

A COMPARISON OF TOURISTS AND LOCAL VISITORS TO NATIONAL ESTUARINE RESEARCH RESERVE SITES

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Abstract: The National Estuarine Research Reserve system serves as a laboratory and classroom where the effects of both natural and human activity can be monitored and studied. Visitors to twelve National Estuarine Research Reserve system sites were surveyed to obtain information about demographics, participation, experience with the system, activities, and opinions. Comparisons were made between local respondents and tourists based on distance traveled to the sites. About 26% of the respondents were tourists. Almost all of the respondents were white, non-Hispanic and most were female with females slightly more prevalent in the local group. Tourists were slightly younger than locals and were more likely to work full time. About 48% of the tourists attended graduate school versus 35% of the local respondents.

Tourists visited the sites less frequently but spent more time per visit and spent more time at the site per year. The study sites were the primary destination for 66% of the locals and only 19% of the tourists, indicating that tourists were on multipurpose trips. Although more tourists (9%) made the decision to visit the site at least three months in advance (versus 3.2% of locals), 33% decided to visit the site on the day of the visit (versus 28% of locals).

In general, levels of satisfaction with the sites and likelihood of future visits were similar for both groups. Interest in education program topics was similar between groups except that tourists were significantly more interested in environmental issues and environmental ethics. Both groups considered it important to understand nature and the role of wildlife. Tourists placed significantly greater importance on the role played by wildlife and the existence of wildlife. Neither group placed much importance on hunting or trapping wildlife. Activities were similar between groups except that tourists were more likely to take photos, beach comb, swim, and bike, while locals were more likely to canoe and be involved with organized group programs. Both groups observed the same animals but tourists were more likely to observe marine mammals.

Introduction

Approximately 63 million people sixteen and older, participated in wildlife watching in 1996, spending about \$29.2 billion in the process (USDI, 1997). Money was spent on trip-related items such as food, lodging, and transportation, equipment such as binoculars and cameras and camping equipment, memberships in wildlife organizations, as well as books, magazines, dues, contributions, and land ownership and leasing. Spending for wildlife watching recreation increased 21% since 1991, although the actual number of American wildlife watchers decreased. (USDI, 1997).

As a result of the ongoing interest in observing wildlife, national, state, and local tourism marketing has evolved. The National Watchable Wildlife Program is a result of individual, community, nongovernment organizations and wildlife management agencies interest in observing wildlife. The program is a nationwide cooperative effort to combine wildlife conservation with America's interest in wildlife related outdoor recreation. The program was founded on the notion that people, given the opportunities to enjoy and learn about wildlife in a natural setting, will become advocates for conservation in the future (Great Outdoor Recreation Pages (GORP), 1997). The National Watchable Wildlife Program seeks to provide wildlife observation opportunities by establishing a nationwide network of quality viewing areas, complemented by uniform directional signing, and a companion series of state wildlife associated recreation guides known as the Watchable Wildlife Series. The goals of the Watchable Wildlife program are to provide enhanced opportunities for the public to enjoy wildlife on public and private lands, to contribute to local economic development, to promote learning about wildlife and habitat needs, and to enhance active public support for resource conservation (Hudson, 1996).

The National Estuarine Research Reserve (NERR) System is a national system of sites including estuarine waters, wetlands, and uplands, facilitated by a network of federal, state, and local partnerships. Through programs of stewardship, education, and research, the System enhances informed management and scientific understanding of the Nation's estuarine and coastal habitats. Through the System, the importance of estuaries are recognized and protected.

Although NERR educators have been successful in the development and delivery of educational programs, little is known about the general or independent visitors to NERR sites. Specifically, are they nearby residents using the sites for locally based outdoor recreation, or are they tourists from outside the area?

Recreation resource educators and planners are interested in identifying and profiling recreationists who visit areas such as NERR sites so that they can learn more about this population. The knowledge gained can be used to help meet the needs of current local residents and tourists participating in activities, to project future use and needs, and to implement marketing programs aimed at each group. The objective of this study is

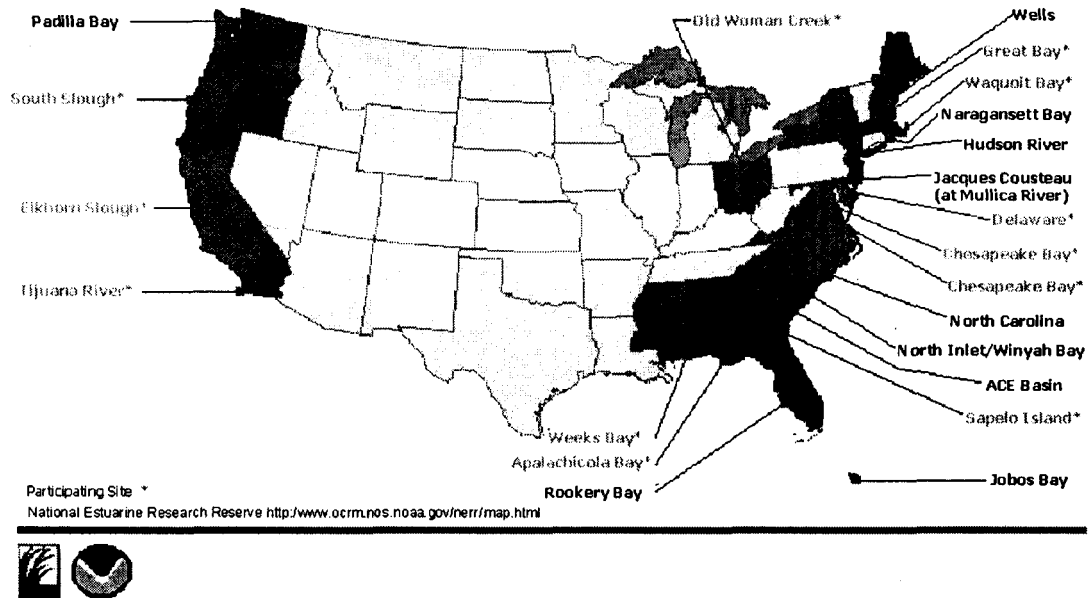
to compare tourists and local visitors to NERR sites in terms of demographics, participation, and attitudes. For the purpose of this study, tourists were defined as visitors who traveled 100 or more miles to the site.

Study Area

The NERR system is vast and many locations are remote. They are located on coasts around the country and in Puerto Rico. The NERR system serves as a laboratory and classroom where the effects of both natural and human activity can be monitored and studied. NERR sites contain protected acreage that cover varieties of natural resource environments. These natural resource environments include uplands, fresh marshes, salt marshes, forested wetlands, tidelands, sub tidal meadows, and open channels. Some

NERR sites have interpretive centers, trails, research buildings or labs, and other interpretive structures such as boardwalks, observation platforms, signs, historic buildings, and classrooms (USDC, 1996). All sites have some on-site programs such as school programs that go from the kindergarten level to the graduate school level. Some sites also provide off-site programs for school education and interpretive education. All sites provide on-site research opportunities and most provide off-site research opportunities (USDC, 1996). The 22 NERR sites that existed at the time of the study as well as those that participated are found in Figure 1.

Figure 1. National Estuarine Research Reserve System



Methods

Due to the geographic distribution of NERR sites and the variability of resources at each site, a mail survey was used to collect data. Education coordinators at the 22 NERR sites were contacted by e-mail and asked to supply names and addresses of individuals who visited that particular NERR site in 1997. Of the 22 NERR sites, 12 could provide names and addresses of visitors by way of registration books.

A total of 3,766 names and addresses of individuals who were not part of an organized program or group were submitted by the education coordinators. Of those, 1,086 names and addresses were legible and complete. A goal of

approximately 400 completed questionnaires was set due to the needs of NERR coordinators and the research budget and time constraints. The 1,086 names and addresses were reduced to 886 names based on an anticipated response rate of fifty percent.

A field pilot study of questionnaire items was conducted in the Spring of 1998. Other questions were pilot tested in the field in June of 1998. The mail survey was conducted next. Then, a nonresponse survey was conducted.

A modified version of the Dillman's (1978) ATotal Design Method (TDM) was used to administer the questionnaire. This consisted of an initial first class mailing, which contained a cover letter, an eight-page questionnaire, and a

self-addressed, stamped return envelope. A reminder post card was mailed one week later. Two weeks following the post card, a second cover letter, survey instrument and postage-paid envelope were mailed. There was no incentive included and the respondents were given the opportunity to receive a copy of the study results if they wished by signifying so on the return envelope when they mailed the questionnaire back.

The total number of questionnaires completed and returned was 383. The response rate (adjusted for incomplete returned questionnaires and underage respondents) was 46.7%. A total of 53 respondents asked for results of the study. The Statistical Package for the Social Sciences (SPSS) 8.0 was used for statistical analysis.

The results of the nonresponse followup indicated no difference between respondents and nonrespondents in most respects. However, nonrespondents were significantly more likely than respondents to prefer to view wildlife from a distance and in a natural environment. Respondents preferred to be as close as possible to wildlife. As a result, some caution should be used in interpreting the results.

Results

Local respondents (traveled less than 100 miles to the NERR site) and tourists differed in many respects. Locals were slightly older and more likely to be female (Table 1). Almost

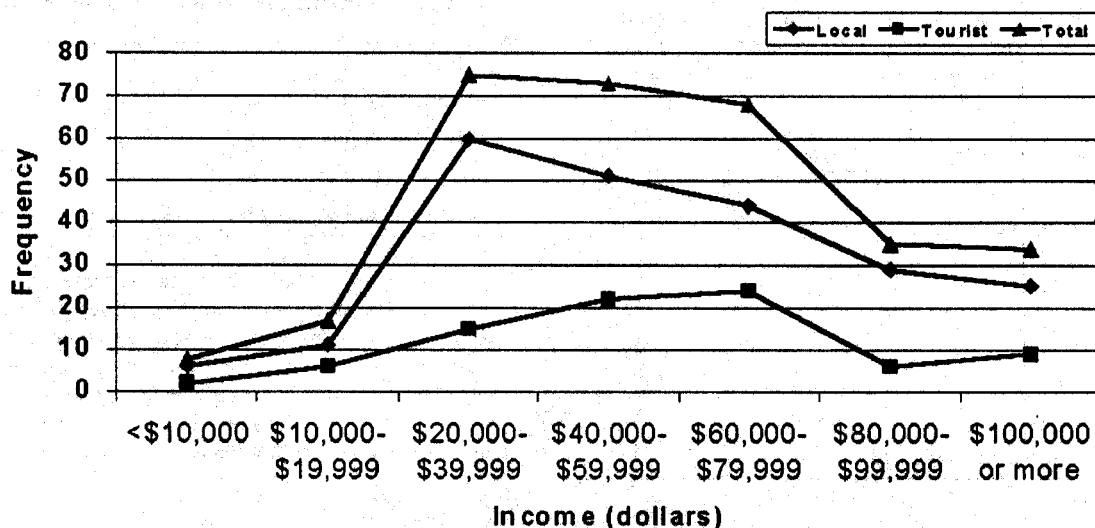
all respondents were white (non Hispanic).. Although the mean education level was about the same, tourists were more likely to have attended graduate school. Tourists were also more likely to be employed full time and less likely to be retired. The household income of locals peaked at \$20,000-\$39,999 while that of tourists peaked at \$60,000-\$79,999 (Fig. 2).

Table 1. Characteristics of Respondents

Characteristic ¹	Local	Tourist
Age (mean years)	49	46
Female (%)	65	58
Married (%)	67	72
White, not Hispanic (%)	96	97
Education (mean years)	17	18
Graduate School (%)	35	46
Employed Full Time (%)	50	69
Retired (%)	21	14

¹ no significant differences. Individual cells of frequency tables not tested.

Figure 2. 1997 annual household income before taxes



Tourists traveled an average of 646 miles to the NERR site while locals traveled an average of 28 miles (Table 2). Although these distances are significantly different, this would be expected because distance was used to segment the data. Tourists spent more time at the site, but the differences were not significant. However, tourists spent significantly more time (days) per trip and made significantly fewer trips per year. These results are in keeping with other studies, which have shown that those who live farther from a site tend to stay longer at the site and spend more days on a trip. The bottom part of Table 2 was created by multiplying the top three lines in the table by the fourth line (visits per year) resulting in estimates of totals for the year. Although locals take more trips per year, tourists spend more days per trip and per year.

Table 2. Distance traveled and time spent at sites by respondents.

Category	Local	Tourist
Distance to site (miles)*	28	646
Time at site (hours)	3.7	10.8
Time per trip (days)*	1.5	6
Visits per year (visits)*	2.2	1.4
Distance per year (miles)	62	904
Time at site per year (hours)	8	15
Total trip time for year (days)	3	8

* significant at .05

About two thirds of the locals and only about one fifth of the tourists considered the site to be their primary destination (Table 3). This means that 81% of the tourists are on multipurpose trips when they visit the site and that, for 81% of the tourists, the site is not the primary purpose of the trip. Tourists are more likely to travel with family and less likely to travel with friends. More tourists plan their visit to the site more than three months in advance, but more tourists decide to visit on the day of the visit.

Table 3. Trip Related Decisions. (Percent)

Decision	Local	Tourist
Site is primary destination*	66	19
Group type		
Family	46	57
Friends	16	12
Decided to visit		
Day of visit	28	33
More than 3 months prior to visit	3	9

*significant at 0.05

Locals were significantly more likely to obtain trip information by calling the site, referring to a site newsletter, or through the media (Table 4). In fact, few tourists obtained trip information from any of the listed means. Respondents were not asked about the Internet as a source of site

information.

Table 4. How Respondents Obtained Trip Information. (Percent)

Method	Local	Tourist
Called the site for information [~]	9	3
Requested information be mailed	4	3
Referred to information collected in past	11	7
Referred to newsletter from site*	14	4
Heard about site through media [~]	13	6

*significant at 0.05 [~]significant at 0.10

Both tourists and locals were about equally satisfied with their visit and both expressed about the same likelihood of making another visit in the future (Table 5). The scale used for this and other tables ranges from 1 through 5 with 5 being the highest or best level and 1 the lowest or worst. Thus 3 can be thought of as average or mid-range. Respondents= satisfaction with observing and/or photographing wildlife is lower than that for the entire trip (Tables 5 and 6), but it is above the mid-range. The likelihood of returning to observe and/or photograph wildlife (Table 6) is about the same as the likelihood of a future visit (Table 5). Locals and tourists were almost identical in their views of observing and/or photographing wildlife.

Table 5. Respondent expectations and satisfaction regarding visit. (Mean of scale 1-5)

Category	Local	Tourist
Visit met expectations	4.0	4.1
Overall satisfaction with visit	4.0	4.0
Likelihood of future visit	3.8	3.7

Table 6. Observing/Photographing wildlife. (Mean of scale 1-5)

Category	Local	Tourist
Importance of activity	3.2	3.2
Met expectations	3.6	3.5
Satisfaction	3.5	3.5
Likelihood of returning for activity	3.6	3.6

Locals and tourists shared about the same levels of interest in most topics at the sites (Table 7). Tourists expressed a significantly higher level of interest in environmental ethics and issues and in the cultural history of the area. Locals might be expected to be less interested in the cultural history of the area because they are likely to be exposed to the cultural aspects of the area on an almost daily basis.

Table 7. Interest in Topics. (Mean of scale 1-5)

Topic	Local	Tourist
Estuary ecology	3.5	3.6
Threatened and endangered species	3.8	3.9
Plant identification	3.5	3.5
Animal identification	3.7	3.7
Environmental ethics*	3.3	3.6
Environmental issues*	3.5	3.7
Prescribed burning	2.9	2.9
Habitat restoration	3.7	3.9
Water pollution	3.7	3.8
Natural history of area	3.8	3.9
Cultural history of area	3.5	3.8

*significant at 0.05 **significant at 0.10

Respondents were asked about the importance of various aspects of wildlife. Non-consumptive aspects are listed in Table 8. There were very few significant differences between locals and tourists, and those that were significant were relatively weak (.10 level). Appreciation for the role and existence of wildlife are very important (4.5-4.6). Tolerance of the nuisance, safety hazards, and damage aspects of wildlife are lower, but still above the mid-range (3.4-3.9). Benefit from wildlife recreation to local economies is just above the mid-range.

Table 8. Importance of Wildlife. (Mean of scale 1-5)

It is important to me that	Local	Tourist
I appreciate the role of wildlife	4.5	4.6
I know wildlife exists in nature	4.5	4.6
I tolerate most wildlife nuisance problems	3.6	3.5
I tolerate most levels of property damage by wildlife	3.5	3.6
I tolerate personal safety hazards associated with	3.7	3.9
I understand more about the behavior of wildlife	4.1	4.2
Local economies benefit from wildlife recreation	3.3	3.4

**significant at 0.10

The other end of the importance scale can be seen in Table 9. Consumptive activities such as hunting and trapping are not important to locals or tourists at these sites. Although the activities are unimportant, respondents do not appear to be against the activities as evidenced by the higher score given to the management of game animals for harvest.

Table 9. Importance of Consumptive Activities. (Mean of scale 1-5)

It is important to me that	Local	Tourist
I hunt game animals for recreation	1.8	1.7
I hunt game animals for food	1.8	1.7
I trap fur bearing animals/sale	1.5	1.3
Game animals are managed for harvest	3.4	3.4

**significant at 0.10

Tourists were more likely to participate in photography, bicycling, beach combing, and swimming, and less likely to participate in canoeing (Table 10). The most popular activities for tourists and locals at the sites were observing wildlife and walking. These were the only activities in which over half of the respondents of both groups participated. Riding and photography were the next most popular activities for locals but slightly fewer than one third of the locals participated in these. Half of all responding tourists participated in photography and about one third took pleasure drives.

Table 10. Participation in Activities. (Percent)

Activity	Local	Tourist
Observed wildlife	61	53
Photography*	30	50
Birding	31	28
Walking	60	60
Hiking	23	20
Pleasure drive	27	32
Canoeing*	10	2
Bicycling*	2	7
Beach combing	16	26
Swimming*	3	11
Picnic	11	8
Meditated	7	7

*significant at 0.05 **significant at 0.10

Sightseeing was the most common primary reason for visiting the site for both locals and tourists (Table 11). Locals were considerably more likely than tourists to visit the site in order to be in a natural environment (the individual rows in this table were not tested for significance). Tourists would logically be less likely to visit these sites for the primary purpose of being in a natural environment. For locals, these sites are convenient natural environments. Tourists who simply wish to get away to a natural environment probably find convenient alternatives closer to home.

Table 11. Primary Purpose of Trip to Site. (Percent)

Purpose of Trip	Local	Tourist
Sightseeing	34	35
Participate in educational	13	10
Observe or photograph wildlife	13	15
Learn more about estuaries	10	11
Be in a natural environment	19	13

Summary and Conclusions

This study compared tourists and local visitors to NERR sites. Demographically, tourists are slightly younger, have higher incomes, are more likely to be male, to have graduate education, to be employed full time, and less likely to be retired. Tourists take fewer, but longer trips, and spend more time on site per trip. On an annual basis, tourists spend almost three times as many days on trips, travel over 10 times as far, and spend almost twice as much time on site. Although the study did not address monetary expenditures, it is likely that tourists spend more money on food, lodging, and transportation, and that some of these expenditures occur while in the local area. Expenditures by tourists in the local area would likely be of interest to local planners and policy makers and would be a logical avenue for future research.

Tourists appear to be more interested than locals in environmental issues and ethics. Both have similar attitudes and values regarding the importance of wildlife. Neither appear to hunt, but neither appear to be against hunting. On-site activities are similar for each group except tourists are more likely to participate in beach combing, photography, swimming, and bicycling while locals are more likely to participate in canoeing, self-guided nature walks, and organized group programs.

Tourists and local visitors appear about equally satisfied with the site and equally likely to return. They visit sites for similar reasons. For most tourists, the site visit is part of a longer trip and for many, the decision to visit is made on the day of the visit, presumably while they are in the area. This indicates that those wishing to attract more tourists may be able to do so through local marketing means such as signs, and brochures at welcome stations, hotels, and restaurants. More tourists than locals plan their trips over three months in advance. This study did not address the Internet as a source of information or marketing tool. However, the proliferation of NERR web sites will likely assist trip planners. The study found that locals are more likely to obtain trip information from printed information from sites, contact with sites, and the media. This indicates that, although this information is available and accessible, it is not reaching the tourists as well as it could.

This study has provided NERR educators and managers with information about visitors who are not affiliated with educational groups. By better understanding the characteristics of both tourists and local residents, managers and educators can better develop education and recreation programs and opportunities for both groups.

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