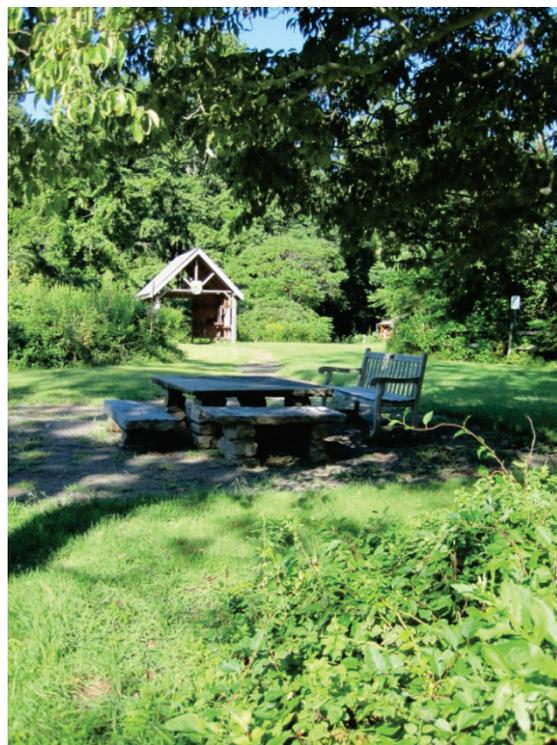




National Wildlife Refuge Visitor Survey 2010/2011: Individual Refuge Results for Stewart B. McKinney National Wildlife Refuge

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

This refuge has an abundance of wildlife. It has been a great pleasure to watch the refuge mature. The resident Park Ranger and associates have always been extremely helpful and have seen to it that this refuge is properly maintained and that the refuge rules have been enforced. It is a lovely refuge.—Survey comment from visitor to Stewart B. McKinney National Wildlife Refuge.



Stewart B. McKinney National Wildlife Refuge.
Photo credit: U.S. Fish and Wildlife Service.

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Acknowledgments

This study was commissioned by the U.S. Fish and Wildlife Service Division of Visitor Services and Communications Headquarters Office, Arlington, Virginia. The study design and survey instrument were developed collaboratively with representatives from the U.S. Fish and Wildlife Service and researchers from the PASA Branch, U.S. Geological Survey. For their support and input to the study, we would like to thank Kevin Kilcullen, Chief of Visitor Services; Steve Suder, National Transportation Coordinator; Regional Office Visitor Services Chiefs and Transportation Coordinators; and the staff and any volunteers at Stewart B. McKinney NWR who assisted with the implementation of this surveying effort. The success of this effort is largely a result of their dedication to the refuge and its resources as well as to the people who come to explore these unique lands. We also would like to thank the following PASA team members for their hard work throughout the surveying effort, which has included (among *many* things) the arduous tasks of stuffing more than 20,000 envelopes, managing multiple databases, and preparing numerous reports: Shannon Conk, Halle Musfeldt, Phadrea Ponds, Gale Rastall, Margaret Swann, Emily Walenza, and Katie Walters.

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 Stewart B. McKinney 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 Stewart B. McKinney 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 Stewart B. McKinney National Wildlife Refuge

Stewart B. McKinney NWR is comprised of 11 units that stretches across Connecticut's shoreline. Stewart B. McKinney NWR covers over 70 miles and 800 acres of barrier beach, tidal wetland and fragile island habitats. The refuge was originally established in 1972 under the name "Salt Meadow NWR," renamed to the "Connecticut Coastal NWR" in 1984, and finally renamed the "Stewart B. McKinney NWR" in 1987 to honor the late U.S. Congressman's integral role in establishing the refuge.

Stewart B. McKinney NWR was established to provide important resting, feeding and nesting habitat for the many species travelling the Atlantic Flyway. Stewart B. McKinney NWR attracts many species of wading birds, shorebirds, songbirds and terns. Many species use Stewart B. McKinney NWR as a winter habitat, including brants, scoters, American black duck and other waterfowl.

Stewart B. McKinney NWR attracts over 25,000 visitors annually (based on 2008 RAPP database; U.S. Fish and Wildlife Service, 2011, written comm.). Visitors can enjoy environmental education and interpretive programs, fishing, hunting, wildlife observation and photography. Waterfowl hunting is only permitted on the Great Meadows unit of the refuge. Hiking trails give visitors the opportunity to spot great egrets, glossy ibis, snowy egrets, belted kingfishers, osprey, white-tailed deer, red fox, coyote, and red-tailed hawks. Figure 1 displays a map of Stewart B. McKinney NWR. For more information, please visit <http://www.fws.gov/northeast/mckinney/>.



Figure 1. Map of Stewart B. McKinney NWR, courtesy of U.S. Fish and Wildlife Service.

Sampling at Stewart B. McKinney National Wildlife Refuge

A total of 288 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Stewart B. McKinney NWR (table 2). In all, 143 visitors completed the survey for a 62% response rate and $\pm 7\%$ margin of error at the 95% confidence level.¹

Table 2. Sampling and response rate summary for Stewart B. McKinney NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	9/11/2010 to 9/25/2010	Great Meadows Unit Salt Meadow Unit	128	46	53	65%
2	7/1/2011 to 7/16/2011	Chimon Island Outer Island Unit Milford Point Unit Westbrook/Salt Meadow Unit	160	11	90	60%
Total			288	57	143	62%

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 Stewart B. McKinney 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 (81%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants and their habitat (91%). 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

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).

manages refuges and why. Compared to other public lands, many visitors feel that refuges provide a unique recreation experience (81%; see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System. More than half of visitors to Stewart B. McKinney NWR had been to at least one other National Wildlife Refuge in the past year (55%), with an average of 5 visits to other refuges during the past 12 months.

Visiting This Refuge

Some surveyed visitors (44%) had only been to Stewart B. McKinney NWR once in the past 12 months, while most had been multiple times (56%). These repeat visitors went to the refuge an average of 17 times during that same 12-month period. Visitors used the refuge during only one season (59%), during multiple seasons (26%), and year-round (15%).

Most visitors first learned about the refuge from friends/relatives (37%), signs on the highway (19%), or people in the local community (18%; fig. 2). Key information sources used by visitors to find their way to this refuge include previous knowledge (56%), directions from friends/family (18%), or signs on highways (13%; fig. 3).

Most visitors (82%) lived in the local area (within 50 miles of the refuge), whereas 18% were nonlocal visitors. For most local visitors, Stewart B. McKinney NWR was the primary purpose or sole destination of their trip (71%; table 3). For most nonlocal visitors, the refuge was an incidental or spur-of-the-moment stop on a trip taken for other purposes (40%). Local visitors (n = 115) reported that they traveled an average of 11 miles to get to the refuge, while nonlocal visitors (n = 25) traveled an average of 153 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 85% of visitors travelling to Stewart B. McKinney NWR were from Connecticut.

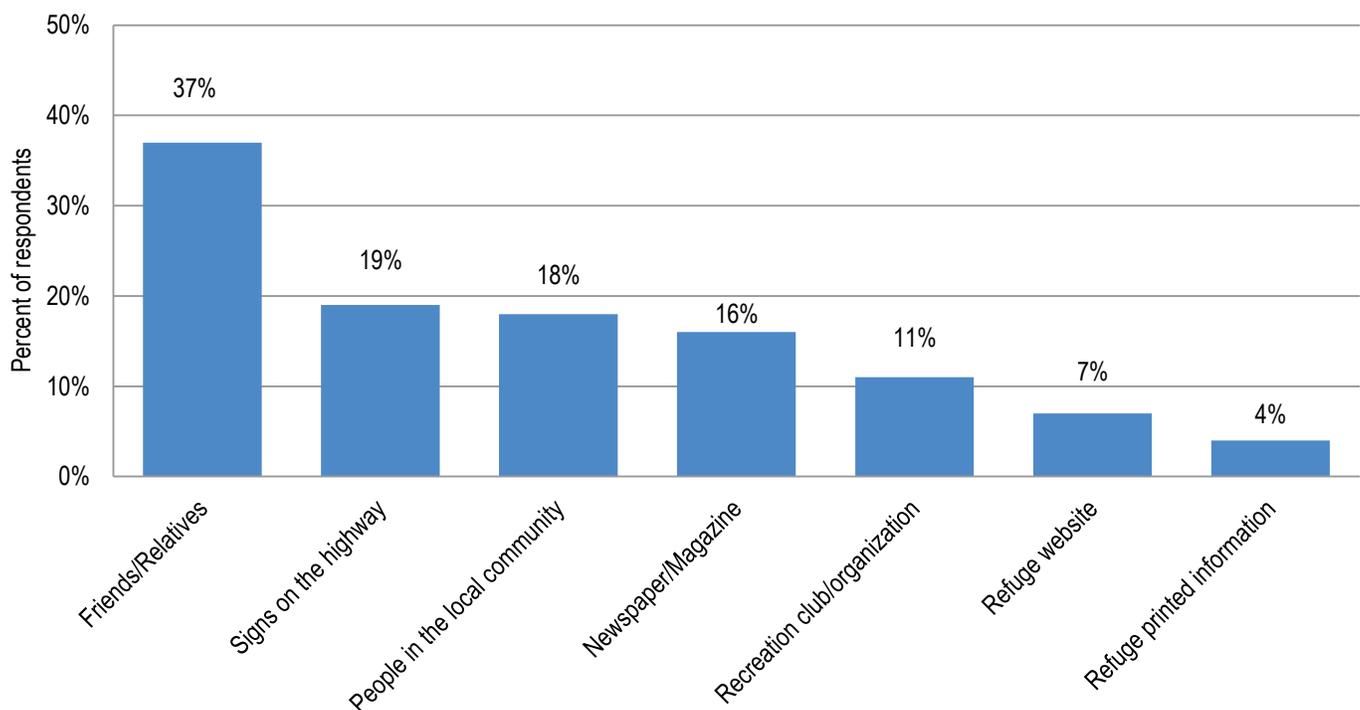


Figure 2. How visitors first learned or heard about Stewart B. McKinney NWR (n = 134).

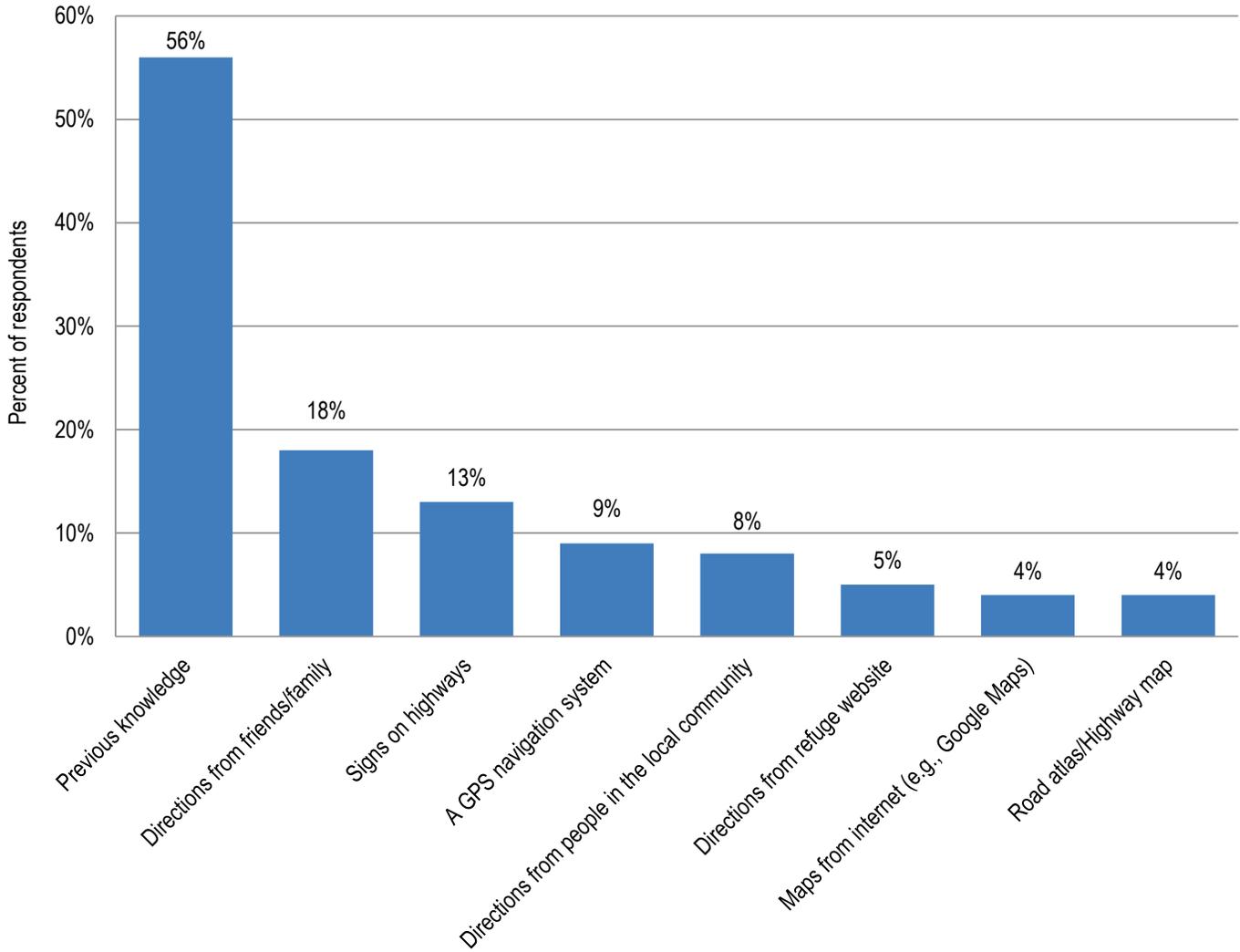


Figure 3. Resources used by visitors to find their way to Stewart B. McKinney NWR during *this* visit (n = 135).

Table 3. Influence of Stewart B. McKinney 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	32%	28%	40%
Local	71%	12%	17%
Total	64%	15%	21%

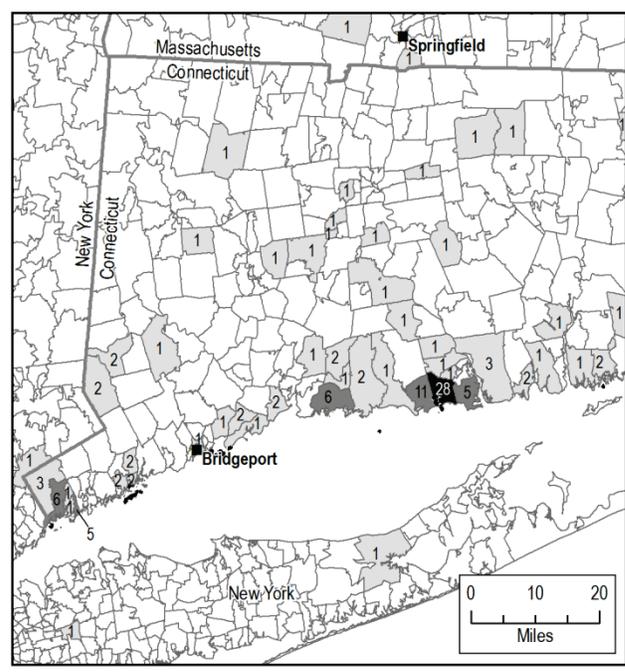
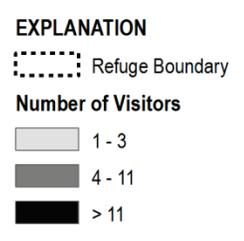


Figure 4. Number of visitors travelling to Stewart B. McKinney NWR by residence. Top map shows residence by state and bottom map shows residence by zip codes near the refuge (n = 142).

Surveyed visitors reported that they spent an average of 3 hours at Stewart B. McKinney 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 1 hour (29%). The key modes of transportation used by visitors to travel around the refuge were private vehicle (50%), boat (37%), and walking/hiking (30%; fig. 5). Most visitors indicated they were part of a group on their visit to this refuge (65%), travelling primarily with family and friends (table 4).

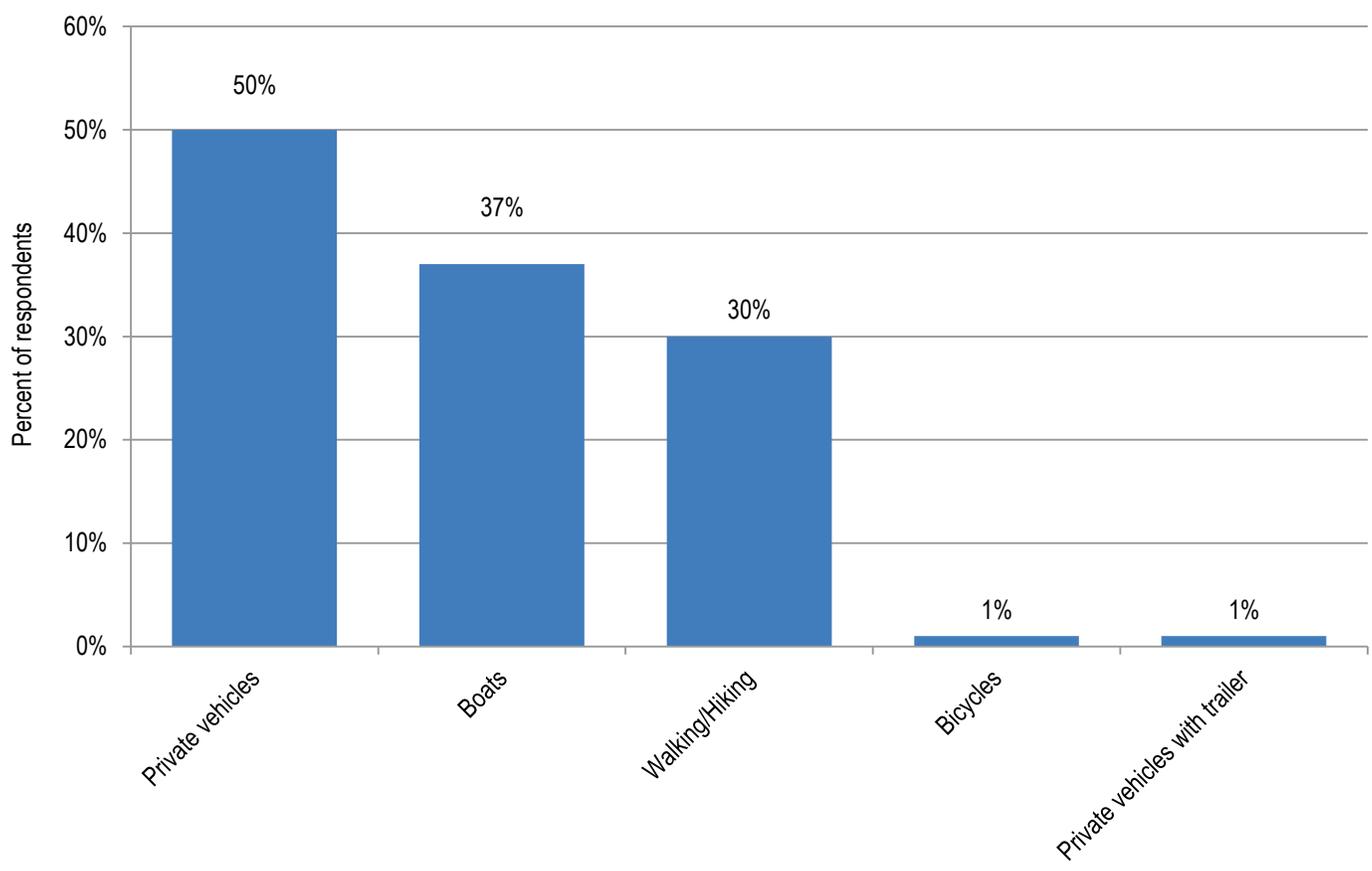


Figure 5. Modes of transportation used by visitors to Stewart B. McKinney NWR during *this* visit (n = 139).

Table 4. Type and size of groups visiting Stewart B. McKinney NWR (for those who indicated they were part of a group, n = 89).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	78%	3	1	4
Commercial tour group	2%	10	3	13
Organized club/School group	13%	18	5	23
Other group type	7%	9	0	9

Surveyed visitors participated in a variety of refuge activities during the past 12 months (fig. 6); the top three activities reported were wildlife observation (62%), hiking (58%), and bird watching (49%). The primary reasons for their most recent visit included hiking (28%), boating (18%), and wildlife observation (14%; fig. 7). Thirty two percent of visitors indicated they went to the visitor center, mostly to ask information of staff/volunteers (66%), stop to use the facilities (for example, get water, use restroom; 41%), and view the exhibits (30%; fig. 8). However, the refuge does not have a visitor center. It may be that some visitors were referencing the visitor contact station at the Salt Meadow Unit in Westbrook.

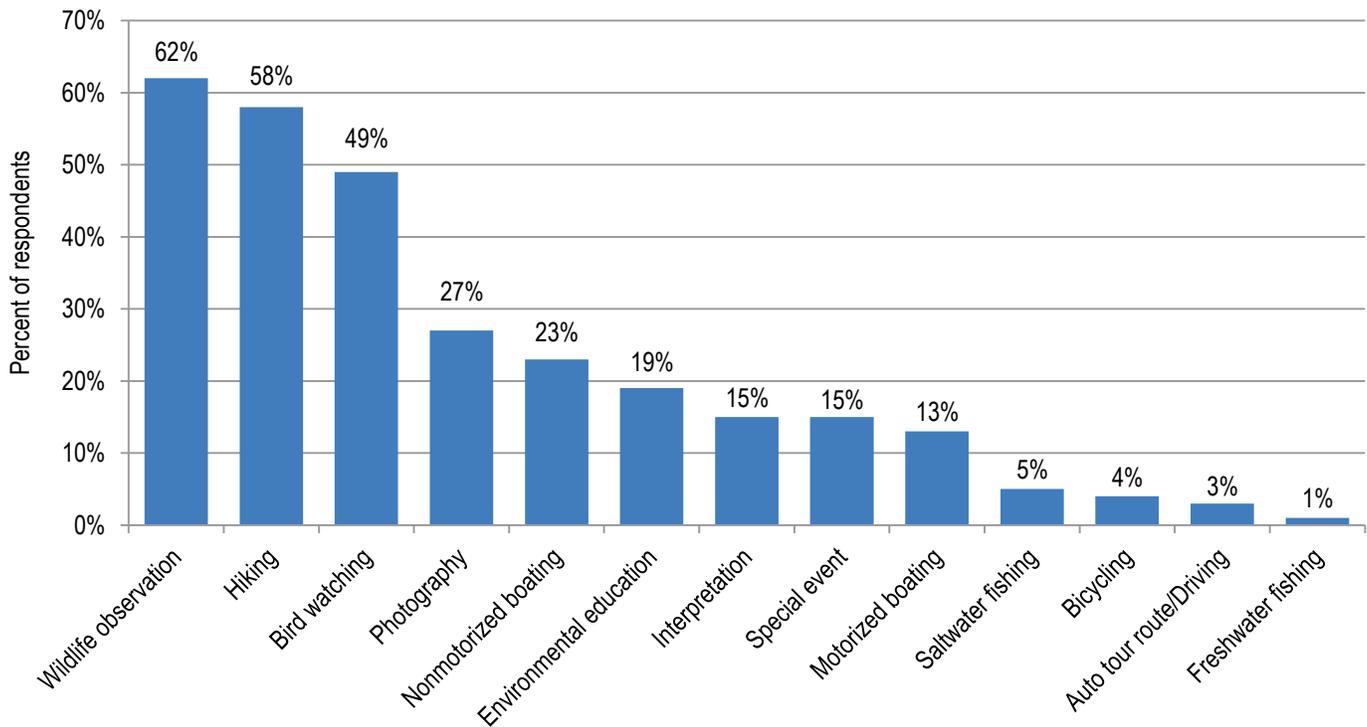


Figure 6. Activities in which visitors participated during the past 12 months at Stewart B. McKinney NWR (n = 137). See Appendix B for a listing of “other” activities.

Visitor Characteristics

Nearly all (99%) surveyed visitors to Stewart B. McKinney 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 49% male with an average age of 55 years and 51% 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).

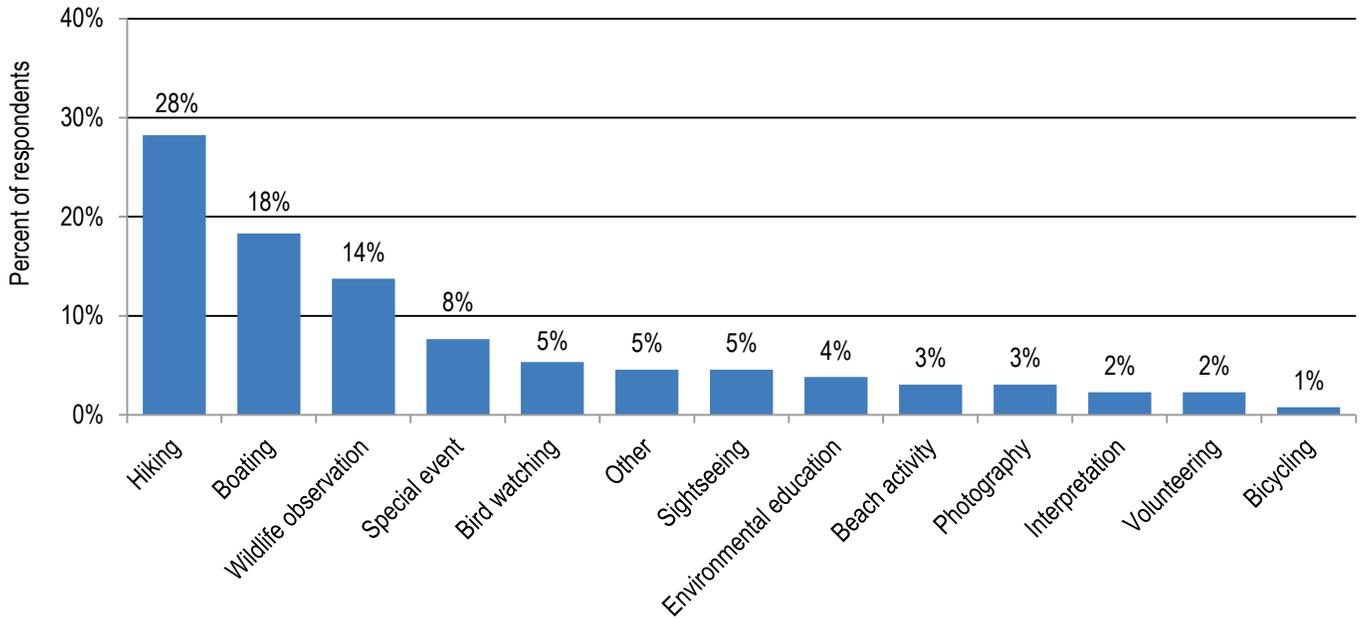


Figure 7. The primary activity in which visitors participated during *this* visit to Stewart B. McKinney NWR (n = 131). See Appendix B for a listing of “other” activities.

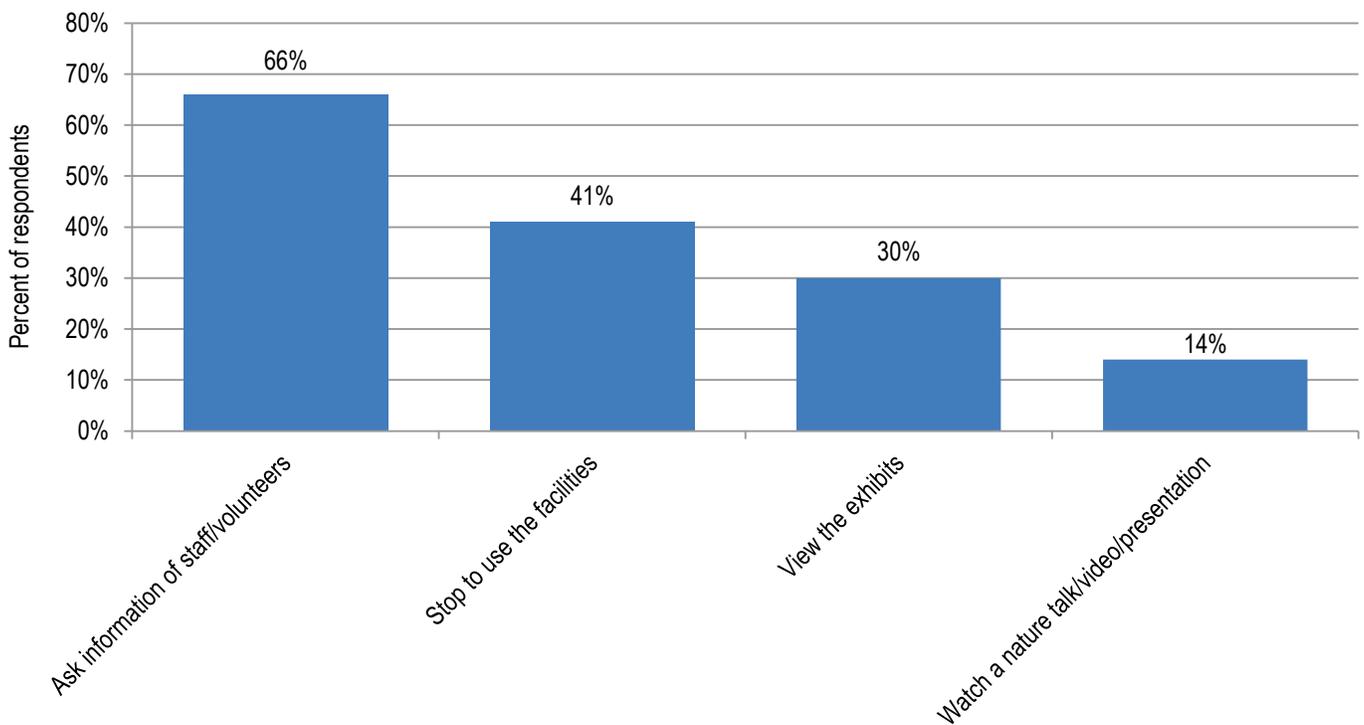


Figure 8. Use of the visitor center at Stewart B. McKinney NWR (for those visitors who indicated they used the visitor center, n = 44).

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, 82% of surveyed visitors to Stewart B. McKinney NWR indicated that they live within the local area. Nonlocal visitors (18%) stayed in the local area, on average, for 3 days. Table 5 shows summary statistics for local and nonlocal visitor expenditures in the local communities and at the refuge, with expenditures reported on a per person per day basis. ***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 \$54 per person per day and local visitors spent an average of \$28 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 Stewart B. McKinney NWR expressed in dollars per person per day.

Visitors	n ¹	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	18	\$31	\$54	\$57	\$0	\$175
Local	69	\$10	\$28	\$43	\$0	\$240

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 Stewart B. McKinney NWR were as follows (fig. 9):

- 89% were satisfied with the recreational activities and opportunities,
- 82% were satisfied with the information and education about the refuge and its resources,
- 86% were satisfied with the services provided by employees or volunteers, and
- 92% were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

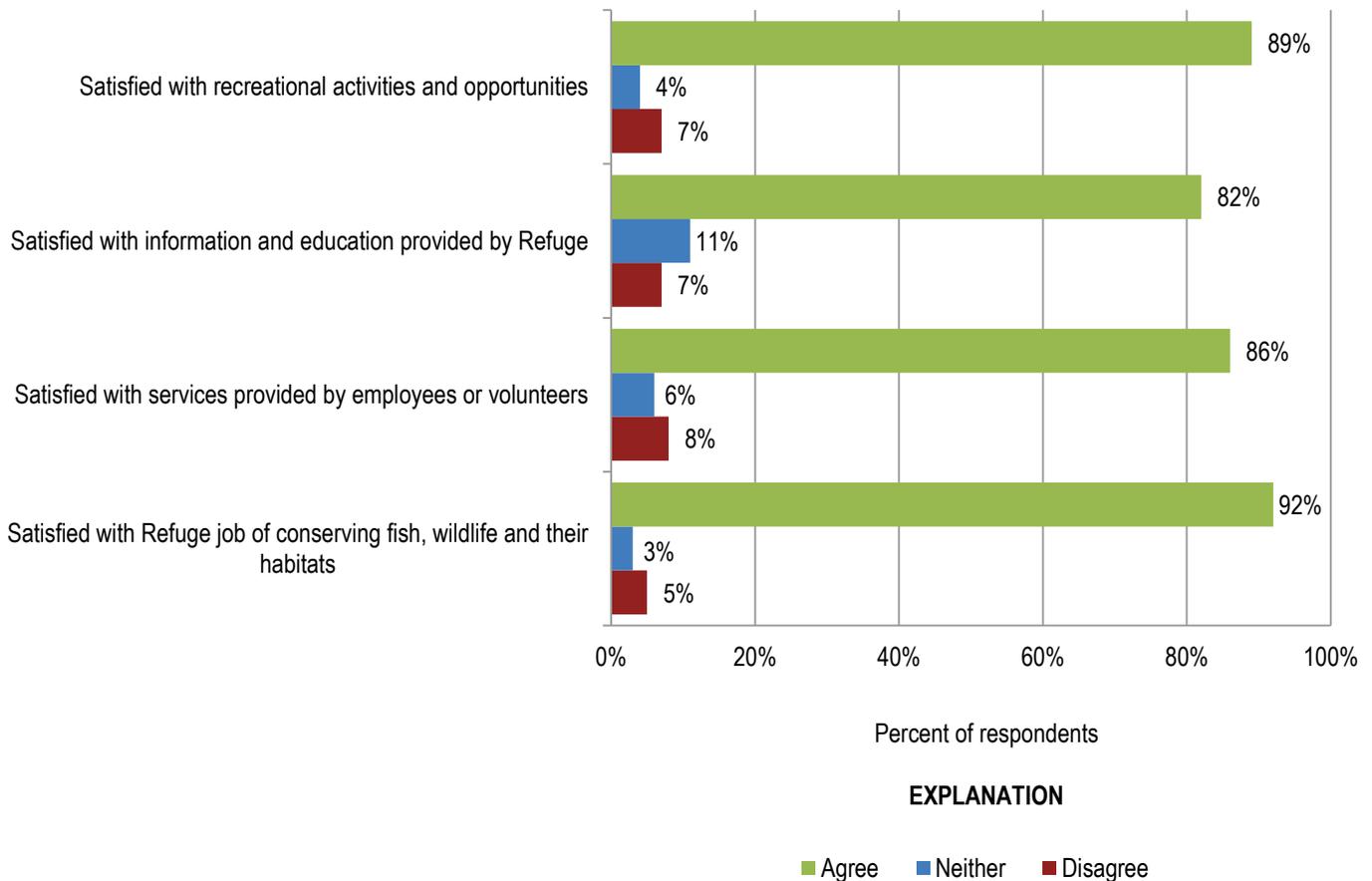


Figure 9. Overall satisfaction with Stewart B. McKinney NWR during this visit (n ≥ 125).

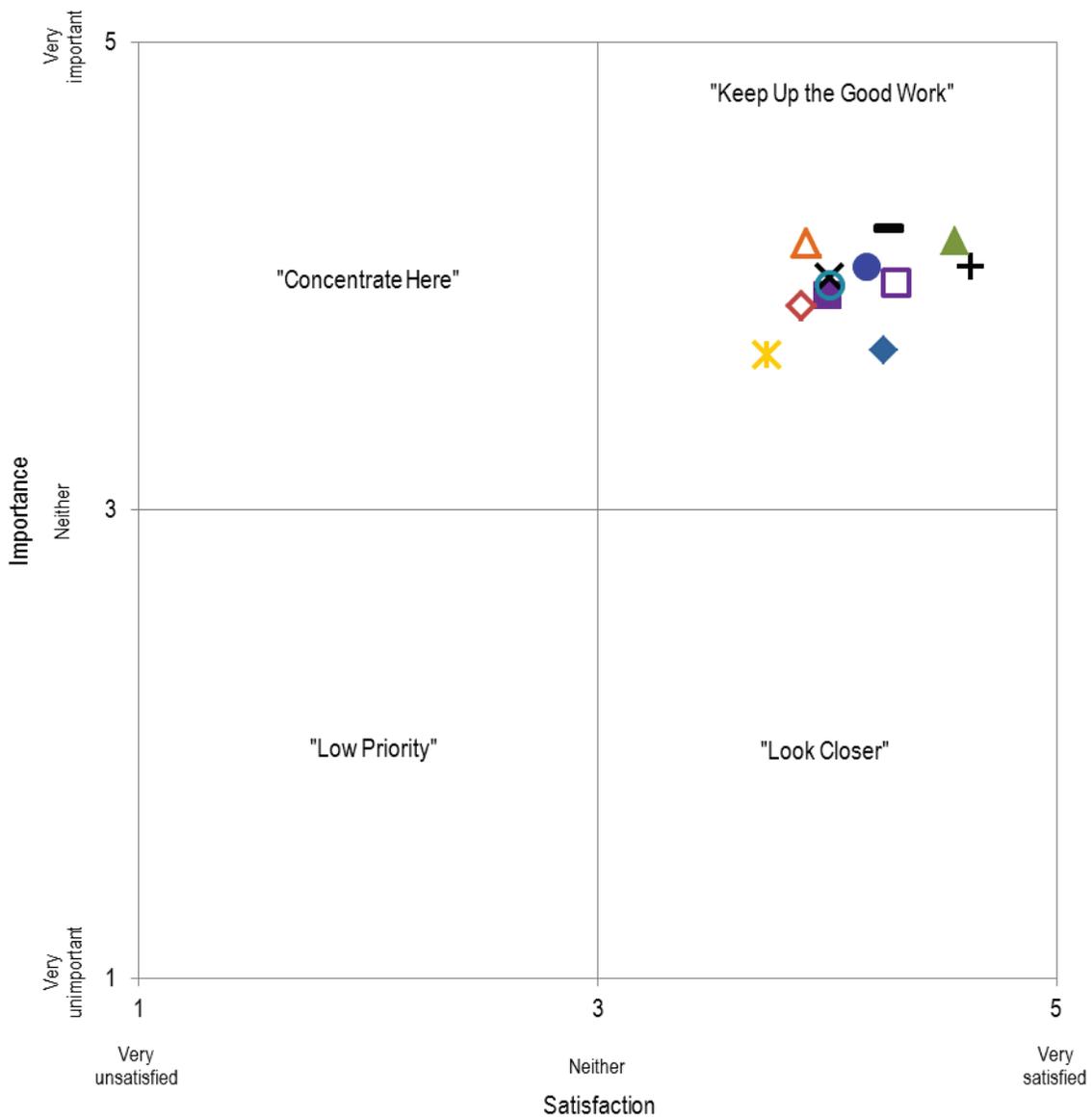
Importance/Satisfaction Ratings

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 Stewart B. McKinney 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.

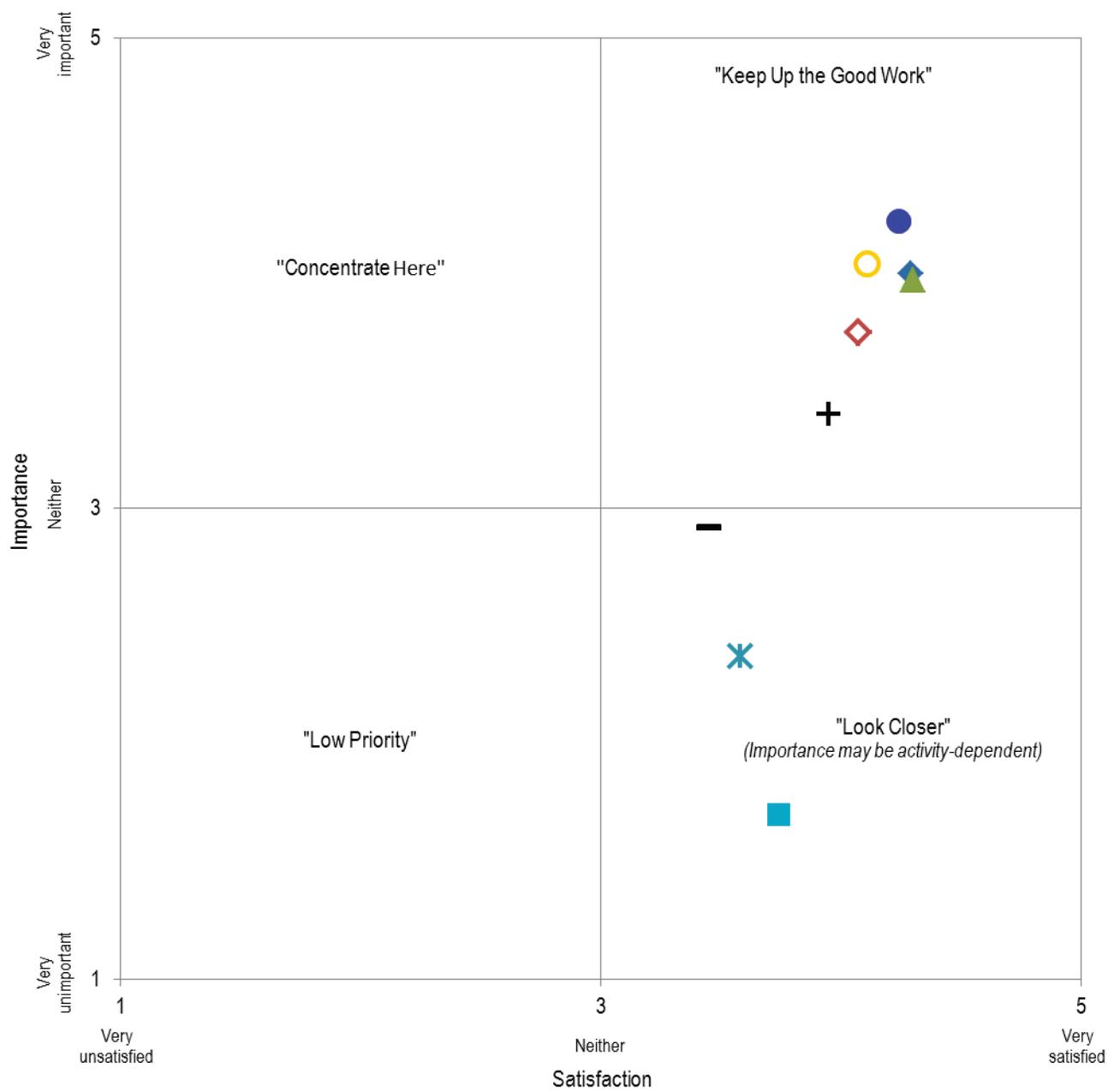
Figures 10-12 depict surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at Stewart B. McKinney NWR, respectively. All refuge services and facilities fell in the "Keep Up the Good Work" quadrant (fig. 10). Nearly all refuge recreational opportunities fell in the "Keep Up the Good Work" quadrant except hunting, fishing, and bicycling opportunities, which fell into the "Look Closer" quadrant (fig. 11). The average importance of these activities in the "Look Closer" quadrant may 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. All transportation-related features fell in the "Keep Up the Good Work" quadrant (fig. 12).



EXPLANATION

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

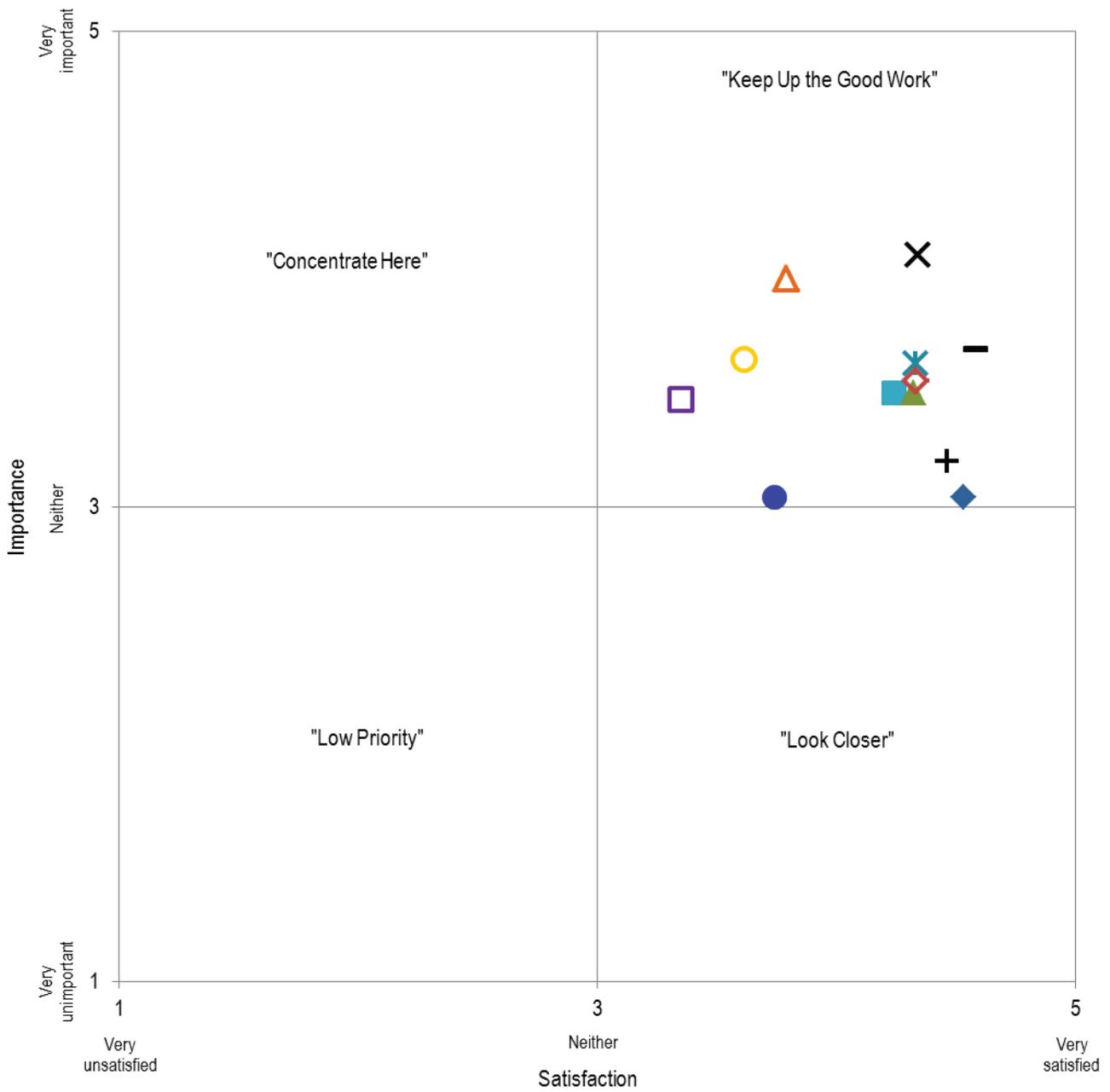
Figure 10. Importance-satisfaction ratings of services and facilities provided at Stewart B. McKinney NWR.



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 Stewart B. McKinney NWR.



EXPLANATION

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

Figure 12. Importance-satisfaction ratings of transportation-related features at Stewart B. McKinney 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 Stewart B. McKinney 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 Stewart B. McKinney 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; and
- a boat that goes to different points on Refuge waterways.

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

When asked about using alternative transportation at Stewart B. McKinney NWR specifically, 28% of visitors indicated they were unsure whether it would enhance their experience; however, some visitors thought alternative transportation would enhance their experience (16%) and others thought it would not (56%).

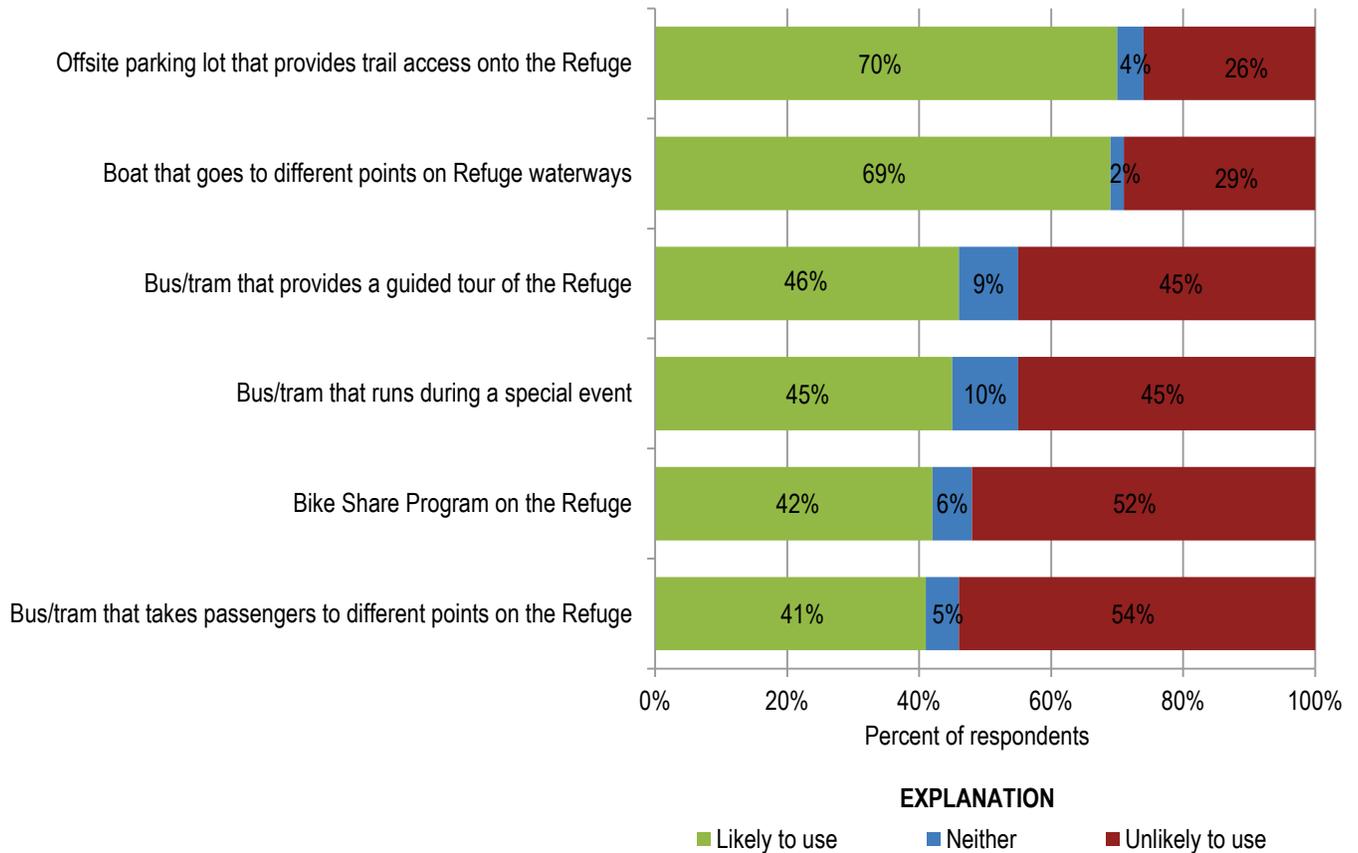


Figure 13. Visitors’ likelihood of using alternative transportation options at national wildlife refuges in the future (n ≥ 128).

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 Stewart B. McKinney 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;”
- “I stay well-informed about the effects of climate change;” and
- “My experience would be enhanced if the Refuge provides information about how I can help address climate change effects.”

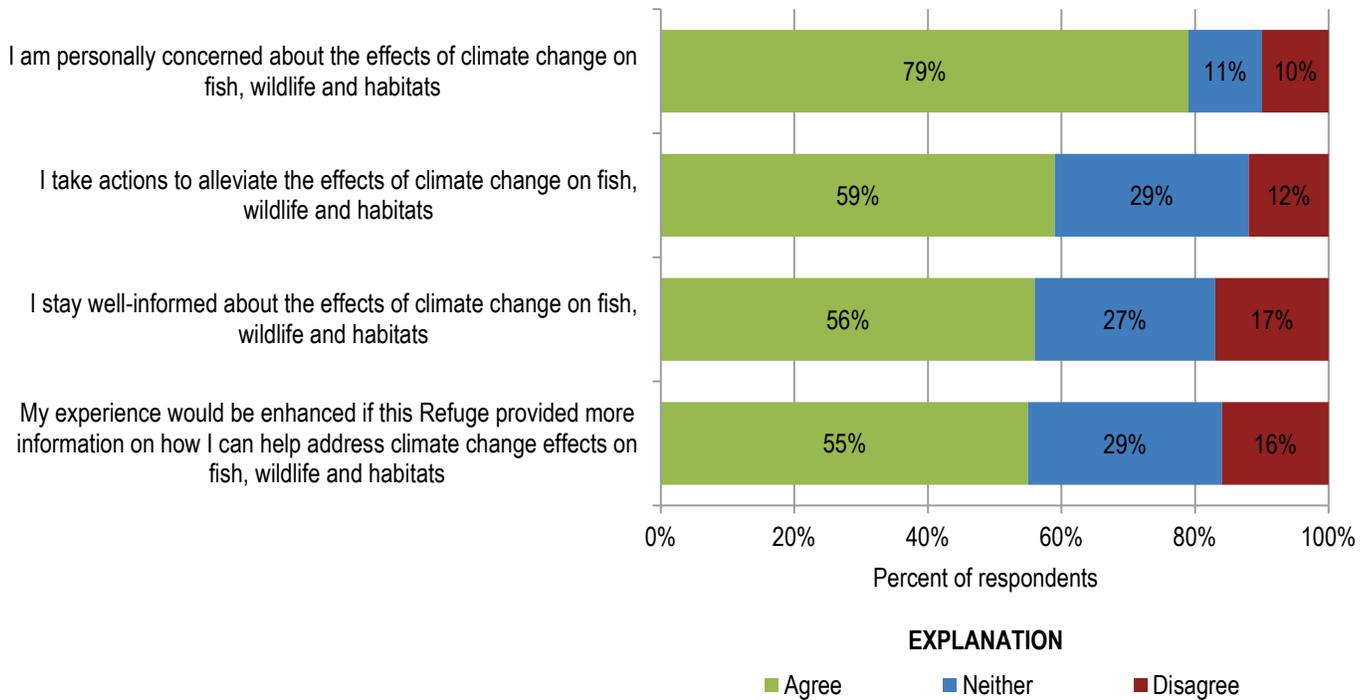


Figure 14. Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 129).

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

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

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 over half of visitors (55%) indicated that their experience would be enhanced if Stewart B. McKinney 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.

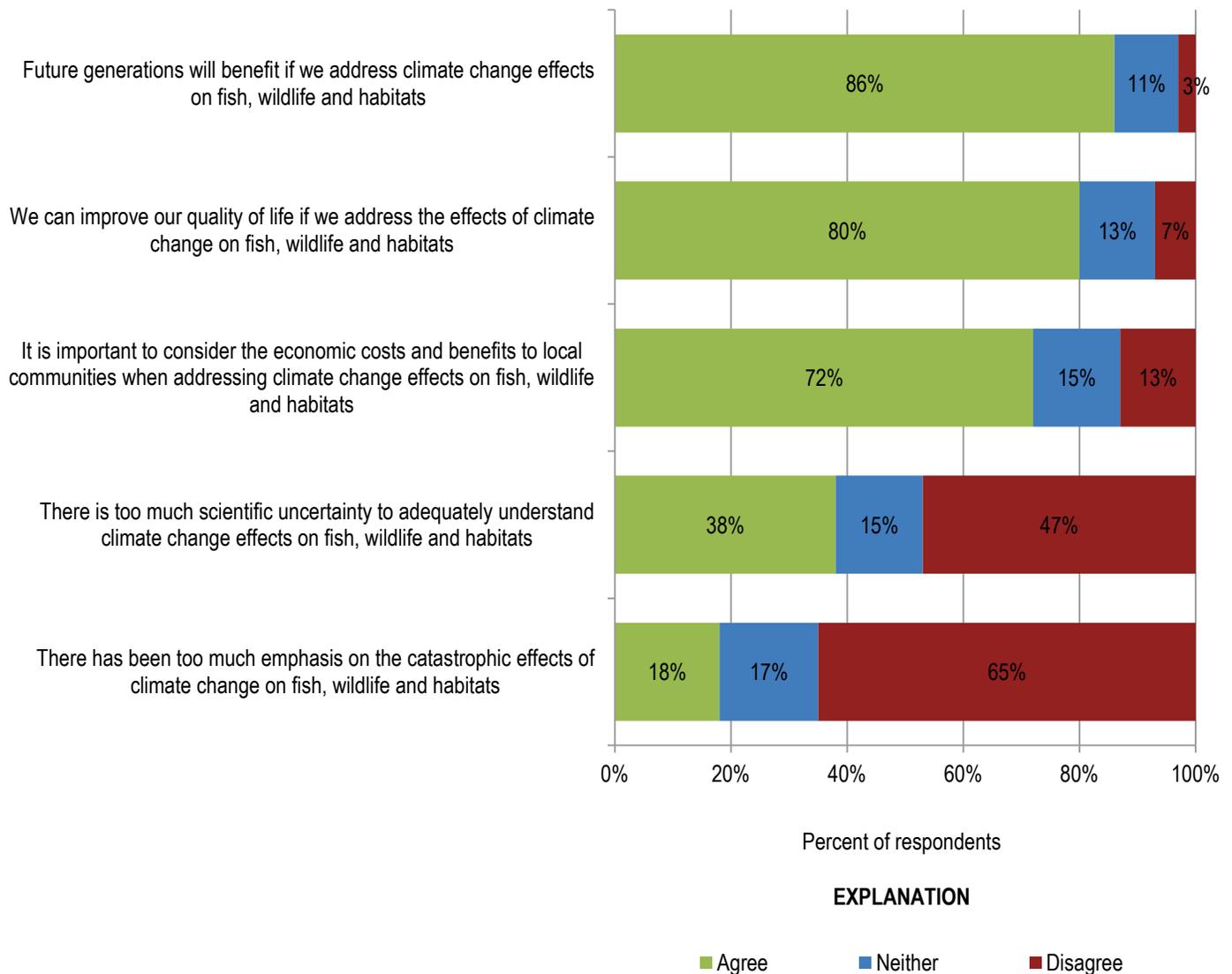


Figure 15. Visitors’ beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 129).

Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to Stewart B. McKinney 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"/> 58% Hiking | <input type="checkbox"/> 19% Environmental education (for example, classrooms or labs, tours) |
| <input type="checkbox"/> 0% Upland/Small-game hunting | <input type="checkbox"/> 4% Bicycling | |
| <input type="checkbox"/> 0% Migratory bird/Waterfowl hunting | <input type="checkbox"/> 3% Auto tour route/Driving | <input type="checkbox"/> 15% Special event (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 62% Wildlife observation | <input type="checkbox"/> 13% Motorized boating | |
| <input type="checkbox"/> 49% Bird watching | <input type="checkbox"/> 23% Nonmotorized boating (including canoes/kayaks) | <input type="checkbox"/> 10% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 1% Freshwater fishing | | |
| <input type="checkbox"/> 5% Saltwater fishing | <input type="checkbox"/> 15% Interpretation (for example, exhibits, kiosks, videos) | <input type="checkbox"/> 0% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 27% 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?

- 68% No
- 32% Yes → If yes, what did you do there? (Please mark **all that apply.**)
- | | |
|--|---|
| <input type="checkbox"/> 2% Visit the gift shop or bookstore | <input type="checkbox"/> 14% Watch a nature talk/video/presentation |
| <input type="checkbox"/> 30% View the exhibits | <input type="checkbox"/> 41% Stopped to use the facilities (for example, get water, use restroom) |
| <input type="checkbox"/> 66% Ask information of staff/volunteers | <input type="checkbox"/> 16% 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	
<input type="checkbox"/> 32%	<input type="checkbox"/> 71%	<input type="checkbox"/> 64%	It was the primary purpose or sole destination of my trip.
<input type="checkbox"/> 28%	<input type="checkbox"/> 12%	<input type="checkbox"/> 15%	It was one of many equally important reasons or destinations for my trip.
<input type="checkbox"/> 40%	<input type="checkbox"/> 17%	<input type="checkbox"/> 21%	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 153 number of miles

Local 11 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?

35% No (skip to question #9)

65% Yes → What **type of group** were you with on your visit? (Please mark **only one**.)

78% Family and/or friends

13% Organized club or school group

2% Commercial tour group

7% Other (please specify) See Appendix B

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

5 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**.)

37% Friends or relatives

7% Refuge website

19% Signs on highway

3% Other website (please specify) See Appendix B

11% Recreation club or organization

0% Television or radio

18% People in the local community

16% Newspaper or magazine

4% 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**.)

34% Spring
(March-May)

82% Summer
(June-August)

50% Fall
(September-November)

15% Winter
(December-February)

11. How many times have you visited...

...this Refuge (including this visit) in the last 12 months? 10 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"/> 50% | Private vehicle without a trailer | <input type="checkbox"/> 0% | Refuge shuttle bus or tram | <input type="checkbox"/> 4% | Bicycle |
| <input type="checkbox"/> 1% | Private vehicle with a trailer
(for boat, camper or other) | <input type="checkbox"/> 0% | Motorcycle | <input type="checkbox"/> 30% | Walk/Hike |
| <input type="checkbox"/> 0% | Commercial tour bus | <input type="checkbox"/> 0% | ATV or off-road vehicle | <input type="checkbox"/> 3% | Other (<i>please specify below</i>) |
| <input type="checkbox"/> 0% | Recreational vehicle (RV) | <input type="checkbox"/> 37% | Boat | <u>See Appendix B</u> | |
| | | <input type="checkbox"/> 0% | Wheelchair or other mobility aid | | |

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

- | | | | |
|------------------------------|--|------------------------------|---|
| <input type="checkbox"/> 13% | Signs on highways | <input type="checkbox"/> 5% | Directions from Refuge website |
| <input type="checkbox"/> 9% | A GPS navigation system | <input type="checkbox"/> 8% | Directions from people in community near this Refuge |
| <input type="checkbox"/> 4% | A road atlas or highway map | <input type="checkbox"/> 18% | Directions from friends or family |
| <input type="checkbox"/> 4% | Maps from the Internet (for example,
MapQuest or Google Maps) | <input type="checkbox"/> 56% | Previous knowledge/I have been to this Refuge before |
| | | <input type="checkbox"/> 7% | 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"/> 49%	<input type="checkbox"/> 5%	<input type="checkbox"/> 5%	<input type="checkbox"/> 23%	<input type="checkbox"/> 18%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 39%	<input type="checkbox"/> 13%	<input type="checkbox"/> 6%	<input type="checkbox"/> 18%	<input type="checkbox"/> 24%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 38%	<input type="checkbox"/> 8%	<input type="checkbox"/> 8%	<input type="checkbox"/> 24%	<input type="checkbox"/> 22%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 23%	<input type="checkbox"/> 6%	<input type="checkbox"/> 2%	<input type="checkbox"/> 31%	<input type="checkbox"/> 38%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 37%	<input type="checkbox"/> 8%	<input type="checkbox"/> 10%	<input type="checkbox"/> 23%	<input type="checkbox"/> 22%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 22%	<input type="checkbox"/> 4%	<input type="checkbox"/> 5%	<input type="checkbox"/> 23%	<input type="checkbox"/> 46%
...some other alternative transportation option? (<i>please specify</i>) <u>See Appendix B</u>	<input type="checkbox"/> 7%	<input type="checkbox"/> 0%	<input type="checkbox"/> 7%	<input type="checkbox"/> 21%	<input type="checkbox"/> 64%

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

- 16% Yes 56% No 28% 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
20%	16%	20%	30%	14%	Surface conditions of roads	1%	1%	5%	27%	65%	NA
16%	16%	18%	33%	17%	Surface conditions of parking areas	4%	2%	7%	18%	69%	NA
17%	4%	23%	25%	31%	Condition of bridges	0%	10%	10%	19%	61%	NA
6%	8%	3%	41%	42%	Condition of trails and boardwalks	4%	6%	1%	28%	61%	NA
15%	4%	12%	44%	25%	Number of places for parking	2%	6%	6%	27%	59%	NA
21%	7%	30%	32%	10%	Number of places to pull over along Refuge roads	0%	10%	39%	19%	32%	NA
16%	5%	22%	24%	33%	Safety of driving conditions on Refuge roads	2%	4%	16%	14%	63%	NA
17%	1%	17%	27%	38%	Safety of Refuge road entrances/exits	3%	1%	3%	21%	72%	NA
15%	4%	16%	36%	30%	Signs on highways directing you to the Refuge	12%	12%	15%	24%	36%	NA
15%	4%	22%	34%	24%	Signs directing you around the Refuge roads	4%	2%	18%	16%	59%	NA
10%	7%	6%	32%	45%	Signs directing you on trails	8%	11%	11%	33%	37%	NA
16%	10%	18%	28%	29%	Access for people with physical disabilities or who have difficulty walking	8%	21%	24%	22%	25%	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)?

82% Yes

18% No → How much time did you spend **in local communities** on this trip?

 1 number of hours OR 5 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 Local Communities & at this Refuge <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?

 2 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
24%	32%	16%	7%	10%	0%	7%	1%	0%	1%	2%

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	100%	About right	0%	Too high	0%	Far too high	95%	Did not pay a fee <i>(skip to Section 4)</i>
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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.

0%	Strongly disagree	0%	Disagree	14%	Neither agree or disagree	57%	Agree	29%	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%	5%	5%	40%	49%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	2%	5%	11%	36%	47%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	2%	6%	6%	32%	54%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	3%	2%	4%	33%	59%	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
8%	10%	18%	34%	30%	Availability of employees or volunteers	1%	7%	16%	20%	57%	NA
3%	5%	15%	37%	40%	Courteous and welcoming employees or volunteers	1%	0%	11%	11%	77%	NA
5%	3%	9%	38%	45%	Knowledgeable employees or volunteers	0%	3%	9%	16%	72%	NA
4%	4%	13%	44%	34%	Printed information about this Refuge and its resources (for example, maps and brochures)	1%	12%	17%	23%	46%	NA
5%	4%	15%	42%	34%	Informational kiosks/displays about this Refuge and its resources	2%	10%	15%	31%	42%	NA
5%	5%	13%	35%	42%	Signs with rules/regulations for this Refuge	2%	6%	15%	29%	49%	NA
4%	5%	17%	46%	28%	Exhibits about this Refuge and its resources	0%	16%	14%	34%	36%	NA
6%	2%	19%	42%	31%	Environmental education programs or activities	3%	4%	25%	28%	41%	NA
9%	5%	22%	40%	24%	Visitor Center	4%	10%	27%	24%	34%	NA
5%	2%	7%	42%	44%	Convenient hours and days of operation	5%	2%	13%	23%	58%	NA
3%	3%	16%	34%	44%	Well-maintained restrooms	5%	9%	20%	19%	46%	NA
4%	5%	12%	46%	33%	Wildlife observation structures (decks, blinds)	1%	6%	10%	27%	56%	NA
2%	5%	18%	41%	34%	Bird-watching opportunities	1%	3%	14%	30%	52%	NA
4%	4%	11%	47%	35%	Opportunities to observe wildlife other than birds	1%	7%	17%	31%	44%	NA
4%	6%	16%	39%	36%	Opportunities to photograph wildlife and scenery	0%	2%	15%	35%	49%	NA
68%	4%	19%	5%	3%	Hunting opportunities	4%	0%	52%	7%	37%	NA
42%	14%	19%	14%	10%	Fishing opportunities	5%	5%	43%	23%	25%	NA
6%	3%	9%	29%	54%	Trail hiking opportunities	3%	3%	12%	30%	52%	NA
9%	9%	21%	22%	39%	Water trail opportunities for canoeing or kayaking	3%	6%	20%	24%	47%	NA
24%	8%	34%	18%	15%	Bicycling opportunities	5%	5%	52%	17%	21%	NA
13%	7%	35%	16%	28%	Volunteer opportunities	1%	4%	35%	19%	41%	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?

81% Yes

19% No

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

91% Yes

9% No

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

81% Yes

19% 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.	5%	5%	11%	29%	50%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	2%	5%	14%	29%	51%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	24%	24%	15%	26%	12%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	2%	15%	27%	33%	23%
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%	12%	15%	48%	25%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	2%	9%	29%	35%	24%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	36%	29%	17%	12%	6%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	2%	2%	11%	30%	56%
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.	5%	11%	29%	38%	17%

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?

99% Yes 1% No → If not, what is your home country? See Figure 4 in Report

2. Are you? 49% Male 51% Female

3. In what year were you born? 1958 (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%			13%				44%				43%			

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.**)*

- 5% American Indian or Alaska Native
 1% Black or African American
 97% White
 1% 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"/> 3% Less than \$10,000 | <input type="checkbox"/> 10% \$35,000 - \$49,999 | <input type="checkbox"/> 17% \$100,000 - \$149,999 |
| <input type="checkbox"/> 3% \$10,000 - \$24,999 | <input type="checkbox"/> 17% \$50,000 - \$74,999 | <input type="checkbox"/> 9% \$150,000 - \$199,999 |
| <input type="checkbox"/> 7% \$25,000 - \$34,999 | <input type="checkbox"/> 21% \$75,000 - \$99,999 | <input type="checkbox"/> 12% \$200,000 or more |

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

 19 number of trips

Thank you for completing the survey.

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

See Appendix B for Comments

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Appendix B: Visitor Comments to Open-Ended Survey Questions for Stewart B. McKinney 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
"A Walk on the Wild Side"	6
Animal show	1
Autumn Equinox Celebration	1
Land Trust Awareness	1
Seawood Workshop	2
Seawood Workshop, Family Day	1
Tour of Calf Island	1
USFWS Tour	1
Volunteer - planting trees	1
Volunteer picnic	1
Walk on the Wildside	1
Wild Animals	1
Wildlife Special Events	1
Wildlife tour	1
Total	20

Other Activity	Frequency
Beach use	1
Calming, recreational	1
Lunch stop	1
Marriage proposal	1
Nostalgia	1
Picnic	1
Reading	1
Sightseeing	1
Swimming, sail boating	1
Swimming, walking the beach	1
Visiting an historic site	1
Volunteering	2
Volunteering, help with clean up	1
Total	14

2 nd Other Activity	Frequency
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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
Animal show	2
Beach	1
Beach use	2

Docent	1
Enjoying the beauty	1
Gave workshop on seaweeds	1
Just visiting	2
Land trust awareness	1
Lunch stop	1
Marriage proposal	1
Peacefulness	1
Recreational	2
Revisit after 63 years	1
Seawood Workshop	3
Sightseeing	1
To show someone that had never been to it	1
Visiting an historic site	1
Volunteer	2
Total	25

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

Other Visitor Center Activity	Frequency
Animals	1
I gave a presentation to a conservation group.	1
I stored a few things for the program.	1
Lunch	1
Picnic	1

Sign in	1
The Visitor Center at this refuge has none of the above. It does have a trail map and a visitor log book, both of which we have used.	1
Total	7

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
Docents-in-Training	1
NWR sponsored	1
Refuge-sponsored hiking tour	1
Special visit to Calf Island	1
USFWS Tour	1
Volunteer	1
Total	6

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

Other Website	Frequency
Email	1
I was an intern for a summer and found it posted online.	1
Total	2

Other Ways Heard about This Refuge	Frequency
"Friends of" Group	1
Boating in the Thimble Islands	1
Book: "Our Federal Lands"	1
I heard about it originally from a teacher in the state university system and a UConn colleague; I was contacted by Friends of Outer Island.	1
I was on an island tour.	1
Library	1
Literature in motel	1
Program	1
School	1
Southern CT University	1
Total	10

Survey Section 2

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

Other Forms of Transportation	Frequency
FWS boat	1
Water taxi	3
Total	4

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

Other Ways Found This Refuge	Frequency
Accessed it from the water	1
Commercial water taxi	1
Directions from tour organizer	1
I called the refuge number that was listed in the newspaper.	1
Kayak trip	1
Nautical chart	1
Newspaper article	2
Part of GLT Tour	1
Total	9

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
Bike trails	1
Boat	1
Canoe/kayak	1
Golf cart to get down and up steep trails	1
Kayak	6
Ski/snowshoe share	1
Trail segway	1
Walk/bike	1
Walking	1

Total

15

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 = 25)

A weekly boat to the island for the general public would be nice; could charge a small fee.

I don't recall there being any signs from the highways directing people to the refuge (Salt Meadow in Westbrook, CT). Hiking trails aren't marked and there is no map showing trails that I recall. I know the trails from having worked there. Perhaps I missed the map.

I wish we could walk a trail all around the island.

If grass is cut lower, I feel I'd be more likely to use since the tick problem would be easier to avoid.

It may be beneficial to extend areas that are designed for visitors with physical disabilities.

It's an island!

Most of the paths are wide enough and clear enough for my child who has a physical disability.

No place for roads or parking on this island, but walking access all the way around its perimeter is desirable.

No transportation offered on a regular basis. The refuge is a small island. I might visit the island occasionally, if boat transportation is available.

On an island refuge, it is important that there are easily accessible mooring spots for visitors with small motor boats. The dock should have proper cleats and tie-up equipment. The dock should be enlarged to handle a large group of visitors. The dock should be equipped with fenders for safe mooring.

Outer Island is accessible by water taxi, boat or kayak. The water taxi picks up every hour, or by special call, which is fine by me, as long as it is partially funded by taxes from other islands.

Parts of Stewart B. McKinney National Wildlife Refuge are only accessible via water taxi, including the Stony Creek part. I was there once and would like to return someday.

The access road and parking area have been improved in the past few years and are quite satisfactory for the traffic at this refuge.

The only sign on the trail was from skunks, but nothing else. More info on signs would be great (e.g., birds, wolves, flowers, whatever might be seen on the trail or in the woods along it).

The parking lot is too small. Parking along the road and the parking lot inside the refuge is not ample enough.

The refuge has been recently opened, so many areas are under construction.

The refuge was an island, so most of these items do not seem applicable.

The trail down to the salt water marsh land was too steep to get down and back. Of course, this is nature, but some aid such as a different, gentler path accessible by golf cart (type) vehicle would have been very nice.

There are only 100 yards of trails on Outer Island. Recently installed metal handrails were an unnecessary addition/cost and will require serious maintenance in the salt air.

There is a raft which a boat could use to tie up to for a 1/2 hour - a small boat under say 30 feet could use this. Only docents use it and hoard it, acting like they have the right to tie up and no one else. Well, heck with that. This should be available to everyone. Their protestations otherwise are hollow. Typical entitlement attitude of lightly empowered people.

This is a fragmented refuge that is made-up of tiny parcels and islands and it would be a complete waste of taxpayer money to contemplate publicly funded transportation facilities of any sort.

This is an island without parking or a road. The survey does not apply to Outer Island.

This is an island, where you park at the beach at your own risk.

This refuge is an incredible place that all people should be able to access. Unfortunately, the trails are narrow and not conducive to people with disabilities. With a little work, this access issue could be solved.

We tried to walk the trails at this refuge on our first visit with a stroller, which was very difficult. Trails are not marked and not easy to hike.

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 = 47)

Bathrooms need to be improved with water.

Courtesy binoculars for volunteers would be appreciated.

Encourage more activities designed to provide nature and wildlife information, especially for children.

Great facility.

I am pleased to learn of a place like Stewart B. McKinney - any land that can be preserved for public nature enjoyment is very important.

I can't wait to see the inside of the log cabin that Eleanor Roosevelt often stayed in. The work done so far is very impressive.

I love Outer Island, but the last time I was there, there was no running water for the house. Also, when the safety black fence was put up, they cut off some of the access to the rocks and also to the vernal pool.

I rarely see the staff, but when I do they are friendly. They could use the buildings to display more information, or at least put up plaques about the history.

I really wish that we could walk around the whole island. Parts are blocked off that prevented us from circumnavigating the island. This was

disappointing. The volunteers are very knowledgeable and clearly love this refuge dearly.

I wasn't aware of the community of volunteer opportunities at Outer Island. The volunteers there were wonderful.

I went to see the cabin where Mrs. Roosevelt visited 63 years ago, when I was 8 years old. One park ranger from MA was on duty and very helpful. I saw no facilities.

I would appreciate year round access to the islands in the refuge - the public is no longer welcome there.

I'm not sure if this refuge has a Visitor Center or restrooms. If it does, they are not marked well.

It is difficult at this refuge to satisfy visitors because it is so spread out along the coast and most of the property is small islands.

It seems like it is just for hiking, but it is really a very nice place!

It would be nice if the island as a whole were accessible to visitors, even if only driving a guided tour.

Needs a restroom or clean outhouse bad.

No restrooms available at all along the Salt Marsh. Trails were poorly marked (although fairly easy to navigate). No maps available of the refuge onsite. I liked and appreciated the signs explaining local birds one is likely to see along the trail.

Park rangers were very informative, friendly, and helpful. It was a great experience. It was also a beautiful hike.

People do not follow the rules: dog waste, bikes, drinking coffee, and smoking. This should not be! This is a wilderness area, not a public park.

The area that can be visited at this refuge seems very restricted by fences. It is difficult to access some of the other, more interesting spots at this refuge.

The island dock is unusable and is inaccessible to many people. The refuge needs to have a functioning dock.

The island needs a lot of work. The Visitor Center is in disrepair and the educational billboards need work.

The nature exhibit was excellent - turtles and possum (both live and stuffed) - knowledgeable staff.

The observation areas are overbuilt - put rocks off limits and limit fishing options. They have made a beautiful place very unattainable and sterile; shame on them.

The Outer Island is only open if and when volunteers are present, which is not 100% of weekends. As the only publicly owned island in the Thimbles, it would be great if boaters and especially kayakers (the public) could have access anytime when birds are not nesting.

The Outer Island should be open to the public more than just weekends.

The ranger is pleasant and helpful, but appearance is very poor. A uniform should be neat and presentable.

The refuge is accessible only by boat. No boat service is available. My visit was part of a one-time tour sponsored by USFWS.

The refuge is great, but needs marketing. The interns were knowledgeable if you asked them questions. The signs on the trail (e.g., "skunks" and "blue crabs") didn't explain much at all. They probably have great literature and more to offer, but I did not see it.

The refuge is not open regular hours, and doesn't provide much. Good bird watching, however.

The refuge looks great. Good to see that the buildings are being kept up and the grounds are nice.

The refuge needs to have a public bathroom with supervision and more places to sit in the shade.

The refuge should offer more wildlife classrooms for family.

The signs leading to the refuge are not visible.

The Stewart B. McKinney National Wildlife Refuge needs to take advantage of its location on the wake zone and institute a canoe/kayak trail. The refuge also needs to allow some mountain biking trails. Finally, the refuge could allow fishing in some designated areas.

The trails were not marked. No maps were given. I asked some young people how to proceed. They said it was a loop. Both of us were over 65. I followed what I thought was an uphill and downhill loop. When we got to a clearing, it was unmarked. We took the easier looking path and got lost into a deep incline near a railroad track that was active.

There are a great group of volunteers known as the "Friends of the Outer Island" who work diligently to make a portion of the refuge available to children and school groups. They need credit and support and less obstructionism from refuge staff. Further, there is no reason for USFWS to prohibit fishing and hunting from portions of the refuge like Outer Island. This is public property and the multiple use concepts are being ignored.

There is a lovely viewing deck on the Menunketesuck River, but there are too many standing trees that block the view.

These answers are based on my needs/experiences. The people were absolutely wonderful! I did not see a restroom. There was no marking. That seems necessary. I couldn't get down the steep trail, so didn't get to see or photograph the birds I was hoping to see. I made some suggestions, but did not want to give the impression that I felt negatively about my experience as it was a great time made so by the people, the ranger and volunteers. :)

They had a meadow that was cut every year. They grow it now so that you can't see when you are walking. Before we used to see birds and rabbits, but now everything is blocked by shrubs.

Unbelievably nice volunteers.

Unfortunately, there were too many mosquitoes to enjoy the refuge.

USFWS should work together more with Friends groups.

We need an outhouse and to get rid of the invasive plants that are taking over the trees and beach on the island. Spray for ticks and black flies. We go there for day trips with friends for recreation and cook on self-contained grills, swim, clam, etc.

We use the refuge for its trails and proximity to our home (3 miles). There have been some modest and welcome improvements to the trails and observation platforms over the years. The buildings have slowly been restored from dilapidated states of repair, but more is needed. The refuge is clearly underfunded, with the management having to cover many divisions/units of the refuge that are scattered across the state. The meadow at the top of Murdoch Hill has overgrown to the point that many bird species, from the Eastern Bluebird to local wild turkeys, cannot live there in any numbers anymore. With the exception of cottontail rabbits, we see fewer wild animals in the refuge now than we do in our own backyard three miles away. In the more than 10 years we have been coming to the refuge to hike, we have yet to meet a staff person of any stripe until the day we met the young man who asked us to participate in the survey. We are not aware of hours when the refuge office or other buildings are open to the public. The refuge has some interesting history tied to Eleanor Roosevelt, who was a frequent visitor to her good friend Esther Lape, who owned the property before she deeded it to the government. None of this is related at the Visitor "Center" (shelter) near the headquarters building. We're told that the local manager is very knowledgeable, but we've never had an opportunity to meet him. The refuge is a jewel in the rough that needs just a bit of polishing to make it shine. We have no reason to believe that anything other than an insufficient budget is to blame.

We visited during the week on a Tuesday in mid-September and all facilities were closed.

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 = 90)

A peaceful place to take a hike with my young boys to see animals that are new to the boys and to have fun in the fresh air.

Active management and wildlife focus.

Anything that preserves the natural habitat for wildlife is important. However, we should keep them available for people to see and enjoy and not put things off limits because they are being preserved. People who love wildlife are not a danger to them. Sometimes, the USFWS feels it's their duty to restrict things needlessly because they feel it's their job.

Beautiful place to hike and observe wildlife and nature. It's free, which helps.

Consistent with their mission, refuges are not tourist traps and are quiet; without too many visitors, they are somewhat pristine, etc.

Except for trails or observation decks, the land is not disturbed. It's important to have protected land.

Good place to walk and bird watch.

Great education program. Good education resources available at the center.

Hands on opportunity to view wildlife in a natural setting, provides educational opportunities, and maintains preservation of natural resources.

Has a wide, groomed trail.

I am very concerned about conserving the environment. The cost of living in the northeast is too high. Advertising and technology are too stressful. I need the peace and quiet of nature.

I don't necessarily think they're unique, but I wouldn't want to see them disappear.

I enjoyed the trail, how it was clearly marked and allowed a wheel chair. It gave access along with providing a wide walking trail. Great lookout point.

I had a peaceful walk in the woods with young children and wife. Thank you.

I love the pristine (non-commercial) quality of refuges. I enjoy visiting unspoiled natural habitats with other folks who also enjoy nature. I also realize that refuges can offer unique educational opportunities for young people. For example, introduction into birding or to activities that instill an understanding of the marine ecosystems. I also see refuges as a place where citizens can volunteer and support the broader USFWS mission.

I think it's important that refuges are federally protected. My state has great state parks, but some states may not have the proper funding to protect them ecologically and maintain them for visitation.

I visited Outer Island in the Thimble Islands. The fact that this is only accessible by boat makes the experience even more unique. Several times I have visited this refuge and have been the only person there! Amazing.

Interesting areas that would not be otherwise available to the public.

It is a beautifully maintained island that is accessible only by boat or kayak.

It is a small refuge and not many people know about it, so it is peaceful and you don't have to fight large groups of people.

It is an island maintained by the wildlife refuge. It is a beautiful place.

It is an uninhabited island.

It is the only island without a "no trespassing" sign.

It is truly representative of the shoreline terrain in this area of CT and therefore gives any visitors from outside the state an excellent glimpse of this part of the U.S. east coast.

It is very quiet and serene there. Many parks are very crowded.

It protects the wildlife, but also lets people enjoy them.

It provides maintenance for a very important coastal marsh area and does a good job of balancing conservation need and public access. The staff is very professional.

It was a fun place to go.

It was beautiful, fun, exciting, and a learning experience. Helpful volunteers. A wonderful day for adults and children.

It's a time of peace and reflection. To enjoy what God has created for us.

It's an island in the sound near New York, and pristine.

It's wonderful to be able to appreciate nature in an atmosphere free of man's motivations toward monetary gains.

Land is primarily left in its natural state except for trails and observing platforms.

Low footprint/impact of facilities and minimal development keeps it wild.

Many of the trees are quite mature and the woods border a brackish marsh. It seems that most places like it in CT have a ton of houses on it.

More opportunities for different activities and learning.

My four-year-old and I are there at least once a week. :)

My trip was not really recreational - the refuge is usually closed to the public, making it a perfect place for migrating and nesting birds.

Natural unspoiled island in Norwalk Sound.

Nature for us to observe.

Not over crowded.

Offers safe trails for hiking.

Open land, preservation, and seeing habitat open. Allowing children to love the outdoors and wildlife. Quality time.

Opportunities to enjoy nature, learn more about the environment, and teach our children to learn and respect the land and its surroundings. I feel that educating our children to all of this is very important, especially getting schools involved, so children have this opportunity. A refuge offers so much, but so much more could be done.

Outer Island is the only island in the Thimbles where the public can land. This makes it unique.

Part of a kayaking journey.

Preserved land!

Protected wildlife; accessible to everyone.

Provides unique opportunities to see wildlife in their natural setting. Visitors are generally respectful of the area, as they tend to be there for specific purposes (rather than entertainment).

Refuges are essential as a place of safety for our wildlife. In order to understand and be sensitive to the animals around us and to appreciate them in the wild, a refuge can be a carefully shared place. Thank you.

Refuges are primarily there for the fauna and flora and not for necessarily human use.

Refuges are unique because they are low-key, non-commercialized, and quiet and peaceful with little traffic and no crowds.

Refuges are unique in providing interaction with nature. They provide a relaxing environment that is conducive to thought and reflection. This is fast diminishing in our present day lives.

Safer environment for animals and plants due to less contact with humans.

Sometimes, but not always, they are well done and make nature more close to us - not in this case.

Stewart B. McKinney National Wildlife Refuge is unique in that it is situated in Long Island Sound and the only way to access it is by boat. I am a kayaker and love visiting this refuge for it is peace and quiet, with lots of nesting birds, some of which are on the endangered species list.

The abundance of wildlife.

The best refuges are just that - places where wildlife can live, reproduce or migrate without substantial interference. The Salt Meadow Unit of the Stewart B. McKinney National Wildlife Refuge needs some additional work to restore its function as a refuge. The loss of the Murdoch Hill meadow has shut out some species and reduced its function as a wildlife refuge.

The day I went was a family exhibit with live and stuffed animals. I had never seen a fisher cat or a beaver up close. They also had a stuffed coyote, which was very interesting.

The fact that the land is primarily in a natural state.

The fact that wildlife come before people makes it unique.

The habitat can support opportunities for wildlife in a landscape which is proper to support the wildlife, yet it allows humans to observe the refuge without disturbing the inhabitants.

The National Wildlife Refuge System provides Americans the opportunity to enjoy pristine environments which are disappearing at a rapid rate. It provides people with the rare opportunity to see wild animals in their natural habitats.

The people put in charge make it unique.

The preservation, focus, and educational museum make it unique.

The primary mission is conserving wildlife and their habitats. Although education is very important, recreation opportunities should continue to be only secondary to the primary mission of conservation.

The protection and conservation of all plant and wildlife makes it unique. If we did not conserve these lands for wildlife and plant life and animals, birds, deer and plants, then I'm afraid some rich wealthy land developers would essentially purchase the land and build another blacktop mall or parking lot which we don't need. I know money talks, but if we don't take care of our earth and all its contents and keep on destroying it, who else will take care of it?

The refuge can put you in touch with how things were many years ago and can teach young people how to preserve our history.

The refuge is nestled in-between a major road (Route 1) and Interstate 95 and maintains a quiet place to view nature. I have a house across the marsh from here and get to view it from the marsh side. You can't ask for more than that from a refuge.

The refuges are enjoyable and maintain natural habitats that are manicured, thereby allowing the true beauty of nature to take shape.

The Stewart B. McKinney National Wildlife Refuge offers a unique opportunity to kayak to the refuge. We consider it one of our favorite kayak destinations and have visited a number of the islands in addition to the Thimble Island site.

There needs to be more education about conserving and restoring our wildlife before future generations don't have any to enjoy.

They are green spaces that have rules about protection that may not be followed/enforced in other public lands.

They are the only place where wild creatures and plants can exist relatively undisturbed by humans.

They make people aware of the necessity of preserving and protecting the many species of wildlife.

They sometimes give you the chance to experience something other places can't offer.

They were set aside for wildlife and for people to enjoy the wildlife.

This island is a unique island and bird migration and nesting on the island helps all our community on the coast to maintain its bird population.

This refuge is a small island just off the coast of CT.

Trails are well maintained.

Undeveloped, more natural experience, as compared to developed/groomed versions offered at National Parks and the like.

Unique in that they are managed with an emphasis on restoring the balance to the ecosystem and wildlife.

Very beautiful and well-maintained.

Very few people and very peaceful.

Very nicely maintained and groomed; still has work to be done in the outer area for it to be tamed.

Volunteers were helpful and gave us a better understanding of the habitat.

Well-kept and very natural habitat.

Well marked nature walks and overlooks. Bench seating along trails for rest and observation.

Wide variety of wildlife.

You get more privacy and opportunity to observe nature.

Additional Comments (n = 28)

A nice place! The ranger (or whatever) was very friendly and informative.

Charming and a visit can be done in a whim or in a spare moment. Short and sweet.

Climate change is something that has happened through the ages. It is nothing new! And scientists' feeble efforts to change climate change will only be a waste of money.

Every form of wildlife is being squeezed out by development. For our generation and future generations, we should preserve as much land and water as possible.

Great refuge that needs to build a stronger presence of its staff and expand its marketing plan to get more people to visit. Better education opportunities for visitors would be a plus. If I were the leader, I would build a stronger base of volunteer leaders to help. Does this refuge have a strategic plan for the next 5 years?

I am a commercial kayak tour operator.

I am currently finishing a Bachelor degree in wildlife biology and will be looking for internships and/or employment in the field soon. I would like very much to be informed of any opportunities available to me in the state. Thank you.

I have a number of suggestions: I would like to see more trails through the island that we could use, install outhouses, clean garbage off the island, spray for black flies and ticks, cut evasive vegetation, install cement blocks about 2' high on the east end of the beach to keep coolers and grills off the sand and prevent beach erosion, clean up vegetation that is taking over the beach, and bring back the grass grove that was there about 20 years ago.

I live on Long Island Sound. I am very concerned with the cleanliness of the sound. The swimmer's itch - a parasite that gets under your skin when walking on the sand bays. Many species of fish I saw as a child are not here for my grandchildren to see.

I love Outer Island!

I want to commend the volunteers' efforts at this refuge, which have greatly enhanced the visitor's opportunities. The new open pavilion offers great views over Long Island Sound and its marine birds. It acts as a mini Visitor Center where folks gather. Hopefully more interpretative events

will be held under the pavilion roof in the near future. I urge the refuge management to collaborate with volunteers and friends groups with openness and polite cooperation.

I was impressed. Thank you!

Keep the trails clean from leaves and falling trees. Do not use stone on trails. It is rough on the feet and not a quiet way to travel, scaring wildlife and birds away.

More public programs are desirable, as the refuge is an important and beneficial resource.

Most of our outdoor trips were to local state parks.

Not enough trail markers. No signs saying 'back to parking lot'. I called out many times while lost, but no one answered.

Outer Island is a very beautiful and special place. The laboratory space and equipment were just right for me to present my hands-on educational workshop.

Outer Island is the jewel in the Stewart B. McKinney National Wildlife Refuge!

Thank you for providing me and all other respondents with the opportunity to voice our opinions. A forum such as this is vitally important.

Thank you for the Refuge System!

The state boat ramp that gives access to the refuge has no parking area. More trail signage and maps would help. The islands in Long Island Sound are the centerpiece of the whole refuge - since becoming part of the refuge, they are essentially off limits. Controlled access would make the public involved in the future of the National Wildlife Refuge System rather unwelcome.

The USFWS could go a long way to improve their service to the public by doing a better job of making sure their employees understand that they work for the public. Service level members - those meeting with and responsible to the general public - are often confrontational and aggressive. I've had a lot of exposure to refuge management and personnel. Generally, they treat the public poorly and act like the refuges are their personal property. I'd be very happy if all refuges were returned to local control. USFWS has a "one size fits all" approach that is, at best, dysfunctional.

The various islands in the refuge are a favorite sea kayaking destination for us. We liked the opportunity to stop on Outer Island for lunch and information.

This is a very peaceful sanctuary. I have observed the natural changes without major changes due to human intervention.

This refuge has an abundance of wildlife. It has been a great pleasure to watch the refuge mature. The resident Park Ranger and associates have always been extremely helpful and have seen to it that this refuge is properly maintained and that the refuge rules have been enforced. It is a lovely refuge.

We are really spoiled, as Stewart B. McKinney is within walking distance of where we live and it is a most wonderful place to hike.

We love Stewart B. McKinney.

We visit this refuge on numerous occasions for a 2+ mile hike because of its close proximity to our home (3 miles). On average, we visit this refuge as often as twice a week when the weather permits. We enjoy the refuge and look forward to its continuing restoration as a functioning wildlife refuge.