

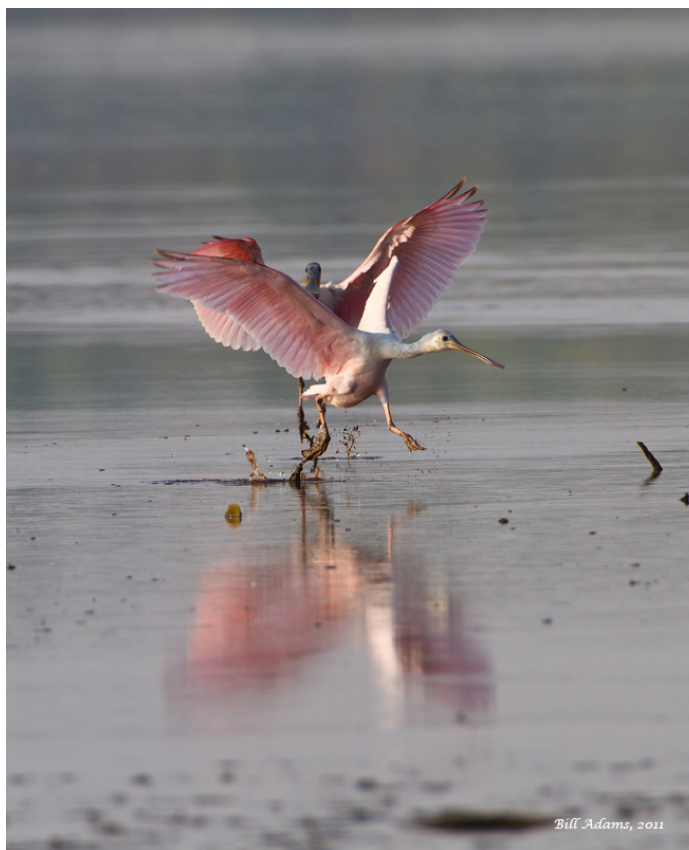


National Wildlife Refuge Visitor Survey 2012: Individual Refuge Results for Tishomingo National Wildlife Refuge

By Alia M. Dietsch, Natalie R. Sexton, Lynne Koontz, and Shannon J. Conk

National Wildlife Refuges not only protect the environment, but also provide opportunities for the public to learn about our nation's natural treasures. People are more likely to fight to protect something they value and National Wildlife Refuges show visitors the value of conserving, managing, and restoring fish and wildlife as well as habitat.

— *Survey comment from a visitor to Tishomingo National Wildlife Refuge*



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

Contents

Acknowledgments	iv
Introduction	1
Organization of Results	2
Methods	3
Selecting Participating Refuges	3
Developing the Survey Instrument	3
Contacting Visitors	3
Interpreting the Results	5
Refuge Description	5
Sampling at This Refuge	8
Selected Survey Results	9
Visitor and Trip Characteristics	9
Visitor Spending in Local Communities	17
Visitor Opinions about This Refuge	18
Visitor Opinions about National Wildlife Refuge System Topics	23
Conclusion	28
References Cited	29
Appendix A: Survey Frequencies for This Refuge	A-1
Appendix B: Visitor Comments for This Refuge	B-1

Figures

1.	Map of this refuge	7
2.	How visitors first learned or heard about this refuge	10
3.	Resources used by visitors to find their way to this refuge during this visit.....	10
4.	Number of visitors travelling to this refuge by place of residence	12
5.	Modes of transportation used by visitors to this refuge during this visit	13
6.	Activities in which visitors participated during the past 12 months at this refuge	14
7.	The primary activity in which visitors participated during this visit to this refuge.....	15
8.	Visitor center/contact station activities in which visitors participated at this refuge	15
9.	Overall satisfaction with this refuge during this visit.....	18
10.	Importance-satisfaction ratings of services and facilities provided at this refuge.	20
11.	Importance-satisfaction ratings of recreational opportunities provided at this refuge.....	21
12.	Importance-satisfaction ratings of transportation-related features at this refuge.....	22
13.	Visitors' likelihood of using alternative transportation options at refuges in the future (n ≥ 146).....	24
14.	Visitors' personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 144).	26
15.	Visitors' beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 141).	27

Tables

1.	Refuges participating in the 2012 national wildlife refuge visitor survey	4
2.	Sampling and response rate summary for this refuge.....	8
3.	Influence of this refuge on visitors' decisions to take their trips	11
4.	Type and size of groups visiting this refuge	13
5.	Total visitor expenditures in local communities and at this refuge expressed in dollars per person per day....	17

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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 specifically dedicated to the conservation of fish, wildlife, and their habitats. There are 560 national wildlife refuges (refuges) and 38 wetland management districts nationwide, including possessions and territories in the Pacific and Caribbean, encompassing more than 150 million acres (U.S. Fish and Wildlife Service, 2013). As stated in the National Wildlife Refuge Improvement Act of 1997, 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 the diversity and interconnectedness of fish, wildlife, and plants, and their habitats” and the goal “to provide and enhance opportunities to participate in compatible wildlife-dependent recreation” (U.S. Fish and Wildlife Service, 2006, p. 2). The Refuge System attracts nearly 45 million visitors annually, including 34.8 million people who observe and photograph wildlife, 9.6 million who hunt and fish, and nearly 675,000 teachers and students who use refuges as “outdoor classrooms” (U.S. Fish and Wildlife Service, 2012). Understanding visitor perceptions of refuges and characterizing their experiences on 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 refuges. The purpose of the survey was to better understand visitor experiences and trip characteristics, to gauge visitors’ levels of satisfaction with existing recreational opportunities, and to garner feedback to inform the design of programs and facilities. The survey results will inform performance, planning, budget, and communications goals. Results will also inform Comprehensive Conservation Plans (CCPs), visitor services, and transportation planning processes.

Organization of Results

These results are specific to visitors who were contacted at Tishomingo National Wildlife Refuge (NWR) (this refuge) during the specified sampling periods and are part of USGS Data Series 754. All refuges participating in the 2012 survey 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 survey effort.
- **Methods:** The procedures for the national survey 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 Refuge System topics
- **Conclusion**
- **References Cited**
- **Survey Frequencies (Appendix A):** The survey instrument with frequency results for this refuge.
- **Visitor Comments (Appendix B):** The verbatim responses to open-ended survey questions for this refuge.

Methods

Selecting Participating Refuges

The national visitor survey was conducted from January–December 2012 on 25 refuges across the Refuge System (table 1). Each refuge was selected for participation by the Refuge Transportation Program National Coordinator in conjunction with regional office Visitor Services Chiefs. Selection was based on the need to inform transportation planning processes at the national level and to address refuge planning and transportation needs at the individual refuge level.

Developing the Survey Instrument

Researchers at the USGS 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 (one 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 at which to sample, 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 the 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 3–5 hour (hr) time bands, stratified across AM and PM as well as weekend and weekdays. In coordination with refuge staff, any necessary customizations were made to the standardized schedule to accommodate the identified sampling locations and to address specific spatial and temporal patterns of visitation.

Twenty visitors (18 years of age or older) per sampling shift were systematically selected, for a total of 320 willing participants per refuge (or 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. Refuges participating in the 2012 national wildlife refuge visitor survey.

Pacific Region (R1)
Ridgefield National Wildlife Refuge (WA)
Southwest Region (R2)
Balcones Canyonlands National Wildlife Refuge (TX)
Hagerman National Wildlife Refuge (TX)
Kofa National Wildlife Refuge (AZ)
Santa Ana National Wildlife Refuge (TX)
Tishomingo National Wildlife Refuge (OK)
Great Lakes-Big Rivers Region (R3)
La Crosse District, Upper Mississippi River National Wildlife and Fish Refuge (WI)
Minnesota Valley National Wildlife Refuge (MN)
Southeast Region (R4)
Crystal River National Wildlife Refuge (FL)
Eufaula National Wildlife Refuge (AL)
Felsenthal National Wildlife Refuge (AR)
Lacassine National Wildlife Refuge (LA)
National Key Deer Refuge (FL)
Savannah National Wildlife Refuge (GA/SC)
Northeast Region (R5)
Assabet River National Wildlife Refuge (MA)
Back Bay National Wildlife Refuge (VA)
Chincoteague National Wildlife Refuge (VA)
Edwin B. Forsythe National Wildlife Refuge (NJ)
Rachel Carson National Wildlife Refuge (ME)
Mountain-Prairie Region (R6)
Bear River Migratory Bird Refuge (UT)
Lee Metcalf National Wildlife Refuge (MT)
Rocky Mountain Arsenal National Wildlife Refuge (CO)
National Bison Range (MT)
California and Nevada Region (R8)
Don Edwards San Francisco Bay National Wildlife Refuge (CA)
San Luis National Wildlife Refuge (CA)

Refuge staff and/or volunteers (survey recruiters) contacted visitors onsite following a protocol provided by the USGS that was designed to obtain a representative sample. Instructions included contacting visitors across the entire sampling shift (for example, every n^{th} visitor for dense visitation, as often as possible for sparse visitation) and contacting only one person per group. Visitors were informed of the survey effort, given a token incentive (for example, a small magnet or 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 were also instructed to record any refusals and then proceed with the sampling protocol.

All visitors that agreed onsite to fill out a survey received the same sequence of correspondence regardless of their preference for survey mode. This approach allowed for an assessment of visitors' likelihood of completing the survey by their preferred survey mode (see Sexton and others, 2011). Researchers at the USGS sent the following materials to all visitors agreeing to participate who had not yet completed a survey at the time of each mailing (Dillman, 2007):

- A postcard mailed within 10 days of the initial onsite contact thanking visitors for agreeing to participate in the survey and inviting them to complete the survey online.
- A packet mailed 9 days later consisting of a cover letter, survey, and postage paid envelope for returning a completed paper survey.
- A reminder postcard mailed 7 days later.
- A second packet mailed 14 days later consisting of another cover letter, survey, and postage paid envelope for returning a completed paper survey.

Each mailing included instructions for completing the survey online, so visitors had an opportunity to complete an online survey with each mailing. 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 packet to determine any differences between respondents and nonrespondents at the aggregate level. Online survey data were exported and paper survey data were entered into Microsoft Excel using a standardized survey codebook and data entry procedure. All survey data were analyzed using *Statistical Package for the Social Sciences* (SPSS, v.20) software¹.

Interpreting the Results

The extent to which these results accurately represent the total population of visitors to this refuge is dependent on the number of visitors who completed the survey (sample size) and the ability of the variation

¹ Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

resulting from that sample to reflect the beliefs and interests of different visitor user groups (Scheaffer and others, 1996). 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 unique to each refuge. Spatially, the geographical layout and public-use infrastructure varies widely across refuges. Some refuges can be accessed only 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 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, which may result in certain survey measures such as visitors' self-reported "primary activity during their visit" reflecting a seasonality bias. Results contained within this report may not apply to visitors during all times of the year or to visitors who did not visit the survey locations.

In this report, visitors who responded to the survey are referred to simply as "visitors." However, when interpreting the results for Tishomingo NWR, any potential spatial and temporal sampling limitation specific to this refuge needs 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 (mi) 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). 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) is too low ($n < 30$), a warning is included in the text. Finally, the term "this visit" is used to reference the visit during which people were contacted to participate in the survey.

Refuge Description for Tishomingo National Wildlife Refuge

Tishomingo NWR, located in southern Oklahoma, surrounds the upper Washita arm of Lake Texoma. The area provides crucial habitat for migratory waterfowl due to its location in the Central Flyway. A wide range of animal species is found within the 16,464 acre refuge due to the diversity of habitat which includes mixed forest, grasslands, and river bottom. The refuge is named after Chief Tishomingo, a Chickasaw Native American who served with distinction in the U.S. Military and was a principal signer of numerous treaties. Refuge land has been home to both Native Americans and a Methodist missionary community, and contains a number of historic sites from the late 1800s and early 1900s. These sites include the Harley Cemetery and several concrete structures, one of which serves as the refuge office/shop building.

Tishomingo NWR attracts approximately 208,000 visitors each year (2011 Refuge Annual Performance Plan measures; Rob Miller, U.S. Fish and Wildlife Service, 2012, written commun.). Opportunities available at the refuge include bird watching, wildlife observation, photography, hiking, fishing and limited hunting opportunities. Deer, herons, beaver, wild turkeys, armadillos, opossums, and many species of waterfowl and migratory birds are some of the refuge's residents which visitors may spot. At the refuge headquarters, a mounted spotting scope assists with viewing wildlife without disturbing them. The refuge's main focus is wildlife; however, visitors may also enjoy viewing unique landscapes such as the

Cumberland Pool from Jemison Lookout. Figure 1 displays a map of the refuge. For more information, please visit <http://www.fws.gov/southwest/refuges/oklahoma/tishomingo/index.html>.



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

Sampling at Tishomingo National Wildlife Refuge

A total of 278 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Tishomingo NWR (table 2). In all, 156 visitors completed the survey for a 59% response rate, and $\pm 6.3\%$ margin of error at the 95% confidence level.²

Table 2. Sampling and response rate summary for Tishomingo NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	4/21/2012 to 5/5/2012	Wildlife Management Unit				
		Craven Nature Trail				
		Visitor Center				
		Murray 23				
SP1 Totals			140	5	86	64%
2	10/6/2012 to 10/20/2012	Wildlife Management Unit				
		Craven Nature Trail				
		Visitor Center				
		Murray 23				
SP2 Totals			138	9	70	54%
Combined Totals			278	14	156	59%

² A margin of error of $\pm 5\%$ at a 95% confidence level, for example, means that, if a reported percentage is 55%, then 95 out of 100 times, that sample estimate would fall between 50% and 60% if the same question was asked in the same way. The margin of error is calculated with an 80/20 response distribution, assuming that for a given dichotomous choice question, approximately 80% of respondents would select one choice and 20% would select the other choice (Salant and Dillman, 1994).

Selected Survey Results

Visitor and Trip Characteristics

A solid understanding of visitor characteristics and details about their trips to refuges can inform communication and outreach efforts, inform managers about desired types of visitor services and modes of transportation used on refuges, and help forecast use and gauge demand for services and facilities.

Familiarity with the Refuge System

Most visitors to Tishomingo NWR reported that before participating in the survey, they were aware of the role of the Service in managing refuges (95%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants, and their habitats (95%). It is important to note that we did not ask visitors to identify the mission of the Refuge System or the Service, and positive responses to these questions concerning the management and mission of the Refuge System do not necessarily indicate that these visitors fully 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.

Many visitors (86%) feel that refuges, compared to other public lands, provide a unique recreation experience (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.

Some visitors to Tishomingo NWR had been to at least one *other* national wildlife refuge in the past year (44%), with an average of 5 visits to *other* refuges during the past 12 months.

Visiting This Refuge

Few surveyed visitors (16%) had only been to Tishomingo NWR once in the past 12 months, while most had been multiple times (84%). These repeat visitors went to the refuge an average of 29 times during that same 12-month period. Visitors used the refuge during only one season (32%), during multiple seasons (23%), and year-round (44%).

Most visitors first learned about the refuge from friends/relatives (74%), while others learned about the refuge from people in the local community (25%) or signs on the highway (18%; fig. 2). Key information sources used by visitors to find their way to this refuge include previous knowledge (85%), signs on highways (10%), or directions from friends/family (8%; fig. 3).

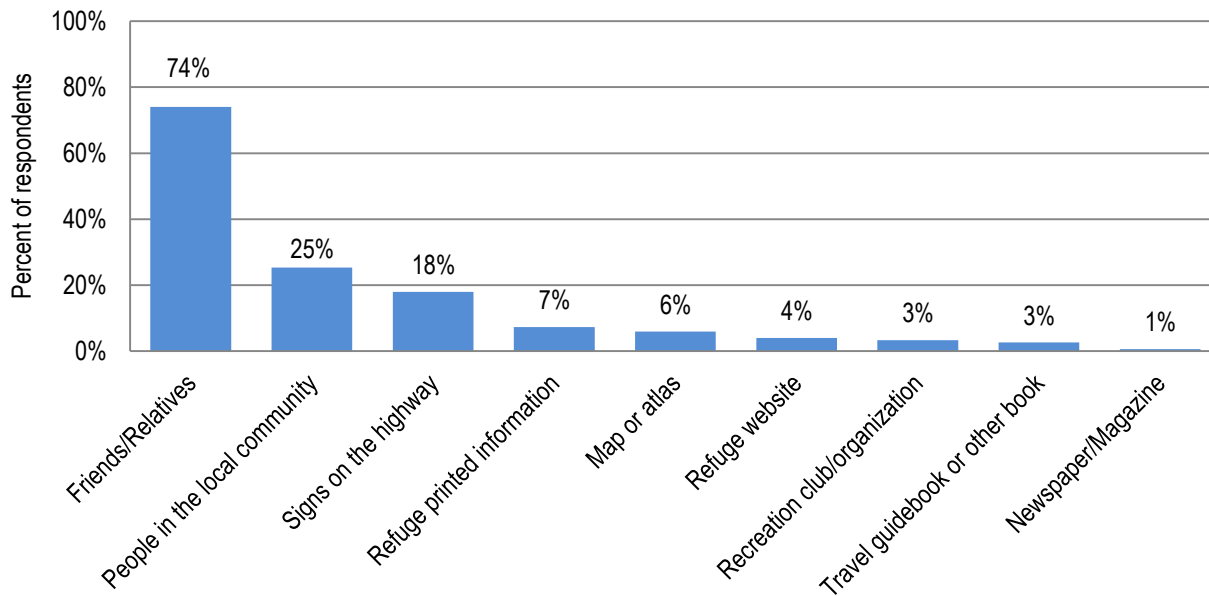


Figure 2. How visitors first learned or heard about Tishomingo NWR (n = 150).

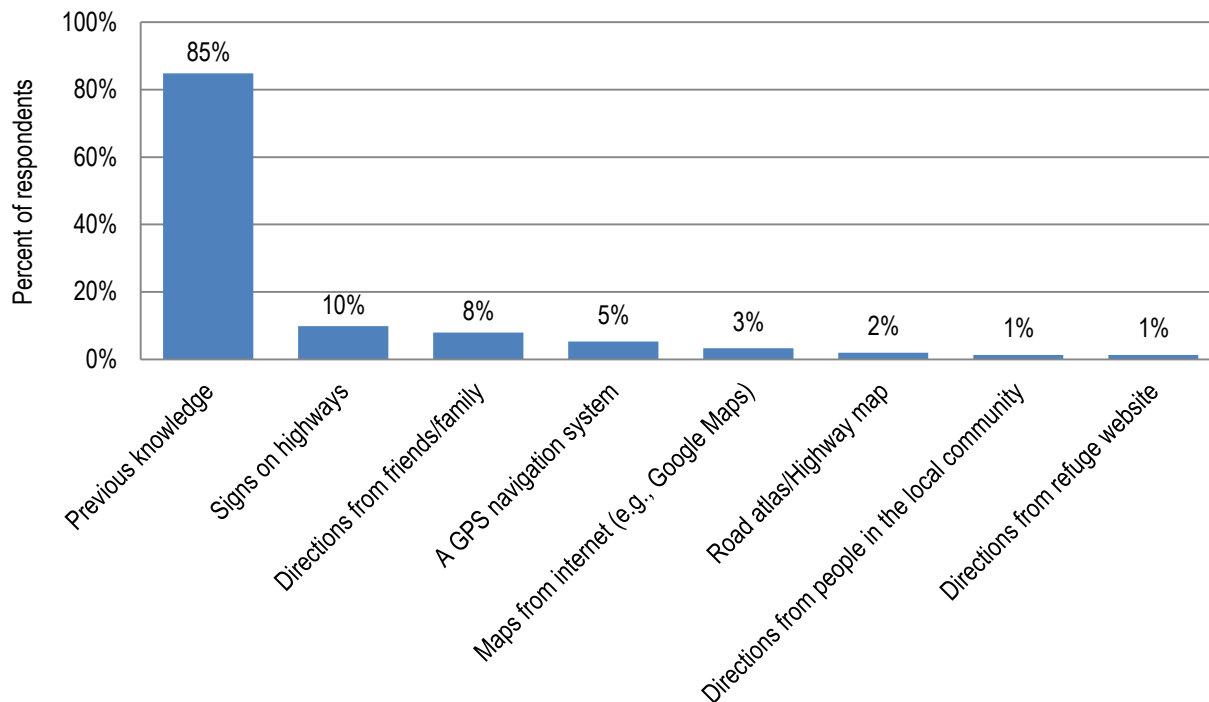


Figure 3. Resources used by visitors to find their way to Tishomingo NWR during this visit (n = 152).

Most visitors (81%) lived in the local area (within 50 mi of the refuge), whereas 19% were nonlocal visitors. For most local visitors, Tishomingo NWR was the primary purpose or sole destination of their trips (81%; table 3). For most nonlocal visitors ($n = 23$), the refuge was also the primary purpose or sole destination of their trips (54%). ***It is important to note that summary statistics based on a small sample size ($n < 30$) may not provide a reliable representation of that population.***

Local visitors reported that they traveled an average of 19 mi to get to the refuge, while nonlocal visitors traveled an average of 137 mi. The average distance traveled for all visitors to this refuge was 38 mi, while the median was 17 mi. Figure 4 shows the residences of visitors traveling to this refuge. About 96% of visitors traveling to Tishomingo NWR were from Oklahoma.

Table 3. Influence of Tishomingo NWR on visitors' decisions to take their trips.

Visitors	Visiting this refuge was...		
	the primary reason for trip	one of many equally important reasons for trip	an incidental stop
Nonlocal	54%	36%	11%
Local	81%	10%	8%
All visitors	76%	15%	9%

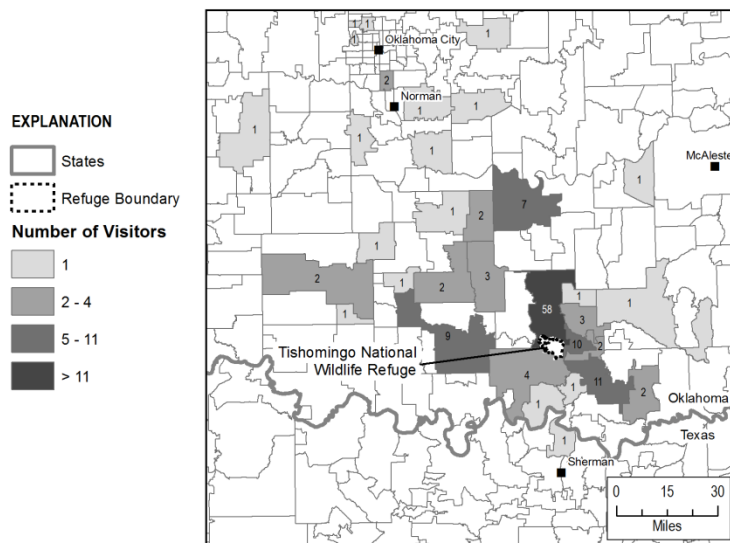
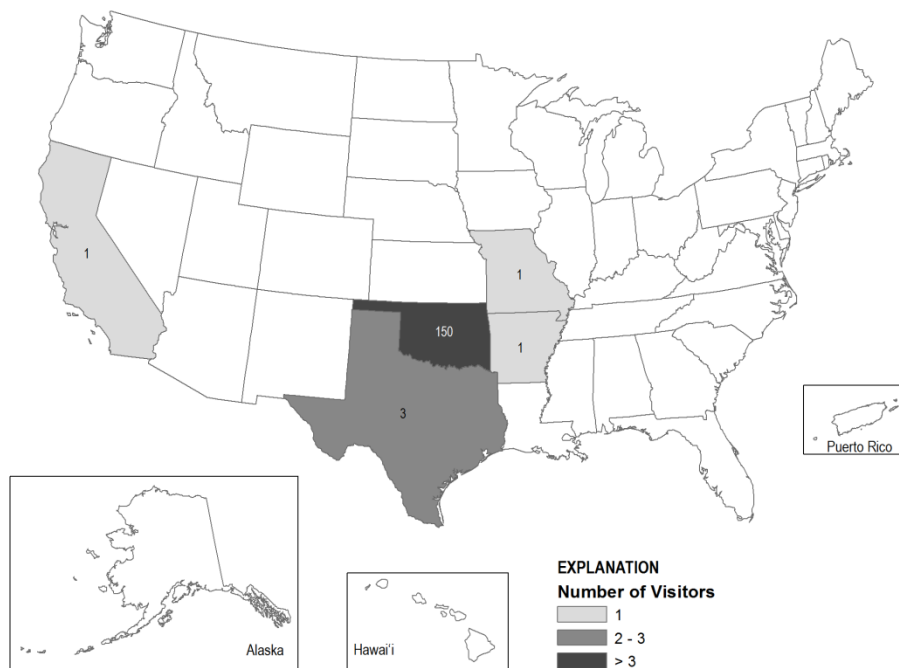


Figure 4. Number of visitors travelling to Tishomingo NWR by place of residence. The top map shows visitors residence by state and the bottom map shows residence by zip codes near the refuge (n = 156).

Surveyed visitors reported that they spent an average of 4 hours at the refuge during one day there, while the most frequently reported length of a day visit (the modal response) was 8 hours (33%). Most visitors indicated they were part of a group on their visit to this refuge (81%). Of those people who indicated they traveled with a group, visitors primarily traveled with family/friends (table 4).

Table 4. Type and size of groups visiting Tishomingo NWR (for those who indicated they were part of a group, n = 152).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	79%	2	1	3
Commercial tour group	1%	1	0	1
Organized club/School group	14%	10	6	16
Other group type	7%	5	12	17

The key modes of transportation used by visitors to travel around the refuge were private vehicles (90%), and to a lesser degree, walking/hiking (20%; fig. 5).

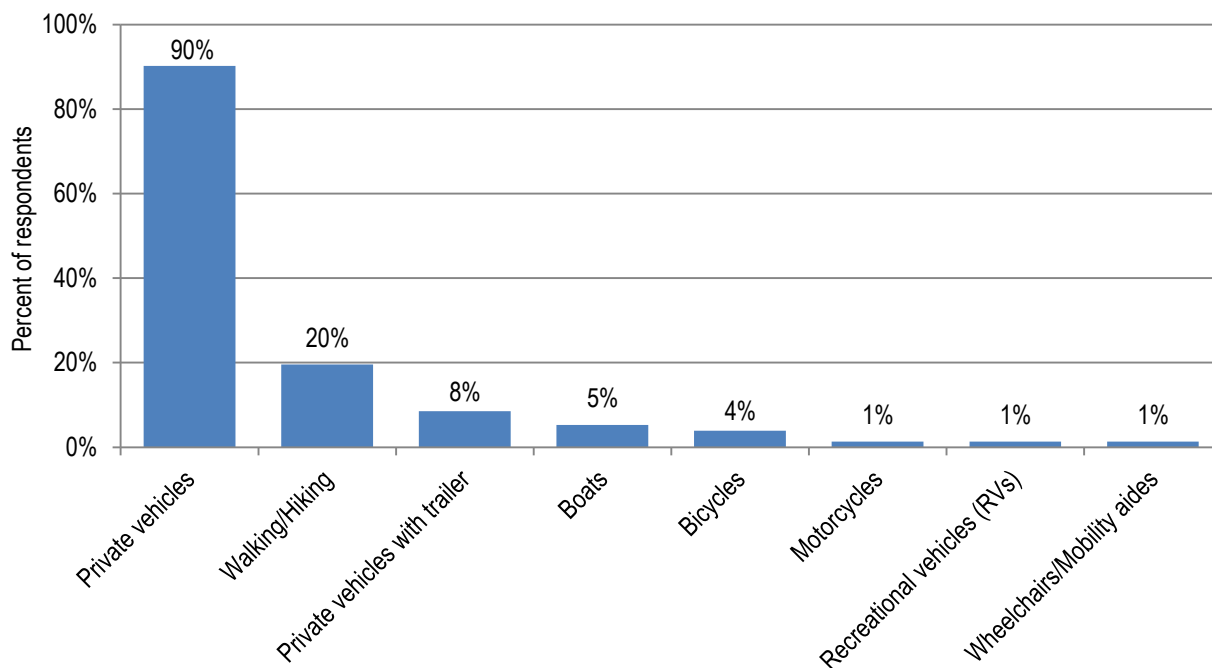


Figure 5. Modes of transportation used by visitors to Tishomingo NWR during this visit (n = 153).

Surveyed visitors participated in a variety of refuge activities during the 12 months prior to completing the survey (fig. 6); the top four activities in which people reported participating were wildlife observation (59%), freshwater fishing (45%), bird watching (39%), and auto tour route/driving (39%). The primary reasons for visitors' most recent visits included fishing (25%), wildlife observation (19%), and hunting (13%; fig. 7). Some visitors also used the Visitor Center/Contact Station during their trips (39%), mostly to ask information of staff/volunteers (48%), stop to use the facilities (48%), and view the exhibits (43%; fig. 8).

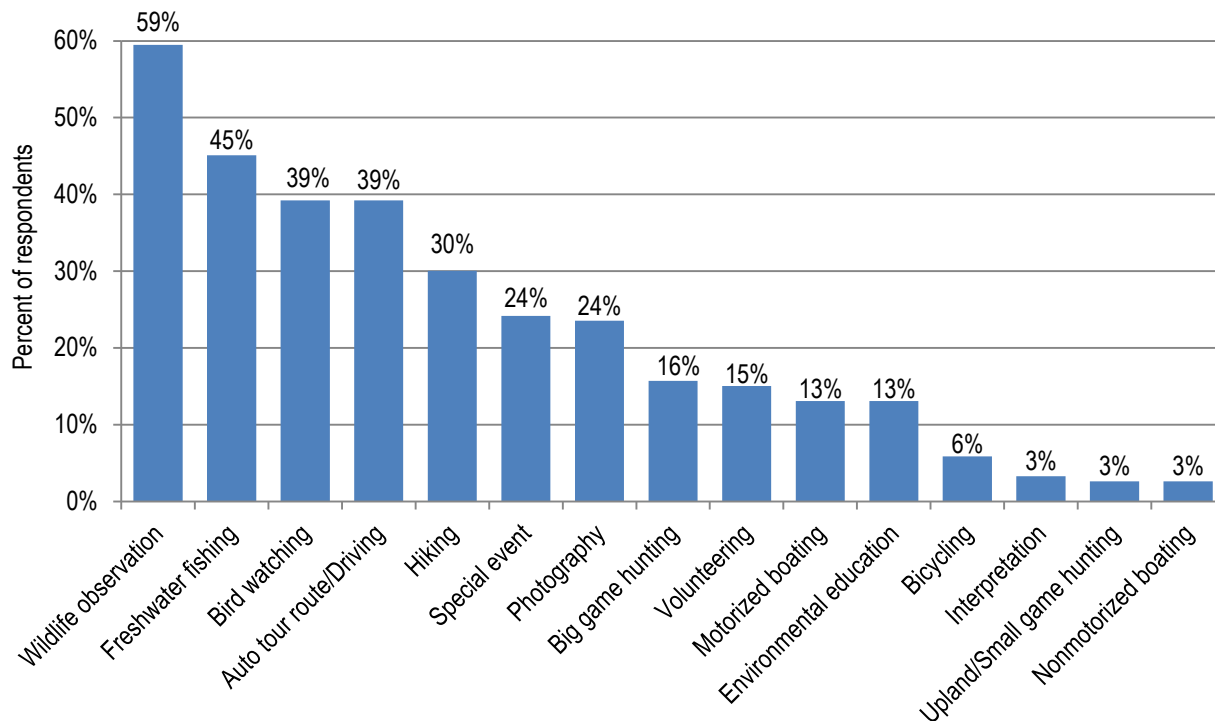


Figure 6. Activities in which visitors participated during the past 12 months at Tishomingo NWR (n = 153). See Appendix B for a listing of “other” activities.

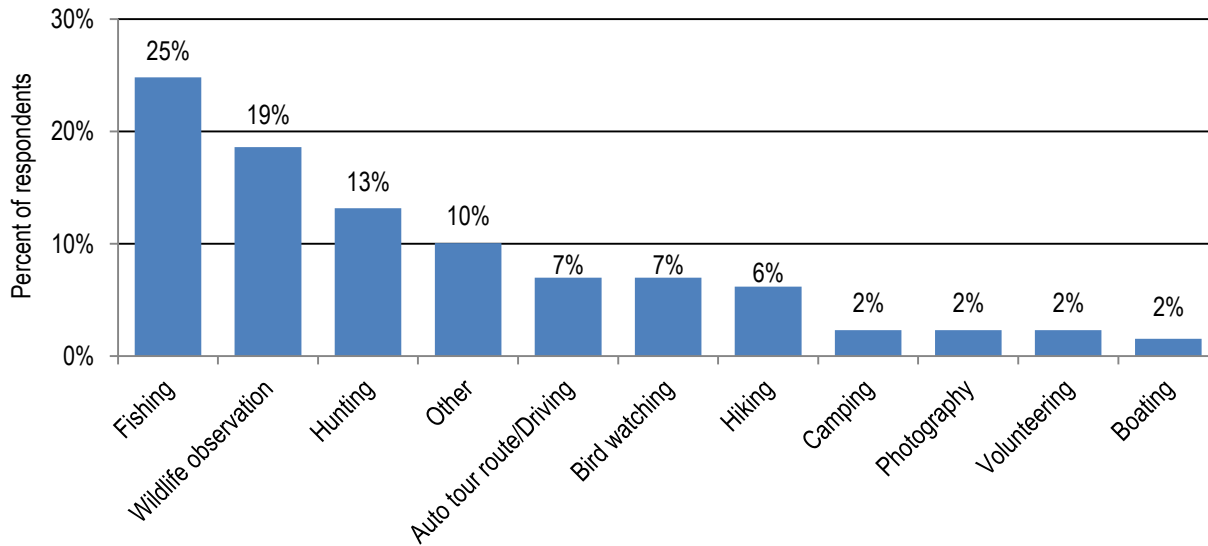


Figure 7. The **primary** activity in which visitors participated during this visit to Tishomingo NWR (n = 129). See Appendix B for a listing of “other” activities.

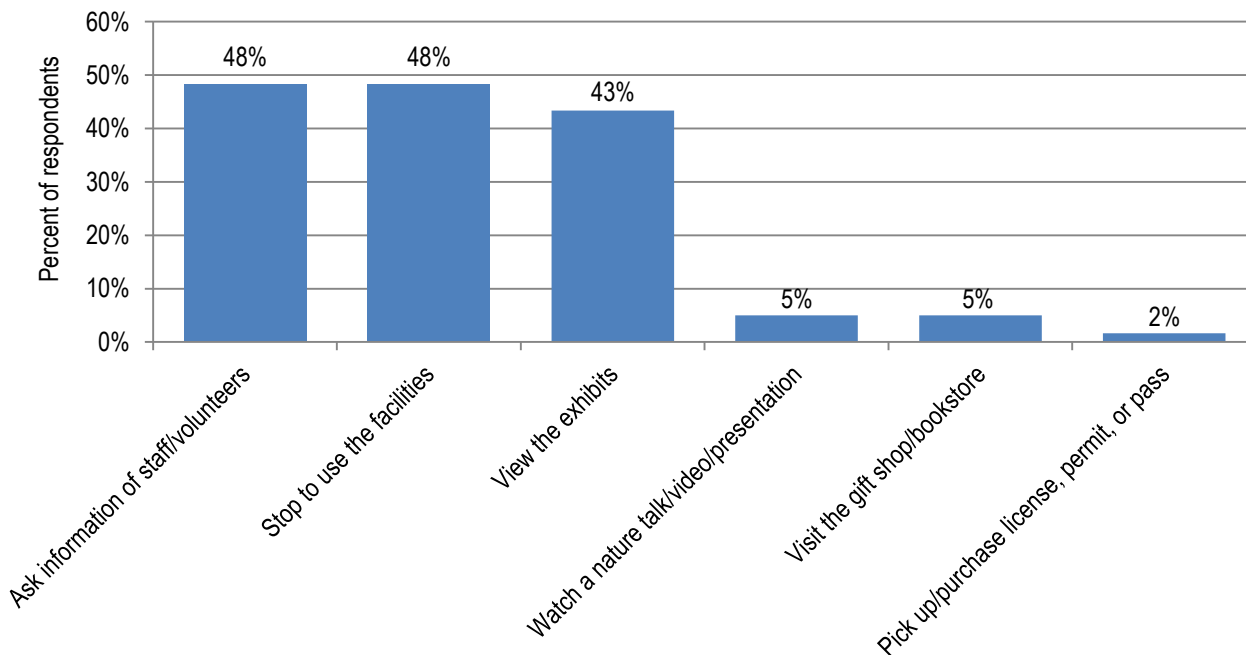


Figure 8. Visitor Center/Contact Station activities in which visitors participated at Tishomingo NWR (n = 60).

Visitor Characteristics

All visitors who participated in the survey at Tishomingo NWR indicated that they were citizens or permanent residents of the United States. These visitors were a mix of 74% male (with an average age of 51 years) and 26% female (with an average age of 54 years). Visitors, on average, reported they had 15 years of formal education (equivalent to three years of college or technical school). The median level of income was \$50,000-\$74,999. See Appendix A for more demographic information.

In comparison to these results, the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation (U.S. Fish and Wildlife Service, 2007) found that participants in wildlife watching and hunting on public lands were 55% male and 45% female with an average age of 46 years, an average level of education of 14 years (equivalent to an associate degree or two years of college), and a median income of \$50,000–74,999 (Anna Harris, U.S. Fish and Wildlife Service, 2011, written commun.). Compared to the U.S. population, participants in wildlife-related recreation are more likely to be male, and tend to be older with higher education and income levels (U.S. Fish and Wildlife Service and U.S. Census Bureau, 2007).

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 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 to local communities of visitor activities on refuges. Visitor expenditure information also can be used to analyze the economic impact of proposed refuge management alternatives.

Visitors that live within the local 50-mi area of a refuge typically have different spending patterns than those that travel from longer distances. During the two sampling periods, 81% of surveyed visitors to Tishomingo NWR indicated that they live within the local 50-mi area while nonlocal visitors (19%) stayed in the local area, on average, for 2 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 ($n = 23$) spent an average of \$55 per person per day and local visitors spent an average of \$39 per person per day in the local area. ***It is important to note that summary statistics based on a small sample size ($n < 30$) may not provide a reliable representation of that population.*** Several factors should be considered when estimating the economic importance of refuge-visitor spending in the local communities. These factors include the amount of time spent at the refuge, influence of the refuge on the visitors' 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.

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

Visitors	n ¹	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	<i>The sample size of nonlocals ($n = 23$) was too low to adequately represent this visitor group.</i>					
Local	91	\$25	\$39	\$44	\$0	\$245

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

Note: For each respondent, reported expenditures were divided by the number of persons in their group that shared expenses in order to determine the spending per person per trip. This number 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 in the local community, 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 7 for the *primary* visitor activities in which people participated), and may not be representative of the total population of visitors to this refuge.

Visitor Opinions about this Refuge

Refuges provide visitors with a variety of services, facilities, and wildlife-dependent recreational opportunities. Understanding visitors' perceptions of refuge offerings is a key component of the Refuge System's mission. In particular, a baseline understanding of visitor experiences provides a framework from which the Refuge System can monitor trends in visitor experiences overtime, which is increasingly useful in the face of changing demographics and wildlife-related interests. Some studies on wildlife-related recreation trends have indicated declines in participation over the latter part of the 20th century in traditional activities such as hunting (for example, U.S. Department of the Interior and others, 2007), while others highlight a need to connect the next generation of people to nature and wildlife (for example, Charles and Louv, 2009). These types of factors highlight a need to better understand visitors' opinions of their refuge experiences and to monitor trends in these opinions over time.

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

- 93% of visitors were satisfied with the recreational activities and opportunities,
- 91% of visitors were satisfied with the information and education about the refuge and its resources,
- 90% of visitors were satisfied with the services provided by employees or volunteers, and
- 94% of visitors were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

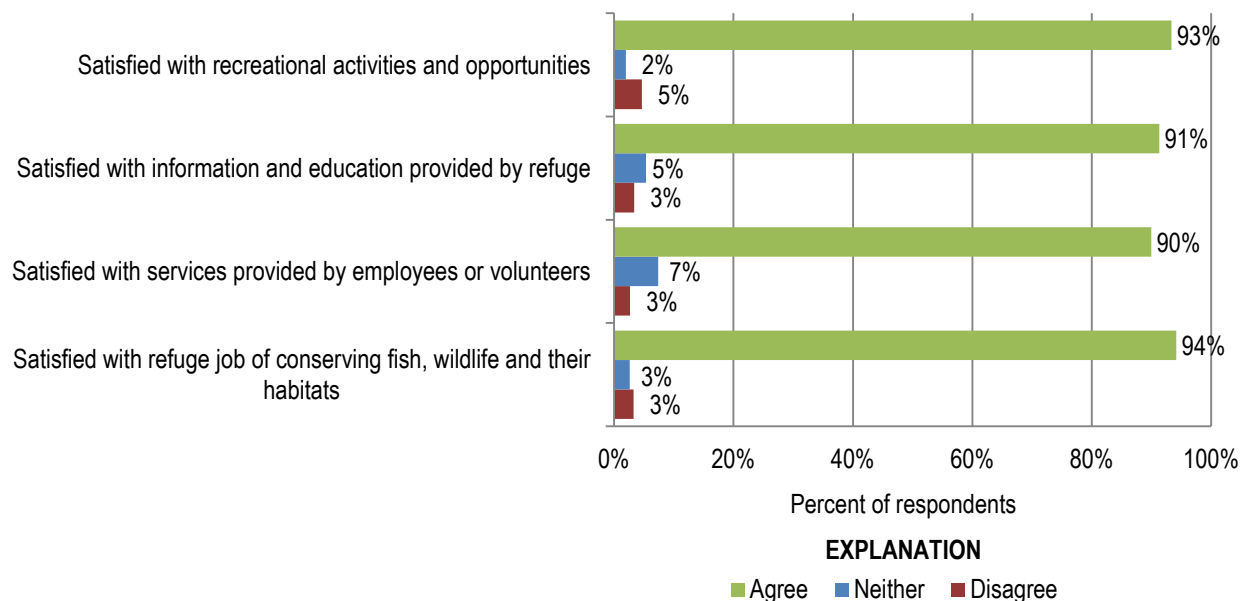


Figure 9. Overall satisfaction with Tishomingo NWR during this visit (n ≥ 149).

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 examines the importance of an attribute to visitors in relation to their satisfaction with that attribute (Martilla and James, 1977). Drawn from marketing research, this tool has been applied to outdoor recreation and visitation settings (for example, Tarrant and Smith, 2002). Results for the attributes of interest are segmented into one of four quadrants (modified slightly for this 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 different visitor groups regarding their expectations and levels of importance (Vaske and others, 1996; Bruyere and others, 2002; Wade and Eagles, 2003); 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. This consideration is especially important when reviewing any attribute that falls 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 or 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 their satisfaction with) the attribute may be much higher than the overall importance (and satisfaction) would be for the sample of visitors summarized in this report.

Figures 10–12 depict surveyed visitors' importance-satisfaction ratings for refuge services and facilities, recreational opportunities, and transportation-related features at Tishomingo NWR. Results are summarized as follows:

- All refuge *services and facilities* fell in the "Keep Up the Good Work" quadrant (fig. 10).
- All refuge *recreational opportunities* fell in the "Keep Up the Good Work" quadrant (fig. 11)
- All *transportation-related features* fell in the "Keep Up the Good Work" quadrant (fig. 12).

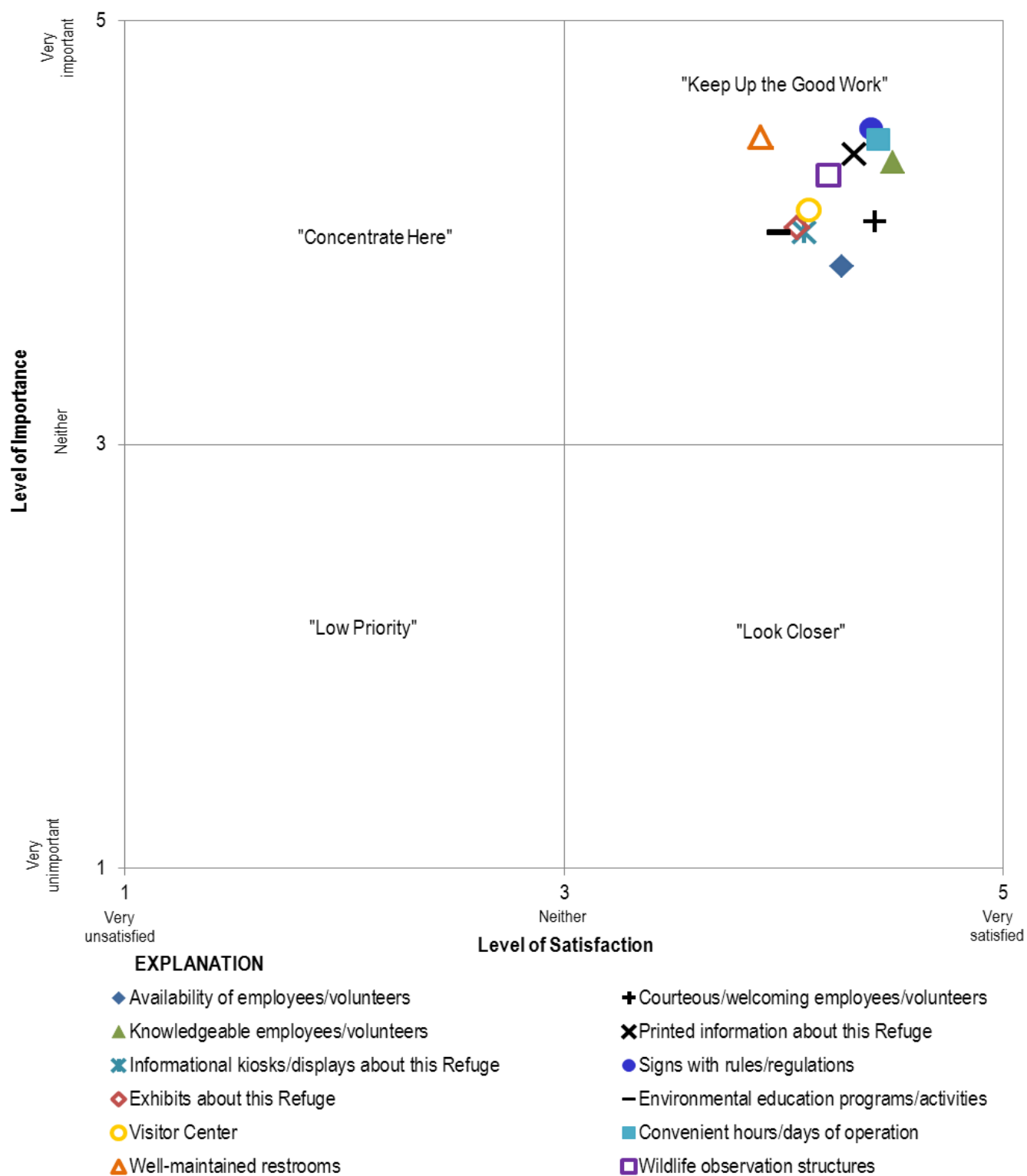
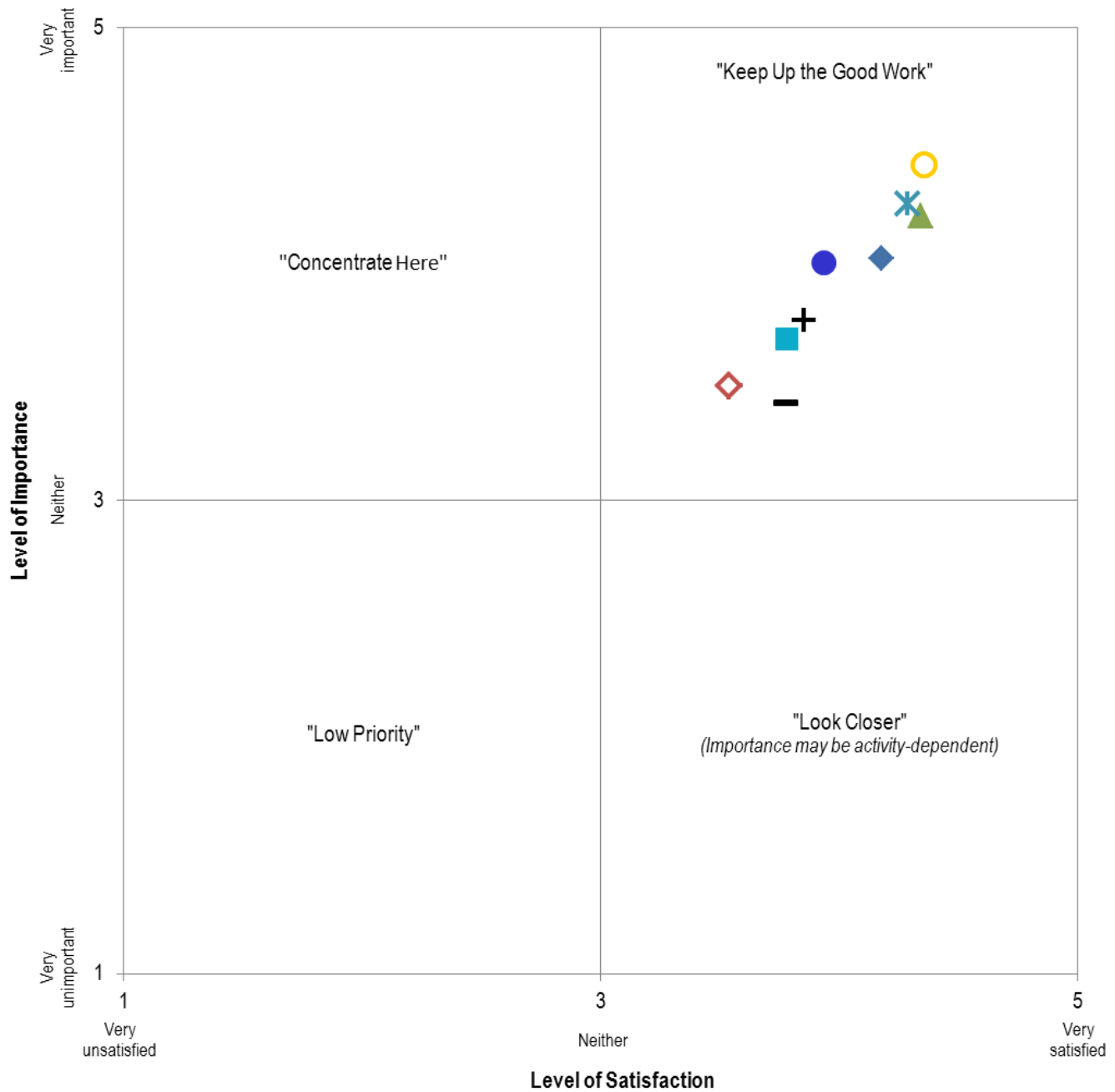


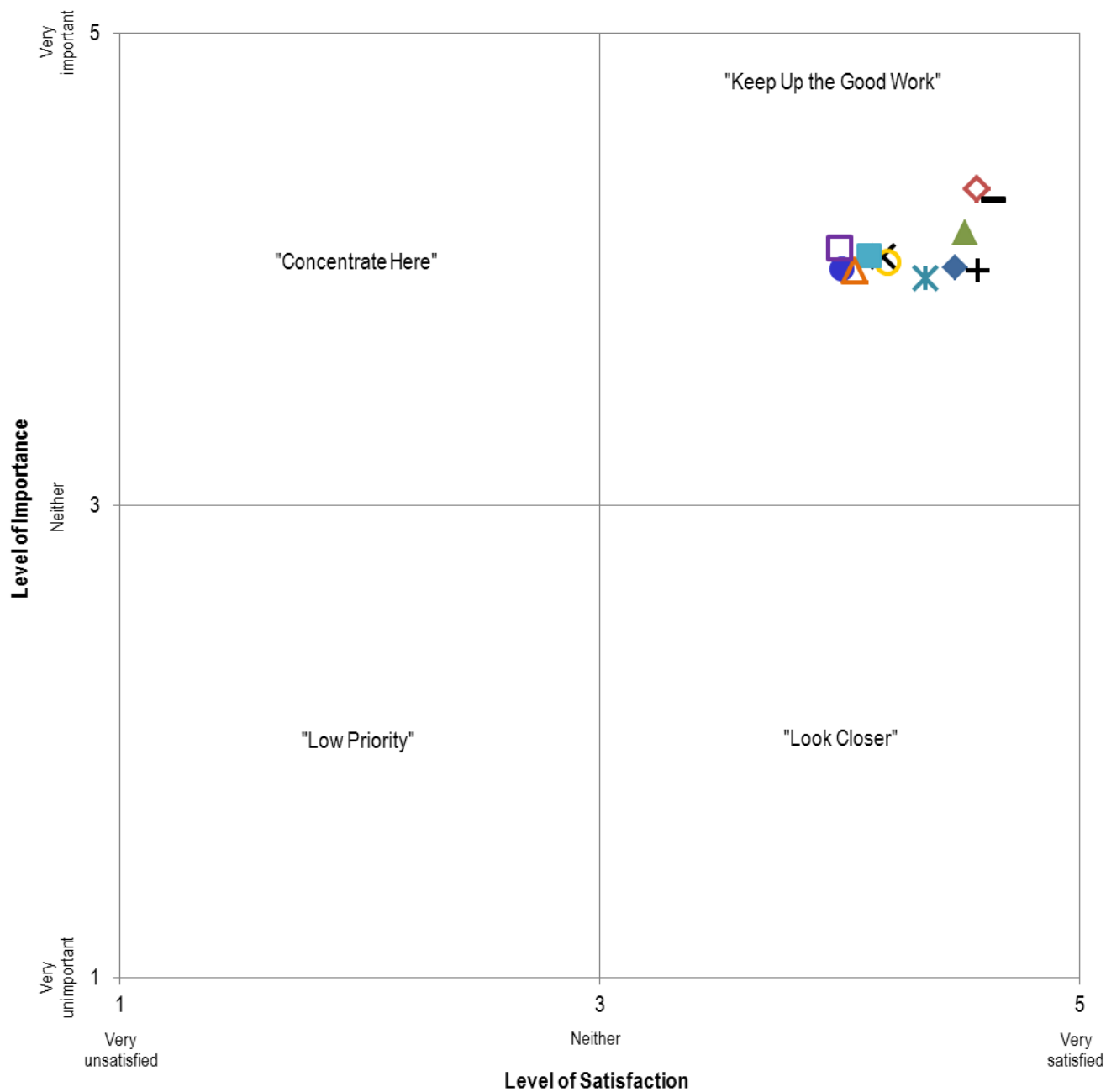
Figure 10. Importance-satisfaction ratings of services and facilities provided at Tishomingo NWR.



EXPLANATION

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

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



EXPLANATION

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

Figure 12. Importance-satisfaction ratings of transportation-related features at Tishomingo 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 of these questions will be evaluated in aggregate form (data from all participating refuges together) to better address national-level goals. Basic results for Tishomingo NWR are reported here.

Alternative Transportation and the Refuge System

Visitors use various types of transportation to access and enjoy refuges. While many visitors arrive at the refuge in private vehicles, 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 and others, 2001), and recent efforts are beginning to characterize the use of transit and non-motorized transportation modes for visitor access to refuges (Volpe Center, 2010). However, less is known about how visitors perceive 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 refuges in the future.

Of six alternative transportation options listed on the survey, a majority of Tishomingo NWR visitors were likely to use the following at refuges in the future (fig. 13):

- a boat that goes to different points on refuge waterways;
- a bus/tram that runs during a special event; and
- an offsite parking lot that provides trail access.

A majority of visitors indicated they were *not* likely to use a bus/tram that takes passengers to different points on the refuge or a bike share program that was offered on the refuge.

When asked specifically about using alternative transportation at Tishomingo NWR, some visitors thought alternative transportation would enhance their experience (28%) while others thought it would not (35%). An additional 37% of surveyed visitors indicated they were unsure whether alternative transportation would enhance their experiences.

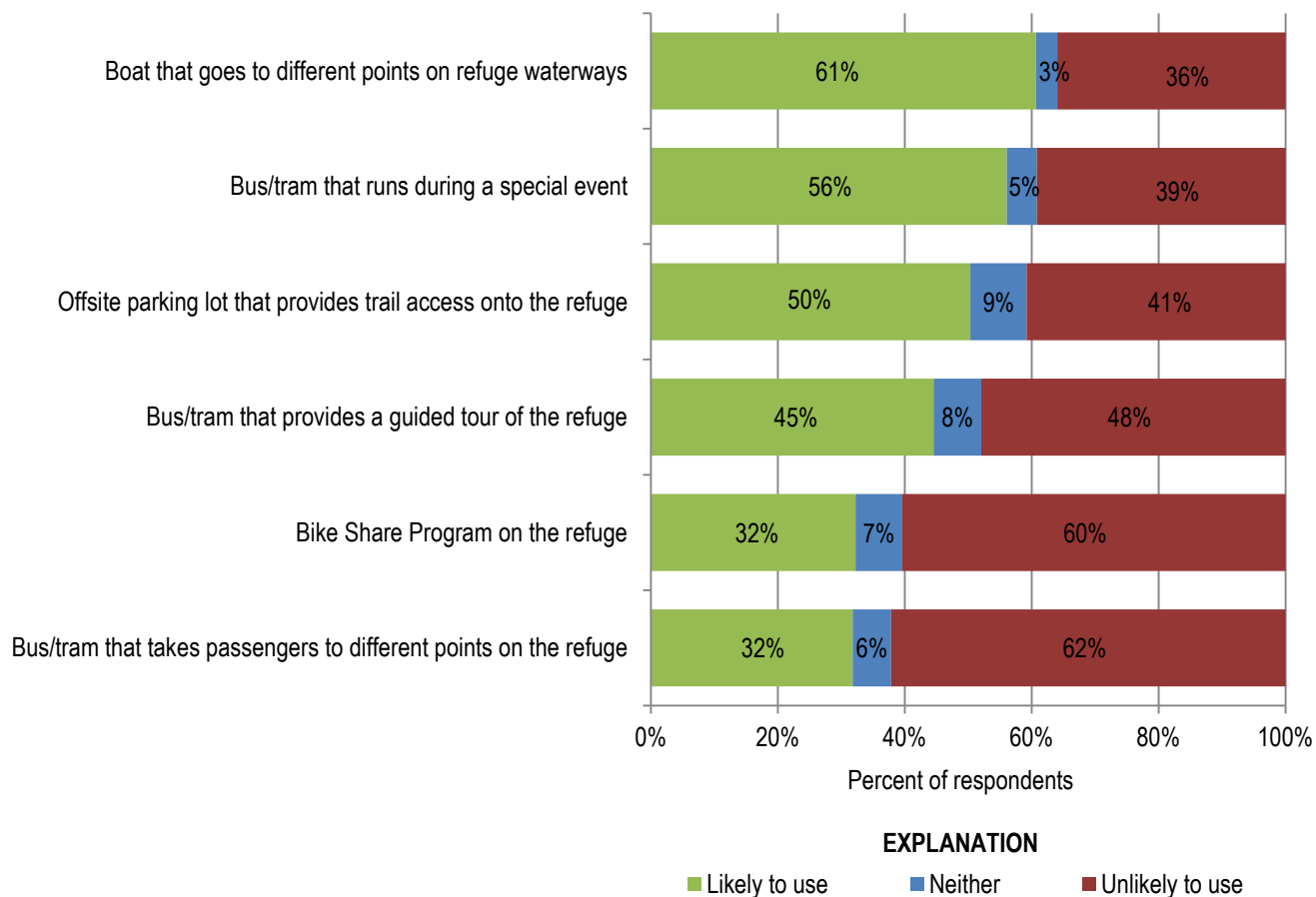


Figure 13. Visitors' likelihood of using alternative transportation options at refuges in the future (n ≥ 146).

Climate Change and the National Wildlife Refuge System

Climate change represents a growing concern for refuge management. The Service's climate-change strategy, titled "Rising to the Urgent Challenge," establishes a basic context for the agency to work within a larger conservation community to 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 the topic of climate change. Previous research suggests that human thought about climate change is influenced by individuals' levels of concern, levels of involvement, preferences for policies, and associated behaviors (Maibach and others, 2009). The results presented below provide baseline information on these factors in relation to the effects of climate change on fish, wildlife, and their habitats.

These results are most useful when coupled with responses to belief statements, 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 does not alter the overall message, but rather places the issue in a context in which different audience groupings can relate (Nisbet, 2009). 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 or supporting economic growth through new jobs/technology). Framing information in ways that resonate with visitors' beliefs may result in more engaged audiences who support strategies aimed at alleviating climate-change pressures. Data will be analyzed further at the national level to inform the development of a comprehensive climate change communication and engagement strategy.

The majority of visitors to Tishomingo NWR agreed with the following statements related to their *personal involvement* with the topic of climate change as it relates to fish, wildlife, and habitats (fig. 14):

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

The majority of visitors also agreed with the following *belief statements* regarding climate change effects on fish, wildlife and their habitats (fig. 15):

- Future generations will benefit if we address climate change effects;
- It is important to consider the economic costs and benefits to local communities when addressing climate change effects;
- We can improve our quality of life if we address the effects of climate change; and
- There is too much scientific uncertainty to adequately understand climate change effects.

Results regarding such beliefs are important to consider when communicating with visitors about this topic, since more than half of visitors (53%) indicated their experiences would be enhanced if Tishomingo NWR provided information about how visitors can help to address climate change impacts on fish, wildlife, and their habitats (fig. 14).

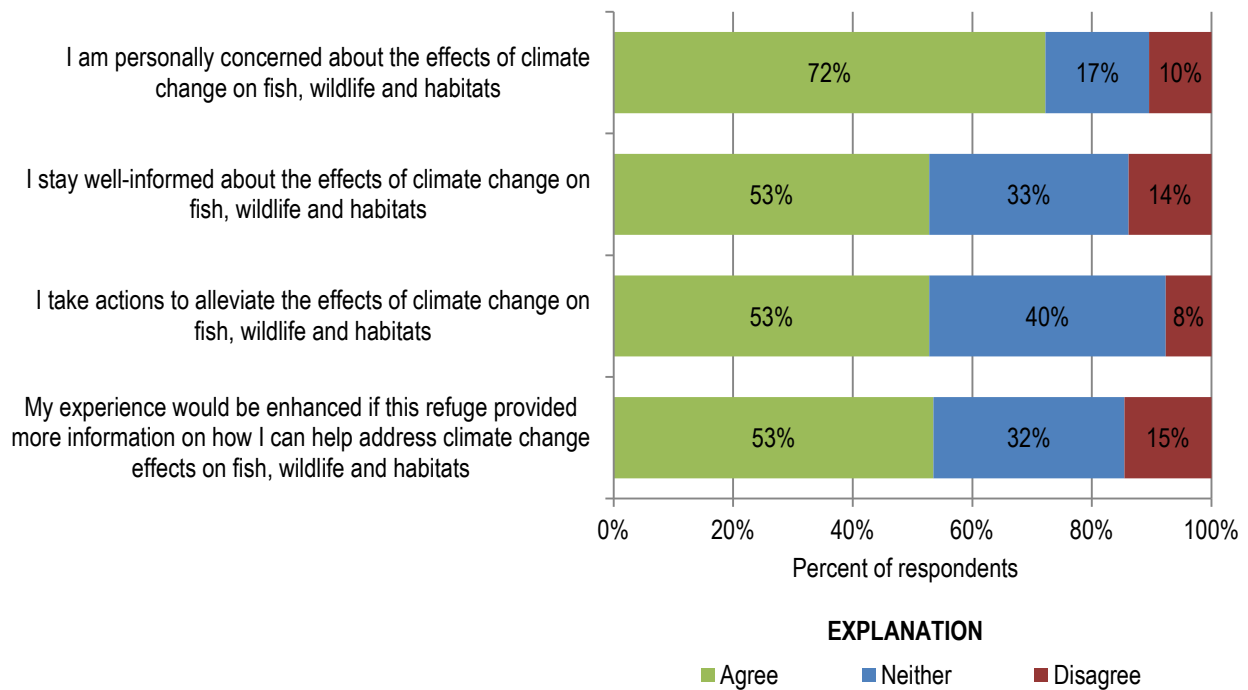


Figure 14. Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 144).

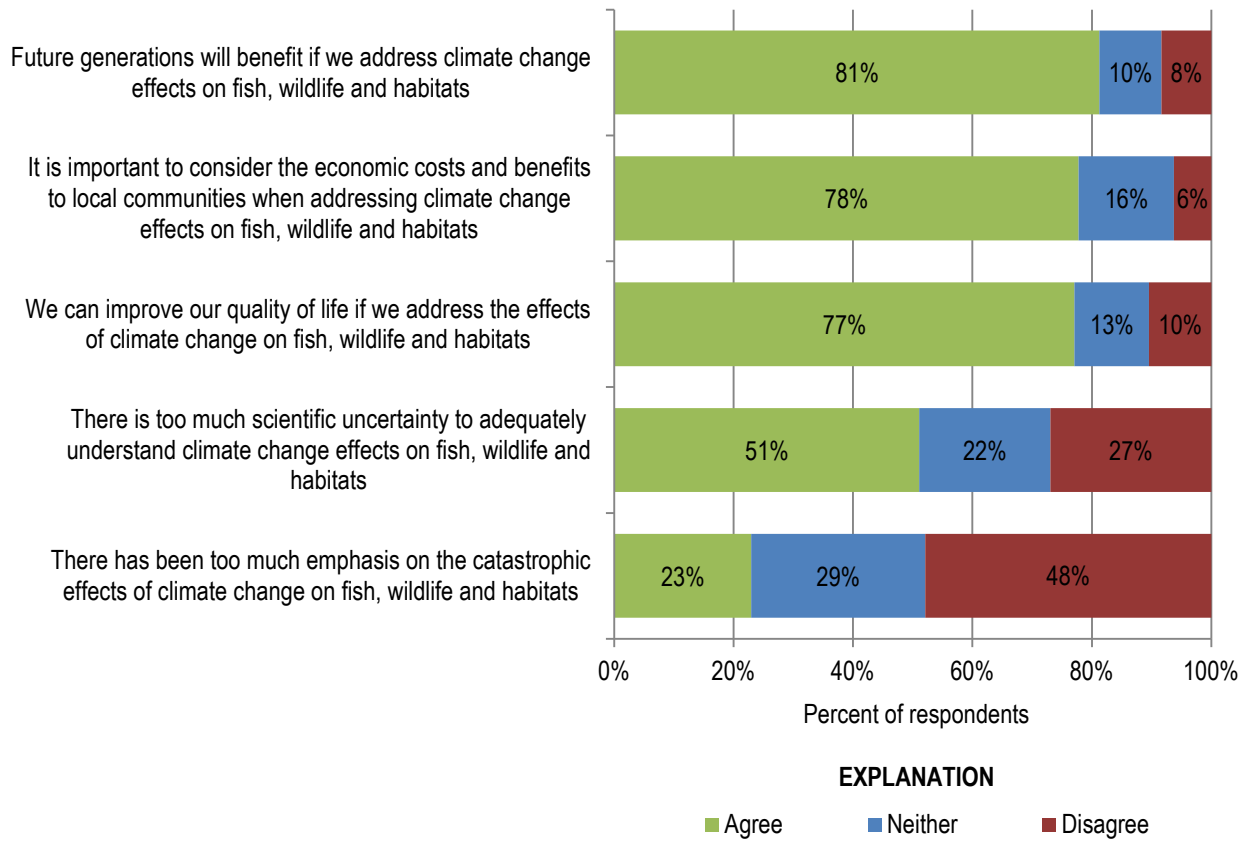


Figure 15. Visitors' beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 141).

Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to Tishomingo NWR during 2012 and are intended to inform decision-making efforts related to visitor services and transportation at the refuge. Additionally, the results from this survey can be used to inform planning efforts, such as a refuge's Comprehensive Conservation Plan. With an understanding of visitors' trip and activity characteristics and visitor-satisfaction ratings with existing offerings, refuge managers are able to make informed decisions about possible modifications (whether reducing or enhancing) to visitor facilities, services, or recreational opportunities. This information can help managers 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 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 and its resources, 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/754/>. For additional information about this project, contact the USGS researchers at national_visitor_survey@usgs.gov or 970.226.9205.

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National Wildlife Refuge Visitor Survey



PLEASE READ THIS FIRST:

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

Even 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 for any question that uses the phrase “this Refuge.” Please reference the cover letter included with this survey if you are unsure of which refuge you visited.

SECTION 1. Your visit to this Refuge

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

<input type="checkbox"/> 16% Big game hunting	<input type="checkbox"/> 30% Hiking	<input type="checkbox"/> 13% Environmental education (for example, classrooms or labs)
<input type="checkbox"/> 3% Upland/Small game hunting	<input type="checkbox"/> 6% Bicycling	
<input type="checkbox"/> 3% Migratory bird/Waterfowl hunting	<input type="checkbox"/> 39% Auto tour route/Driving	<input type="checkbox"/> 3% Interpretation (for example, exhibits, kiosks, videos)
<input type="checkbox"/> 59% Wildlife observation	<input type="checkbox"/> 13% Motorized boating	
<input type="checkbox"/> 39% Bird watching	<input type="checkbox"/> 3% Nonmotorized boating (including canoes/kayaks)	<input type="checkbox"/> 24% Refuge special event (<i>please specify</i>) See Appendix B
<input type="checkbox"/> 12% Freshwater fishing		
<input type="checkbox"/> 0% Saltwater fishing	<input type="checkbox"/> 15% Volunteering	<input type="checkbox"/> 9% Other (<i>please specify</i>) See Appendix B
<input type="checkbox"/> 24% 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"/> 61% No	
<input type="checkbox"/> 39% Yes → If yes, what did you do there? (Please mark <u>all that apply.</u>)	
<input type="checkbox"/> 5% Visit the gift shop or bookstore	<input type="checkbox"/> 2% Pick up/purchase a license, permit, or pass
<input type="checkbox"/> 43% View the exhibits	<input type="checkbox"/> 48% Stop to use the facilities (for example, get water, use restroom)
<input type="checkbox"/> 48% Ask information of staff/volunteers	
<input type="checkbox"/> 5% Watch a nature talk/video/presentation	<input type="checkbox"/> 12% Other (<i>please specify</i>) See Appendix B

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

Nonlocal**	Local	All visitors	
<input type="checkbox"/> 54%	<input type="checkbox"/> 81%	<input type="checkbox"/> 76%	It was the primary purpose or sole destination of my trip.
<input type="checkbox"/> 36%	<input type="checkbox"/> 10%	<input type="checkbox"/> 15%	It was one of many equally important reasons or destinations for my trip.
<input type="checkbox"/> 11%	<input type="checkbox"/> 8%	<input type="checkbox"/> 8%	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 **hours/minutes and miles** (one-way) did you travel from your home to this Refuge?

Nonlocal** (*n* = 23) 2 Hours 15 Minutes and 137 Miles

Local 0 Hours 35 Minutes and 19 Miles

All visitors 0 Hours 51 Minutes and 38 Miles

****It is important to note that summary statistics based on a small sample size (*n* < 30) may not provide a reliable representation of that population.**

6. What type of group were you with on your visit to this Refuge?

☐ 19% None, I visited this Refuge alone

(*of those visiting with a group*)

☐ 79% Family and/or friends

☐ 14% Organized club or school group (for example, Boy/Girl Scouts, hiking club, bird watching group)

☐ 1% Commerical tour group

☐ 7% Other (*please specify*) See Appendix B

7. Including yourself, how many people were in your group? (*Please answer each category.*)

 3 number 18 years and over

 2 number 17 years and under

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

☐ 74% Family and/or friends

☐ 4% Refuge website

☐ 18% Signs on highway

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

☐ 3% Recreation club or organization

☐ 0% Television or radio

☐ 25% People in the local community

☐ 1% Newspaper or magazine

☐ 7% Refuge printed information (brochure, map)

☐ 3% Travel guidebook or other book

☐ 6% Map or atlas

☐ 7% Other (*please specify*) See Appendix B

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

☐ 84% Spring
(March-May)

☐ 58% Summer
(June-August)

☐ 76% Fall
(September-November)

☐ 49% Winter
(December-February)

10. How many times have you visited...

...this Refuge (including this visit) in the last 12 months?

 24 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"/> 90%	Private vehicle without a trailer	<input type="checkbox"/> 1%	Refuge shuttle bus or tram	<input type="checkbox"/> 4%	Bicycle
<input type="checkbox"/> 8%	Private vehicle with a trailer (for boat, camper or other)	<input type="checkbox"/> 1%	Motorcycle	<input type="checkbox"/> 20%	Walk/Hike
<input type="checkbox"/> 0%	Commercial tour bus	<input type="checkbox"/> 1%	ATV or off-road vehicle	<input type="checkbox"/> 1%	Other (<i>please specify below</i>)
<input type="checkbox"/> 1%	Recreational vehicle (RV)	<input type="checkbox"/> 5%	Boat	<u>See Appendix B</u>	
		<input type="checkbox"/> 1%	Wheelchair or other mobility aid		

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

<input type="checkbox"/> 85%	Previous knowledge/I have been to this Refuge before	<input type="checkbox"/> 3%	Maps from the Internet (for example, MapQuest or Google Maps)
<input type="checkbox"/> 10%	Signs on highways	<input type="checkbox"/> 1%	Directions from Refuge website
<input type="checkbox"/> 5%	A GPS navigation system	<input type="checkbox"/> 1%	Directions from people in community near this Refuge
<input type="checkbox"/> 2%	A road atlas or highway map	<input type="checkbox"/> 8%	Directions from friends or family
		<input type="checkbox"/> 3%	Other (<i>please specify</i>) <u>See Appendix B</u>

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

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 49%	<input type="checkbox"/> 14%	<input type="checkbox"/> 6%	<input type="checkbox"/> 24%	<input type="checkbox"/> 8%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 42%	<input type="checkbox"/> 19%	<input type="checkbox"/> 7%	<input type="checkbox"/> 21%	<input type="checkbox"/> 11%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 36%	<input type="checkbox"/> 12%	<input type="checkbox"/> 8%	<input type="checkbox"/> 27%	<input type="checkbox"/> 18%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 27%	<input type="checkbox"/> 9%	<input type="checkbox"/> 3%	<input type="checkbox"/> 38%	<input type="checkbox"/> 23%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 34%	<input type="checkbox"/> 5%	<input type="checkbox"/> 5%	<input type="checkbox"/> 34%	<input type="checkbox"/> 22%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 24%	<input type="checkbox"/> 16%	<input type="checkbox"/> 9%	<input type="checkbox"/> 24%	<input type="checkbox"/> 27%
...some other alternative transportation option? (<i>please specify</i>) <u>See Appendix B</u>	<input type="checkbox"/> 6%	<input type="checkbox"/> 0%	<input type="checkbox"/> 6%	<input type="checkbox"/> 29%	<input type="checkbox"/> 59%

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

☐ 28% Yes ☐ 35% No ☐ 37% Not Sure

4. 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 <i>Circle one for each item.</i>						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
7%	8%	2%	43%	40%	Surface conditions of roads	3%	4%	3%	25%	66%	NA
6%	7%	5%	45%	37%	Surface conditions of parking areas	1%	1%	6%	21%	70%	NA
6%	4%	8%	35%	48%	Condition of bridges	2%	2%	9%	18%	70%	NA
3%	6%	14%	35%	41%	Condition of trails and boardwalks	1%	2%	17%	40%	41%	NA
6%	4%	12%	43%	34%	Number of places for parking	2%	4%	7%	29%	58%	NA
3%	8%	9%	45%	35%	Number of places to pull over along Refuge roads	4%	11%	7%	37%	41%	NA
6%	4%	3%	26%	61%	Safety of driving conditions on Refuge roads	1%	3%	4%	20%	71%	NA
3%	6%	2%	39%	51%	Safety of Refuge road entrances/exits	1%	2%	3%	21%	73%	NA
6%	7%	8%	38%	41%	Signs on highways directing you to the Refuge	2%	7%	8%	34%	49%	NA
4%	7%	6%	46%	37%	Signs directing you around the Refuge roads	2%	9%	9%	34%	46%	NA
3%	8%	15%	36%	38%	Signs directing you on trails	1%	8%	19%	29%	43%	NA
6%	5%	9%	33%	47%	Access for people with physical disabilities or who have difficulty walking	5%	5%	17%	32%	41%	NA

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

See Appendix B

SECTION 3. Your expenses related to your Refuge visit

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

☐ 81% Yes

☐ 19% No → How much time did you spend **in the local area** on this trip?

Nonlocals If you spent one day or more in the local area, enter the number of days: 3 day(s)

only If you spent less than one day in the local area, enter the number of hours: 5 hour(s)

*****It is important to note that summary statistics based on a small sample size ($n < 30$) may not provide a reliable representation of that population.***

2. How much time did you spend **at this Refuge** during your most recent visit?

If you spent one day or more at this Refuge, enter the number of days: 2 day(s)

If you spent less than one day at this Refuge, enter the number of hours: 3 hour(s)

3. 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 (within 50 miles of this Refuge)
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 (please specify) _____	

See Report for Results

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

2 number of people sharing expenses

5. 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
16%	15%	18%	10%	14%	5%	13%	1%	0%	1%	6%

6. 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**.)*

☒ 100% Did not pay a fee *(skip to Section 4)*

Tishomingo National Wildlife Refuge does not charge an entrance fee. This question does not apply.

7. 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.

Tishomingo National Wildlife Refuge does not charge an entrance fee. This question does not apply.

SECTION 4. Your experience at this Refuge

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Applicable
Overall, I am satisfied with the recreational activities and opportunities provided by this Refuge.	<input type="checkbox"/> 1%	<input type="checkbox"/> 3%	<input type="checkbox"/> 2%	<input type="checkbox"/> 46%	<input type="checkbox"/> 47%	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"/> 5%	<input type="checkbox"/> 46%	<input type="checkbox"/> 45%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	<input type="checkbox"/> 1%	<input type="checkbox"/> 2%	<input type="checkbox"/> 7%	<input type="checkbox"/> 36%	<input type="checkbox"/> 54%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	<input type="checkbox"/> 1%	<input type="checkbox"/> 2%	<input type="checkbox"/> 3%	<input type="checkbox"/> 33%	<input type="checkbox"/> 61%	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
5%	6%	18%	43%	28%	Availability of employees or volunteers	2%	4%	16%	23%	55%	NA
4%	4%	17%	35%	41%	Courteous and welcoming employees or volunteers	2%	2%	13%	19%	64%	NA
4%	1%	7%	35%	54%	Knowledgeable employees or volunteers	2%	1%	8%	24%	66%	NA
2%	1%	2%	46%	48%	Printed information about this Refuge and its resources (for example, maps and brochures)	5%	2%	5%	31%	57%	NA
2%	3%	19%	45%	31%	Informational kiosks/displays about this Refuge and its resources	5%	4%	18%	25%	49%	NA
2%	2%	4%	28%	64%	Signs with rules/regulations for this Refuge	1%	4%	7%	28%	60%	NA
3%	1%	16%	53%	28%	Exhibits about this Refuge and its resources	3%	5%	19%	30%	43%	NA
3%	2%	24%	35%	37%	Environmental education programs or activities	3%	4%	26%	24%	42%	NA
4%	1%	16%	38%	41%	Visitor Center	3%	2%	23%	25%	47%	NA
3%	1%	5%	32%	59%	Convenient hours and days of operation	2%	3%	9%	22%	64%	NA
4%	1%	6%	24%	65%	Well-maintained restrooms	6%	13%	11%	28%	43%	NA
4%	2%	11%	29%	54%	Wildlife observation structures (decks, blinds)	4%	2%	16%	28%	51%	NA
4%	4%	21%	30%	41%	Bird-watching opportunities	2%	3%	23%	21%	52%	NA
2%	1%	7%	32%	58%	Opportunities to observe wildlife other than birds	2%	2%	11%	33%	54%	NA
1%	4%	16%	31%	48%	Opportunities to photograph wildlife and scenery	2%	0%	17%	25%	56%	NA
13%	6%	19%	22%	40%	Hunting opportunities	7%	6%	25%	25%	37%	NA
7%	2%	9%	22%	60%	Fishing opportunities	3%	4%	10%	27%	56%	NA
1%	6%	19%	37%	37%	Trail hiking opportunities	4%	6%	19%	36%	36%	NA
9%	7%	34%	28%	22%	Water trail opportunities for canoeing or kayaking	7%	4%	41%	25%	23%	NA
10%	11%	29%	28%	22%	Bicycling opportunities	3%	5%	36%	21%	34%	NA
5%	6%	27%	32%	30%	Volunteer opportunities	4%	2%	35%	23%	36%	NA

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

See Appendix B

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

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

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

☐ 95% Yes

☐ 5% No

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

☐ 95% Yes

☐ 5% No

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

☐ 86% Yes

☐ 14% No

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

See Appendix B

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.	6%	4%	17%	36%	36%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	5%	6%	13%	46%	31%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	9%	18%	22%	40%	11%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	4%	10%	33%	42%	11%
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.	1%	5%	16%	56%	22%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	3%	4%	40%	40%	13%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	22%	26%	29%	15%	8%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	4%	4%	10%	38%	43%
My experience at this Refuge would be enhanced if this Refuge provided more information about how I can help address the effects of climate change on fish, wildlife and their habitats.	5%	10%	32%	38%	15%

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?

☒ 100% Yes ☐ 0% No → If not, what is your home country? See Figure 2 in Report

2. Are you? ☒ 74% Male ☒ 26% Female

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

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
(elementary)					(junior high or middle school)			(high school)				(college or technical school)				(graduate or professional school)			
					<input type="text" value="1%"/>			<input type="text" value="28%"/>				<input type="text" value="46%"/>				<input type="text" value="25%"/>			

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

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

<input type="text" value="21%"/> American Indian or Alaska Native	<input type="text" value="1%"/> Black or African American	<input type="text" value="91%"/> White
<input type="text" value="0%"/> Asian	<input type="text" value="0%"/> Native Hawaiian or Pacific Islander	

7. How many members are in your household? 3 persons

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

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

<input type="text" value="3%"/> Less than \$10,000	<input type="text" value="17%"/> \$35,000 - \$49,999	<input type="text" value="9%"/> \$100,000 - \$149,999
<input type="text" value="15%"/> \$10,000 - \$24,999	<input type="text" value="24%"/> \$50,000 - \$74,999	<input type="text" value="4%"/> \$150,000 - \$199,999
<input type="text" value="9%"/> \$25,000 - \$34,999	<input type="text" value="16%"/> \$75,000 - \$99,999	<input type="text" value="3%"/> \$200,000 or more

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

27 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.

Comments?

See Appendix B for Comments

PAPERWORK REDUCTION ACT STATEMENT: The Paperwork Reduction Act requires us to tell you why we are collecting this information, how we will use it, and whether or not you have to respond. The information that we collect in this survey will help us understand visitor satisfaction with and use of National Wildlife Refuges and to make sound management and policy decisions. Your response is voluntary. An agency may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a valid OMB Control Number. We estimate it will take an average of 25 minutes to complete this survey. You may send comments concerning the burden estimate or any aspect of the survey to the Information Collection Clearance Officer, Fish and Wildlife Service, 4401 North Fairfax Drive, MS 222-ARLSQ, Arlington, VA 22203. OMB CONTROL #1018-0145 EXPIRATION DATE 6/30/2013

Appendix B: Visitor Comments to Open-Ended Survey Questions for Tishomingo 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
Arbuckle-Simpson Nature Festival	8
Art contest	1
Big Sit	1
Boy Scouts	3
C.A.R. meeting, endangered species masquerade party	1
Children of the American Revolution Endangered Species Act meeting	1
Cookout, fish fry	1
Cub scout meetings	1
Cub scout sailboat regatta	2
Disability deer hunt	3
Fishing clinic	1
Nature Festival	2
Nature Festival, fishing clinic	1
Oklahoma Youth Hunt	5
Spring Festival	1
TREES annual meeting	3
TREES annual meeting, Kids fishing instructional class	1
Youth fishing program	1

Other Activity	Frequency
Camping	3
Cast for bait	2
Checking water level	1
Church gatherings	1
Picnic	1
Research	2
Research - Monarch tagging	1
Research on migratory songbirds (i.e. Prothonotary Warbler)	1
Sightseeing	2

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
Art contest	1
Boy scouts and deer watching	1
C.A.R. meeting	1
Cast for bait	2
Cub scout meeting	1
Friends of Refuge meeting	1
Just admiring the refuge	1
Rain gutter regatta	1
Research	2
Sightseeing	1
To enjoy nature	1

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

Other Visitor Center Activity	Frequency
Boy scouts	1
Inquire as to why the bird feeding station had fallen into disuse. No one taking care of it, nor putting out feed or water!	1
Just to look and get some information.	1
To view the wildlife and scenery	1
Turned in class art	1
Visit with someone	1
Volunteer	1

Question 6: “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
Arbuckle-Simpson Nature Festival	2
Draw hunt	1
Fishing	1
Nature Festival organized fundraising tour	1
Refuge program instructor	1
veterans.org	1
Volunteer group to support the Tishomingo NWR	1

Question 8: "How did you first learn or hear about this Refuge?"

Other Website	Frequency
Email from organizers of tour	1
travelok.com	1

Other Ways Heard about This Refuge	Frequency
Child's school	1
Citizens for the protection of the Arbuckle-Simpson Aquifer	1
College biology professor	1
Oklahoma lottery hunt	1
Oklahoma Department of Wildlife	2
People at an Arbuckle-Simpson Nature Festival event	1
Ranger	1
Stumbled upon it.	1
Went to school at Murray.	1
Worked for FWS for 31 years. Manager at Tishomingo from 1967 to 1981.	1

Survey Section 2

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

Other Forms of Transportation	Frequency
College owned van	1
Van from Tishomingo to Tishomingo NWR	1

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

Other Ways Found This Refuge	Frequency
Accidentally drove onto it.	1
Information from Oklahoma Department of Wildlife Conservation about youth deer hunt.	1
Maps provided by the refuge staff.	1
Tour guide from USGS and Murray State College.	1

Question 3: "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
ATV	5
ATV for the hunters!	1
Golf cart rentals	2
Horseback riding	2
My own transportation	1
One that was equipped with wheelchair lift	1
Personal vehicle	1
Scooter with trailer	1
Truck	1
Walking trail beside the roadway	1
Whatever is green and decreases user impacts	1

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

Comments on Transportation-related Items at This Refuge (n = 15)

Better access to public recreational areas and more access to them. More land in this area, because of the growing population and the interest in hunting and fishing.

Better signs on main highways, more interpretive signs on drive path pullouts.

Blind corners.

Dangerous turns onto paved roads with vegetation blocking sightlines. Potential for serious accident high on main refuge road.

Make sure they are wheelchair accessible.

Most people here seem to enjoy walking and running on the main roads, some biking. I don't feel extra transportation is necessary as most visitors use their own autos to go from one point of interest to the other.

Need access road South of Murray 23, it is too far for me to walk to deep water.

Need maps of all roads and keep the roads open to public.

Need walking and biking trail beside roadway. Need new or better restrooms. Need more paved roads. Need more off road stopping spots or pull offs.

Our refuge is rather small and fairly easy to navigate. Only one entrance/exit and 3 to 5 main roads.

Should have ATV for hunters where they would not have to walk all the way into the refuge! It would be helpful to carry out deer!

Shouldn't let people go sightseeing during hunting season.

There needs to be a sign at Murray 23 that tells you that you can't drive only so far down the beach. I know better because we knew a friend that told us about it. Some aren't so lucky. I think there should be something that tells visitors, that are out of town, just where they can drive and where they can't. We were just lucky for having a good friend.

Walking on the unpaved portions of the Craven Nature Trail is difficult because of loose rocks.

We need better access. You can scout all you want but if you cannot get to the place you scouted then the hunt is not enjoyable.

Survey Section 4

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

Comments on Services, Facilities, and Activities at This Refuge (n = 55)

Bathrooms need to be updated. No soap for hand washing. Need water fountain for drinking water.

Boat ramps need to be improved so when the water is low you can float a boat off.

Chris Patton gave a wonderful program on endangered species and Kyle Troxell was very helpful with the group cleaning up.

For us who can't walk down the beach, we need a way to get down to where the fish are biting.

Good for hiking and biking. Wonderful flocks of geese gather near the water.

I am glad you let us use one of the buildings for our boy scout meetings. They learn so much out there.

I am very satisfied with the people at the refuge, every time we have asked Chris for anything he has done it.

I believe more emphasis should be placed on growing crops more beneficial to residential migratory birds as well as waterfowl. Less emphasis on wheat productions. Beneficial seed crops such as sunflowers were planted here but soon after maturity they were plowed under and wheat was planted. Not much benefit to anything.

I feel that the refuge is well managed and fulfills the mission for which it was created. The staff is friendly and some I would count as friends.

I love this refuge. It is a place I can go and enjoy myself and I can educate my children about wildlife conservation.

I love this refuge. It's a very nice place where I can take my family and enjoy seeing wildlife. it is also where my son has his cub scout meetings and I would greatly appreciate being able to continue to use the Redbud Center for his meetings. It is the perfect place for young people to learn about nature and conservation and that is very important to young minds. Thank you.

I realize that funds are very limited but we are in desperate need of a boat load/unloading ramp. Fishing is on the decline because of this.

I served as manager for 12 years. This refuge needs to re-establish its number one objective. They claim they plant corn and wheat for food for migrating waterfowl, however, they do not plant corn and any other grain. Migrating waterfowl populations have dropped drastically over the past 6 years. Refuge personnel blame flooding and feral hogs as the major problem, however this has been true since the refuge was established. Accept this problem and get on with the show. Local men have offered to help the refuge plant corn, but has not been accepted. Another way to get around the flooding problem.

I think it is poorly lit.

I think the restrictions should be enforced on damage and littering laws to the refuge by law enforcement caused by the public.

I think you need to open Murray 23 and Nida Point for camping again. Need to find a way to establish better water levels in the lake, because when they get too low you cannot launch your boats. Nida Cut needs a spillway to retain the water level.

I would like new bathrooms at the refuge because the ones there are nasty. Also trash needs to be picked up.

It would have been nice to have the meeting room closer to the restrooms.

It's in good shape! Very grateful!

Maintain camp grounds from weeds and snakes around campground.

Maybe better camping spots. More wheelchair friendly restrooms and off-road trails.

More nature programs for children, allow certain noodling weekends. Better restrooms at HQ.

My children and I had a wonderful time and experience at the refuge. The staff/volunteers were very friendly and helpful and answered any question that I addressed to them!

My first time to visit, enjoyed it very much. I came with a friend. I intend to bring my family next time. All very nice except the bathrooms, very dirty.

My son lives nearby and we love the refuge. We will continue to go often no matter what is offered.

Need bathroom facilities of some sort at all areas.

Need longer trails.

Need more biking/hiking trails.

Need new restrooms. Need more fishing docks. Need more paved roads.

Need to improve rules on youth and disability hunts. You must kill doe before buck, sometimes bucks are all you see which makes it disappointing. If it has to stay that way extend the time of hunt so you have better chance to get both. Too many bucks aren't good for the herd either.

No electricity at campgrounds. Many disabled people need to refrigerate their medications.

Not all employees are friendly. Seem tired and not very outgoing. The website maps are terrible. Need better visitor maps that show refuge access points to people unfamiliar with refuge. Some of the educational signs have birds that are not found on refuge or in wrong habitats. Names outdated too. Why does this refuge have two Visitor Centers? Makes no sense and is a waste of resources. Visitors are not sure which to go to. Restroom at picnic area was filthy. We were confused why there were youth hunts and handicap hunts on a refuge. A refuge should provide refuge; hunts didn't seem to have a management purpose. Fishermen seem to ruin the birding at some of the birding points. Not sure why fishing is even allowed on a refuge. Shouldn't the refuge be for the wildlife first?

Open for hunters only. No sightseeing.

Our only problem is that the driver was not given specific directions to our destination; we made several wrong turns. Guide was not well versed in the history of the area.

Our refuge management seems mostly focused on activities that provide hunting opportunities for white-tailed deer; though very limited season at refuge. Not easy to volunteer or help out at our refuge. I spent 5 years in the effort and was never asked for an opinion!

Restrooms need improvement. We love fishing and biking.

Staff seems very knowledgeable and helpful.

The employees and volunteers were very helpful with maps and brochures, and the refuge was also well maintained with clean restrooms.

The grass area around the picnic area is full of grass burrs.

The lake level got low in 2011 and very heavy growth of weeds grew up approximately 1.5 inches in diameter. All shore lines are almost impossible to fish.

The local facilities are well kept and the personnel are very well informed. They work hard to the part of local activities outside their schedule.

The ranger on duty was extremely helpful, accommodating, and informative.

The refuge was a nice place to visit.

The telescopes on the observation tower were broken.

The waterfowl management used to be bow only for deer hunting. It should have stayed that way.

There could be more moveable restrooms at Sandy Creek, Murray23, and Goose ponds. I know it's hard to keep them at these locations because of rising water levels and when people don't care to take care of them. When you're fishing by yourself you have to take up all your poles to go up to the bathrooms by the headquarters 1 mile away.

They keep the grass mowed and the trash picked up. The restrooms at Murray 23 and Sandy Creek need to be put back.

They need to clean the one we were at had trash all over the place and all in the river.

They were all very nice!

Tishomingo Wildlife Refuge is wonderful. I have been going there 39 years, and have passed it on to my children. Needs more activities though.

Very impressed with attitudes of employees and volunteers.

Very well kept.

Visitor Center needs restroom.

We only drove through part of the refuge and really didn't get to see enough to rate most of it.

Yes you need more access to areas for fishing or more docks to fish.

Survey Section 5

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

Comments on What Makes Refuges Unique? (n = 100)

A combination of hunting opportunities, management, and education that is not offered elsewhere...total conservation.

A wonderful experience for parents and their children.

Ample amount of ponds for fishing and clean camping sites.

Beauty of nature and seeing wildlife in the natural instead of cages.

Because it conserves wildlife. There is food planted for the deer. Bird houses and feeders!

Because they are maintained and wildlife is managed by staff.

Being able to experience the joy of seeing animals in their natural habitat.

Chance to observe flora and fauna of the local area.

Designated hunting and fishing areas, useful maps and opportunity for fish and game management sets the refuge apart from other public hunting/fishing areas I have visited.

Enjoy watching and seeing wildlife such as deer, snow geese, and feral hogs. We visit refuge every time we visit relatives in the area.

Environment is not "modified"- left natural for birds and animals.

Every piece of nature is unique, never the same in two places.

Every refuge has opportunities that others don't. It all depends on what the visitor is looking for in their visit. For me every place is a new photography opportunity.

Fields of sunflowers for animals. Fields maintained for animals.

Focus on ecology and wildlife and their interactions. I have seen many wonderful informational signs in Refuges all over the US. The educational element is a critical benefit to we the citizens. Thank you!

Free fishing and hunting and good camping areas.

Gives people the chance to see animals they might not otherwise get to see.

Good for the kids to experience the wildlife.

Greater opportunities to see birds and other wildlife. Fewer people and less traffic than National Parks. Close enough to my home that I can visit often with little expense.

I enjoy hunting here.

I have been all over our planet. Our refuge system is one thing America got right! Keep it up.

I have fished this refuge the past 30 years and it has been silted in from the Washita River.

I like it because it is right in my backyard. I live like 5 miles from it.

I like the birdwatching tower and all the birds you can see. Also, last year, Justin Roach gave us an excellent tour to observe all kinds of tracks.

I like to see things in their natural state. This refuge has all of that.

I love the dock that we can fish off of. That is when the water is up. Thanks so much for the one at Murray 23 where we fish.

In an age that has seen diminishing habitat, the refuge program ensures a continued haven for endangered species. They also provide a wholesome experience for visitors and recreational activities.

In the refuge no native wildlife should be hunted or harassed so they can be viewed and reproduce in peace.

It gives me the opportunity to bring my grandchildren to the refuge to hike, observe wildlife, and enjoy nature. It offers me a

close area to hike and enjoy nature and exercise.

It gives you first hand insight/experience on our wildlife and natural resources. I grew up just a few miles away from the Everglades in South Florida and early on in my childhood, I learned that we have to balance the life we share with the animals and plants that God created/provided for us! If we kill off these what God gave, then we pretty much destroy ourselves and the planet we live on!

It is what they are.

It offers such a choice of recreational activities, therefore many people become involved.

It provides an excellent place to walk and observe plants and wildlife.

It was a great opportunity for me and my grandson to be out hunting and seeing the wildlife.

It's pretty much the same. Except this refuge seems cleaner and better taken care of than some I have seen in the past.

It's the wildlife!

Just a nice place to visit.

Keeping wildlife safe.

Kept clean and orderly.

Local in town and can see wildlife closer than most zoos.

Lots of places to fish and hunt. Just hard to reach them when gates are locked!

Managed for wildlife instead of recreation, such as boating, ATVs, etc.

More wildlife to observe.

National backing as opposed to local and/or state.

Nature.

No two refuges can be managed alike, because each is unique. However, they should be managed to obtain objectives. This would increase public use and enjoyment.

Not as many boaters as the main part of Texoma/the best cat fishing. Peaceful.

Not bothered by dirt bikes, etc.

Not trying to cater to the "tourist", rather , they make the beauty of the natural area available for the tourist/naturist.

NWRs not only protect the environment, but also provide opportunities for the public to learn about our nation's natural treasures. People are more likely to fight to protect something they value and NWRs show its visitors the value of conserving, managing, and restoring fish and wildlife as well as habitat.

Protection of many different animals. Love the controlled hunts. Come and go as I want to. No fees to enter the refuge. Wonderful place to take kids to learn the importance of preserving the wildlife.

Provides good opportunity for recreation at very little cost to the public. Usually not large crowds.

Recognition of ecological diversity and role of specific lands/waters in supporting and conserving natural resources.

Refuges provide public access to habitats that would be normally unavailable to non-landowners.

Safety of animals and land and water being protected from people and industry. Buy more land and protect it.

Scenery and hunter opportunities.

See more wildlife, roads maintained well, and friendly people.

Takes you away from the crowded city streets and allows opportunity to see birds, deer, from the parking and driving areas. Picnicking and fishing opportunities.

The ability to see different wild animals.

The act of preservation versus conservation on public land.

The amount of wildlife.

The area.

The birds that flock to this area are magnificent. The roads are safe for jogging and biking. When we are not in a draught, the water ramps for boats, and camping opportunities on the water front is good. The workers here do a great deal of planting and providing food for wildlife. Well managed areas. It's nice to escape to such a vast open area.

The fact that they are national, not state or local. Kind of neat understanding that this is a national resource for all the people. Kind of cool seeing uniformed personnel for a federal agency that I could take my teenage daughter to hunt on.

The fishing; I call it the world's best fishing hole to friends.

The history of the place. The wildlife. The beautiful scenery.

The location in southern OK and abundant wildlife in the area makes it unique.

The management of wildlife is very important and controlling herd size is also so that overpopulation doesn't cause the animals to starve or become diseased and die.

The many acres of land for the animals and the great waterfowl areas and fishing areas, camping areas, and the peacefulness of nature. Watching the deer feed and the wild hogs run. It's just a fun place to visit.

The opportunity to observe wildlife.

The people that work there are friendly and always very helpful.

The refuge here gives more than adequate information to its properties and opportunities to the public.

The refuges offer a more open possibility of seeing wildlife outside of a defined space and you have the freedom to walk pretty much where you want, when you want.

The right and privilege to enjoy the time.

The training of employees and their helpfulness is unique to the NWR system. People are very impressed by how helpful and courteous these employees are.

The way they are managed.

The wildlife.

There are generally interpretive materials or programs for the uninitiated.

There are good trails to walk and observe wildlife.

They are committed to protecting and managing wildlife for future generations to enjoy and that is very important to me!

They conserve wild, while thinking about the whole picture and not just catering to hunters. For example Tishomingo NWR care about butterflies and other invertebrates as much as the "big game" animals. Keep up the good work!

They generally have more abundant and various types of wildlife for viewing by the public than other public lands. Also, as a management tool they allow special hunts to the public to control wildlife populations which provides a unique opportunity to sportsmen who in turn support the work of the refuges.

They manage and protect wildlife.

They offer an opportunity for the public to see wildlife in their natural habitat. Provides educational opportunities for young people who may have had limited outdoor experiences.

They provide a place for families to recreate at a reasonable price and they are kept clean and safe.

They vary with the environment in which they are located and enhance that area. We are fortunate to have such a unique facility in our community.

To me BLM areas are more for the leasing of land for cattle grazing and for unlimited recreation. National Parks are also for unlimited recreation, but National Wildlife Refuges are more for the protection of flora and fauna while still allowing wildlife viewing, fishing, and limited hunting.

Trails, hiking, walking.

Variety of wet, pasture, dry land to view birds/wildlife and wildflowers/shrubs/trees. Provides experts and educational programs.

Very comfortable and welcoming atmosphere.

We always see the birds and deer.

We enjoy seeing the birds and wildlife and the information the refuges provide.

Well maintained food plots and habitat for most species of wildlife in Oklahoma.

When you go to the refuge you are almost always going to see wildlife and unlike most places the wildlife is protected there. My family and I really enjoy visiting the Tishomingo NWR several times a week. It is always an enjoyable experience.

Wildlife is abundant.

Wildlife refuges provide a closer to nature experience.

Wildlife.

Yes because, to see wildlife in a smaller place you can see so much in a short distance anywhere you go. We saw deer, hogs, beaver, otter, eagle, ducks, birds, fish, all at camp! Thanks very much for everything.

Yes they do because for many of the young kids, these controlled hunts may be a chance for them to kill a deer for the first time. Public land offers the chance of maybe seeing a deer but not near the chance that a wildlife refuge offers.

You protect critical habitats and act as good stewards of the natural resources while providing the public with opportunities to interact with and learn from nature. my family has fished these Oklahoma waters for over 180 years. Thank you for the continuing opportunities.

Additional Comments (n = 26)

Big thanks to Justin Roach and Kris Patton.

Climate change is important to understand how it will affect our nation's resources to enable us to better protect and conserve. However, I believe we have minimal effect on this warming cycle of our climate. Furthermore, the money involved in "climate change" has clouded the reality of the subject as agencies and NGOs align themselves with "climate change" for no other reason than financial gains to further their agendas as the results justify the means.

Game warden was nice and courteous.

I am a board member of a friends group that supports the refuge.

I appreciate having a refuge within easy driving distance. Our refuge contributes in many ways to my lifestyle and to my community.

I don't count fishing on personal land.

I made this trip to take part in a locally sponsored nature festival. The refuge and birdwatching were my main activities at the festival. My son lives locally and we love the refuge and will continue to go often.

I served on a volunteer friends group for 5 plus years at our refuge. Our manager did not keep the group informed and up to date. The number of complaints and amount of dissatisfaction has continued to grow over the last few years. I have ceased trying to help and volunteer!

I wish more were done to attract special interest groups, such as camping clubs, and yes even motorcycle clubs. There is considerable activity in our area involving motorcycle groups. Not very many bicycle groups, but a few.

It was awesome as usual. We love camping, fishing, hiking, all of what nature provides.

National Wildlife Refuges are a place to observe and learn about birds and other wildlife, flora and fauna, in a safe and natural environment. People need wild places like these as most people now live in an urban environment. They need places like this to revitalize their spirit and broaden their interest. It is equally important as a place for the perpetuation, revitalization, and protection of plant and animal species and as an area reserved for migrating birds to rest or spend part of their lives in relative safety. National Wildlife Refuges should remain free to the public in most instances so they can be accessed and enjoyed by all. It is vital that the effects, consequences, and solutions to climate change be emphasized to the public. I think the U.S. Fish and Wildlife service should be one of the means of transmitting this urgent message. There is not nearly enough information being discussed about climate change. Many people do not believe that we are causing it.

Need more fishing docks, maybe handicap ramps.

Need to plant more food for deer and ducks. There are not many ducks around now. This year, they did good and planted millet. They need to plant more to bring in the ducks again this year.

New equipment needed, so much of it looks so old and worn out or used up. Need new restroom, theirs is a wreck! Need new office, theirs is coming apart! Need more paved roads. Need more crops planted for deer. Need less hogs! Get rid of pigs. Need more law enforcement. Saw no law men.

Said no to National Wildlife Refuges providing a unique recreation experience, because we need more public lands with hunting and fishing opportunities in this area and better maintained roads to these areas that we do have and more access to these areas.

Some way I wish that the water level at this refuge could stay at the level it used to be at, because there was no water to fish in. Wildlife is very important in a lot of ways.

Staff and manager do a great job! Would like to see plans for a new boat ramp on the east bank of the lake. Siltation and low water have cut off all other access to the Cumberland Pool of Lake Texoma, and has had a significant impact to the local economy. The east bank has the deepest water and is the farthest from the siltation source.

Thank you for providing these opportunities for us (especially in these budgetary trying times).

Thank you so much for all you have done at Murray 23.

The management and employees at the refuge are always ready to help or give us advice if needed. My family has been fishing and camping at this refuge since 1952. We have been involved in clean-up days.

This refuge has very helpful and knowledgeable staff and so were the others that we there to help with the event. I hope to return many times!

This refuge is a great place for me to go fishing, hiking, biking, and it is a great place to take my family for a nice picnic or just to get out of the house. I love our refuge!

Visit refuge every weekend.

We love this refuge.

Would like to see less mowing and more wildflowers, plus greater emphasis on flora attractive to seasonal birds and pollinators rather than on crops for deer to support hunting on the refuge.

Would like to see trash cans at entrance and exit at gates! And maybe porta potties. Would like to use my ATV to get my deer or game instead of having to drag it out about two miles. And it could stay on main road! Thank you for the survey. Thanks for your consideration!
