



# National Wildlife Refuge Visitor Survey 2010/2011: Individual Refuge Results for St. Marks National Wildlife Refuge

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

*In this trip I viewed the wood stork at rest and in flight, mimicked kingfishers who responded, watched an anhinga uttering a mourning cry three feet from a medium sized gator for several hours, watched a large bobcat stalking its prey, and mimicked a returning osprey that kept up a conversation with me. I listened to the SILENCE. —Survey comment from visitor to St. Marks National Wildlife Refuge.*



St. Marks National Wildlife Refuge. Photo credit: Steve Hillebrand/U.S. Fish and Wildlife Service.

## Contents

Acknowledgments .....	iv
Introduction .....	1
Organization of Results .....	1
Methods .....	2
Selecting Participating Refuges.....	2
Developing the Survey Instrument .....	2
Contacting Visitors .....	2
Interpreting the Results .....	4
Refuge Description.....	5
Sampling at This Refuge .....	7
Selected Survey Results .....	7
Visitor and Trip Characteristics.....	7
Visitor Spending in Local Communities .....	14
Visitor Opinions about This Refuge .....	15
Visitor Opinions about National Wildlife Refuge System Topics .....	20
Conclusion .....	24
References.....	24
Appendix A: Survey Frequencies for This Refuge.....	A-1
Appendix B: Visitor Comments for This Refuge .....	B-1

## Figures

1.	Map of this refuge.....	6
2.	How visitors first learned or heard about this refuge.....	8
3.	Resources used by visitors to find their way to this refuge during this visit.....	9
4.	Number of visitors travelling to this refuge by residence.....	10
5.	Modes of transportation used by visitors to this refuge during this visit. ....	11
6.	Activities in which visitors participated during the past 12 months at this refuge. ....	12
7.	The primary activity in which visitors participated during this visit.....	13
8.	Use of the visitor center at this refuge.. ....	13
9.	Overall satisfaction with this refuge during this visit.....	15
10.	Opinions about fees at this refuge. ....	16
11.	Importance-satisfaction ratings of services and facilities provided at this refuge. ....	17
12.	Importance-satisfaction ratings of recreational opportunities provided at this refuge.....	18
13.	Importance-satisfaction ratings of transportation-related features at this refuge.....	19
14.	Visitors' likelihood of using alternative transportation options at national wildlife refuges in the future. ....	21
15.	Visitors' personal involvement with climate change related to fish, wildlife and their habitats.....	22
16.	Visitors' beliefs about the effects of climate change on fish, wildlife and their habitats.....	23

## Tables

1.	Participating refuges in the 2010/2011 national wildlife refuge visitor survey. ....	3
2.	Sampling and response rate summary for this refuge. ....	7
3.	Influence of this refuge on visitors' decision to take this trip. ....	9
4.	Type and size of groups visiting this refuge.....	11
5.	Total visitor expenditures in local communities and at this refuge expressed in dollars per person per day.....	14

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## Introduction

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

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

## Organization of Results

These results are for St. Marks 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):** A copy of 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.

<b>Pacific Region (R1)</b>	
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)	
<b>Southwest Region (R2)</b>	
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)	
<b>Great Lakes-Big Rivers Region (R3)</b>	
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)
<b>Southeast Region (R4)</b>	
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)
<b>Northeast Region (R5)</b>	
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)
<b>Mountain-Prairie Region (R6)</b>	
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)	
<b>Alaska Region (R7)</b>	
Alaska Maritime National Wildlife Refuge (AK)	Kenai National Wildlife Refuge (AK)
<b>California and Nevada Region (R8)</b>	
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  $n^{\text{th}}$  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 St. Marks 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 St. Marks National Wildlife Refuge**

St. Marks NWR is located along the Gulf Coast of Florida's "Big Bend." Covering a vast 68,000 acres across three counties, the refuge is known for its historic lighthouse, migratory bird populations, and its abundance of Monarch butterflies. The refuge was established in 1931 as protective wintering habitat for migratory birds, and is one of the oldest refuges in the system.

St. Marks NWR attracts over 257,000 visitors each year (based on 2008 RAPP database; U.S. Fish and Wildlife Service, 2011, written comm.). Visitors are attracted to St. Marks NWR because of its untamed wilderness. Depending on the time of year, visitors can expect to see vast numbers of Monarch butterflies, migratory birds, alligators, and even black bears and bobcats. Visiting the lighthouse (built in 1832 and still in use today) is a popular family activity. St. Marks NWR offers a diverse set of recreational options ranging from wildlife photography, hiking, and environmental education to saltwater and freshwater fishing, as well as boating. A main attraction to fishermen is the ability to fish both freshwater and saltwater. The refuge attracts many families eager to learn more about the environment and ecosystems. Figure 1 displays a map of St. Marks NWR. For more information, visit <http://www.fws.gov/saintmarks/>.



Figure 1. Map of St. Marks NWR, courtesy of U.S. Fish and Wildlife Service.

## Sampling at St. Marks National Wildlife Refuge

A total of 317 visitors agreed to participate in the survey during the two sampling periods at the identified locations at St. Marks NWR (table 2). In all, 199 visitors completed the survey for a 65% response rate and  $\pm 6\%$  margin of error at the 95% confidence level.<sup>1</sup>

**Table 2.** Sampling and response rate summary for St. Marks NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	10/23/10 to 11/06/10	Visitor Center	159	6	102	67%
		Lighthouse and Saltwater Boat Ramp				
		Otter Lake Recreation Area and Boat Ramp				
		Wakulla Beach Road Check Station				
2	04/09/11 to 04/23/11	Lighthouse and Saltwater Boat Ramp	158	6	97	64%
		Wakulla Beach Road Check Station xx				
		Panacea Unit Check Station at Road 316				
		East River Pool Boat Ramp				
		Visitor Center				
Total			317	12	199	65%

## 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 St. Marks 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 (91%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants and their habitat (89%). Positive responses to these questions concerning the management and mission

<sup>1</sup> 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).

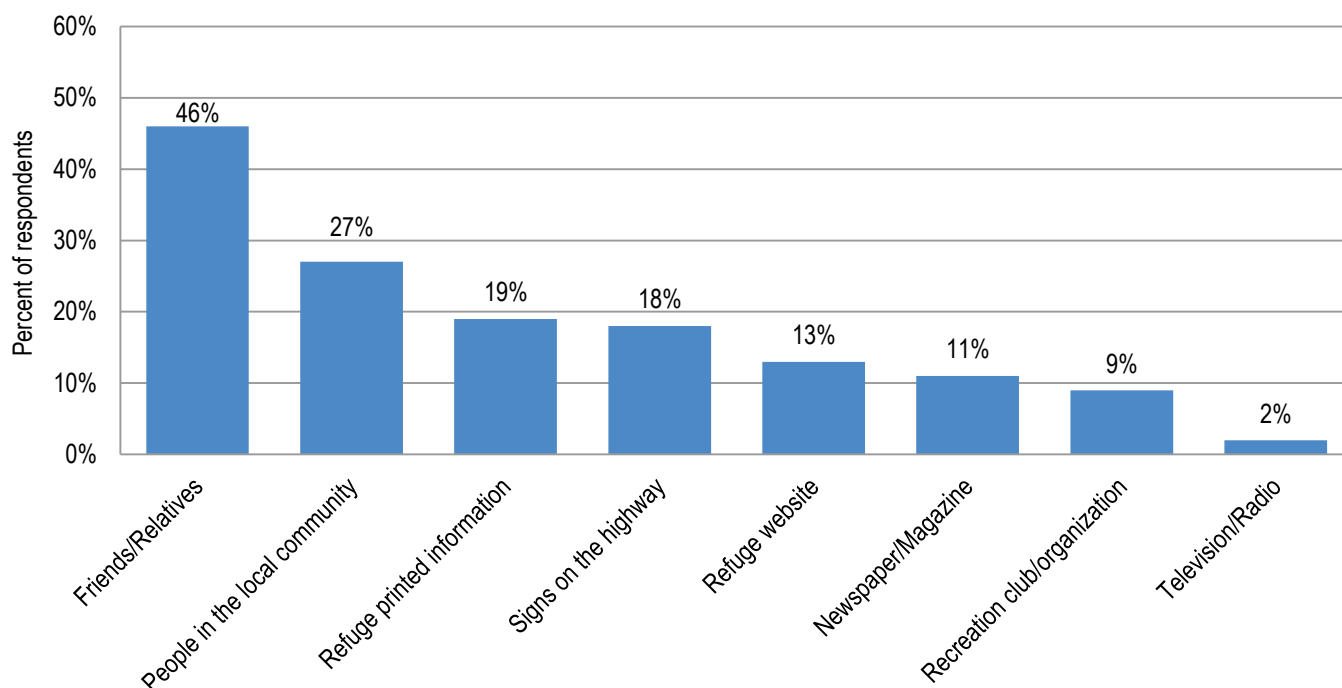
of the Refuge System do not indicate the degree to which these visitors understand the day-to-day management practices of individual refuges, only that visitors feel they have a basic knowledge of who manages refuges and why. Compared to other public lands, many visitors feel that refuges provide a unique recreation experience (93%; see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System. Most visitors to St. Marks NWR had been to at least one other National Wildlife Refuge in the past year (63%), with an average of 4 visits to other refuges during the past 12 months.

## Visiting This Refuge

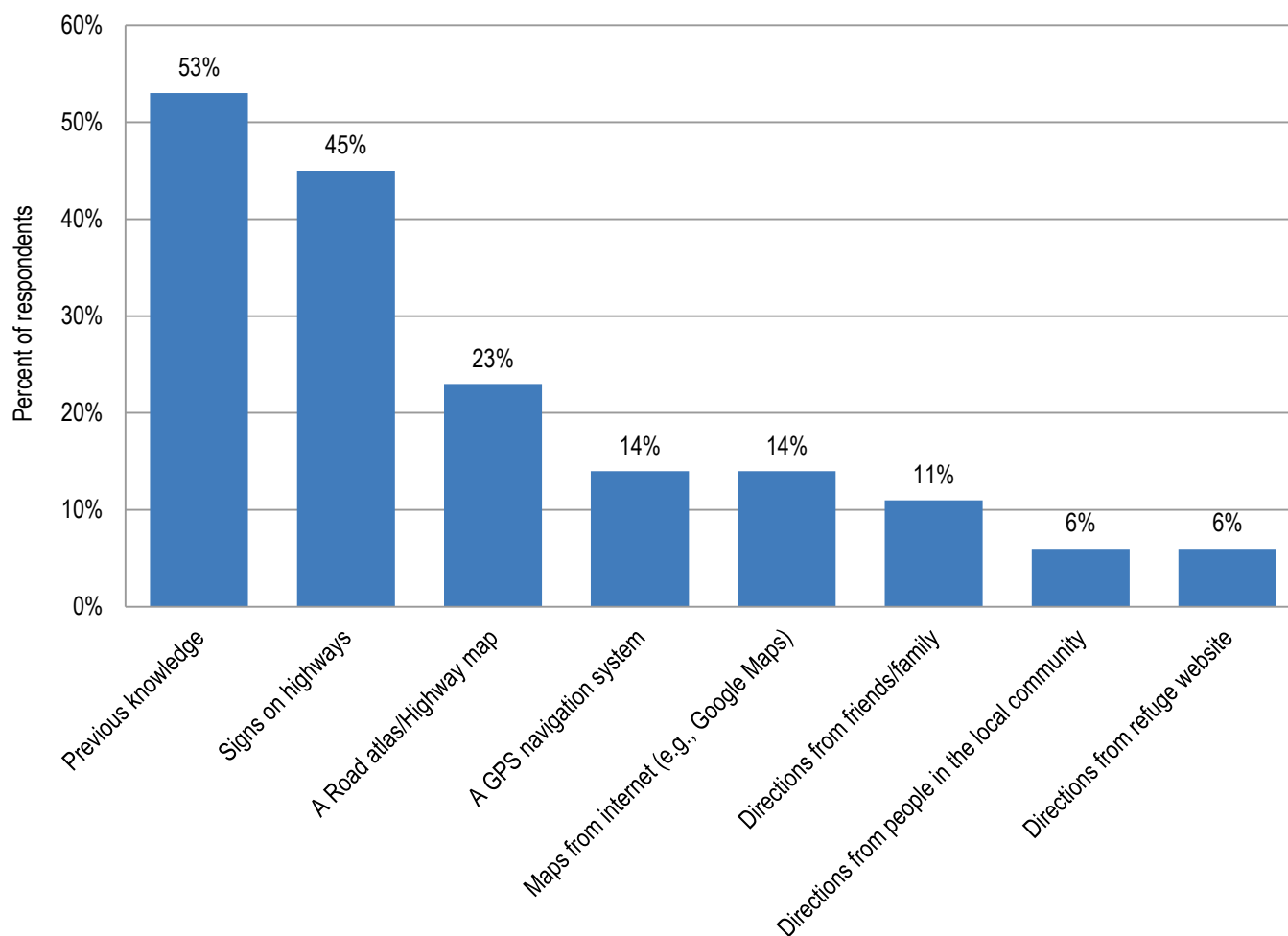
Some surveyed visitors (39%) had only been to St. Marks NWR once in the past 12 months, while most had been multiple times (61%). These repeat visitors went to the refuge an average of 13 times during that same 12-month period. Visitors used the refuge during only one season (47%), during multiple seasons (20%), and year-round (33%).

Most visitors first learned about the refuge from friends/relatives (46%), people in the local community (27%), or refuge printed information (19%; fig. 2). Key information sources used by visitors to find their way to this refuge include previous knowledge (53%), signs on highways (45%), or a road atlas/highway map (23%; fig. 3).

Most visitors (59%) lived in the local area (within 50 miles of the refuge), whereas 41% were nonlocal visitors. For most local visitors, St. Marks NWR was the primary purpose or sole destination of their trip (91%; table 3). For most nonlocal visitors, the refuge was one of many equally important reasons or destinations for trip (54%). Local visitors reported that they traveled an average of 27 miles to get to the refuge, while nonlocal visitors traveled an average of 341 miles. Figure 4 shows the residence of visitors travelling to the refuge. About 75% of visitors travelling to St. Marks NWR were from Florida.



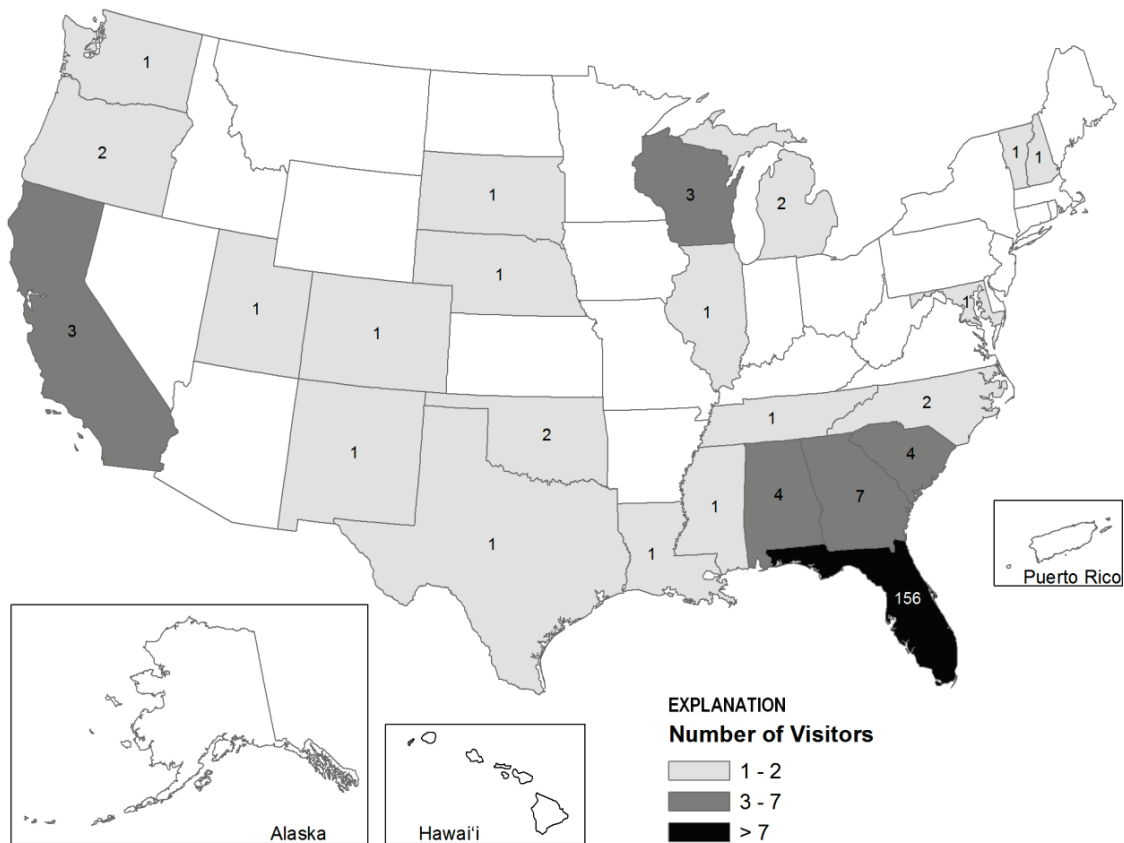
**Figure 2.** How visitors first learned or heard about St. Marks NWR (n = 197).



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

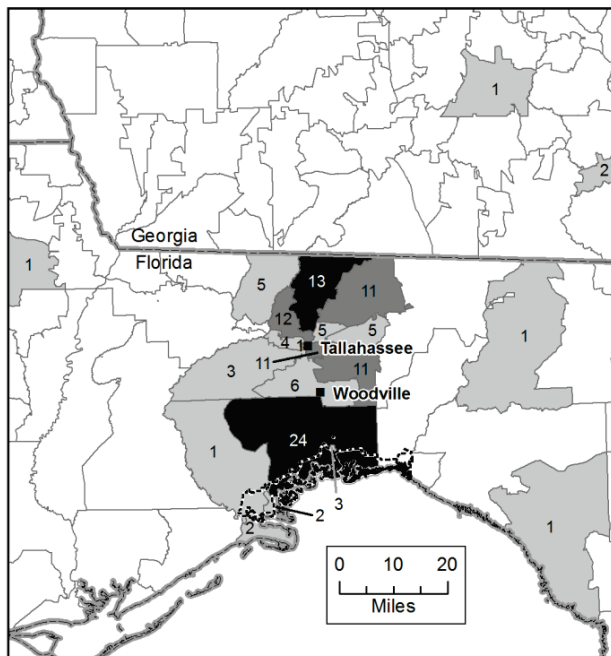
**Table 3.** Influence of St. Marks NWR on visitors' decision to take *this* trip.

Visitors	Visiting this refuge was...		
	the primary reason for trip	one of many equally important reasons for trip	an incidental stop
Nonlocal	23%	54%	23%
Local	91%	6%	3%
Total	63%	26%	11%



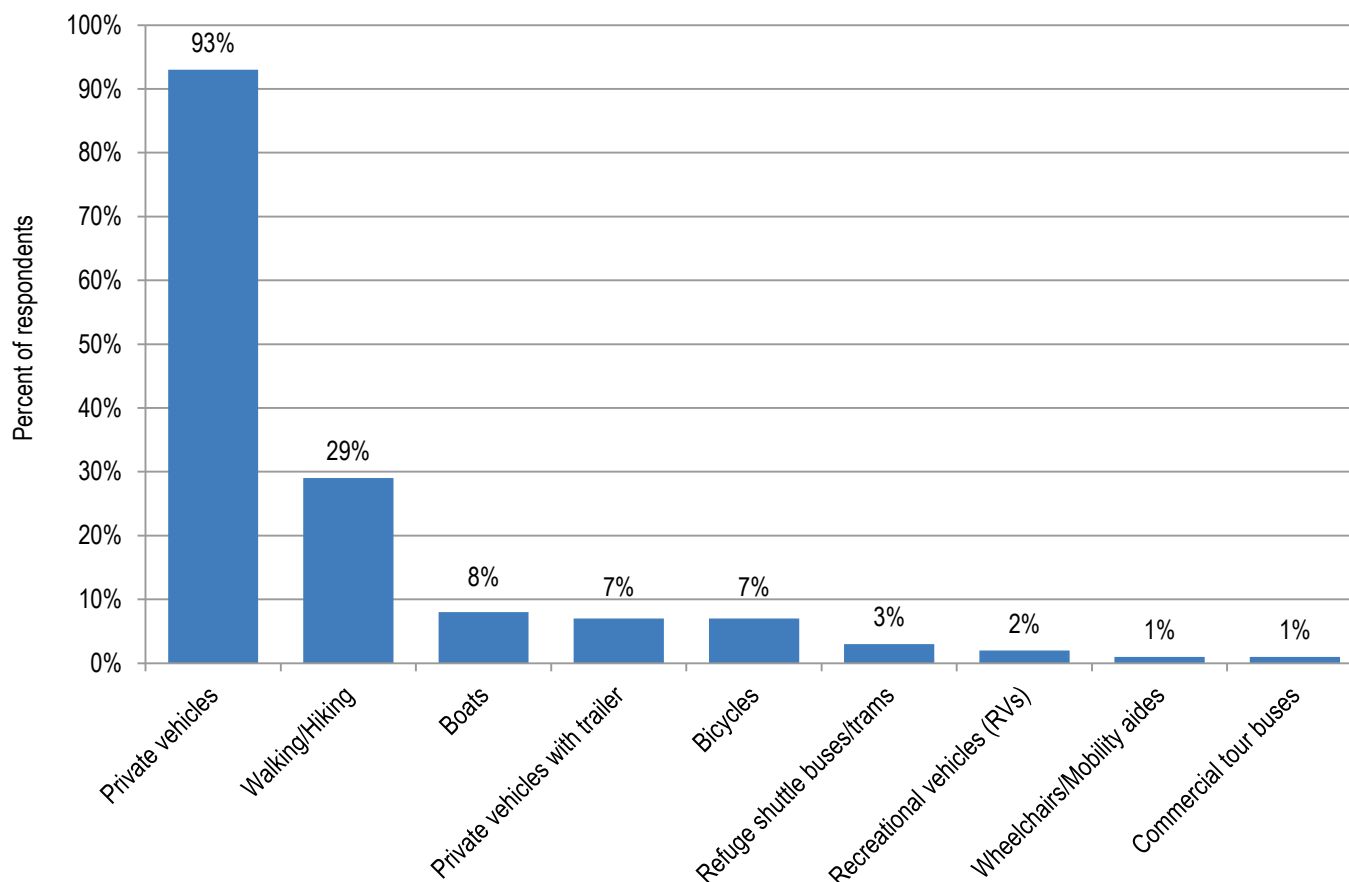
**EXPLANATION**  
 [Dashed line] Refuge Boundary  
**Number of Visitors**

- 1 - 6
- 7 - 12
- > 12



**Figure 4.** Number of visitors travelling to St. Marks NWR by residence. Top map shows residence by state and bottom map shows residence by zip codes near the refuge (n = 199).

Surveyed visitors reported that they spent an average of 4 hours at St. Marks 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 3 hours (24%). The key modes of transportation used by visitors to travel around the refuge were private vehicle (93%), walking/hiking (29%), and boat (8%; fig. 5). Most visitors indicated they were part of a group on their visit to this refuge (61%), travelling primarily with family and friends (table 4).

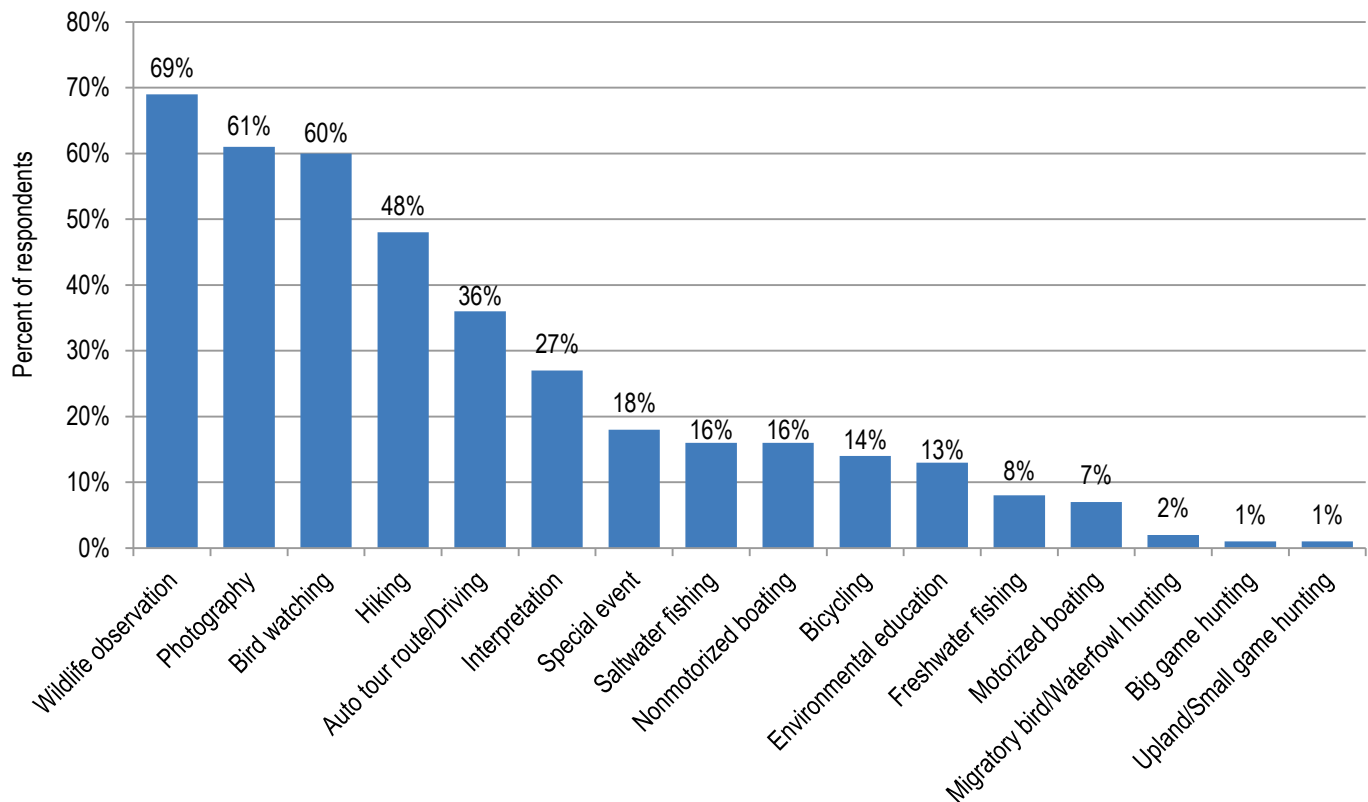


**Figure 5.** Modes of transportation used by visitors to St. Marks NWR during *this* visit (n = 198).

**Table 4.** Type and size of groups visiting St. Marks NWR (for those who indicated they were part of a group, n = 119).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	82%	3	0	3
Commercial tour group	0%	0	0	0
Organized club/School group	14%	9	2	11
Other group type	3%	12	0	12

Surveyed visitors participated in a variety of refuge activities during the past 12 months (fig. 6); the top three activities reported were wildlife observation (69%), photography (61%), and bird watching (60%). The primary reasons for their most recent visit included wildlife observation (20%), bird watching (15%), and fishing (9%; fig. 7). The visitor center was used by 78% of visitors, mostly to visit the gift shop/bookstore (77%), stop to use the facilities (for example, get water, use restroom; 76%), and view the exhibits (76%; fig. 8).

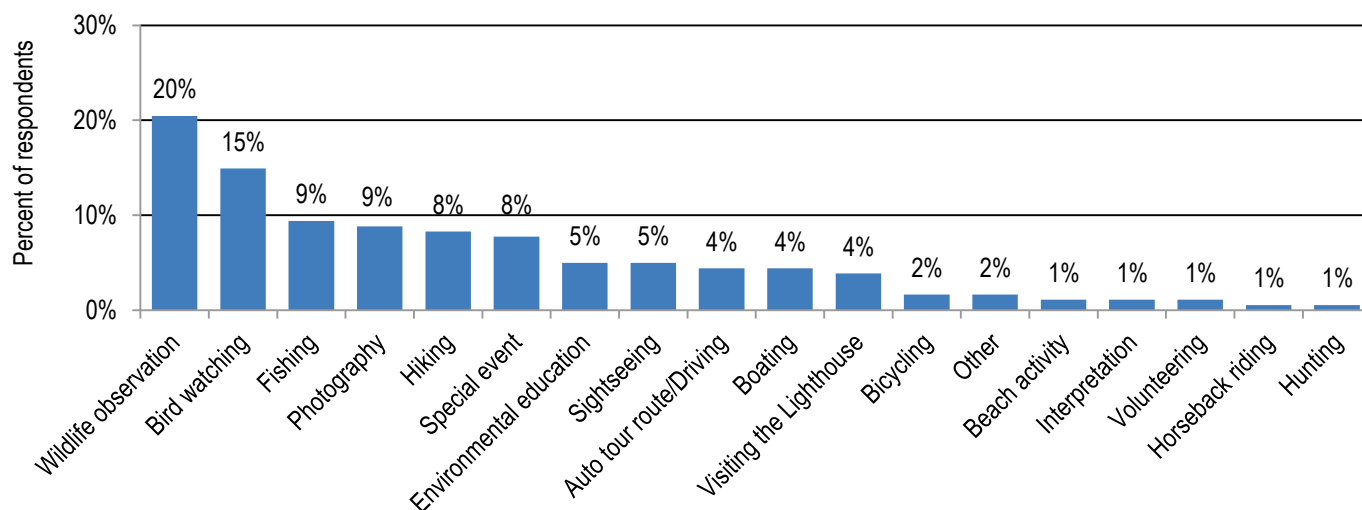


**Figure 6.** Activities in which visitors participated during the past 12 months at St. Marks NWR (n = 199). See Appendix B for a listing of “other” activities.

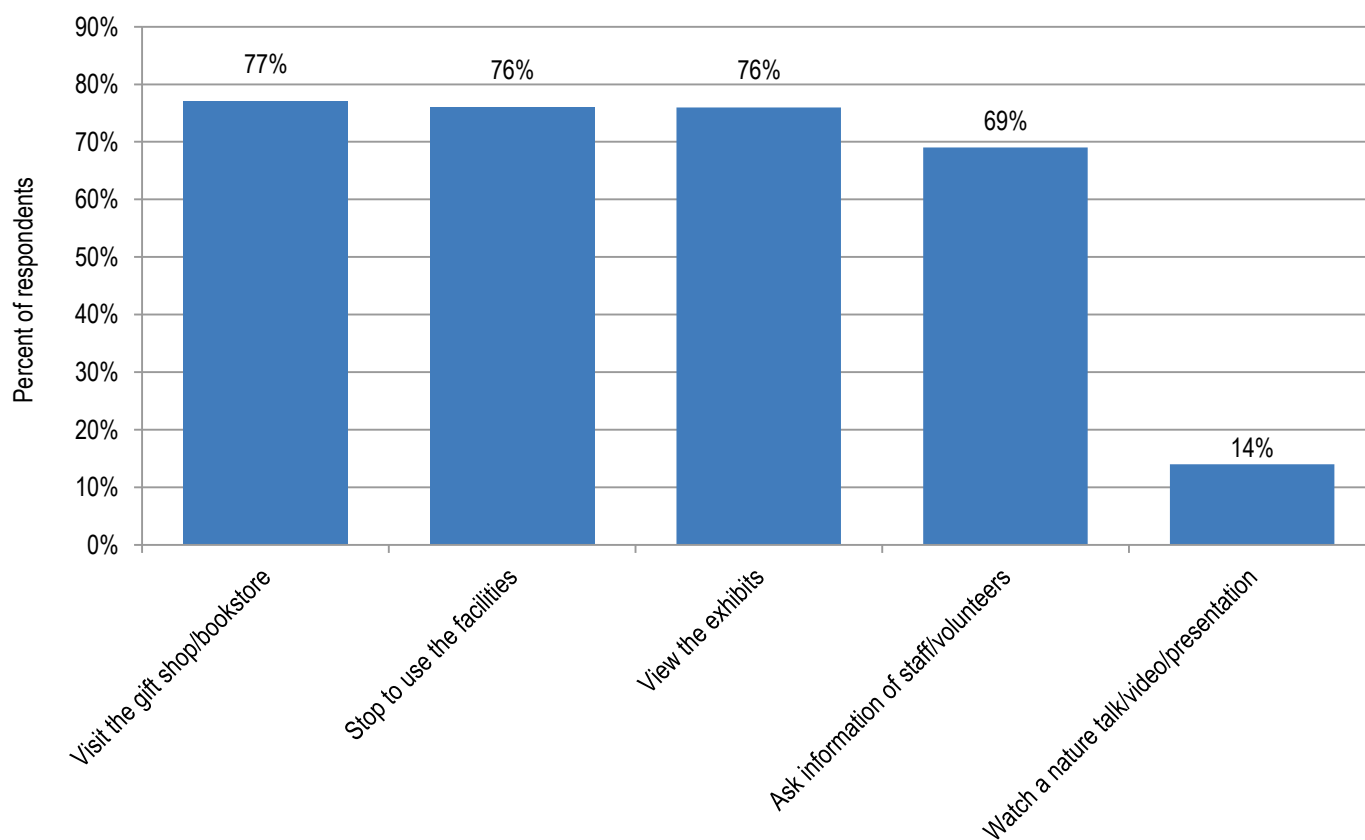
### Visitor Characteristics

Nearly all (99%) surveyed visitors to St. Marks 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 45% male with an average age of 57 years and 55% female with an average age of 57 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 St. Marks NWR (n = 181). See Appendix B for a listing of “other” activities.



**Figure 8.** Use of the visitor center at St. Marks NWR (for those visitors who indicated they used the visitor center, n = 153).

## 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, 59% of surveyed visitors to St. Marks NWR indicated that they live within the local area. Nonlocal visitors (41%) stayed in the local area, on average, for 3 days. Table 5 shows summary statistics for local and nonlocal visitor expenditures in the local communities and at the refuge, with expenditures reported on a per person per day basis. During the two sampling periods, nonlocal visitors spent an average of \$58 per person per day and local visitors spent an average of \$44 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 St. Marks NWR expressed in dollars per person per day.

Visitors	n <sup>1</sup>	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	71	\$47	\$58	\$54	\$0	\$288
Local	101	\$25	\$44	\$53	\$0	\$320

<sup>1</sup>n = 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.

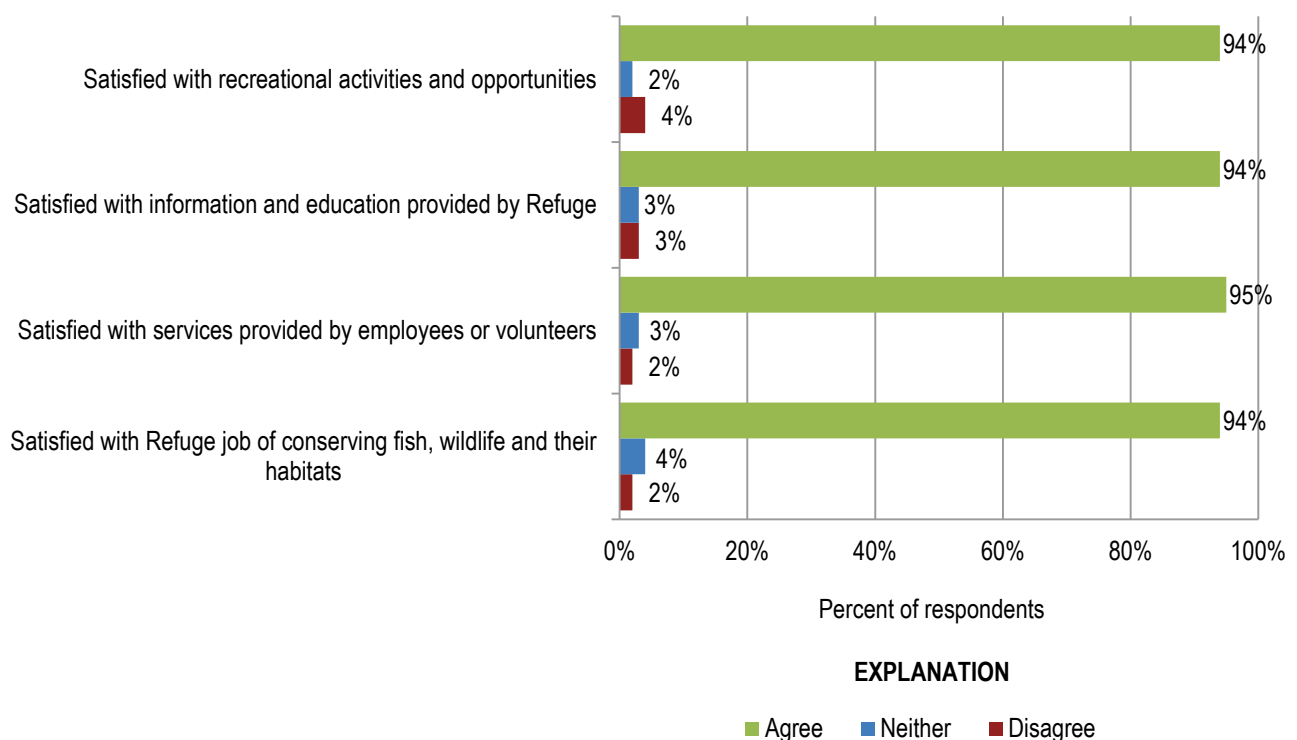
## Visitor Opinions about This Refuge

*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.*

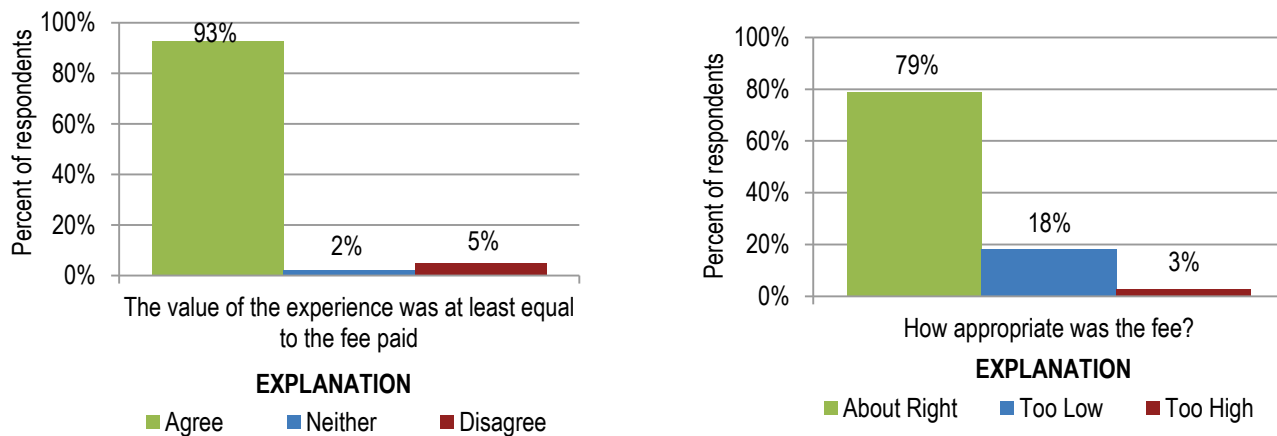
Surveyed visitors' overall satisfaction with the services, facilities, and recreational opportunities provided at St. Marks NWR were as follows (fig. 9):

- 94% were satisfied with the recreational activities and opportunities,
- 94% were satisfied with the information and education about the refuge and its resources,
- 95% were satisfied with the services provided by employees or volunteers, and
- 94% were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

Of the 74% of visitors who indicated that they paid a fee to enter the refuge, 93% agreed that the opportunities and services were at least equal to the fee they paid; 79% felt the fee was about right, whereas 21% felt that the fee was too low or too high (fig. 10).



**Figure 9.** Overall satisfaction with St. Marks NWR during *this* visit (n ≥ 182).



**Figure 10.** Opinions about fees at St. Marks NWR (for those visitors who indicated they paid a fee, n = 140).

### Importance/Satisfaction Ratings

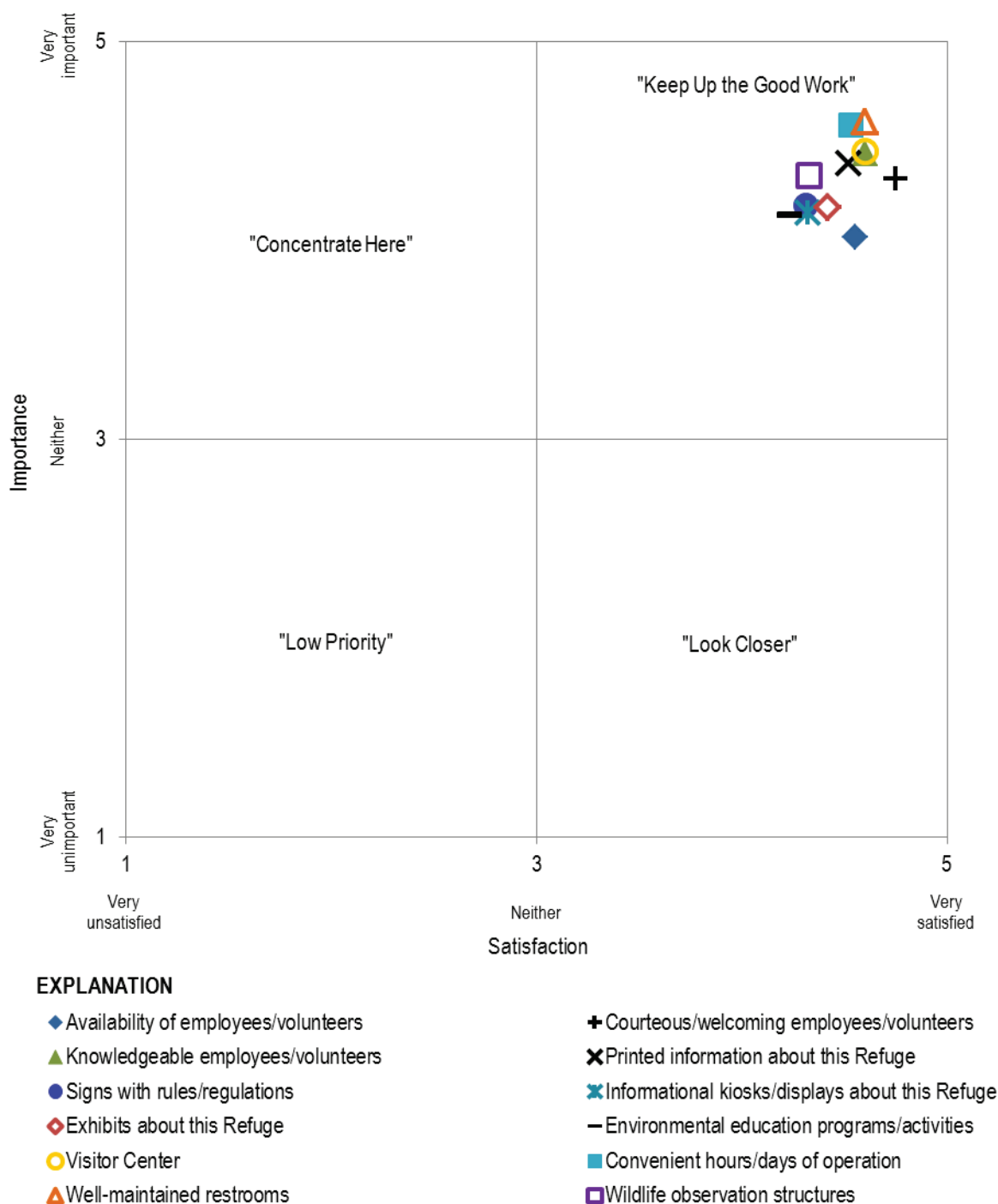
*Comparing the importance and satisfaction ratings for visitor services provided by refuges can help to identify how well the services are meeting visitor expectations. The importance-performance framework presented in this section is a tool that includes the importance of an attribute to visitors in 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.

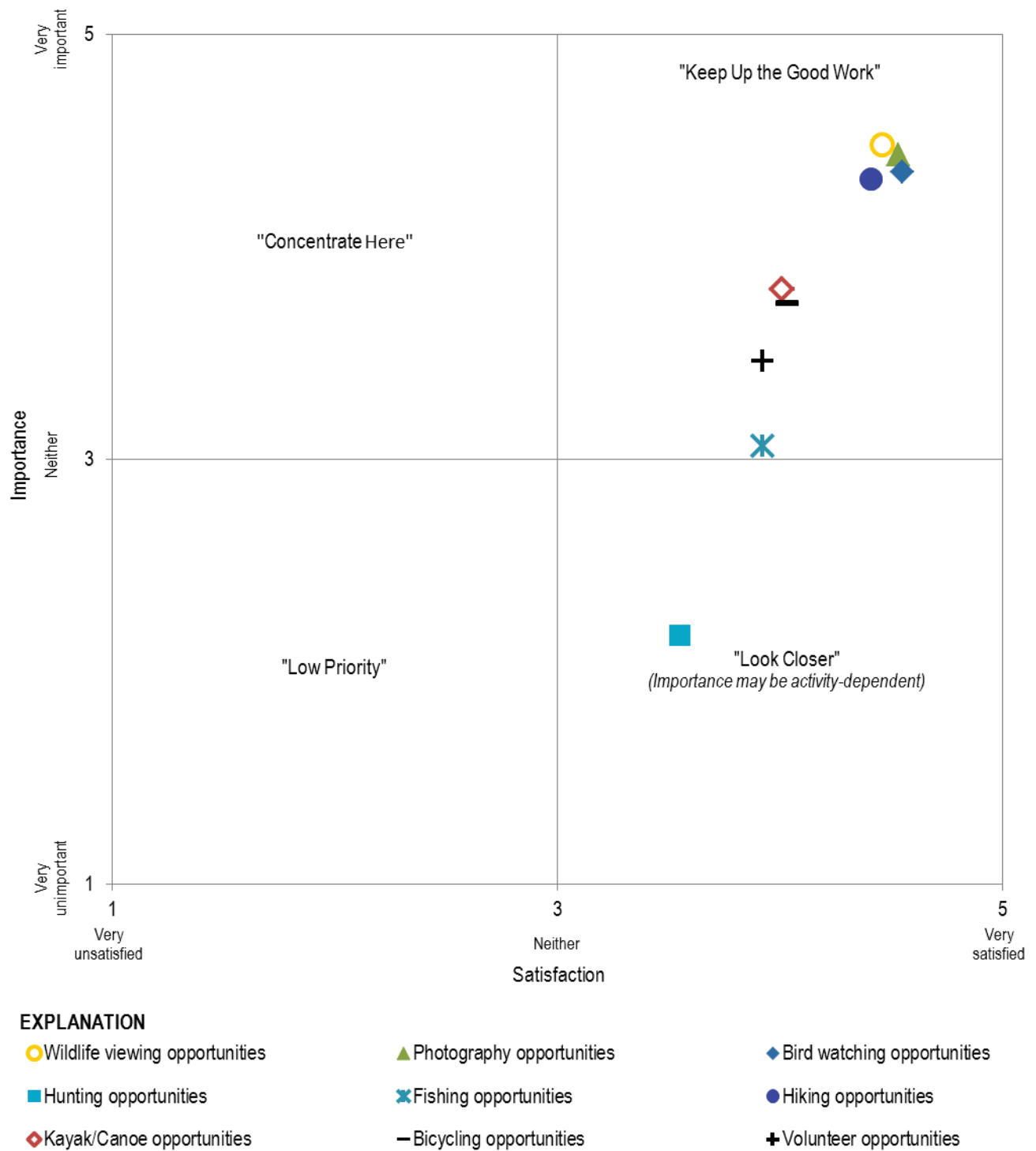
*Graphically plotting visitors' importance and satisfaction ratings for different services, facilities, and recreational opportunities provides a simple and intuitive visualization of these survey measures. However, this tool is not without its drawbacks. One is the potential for variation among visitors 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 St. Marks 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 11-13 depict surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at St. Marks NWR, respectively. All refuge services and facilities fell in the "Keep Up the Good Work" quadrant (fig. 11). Nearly all refuge

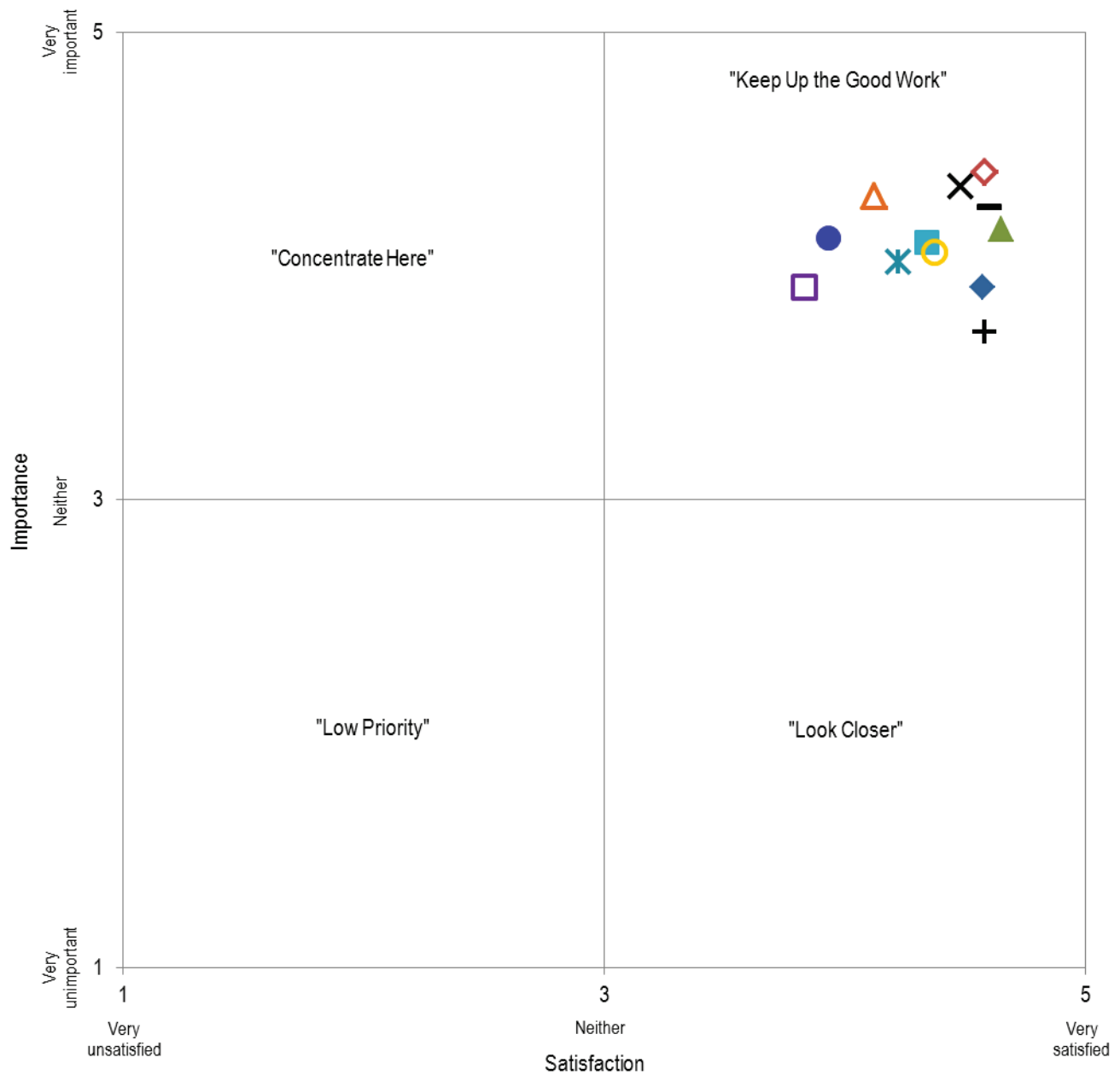
recreational opportunities fell in the “Keep Up the Good Work” quadrant except hunting opportunities, which fell into the “Look Closer” quadrant (fig. 12). The average importance of hunting opportunities in the “Look Closer” quadrant may be higher among visitors who have participated in this activity during the past 12 months; however, there were not enough individuals in the sample to evaluate the responses of such participants. All transportation-related features fell in the “Keep Up the Good Work” quadrant (fig. 13).



**Figure 11.** Importance-satisfaction ratings of services and facilities provided at St. Marks NWR.



**Figure 12.** Importance-satisfaction ratings of recreational opportunities provided at St. Marks NWR.



#### EXPLANATION

- |                               |                                 |                                |                                  |
|-------------------------------|---------------------------------|--------------------------------|----------------------------------|
| ◆ Condition of roads          | + Condition of parking areas    | ▲ Condition of bridges         | ✕ Condition of trails/boardwalks |
| ✕ Number of parking places    | ● Number of pullovers           | ◇ Safety of driving conditions | — Safety of Refuge entrances     |
| ■ Directional signs on Refuge | ○ Directional signs on highways | △ Directional signs on trails  | □ Disabled access                |

**Figure 13.** Importance-satisfaction ratings of transportation-related features at St. Marks 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 St. Marks NWR are reported here.*

### Alternative Transportation and the National Wildlife Refuge System

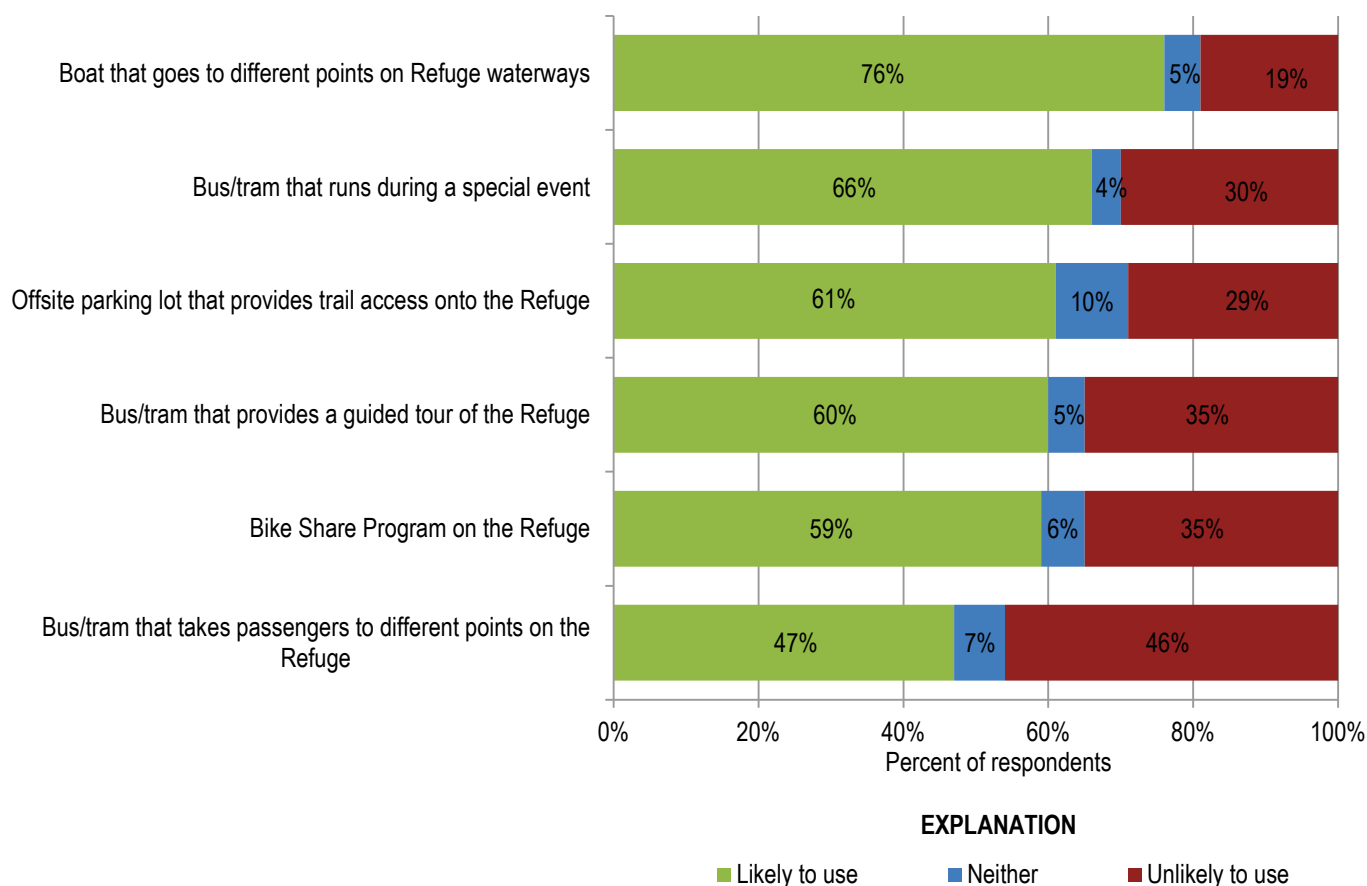
*Visitors use a variety of transportation means to access and enjoy national wildlife refuges. While many visitors arrive at the refuge in a private vehicle, alternatives such as buses, trams, watercraft, and bicycles are increasingly becoming a part of the visitor experience. Previous research has identified 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 St. Marks NWR visitors who were surveyed were likely to use the following options at national wildlife refuges in the future (fig. 14):

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

When asked about using alternative transportation at St. Marks NWR specifically, 45% of visitors indicated they were unsure whether it would enhance their experience; however, some visitors thought alternative transportation would enhance their experience (31%) and others thought it would not (24%).





**Figure 14.** Visitors' likelihood of using alternative transportation options at national wildlife refuges in the future (n ≥ 190).

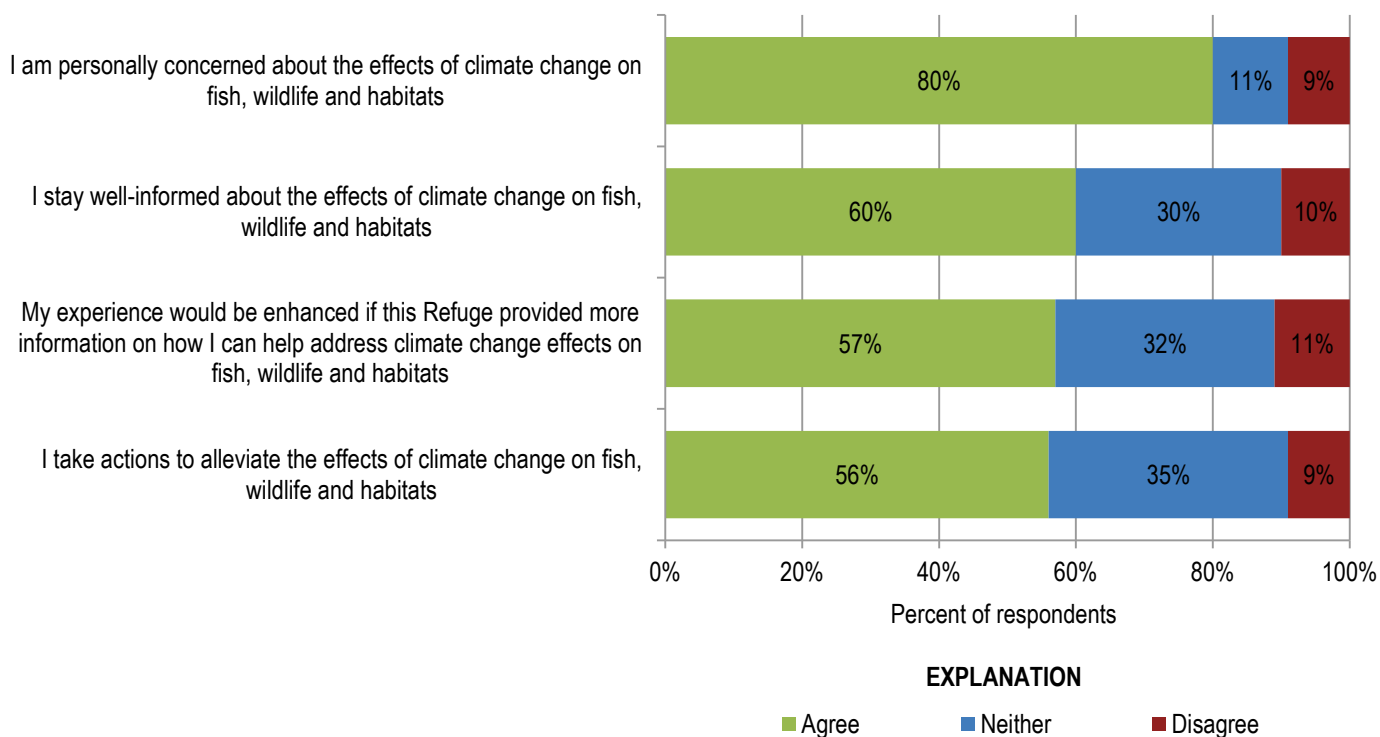
## Climate Change and the National Wildlife Refuge System

*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 St. Marks NWR agreed with the following statements (fig. 15):

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



**Figure 15.** Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 184).

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).

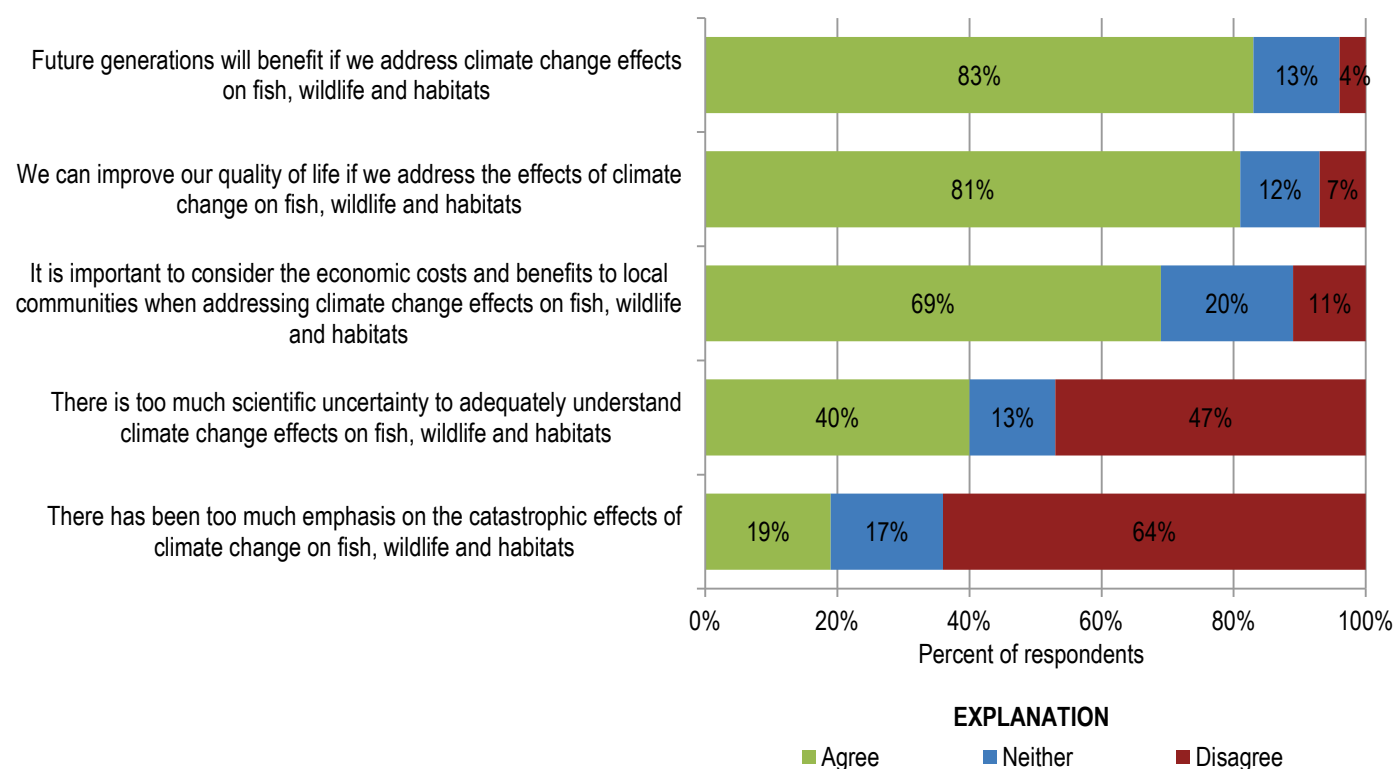
For St. Marks NWR, the majority of visitors believed the following regarding climate change related to fish, wildlife and their habitats (fig. 16):

- “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 the majority of visitors (57%) indicated that their experience would be enhanced if St. Marks NWR provided information about how they could help address the effects of climate change on fish, wildlife, and their habitats (fig. 15), 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 16.** Visitors' beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 184).

## Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to St. Marks 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](mailto: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.**

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**SECTION 1. Your visit to this Refuge**

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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"/> 1% Big game hunting	<input type="checkbox"/> 48% Hiking	<input type="checkbox"/> 13% Environmental education (for example, classrooms or labs, tours)
<input type="checkbox"/> 1% Upland/Small-game hunting	<input type="checkbox"/> 14% Bicycling	
<input type="checkbox"/> 2% Migratory bird/Waterfowl hunting	<input type="checkbox"/> 36% Auto tour route/Driving	<input type="checkbox"/> 18% Special event ( <i>please specify</i> ) <u>See Appendix B</u>
<input type="checkbox"/> 69% Wildlife observation	<input type="checkbox"/> 7% Motorized boating	
<input type="checkbox"/> 60% Bird watching	<input type="checkbox"/> 16% Nonmotorized boating (including canoes/kayaks)	<input type="checkbox"/> 16% Other ( <i>please specify</i> ) <u>See Appendix B</u>
<input type="checkbox"/> 8% Freshwater fishing		
<input type="checkbox"/> 16% Saltwater fishing	<input type="checkbox"/> 27% Interpretation (for example, exhibits, kiosks, videos)	<input type="checkbox"/> 2% Other ( <i>please specify</i> ) <u>See Appendix B</u>
<input type="checkbox"/> 61% 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?

<input type="checkbox"/> 22% No	
<input type="checkbox"/> 78% Yes → If yes, what did you do there? (Please mark <b><u>all that apply.</u></b> )	
<input type="checkbox"/> 77% Visit the gift shop or bookstore	<input type="checkbox"/> 14% Watch a nature talk/video/presentation
<input type="checkbox"/> 76% View the exhibits	<input type="checkbox"/> 76% Stopped to use the facilities (for example, get water, use restroom)
<input type="checkbox"/> 69% 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**

23%

91%

63%

It was the primary purpose or sole destination of my trip.

54%

6%

26%

It was one of many equally important reasons or destinations for my trip.

23%

3%

11%

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**    341    number of miles

**Local**    27    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?

39% No (*skip to question #9*)

61% Yes → What **type of group** were you with on your visit? (*Please mark only one.*)

82% Family and/or friends

14% Organized club or school group

0% Commercial tour group

3% Other (*please specify*) See Appendix B

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

4 number 18 years and over

1 number 17 years and under

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

46% Friends or relatives

13% Refuge website

18% Signs on highway

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

9% Recreation club or organization

2% Television or radio

27% People in the local community

11% Newspaper or magazine

19% Refuge printed information (brochure, map)

13% 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.*)

72% Spring  
(March-May)

42% Summer  
(June-August)

69% Fall  
(September-November)

44% Winter  
(December-February)

11. How many times have you visited...

...this Refuge (including this visit) in the last 12 months?    9    number of visits

...other National Wildlife Refuges in the last 12 months?    2    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"/> 93% Private vehicle without a trailer	<input type="checkbox"/> 3% Refuge shuttle bus or tram	<input type="checkbox"/> 7% Bicycle
<input type="checkbox"/> 7% Private vehicle with a trailer (for boat, camper or other)	<input type="checkbox"/> 0% Motorcycle	<input type="checkbox"/> 29% Walk/Hike
<input type="checkbox"/> 1% 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"/> 2% Recreational vehicle (RV)	<input type="checkbox"/> 8% Boat	<u>See Appendix B</u>
	<input type="checkbox"/> 1% Wheelchair or other mobility aid	

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

<input type="checkbox"/> 45% Signs on highways	<input type="checkbox"/> 6% Directions from Refuge website
<input type="checkbox"/> 14% A GPS navigation system	<input type="checkbox"/> 6% Directions from people in community near this Refuge
<input type="checkbox"/> 23% A road atlas or highway map	<input type="checkbox"/> 11% Directions from friends or family
<input type="checkbox"/> 14% Maps from the Internet (for example, MapQuest or Google Maps)	<input type="checkbox"/> 53% Previous knowledge/I have been to this Refuge before
	<input type="checkbox"/> 3% Other ( <i>please specify</i> ) <u>See Appendix B</u>

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

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 36%	<input type="checkbox"/> 10%	<input type="checkbox"/> 7%	<input type="checkbox"/> 30%	<input type="checkbox"/> 17%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 25%	<input type="checkbox"/> 10%	<input type="checkbox"/> 6%	<input type="checkbox"/> 34%	<input type="checkbox"/> 25%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 25%	<input type="checkbox"/> 10%	<input type="checkbox"/> 5%	<input type="checkbox"/> 33%	<input type="checkbox"/> 27%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 12%	<input type="checkbox"/> 7%	<input type="checkbox"/> 5%	<input type="checkbox"/> 35%	<input type="checkbox"/> 41%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 22%	<input type="checkbox"/> 8%	<input type="checkbox"/> 4%	<input type="checkbox"/> 37%	<input type="checkbox"/> 29%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 15%	<input type="checkbox"/> 14%	<input type="checkbox"/> 10%	<input type="checkbox"/> 36%	<input type="checkbox"/> 26%
...some other alternative transportation option? ( <i>please specify</i> ) <u>See Appendix B</u>	<input type="checkbox"/> 0%	<input type="checkbox"/> 6%	<input type="checkbox"/> 6%	<input type="checkbox"/> 25%	<input type="checkbox"/> 63%

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

<input type="checkbox"/> 31% Yes	<input type="checkbox"/> 24% No	<input type="checkbox"/> 45% Not Sure
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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
3%	9%	7%	54%	26%	Surface conditions of roads	5%	1%	3%	15%	76%	NA
4%	12%	12%	51%	20%	Surface conditions of parking areas	4%	2%	3%	17%	75%	NA
4%	4%	9%	37%	46%	Condition of bridges	3%	0%	3%	16%	78%	NA
3%	4%	3%	36%	54%	Condition of trails and boardwalks	3%	3%	4%	24%	66%	NA
3%	9%	6%	49%	34%	Number of places for parking	4%	7%	5%	32%	52%	NA
4%	8%	6%	36%	46%	Number of places to pull over along Refuge roads	3%	13%	6%	44%	34%	NA
4%	3%	3%	31%	60%	Safety of driving conditions on Refuge roads	2%	3%	3%	20%	72%	NA
3%	3%	9%	36%	49%	Safety of Refuge road entrances/exits	3%	0%	4%	20%	73%	NA
4%	6%	12%	38%	41%	Signs on highways directing you to the Refuge	3%	3%	9%	23%	61%	NA
3%	6%	9%	44%	38%	Signs directing you around the Refuge roads	2%	2%	10%	33%	53%	NA
2%	3%	10%	33%	52%	Signs directing you on trails	1%	7%	12%	38%	42%	NA
3%	6%	22%	33%	36%	Access for people with physical disabilities or who have difficulty walking	2%	7%	28%	31%	32%	NA

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

See Appendix B

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### SECTION 3. Your expenses related to your Refuge visit

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

☐ 59% Yes

☐ 41% No → How much time did you spend **in local communities** on this trip?

  2   number of hours      OR        4   number of days

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

Categories	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
<input type="checkbox"/> 3%	<input type="checkbox"/> 28%	<input type="checkbox"/> 18%	<input type="checkbox"/> 11%	<input type="checkbox"/> 19%	<input type="checkbox"/> 2%	<input type="checkbox"/> 12%	<input type="checkbox"/> 1%	<input type="checkbox"/> 2%	<input type="checkbox"/> 1%	<input type="checkbox"/> 3%

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.***)

☐ 1% Far too low   ☐ 16% Too low   ☐ 79% About right   ☐ 1% Too high   ☐ 1% Far too high   ☐ 26% Did not pay a fee  
(skip to Section 4)

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

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

☐ 4% Strongly disagree   ☐ 1% Disagree   ☐ 2% Neither agree or disagree   ☐ 35% Agree   ☐ 58% Strongly agree

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#### SECTION 4. Your experience at this Refuge

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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.	<input type="checkbox"/> 2%	<input type="checkbox"/> 2%	<input type="checkbox"/> 2%	<input type="checkbox"/> 32%	<input type="checkbox"/> 62%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	<input type="checkbox"/> 2%	<input type="checkbox"/> 1%	<input type="checkbox"/> 3%	<input type="checkbox"/> 34%	<input type="checkbox"/> 60%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	<input type="checkbox"/> 2%	<input type="checkbox"/> 0%	<input type="checkbox"/> 3%	<input type="checkbox"/> 27%	<input type="checkbox"/> 68%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	<input type="checkbox"/> 2%	<input type="checkbox"/> 0%	<input type="checkbox"/> 4%	<input type="checkbox"/> 19%	<input type="checkbox"/> 76%	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 <i>Circle one for each item.</i>					Refuge Services, Facilities, and Activities	Satisfaction <i>Circle one for each item.</i>					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important		Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
3%	6%	12%	46%	34%	Availability of employees or volunteers	2%	3%	4%	21%	70%	NA
1%	5%	5%	39%	50%	Courteous and welcoming employees or volunteers	2%	1%	2%	11%	85%	NA
2%	2%	8%	29%	60%	Knowledgeable employees or volunteers	3%	1%	5%	16%	76%	NA
1%	3%	7%	34%	55%	Printed information about this Refuge and its resources (for example, maps and brochures)	2%	2%	5%	24%	67%	NA
2%	3%	10%	49%	36%	Informational kiosks/displays about this Refuge and its resources	2%	2%	11%	34%	52%	NA
3%	3%	10%	43%	41%	Signs with rules/regulations for this Refuge	2%	1%	13%	30%	53%	NA
1%	4%	13%	44%	39%	Exhibits about this Refuge and its resources	2%	1%	8%	31%	58%	NA
1%	5%	15%	37%	42%	Environmental education programs or activities	2%	2%	19%	25%	52%	NA
1%	2%	4%	37%	56%	Visitor Center	2%	1%	3%	20%	73%	NA
2%	1%	3%	26%	68%	Convenient hours and days of operation	3%	3%	2%	22%	70%	NA
1%	1%	2%	29%	67%	Well-maintained restrooms	2%	2%	2%	21%	73%	NA
1%	3%	9%	38%	50%	Wildlife observation structures (decks, blinds)	2%	3%	9%	29%	56%	NA
1%	5%	12%	23%	59%	Bird-watching opportunities	1%	3%	7%	17%	72%	NA
1%	2%	3%	37%	57%	Opportunities to observe wildlife other than birds	2%	3%	3%	31%	61%	NA
1%	2%	10%	27%	60%	Opportunities to photograph wildlife and scenery	2%	3%	7%	17%	71%	NA
50%	6%	28%	8%	8%	Hunting opportunities	5%	0%	57%	11%	27%	NA
26%	10%	23%	15%	26%	Fishing opportunities	3%	1%	36%	19%	41%	NA
3%	1%	7%	38%	51%	Trail hiking opportunities	2%	4%	8%	23%	63%	NA
5%	5%	22%	39%	29%	Water trail opportunities for canoeing or kayaking	2%	3%	26%	28%	40%	NA
7%	6%	22%	38%	27%	Bicycling opportunities	1%	5%	28%	20%	46%	NA
11%	4%	36%	27%	22%	Volunteer opportunities	2%	3%	38%	16%	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

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

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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?

91%

Yes

9%

No

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

89%

Yes

11%

No

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

93%

Yes

7%

No

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

See Appendix B

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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.	4%	4%	11%	29%	52%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	2%	5%	12%	29%	52%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	23%	24%	13%	26%	14%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	3%	6%	30%	42%	18%
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.	4%	7%	20%	51%	18%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	3%	6%	35%	38%	18%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	33%	31%	17%	12%	7%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	1%	3%	13%	28%	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.	7%	5%	32%	35%	21%

## 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? 45% Male 55% Female

3. In what year were you born? 1954 (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)			
					1%			12%				38%				49%			

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

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

4% American Indian or Alaska Native	3% Black or African American	93% White
1% Asian	0% 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?

2% Less than \$10,000	15% \$35,000 - \$49,999	21% \$100,000 - \$149,999
5% \$10,000 - \$24,999	21% \$50,000 - \$74,999	3% \$150,000 - \$199,999
5% \$25,000 - \$34,999	21% \$75,000 - \$99,999	6% \$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.)?

17 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 St. Marks 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
Butterfly Day	1
Butterfly Festival	5
Class Field Trip	1
Field Trip	1
Florida Lighthouse Day	1
Historical Hike to Port Leon	1
History of Port Leon Tour	1
Led birding field trip for Albany, GA Audubon Society	1
Monarch Butterflies	1
Monarch Butterfly Festival	3
Monarch Butterfly Festival, Lighthouse Tour	1
Monarch Butterfly Migration	1
Monarch Butterfly Tagging	1
Monarch Festival	4
Monarch Festival, WHO Festival, Big Sit	1
Monarch Migration	2
Monarch Observation	1
Photography class	1
See inside the Lighthouse	1

Tour of Lighthouse	1
WHO Festival, Photo Club meetings and special events.	1
Wildlife and Butterfly Festivals	1
Total	32

Other Activity	Frequency
Butterfly Migration	1
Butterfly Watching	1
Enjoying the beauty of the refuge	1
Exploration of Confederate salt work sites	1
Exploring	1
Family walk, Conversing, Exploring together	1
Help in the Visitor Center	1
Horseback Riding	1
Horseback riding throughout the refuge	1
Just escape to mother nature	1
Just stopped to look around	1
Just visited with family to see the lighthouse	1
Landscape Painting	1
Lighthouse	1
Lighthouse challenge	1
Lying on beach	2
Monarch Butterflies	3
Observe and Learn about the St. Marks Lighthouse	1

Open Lighthouse	1
Picnic	1
Picnic Lunch	1
Sight Seeing	1
Take a child outside	1
Tour by bus on dam	1
Trail running	1
Trip to Magnolia Cemetery	1
Visit Lighthouse	1
Visiting Lighthouse	1
Volunteer	1
Total	32

2 <sup>nd</sup> Other Activity	Frequency
Enjoy talking to folks like me who enjoy being in nature. Folks who enjoy their jobs and share with us.	1
Full Moon Paddle	1
Tots on trails	1
Total	3

Question 2: "Which of the activities above was the primary purpose of your visit to this Refuge?"  
*Primary activities are categorized in the main report; the table below lists the "other" miscellaneous primary activities listed by survey respondents.*

Other Miscellaneous Primary Activities	Frequency
Beach	1
Horseback Riding	1
Landscape Painting	1
Lying on beach	1
Picnic	1
Ran 20km, immediately followed by cycling same 20km trail, then had a warm meal.	1
Volunteer	1
Total	7

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

Other Visitor Center Activity	Frequency
Attended photography class	1
Bird watch from deck	1
Bird watching from center	1
Birding	1
Buy Duck Stamp	1
Buy honey	1
Buy Pass	1
Checked for wildlife off the back deck	1
Children Crafts	1
Discussed with Ranger Barney Parker the possibility of doing an Audubon Society bird program there.	1
Get a map	1
Got the blue goose stamp for my passport	1
Looked for maps of refuge	1
Made a donation to a fund for McKenzie's' daughter.	1
Maps	1
Pay entrance fee	1
Photography Class	1
Purchase yearly refuge pass	1
Purchased Duck Stamp	1
Purchased nature books	1
Purchased senior pass	1
Renew Pass (annual)	1

Year Pass	1
Yearly pass to the park	1
Total	24

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
Audubon Group	1
College class	1
On-site Photography Class	1
Passing through on annual bird education trip	1
Total	4

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

Other Website	Frequency
Florida birding site	1
Florida Tourist Site	1
Florida Trail Association	1
I looked up places to hike on Google and found St. Marks.	1
Map and internet search	1
National Wildlife Refuge website and NWR maps	1
Website browsing for Lighthouse in Florida	1
Total	7



Other Ways Heard about This Refuge	Frequency
A map of local places of interest	1
Academic Colleagues at University of Florida	1
Also heard about the refuge from the Tallahassee Democrat's "Living Here"	1
Also used Florida Tour Guide Books.	1
Bird watching books	1
Blue Goose Stamp Book	1
Employee	1
Florida guidebook	1
Florida Master Naturalist	1
Graduate School Group	1
Guide book	1
Home school Group	1
Invitation from my friends, the teacher.	1
Just riding by.	1
Listing in tourist folder/map from 2001 trip to Florida	1
National Wildlife Refuge maps and information	1
Professor for our wetlands class	1
Ranger David Moody	1
Staying at Wakulla State Lodge	1
Tallahassee Visitors Center	1
Through Atlanta Audubon Society	1
University of Florida	2
USFS Survey 1979	1

Were told about a lighthouse to photograph	1
Total	25

## Survey Section 2

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

Other Forms of Transportation	Frequency
Horse	1
Kayak	1
Run	1
University 15 passenger van	1
University of Florida passenger van	1
Total	5

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

Other Ways Found This Refuge	Frequency
Directions in brochure	1
Map from Ranger	1
Paddling Guidebook	1
Professor drove us there	1
Son drove us there	1
Total	5

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
Bicycle single track trails	1
Boat Ramp	1
Bring our boat and travel around refuge in person	1
Canoe	1
Canoe/kayak rental	1
Electric bus/tram	1
Golf cart	1
Golf Cart	1
Hiking	1
Horse	1
Hot Air Balloon	1
It would depend on cost	1
Kayak or canoe rental	1
Kayak Rentals	1
Kayak share program or kayak tours	1
Kayak, canoe	1
Kayaking	1
Kayaks for rent	1
Personal auto with a guide to follow	1
Rental canoe/kayak	1
Train	1
Total	21

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

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Comments on Transportation-related Items at This Refuge (n = 32)

A bike share program would enhance access and give the ability of enjoying the trails to some who otherwise wouldn't have access to them. I have problems with walking/standing for long periods of time and I would really enjoy using a bike to explore the trails!

Boat ramp traffic is somewhat inconsiderate of slower bicycles and car traffic.

Each refuge presents a different challenge. St. Marks only has one road mostly around marshes and impoundments. Having enough places to pull over is difficult, and might mean filling in an area. The staff tries hard to make access easier for the disabled, but funding makes that harder. Since St. Marks is only a few feet above sea level, it's hard to find more parking. I believe they do the best that they can.

Enforce the speed limit.

How does a person who is blind find his/her way to the refuge?

I am concerned about the loss of motorhome parking just opposite of our parking lot. The parking lot for trailers and motorhomes isn't good for more than two vehicles.

I cannot walk far at a time. It would be nice to have regular refuge transport on the trails, etc.

I feel, on the whole, more walking trails through the refuge would be great! It would give visitors a safe, non-invasive path to view nature without disturbing it.

I love the refuge as it is.

I toured by car and did some hiking. All roads and trails were in good condition and adequately marked.

I wish there were more safe places to pull off and take photos when you see something interesting. I guess a separate lane, like at Ding Darling, is out of the question. Also, I would like to see boaters have another entrance. They drive too fast and could care less about the wildlife or people they could injure. I love St. Marks NWR and visit as often as I can during cool weather.

I would like more trails smooth enough for wheelchairs. We wish for ramps that the disabled can use, low-rise steps, etc.

I would like to have car access to the dam roads in this refuge for bird watching.

In the summer and other warm months, the trails and dikes need to be mowed more regularly in order for hikers to spot the poisonous snakes and avoid injury. I did not appreciate the way certain trails were widened (like a highway) with bush hogs last year and the destruction of vegetation including palm trees. Some trail signs are missing and would cause confusion for first-time hikers or bikers. There should be some signs created at certain trail intersections with the trail routes shown on the sign since some hikers and bikers fail to pick up a trail map or the trail maps are not available. The trail system is too extensive in the refuge for hikers and bikers to memorize. More hikers and bikers would venture farther on the more remote trails if they felt more comfortable about the distance and direction to be covered. More should be done to highlight the Florida Trail segments running through the refuge. It would be nice to see some interpretative kiosks which might lure some folks out of their vehicles to hike the trails and dikes to see something of particular interest, e.g. certain bald eagle nests, particular

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gathering places for alligators, or the curve of the big bend of the Florida peninsula along the Florida Trail. At one time the wild boars were more of a problem. I have encountered fewer feral hogs lately. It would be nice to see one or two ADA accessible short trails. As for boating, it is great to see the renovation work being done on the boat ramp.

It took a lot of searching and asking to find some part of the refuge that we wanted to visit.

It was not clear if we were allowed to pull over and park on the side of the road near the trailheads. We ended up parking at the visitor center and walked to a trailhead on the road.

It would be nice for a city (Tallahassee primarily and any other willing cities) to have a small bus with a bike trailer to take people to the refuge for a ride then let them return to the bus with their bikes carefully stowed on the trailer. It's too far to ride from town and is a great ride once there.

Need bike trails, both paved and unpaved, and well marked with accurate maps throughout the refuge.

Need more room on the side of the road to pull off and look.

Need to open the road on dikes to access more of the fishing areas (to vehicles).

Our visit was wonderful and we were quite happy with the condition of everything, even though I was bit by a nasty flying critter.

Please don't commercialize. For once, leave nature alone.

RAMP (2 Sided): East side SHORTER (15ft+) than West and at LOW tide boats drop off the end of the ramp onto trailer frames (BAD, BAD). Many Concrete planks are broken or crumbling. Ramp signage: NO boat prepping at ramp area. Use exit road right-away to prep Boats. Restrooms open the same time refuge gate opens.

The people towing boats through the St. Marks Wildlife Refuge drive too fast.

The refuge seems to be "parking friendly," "driving friendly," and "pull-off friendly."

The roads, parking areas, and signs were excellent.

There are many bikers at this refuge, but no bicycle lane on the main road from the entrance to the lighthouse. It would be nice to put in a designated bicycle lane if widening would not impact the environment on this very narrow road, which is bordered by numerous plants and waterways and full of wildlife crossing in the early morning hours.

Too many people stop in the middle of the road instead of pulling over on the shoulder.

Transportation through the park was lovely for viewing and easy to use.

Walker Beach needs culverts and bridges in low spots. It cuts into the road when it rains heavy in two or three different spots.

We only had the opportunity to visit for a few hours. It was a very good experience.

Wonderful place--pristine and full of birds and more birds. Lighthouse was lovely as well.

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## 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."

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### Comments on Services, Facilities, and Activities at This Refuge (n = 57)

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Again, I would like more places to pull off safely to photograph wildlife without cars and trucks with boats flying by breaking the speed limit.

Almost impossible to launch a boat by yourself with the new boat ramp that is installed on the east river pool (elderly people).

Always a wonderful day. We even went twice in 2 days the last time we were there. We walked two different routes. The value of these days is worth much more than the amazingly low yearly pass charge. I'd pay \$25 or more for a yearly pass. Thanks!!

Arrived about 4 pm because it is the best time for observing wildlife. It would have been nice if someone was available to answer questions. The only contact was a volunteer who was counting birds. He was very knowledgeable and welcoming, but it was not his primary purpose. Also, would like camping opportunities in the refuge.

As far as I can tell, St. Marks Wildlife Refuge is the most beautiful place on the planet! Thank you for making it available!

Better access to the knowledge and opportunities of the photography club there.

During low tide, it can often be hard to launch a boat of any size. Need more of a defined launching spot.

Great refuge! We really enjoy St. Marks.

I had a terrific time at St. Marks and I look forward to visiting again in different seasons. Volunteer opportunities are not important or unimportant to me, because I live far away and therefore can't volunteer.

I have volunteered at this refuge for a number of years and have enjoyed every minute of it. The staff and other volunteers are dedicated people who have the refuge utmost in their minds. The opportunities for bird and wildlife observation are top notch and made available through various programs. There is good visibility from the main road. We would like to see the historic lighthouse transferred to FWS from the Coast Guard. We have been waiting a long time!

I really enjoyed visiting the refuge. The staff was very professional and friendly. I look forward to becoming involved with the volunteer program.

I think more full time staff is needed so they could spend more time with visitors.

I was surprised that they did not have any trash barrels. I understand that you should take out what you bring in, but it would have been nice to have one.

I would like to see more rangers (but understand money is an issue). Your people seem content in their job and are always friendly and helpful. If folks don't feel "welcomed" or encouraged or inspired they don't feel inclined to seek new experiences (rush in and out and just not learn to see and enjoy). People like to be coached. Your people care about keeping it all for everyone. Education is the best solution (has to be a thankless job sometimes).

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I would like to volunteer to help maintain the out-of-the-way trails that have high grass. Also, I would like to improve/maintain the signage.

It would be nice to install a bathroom right at the lighthouse area as a large portion of the visitors go to this location, which often includes the elderly, and they would enjoy the lighthouse and shoreline area much more if they had a bathroom close by.

It's somewhat difficult to answer some questions based on a visit of a few hours. Overall it was a very good experience. We live in NH, far from the refuge.

More advanced publication.

More pullouts for vehicles would be welcomed. Some of the better bird observation sites have no way to stop your vehicle to observe what's there.

My favorite National Wildlife Refuge in the whole country.

My husband and I have visited this refuge many times over the past 25 years and always found well-managed and knowledgeable volunteers.

No hunting should be allowed.

On a trip down the Atlantic coastline and going to a site on the Gulf coast, we heard of a lighthouse located in this preserve. We found the lighthouse and so very much more than we had anticipated. We knew nothing of the park and were overwhelmed with the wildlife. We saw and photographed an eagle, an alligator, and more new (to us) birds than we ever expected. We have told many others of our luck in finding St. Marks and recommended they visit.

Please keep up the park system of Florida refuges. They are an important part of my life. We should provide access to all, especially low income households.

Please offer benches at various spots around the refuge.

Possibly have restrooms and water (drinking) available in several locations throughout the refuge.

Printed information about fall wildflowers needs to be made available. Since I cannot walk or hike I would like more opportunities to drive and/or take tram rides behind the locked gates to see otherwise inaccessible wildlife viewing areas.

RAMP (2 Sided): East side SHORTER (15ft+) than West and at LOW tide boats drop off the end of the ramp onto trailer frames (BAD, BAD). Many concrete planks are broken or crumbling. Ramp signage: NO Boat prepping at ramp area / Use exit road right-away to prep Boats. Restroom hours should open at the SAME TIME. St. Marks Refuge gate opens at 6 AM.

Re: Federal Senior Pass. I feel since budget cuts are a problem this pass could be an annual fee pass instead of a lifetime pass. That way it would still be affordable but not ridiculously low. Re: this refuge. It was a very nice place to visit. The staff was friendly and helpful. The facilities were good and the whole place was beautiful.

Satisfied with this refuge. Personnel are wonderful. Great trails and Visitors Center.

Sometimes visitors are careless with trash in the restrooms and around the refuge. The Visitor Center is a beautiful building, but it is not large enough to house all of the staff and provide proper modern workspace.

The exhibits are pertinent and not so much out of date as in need of updating. However, the exhibit space is small and given the unwillingness of congress to do anything (and I do mean anything) it is unlikely that the exhibits will be added to. I don't believe there is a marked canoe or kayak trail.

St. Marks NWR is a fantastic resource in our area!

St. Marks NWR is an outstanding refuge in every way! I have been going there since I was a child, and it is one of my favorite places on earth. The staff and volunteers do a terrific job of managing the refuge for both human visitors and wildlife.

The addition of the new kiosks has added greatly to the refuge experience. I would still consider additional kiosks (see comments regarding the trails). As for observation of birds and wildlife, the refuge needs to be careful when adjusting the water levels in the retention ponds since in the past they have become mud holes instead of pools for wading birds. A unique bird observation tower is in the Wheeler National Wildlife Refuge in Alabama, but is probably overkill for St. Marks. If you build it, will they come? Besides, I enjoy the open-air observation of birds instead of being behind glass. While I was in the Wheeler National Wildlife Refuge last week I saw two whooping cranes. I hope that our whooping cranes will thrive in St. Marks. It would be nice to see some wildlife viewing observation structures for those sections that are frequented by deer, etc. My dog and I walk the trails regularly and enjoy watching the deer. I think the refuge can do more to promote kayak fishing and environmental education kayak tours. The refuge is in the process of making the boat ramp safer.

The educational programs are fantastic! They are very age appropriate and informative, from tots on trails to the more organized events with different booths. My kids love and learn a lot when we go to St. Marks Wildlife Refuge. The visitor center is easy to access, always clean, and nicely stocked. I wish there was a little more parking, but then that comes at the cost of the land. Perhaps a bus that would shuttle you out to the lighthouse or picnic area for the events? Also, we LOVE the night prowls! What a unique experience!

The ladies room in the visitor's center has no hooks in the stalls for hanging purses, binoculars, cameras, etc.

The lighthouse is of major importance to visitors, but it cannot be opened; it is only for external pictures.

The photography class led by Barney Parker is the best in the world. Go Barney go!

The refuge does a great job!

The refuge is absolutely beautiful! This is such a unique place to be able to ride our horses with my children and grandchildren. The scenery and variety of animals, birds, and alligators offer such a wonderful opportunity for the 10 and 8 year old grandchildren to observe and enjoy nature the way it has existed here for thousands of years. On our most recent trip, in addition to multitudes of alligators sunning themselves, we were fortunate to observe two alligator mothers and their pencil length hatchlings. We also saw two bald eagles standing on a small sandy beach about 100 feet away from us. The only thing that would have been useful (that wasn't available) would have been having access to a water faucet at the Visitor Center so we could have filled a bucket to water the horses at the end of our ride. Thanks so much for such a delightful experience.

The refuge is beautiful, well-maintained, and welcoming. I go there for peace, to paint with my water colors, and to take pictures. They keep it as natural as possible.

The refuge is doing an excellent job!

The staff at the St. Marks visitor's center was very helpful for our group (to find local vendors, provide directions for retailers, and to answer questions about the Reserve). Great visitors' center; I'm glad to see the new education center being built for the future.



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There are no off-road bicycle trails. Bicyclists must share the road with motor vehicles.

There are no restrooms available; we have to use the woods. More trash was left behind because families come out with smaller children that just hang out at water's edge.

There is not enough to make us come back. If you had a restaurant and lodge and a place to swim like the Edward Ball State Park we could stay longer. With 3 children we need interesting guided tours, boat rides, bike rides, etc. The kids eat every two hours and need facilities.

They are all enjoyable and reasonably well done especially with the budget.

This refuge is very well managed and a delight to visit.

This refuge really needs restrooms, there are none, and a lot of families come down. That leaves the woods for relieving yourself, but that also brings the trash for clean up!

Trail closed at the Visitors' Center so we felt we didn't really get to experience as much as we typically might.

Very clean and well kept.

Visitors Center needs to be more open and visitor friendly. Employees are behind a closed door. At St. Marks (owned by the public) the center has a closed and isolated feeling between the public and staff (paid for by the public).

We love the natural view of the area without restriction, noise, manmade obstructions, or anything to take away from the beauty and wildlife.

We were very pleased with our experience at St. Marks. We will return.

Would like better maps and wheeled vehicle access to saltwater fishing dikes and creeks.

Would like to have 24 hour access for night visits. Maybe a sign-in sheet or night pass.

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## Survey Section 5

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

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### Comments on What Makes Refuges Unique? (n = 149)

7 mile bike ride to lighthouse. Good variety of shorebirds, wading birds, and waterfowl. We have seen our only Cistern Diamondback in the wild at St. Marks.

A chance to experience mother nature and the wonderful environment. Created to see nature unveiled with birds and wildlife.

A place to see nature at its best.

Access to wildlife in natural settings.

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Beauty, peace, quiet, close to God.

Because of the lighthouse.

Because the area has been planned and managed to provide habitat and not just left in its most natural state.

being able to bird watch- watching birds in natural habitats

Ever changing scenery, always some unexpected wildlife viewing experience - relaxing, peaceful, and amazing - ALWAYS. Fantastic! Our home away from home - our big backyard. We love refuges!

Fishing, bird watching and hiking.

Florida state parks and preserves are also quite wonderful.

For birding and enjoying an outdoor experience, enjoying the beauty.

For the most part, they are left in their natural state and cater to those who value a unique outdoor experience. They also offer greater opportunities to view wildlife in their natural habitat.

Great home for wildlife.

Having volunteered at several NWR's, I have found visitors are uniquely pleased with both the experience of seeing wildlife in a "natural" setting and hearing about management practices.

High level of protection and high emphasis on wildlife (as opposed to scenery).

Historic lighthouse.

I am an avid bird watcher and spend two week in the Spring, usually April 11th to 19th, observing the spring migration around the coast of Florida and Alabama. This is my last stop to see shorebirds migrate and the first Warblers arrive.

I am an avid butterfly fan. Happened to visit when instructors were teaching how to tag and release Monarchs.

I enjoyed the wild side of this facility.

I especially enjoy watching wildlife and photographing it. I usually find much more in the National Wildlife Refuges and enjoy learning more about the wildlife throughout our great country.

I haven't visited a lot of refuges relative to state and national parks, but it seems to me that refuges are primarily managed for plant and animal habitat rather than recreation for people. They offer an opportunity to see management for habitat at work and therefore give me a little insight into what plants and animals need and how biologists or other managers accomplish this.

I like that the refuges protect plants and wildlife during sensitive periods like migration and mating, and that St. Marks National Wildlife Refuge staff are so approachable and accommodating.

I like the lighthouse and the "picture" tree.

I treasure these protected wild areas made accessible for average active people who love the outdoors and

want to see, enjoy, and learn about nature specific to the area. I feel safe whether by myself or with girlfriends. No extreme survival skills necessary!

I value the natural settings you can always find at a refuge.

Important and unique habitat.

In my experience, they strive to preserve the natural ecosystems. Refuges are more natural. National Parks have to accommodate so many visitors that the natural experience is somewhat diminished.

In some spots the oak trees almost meet the water's edge. Also, the old ruins at the Lodge looks like something from ancient Greek buildings.

In this trip I viewed the wood stork at rest and in flight, mimicked kingfishers who responded, watched an anhinga uttering a mourning cry three feet from a medium sized gator for several hours, watched a large bobcat stalking its prey, and mimicked a returning osprey that kept up a conversation with me. I listened to the SILENCE.

Incredible natural beauty and wildlife viewing in one compact coastal location. It has everything from deer to alligators and numerous birds and butterflies. It is a very unique and beautiful place to be at dawn and sunset.

Interpretive displays; knowledgeable people.

It is home to the wildlife, and the people are just visitors.

It is inexpensive and preserves nature as it is.

It is old Florida at its best.

It is quiet and left untouched except by nature. :)

It is unique to have large tracts of land maintained for nature and wildlife, and to have paths and observation routes so that we can enjoy it without damaging the habitat.

It is very accessible compared to other refuges that I have visited. It also has a great combination of hiking, beach, and wildlife viewing opportunities.

It is well-maintained. See lots of birds, butterflies, gators, deer, and have seen a wildcat. The natural beauty of the entire refuge.

It keeps the developers off our coast and lets the natural woods and wildlife survive.

It provides a safe haven to wildlife and an opportunity for humans to see wildlife in its unique habitat.

It should be managed more for wildlife than for people.

It's clean, welcoming, and lets you become one with the nature and surroundings.

Its beauty and creatures.

Its location and the system of pond management that is tilted towards supporting migratory birds, especially waterfowl.

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Just being able to see different scenic sites all over the country. Very educational.

Lighthouse and boating

Lighthouse, Monarch observational and waterfowl.

Maintained.

Minimal or no disruption of natural habitat, which maximizes visitor enjoyment of wildlife via primitive access trails.

Most refuges are large enough to allow habitat for birds and other animals. They are not "maintained" like a park and allow a more natural environment. They are usually less crowded than a park too.

Natural habitat.

Natural habitats of wildlife well preserved.

Natural, not crowded, photography opportunities.

One of few places that were designed for interaction between people and nature.

Openers and conservation of wildlife, animals and vegetables.

Opportunity to visit wildlife in relatively safe, well-managed environments with Visitors Center and rest stop.

People can enjoy a variety of activities amongst everyone else at the same time without crowding. The big sky overhead helps, but the civility of the refuge is really what matters and works here at St. Marks.

Preserving wildlife, preserving natural habitat, and opportunities for people to interact and observe.

Protection and management of wildlife and natural resources, i.e. marsh lands.

Protection of wildlife without commercialization.

Protects the land from encroachment by private concerns and protects the unspoiled beauty for us to experience. They also protect all resident wildlife.

Refuges are often the most natural of public lands. They allow visitors to witness the intrinsic value of wildlife observation.

Refuges offer a unique place for birds and other wildlife in natural habitats, other public lands don't. This provides a natural place for birdwatchers, photographers, and other folks that just enjoy observing wildlife.

Refuges should be special preserves specific to providing safe natural habitats and protection for flora and fauna. They should focus on preserving habitats, flora, and fauna, and not on recreational uses. Recreational uses should be limited to those passive activities that educate us and do not impact the land and its plants and animals.

Refuges tend to have better infrastructure for birdwatchers (blinds, towers) and easily accessible trails.

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Relatively unspoiled, naturally diverse (ocean and ponds) giving a diverse mix of habitat and of bird rarities. The main road was well-paved and often crossed by bears, bobcats, and otters.

Road open only in hunting season, stop poaching.

See my above notes.

See response to earlier question.

Sheltered/protected from distress and stress. Also a place that provides this for wildlife and resources too. A safe place to come learn about Florida things folks hear about but haven't learned about yet. Interpretation is paramount so people learn to see ethical standards in this setting. If more folks understand they will think twice, which could grow into caring about wildlife resources.

Significant protection provided for many wildlife species.

SMNWR offers the opportunity to see rare species of birds. It is kept natural and I love it.

So much wildlife to see! From gators, to birds to hermit and fiddler crabs there's so much to observe! It's also unique that the monarch butterflies and whooping cranes come through the refuge. My family counts the refuge among the top reasons we love living in Wakulla County!

St. Marks is a unique place in that it has both forest and salt water locations, activities, and access. I enjoyed seeing the Monarch Butterfly tagging and release. My daughter and I spent my birthday there!

St. Marks is my favorite natural place to visit in all of the Florida Big Bend. It is open, vast, and offers many diverse habitats that are so important for so many species in these ecosystems, offshore and onshore. Wildlife viewing and photography is incredible here. These areas are as close to nature as you can get.

St. Marks Refuge gives the average person access and the opportunity to experience the incredible natural beauty in our world. So many places and forms of wildlife would be out of reach to the average person without the wonderful park and refuge program. My family is extremely grateful.

Strategically placed to save and savor land that is only gently touched by our modern society. This part of our heritage must always be protected and preserved.

That you can observe wildlife in their own habitat.

The ability to observe nature without too much intrusion of the outside world.

The ability to observe wildlife without all the people. Let's keep your success under wraps. We don't want to share with people who don't respect wildlife.

The access to water and natural habitats.

The air, the trails, the wildlife, and the birds. It's just a wonderful outdoor way to spend the day just hiking, riding our bikes, walking and taking photos, walking and looking thru binoculars, and just breathing the wonderful air in every season.

The all natural beauty, soreness.

The amount and types of birds we observed when hiking and kayaking in the St. Marks Refuge made us

realize we were in a very special area. Thanks.

The availability to observe wildlife and plants in their natural state. The knowledge and effort of the staff to provide protection, suitable habitat, and food sources for plants and animals. Accessible trails, boardwalks, blinds, and platforms for viewing wildlife. Written information and assistance provided by staff.

The beautiful lighthouse and the view.

The best of both worlds, fresh water and salt water. Truly enjoyable!

The bird watching was excellent. It was amazing.

The dike system and water management which makes it a haven for migrating birds, butterflies etc.

The educational opportunities at this refuge are so much fun for children and adults alike. I love seeing all the animals in the natural habitat.

The gulf coast is a major fly-way for migratory birds, and the refuge provides birding opportunities that can't be found elsewhere.

The lighthouse and how close by it is.

The location is unique and convenient.

The many different areas to observe wild birds and to photograph the birds.

The opportunity to learn and observe the monarch butterflies, and watch my grandson enjoy it as well, was wonderful. The ranger informed the children and adults so well and we all learned things we did not know.

The opportunity to see nature that is not provided elsewhere.

The opportunity to see wildlife in its own habitat is unparalleled.

The opportunity to view wildlife in natural habitats.

The opportunity to view wildlife. Camping is important because the best time to view wildlife is sunrise and sunset.

The opportunity to watch nature change over time knowing many things remain the same. There is a place here for nature, which brings the best out in you.

The peacefulness of being outside and being able to go through at your own pace.

The refuge allows for a person to view Florida in a more primitive setting, which is unique these days.

The refuge and others I've visited do their best to attract birds and other wildlife. I do wish hunting was not allowed.

The refuge is a place to visit where there is no development, only plants, water and wildlife. A very restorative experience.

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The refuge is quieter, less polluted and the bathrooms are clean. We enjoy the Visitors Center displays and the educational fieldtrips as well.

The refuge's commitment to improving the experience.

The St. Marks National Wildlife Refuge offers all the outdoor activities I enjoy.

The staff, volunteers and most of all the wildlife. Saw a Black Bear my last visit, a first. It was wonderful.

The total scenery and habitat diversity. I fish quite a bit at this refuge and the ability to fish both freshwater and saltwater is unique.

The use of prescribed fire management and wildlife protection.

The variety of uses available.

The water trails.

The wildlife, the trails, the waterways and the boat ramps.

Their devotion to wildlife conservation in unique habitats.

Their emphasis on natural life is refreshing.

There are few recreation areas with such an expansive marsh in this area with such a large selection of visible wildlife.

There are unlimited recreational and educational opportunities in the unique ecosystem of the historically significant St. Marks National Wildlife Refuge for hiking, biking, running, or horseback riding on the trails and dikes, freshwater and saltwater fishing from shore or by boat or kayak, wildlife observation (including the Monarch butterfly), and bird watching.

There is not a lot of traffic or high foot traffic. I enjoy the distance that it takes to travel through the woods before you get to the gulf. The fishing is amazing for canoes and kayakers with a heavy follow of motorized boats.

These are natural wildlife settings which facilitate appreciation for the beauty and diversity of nature without commercialism.

They are involved in conservation and protect the animals.

They are maintained as natural habitats for the animals and the people are observers.

They are managed with primary intent to protect and conserve flora, fauna, fish, and other natural resources instead of primarily for human recreation.

They are more natural and less crowded than a lot of national parks. It makes me feel good that there are refuges that have their mission to protect the environment for the future.

They are more natural.

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They are not necessarily endowed with all of the outstanding mountains or seashore sights that national parks might have, but they are dedicated to conserving birds, animals, plants, and managing those for public use.

They are quiet places to see native wildlife and plants.

They are there first for the protection of wildlife with people secondary.

They are very well maintained in a pristine and wild way.

They belong to us, the United States people, forever. No question. They always will be there, for us and succeeding generations.

They provide an opportunity for people to enjoy and use the natural resources of our country in diverse ways and to see and learn about the land without it being overdeveloped. The refuges are one of the most satisfying uses for our tax money.

They seem safer than non-parks. I don't worry about my car and my life while I'm there.

This refuge is unique because of all the different environments it encompasses: freshwater, ponds, marshes, saltwater estuaries, and the gold coast.

Tidal creeks, oyster bars, sand bars, coastal birds, and fish all protected from civilization encroachment.

Typically larger in area and located in strategic wildlife corridors or unique areas around the country.

Typically their size and the limitations they put on activities that are not conducive to NWRs.

Unique wildlife habitat and migration patterns.

Very beautiful, educational and wonderful monarch features.

Very well maintained kiosks and trails.

We need to save our wild lands and waterways for the future of our world. I want my children and their children to have the same opportunities to visit NWR's that I have had. I am an avid birder and always find something unique every time I visit a wild setting. Great memories. The first time I visited St. Marks we saw hundreds of Pelicans and I remember that as I will also remember the Swamp Sparrows and Wrens I saw on this trip.

We need to see and enjoy all nature's makeup and beauty.

Well managed and environmentally sound.

Wildlife availability for observation and photography is best in the refuges. Fishing is as well, usually a satisfactory experience, more so than elsewhere.

Wildlife comes first on refuges. For now many refuges are undiscovered destinations. Unlike national parks, refuges still offer an opportunity for people to view and learn about nature in a less crowded setting. Many refuges are scenic. Most protect historical and cultural sites that have not been fully documented or shared with the public. To understand a place, one has to know the history of a place, and then one will be able to truly appreciate the value of a place.

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Wildlife in the wild.

Wildlife is unique and you usually can get closer to the wildlife than other public lands. Also habitat is set aside for wildlife, especially birds.

Wildlife, alligators, birds, fish, natural beauty.

Wildlife.

Your experience is enhanced by the ability to lose yourself in the natural environment of Florida. You can see so many species of animal in their natural habitat. It is like walking into the past before people came along.

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Additional Comments (n = 57)

As a retired science teacher involved in promoting sustainable agriculture in my local community, I need the time in silence to restore my ability to deal with diverse members of my community to shift the paradigm.

As the name implies refuges are my personal refuge. I began visiting St. Marks Refuge in 1984 after my father died for I was in need of finding peace and comfort. I have been trying to give back to this refuge and other refuges ever since.

Before his death, my Alzheimer suffering husband looked forward to our monthly or twice monthly trips to St. Marks Wildlife Refuge. The ebb and flow of seasons, the abundant wildlife - all of these soothed and invigorated him. Thank you for offering this place of refuge.

Dogs for recovering shot deer.

Excellent refuge! Very impressive! Nice to hear of education building going up!

For a visit of only a few hours it was an excellent experience.

For years, when I rode a bicycle for transportation I talked about arranging a three-wheeled bike for my elderly friend, who was thinking of accompanying me for a ride to the lighthouse from the Visitors Center. I never did. It was too much to find a 3 wheeler, let alone tangent from town. So the idea faded. I think if three wheel adult bikes were available and maintained as well as had road service or an accompanying bike fixer and generally pleasant person, the delight would be fanatic. Our old timers need to feel alive in nature.

FWS should be applauded for its management of St. Marks. I'd welcome climate change informal education here, but I'm already a climate scientist so I don't need it, but the public at large does.

Give the fishermen the right to fish at least a 5/8 net paddle skiff with small outboard motor to catch mulled. I think the fishermen have been done wrong.

Great refuge, but I do not understand why so many living cabbage palm trees, the state tree, were chopped down. There are not enough pull-off places for bird/gator viewers.

Hunting should not be allowed, and if it must be, only quota archery.

I absolutely LOVE this NWR!

I am an international student at the University of South Alabama, and even though I've been here for 3 years I

am still amazed by the quality of the national parks, state parks, and wildlife refuges in the United States. I applaud you for it!

I believe that our wildlife refuges are under pressure and threat of overuse while they are at the same time under-protected. USFW is understaffed, and volunteer support is also inadequate to maintain these resources.

I enjoyed a first visit to St. Marks. Afforded an interesting drive and hikes. Lots of Monarch butterflies on their migration.

I enjoyed the tram to the lighthouse and seeing the inside of the lighthouse.

I have direct ancestors buried at Port Leon in St. Marks National Wildlife Refuge. Daniel and Sarah Demit died in Port Leon during the Yellow Fever Epidemic of 1841. Their two children, Alonzo and Elizabeth, wrote a book and Elizabeth became my great grandmother. I visit the site several times each winter (bugs are too bad in the summer). I wish there could be a marker placed in memory of those lost at Port Leon due to Yellow Fever.

I have in the past visited many wildlife places for birding and find St. Marks right up there with most of them regarding usage, beauty and places to view birds, especially shorebirds and the large water birds - eagles, etc. PS: I originally intended to do this on-line but was unable to get to the web site.

I have taken a University of Florida Graduate class on Wetlands and Water Quality to St. Marks for the past 5 years since it offers a great transitional gradient of wetlands from freshwater to saltwater along a low energy shoreline. The impoundments also provide a great example of how hydrologic manipulation changes vegetative community structure as well as biogeochemistry and habitat. A great refuge for many purposes. Keep up the good work!!

I love St. Marks NWR. I developed my interest in photography there back in 1997. The dikes make it easy to see what is going on. It is large and has many trails. It is my favorite NWR in Florida.

I thoroughly enjoyed it. I will go back as often as I can manage. I will encourage others to visit. Next time I will spend more time (2-3 days).

I totally support your mission. I hope your agency continues its mission as the country gets poorer and government gets more and more compromised.

I try to visit the refuge weekly and sometimes several times a week. It is the most important and only place I look forward to going to each week. It is very important to me.

I wanted to see the Visitors Center and buy a thimble, if available, but it was closed.

I work on a deep sea fishing boat.

I would have enjoyed more info available on the plant communities in the refuge.

Invasive exotics (plants and animals) here and at other NWRs we visit need to be controlled. It takes time, personnel, and budget, but the problems to ecosystems will only get worse if these threats are ignored.

It is a wonderful place.

It was a wonderful experience.

Just thanks for maintaining these refuges and helping to save them and the wildlife living within them.

Keep up the good work so our children and grandchildren will be able to learn and enjoy more about nature and God's gift to all of us.

My family and I spend many weekends exploring on horseback. We would like more information about other wildlife refuges that allow horseback riding.

My husband and I love St. Marks. It is not heavily visited, therefore mostly visited by locals who leave it largely unspoiled. It has astoundingly diverse flora and fauna with great exposure to the Gulf and marshlands.

My husband and I really enjoy going to the refuge as often as possible. Thank you!

My husband and I visit this refuge as often as possible. We love it! We have many fantastic photos of wildlife, plants, scenery, etc. We've recently gotten a kayak and plan to add kayaking to our activities. No words can adequately express the total beauty of St. Marks. Fantastic experience every time. Always beautiful, never a dull moment.

My wife and I have been going to St. Marks for over 20 years. It's our favorite place in the world.

Outside of no restrooms, this refuge is very simple, and this is what makes it beautiful.

Places like St. Marks are priceless; they restore one's soul and bring one into unity with nature.

Please keep up the good work on the National Wildlife Refuges.

Selfishly, I'd like better vehicle access to inshore fishing areas.

St Marks is a favorite of our entire family.

St. Marks is a wonderful resource for me and many of my friends. I learn from both its programs and just enjoying it.

St. Marks is fantastic! I'm excited to return the next time I'm in Florida.

St. Marks National Wildlife Refuge is awesome!

This visit was to help at one of the special events held at this refuge every year. I feel that the special events enhance the visitor's experiences at the refuge. It was a beautiful day at a beautiful place, one I love spending time at many times through the year!

Wakulla beach is perfect, outside of no restrooms, because it is untouched and just has a natural beauty.

We appreciate the knowledge of the staff at the refuge. The information they shared turned our time at the craft booths into learning time (Shhh! Don't tell the kids! They just thought they were having fun!). As a homeschooling mom, I count on the refuge and their staff as a valuable resource.

We go at least twice a month to this refuge. The Federal Senior Pass replaced our annual one, making it even more economical for us to enjoy the variety of wildlife in this special place.

We love it.

We love St. Marks and also the local river to canoe, St. Marks and Wakulla. We want to plan birding trips to St. Marks for Atlanta Audubon Society - we have taken an annual trip to Merritt Island National Wildlife Refuge

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every January for the past 8 years.

We went to the festival in Panacea and drove down to the park just riding around. It was the first time we have visited this park and I don't know if we'll go again. It has a few tables and restrooms in a very pretty location by Otter Lake.

When we have out-of-state visitors we always bring them to the refuge on at least one day of the visit. Grandkids always want to see alligators. The refuge never fails to interest and entertain. There is so much to see on any given day. Great for photographs. Visitors always want to see the Lighthouse.

Wonderful! Please, please, please, continue!!! And thank you!

Would be great if the hours of the St. Marks Refuge/Lighthouse area could be extended to 8:00 PM. The park has an automatic gate which opens at 6:00 AM, but lots of folks who fish (and this location has a boat ramp) like to fish the waters until sunset/sundown and a 6:00 PM closure is just too early, particularly in the summer months with daylight savings time.

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