

# National Wildlife Refuge Visitor Survey 2010/2011: Individual Refuge Results for Pond Creek National Wildlife Refuge

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*For me, the refuge is special in that I can't afford to pay for lease land to deer hunt and the refuge allows me several months to hunt with archery equipment and my gun, when I am fortunate to get to do that. It's a great place to get away and enjoy nature.—Survey comment from visitor to Pond Creek National Wildlife Refuge.*



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

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## Introduction

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

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

## Organization of Results

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

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

## **Methods**

### **Selecting Participating Refuges**

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

### **Developing the Survey Instrument**

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

### **Contacting Visitors**

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

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

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

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

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

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

## Interpreting the Results

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

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



## Refuge Description for Pond Creek National Wildlife Refuge

Positioned at the confluence of the Central and Mississippi flyways, Pond Creek NWR provides outstanding habitat for waterfowl. Established in 1994, this 30,000-acre refuge is located 30 miles north of Texarkana along the Little and Cossatot Rivers in southwest Arkansas. An abundance of water in the form of swamps, rivers, and oxbow lakes gives rise to a diversity of species in Pond Creek NWR.

The forested wetlands of Pond Creek NWR are used by migrating and wintering waterfowl during the fall, winter and spring. Mallards, gadwall, American wigeon and wood ducks are among the over 15 species of waterfowl that traditionally use the seasonally flooded wetland habitats of Pond Creek NWR. Other species seen less often include the northern shoveler and the blue and green-winged teal.

The hardwood-dominated forested wetlands of Pond Creek NWR provide outstanding habitat for an abundance of birdlife, particularly neotropical migratory songbirds. Neotropical birds use Pond Creek NWR as a rest stop during fall and spring migration to replenish energy reserves for the long journey to and from wintering areas in Central and South America. This habitat is also used for breeding and nesting during the spring and summer for many of these species. The Carolina chickadee, tufted titmouse, Carolina wren, prothonotary warbler; northern cardinal, swainsons warbler; summer tanager; Kentucky warbler; and white-throated sparrow are among the over 20 species of migrants that nest at Pond Creek NWR.

With close to 40,000 visitors annually (based on 2008 RAPP database; U.S. Fish and Wildlife Service, 2011, written comm.), Pond Creek NWR offers a wide variety of activities including waterfowl hunting, upland game hunting, big game hunting, fishing, hiking, biking, camping, auto tour routes, motorized and nonmotorized boating, wildlife observation, photography, environmental education, and interpretation. Figure 1 displays a map of Pond Creek NWR. For more information, please visit <http://www.fws.gov/felsenthal/PondCreek/>.

# Pond Creek

## National Wildlife Refuge

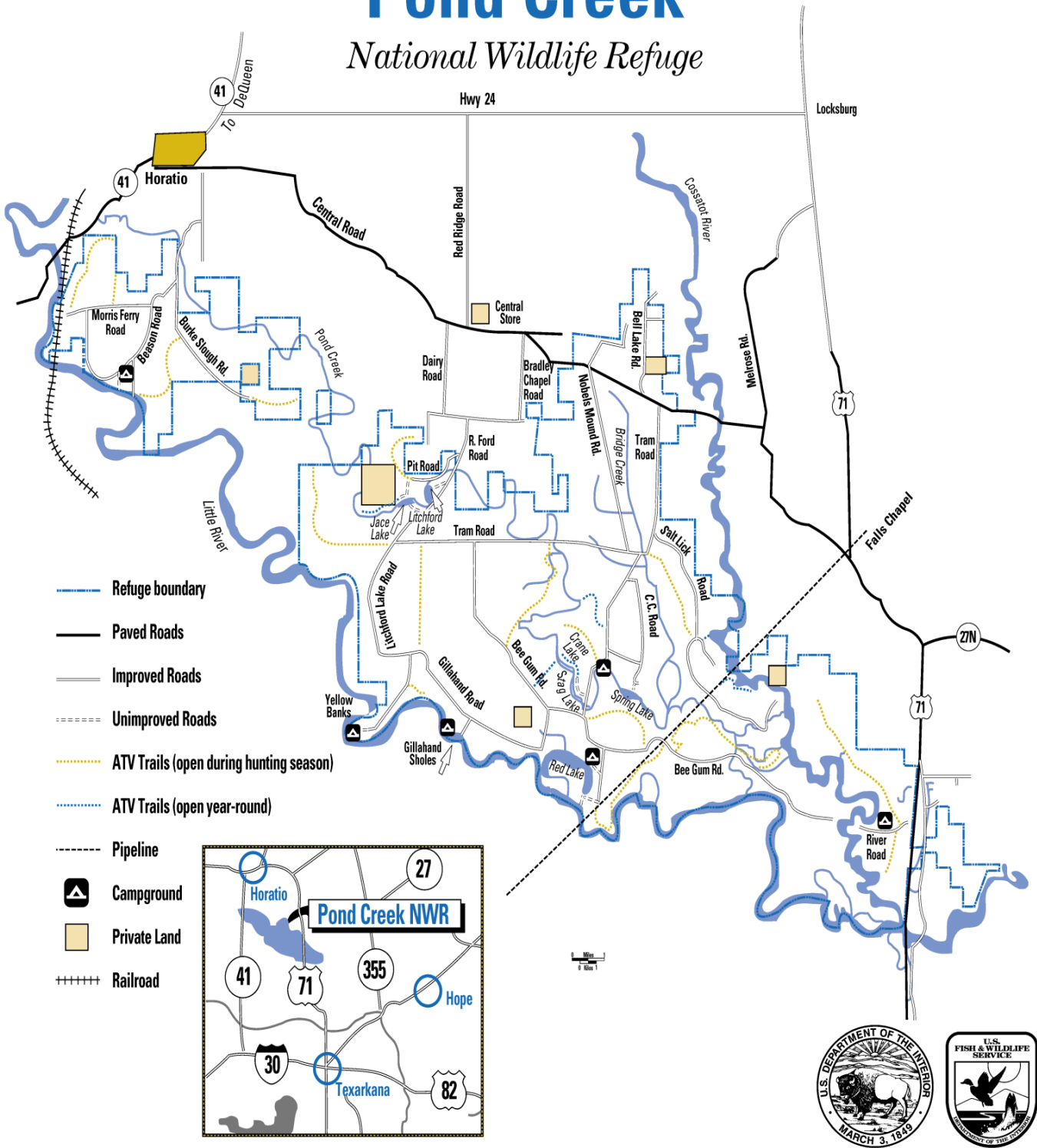


Figure 1. Map of Pond Creek NWR, courtesy of U.S. Fish and Wildlife Service.

## Sampling at Pond Creek National Wildlife Refuge

A total of 217 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Pond Creek NWR (table 2). In all, 89 visitors completed the survey for a 43% response rate and  $\pm 8\%$  margin of error at the 95% confidence level.<sup>1</sup>

**Table 2.** Sampling and response rate summary for Pond Creek NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	11/30/2010 to 11/13/2010	Burke Slough Road Entrance	160	12	64	43%
		Litchford Lake Road Entrance				
		Nobles Mound Road Entrance				
		Tram Road Entrance				
2	4/2/2011 to 4/16/2011	Burke Slough Road Entrance	57	0	25	44%
		Litchford Lake Road Entrance				
		Nobles Mound Road Entrance				
		Tram Road Entrance				
<b>Total</b>			<b>217</b>	<b>12</b>	<b>89</b>	<b>43%</b>

## Selected Survey Results

### Visitor and Trip Characteristics

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

### Familiarity with the Refuge System

While we did not ask visitors to identify the mission of the National Wildlife Refuge System or the U.S. Fish and Wildlife Service, visitors to Pond Creek NWR reported that before participating in the survey, they were aware of the role of the U.S. Fish and Wildlife Service in managing national wildlife refuges (96%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants and their habitat (98%). Positive responses to these questions concerning the management and mission

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

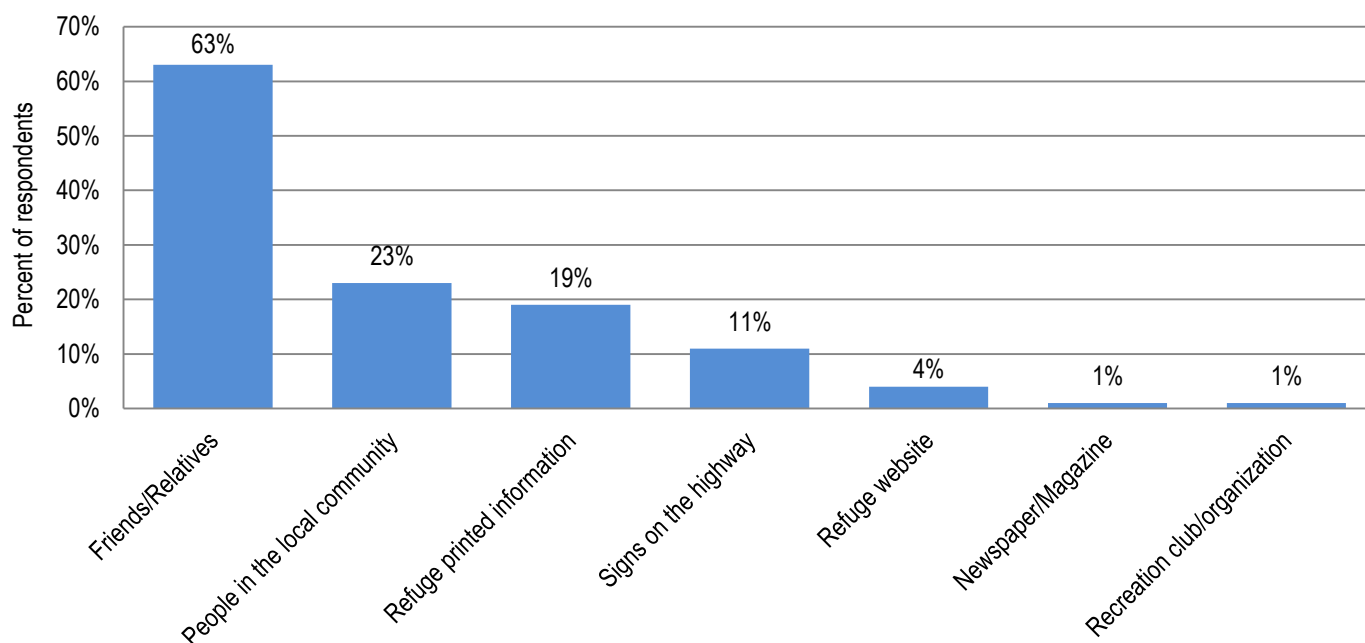
of the Refuge System do not indicate the degree to which these visitors understand the day-to-day management practices of individual refuges, only that visitors feel they have a basic knowledge of who manages refuges and why. Compared to other public lands, many visitors feel that refuges provide a unique recreation experience (81%; see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System. Some visitors to Pond Creek NWR had been to at least one other National Wildlife Refuge in the past year (44%), with an average of 6 visits to other refuges during the past 12 months.

### Visiting This Refuge

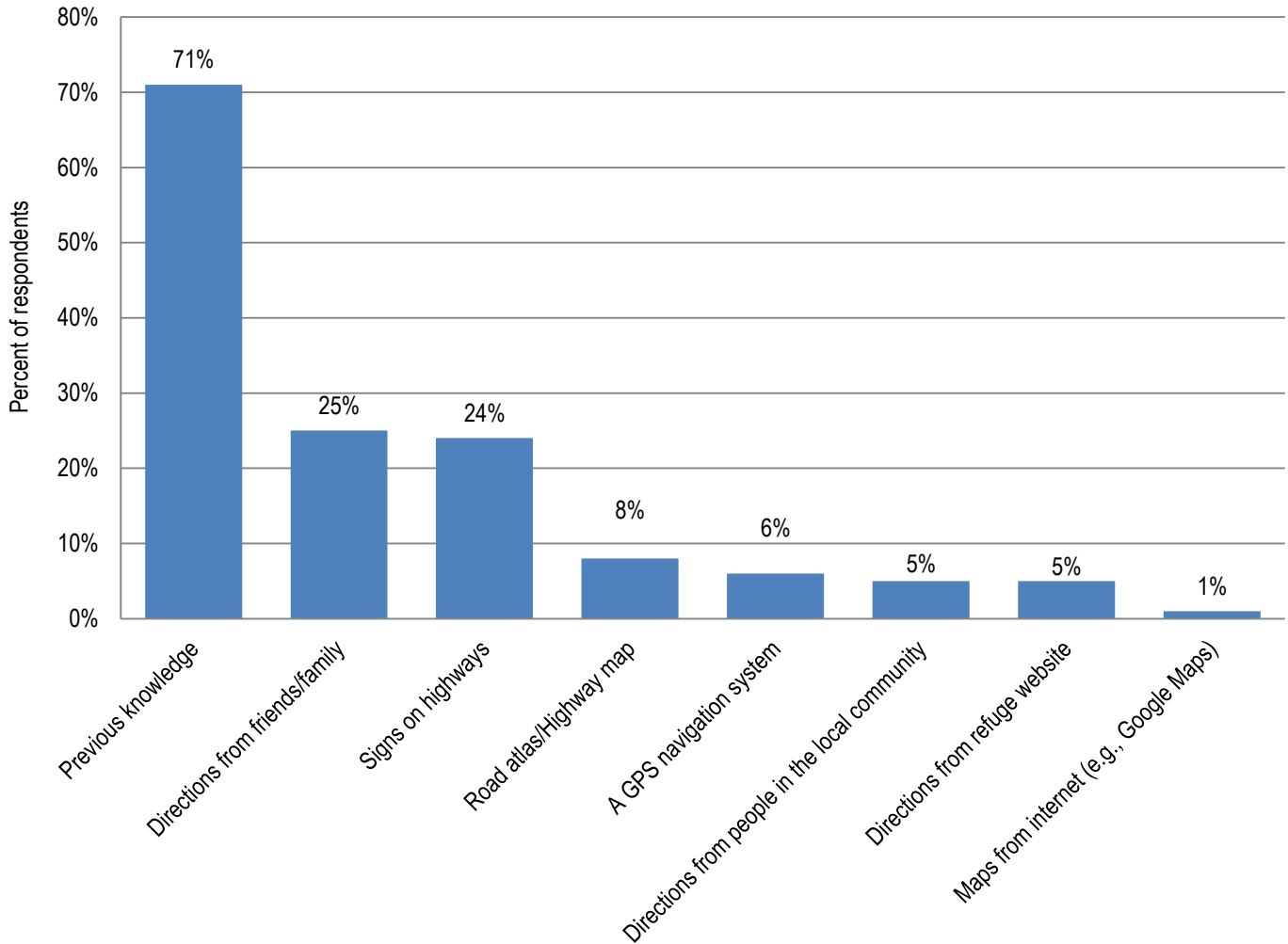
Few surveyed visitors (11%) had only been to Pond Creek NWR once in the past 12 months, while most had been multiple times (89%). These repeat visitors went to the refuge an average of 20 times during that same 12-month period. Visitors used the refuge during only one season (34%), during multiple seasons (32%), and year-round (33%).

Most visitors first learned about the refuge from friends/relatives (63%), people in the local community (23%), or refuge printed information (19%; fig. 2). Key information sources used by visitors to find their way to this refuge include previous knowledge (71%), directions from friends/family (25%), or signs on highways (24%; fig. 3).

Most visitors (80%) lived in the local area (within 50 miles of the refuge), whereas 20% were nonlocal visitors. For most local visitors, Pond Creek NWR was the primary purpose or sole destination of their trip (91%; table 3). For most nonlocal visitors, the refuge was also the primary purpose or sole destination of their trip (94%). Local visitors (n = 71) reported that they traveled an average of 25 miles to get to the refuge, while nonlocal visitors (n = 18) traveled an average of 146 miles. ***It is important to note that summary statistics based on a small sample size (n < 30) may not provide a reliable representation of the population.*** Figure 4 shows the residence of visitors travelling to the refuge. About 82% of visitors travelling to Pond Creek NWR were from Arkansas.



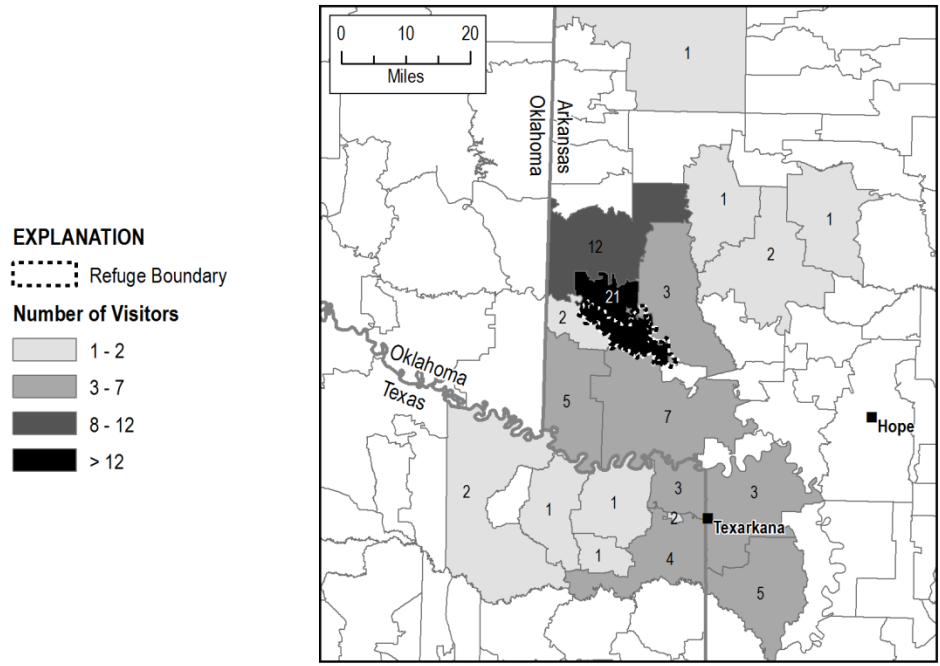
**Figure 2.** How visitors first learned or heard about Pond Creek NWR (n = 83).



**Figure 3.** Resources used by visitors to find their way to Pond Creek NWR during *this* visit (n = 87).

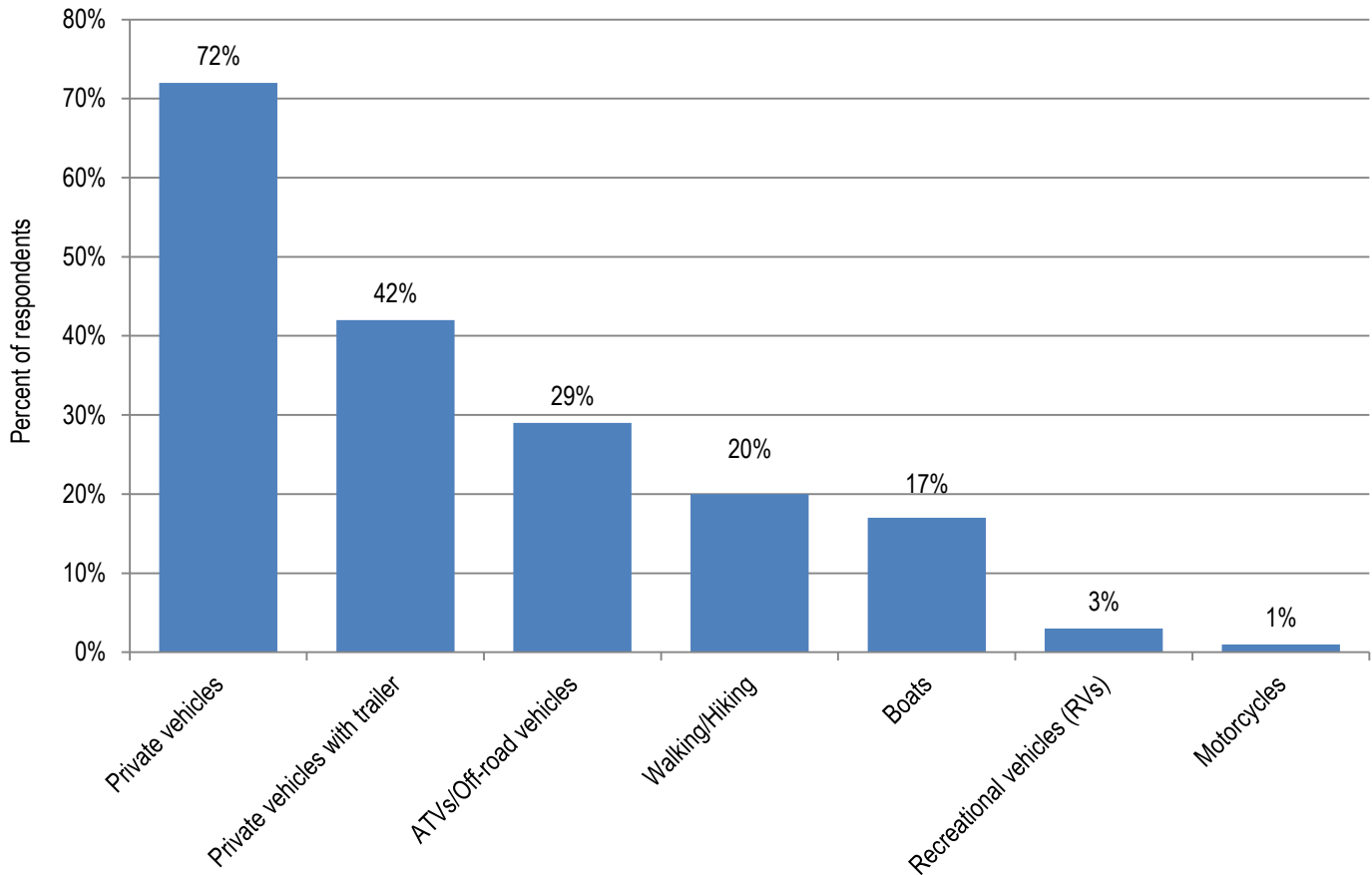
**Table 3.** Influence of Pond Creek NWR on visitors' decision to take *this* trip.

Visitors	Visiting this refuge was...		
	the primary reason for trip	one of many equally important reasons for trip	an incidental stop
Nonlocal	94%	6%	0%
Local	91%	2%	7%
Total	92%	2%	6%



**Figure 4.** Number of visitors travelling to Pond Creek NWR by residence. Top map shows residence by state and bottom map shows residence by zip codes near the refuge (n = 89).

Surveyed visitors reported that they spent an average of 6 hours at Pond Creek NWR during one day there (a day visit is assumed to be 8 hours). However, the most frequently reported length of visit during one day was actually 8 hours (63%). The key modes of transportation used by visitors to travel around the refuge were private vehicle (72%), private vehicle with trailer (42%), and ATV or off-road vehicle (29%; fig. 5). About half of visitors indicated they were part of a group on their visit to this refuge (52%), travelling primarily with family and friends (table 4).

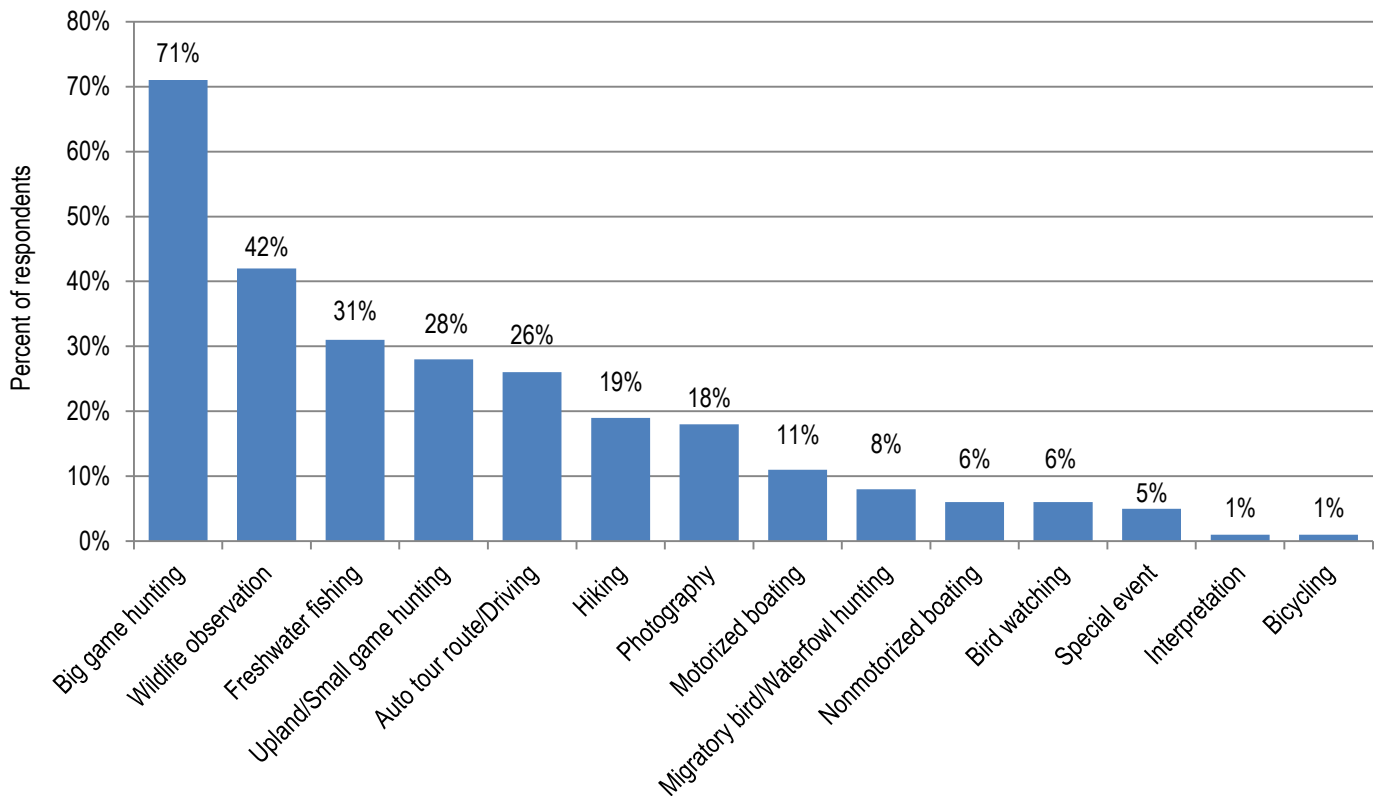


**Figure 5.** Modes of transportation used by visitors to Pond Creek NWR during *this* visit (n = 89).

**Table 4.** Type and size of groups visiting Pond Creek NWR (for those who indicated they were part of a group, n = 44).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	98%	4	1	5
Commercial tour group	0%	0	0	0
Organized club/School group	0%	0	0	0
Other group type	2%	8	4	12

Surveyed visitors participated in a variety of refuge activities during the past 12 months (fig. 6); the top three activities reported were big game hunting (71%), wildlife observation (42%), and freshwater fishing (31%). The primary reasons for their most recent visits included hunting (72%), auto tour route/driving (5%), fishing (5%), and wildlife observation (5%; fig. 7). Twenty percent of visitors indicated they had used the visitor center, mostly to ask information of staff/volunteers (53%), stop to use the facilities (for example, get water, use restroom; 24%), and view the exhibits (24%; fig. 8). Pond Creek NWR does not have a visitor center; it is unknown why a small number of visitors indicated they had used the visitor center.

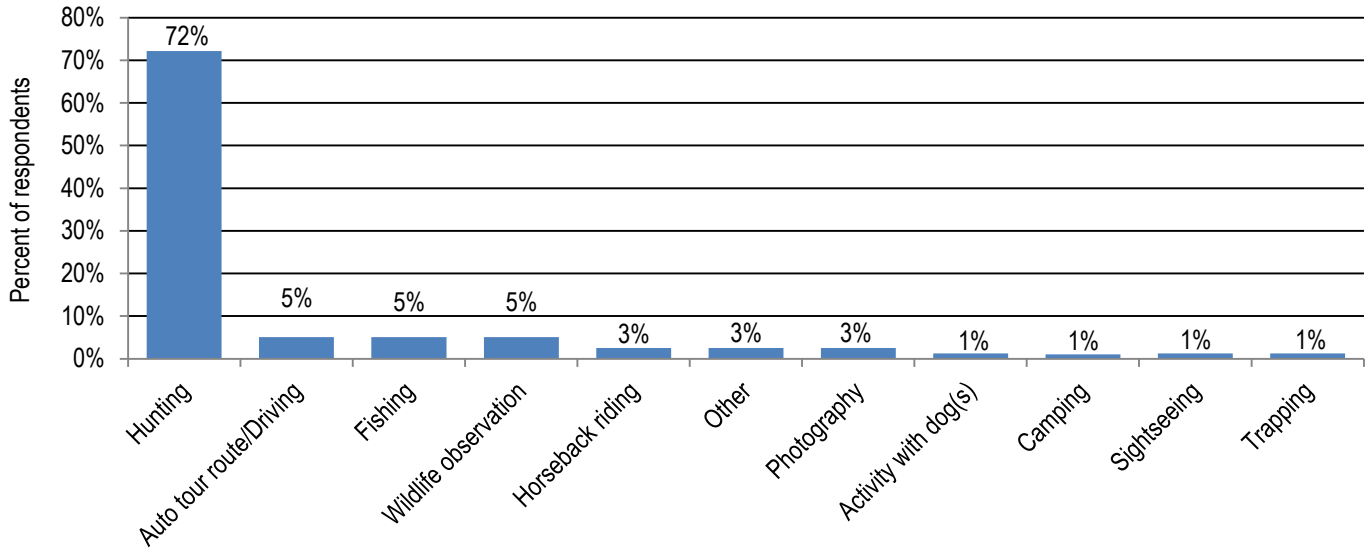


**Figure 6.** Activities in which visitors participated during the past 12 months at Pond Creek NWR (n = 85). See Appendix B for a listing of “other” activities.

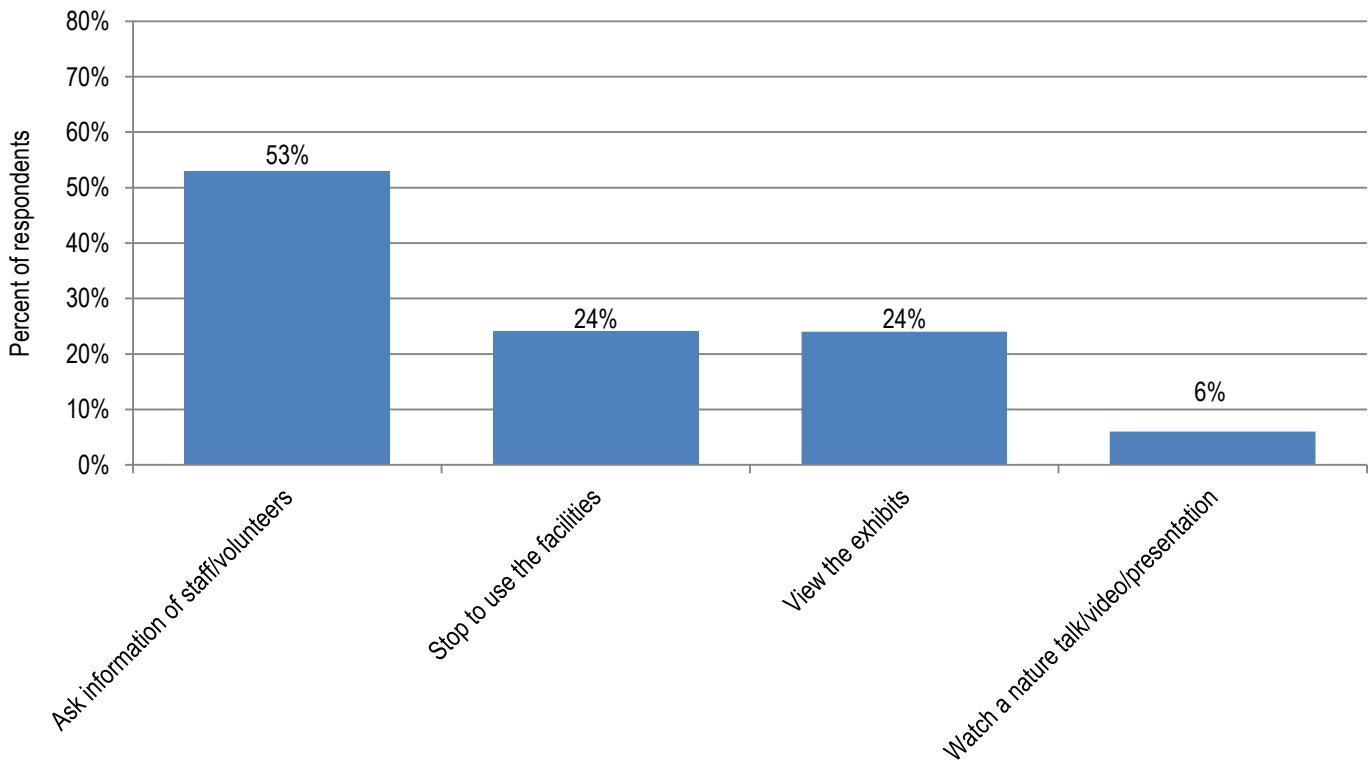
### Visitor Characteristics

All (100%) surveyed visitors to Pond Creek NWR indicated that they were citizens or permanent residents of the United States. Only those visitors 18 years or older were sampled. Visitors were a mix of 93% male with an average age of 51 years and 7% female with an average age of 52 years. Visitors, on average, reported they had 14 years of formal education (college or technical school). The median level of income was \$75,000–\$99,000. See Appendix A for more demographic information. In comparison, the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation found that participants in wildlife watching and hunting on public land were 55% male and 45% female with an average age of 46 years, an average level of education of 14 years (associate degree or two years of college), and a median income of \$50,000–\$74,999 (Harris, 2011, personal communication). Compared to the U.S. population, these 2006 survey participants are more likely to be male, older, and have higher education and income levels (U.S. Department of the Interior and U.S. Department of Commerce, 2007).





**Figure 7.** The primary activity in which visitors participated during *this* visit to Pond Creek NWR (n = 80). See Appendix B for a listing of “other” activities.



**Figure 8.** Use of the visitor center at Pond Creek NWR (for those visitors who indicated they used the visitor center, n = 17).

## Visitor Spending in Local Communities

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

A region (and its economy) is typically defined as all counties within 50 miles of a travel destination (Stynes, 2008). Visitors that live within the local 50-mile area of a refuge typically have different spending patterns than those that travel from longer distances. During the two sampling periods, 80% of surveyed visitors to Pond Creek NWR indicated that they live within the local area. Nonlocal visitors (20%) 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. ***It is important to note that summary statistics based on a small sample size ( $n < 30$ ) may not provide a reliable representation of that population.*** During the two sampling periods, nonlocal visitors spent an average of \$63 per person per day and local visitors spent an average of \$40 per person per day in the local area. Several factors should be considered when estimating the economic importance of refuge visitor spending in the local communities. These include the amount of time spent at the refuge, influence of refuge on decision to take this trip, and the representativeness of primary activities of the sample of surveyed visitors compared to the general population. Controlling for these factors is beyond the scope of the summary statistics presented in this report. Detailed refuge-level visitor spending profiles which do consider these factors will be developed during the next phase of analysis.

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

Visitors	n <sup>1</sup>	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	16	\$54	\$63	\$47	\$16	\$171
Local	52	\$20	\$40	\$48	\$0	\$225

<sup>1</sup>n = number of visitors who answered both locality *and* expenditure questions.

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

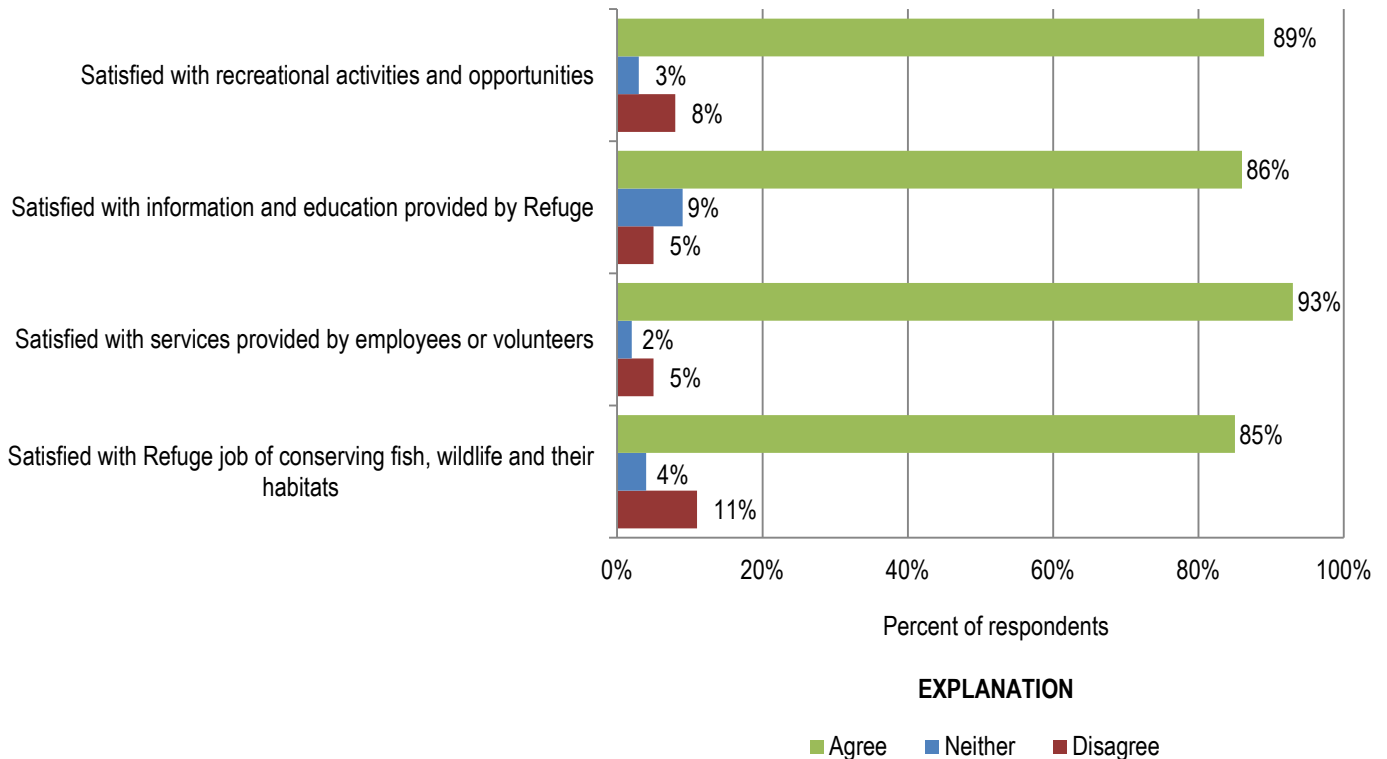
## Visitor Opinions about This Refuge

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

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

- 89% were satisfied with the recreational activities and opportunities,
- 86% were satisfied with the information and education about the refuge and its resources,
- 93% were satisfied with the services provided by employees or volunteers, and
- 85% were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

Although 20% of visitors (n = 16) indicated they paid a fee to enter Pond Creek NWR, the refuge does not have an entrance fee. There is a fee for quota deer or turkey gun hunting. It may be that some visitors were referencing this fee when they answered this question.



**Figure 9.** Overall satisfaction with Pond Creek NWR during *this* visit (n ≥ 85).

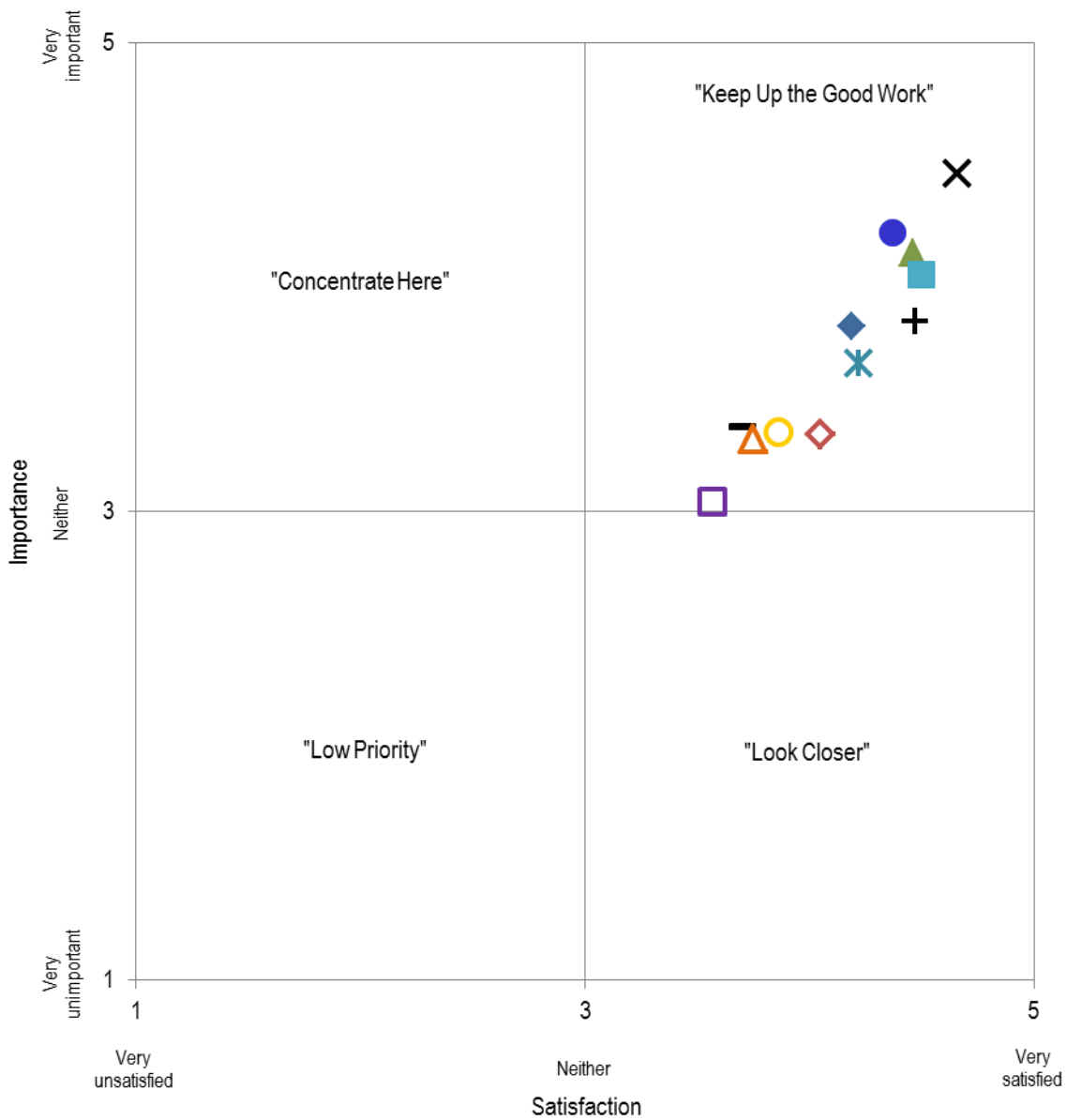
## Importance/Satisfaction Ratings

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

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

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

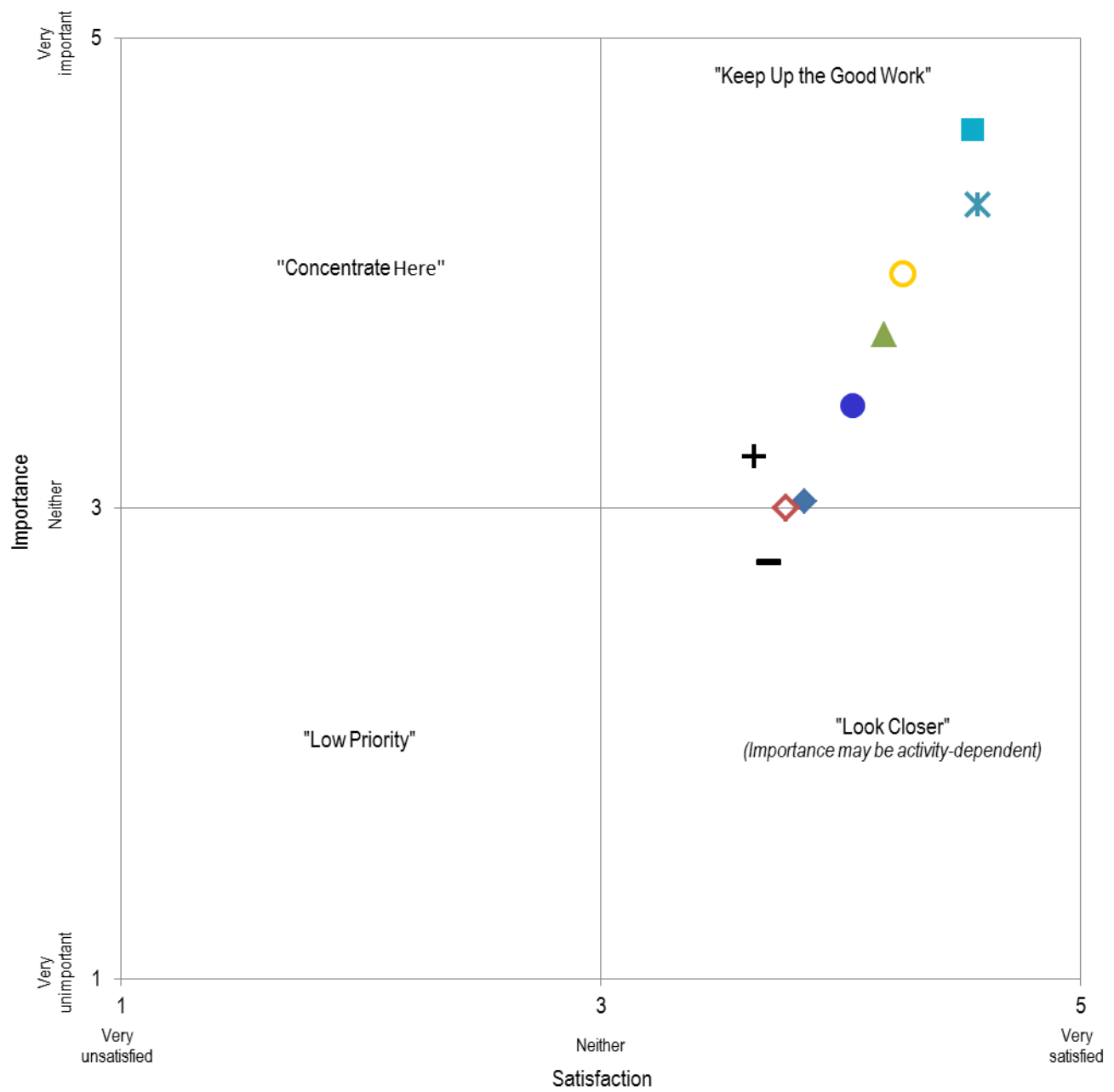
Figures 10-12 depict surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at Pond Creek NWR, respectively. All refuge services and facilities fell in the "Keep Up the Good Work" quadrant (fig. 10). Nearly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



**EXPLANATION**

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

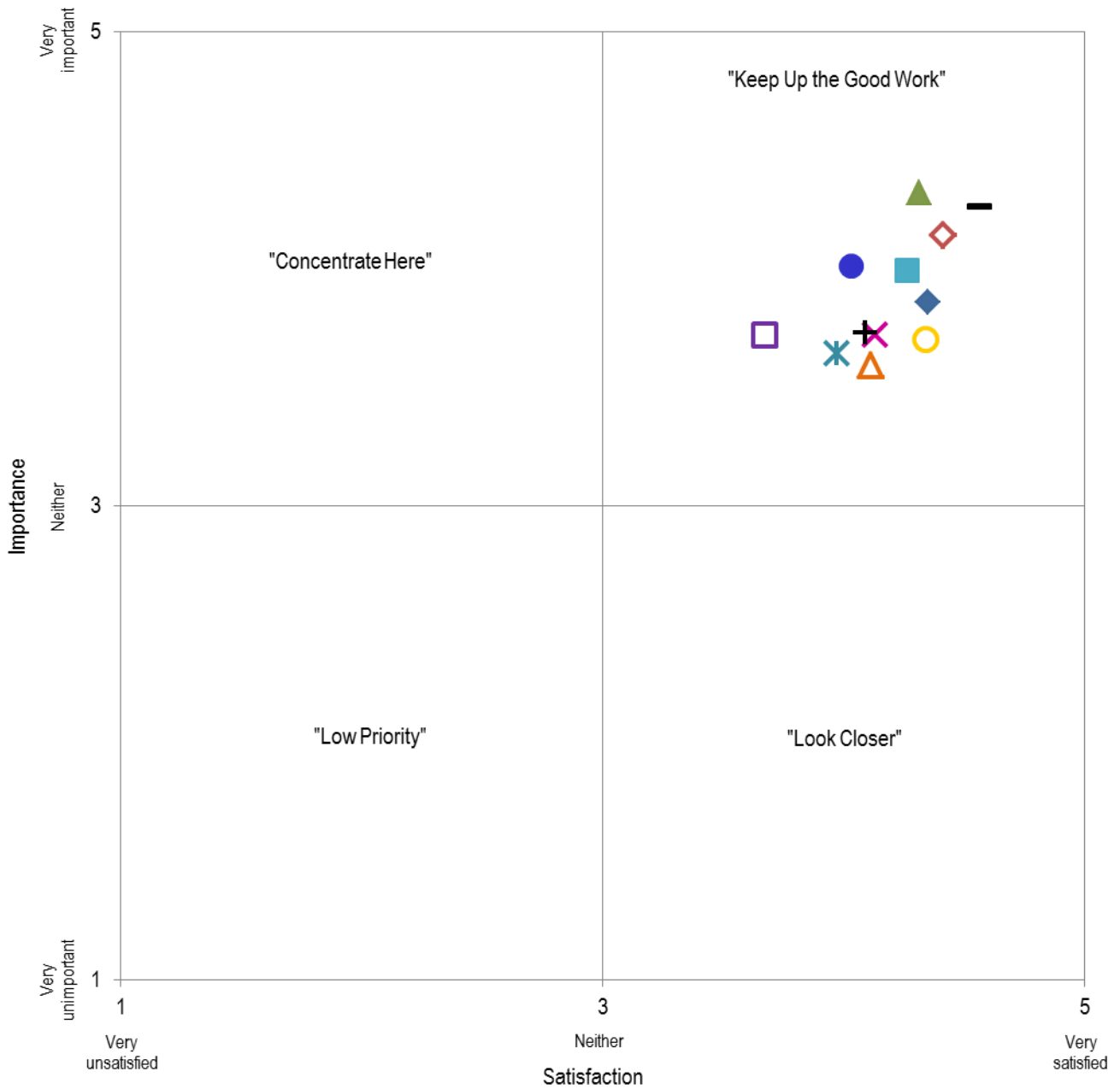
**Figure 10.** Importance-satisfaction ratings of services and facilities provided at Pond Creek NWR.



**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 Pond Creek NWR.



**EXPLANATION**

- |                                 |                               |                                  |                              |
|---------------------------------|-------------------------------|----------------------------------|------------------------------|
| ◆ Condition of roads            | ▲ Condition of bridges        | ✕ Condition of trails/boardwalks | ⊕ Condition of parking areas |
| ✕ 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 Pond Creek NWR.

## Visitor Opinions about National Wildlife Refuge System Topics

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

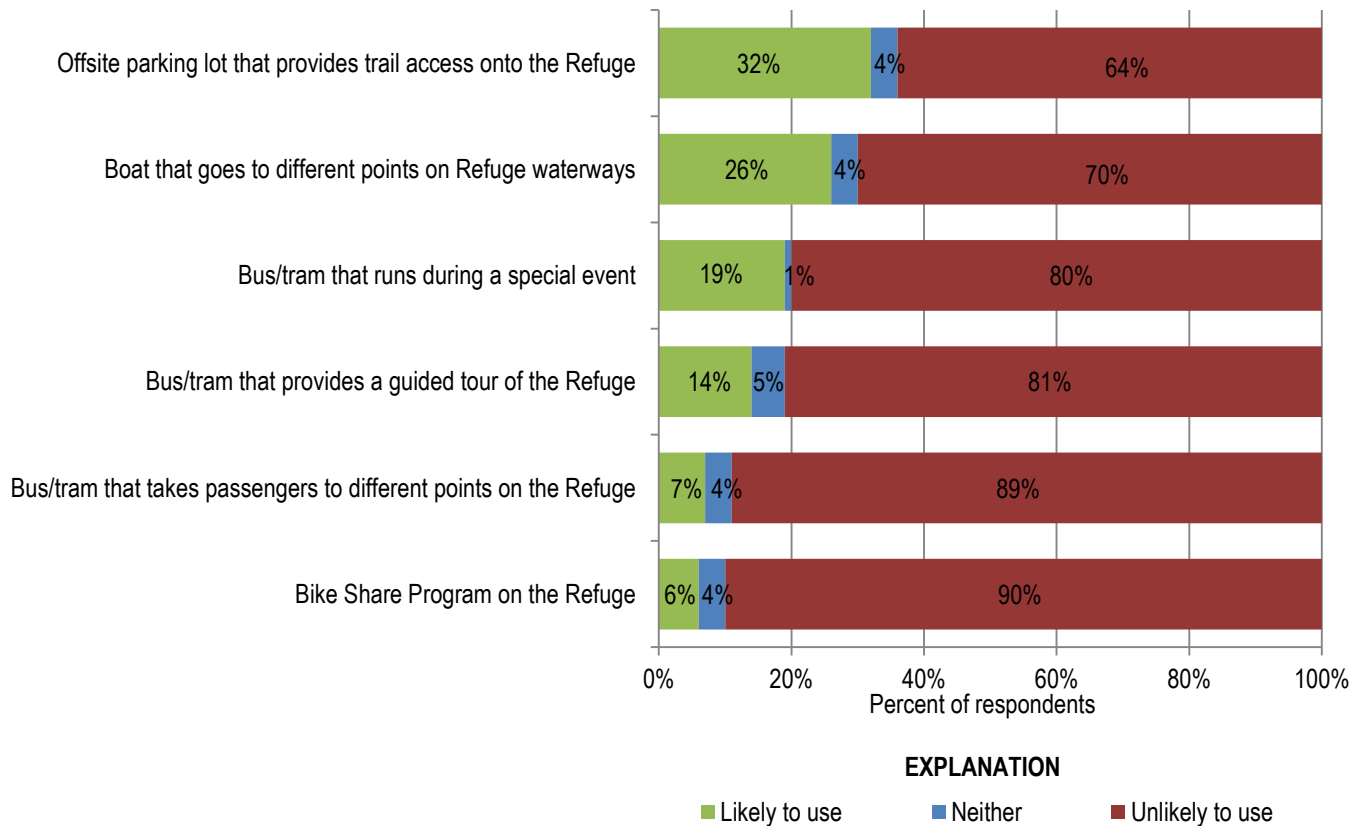
### Alternative Transportation and the National Wildlife Refuge System

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

Of the six Refuge System-wide alternative transportation options listed on the survey, the majority of Pond Creek NWR visitors who were surveyed were *unlikely* to use any of the options on national wildlife refuges in the future (fig. 13).

When asked about using alternative transportation at Pond Creek NWR specifically, 18% of visitors indicated they were unsure whether it would enhance their experience; however, some visitors thought alternative transportation would enhance their experience (10%) and most thought it would not (73%).





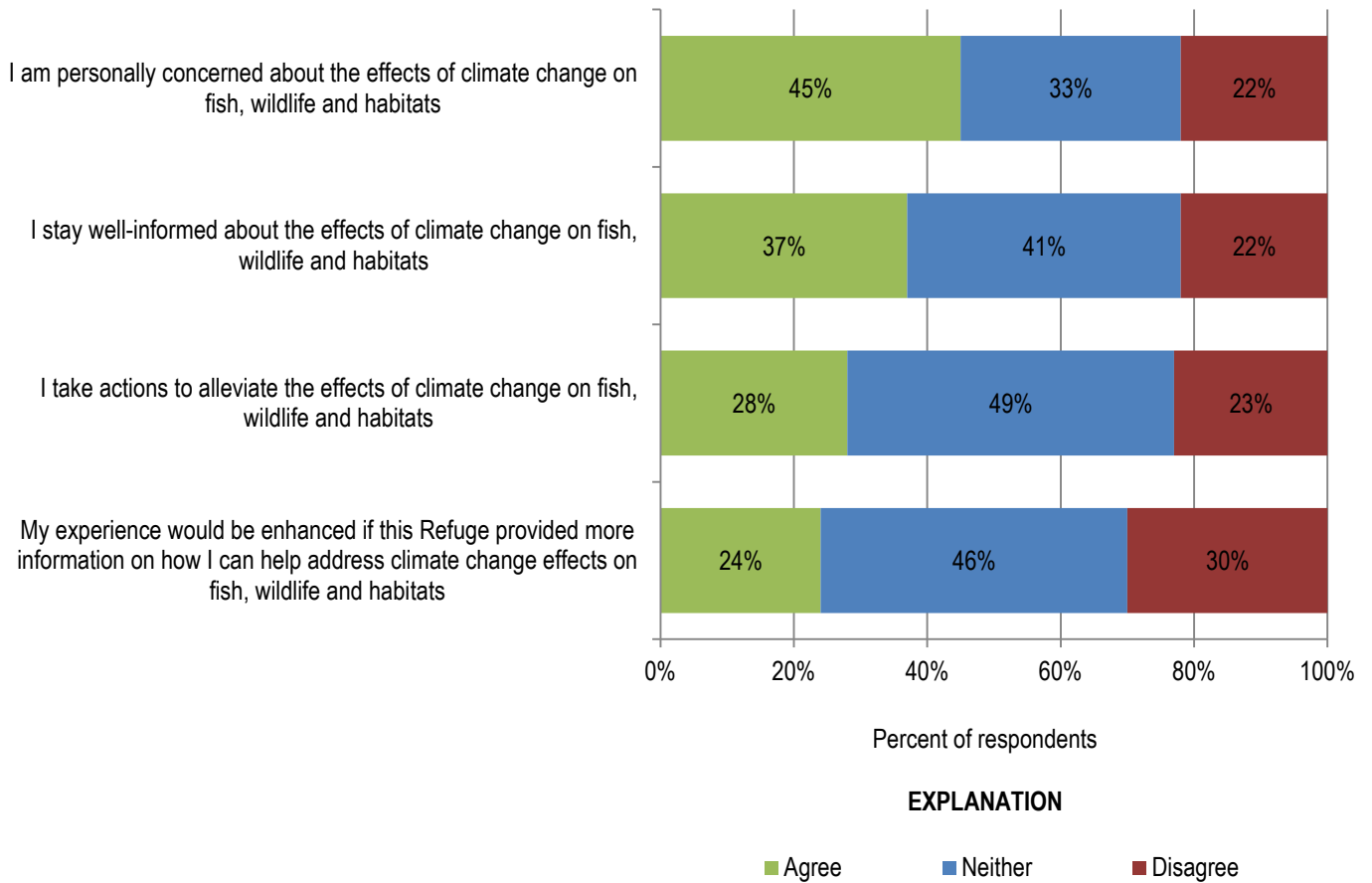
**Figure 13.** Visitors’ likelihood of using alternative transportation options at national wildlife refuges in the future (n ≥ 87).

### Climate Change and the National Wildlife Refuge System

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

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

wildlife and their habitats. The majority of surveyed visitors to Pond Creek NWR did not agree or disagree with any of the statements in figure 14.



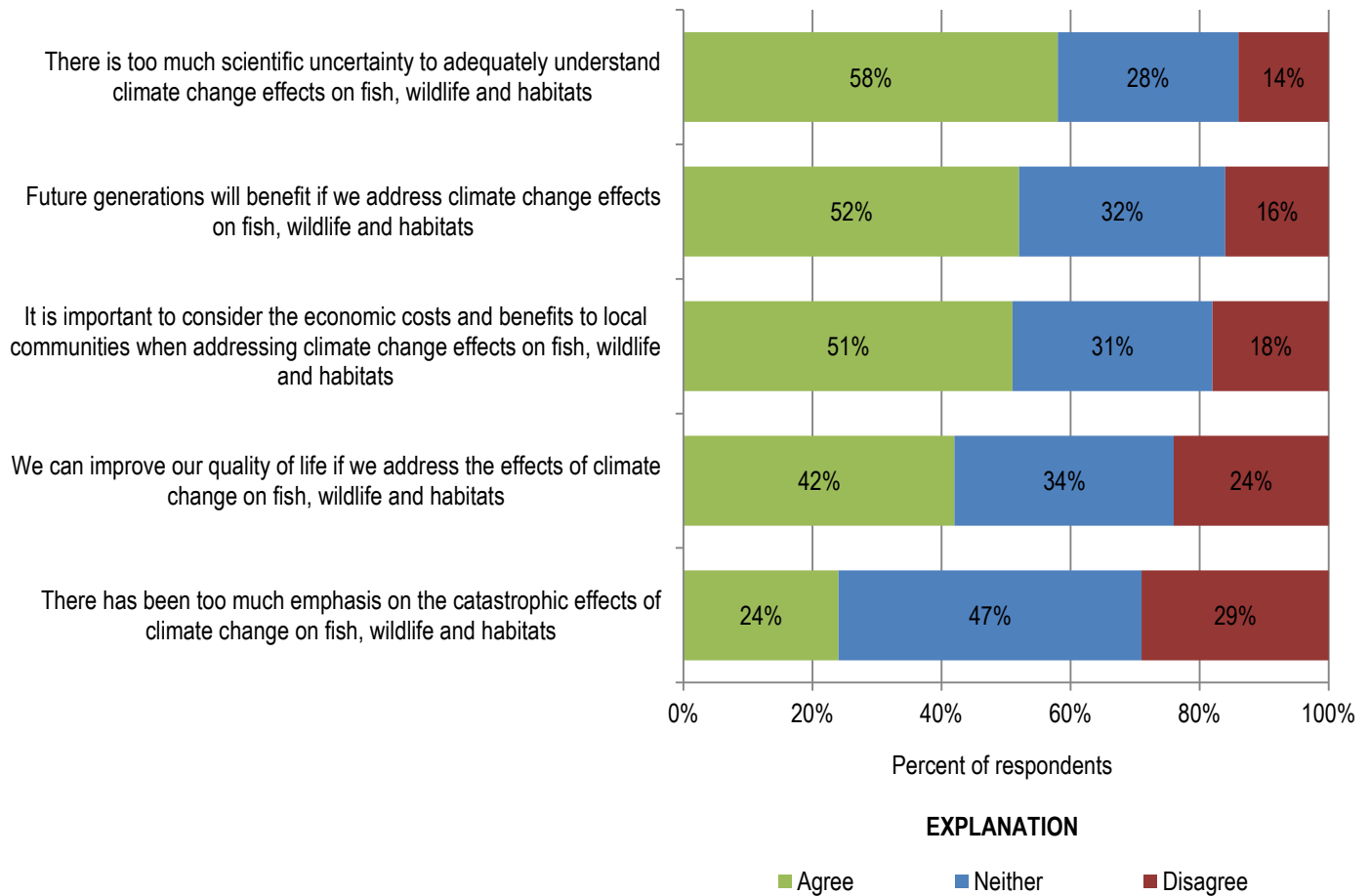
**Figure 14.** Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 82).

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

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

- “There is too much scientific uncertainty to adequately understand climate change effects;”
- “Future generations will benefit if we address climate change effects;” and
- “It is important to consider the economic costs and benefits to local communities when addressing climate change effects.”

Such information suggests that certain beliefs resonate with a greater number of visitors than other beliefs do. This information is important to note because some visitors (24%) indicated that their experience would be enhanced if Pond Creek NWR provided information about how they could help address the effects of climate change on fish, wildlife, and their habitats (fig. 14), and framing the information in a way that resonates most with visitors may result in a more engaged public who support strategies aimed at alleviating climate change pressures. Data will be analyzed further at the aggregate, or national level, to inform the development of a comprehensive communication strategy about climate change.



**Figure 15.** Visitors' beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 82).

## Conclusion

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

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

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# National Wildlife Refuge Visitor Survey



**PLEASE READ THIS FIRST:**

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

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

---

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

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

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> 71% Big game hunting                | <input type="checkbox"/> 19% Hiking  | <input type="checkbox"/> 0% Environmental education (for example, classrooms or labs, tours) |
| <input type="checkbox"/> 28% Upland/Small-game hunting       | <input type="checkbox"/> 1% Bicycling  |  |
| <input type="checkbox"/> 8% Migratory bird/Waterfowl hunting | <input type="checkbox"/> 26% Auto tour route/Driving                               | <input type="checkbox"/> 5% Special event ( <i>please specify</i> )<br><u>See Appendix B</u> |
| <input type="checkbox"/> 42% Wildlife observation            | <input type="checkbox"/> 11% Motorized boating                                     |  |
| <input type="checkbox"/> 6% Bird watching                    | <input type="checkbox"/> 6% Nonmotorized boating (including canoes/kayaks)         | <input type="checkbox"/> 7% Other ( <i>please specify</i> )<br><u>See Appendix B</u>         |
| <input type="checkbox"/> 31% Freshwater fishing              |  |  |
| <input type="checkbox"/> 0% Saltwater fishing                | <input type="checkbox"/> 1% Interpretation (for example, exhibits, kiosks, videos) | <input type="checkbox"/> 0% Other ( <i>please specify</i> )<br><u>See Appendix B</u>         |
| <input type="checkbox"/> 18% 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?

- 80% No
- 20% Yes → If yes, what did you do there? (Please mark **all that apply.**)
- |  |   |
|--|---|
| <input type="checkbox"/> 0% Visit the gift shop or bookstore     | <input type="checkbox"/> 6% Watch a nature talk/video/presentation                                |
| <input type="checkbox"/> 24% View the exhibits                   | <input type="checkbox"/> 24% Stopped to use the facilities (for example, get water, use restroom) |
| <input type="checkbox"/> 53% Ask information of staff/volunteers | <input type="checkbox"/> 24% Other ( <i>please specify</i> ) <u>See Appendix B</u>                |



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

Nonlocal	Local	Total	
94%	91%	92%	It was the primary purpose or sole destination of my trip.
6%	1%	2%	It was one of many equally important reasons or destinations for my trip.
0%	7%	6%	It was just an incidental or spur-of-the-moment stop on a trip taken for other purposes or to other destinations.

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

**Nonlocal** 146 number of miles

**Local** 25 number of miles

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

See Report for Results

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

48% No (*skip to question #9*)

52% Yes → What **type of group** were you with on your visit? (*Please mark **only one.***)

98% Family and/or friends

0% Organized club or school group

0% Commercial tour group

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

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

4 number 18 years and over

1 number 17 years and under

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

63% Friends or relatives

4% Refuge website

11% Signs on highway

0% Other website (*please specify*) See Appendix B

1% Recreation club or organization

0% Television or radio

23% People in the local community

1% Newspaper or magazine

19% Refuge printed information (brochure, map)

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

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

59% Spring  
(March-May)

39% Summer  
(June-August)

87% Fall  
(September-November)

61% Winter  
(December-February)

11. How many times have you visited...

...this Refuge (including this visit) in the last 12 months? 18 number of visits

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

**SECTION 2. Transportation and access at this Refuge**

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

- |                              |   |                              |                                  |                              |                                       |
|------------------------------|---|------------------------------|----------------------------------|------------------------------|---------------------------------------|
| <input type="checkbox"/> 72% | Private vehicle without a trailer                             | <input type="checkbox"/> 0%  | Refuge shuttle bus or tram       | <input type="checkbox"/> 0%  | Bicycle                               |
| <input type="checkbox"/> 42% | Private vehicle with a trailer<br>(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"/> 29% | ATV or off-road vehicle          | <input type="checkbox"/> 2%  | Other ( <i>please specify below</i> ) |
| <input type="checkbox"/> 3%  | Recreational vehicle (RV)                                     | <input type="checkbox"/> 17% | Boat                             | <u>See Appendix B</u>        |                                       |
|                              |   | <input type="checkbox"/> 0%  | Wheelchair or other mobility aid |                              |                                       |

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

- |                              |  |                              |   |
|------------------------------|--|------------------------------|---|
| <input type="checkbox"/> 24% | Signs on highways  | <input type="checkbox"/> 5%  | Directions from Refuge website                        |
| <input type="checkbox"/> 6%  | A GPS navigation system  | <input type="checkbox"/> 5%  | Directions from people in community near this Refuge  |
| <input type="checkbox"/> 8%  | A road atlas or highway map                                      | <input type="checkbox"/> 25% | Directions from friends or family                     |
| <input type="checkbox"/> 1%  | Maps from the Internet (for example,<br>MapQuest or Google Maps) | <input type="checkbox"/> 71% | Previous knowledge/I have been to this Refuge before  |
|                              |  | <input type="checkbox"/> 0%  | Other ( <i>please specify</i> ) <u>See Appendix B</u> |

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

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 83%	<input type="checkbox"/> 6%	<input type="checkbox"/> 5%	<input type="checkbox"/> 5%	<input type="checkbox"/> 2%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 77%	<input type="checkbox"/> 13%	<input type="checkbox"/> 5%	<input type="checkbox"/> 5%	<input type="checkbox"/> 1%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 73%	<input type="checkbox"/> 8%	<input type="checkbox"/> 6%	<input type="checkbox"/> 13%	<input type="checkbox"/> 1%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 62%	<input type="checkbox"/> 8%	<input type="checkbox"/> 3%	<input type="checkbox"/> 21%	<input type="checkbox"/> 6%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 74%	<input type="checkbox"/> 6%	<input type="checkbox"/> 1%	<input type="checkbox"/> 18%	<input type="checkbox"/> 1%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 55%	<input type="checkbox"/> 9%	<input type="checkbox"/> 5%	<input type="checkbox"/> 17%	<input type="checkbox"/> 15%
...some other alternative transportation option? ( <i>please specify</i> ) <u>See Appendix B</u>	<input type="checkbox"/> 17%	<input type="checkbox"/> 0%	<input type="checkbox"/> 0%	<input type="checkbox"/> 0%	<input type="checkbox"/> 83%

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

- 10% Yes       73% No       18% Not Sure

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

Importance					Satisfaction					
Circle one for each item.					Circle one for each item.					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important	Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
7%	5%	12%	47%	29%	6%	5%	6%	16%	67%	NA
4%	10%	20%	43%	23%	6%	7%	13%	18%	55%	NA
6%	1%	6%	27%	59%	4%	5%	10%	21%	61%	NA
9%	9%	13%	41%	29%	5%	5%	17%	16%	57%	NA
10%	8%	16%	41%	25%	5%	6%	21%	21%	46%	NA
5%	6%	9%	43%	37%	5%	10%	9%	28%	48%	NA
9%	4%	5%	31%	52%	4%	4%	8%	18%	67%	NA
5%	5%	5%	30%	56%	4%	1%	6%	14%	75%	NA
10%	9%	16%	32%	33%	6%	1%	11%	17%	65%	NA
10%	2%	12%	30%	46%	6%	2%	12%	18%	61%	NA
15%	7%	16%	27%	35%	7%	4%	18%	14%	57%	NA
8%	8%	24%	28%	34%	9%	3%	33%	22%	33%	NA

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

See Appendix B

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

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

80% Yes

20% No → How much time did you spend **in local communities** on this trip?  
             4   number of hours      OR        5   number of days

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

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

See Report for Results

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

  2   number of people sharing expenses

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

\$0	\$10	\$20	\$35	\$50	\$75	\$100	\$125	\$150	\$200	\$250
13%	6%	13%	5%	14%	3%	21%	0%	3%	4%	18%

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

6%	Far too low	0%	Too low	88%	About right	6%	Too high	0%	Far too high	80%	Did not pay a fee <i>(skip to Section 4)</i>
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6. Please indicate whether you disagree or agree with the following statement. *(Please mark **only one**.)*

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

0%	Strongly disagree	0%	Disagree	19%	Neither agree or disagree	44%	Agree	38%	Strongly agree
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#### SECTION 4. Your experience at this Refuge

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Applicable
Overall, I am satisfied with the recreational activities and opportunities provided by this Refuge.	5%	3%	3%	35%	53%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	4%	1%	9%	40%	46%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	5%	0%	2%	37%	56%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	7%	5%	3%	30%	56%	NA

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

Importance					Refuge Services, Facilities, and Activities	Satisfaction					
Circle one for each item.						Circle one for each item.					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important		Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
5%	5%	22%	42%	26%	Availability of employees or volunteers	3%	5%	15%	24%	53%	NA
5%	8%	23%	29%	35%	Courteous and welcoming employees or volunteers	4%	0%	10%	16%	70%	NA
5%	3%	13%	38%	43%	Knowledgeable employees or volunteers	3%	3%	8%	20%	67%	NA
5%	1%	1%	30%	63%	Printed information about this Refuge and its resources (for example, maps and brochures)	1%	0%	4%	22%	73%	NA
8%	6%	24%	38%	23%	Informational kiosks/displays about this Refuge and its resources	0%	3%	22%	26%	49%	NA
8%	1%	8%	31%	53%	Signs with rules/regulations for this Refuge	0%	3%	15%	24%	58%	NA
7%	16%	33%	25%	19%	Exhibits about this Refuge and its resources	0%	3%	34%	17%	45%	NA
7%	8%	44%	25%	16%	Environmental education programs or activities	0%	6%	47%	19%	28%	NA
7%	10%	45%	18%	20%	Visitor Center	2%	2%	40%	21%	35%	NA
5%	5%	18%	25%	46%	Convenient hours and days of operation	0%	3%	12%	18%	68%	NA
12%	6%	42%	19%	21%	Well-maintained restrooms	3%	0%	47%	19%	31%	NA
19%	6%	43%	16%	16%	Wildlife observation structures (decks, blinds)	4%	6%	40%	26%	23%	NA
22%	3%	43%	16%	16%	Bird-watching opportunities	2%	3%	39%	21%	35%	NA
8%	3%	18%	26%	46%	Opportunities to observe wildlife other than birds	0%	3%	18%	29%	50%	NA
7%	5%	26%	32%	30%	Opportunities to photograph wildlife and scenery	0%	1%	27%	24%	48%	NA
5%	1%	3%	10%	81%	Hunting opportunities	0%	8%	3%	17%	73%	NA
5%	3%	10%	22%	60%	Fishing opportunities	0%	1%	11%	18%	70%	NA
12%	5%	33%	25%	24%	Trail hiking opportunities	0%	2%	33%	24%	41%	NA
17%	8%	44%	19%	11%	Water trail opportunities for canoeing or kayaking	2%	2%	48%	16%	33%	NA
25%	5%	48%	12%	10%	Bicycling opportunities	3%	2%	47%	18%	30%	NA
12%	8%	42%	19%	18%	Volunteer opportunities	5%	2%	45%	20%	29%	NA

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

See Appendix B

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

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

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

96% Yes

4% No

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

98% Yes

2% No

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

81% Yes

19% No

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

See Appendix B

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

Statements about climate change	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I am personally concerned about the effects of climate change on fish, wildlife and their habitats.	14%	8%	33%	31%	14%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	14%	9%	34%	28%	14%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	4%	11%	28%	41%	16%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	6%	16%	41%	33%	5%
It is important to consider the economic costs and benefits to local communities when addressing the effects of climate change on fish, wildlife and their habitats.	5%	13%	31%	39%	12%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	12%	11%	49%	26%	2%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	5%	24%	46%	13%	11%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	11%	5%	32%	32%	20%
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.	14%	15%	46%	20%	4%

## 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 4 in Report

2. Are you?  93% Male  7% Female

3. In what year were you born? 1960 (YYYY)



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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
(elementary)					(junior high or middle school)			(high school)				(college or technical school)				(graduate or professional school)			
					1%			38%				48%				13%			

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

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

- 7% American Indian or Alaska Native  0% Black or African American  98% White  
 0% Asian  0% Native Hawaiian or Pacific Islander

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

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

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> 1% Less than \$10,000  | <input type="checkbox"/> 8% \$35,000 - \$49,999  | <input type="checkbox"/> 18% \$100,000 - \$149,999 |
| <input type="checkbox"/> 8% \$10,000 - \$24,999 | <input type="checkbox"/> 28% \$50,000 - \$74,999 | <input type="checkbox"/> 3% \$150,000 - \$199,999  |
| <input type="checkbox"/> 5% \$25,000 - \$34,999 | <input type="checkbox"/> 25% \$75,000 - \$99,999 | <input type="checkbox"/> 4% \$200,000 or more      |

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

34 number of trips

**Thank you for completing the survey.**

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

See Appendix B for Comments

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## Appendix B: Visitor Comments to Open-Ended Survey Questions for Pond Creek 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
2011 two-day Turkey hunt	1
Fishing Derby	1
I led a boy scout troop on the marked trails and lectured.	1
Youth hunt	1
Total	4

Other Activity	Frequency
Camping	1
Horseback riding	2
Looking for dogs	1
Private property check	1
Riding ATV	1
Total	6

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
Horseback riding on trails	1
None	1
Pleasure	1
Private property check	1
Riding horses	1
Sightseeing	1
Trapping	1
Turkey	1
Total	8

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

Other Visitor Center Activity	Frequency
I got literature and maps.	1
I went in to check on the game.	1
Looked at a map.	1
Meet with friends and check harvested game.	1
Total	4

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

Other Group Type	Frequency
HHS senior class. Go Lions!	1
Total	1

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

Other Ways Heard about This Refuge	Frequency
I sell hunting property and I listed one adjacent to the refuge.	1
Private property owner	1
Swenkies	1
Total	3

## Survey Section 2

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

Other Forms of Transportation	Frequency
Horses	2
Total	2

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

Other Transportation Option Likely to Use	Frequency
4 Wheeler/ATV	1
ATV	1
ATV/UTV	1
Horse trailer - truck	1
I have my own and walk.	1
Motor vehicle and ATV	1
Personal vehicle	1
Total	7

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)

Alcohol containers littered the exit road on the day of survey during departure.

Bridge is in much need of repair on Pond Creek National Wildlife Refuge on the Morris Ferry Road (south loop). The bridge is presently blocked due to a need of repair!

I am disabled. I am very satisfied with the ruling on ATV riding during seasons for different reasons.

I am very happy with all roads and trails.

I am very satisfied with everything they do at this refuge.

I would like to see more ATV trails year round. Just for fun.

I would like to see more trails and connections between the trails. Starting points and return routes rather than "in and dead end" trails.

Much work has been done on this refuge on the roads, all for the good. However, the aggregates used in most places have cost visitors thousands of dollars in destroyed tires. My truck has 10 ply tires and I have lost as many as 8 tires per year as well as losing trailer tires. Sometimes 4 at a time. Almost every guest that has come with me has lost at least one tire on these roads. I notice that this is possibly being addressed, but it is still happening. Some folks do not come back; what a shame.

People aren't pulling far enough off the road when they park to hunt.

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Pond Creek is well kept and managed. The people responsible for keeping roads and trails up at Pond Creek are doing a great job.

Road conditions are much better this year than they were the last 2 years. Additional gravel is needed in camping areas - I'm always afraid of getting stuck again, if my truck is parked or driven off gravel pads.

The place needs more turnarounds for teenage kids. People are always getting stuck.

The policy for disabled hunters could use some revision. Being a disabled vet myself, there are a few issues that I am uncomfortable with. My hunting buddy is also a disabled vet who served with me and these problems we discussed later are viewed as his major problem hunting in Pond Creek NWR also.

They need more campsites.

They should have speed limits on refuge roads and enforce them.

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## Survey Section 4

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

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### Comments on Services, Facilities, and Activities at This Refuge (n = 30)

Antler restrictions should be implemented on deer hunting regulations.

Good deal.

I do not agree with the local people being able to put up stands in October and leave them there the whole season. This caused a difficult time for me to find places for my children to hunt during the youth hunt.

I feel very privileged to live so near this refuge that my wife and I can visit it often. All of the employees with whom I am acquainted are very knowledgeable and helpful.

I like this refuge because of the bow hunting restrictions and the youth hunt it provides. I wish this refuge would discontinue the muzzle loader hunt and 2 day gun hunt. Bow hunting is what makes Pond Creek so great.

I love the refuge - It is so well managed.

I only stayed about 3 to 4 hours on one day. I was pleased with my brief trip through the refuge.

I really admire the way the wardens patrol the refuge to keep poachers and trouble makers out. They run a tight ship and I like that.

I want a job with Pond Creek.

I would like for there to be an area where you are allowed to run generators past 10pm while camping to make summer camping trips more enjoyable.

I would like to have more ATV trails year round, please!

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I would like to see more days of the turkey hunt and would like to move gun deer hunt to Thanksgiving weekend.

It needs stronger restrictions against shooting younger bucks.

It's a nice place to hunt and fish or just visit the outdoors.

Keep it primitive. I like the hunting seasons like they are.

Our family grew up enjoying Pond Creek before it became a refuge. Much of the time the roads were impossible. We're enjoying all the work that has been done.

Ramps for launching small boats could have less of an incline.

Refuge regulations governing big game hunting are too liberal. Season length and bag limits need to be reduced. Quality and total number of big game animals are declining.

Seems like the people at the refuge stay very busy.

Staff have been helpful when necessary to answer questions. Well patrolled, always safe when in the park, and very clean.

The disabled and mobility impaired programs could use some work. They only allow a disabled person to go 300 feet off of any road or trail, which means they only have 150 feet of huntable space since the rules say you cannot hunt within 150 feet of any road or trail. A revision to this would be great.

The only refuge employee that I saw was the young man that stopped me and asked if I would take this survey.

The refuge needs a full time game warden and a secretary.

There is far too much ATV access.

There needs to be a cell tower in the area; it is a safety reason when people are hunting and you can't get a phone call out because there is no service.

There needs to be another full time wildlife officer in the refuge.

They need to manage the timber better. It is wasting a lot of money.

This refuge must have a time that feral hogs only can be hunted and killed by any means. It is the most efficient "furring house" in Arkansas the way it is being managed now. I am a professional wildlife consultant and it breaks my heart to see all the staff's hands tied up due to rules that they must follow. Have a reason - supply personnel to perfect the killing of other game. Best have a hog tournament!

When this refuge started, we were told this would be number one for duck hunting. Nothing has been done for the ducks. Nothing.

Why did the refuge waste the money to build an observation tower on a 3 acre pond? You will scare off any wildlife on your walk in, unless you are there to look at turtles. It is a waste of money that could be put to better use. There are more people who fish at that pond. Why not build them a small fishing pier or something that will actually get put to use? I've never seen anyone in the tower, much less in the refuge, looking for birds/wildlife to watch unless they are hunting. Seriously people!

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## Survey Section 5

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

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Comments on What Makes Refuges Unique? (n = 57)

A great opportunity for bow hunters to hunt without interference from gun hunters and dogs.

All the different tree species and different species of birds and wildlife make it unique.

Because they offer real wildlife experiences. The animals are wild and free roaming.

Clean, accessible, and a lot of wildlife.

For me, it's special in that I can't afford to pay for lease land to deer hunt and the refuge allows me several months to hunt with archery equipment and my gun, when I am fortunate to get to do that. It's a great place to get away and enjoy nature. The only problem I have is that the rules of the refuge and state wide hunting and fishing don't always agree and it makes it very confusing and very easy to violate the laws accidentally, if you are not "extremely" careful. Also, there are many animals that are lost every year because tracking them after shooting them is so difficult. I think I should be allowed to be able to track wounded deer with a dog if it is on a leash or even with the assistance of refuge authorities. It is a shame to have animals go to waste because you can't find them. And when they are shot with bows, and even modern guns, they usually go long distances. A good tracking dog could find them if it was allowed.

Getting in the woods to hunt and fish and feel safe. Before this refuge, there were too many ATVs, drinking, drunks, and doping, It was getting out of hand. I am pleased with the new rulings. [signed]

I am a deer hunter. I only hunt with the bow and arrow. Pond Creek offers me a great place to hunt. I like their rules and regulations. You have to hunt the deer on their terms; no feeders are allowed. Also, you can't run ATVs all through the woods, only on designated trails. This is the place I have been looking for all my life and I just love it.

I am very pleased with the preservation of hardwood timber for wildlife and the cleanliness of the area. I am also pleased with the restriction of ATV use in the area so that there are some places you can only access by foot.

I can spend time in the park to enjoy the outdoors, ride my horse, and see different types of wildlife. The Cossatot River State Park has an excellent Visitor Center and educational programs. We love to visit there also. We have not ridden our horses there, because we are not sure if they have a good trail system.

I enjoy riding the roads while enjoying wildlife. I like not paying a lease fee and still have great hunting.

I like that it is bow hunting only. The thing that I don't like is that we can't hunt hogs year round and they are destroying the refuge.

I like the hunting opportunities.

I like the supervision and enforcement of laws and rules, and availability of hunting and fishing.

I visit Burk's Slough often at Pond Creek, probably 4 times a year, and I enjoy every trip.

It gives the everyday person a place to recreate without having to break the bank. It's a good way to spend our tax money that really benefits us.

It gives the kids of Horatio some place to hang out on weekends. We really need that since Weyerhaeuser started leasing. They stink!

It is a great place for my family.

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It is a place to get away.

It is a system that we can manage to restore and conserve plants and wildlife, if we control the feral hogs. Some feral hogs are exciting and ok, but poor management creates a hog heaven. Pond Creek is one of the best in the US and the entire natural flora would heal and blossom with hog removal.

It is a very good place to hunt. There are beautiful hardwoods and plenty of game.

It is becoming increasingly difficult to access high-quality habitats for hunting.

It is better maintained and managed than other public lands.

It is very peaceful with not many people allowed.

It provides a safe environment to enjoy nature.

Its natural state, for the most part, around the sloughs and rivers make it unique.

Just how well they make sure the wildlife is protected.

Large uncut stands of hardwood timber.

Large vast tracts of hardwood timber, limited gun deer hunting, abundant primitive camping areas, and an excellent system of roads and ATV trails makes it unique.

Limited amount of gun hunting for deer, primarily bow hunting.

Limited number of people. No charge. Don't have to lease the land.

Lots of animals make it unique.

Most of the hunting on the refuge is for primitive weapons only.

Open roads to drive around and look at wildlife make it unique.

Oxbow lakes and small rivers and lots of hunting territory make it unique.

Pond Creek provides opportunities for me and other sportsmen looking for a great place to bow hunt in a well-managed atmosphere. This is worthwhile tax dollars in action. The government squanders so many of our tax dollars that it is good to see they do utilize some of our tax dollars for worthwhile endeavors.

Refuges give an opportunity to do your own thing. Refuges are important in that future generations will have opportunities to experience nature. Refuges are important in that they provide a secure environment for nature and wildlife.

Refuges make it possible to observe birds and animals in their natural habitat. They also offer the opportunity to see and study a large variety of native plants.

The closeness with nature and its creatures. They provide a unique experience to interact with nature and its creatures.

The lack of development makes it unique.

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The preservation of forest/waterways that it provides.

The primary focus is on wildlife and habitat conservation rather than public demand.

The way they patrol and keep poachers and trouble makers out and the way the deer are managed.

The wildlife is getting more plentiful every year.

The wildlife you can see on a drive makes it unique.

There are big deer.

There is an opportunity to kill a trophy buck.

There is easy access to big woods via hiking and ATV trails.

There were no crowds; we were alone. It was very peaceful.

They are better managed than all the other hunting areas in this part of the country.

They are well patrolled and give opportunities for managed hunting.

This NWR provides great opportunities for the public to explore nature at its best.

This refuge is my favorite place to hunt and ride around to see the wildlife.

Timber and wildlife management.

To be able to see wildlife in a safe place makes it unique.

Wildlife makes this refuge unique.

Wildlife, forest, natural streams, and no driving vehicles off marked trails make it unique.

Wildlife.

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Additional Comments (n = 16)

All refuge activities could be funded from within if it was reconstructed.

All the HHS kids think Pond Creek is the bomb. Gives us somewhere to hang out and be with our boyfriends. I would say over 90% of teen pregnancies in Horatio happened in Pond Creek. We love you guys! Keep it up and party on dudes!

Although we do not take long recreation trips, at least once or twice a week we take drives to our camp which is in the vicinity of the refuge. (We only have to drive twelve miles one way.) After visiting our camp, we usually drive through a portion of the refuge as well. We really appreciate these opportunities to enjoy the beauty of the refuge!

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Before the government took over Pond Creek, I duck and coon hunted this land from the 60's. Then Dierks County sold land to Weyco. Dierks County select cut the timber, but Weyco clear cut it. They made the land trade with the government. Before the trade, they had been having meetings. At the last meeting held at Horatio, the main man from Atlanta Georgia, along with some of his employees, were at the meeting. They broke out into groups of 8 and asked us to talk it over and put down what we wanted to see happen in the refuge. #1 Ducks, #2 Deer. They took info from the groups and, after looking it over, made the following remarks. We see that you want duck hunting #1. They said they would need some help, because they didn't have the personnel to do the job. They asked for volunteers, and a good number volunteered. We put down our names and telephone numbers. To this day as far as I know, no one has received a call. My duck hunting days are getting short, but we have young people to think about. Please do something for the youth. Your friend in Christ. [Signed]

I don't agree with not having a rule about putting up a stand and leaving it in. I think there should be a limit (time/days) that a person should be able to leave a stand in a certain area. I drove 350 miles one-way and had to come 3 different days to find a place for my children to hunt, because so many locals had lock-on stands already in place. I would like to see a rule put in place to limit the time frame and also for the stands to be removed during youth hunts. Also, I think there should be a sign at the road you turn on to go to the refuge. There is not a sign pointing the direction and it is easily missed.

I enjoyed the turkey hunt.

I just love it. Thanks for making it available.

I repeat, Pond Creek area is a jewel. I manage over 70,000 acres in 4 different states and produce free roaming 170+ whitetail deer on some of these properties. They, of course, are private holdings. This refuge, with its climate, fertile soils, and critter diversity, is one the best areas that I have ever walked on. The only limiting factor for animals and plants is the runaway reproduction of the feral hogs. They are also predators of new born fawns and turkey nestlings, not to mention the plants they consume. A great PR stunt would be to host a hog tournament with all methods of killing. If it worked, then you could use it in other troubled areas or refuges! Thanks.

Keep the refuge as primitive as possible, especially if you're worried about global warming or climate change. Al Gore is laughing all the way to the bank. Do you realize the government is here for the people, by the people, and of the people? All Democrats have forgotten and a few Republicans. God Bless America. In 2009, I was stopped twice by the U.S. Fish and Wildlife enforcement officers and once by the state. The U.S. Fish and Wildlife had the attitude that we were here for them. Cold and like they hated what they were doing. The state enforcement officer had a good attitude and conversed with me for about 15 minutes.

Please add more ATV trails for year round use!

Pond Creek has too many hogs and this needs to be addressed. Some type of season needs to be allowed all year to do this.

The muzzle loading hunt needs to be by permit only. There are too many people hunting. Also, the bag limit on deer needs to be reduced to one buck per person to reduce the number of people hunting. I'm running into way too many deer stands in the woods and too many people. Also, the hog problem needs to be addressed.

The refuge needs to implement the antler restrictions for all deer hunting that were once in effect. Eliminate the bow case regulation.

There needs to be a cell tower; there is no phone service.

This refuge needs to be publicized; people don't know that it's here.

You said earlier in the survey that the primary mission of the NWRS is to conserve, manage, and restore areas for fish, wildlife, plants and their habitats. Please tell me how cutting down trees that provide for the wildlife (oak, pine, hickory, etc.) and leaving the area clear cut, allowing the worthless trees (Sweetgum, Elm, Hackberry, etc.) to regrow and flourish, provides for your primary mission. You moved into the area, took the trees out that had value for both monetary gains and for the wildlife, and left the area in a clear cut state without doing anything to replant the beneficial trees. Looks like you came for the money and tried to pull one over on the locals by telling them you were restoring the area to its native state. When the Indians and first settlers arrived, it was oak, pine and hickory that dominated the area, not the crap that you are allowing to regrow. Shame on you - you failed your mission!

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