Smyth & Christian (2009) were utilized. The final questionnaire evolved out of a process of one-on-one inquiry and discussion between the Principal Investigator and the Graduate Research Assistant in addition to pretesting. Both the design and implementation of the questionnaire is based on a modified Tailored Design Method (TDM). This method is based on social exchange theory and is designed to elicit high response rates and minimize cognitive burden and consists of five steps of contact with the questionnaire recipients: (1) the pre-notice letter, (2) the questionnaire mail-out, (3) a postcard thank you/reminder, (4) a replacement questionnaire, and finally, (5) a phone call reminder and to check for non-response bias. Best practices included careful attention to questionnaire design with respect to question order, wording, and formatting in addition to including address sampling, non-response contact, presentation and multiple mailings; all designed to reduce measurement and non-response bias (Dillman, Smyth, & Christian, 2009). The mailings, including the questionnaire, were mailed using First Class U.S. Post. In addition to the five steps of the TDM, survey respondents will be mailed a flyer including results of the study as a last step in the social exchange. See Table 5 for detailed mailing schedule.

Individuals were also offered the option of responding to an electronic version of the questionnaire via the World Wide Web. The online version of the survey was customized to appear nearly identical to the paper version and was created with the help of the Auburn University Business School Web Team. The URL for the online version

was www.business/auburn.edu/recreation. Access to the online version was 'semiautomatic' where the respondents were provided with a simple URL which they were required to enter a unique access code. The unique code was provided to them in the cover letter and in subsequent reminder mailings. The code was 8-digits in length: the first two digits identified the urban core residence of the respondent, followed by 4 digits, 0001-1000, and finally, the last two digits were two random letters. The print version of the survey was printed with the same ID number. This ID number was used in order to control mailings as undeliverable addresses were recorded, participants opted out, and as participants responded to the survey.

The questionnaire had 55 questions (some of which were multi-part lists) organized into six sections titled: Outdoor and Nature Recreation, Near Your Home, Away From Home, Your Most Recent Trip Away From Home, Your Ideal Recreation Experience, and Household Information. Both *yes/no* and *Likert* type scales were used for answer options according to the appropriateness for the question type. The *Likert* type scale allowed respondents to specify their level of agreement to the question on a scale of one to five. In addition, participation frequency categories were used to gain information about how often respondents participated in certain activities or visited certain types of locations. The survey instrument was pretested on at least 45 individuals prior to submittal to the Institutional Review Board (IRB) of Auburn University. All standard regulations for human subject research were strictly adhered to and the IRB approval Protocol number is #09-147 EX0905 and was valid from May 19, 2009 to May 18, 2010.

Measures Specific to Objectives

Data was collected on the respondents' preferences for activities and setting characteristics as well as motivations. This information was labeled as 'Ideal Recreation Experience'. First, study participants were asked to identify their favorite activity to participate in away from home (see Figure 4 for list of activities). Next, they were asked to choose other activities that they also like to do on the same trip as their favorite activity in their ideal setting. In order to include all of the components of the outdoor recreation setting, the Recreation Opportunity Spectrum Framework including physical, social, and managerial categories, was used. In addition, natural characteristics (representing characteristics of the ecosystem) were included. We asked the study respondents to choose how important on a scale of 1 to 5 that different sets of setting characteristics were for creating their ideal recreation experience.

After the 'Ideal Recreation Experience' (IRE) was described, respondents were asked to tell how important each of a list of reasons (motivations/benefits sought) were for wanting to participate in that particular experience. They were asked about number of people they wish to share their 'Ideal Recreation Experience' with, amount willing to pay for access and distance willing to travel for the experience that they described. In addition, they were asked to reveal how much they would be willing to pay per person/per day to have access to their IRE. Most importantly, they were asked if they would be willing to recreate on private land if the opportunity existed for their ideal recreation experience. This information was useful for capturing non-use and indirect use values. By understanding the motivations for participating in a favorite activity, the benefits that the study participant seek and how those benefits sought manifest

themselves as participation in ONR activities can also be understood. One of the most important components of the questionnaire for looking at diversity in recreation is the demographic information elicited in the section called 'Household Information'. This data gave us a starting point for making comparisons among different groups, including gender, race/ethnicity, age, income, and education level.

Response Information

Study participants utilized both online and paper versions to respond to the questionnaire, however nearly two thirds of respondents replied using the paper method. Paper questionnaires completed totaled 1,136 and online questionnaires totaled 344 for a total response of 1480 completed questionnaires. Tables 6 and 7 show details about survey returns. Frequencies by return date can be seen in Figure 5. The overall response rate was 22.1%. The response rates and distribution of returns by MSA can be seen in the pie chart in Figure 6 and 7.

Information Management. Undeliverable mail was returned to the study headquarters, despite best efforts with the NCOA check to eliminate bad addresses. Return addresses on outgoing envelopes were marked with a 'RETURN TO SENDER' request so that records could be kept of individuals that may have moved out of the study area and would thus no longer be appropriate for the sample. Had this mail been automatically forwarded to the recipients at their new address, there would have been no way of knowing that this had been done. For example, they may live in a different geographic area than the sample they were drawn from. There also is less reliability that the survey would actually get to them in the first place, even if they continued to reside in

the same MSA. Lastly, the timing for all of the mailings using the Total Design Method would be compromised and thus the entire methodology. Since the study relied heavily on this method, it was logical to attempt to collect the mail that could not be delivered to the address from the Master List.

When the mail was collected in the mailroom over the period of the study, it was managed in a very specific way. Returned prenotice letters were marked as 'RETURN TO SENDER PRENOTICE' and further categorized by presence/absence of 'USPS FORWARDING LABEL', 'TEMPORARILY AWAY', and then eliminated from the mailing list for mailing #2, the questionnaire packets. Returned survey packets were also eliminated from the mailing list and marked 'RETURNED TO SENDER SURVEY PACKET'. For returned prenotice letters and survey packets, no attempt was made to forward the ones with forwarding labels since there was no interest in subjects outside of the specific metropolitan statistical areas included in the study. When the follow-up mailings were returned with a forwarding address label, addresses were manually changed in the master list and follow-up was resent to the updated address. This later attempt was made for final contact because it was assumed that those subjects received the first two mailings, the prenotice letter and the survey packet. It was important that they stay in the study throughout the complete Tailored Design Method process. In some cases, prenotice letters and survey packets were returned after the follow-up letter which may reflect some sort of holding or delay on the part of the US Postal Service or Auburn University Campus Mail.

As study participants responded to the survey, their names were removed from the mailing list. This was done using the survey 'access code' printed on the cover of the

paper survey and required as a password for the online version. Some participants opted out of the survey by mail or phone and were recorded as 'NOT INTERESTED'. Notices received about deceased individuals were marked as 'DECEASED'. Notices were also received for non-participation due to disabilities (marked 'DISABLED') and old age (marked 'NOT INTERESTED'). From all of this information, the number of records counted as unable to respond was calculated by adding the totals from the following categories: 'DECEASED' + 'DISABLED' + 'RETURN TO SENDER PRENOTICE' + 'RETURN TO SENDER SURVEY PACKET (distinct records not included in 'RETURN TO SENDER PRENOTICE') = UNABLE TO RESPOND. There were 514 records total and these were subtracted from the original sample number ($n = (7200 - 514)$) for a new sample size of $n = 6686$ (Table 6).

Sources of Error

Sampling error was examined by comparing demographic and socioeconomic data from each Metropolitan Statistical Area against U.S. Census Data for the same geographies. The comparison data was obtained from the American Fact Finder website, a data portal for census data collected by the United States government (U.S. Census Bureau, 2009). Specifically, the study data was compared with the American Community Survey 2006-2008 Population Estimates, extracted by download in January of 2010. Each MSA was examined with regard to generalizing survey responses to the entire population of interest; in this case, residents in and around urban cores of the interior southeastern United States. For each MSA, the multicategorical demographic variables of age, gender, income, race, and education level are represented graphically and discussed. Next, the dichotomous demographic variables examined including

average size of household, active-duty in Armed Forces status, English-speaking only households, and Hispanic, Latino, or Spanish origin will be shown and discussed for all of the MSAs together. These detailed analyses can be seen in Appendix J.

General conclusions that can be drawn from analyzing the ONR data against the U.S. Census data are: (1) the 20-24 age class is underrepresented and the 45-54 and 65-74 age groups are over represented; (2) males are overrepresented and females are underrepresented; (3) Caucasians are overrepresented and African Americans are underrepresented; (4) although the more northern MSAs (Chattanooga/Huntsville) have fewer African American residents, a greater proportion of those residents responded to the ONR survey - in southern MSAs (Montgomery and Macon namely), there is a greater proportion of the population that is African American, but a lesser proportion of these residents responded to the survey instrument; (5) the middle and top income brackets are overrepresented and the lowest two are underrepresented; (6) residents with a Bachelors degree or beyond are overrepresented and persons with no post-secondary education are underrepresented; and (7) ONR data from two MSAs, Atlanta and Athens may be under representing the 'Hispanic, Latino, or other Spanish origin' group.

Sampling error was designed to be minimized by using a large sample size, but it is important to mention the likelihood of sample bias that may have occurred due to coverage error and nonresponse bias. The sampling frame used may cause coverage error due to the fact that the records purchased from SSI, Inc. were based on telephone listings. This technique may have excluded poor that could not afford telephones, individuals that are unlisted (Singleton Jr. & Straits, 2005), and a new generation of people that do not

have landlines in their homes due to the use of cellular phones as a primary communication method.

The list of non-respondents was derived by performing a query of the Master List selecting for records that were not marked as having returned paper or online surveys, and were not included in 'DECEASED', 'DISABLED', 'NOT INTERESTED', or 'RETURN TO SENDER' categories. Of the 350 telephone calls made, 23 individuals hung up on the GRA, 149 did not answer, 88 were invalid phone numbers, 16 were not available, and 12 refused. Seven were discovered to be deceased and seven said that they did not participate because they were ill or disabled. Six phone call recipients stated that they had already completed and mailed in the survey. Thirteen said that they did not receive the survey. Only thirty one respondents provided complete demographic information. The mean year of birth was 1943 (average age 66).

Nonresponse bias occurs when people who refuse to cooperate are not represented because they do not return the questionnaire, or by leaving questions incomplete (Singleton Jr. & Straits, 2005). These types of cases may result in the sample reflecting only a fraction of the population that a researcher wishes to represent. Phone calls were made to 350 of the 5,122 non-respondents, chosen at random, to understand more about the study subjects who chose not to participate or were unable to participate in the study (as of October 12, 2009). This final contact with a sample of the non-respondents was implemented using a predetermined script, approved by the Institutional Review Board at Auburn University. The main goal of this final communication attempt was to understand why the non participating subjects did not complete and return the questionnaire. Common reasons for not replying to the survey were explored including

the length of the survey, the topic of the survey, survey sponsor, time to complete survey, and general dislike for all surveys. Additional reasons emerged from the phone calls; illness/disability, subject deceased, and did not receive survey. An attempt was made to establish the level of interest in outdoor and nature recreation in addition to determining if subjects participated as often as they would have liked over the past year in their favorite activity. Finally, demographic information was solicited including age, gender, race, and education level.

For mail surveys, respondents typically tend to have higher education than non-respondents (perhaps due to facility in writing) (Kanuk & Berenson, 1975) and older people and Caucasians typically respond more frequently than their counterparts. These issues were known limitations to this study. The most important reason that many people do not respond to mail surveys is non-saliency; people will not respond if they are not interested in the topic. This survey was sent to the general population rather than known recreationists. This is evident in this study from response to a question asking how interested in participating in outdoor and nature recreation was. Only 4.4% (N=1464) said that they were not interested while 58.7% said they were very interested. The remaining 36.9% were at least somewhat interested. This suggests that survey results can be extended to those in the population that are at least somewhat interested in participating in ONR. A summary of the two main thesis chapters is described next.

Summary of Chapters to Follow

The development of Outdoor and Nature Recreation on private lands in the southeast has the potential to have positive economic, ecological and social impacts in the region. Non-consumptive wildlife tourism generates income from park fees, admission fees, leases, services, sales of materials, and other tourism-related enterprises (Freese, 1996). There has been an increase in demand for hunting, fishing, wildlife observation and hiking on private lands at the national level (Teasley, 1999). This study aims to understand outdoor recreation preferences of residents in and around population cores in the interior southeastern United States. Forest management in the southeastern United States is multifaceted and designed to meet a number of different goals and management decision tools and should encompass the need for multi-stakeholder collaboration (Williams, 2007). Benson (2001) encourages partnerships among landowners, governments, businesses, users, and communities in the integration of planning, programs, and evaluation. Poor or inconsistent representation of recreationists in planning raises important issues of equity and the perception that certain recreation user groups may not be well represented. This may be a pre-cursor to land-use conflict (Harshaw, Kozak, & Sheppard, 2006). Johnson et al. (2007) call for more specific research to understand factors affecting recreation demands by African Americans such as: types of recreation activities preferred, suitability of national forests for engaging in these activities, availability of private lands as alternative places to recreate outdoors, perceived constraints, meanings associated with forested settings and national forests. The research represented in this thesis is what is needed for these needs to be met and has been accomplished through the evaluation of regional data on ONR preferences of residents of Southeastern metropolitan areas. This study contributes empirical

information that can be used to provide scientifically sound advice to private landowners that are currently developing or are interested in developing recreation opportunities on their rural lands. In addition public recreation professionals and managers may also be able to utilize this information as a tool in providing outdoor and nature recreation in this region of the country. This study was conducted to meet a need for empirical assessment of outdoor recreation demand specific to private lands in the southeastern United States.

The following chapters present results from a large mail survey sent to a total random sample of 7,200 residents in 8 Metropolitan Statistical Areas (MSA) of the southeastern United States. Nine hundred individuals from each MSA were mailed a questionnaire for self-administration. The survey was designed to measure participation, preferences, motivations, and constraints to participation by individuals of these areas in outdoor recreation both near home and away from home in rural settings. Chapter two examines the effect of the seven most popular activities on preferences for outdoor recreation settings, motivations, and constraints. Chapter three examines the effect of two main race groups and gender groups on the same dependent variables.

Table 1-Wildlife Watching Participants in three-state region

State	Wildlife Watching Participants over 16
Alabama	1,161,000
Georgia	1,987,000
Tennessee	2,362,000
TOTAL	5,510,000

Source: (U.S. Fish & Wildlife Service, 2006)

Table 2 - Regional economic impact of wildlife watching

State	Jobs	Salaries, Wages and Business Owner's Income	State and Local Tax Revenue	Federal Tax Revenue
Alabama	10,157	\$261,145,268	\$59,073,791	\$56,999,666
Georgia	27,830	\$990,509,431	\$210,368,321	\$218,156,184
Tennessee	21,007	\$612,455,711	\$129,813,625	\$132,119,631
TOTAL	58,994	\$1,864,110,410	\$399,255,737	\$407,285,481

Source: (USFWS, 2006)

Table 3 - Recreation Opportunity Spectrum setting components and inventory criteria

Setting Component	Inventory Criteria
Physical	Remoteness Size Evidence of Human Activity
Social	User Diversity
Managerial	Managerial Regimentation and Noticibility

Source: (Moore & Driver, 2005)

Table 4 - Sampling Error Calculations for each Metropolitan Statistical Area and Region

	<i>p</i>							
Athens	111,706	0.5	0.5	111705	0.1	2.0	0.00260	95.96
Atlanta	5,251,899	0.5	0.5	5251898	0.1	2.0	0.00260	96.04
Birmingham	1,108,854	0.5	0.5	1108853	0.1	2.0	0.00260	96.03
Chattanooga	512,327	0.5	0.5	512326	0.1	2.0	0.00260	96.02
Columbus	288,645	0.5	0.5	288644	0.1	2.0	0.00260	96.01
Huntsville	386,572	0.5	0.5	386571	0.1	2.0	0.00260	96.02
Macon	227,022	0.5	0.5	227021	0.1	2.0	0.00260	96.00
Montgomery	364,782	0.5	0.5	364781	0.1	2.0	0.00260	96.01
Regional Sample	8,251,807	0.5	0.5	8251806.0	0.03	2.0	0.00023	1066.97

Table 5 - Tailored Design Method Schedule for Outdoor and Nature Recreation in the SE U.S. Study

Mailing	Details	Date Mailed
Prenotice Letter	Informs individual to expect a questionnaire in the mail; express gratitude prior to sending questionnaire	July 14, 2009 (Appendix A)
Questionnaire Packet	Cover Letter Details of study Why response is important Rights and confidentiality Request of consent URL of online version of questionnaire Paper version of questionnaire Instruction sheet for online version Reward (Outdoor grade sticker) Stamped return envelope	July 24, 2009 (Appendices B-E)
Postcard Thank You/Reminder	Express appreciation for responding Request response to questionnaire if not yet completed and sent	July 31, 2009 (Appendix F)
Replacement Questionnaire/ Web Survey Reminder Letter	<i>Replacement Questionnaire:</i> Informs individual that completed questionnaire has not been received and gives final request for participation Paper version of questionnaire Instruction sheet for online version Stamped return envelope No reward sent <i>Reminder Letter (online version):</i> Final request for individual to respond to questionnaire online Instruction sheet for online version	August 24, 2009 (Appendices G and H)
Phone Calls to Non-respondents (as of October 12, 2009)	Request demographic information Request telephone interview for non-response script	October 12-16, 2009 (Appendix I)

Table 6 - Explanation of 'Unable to Respond' calculation

Comment	Frequency
Deceased	56
Disabled	6
Return to Sender Prenotice	367
Return to Sender Survey Packet (minus Prenotice returns)	85
TOTAL UNABLE TO RESPOND	514
Sample Size (7200-514)	6,686

Table 7 - Overall response rate and response mode frequencies

Comment	Number of Subjects Removed from mailing list
Online Responses	344
Paper Responses	1,136
Total Responses	1,480
Response Rate (1,480 / 6686)	22.1%

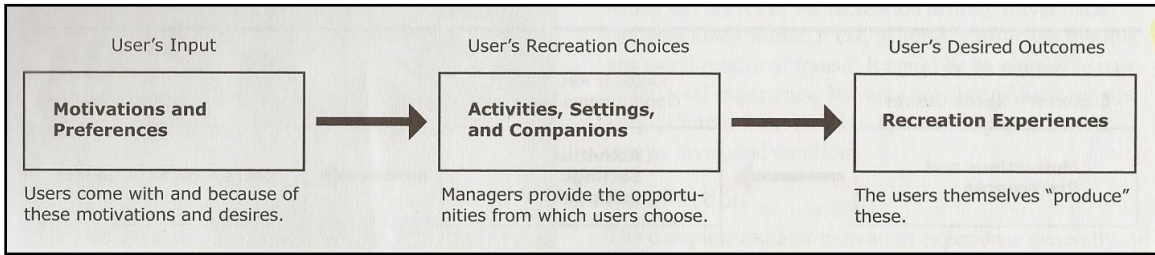


Figure 1 - Outdoor Recreation Experience Model – used as framework for this study
Source: (Moore & Driver, 2005)

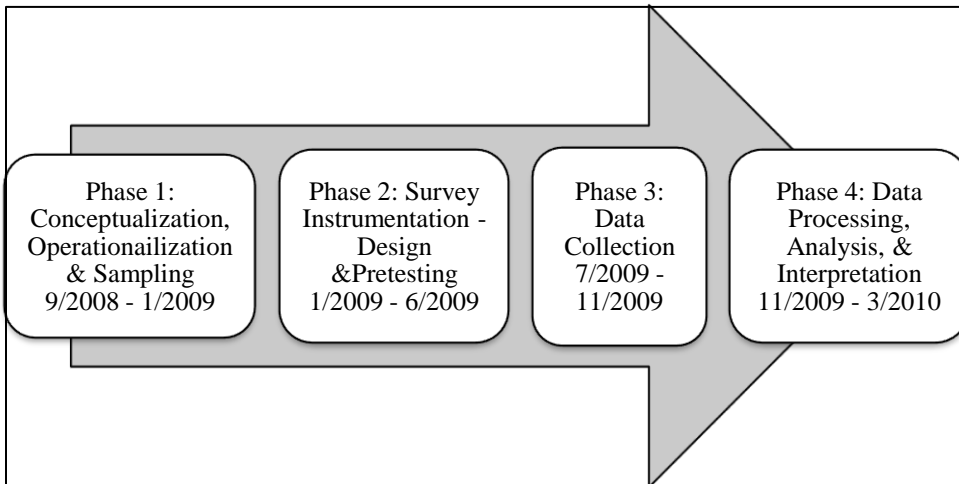


Figure 2 - Phases of research with dates

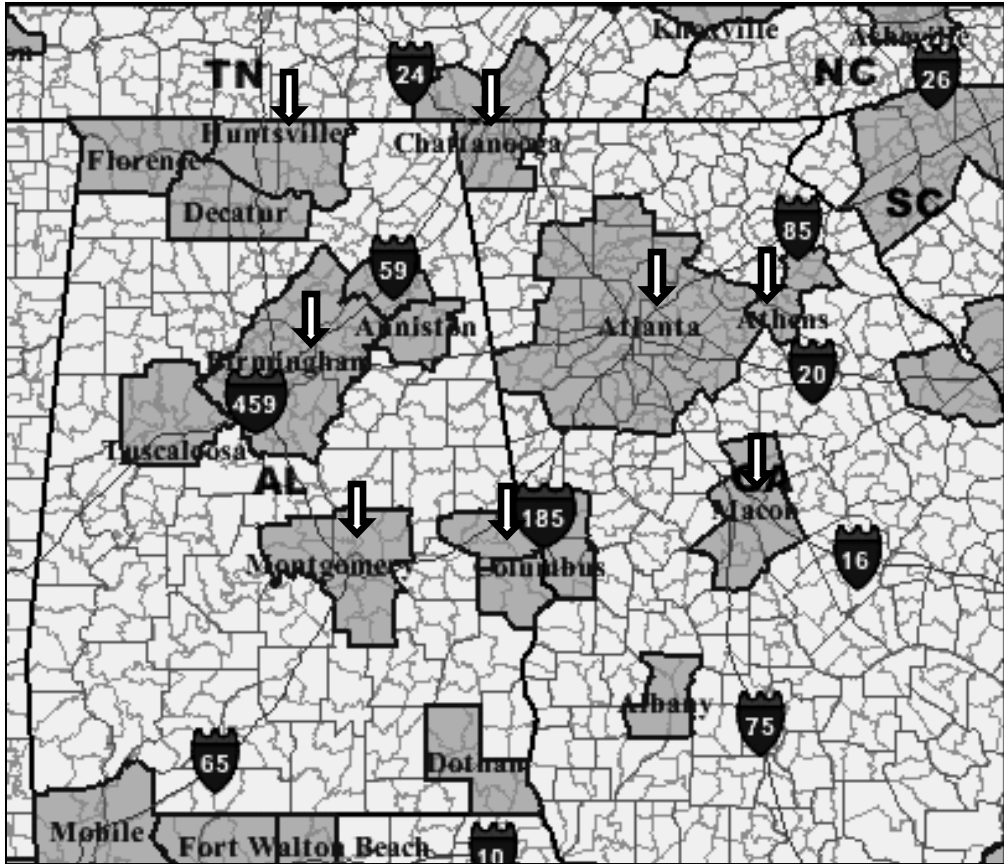


Figure 3-Map of sampling area highlighting 8 metropolitan areas (Chattanooga, Atlanta, Athens, Macon, Columbus, Montgomery, Tuscaloosa, Birmingham, Huntsville)

YOUR IDEAL RECREATION EXPERIENCE AWAY FROM HOME

● Remember! Away from home is more than a 15 minute drive from your home.

25. From the list of activities below, please choose your favorite activity to do away from home. (Write favorite activity next to the bold arrow below.)

MY FAVORITE ACTIVITY **→**

<input type="checkbox"/> Family or other group gathering	<input type="checkbox"/> Fishing	<input type="checkbox"/> Swimming (lakes, rivers, ocean)
<input type="checkbox"/> Walking/hiking	<input type="checkbox"/> Hunting	<input type="checkbox"/> Canoeing/kayaking
<input type="checkbox"/> Viewing natural scenery	<input type="checkbox"/> Camping	<input type="checkbox"/> Biking/cycling
<input type="checkbox"/> Bird watching	<input type="checkbox"/> Horseback riding	<input type="checkbox"/> Visiting agricultural areas (fruit picking, farm tour)
<input type="checkbox"/> Other wildlife observation	<input type="checkbox"/> Motorized sports (4x4, all-terrain vehicles, dirt bikes)	<input type="checkbox"/> Other: _____

26. In the list of activities above, please tell us the other activities that you like to do on the same trip as your favorite activity. (Check up to five other activities.)

Figure 4 - Favorite activities solicitation as it appeared in paper and online versions of questionnaire

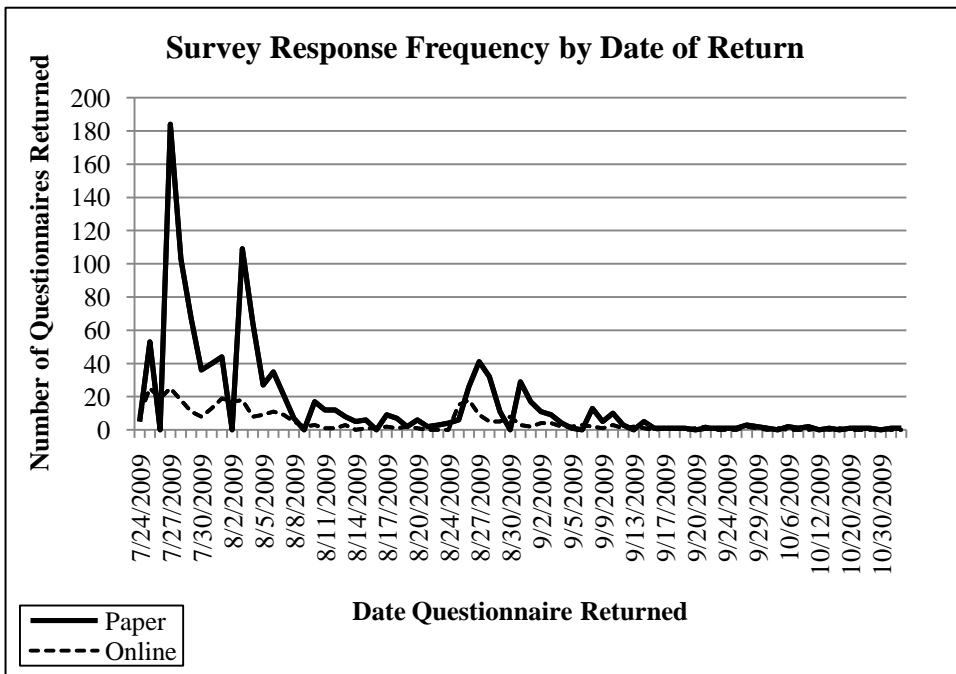


Figure 5 – Frequencies for the returns received by date

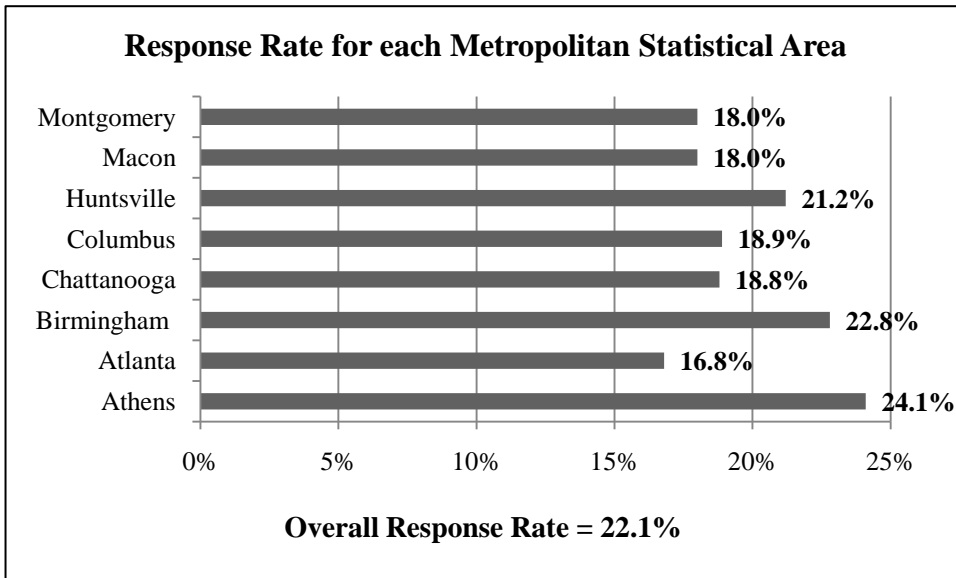


Figure 6 - Response rate by Metropolitan Statistical Area

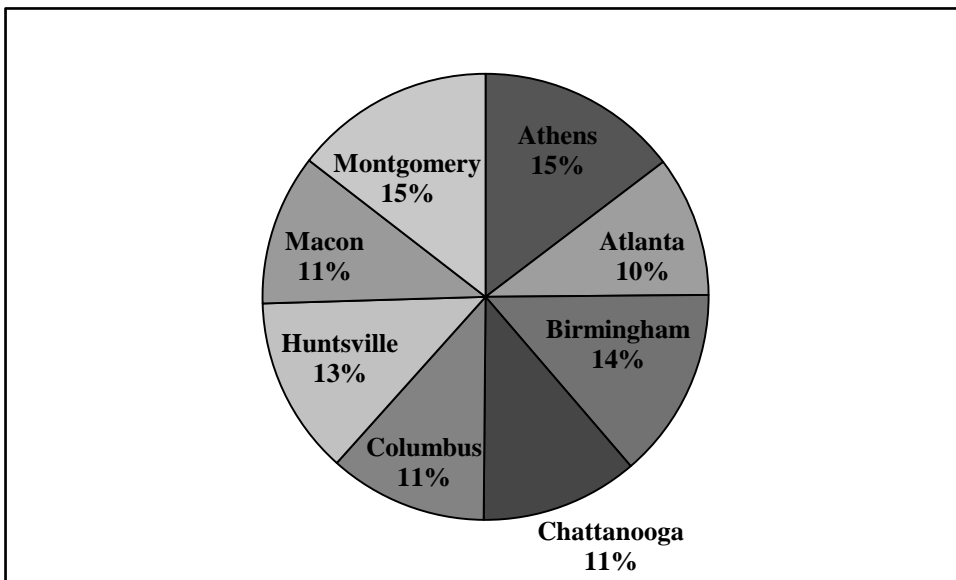


Figure 7 - Distribution of returned questionnaires by Metropolitan Statistical Area (% of total responses)

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Chapter 2

Understanding Outdoor Recreation Activity and Setting Preferences Among Urban Residents of the Interior Southeastern United States

Abstract

This study evaluated willingness of Southeastern urbanites to participate in outdoor and nature recreation on private lands in rural settings away from home. An in-depth understanding of urban demand for private land recreation is a critical first step prior to the promotion of recreation leasing as an economic opportunity for private forest owners. Analyses were performed to identify the most popular favorite activities and the effect of those favorite activity preferences on the importance of other components of recreation experiences (biophysical, physical/facilities, & management/social setting attributes and motivations & constraints). Opportunities for participating non-consumptive activities in natural settings are in demand as revealed by results from a mail questionnaire completed by residents living in eight interior, urban areas in the Southeast.

Introduction

Rural private landowners have the opportunity to benefit economically by providing outdoor and nature recreation opportunities to residents of the increasingly dense population cores in the Southeastern. Population growth is higher than the national average in this region and is predominantly seen in urban cores and surrounding areas (U.S. Dept of Commerce, 2001). The Southeast had the greatest increase in percent urban land between 1990-2000 (1.8% of the land area), compared nationally (Nowak, Walton, Dwyer, Kaya, & Myeong, 2005). Population growth is expected to lead to an increase in the demand for/and use of public lands for recreation. Findings by Cordell, Betz, and Green (2008) reveal that nature-based recreation is on the rise, particularly activities like viewing, photographing and studying nature (like wildlife and birds). The largest national outdoor recreation study, the National Survey on Recreation and the Environment indicated that urban residents in the southeastern U.S. prefer participating in non-consumptive activities (Overdevest & Cordell, 2001). The population growth in the region may accentuate these urban preferences. Wear and Greis (2002) note that this trend is expected to continue and that, as public lands become more congested, competition and conflict among recreation groups will likely increase. Public lands available may not be sufficient to meet these demands (Overdevest & Cordell, 2001; Teasley, Bergstrom, Cordell, Zarnoch, & Gentle, 1999). Therefore, interest has turned to private property which comprises 70% of the land in this region. Understanding preferences by this growing population is crucial to providing scientifically sound advice to private landowners looking to develop recreation opportunities on their lands.

Consumptive tourism demands (such as for hunting) are well studied on private lands (Benson, 2001; Lovelock, 2007; Zhang, Hussain, & Armstrong, 2006), however,

studies related to non-consumptive recreation demands are few. Research was identified that focused on leasing land to hunters and their preferences and willingness to pay for the leases (Hussain, Zhang, & Armstrong, 2004; Hussain, Zhang, & Armstrong, 2003). Research on the motivations and satisfaction of hunters was identified (Hayslette, Armstrong, & Mirarchi, 2001; Mehmood, 2003) as well as those for the economic benefits for landowners who lease their land for hunting (Jones, Jones, Munn, & Grado, 2004) (Munn et al., 2007). The economic and legal issues of private land leasing for hunting was recently reviewed with recommendations for future studies on the leasing for private lands for hunting (Mozumder, Starbuck, Berrens, & Alexander, 2007). Hunting is generally a rural recreation activity, and does not necessarily illustrate urban demand (Cordell, Betz, & Green, 2002).

There are three main studies that examine recreation use, demand trends, and impacts in the United States. The first study is the National Survey on Recreation and the Environment (NSRE) (Cordell H. , 2004); it addresses broad scale demand for multiple recreation activities and has more recently incorporated research on environmental attitudes (Cordell, Bergstrom, & Michael, 2005). The second study is the National Survey of Fishing, Hunting and Wildlife-Associated Recreation (NSFHWR) (USF&WS, 2006); it analyzes trends over time in these activities and began assessing wildlife recreation in 1955. It also looks at economic impacts and trip expenditures at national, regional and state levels. The third study is the National Private Landowner Survey (NPLOS) (Teasley, Bergstrom, Cordell, Zarnoch, & Gentle, 1999) ; it was designed to estimate the amount of private land used for recreation and to understand landowner practices and attitudes related to recreation. To date, no studies document

potential demand for a diverse set of recreation activities on private land by urban residents. Empirical data is limited for capturing details about preferences for a diverse set of recreation experiences by people living in and around non-coastal, urban centers in the Southeast. Information on urban recreation preferences at the regional and national scales is available; however, none of the studies differentiate between recreation opportunities and settings offered by individual private landowners and those on public lands.

The development of nature based recreation enterprises by individual private landowners has socioeconomic and ecological implications for the southeastern region. The collection of temporally and geographically relevant preference data gives private landowners the information that they need for developing recreation opportunities. According to the 2006 Fishing, Hunting, and Wildlife Associated Recreation Survey (FHWAR), there are a total of 5,510,000 wildlife watching participants, age 16 years or older in the three state region of our study site (Alabama, Georgia, and Tennessee). At the national scale, there were \$45.7 million in direct expenditures by wildlife-watching participants in 2006. The FHWAR report 2006-1 declares that this consumer spending is a substantial in its impact on economic activity, employment, and household income across the nation. In 2006, Alabama, Georgia, and Tennessee reflected these impacts with a total of nearly 60,000 jobs and two billion dollars in salaries, wages and business owner's incomes. In addition, state and local tax revenues from recreation amounted to around \$400,000. This study measured demand for recreation on private lands by exploring the Ideal Recreation Experiences (IRE) of urban Southeastern residents (including activity and setting preferences to benefits sought). An in-depth understanding

of urban demand for private land recreation is a critical first step prior to the promotion of recreation leasing as an economic opportunity for private forest owners.

The main objectives of this study were (1) to determine if Southeastern urban dwellers would be willing to participate in outdoor and nature recreation on private lands if their ideal experience existed, (2) to determine the most favored activities desired for participation in rural settings, (3) to quantify the importance of a diverse set of site characteristics, benefits sought, and constraints, (4) to measure the effect of the most popular activities on setting preferences, benefits sought, and constraints, and (5) to develop profiles by favorite activity groups that encompasses the entire ideal recreation experience combining secondary activities, setting indicators, benefits sought, and constraints.

Research Methods

Conceptual Frameworks

Leisure sciences literature contributes useful frameworks for comprehensively and systematically examining the human experience in outdoor and nature recreation. The Outdoor Recreation Experience Model was utilized in the design of this study. This model is based on expectancy theory which proposes that “people engage in particular behaviors with the expectation that the activity will meet their particular needs and help them to achieve what they desire”; it was useful because it targets “why people do what they do and what they hope to gain” (Moore & Driver, 2005 p. 15). Outdoor recreationists combine their own motivations and preferences with activities, settings, and companions to produce desired Recreation Experiences. This model was used to develop a hypothetical ‘Ideal Recreation Experience’ model for current and potential Outdoor and

Nature-based Recreation (ONR) participants. The setting categories used to measure setting preferences in this study were biophysical (BP), managerial/social (MS), and physical/facilities (PF). The ecological components of private lands, including landscape and quality indicators were included as specific inventory criteria of the biophysical setting (Lee & Stafford, 2008; Morse, Hall, & Kruger, 2009).

The specific items used to understand benefits sought in this study were selected from the Recreation Experience Preference (REP) scales list with the goal of representing a cross section of indicators (Moore & Driver, 2005). The REP scales were developed through empirical testing to identify and measure a specific desired and/or realized recreation experience. A Meta-Analysis of the REP scales as measures of leisure motivations can be found in Manfredi, Driver, and Tarrant (1996). A motivation can be thought of as a desired outcome that moves individuals to participate in activities in particular settings to achieve a particular recreation benefit or set of benefits/outcomes.

A subset of constraints was selected from previous research to specifically address the Southeastern recreation opportunity context of limited public lands. A constraint is “anything that inhibits people’s ability to participate in leisure activities, to spend more time doing so, or to take advantage of leisure services, or to achieve a desired level of satisfaction” (Shinew, Floyd, & Parry, 2004). Recent studies have focused on constraints with respect to the other aspects of the total recreation experience like motivations, activity participation, and desired experience and constraint negotiation (White, 2008). All indicators used to represent the Outdoor Recreation Experience can be seen in Table 1.

Data Collection

A quantitative mail survey was used for data collection. Both the design and implementation of the questionnaire was based on a modified Tailored Design Method (TDM) (Dillman, Smyth, & Christian, 2009). This method is based on social exchange theory and is designed to elicit high response rates and minimize cognitive burden. Best practices included careful attention to questionnaire design in terms of question order, wording, and formatting in addition to, presentation and multiple mailings; all designed to reduce measurement and non-response bias (Dillman et al., 2009). The Tailored Design Method consists of five steps of contact with the study participants: (1) the pre-notice letter, (2) the questionnaire mail-out, (3) a postcard thank you/reminder, (4) a replacement questionnaire, and finally, (5) a phone call reminder to check for non-response bias. Questionnaire recipients were offered the option of responding to a customized, visually identical electronic version via the World Wide Web.

Study Area and Sample Selection

The target populations in this study were eight Metropolitan Statistical Areas (MSA) in the Southeastern United States. The cities were selected based on having populations of over 100,000 residents and for their interior geographic locations away from beaches and not in primarily mountainous zones. MSAs included were Athens-Clarke County, GA (Athens); Atlanta-Sandy Springs-Marietta, GA (Atlanta); Birmingham-Hoover, AL (Birmingham); Chattanooga, TN-GA (Chattanooga); Huntsville, AL (Huntsville); Columbus, GA-AL (Columbus); Macon, GA (Macon); and Montgomery, AL (Montgomery). Coastal zones and mountainous zones were excluded from the research area based on the potential effects of recreational, social, and economic

differences of those areas. The inclusion of the entire MSA of each population core in the study allowed the capture of individuals that identify themselves as living in the urban core, but may not live within the political boundaries of the area.

The sampling frame that was utilized for this study is the Directory Listed database. This database is an updated version of the residential white page listings and includes all households in the country that are listed in the residential white pages. The sample was generated randomly using an nth selection method across each of the eight Metropolitan Statistical Areas of interest (pers.comm., SSI, LLC, 2010). The sample list was purchased from Survey Sampling International (SSI). This company was chosen for its reputation of having current and valid data sets derived from multiple data sources. The sample size was selected for analyzing data region wide with the aggregated data as well as for making comparisons across cities in future analyses. The sampling frame used may have coverage error due to the fact that the records purchased from SSI, Inc. were based on telephone listings. This technique may have excluded poor that could not afford telephones, individuals that are unlisted (Singleton Jr. & Straits, 2005), and a new generation of people that do not have landlines in their homes due to the use of cellular phones as a primary communication method.

About the Questionnaire

The questionnaire was developed following accepted theoretical frameworks and was pretested on 45 individuals and modified for language, order and length based on participant recommendations. The questionnaire consisted of approximately 55 questions (some of which are multi-part lists) organized into six sections including: Outdoor and

Nature Recreation, Near Your Home, Away From Home, Your Most Recent Trip Away From Home, Your Ideal Recreation Experience (IRE), and Household Information. For this report, the focus is on the ‘Your Ideal Recreation Experience’ and ‘Household Information’ sections. Categorical, Likert-type, and open-ended measures were used for answer options according to the appropriateness for question type. The Likert-type items allowed respondents to specify level of importance recreation experience attributes on a scale of one to five.

Study participants were asked to identify their favorite activity to participate in away from home in rural settings. A list of fourteen options was provided in addition to an ‘other’ category. The list included activities that were considered reasonable for an individual/family private landowner to offer on their land. The list of activities can be seen in Table 1. Outdoor recreationists can and often do participate in multiple activities on the same trip, therefore they were asked to choose other activities that they would also like to do along with favorite activity in their ideal setting. Next, respondents chose how important a variety of setting attributes were for creating their ideal recreation experience using a Likert type scale (1=not at all important, 2=slightly important, 3=fairly important, 4=quite important, 5=very important). After the IRE was described, respondents were asked to tell how important each of a list of reasons (motivations) was for wanting to participate in that particular experience and setting.

Data Analysis

Data were analyzed using PASW 18 data analysis software (PASW 18 (SPSS Inc., 2010). Data were first filtered to exclude records that were not willing to participate on private lands. Next, frequencies were evaluated for the favorite activity away from

home variable. Data were filtered to include only records that chose one of the seven most frequently chosen activities. The means for each item specific to the top seven favorite activities were analyzed both individually as well as summed across activities (Tables 2-6). Multivariate analysis of variance (MANOVA) tests were conducted in PASW 18 for five sets of dependent variables. The first three categories of setting attributes included were Managerial/Social, Physical/Facilities, and Biophysical. Motivation and Constraint indicators were also evaluated. The independent variables were favorite activity with seven levels which were the seven most frequently chosen favorite primary activities. Each category of variable was performed separately for a total of five separate MANOVAs.

Each set of dependent variables were first explored for normality and outliers. Moderate univariate outliers were discovered for most of the dependent variables, however since there were no extreme outliers, the cases were included unmodified. Each MANOVAs had statistically significant normality tests (Kolmogorov-Smirnov and Shapiro-Wilk), indicating possible normality violations within the distributions of all dependent measures for each set. However, since the Q-Q plots appeared normal, it was judged that all of the dependent variables were ready for analysis and that dependent variables would not be transformed to try to achieve greater normality. For each MANOVA test, Box's Test of Equality of Covariance Matrices were examined and were found to be significant for each set indicating that the dependent variable covariance matrices were not equal across the levels of the independent variable. This was likely due to unequal sample sizes; Pillai's trace was used to assess the multivariate effects for each MANOVA. In addition, Barlett's Tests of Sphericity were run for each MANOVA

and were all statistically significant indicating sufficient correlation between dependent variables for each variable category in order to proceed.

Next, each dependent variable was analyzed separately. In determining which indicators had statistically significant mean differences, a Bonferroni adjustment was applied by dividing the desired alpha level of .05 by the number of dependent variables in each set (Pallant, 2005). Post hoc analyses were analyzed to quantify the mean differences for each set of dependent variables. Equality of variance was tested using the Levene's Test of Equality of error variance. For the dependent variables where equal variance was assumed, Sidak post-hoc tests were used to identify the specific differences among the seven favorite activity groups. For those variables where equal variance could not be assumed, Tamhane's T2 post-hoc procedures were used. The PASW default alpha=.05 was used for both types of tests. Statistically significant, positive mean differences for statistically significant indicators were analyzed and summed for each favorite activity. This revealed a ranking of indicators that were consistently more important for each favorite activity. Finally, the sum of the mean differences was calculated for setting indicators that were found to be consistently and statistically more important per activity group when compared against other activity groups. This helped to paint a quantitative picture of the indicators with largest mean differences.

Results

Survey Response

A total of 1,480 (22.1% response rate) completed surveys were returned. Nearly two-thirds of respondents replied using the paper mail survey method: 1,136 paper and 344 online questionnaires were returned. After filtering for individuals that responded

yes to the question, “If an individual private landowner offered access to their land to participate in your favorite activities in your ideal setting, would you recreate on their land in the next year?”, 1,124 individuals (75.9% of total respondents). From the 1,124 individuals, 65.8% of were male and 34.2% were female. Caucasians expectedly outnumbered all other race groups at 86.2% with African Americans second at 11.7%. Over half of the study group had at least a Bachelors degree and nearly 43.2% had household income of \$75,000 or more. Nearly 30% were between the ages of 45-54 with the same amount falling into age brackets on either side of this one; over half of the participants were between the ages of 35 and 59. It was expected that there would be more response by white, educated, and more affluent as is common in this type of survey research. Results were not weighted because the intent was to understand *individuals*’ willingness to participate on private lands and not necessarily the general public. All demographic data can be seen in Table 2.

Favorite Activities (Primary and Secondary)

The first step in the analysis was to evaluate which primary favorite activities were chosen most frequently. The most frequently chosen activities to participate in away from home in rural settings were *family or other group gathering* (26.9%), *walking/hiking/jogging/running* (14.1%), *fishing* (12.7%), *viewing natural scenery* (12.3%), *swimming* (8.6%), *camping* (7.5%), and *hunting* (6.6%). The remaining respondents chose one of the other activities listed or the *other* category. There were 900 (80% of all people willing to participate in outdoor recreation on private lands) that chose one of the top seven favorite activities. Over half (53.9%) of the 900 urban recreationists in the final analysis, chose *viewing natural scenery* and *walking/hiking* (50.9%) as

favorite secondary activities. The next most popular secondary activities included *other wildlife observation* (40.0%), *swimming* (30.7%), *family or other group gathering* (28.8%), *fishing* (25.4%), and *bird watching* (19.4%). Interestingly, *other wildlife observation* and *bird watching* were popular secondary activities although they were not among the most frequently chosen favorite primary activities. Tables 3 and 4 display frequency data for each secondary favorite activity by the top seven primary activities. The secondary activities will be explored in more depth by primary activities in the discussion ahead.

There were a few noticeable differences in demographics across favorite primary activity groups (Table 2). Males dominated the *fishing* (88.4%) and *hunting* (98.5%) groups. African Americans were most represented in the *family or other group gathering* and *swimming* groups relative to other activity groups. African Americans were absent from the *camping* group and were only 1.5% of those that chose *hunting*. *Walking/hiking*, *viewing natural scenery* and *swimming* appear to be favorite activities of individuals with higher levels of education while *group gathering* and *fishing* were more popular among those with less education. *Hunting* was not very popular among urban residents surveyed with household incomes of less than \$35,000. No study participants over 75 years of age chose *camping* as a favorite activity. *Camping* and *hunting* were noticeably most popular with people aged 45-54.

Setting Preferences, Motivations, and Constraints

The results from descriptive analyses as well as analyses of variance will be presented here by category of dependent variable. The basic descriptive analyses for all setting, motivation, and constraint indicators can be seen in Tables 5 and 6. Indicators

were ranked by sums of means across favorite activity groups; these are considered to be most important across all of the top seven favorite primary activity groups. Results from multivariate analyses of variance testing the effect of favorite activity on components of the Outdoor Recreation Experience model can be seen in Table 7. Statistically significant univariate results can be seen in Tables 8 and 9. Post hoc analyses showing positive statistically significant mean differences for indicators by each activity group can be seen in Tables 10 and 11.

Biophysical Setting Attributes. Across all activities, biophysical attributes that measured most important in order were *clean water, clean air, natural scenic beauty, variety of wildlife, river or stream, and lake or pond*. There was a significant multivariate effect of favorite activity on biophysical setting attributes, $F(96, 3408) = 5.039, p = .000$, partial eta squared = .124. The test revealed that there were differences in setting preferences for activity groups for twelve of the sixteen dependent variables. The only biophysical indicators that did not show differences among favorite activity groups (under the newly created alpha level) were *clean air, clean water, tree plantation, and open range or pasture*.

Physical/Facilities. The most important physical/facilities setting attributes across favorite activity groups were *secure parking, drinking water, flush toilets, well maintained trails, cellular phone reception, hot showers, hotel/motel/resorts, equipped cabins, and picnic tables*. There was a significant multivariate effect of favorite activity on physical/facilities setting attributes, $F(126, 4404) = 5.043, p = .000$, partial eta squared = .126. There were differences in setting preferences for activity groups for seventeen of the twenty one dependent variables. The only physical/facilities indicators

that did not show differences among favorite activity groups were *primitive road/jeep trail, single track trails, rustic cabins, and hot shower*.

Managerial/Social. For managerial/social setting attributes, the *ability reserve lodging, directional signs, on-site regulations and controls, and educational signs and brochures* were most important. There was a significant multivariate effect of favorite activity $F(54, 4734) = 4.675, p=.000$, partial eta squared=.051. There were differences in setting preferences for activity groups for eight of the nine dependent variables. The only indicator that did not show differences among favorite activity groups was *on-site regulations and controls*.

Motivations. All of the motivation indicators were ranked on the 'important' end of the Likert type scale. The three most important motivations for wanting to participate in the ideal recreation experience created were to *get away from the usual demands of life, to enjoy the sounds and smells of nature, and to do something with family*. There was a significant multivariate effect of favorite activity $F(72, 4986) = 5.751, p=.000$, partial eta squared=.077. Statistically significant differences in motivations existed for activity groups for nine of the twelve dependent variables. The indicators with no mean differences among favorite activity groups were *to do something with my family, to get away from the usual demands of life, and to develop my personal/spiritual values*.

Constraints. When asked to describe why, if relevant, study participants did not participate in their favorite activities as often as they wanted over the previous twelve months, the top two constraints across all activity groups were *not enough time and not enough money*. There was a significant multivariate effect of favorite activity $F(36, 3900) = 2.507, p=.000$, partial eta squared=.023. The test revealed that there were

differences among activity groups for only one of the six dependent variables - *not enough money*.

Post-hoc analyses. In order to further understand differences between activities, post-hoc analyses were used. Sums of the mean differences across the seven favorite activity groups, in rank order, reveal additive effects of differences for each favorite activity. This is a way of viewing the indicators that had the most quantitative differences for each activity relative to other activities. Tables 10 and 11 show many of the positive mean differences by each favorite activity group. The indicators in the left column are more important for the activity that they are listed under in the left column than the activities in the columns to the right. Indicators where there were no statistically significant mean differences and those with differences with only one other group were excluded in order to simplify the summary. Setting indicators that showed the most statistically significant mean differences in order were: *boat launch/access* (fishers), *fire rings* (campers), *developed campsite* (campers), *land are bigger than fifty acres* (hunters), *specific fish or other wildlife* (fishers and hunters), *marsh/wetland/swamp* (hunters), and *recreational vehicle hookup* (campers). These are logical and provide additional information to landowners interested in prioritizing attributes for development on their land to provide recreational settings.

Companions, distance willing to travel, and amount willing to pay. Nearly half of the survey respondents (48.5%) reported that they would like to have 3-5 people accompany them on their ideal recreation experience and one quarter (25.6%) preferred 6-10 people. Nearly 40% were willing to travel more than 300 miles (one way) to participate in their ideal recreation experience with 20% preferring to stay within 101-200

miles of their home. When asked how much they would be willing to pay to have access to their ideal recreation experience per person, per day, 37.2% said that they would pay more than \$30. Nearly 37% were willing to pay between \$11-30 and 23.2% were willing to pay \$1-10. Table 12 shows complete results by favorite activity for these variables.

Favorite Activity Group Profiles

Profiles were developed for each of the top seven favorite primary activity groups. The profiles outline the overall most important indicators for each group as well as highlights indicators that were more important than other groups. Profiles were derived from analyzing favorite activity combinations, statistical means, statistically significant mean differences from post-hoc analyses. Highlights from demographics, companion, travel, and willingness to pay variables are also discussed. Where there was no statistically significant mean difference in the indicators measured on the Likert-type scale, it was assumed that there was no preference difference. Those indicators that were equally and at least fairly important across activities will be discussed here rather than as part of each profile. Setting indicators were clean air and clean water, hot showers, and on-site regulations and controls. Motivation indicators were to get away from the usual demands of life, to do something with family, and to develop personal/spiritual values. One constraint indicator was quite important across all groups – not enough time. Not enough money and not enough places nearby were between somewhat and fairly important across activity groups, though money was more of a constraint for one activity group as detailed below. Over 30% of every activity group said they would be willing to pay travel more than 300 miles one-way to participate in their ideal recreation experience.

Over 30% (and some over 40%) of ever group besides Campers said that they were willing to pay more than \$30 per person/per day for access to their ideal experience.

Family or other group gatherers. This group is a highlight of the study. Family or other group gathering was the most popular primary activity; over a quarter of all survey respondents chose it as their favorite activity to participate in away from home. This activity was not only a popular primary activity, but it also appeared at the top of the favorite secondary activities list. Over half of all respondents in the top seven groups chose this as an additional activity. This is revealing of the importance of companionship in outdoor recreation experiences for southern urbanites. Members of this group also said they enjoy viewing natural scenery (60.4%), walking/hiking (57.5%), and swimming (41.8%), fishing (30.0%), and observing wildlife (28.9%). Group gatherers desire natural scenic beauty (M= 3.8). Secure parking (M=4.0), flush toilets (M=4.0), drinking water (M=3.9), well-maintained trails (M=3.9), and hotels/motel/resorts (M=3.5) are important facilities attributes for this group. Family or other group gatherers would like to be able to reserve lodging in advance (M=3.8) and they also prefer directional signs (M=3.7). They are seeking to be with friends (M=4.0). Indicators that are significantly more important for this group relative to other groups are the ability to be in large groups, group shelter, hotel/motel/resort, bed-n-breakfasts, and family or friends' homes. They are also motivated by being with friends more than some other groups which highlights the social nature of these recreationists and helps to understand the nature of the gatherings: they are not only seeking to spend with family, but also friends. African Americans identified with this activity more than any other activity. A portion of this

group (14%) said they desired to share their experience with more than 10 companions, but 78.3% desire between 3 and 10 companions.

Walkers/hikers. Walking and hiking ranked second as a favorite primary activity to participate in away from home. Walking/hiking was also very popular as a secondary activity with approximately half of all respondents among the top seven activity groups choosing it as an additional activity. This group also enjoys viewing natural scenery (74.1%), wildlife observation (52.4%), family or other group gathering (35.7%), swimming (28.0%), and bird watching (24.5%). Of importance for walkers/hikers in the biophysical setting are natural scenic beauty (M=4.3), variety of wildlife (M=3.7), and variety of plant and tree species (M=3.5). Predictably, this group desires well maintained trails (M=3.9). They also prefer secure parking (M=3.8), drinking water (M=3.7), and flush toilets (M=3.5). Relative to other groups, the preferences of walkers/hikers were very similar with family or other group gatherers, viewers of natural scenery, and swimmers. This group is more motivated to participate in their self-described ideal recreation experience by promoting physical fitness, learning about the history/culture of the area, and exploring the area/learning about nature than at least three other groups. This information may indicate that walkers/hikers are driven to participate in recreation outdoors by self-improvement (physical and intellectual). They are looking for opportunities to learn and walking/hiking is the activity that they desire to participate in to manifest beneficial outcomes. Over 60% of this group holds at least a bachelors degree which may partially explain these motivations (though not tested).

Fishers. Fishing was the third most popular favorite primary activity. In addition to fishing, this group also enjoys viewing natural scenery (51.2%), family or other group

gathering (40.3%), walking/hiking/jogging/running (38.8%), other wildlife observation (33.3%), and swimming (27.9%). Fishers desire lake/pond (M= 4.1), river/stream (M= 4.0), specific fish (3.9), variety of wildlife (M= 3.8), and natural scenic beauty (M= 3.7). They also desire secure parking (M= 3.6), boat launch/access (M= 3.5), drinking water (M= 3.4), and flush toilets (M=3.4). They rated the ability to reserve lodging (M= 3.4) and directional signs (M= 3.3) between fairly and quite important. Fishers seek to enjoy the sounds and smells of nature (M= 4.0) and to be with friends (M=3.8). They are most constrained by a lack of time (M= 3.6) to participate in fishing. Predictably, this group shows a higher preference for *boat launches* than all other activity groups. They placed more importance on *specific fish or other wildlife* and *lakes/ponds* than every other group besides hunters where there was no statistically significant mean difference. Fishers are more motivated by being with friends than walkers/hikers and viewers of natural scenery. Over half of this group (54.3%) desired to be with 3-5 companions. People with no high school diploma are most represented in this group. African Americans are more represented in this group (14.7%) than all other groups besides group gatherers.

Viewers of natural scenery. This group is nearly equal in size to the fishing group. Although it is only the fourth most popular favorite primary activity, it is the number one most popular secondary activity, selected by 53% of the top seven activity members. This indicates that even though many people are not identifying it as a favorite activity, most people are participating in it while they enjoy their other favorite activities. Viewers of natural scenery also like to walk/hike (78.4%), observe wildlife (62.4%), gather with family and friends (51.2%), swim (31.2%), and bird watch (28.0%). They placed the most importance on biophysical attributes of natural scenic beauty (M=4.5),

variety of wildlife (M=4.0), river/stream (M=3.8), variety of plant/tree species (M=3.8), and woodland/forest (M=3.7). In the facilities category, viewers of natural scenery desire secure parking (M=4.1), drinking water (M=4.0), flush toilets (M=3.9), and hotels/motels/resorts (M=3.6). They want to be able to reserve lodging (M=4.0) and the presence of directional signs (M=3.9). All motivation indicators were at least fairly important and the main constraint was not enough time (M=3.8). Setting indicators for which this group expressed greater preference more than other groups were hotels/motels/resorts, natural scenic beauty, and woodlands/forests. Compared to other activity groups, this group expressed greater importance for hotel/motel/resort, natural scenic beauty, woodland/forest, bed-n-breakfasts, and secure parking. They are also more motivated by learning about the history/culture of an area and exploring an area to learn about nature.

Swimmers. The swimming group was the fifth most frequently chosen favorite primary activity. As secondary activities, swimmers also enjoy walking/hiking (67.8%), viewing natural scenery (60.9%), group gathering (50.6%), fishing (28.7%), and wildlife observation (24.1%). They desire natural scenic beauty (M=4.0), river/stream (M= 3.7), and lake/pond (M= 3.5). Swimmers prefer secure parking (M= 4.0), flush toilets (M=4.0), drinking water (M=3.8), well maintained trails (M= 3.6), and hotels/motels/resorts (M=3.6). Directional signs (M=3.9) and ability to reserve lodging (M=3.8) were also important to swimmers. This group seeks to enjoy the sounds and smells of nature (M=3.8), to be with friends (M=3.7), and to escape noise and crowds (M=3.6). Swimmers were more constrained by not enough money (M=3.6) than were any other group besides viewers of natural scenery (where no difference existed).

Contradictory to this, however, a higher percentage of this group was willing to pay the \$30 or more to have access than were any other activity group. They prefer hotels, motels, or resorts more than four other activity groups. Flush toilets, directional signs, bed-n-breakfasts, and the ability to be in large groups were more important for swimmers than at least two other groups. This group was distinct in that there was almost no representation by people with less than at least some college education or by members of the 20-24 age group.

Campers. Camping was the sixth most popular primary activity. This group also enjoys walking/hiking (80.3%), viewing natural scenery (78.9%), swimming (52.6%), group gathering (43.4%), and fishing (42.1%). Campers enjoy natural scenic beauty (M=4.4), river/stream (M=3.8), a variety of wildlife (M=3.7), variety of plant and tree species (M=3.7), and woodland/forest (M=3.7). They prefer developed campsites (M=3.8), drinking water (M=3.8), fire rings (M=3.6), well maintained trails (M=3.6), and secure parking (M=3.6). Ability to reserve lodging (M=3.4) and directional signs (M=3.4) were also important to campers. They are seeking to enjoy sounds and smells of nature (M=4.4), to be close to nature (M=4.3), to escape noise and crowds (M= 4.2), and to explore the area and learn about nature (M=3.9). Setting attributes that campers consistently preferred more than other groups were fire rings, developed campsites, RV hook-ups, and woodlands/forests, and picnic tables. Campers were more motivated by being close to nature compared to other groups. Campers did not differ in their motivations at all with walkers/hikers, viewers of natural scenery, and hunters. Members of this group do not want to participate alone in this activity and half desire to be with 3-5 people. The most frequently chosen category with respect to amount willing to pay for

access was \$11-20 (31.6%). There were no African Americans or people over 75 that chose this activity. Nearly 40% of this group was between the ages of 45-54.

Hunting. Hunting came in last on the top-seven list of most popular favorite activities. Out of all of the people that were willing to participate in their ideal recreation experience on private lands, 6.6% chose hunting as their favorite activity. In addition to hunting, this group also enjoys fishing (55.2%), wildlife observation (55.2%), viewing natural scenery (52.2%), walking/hiking (49.3%), and camping (31.3%). Hunters desire a variety of wildlife (M=4.3), land area bigger than 50 acres (M=4.1), specific fish or other wildlife (M=3.9), river/stream (M=3.9), lake/pond (M=3.7), woodland/forest (M=3.7), an unmodified natural environment (M=3.7), and natural scenic beauty (M=3.6). They rated secure parking, flush toilets, and well maintained trail (all M=3.1) as fairly important, but less so than other groups. They desire drinking water (M=3.5), and to rarely hear and see others (M=3.1). They are seeking to be close to nature (M=4.3), to enjoy sounds and smells of nature (M=4.3), to escape noise and crowds (M=4.2), and to experience excitement/adventure (M=4.0). Setting attributes that hunters in this study prefer more than most other top seven favorite activity groups were *land area bigger than 50 acres, specific fish or other wildlife, marshes/wetlands/swamps, and agricultural farm fields*. Overall, hunters have the largest amount of mean differences for setting preferences. Hunters were more motivated by *experiencing excitement/adventure and being close to nature, and escaping noise and crowds* relative to other groups. *To depend on/develop skills and abilities* and *to enjoy the sounds and smells of nature* were more important for hunters than for two other groups. This group consisted almost

entirely of white males and over 40% were between the ages of 45-54. Low income individuals were least represented in this group.

Discussion

Outdoor recreation research that indicated that urban residents in the southeastern U.S. prefer participating in non-consumptive activities (Cordell, Betz, & Green, 2008; Overdeest & Cordell, 2001) was supported by this study. The top five activities when looking at secondary favorite activities were all non-consumptive activities. Five of the seven most popular favorite primary activities overall in this study were non-consumptive (*family or other group gathering, walking/hiking, fishing, viewing natural scenery, swimming, camping, and hunting*). The analysis of secondary favorite activities was a very important component of the study because people prefer to participate in multiple activities at the same time or on the same trip. Although they may identify with one as favorite, the other activities are also important. Six of the seven top favorite activities were also top favorite secondary activities, reinforcing their importance. Bird watching and other wildlife observation were identified as also being important by using this method which may support research that suggest that wildlife watching activities such as birding is increasing in popularity (and that they may have significant economic impacts) (Cordell & Herbert, *The Popularity of Birding is Still Growing*, 2002).

Setting attributes are a very important component of the outdoor and nature recreation experience. Stein & Lee (1995) claim that some benefits sought by outdoor recreationists require a specific combination of activity and setting to be realized (Stein & Lee, 1995). It is the setting attributes that are most able to be controlled for and/or provided by private landowners. Kyle et al. (2004) note that that much of the leisure

research focuses on activities alone and ignores the settings in which these experiences occur and that “the implications for the leisure experience within the context of the setting are not as clear”. In this study, biophysical, managerial/social, and physical/facilities settings were examined. Multivariate analysis of variance tests revealed large effect size of favorite activity on preferred biophysical and physical/facilities indicators. This suggests that these categories of setting indicators should be a critical focus for landowners interested in targeting specific activity groups. Biophysical setting attributes are likely to already be present in a landscape, though many of the most important natural characteristics highlighted in this study can also be managed for. For example, clean water and air, natural scenic beauty, variety of wildlife, and variety of plant and tree species may already exist on a property or could be developed or managed to a degree to create an opportunity setting to meet the demand. According to Loomis (1995), natural resources quality can affect all four known recreation choice decisions: (1) decision whether to participate in a recreation activity, (2) the decision of which site to visit; (3) the decision of how many trips to make to a given site; (4) the decision of how long to stay. Loomis concluded that “failure to account for increases in recreational use at all four stages of recreation decision making can lead to an underestimate of the local economic effect of improvements in recreation facilities or environmental quality.” Biophysical attributes (or natural characteristics) of the outdoor and nature recreation setting were a highlight of this study; five of the top ten most important setting attributes come from this category. Clean air and clean water were both rated as important regardless of favorite activity group. This is an important finding and supports suggestions made by others who promote the incorporation of ecological

components of recreation settings into current planning frameworks (Lee & Stafford, 2008; Morse, Hall, & Kruger, 2009).

Overall, the southeastern urbanites surveyed in this study were not the ‘roughing it’ type of recreationists as revealed by the importance placed on physical/facilities attributes like security, flush toilets, well maintained trails, cell phone reception, and hot showers. In addition, they also appear to prefer hotel/motel/resorts and equipped cabins rather than more primitive accommodations like primitive campsites and rustic cabins. Favorite activity did not have a large effect on managerial/social setting indicators collectively as evidenced by a small multivariate effect size. This may suggest that favorite activity does not play as much of a role in determining the importance of this set of preference indicators. The same was true for motivation indicators (which were all rated on the high end of the ‘importance’ scale) and constraint indicators (which were all rated on the low end of the ‘importance’ scale). Across favorite activity groups, there was an overall demand for *directional signs, on-site regulations and controls, and the ability to reserve lodging*. The preference for reservation method was not explored, but it is clear that having at least some mode of being able to lock-in overnight accommodations in advance is important across activity groups (though less so for hunters).

Teasley et al. (1999) say that one reason for looking to private lands for outdoor recreation opportunities is that public lands may not be sufficient for meeting recreational needs. This study looked at the importance of overcrowding of preferred destinations as a constraint to Southeastern urbanites participation in favorite activities. This constraint was found to be less than fairly important overall. However, the constraint indicator that

tested the importance of not having enough time and money, and lack of preferred places nearby were more important. These findings may suggest that urban recreationists need more places closer to the population centers in which they live. This may alleviate both time and proximity of opportunity constraints.

For mail surveys, respondents typically tend to have higher education than non-respondents (Kanuk & Berenson, 1975) and older people and Caucasians typically respond more frequently than their counterparts. These issues were known limitations to this study. The most important reason that many people do not respond to mail surveys is non-saliency; people will not respond if they are not interested in the topic. This survey was sent to the general population rather than known recreationists. This is evident in this study from response to a question asking how interested in participating in outdoor and nature recreation was. Only 4.4% (N=1464) said that they were not interested while 58.7% said they were very interested. The remaining 36.9% were at least somewhat interested. This suggests that survey results can be extended to those in the population that are at least somewhat interested in participating in ONR.

Demographic information of survey respondents from each Metropolitan Statistical Area was compared against the U.S. Census Data (American Community Survey 2006-2008 Population Estimates). Observations were made based on a general analysis over the eight MSAs. The 20-24 age class was underrepresented and the 45-54 and 65-74 age groups were over represented. Males are overrepresented and females were underrepresented. The middle and top income brackets were overrepresented and the lowest two were underrepresented. Residents with a Bachelors degree or beyond were overrepresented and persons with no post-secondary education were

underrepresented. ONR data from two MSAs, Atlanta and Athens may have under represented the ‘Hispanic, Latino, or other Spanish origin’ group. Caucasians were overrepresented and African Americans were underrepresented. Although the more northern MSAs have fewer African American residents, this group responded in greater to proportion to the ONR survey for these areas. In southern MSAs (Montgomery and Macon namely), there is a greater proportion of the population that is African American, but a lesser proportion of these residents responded to the survey instrument. This may be representative of saliency issues - that more southern African Americans did not identify with the purpose of the study. It is difficult to say if these are issues related specifically to non-participation in outdoor recreation, was a function of non-interest in specific survey content (which may not equal non-participation in outdoor recreation), or socioeconomic variables. Floyd (1998) states that, due to a failure of leisure researchers to “elaborate the components of ethnicity from a constructionist perspective, there is a limited understanding of ethnicity and its consequences for leisure behavior”. The responses used for this analysis were selected based on their reported willingness to participate in ONR on private lands and attempts to weight this sample to population parameters were not done.

Conclusion

Due to the growing urban populations in the Southeastern United States, interest has turned to private lands for providing outdoor recreation opportunities. A central objective in this study was to determine if urban residents in the Southeast would be willing to recreate on private lands if their desired experience existed. The results revealed that three-quarters of the survey respondents were willing. One explanation for

the demand for increased recreation opportunities may be the lack of preferred opportunities nearby residents of population cores in this region as this was identified as a constraint to participation in favorite activities. The fact that time was also an important constraint across activity groups may suggest that providing more opportunities in close proximity to urban cores may be necessary. Geographic factors may be more important and should be researched further. Overcrowding of preferred destinations was not an important constraint and may be indicative of the social nature of Southeastern urban recreationists. Results from this study do not verify or accept that public lands are not sufficient to meet urban demand in the region, rather they help to understand what it is that survey respondents were desiring in their ideal experience. Information from this study could also be used to increase the quality of recreation experience on public lands as well. It is likely that an increase of opportunities to fulfill desired outcomes of urban recreationists will be beneficial to both public and private lands.

Outdoor recreation in the south is often associated with hunting; there are a number of studies that examine hunting activities on private land. These studies are useful, but do not address the non-consumptive preferences of urban recreationists. The results from this study and others reveal that there are other types of recreation experiences that many urban southerners are seeking and willing to participate in on private lands. Non-consumptive activities like viewing natural scenery, walking/hiking, wildlife observation including bird watching, swimming, and group gathering should be a focus of recreation development efforts on private lands. These types of activities can be offered on smaller tracts of land than hunting. However, an important point to consider is that the urban dwellers in this study who chose activities other than hunting place a good

deal of importance on management and facilities attributes. Although these elements of the setting can be developed at a minimal cost, they will require management and maintenance. Leasing for hunting may be a more hands-off approach to providing recreation opportunity. Favorite activity has been shown to affect preferences for setting attributes, specifically biophysical and physical/facilities attributes. Whether offering opportunity for consumptive or non-consumptive activities, the target activity should be compared against these components of the setting opportunity in order to offer maximum benefits and minimize recreational conflicts.

This research was designed to obtain empirical information regarding the current and potential preferences for a combination of recreation activity, setting, and benefits. An attempt was made to understand what Southeastern urbanites are seeking in order to guide private landowners' decision making when developing or managing the parts of the experience that they could provide. Knowledge of the relationship between setting characteristics and desired beneficial outcomes is critical in order to provide opportunities for recreationists to achieve desired benefits; settings are the primary aspect of the recreation experience that private landowners could control. The creation of profiles by activity groups and the comparative analysis of activity effect on settings, motivations (benefits sought), and constraints helped to elicit this type of information. A subsequent step in a broader analysis from this perspective could include an examination of the effect of the most important motivation indicators on setting preferences (*to get away from the usual demands of life, to enjoy the sounds and smells of nature, and to do something with my family*).

This study has significant implications for conservation, rural economic development, and recreation opportunities for the general public. The potential demand for a diverse set of recreation activities on private land by urban residents was evaluated. This in-depth understanding of urban preferences for private land recreation is a critical first step prior to the promotion of recreation leasing as an economic opportunity for private forest owners. Results from this study offer insight into what is important for helping urban dwellers living in the interior southeastern U.S. achieve their ideal outdoor recreation experience. Demographic data was gathered to categorize potential consumers of private land recreation and will be useful in future analyses for further investigating this demand. The economic impact of outdoor and nature recreation on individual private lands in the Southeast should be further investigated for a more complete understanding. In addition, future research should include a study of private and public lands surrounding urban cores in the Southeast.

Table 1 - Setting attributes, motivation, constraint indicators and favorite activities tested in Outdoor and Nature Recreation in Southeastern U.S. study

<p>Biophysical Setting Attributes</p> <ul style="list-style-type: none"> Clean water Clean air Natural scenic beauty Variety of wildlife River or stream (flowing water) Lake or pond Variety of plant and tree species Woodland/forest Unmodified natural environment Land area bigger than 50 acres Mixture of open field and forest Specific fish or other wildlife Tree plantation Open range or pasture Marsh, wetland or swamp Agricultural farm field <p>Physical/Facilities Setting Attributes</p> <ul style="list-style-type: none"> Secure parking Drinking water Flush toilets Well maintained trail Cellular phone reception Hot showers Hotel, motel, or resort Equipped cabins (modest) Picnic tables Single track trails (biking or hiking) Developed campsite (drive-in) Cooking grills Group shelter Family or friends' home Fire rings Rustic cabins (basic) Boat launch/access Bed-n-Breakfast Primitive campsite (walk-in) Recreational Vehicle (RV) hookup Primitive road/jeep trail <p>Management/Social Setting Attributes</p> <ul style="list-style-type: none"> Ability to reserve lodging Directional signs On-site regulations and controls Educational signs and brochures Rarely hear and see others Accessibility for physically disabled Recreational equipment rental Presence of site manager 	<p>Motivations/Benefits Sought</p> <ul style="list-style-type: none"> To get away from the usual demands of life To enjoy the sounds and smells of nature To do something with my family To escape noise and crowds To be close to nature To be with friends To explore the area and learn about nature To experience excitement/adventure To promote my physical fitness/exercise To learn about the history/ culture of the area To develop my personal/spiritual values* To depend on/develop my skills and abilities <p>Constraint Indicators</p> <ul style="list-style-type: none"> Not enough time Not enough money Not enough places near me to do this activity Preferred destination was too crowded Didn't know where to go Felt unwelcome or threatened <p>Favorite Activities</p> <ul style="list-style-type: none"> Viewing natural scenery Walking/hiking/jogging/running Other wildlife observation Swimming (lakes, rivers, oceans) Family or other group gathering Fishing Bird watching Camping Biking/cycling Canoeing/kayaking Visit agricultural areas Motor sports Hunting Horseback riding
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Table 2 - Frequency table showing demographic variables by favorite activity

	Total	GG	WH	FI	VS	SW	CA	HU
FREQ Chosen as Favorite Activity*		26.9%	14.1%	12.7%	12.3%	8.6%	7.5%	6.6%
Gender								
Male	65.8%	59.2%	58.5%	88.4%	54.8%	58.1%	62.7%	98.5%
Female	34.2%	40.8%	41.5%	11.6%	45.2%	41.9%	37.3%	1.5%
Race								
Caucasian	86.2%	78.7%	88.3%	82.9%	89.5%	87.1%	97.3%	98.5%
Black or African American	11.7%	19.1%	9.5%	14.7%	9.7%	8.2%	.0%	1.5%
Other	2.2%	2.2%	2.2%	2.3%	.8%	4.7%	2.7%	.0%
Education								
Did not complete high school	3.2%	4.4%	2.1%	5.4%	2.4%	.0%	3.9%	1.5%
High school diploma or GED	15.6%	5.0%	1.9%	3.6%	1.4%	.8%	1.2%	1.7%
Some college but no degree	19.7%	20.6%	16.8%	23.3%	17.6%	18.6%	21.1%	19.4%
Associate degree	8.0%	9.2%	5.6%	10.1%	8.0%	4.7%	9.2%	7.5%
Bachelors degree	27.7%	28.7%	30.1%	23.3%	27.2%	27.9%	26.3%	29.9%
Graduate or Professional deg.	24.3%	19.5%	32.9%	13.2%	33.6%	39.5%	21.1%	13.4%
Other	1.4%	1.1%	.7%	.0%	.8%	1.2%	3.9%	6.0%
Income								
\$35,000 or less	18.2%	19.8%	18.8%	21.2%	15.8%	16.5%	21.9%	6.7%
\$35,000 to \$49,999	15.2%	17.9%	11.7%	14.4%	14.2%	13.9%	13.7%	18.3%
\$50,000 to \$74,999	23.4%	20.6%	28.1%	22.0%	22.5%	20.3%	26.0%	30.0%
\$75,000 or more	43.2%	41.6%	41.4%	42.4%	47.5%	49.4%	38.4%	45.0%
Age								
20-24	1.1%	.4%	2.8%	.0%	.0%	.0%	2.6%	3.0%
25-34	6.9%	6.6%	4.9%	7.8%	4.0%	12.6%	7.9%	7.5%
35-44	16.3%	19.4%	11.9%	11.6%	15.2%	21.8%	19.7%	13.4%
45-54	28.6%	23.1%	32.2%	27.1%	26.4%	26.4%	38.2%	41.8%
55-59	14.9%	15.0%	14.0%	14.7%	18.4%	13.8%	11.8%	14.9%
60-64	11.2%	9.2%	14.0%	10.9%	13.6%	13.8%	11.8%	6.0%
65-74	12.9%	15.4%	9.8%	17.1%	17.6%	5.7%	7.9%	7.5%
75 or older	6.2%	8.5%	7.7%	10.1%	2.4%	2.3%	.0%	6.0%

GG=Family or other group gathering, WH=Walkers/hikers/joggers/runners, FI=Fishers, VS=Viewers of natural scenery, SW=Swimmers, CA=Campers, HU=Hunters

***Remaining 11.3% chose other activity as their favorite primary activity.**

Table 3 - Frequency table showing popularity of secondary activities by most popular primary favorite activity groups

Secondary Activities:	% of Total	Frequency that secondary activities were chosen by seven most popular primary favorite activity groups						
		GG	WH	FI	VS	SW	CA	HU
Viewing natural scenery	53.9%	165	106	66	---	53	60	35
Walking/hiking/jogging/running	50.9%	157	---	50	98	59	61	33
Other wildlife observation	40.0%	79	75	43	78	21	27	37
Swimming (lakes, rivers, oceans)	30.7%	114	40	36	39	---	40	7
Family or other group gathering	28.8%	---	51	52	64	44	33	15
Fishing	25.4%	82	23	---	30	25	32	37
Bird watching	19.4%	45	35	19	35	11	17	13
Camping	16.0%	38	31	22	16	16	---	21
Biking/cycling	15.1%	38	22	16	20	20	20	0
Canoeing/kayaking	13.0%	29	20	18	15	7	23	5
Visit agricultural areas	10.0%	30	14	10	22	5	6	3
Motor sports	7.8%	22	2	10	5	4	7	20
Hunting	6.9%	22	2	24	5	0	9	---
Horseback riding	6.2%	20	8	5	9	5	5	4

GG=Family or other group gathering, WH=Walkers/hikers/joggers/runners, FI=Fishers, VS=Viewers of natural scenery, SW=Swimmers, CA=Campers, HU=Hunters

Table 4 - Favorite secondary activities by each of the most popular primary activities

	% of Group		% of Group
Family or other group gathering N=273		Swimming N=87	
1. Viewing natural scenery	60.4%	1. Walking/hiking/jogging/running	67.8%
2. Walking/hiking/jogging/running	57.5%	2. Viewing natural scenery	60.9%
3. Swimming	41.8%	3. Family or other group gathering	50.6%
4. Fishing	30.0%	4. Fishing	28.7%
5. Other wildlife observation	28.9%	5. Other wildlife observation	24.1%
Walking/hiking/jogging/running N=143		Camping N=76	
1. Viewing natural scenery	74.1%	1. Walking/hiking/jogging/running	80.3%
2. Other wildlife observation	52.4%	2. Viewing natural scenery	78.9%
3. Family or other group gathering	35.7%	3. Swimming	52.6%
4. Swimming	28.0%	4. Family or other group gathering	43.4%
5. Bird watching	24.5%	5. Fishing	42.1%
Fishing N=129		Hunting N=67	
1. Viewing natural scenery	51.2%	1. Fishing	55.2%
2. Family or other group gathering	40.3%	2. Other wildlife observation	55.2%
3. Walking/hiking/jogging/running	38.8%	3. Viewing natural scenery	52.2%
4. Other wildlife observation	33.3%	4. Walking/hiking/jogging/running	49.3%
5. Swimming	27.9%	5. Camping	31.3%
View natural scenery N=125			
1. Walking/hiking/jogging/running	78.4%		
2. Other wildlife observation	62.4%		
3. Family or other group gathering	51.2%		
4. Swimming	31.2%		
5. Bird watching	28.0%		

Table 5 – Means table showing importance of setting attributes by primary favorite activities on a Likert-type scale (1-5)*

Biophysical Setting Attributes	GG	WH	FI	VS	SW	CA	HU	∑ of Means
Clean water*	4.4	4.5	4.5	4.5	4.5	4.5	4.2	31.0
Clean air*	4.3	4.5	4.3	4.6	4.4	4.5	4.3	30.8
Natural scenic beauty	3.8	4.3	3.7	4.5	4.0	4.4	3.6	28.3
Variety of wildlife	3.3	3.7	3.8	4.0	3.4	3.7	4.3	26.2
River or stream (flowing water)	3.4	3.4	4.0	3.8	3.7	3.8	3.9	25.8
Lake or pond	3.4	3.0	4.1	3.3	3.5	3.5	3.7	24.5
Variety of plant and tree species	3.2	3.5	3.1	3.8	3.3	3.7	3.4	23.9
Woodland/forest	3.0	3.3	2.9	3.7	2.8	3.7	3.7	23.2
Unmodified natural environment	2.8	3.2	3.2	3.3	3.0	3.2	3.7	22.4
Land area bigger than 50 acres	2.6	2.9	3.1	2.6	2.5	3.2	4.1	20.9
Mixture of open field and forest	2.8	2.8	2.7	3.2	2.5	2.8	3.4	20.3
Specific fish or other wildlife	2.3	2.3	3.9	2.6	2.4	2.7	3.9	20.1
Tree plantation*	2.6	2.5	2.2	2.6	2.3	2.5	2.8	17.5
Open range or pasture*	2.2	2.2	2.1	2.5	2.0	1.9	2.7	15.6
Marsh, wetland or swamp	1.8	2.2	2.4	2.2	1.9	1.9	3.2	15.5
Agricultural farm field	1.9	1.8	2.1	2.1	1.7	1.6	2.7	13.9
Physical/Facilities Setting Attributes								
Secure parking	4.0	3.8	3.6	4.1	4.0	3.6	3.1	26.3
Drinking water	3.9	3.7	3.4	4.0	3.8	3.8	3.5	26.1
Flush toilets	4.0	3.5	3.4	3.9	4.0	3.4	3.1	25.2
Well maintained trail	3.9	3.9	3.1	4.0	3.6	3.6	3.1	25.2
Cellular phone reception	3.4	3.2	3.1	3.4	3.4	2.7	2.9	22.1
Hot showers*	3.2	2.8	2.8	3.1	3.2	3.2	2.8	21.1
Hotel, motel, or resort	3.5	2.9	2.9	3.6	3.6	1.9	2.3	20.8
Equipped cabins (modest)	3.3	2.9	2.8	3.2	3.2	2.1	2.7	20.2
Picnic tables	3.2	2.8	2.6	2.9	2.8	3.4	2.2	19.9
Single track trails (biking or hiking)*	2.7	2.9	2.3	3.0	2.7	3.1	2.6	19.4
Developed campsite (drive-in)	2.6	2.3	2.5	2.4	2.4	3.8	2.5	18.6
Cooking grills	3.0	2.4	2.8	2.5	2.7	2.8	2.3	18.5
Group shelter	3.1	2.5	2.4	2.7	2.5	2.3	2.3	17.7
Family or friends' home	3.0	2.3	2.4	2.7	2.8	2.1	2.3	17.7
Fire rings	2.3	2.1	2.1	2.3	2.1	3.6	2.4	17.0
Rustic cabins (basic)*	2.4	2.3	2.3	2.3	2.4	2.1	2.3	16.2
Boat launch/access	2.0	1.7	3.5	1.8	2.1	2.0	2.4	15.5
Bed-n-Breakfast	2.6	2.2	1.8	2.6	2.4	1.7	1.6	14.7
Primitive campsite (walk-in)	2.0	2.0	2.0	1.8	2.0	2.6	2.3	14.7
Recreational Vehicle (RV) hookup	2.0	1.6	2.3	1.9	1.5	2.7	1.8	13.9
Primitive road/jeep trail*	2.0	1.7	2.0	1.8	1.6	2.0	2.4	13.5
Management/Social Setting Attributes								
Ability to reserve lodging	3.8	3.5	3.4	4	3.8	3.4	2.8	24.6
Directional signs	3.7	3.7	3.3	3.9	3.9	3.4	2.6	24.4
On-site regulations and controls*	3.1	2.9	2.9	3.3	3.0	2.9	2.8	20.9
Educational signs and brochures	3.1	3.2	2.5	3.3	3.0	2.7	2.3	20.0
Rarely hear and see others	2.3	2.7	2.5	2.7	2.3	2.5	3.1	18.0
Accessibility for physically disabled	2.9	2.3	2.5	2.7	2.4	2.3	2.2	17.2
Recreational equipment rental	2.5	2.2	2	2.4	2.5	2.1	1.8	15.5
Presence of site manager	2.5	2.1	2.1	2.5	2.3	2.3	1.7	15.5
Ability to be in large groups (8 or more)	2.8	1.8	1.9	2	2.4	2.1	1.9	14.8

*Indicators where favorite activity showed no statistically significant effect on setting attribute importance. Scale: (1=not important all, 2=somewhat important, 3=fairly important, 4=quite important, 5=very important) GG=Family or other group gathering, WH=Walkers/hikers/joggers/runners, FI=Fishers, VS=Viewers of natural scenery, SW=Swimmers, CA=Campers, HU=Hunters. Bolded means are at least fairly important.

Table 6 - Means table showing importance of motivation and constraint indicators on a Likert-type scale (1-5)

	GG	WH	FI	VS	SW	CA	HU	Σ of Me ans
Motivations/Benefits Sought								
To get away from the usual demands of life*	4.1	4.2	4.1	4.3	4.2	4.4	4.3	29.7
To enjoy the sounds and smells of nature	3.8	4.1	4.0	4.3	3.8	4.4	4.3	28.6
To do something with my family*	4.3	3.9	4.1	4.0	4.1	4.2	3.9	28.4
To escape noise and crowds	3.7	4.0	3.7	4.0	3.6	4.2	4.2	27.5
To be close to nature	3.4	4.0	3.7	4.1	3.4	4.3	4.3	27.1
To be with friends	4.0	3.4	3.8	3.3	3.7	3.7	3.6	25.3
To explore the area and learn about nature	3.4	4.0	3.2	4.0	3.3	3.9	3.5	25.3
To experience excitement/adventure	3.3	3.3	3.5	3.4	3.4	3.7	4.0	24.6
To promote my physical fitness/exercise	3.4	4.0	3.1	3.4	3.5	3.4	3.0	23.8
To learn about the history/ culture of the area	3.4	3.8	3.0	3.9	3.2	3.4	3.1	23.7
To develop my personal/spiritual values*	3.3	3.5	3.0	3.5	3.1	3.2	3.1	22.8
To depend on/develop my skills and abilities	2.8	3.1	3.1	2.7	2.6	3.1	3.4	20.8
Constraint Indicators								
Not enough time*	3.6	3.7	3.6	3.8	3.9	4.0	4.1	26.8
Not enough money	2.9	2.4	2.5	3.2	3.6	2.7	2.7	20.0
Not enough places near me to do this activity*	2.5	2.4	2.4	2.5	3.0	2.4	2.5	17.6
Preferred destination was too crowded*	1.6	1.7	1.7	1.9	1.7	2.0	1.5	12.3
Didn't know where to go*	1.5	1.7	1.8	1.7	1.6	1.7	1.1	11.1
Felt unwelcome or threatened*	1.3	1.3	1.3	1.5	1.3	1.2	1.2	8.90

*Indicators where favorite activity showed no statistically significant effect on motivation/constraint importance. Scale: (1=not important all, 2=somewhat important, 3=fairly important, 4=quite important, 5=very important) GG=Family or other group gathering, WH=Walkers/hikers/joggers/runners, FI=Fishers, VS=Viewers of natural scenery, SW=Swimmers, CA=Campers, HU=Hunters. Bolded means are at least quite important.

Table 7 - Results from MANOVA testing the effect of favorite activity on dependent variable categories

Dependent Variable Category	Multivariate Results
Biophysical Setting	F (96, 3408) = 5.039, p=.000, partial eta squared=.124
Attributes	
Physical/Facilities	F (126, 4404) = 5.043, p=.000, partial eta squared=.126
Managerial/Social	F (54, 4734) = 4.675, p=.000, partial eta squared=.051
Motivations	F (72, 4986) = 5.751, p=.000, partial eta squared=.077
Constraints	F (36, 3900) = 2.507, p=.000, partial eta squared=.023

Table 8 – Results of one-way between-subjects testing effects of favorite activity on setting indicators

	F	Sig.	Partial Eta Squared
Managerial/Social $\alpha=.005$			
Presence of site manager	5.213	0.000	0.038
Educational signs and brochures	7.458	0.000	0.053
Directional signs	10.382	0.000	0.073
Accessibility for physically disabled (trails)	3.497	0.002	0.026
Ability to reserve lodging	7.048	0.000	0.051
Recreational equipment rental	3.909	0.001	0.029
Rarely hear and see others	4.189	0.000	0.031
Ability to be in large groups (8 or more)	17.094	0.000	0.115
Physical/Facilities $\alpha=.002$			
Well maintained trail	8.137	0.000	0.061
Equipped cabins (modest)	9.084	0.000	0.068
Primitive campsite (walk-in)	3.778	0.001	0.029
Developed campsite (drive-in)	10.155	0.000	0.075
Recreational Vehicle (RV) hookup	8.652	0.000	0.065
Hotel, motel, or resort	19.666	0.000	0.136
Bed-n-Breakfast	11.038	0.000	0.081
Family or friends' home	5.853	0.000	0.045
Picnic tables	8.117	0.000	0.061
Fire rings	12.755	0.000	0.093
Cooking grills	4.759	0.000	0.037
Group shelter	9.353	0.000	0.070
Drinking water	3.787	0.001	0.029
Flush toilet	8.582	0.000	0.064
Secure parking	7.431	0.000	0.056
Boat launch/access	24.239	0.000	0.163
Cellular phone reception	3.884	0.001	0.030
Biophysical $\alpha=.003$			
Land area bigger than 50 acres	11.116	0.000	0.103
Unmodified natural environment	6.144	0.000	0.060
River or stream (flowing water)	5.434	0.000	0.053
Lake or pond	9.510	0.000	0.090
Marsh, wetland or swamp	10.173	0.000	0.096
Agricultural farm field	4.433	0.000	0.044
Mixture of open field and forest	4.177	0.000	0.042
Woodland/forest	10.413	0.000	0.098
Natural scenic beauty	9.481	0.000	0.090
Variety of plant and tree species	4.315	0.000	0.043
Variety of wildlife	7.464	0.000	0.072
Specific fish or other wildlife	20.477	0.000	0.175

Table 9 - Results of one-way between-subjects testing effects of favorite activity on motivation and constraint indicators

	F	Df	Sig.	Partial Eta Squared
Motivation Indicators $\alpha=.003$				
To be close to nature	15.990	14.849	.000	.096
To escape noise and crowds	7.156	6.375	.000	.044
To experience excitement/adventure	4.906	3.302	.003	.023
To be with friends	11.048	8.582	.000	.058
To explore the area and learn about nature	12.951	10.906	.000	.073
To learn about the history/ culture of the area	13.135	9.763	.000	.065
To promote my physical fitness/exercise	12.893	9.898	.000	.066
To depend on/develop my skills and abilities	7.013	4.496	.000	.031
To enjoy the sounds and smells of nature	7.847	7.877	.000	.053
Constraints $\alpha=.003$				
Not enough money	7.059	6	0.000	0.061

Table 10 - MANOVA post hoc analyses showing positive statistically significant mean differences for setting indicators by favorite activity group

	Σ mean diff.	GG	WH	FI	VS	SW	CA	HU
Family or other group gatherers								
Ability to be in large groups (8 or more)	4.53		1.07	0.97	0.80	---	0.77	0.93
Group shelter	3.99		0.69	0.85	---	0.63	0.84	0.98
Hotel, motel, or resort	3.70		0.47	0.54	---	---	1.54	1.15
Bed-n-Breakfast	3.31		0.48	0.76	---	---	1.01	1.07
Family or friends' home	2.82		0.67	0.54	---	---	0.93	0.69
Flush toilets	2.35		---	0.68	---	---	0.63	1.04
Cooking grills	1.86		0.62		0.54	---	---	0.70
Picnic tables	1.54		---	0.52	---	---	---	1.02
Well maintained trail	1.36		---	0.65	---	---	---	0.71
Educational signs and brochures	1.34		---	0.58	---	---	---	0.76
Presence of site manager	1.26		0.41	---	---	---	---	0.85
Walkers/Hikers								
Hotel, motel, or resort	1.74	---		---	---	---	1.06	0.68
Educational signs and brochures	1.50	---		0.66	---	---	---	0.84
Well maintained trail	1.40	---		0.67	---	---	---	0.73
Bed-n-Breakfast	1.12	---		---	---	---	0.53	0.59
Fishers								
Boat launch/access	9.22	1.49	1.80		1.72	1.42	1.62	1.18
Specific fish or other wildlife	7.39	1.58	1.57		1.32	1.62	1.30	---
Lake or pond	4.24	0.84	1.10		0.97	0.69	0.64	---
Recreational Vehicle (RV) hookup	1.48	---	0.69		---	0.79	---	---
River or stream (flowing water)	1.36	0.63	0.73		---	---	---	---
Marsh, wetland or swamp	1.30	0.64			---	0.66	---	---
Viewers of Natural Scenery								
Hotel, motel, or resort	4.31	---	0.63	0.69		---	1.69	1.30
Natural scenic beauty	4.05	0.83	0.50	0.96		0.71	---	1.05
Woodland/forest	3.54	0.83	0.70	0.81		1.20	---	---
Bed-n-Breakfast	2.49	---	---	0.64		---	0.89	0.95
Secure parking	2.29	---	---	0.53		---	0.62	1.14
Directional signs	1.91	---	---	0.66		---	---	1.25
Ability to reserve lodging	1.73	---	---	0.54		---	---	1.18
Well maintained trail	1.61	---	---	0.77		---	---	0.84
Educational signs and brochures	1.61	---	---	0.71		---	---	0.89
Flush toilets	1.57	---	---	0.61		---	---	0.96
Variety of plant and tree species	1.55	0.78	---	0.77		---	---	---
Variety of wildlife	1.46	0.74	---			0.72	---	---
Swimmers								
Hotel, motel, or resort	4.30	---	0.62	0.69	---		1.69	1.30
Flush toilets	1.75	0.70	---	---	---		---	1.05
Directional signs	1.75	---	---	0.58	---		---	1.17
Bed-n-Breakfast	1.59	---	---	---	---		0.76	0.83
Ability to be in large groups (8 or more)	1.24	---	0.67	0.57	---		---	---
Campers								
Fire rings	8.19	1.29	1.48	1.54	1.33	1.37		1.17
Developed campsite (drive-in)	7.84	1.11	1.43	1.28	1.37	1.35		1.31
Recreational Vehicle (RV) hookup	5.15	0.74	1.15	---	0.94	1.25		1.08
Woodland/forest	3.57	0.83	0.70	0.82	---	1.21		---
Picnic tables	2.70	---	0.59	0.81	---	---		1.30
Natural scenic beauty	1.95	0.53	---	0.66	---	---		0.76
Land area bigger than 50 acres	1.45	0.67	---	---	---	0.79		---
Primitive campsite (walk-in)	1.35	0.60	---	---	0.75	---		---

Hunters								
Land area bigger than 50 acres	7.68	1.53	1.30	0.97	1.36	1.65	0.86	
Specific fish or other wildlife	6.98	1.50	1.49	---	1.24	1.54	1.22	
Marsh, wetland or swamp	5.88	1.33	0.98	---	1.02	1.34	1.21	
Agricultural farm field	3.40	0.72	0.71	---	---	1.01	0.96	
Woodland/forest	2.56	0.73	---	0.72	---	1.11	---	
Variety of wildlife	2.51	0.94	0.64	---	---	0.93	---	
Rarely hear and see others	1.36	0.67	---	---	---	0.69	---	

*Positive mean differences at .05 alpha level are shown – indicators listed are more important for the favorite activity that they are listed under than the activities in the columns on the right. Example: Ability to be in large groups is more important for Family or other group gatherers than for WH, FI, VS, CA, and HU. Sums of mean differences in rank order reveal additive effect of differences across other activities.

Scale: 1=not important all, 2=somewhat important, 3=fairly important, 4=quite important, 5=very important
GG=Family or other group gathering, WH=Walkers/hikers/joggers/runners, FI=Fishers, VS=Viewers of natural scenery, SW=Swimmers, CA=Campers, HU=Hunters

Table 11 - MANOVA post hoc analyses showing positive statistically significant mean differences for setting indicators by favorite activity group

	Σ mean diff.	GG	WH	FI	VS	SW	CA	HU
Family or other group gatherers								
To be with friends	1.43		0.68	---	0.75	---	---	---
Walkers/Hikers								
To promote my physical fitness/exercise	4.55	0.62		0.91	0.67	0.57	0.65	1.13
To learn about the history/culture of the area	2.60	0.48		0.81	---	0.60	---	0.71
To explore the area and learn about nature	2.02	0.63		0.72	---	0.67	---	---
To be close to nature	1.22	0.62		---	---	0.60	---	---
To escape noise and crowds	0.88	0.36		---	---	0.52	---	---
Fishers								
To be with friends	0.99	---	0.46		0.53	---	---	---
Viewers of Natural Scenery								
Not enough money	1.66	---	0.86	0.80		---	---	---
To learn about the history/culture of the area	2.87	0.54	---	0.88		0.67	---	0.78
To explore the area and learn about nature	1.99	0.62	---	0.71		0.66	---	---
To be close to nature	1.30	0.66	---	---		0.64	---	---
To enjoy the sounds and smells of nature	1.11	0.54	---	---		0.57	---	---
Swimmers								
Not enough money	4.62	0.65	1.16	1.10	---		0.87	0.84
Campers								
To be close to nature	2.23	0.84	---	0.57	---	0.82		---
To explore the area and learn about nature	1.65	0.50	---	0.60	---	0.55		---
To escape noise and crowds	1.61	0.48	---	0.50	---	0.63		---
To enjoy the sounds and smells of nature	1.24	0.61	---	---	---	0.63		---
Hunters								
To experience excitement/adventure	2.60	0.65	0.66	---	0.66	0.63	---	
To be close to nature	2.30	0.87	---	0.59	---	0.84	---	
To escape noise and crowds	1.75	0.52	---	0.55	---	0.68	---	
To depend on/develop my skills and abilities	1.40	---	---	---	0.68	0.72	---	
To enjoy the sounds and smells of nature	1.06	0.52	---	---	---	0.54	---	

*Positive mean differences at .05 alpha level are shown – indicators listed are more important for the favorite activity that they are listed under than the activities in the columns on the right. Sums of mean differences in rank order reveal additive effect of differences across other activities.

Scale: 1=not important all, 2=somewhat important, 3=fairly important, 4=quite important, 5=very important
GG=Family or other group gathering, WH=Walkers/hikers/joggers/runners, FI=Fishers, VS=Viewers of natural scenery, SW=Swimmers, CA=Campers, HU=Hunters

Table 12 – Frequency table showing preferences for number of companions, distance willing to travel, and amount willing to pay by favorite activity

	TOT	GG	WH	FI	VS	SW	CA	HU
Desired number of companions desired								
1 person (alone)	2.0%	1.1%	3.5%	3.9%	2.4%	2.3%	0.0%	0.0%
2 people	16.5%	6.6%	25.9%	21.7%	28.8%	10.3%	14.5%	13.4%
3-5 people	48.5%	40.4%	47.6%	54.3%	51.2%	51.7%	50.0%	61.2%
6-10 people	25.5%	37.9%	17.5%	17.1%	13.6%	28.7%	27.6%	25.4%
More than 10 people	7.5%	14.0%	5.6%	3.1%	4.0%	6.9%	7.9%	0.0%
Distance willing to travel one way								
Up to 25 miles	3.1%	2.9%	6.3%	1.6%	3.2%	2.3%	0.0%	4.5%
26-50 miles	6.3%	6.2%	6.3%	9.3%	3.2%	3.4%	5.3%	11.9%
51-100 miles	16.2%	19.4%	16.8%	14.0%	9.6%	12.6%	21.1%	17.9%
101-200 miles	20.0%	17.2%	23.8%	25.6%	12.0%	24.1%	25.0%	16.4%
201-300 miles	15.7%	19.8%	8.4%	12.4%	16.0%	20.7%	17.1%	11.9%
More than 300 miles	38.7%	34.4%	38.5%	37.2%	56.0%	36.8%	31.6%	37.3%
Amount willing to pay per person per day								
\$0	2.9%	2.6%	4.9%	2.3%	1.6%	0.0%	2.6%	7.5%
\$1-5	6.6%	5.2%	10.5%	7.0%	6.4%	5.7%	7.9%	3.0%
\$6-10	16.6%	18.5%	16.1%	10.2%	16.0%	16.1%	15.8%	25.4%
\$11-20	19.4%	18.9%	18.2%	19.5%	20.8%	17.2%	31.6%	10.4%
\$21-30	17.3%	18.5%	20.3%	14.8%	17.6%	16.1%	21.1%	7.5%
More than \$30	37.2%	36.3%	30.1%	46.1%	37.6%	44.8%	21.1%	46.3%

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Chapter 3

An Analysis of the Effects of Race and Gender on Components of a hypothetical Ideal Outdoor Recreation Experience for Southeastern Urbanites

Abstract

This paper presents partial results from a mail results on Outdoor and Nature Recreation in the Southeast United States. Residents of eight Metropolitan Statistical Areas in the interior Southeastern United States were surveyed about their activity and setting preferences. Motivation and constraint indicators were also tested. Specifically, the effect of race (African American/Caucasian) and gender on components of the Outdoor Recreation Experience were analyzed. Descriptive statistics and multivariate analyses of variance were implemented. Race had strong multivariate effects on dependent variable categories. Gender had only small multivariate effects. No multivariate interaction effects were identified for race and gender. Gender was a greater factor in activity selection than was race, although significant proportional differences were found for each independent variable.

Introduction

Nature-based recreation and tourism have become one of the main industries identified as having the potential to assist rural communities in developing stronger economic diversity (Byrd & Cardenas, 2006; McGehee & Andereck, 2004). Urban growth has led to a loss of forests changing the character of the landscape and the demographics of the region. Estimations from the US Forest Service reveal that nearly 4.9 million hectares of forestland in the Southeastern United States have been lost to urban development and that an additional 7.7 million hectare could be lost by 2040; the majority of this land is non-industrial private forestland (Bliss, 2003). Commercial forestry, competition between forest and agriculture, economic and population growth, and changes in transportation and technology (Napton, Auch, Headley, & Taylor, 2010) are serving as drivers of economic, social, and ecological change. Population growth is higher than the national average in the south and the rapid increase in population is predominantly seen in urban cores and surrounding areas (U.S. Dept of Commerce, 2001). Private landowners in rural areas have the opportunity to take advantage of the development potential of tourism and outdoor recreation and for this reason, it is important to understand the recreation preferences of the growing urban population. Specifically, understanding preferences by urbanites in the Southeast for recreation settings as part of their ideal recreation experience will help rural landowners develop recreation opportunities for diverse and growing urban populations.

A challenge that faces researchers [and landowners] is trying to understand how past, current, and future populations differ in their recreation demands (Cordell, Betz, & Green, 2002). Virden and Walker (1999) found that significant differences exist across

ethnicity/race and gender groups. Studies that analyze race and gender together when looking at setting preferences are few. Approximately 25% of the population in the Southeast United States is African American, over 40% in some cities like Montgomery, Alabama and Macon, Georgia (US Census Bureau, 2007), and even more in other areas. Cordell, Betz, and Green (2008) note that 46.9% of the African American population nationwide resides in the South and are clustered around major urban centers. This demographic characteristic of the region is reason alone to analyze African Americans and their Caucasian counterparts independently with respect to nature recreation preferences. A history of social stratification in the region is also an important reason to monitor the social construct of race with regard to outdoor recreation demand. Schelhas (2002) cautions that “the failure to recognize the diverse values and uses that different racial and ethnic groups have for natural resources has the same exclusionary effect as discrimination.”

Floyd, Taylor, & Whitt-Glover (2009) point out that recreation research shows consistently that that park-use patterns, recreation setting preferences, and constraints to park use vary by race and ethnicity. Floyd et al. (2008) published a review of research on race and ethnicity in leisure studies from five major journals. They found that although the number of peer-reviewed articles related to race and ethnicity has shown a substantial increase over time (relative to the entire literature), they represent only a sub-topical area of research. They suggest that there is limited understanding of basic constructs from different racial and ethnic group perspectives. An assessment of the gaps in race/ethnicity and leisure studies can be found in Gomez (2008). Gaps identified were: (1) the need for replication of previous studies (2) the need to diversify location of studies

(3) the role of language in leisure (4) the role of values and leisure/recreation and (5) more exploration on role of dominant ideologies. National surveys have shown that African Americans are significantly less likely than Caucasian Americans to engage in forest-based activities such as camping and hiking or water-related activities other than fishing (Johnson, Bowker, & Cordell, 2001). Shinew et al. (2006) discuss the evolving nature of racial and ethnic research in leisure studies; they are concerned with methodological issues related to the traditional self-identification of race/ethnicity in this field of research. Johnson and Bowker (2004) write about the various factors in history that may have negatively impacted black perceptions of wild lands; they note that because modern, urban, black populations are more removed from the land than their earlier rural predecessors, they may be more removed from negative images of wild lands as well (Johnson & Bowker, 2004). Dwyer and Hutchison (1990) found that African Americans placed greater importance on *social interaction* and *developed facilities and conveniences* than Caucasians.

Henderson (2009) claims that to research diversity as a single independent variable is insufficient. Leisure can be further understood by analyzing and interpreting it within the context of gender, as it is a common construct of human behavior (Henderson, 1994). Some recreation studies show gender differences for recreation setting preferences including a greater preference for developed and secure settings (Bialeschki & Hicks, 1998; Henderson, 1994; Ho, Sasidharan, Elmendorf, Willits, Graefe, & Godbey, 2005; Virden & Walker, 1999). Lee, Scott, and Floyd (2001) found that women are more likely than men to be influenced by children's and spouse's preferences with regard to the selection of leisure activity. In an examination of preferences, visitation

patterns, and perceived benefits of urban parks by ethnically diverse adults in Atlanta and Philadelphia, gender was not a predictor of differences (Ho et al., 2005). Lee et al. (2007) found that females were more likely to consider physical safety when choosing recreation sites. It has been suggested that race and ethnicity interact with gender to affect outdoor recreation participation (Floyd, Shinew, McGuire, & Noe, 1994). Analyzing race and gender together prevents the social identity of recreationists in this study from being defined by one demographic characteristic alone.

Conceptual Framework

A generally accepted outdoor recreation framework, the Outdoor Recreation Experience Model, was used for the design of the research presented here. This framework is based on the idea that people will participate in certain behaviors in order to meet their own specific needs and that it will help them obtain what they are wanting. (Moore & Driver, 2005 p.15). Moore and Driver (2005) state that outdoor recreation behavior can be understood as a means to achieve a psychological or physiological outcome or benefit. The component of motivations, preferences, and abilities (to conduct activities in settings to produce outcomes/benefits) are all combined by outdoor recreationists. A recreation opportunity is the availability of a real choice for a user to participate in a preferred activity within a preferred setting in order to realize the satisfying experiences which are desired. This framework was used to develop a hypothetical 'Ideal Recreation Experience' for current and potential recreationists. Desired outcomes that move individuals to participate in activities in particular settings to achieve a particular benefit or set of benefits are often referred to as motivations. Empirical testing was performed by Manfredo, Driver, & Tarrant (1996) to identify and

measure specific desired and/or realized recreation outcomes/benefits; the full list of domains and scales can be found in Moore & Driver (2005) and Driver (B.L. Driver (ed.), 2008). Using this framework, the recreation setting has been divided into biophysical, physical, social, and managerial characteristics of a site.

Shinew, Floyd, & Parry (2004) recognize a constraint to leisure as “anything that inhibits people’s ability to participate in leisure activities, to spend more time doing so, or to take advantage of leisure services, or to achieve a desired level of satisfaction”.

Manning (2000) suggests research that examines the variables that best reflect the integrity of natural and cultural resources within the biophysical and social domains. The overall recreation experience includes biophysical, managerial, and social settings.

Constraint indicators were utilized primarily to compare against other studies as related to race, gender (Floyd, Taylor, & Whitt-Glover, 2009; Henderson, 1994).

This study looked at the entire Recreation Experience Model to study the effect of race and gender on ONR preferences for setting attributes, motivations, and constraints. This information is valuable for land managers, recreation planners, and researchers working in the southeastern United States. The analysis represented in this paper is part of a larger study focused on the development of recreation opportunities on private lands; therefore, results are specific to study participants who are willing to participate in ONR on private lands. Dependent variable categories of activity preference, importance of setting attributes, as well as motivation and constraint indicators were compared for two bivariate independent variables: race (Caucasian and African American) and gender (Male and Female).

Research Methods

Survey Administration

This study utilized a quantitative mail survey instrument based on a modified Tailored Design Method (TDM). Both paper and online response formats were implemented. This study here is representative of partial results from the questionnaire which had 55 questions. The paper questionnaire had a full color cover and was presented in a medium sized booklet. The online version of the questionnaire was created to simulate the paper version in design. Four steps were included in the survey administration process (1) a prenotice letter was sent to prepare the study participant for the upcoming request to participate (2) a full survey packet consisting of a questionnaire, online questionnaire instruction sheet, cover letter, self-addressed and stamped return envelope, and a novelty sticker as a reward; (3) a thank you note and postcard reminder; and (4) a full follow-up survey packet. Several types of answer responses were used including categories, Likert-type scales, and open-ended write-ins according to the appropriateness for the question type. The Likert-type items allowed respondents to specify the level of importance of recreation experience attributes on a scale of one to five (where 1=not important at all and 5=very important).

A general public sample of 8,000 individuals was purchased from Survey Sampling International, Inc. This sampling firm uses the Directory Listed database from SSI, an updated version of the residential white page listings. The sample was generated randomly using an nth selection method across each of the eight Metropolitan Statistical Areas. One thousand records were purchased from each of eight urban cores. Bad addresses were eliminated or changed based on a National Change of Address and the

final sample included nine hundred records from each of the following eight MSAs: (1) Atlanta-Sandy Springs-Marietta, Georgia; (2) Athens-Clarke County, GA; (3) Birmingham-Hoover, AL; (4) Chattanooga, TN-GA; (5) Columbus, GA-AL; (6) Huntsville, AL; (7) Macon, GA; and (8) Montgomery, AL.

Independent variables of race (African American/Caucasian) and gender (male/female) were analyzed for ten categories of dependent variables. The first category was favorite activities which were based on consumptive and non-consumptive activities considered being within reasonable development reach of private landowners. The list included fourteen activities which can be seen in Table 1. Study participants were asked to identify their favorite activity to participate in away-from-home in rural settings; they were asked to choose up to five other activities that they also like to do on the same trip as their favorite activity from the same list. Next, they were presented with six indicators to measure constraints to participation in their favorite activities over the twelve month time period prior to the completion of the survey; the six constraint indicators measured which were taken from current constraint literature and although not comprehensive, they were designed to address two commonly cited constraints (money and time)(Shores, Scott, & Floyd, 2007; White, 2008) and issues related to access, crowding, and comfort. Following the constraint indicators, they were asked to choose how important a variety of setting attributes were, including biophysical attributes, for creating their ideal recreation experience for those activities. Indicators representing biophysical attributes of the recreation setting were developed to distinguish between landscape and ecological quality of an area. Other setting indicators focused on the types of non-natural components that could be provided by a private landowner: facilities/amenities, management/development

and overnight accommodations. Indicators representing the preferences for social/companionship factors were analyzed. After the ideal recreation experience was described, respondents were asked to tell how important each of a list of motivations was for wanting to participate in the hypothetical ONR experience that they created. Motivation indicators represented a cross section of domains from the Recreation Experience Preference scales and were related closely to Roggenbuck and Driver's benefit indicators from a study on non-facilitated uses of wilderness (Roggenbuck & Driver, 2000). Finally, demographic data were also elicited including gender and race.

Data Analysis

Categorical Data. For categorical data (favorite activity), frequencies were calculated overall and the top seven most popular favorite activities were selected for further analyses using cross tabulations. Statistically significant proportional differences among race and gender groups were identified by Chi-Square tests (bivariate variables were used for the favorite activities producing 2x2 tests, therefore requiring the use of the Yate's Correction for Continuity) (Pallant, 2005).

Likert Type Scale Data. Multivariate analyses of variance (MANOVAs) for each of eight categories of continuous dependent variables were performed in order to identify main and interaction effects of gender and race on each individual dependent variable when examined together. Between-subjects analyses were then performed and means analyzed for each dependent variable to discover where the exact differences were.

Results

Survey Response

Completed surveys were received from a total of 1,480 residents across the eight metropolitan statistical areas sampled for a total response rate of 23% (63.5% male/36.5% female and 85.1% Caucasian/12.5% African American). More males and Caucasians responded which may indicate that higher level of interest in the topic of the survey by these groups. Data analysis for this study focused on survey respondents who expressed interested in recreating on private lands by answering yes to the following question: “If an individual private landowner offered access to their land to participate in your favorite activities in your ideal setting, would you recreate on their land in the next year?” reducing the number of questionnaires in the analysis to 1,124 (66.3% male/33.7% female and 85.6% Caucasian/12.0% African American) Respondents from each other race group were 2% or less. Respondents having at least some post-secondary education were 81.3% with the remaining having none. Over half (55.1%) of survey respondents were between the ages of 45 and 74 with the remaining under 45 (25.0%) and 75 or over (19.9%). Each MSA was represented by at least 10% of overall respondents. Demographic and geographic information can be seen in detail in Table 2.

Frequency and Chi-Square Tests

The seven most popular favorite primary activities were family or other group gathering (26.9%), walking/hiking/running/jogging (14.1%), fishing (12.7%), viewing natural scenery (12.3%), swimming (8.6%), camping (6.8%), and hunting (6.1%) (Table 3). The chi-square test for gender across each of seven most popular favorite primary activities revealed that the difference in the proportion of males and females was

statistically significant for all primary favorite activity except for swimming and camping. The chi-square test revealed statistically significant differences for race for three of the top seven favorite primary activities. Proportionately more African Americans chose family or other group gathering than did Caucasians and proportionately more Caucasians chose camping and hunting as favorite activities. Results from these tests and frequency statistics for the top seven favorite activities for each level of gender and race can be seen in Tables 4 and 5. When secondary activities were examined, viewing natural scenery, walking/hiking, observing wildlife, and swimming, and family or other group gathering emerged as most popular (see Table 4 for complete list by race and gender). Also see Figures 1-4.

Multivariate Analyses of Variance

Eight separate one-way between-groups multivariate analyses of variance were performed to investigate the effect of gender and race on outdoor recreation setting preferences. Preliminary assumption testing was conducted to check for normality, linearity, univariate/multivariate outliers, and multicollinearity with no serious violations noted. Box's tests of Equality of Covariance Matrices were statistically significant for each MANOVA, indicating that the dependent variable covariance matrices were not equal across the levels of gender and race. The unequal variances were likely a function of unequal group sample sizes and it was therefore decided to proceed with the analyses rather than transform the dependent measures. Pillai's trace was used to assess the multivariate effects. Bartlett's Tests of sphericity were also all statistically significant for all of the data sets indicating sufficient correlation between the dependent variables to proceed with the analyses. Results from each multivariate tests can be seen in Table 6.

There were statistically significant differences between males and females as well as Caucasians and African Americans for the combined dependent variables for each of the eight multivariate analyses performed. There were no statistically significant interaction effects. Partial eta squared values revealed the percentage of variance in each of the effects and the associated error accounted for by the effect. For gender, there were no values over 5% indicating relatively low effect of gender on the sets of combined indicators. For race, there were medium multivariate effects (of around 8%) for Biophysical/Landscape, Overnight Accommodations, and Motivations indicators. Large multivariate effect sizes were revealed for Facilities/ Amenities (14%) and Management/Development (13%) indicators indicating that race had an overall greater effect on these combined indicators. Race appears to be a more important factor affecting recreation preferences overall.

Univariate Between-Groups Analysis of Variance

Univariate between-groups analyses were also conducted to determine which dependent variables had differences between gender and race groups. When the results for the each dependent variable were considered independently, a Bonferroni adjusted alpha level was applied. For each category of setting indicators, the desired alpha level of .05 was divided by the number of dependent variables in the set. The alpha level used for each can be seen along with results from these tests and mean scores in Tables 7-10.

Effects of Gender on Setting Preferences and Motivation/Constraint Indicators

Biophysical (Landscape and Quality). There was a statistically significant difference between males and females on five of the fifteen Biophysical (Landscape and Quality) setting indicators. Males placed greater importance on landscape attributes

while females did for quality attributes. Males prefer *land areas bigger than 50 acres*, $F(1, 986) = 17.53$, $p = .000$, partial eta squared = .017 and *marsh, wetland, or swamp*, $F(1, 986) = 9.68$, $p = .002$, partial eta squared = .010. Females placed greater importance on *clean air*, $F(1, 990) = 18.22$, $p = .000$, partial eta squared = .018, *clean water*, $F(1, 990) = 21.79$, $p = .000$, partial eta squared = .022, and *variety of plant and tree species*, $F(1, 990) = 8.29$, $p = .004$, partial eta squared = .008.

Facilities/Amenities. For this set of dependent variables, five of the eleven setting indicators were rated statistically higher by females than males. Males did not prefer any facilities/amenities setting attributes more than females. The five dependent variables where females had statistical differences compared to males were *drinking water*, $F(1, 920) = 9.69$, $p = .002$, partial eta squared = .010; *flush toilets*, $F(1, 920) = 19.82$, $p = .000$, partial eta squared = .02; *cellular phone reception*; $F(1, 920) = 11.11$, $p = .001$, partial eta squared = .012; *hot showers*, $F(1, 920) = 13.19$, $p = .000$, partial eta squared = .014; and *group shelter* $F(1, 920) = 16.73$, $p = .000$, partial eta squared = .018.

Management/Development. Females rated all of the Management/Development setting indicators, except for one, statistically more important than did males. Well maintained trails $F(1, 946) = 18.97$, $p = .000$, partial eta squared = .02; *directional signs*, $F(1, 946) = 13.48$, $p = .000$, partial eta squared = .014; *educational signs and brochures* $F(1, 946) = 12.57$, $p = .000$, partial eta squared = .013; *on-site regulations and controls*, $F(1, 946) = 9.33$, $p = .002$, partial eta squared = .010; *accessibility for physically disabled*, $F(1, 946) = 10.29$, $p = .001$, partial eta squared = .011; *presence of site manager* $F(1, 946) = 9.29$, $p = .010$, partial eta squared = .02, and *recreational equipment rental*, $F(1, 946)$

=9.15, $p=.003$, partial eta squared=.010 all showed statistically significant difference with females placing greater importance on these attributes.

Overnight Accommodations. Females preferred more developed overnight accommodations than males. Three overnight indicators had mean differences that reached statistical significance with females placing greater importance on staying in *hotels/motels/resorts*, $F(1, 979) = 15.67$, $p=.000$, partial eta squared=.016; *equipped cabins*, $F(1, 979) = 8.93$, $p=.003$, partial eta squared=.009; and *bed and breakfast*, $F(1, 979) = 18.62$, $p=.000$, partial eta squared=.019.

Social/companionship. A statistically significant difference for males and females was found for one of the two social/companionship indicators, though extremely slight; females rated the *ability to be in large groups* more important than males, $F(1, 1031) = 8.82$, $p=.003$, partial eta squared=.008.

Motivations. When the results for the motivation dependent variables were considered separately, there were no statistically significant differences between males and females.

Constraints. Two constraint indicators reached statistical significance for gender. *Not enough money*, $F(1, 774) = 17.582$, $p=.000$, partial eta squared=.022 and *didn't know where to go*, $F(1, 774) = 14.001$, $p=.000$, partial eta squared=.018 were more important for females than males.

Effects of Race on Setting Preferences and Constraint/Motivation Indicators

Biophysical (Landscape and Quality). There were four biophysical setting indicators with statistically significant mean differences between the two race groups tested. Caucasians placed greater importance on *river or stream*, $F(1, 986) = 8.19$, $p = .004$, partial eta squared = .008 and *woodland/forest*, $F(1, 986) = 24.98$, $p = .000$, partial eta squared = .025. On the other hand, African Americans preferred *agricultural farm field*, $F(1, 990) = 15.65$, $p = .000$, partial eta squared = .016 and *clean air*, $F(1, 990) = 18.22$, $p = .000$, partial eta squared = .018 more than Caucasians.

Facilities/Amenities. African Americans and Caucasians differed statistically in their preference for nearly all of the facilities and amenities setting indicators. Only *fire rings* and *boat launch/access* showed no statistically significant differences. For all setting indicators in this group, African Americans rated them more important than their Caucasian counterparts. The largest difference between African Americans and Caucasians was in their preference for *cooking grills* where the effect size was greater than for all other indicators in this category, $F(1, 920) = 68.18$, $p = .000$, partial eta squared = .069. African Americans also preferred the following setting attributes more than Caucasians: *secure parking*, $F(1, 920) = 17.68$, $p = .000$, partial eta squared = .019; *drinking water*, $F(1, 920) = 18.50$, $p = .000$, partial eta squared = .020; *flush toilets*, $F(1, 920) = 13.74$, $p = .000$, partial eta squared = .015; *cellular phone reception*, $F(1, 920) = 39.24$, $p = .000$, partial eta squared = .041; *hot showers*, $F(1, 920) = 11.27$, $p = .001$, partial eta squared = .012; *picnic tables*, $F(1, 920) = 25.29$, $p = .000$, partial eta squared = .027; *group shelter*, $F(1, 920) = 51.32$, $p = .000$, partial eta squared = .053; and *single track trails*, $F(1, 920) = 11.46$, $p = .001$, partial eta squared = .012.

Management/Development. Statistically significant differences were revealed for all of the management/development setting indicators with African Americans consistently showing greater preferences across all measures. Setting attributes in this group with at least medium effect sizes were *accessibility for physically disabled*, $F(1, 946) = 76.83, p = .000, \text{partial } \eta^2 = .075$; *recreational equipment rental*, $F(1, 946) = 76.46, p = .000, \text{partial } \eta^2 = .075$; and *presence of site manager*, $F(1, 946) = 61.39, p = .000, \text{partial } \eta^2 = .061$. Other management setting indicators preferred more by African Americans were: *well maintained trail*, $F(1, 946) = 18.45, p = .000, \text{partial } \eta^2 = .019$; *ability to reserve lodging*, $F(1, 946) = 19.56, p = .000, \text{partial } \eta^2 = .020$; *directional signs*, $F(1, 946) = 26.73, p = .000, \text{partial } \eta^2 = .027$; *educational signs/brochures*, $F(1, 946) = 50.24, p = .000, \text{partial } \eta^2 = .050$; and *on-site regulations and controls*, $F(1, 946) = 38.34, p = .000, \text{partial } \eta^2 = .039$.

Overnight Accommodations. All of the overnight accommodation indicators had statistically significant mean differences with African Americans consistently rating them as more important. The biggest difference was seen for *hotel/motel/resort*, $F(1, 979) = 44.88, p = .000, \text{partial } \eta^2 = .044$, followed by *bed and breakfast*, $F(1, 979) = 41.72, p = .000, \text{partial } \eta^2 = .041$. Results for the other overnight indicators were: *equipped cabin*, $F(1, 979) = 23.96, p = .000, \text{partial } \eta^2 = .024$; *family/friends' home*, $F(1, 979) = 20.95, p = .000, \text{partial } \eta^2 = .021$; *developed campsite*, $F(1, 979) = 41.72, p = .000, \text{partial } \eta^2 = .041$; *rustic cabin*, $F(1, 979) = 7.52, p = .006, \text{partial } \eta^2 = .008$; *primitive camping*, $F(1, 979) = 14.53, p = .000, \text{partial } \eta^2 = .015$; and *RV hookup*, $F(1, 979) = 10.40, p = .001, \text{partial } \eta^2 = .011$.

Social/companionship. A statistically significant difference for African American and Caucasians was found for one of the two social/companionship indicators; African Americans rated the *ability to be in large groups* more important than Caucasians, $F(1, 1031) = 47.63, p = .000, \text{partial } \eta^2 = .044$.

Motivations for wanting to participate in Ideal Recreation Experience. Race revealed three statistically significant dependent variables with African Americans rating higher importance for all three. They were *to be close to nature*, $F(1, 993) = 15.827, p = .000, \text{partial } \eta^2 = .016$; *to develop my personal/spiritual values*, $F(1, 993) = 17.543, p = .000, \text{partial } \eta^2 = .017$ and *to depend on/develop my skills and abilities*, $F(1, 993) = 15.321, p = .000, \text{partial } \eta^2 = .015$.

Constraints to participation in favorite activities. Two statistically significant constraint variables were revealed for race. They were *felt unwelcome or threatened*, $F(1, 774) = 21.533, p = .000, \text{partial } \eta^2 = .027$ and *didn't know where to go*, $F(1, 774) = 11.309, p = .001, \text{partial } \eta^2 = .014$, with African Americans being more constrained than Caucasians.

Discussion

Southeasterners have a history of enjoying diversity of their natural surroundings in both economic and recreational capacities. In the Southeast race is important and relevant to recreation planning; Floyd (1998) points out that although race is a social construct, it impacts quality of life and is thus important for studying recreation preferences. Interesting insights into the importance of activity, setting attributes, motivations, and constraints for outdoor recreationists in the urban south were revealed in the results of this study. Recreation research shows consistently that that park-use

patterns, recreation setting preferences, and constraints to park use vary by race and ethnicity (Floyd, Taylor, & Whitt-Glover, 2009). Race and age were found to play a significant role in recreation preferences and behavior in a study by Payne et al. (2002).

Overall Most Important Setting Preferences

Setting indicators that were important to the overall sample can be understood by looking at the sum of means across gender and race groups. Nearly all of the biophysical setting attributes tested were at least slightly important to the overall sample. Those that were most important were *clean air, clean water, a variety of wildlife, and a river/stream*. Facilities/ amenities that were rated most important were *secure parking, drinking water, flush toilets, and cellular phone reception*. For management indicators, *well maintained trails, the ability reserve lodging, and directional signs* were most important. For overnight accommodations, the overall sample most preferred *hotels/motels/resorts and equipped cabins*. The urban recreationists in this study were seeking recreation experiences in rural settings that allowed them to *get away from the usual demands of life, to do something with family, and to enjoy the smells and sounds of nature*. *Lack of time and money* emerged as overall top constraints to participation in favorite activities.

Effect of Gender and Race on Selection of Favorite Activities

Activity preference may not be as important of an indicator of differences among the two largest race groups living in and around southeastern urban areas. The bigger story for race and activities here is that there are more commonalities than differences. There were race differences for only one of the top five favorite primary activities. Although proportionately more African Americans chose *family or other group gathering* as a favorite activity, this activity emerges at the top of this list across all independent

variable levels. African Americans and Caucasians also share the same top five activities (*family/group gathering, walking/hiking, fishing, viewing natural scenery, and swimming*) when analyzed separately, though in different order. This is in accordance with national findings that suggest family gathering and sightseeing are among the most popular outdoor activities among metropolitan and non-metropolitan groups (Cordell, et al., 1999). National surveys have shown that African Americans are significantly less likely than white Americans to engage in forest-based activities such as camping and hiking or water-related activities other than fishing (Johnson, Bowker, & Cordell, 2001). There were no statistically significant differences among Caucasians and African Americans for swimming (which is a water based activity other than fishing) and this favorite primary activity fell into the number five spot for both groups when analyzed separately. Camping placed 6th overall, but chi-square tests indicated that proportionately more Caucasians than African Americans chose it as a favorite activity. In fact, no African Americans chose camping as a favorite primary activity. Walking and hiking had no statistically significant difference between race groups.

Proportionally fewer urban African Americans than urban Caucasians in this study chose hunting as a favorite primary activity; this may be attributed to the issues of negative collective memory images of wild lands as discussed in the introduction (Johnson & Bowker, 2004); in addition, lesser importance was placed by this group on woodlands/forests. This finding is similar to those from the National Survey on Recreation and the Environment as well (Cordell, et al., 1999). There may be a “legacy of historical dangers faced by [African Americans] in the woods from racial violence” and less access to hunting opportunities (Schelhas, 2002). However, this was

contradictory to Johnson, Bowker, English, and Worthen (1998) who found no differences between Blacks and Caucasians in participation in consumptive outdoor recreation activities. This finding may be more indicative of our urban sample since rural populations were not specifically surveyed in this study and that there may be more African American hunters in those areas. There may be some discrepancy in defining hunting as a recreational activity at all since it is considered to some to be a subsistence activity. There was no difference between the two race groups when choosing fishing as a favorite primary activity.

Results from this study showed more statistically significant proportional differences in preference for primary favorite activities for gender than for race groups; continuing to analyze gender difference in activity preference is a worthwhile endeavor. Of the top five most popular activities overall, there were similar proportions of males and females only for swimming; this activity did not make it in the top five at all for males when analyzed separately. This is contrary to a study that found that gender was not a predictor of differences in Atlanta and Philadelphia for preferences, visitation patterns, and perceived benefits of urban parks by ethnically diverse adults (Ho et al., 2005).

The analysis of secondary favorite activities painted a different picture than when analyzing the primary favorite activities alone. Family or other group gathering ranked fifth rather than first here. Allowing study participants to choose this combination of activities, different activities emerged as being important. The most frequently chosen activities from this perspective were viewing natural scenery, walking/hiking, observing wildlife, and swimming and then family or other group gathering. This may provide

support to findings of Cordell, Betz, & Green's (2008) that participation in viewing and studying nature including bird watching, other wildlife observation, and fishing have grown.

Outdoor Recreation Setting Preferences

African Americans had a statistically significant lower mean score than Caucasians when rating the importance of *woodland/forest*. They also preferred *clean water* more than Caucasians; no studies have revealed similar findings. Manning (2000) suggests research that examines the variables that best reflect the integrity of natural and cultural resources within the biophysical and African Americans in this study preferred *openness* in their ideal setting more than their Caucasian counterparts including an *open range or pasture* and *agricultural farm fields*. Findings by Dwyer and Hutchison (1990) that African Americans placed greater importance on *social interaction* and *developed facilities and conveniences* than Caucasians are supported by this study. Recognizing that there are several differences in race and gender groups for the importance of biophysical settings, this part of the outdoor recreation experience could use further investigation.

Males prefer a *land area larger than 50 acres* more than females. Females rated the importance of *clean water* and *clean air* higher than males. The fact that females placed greater importance on the ability to be in large groups may support Virden & Walker's (1999) observation that females expressed more preference than males for natural settings that offered intimacy with close friends and family. Bialeschki & Hicks (1998) found that a critical factor in choosing appropriate recreation sites for females was *physical and psychological safety*. Lee et al. (2007) found that females were more likely

to consider physical safety when choosing recreation sites. The females in this study placed greater importance on *the presence of a site manager, cell phone reception, and directional signs* which could be considered safety indicators. No difference was revealed between females and males on the *secure parking* indicator and both groups rated it as very important. Overall, females and African Americans rated many of the management and facilities indicators as more important than their counterparts.

Recreation settings have biophysical, physical (facilities), social and managerial components. However, the major planning framework for recreation, the Recreation Opportunity Spectrum (US Forest Service, 1975), does not use biophysical landscape features or biophysical quality indicators. Understanding preference for both landscape and quality indicators are important; recent work by Morse, Hall, & Kruger (2009) and Lee & Stafford (2008) suggest that these specific ecological components should be central to recreation setting planning. The biophysical, natural, or ecological components of a place consist of land, water, forests, geology, wildlife, fauna, and weather (Beckley, Stedman, Wallace, & Ambard, 2007). Measuring the importance of natural characteristics to current and future recreationists will allow the demand to be compared against the resources available on an individual's land.

Motivations for Wanting to Participate in Ideal Recreation Experience

Three motivation indicators showed statistically significant differences among the two race groups. African Americans in this study rated the importance of *developing personal/spiritual values, depending on/developing skills and abilities* and *being close to nature* as more important than their Caucasian counterparts. This may suggest that urban African Americans in the Southeast are seeking rural outdoor recreation experiences in

natural settings as a mode of self-development more than Caucasians. Dwyer and Hutchison's (1990) finding that Caucasians preferred *getting away* more than Blacks was not found to be true for the Southeastern urbanites in this study. For gender, there were no significant differences between males and females on among the motivation indicators. This is in accordance with another study that found that gender was not significantly related to any of 45 motivation dimensions examined (Tinsley & Kass, 1978).

Constraints to Participation in Favorite Activities

African American respondents were more constrained by *not knowing where to go* than Caucasians respondents which matches results from Johnson et al. (2007) who found African Americans were more likely than white Americans to say that non-participation in their favorite activities was because of a *lack of awareness of opportunities available*. Females were statistically more constrained by *not enough money* and *lack of information* about where to go. This supports previous findings about females feeling constrained by *inadequate information*, but not that they felt more *threatened* than males (Johnson, Bowker, & Cordell, 2001). One study showed that females felt that a forest environment was *more threatening* than males did and that whites preferred remote, *less developed recreation* more than black participants (Virden & Walker, 1999). Despite these small differences, it is worth mentioning that the southeastern urbanites surveyed in this study had overall mean constraint scores less than 2 (slightly important) when rating the importance of their preferred destination being *too crowded, feeling unwelcomed or threatened*, and *lack of information*. This indicates that these constraints were not very influential on individual's decision to participate. This

may conflict with previous studies or be an outcome of constraint negotiation techniques as suggested by White (2008). Arnold and Shinew (1998) state that, given the complexity of constraints, efforts are best spent on diminishing constraints that are easily controlled or modified by the provider of the recreation opportunity. Money constraints felt by women might be overcome by having special price offerings and deals.

Conclusion

This study aimed to focus on the activity preferences, setting attributes, motivations, and constraints of Southeastern urbanites. The effect of race and gender were explored for components of the outdoor recreation experience. There is a clear preference for opportunities to participate in outdoor recreation activities with groups of family and friends in the rural southeast. Private landowners interested in developing recreation opportunities for group gatherers should focus on group spaces, well-maintained trails for walking and hiking, water for fishing and swimming, and access to view a variety of wild plant and animal species. Landowners that can offer setting attributes like biodiversity, clean air/water, and natural water spots are encouraged to explore offering recreation opportunity on their lands. In general, the residents surveyed in this study desired managed and developed settings with full amenities including hot showers, flush toilets, cell phone reception, directional signs, and secure parking. According to results of this study, landowners are encouraged to explore offering activities other than hunting to match demand from the urban cores of the Southeast. Although hunting is an activity with a long standing tradition in this region of the country; it did not emerge as a very frequently chosen favorite activity among southeastern urbanites in this study.

Paying special attention to specific differences of setting attribute preferences of target clientele may help prevent recreational conflicts and maximize benefits to recreationists. Landowners who wish to develop and promote outdoor and nature recreation opportunities on their lands that are inclusive to African Americans and females should focus on setting attributes that were found to be statistically more important to these groups. Race explained a large amount of the variance for overall facilities/amenities and management/development indicators. African Americans in this study preferred more developed settings evident by higher ratings on nearly all of the facilities/amenities and management/development indicators. Specifically, they desired *cooking grills, group shelters, cell phone reception, accessibility for physically disabled, recreational equipment rentals, educational signs/brochures, and the presence of a site manager. Clean air, open range or pasture and agricultural farm fields* were all more important for African American respondents. They preferred the *ability to be in large groups (8 or more)* more than Caucasians. It is recommended to make opportunities more visible and welcoming to this race group since they were more constrained by not knowing where to go and feeling unwelcome or threatened. Females were also constrained by a *lack of awareness* of opportunities. The development of highly accessible marketing materials and a participation in a marketing cooperative or network will likely be useful for non-industrial private landowners in offering recreation opportunities. Females were more concerned with having a variety of plant and tree species, clean air, and clean water. Females also placed greater importance on the developed aspect of the outdoor recreation experience though to a lesser degree than African Americans when compared to Caucasians. African Americans and females both

preferred overnight accommodations of *hotels/motels/resorts* and *bed-n-breakfasts* more than their counterparts.

Several objectives have been met with this research. Results of this study answer questions about rural outdoor recreation preferences of southeastern urban recreationists. Motivation and constraint measures were explored to gain deeper insight into the survey respondents. Favorite activities were ranked according to popularity. An attempt was made to understand social differences by looking at the effect of race and gender on these variables. This information can be used to evaluate private lands for attributes that are in demand by people living in population dense areas nearby. It has revealed the details of a place where the most southeasterners are likely to realize a satisfying outdoor recreation experience.

Differences in environmental setting preferences among race and gender groups suggest that different types of settings are being sought by these sociocultural and sociostructural groups (Virden & Walker, 1999). Virden and Walker ask, “Can managers design recreation settings that are more attractive, inclusive, and equitable to different recreation groups?” Floyd (1998) recommends expanding the dependent variables used in recreation research – that it is important to get a full understanding of preferences and benefits sought by African Americans rather than only participation frequency and constraint information. This way, research will evolve to be less biased towards the perspective of any one ideology or group. The empirical information presented here along with other related publications will help private landowners and other land managers do just that. It is important to note, however, that research that aims to specifically understand perceptions of enjoying the outdoors by African Americans

will be best implemented in a qualitative manner. Specific Cordell, Betz, and Green (2002) urge that diversity must be a deliberately considered factor in recreation and environmental planning and that it must be hard linked to decisions and anticipated outcomes of planning. Results from this survey suggest that it is important to continue analyzing the basic social constructs currently and in the recent past due to the fact that they affect preferences for natural and non-natural setting preferences.

Findings from this study should be considered exploratory as there were some limitations including potential coverage error and non-response bias. The database from which the survey sample was drawn was derived from updated telephone directory lists. These lists may have been exclusive of some groups and may help explain lower response rates for African Americans and females.

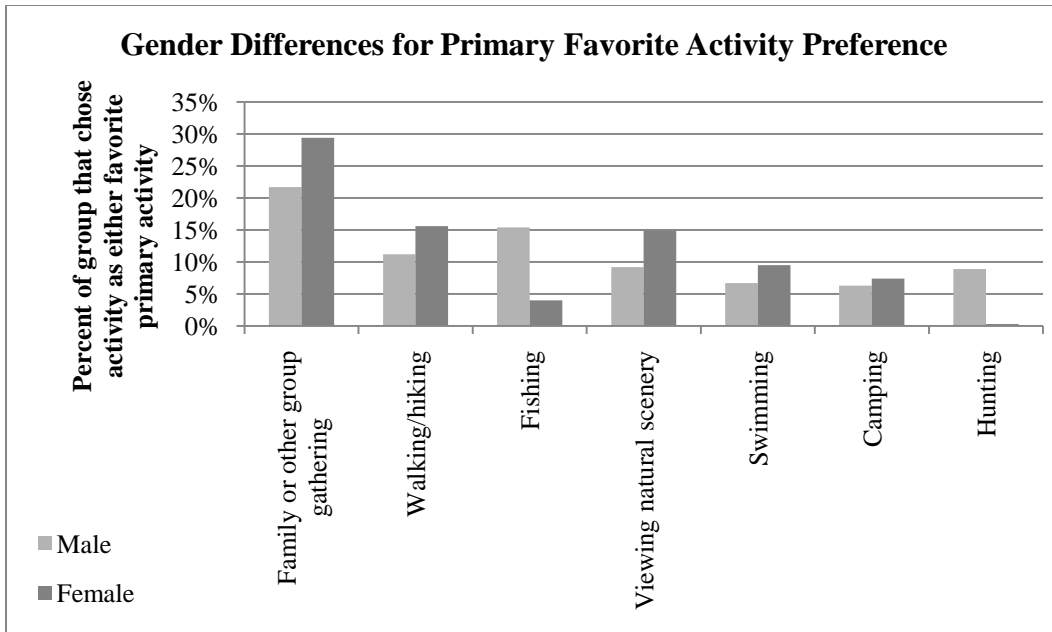


Figure 1 - Gender differences for primary favorite activity preferences

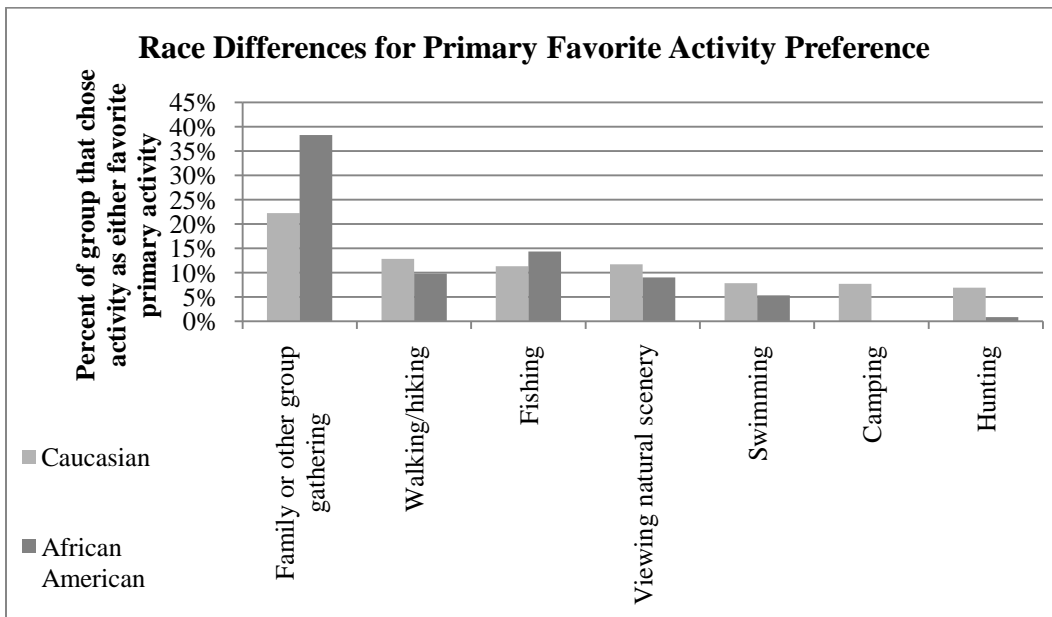


Figure 2 - Race differences for primary favorite activity preference

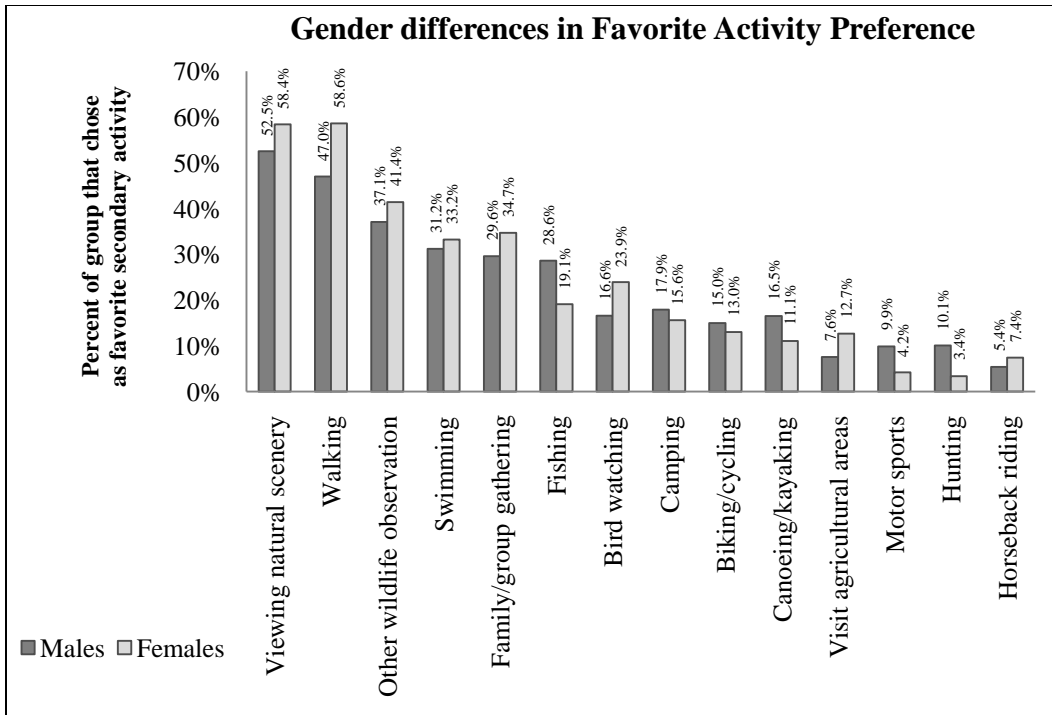


Figure 3 – Frequency histogram comparing percentage of each gender group that chose each activity as a favorite secondary activity.

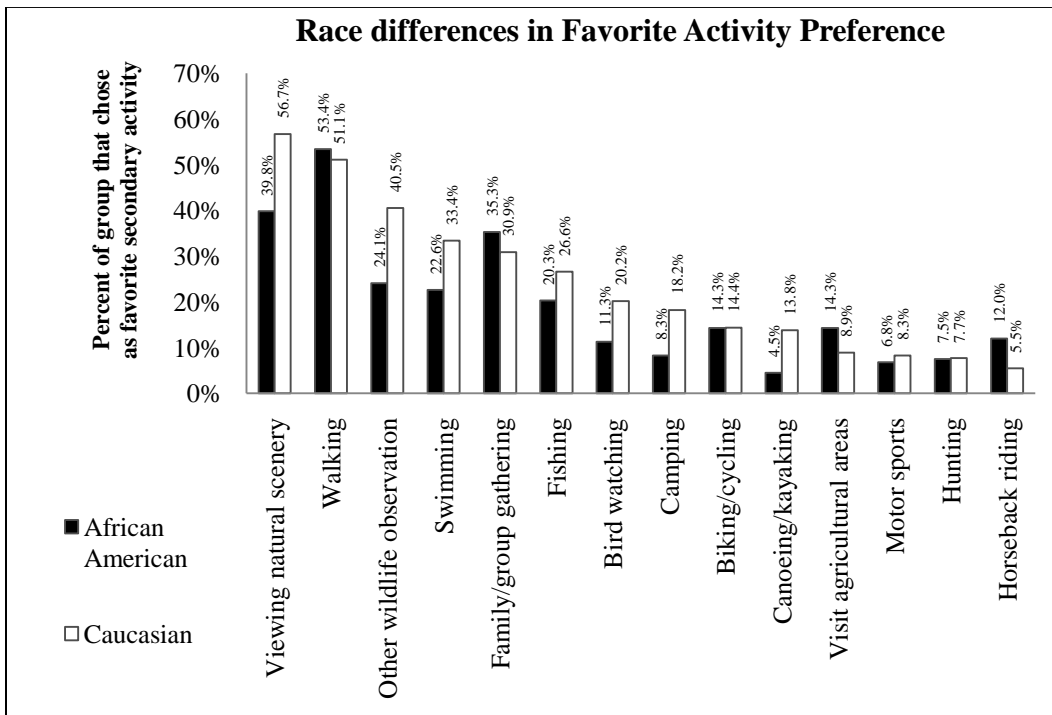


Figure 4 - Frequency histogram comparing percentage of each race group that chose each activity as a favorite secondary activity

Table 1 - Activities included in questionnaire

Viewing natural scenery
Walking
Other wildlife observation
Swimming
Family/group gathering
Fishing
Bird watching
Camping
Biking/cycling
Canoeing/kayaking
Visit agricultural areas
Motor sports
Hunting
Horseback riding

Table 2 - Demographic characteristics of study participants

	Frequency	Valid Percent
Gender		
Male	741	66.3%
Female	377	33.7%
Race		
Caucasian	945	85.6%
African American	133	12.0%
Other	26	2.4%
Education		
Did not complete high school	32	2.9%
High school diploma or GED	178	15.9%
Some college but no degree	223	19.9%
Associate degree	96	8.6%
Bachelors degree	304	27.1%
Graduate or Professional degree	269	24.0%
Other	19	1.7%
Income		
Under \$35,000	192	18.4%
\$35,000-\$49,999	157	15.1%
\$50,000-\$74,999	244	23.4%
\$75,000 or more	449	43.1%
Age		
20-34	92	8.2
35-44	184	16.4%
45-54	314	27.9%
55-59	164	14.6%
60-64	130	11.6%
65-74	150	13.3%
75 or older	70	6.2%

Table 3 - Most frequently chosen favorite primary activities

Activity	Valid %
Family or other group gathering	26.9%
Walking/hiking/running/jogging	14.1%
Fishing	12.7%
Viewing natural scenery	12.3%
Swimming	8.6%
Camping	6.8%
Hunting	6.1%

Table 4 - Popularity of secondary activities and comparisons among each level of independent variable: Gender and Race

	Overall Frequency (N=1124)	Gender		Race	
		Male	Female	Caucasian	African American
Viewing natural scenery	54.4%	52.5%	58.4%	56.7%	39.8%
Walking	50.8%	47.0%	58.6%	51.1%	53.4%
Other wildlife observation	38.4%	37.1%	41.4%	40.5%	24.1%
Swimming	31.9%	31.2%	33.2%	33.4%	22.6%
Family/group gathering	31.4%	29.6%	34.7%	30.9%	35.3%
Fishing	25.4%	28.6%	19.1%	26.6%	20.3%
Bird watching	19.0%	16.6%	23.9%	20.2%	11.3%
Camping	17.2%	17.9%	15.6%	18.2%	8.3%
Biking/cycling	14.4%	15.0%	13.0%	14.4%	14.3%
Canoeing/kayaking	12.6%	16.5%	11.1%	13.8%	4.5%
Visit agricultural areas	9.3%	7.6%	12.7%	8.9%	14.3%
Motor sports	7.9%	9.9%	4.2%	8.3%	6.8%
Hunting	7.8%	10.1%	3.4%	7.7%	7.5%
Horseback riding	6.1%	5.4%	7.4%	5.5%	12.0%

Table 5 – Results from Chi-square (Yates' Continuity Correction) showing statistically significant proportional differences for primary favorite activity selection by gender and race

	Gender			Race		
	Yate's Cont.Corr.	Male	Female	Yate's Cont.Corr.	Cauc.	Af.Am.
Family or other group gathering	7.67**	21.7%	29.4%	15.65**	22.2%	38.3%
Walking/hiking	4.07*	11.2%	15.6%	0.730	12.8%	9.8%
Fishing	30.74**	15.4%	4.0%	0.730	11.3%	14.3%
Viewing natural scenery	7.60**	9.2%	14.9%	0.610	11.7%	9.0%
Swimming	2.38	6.7%	9.5%	0.77	7.80%	5.30%
Camping	0.31	6.30%	7.40%	9.83**	7.70%	0.00%
Hunting	31.61**	8.90%	0.30%	6.59**	6.90%	0.80%

*Statistical significance at the .05 alpha level

**Statistical significance at the .01 alpha level

Table 6 - Multivariate main and interactions effects of gender and race on setting preferences, motivation, and constraint indicators

	F	df	Eta
Biophysical/Landscape (BL)			
Main Effect for Gender	4.532*	1, 978	0.04
Main Effect for Race (two categories)	8.944*	1, 978	0.08
Interaction Effect for Gender x Race	0.626	1, 978	0.01
Biophysical/Quality (BQ)			
Main Effect for Gender	7.925*	1, 985	0.05
Main Effect for Race (two categories)	5.800*	1, 985	0.03
Interaction Effect for Gender x Race	1.016	1, 985	0.01
Facilities/Amenities (FA)			
Main Effect for Gender	4.228*	1, 910	0.05
Main Effect for Race (two categories)	13.600*	1, 910	0.14
Interaction Effect for Gender x Race	1.090	1, 910	0.01
Management/Development (MD)			
Main Effect for Gender	3.374*	1, 939	0.03
Main Effect for Race (two categories)	17.391*	1, 939	0.13
Interaction Effect for Gender x Race	1.086	1, 939	0.01
Overnight Accommodations (OA)			
Main Effect for Gender	3.147*	1, 972	0.03
Main Effect for Race (two categories)	10.314*	1, 972	0.08
Interaction Effect for Gender x Race	1.817	1, 972	0.02
Social/Companionship (SC)			
Main Effect for Gender	4.909*	1, 1030	0.01
Main Effect for Race (two categories)	25.100*	1, 1030	0.05
Interaction Effect for Gender x Race	0.224	1, 1030	0.00
Constraint Indicators			
Main Effect for Gender*	5.577*	1, 769	.042
Main Effect for Race (two categories)*	6.388*	1, 769	.047
Interaction Effect for Gender x Race	1.991	1, 769	.015
Motivations Indicators			
Main Effect for Gender*	2.126*	1, 982	.025
Main Effect for Race (two categories)*	6.563*	1, 982	.074
Interaction Effect for Gender x Race	1.192	1, 982	.014

*Statistically significant at .05 alpha level

Table 7 – Effect of gender on setting preferences & descriptive data by gender

	Between-Subjects Results			Gender		
	F	Sig.	Par. Eta Squared	Male	Female	$\Sigma\mu$
Biophysical/Quality (BQ) $\alpha = .008$						
Clean air	18.22	0.00	0.02	4.35	4.72	9.07
Clean water	21.788	0.00	0.02	4.32	4.73	9.05
Variety of wildlife	---	---	---	3.56	3.52	7.08
Variety of plant and tree species	8.291	0.00	0.01	3.18	3.54	6.72
Natural scenic beauty	---	---	---	3.80	4.05	6.66
Unmodified natural environment	---	---	---	3.10	2.87	5.97
Biophysical/Landscape (BL) $\alpha = .006$						
River or stream (flowing water)	---	---	---	3.47	3.43	6.90
Lake or pond	---	---	---	3.43	3.29	6.71
Woodland/forest	---	---	---	2.99	2.93	5.92
Mixture of open field and forest	---	---	---	2.78	2.89	5.67
Land area bigger than 50 acres	17.527	0.00	0.02	3.00	2.44	5.43
Tree plantation	---	---	---	2.53	2.64	5.17
Open range or pasture	---	---	---	2.35	2.38	4.73
Agricultural farm field	---	---	---	2.10	2.08	4.18
Marsh, wetland or swamp	9.684	0.00	0.01	2.15	1.77	3.92
Facilities/Amenities (FA) $\alpha = .005$						
Secure parking	---	---	---	3.92	4.26	8.17
Drinking water	9.692	0.002	0.01	3.82	4.24	8.06
Flush toilets	19.817	0.000	0.02	3.67	4.29	7.96
Cellular phone reception	11.109	0.001	0.01	3.38	3.88	7.26
Hot showers	13.186	0.000	0.01	3.01	3.56	6.57
Picnic tables	---	---	---	3.05	3.35	6.39
Cooking grills	---	---	---	3.06	3.23	6.29
Group shelter	16.728	0.000	0.02	2.77	3.33	6.10
Single track trails (biking or hiking)	---	---	---	2.95	3.04	5.99
Fire rings	---	---	---	2.30	2.35	4.65
Boat launch/access	---	---	---	2.31	1.93	4.24
Management/Development (MD) $\alpha = .006$						
Well maintained trail	18.97	0.00	0.02	3.69	4.18	7.87
Ability to reserve lodging	---	---	---	3.74	4.06	7.80
Directional signs	13.475	0.00	0.01	3.66	4.10	7.76
Educational signs and brochures	12.571	0.00	0.01	3.12	3.56	6.69
On-site regulations and controls	9.331	0.00	0.01	3.12	3.51	6.64
Accessibility for physically disabled	10.293	0.00	0.01	2.80	3.25	6.05
Presence of site manager	9.289	0.00	0.01	2.53	2.90	5.42
Recreational equipment rental	9.153	0.00	0.01	2.53	2.89	5.42
Overnight Accommodations (OA) $\alpha = .006$						
Hotel, motel, or resort	15.669	0.00	0.02	3.31	3.87	7.18
Equipped cabins (modest)	8.929	0.00	0.01	3.05	3.45	6.50
Family or friends' home	---	---	---	2.83	3.07	5.91
Developed campsite (drive-in)	---	---	---	2.68	2.87	5.54
Bed and Breakfast	18.616	0.00	0.02	2.37	2.94	5.31
Rustic cabins (basic)	---	---	---	2.37	2.59	4.96
Primitive camping	---	---	---	2.24	2.15	4.38
RV hookup	---	---	---	2.09	2.24	4.33
Social/Companionship (SC) $\alpha = .025$						
Ability to be in large groups (8 or more)	8.823	0.00	0.01	2.41	2.78	5.19
Rarely hear and see others	---	---	---	2.42	2.55	4.97

Table 8 - Effects of gender on motivation and constraint indicators and descriptive statistics by gender

	Between-subjects Results			Gender		Sum of Means
	F	Sig.	Partial Eta Squared	Male	Female	
Motivations $\alpha = .004$						
To get away from the usual demands of life	---	---	---	4.20	4.29	8.49
To do something with my family	---	---	---	4.19	4.20	8.39
To enjoy the sounds and smells of nature	---	---	---	4.02	4.06	8.08
To escape noise and crowds	---	---	---	3.85	3.87	7.72
To be with friends	---	---	---	3.77	3.80	7.57
To explore the area and learn about nature	---	---	---	3.69	3.70	7.39
To promote my physical fitness/exercise	---	---	---	3.62	3.65	7.26
To be close to nature	---	---	---	3.58	3.64	7.21
To experience excitement/adventure	---	---	---	3.63	3.55	7.18
To develop my personal/spiritual values	---	---	---	3.44	3.73	7.17
To learn about the history/culture of the area	---	---	---	3.46	3.50	6.96
To depend on/develop my skills and abilities	---	---	---	3.32	3.02	6.34
Constraints $\alpha = .008$						
Not enough time	---	---	---	3.58	3.70	7.28
Not enough money	17.582	.000	.022	2.71	3.43	6.14
Not enough places near me to do this activity	---	---	---	2.46	2.75	5.21
Didn't know where to go	14.001	.000	.018	1.58	2.04	3.61
Preferred destination was too crowded	---	---	---	1.74	1.76	3.50
Felt unwelcome or threatened	---	---	---	1.45	1.65	3.10

Table 9- Effects of race on setting preferences and descriptive statistics by race

	Between-subjects Results			Race		
	F	Sig.	Partial Eta Squared	Cauc.	Afr.Am.	$\Sigma\mu$
Biophysical/Quality (BQ) $\alpha = .008$						
Clean air	7.125*	0.00	0.01	4.42	4.65	9.07
Clean water	---	---	---	4.44	4.61	9.05
Natural scenic beauty	---	---	---	4.06	3.79	7.85
Variety of wildlife	---	---	---	3.67	3.42	7.08
Variety of plant and tree species	---	---	---	3.42	3.30	6.72
Unmodified natural environment	---	---	---	3.08	2.89	5.97
Biophysical/Landscape (BL) $\alpha = .006$						
River or stream (flowing water)	8.188*	0.00	0.01	3.62	3.29	6.90
Lake or pond	---	---	---	3.38	3.33	6.71
Woodland/forest	24.979*	0.00	0.03	3.27	2.65	5.92
Mixture of open field and forest	---	---	---	2.85	2.82	5.67
Land area bigger than 50 acres	---	---	---	2.77	2.67	5.43
Tree plantation	---	---	---	2.50	2.67	5.17
Open range or pasture	12.073	.001	.012	2.16	2.57	4.73
Agricultural farm field	15.653	.000	.016	1.87	2.31	4.18
Facilities/Amenities (FA) $\alpha = .005$						
Secure parking	17.675*	0.00	0.02	3.82	4.36	8.17
Drinking water	18.498*	0.00	0.02	3.74	4.32	8.06
Flush toilets	13.736*	0.00	0.02	3.73	4.24	7.96
Cellular phone reception	39.244*	0.00	0.04	3.16	4.10	7.26
Hot showers	11.272*	0.00	0.01	3.03	3.45	6.48
Picnic tables	25.294*	0.00	0.03	2.86	3.53	6.39
Cooking grills	68.18*	0.00	0.07	2.59	3.71	6.29
Group shelter	51.32*	0.00	0.05	2.56	3.54	6.10
Single track trails (biking or hiking)	11.461*	0.00	0.01	2.75	3.24	5.99
Fire rings	---	---	---	2.36	2.29	4.65
Boat launch/access	---	---	---	2.20	2.04	4.24
Management/Development(MD) $\alpha = .006$						
Well maintained trail	18.446*	0.00	0.02	4.18	3.69	7.87
Ability to reserve lodging	19.561*	0.00	0.02	3.61	4.19	7.80
Directional signs	26.726*	0.00	0.03	3.56	4.19	7.76
Educational signs and brochures	50.242*	0.00	0.05	2.90	3.79	6.69
On-site regulations and controls	38.341*	0.00	0.04	2.92	3.71	6.64
Accessibility for physically disabled	76.825*	0.00	0.08	2.41	3.64	6.05
Presence of site manager	61.39*	0.00	0.06	2.24	3.18	5.42
Recreational equipment rental	76.461*	0.00	0.08	2.18	3.24	5.42
Overnight Accommodations (OA) $\alpha = .006$						
Hotel, motel, or resort	44.877*	0.00	0.04	3.12	4.06	7.18
Equipped cabins (modest)	23.961*	0.00	0.02	2.92	3.58	6.50
Family or friends' home	20.945*	0.00	0.02	2.63	3.28	5.91
Developed campsite (drive-in)	8.615*	0.00	0.01	2.57	2.98	5.54
Bed and Breakfast	41.72*	0.00	0.04	2.23	3.09	5.31
Rustic cabins (basic)	7.523*	0.01	0.01	2.31	2.64	4.96
Primitive camping	14.527*	0.00	0.02	1.96	2.43	4.39
RV hookup	10.4*	0.00	0.01	1.94	2.39	4.33
Social/Companionship (SC) $\alpha = .025$						
Ability to be in large groups (8 or more)	47.628*	0.00	0.04	2.17	3.02	5.19
Rarely hear and see others	---	---	---	2.57	2.40	4.97

Table 10 - Effects of race on motivation and constraint indicators and descriptive statistics by race

	Between-subjects Results			Race		$\Sigma\mu$
	F	Sig.	Par. Eta Sq.	Cauc	Afr. Am.	
Motivations $\alpha = .004$						
To get away from the usual demands of life	---	---	---	4.26	4.23	8.49
To do something with my family	---	---	---	4.09	4.30	8.39
To enjoy the sounds and smells of nature	---	---	---	4.07	4.01	8.08
To escape noise and crowds	---	---	---	3.88	3.84	7.72
To be with friends	---	---	---	3.69	3.88	7.57
To explore the area and learn about nature	---	---	---	3.63	3.77	7.39
To promote my physical fitness/exercise	---	---	---	3.48	3.78	7.26
To be close to nature	15.827	.000	.016	3.83	3.39	7.21
To experience excitement/adventure	---	---	---	3.42	3.75	7.18
To develop my personal/spiritual values	17.543	.000	.017	3.31	3.86	7.17
To learn about the history/culture of the area	---	---	---	3.41	3.55	6.96
To depend on/develop my skills and abilities	15.321	.000	.015	2.91	3.24	6.15
Constraints $\alpha = .008$						
Not enough time	---	---	---	3.81	3.47	7.28
Not enough money	---	---	---	2.93	3.21	6.14
Not enough places near me to do this activity	---	---	---	2.53	2.69	5.21
Didn't know where to go	11.30 9	.001	.014	1.60	2.01	3.61
Preferred destination was too crowded	---	---	---	1.75	1.75	3.50
Felt unwelcome or threatened	21.53 3	.000	.027	1.32	1.79	3.11

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Thesis Conclusion

This study aimed to compliment larger studies that routinely address outdoor recreation demand and supply at national and regional scales. Similarities among this study and those were found, as were some differences. The main objective of this study had two parts: (1) to elicit a description of individuals' ideal recreation experience preferences for a combination of favorite primary and secondary activities and the measurement of importance placed on setting preferences, benefits sought, and constraints to participation and (2) to measure the proportion of respondents that were willing to participate in that experience on private lands owned by individuals and families. Secondary objectives were (1) to evaluate the effect of favorite primary activity on secondary activities, setting preferences, benefits sought, and constraints of Southeastern urbanites and (2) to evaluate the effects of race (African American and Caucasian) and gender (female and male) on favorite activities, setting preferences, benefits sought, and constraints. The findings of this study reveal that just over three-quarters of all survey respondents –consisting of individuals living in eight metropolitan areas of the interior southeastern United States – said that they were willing to participate in outdoor recreation on private lands. Specifically, private lands are in demand if they can provide opportunities to urban recreationists to fulfill benefits and desired outcomes.

There were large multivariate effects of favorite primary activity on *biophysical* and *physical/facility* indicators. This finding indicates that these setting attributes should be carefully assessed if a land owner/manager wishes to provide certain types of activity opportunities. There was a medium multivariate effect for favorite activity on motivation indicators and small to medium effect for constraints on *managerial/social* indicators.

The fact that favorite activity had a low effect on constraint indicators (which were also all rated as only slightly important or less) suggests that this independent variable was not so important overall. Favorite activity had statistically significant univariate effects on several preference and motivation indicators.

African Americans and Caucasians had several statistically significant differences which were revealed by multivariate and univariate analyses of variance. Race had strong multivariate effects for two categories of indicators: *facilities/amenities* and *management/development*. It was revealed that African Americans placed greater importance on management indicators overall and this may be an important consideration for increasing opportunities for this group in Southeastern Metropolitan areas. Medium multivariate effect sizes for race were found for *biophysical/landscape*, *overnight accommodations*, and *motivation* indicators. Race was not found to have low multivariate effects on *biophysical/quality*, *social/companionship*, and *constraint indicators*. Gender showed small effects for all indicators. In the cases of favorite activity and race, univariate effect sizes on individual dependent variables were low with the exception of the medium sized effects of race on the importance of *accessibility for physically disabled* and *recreational equipment rental*.

The content development of the survey instrument and administrative process were both performed through a highly collaborative process. Design, structure, and content were developed and tested through cooperation of the principle investigator, Dr. Wayne Morse, and myself, Leslie Grill (Graduate Research Assistant) as well as undergraduate and graduate Forestry students (who served as testers). The institutional review board also played an important role in certifying the evaluation by researchers of

the potential *costs for* and *benefits to* the human subjects involved in the study. The administration of the survey was possible through the collaboration of researchers with College of Business at Auburn University and two different printing services. The College of Business provided the invaluable service of customizing an online version of the questionnaire to appear nearly identical to the paper version including the creation of a database necessary for storing data collected online and the exportation of the data into an accessible format for analysis. The two printing services used played an integral role in survey administration and was responsible for merging contact information onto printed materials, printing of survey materials, stuffing of envelopes, stamping of outgoing and return envelopes, as well as delivery of mailings to the U.S. Post Office. One of the printing services provided a National Change of Address check as part of their printing service and was responsible for printing the large outgoing envelopes, return envelopes, postcards, and stickers. In both cases it was necessary for the research team to ensure the quality of services offered by these companies. Although spot checks were performed for the services provided, errors were detected. The mistakes were promptly identified and resolved and resulted in minimal impact on survey methodology. There were also two instances where mail was returned due to insufficient postage. For future studies, it is recommended that the research staff be closely involved in each step of the services that are being outsourced.

Another important element of this study was the management of both mail tracking data and survey responses. Mail tracking data was monitored by a database that was created and modified throughout the study. Important information was collected that will aide in the analysis of the methodology implemented including date of survey

returns, mode of response, details about mail returned to sender, and personal information on study participants related to their non participation (like being deceased, disabled, or uninterested). As mentioned above, survey response data was collected in a database managed by the College of Business. The web based database utilized for capturing responses from online users also served as a data entry method for research staff – this helped to reduce data entry errors. The decreased need for intensive data cleaning helped ensure the integrity of the final data used for the analyses represented in this thesis. Data cleanup mostly involved the categorization of open-ended, write-in answers; a conservative approach was taken in which as much detail as possible was kept in the new categories.

Results from this study offer insight into what is important for helping urban dwellers living in the interior southeastern U.S. achieve their ideal outdoor recreation experience. In addition the information in this study is useful for the rural landowners that desire to benefit economically by developing outdoor recreation opportunities on their land. The economic impact of outdoor and nature recreation on individual private lands in the Southeast should be further investigated for a more complete understanding. This research identified the preferences and defined what the desired activity opportunity settings are. Demographic data will be useful in future analyses for further investigating this demand. This study has significant implications for conservation, rural economic development, and recreation opportunities for the general public. The potential demand for a diverse set of recreation activities on private land by urban residents was evaluated. The in-depth understanding of urban preferences for private land recreation offered here

is a critical first step in the promotion of recreation leasing as an economic opportunity for private forest owners.

The top five activities when primary and secondary favorite activities were ranked together were all non-consumptive activities. Five of the seven most popular favorite primary activities overall are considered non-consumptive (in order, *Family or other group gathering, walking/hiking, fishing, viewing natural scenery, swimming, camping, and hunting*). The analysis of secondary favorite activities was a very important component of the study because people prefer to participate in multiple activities at the same time or on the same trip. Although they may identify with one as favorite, it is rarely participated in on its own and the other activities are also important. Six of the seven top favorite activities were also top favorite secondary activities, reinforcing their importance. Bird watching and other wildlife observation were identified as also being important by using this method which may support research that suggest that wildlife watching activities such as birding is increasing in popularity (and that they may have significant economic impacts) (Cordell & Herbert, 2002). It is suspected that activities like birding, fishing, and hunting are highly specialized activities and are likely to be best understood from the angle of specialization.

Setting attributes are a very important component of the outdoor and nature recreation experience. It is the setting attributes that are most able to be controlled for and/or provided by private landowners. Biophysical and physical/facilities indicators should be a critical focus for landowners interested in targeting specific activity groups. Biophysical setting attributes are likely to be present in a landscape; however, many of the most important natural characteristics highlighted in this study can also be managed

for. For example, *Clean water and air, natural scenic beauty, variety of wildlife, and variety of plant and tree species* may already exist on a property or they could be enhanced/managed for, creating an setting opportunity to meet the urban demand. Overall, the southeastern urbanites surveyed in this study were not the ‘roughing it’ kind as revealed by the importance placed on physical/facilities attributes like *security, flush toilets, well maintained trails, cell phone reception, and hot showers*. In addition, they also appear to prefer *hotel/motel/resorts* and *equipped cabins* rather than more *primitive* accommodations like primitive campsites and rustic cabins. Biophysical attributes of the outdoor and nature recreation setting were a highlight of this study; five of the top ten most important setting attributes come from this category. This is an important finding and supports the suggestions made by authors who promote the incorporation of ecological components of recreation settings into outdoor recreation planning frameworks which acts as a catalyst for creating beneficial outcomes (Lee & Stafford, 2008; Morse, Hall, & Kruger, 2009).

Favorite activity does not play as much of a role in importance of managerial/social setting indicators collectively. The same was true for motivation indicators (which were all rated on the high end of the ‘importance’ scale) and constraint indicators (which were all rated on the low end of the ‘importance’ scale). Across favorite activity groups, there was an overall demand for *directional signs, on-site regulations and controls, and the ability to reserve lodging*. Preference for specific reservation mode was not explored, but it is clear that having at least some mode of being able to lock-in overnight accommodations in advance is important across activity groups (though less so for hunters).

According to results of this study, landowners are encouraged to explore offering activities other than hunting to match demand from the urban cores of the Southeast. Although hunting is an activity with a long standing tradition in this region of the country; it did not emerge as a very frequently chosen favorite activity in this study among southeastern urbanites (perhaps due to the fact that it is more of a rural activity). There is a clear preference for opportunities to participate in outdoor recreation activities with groups of family and friends in the rural Southeast. Private landowners interested in developing recreation opportunities for group gatherers should focus on group spaces, well-maintained trails for walking and hiking, water for fishing and swimming, and access to view a variety of wild plant and animal species. Landowners that can offer setting attributes like biodiversity, clean air/water, and natural water spots are encouraged to explore offering recreation opportunity on their lands. Paying special attention to specific differences of setting attribute preferences of their target clientele may also help in the prevention of recreational conflicts and maximize benefits to recreationists.

Landowners who wish to develop and promote outdoor and nature recreation opportunities on their lands that are inclusive to African Americans and females should focus on setting attributes that were found to be statistically more important to these groups. For example, *clean air, open range or pasture* and *agricultural farm fields* were all more important for African Americans. They prefer more developed settings evident by higher ratings on nearly all of the facilities/amenities and management/development indicators. Specifically, they desired *cooking grills, group shelters, cell phone reception, accessibility for physically disabled, recreational equipment rentals, educational signs/brochures, and the presence of a site manager*. They preferred the *ability to be in*

large groups (8 or more) more than Caucasians. Females were more concerned with having a *variety of plant and tree species, clean air, and clean water*. Females also placed greater importance on the developed aspect of the outdoor recreation experience though to a lesser degree than African American when compared to Caucasians. African Americans and females both preferred overnight accommodations of *hotels/motels/resorts* and *bed-n-breakfasts* more than their counterparts.

Findings from this study should be considered exploratory as there were some limitations including potential coverage error and non-response bias. The ability of this study to gain an in-depth understanding of the differences between Caucasians and African Americans related to outdoor and nature recreation preferences in the Southeast is limited and was a secondary objective. The database from which the survey sample was drawn was derived from updated telephone directory lists. These lists may have been exclusive of some groups and may help explain lower response rates for African Americans and females. This study did not attempt to test theories of ethnicity, marginality, assimilation, or discrimination as related to outdoor recreation (Floyd M. , 1999); rather empirical data from Southeastern urban dwellers were presented.

Differences in environmental-setting preferences among race and gender groups suggest that different types of settings are being sought by these sociocultural and sociostructural groups (Virden & Walker, 1999). Virden and Walker ask, “Can managers design recreation settings that are more attractive, inclusive, and equitable to different recreation groups?” This empirical information and other related publications will help private landowners and other land managers to do just that. Cordell, Betz, and Green (2002) urge that diversity must be a deliberately considered factor in recreation

and environmental planning and that it must be hard linked to decisions and anticipated outcomes of planning. Results from this survey suggest that it is important to continue analyzing the basic social constructs because they affect preferences for natural and non-natural setting preferences.

It will be important to support private rural landowners in the development and promotion of recreation opportunities and in providing legal protection. Some private landowners may benefit from efforts to help with capacity building and the development of a network for marketing outdoor recreation opportunities. Individual landowners may have limited resources and capabilities for reaching outdoor recreationists, particularly in urban areas. This study found that both women and African Americans were statistically more constrained than their counterparts by *not knowing where to go*. Marketing strategies that can reach these groups is recommended. In addition, developing networks for marketing outdoor recreation opportunities on private lands could stimulate productive partnerships for nature based tourism initiatives in the same geographic areas. Many states have implemented policies protecting landowners from liability associated with leasing lands for recreation use; this is another way to support rural development through nature based recreation on private lands. The potential for owner of private rural lands to provide outdoor recreation is a very exciting opportunity for the landowners themselves as well as southeastern residents, however it can only be successful with the right combination of management, policy and economic incentives.

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Appendices

Appendix A – Prenotice Letter

Date

NAME
STREET ADDRESS
CITY, STATE, ZIP

Dear FULL NAME,

I am writing to ask for your help with an important study being conducted by Auburn University to understand outdoor and nature recreation in the Southeastern United States. In approximately one week, you will receive a request to participate in this project by answering questions about your outdoor and nature recreation preferences. The information will be used to enhance recreation opportunities near you and throughout the Southeast.

I would like to do everything that I can to make it easy and enjoyable for you to participate in the study. You will have the option to complete a paper version of the survey or an online version on the internet. I am writing in advance because many people like to know ahead of time that they will be asked to fill out a questionnaire. This research can only be successful with the generous help of people like you.

To say thanks, you will receive a small token of appreciation with the request to participate. I hope you will take 15-20 minutes of your time to help us. Most of all, I hope that you enjoy the questionnaire and the opportunity to voice your thoughts and opinions about your outdoor and nature recreation preferences.

Sincerely,



Dr. Wayde Morse
Assistant Professor and Researcher
School of Forestry and Wildlife Sciences
Auburn University



Appendix B – Cover Letter

Date

NAME
STREET ADDRESS
CITY, STATE, ZIP

Dear FULL NAME,

I am writing to ask for your help with an important research study about your interest and involvement in outdoor and nature recreation in the Southeastern United States.

Outdoor recreation refers to non-work time you spend doing outdoor activities such as family and group gatherings, walking, biking, wildlife viewing, fishing, hunting, or just enjoying the scenery. Outdoor recreation can occur near or away from your home and in many areas such as a city park, family farm, beach, to other public or private natural areas. Even if you do not frequently participate in outdoor recreation, we are still very interested in hearing from you.

The best way we have of learning about these issues is by asking a diversity of people to share their thoughts and opinions. You are one of only a small number of residents who live in your area selected to represent your city. Your name was randomly selected to make sure that we hear from all different types of people who live in your city. Please have the adult (age 19 or older) in your household who has **the most recent birthday** complete the enclosed questionnaire.

The questions should only take about 15 - 20 minutes to complete. Your responses are voluntary and will be kept confidential. Your answers will never be associated with your mailing address or name and will remain anonymous.

If you would prefer to take the survey on the **internet** instead of mailing in the paper version, you can access the online version at the following URL address:

<http://business.auburn.edu/recreation/>

You will need an access code to enter the survey. Your access code is **ACCESS CODE**.

Your decision about whether or not to participate will not jeopardize your future relations with Auburn University or the School of Forestry and Wildlife Sciences. If you have any questions about this survey, please call Dr. Wayde Morse, by telephone at 1-800-818-0755 or by email at recstudy@auburn.edu. If you have any questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by telephone at (334) 844-5966 or by email at hsubjec@auburn.edu.

By taking a few minutes to share your experiences, you will be helping us out a great deal. The information you share with us can be used to enhance recreation opportunities. We have included a sticker as a way of saying thank you. I hope that you enjoy completing the questionnaire and look forward to receiving your responses.

Sincerely,



Dr. Wayde Morse
Assistant Professor and Researcher
School of Forestry and Wildlife Sciences
Auburn University



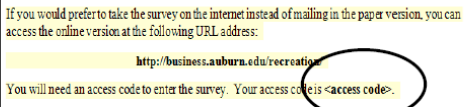
HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.

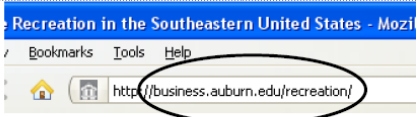
Appendix C – Instruction sheet for online version of questionnaire

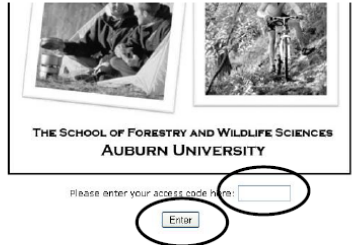
HOW TO FIND AND COMPLETE THE ONLINE VERSION OF THE OUTDOOR AND NATURE RECREATION SURVEY FROM AUBURN UNIVERSITY

Please be sure to allow about 15-20 minutes to complete the survey.

- 1 First, you will need to locate your online access code. This is an 8-digit code that can be found on the invitation letter that came in this envelope. The access code can also be found on the cover of your paper survey.

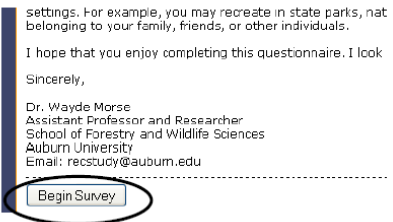

- 2 In your internet browser, type the following web address in the address bar:
business.auburn.edu/recreation/


- 3 On the internet site, you will see the same image as on the cover page of the print version of the survey. Below the image, you will see a box where you can enter your access code.

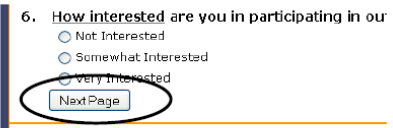

- 4 Upon entering the survey, there is a welcome letter. Please read the letter.

When you are ready to start the survey, please click on the 'Begin Survey' button.


Please start with question #1 and continue until you reach the bottom of the page.


- 5 At the bottom of each section, you will see a button called 'Next Page'.

When you have completed all of the questions in a given section, please click on 'Next Page'.


- 6 On the last page, you will have a chance to write any additional comments that you may have.

Please do so and then click the 'Finish' button at the bottom of the page.



Please email us at recstudy@auburn.edu if you have any questions. You may also call 1-800-818-0755.

Appendix D – Paper version of questionnaire

OUTDOOR AND NATURE RECREATION IN THE SOUTHEASTERN UNITED STATES



A STUDY BY:
THE SCHOOL OF FORESTRY AND WILDLIFE SCIENCES
AUBURN UNIVERSITY

Online Survey Access Code:

ah0001K

Greetings from Auburn University,

Thank you for taking our survey of nature related outdoor recreation! Many people spend at least some of their leisure time outside even if it's just walking up the street or having a group gathering at a park.

Outdoor recreation is the non-work time that you spend doing outdoor activities. We would like to understand your outdoor recreation preferences both near your home and away from your home during the past 12 months.

Near your home refers to outdoor recreation settings within a 15 minute drive (or about 15 miles) of your home – generally in urban and suburban areas. For example, you may recreate in city parks, schoolyards, local hiking and biking trails, open green areas, and even in your own backyard.

Away from home refers to outdoor recreation settings that are more than a 15 minute drive (or about 15 miles) from your home in rural or natural settings. For example, you may recreate in state parks, national forests or wildlife areas, on the banks of a stream or reservoir, and on rural land belonging to your family, friends, or other individuals.

I hope that you enjoy completing this questionnaire. I look forward to receiving your responses.

Sincerely,



Dr. Wayde Morse
Assistant Professor and Researcher
School of Forestry and Wildlife Sciences
Auburn University



Online Survey: business.auburn.edu/recreation

OUTDOOR AND NATURE RECREATION

1. Which of the following outdoor and nature recreation activities have you participated in at least once in your lifetime? (Check all that apply.)

- | | | |
|--|---|---|
| <input type="checkbox"/> Family or other group gathering | <input type="checkbox"/> Fishing | <input type="checkbox"/> Swimming (lakes, rivers, ocean) |
| <input type="checkbox"/> Walking/hiking | <input type="checkbox"/> Hunting | <input type="checkbox"/> Canoeing/kayaking |
| <input type="checkbox"/> Viewing natural scenery | <input type="checkbox"/> Camping | <input type="checkbox"/> Biking/cycling |
| <input type="checkbox"/> Bird watching | <input type="checkbox"/> Horseback riding | <input type="checkbox"/> Visiting agricultural areas (fruit picking, farm tour) |
| <input type="checkbox"/> Other wildlife observation | <input type="checkbox"/> Motorized sports (4x4, all-terrain vehicles, dirt bikes) | |

2. Do you have a park within 10 minutes walking distance of your home? (Check one.)

- Yes
- No

3. Have you ever been to a zoo? (Check one.)

- Yes
- No

4. Have you ever been to an aquarium? (Check one.)

- Yes
- No

5. Have you ever been to a botanical garden? (Check one.)

- Yes
- No

6. How interested are you in participating in outdoor and nature recreation? (Check one.)

- Not interested
- Somewhat interested
- Very interested



NEAR YOUR HOME

☀ Remember, near your home means within a 15 minute drive from home.

7. About how many days during the past 12 months did you participate in each of the following activities near your home? (For each activity, check one circle.)

ACTIVITIES NEAR YOUR HOME	Not at all	About 1-3 days	About 4-10 days	About 11-25 days	About 26-50 days	More than 50 days
Family or other group gathering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking/hiking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Viewing natural scenery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bird watching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other wildlife observation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Horseback riding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swimming (lakes, rivers, ocean)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Canoeing/kayaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biking/cycling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visiting agricultural areas (fruit picking, farm tour)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visiting a city park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. From the list of 'ACTIVITIES NEAR YOUR HOME' on the last page, please choose your favorite activity. (Write it next to the bold arrow below.)

MY FAVORITE ACTIVITY



9. How important was being close to nature for choosing to participate in your favorite activity the last time you did it? (Check one.)

- Not at all important
- Fairly important
- Very important

10. Did you participate in your favorite activity near home as often as you wanted during the past 12 months? (Check one.)

- Yes (Please skip to question #12.)
- No, I wanted to participate more often.

11. How important are each of the following reasons for not participating in your favorite activity near home as often as you wanted during the past 12 months?

(For each reason, check one circle.)

REASONS	← 1	2	3	4	5 →
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
Not enough money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not enough time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not enough places near me to do this activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt unwelcome or threatened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Didn't know where to go	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preferred destination was too crowded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



AWAY FROM HOME

☀ *Remember! Away from home is more than a 15 minute drive from your home.*

12. About how many days during the past 12 months did you participate in each of the following activities in rural or natural settings away from home? (For each activity, check one circle.)

ACTIVITIES AWAY FROM HOME	Not at all	About 1-3 days	About 4-10 days	About 11-25 days	About 26-50 days	More than 50 days
Family or other group gathering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking/hiking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Viewing natural scenery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bird watching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other wildlife observation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hunting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Camping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Horseback riding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motorized sports (4x4, ATV, dirt bikes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Swimming (lakes, rivers, ocean)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Canoeing/kayaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biking/cycling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visiting agricultural areas (fruit picking, farm tour)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. About how many days during the past 12 months did you visit the beach? (Check one.)

- Not at all
- About 1-3 days
- About 4-10 days
- About 11-25 days
- About 26-50 days
- More than 50 days

14. Was the only outdoor recreation trip that you took away from home in the past 12 months to the beach? (Check one.)

- Yes (Please skip to question #16.)
- No

15. About how many days during the past 12 months did you visit the following types of locations in rural or natural settings away from your home? (For each type of location, check one circle.)

TYPES OF LOCATIONS	Not at all	About 1-3 days	About 4-10 days	About 11-25 days	About 26-50 days	More than 50 days
Private lands owned by your family or friends <i>(where you did not pay money to have access)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Private lands owned by other individuals <i>(where you paid money to have access)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Corporate owned lands <i>(nature resorts or forest products companies)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
State public lands <i>(state parks/forests, historical sites)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
National public lands <i>(national parks/forests, monuments)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you did not participate in any outdoor recreation activities away from home in the past 12 months, please check this box and skip to question #25.

◆ YOUR MOST RECENT TRIP AWAY FROM HOME ◆

● Remember! Away from home is more than a 15 minute drive from your home.

16. From the list of activities below, please tell us the activity that was the focus of your most recent trip away from home. (Write main activity next to the bold arrow below.)

MY MAIN ACTIVITY **➔**

- | | | |
|--|---|--|
| <input type="checkbox"/> Family or other group gathering | <input type="checkbox"/> Fishing | <input type="checkbox"/> Swimming (lakes, rivers, ocean) |
| <input type="checkbox"/> Walking/hiking | <input type="checkbox"/> Hunting | <input type="checkbox"/> Canoeing/kayaking |
| <input type="checkbox"/> Viewing natural scenery | <input type="checkbox"/> Camping | <input type="checkbox"/> Biking/cycling |
| <input type="checkbox"/> Bird watching | <input type="checkbox"/> Horseback riding | <input type="checkbox"/> Visiting agricultural areas
(fruit picking, farm tour) |
| <input type="checkbox"/> Other wildlife observation | <input type="checkbox"/> Motorized sports (4x4, all-terrain vehicles, dirt bikes) | <input type="checkbox"/> Other: _____ |

17. In the list of activities above, please tell us the other activities that you also did on this trip. (Check up to five other activities.)

18. Which of the following choices best describes the type of location where you spent most of your time on your most recent trip away from home? (Check one.)

- | | | |
|--|---|---|
| <input type="radio"/> Private lands owned by family or friends | <input type="radio"/> Corporate owned lands | <input type="radio"/> National public lands |
| <input type="radio"/> Private lands owned by other individuals | <input type="radio"/> State public lands | <input type="radio"/> Other _____ |

19. How far did you travel (one way) on your most recent trip away from home? (Check one.)

- | | | |
|--------------------------------------|-------------------------------------|---|
| <input type="radio"/> Up to 25 miles | <input type="radio"/> 51-100 miles | <input type="radio"/> 201-300 miles |
| <input type="radio"/> 26-50 miles | <input type="radio"/> 101-200 miles | <input type="radio"/> More than 300 miles |

20. How much did you pay per person, per day to have access to the recreation site (entrance fee)? (Check one.)

- | | | |
|-----------------------------|-------------------------------|--------------------------------------|
| <input type="radio"/> \$ 0 | <input type="radio"/> \$6-10 | <input type="radio"/> \$21-30 |
| <input type="radio"/> \$1-5 | <input type="radio"/> \$11-20 | <input type="radio"/> More than \$30 |

21. Did you stay overnight on your most recent trip? (Check one.)

- Yes
- No (Skip to question #25.)

22. How many nights did you stay?

23. How many people including yourself stayed in these accommodations?

24. Which of the following best describes where you stayed? (Check one.)

- | | | |
|---|--|---|
| <input type="radio"/> Family or friends' home | <input type="radio"/> Rustic cabin (<i>basic</i>) | <input type="radio"/> Developed camp area (<i>drive-in</i>) |
| <input type="radio"/> Hotel, motel, resort | <input type="radio"/> Equipped cabin (<i>modest</i>) | <input type="radio"/> Primitive camp area (<i>walk-in</i>) |
| <input type="radio"/> Bed-n-Breakfast | <input type="radio"/> Recreational Vehicle (<i>RV</i>) | <input type="radio"/> Other: _____ |



YOUR IDEAL RECREATION EXPERIENCE AWAY FROM HOME

● Remember! Away from home is more than a 15 minute drive from your home.

25. From the list of activities **below**, please choose your favorite activity to do away from home.
(Write favorite activity next to the bold arrow below.)

MY FAVORITE ACTIVITY **—————→**

- | | | |
|--|---|--|
| <input type="checkbox"/> Family or other group gathering | <input type="checkbox"/> Fishing | <input type="checkbox"/> Swimming (lakes, rivers, ocean) |
| <input type="checkbox"/> Walking/hiking | <input type="checkbox"/> Hunting | <input type="checkbox"/> Canoeing/kayaking |
| <input type="checkbox"/> Viewing natural scenery | <input type="checkbox"/> Camping | <input type="checkbox"/> Biking/cycling |
| <input type="checkbox"/> Bird watching | <input type="checkbox"/> Horseback riding | <input type="checkbox"/> Visiting agricultural areas
(fruit picking, farm tour) |
| <input type="checkbox"/> Other wildlife observation | <input type="checkbox"/> Motorized sports (4x4, all-terrain vehicles, dirt bikes) | <input type="checkbox"/> Other: _____ |

26. In the list of activities **above**, please tell us the **other activities** that you like to do on the same trip as your favorite activity. (Check up to five other activities.)

27. Did you participate in your favorite activity away from home **as often as you wanted** during the past 12 months? (Check one.)

- Yes (Please skip to question #29.)
- No, I wanted to participate more often.

28. How important are each of the following reasons for not participating in your favorite activity away from home **as often as** you wanted during the past 12 months? (For each reason, check one circle.)

REASONS	← 1	2	3	4	5 →
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
Not enough money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not enough time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not enough places near me to do this activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt unwelcome or threatened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Didn't know where to go	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preferred destination was too crowded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CREATE YOUR IDEAL SETTING FOR YOUR FAVORITE ACTIVITIES!

29. How important are each of the following **amenities and services** for creating your ideal setting for your favorite activities? (For each item, check one circle.)

AMENITIES AND SERVICES	1	2	3	4	5
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
Picnic tables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fire rings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooking grills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Group shelter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drinking water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hot showers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flush toilets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secure parking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreational equipment rental	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Boat launch/access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cellular phone reception	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. How important are each of the following **social characteristics** for creating your ideal setting for your favorite activities? (For each item, check one circle.)

SOCIAL CHARACTERISTICS	1	2	3	4	5
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
Rarely hear and see others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to be in large groups (8 or more)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presence of site manager	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On-site regulations and controls	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Educational signs and brochures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Directional signs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



KEEP GOING, YOU'RE DOING GREAT!

31. How important are each of the following **trail characteristics** for creating your ideal setting for your favorite activities? (For each item, check one circle.)

TRAIL CHARACTERISTICS	← 1 2 3 4 5 →				
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
Well maintained trail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessibility for physically disabled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Primitive road/jeep trail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Single track trails (biking or hiking)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. How important are each of the following **natural characteristics** for creating your ideal setting for your favorite activities? (For each item, check one circle.)

NATURAL CHARACTERISTICS	← 1 2 3 4 5 →				
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
Land area bigger than 50 acres	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unmodified natural environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
River or stream (<i>flowing water</i>)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lake or pond	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marsh, wetland or swamp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tree plantation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open range or pasture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agricultural farm field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mixture of open field and forest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Woodland/forest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Natural scenic beauty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variety of plant and tree species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean air	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variety of wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Specific fish or other wildlife Specify: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33. How important are each of the following options for overnight accommodations for creating your ideal setting for your favorite activities? (For each item, check one circle.)

OVERNIGHT ACCOMMODATIONS	← 1 2 3 4 5 →				
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
Equipped cabins (<i>modest</i>)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rustic cabins (<i>basic</i>)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Primitive campsite (<i>walk-in</i>)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developed campsite (<i>drive-in</i>)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreational Vehicle (<i>RV</i>) hookup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hotel, motel, or resort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bed-n-Breakfast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family or friends' home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to reserve lodging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

34. How important are each of the following reasons for wanting to participate in your favorite activities in your ideal setting as you have just described? (For each reason, check one circle.)

REASONS	← 1 2 3 4 5 →				
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
To be close to nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To escape noise and crowds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To experience excitement/adventure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be with friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To do something with my family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To get away from the usual demands of life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To explore the area and learn about nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To learn about the history/culture of the area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To promote my physical fitness/exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To develop my personal/spiritual values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To depend on/develop my skills and abilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To enjoy the sounds and smells of nature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

35. How many people, including yourself, would you like to participate in your favorite activities in the ideal setting that you just described? *(Check one.)*
- 1 person (alone) 3-5 people More than 10 people
 2 people 6-10 people
36. What is the farthest that you would be willing to travel one way to participate in your favorite activities in the ideal setting that you just described? *(Check one.)*
- Up to 25 miles 51-100 miles 201-300 miles
 26-50 miles 101-200 miles More than 300 miles
37. How much would you be willing to pay per person, per day to have access to the ideal setting that you just described? *(Check one.)*
- \$ 0 \$6-10 \$21-30
 \$1-5 \$11-20 More than \$30
38. If an individual private landowner offered access to their land to participate in your favorite activities in your ideal setting, would you recreate on their land in the next year? *(Check one.)*
- Yes
 No

HOUSEHOLD INFORMATION

◆————◆
 ● *For statistical purposes, we need to ask you a few questions about your household.
 Please remember that the information that you provide is confidential!*

39. What year were you born? 1 9 ____
40. What is your gender? Male Female
41. How many years have you lived in your city? _____ years
42. Including yourself, how many people live in your house full time? _____ people
43. How many of these people are members of your family? _____ family members
44. How many people over 16 years old live in your house? _____ people over 16
45. How many children under 6 years old live in your house? _____ children under 6

12

● **JUST ONE MORE PAGE AND YOU'RE DONE!**

46. Are you a student? Yes No
47. Are you retired? Yes No
48. Are you on active duty in the U.S. military (Armed Forces/National Guard)? Yes No
49. Do you speak a language other than English at home? Yes No
50. Are you of Hispanic, Latino, or Spanish origin? Yes No

If yes, from which country?

51. What is your race? (Check one.)

- African American/Black Asian Caucasian/White
- American Indian/Alaska Native Native Hawaiian/other Pacific Islander Other _____

If you would like to tell us more about your race or ethnicity (like country of origin), please do so below.

52. What is the highest degree or level of school you have completed? (Check one.)

- Did not complete high school Associate degree
- High school diploma or GED Bachelor degree
- Some college, but no degree Graduate or professional degree Other _____

53. Are you currently employed?

- Yes
- No (Please skip to question #55)

54. How many hours a week do you work?

- Less than 10 hours per week 21-40 hours per week
- 11-20 hours per week More than 40 hours per week

55. Please check the box corresponds to your household income for 2008.

- Less than \$14,999 \$25,000 to \$34,999 \$75,000 to \$99,999
- \$15,000 to \$19,999 \$35,000 to \$49,999 \$100,000 to 149,999
- \$20,000 to \$24,999 \$50,000 to \$74,999 \$150,000 or more

THANK YOU FOR PARTICIPATING IN THIS STUDY!

Please provide any additional comments about your outdoor and nature recreation preferences here.

- Please fold this survey along the dotted line and return it to the School of Forestry and Wildlife Sciences at Auburn University in the self-addressed, stamped envelope provided.



Appendix E – Outdoor and Nature Recreation Study Logo and sticker design



Appendix F – Postcard Reminder/thank you note

Date

Last week a questionnaire was mailed to you because your household was randomly selected to help in a study about outdoor and nature recreation in the Southeastern United States. If someone at your address has already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please have the adult (age 19 or older) in your household who has had the **most recent birthday** do so right away. We are especially grateful for your help with this important study.

If you would prefer to take the survey on the internet, you can access the online version at the following URL address: **<http://business.auburn.edu/recreation/>**. You will need an access code to enter the survey. This code was provided on the cover of the paper questionnaire as well as the introduction letter mailed last week. If you did not receive a questionnaire, or if it was misplaced, please call us toll free at **1-800-818-0755** or email us at recstudy@auburn.edu and we will get another one in the mail to you today.

Sincerely,



Dr. Wayde Morse
School of Forestry and Wildlife Sciences
Auburn University



Appendix G – Follow up cover letter (full survey packet)

Date

NAME
STREET ADDRESS
CITY, STATE, ZIP

Dear FULL NAME,

A few weeks ago, we sent a letter to your address that asked for a member of your household to complete a questionnaire about your preferences for outdoor and nature recreation. To the best of our knowledge, it has not yet been returned.

We are writing again because of the importance that your household's questionnaire has for helping to get accurate results. It is only by hearing from nearly everyone in the sample that we can be sure that the results truly represent your area. Your name was randomly selected to make sure that we hear from all different types of people who live in your city. Therefore, we hope the adult (age 19 or over) in your household who has had the most recent birthday will fill out the questionnaire soon.

As mentioned before, the questions should only take about 15-20 minutes to complete and are available in a paper version or an online version. Your responses are voluntary and will be kept confidential. Your answers will never be associated with your name or address and will remain anonymous.

If you would prefer to take the survey on the **internet** instead of mailing in the paper version, you can access the online version at the following URL address:

<http://business.auburn.edu/recreation/>

You will need an access code to enter the survey. Your access code is **ACCESS CODE**.

Your decision about whether or not to participate will not jeopardize your future relations with Auburn University or the School of Forestry and Wildlife Sciences. If you have any questions about this survey, Dr. Wayne Morse, the study director, will be happy to help and can be reached by telephone at 1-800-818-0755 or by email at recstudy@auburn.edu. If you have any questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by telephone at (334) 844-5966 or by email at hsubjec@auburn.edu.

We hope that you enjoy completing the questionnaire and look forward to receiving your responses. The information you share with us can be used to enhance recreation opportunities near you and throughout the southeast.

Sincerely,

Wayde Morse

Dr. Wayde Morse
Assistant Professor and Researcher
School of Forestry and Wildlife Sciences
Auburn University



HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.

Appendix H - Follow up cover letter (online version only)

Date

NAME

STREET ADDRESS

CITY, STATE, ZIP

Dear FULL NAME,

A few weeks ago, we sent a letter to your address that asked for a member of your household to complete a questionnaire about your preferences for outdoor and nature recreation. To the best of our knowledge, it has not yet been returned.

We are writing again because of the importance that your household's questionnaire has for helping to get accurate results. It is only by hearing from nearly everyone in the sample that we can be sure that the results truly represent your area. Your name was randomly selected to make sure that we hear from all different types of people who live in your city. Therefore, we hope the adult (age 19 or over) in your household who has had the most recent birthday will fill out the questionnaire soon.

As mentioned before, the questions should only take about 15-20 minutes to complete and are available in a paper version or an online version. Your responses are voluntary and will be kept confidential. Your answers will never be associated with your name or address and will remain anonymous.

You can access the **online internet version** of the survey at the following URL address:

<http://business.auburn.edu/recreation/>

You will need an access code to enter the survey. Your access code is **ACCESS CODE**.

If you would **prefer to take the paper version** of the survey, please contact Dr. Wayde Morse, the study director, by telephone at 1-800-818-0755 or by email at recstudy@auburn.edu and a paper version will be sent immediately.

Your decision about whether or not to participate will not jeopardize your future relations with Auburn University or the School of Forestry and Wildlife Sciences. If you have any questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by telephone at (334) 844-5966 or by email at hsubjec@auburn.edu.

We hope that you enjoy completing the questionnaire and look forward to receiving your responses. The information you share with us can be used to enhance recreation opportunities near you and throughout the southeast.

Sincerely,

Wayde Morse

Dr. Wayde Morse
Assistant Professor and Researcher
School of Forestry and Wildlife Sciences
Auburn University



HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.

Appendix I – Nonresponse Bias check telephone script

OUTDOOR AND NATURE RECREATION SURVEY NON RESPONSE BIAS TELEPHONE SCRIPT

1. Good [MORNING, AFTERNOON], my name is _____. I am calling from Auburn University about a study on outdoor and nature recreation in the Southeast. We sent you a survey on outdoor recreation a few weeks ago. Your household was selected randomly to complete a survey and we noticed that you chose not to participate or were unable to participate. Is this correct?
2. We want to make sure that all types of people in your area are represented in this study. Would you mind taking just a couple of minutes to answer a few questions with me over the phone?

(If person is willing) → Continue with #3

(If person is not willing) → Is there a better time to contact you?

(If no) → Thank you anyway. Have a nice day.

(If yes) → Record better time – Great, we will try calling you at that time. Thank you and have a great day

3. Great! Thanks. Before we begin, I just want you to know that, by federal law, your answers are completely confidential and will not be linked to your identity in any way.
4. How interested are you in participating in outdoor and nature recreation such as walking, fishing, camping, or having group gatherings outside?
 - Not interested
 - Somewhat interested
 - Very interested
5. Did you participate in outdoor and nature recreation as often as you wanted during the past 12 months? (Check one.)
 - Yes, *skip to #7.*
 - No

6. Now I will read a few reasons that might explain why you did not participate as much as you wanted in outdoor and nature recreation in the past 12 months. On a scale from 1 to 5, where 1 means not important at all and 5 means very important, please tell me how important each reason is.

Did you not participating in recreation as often as you would have liked because:

(read the following reasons below...and repeat the scale as necessary)

REASONS	1	2	3	4	5
	Not At All Important	Slightly Important	Fairly Important	Quite Important	Very Important
Not enough money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not enough time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not enough places near me to do it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt unwelcome or threatened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Didn't know where to go	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preferred destination was too crowded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Okay, now for statistical purposes, I just need to ask three typical demographic questions.

8. What year were you born?

9. What is your race?

- African American/Black Asian Caucasian/White
 American Indian/Alaska Native Native Hawaiian/other Pacific Islander Other _____

10. Would you like to tell us more about your race or ethnicity?

(If no) → Continue to #12.

(If yes) → Record details.

11. This is the last question. What is the highest degree or level of school you have completed?

- Did not complete high school Associate degree
 High school diploma or GED Bachelor degree
 Some college, but no degree Graduate or professional degree Other, *record*

12. Finally, I would like to ask the approximate range of your yearly household income. Is it:

- Less than \$14,999 \$25,000 to \$34,999 \$75,000 to \$99,999
 \$15,000 to \$19,999 \$35,000 to \$49,999 \$100,000 to 149,999
 \$20,000 to \$24,999 \$50,000 to \$74,999 \$150,000 or more

13. Do you have any other thoughts or comments that you would like to share?

14. Thank you very much for helping us with this. If you have any questions about this study, I can provide you with a phone number that you can call. Dr. Wayde Morse is the principle researcher for this study and he can be reached at (334) 844-8086. Thanks again for your time and have a great day!

Appendix J – Demographic data from Outdoor and Nature Recreation (ONR) in the Southeastern United States compared to U.S. Census Data

KEY:

Black bars in charts are from *Outdoor and Nature Recreation in the Southeastern United States study*

White bars in charts represent *U.S. Census data for corresponding Metropolitan Statistical Area*

Athens. The ONR Study sample obtained for Athens under represents the 20-24 and 25-34 age groups. In contrast, the 45-54, 55-59, 60-64, 65-74, and 75-84 age groups were over represented. Gender representation by both males and females were both within 10% of the expected values from the census data. For race, Caucasians were over represented by about 22% as well as were American Indians/Alaskan Natives. Other races were underrepresented with African Americans at 7.8% compared with the 26.5% in the actual population. All household income categories under \$50,000 were under represented whereas income categories over \$50,000 were overrepresented. Education Level follows the same pattern with high representation by people with higher levels of education.

Atlanta. The age bias is much the same for Atlanta as it was for Athens except that the 20-24 age group actually has zero representation here; in addition, the over representation by the older age groups actually begins slightly younger in this MSA, at the 35-44 category. For gender, there is nearly a twenty percent difference between the ONR sample and the census data for both males and females where males are over

represented and females are underrepresented. The expected overrepresentation of Caucasians occurred in Atlanta as well as it did more unexpectedly by Native Hawaiian/other Pacific Islanders. There were minimal differences in income levels in this MSA with the exception of the \$25,000 – 34,999 bracket which is sorely underrepresented as were income brackets below that, though to a lesser degree. The higher income categories are all overrepresented, although they all fall within 10% of the actual population. As for education, residents with bachelor's or graduate/professional degrees made up over half of the respondents for the ONR study; by contrast, well-over half of the actual population of this MSA actually holds less than an associate's degree with over a quarter of the population not completing or receiving any post secondary education.

Birmingham. Birmingham's representation by age class in the ONR study follows suit with Atlanta with higher numbers at the 35-44 and older age classes. For gender, the same 20+% difference occurs with both males and females where males are overrepresented and females underrepresented. The ONR Study data is biased toward Caucasians by approximately 20% while African Americans represented are about 16% fewer than in the census data for Birmingham . Higher income classes are overrepresented; however, the difference between ONR study and census data is greater at the lower end and minimal for income brackets beyond the \$25,000-49,999 category. Difference in education level is most pronounced (more than 10%) at 'Did not complete high school', who were underrepresented, and at Graduate/professional degree at the other end with overrepresentation.

Chattanooga. Age classes under 45 are underrepresented for Chattanooga in the ONR study. For the 45 and over categories, overrepresentation occurs; being most pronounced at the 60-64 and 65-74 age categories. The difference in the two sets of gender data for males and females are less than 20%, but not by much. The ONR study data shows a strong male bias in comparison to the census data for this MSA. While Chattanooga had the largest percentage of Caucasian respondents of all of the MSAs at 92.5%, this actually was only about 5% more than the actual population, so the white population is not exceedingly over represented in this area. Further, while African Americans are underrepresented as to be expected, the difference between ONR and census data reveals a difference of just over 10%; this is much less than in other MSAs where the underrepresentation of African Americans is by 20% or greater. Lower income classes are typically underrepresented but the very poor show the most difference with the census population data. The most overrepresented income category in Chattanooga is \$50,000-74,999 with other categories showing minimal differences. The level of education data for the ONR study is highly skewed towards the higher education categories while the census population data is for the same variable is highly skewed towards the lowest two categories.

Columbus. The 20-24 and 25-34 age classes are underrepresented in Columbus. Overrepresentation in the ONR study begins at the 35-44 category and continues until those older than 85. Residents between 35 and 59 as well as those 65-74 are most represented in this MSA. Representation of males is larger and females smaller for the ONR study, but the by less than 10% for both sexes. Columbus had the best representation by African Americans in the study with 25.8% of the 41.2% population

responding to the ONR questionnaire. Caucasians were overrepresented by about 16.6%. For income, the very poor are most underrepresented differences in other income categories are minimal. ONR study data over represents all post secondary levels of education and the lowest two education level groups are sorely underrepresented, both by about 14%.

Huntsville. Respondents in the 45-54 age group make up nearly double any other age class in Huntsville; at 32.8% of all respondents, this group is over represented in this study by about 17.7%. Overrepresentation occurs in all age groups beyond that one, markedly for the 65-74 category. There is a nearly 20% difference in ONR study and census data for both males and females with the standard overrepresentation by males and underrepresentation for females. Caucasians are overrepresented by about 15% and African Americans under by 16.5%. All income data from the ONR study falls within 10% of the U.S. Census data for Huntsville. The majority of the respondents from Huntsville held at least a Bachelor's degree.

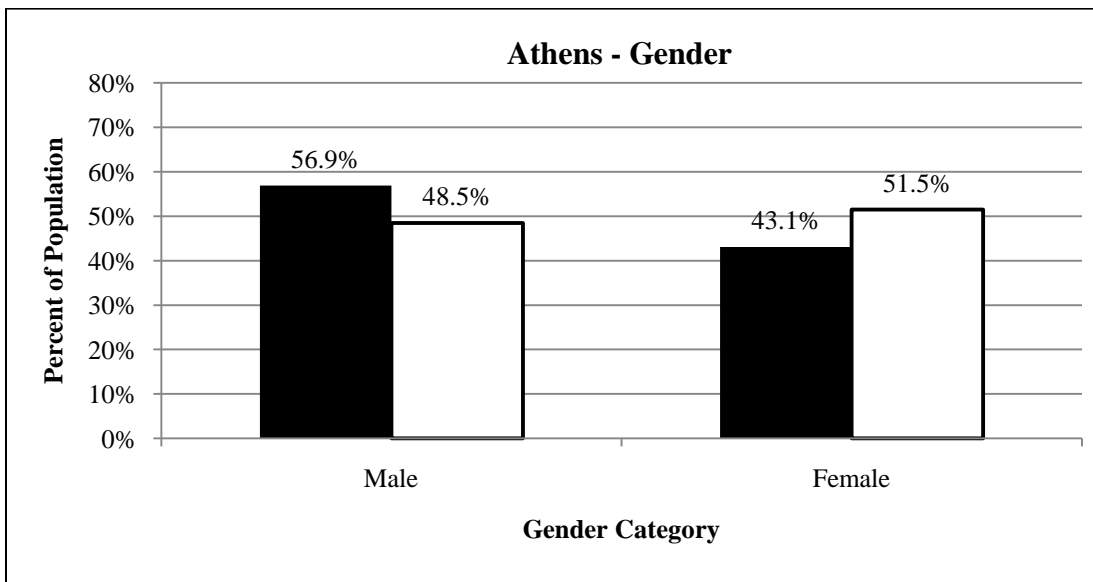
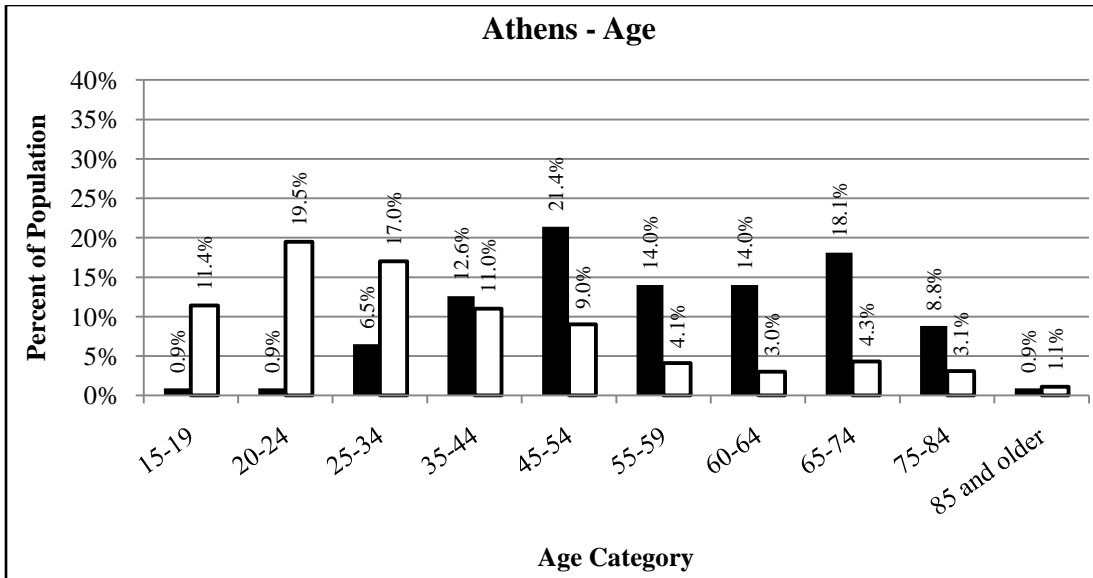
Macon. There was zero representation by the 20-24 age class in Macon and little in the 25-34 group. The 45-54 age class is overrepresented by about 13% as well as the 65-74 group at 11.5%. Males are overrepresented in the ONR study by about 10% and female are underrepresented by the same amount . Macon is the least white MSA in the study with only 54.8% of the actual population in this category; the ONR data over represents this population by about 25%. Underrepresentation by African Americans is also nearing 25%. Only in the lowest income bracket, those earning less than \$15,000, is there significant misrepresentation in the ONR data. Macon residents that 'Did not

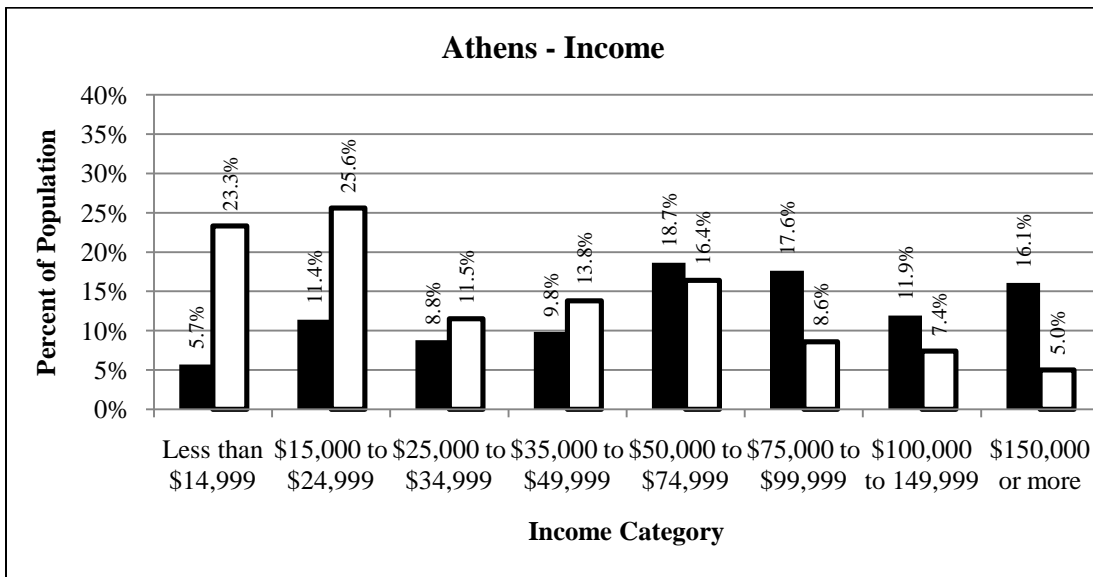
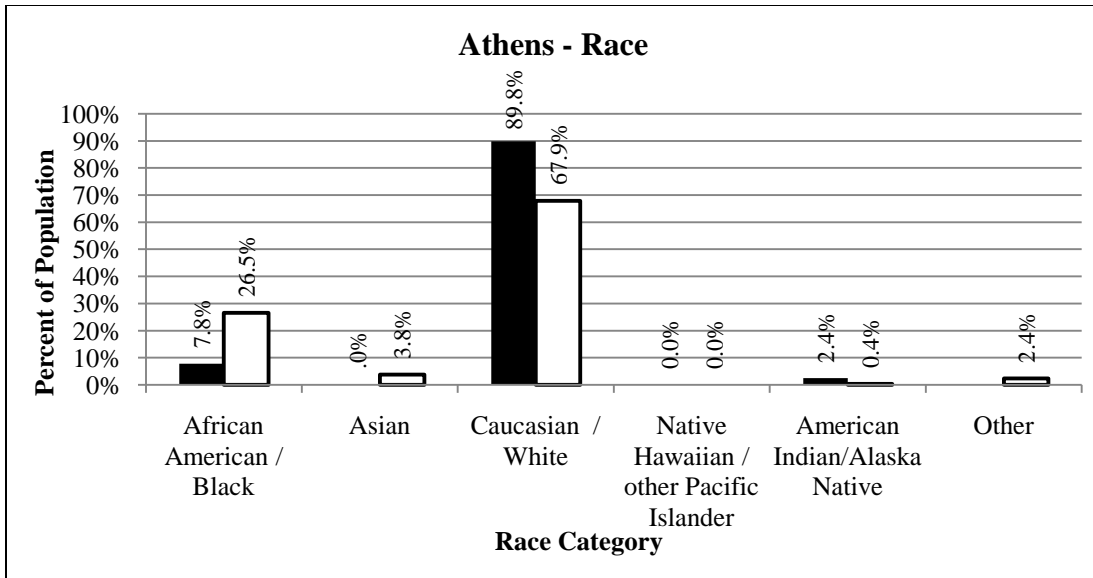
complete high school' are sorely represented in this study and those with 'Bachelors degree' are overrepresented.

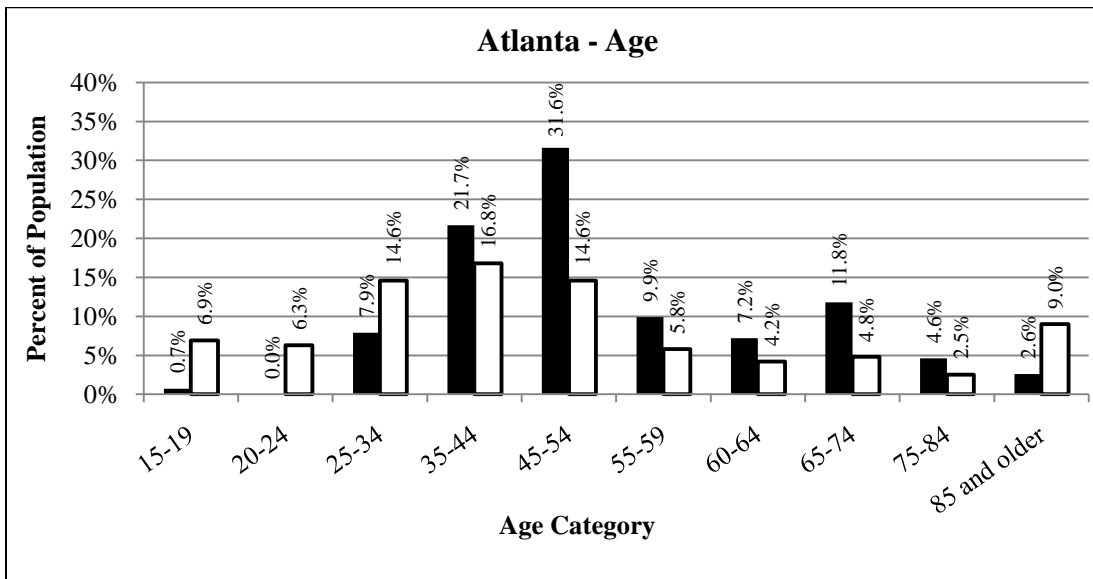
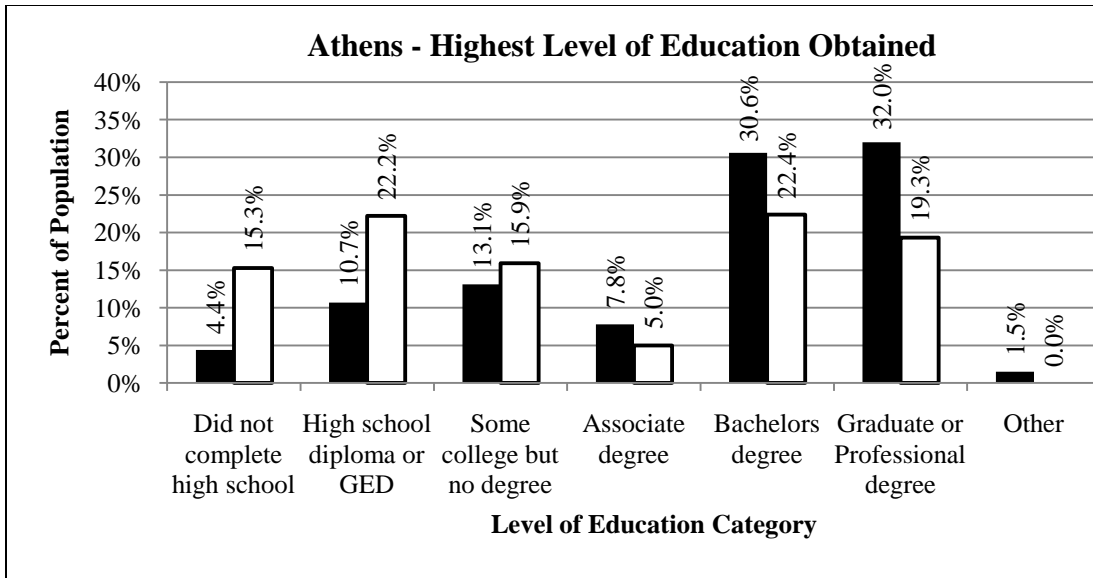
Montgomery. Data from the ONR study for Montgomery over represents the actual population in the 55-59 and 65-74 age classes. There is less than a 15% difference from the census data for both males and females, with the males being overrepresented and females underrepresented. African Americans are underrepresented in the ONR study by about 27.6% and Caucasians overrepresented by about 25%. The most notable difference in income data from the ONR study and the census is in the lowest and highest categories with predictable underrepresentation by the poor and overrepresentation by the wealthy. The highly educated are overrepresented in Montgomery and those having no post secondary education at all are underrepresented.

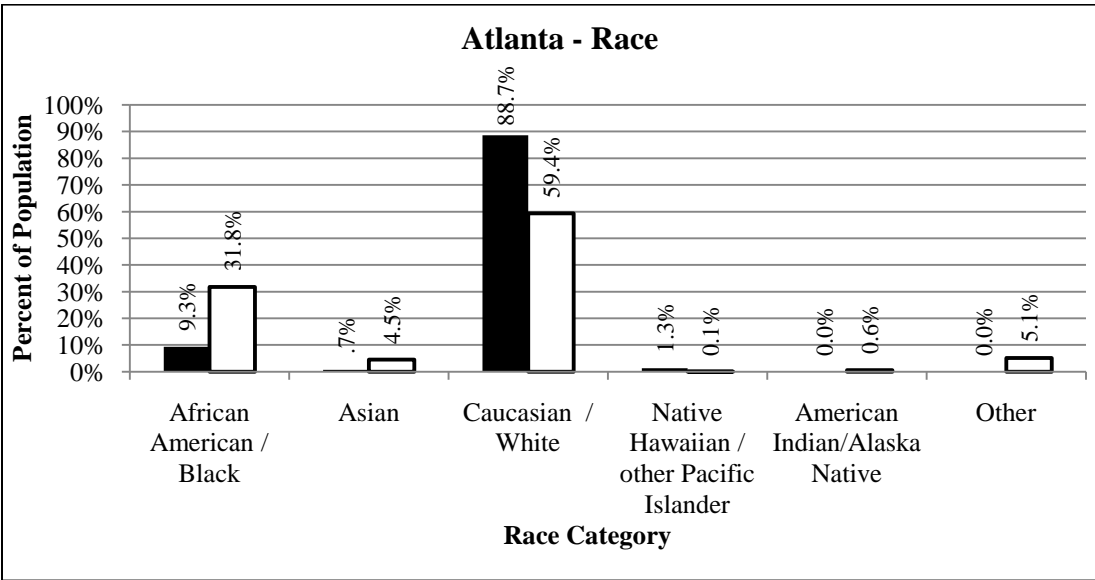
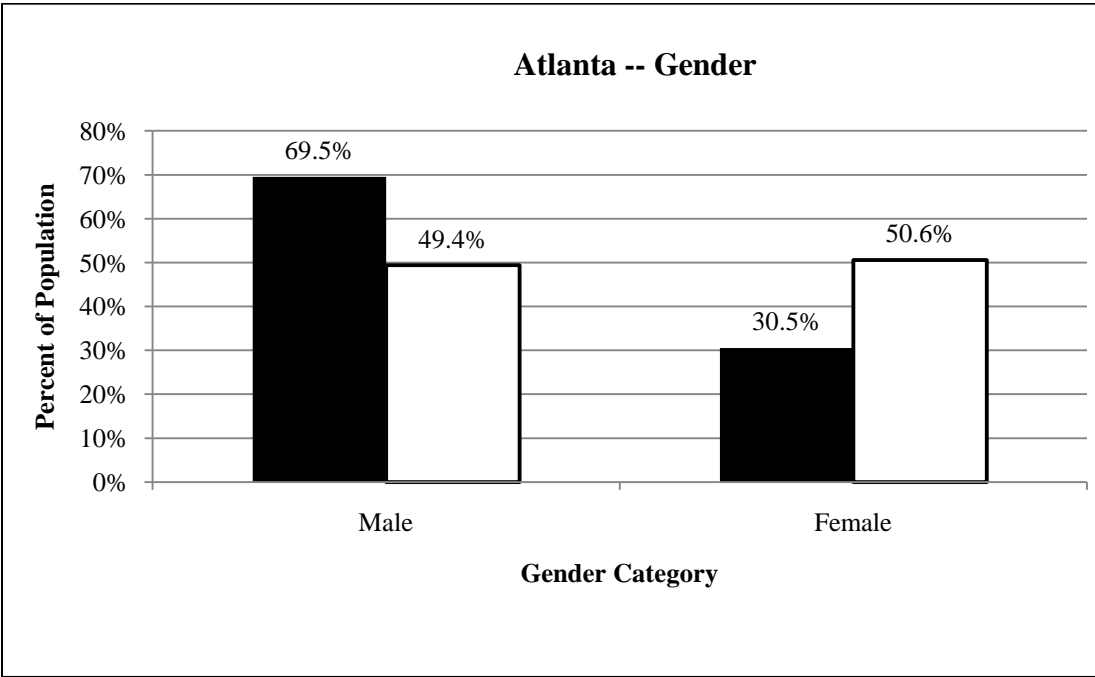
Dichotomous Demographic Variables Compared by MSA to U.S. Census

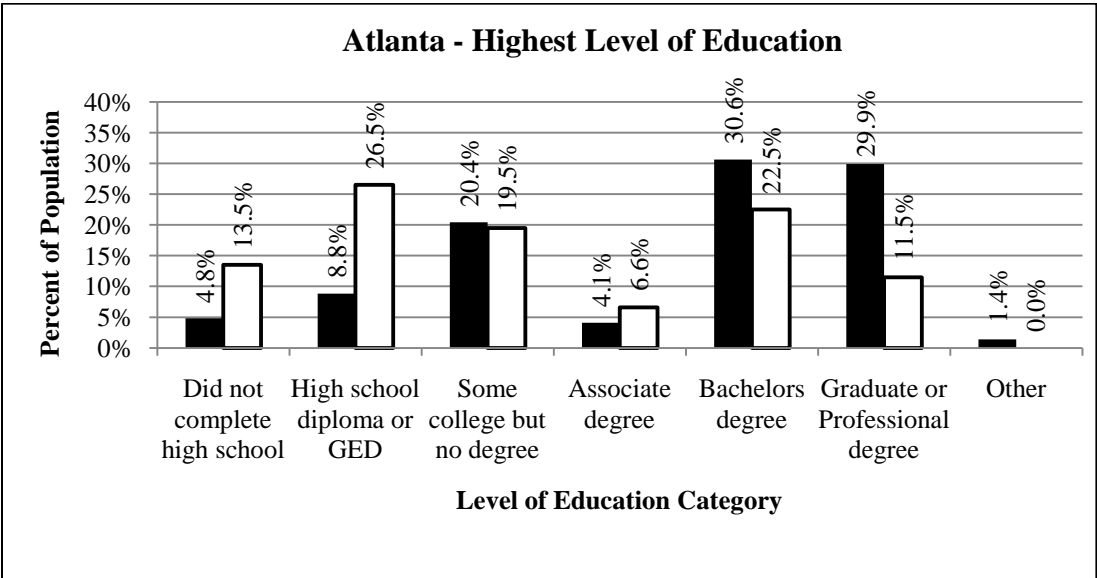
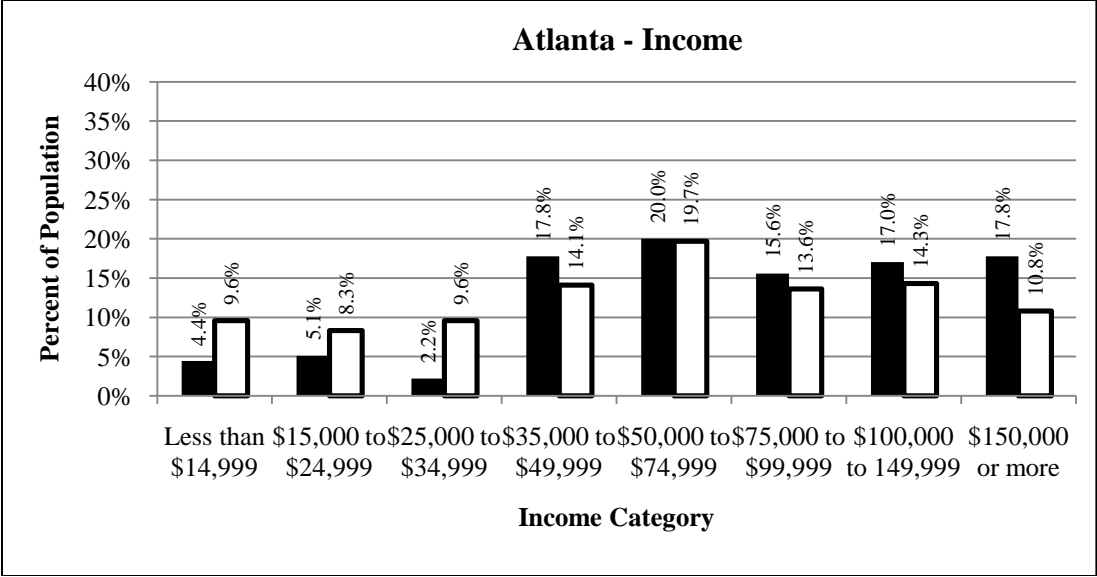
Data. The following four charts refer to the demographic variables that only had two answer choices, yes or no. Just under half of Columbus's active duty population is represented in the ONR data. Residents living in households that speak a language other than English may be underrepresented in Athens and Atlanta; there may also be underrepresentation by the 'Hispanic, Latino, or other Spanish origin' group in these areas as well.

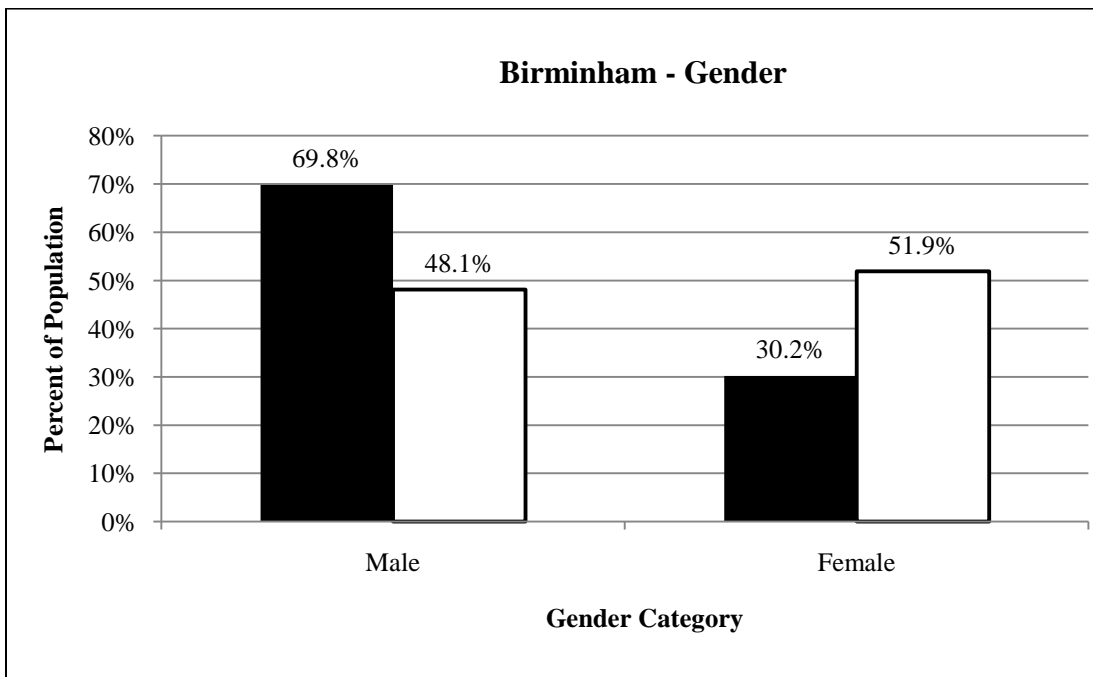
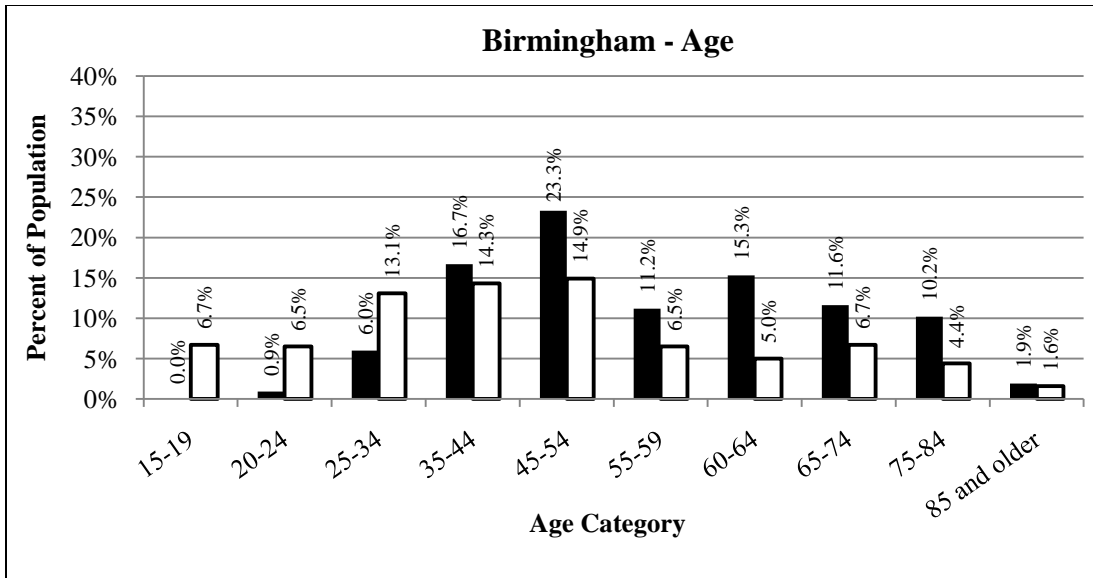


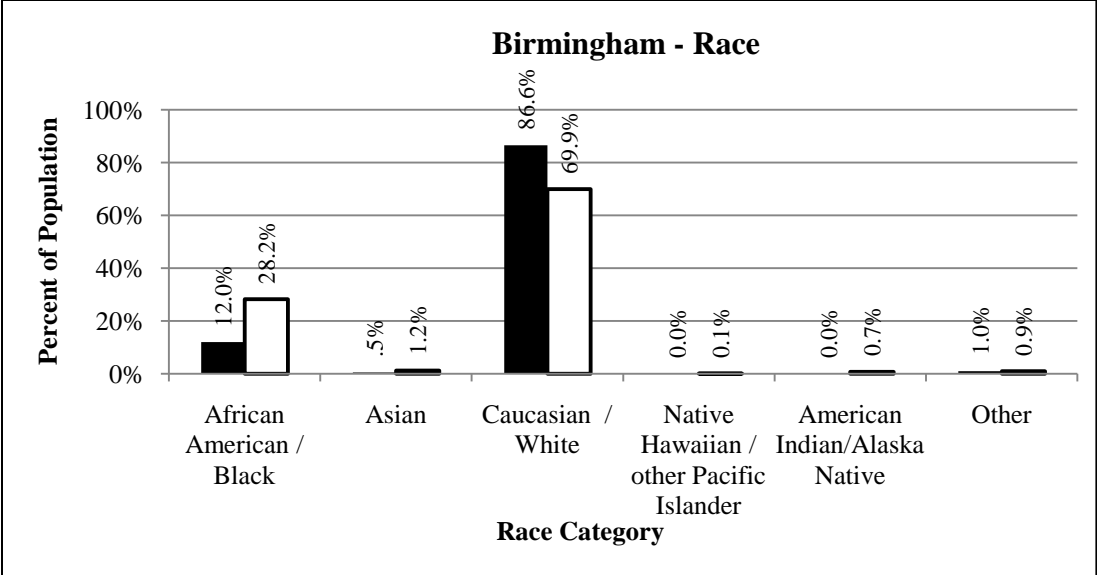


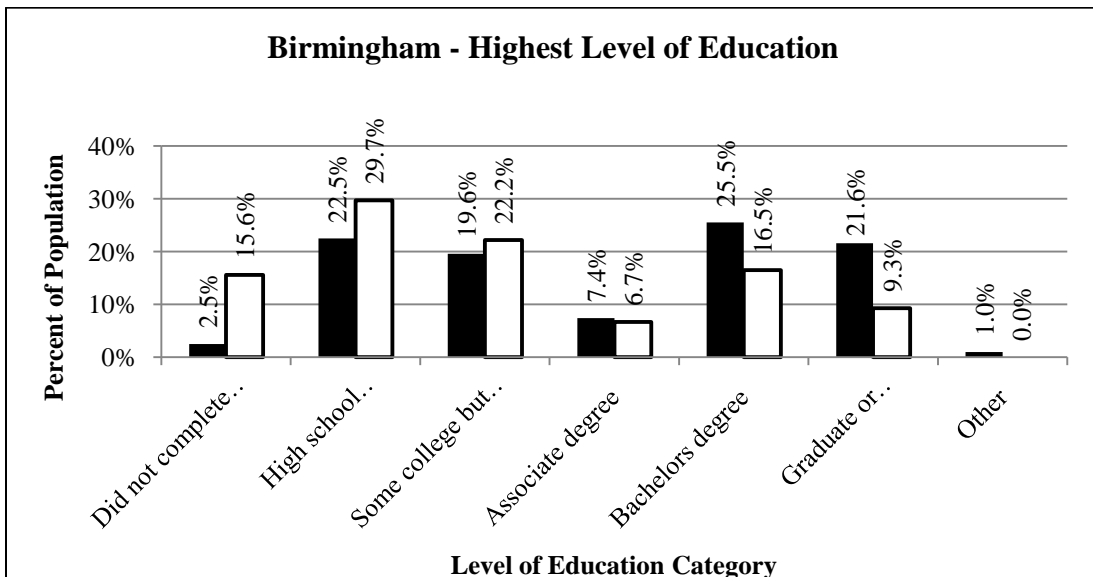
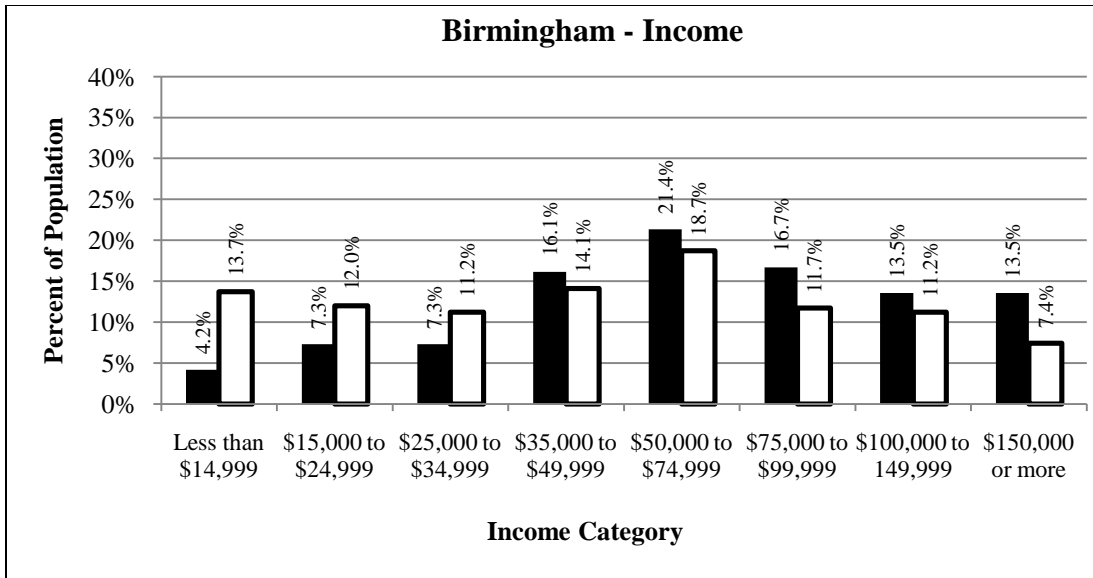


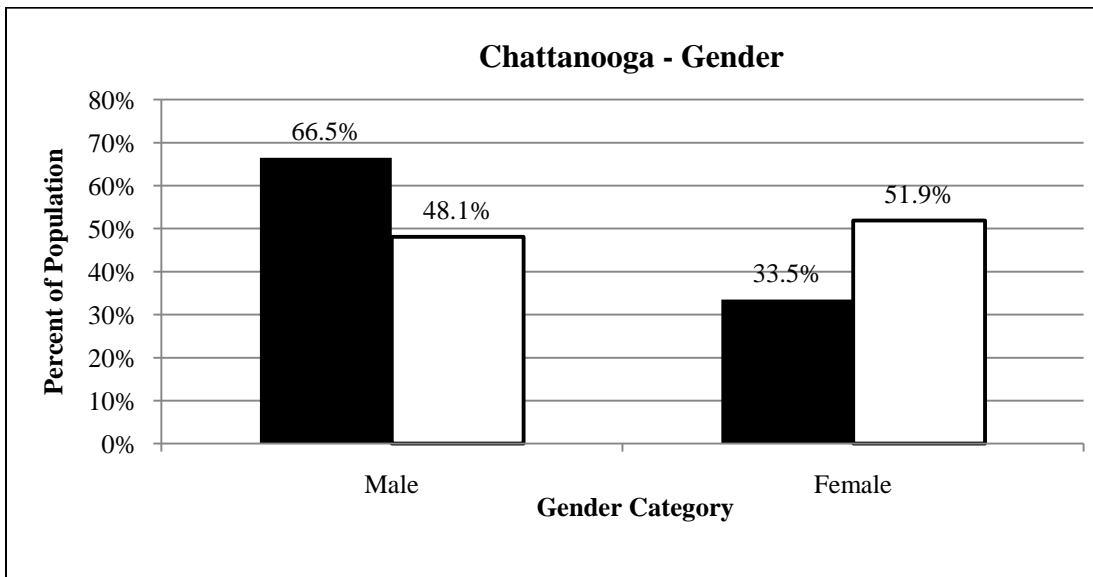
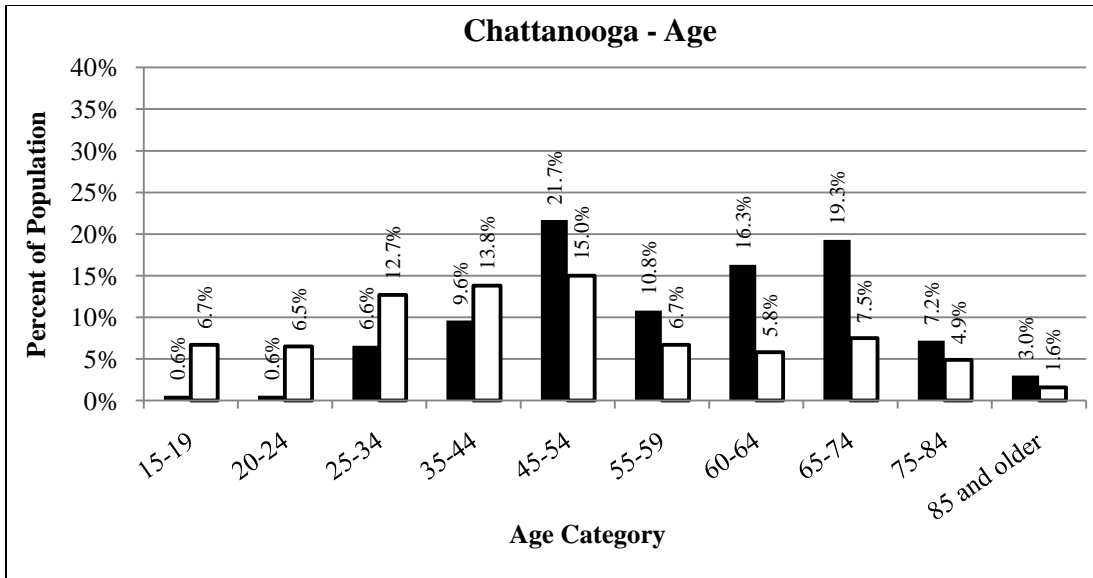


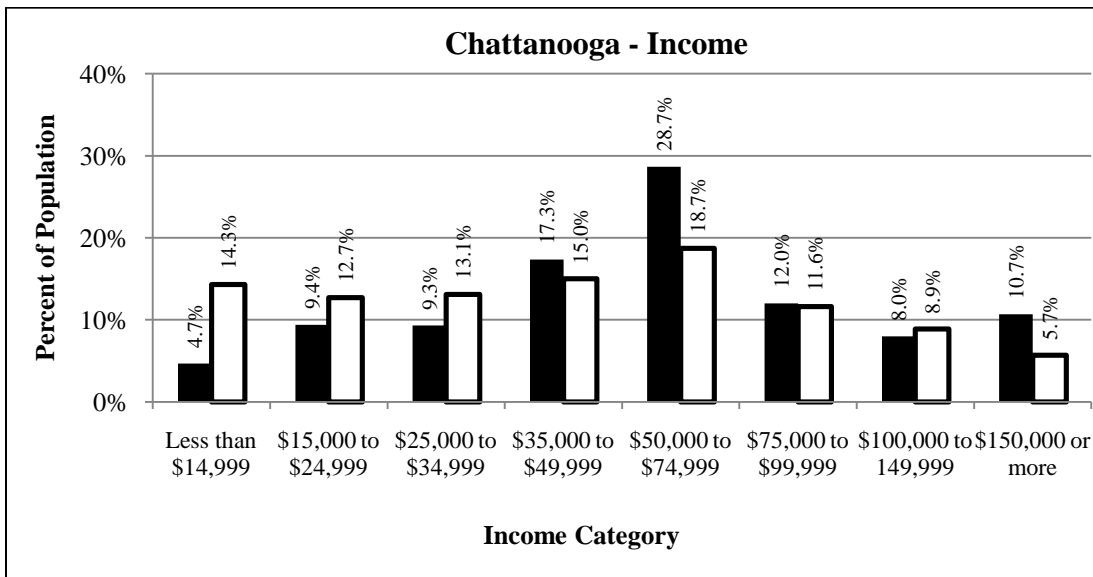
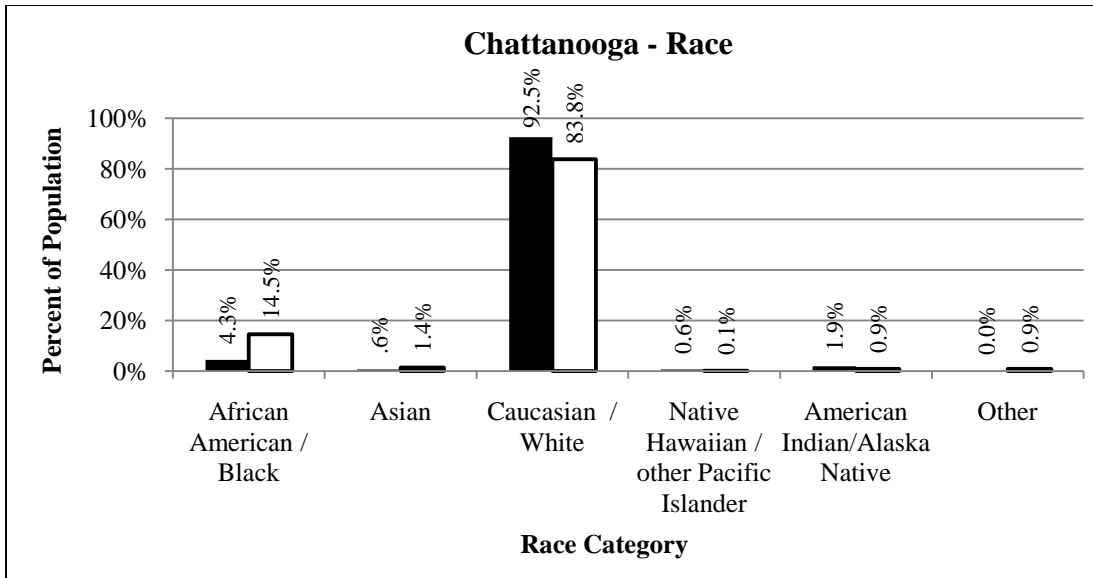


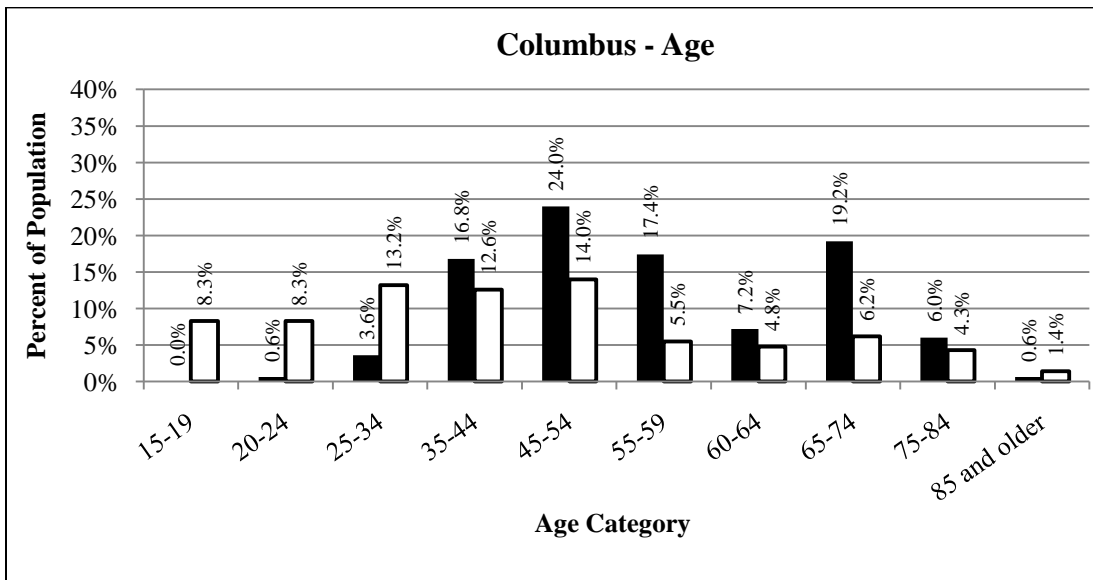
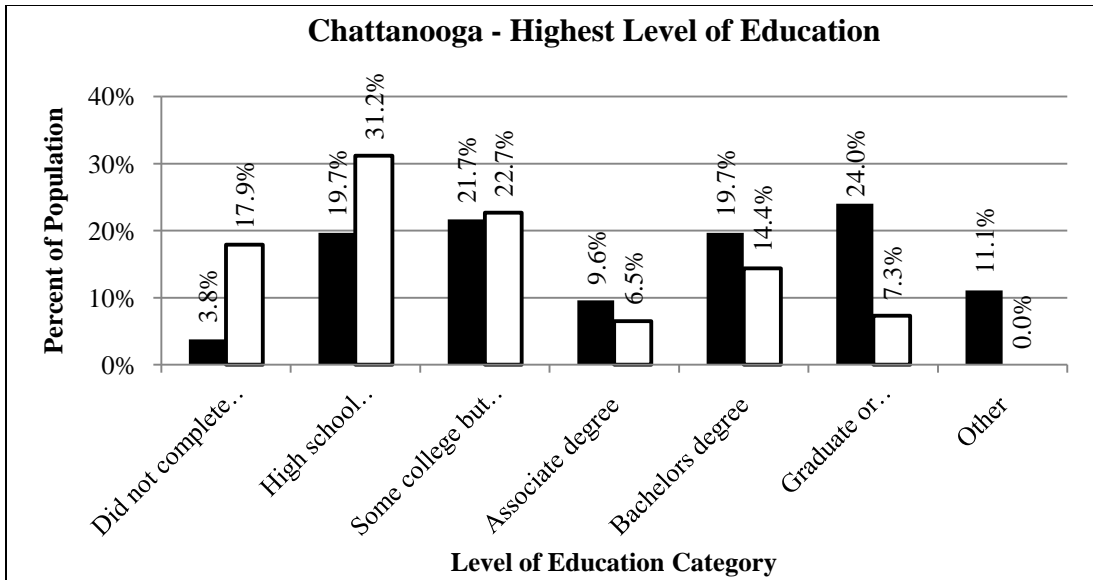


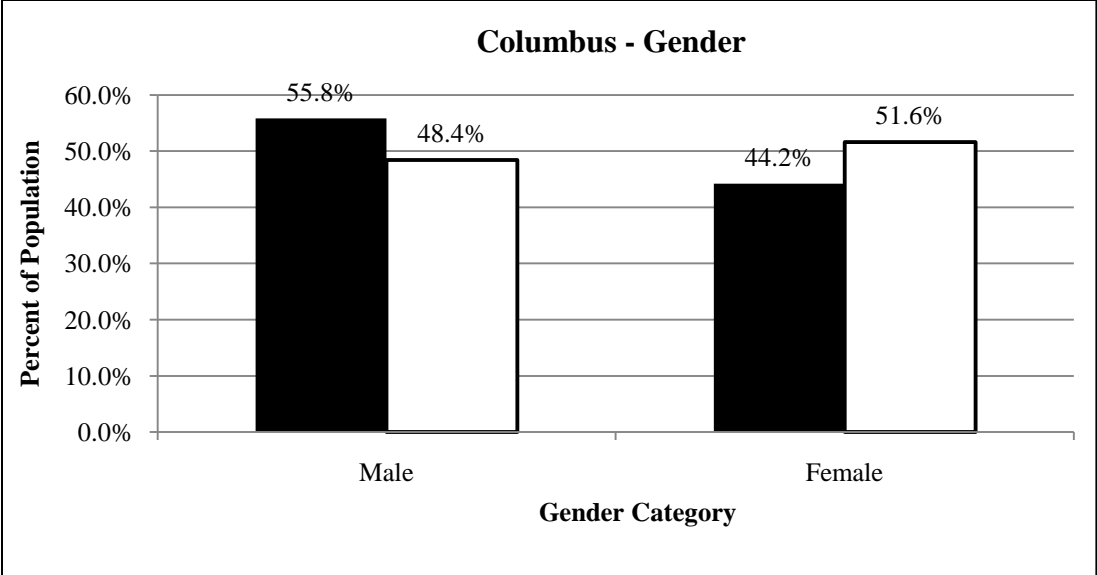


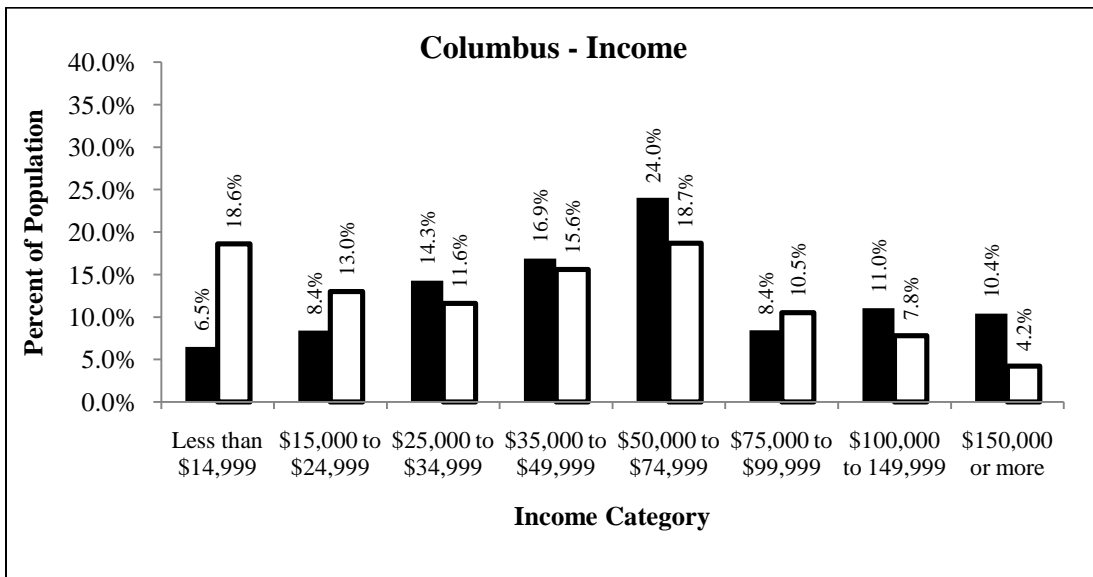
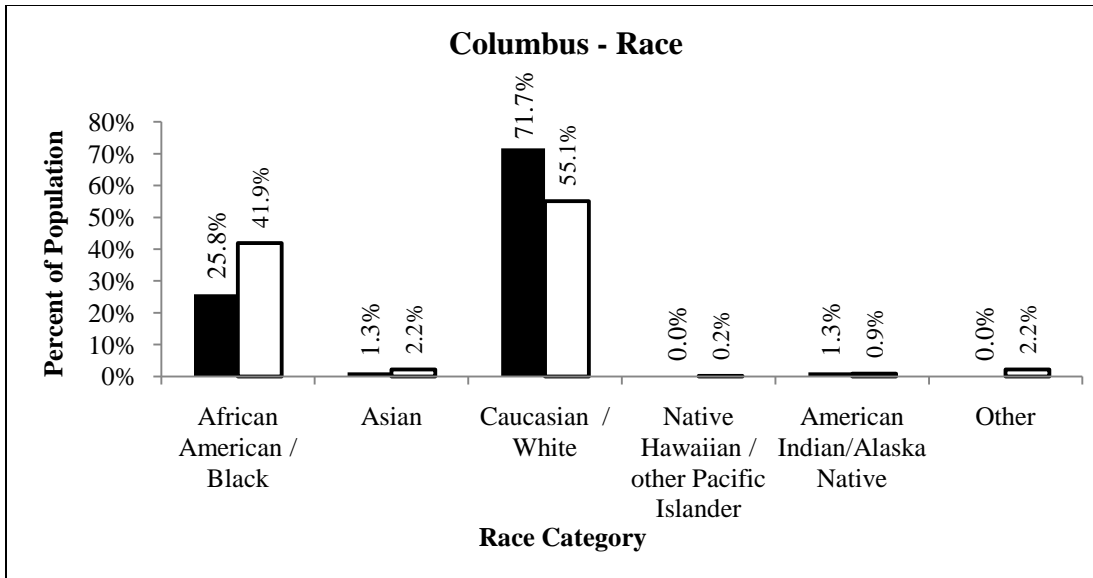


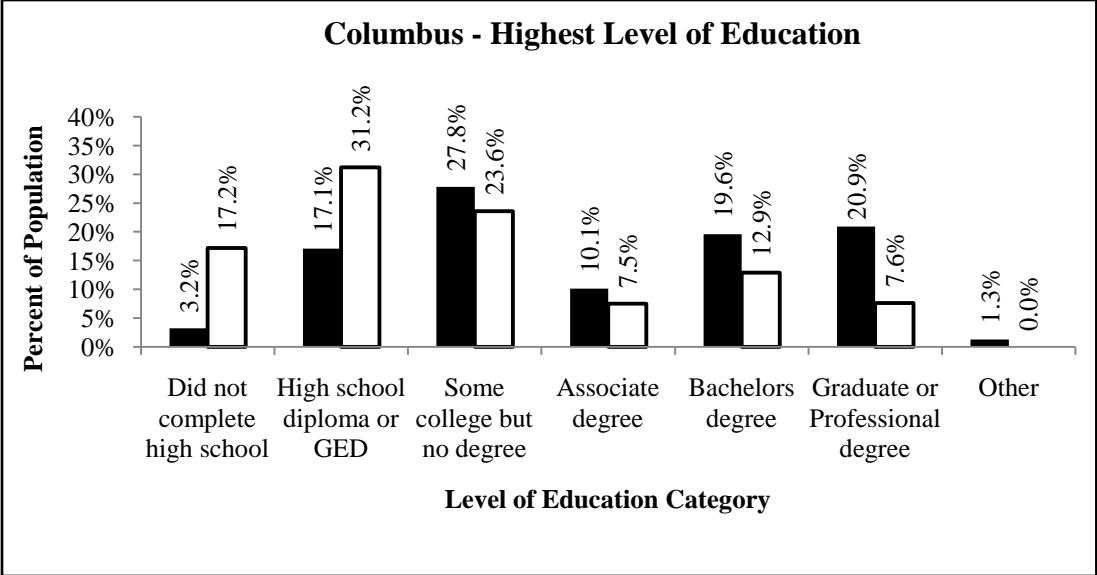


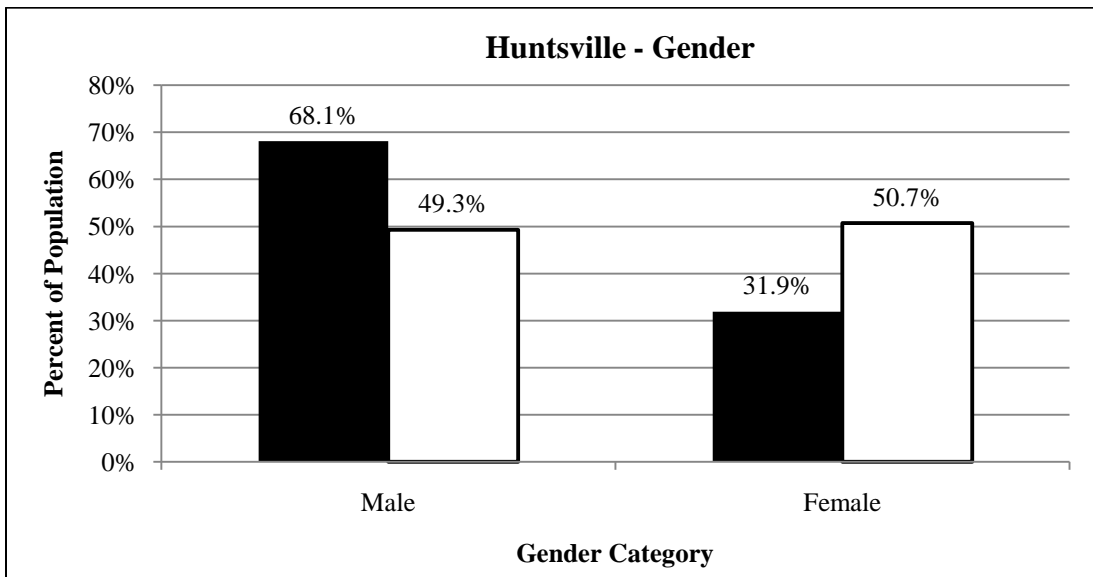
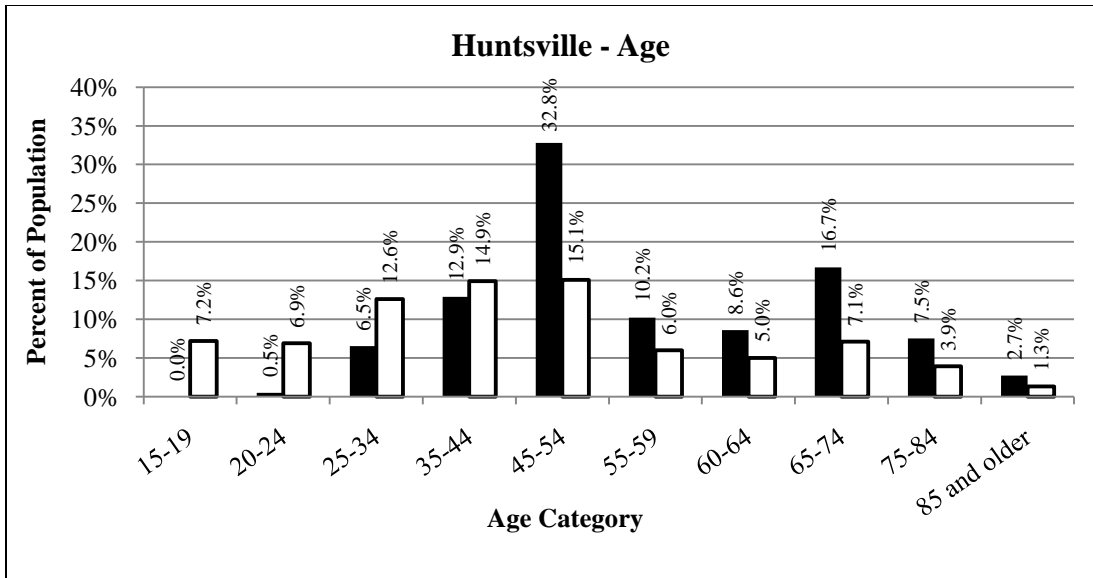


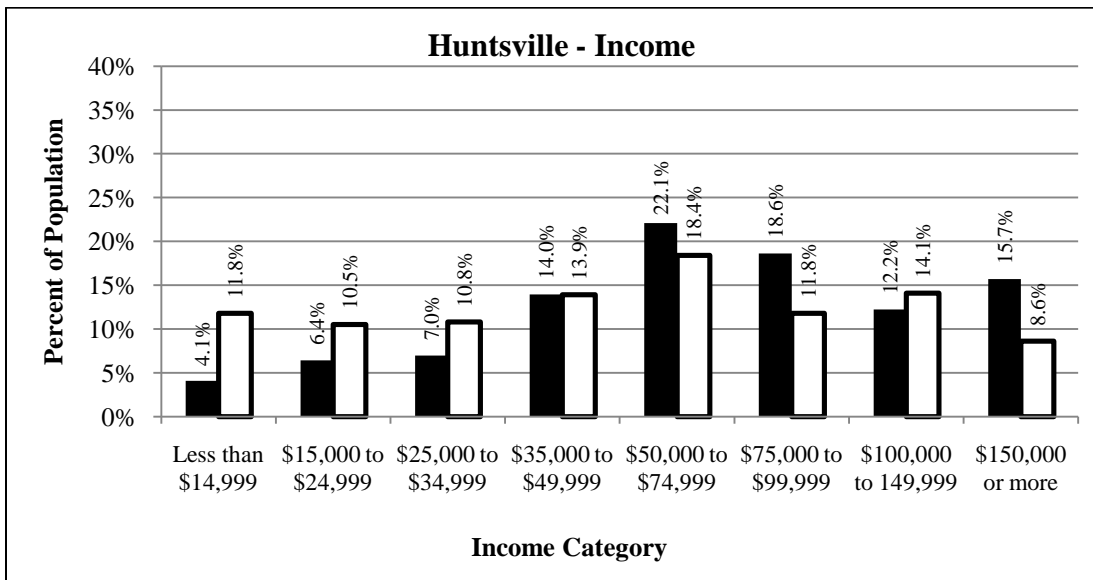
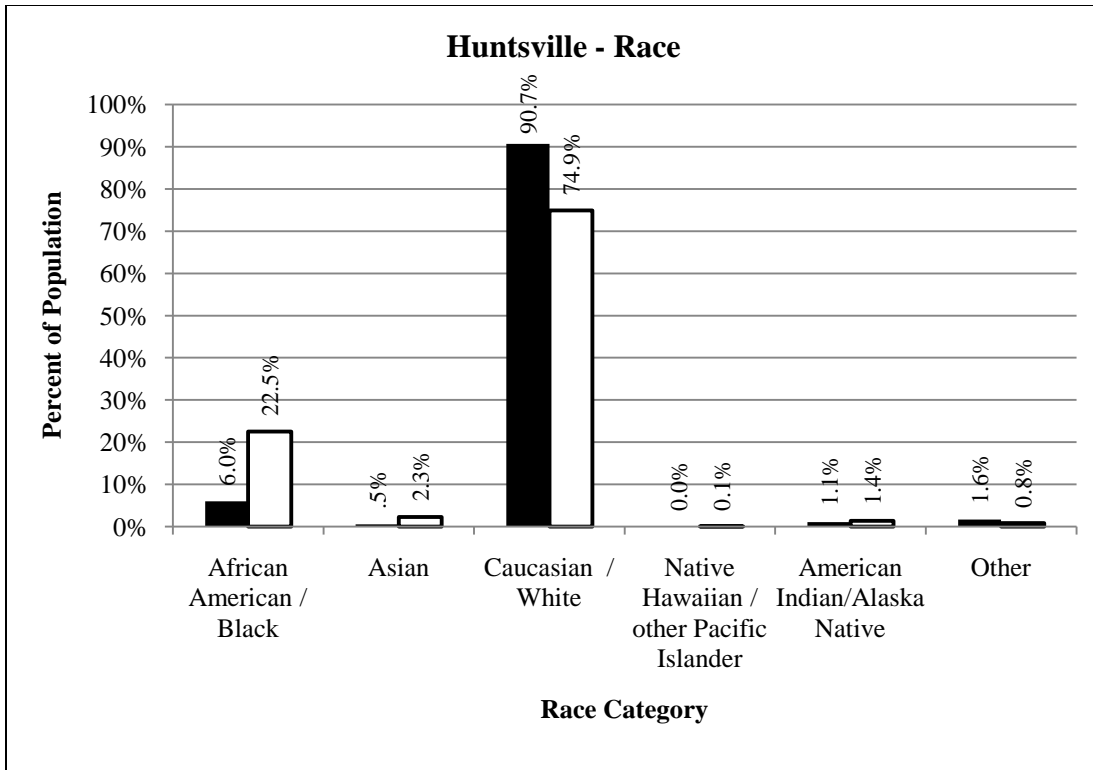


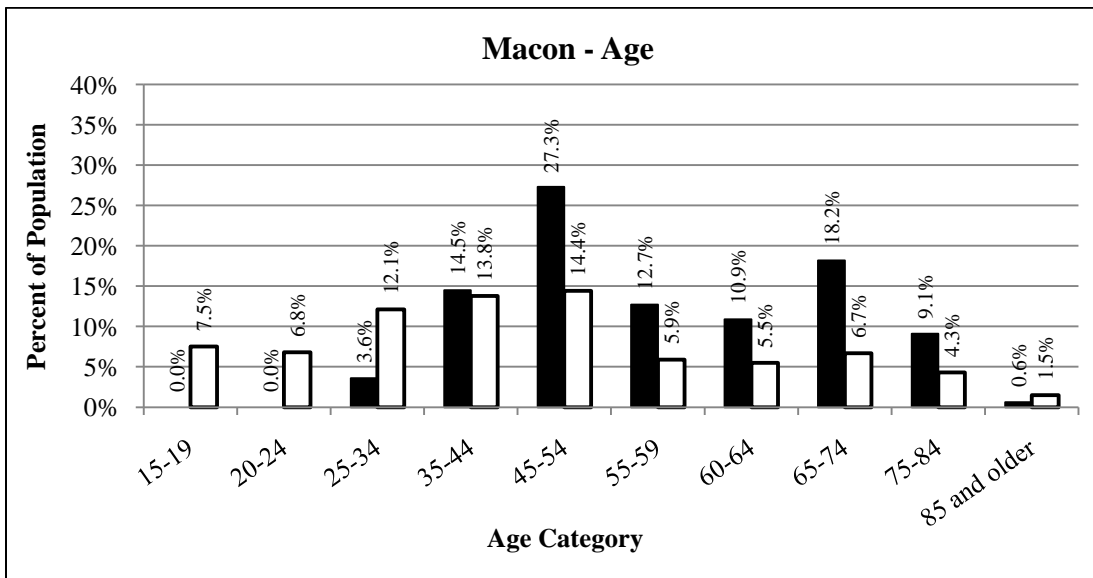
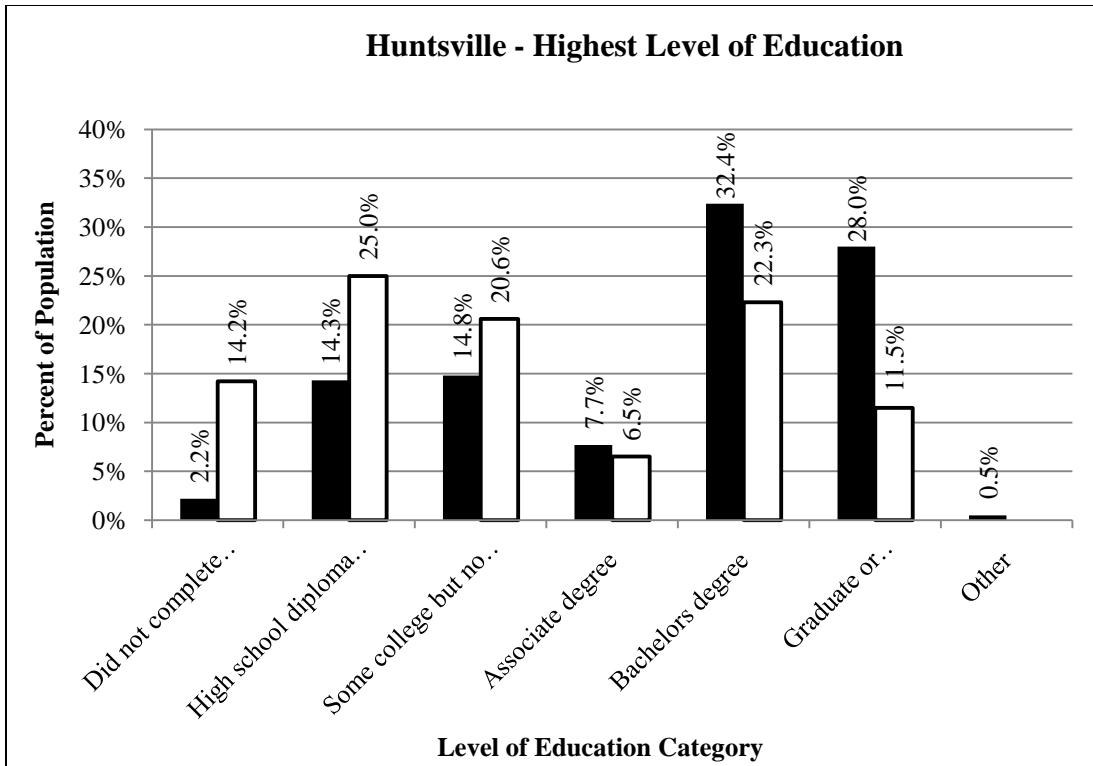












Macon
Gender - Comparison with US Census Data

