



National Wildlife Refuge Visitor Survey 2010/2011: Individual Refuge Results for Cape Romain National Wildlife Refuge

By Natalie R. Sexton, Alia M. Dietsch, Andrew W. Don Carlos, Lynne Koontz, Adam N. Solomon and Holly M. Miller

Our group consisted of six women; the oldest was 83 years old. We walked through the forest and had lunch on the beach. Everyone had a great day and said they never expected to see the petrified trees on the beach, or the birds and wildlife. Thank you.—Survey comment from visitor to Cape Romain National Wildlife Refuge.



Cape Romain National Wildlife Refuge.
Photo credit: U.S. Fish and Wildlife Service.

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Introduction

The National Wildlife Refuge System (Refuge System), established in 1903 and managed by the U.S. Fish and Wildlife Service (Service), is the leading network of protected lands and waters in the world dedicated to the conservation of fish, wildlife and their habitats. There are 556 national wildlife refuges (NWRs) and 38 wetland management districts nationwide, including possessions and territories in the Pacific and Caribbean, encompassing more than 150 million acres. The mission of the Refuge System is to “administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” Part of achieving this mission is the goal “to foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use” (Clark, 2001). The Refuge System attracts more than 45 million visitors annually, including 25 million people per year to observe and photograph wildlife, over 9 million to hunt and fish, and more than 10 million to participate in educational and interpretation programs (Uniack, 1999; U.S. Fish and Wildlife Service, 2007). Understanding visitors and characterizing their experiences on national wildlife refuges are critical elements of managing these lands and meeting the goals of the Refuge System.

The Service contracted with the U.S. Geological Survey (USGS) to conduct a national survey of visitors regarding their experiences on national wildlife refuges. The survey was conducted to better understand visitor needs and experiences and to design programs and facilities that respond to those needs. The survey results will inform Service performance planning, budget, and communications goals. Results will also inform Comprehensive Conservation Plan (CCPs), Visitor Services, and Transportation Planning processes.

Organization of Results

These results are for Cape Romain NWR (this refuge) and are part of USGS Data Series 643 (Sexton and others, 2011). All refuges participating in the 2010/2011 surveying effort will receive individual refuge results specific to the visitors to that refuge. Each set of results is organized by the following categories:

- **Introduction:** An overview of the Refuge System and the goals of the national surveying effort.
- **Methods:** The procedures for the national surveying effort, including selecting refuges, developing the survey instrument, contacting visitors, and guidance for interpreting the results.
- **Refuge Description:** A brief description of the refuge location, acreage, purpose, recreational activities, and visitation statistics, including a map (where available) and refuge website link.
- **Sampling at This Refuge:** The sampling periods, locations, and response rate for this refuge.
- **Selected Survey Results:** Key findings for this refuge, including:
 - Visitor and Trip Characteristics
 - Visitor Spending in the Local Communities
 - Visitors Opinions about This Refuge
 - Visitor Opinions about National Wildlife Refuge System Topics
- **Conclusion**
- **References**
- **Survey Frequencies (Appendix A):** The survey instrument with the frequency results for this refuge.
- **Visitor Comments (Appendix B):** The verbatim responses to the open-ended survey questions for this refuge.

Methods

Selecting Participating Refuges

The national visitor survey was conducted from July 2010 – November 2011 on 53 refuges across the Refuge System (table 1). Based on the Refuge System’s 2008 Refuge Annual Performance Plan (RAPP; U.S. Fish and Wildlife Service, 2011, written comm.), 192 refuges with a minimum visitation of 25,000 were considered. This criterion was the median visitation across the Refuge System and the minimum visitation necessary to ensure that the surveying would be logistically feasible onsite. Visitors were sampled on 35 randomly selected refuges and 18 other refuges that were selected by Service Regional Offices to respond to priority refuge planning processes.

Developing the Survey Instrument

USGS researchers developed the survey in consultation with the Service Headquarters Office, managers, planners, and visitor services professionals. The survey was peer-reviewed by academic and government researchers and was further pre-tested with eight Refuge System Friends Group representatives from each region to ensure readability and overall clarity. The survey and associated methodology were approved by the Office of Management and Budget (OMB control #: 1018-0145; expiration date: 6/30/2013).

Contacting Visitors

Refuge staff identified two separate 15-day sampling periods and one or more locations that best reflected the diversity of use and specific visitation patterns of each participating refuge. Sampling periods and locations were identified by refuge staff and submitted to USGS via an internal website that included a customized mapping tool. A standardized sampling schedule was created for all refuges that included eight randomly selected sampling shifts during each of the two sampling periods. Sampling shifts were three- to five-hour randomly selected time bands that were stratified across AM and PM, as well as weekend and weekdays. Any necessary customizations were made, in coordination with refuge staff, to the standardized schedule to accommodate the identified sampling locations and to address specific spatial and temporal patterns of visitation.

Twenty visitors (18 years or older) per sampling shift were systematically selected, for a total of 320 willing participants per refuge—160 per sampling period—to ensure an adequate sample of completed surveys. When necessary, shifts were moved, added, or extended to alleviate logistical limitations (for example, weather or low visitation at a particular site) in an effort to reach target numbers.

Table 1. Participating refuges in the 2010/2011 national wildlife refuge visitor survey.

Pacific Region (R1)	
Kilauea Point National Wildlife Refuge (HI)	William L. Finley National Wildlife Refuge (OR)
Deer Flat National Wildlife Refuge (ID)	McNary National Wildlife Refuge (WA)
Cape Meares National Wildlife Refuge (OR)	Turnbull National Wildlife Refuge (WA)
Malheur National Wildlife Refuge (OR)	
Southwest Region (R2)	
Bitter Lake National Wildlife Refuge (NM)	Aransas National Wildlife Refuge (TX)
Bosque del Apache National Wildlife Refuge (NM)	San Bernard/ Brazoria National Wildlife Refuge (TX)
Wichita Mountains Wildlife Refuge (OK)	
Great Lakes-Big Rivers Region (R3)	
DeSoto National Wildlife Refuge (IA)	McGregor District, Upper Mississippi River National Wildlife and Fish Refuge – (IA/WI)
Neal Smith National Wildlife Refuge (IA)	
Muscatatuck National Wildlife Refuge (IN)	Big Muddy National Fish and Wildlife Refuge (MO)
Rice Lake National Wildlife Refuge (MN)	Horicon National Wildlife Refuge (WI)
Tamarac National Wildlife Refuge (MN)	Necedah National Wildlife Refuge (WI)
Southeast Region (R4)	
Wheeler National Wildlife Refuge (AL)	Banks Lake National Wildlife Refuge (GA)
Big Lake National Wildlife Refuge (AR)	Noxubee National Wildlife Refuge (MS)
Pond Creek National Wildlife Refuge (AR)	Cabo Rojo National Wildlife Refuge (Puerto Rico)
Merritt Island National Wildlife Refuge (FL)	Pea Island National Wildlife Refuge (NC)
St. Marks National Wildlife Refuge (FL)	Cape Romain National Wildlife Refuge (SC)
Ten Thousand Islands National Wildlife Refuge (FL)	Reelfoot National Wildlife Refuge (TN)
Northeast Region (R5)	
Stewart B. McKinney National Wildlife Refuge (CT)	Moosehorn National Wildlife Refuge (ME)
Bombay Hook National Wildlife Refuge (DE)	Great Swamp National Wildlife Refuge (NJ)
Monomoy National Wildlife Refuge (MA)	Montezuma National Wildlife Refuge (NY)
Parker River National Wildlife Refuge (MA)	Wertheim National Wildlife Refuge (NY)
Patuxent Research Refuge (MD)	Occoquan Bay/ Elizabeth Hartwell Mason Neck National Wildlife Refuge (VA)
Mountain-Prairie Region (R6)	
Monte Vista National Wildlife Refuge (CO)	Sand Lake National Wildlife Refuge (SD)
Quivira National Wildlife Refuge (KS)	National Elk Refuge (WY)
Charles M. Russell National Wildlife Refuge (MT)	
Alaska Region (R7)	
Alaska Maritime National Wildlife Refuge (AK)	Kenai National Wildlife Refuge (AK)
California and Nevada Region (R8)	
Lower Klamath/Tule Lake National Wildlife Refuge (CA)	Ruby Lake National Wildlife Refuge (NV)
Sonny Bono Salton Sea National Wildlife Refuge (CA)	

Refuge staff and/or volunteers (survey recruiters) contacted visitors on-site following a protocol provided by USGS to ensure a diverse sample. Instructions included contacting visitors across the entire sampling shift (for example, every n^{th} visitor for dense visitation, as often as possible for sparse visitation), and only one person per group. Visitors were informed of the survey effort, given a token incentive (for example, a small magnet, temporary tattoo), and asked to participate. Willing participants provided their name, mailing address, and preference for language (English or Spanish) and survey mode (mail or online). Survey recruiters also were instructed to record any refusals and then proceed with the sampling protocol.

Visitors were mailed a postcard within 10 days of the initial on-site contact thanking them for agreeing to participate in the survey and inviting them to complete the survey online. Those visitors choosing not to complete the survey online were sent a paper copy a week later. Two additional contacts were made by mail during the next seven weeks following a modified Tailored Design Method (Dillman, 2007): 1) a reminder postcard one week after the first survey, and 2) a second paper survey two weeks after the reminder postcard. Each mailing included instructions for completing the survey online and a postage paid envelope for returning the paper version of the survey. Those visitors indicating a preference for Spanish were sent Spanish versions of all correspondence (including the survey). Finally, a short survey of six questions was sent to nonrespondents four weeks after the second survey mailing to determine any differences between respondents and nonrespondents at the national level. Online survey data were exported and paper survey data were entered using a standardized survey codebook and data entry procedure. All survey data were analyzed by using SPSS v.18 statistical analysis software.

Interpreting the Results

The extent to which these results accurately represent the total population of visitors to this refuge is dependent on 1) an adequate sample size of those visitors and 2) the representativeness of that sample. The adequacy of the sample size for this refuge is quantified as the margin of error. The composition of the sample is dependent on the ability of the standardized sampling protocol for this study to account for the spatial and temporal patterns of visitor use specific to each refuge. Spatially, the geographical layout and public use infrastructure varies widely across refuges. Some refuges only can be accessed through a single entrance, while others have multiple unmonitored access points across large expanses of land and water. As a result, the degree to which sampling locations effectively captured spatial patterns of visitor use will likely vary from refuge to refuge. Temporally, the two 15-day sampling periods may not have effectively captured all of the predominant visitor uses/activities on some refuges during the course of a year. Therefore, certain survey measures such as visitors' self-reported "primary activity during their visit" may reflect a seasonality bias.

Herein, the sample of visitors who responded to the survey are referred to simply as "visitors." However, when interpreting the results for Cape Romain NWR, any potential spatial and temporal sampling limitations specific to this refuge need to be considered when generalizing the results to the total population of visitors. For example, a refuge that sampled during a special event (for example, birding festival) held during the spring may have contacted a higher percentage of visitors who traveled greater than 50 miles to get to the refuge than the actual number of these people who would have visited throughout the calendar year (that is, oversampling of nonlocals). In contrast, another refuge may not have enough nonlocal visitors in the sample to adequately represent the beliefs and opinions of that group type. If the sample for a specific group type (for example, nonlocals, hunters, those visitors who paid a fee) is too low ($n < 30$), a warning is included. Additionally, the term "*this* visit" is used to reference the visit on which people were contacted to participate in the survey, which may or may not have been their most recent refuge visit.

Refuge Description for Cape Romain National Wildlife Refuge

Extending twenty-two miles along South Carolina's Atlantic coast, Cape Romain NWR encompasses 66,267 acres of barrier islands (including Bulls Island), salt marshes, intricate coastal waterways, long sandy beaches, fresh and brackish water impoundments, and maritime forest. Established in 1932 as a sanctuary for migratory birds, this land was originally inhabited by the Sewee Indians. The tidal creeks and bays provided bountiful supplies of fish, oysters, and clams before the English settlers made their first landing in the New World on Bulls Island. Eventually, the settlers established the first permanent settlement in South Carolina in the present city of Charleston.

Two lighthouses, both of which are listed on the National Register of Historic Places, still stand on Cape Romain's Lighthouse Island. The first one was built in 1827 and is the oldest of its kind still standing in the United States. The second, which was built in 1857, stood watch over the coastal area until 1947. Today, neither is in operation. However, they are still used as daytime landmarks for ships and anglers coming to the coast of South Carolina.

With just over 187,000 visitors each year (based on 2008 RAPP database; U.S. Fish and Wildlife Service, 2011, written comm.), Cape Romain NWR hosts a variety of activities including migratory bird hunting, big game hunting, fishing, walking, hiking, shelling and beach combing, boating, visiting historical sites, wildlife observation, photography, environmental education, and interpretation. Figure 1 displays a map of Cape Romain NWR. For more information, please visit: <http://www.fws.gov/caperomain/>.

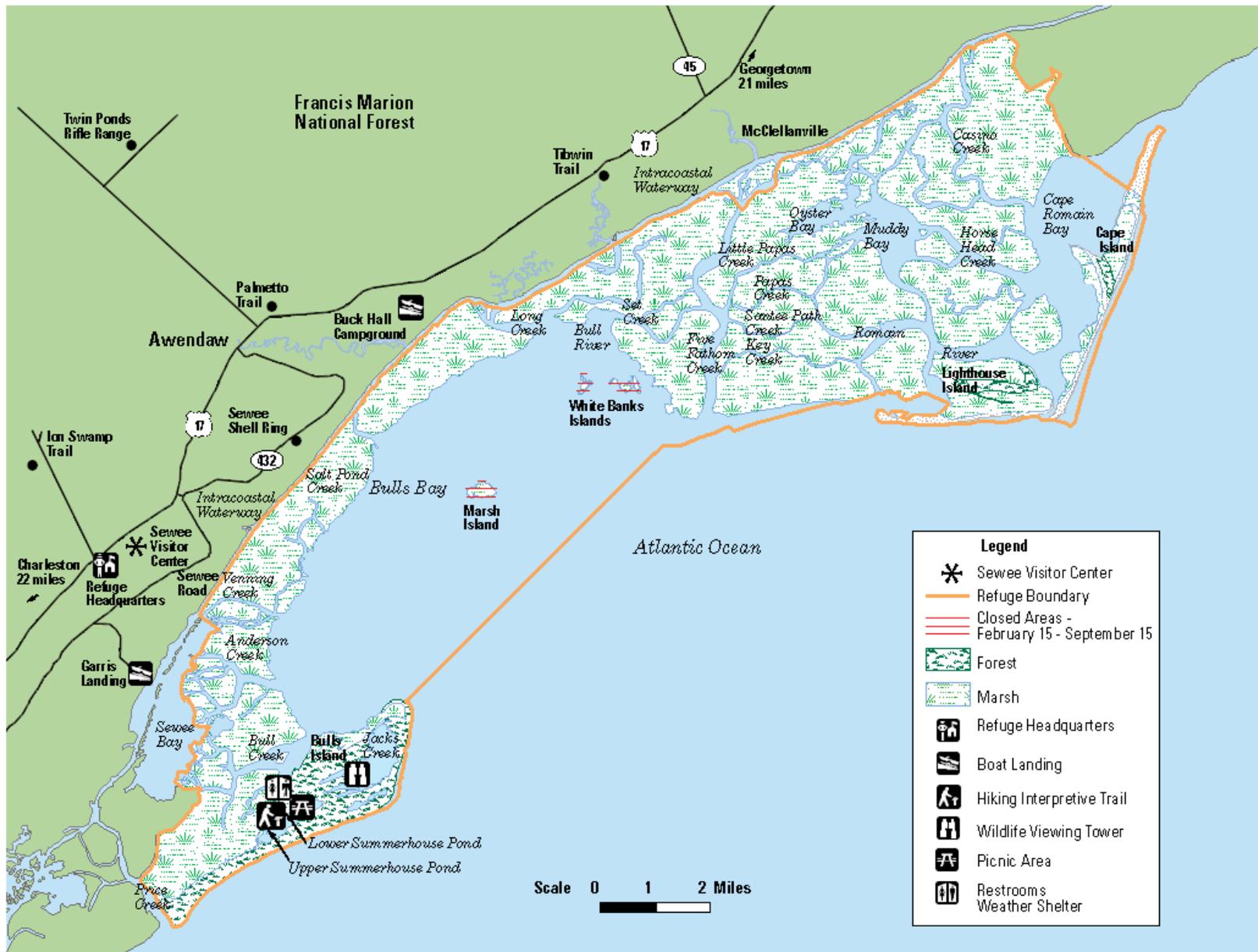


Figure 1. Map of Cape Romain NWR, courtesy of U.S. Fish and Wildlife Service.

Sampling at Cape Romain National Wildlife Refuge

A total of 298 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Cape Romain NWR (table 2). In all, 202 visitors completed the survey for a 68% response rate and $\pm 6\%$ margin of error at the 95% confidence level.¹

Table 2. Sampling and response rate summary for Cape Romain NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	11/6/2010 to 11/20/2010	Sewee Visitor and Environmental Education Center	173	2	118	69%
		Garris Landing refuge boat launch				
		Garris Landing Pier				
		Camp ground on Bulls Island				
2	4/2/2011 to 4/16/2011	Sewee Visitor and Environmental Education Center	125	1	84	68%
		Garris Landing refuge boat launch				
		Bulls Island Dock				
Total			298	3	202	68%

Selected Survey Results

Visitor and Trip Characteristics

A solid understanding of refuge visitors and details about their trips to refuges can inform communication outreach efforts, inform visitor services and transportation planning, forecast use, and gauge demand for services and facilities.

Familiarity with the Refuge System

While we did not ask visitors to identify the mission of the National Wildlife Refuge System or the U.S. Fish and Wildlife Service, visitors to Cape Romain NWR reported that before participating in the survey, they were aware of the role of the U.S. Fish and Wildlife Service in managing national wildlife refuges (92%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants and their habitat (90%). Positive responses to these questions concerning the management

¹ The margin of error (or confidence interval) is the error associated with the results related to the sample and population size. A margin of error of $\pm 5\%$, for example, means if 55% of the sample answered a survey question in a certain way, then 50–60% of the entire population would have answered that way. The margin of error is calculated with an 80/20 response distribution, assuming that for any given dichotomous choice question, approximately 80% of respondents selected one choice and 20% selected the other (Salant and Dillman, 1994).

and mission of the Refuge System do not indicate the degree to which these visitors understand the day-to-day management practices of individual refuges, only that visitors feel they have a basic knowledge of who manages refuges and why. Compared to other public lands, many visitors feel that refuges provide a unique recreation experience (88%; see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System. More than half of visitors to Cape Romain NWR had been to at least one other National Wildlife Refuge in the past year (67%), with an average of 5 visits to other refuges during the past 12 months.

Visiting This Refuge

Some surveyed visitors (48%) had only been to Cape Romain NWR once in the past 12 months, while slightly more than half had been multiple times (52%). These repeat visitors went to the refuge an average of 14 times during that same 12-month period. Visitors used the refuge during only one season (61%), during multiple seasons (23%), and year-round (16%).

Most visitors first learned about the refuge from friends/relatives (49%), signs on the highway (26%), or people in the local community (23%; fig. 2). Key information sources used by visitors to find their way to this refuge include signs on highways (47%), previous knowledge (41%), or a GPS navigation system (20%; fig. 3).

Half of visitors (50%) lived in the local area (within 50 miles of the refuge), whereas the other half were nonlocal visitors. For most local visitors, Cape Romain NWR was the primary purpose or sole destination of their trip (79%; table 3). For most nonlocal visitors, the refuge was also the primary purpose or sole destination of their trip (47%). Local visitors reported that they traveled an average of 26 miles to get to the refuge, while nonlocal visitors traveled an average of 211 miles. Figure 4 shows the residence of visitors travelling to the refuge. About 70% of visitors to Cape Romain NWR were from South Carolina.

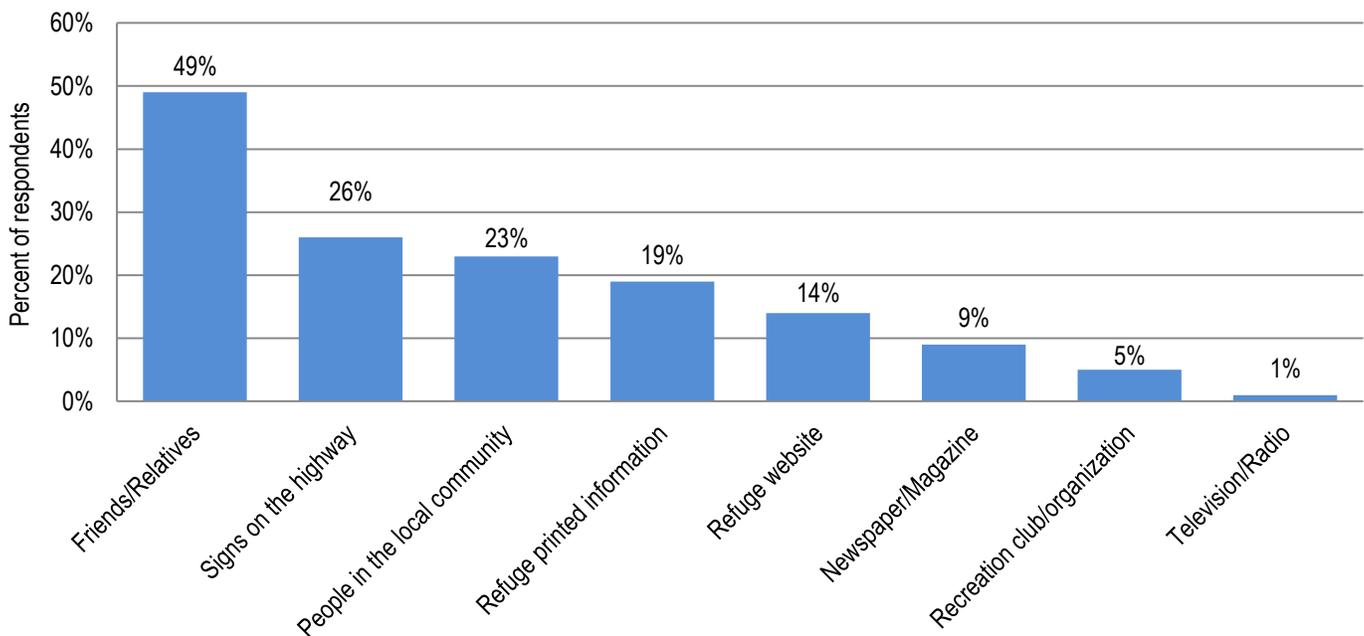


Figure 2. How visitors first learned or heard about Cape Romain NWR (n = 196).

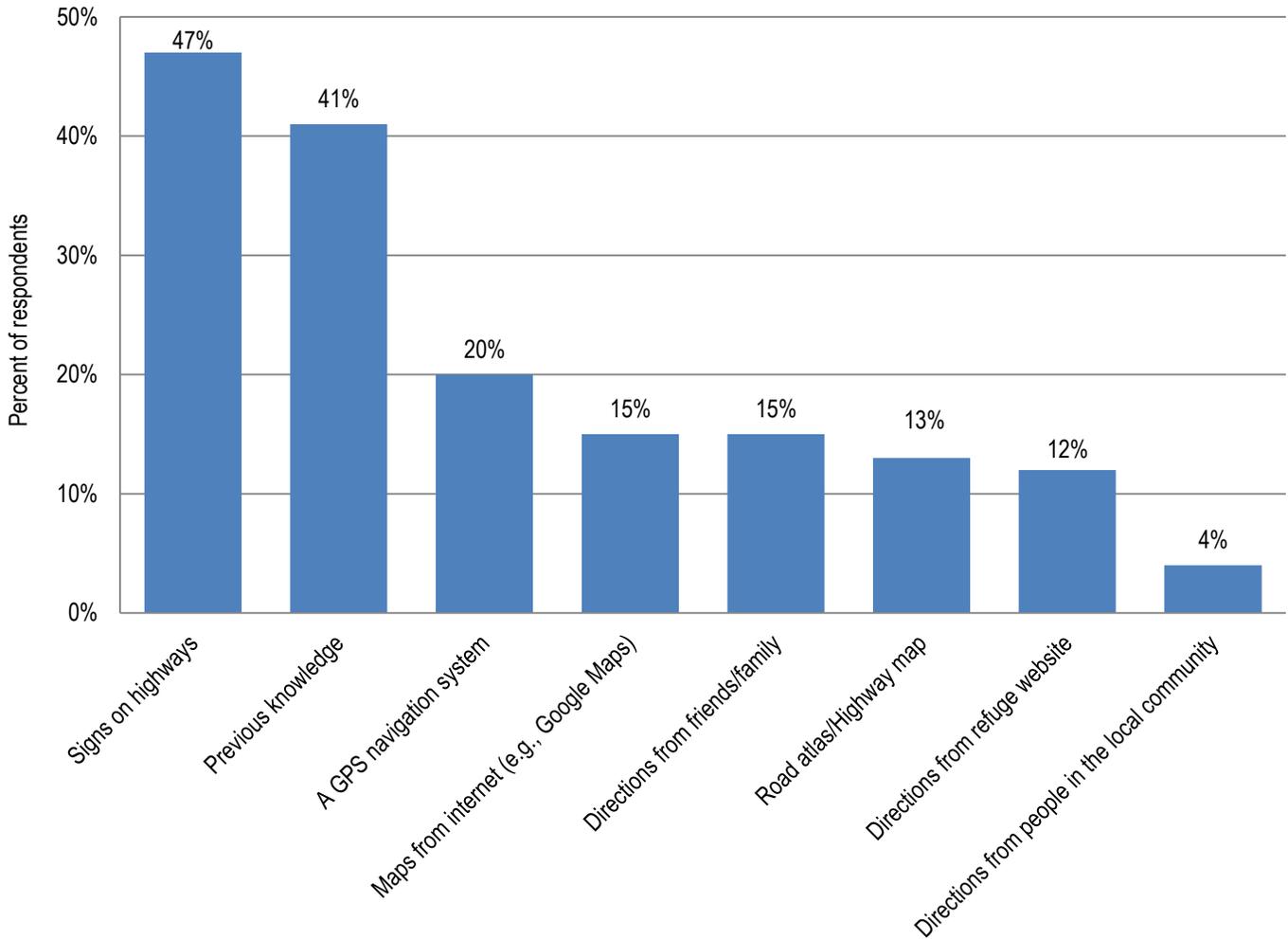


Figure 3. Resources used by visitors to find their way to Cape Romain NWR during *this* visit (n = 198).

Table 3. Influence of Cape Romain NWR on visitors' decision to take *this* trip.

Visitors	Visiting this refuge was...		
	the primary reason for trip	one of many equally important reasons for trip	an incidental stop
Nonlocal	47%	37%	16%
Local	80%	12%	8%
Total	63%	25%	12%

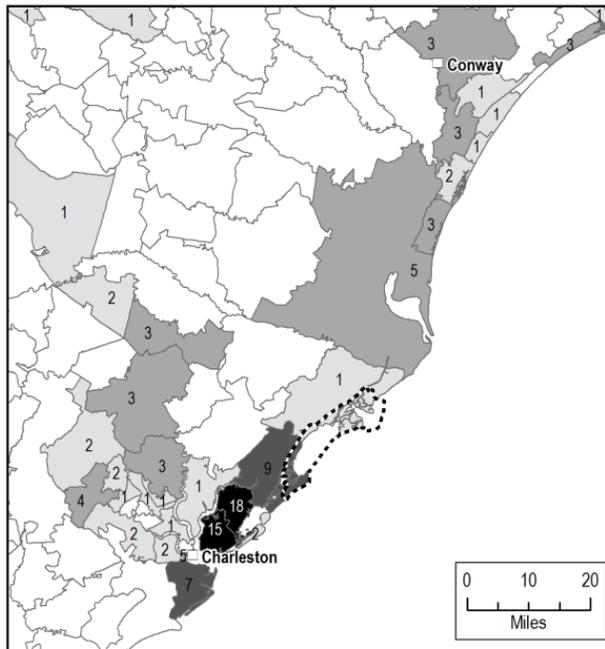
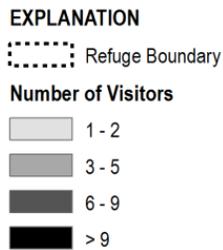
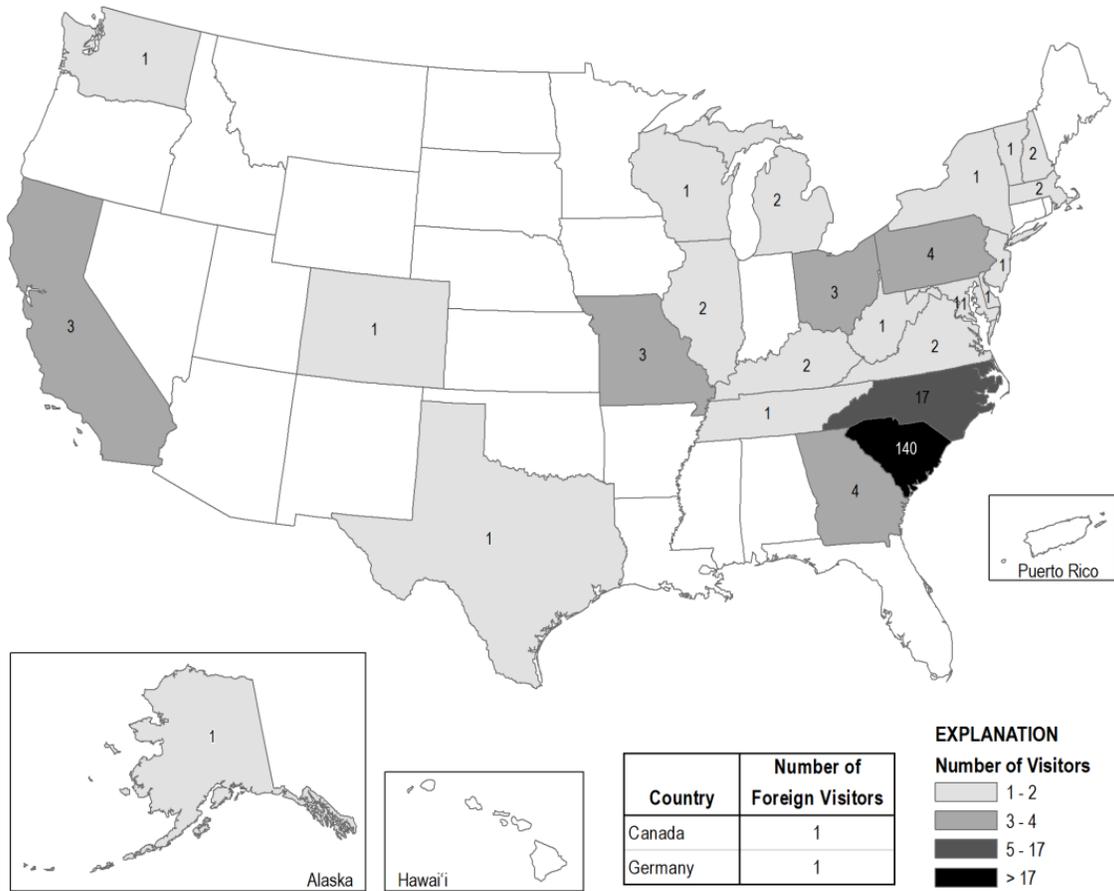


Figure 4. Number of visitors travelling to Cape Romain NWR by residence. Top map shows residence by state and bottom map shows residence by zip codes near the refuge (n = 201).

Surveyed visitors reported that they spent an average of 5 hours at Cape Romain NWR during one day there (a day visit is assumed to be 8 hours). However, the most frequently reported length of visit during one day was actually 8 hours (36%). The key modes of transportation used by visitors to travel around the refuge were private vehicle (52%), boat (41%), walking/hiking (27%) and private vehicle with trailer (27%; fig. 5). Most visitors indicated they were part of a group on their visit to this refuge (69%), travelling primarily with family and friends (table 4).

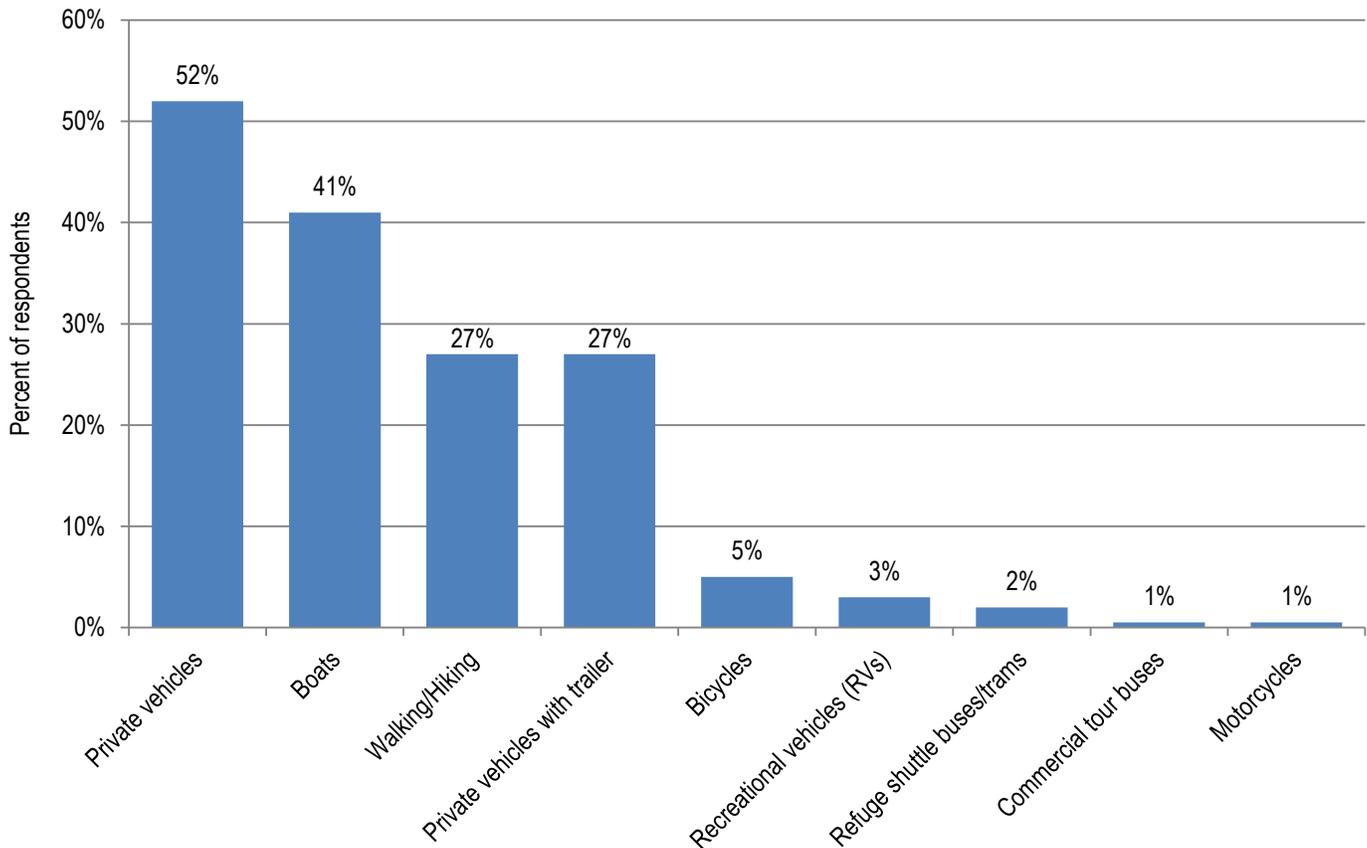


Figure 5. Modes of transportation used by visitors to Cape Romain NWR during *this* visit (n = 198).

Table 4. Type and size of groups visiting Cape Romain NWR (for those who indicated they were part of a group, n = 137).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	80%	3	0	3
Commercial tour group	6%	18	0	18
Organized club/School group	4%	15	0	15
Other group type	11%	16	2	18

Surveyed visitors participated in a variety of refuge activities during the past 12 months (fig. 6); the top activities reported were wildlife observation (60%), photography (44%), hiking (41%), and bird watching (40%). The primary reasons for their most recent visit included fishing (19%), wildlife observation (17%), harvesting shellfish (11%), and bird watching (10%; fig. 7). The visitor center was used by 34% of visitors, mostly to view the exhibits (84%), ask information of staff/volunteers (75%), and stop to use the facilities (for example, get water, use restroom; 66%; fig. 8). Visitors were likely referencing the Sewee Visitor and Environmental Education Center, a center jointly operated by Cape Romain NWR and Francis Marion National Forest when answering the question about the visitor center.

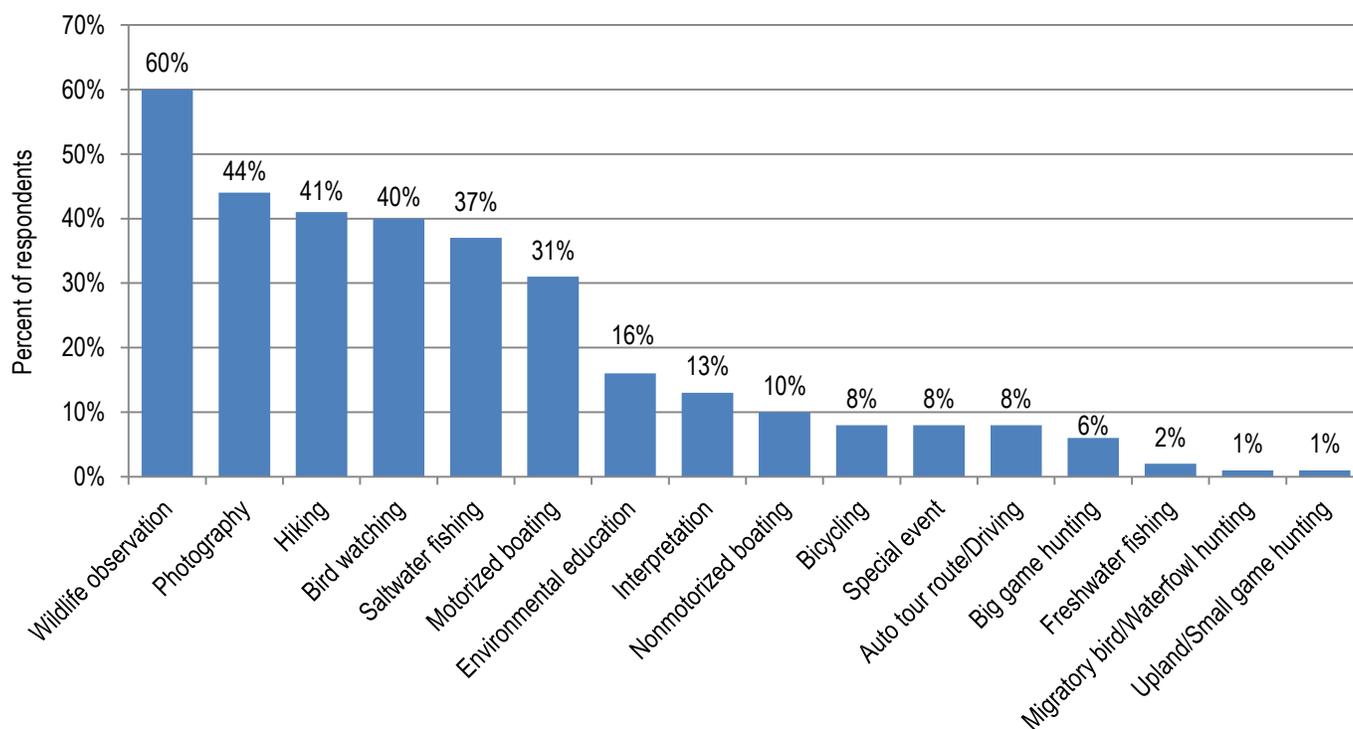


Figure 6. Activities in which visitors participated during the past 12 months at Cape Romain NWR (n = 196). See Appendix B for a listing of “other” activities.

Visitor Characteristics

Nearly all (98%) surveyed visitors to Cape Romain NWR indicated that they were citizens or permanent residents of the United States. Only those visitors 18 years or older were sampled. Visitors were a mix of 63% male with an average age of 55 years and 37% female with an average age of 54 years. Visitors, on average, reported they had 16 years of formal education (college or technical school). The median level of income was \$75,000–\$99,000. See Appendix A for more demographic information. In comparison, the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation found that participants in wildlife watching and hunting on public land were 55% male and 45% female with an average age of 46 years, an average level of education of 14 years (associate degree or two years of college), and a median income of \$50,000–\$74,999 (Harris, 2011, personal communication). Compared to the U.S. population, these 2006 survey participants are more likely to be male, older, and have higher education and income levels (U.S. Department of the Interior and U.S. Department of Commerce, 2007).

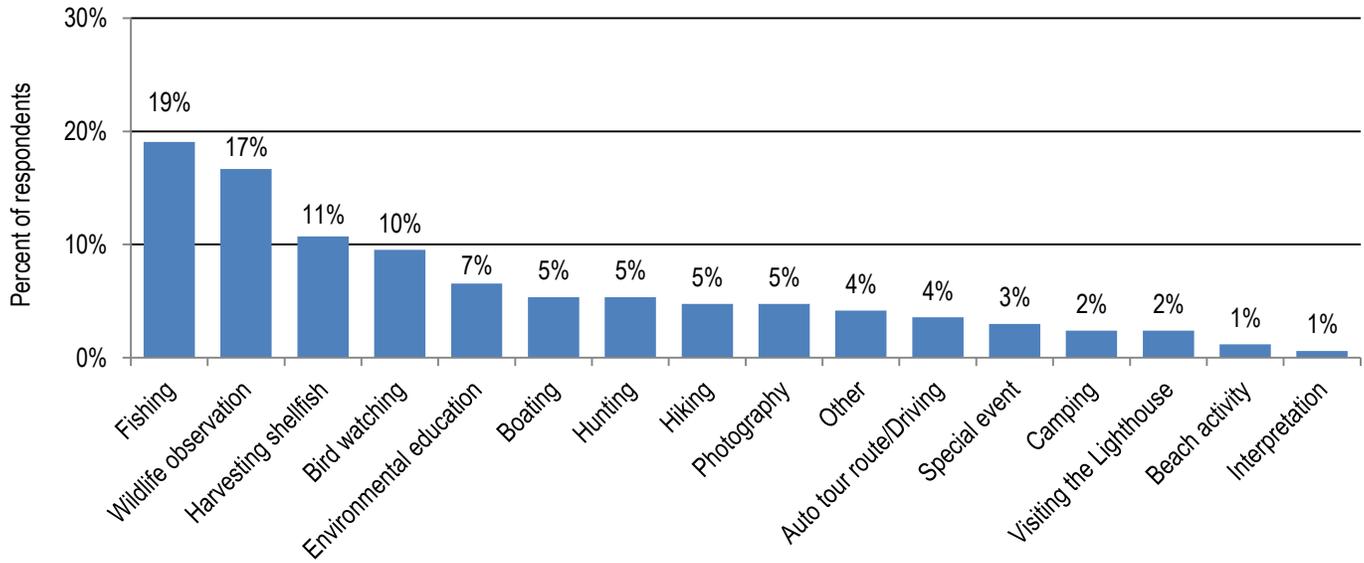


Figure 7. The primary activity in which visitors participated during *this* visit to Cape Romain NWR (n = 168). See Appendix B for a listing of “other” activities.

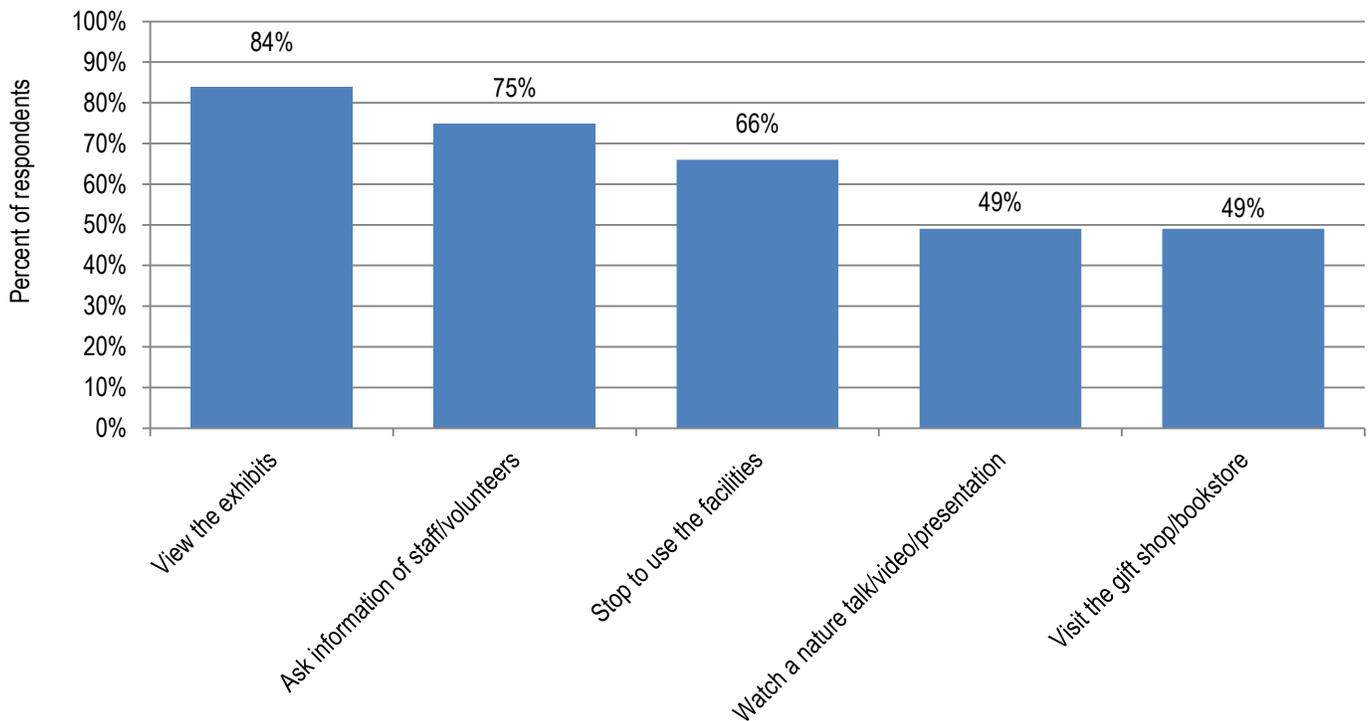


Figure 8. Use of the visitor center at Cape Romain NWR (for those visitors who indicated they used the visitor center, n = 68).

Visitor Spending in Local Communities

Tourists usually buy a wide range of goods and services while visiting an area. Major expenditure categories include lodging, food, supplies, and gasoline. Spending associated with refuge visitation can generate considerable economic benefits for the local communities near a refuge. For example, more than 34.8 million visits were made to national wildlife refuges in fiscal year 2006; these visits generated \$1.7 billion in sales, almost 27,000 jobs, and \$542.8 million in employment income in regional economies (Carver and Caudill, 2007). Information on the amount and types of visitor expenditures can illustrate the economic importance of refuge visitor activities to local communities. Visitor expenditure information also can be used to analyze the economic impact of proposed refuge management alternatives.

A region (and its economy) is typically defined as all counties within 50 miles of a travel destination (Stynes, 2008). Visitors that live within the local 50-mile area of a refuge typically have different spending patterns than those that travel from longer distances. During the two sampling periods, 50% of visitors to Cape Romain NWR indicated that they live within the local area. Nonlocal visitors (50%) stayed in the local area, on average, for 3 days. Table 5 shows summary statistics for local and nonlocal visitor expenditures in the local communities and at the refuge, with expenditures reported on a per person per day basis. During the two sampling periods, nonlocal visitors spent an average of \$81 per person per day and local visitors spent an average of \$56 per person per day in the local area. Several factors should be considered when estimating the economic importance of refuge visitor spending in the local communities. These include the amount of time spent at the refuge, influence of refuge on decision to take this trip, and the representativeness of primary activities of the sample of surveyed visitors compared to the general population. Controlling for these factors is beyond the scope of the summary statistics presented in this report. Detailed refuge-level visitor spending profiles which do consider these factors will be developed during the next phase of analysis.

Table 5. Total visitor expenditures in local communities and at Cape Romain NWR expressed in dollars per person per day.

Visitors	n ¹	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	90	\$67	\$81	\$69	\$2	\$375
Local	80	\$40	\$56	\$64	\$0	\$356

¹n = number of visitors who answered both locality *and* expenditure questions.

Note: For each respondent, reported expenditures were divided by the number of persons in their group that shared expenses in order to determine the spending per person per trip. This was then divided by the number of days spent in the local area to determine the spending per person per day for each respondent. For respondents who reported spending less than one full day, trip length was set equal to one day. These visitor spending estimates are appropriate for the sampling periods selected by refuge staff (see table 2 for sampling period dates and figure 7 for the primary visitor activities). They may not be representative of the total population of visitors to this refuge.

Visitor Opinions about This Refuge

National wildlife refuges provide visitors with a variety of services, facilities, and wildlife-dependent recreational opportunities. Understanding visitors' perceptions of their refuge experience is a key component of the Refuge System mission as it pertains to providing high-quality wildlife-dependent recreational opportunities. Having a baseline understanding of visitor experience can inform management decisions to better balance visitors' expectations with the Refuge System mission. Recent studies in outdoor recreation have included an emphasis on declining participation in traditional activities such as hunting and an increasing need to connect the next generation to nature and wildlife. These factors highlight the importance of current refuge visitors as a key constituency in wildlife conservation. A better understanding is increasingly needed to better manage the visitor experience and to address the challenges of the future.

Surveyed visitors' overall satisfaction with the services, facilities, and recreational opportunities provided at Cape Romain NWR were as follows (fig. 9):

- 92% were satisfied with the recreational activities and opportunities,
- 86% were satisfied with the information and education about the refuge and its resources,
- 92% were satisfied with the services provided by employees or volunteers, and
- 94% were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

Although 39% of visitors indicated that they paid a fee to enter Cape Romain NWR, the refuge does not charge an entrance fee. It may be that visitors were considering the fee paid to Coastal Expeditions, the refuge concessionaire, for ferry transportation to Bulls Island.

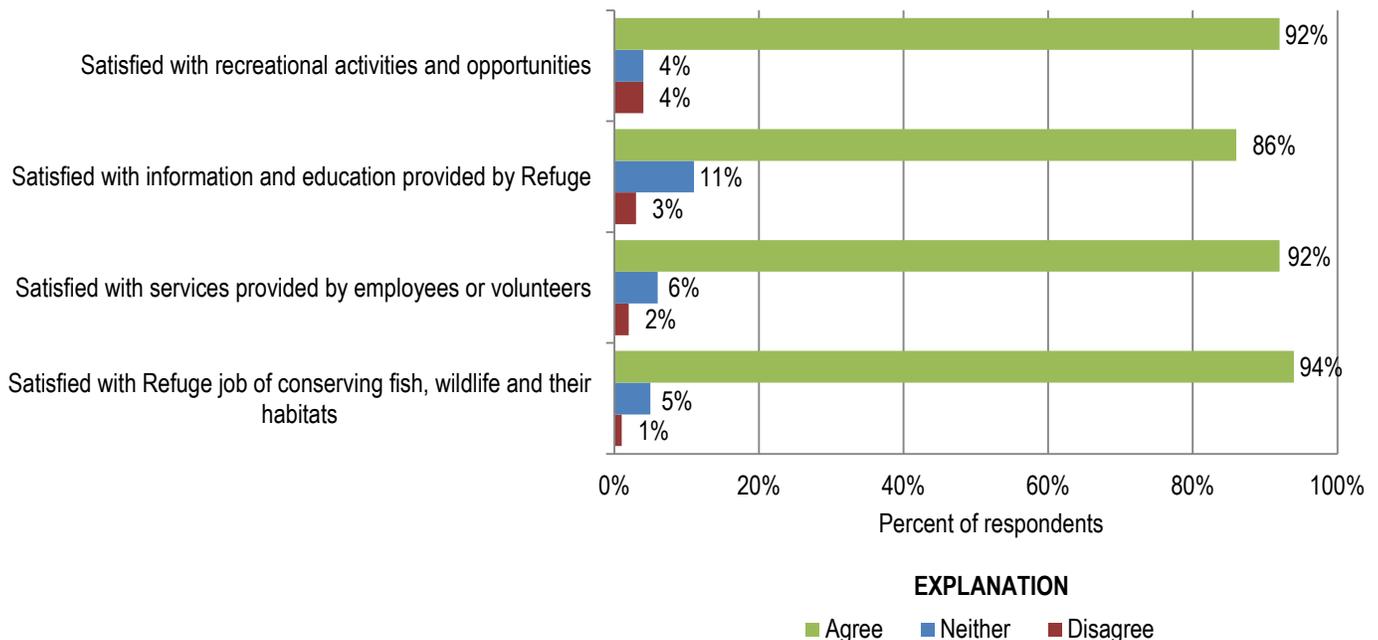


Figure 9. Overall satisfaction with Cape Romain NWR during *this* visit (n ≥ 180).

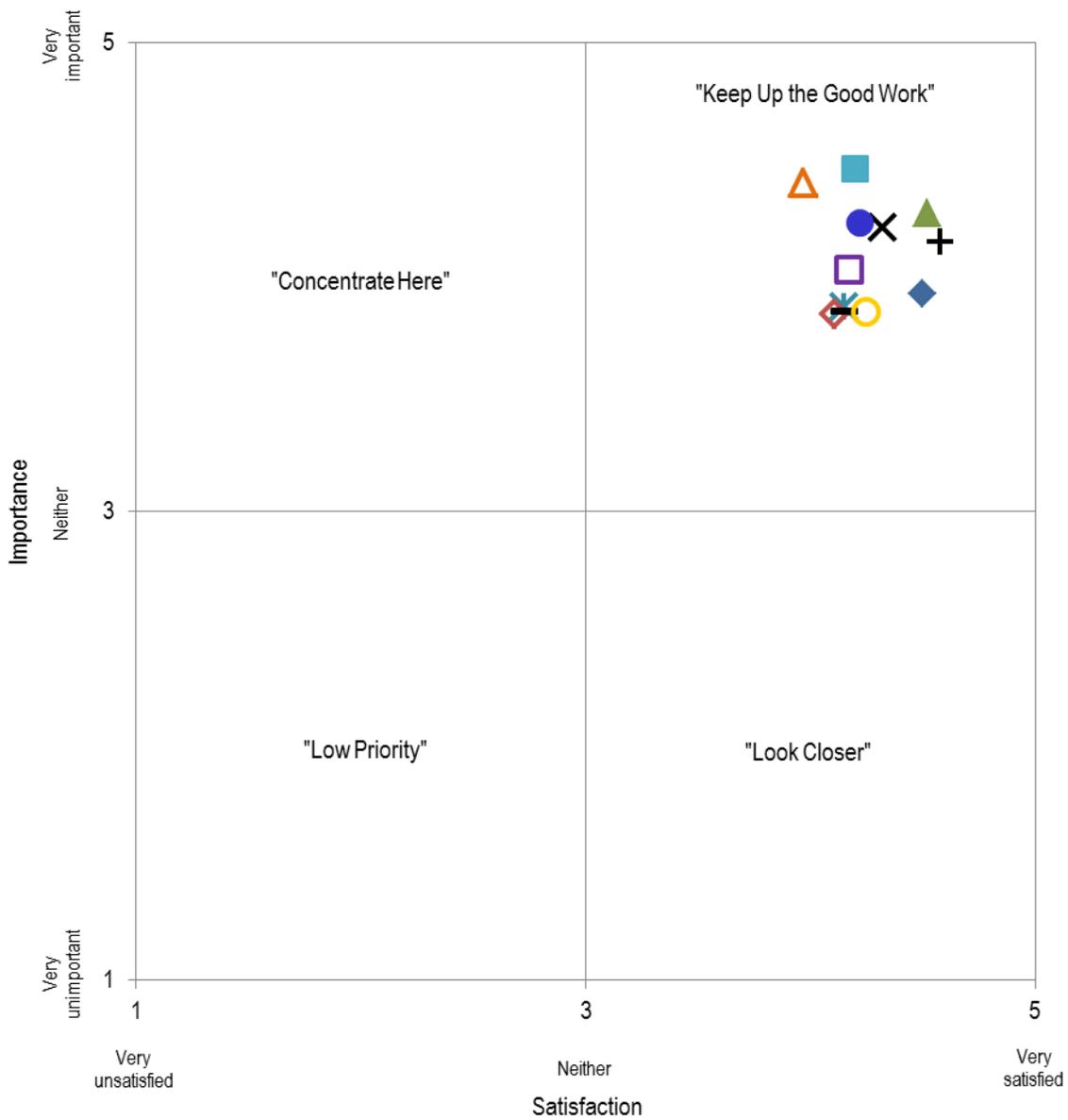
Importance/Satisfaction Ratings

Comparing the importance and satisfaction ratings for visitor services provided by refuges can help to identify how well the services are meeting visitor expectations. The importance-performance framework presented in this section is a tool that includes the importance of an attribute to visitors in relation to their satisfaction with that attribute. Drawn from marketing research, this tool has been applied to outdoor recreation and visitation settings (Martilla and James, 1977; Tarrant and Smith, 2002). Results for the attributes of interest are segmented into one of four quadrants (modified for this national study):

- Keep Up the Good Work = high importance/high satisfaction;
- Concentrate Here = high importance/low satisfaction;
- Low Priority = low importance/low satisfaction; and
- Look Closer = low importance/high satisfaction.

Graphically plotting visitors' importance and satisfaction ratings for different services, facilities, and recreational opportunities provides a simple and intuitive visualization of these survey measures. However, this tool is not without its drawbacks. One is the potential for variation among visitors regarding their expectations and levels of importance (Vaske et al., 1996; Bruyere et al., 2002; Wade and Eagles, 2003), and certain services or recreational opportunities may be more or less important for different segments of the visitor population. For example, hunters may place more importance on hunting opportunities and amenities such as blinds, while school group leaders may place more importance on educational/informational displays than would other visitors. This potential for highly varied importance ratings needs to be considered when viewing the average results of this analysis of visitors to Cape Romain NWR. This consideration is especially important when reviewing the attributes that fall into the "Look Closer" quadrant. In some cases, these attributes may represent specialized recreational activities in which a small subset of visitors participate (for example, hunting, kayaking) or facilities and services that only some visitors experience (for example, exhibits about the refuge). For these visitors, the average importance of (and potentially the satisfaction with) the attribute may be much higher than it would be for the overall population of visitors.

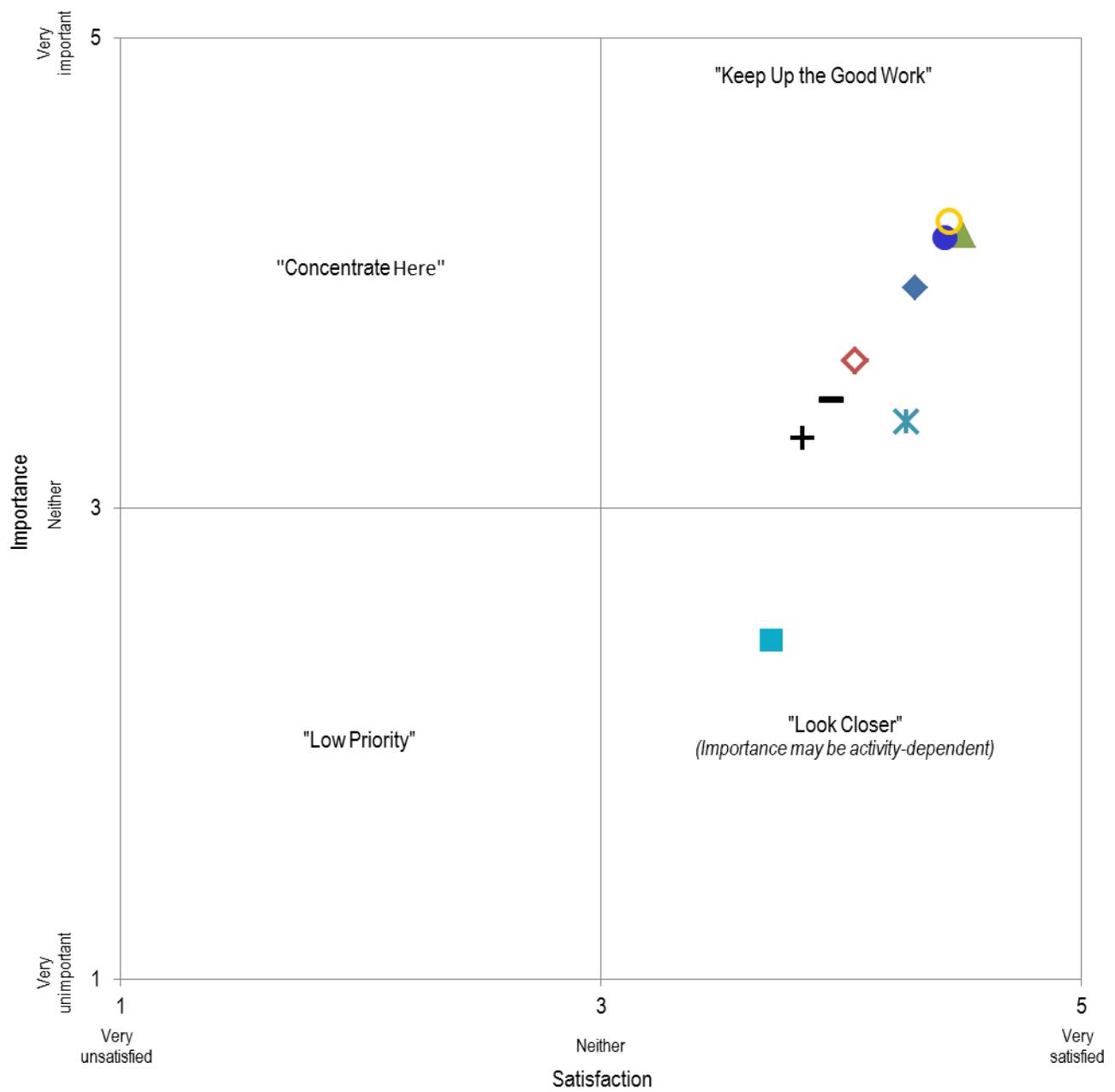
Figures 10-12 depict surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at Cape Romain NWR, respectively. All refuge services and facilities fell in the "Keep Up the Good Work" quadrant (fig. 10). Nearly all refuge recreational opportunities fell in the "Keep Up the Good Work" quadrant except hunting, which fell into the "Look Closer" quadrant (fig. 11). The average importance of hunting activities may be higher among visitors who have participated in this activity during the past 12 months; however, there were not enough individuals in the sample to evaluate the responses of such participants. All transportation-related features fell in the "Keep Up the Good Work" quadrant (fig. 12).



EXPLANATION

- ◆ Availability of employees/volunteers
- ▲ Knowledgeable employees/volunteers
- ⊠ Informational kiosks/displays about this Refuge
- ◊ Exhibits about this Refuge
- Visitor Center
- ▲ Well-maintained restrooms
- + Courteous/welcoming employees/volunteers
- ⊠ Printed information about this Refuge
- Signs with rules/regulations
- Environmental education programs/activities
- Convenient hours/days of operation
- Wildlife observation structures

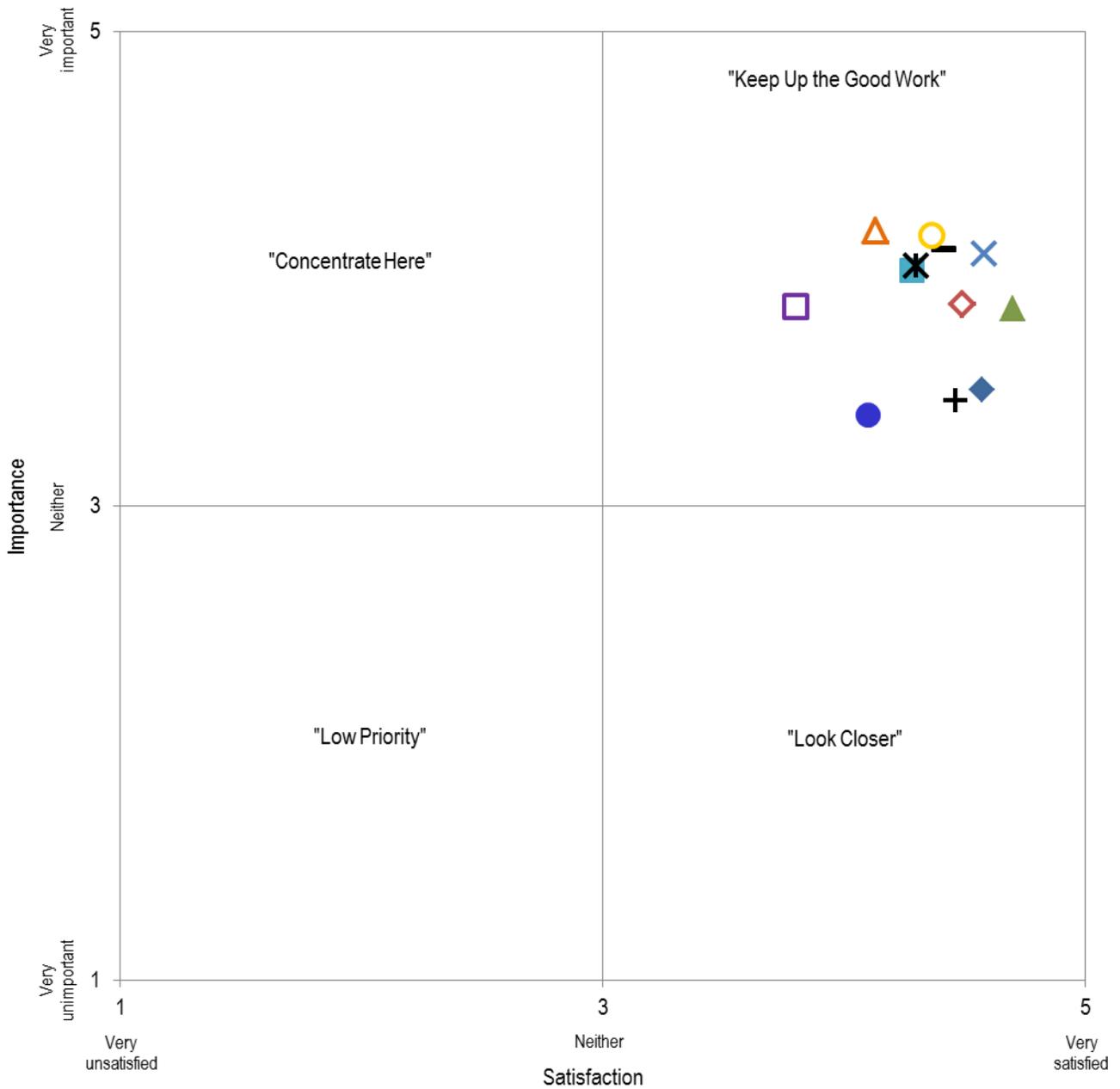
Figure 10. Importance-satisfaction ratings of services and facilities provided at Cape Romain NWR.



EXPLANATION

- ◆ Bird watching opportunities
- ▲ Photography opportunities
- Hunting opportunities
- ✱ Fishing opportunities
- Hiking opportunities
- Wildlife viewing opportunities
- ◇ Kayak/Canoe opportunities
- Bicycling opportunities
- + Volunteer opportunities

Figure 11. Importance-satisfaction ratings of recreational opportunities provided at Cape Romain NWR.



EXPLANATION

- ◆ Condition of roads
- ✦ Condition of parking areas
- ▲ Condition of bridges
- Directional signs on Refuge
- ✕ Condition of trails/boardwalks
- ✖ Number of parking places
- Number of pullovers
- ◇ Safety of driving conditions
- Safety of Refuge entrances
- Directional signs on highways
- △ Directional signs on trails
- Disabled access

Figure 12. Importance-satisfaction ratings of transportation-related features at Cape Romain NWR.

Visitor Opinions about National Wildlife Refuge System Topics

One goal of this national visitor survey was to identify visitor trends across the Refuge System to more effectively manage refuges and provide visitor services. Two important issues to the Refuge System are transportation on refuges and communicating with visitors about climate change. The results to these questions will be most meaningful when they are evaluated in aggregate (data from all participating refuges together). However, basic results for Cape Romain NWR are reported here.

Alternative Transportation and the National Wildlife Refuge System

Visitors use a variety of transportation means to access and enjoy national wildlife refuges. While many visitors arrive at the refuge in a private vehicle, alternatives such as buses, trams, watercraft, and bicycles are increasingly becoming a part of the visitor experience. Previous research has identified a growing need for transportation alternatives within the Refuge System (Krechmer et al., 2001); however, less is known about how visitors perceive and use these new transportation options. An understanding of visitors' likelihood of using certain alternative transportation options can help in future planning efforts. Visitors were asked their likelihood of using alternative transportation options at national wildlife refuges in the future.

Of the six Refuge System-wide alternative transportation options listed on the survey, the majority of Cape Romain NWR visitors who were surveyed were likely to use the following options at national wildlife refuges in the future (fig. 13):

- a boat that goes to different points on Refuge waterways;
- an offsite parking lot that provides trail access;
- a bike share program;
- a bus/tram that runs during a special event; and
- a bus/tram that provides a guided tour.

The majority of visitors were *not* likely to use a bus/tram that takes passengers to different points on national wildlife refuges in the future (fig. 13).

When asked about using alternative transportation at Cape Romain NWR specifically, 31% of visitors indicated they were unsure whether it would enhance their experience; however, some visitors thought alternative transportation would enhance their experience (32%) and others thought it would not (37%).

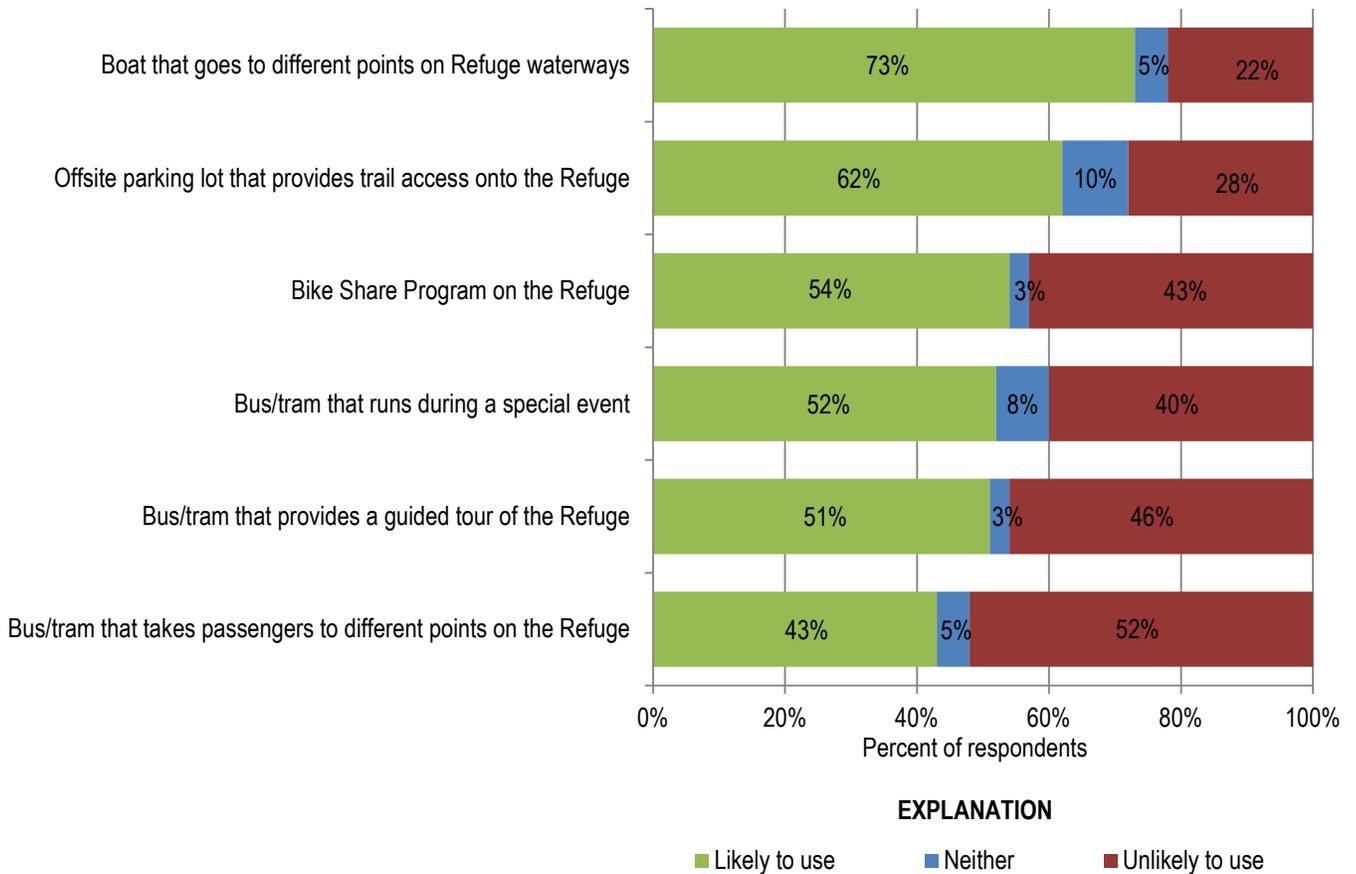


Figure 13. Visitors’ likelihood of using alternative transportation options at national wildlife refuges in the future (n ≥ 186).

Climate Change and the National Wildlife Refuge System

Climate change represents a growing concern for the management of national wildlife refuges. The Service’s climate change strategy, titled “Rising to the Urgent Challenge,” establishes a basic framework for the agency to work within a larger conservation community to help ensure wildlife, plant, and habitat sustainability (U.S. Fish and Wildlife Service, 2010). To support the guiding principles of the strategy, refuges will be exploring options for more effective engagement with visitors on this topic. The national visitor survey collected information about visitors’ level of personal involvement in climate change related to fish, wildlife and their habitats and visitors’ beliefs regarding this topic. Items draw from the “Six Americas” framework for understanding public sentiment toward climate change (Leiserowitz, Maibach, and Roser-Renouf, 2008) and from literature on climate change message frames (for example, Nisbet, 2009). Such information provides a baseline for understanding visitor perceptions of climate change in the context of fish and wildlife conservation that can further inform related communication and outreach strategies.

Factors that influence how individuals think about climate change include their basic beliefs, levels of involvement, policy preferences, and behaviors related to this topic. Results presented below provide baseline information on visitors’ levels of involvement with the topic of climate change related to fish,

wildlife and their habitats. The majority of surveyed visitors to Cape Romain NWR agreed with the following statements (fig. 14):

- “I am personally concerned about the effects of climate change on fish, wildlife and habitats;”
- “I stay well-informed about the effects of climate change;”
- “I take actions to alleviate the effects of climate change;” and
- “My experience would be enhanced if the Refuge provides information about how I can help address climate change effects.”

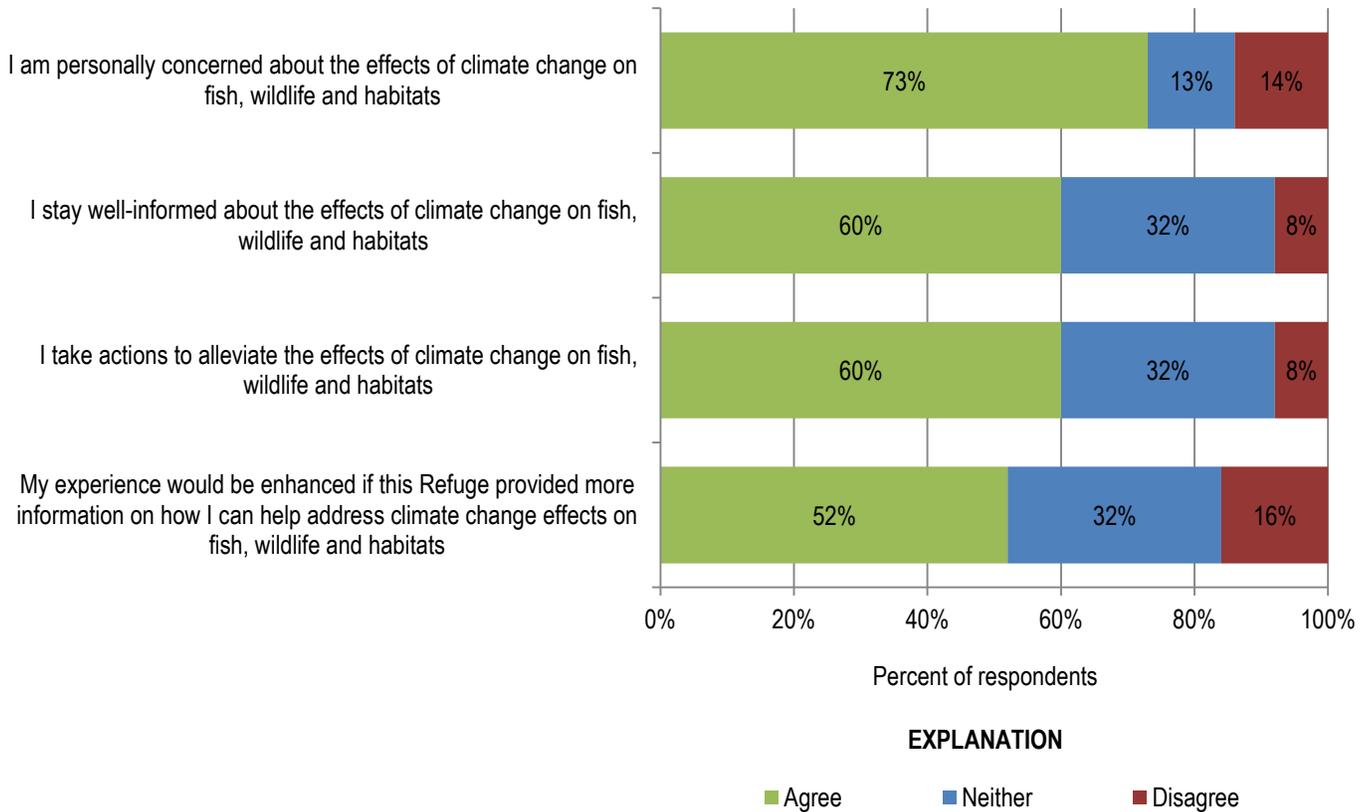


Figure 14. Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 190).

These results are most useful when coupled with responses to belief statements about the effects of climate change on fish, wildlife and their habitats, because such beliefs may be used to develop message frames (or ways to communicate) about climate change with a broad coalition of visitors. Framing science-based findings will not alter the overall message, but rather place the issue in a context in which different audience groupings can relate. The need to mitigate impacts of climate change on Refuges could be framed as a quality-of-life issue (for example, preserving the ability to enjoy fish, wildlife, plants, and their habitat) or an economic issue (for example, maintaining tourist revenues, supporting economic growth through new jobs/technology).

For Cape Romain NWR, the majority of visitors believed the following regarding climate change related to fish, wildlife and their habitats (fig. 15):

- “It is important to consider the economic costs and benefits to local communities when addressing climate change effects;”
- “Future generations will benefit if we address climate change effects;” and
- “We can improve our quality of life if we address the effects of climate change.”

Such information suggests that certain beliefs resonate with a greater number of visitors than other beliefs do. This information is important to note because some visitors (52%) indicated that their experience would be enhanced if Cape Romain NWR provided information about how they could help address the effects of climate change on fish, wildlife, and their habitats (fig. 14), and framing the information in a way that resonates most with visitors may result in a more engaged public who support strategies aimed at alleviating climate change pressures. Data will be analyzed further at the aggregate, or national level, to inform the development of a comprehensive communication strategy about climate change.

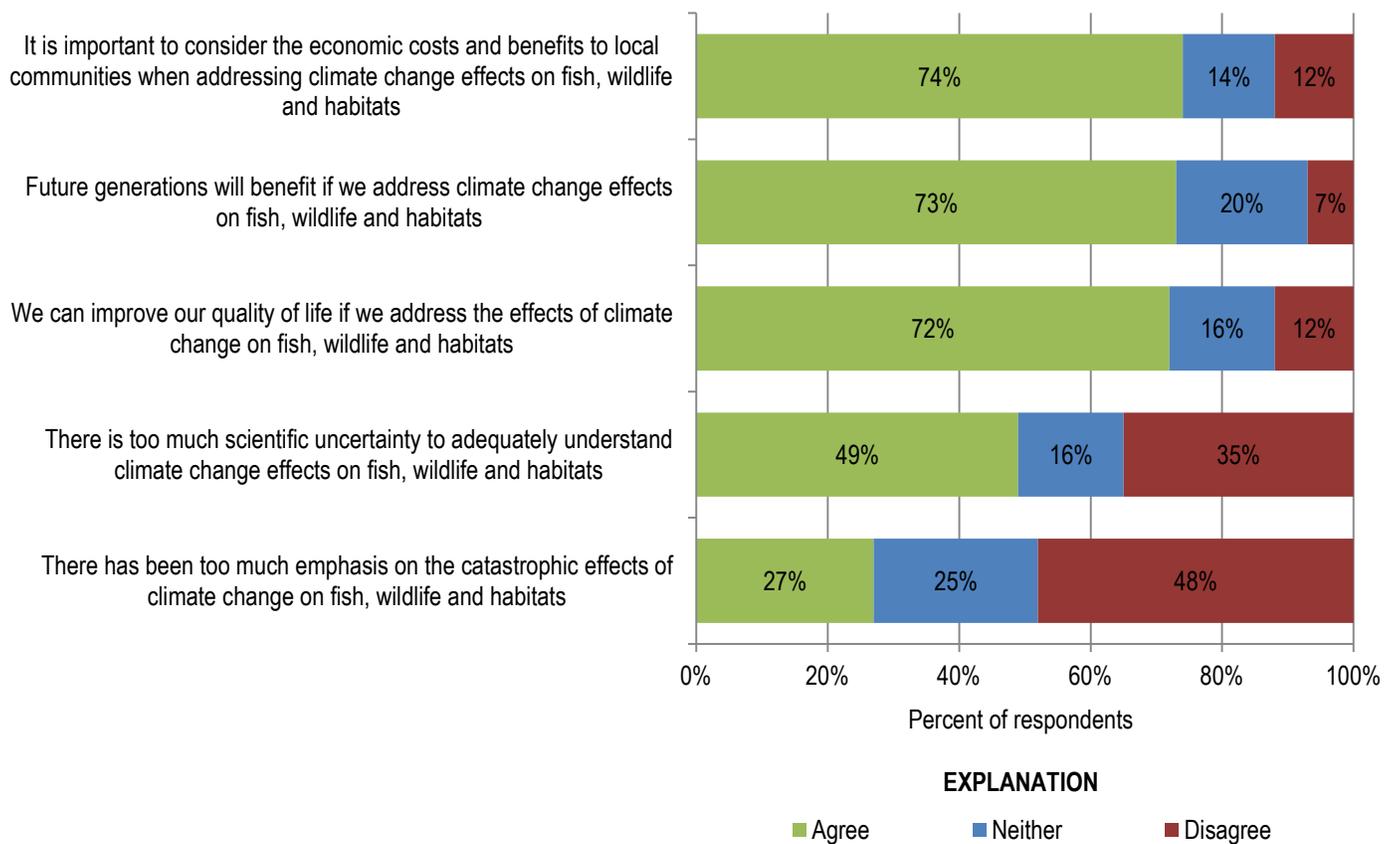


Figure 15. Visitors’ beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 192).

Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to Cape Romain NWR during 2010–2011. These data can be used to inform decision-making efforts related to the refuge, such as Comprehensive Conservation Plan implementation, visitor services management, and transportation planning and management. For example, when modifying (either minimizing or enhancing) visitor facilities, services, or recreational opportunities, a solid understanding of visitors' trip and activity characteristics, their satisfaction with existing offerings, and opinions regarding refuge fees is helpful. This information can help to gauge demand for refuge opportunities and inform both implementation and communication strategies. Similarly, an awareness of visitors' satisfaction ratings with refuge offerings can help determine if any potential areas of concern need to be investigated further. As another example of the utility of these results, community relations may be improved or bolstered through an understanding of the value of the refuge to visitors, whether that value is attributed to an appreciation of the refuge's uniqueness, enjoyment of its recreational opportunities, or spending contributions of nonlocal visitors to the local economy. Such data about visitors and their experiences, in conjunction with an understanding of biophysical data on the refuge, can ensure that management decisions are consistent with the Refuge System mission while fostering a continued public interest in these special places.

Individual refuge results are available for downloading at <http://pubs.usgs.gov/ds/643/> as part of USGS Data Series 643 (Sexton and others, 2011). For additional information about this project, contact the USGS researchers at national_visitor_survey@usgs.gov or 970.226.9205.

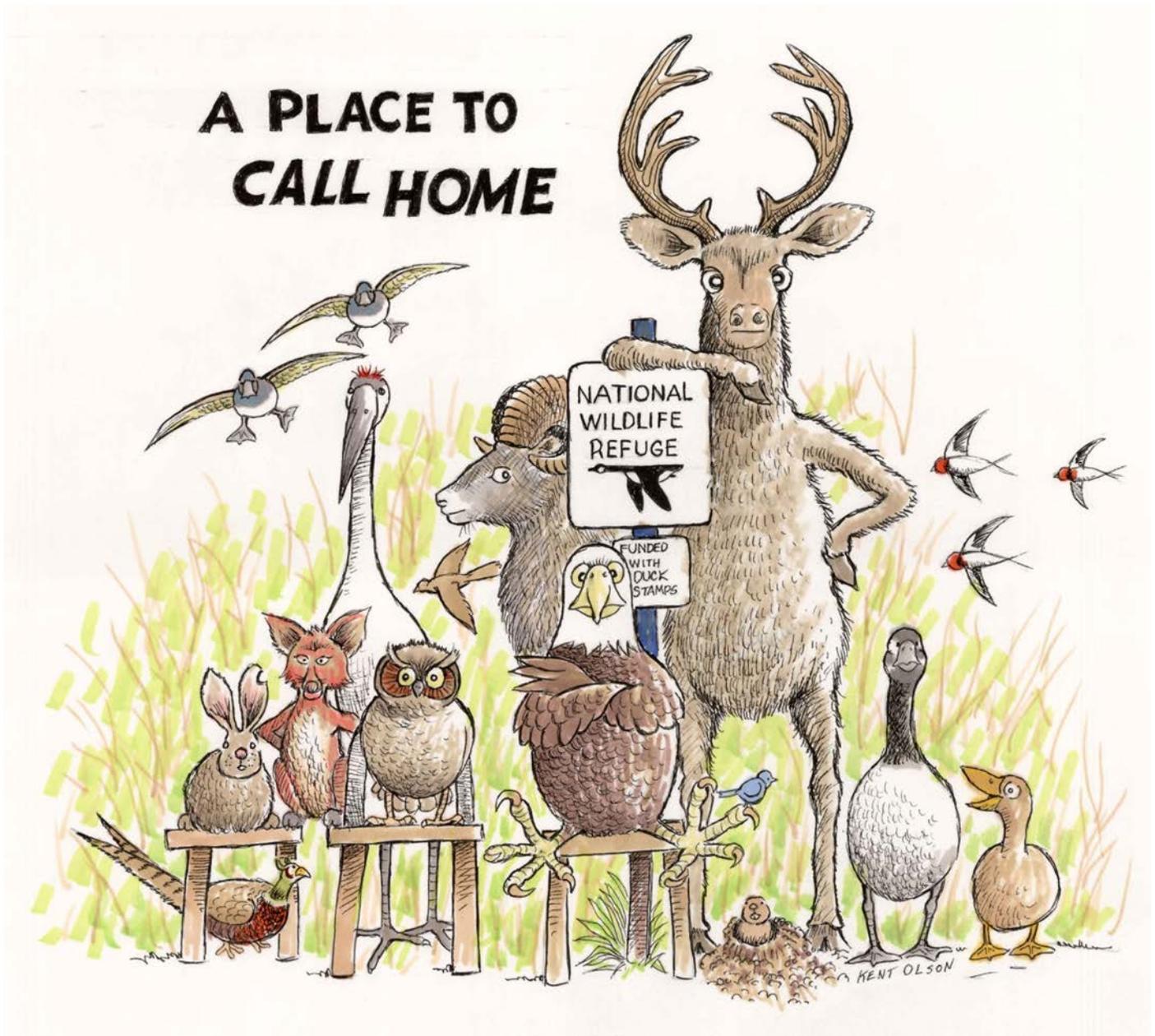
References

- Bruyere, B.L., Rodriguez, D.A., and Vaske, J.J., 2002, Enhancing importance-performance analysis through segmentation: *Journal of Travel and Tourism Marketing*, v. 12, no. 1, p. 81-95.
- Carver, E., and Caudill, J., 2007, Banking on nature 2006: The economic benefits to local communities of National Wildlife Refuge visitation: U.S. Fish and Wildlife Service, Division of Economics, Washington, D.C., 372 p., accessed September 30, 2011, at http://www.fws.gov/refuges/about/msWord/BankingonNature_2006_11-23.doc.
- Clark, J.R., 2001, Mission and Goals (National Fish and Wildlife Service Director's Order #132–601 FW1), accessed November 18, 2011 at http://www.fws.gov/refuges/policiesandbudget/HR1420_missionGoals.html.
- Dillman, D.A., 2007, Mail and Internet surveys: The tailored design method. (2nd ed.): Hoboken, N.J., John Wiley and Sons, Inc., 523 p.
- Krechmer, D., Grimm, L., Hodge, D., Mendes, D., and Goetzke, F., 2001, Federal lands alternative transportation systems study – Volume 3 – Summary of national ATS needs: prepared for Federal Highway Administration, and Federal Transit Administration in association with National Park Service, Bureau of Land Management, and U.S. Fish and Wildlife Service, 80 p. (Also available at http://www.fta.dot.gov/documents/3039_study.pdf.)
- Leiserowitz, A, Maibach, E., and Roser-Renouf, C., 2008, Global warming's six Americas: An audience segmentation: New Haven, Conn., Yale University.
- Martilla, J.A., and James, J.C., 1977, Importance-performance analysis: *Journal of Marketing*, v. 41, p. 77–79.
- Nisbet, M.C., 2009, Communicating climate change: Why frames matter for public engagement: *Environment*, v. 51, p. 12-23.
- Salant, P., and Dillman, D.A., 1994, How to conduct your own study: New York, N.Y., John Wiley and Sons, Inc.

- Sexton, N.R., Dietsch, A.M., Don Carlos, A.W., Koontz, L., Solomon, A. and Miller, H., 2011, National wildlife refuge visitor survey 2010/2011: Individual refuge results: U.S. Geological Survey Data Series 643.
- Stynes, D.J., 2008, National Park visitor spending and payroll impacts, 2007: East Lansing, Mich., Michigan State University, Department of Community, Agriculture, Recreation and Resource Studies.
- Tarrant, M.A., and Smith, E.K., 2002, The use of a modified importance-performance framework to examine visitor satisfaction with attributes of outdoor recreation settings: *Managing Leisure*, v. 7, no. 2, p. 69–82.
- Uniack, T., 1999, The citizen's wildlife refuge planning handbook: Charting the future of conservation on the National Wildlife Refuge near you: Defenders of Wildlife, Washington, D.C., accessed April 2010 at http://www.defenders.org/resources/publications/programs_and_policy/habitat_conservation/federal_lands/citizen's_wildlife_refuge_planning_handbook.pdf.
- U.S. Department of the Interior, Fish and Wildlife Service and U.S. Department of Commerce, U.S. Census Bureau, 2007, 2006 National survey of fishing, hunting, and wildlife-associated recreation: U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C., 168 p.
- U.S. Fish and Wildlife Service, 2007, America's national wildlife refuges, Fact Sheet, last updated July 31, 2007.
- U.S. Fish and Wildlife Service, 2010, Rising to the urgent challenge: Strategic plan for responding to accelerating climate change: U.S. Fish and Wildlife Service, Division of Refuges, Washington, D.C., 32 p., accessed April 2011 at <http://www.fws.gov/home/climatechange/pdf/CCStrategicPlan.pdf>.
- Vaske, J.J., Beaman, J., Stanley R., and Grenier, M., 1996, Importance-performance and segmentation: Where do we go from here?: *in* Fesenmaier, D.R., O'Leary, J.T., and Uysal, M., eds., *Recent advances in tourism marketing research*: New York, The Haworth Press, Inc., p. 225-240.
- Wade, D.J. and Eagles, P.F.J., 2003, The use of importance-performance analysis and market segmentation for tourism management in parks and protected areas: An application to Tanzania's National Parks: *Journal of Ecotourism*, v. 2, no. 3, p. 196-212.

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National Wildlife Refuge Visitor Survey



PLEASE READ THIS FIRST:

Thank you for visiting a National Wildlife Refuge and for agreeing to participate in this study! We hope that you had an enjoyable experience. The U.S. Fish and Wildlife Service and the U.S. Geological Survey would like to learn more about National Wildlife Refuge visitors in order to improve the management of the area and enhance visitor opportunities.

If you have recently visited more than one National Wildlife Refuge or made more than one visit to the same Refuge, please respond regarding only the Refuge and the visit when you were asked to participate in this survey. Any question that uses the phrase “this Refuge” refers to the Refuge and visit when you were contacted.

SECTION 1. Your visit to this Refuge

1. Including your most recent visit, which activities have you participated in during the past 12 months at this Refuge?
(Please mark **all that apply.**)

- | | | |
|--|---|---|
| <input type="checkbox"/> 6% Big game hunting | <input type="checkbox"/> 41% Hiking | <input type="checkbox"/> 16% Environmental education (for example, classrooms or labs, tours) |
| <input type="checkbox"/> 1% Upland/Small-game hunting | <input type="checkbox"/> 8% Bicycling | |
| <input type="checkbox"/> 1% Migratory bird/Waterfowl hunting | <input type="checkbox"/> 8% Auto tour route/Driving | <input type="checkbox"/> 8% Special event (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 60% Wildlife observation | <input type="checkbox"/> 31% Motorized boating | |
| <input type="checkbox"/> 40% Bird watching | <input type="checkbox"/> 10% Nonmotorized boating (including canoes/kayaks) | <input type="checkbox"/> 17% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 2% Freshwater fishing | | |
| <input type="checkbox"/> 37% Saltwater fishing | <input type="checkbox"/> 13% Interpretation (for example, exhibits, kiosks, videos) | <input type="checkbox"/> 2% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 44% Photography | | |

2. Which of the activities above was the ***primary*** purpose of your visit to this Refuge?
(Please write **only one activity** on the line.) See report for categorized results; see Appendix B for miscellaneous responses

3. Did you go to a Visitor Center at this Refuge?

- 66% No
- 34% Yes → If yes, what did you do there? (Please mark **all that apply.**)
- | | |
|--|---|
| <input type="checkbox"/> 49% Visit the gift shop or bookstore | <input type="checkbox"/> 49% Watch a nature talk/video/presentation |
| <input type="checkbox"/> 84% View the exhibits | <input type="checkbox"/> 66% Stopped to use the facilities (for example, get water, use restroom) |
| <input type="checkbox"/> 75% Ask information of staff/volunteers | <input type="checkbox"/> 19% Other (<i>please specify</i>) <u>See Appendix B</u> |

4. Which of the following best describes your visit to this Refuge? (*Please mark **only one.***)

Nonlocal	Local	Total	
47%	79%	62%	It was the primary purpose or sole destination of my trip.
37%	12%	24%	It was one of many equally important reasons or destinations for my trip.
16%	8%	13%	It was just an incidental or spur-of-the-moment stop on a trip taken for other purposes or to other destinations.

5. Approximately how many **miles** did you travel to get to this Refuge?

Nonlocal 211 number of miles

Local 26 number of miles

6. How much time did you spend at this Refuge on your visit?

See Report for Results

7. Were you part of a group on your visit to this Refuge?

31% No (*skip to question #9*)

69% Yes → What **type of group** were you with on your visit? (*Please mark **only one.***)

80% Family and/or friends

4% Organized club or school group

6% Commercial tour group

11% Other (*please specify*) See Appendix B

8. How many people were in your group, including yourself? (*Please answer each category.*)

6 number 18 years and over

1 number 17 years and under

9. How did you **first learn or hear about** this Refuge? (*Please mark **all that apply.***)

49% Friends or relatives

14% Refuge website

26% Signs on highway

4% Other website (*please specify*) See Appendix B

5% Recreation club or organization

1% Television or radio

23% People in the local community

9% Newspaper or magazine

19% Refuge printed information (brochure, map)

8% Other (*please specify*) See Appendix B

10. During which seasons have you visited this Refuge in the last 12 months? (*Please mark **all that apply.***)

60% Spring
(March-May)

32% Summer
(June-August)

65% Fall
(September-November)

24% Winter
(December-February)

11. How many times have you visited...

...this Refuge (including this visit) in the last 12 months? 8 number of visits

...other National Wildlife Refuges in the last 12 months? 3 number of visits

SECTION 2. Transportation and access at this Refuge

1. What **forms of transportation** did you use on your visit to this Refuge? (*Please mark **all that apply.***)

- | | | | | | |
|------------------------------|---|------------------------------|----------------------------------|------------------------------|---------------------------------------|
| <input type="checkbox"/> 52% | Private vehicle without a trailer | <input type="checkbox"/> 2% | Refuge shuttle bus or tram | <input type="checkbox"/> 5% | Bicycle |
| <input type="checkbox"/> 27% | Private vehicle with a trailer
(for boat, camper or other) | <input type="checkbox"/> 1% | Motorcycle | <input type="checkbox"/> 27% | Walk/Hike |
| <input type="checkbox"/> 1% | Commercial tour bus | <input type="checkbox"/> 0% | ATV or off-road vehicle | <input type="checkbox"/> 8% | Other (<i>please specify below</i>) |
| <input type="checkbox"/> 3% | Recreational vehicle (RV) | <input type="checkbox"/> 41% | Boat | <u>See Appendix B</u> | |
| | | <input type="checkbox"/> 0% | Wheelchair or other mobility aid | | |

2. Which of the following did you use to find your way to this Refuge? (*Please mark **all that apply.***)

- | | | | |
|------------------------------|--|------------------------------|---|
| <input type="checkbox"/> 47% | Signs on highways | <input type="checkbox"/> 12% | Directions from Refuge website |
| <input type="checkbox"/> 20% | A GPS navigation system | <input type="checkbox"/> 4% | Directions from people in community near this Refuge |
| <input type="checkbox"/> 13% | A road atlas or highway map | <input type="checkbox"/> 15% | Directions from friends or family |
| <input type="checkbox"/> 15% | Maps from the Internet (for example,
MapQuest or Google Maps) | <input type="checkbox"/> 41% | Previous knowledge/I have been to this Refuge before |
| | | <input type="checkbox"/> 4% | Other (<i>please specify</i>) <u>See Appendix B</u> |

3. Below are different alternative transportation options that could be offered at some National Wildlife Refuges in the future. Considering the different Refuges you may have visited, please tell us **how likely you would be to use each transportation option.** (*Please circle one number for each statement.*)

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 40%	<input type="checkbox"/> 12%	<input type="checkbox"/> 5%	<input type="checkbox"/> 29%	<input type="checkbox"/> 14%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 30%	<input type="checkbox"/> 13%	<input type="checkbox"/> 3%	<input type="checkbox"/> 30%	<input type="checkbox"/> 25%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 33%	<input type="checkbox"/> 13%	<input type="checkbox"/> 4%	<input type="checkbox"/> 30%	<input type="checkbox"/> 20%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 15%	<input type="checkbox"/> 6%	<input type="checkbox"/> 5%	<input type="checkbox"/> 31%	<input type="checkbox"/> 42%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 26%	<input type="checkbox"/> 14%	<input type="checkbox"/> 8%	<input type="checkbox"/> 32%	<input type="checkbox"/> 19%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 20%	<input type="checkbox"/> 8%	<input type="checkbox"/> 10%	<input type="checkbox"/> 26%	<input type="checkbox"/> 37%
...some other alternative transportation option? (<i>please specify</i>) <u>See Appendix B</u>	<input type="checkbox"/> 0%	<input type="checkbox"/> 0%	<input type="checkbox"/> 4%	<input type="checkbox"/> 44%	<input type="checkbox"/> 52%

4. If alternative transportation were offered at *this* Refuge, would it enhance your experience?

- 32% Yes 37% No 31% Not Sure

5. For each of the following transportation-related features, first, **rate how important** each feature is to you when visiting this Refuge; then **rate how satisfied** you are with the way this Refuge is managing each feature. *If this Refuge does not offer a specific transportation-related feature, please rate how important it is to you and then circle NA "Not Applicable" under the Satisfaction column.*

Importance						Satisfaction					
Circle one for each item.						Circle one for each item.					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important		Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
11%	13%	10%	46%	19%	Surface conditions of roads	3%	3%	4%	17%	74%	NA
11%	14%	14%	45%	17%	Surface conditions of parking areas	3%	2%	4%	27%	64%	NA
11%	7%	12%	26%	43%	Condition of bridges	0%	2%	5%	14%	80%	NA
8%	3%	9%	35%	45%	Condition of trails and boardwalks	2%	3%	5%	15%	75%	NA
9%	5%	7%	36%	43%	Number of places for parking	3%	11%	6%	15%	65%	NA
12%	12%	26%	28%	23%	Number of places to pull over along Refuge roads	4%	1%	21%	30%	44%	NA
9%	4%	17%	33%	37%	Safety of driving conditions on Refuge roads	1%	3%	9%	22%	66%	NA
7%	2%	11%	34%	45%	Safety of Refuge road entrances/exits	4%	2%	7%	24%	63%	NA
8%	4%	7%	31%	51%	Signs on highways directing you to the Refuge	2%	5%	4%	30%	58%	NA
8%	3%	13%	31%	44%	Signs directing you around the Refuge roads	2%	4%	13%	28%	54%	NA
9%	2%	9%	24%	56%	Signs directing you on trails	3%	8%	13%	26%	50%	NA
9%	3%	20%	32%	36%	Access for people with physical disabilities or who have difficulty walking	4%	10%	22%	29%	35%	NA

6. If you have any comments about transportation-related items at this Refuge, please write them on the lines below.

See Appendix B

SECTION 3. Your expenses related to your Refuge visit

1. Do you live in the local area (within approximately 50 miles of this Refuge)?

50% Yes

50% No → How much time did you spend **in local communities** on this trip?
 3 number of hours OR 4 number of days

2. Please record the amount that **you and other members of your group** with whom you shared expenses (for example, other family members, traveling companions) spent in the local 50-mile area during **your most recent visit** to this Refuge. *(Please enter the amount spent to the nearest dollar in each category below. Enter 0 (zero) if you did not spend any money in a particular category.)*

Categories	<u>Amount Spent in Local Communities & at this Refuge</u> <i>(within 50 miles of this Refuge)</i>
Motel, bed & breakfast, cabin, etc.	
Camping	
Restaurants & bars	
Groceries	
Gasoline and oil	
Local transportation (bus, shuttle, rental car, etc.)	
Refuge entrance fee	
Recreation guide fees (hunting, fishing, wildlife viewing, etc.)	
Equipment rental (canoe, bicycle, kayak, etc.)	
Sporting good purchases	
Souvenirs/clothing and other retail	
Other <i>(please specify)</i> _____	

See Report for Results

3. Including yourself, how many people in your group shared these trip expenses?

 3 number of people sharing expenses

4. As you know, some of the costs of travel such as gasoline, hotels, and airline tickets often increase. If your total trip costs were to increase, what is the maximum extra amount you would pay and still visit this Refuge? (*Please circle the highest dollar amount.*)

\$0	\$10	\$20	\$35	\$50	\$75	\$100	\$125	\$150	\$200	\$250
8%	11%	25%	8%	15%	2%	14%	1%	2%	4%	10%

5. If you or a member of your group paid a fee or used a pass to enter this Refuge, how appropriate was the fee? (*Please mark **only one.***)

4%	Far too low	4%	Too low	84%	About right	8%	Too high	0%	Far too high	61%	Did not pay a fee (skip to Section 4)
----	-------------	----	---------	-----	-------------	----	----------	----	--------------	-----	--

6. Please indicate whether you disagree or agree with the following statement. (*Please mark **only one.***)

The value of the recreation opportunities and services I experienced at this Refuge was at least equal to the fee I paid.

4%	Strongly disagree	1%	Disagree	5%	Neither agree or disagree	36%	Agree	54%	Strongly agree
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SECTION 4. Your experience at this Refuge

1. Considering your visit to this Refuge, please indicate the extent to which you disagree or agree with each statement. (*Please circle one number for each statement.*)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Applicable
Overall, I am satisfied with the recreational activities and opportunities provided by this Refuge.	1%	3%	5%	36%	56%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	1%	2%	11%	34%	52%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	1%	1%	7%	28%	63%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	1%	1%	5%	28%	66%	NA

2. For each of the following services, facilities, and activities, first, **rate how important** each item is to you when visiting this Refuge; then, **rate how satisfied** you are with the way this Refuge is managing each item.
If this Refuge does not offer a specific service, facility, or activity, please rate how important it is to you and then circle NA “Not Applicable” under the Satisfaction column.

Importance					Refuge Services, Facilities, and Activities	Satisfaction					
Circle one for each item.						Circle one for each item.					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important		Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
9%	4%	14%	32%	41%	Availability of employees or volunteers	1%	2%	11%	19%	68%	NA
6%	3%	12%	26%	52%	Courteous and welcoming employees or volunteers	2%	1%	11%	11%	76%	NA
5%	4%	9%	21%	60%	Knowledgeable employees or volunteers	3%	2%	12%	8%	75%	NA
5%	2%	7%	36%	49%	Printed information about this Refuge and its resources (for example, maps and brochures)	2%	7%	7%	26%	58%	NA
8%	3%	14%	43%	31%	Informational kiosks/displays about this Refuge and its resources	3%	6%	14%	28%	50%	NA
3%	2%	9%	41%	45%	Signs with rules/regulations for this Refuge	1%	6%	10%	36%	47%	NA
8%	4%	16%	36%	35%	Exhibits about this Refuge and its resources	3%	3%	20%	28%	46%	NA
8%	6%	18%	30%	39%	Environmental education programs or activities	2%	6%	21%	18%	53%	NA
7%	5%	21%	32%	35%	Visitor Center	1%	2%	26%	14%	57%	NA
3%	1%	6%	30%	61%	Convenient hours and days of operation	4%	7%	6%	29%	53%	NA
4%	1%	3%	34%	58%	Well-maintained restrooms	7%	12%	6%	26%	49%	NA
6%	5%	12%	35%	42%	Wildlife observation structures (decks, blinds)	3%	3%	14%	33%	47%	NA
6%	4%	20%	30%	40%	Bird-watching opportunities	1%	3%	14%	25%	56%	NA
4%	4%	9%	30%	52%	Opportunities to observe wildlife other than birds	2%	2%	9%	24%	63%	NA
4%	4%	12%	31%	49%	Opportunities to photograph wildlife and scenery	2%	0%	9%	25%	65%	NA
46%	6%	21%	10%	16%	Hunting opportunities	5%	2%	42%	19%	32%	NA
25%	5%	16%	18%	36%	Fishing opportunities	2%	3%	17%	21%	57%	NA
6%	5%	9%	28%	52%	Trail hiking opportunities	1%	1%	12%	23%	62%	NA
12%	5%	22%	29%	31%	Water trail opportunities for canoeing or kayaking	2%	4%	29%	17%	48%	NA
13%	6%	25%	33%	23%	Bicycling opportunities	3%	4%	32%	18%	44%	NA
14%	7%	33%	29%	18%	Volunteer opportunities	0%	5%	44%	12%	39%	NA

3. If you have any comments about the services, facilities, and activities at this Refuge, please write them on the lines below.

See Appendix B

SECTION 5. Your opinions regarding National Wildlife Refuges and the resources they conserve

1. Before you were contacted to participate in this survey, were you aware that National Wildlife Refuges...

...are managed by the U. S. Fish and Wildlife Service?

92%

Yes

8%

No

...have the primary mission of conserving, managing, and restoring fish, wildlife, plants and their habitat?

90%

Yes

10%

No

2. Compared to other public lands you have visited, do you think Refuges provide a unique recreation experience?

88%

Yes

12%

No

3. If you answered "Yes" to Question 2, please briefly describe what makes Refuges unique. _____

See Appendix B

4. There has been a lot of talk about climate change recently. We would like to know what you think about climate change as it relates to fish, wildlife and their habitats. To what extent do you disagree or agree with each statement below? (Please circle one number for each statement.)

Statements about climate change	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I am personally concerned about the effects of climate change on fish, wildlife and their habitats.	8%	6%	13%	30%	42%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	7%	4%	16%	31%	42%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	21%	15%	16%	32%	17%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	1%	7%	31%	39%	22%
It is important to consider the economic costs and benefits to local communities when addressing the effects of climate change on fish, wildlife and their habitats.	5%	7%	14%	49%	25%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	3%	5%	32%	36%	24%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	26%	22%	25%	17%	10%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	5%	2%	21%	30%	43%
My experience at this Refuge would be enhanced if this Refuge provided more information about how I can help address the effects of climate change on fish, wildlife and their habitats.	8%	7%	32%	34%	18%

SECTION 6. A Little about You

**** Please tell us a little bit about yourself. Your answers to these questions will help further characterize visitors to National Wildlife Refuges. Answers are not linked to any individual taking this survey. ****

1. Are you a citizen or permanent resident of the United States?

98% Yes 2% No → If not, what is your home country? See Figure 4 in Report

2. Are you? 63% Male 37% Female

3. In what year were you born? 1956 (YYYY)

4. What is your highest year of formal schooling? *(Please circle one number.)*

1 (elementary)	2	3	4	5	6 (junior high or middle school)	7	8	9	10 (high school)	11	12	13 (college or technical school)	14	15	16	17	18	19	20+ (graduate or professional school)
<input type="checkbox"/> 0%					<input type="checkbox"/> 17%					<input type="checkbox"/> 48%					<input type="checkbox"/> 35%				

5. What ethnicity do you consider yourself? 1% Hispanic or Latino 99% Not Hispanic or Latino

6. From what racial origin(s) do you consider yourself? *(Please mark **all that apply.**)*

- 4% American Indian or Alaska Native 3% Black or African American 96% White
 2% Asian 2% Native Hawaiian or Pacific Islander

7. How many members of your household contribute to paying the household expenses? 2 persons

8. Including these members, what was your approximate household income from all sources (before taxes) last year?

- | | | |
|---|--|--|
| <input type="checkbox"/> 0% Less than \$10,000 | <input type="checkbox"/> 14% \$35,000 - \$49,999 | <input type="checkbox"/> 22% \$100,000 - \$149,999 |
| <input type="checkbox"/> 6% \$10,000 - \$24,999 | <input type="checkbox"/> 23% \$50,000 - \$74,999 | <input type="checkbox"/> 5% \$150,000 - \$199,999 |
| <input type="checkbox"/> 4% \$25,000 - \$34,999 | <input type="checkbox"/> 19% \$75,000 - \$99,999 | <input type="checkbox"/> 7% \$200,000 or more |

9. How many outdoor recreation trips did you take in the last 12 months (for activities such as hunting, fishing, wildlife viewing, etc.)?

 19 number of trips

Thank you for completing the survey.

There is space on the next page for any additional comments you may have regarding your visit to this Refuge.

See Appendix B for Comments

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Appendix B: Visitor Comments to Open-Ended Survey Questions for Cape Romain National Wildlife Refuge

Survey Section 1

Question 1: "Including your most recent visit, which activities have you participated in during the past 12 months at this Refuge?"

Special Event	Frequency
Bus tour for people with limited mobility	1
Cape Romain Lighthouse Tour	5
Careers Come Naturally, Kids Care Program	1
College Ecology class - I'm the professor	1
Frances Marion Cleanup	1
Junior Ranger Program	1
Nature Conservancy guided auto tour	1
Red wolf feeding	1
Scouting Pack	1
Tour of Bull Island	1
Winyah Bay Heritage Festival in Georgetown, SC	1
YMCA Indian Princess Learning Event	1
Total	16

Other Activity	Frequency
Asked directions, bought maps and book	1
Camping	5
Camping in F. Marion National Forest - Buck Hall	1
Cape Romain Light House	1

Ferry to Bull Island	1
I am a commercial fisherman; I work in and around the refuge every day.	1
Leisure day with friends	1
Oystering	1
Red Wolf Exhibit	1
Shell collecting	10
Shrimping	10
Took a picnic	1
Total	34

2 nd Other Activity	Frequency
Clamming	1
Enjoying the beach	1
History/Beauty	1
Total	3

Question 2: "Which of the activities above was the primary purpose of your visit to this Refuge?"

Primary activities are categorized in the main report; the table below lists the "other" miscellaneous primary activities listed by survey respondents.

Other Miscellaneous Primary Activities	Frequency
Archery	1
Boneyard Beach	1
Bus tour	1
Crabbing	1
Day out with friends	1

Enjoyment	1
Ferry to Bull Island	2
Harvest Oysters and Crabs	1
History	1
Junior Ranger Program	1
Oystering	1
Purchase maps	1
Red Wolf Program	3
Shelling	8
Shrimping	7
Total	31

Question 3: "Did you go to a Visitor Center at this Refuge?"; If Yes, "What did you do there?"

Other Visitor Center Activity	Frequency
Apply for a volunteer position	1
Birding	1
Bought field guides	1
Fishing/Red wolf talk	1
Lunch on the patio	1
Nature	1
Nature trails	1
Picnic facilities	1
Previous to the tour, I recorded information and paid a fee for a boat van.	1
Purchase boat launch pass	1

Receive information about area sites and activities	1
See Red Wolves	2
Total	13

Question 7: "Were you part of a group on your visit to this Refuge?; If Yes, "What type of group were you with on your visit?"

Other Group Type	Frequency
Cub Scouts	1
Group to tour island by van	1
Hunting party	1
Lighthouse tour	1
November deer hunt	1
Personalized tour with local company	1
Public tour for people with limited mobility	1
SC Master Naturalist	1
Sea View Inn Nature Week	1
Six coworkers	1
Special group to see the lighthouses	1
Team building activity for work	1
The Nature Conservancy	2
Work group	1
Total	15

Question 9: "How did you first learn or hear about this Refuge?"

Other Website	Frequency
Coastalexpeditions.com	1
Facebook/Coastal Expeditions - page	1
Lighthouse website	1
Lighthousefriends.com	1
NPS, FV Sumter	1
Seweeassociation.org	1
South Carolina Audubon website	1
Total	7

Other Ways Heard about This Refuge	Frequency
Birding Locations in South Carolina	1
Book	1
Bull Island	1
Came across the refuge while birding in the Francis Marion National Forest.	1
Carolina Bird Club	1
Coastal Expeditions	1
Georgetown Chamber of Commerce	1
Group leader	1
Hiking Trails of South Carolina - book	1
Maps	1
My boss found the refuge	1
Road map	2

Sewee Association (Friends Group)	1
Work associated	1
Total	15

Survey Section 2

Question 1: "What forms of transportation did you use on your visit to this Refuge?"

Other Forms of Transportation	Frequency
Boat	1
Boat to island	1
Bus	1
Ferry	9
Kayak	2
Tour boat	1
Van	1
Total	16

Question 2: "Which of the following did you use to find your way to this Refuge?"

Other Ways Found This Refuge	Frequency
Charter Service	1
Group leader	1
iPhone	1
Letter from public information officer	1
Map outside the Visitors Center (which was closed when I got there late in the day).	1
National Geographic Maps	1

Rode with our guide for the week	1
Total	7

Question 5: "Below are different alternative transportation options that could be offered at some National Wildlife Refuges in the future...please tell us how likely you would be to use each transportation option."

Other Transportation Option Likely to Use	Frequency
Alternative Transportation	1
ATV	1
ATV or shuttle to beach	1
ATV or vehicle	1
Boat share or rental program	1
Canoe/Kayak	3
Car	2
Car/Boat	1
Electric vehicle without the pollution associated with a bus	1
Golf cart	1
Golf cart or guided tours	1
Golf carts for the elderly and disabled	1
Horse	2
Horse rental, horse cart rides, cable-lift chair with platforms	1
Horse, horse and buggy, ATV	1
Horseback	1
Hot Air Balloon	1
Kayak	2

Motorboat	1
Personal boat	1
Private vehicle	1
Raft	1
Rental bicycle	1
Shuttle	1
Walking	1
Zip line	1
Total	31

Question 6: "If you have any comments about transportation-related items at this Refuge, please write them on the lines below."

Comments on Transportation-related Items at This Refuge (n = 48)

A bigger sign to this refuge.

Although motorized vehicles certainly provide access around the Island, particularly for those that are challenged in their mobility, I would strongly suggest that the environmental impact be very closely studied. The use of motorized vehicles should be very restricted.

As a non-hunter, I need to know what roads are closed if it is hunting season.

Biking was difficult for those who used trails. Since we were in a van, it was not difficult for us.

Cape Romain is somewhat unique in being only accessible by boat. The concierge service is impeccable, though, and makes it accessible for most of the public, with the exception of physical disabilities related to walking.

Cape Romain Wildlife Refuge - too much walking distance to view sights. There must be some type of transportation provided on the island.

Enjoy the natural areas; would not want to see paved roads or paved trails.

Getting to Swamp Trail is confusing because you hit Peat Swamp Road before getting to the trailhead. You need a sign directing people straight (not to take a left onto Swamp Road). I've done it twice now.

Getting to the boat at Garris Landing is most difficult. A boating access dock at the end of the pier would be great.

Great transportation, and reasonable.

I feel like many of these categories don't apply within the boundaries of Cape Romain, particularly on Bull Island. Signs on Hwy 17 pointing towards Garris Landing are difficult to see if you aren't looking for them. Several of the signs along the major trails are also only visible from one direction.

I like that Bull Island is accessible only by boat (no cars) and that it has an extensive trail system. Wish that the ferry allowed for a longer stay (earlier arrival, later departure).

I really enjoyed the refuge. However, I would appreciate having more signs on the beach to find the main trail. It is difficult for people who came for the first time, as the access is difficult to find.

I was only there to see a photo of the red wolves. I'm planning to return for a complete tour. It was cool and I would like to return in the spring.

It is somewhat important that the boat ramps, parking area, and access roads relating to boat ramps be maintained and adequate.

It was difficult to find trailheads from the beach - there were no signs directing you to the trailhead. We did backtracking and guessed where to start. It would be helpful to have "miles" on the different trail names.

Leave this refuge alone, exactly as it is. It is the very best kept secret in South Carolina, and this refuge is NOT for everyone, as it is way too fragile. More people will only do damage to it!

Loved the boat that took us to Bulls Island! However, the price had increased by \$10 per person in the 6 weeks since we had made the reservations. Although they accepted the original price we were quoted, they were not happy about it.

Many transportation issues do not apply to this refuge. They are very important on non-barrier island refuges.

Most of the points of interest are widely separated or isolated by water. We would be most interested in the ferry ride to the Island, if we do not bring our own boat next time.

Motorized vehicles are not allowed. Walk or bicycle only on this refuge.

Need better signs on Highway 17 directing you to the ferry.

Need to have cars without trailers park outside the gate to give trailers more room.

Only official vehicles and special buses for planned groups (in my case, a tour for people with limited walking ability) are allowed on Bull Island, so the condition of parking and roads is less important than the condition of trails.

Rangers and workers offer transportation to and from the campsite. They are very helpful. Thanks.

Rather than roads, this refuge has waterways. It would be better if these were more clearly marked regarding specific routes. It is very easy to get lost in the marshes.

Redo the short dock and dig out the waterway to the dock. Make the whole island accessible for people with physical disabilities.

Signs on the trails were not very good/clear.

Staff is great. More hiking trails would be nice. A rehab center for native animals.

The area I visit at Cape Romain National Wildlife Refuge has one access road to a parking lot near the pier and water. Many questions are not as applicable as they would be on a larger refuge. The Visitor Center is on a main highway and I have visited it also.

The boat cannot land onshore and there is no dock. Some sort of docking should be afforded for people that have difficulty walking and with

back problems.

The boat ramp needs to be dredged; it is very shallow at low tide. Access is limited to smaller boats only at low tide.

The ferry to the refuge was fun and the Naturalist was knowledgeable.

The map of the island was given to everyone on the boat before we went hiking and was VERY helpful so you knew where you were going.

The refuge is primarily on water-marsh and islands; therefore, most of the items do not apply. My two days were spent at Sewee Center and Francis Marion National Forest.

The staff was very courteous and professional.

There is very limited vehicle transportation. The water habitat limits it. That is great.

This refuge is accessible by ferry only. There is a parking area and dock that is well maintained.

To get to Bull Island we had to take a boat. While there was no problem and the guide was nice, it was VERY expensive. Prohibitive for a family - \$40 each. We paid \$80, got a bike flat tire after only about two miles of riding (thorns), had to walk/rush back to make the noon boat and couldn't visit the areas we wanted to. It was too expensive to go back the next day.

Trail signage was not easily noted, and more maintained beyond the main route.

Trails were poorly marked.

We missed the first boat because we could not locate the trail away from the beach.

We took the Bull Island Ferry and were very pleased.

We were at the Sewee Center for about an hour, then went to McClellanville to catch the boat out to Lighthouse Island. We used our own transportation to the center and dock to catch the boat. The boat was great.

We were there late in the day. We will go back next year when we have more time.

You have an automatic gate that restricts my primary purpose to visit the refuge. I would love to flounder gig in the refuge. It's done at night during low tide. The gate closes and you get a ticket if your truck is there. You can close the gate; just don't give me a ticket for staying all night.

You must have a boat to access this site.

You need to install a floating dock to tie boats to. You need to dredge the waterway leading to the ramp; it is too shallow. You also need more parking spaces.

Survey Section 4

Question 6: "If you have any comments about services, facilities, and activities at this Refuge, please write them on the lines below."

Comments on Services, Facilities, and Activities at This Refuge (n = 66)

A floating dock would facilitate launching boats and reduce time and traffic around the ramp.

A wonderful place to spend the day.

All was good. Thank you for a nice day.

Allow hunters to come into the campgrounds on the Saturday before the hunt, so hunters will have all day Sunday to scout and place stands.

Automatic gate does not allow night fishing in a boat.

Boat landing should be dredged periodically to have access to the refuge on low tide.

Boat ramp access 24 hours a day.

Bull Island is a wild area, so our expectations were not high. Its natural state is its charm. We wouldn't expect a lot of facilities.

Employees of the ferry (and/or refuge) are very knowledgeable, very dedicated, and very helpful.

Excellent educators.

Garris Landing - I'm not sure why the landing has such strict hours. I would prefer 24/7 operation and access.

Garris Landing. Boat landing access to deep water needs attention. Too shallow.

Great experience - this was my second trip to Bull Island. The guy who was captain of the ferry over to the Island was the epitome of what a refuge employee should be: informative, courteous, friendly, knowledgeable, and displayed a passion for his job.

Great location. I've used the Boat Ramp for over 30 years. Channel needs dredging. Parking often overflows in the summer and on holidays.

Great people. Loved the Center. Gift shop could have more things - I prefer to purchase from such places to help out the refuges.

I do not think employees should be able to drive trucks during the hunting seasons.

I have not completely seen this whole refuge. I plan on returning and visiting most of the areas provided. I enjoyed the walk to the wolves.

I love the hunt and the experience. I wouldn't change a thing.

I visited this site to bird. My wife and I started in New Orleans, and went through MS, AL, FL, GA, SC and NC. Birding was a major activity on our trip. I was very satisfied with the volunteer who asked me to participate in this survey. He gave me some excellent birding information and was very knowledgeable. Due to time factors, I did not take advantage of a boat trip to Bull Island, which has many species of birds and other animals to see. I have been a volunteer myself at the San Pablo Bay NWR in California for seven years and also volunteer with other organizations such as San Francisco Bay Bird Observatory.

I wish we lived closer.

I would have liked to be able to explore the island more. It was not cleared out well enough.

I would like to see in the future an aluminum table and water supply for filleting and cleaning fish. You have a nice area near the spigot that you have there now.

I would like to see more hunting and fishing opportunities and the landing open 24 hours a day.

I would like to volunteer several times during the summer.

It was a weekend when we arrived, so I assume the two very helpful ladies at the desk were volunteers.

Keep Bull Island free of development!

Keep gate open longer!

More trails.

Need better trail markings and restroom facilities.

Need more of an un-interpretive (museum) aspect to the current Visitors Center. There's simply not enough there now. Volunteers were great. Park refuge employees were very helpful and knowledgeable.

Need to have open cooler, as was in the past, for hunters to store game.

Not much to see or we just didn't know what to look for.

One of the best natural educational facilities in South Carolina. The staff is extremely helpful and knowledgeable about the refuge. They point out flora and fauna on the guided walks, identify native plant species, and host bird counts and birding identification trips. The tours and lectures entertain all ages.

Participation in the Junior Ranger Program was a struggle to coordinate. The staff did not have a cohesive program put together and we had to be very insistent that our kids be allowed to complete the program while on vacation for one week camping at the Buck Hall camping area.

Pay fees for boat transportation--little to see--too far to walk.

Please, do NOT develop this place. Leave it alone; no need for more people to go there!

Should be open after dark.

Staff was friendly and very helpful.

Staff was very friendly and helpful!

The bathrooms are kept clean, but the stainless steel commodes function very poorly. They will not flush properly, and they clog easily.

The bathrooms were pretty rough. I don't care too much about restroom quality, but other visitors might.

The beach walk wasn't marked properly.

The employees are very accommodating with our bikes. Excellent education session on the boat to and from the refuge.

The only place I had time to visit was Bull Island. It was a wonderful day outing. I loved the bike/hike setup there; lots of trails, and the ferry. It was an environmental education group that provided a top notch, very interesting trip to and from.

The public information officer was very helpful. She did her job professionally with great enthusiasm. This facility fulfills its mission and needs to be supported to the greatest extent possible.

The public restrooms at Garris Landing are in need of attention! The smell was almost unbearable!!

The staff at this refuge are wonderful, courteous and very friendly; also applies to the staff at the Visitor Center.

The toilets in the restrooms were hard to flush.

The trail signs and symbols need improvement. One woman and her son got lost.

The waterway beside the park needs dredging desperately.

The waterway from the boat landing to the intercostals waterway is almost impassible to small boats around low tide (plus or minus 45 minutes), and larger boats cannot use the landing at all.

There is very little information or help offered at the points of access to the refuge area. I have no idea where the Visitor Center is located. Since this is primarily a boat launch, it would be good to have a map that showed the primary routes through the marsh at both low and high tide. It would also be helpful to explain what is on the Islands that make them worth visiting.

There should be a floating dock at the boat ramp. It is very hard to get in and out of your boat at this boat ramp.

There was no toilet paper in the parking lot bathroom.

Time limits were too short. Did not gain a sense of the entire island.

Very pleasant visit. Company did not go to the Visitors Center this time.

Visitors should be told to take their garbage with them. I was shocked to see litter thrown into the woods. We did pick up some, but rude visitors tossed soda cans into the woods. Our boat captain did try to inform people to keep the island clean; some people didn't care.

Volunteers were excellent, as well as staff.

We only had a couple hours to spend there on route to visit a friend, but it was very nice and well maintained.

We totally enjoyed visiting this center and will be visiting again soon.

Well maintained. Restrooms were clean. Recycle program was available and well utilized.

While I think the refuge is great, it is too expensive for me to go as much as I want.

Widen the boat ramp and dredge water to and from the ramp.

With the reduced funding, I am astonished at the great job that Fish and Wildlife Service and volunteers do. The facilities and habitat are well maintained and cared for.

You need a dock for launching boats.

You need more boat parking at the boat dock on the island. Dredge out the old boat dock.

Survey Section 5

Question 3: "If you answered "Yes" to Question 2, please briefly describe what makes Refuges unique."

Comments on What Makes Refuges Unique? (n = 135)

A refuge is nearly "natural." No RVs. No major roads and traffic - silence! People can observe plants and wildlife without negatively impacting their environment.

Access to fishing, boating, and shrimping.

Allows one to see nature in its pristine form.

Always well-maintained with a very knowledgeable staff. My family always tends to learn more when we visit a refuge.

An opportunity to preserve wildlife habitat.

Beautiful, peaceful, pristine, and educational.

Being able to see how much is being done to protect our waters, land, fish, and wildlife.

Camping on the island is like nothing else.

Cape Romain is beautiful, natural, and pristine. It is a totally unique place in the world. It needs to be preserved for our enjoyment.

Cape Romain is in and of itself one of the most pristine and beautiful places on earth. The maze of marshland and abundance of habitat coupled with the remnants of history make it truly unique. Add to that, unparalleled fishing of anywhere else in SC and you have a precious gem that is worth preserving at any cost.

Cape Romain National Wildlife Refuge is one of the most beautiful spots in the world. Thanks for making it such a great place without making it too commercial. It is a refuge, as it should be, without a lot of people. No cars, trucks, or buses.

Certain areas should be expanded and more people should volunteer for the projects.

Coastal location.

Commitment to wildlife and human access.

Compared to National Forest lands, Wildlife Refuges are managed to preserve the natural wildlife and habitat, whereas forest lands are there for public use, but also for public and commercial consumption. I have seen many National Forests over timbered and devalued by the installation of new access roads. This devalues the wild qualities of these properties and makes them a commodity.

Due to management practices, refuges attract wildlife that would not otherwise be abundant - this provides the public an opportunity to enjoy

unspoiled marshland and wild animals.

Educational approach, knowledgeable employees, doing the right thing for habitat, restoration, and well managed.

Emphasis on the interests of the "clients" ahead of those of the public.

Excellent nature, bird watching, and photography opportunities.

Fewer people know about them, and they are less crowded than national parks.

Fewer people!

Focus is on maintaining specific habitats, not simply "open space," and support for critters that require said habitat. Thus, they are very interesting, and not just a playground or place to exercise!

Focus on wildlife conservation and management; not overrun by other recreational activities. Low-key experiences.

For the first time, I was able to observe birds of prey close-up while learning about their behavior.

Generally, the non-touristy nature of the refuges make them a great alternative to higher trafficked venues.

I am an avid bird and wildlife watcher and lover. Anything done to help preserve and maintain their existence is vital.

I appreciate the public access to the facilities and to the waters therein.

I dislike that people who visit the area feel the need to leave their trash on the ground instead of in proper disposals. The two volunteers on the boat to and from the island were awesome! I hope to have them again during my visit in the spring.

I have been birding for 40 years and use National Wildlife Refuges often in many different states. Many refuges have unique wildlife found only on those refuges. All have an excellent representation of the local animal and plant species. I think they are critical to the maintenance of many species and allow all types of opportunities to have nature experiences. I also think that National and State parks fill this role.

I saw things there you cannot see on any other beaches in SC.

I visited Capers and Bull Island. Both of these islands offer sightings of sea turtles, dolphins, crabs, horseshoe crabs, sand dollars and many other shells. One of the most unique features that these two islands have is the palmetto tree lined beach, and the amount of driftwood along the beach makes some of the best sunrises and sunsets.

If it were not for the refuges, all public land would be destroyed.

In general, NWRs provide an untrammled exposure to the natural world. As compared to, say, National Parks, with all the roads and maintenance, the NWRs are more free and open - less traveled.

Island.

It allows archery hunting with a camping experience.

It gives us an opportunity to experience wildlife in its natural state rather than in a state of adaptation to OUR habitat.

It is a pristine environment, well maintained and an excellent viewing and fishing area.

It is a wonderful place; peaceful, and not ruined!!!! Please leave it alone, it is plenty developed!

It is very nice to have access to public lands that allow the public to hunt and fish.

It seems to focus on the "natural" aspect of the wildlife and plants. They do what is best for the plants and animals, not humans.

It's beautiful. You walk through the forest and can see wildlife, smell the clean air, look at the huge trees, and sit on the beach. It's a wonderful place to go.

It's close to an urban location (Charleston, SC), but has the feel of a place a hundred miles in the wilderness.

It's nature at its best.

It's only accessible by boat with naturalists on board to answer questions (they didn't work for the Park Service).

Its pristine quality.

Keeping nature undeveloped and as wild as possible.

Less crowds; natural landscape; active in helping wildlife and litter problems; and, more friendly service.

Less permanent man-made intrusion.

Letting nature have its way with the island.

Long fishing pier.

Minimal impact by humans. The Bull's Bay area that we visited left us feeling as if we could have been the first ones to travel through. That is what I expect from a refuge. You are doing your part at Bull's Bay. Thanks!

More opportunities to see wildlife than at National Parks or National Forests.

Most of them have no charge for entrance, have a "do it yourself" experience, and offer a wonderful range of wildlife to see.

Most other public lands are all about people, where a refuge is more about animal habitats.

Natural conservation of the area.

No discernible commercialism.

No fee for parking at Garris Landing.

Not as crowded as the national parks.

Offering a safe place for vehicle parking while enjoying the outdoors.

One can actually view wildlife in their natural habitat and come away with a good feeling that your money is really making a difference in building habitat for wildlife.

People don't get that many chances to ride boats to a refuge.

Preservation of the resources. Would like to see archery hunts on Cape Romaine for deer.

Pristine environment, no crowds, and natural habitat.

Pristine, clean, and no cars/boats, shops, or restaurants.

Protection of birds and other natural resources.

Protection of flora and fauna, and education of folks who are not aware of "what can be again." All creatures need to feel that refuges are exactly that place where human predation is nonexistent or in a minimal way. I believe the non-human animals realize this in ways I cannot know or understand. These refuges put restraints on the built-in tendencies of man to change things in our world in undesirable ways.

Protection of wildlife and preservation of open space.

Public access can coincide with conservation.

Quantity and quality of wild creatures.

Refuges are good places to learn about our fish and wildlife.

Refuges are in large part untouched by humans, apart from kiosks, trails, and observation platforms. They let you get in touch with nature by yourself and observe nature more so than most public areas.

Refuges are unique because they specialize in local and regional wildlife and their habitat(s).

Refuges provide a nice variety of recreational opportunities, more so than National Forests do, and give the public an alternative experience versus our National Parks, which are over used.

Refuges provide unique and unspoiled wilderness opportunities.

Refuges' first priority is conservation. In some other "protected" lands like National Forests, I don't think this is the case.

The abundance of protected wildlife, away from noise and commercialism. Areas are more isolated and pristine. Visitors are more "like-minded" in enjoying nature.

The areas are untouched. They are in a more natural state.

The boat ride and explanation regarding marshes and marsh life.

The Cape Romain National Wildlife Refuge is awesome. I have traveled to many places and visited many refuges; this is the best and my favorite place on earth! Thanks for the excellent job maintaining the refuge and keeping it wild!

The educational materials.

The emphasis is on wildlife (appreciation, respect of nesting areas, calving season, etc.) instead of human recreation (driving around, motorboats, motorcycles, etc.). More low-key and quiet.

The example that they set by preserving history, wildlife, and the environment; how things "used to be" are all very interesting to me.

The fact that their primary mission is to conserve and manage wildlife as opposed to providing public recreation as the primary goal.

The hunting experience; a lot of deer, some really big bucks; a very beautiful place.

The lack of commercial exploitation.

The lack of development and diversity of wildlife. They're each beautiful in their own way.

The lack of people.

The land/water is unique.

The lighthouses.

The many activities that are available.

The opportunity to see alligators, various birds, and red wolves, as well as many other animals. Also, the ability to engage in various activities.

The opportunity to spend the day wondering about on your own time. It is relaxing and unique.

The preservation of coastal wetlands and barrier islands is critical. The access to original land and waters is becoming more and more difficult. Two of my favorites are Cape Romain and Aransas. I live near Cape Romain and visit regularly.

The preservation of our natural resources and plants, animals, etc.

The primary mission is preservation of wildlife and habitat.

The pristine and remote environment is unique. Many public lands make it far too easy for everybody and anybody to visit. This high number of visitors, with its requisite parking, paved trails, motor vehicle support (buses, etc.), gift shops, etc., are not in line with the mission of the Wildlife Refuges. There are some places in the world where only a small number of people will get to see precisely because they are remote and difficult to get to. We don't need to "fix" that in our Wildlife Refuges.

The pristine nature of the refuge.

The public has an opportunity to see places not usually available for viewing. It is important that our children and grandchildren have a chance to see how birds, animals, insects, etc. and old places of historic value are important to our land.

The red wolf display was outstanding!

The red wolves were so thrilling to see. Also, nice clean restrooms.

The refuge only permits official vehicles on Bull Island, so the environment is quiet and natural.

The set aside vast acreage for wildlife preservation and public use that would otherwise not be available to the public. A critically important resource throughout the United States.

The silence and lack of distractions.

The staff at the Visitor Center and the large amount of land.

The variety of wildlife.

The Visitor Centers; the undisturbed natural area; in a most unobtrusive way, they allow an intimate and personal experience with the environment.

The wide variety of wildlife makes the Refuge experience much better, as there are more opportunities to see and potentially interact with wildlife.

Their primary mission being conservation instead of recreation.

There seems to be more learning opportunities available to make the visit richer.

These refuges generate a sense of permanence for our wild areas. They should be maintained and enlarged at all costs.

They allow visitors to experience wildlife in a natural, undisturbed setting.

They are an important part of conserving unique ecological habits and allow people to explore diverse natural settings. Therefore, prescribed burns should not be carried out as they are today - to an extreme degree (which is inconsistent with infrequent natural fires over an extended time period) that interferes with a good outdoor experience. This is not only when the burn takes place, but the landscape is charred a long time after.

They are managed to provide normal habitat for wildlife with limited access for vehicles.

They are more natural without a lot of buildings and no private property restrictions. For the most part, they make access to the area easy, but, due to the size, could make it easier to navigate.

They are not overly developed, leaving more opportunity to observe wildlife and plants in their natural habitat.

They are very well organized, well managed, and professionally staffed.

They give families the opportunity to explore wildlife as well as spend quality time together. Would like to see more schools visit the Refuges so that children could learn about plants and animals in their true habitat.

They often are great places to watch birds. They often have available habitats (such as marshes, tide flats, or open country) that might not be as likely to become a park or forest unit.

They protect the environment.

They provide places for people to visit, vacation and work in this country. They also try to maintain the land and waters in their natural state for generations to enjoy in the future. Thank you for making this possible for me to enjoy in my lifetime.

This Bull's Island is very wild without shopping centers, restaurants, and bars, which is good! Only people interested in the wild area come and visit.

This one does not provide a unique recreation experience, but I've been to some with recreation experiences that allow families and friends to come out and have a wonderful time. It is a nice place for fishing, birthday parties, and togetherness with families, and I like that.

This refuge gives easy access to some of South Carolina's best fishing, oystering, and clamming.

This refuge represents a wild, unspoiled place; competent management should keep it so. It provides excellent fishing in the waters of the refuge. Human encroachment on the land should be minimal. The terrain and wildlife should remain unspoiled and protected with limited access by and accommodation of people.

Unspoiled nature experience.

Untouched.

We have always enjoyed our trips to wildlife refuges across a number of states. Generally, they are well staffed and maintained and they always enhance our birding and wildlife observation experiences. One of our favorite refuges is Harris Neck out of Darien, Georgia. We also enjoy our visits to Mattamuskeet and Pea Island.

We love the natural environment and love to see these special areas preserved. We are pleased to have access to visit them, but recognize it must be done in an unobtrusive way.

We need to maintain refuges so that they keep biodiversity alive and well.

We travel the country looking for Refuges, National Parks, and Monuments.

Wildlife conservation is a primary focus - what a great thing. I think the refuge system's mandate could be communicated more clearly to the public, especially the various endangered species and their story, on the land.

Wildlife habitat is the primary management concern so they really are great places to observe animals.

Wildlife refuges are set aside for the conservation of animals, plants, and the environment as a whole. Cape Romain is a breathtaking example of an estuary that has been largely untrammled by man, and provides a unique opportunity to observe the natural progression of the ecosystem.

Wildlife.

You can see some type of wildlife around every turn. On Bull Island we can leave our fishing gear or hunting gear on the beach or in the woods, no one bothers it. Fellowship and meeting friends from year to year. I truly enjoy our refuge. Thanks.

Additional Comments (n = 45)

A commercial boat transports visitors to Cape Romain Wildlife Refuge for a fee of \$30 per adult. There are walking trails totaling about 16 miles; we walked only about 4 miles. There were lots of biting insects and very little to see other than some alligators. No shore birds, few wading birds, few waterfowl, and no mammals observed. Very disappointing trip for bird watchers. Impoundments not properly managed for bird observations.

A very nice refuge that is enjoyable to visit.

Came to refuge after visiting the SC Birds of Prey Center.

Cape Romain is a beautiful place. We decided that the cost of the ferry to transport our 4 person family to the island was prohibitive.

Cape Romain is a valuable asset to our community, state, and nation. I was impressed by the staff at the Visitors Center for their willingness to help us find canoe trails that we can access that are local to our home. Thanks!

Discussion by naturalist regarding illegal imports into the US was very interesting.

Fantastic refuge - it is a legacy for future generations, and we need to maintain it by buffering and growing the Refuge lands in coordination with the local community.

Great refuge.

I am a lifelong waterman. I would like to see more done to restore oyster reefs within the refuge. The state has programs in place; however, I am not aware of the federal programming to restore oyster reefs in the Cape Romain Refuge.

I am shocked at how many people I talk with who have no idea as to what a refuge is! Focus should be on habitat preservation, and be preserved against urban sprawl and economic development. Climate is always "changing." At any rate, needs more advertising; a simple, inexpensive project would be to design an auto decal using the national wildlife refuge system logo. Sell them at every refuge for \$1. It would raise money and would get people asking questions about the decal and its meaning.

I cannot wait to go back in the spring!

I enjoy my time fishing while there. See bald eagles on occasion while fishing. It is a great place to get away from all the hustle and bustle of the city and traffic. Keep up the good work. See you next year, God willing. Thanks again.

I really enjoy using your facilities. I would like to see some of the boat landings dredged for lower tide use.

I really would like to see a 24-hour access or at least a one-way gate to allow people (users) to launch before dusk and leave well after nightfall.

I strongly recommend the visit to Bull's Island for people who like nature, animals, beach, and wild landscapes, and I appreciate the employees of the ferry for their knowledge.

I suggest marking the primary channels with some colored markers or floats that would lead to better navigation. Coming out of Bulls Bay, it would help to know if you are in a red, green, or blue channel, or not.

I was very happy with my visit and look forward to future trips to this refuge.

I will return in the future, but would suggest that the Refuge add more trails to the ocean side of the island.

I would like to say that I do not think there is any such thing as "global warming." Climate change is a natural process. That being said, it is everyone's duty to protect our environment as we can.

I've been a photographer for many years. I have a definite interest in the survivability of all wildlife refuges. (signature).

Keep up the good work.

Let us go in a day earlier to hunt, so that new people would have time to scout out the island and could stand a better chance of harvesting a deer and getting to know the island.

Maybe a large visual map of the island and its trails as you get off the ferry, along with readily available small maps. We were given a map when we crossed on the ferry, but I ran into a couple of people who had missed the handout and were lost.

More. I would like more people to come to the Refuge and more trails and activities.

My group visited Cape Romain. The transportation by ferry was excellent. However, when we landed there were few, if any, trails cut so that we might see more of the island. The only landmarks we recognized were the lighthouses. Our lector at the Visitor Center told us about the houses, etc. that were now in ruins, but we could not locate any of them for certain because of the vines and tall grasses. I know your department is hurting for money during this slow economy, but it seems that maybe a volunteer group locally might be relied upon to do the job. [signed name]

Needs a trail to pitcher plants with good interpretive signs.

Our group consisted of six women; the oldest was 83 years old. We walked through the forest and had lunch on the beach. The day was sunny and about 75 degrees. Everyone had a great day and said they never expected to see the petrified trees on the beach, or the birds and wildlife. If I had any complaints it would be that visitors were told the boat leaves promptly at 4PM and some people had to be gone after. I felt bad for the captain because after waiting 30 minutes he had to take the boatload of visitors back to the mainland and go back for the ones who couldn't keep track of their time. These people were the same ones who expected to buy food and beverages on the island. They came totally unprepared. I would like to visit other wildlife refuges in South Carolina. Thank you, (signature).

Please see if anything can be done to improve the boat ramp at Cape Romain. It is in dire need of dredging in the channel leaving the boat ramp. Another need is a floating dock for boaters to exit their boats without walking on the ramp or in the mud. Thanks, (signature).

Staff was great! Thanks for a wonderful, educational and informative visit!!!

Thank you for being as is.

Thank you, thank you for the Refuges.

Thanks for the opportunity to complete this survey. Apologies for the wishy-washy responses to climate changes. I am aware and concerned and want to do my part to help. Not sold on the data and I believe that some people are trying to create a "green industry", thus the driving force is money and not improved climate. Thanks again for providing an excellent resource and refuge. Regards, (signature).

The area desperately needs to be dredged, as it can only be accessed at high tides or boats get stuck and drag mud into their engines.

The boat landing does not have a dock and the channel out to the intra-coastal waterway is very shallow and hard to navigate during low tide. I would pay a user fee to have a dock built and the channel dredged. I would like to see more parking for boat trailers.

The Cape Romain National Wildlife Refuge would benefit from having a permitted kayak outfitter that would allow guided interpreted trips to the refuge.

The entire climate change section seems to infer people can control climate change - the climate has been changing for millennia.

The public information officer performed her job in a professional manner. She organized the lighthouse tour and coordinated the transportation and is a very knowledgeable volunteer. I am planning on returning to the facility in the near future.

The waterway beside dock needs dredging. When it is low tide you cannot use the landing for the shallow water.

There are people who would cut the last tree, kill the last animal, and destroy our water sources.... I resist the people who have these inclinations.

We are fortunate to have this refuge protected and maintained for varied uses by a well educated and dedicated staff.

We loved it!

We were returning to MA from our winter home in Florida and had a wonderful experience last year at the refuge so we decided to make it a stop on our route home this year.

We will certainly be going back and have told many friends about the refuge.

Wonderful.

Would like guides on the island to have lists of birds one might see. Would also like to be able to stay on island and return on van in afternoon. Please continue van tours as it is too much for older people to walk. Possibly make biking easier and arrange for bike rentals at the island. Tell us how to volunteer to help at refuge (e.g., who to contact).