



National Wildlife Refuge Visitor Survey 2010/2011: Individual Refuge Results for Pea Island National Wildlife Refuge

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I believe that the wildlife refuges (especially, this coastal refuge at Pea Island) are important, as they offer wildlife refuge while maintaining public use for recreational activities such as fishing, hunting, hiking, and bird watching. With much of the coastal area developing in private hands, this area is vital for the conservation of plant, fish, and animal species.—Survey comment from visitor to Pea Island National Wildlife Refuge.



Pea Island 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 Pea Island 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.

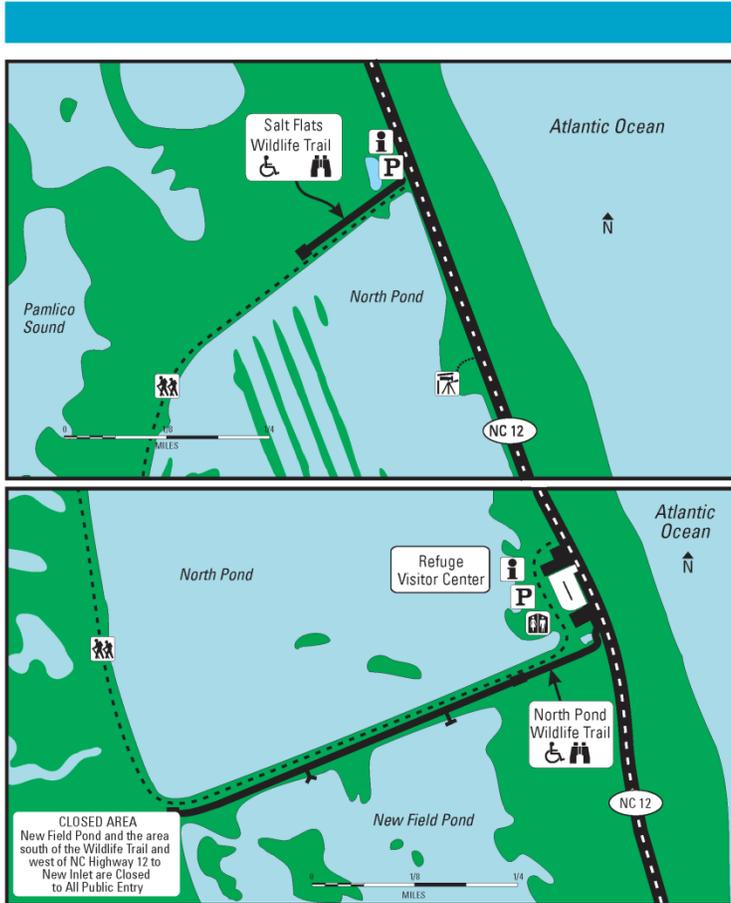
Herein, the sample of visitors who responded to the survey are referred to simply as "visitors." However, when interpreting the results for Pea Island NWR, any potential spatial and temporal sampling limitations specific to this refuge need to be considered when generalizing the results to the total 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 Pea Island National Wildlife Refuge

Pea Island NWR is located on the north end of Hatteras Island, a coastal barrier island, and part of the chain of islands known as the Outer Banks, North Carolina. Pea Island NWR stretches 13 miles along the island, and ranges from a quarter mile to one mile wide. Pea Island NWR covers 5,834 acres of land and almost 26,000 acres of water, with a mixture of ocean beaches, dunes, upland, fresh and brackish water ponds, salt flats and salt marshes. Pea Island NWR is managed in tandem with the Alligator River National Wildlife Refuge.

Pea Island NWR was established in 1938 to restore, maintain and enhance the health and biodiversity of barrier island upland and wetland habitats and to protect, maintain and enhance healthy and viable populations of indigenous migratory birds, wildlife, fish and plants. Pea Island NWR is home to over 365 species of birds, 25 species of mammals, 24 species of reptiles and 5 species of amphibians.

Pea Island NWR attracts nearly 1.6 million visitors annually (based on 2008 RAPP database; U.S. Fish and Wildlife Service, 2011, written comm.). Visitors can enjoy environmental education and interpretive programs, a universally-accessible foot trail, observation towers, platforms and blinds for wildlife observation and photography, as well as surf and sound fishing. Figure 1 displays a map of Pea Island NWR. For more information, please visit <http://www.fws.gov/peaisland/index.html>.



- Unimproved boat ramp
- Universal accessibility
- Information
- Observation
- Parking
- Photo blind
- Restrooms
- Walking trail

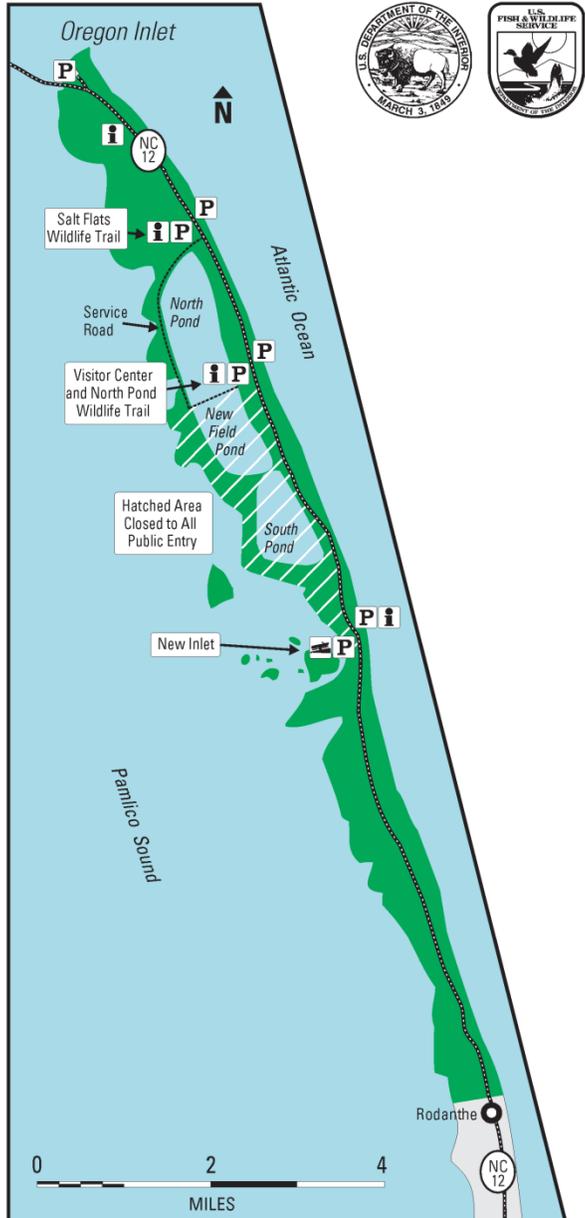


Figure 1. Map of Pea Island NWR, courtesy of U.S. Fish and Wildlife Service.

Sampling at Pea Island National Wildlife Refuge

A total of 197 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Pea Island NWR (table 2). In all, 138 visitors completed the survey for a 71% response rate and $\pm 7\%$ margin of error at the 95% confidence level.¹

Table 2. Sampling and response rate summary for Pea Island NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	11/6/2010 to 11/20/2010	Oregon Inlet Salt Flats Trail Visitor Center and Wildlife Store North Pond Trail New Inlet	88	1	64	74%
2	6/25/2011 To 7/9/2011	North End Fishing Spot Salt Flats Trail Visitor Center and Wildlife Store North Pond Trail New Inlet	109	2	74	69%
Total			197	3	138	71%

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 Pea Island 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 (82%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife,

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).

plants and their habitat (88%). Positive responses to these questions concerning the management 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 (84%; 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. Most visitors to Pea Island NWR had been to at least one other National Wildlife Refuge in the past year (70%), with an average of 4 visits to other refuges during the past 12 months.

Visiting This Refuge

More than half of surveyed visitors (57%) had only been to Pea Island NWR once in the past 12 months, while others had been multiple times (43%). These repeat visitors went to the refuge an average of 7 times during that same 12-month period. Visitors used the refuge during only one season (68%), during multiple seasons (20%), and year-round (13%).

Most visitors first learned about the refuge from signs on the highway (54%), friends/relatives (38%), or refuge printed information (21%; fig. 2). Key information sources used by visitors to find their way to this refuge include signs on highways (56%), previous knowledge (46%), or a road atlas/highway map (20%; fig. 3).

Few visitors (11%) lived in the local area (within 50 miles of the refuge), whereas 89% were nonlocal visitors. For most local visitors, Pea Island NWR was the primary purpose or sole destination of their trip (38%) or one of many equally important reasons or destinations for their trip (38%; table 3). For most nonlocal visitors, the refuge was one of many equally important reasons or destinations for their trip (52%). Local visitors (n = 15) reported that they traveled an average of 24 miles to get to the refuge, while nonlocal visitors (n = 121) traveled an average of 458 miles. ***It is important to note that summary statistics based on a small sample size (n < 30) may not provide a reliable representation of the population.*** Figure 4 shows the residence of visitors travelling to the refuge. About 27% of visitors travelling to Pea Island NWR were from North Carolina and 21% were from Virginia.

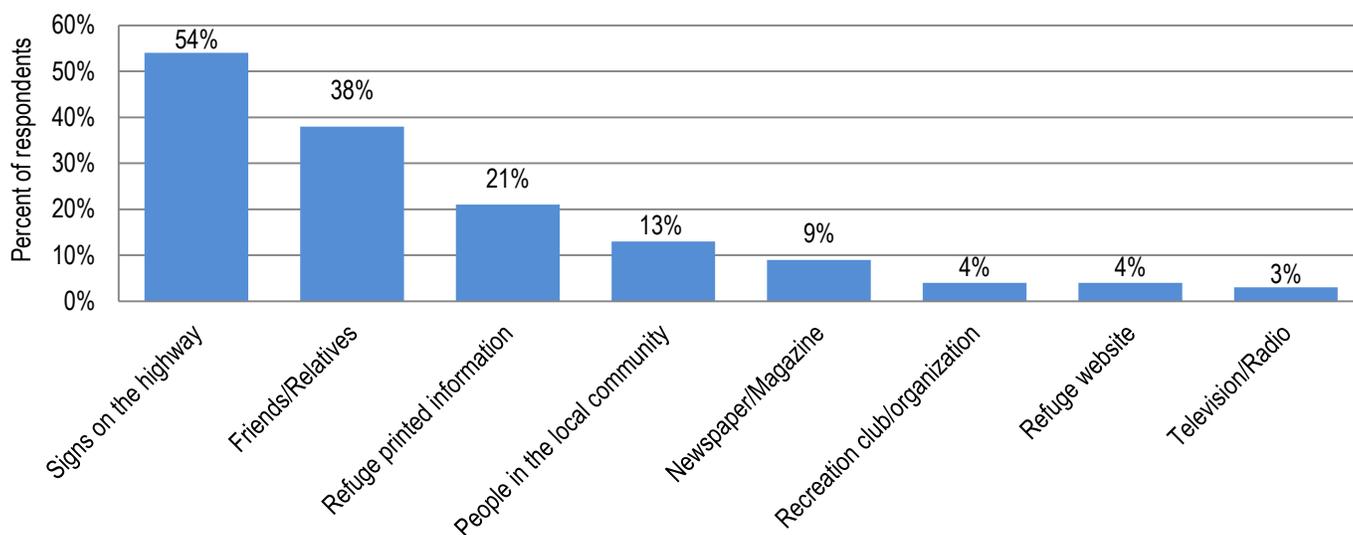


Figure 2. How visitors first learned or heard about Pea Island NWR (n = 125).

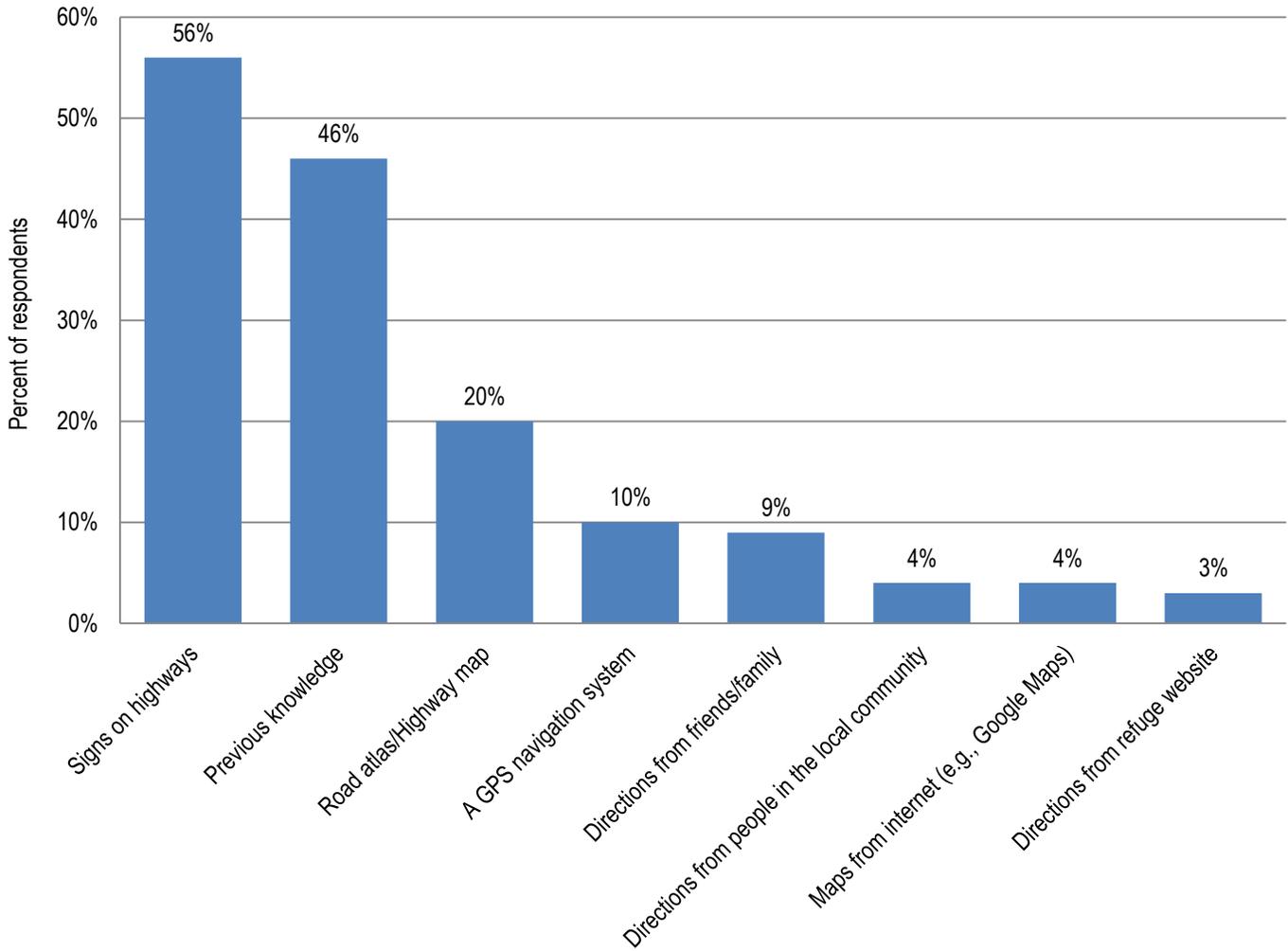


Figure 3. Resources used by visitors to find their way to Pea Island NWR during *this* visit (n = 136).

Table 3. Influence of Pea Island 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	16%	52%	32%
Local	40%	33%	27%
Total	19%	50%	31%

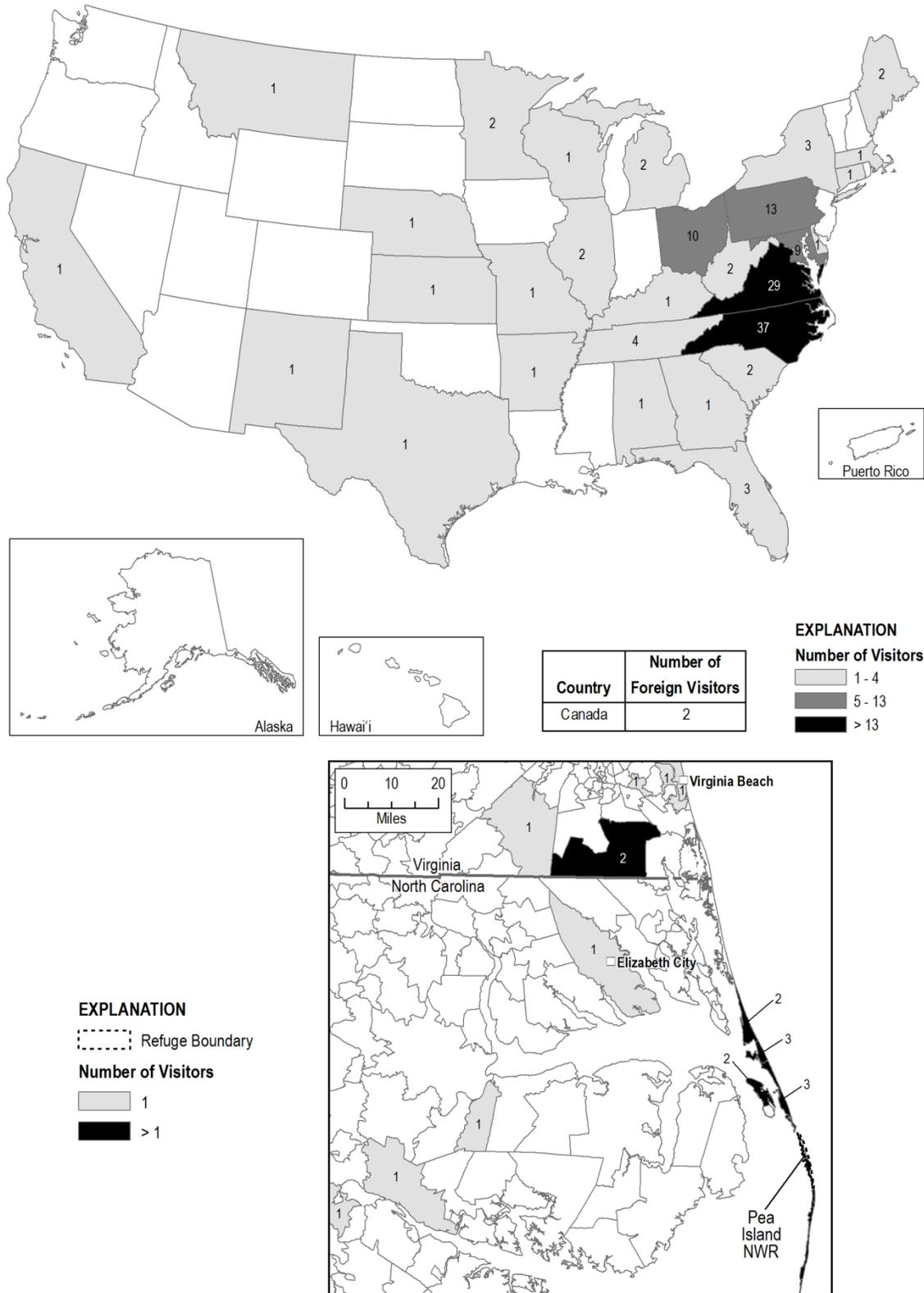


Figure 4. Number of visitors travelling to Pea Island NWR by residence. Top map shows residence by state and bottom map shows residence by zip codes near the refuge (n = 137).

Surveyed visitors reported that they spent an average of 4 hours at Pea Island 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 (30%). The key modes of transportation used by visitors to travel around the refuge were private vehicle (90%) and walking/hiking (26%; fig. 5). Most visitors indicated they were part of a group on their visit to this refuge (67%), travelling primarily with family and friends (table 4)

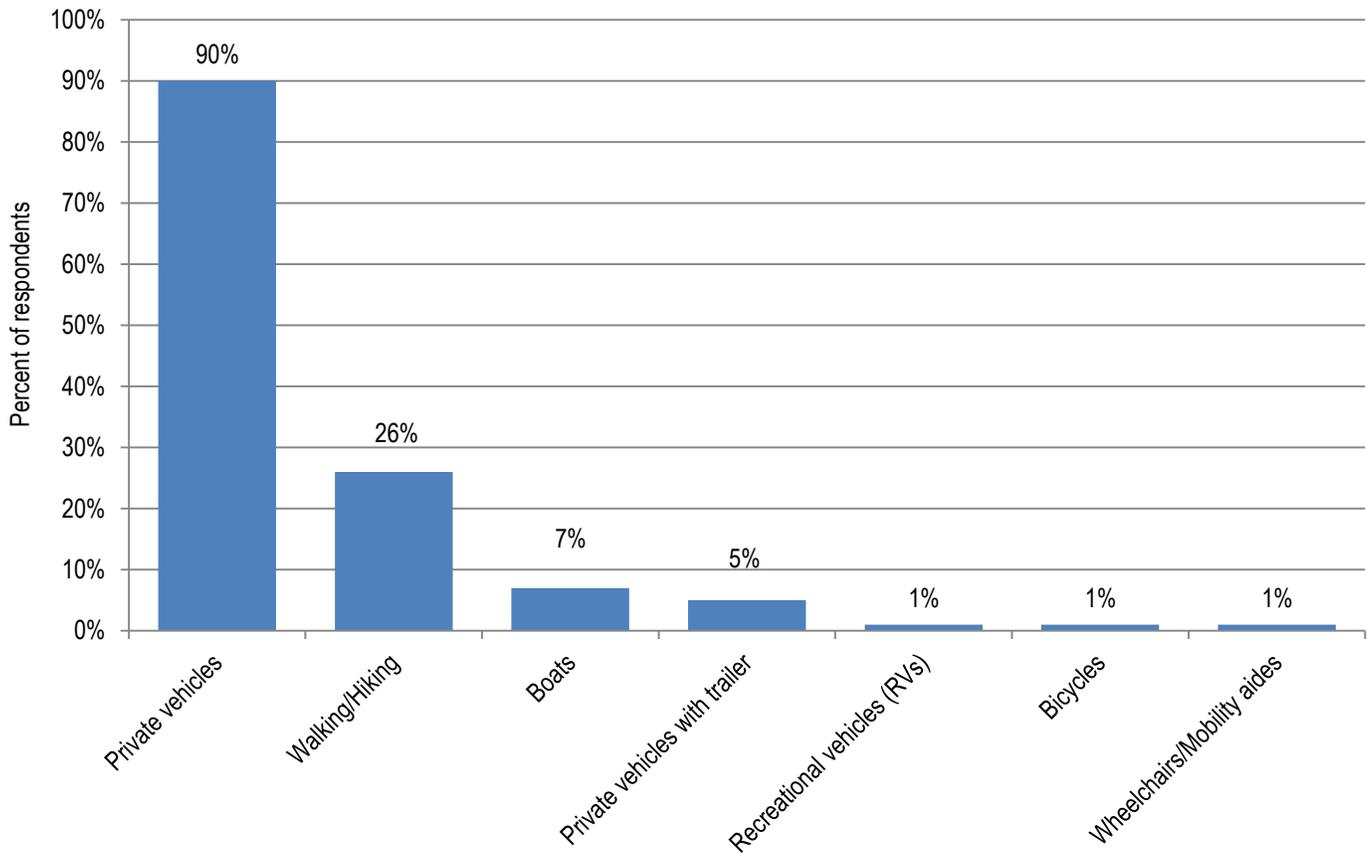


Figure 5. Modes of transportation used by visitors to Pea Island NWR during *this* visit (n = 136).

Table 4. Type and size of groups visiting Pea Island NWR (for those who indicated they were part of a group, n = 91).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	95%	3	1	4
Commercial tour group	0%	0	0	0
Organized club/School group	3%	12	0	12
Other group type	2%	11	0	11

Surveyed visitors participated in a variety of refuge activities during the past 12 months (fig. 6); the top three activities reported were wildlife observation (60%), bird watching (59%), and photography (43%). The primary reasons for their most recent visit included bird watching (24%), fishing (22%), and wildlife observation (19%; fig. 7). The visitor center was used by 68% of visitors, mostly to view the exhibits (82%), visit the gift shop/bookstore (79%), and stop to use the facilities (for example, get water, use restroom; 77%; fig. 8).

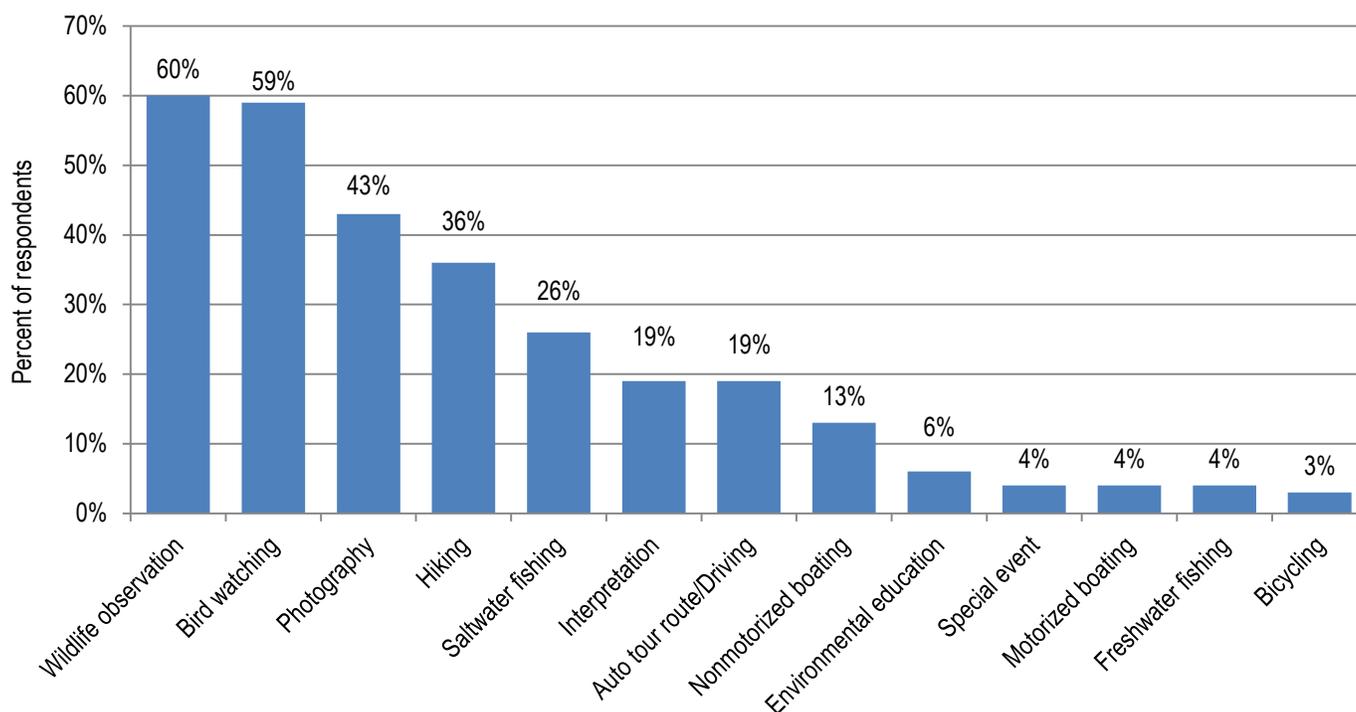


Figure 6. Activities in which visitors participated during the past 12 months at Pea Island NWR (n = 135). See Appendix B for a listing of “other” activities.

Visitor Characteristics

Nearly all (98%) surveyed visitors to Pea Island 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 57% male with an average age of 52 years and 43% female with an average age of 52 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).

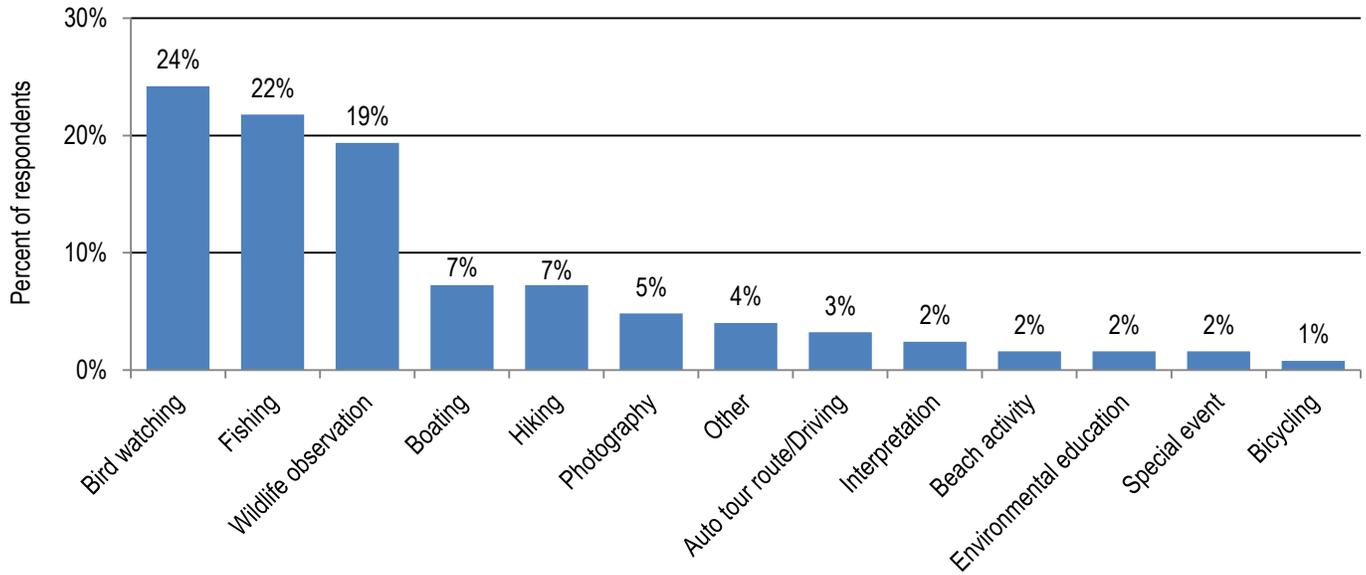


Figure 7. The primary activity in which visitors participated during *this* visit to Pea Island NWR (n = 125). See Appendix B for a listing of “other” activities.

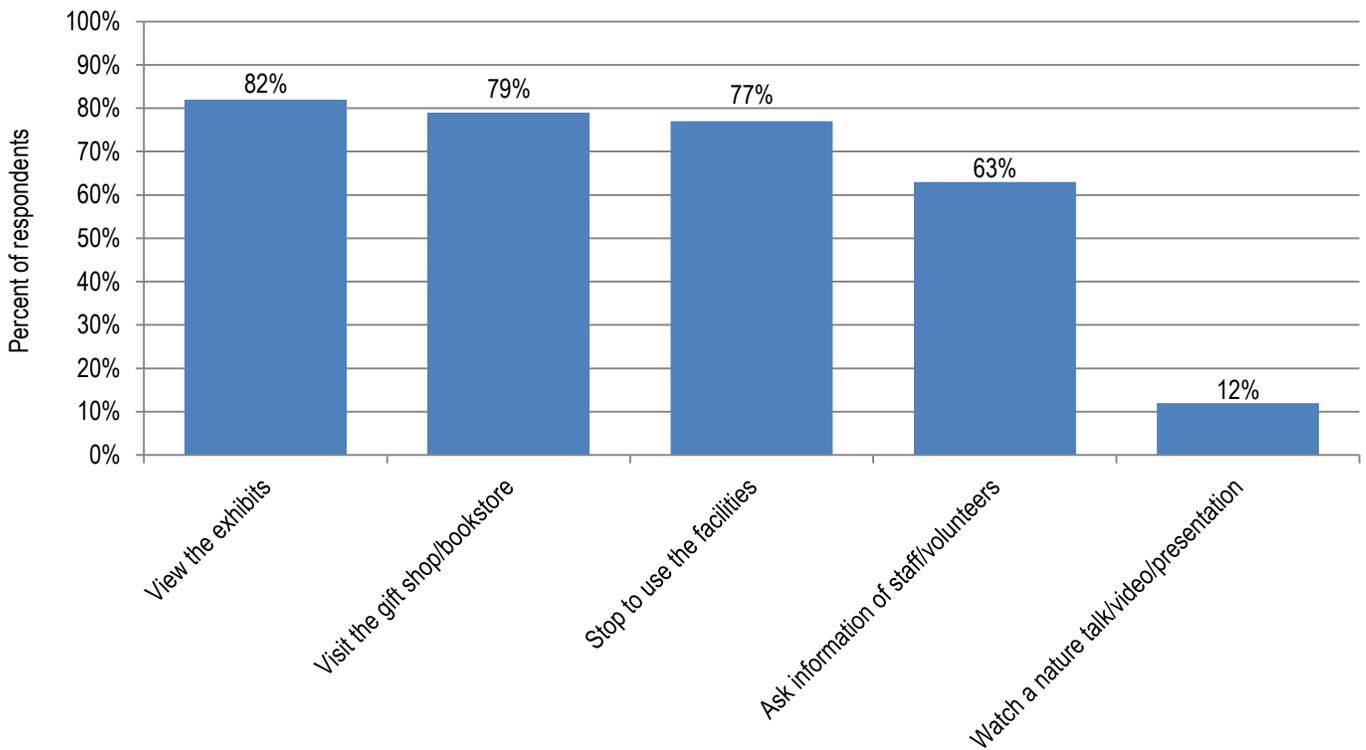


Figure 8. Use of the visitor center at Pea Island NWR (for those visitors who indicated they used the visitor center, n = 92).

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, 11% of visitors to Pea Island NWR indicated that they live within the local area. Nonlocal visitors (89%) stayed in the local area, on average, for 6 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. ***It is important to note that summary statistics based on a small sample size (n < 30) may not provide a reliable representation of that population.*** During the two sampling periods, nonlocal visitors spent an average of \$95 per person per day and local visitors spent an average of \$80 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 Pea Island NWR expressed in dollars per person per day.

Visitors	n ¹	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	103	\$69	\$95	\$77	\$1	\$545
Local	11	\$55	\$80	\$93	\$0	\$310

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 Pea Island NWR were as follows (fig. 9):

- 88% were satisfied with the recreational activities and opportunities,
- 90% were satisfied with the information and education about the refuge and its resources,
- 90% were satisfied with the services provided by employees or volunteers, and
- 90% were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

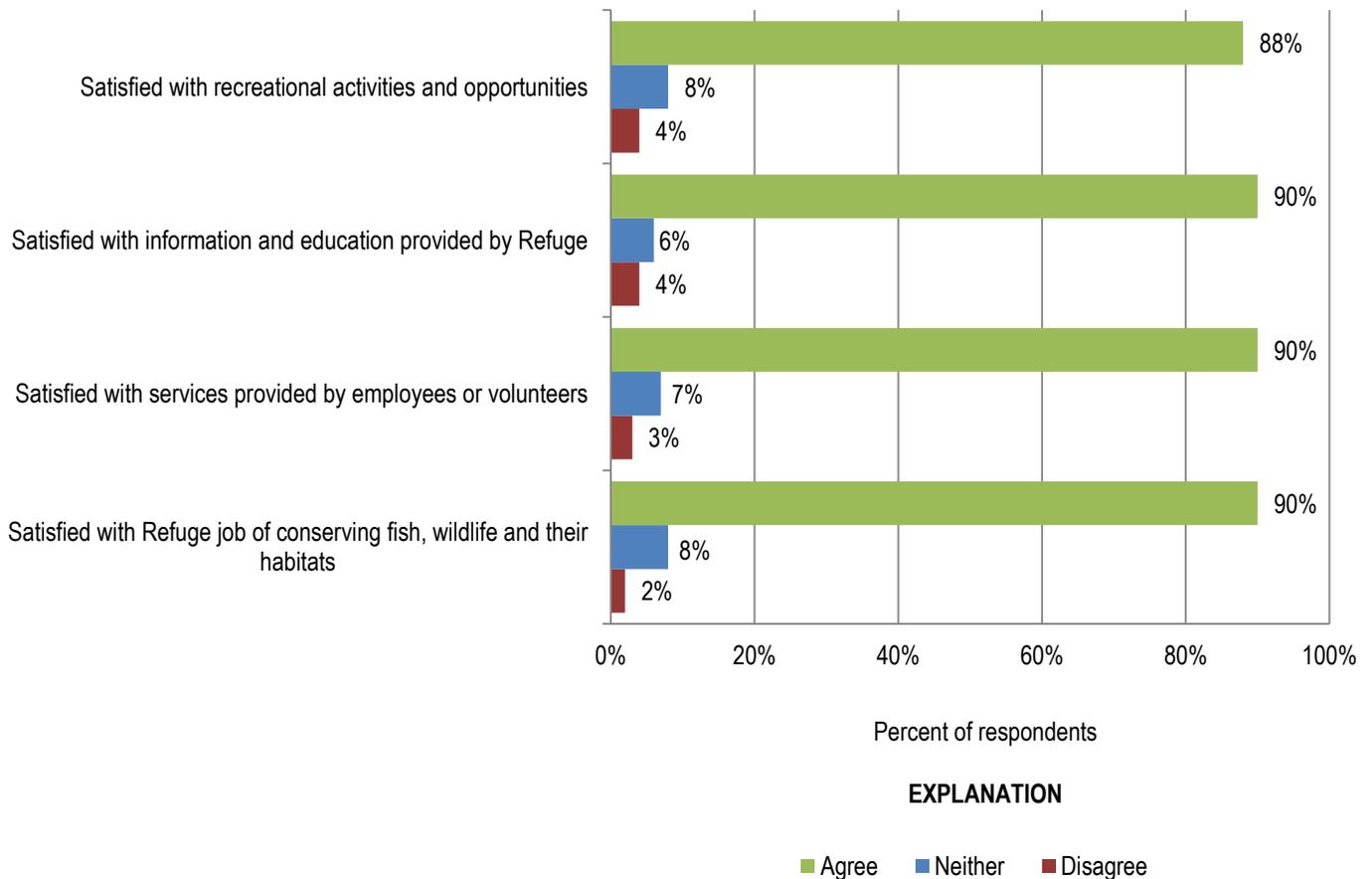


Figure 9. Overall satisfaction with Pea Island NWR during this visit (n ≥ 124).

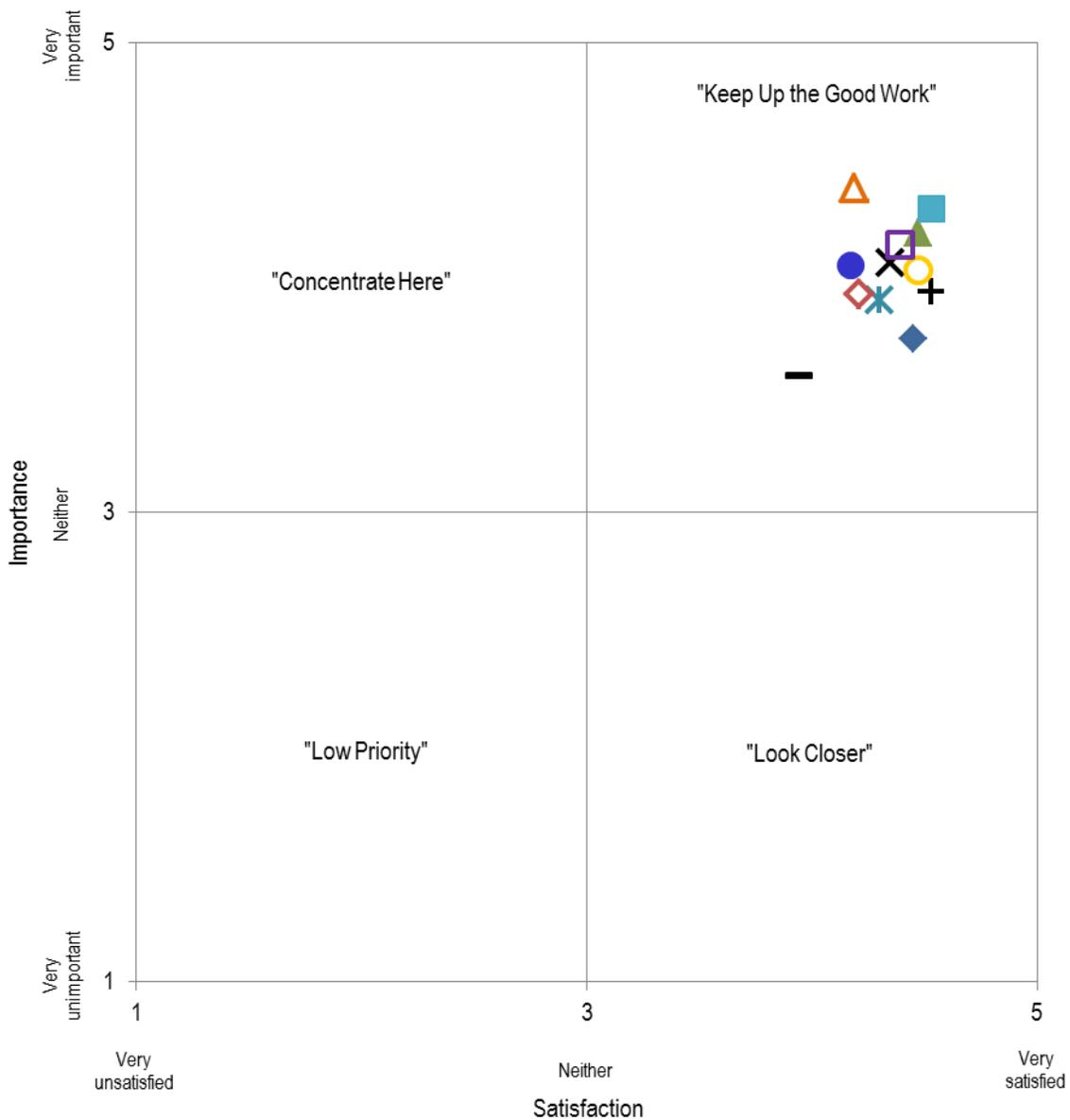
Importance/Satisfaction Ratings

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 Pea Island 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.

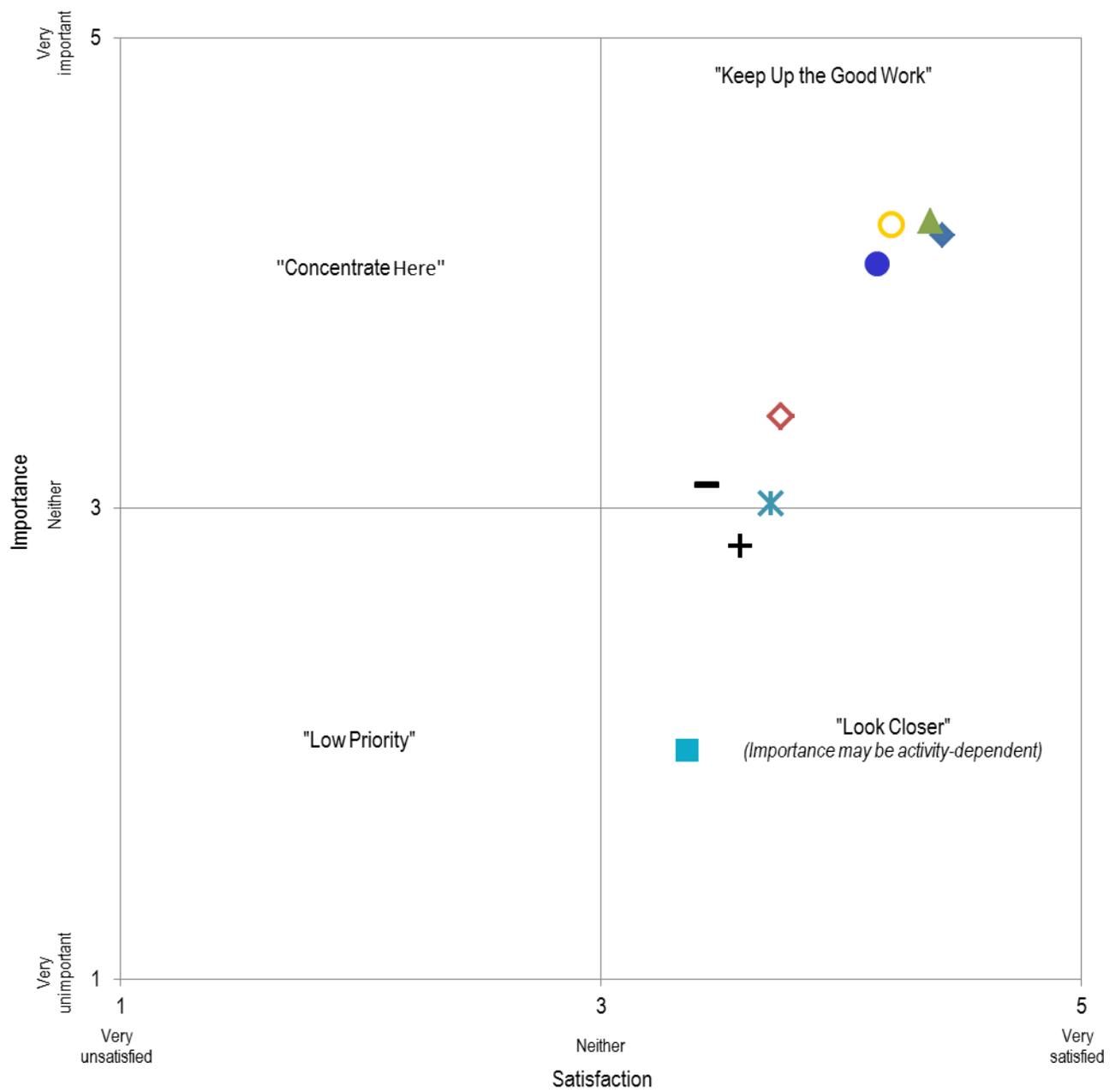
Figures 10-12 depict surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at Pea Island NWR, respectively. All refuge services and facilities fell in the "Keep Up the Good Work" quadrant (fig. 10). Nearly all refuge recreational opportunities fell in the "Keep Up the Good Work" quadrant except hunting and volunteering opportunities, which fell into the "Look Closer" quadrant (fig. 11). Additionally, the importance ratings for fishing and bicycling opportunities are very close to the "Look Closer" quadrant. Those who participated in fishing (n = 32) indicated on average that fishing opportunities were very important (mean importance score = 4.5), while visitors who did not participate in fishing in the past 12 months indicated on average that fishing opportunities were somewhat unimportant (mean importance score = 2.5). The average importance of hunting, volunteering, and bicycling opportunities may also be higher among visitors who have participated in them during the past 12 months; however, there were not enough individuals in the sample to evaluate the responses of such participants or it is not known how many visitors in the sample participated in the activity. 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

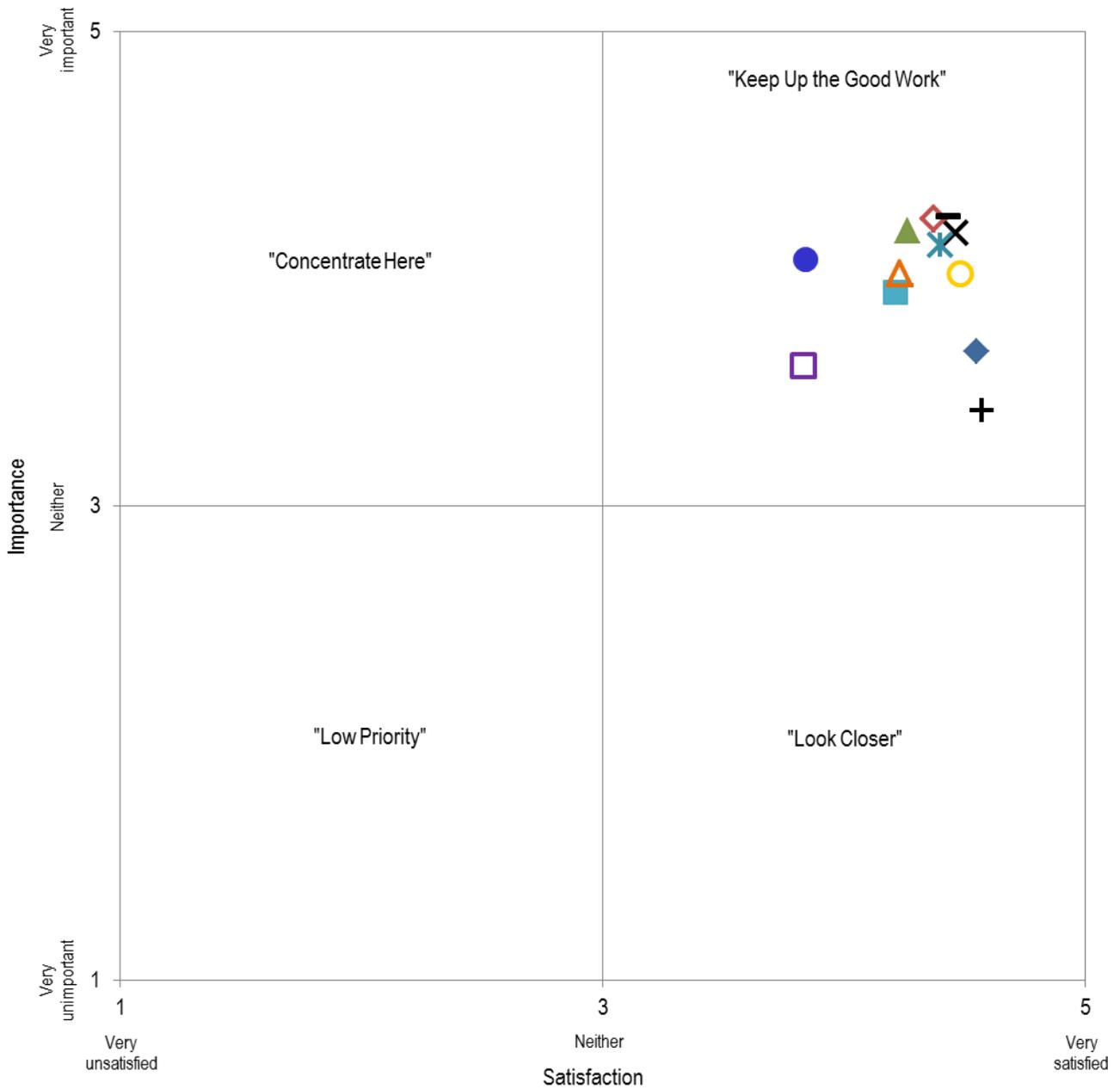
Figure 10. Importance-satisfaction ratings of services and facilities provided at Pea Island NWR.



EXPLANATION

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

Figure 11. Importance-satisfaction ratings of recreational opportunities provided at Pea Island NWR.



EXPLANATION

- ◆ Condition of roads
- ⊕ Condition of parking areas
- ▲ Condition of bridges
- ⊗ 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 Refuge
- ▲ Directional signs on trails
- Disabled access

Figure 12. Importance-satisfaction ratings of transportation-related features at Pea Island 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 Pea Island 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 Pea Island NWR visitors who were surveyed were likely to use the following options at national wildlife refuges in the future (fig. 13):

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

When asked about using alternative transportation at Pea Island NWR specifically, 48% of visitors indicated they were unsure whether it would enhance their experience; however, some visitors thought alternative transportation would enhance their experience (20%) and others thought it would not (33%).

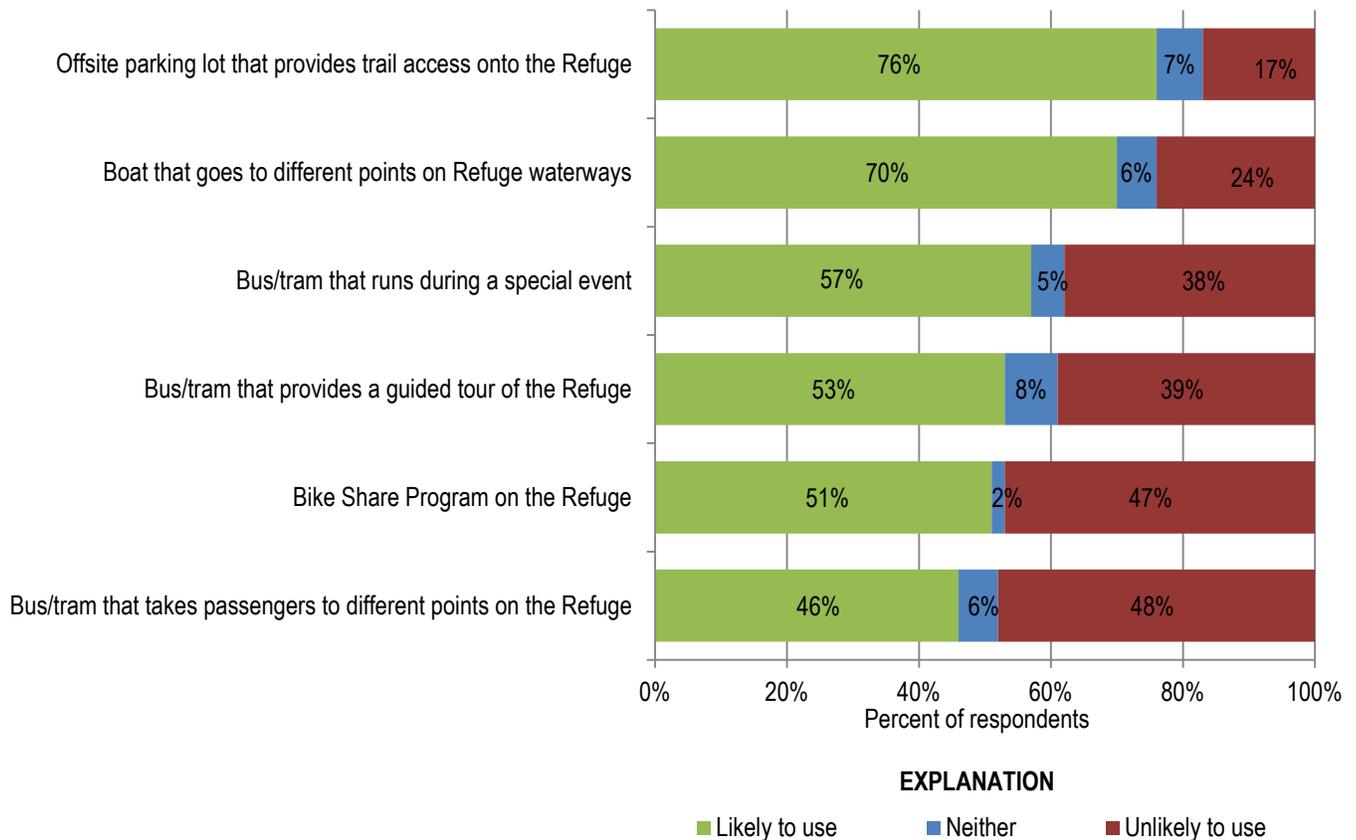


Figure 13. Visitors’ likelihood of using alternative transportation options at national wildlife refuges in the future (n ≥ 133).

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 Pea Island NWR agreed with the following statements (fig. 14):

- “I am personally concerned about the effects of climate change on fish, wildlife and habitats;”
- “I take actions to alleviate the effects of climate change;” and
- “I stay well-informed about the effects of climate change.”

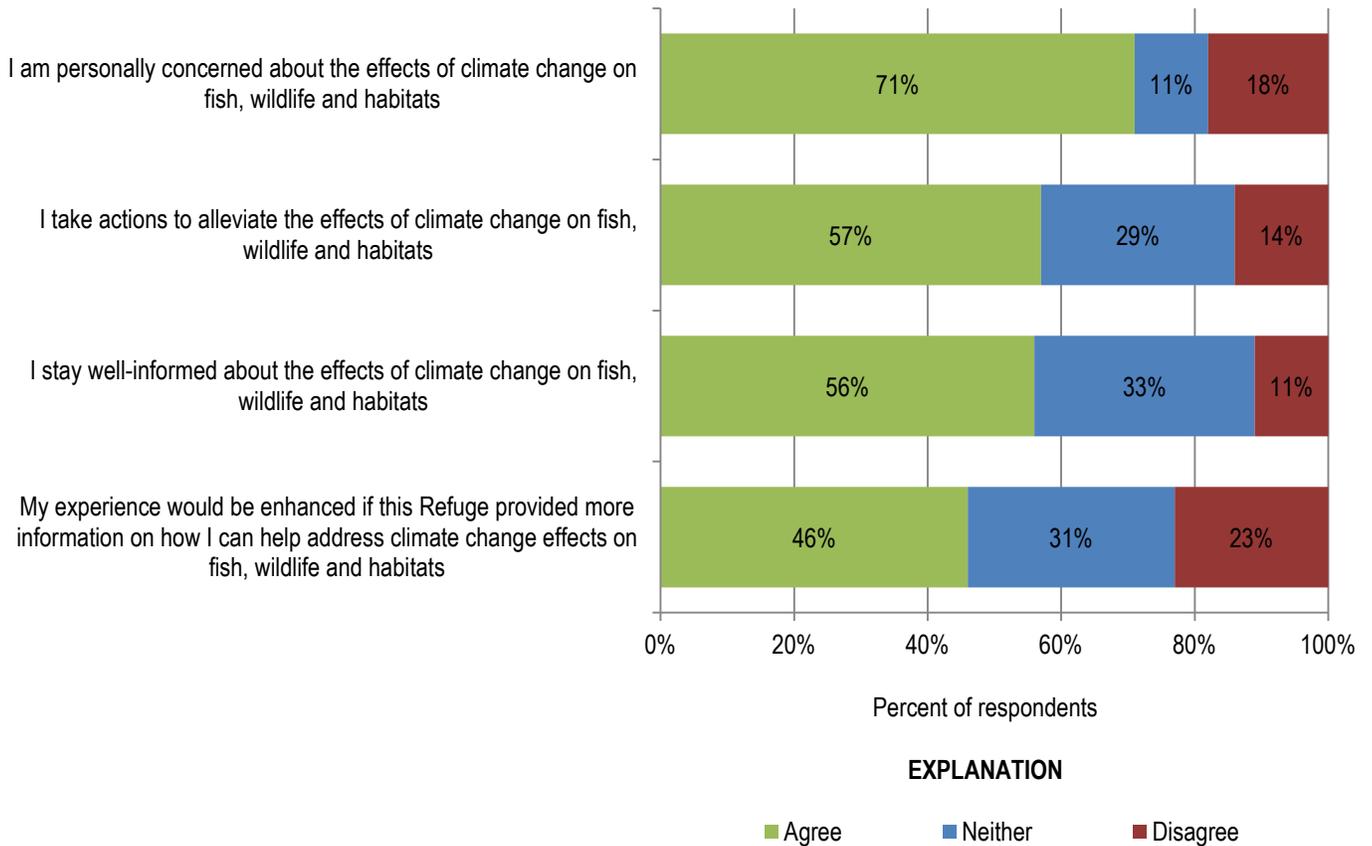


Figure 14. Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 129).

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 Pea Island 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.”

The majority of visitors did *not* believe:

- “There has been too much emphasis on the catastrophic 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 (46%) indicated that their experience would be enhanced if Pea Island 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.

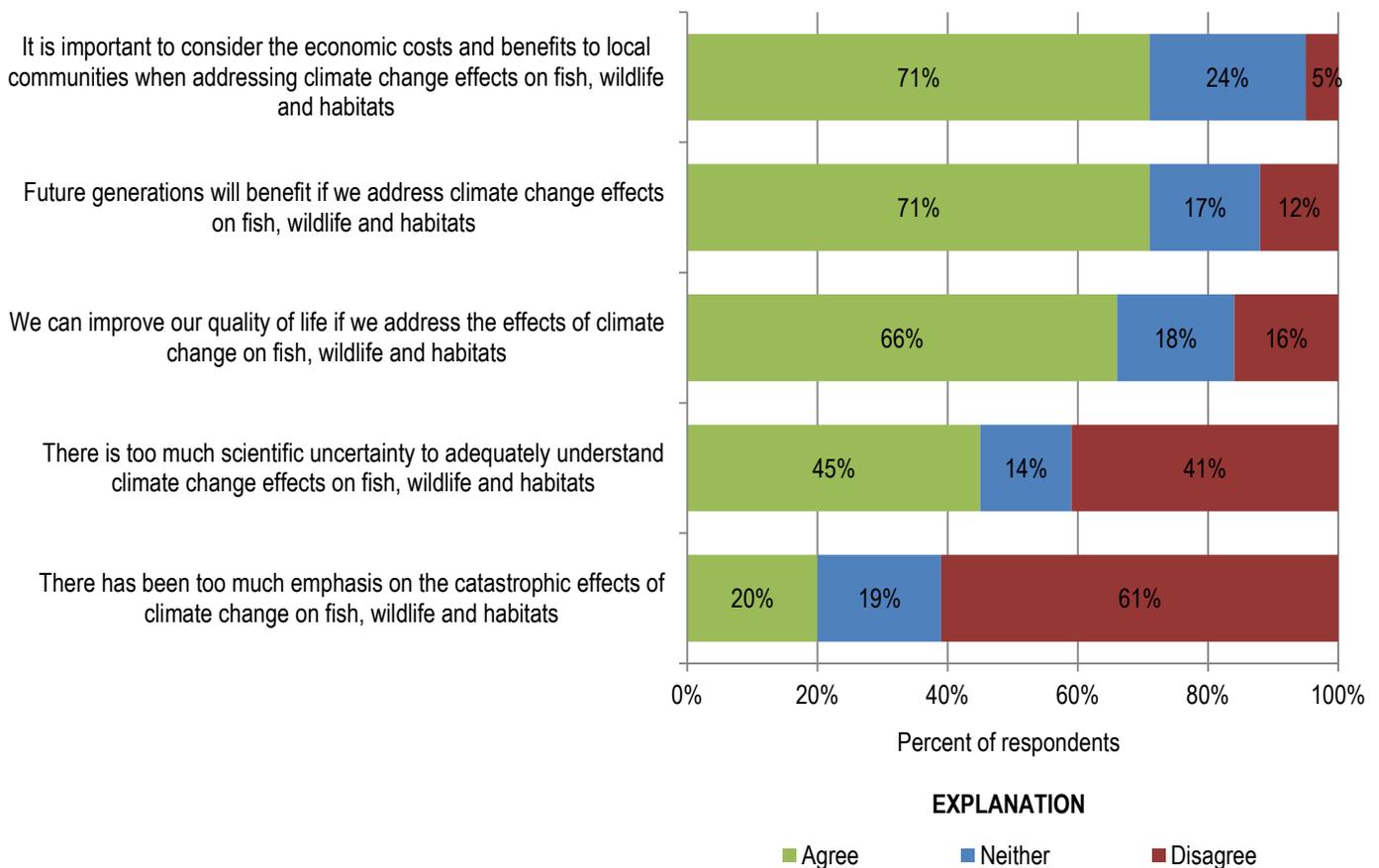


Figure 15. Visitors’ beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 129).

Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to Pea Island 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.

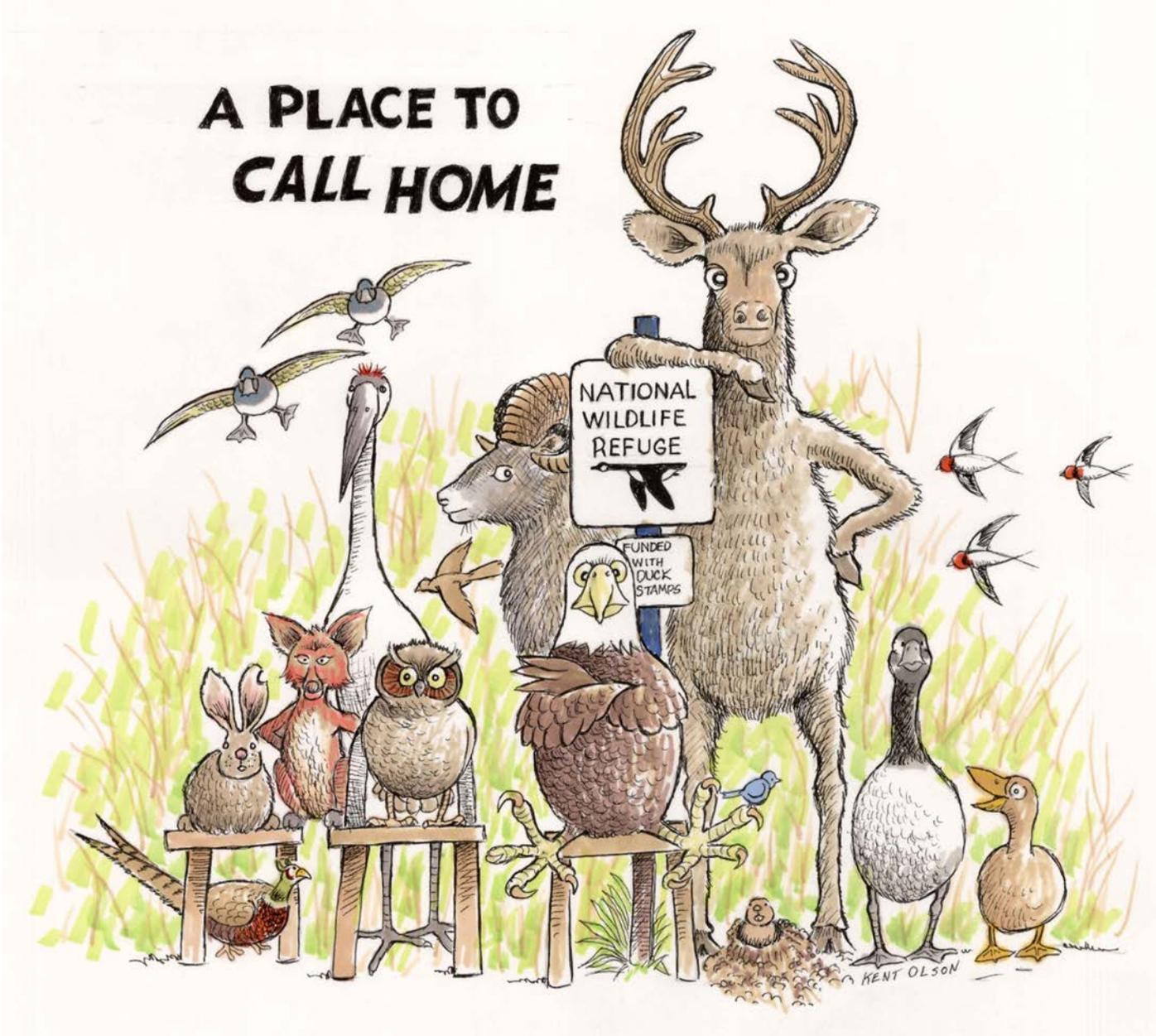
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National Wildlife Refuge Visitor Survey



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"/> 0% Big game hunting | <input type="checkbox"/> 36% Hiking | <input type="checkbox"/> 6% Environmental education (for example, classrooms or labs, tours) |
| <input type="checkbox"/> 0% Upland/Small-game hunting | <input type="checkbox"/> 3% Bicycling | |
| <input type="checkbox"/> 0% Migratory bird/Waterfowl hunting | <input type="checkbox"/> 19% Auto tour route/Driving | <input type="checkbox"/> 4% Special event (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 60% Wildlife observation | <input type="checkbox"/> 4% Motorized boating | <input type="checkbox"/> 7% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 59% Bird watching | <input type="checkbox"/> 13% Nonmotorized boating (including canoes/kayaks) | <input type="checkbox"/> 0% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 4% Freshwater fishing | | |
| <input type="checkbox"/> 26% Saltwater fishing | <input type="checkbox"/> 19% Interpretation (for example, exhibits, kiosks, videos) | |
| <input type="checkbox"/> 43% 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?

- 32% No
- 68% Yes → If yes, what did you do there? (Please mark **all that apply.**)
- | | |
|--|---|
| <input type="checkbox"/> 79% Visit the gift shop or bookstore | <input type="checkbox"/> 12% Watch a nature talk/video/presentation |
| <input type="checkbox"/> 82% View the exhibits | <input type="checkbox"/> 77% Stopped to use the facilities (for example, get water, use restroom) |
| <input type="checkbox"/> 63% Ask information of staff/volunteers | <input type="checkbox"/> 12% 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	
16%	38%	19%	It was the primary purpose or sole destination of my trip.
52%	38%	50%	It was one of many equally important reasons or destinations for my trip.
32%	25%	32%	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 458 number of miles

Local 24 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?

33% No (*skip to question #9*)

67% Yes → What **type of group** were you with on your visit? (*Please mark **only one.***)

95% Family and/or friends

3% Organized club or school group

0% Commercial tour group

2% Other (*please specify*) See Appendix B

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

 4 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.***)

38% Friends or relatives

4% Refuge website

54% Signs on highway

1% Other website (*please specify*) See Appendix B

4% Recreation club or organization

3% Television or radio

13% People in the local community

9% Newspaper or magazine

21% Refuge printed information (brochure, map)

10% 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.***)

26% Spring
(March-May)

68% Summer
(June-August)

53% Fall
(September-November)

17% Winter
(December-February)

11. How many times have you visited...

...this Refuge (including this visit) in the last 12 months? 4 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"/> 90% | Private vehicle without a trailer | <input type="checkbox"/> 0% | Refuge shuttle bus or tram | <input type="checkbox"/> 1% | Bicycle |
| <input type="checkbox"/> 5% | Private vehicle with a trailer
(for boat, camper or other) | <input type="checkbox"/> 0% | Motorcycle | <input type="checkbox"/> 26% | Walk/Hike |
| <input type="checkbox"/> 0% | Commercial tour bus | <input type="checkbox"/> 0% | ATV or off-road vehicle | <input type="checkbox"/> 1% | Other (<i>please specify below</i>) |
| <input type="checkbox"/> 1% | Recreational vehicle (RV) | <input type="checkbox"/> 7% | Boat | <u>See Appendix B</u> | |
| | | <input type="checkbox"/> 1% | 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"/> 56% | Signs on highways | <input type="checkbox"/> 3% | Directions from Refuge website |
| <input type="checkbox"/> 10% | A GPS navigation system | <input type="checkbox"/> 4% | Directions from people in community near this Refuge |
| <input type="checkbox"/> 20% | A road atlas or highway map | <input type="checkbox"/> 9% | Directions from friends or family |
| <input type="checkbox"/> 4% | Maps from the Internet (for example,
MapQuest or Google Maps) | <input type="checkbox"/> 46% | Previous knowledge/I have been to this Refuge before |
| | | <input type="checkbox"/> 3% | 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"/> 35%	<input type="checkbox"/> 13%	<input type="checkbox"/> 6%	<input type="checkbox"/> 30%	<input type="checkbox"/> 16%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 33%	<input type="checkbox"/> 13%	<input type="checkbox"/> 2%	<input type="checkbox"/> 31%	<input type="checkbox"/> 20%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 27%	<input type="checkbox"/> 13%	<input type="checkbox"/> 7%	<input type="checkbox"/> 33%	<input type="checkbox"/> 20%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 16%	<input type="checkbox"/> 8%	<input type="checkbox"/> 5%	<input type="checkbox"/> 37%	<input type="checkbox"/> 33%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 27%	<input type="checkbox"/> 11%	<input type="checkbox"/> 5%	<input type="checkbox"/> 39%	<input type="checkbox"/> 19%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 10%	<input type="checkbox"/> 7%	<input type="checkbox"/> 8%	<input type="checkbox"/> 37%	<input type="checkbox"/> 39%
...some other alternative transportation option? (<i>please specify</i>) <u>See Appendix B</u>	<input type="checkbox"/> 0%	<input type="checkbox"/> 11%	<input type="checkbox"/> 0%	<input type="checkbox"/> 44%	<input type="checkbox"/> 44%

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

- 20% Yes 33% No 48% 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
5%	17%	9%	46%	23%	Surface conditions of roads	3%	0%	8%	17%	72%	NA
9%	17%	13%	48%	14%	Surface conditions of parking areas	4%	0%	5%	17%	74%	NA
5%	3%	8%	37%	47%	Condition of bridges	5%	5%	8%	21%	60%	NA
3%	4%	6%	49%	38%	Condition of trails and boardwalks	4%	1%	5%	25%	65%	NA
3%	2%	5%	62%	28%	Number of places for parking	3%	7%	2%	22%	66%	NA
4%	6%	5%	52%	33%	Number of places to pull over along Refuge roads	5%	14%	8%	40%	34%	NA
2%	5%	9%	39%	46%	Safety of driving conditions on Refuge roads	2%	3%	10%	27%	58%	NA
4%	3%	7%	40%	47%	Safety of Refuge road entrances/exits	3%	1%	8%	28%	60%	NA
5%	6%	12%	38%	38%	Signs on highways directing you to the Refuge	4%	1%	3%	27%	65%	NA
7%	5%	11%	44%	33%	Signs directing you around the Refuge roads	2%	2%	13%	36%	46%	NA
7%	7%	9%	35%	42%	Signs directing you on trails	4%	3%	9%	35%	49%	NA
8%	8%	24%	37%	23%	Access for people with physical disabilities or who have difficulty walking	1%	6%	32%	31%	31%	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)?

12% Yes

88% No → How much time did you spend **in local communities** on this trip?

 7 number of hours OR 6 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	Amount Spent in <u>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?

 4 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%	7%	3%	11%	0%	27%	3%	7%	6%	16%

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**.)*

0%	Far too low	0%	Too low	90%	About right	0%	Too high	10%	Far too high	93%	Did not pay a fee <i>(skip to Section 4)</i>
----	-------------	----	---------	-----	-------------	----	----------	-----	--------------	-----	---

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.

10%	Strongly disagree	0%	Disagree	10%	Neither agree or disagree	40%	Agree	40%	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.	2%	2%	8%	34%	54%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	2%	2%	6%	34%	56%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	2%	1%	7%	29%	61%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	2%	1%	8%	24%	65%	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
6%	10%	10%	48%	25%	Availability of employees or volunteers	2%	4%	12%	14%	69%	NA
5%	9%	11%	38%	37%	Courteous and welcoming employees or volunteers	3%	2%	11%	10%	75%	NA
2%	6%	9%	34%	48%	Knowledgeable employees or volunteers	3%	2%	11%	15%	70%	NA
3%	5%	10%	47%	35%	Printed information about this Refuge and its resources (for example, maps and brochures)	3%	2%	12%	25%	58%	NA
2%	8%	16%	48%	27%	Informational kiosks/displays about this Refuge and its resources	1%	3%	13%	31%	51%	NA
3%	2%	13%	49%	32%	Signs with rules/regulations for this Refuge	3%	2%	16%	36%	44%	NA
2%	10%	10%	51%	27%	Exhibits about this Refuge and its resources	1%	2%	17%	36%	45%	NA
5%	9%	26%	42%	17%	Environmental education programs or activities	2%	1%	31%	30%	35%	NA
3%	7%	10%	43%	37%	Visitor Center	4%	0%	9%	21%	67%	NA
3%	0%	7%	45%	45%	Convenient hours and days of operation	1%	3%	7%	20%	69%	NA
3%	2%	3%	37%	54%	Well-maintained restrooms	4%	7%	5%	34%	50%	NA
3%	3%	8%	46%	39%	Wildlife observation structures (decks, blinds)	2%	2%	11%	25%	60%	NA
3%	4%	13%	33%	47%	Bird-watching opportunities	2%	1%	11%	26%	61%	NA
2%	3%	11%	39%	44%	Opportunities to observe wildlife other than birds	2%	1%	16%	37%	44%	NA
2%	2%	10%	42%	44%	Opportunities to photograph wildlife and scenery	3%	0%	9%	34%	54%	NA
52%	14%	25%	6%	4%	Hunting opportunities	2%	2%	73%	5%	18%	NA
28%	11%	19%	15%	27%	Fishing opportunities	4%	5%	39%	20%	32%	NA
3%	8%	10%	40%	39%	Trail hiking opportunities	1%	1%	17%	43%	38%	NA
10%	17%	20%	31%	22%	Water trail opportunities for canoeing or kayaking	1%	4%	45%	17%	32%	NA
17%	12%	26%	32%	12%	Bicycling opportunities	4%	7%	51%	17%	21%	NA
20%	8%	49%	15%	8%	Volunteer opportunities	3%	0%	61%	8%	28%	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?

82% Yes

18% No

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

88% Yes

12% No

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

84% Yes

16% 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.	9%	9%	12%	30%	40%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	9%	7%	18%	28%	38%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	18%	22%	15%	28%	17%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	1%	10%	33%	41%	15%
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.	2%	3%	24%	51%	20%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	5%	9%	29%	44%	13%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	32%	29%	19%	11%	9%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	5%	7%	16%	33%	38%
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.	9%	13%	32%	32%	14%

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? 57% Male 43% Female

3. In what year were you born? 1959 (YYYY)

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
(elementary)					(junior high or middle school)			(high school)				(college or technical school)				(graduate or professional school)			
					0%			8%				48%				44%			

5. What ethnicity do you consider yourself? 2% Hispanic or Latino 98% Not Hispanic or Latino

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

- 2% American Indian or Alaska Native 0% Black or African American 98% White
 2% Asian 1% 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"/> 8% \$35,000 - \$49,999 | <input type="checkbox"/> 28% \$100,000 - \$149,999 |
| <input type="checkbox"/> 4% \$10,000 - \$24,999 | <input type="checkbox"/> 23% \$50,000 - \$74,999 | <input type="checkbox"/> 9% \$150,000 - \$199,999 |
| <input type="checkbox"/> 2% \$25,000 - \$34,999 | <input type="checkbox"/> 20% \$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.)?

12 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 Pea Island 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
Crab Rodeo	1
Tour as part of the Atlantic Estuarine Research Society (AERS)	1
Wings over Water Bird Festival	4
Total	6

Other Activity	Frequency
Enjoyment of natural landscape	1
Gift shop	1
Local maps and area wildlife	1
Oystering, clamming	1
Playing on beach and swimming	1
Swimming	1
Swimming, sunning, beach walking, and surfing	1
Swimming, surfing	1
Visited with nephew who is working at refuge	1
Wildflower viewing	1
Total	10

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
Enjoyment of natural landscape	1
Gift Shop	1
Local maps and area wildlife	1
Passing through	1
Surfing	1
Walking the beach	1
Total	6

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

Other Visitor Center Activity	Frequency
I wanted to see a log of what other visitors had observed, especially rare sightings, but did not find this at the Pea Island Visitor Center.	1
Looking at lighthouses	1
Used optics equipment to view wildlife	3
Used the scope to view birds	5
Walked a nature trail	1
Total	11

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
Wings over Water Bird Festival	2
Total	2

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

Other Website	Frequency
Fishing websites	1
Total	1

Other Ways Heard about This Refuge	Frequency
A Book: Insiders' North Carolina's Outer Banks	1
AAA tour book	1
Fishing books such as Joe Malet's Guide to Surf Fishing	1
Guidebook	1
Kayaking book	1
Learned about it while visiting Kitty Hawk Memorial	1
Map	1
Map of the Outer Banks	1
NC maps and wildlife refuge books	1
Tourist book	1
Travel books	1
Wings over Water Bird Festival	2
Total	13

Survey Section 2

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

Other Forms of Transportation	Frequency
University owned van	1
Total	1

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

Other Ways Found This Refuge	Frequency
Map of the area that we got at Kitty Hawk Memorial.	1
Parks Service information office	1
Touring books about North Carolina	1
Tourist book	1
Total	4

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
Airplane	1
ATV	2
ATV or off road vehicle	1
Horse	1
Horse rental, paddle boat	1
Kayaks/canoes	1
Segway	2
Total	9

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 = 17)

Beach access needs to be improved for those who have difficulty walking.

Build the Oregon Inlet replacement bridge before the only north exit becomes the Stumpy Point Ferry. Your attendance will fall drastically if you lose vehicle traffic via the bridge.

Entrances and exits were OK when I visited in November, but in the summer I wonder just how safe it would be.

I didn't assess the trails for handicap accessibility.

I don't want more transportation infrastructure; it should be left in its natural state.

I had a great trip. Keep it wild and natural. Loved it.

It may not be a refuge problem, but, while we were at a bridge fishing, we got stuck in our car off the outer banks for several hours due to a road washout. We also left our trip early once we got to our house for fear of being stuck again. The washout occurs at the same point on the highway all the time. Why can't this be resolved?

Since this refuge was pretty small, alternative transportation options wouldn't really apply.

The Bonner Bridge needs to be replaced immediately. Please support this initiative for the livelihood of the residents living on Hatteras Island for the tourism that boosts the economy.

The Bonner Bridge needs to be replaced.

The bridge issue is about access to Hatteras Island from Bodie Island. This is not a bridge under the FWS jurisdiction. However, the refuge can only be accessed by the Bonner Bridge, which must be replaced as soon as possible to avoid potential catastrophic collapse in the near future.

The coast of NC is fragile enough; we do not need any more signs directing everyone everywhere, as it takes away from the true beauty of the wetlands in NC. I thought the wetlands were sufficient enough for any hunter and every wheelchair ramp was accessible enough for the location.

The refuge was very accessible and there wasn't much to complain about. It is very helpful sometimes to have buses between trail heads, like those at Yellowstone or Rocky Mountain National Park, so that you can hike a longer distance and see more.

There are no lights at night in the parking area or on the fishing pier. It is very dark. Also, it is a long way from the beach/fishing area from the parking lot, making it an inconvenience for people that cannot walk.

Trail signs listing the distance to landmarks might be nice.

We are going to lose the Bonner Bridge and NC Highway 12 very soon due to coastal erosion and sea level rise - in fact, we visited this site at Pea Island to look at the very great potential for a new inlet to form right there! A ferry boat from Manteo or another coastal location is needed soon, along with USFWS transportation options (shuttle, tram, vessel access). Good luck keeping the refuge road from over washing with salt water every time there is a northeastern storm!

When the Bonner Bridge over Oregon Inlet is relocated in the future, it is very important to continue vehicular access to the south end of Oregon Inlet where the present parking lot is located on Pea Island.

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 = 39)

"Everyone needs to believe in something; I believe I'll go fishing at Pea Island National Wildlife Refuge!" - Nak

A fishing pier on the intercostal side of the Outer Banks would be great. The fishing walkway is nice, but there is not enough room. Other options would be nice when the ocean surf is too rough.

Access to beach areas are limited; you can't drive to some areas to fish and there is more limitation each year. Because of this, and the fact that there are much less fish to catch, I may not come back again, even though I have gone fishing in the Outer Banks for 42 years, spending 2 to 3 months here each year!

Attendants were very courteous and knowledgeable of the local area and wildlife.

FWS enforcement could take a far more benign posture with respect to sunbathers in extremely isolated and difficult to access beach areas. Going back to enforcing North Carolina gym laws, as was the case in the 1990's, would make a lot more sense than the Bush Administration era changes that make it illegal for members of one sex to be "exposed" for any amount of time to others of the same sex on the beach (e.g., when coming out of the water and removing wetsuits, bathing suits to dry off, etc.). Having enforcement officers hiding in the dunes and spying on isolated sunbathers, swimmers, and surfers has a police state feel that is utterly inconsistent with the natural beauty of the isolated beach areas in this refuge.

Gentleman working in the center on the day of our visit was very knowledgeable and welcoming.

Heated restrooms.

I appreciate the guides that we decided to follow and their knowledge and interest in the habitats and the animals/birds that we all see.

I can't really evaluate the refuge yet; we were only passing through and stopped to snap a few photos. From what I saw, it was wonderful and I hope to get back there next year to spend some time and explore.

I fail to see how keeping the Pea Island National Wildlife Refuge Eastern Shoreline closed off to road vehicles affects wildlife. This area should be re-opened to fishermen and others who wish to drive on the beach.

I feel that the primary reason the refuge exists is to protect the wildlife, so my comfort and convenience comes second to the safety of the wildlife. I think this refuge does a good job of educating the public without compromising the safety of the wildlife. I feel privileged to enter the animals' sanctuary and would be ok with even less access for the public.

I like to watch and take pictures of birds and other wildlife. If there could be a little hut to view the birds from near the shore, that would be neat. Waterfowl spook easily. It would be shady and some information about Outer Banks waterfowl could be included too in the hut - just a suggestion. On the whole, I was very pleased with the refuge and it is a welcome respite from the endless beach houses on NC 12.

I think this refuge is very important for the bird and wildlife of the area. We were shocked at how much development there was in the Outer Banks and any area that provides habitat for the wildlife should be preserved.

I would enjoy having a boardwalk that extends a bit into the south side water area, if it would not be too invasive to the birds, etc. We love Pea Island NWR and believe it is managed well.

I would like to have seen more long range binoculars and scopes around the lake/pond.

More information about native plants would be very good.

Need better bike lanes here - but the road is disappearing with each storm, so this not likely to happen anytime soon. Too bad.

No water or sink in the restroom.

Please do not overregulate Pea Island.

Restrooms were chilly; there was no heat.

The bathroom is separate from the Visitor Center and is pretty unpleasant. It needs a baby changing station, and it was much too hot inside.

The interns are extremely knowledgeable and enthusiastic.

The refuge is great the way it is; expand it if possible.

The restrooms at the refuge were porta potties that need to be cleaned more often for female visitors.

The road needs to be serviced for safety. There needs to be a plan to reserve fishing resources, maintain fish stock, and regulate people catching fish.

The Visitor Center had an outstanding, hands-on, seashell identification display.

The volunteers were especially friendly and helpful.

There are no lights or restrooms (only porta potties) and the mosquitoes are terrible at night. It would be more enjoyable if there was a restroom or a water fountain, or a place to sit and eat other than on the bridge.

There needs to be a public boat ramp or ramps on the sound side. There are no ramps, only at Oregon Inlet and Roanoke. They need them in between.

This is an unmanned refuge location with an access ramp to launch kayaks. It is beautiful and natural. It offers no other services but nature. Nature is all we need. Thank you for leaving it alone and protecting it as it is.

This refuge (as well as most others) does a very poor job of providing access for wildlife observation and education.

Volunteers should receive training from the staff biologist. Our volunteer, for example, did not know the names for the 3 species of turtles that anyone visiting the refuge would normally see.

Washrooms need to be fixed up for us aging baby boomers! Great Visitor Center with excellent telescopes and volunteers.

We enjoyed our time at Pea Island.

We enjoyed the Visitor Center, but the volunteers did not even acknowledge us and we were the only visitors at the time.

We enjoyed visiting the refuge and participating in some of the activities.

We had a great trip. I went with a friend and I will bring my family at another time.

We loved the Visitor Center and a man focused the binoculars for us and told us about the birds.

We really enjoyed this refuge. It was a short drive-through trip just for the day, but we were interested in returning for a longer stay.

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 = 88)

A lot is devoted to conservation. We go to many state parks, usually in Virginia, and while they also provide a nice experience, the refuges are more about conservation.

Allows for viewing wildlife not found in other areas.

Awesome number and variety of birds within view.

Because of their mission, I think refuge visitors have a higher expectation of seeing wildlife and good wildlife habitat.

Both coast and marsh areas for birds and wildlife that are near the roadways.

Concentrations of waterfowl and other birds.

Each refuge has been established to provide and protect habitat needed for specific species of waterfowl, cranes, prairie chickens, neotropical migrants, etc.

Fun and free add-on to our trip.

Greater ability to observe large numbers of migrating birds.

I believe that the refuges offer a more focused approach to wildlife and habitats than do National Parks, State Parks, etc.

I believe that the wildlife refuges (especially, this coastal refuge at Pea Island) are important, as they offer wildlife refuge while maintaining public use for recreational activities such as fishing, hunting, hiking, and bird watching. With much of the coastal area developing in private hands, this area is vital for the conservation of plant, fish, and animal species.

I like how the area is undeveloped.

I like the combination of extensive protected areas to explore and discover wildlife with Visitor Centers that provide educational opportunities.

I live here year round and I've watched this place grow and evolve into one of the finest refuges in America.

I love the ocean views, but I enjoy them more in the fall and winter months, as it's quieter and I don't care for the large noisy crowds. You can enjoy things more when it's peaceful. You can listen to the wildlife and ocean more.

If you have a "special interest" in birds, then this is the place to go.

It is a natural place and all people can enjoy fishing, bird watch and touring.

It is getting harder to find nature in a pristine, unspoiled condition. I believe that National Wildlife Refuges accomplish this. I am thankful for them.

It is important as a place that is not primarily for our recreation, but for the stewardship of the flora and fauna of the region.

It is unique because of the location.

It's a great place to observe the birds and animals in their native habitat and know they are safe there.

It's a place for local information about wildlife. We're retired, but do very little physical activity at refuges.

Its location on North Carolina Outer Banks, populations of migratory birds and other wildlife, and observation decks.

Its natural beauty and lack of "commercialization".

Just all of the nature, and the preservation of the land and the water.

Knowing that my grandchildren can come when they grow up and it will still be here for them to observe.

Location, habitat, and bird watching opportunities.

Many other experiences are based on profit motives of the different parks. Here, you truly see nature as it is.

More information than state parks.

Natural beach without much development.

Natural habitat, and the animals are given good consideration.

No commercial establishments to take away from the experience.

Not quite a State Park and not a Nature Conservancy.

Ocean and water views.

Our birds and wildlife are in so many ways threatened (or could be) and lots are already endangered. The refuges help maintain vital resource areas for the continued existence of these wonders of nature. Without them, we fear many species would perish.

Pea Island is a coastal surf zone refuge (partial).

Preservation of habitat and the opportunity to view wildlife and birds, as well as hiking.

Preservation.

Protected land.

Protects endangered/rare/interesting habitat and animal life.

Refuges are unique for their focus on wildlife. They usually offer great opportunities to see birds and other kinds of creatures.

Refuges seem to attract people with a real appreciation for the land; would not want to see multiple uses like ATVs, motor boats, etc.

Safe and educational; diversified experiences relative to the location of the refuge.

Safety, access to special habitat, and protected and cared for with people/guides to share their knowledge. I think walking and experiencing nature is very important - and to not make it a Disney World, but keep it simple, rustic, etc.

Shorebird watching.

The ability to see wildlife in their natural habitats and the conservation of the land in its natural state.

The abundance of waterfowl you see; very well maintained. Being from Virginia, the scenery is different. I have one suggestion: have people that are serving community service help clean up/maintain the refuge.

The amount of educational information available.

The beautiful, pristine, wide, and extremely isolated and very sparsely populated ocean beaches with warm water in summer; sightings of porpoise, herons, pelicans, manta rays, occasional loons and windsurfers (no comparison intended); and the wild vegetation on windswept dunes.

The coastline and its views.

The diversity of sea and bird life was outstanding.

The ecosystems of the refuges.

The family fun; we enjoyed fishing and crabbing.

The features of landscape and scenery are unique.

The government is saving something for future generations.

The land is kept in its natural state.

The opportunity to access migratory waterfowl without requiring extensive hiking/camping to reach it.

The recreation is the different ways wildlife can be observed (e.g., biking, kayaking), all the while evidence of preservation and resource management are being conducted.

The refuges are the bequest of previous generations of the flora, fauna, and habitats that sustained and continue to sustain. What could be more unique than that which cannot be replaced?

The solitude.

The whole concept of maintaining wildlife and nature.

The wildlife and natural habitats.

The wildlife is considered the number one important thing at a refuge. Nowhere else is that true.

The wildlife.

There are different species of birds, ducks and fish. The fishing is excellent!

There is available wildlife and hiking opportunities in a natural setting.

They are generally more remote and offer fewer facilities, which is great, because it makes them less polluted, more scenic, and more natural.

They are largely left alone to let nature take its course.

They are quiet.

They are remote, untouched, and not commercialized.

They are unique because of the access that you have to the flora and fauna and the ability to get close to natural habitats that are evolving.

They are unique in that they offer what they promise.

They have a purpose other than play; they are there primarily for the wildlife, even at the inconvenience of visitors. I interned at Back Bay NWR where the main trails were closed over the fall/winter so that migrating birds could feed and rest undisturbed... I love that!

They offer a place where modern infrastructure (in this case) can cohabitate with wildlife, thus allowing the visitor to experience the wildlife in its natural habitat without traveling too far off the main roads.

They provide a protected area for important migratory birds and the important foods needed to make the journey.

They provide precious habitat for wildlife and there are usually not as many rules to follow compared to National Parks. Most don't cost anything to visit and are always a treat to visit.

They usually are established to protect a particularly important biological resource, such as waterfowl, marsh, etc. As a person interested in birds, the refuges offer particularly important opportunities.

They usually have special wildlife to observe and have unique viewing areas for this which are very well kept.

They're well maintained, clean, and safe. Now, with the job losses and unemployment, people need to have places to go like this. They can camp cheap and enjoy the same experiences. It's very important that we keep these refuges.

To be honest, I didn't know much about the National Wildlife Refuges, but the volunteers and facilities were welcoming. I learned lots and I benefited greatly from the education. Otherwise, I would not have agreed to complete this survey. Advertise more!

Unique preserves with varied access and uses.

Unique, unspoiled, and beauty of the Outer Banks.

Visiting a refuge allows me to see and hear wildlife in their own habitat. The encounters are not planned, scripted, or controlled, and that means I get to see animals on their own terms. There's nothing more exciting than seeing an animal I've never seen before in the wild, and experiencing it with a refuge staff member who's just as excited as I am. I always learn something new when I visit. Thanks!

Water birds and the beautiful shore area of Pea Island.

We need places that the public can go to enjoy wildlife.

Well protected wildlife that assures me that the next generation will also be able to enjoy this beauty. Thanks for it!

Wildlife refuges have provided me with fishing and wildlife observing opportunities all over the USA. Normally, I think of them as a place where one can go and observe nature. I know that hunting is allowed sometimes, but this seems odd, as they are meant to be "refuges" from predation by humans. So, I guess fishing should not be allowed either. In other kinds of public lands, hunting and fishing are sometimes allowed. I guess that is what should make FWS refuges different - they are no take reserves.

Wildlife viewing was much greater here.

Additional Comments (n = 28)

Always an enjoyable refuge to visit!

Closing the trails to foot travel that access the beach because of a bird is not a good way to allow people to remember a trip to this wonderful place.

Don't change anything, unless the change is expansion!

For some reason, the fishing has become very poor on the Outer Banks. Some control of the netting and the taking and killing of bait fish needs to happen. The taking of menhaden by the commercial boats needs to stop in the Chesapeake and all waters feeding the waters of the Outer Banks.

I am concerned about future access to Pea Island National Wildlife Refuge.

I had a great time with my daughter watching birds.

I live just 30 miles north of this refuge. I have a rental property just south of this refuge. I am blessed to go through this refuge on a regular basis. I am in awe of the beauty of this place.

I love Pea Island. Let's fix the Bonner Bridge.

I loved the bridge where you could watch the turtles, but the mosquitoes were a big turnoff the day we visited.

I only spent 30 minutes in the Visitor Center, mostly looking at the books. The volunteer working that day was a very pleasant man who told me a lot about the birds/animals in the area. It was a pleasant stop on my way further south.

I spent a couple of hours birding and would have liked to see some signage (bird photo identification) between the beginning of the trail and the observation tower.

I think it is a very important refuge to have, because this area is so developed in the areas that aren't protected. We enjoyed this refuge a lot because it was an area that wasn't developed and we saw a lot of birds. Do whatever you can to keep it going.

I think our government is entirely too big and unaccountable to the American public. Our leaders have not learned one thing in 300 years. The Revolutionary War was about taxation without representation. We are at that same place times 10! It will not get better until Jesus comes back.

I was amazed as to all of the kinds of wildlife that exist in the Outer Banks area. There is so much more to the area than what meets the eye.

I was very pleased with my visit and I hope that you can educate perpetually distracted people that wetlands are more than mosquito-breeding mud pits. Being that global warming is a politically charged topic, it is inevitable that anyone attempting to educate on this topic will be accused of having an agenda. Perhaps one way to mitigate this is to have a kiosk like a "Climate Box" which would be a computer allowing one to explore

the current and historical weather information at the refuge and other locations. It could, for example, compare the weather on a given day with the weather on the same day in previous years in the same location. This might encourage a visitor to think, without providing them a conclusion.

It was beautiful and I hope to get to explore it more in depth in the future.

Keep it in its current condition.

My husband and I feel like we live at Pea Island. We go there and sit on the beach and fish almost every weekend. In many instances, we are the only ones on the beach. It is so inspirational!

People are more important than birds, fish, and wildlife. As long as we remember this and keep that in mind, we can and should take care of animals. We were given dominion over them by God for that reason.

Thanks for the good work you do. Thanks for letting us come share it with you!

The bridges crossing the waters kill more seagulls than any shotgun ever thought about killing.

The kayak trails were great at Alligator River. The highlight of my trip was the photos I took of a bear from the road and a Pileated Woodpecker from my kayak. I am a strong believer in wildlife conservation; however, the entire issue of "climate change" leaves a bad taste in my mouth. There is too much evidence in my opinion of bad science involved in too many of the supporter's conclusions.

The most important thing the National Wildlife Refuge System can provide for people is for them to have a chance to experience and have a personal relationship with nature. Also, to learn something about the habitat, animals, botany, geology, etc. Having enthusiastic, but 'cool' guides, like we had the day we visited, was wonderful - they were available, but not lecturing and demanding attention. Also, it is less important to have tip-top parking lots and modern facilities and a lot of stuff to buy at the gift shops as it is to provide an opportunity for people to be a part of that piece of nature! And may that experience inspire us all to take good care of Mother Earth and do whatever we need to do to fight climate change and destruction of habitats and life!

The Outer Banks of NC is a tremendous economic engine for our state due to tourism. Wildlife viewing is part of that economic engine. We are in danger of losing this tourism destination due to climate change and sea level rise. The USFWS should not allow the state of NC to encroach on Pea Island National Wildlife Refuge because of the over wash and relocation of Highway 12. A strong consideration should be given to the construction of an inland causeway or ferry dock near Pea Island for visitor access after the Bonner Bridge is destroyed in a storm. This road closure will happen eventually, and the FWS needs to be on record as supporting an alternative transportation plan to allow access to the refuge when that road closure happens.

This is a lovely spot to stop and walk and view birds. Great people greeting visitors, and well-informed.

This is an excellent refuge for birding.

This is an excellent refuge. There are great educational facilities.

We need more waterfowl hunting opportunities for North Carolina residents.
