



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

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

We have seen such an amazing number of birds and animals on our trips to Turnbull. I can't say enough about how much my family and I like our visits. Our daughter turns two in August, and we look forward to making many more visits with her as she grows up. Thank you!—Survey comment from visitor to Turnbull National Wildlife Refuge.



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

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Acknowledgments

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

Introduction

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

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

Organization of Results

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

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

Methods

Selecting Participating Refuges

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

Developing the Survey Instrument

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

Contacting Visitors

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

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

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

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

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

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

Interpreting the Results

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

Herein, the sample of visitors who responded to the survey are referred to simply as "visitors." However, when interpreting the results for Turnbull 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 Turnbull National Wildlife Refuge

Turnbull NWR lies on the eastern edge of the Columbia Basin of Spokane County in Washington. In the heart of the “Channel Scablands,” this area was formed by volcanic activity and glacial floods (called the Missoula Floods and considered the largest in geological history) towards the end of the last ice age nearly 16,000 years ago. Established in 1937, Turnbull’s ecosystem distinguishes it from natural reserves worldwide.

With a blend of basalt outcrops, channeled canyons and ponderosa pine forests located throughout a diverse landscape of over 130 marshes, wetlands and lakes, Turnbull NWR creates an environment of beauty as well as quality wildlife habitat. The refuge’s ecosystems represent an ecological change between the timbered Selkirk and Bitterroot Mountain Ranges that rise up to the east to the dry, sagebrush dotted grasslands of the Columbia Basin. Throughout the years, the focus has broadened to protect habitat for the numerous species of birds, mammals, reptiles, amphibians, insects, and plants that call the refuge home. These inhabitants of Turnbull NWR rely on the 16,000 acres of grassland, wetland, riparian, and forest habitats that lie in the heart of the Channeled Scabland found in northeastern Washington.

With over 37,000 visitors each year (based on 2008 RAPP database; U.S. Fish and Wildlife Service, 2011, written comm.), Turnbull NWR offers a number of activities including big game hunting, waterfowl hunting, hiking, auto tour routes, wildlife observation, photography, environmental education, and interpretation. Figure 1 displays a map of the refuge. For more information, please visit <http://www.fws.gov/turnbull/>.

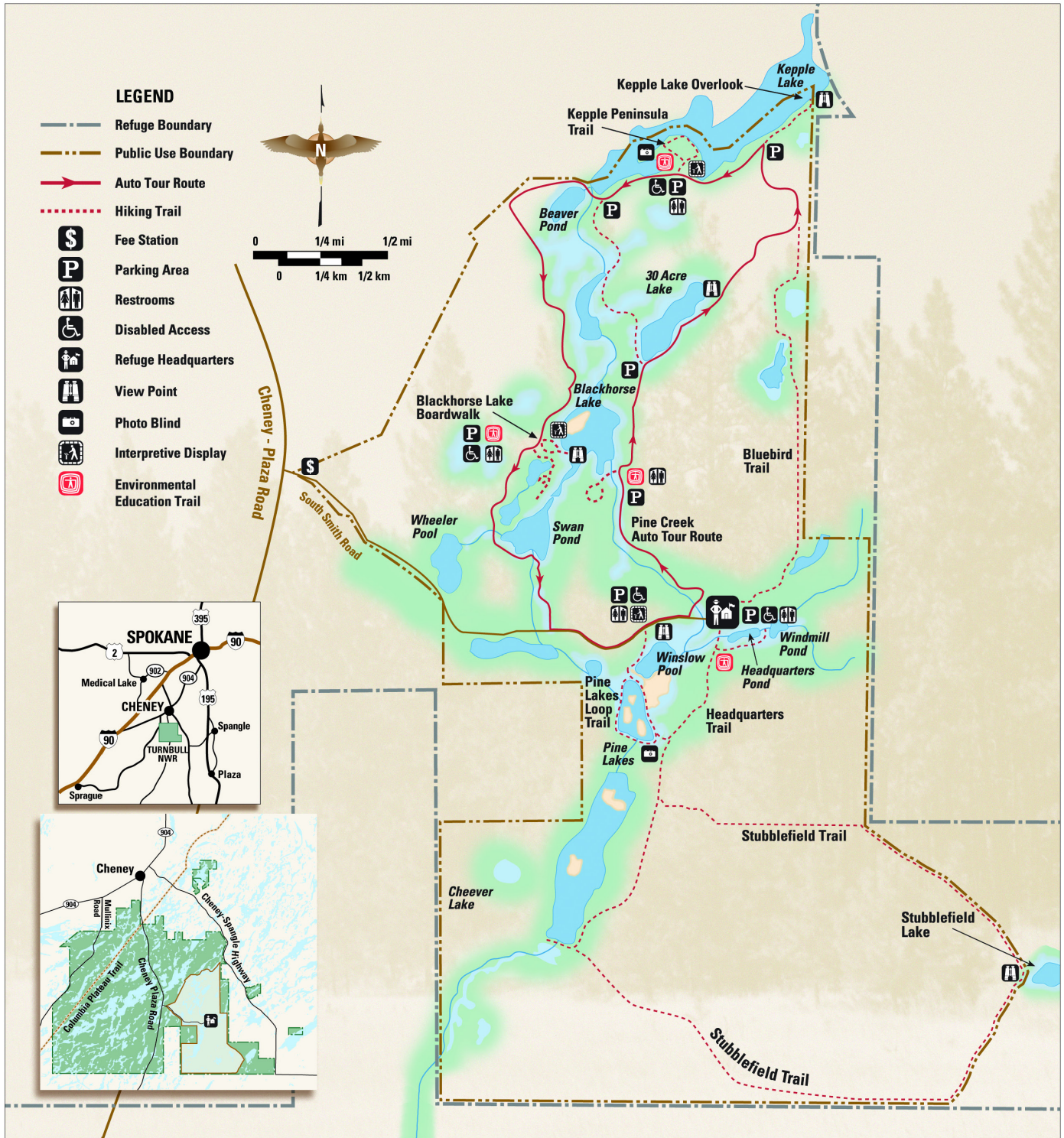


Figure 1. Map of Turnbull NWR, courtesy of U.S. Fish and Wildlife Service. Map does not show Columbia Plateau Trail.

Sampling at Turnbull National Wildlife Refuge

A total of 233 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Turnbull NWR (table 2). In all, 177 visitors completed the survey for an 80% response rate and $\pm 6\%$ margin of error at the 95% confidence level.¹

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

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	7/24/2010 to 8/7/2010	Fee Station	107	6	83	82%
2	5/14/2011 to 5/28/2011	Fee Station	126	5	94	78%
Total			233	11	177	80%

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 Turnbull 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 (92%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants and their habitat (96%). Positive responses to these questions concerning the management and mission of the Refuge System do not indicate the degree to which these visitors understand the day-to-day management practices of individual refuges, only that visitors feel they have a basic knowledge of who manages refuges and why. Compared to other public lands, many visitors feel that refuges provide a unique

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

recreation experience (89%; see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System. More than half of visitors to Turnbull NWR had been to at least one other National Wildlife Refuge in the past year (55%), with an average of 5 visits to other refuges during the past 12 months.

Visiting This Refuge

Some surveyed visitors (35%) had only been to Turnbull NWR once in the past 12 months, while most had been multiple times (65%). These repeat visitors went to the refuge an average of 15 times during that same 12-month period. Visitors used the refuge during only one season (46%), during multiple seasons (25%), and year-round (29%).

Most visitors first learned about the refuge from friends/relatives (43%), signs on the highway (36%), or people in the local community (33%; fig. 2). Key information sources used by visitors to find their way to this refuge include previous knowledge (58%), signs on highways (56%), or a road atlas/highway map (13%; fig. 3).

Most visitors (79%) lived in the local area (within 50 miles of the refuge), whereas 21% were nonlocal visitors. For most local visitors, Turnbull NWR was the primary purpose or sole destination of their trip (84%; table 3). For most nonlocal visitors, the refuge was also the primary purpose or sole destination of their trip (43%). Local visitors reported that they traveled an average of 23 miles to get to the refuge, while nonlocal visitors traveled an average of 349 miles. Figure 4 shows the residence of visitors travelling to the refuge. About 90% of visitors to Turnbull NWR were from Washington.

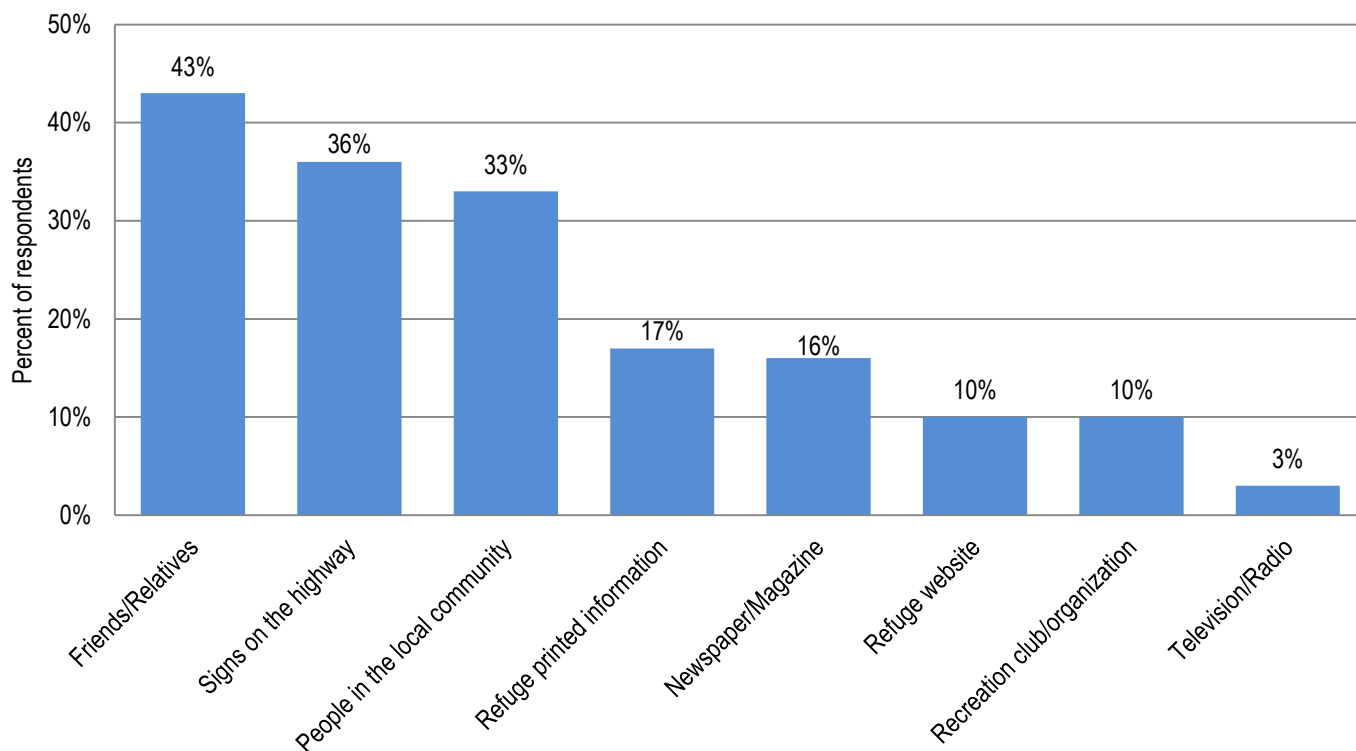


Figure 2. How visitors first learned or heard about Turnbull NWR (n = 167).

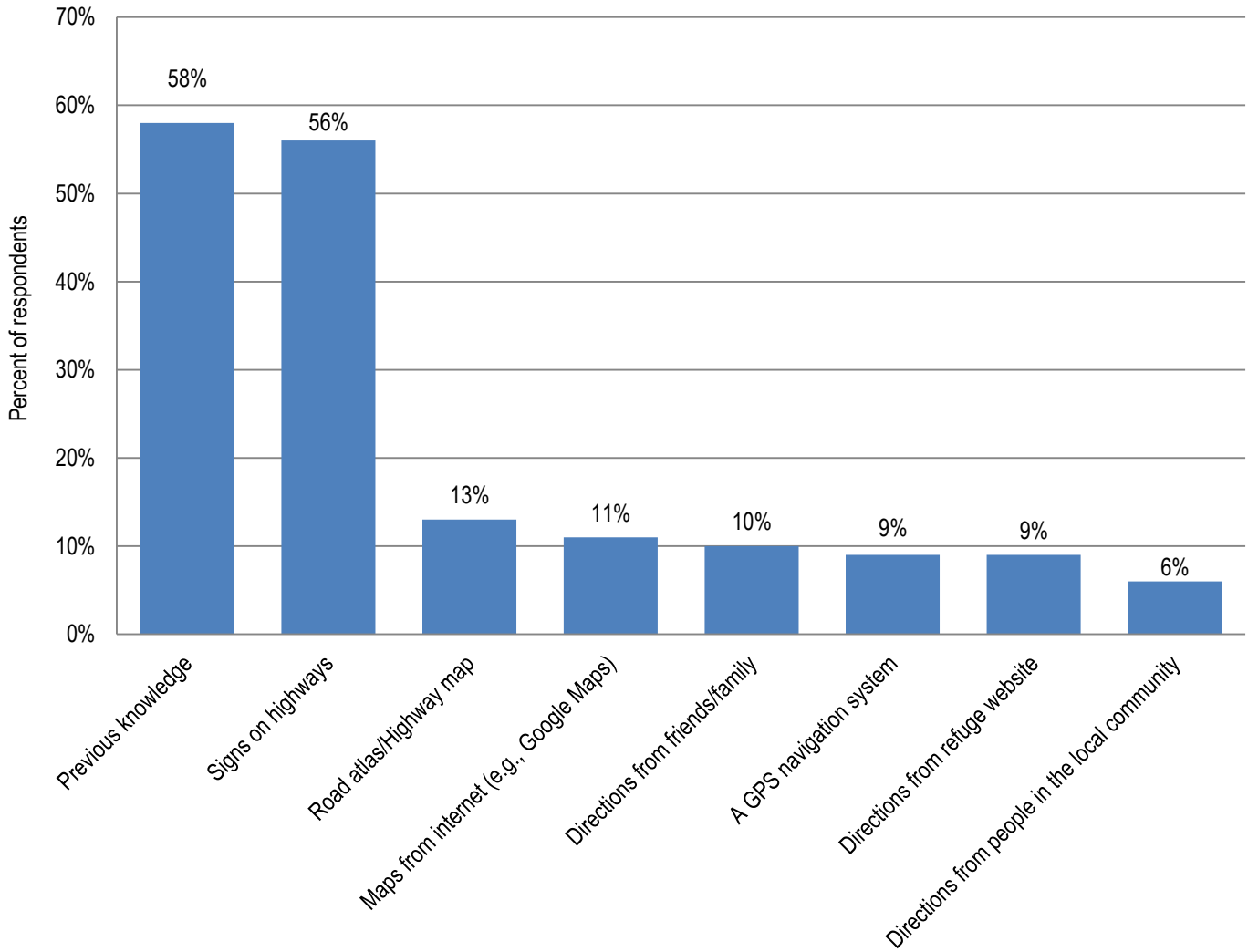


Figure 3. Resources used by visitors to find their way to Turnbull NWR during *this* visit (n = 172).

Table 3. Influence of Turnbull 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	43%	23%	34%
Local	84%	9%	7%
Total	75%	12%	13%

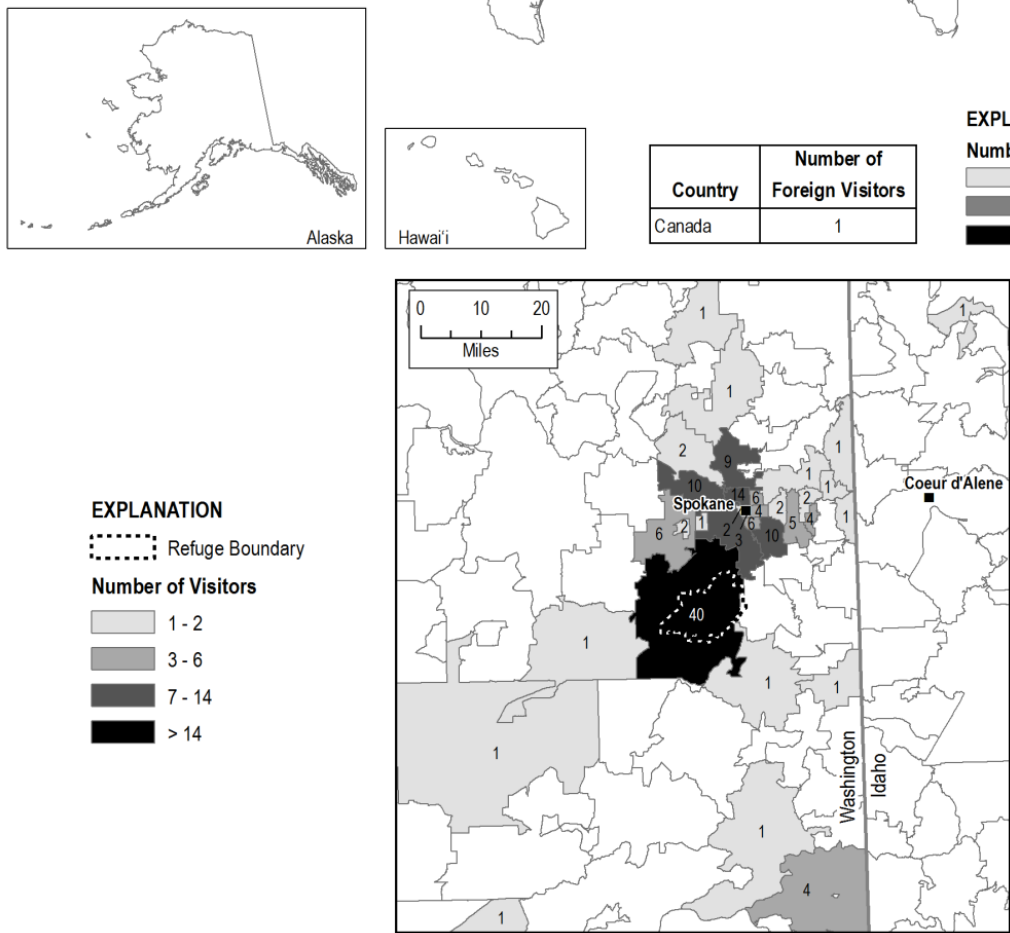
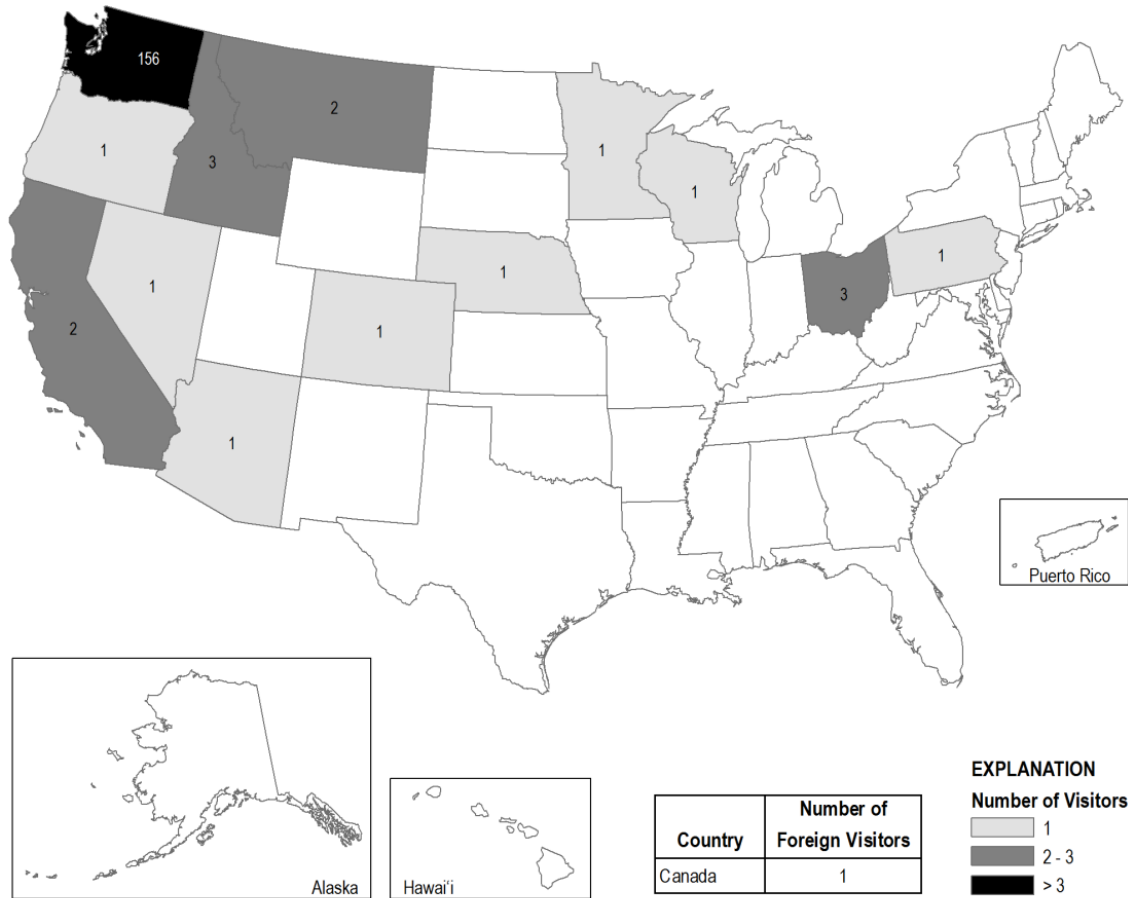


Figure 4. Number of visitors travelling to Turnbull NWR by residence. Top map shows residence by state and bottom map shows residence by zip codes near the refuge (n = 175).

Surveyed visitors reported that they spent an average of 3 hours at Turnbull 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 2 hours (27%). The key modes of transportation used by visitors to travel around the refuge were private vehicle (95%) and walking/hiking (40%; fig. 5). Most visitors indicated they were part of a group on their visit to this refuge (62%), travelling primarily with family and friends (table 4).

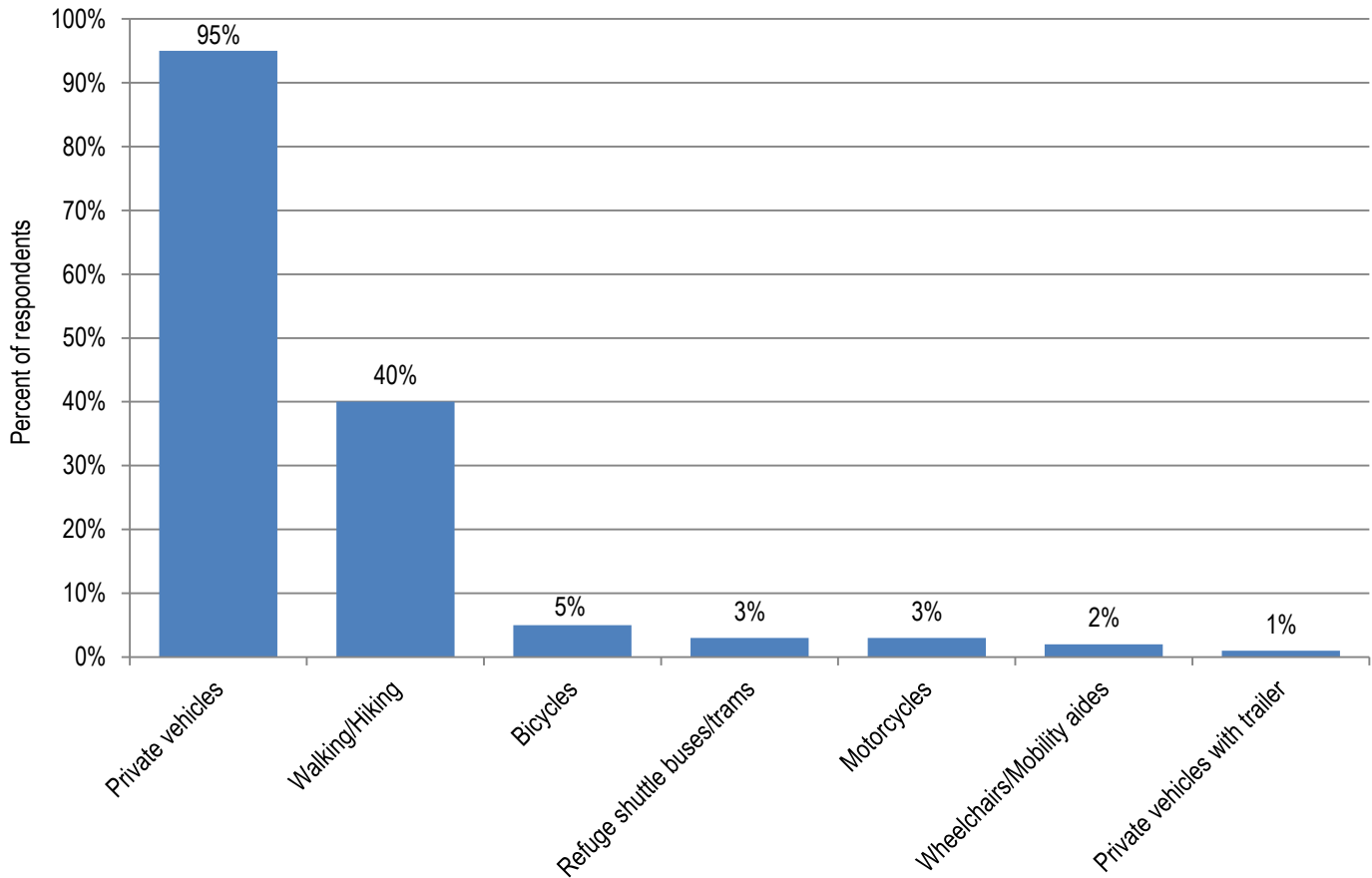


Figure 5. Modes of transportation used by visitors to Turnbull NWR during *this* visit (n = 174).

Table 4. Type and size of groups visiting Turnbull NWR (for those who indicated they were part of a group, n = 106).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	75%	3	0	3
Commercial tour group	0%	0	0	0
Organized club/School group	22%	13	8	21
Other group type	3%	8	11	19

Surveyed visitors participated in a variety of refuge activities during the past 12 months (fig. 6); the top three activities reported were wildlife observation (82%), bird watching (71%), and auto tour route/driving (67%). The primary reasons for their most recent visit included wildlife observation (31%), bird watching (21%), and hiking (14%; fig. 7). The visitor center was used by 47% of visitors, mostly to stop to use the facilities (for example, get water, use restroom; 62%), visit the gift shop/bookstore (54%), and ask information of staff/volunteers (47%; fig. 8).

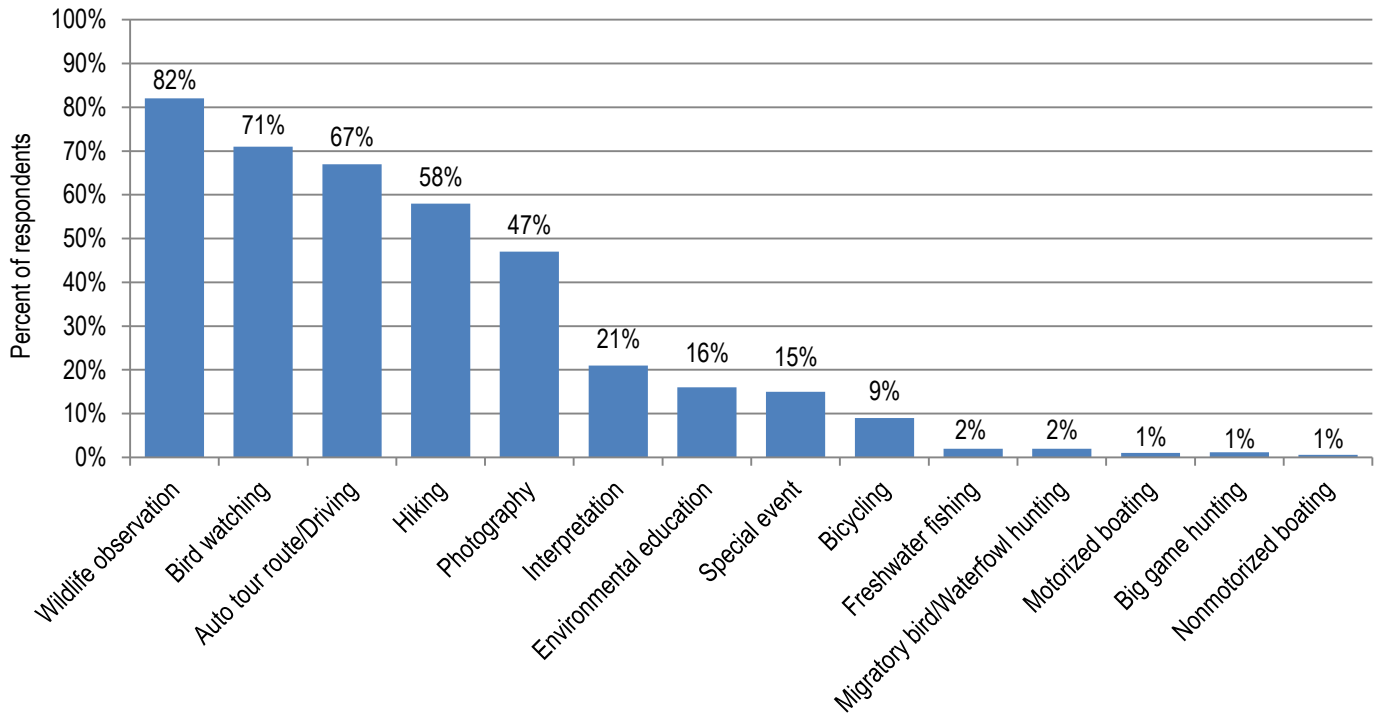


Figure 6. Activities in which visitors participated during the past 12 months at Turnbull NWR (n = 169). See Appendix B for a listing of “other” activities.

Visitor Characteristics

Nearly all (99%) surveyed visitors to Turnbull 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 50% male with an average age of 56 years and 50% female with an average age of 54 years. Visitors, on average, reported they had 16 years of formal education (college or technical school). The median level of income was \$50,000–\$74,999. 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).

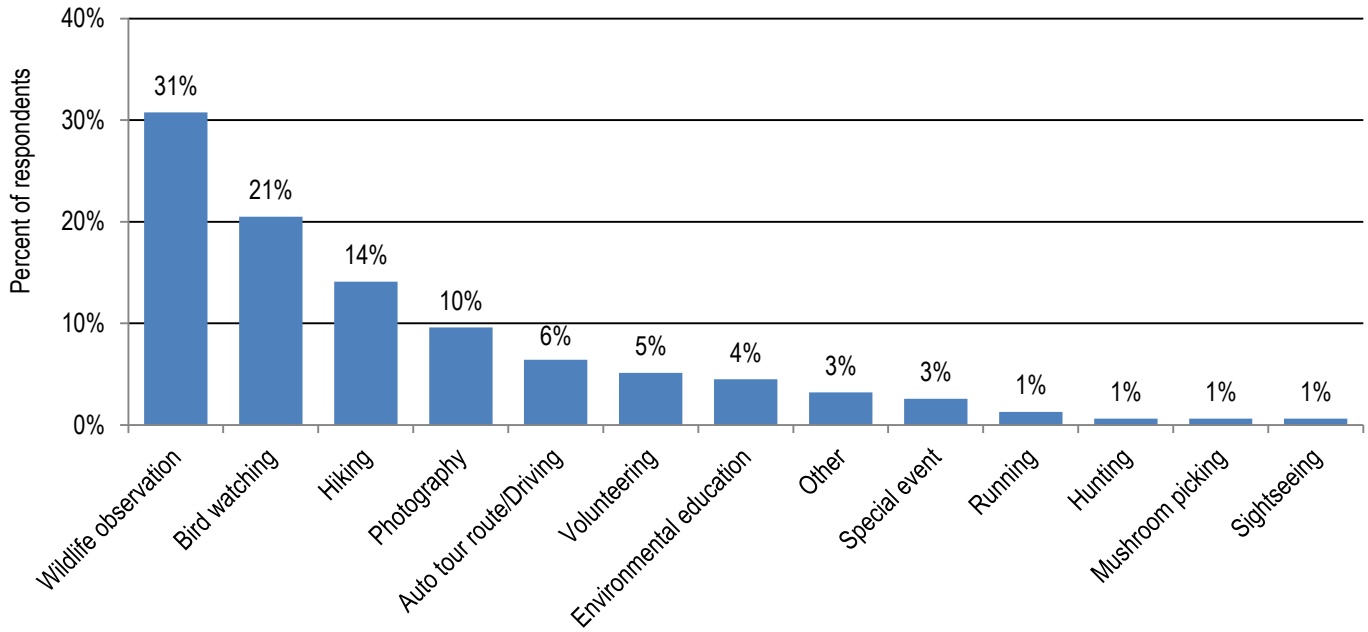


Figure 7. The primary activity in which visitors participated during *this* visit to Turnbull NWR (n = 156). See Appendix B for a listing of “other” activities.

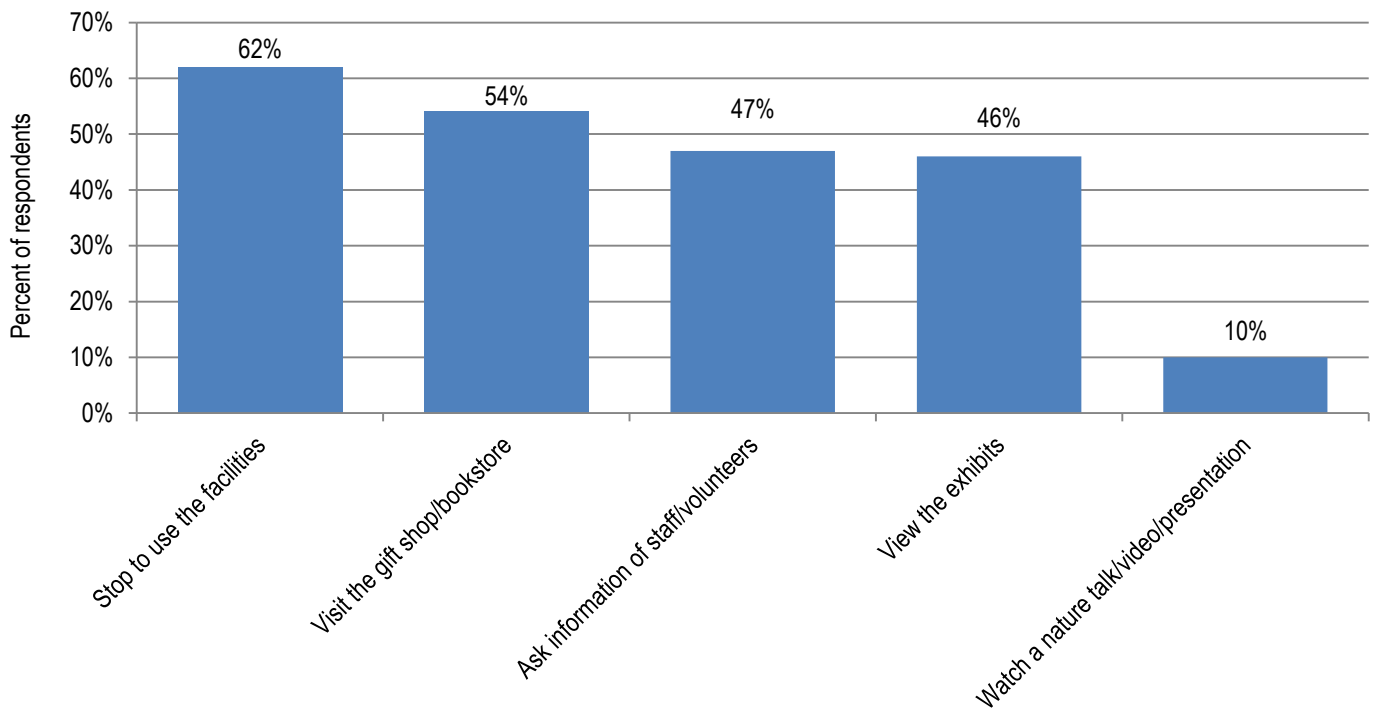


Figure 8. Use of the visitor center at Turnbull NWR (for those visitors who indicated they used the visitor center, n = 80).

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, 79% of visitors to Turnbull NWR indicated that they live within the local area. Nonlocal visitors (21%) stayed in the local area, on average, for 3 days. Table 5 shows summary statistics for local and nonlocal visitor expenditures in the local communities and at the refuge, with expenditures reported on a per person per day basis. During the two sampling periods, nonlocal visitors spent an average of \$68 per person per day and local visitors spent an average of \$23 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 Turnbull NWR expressed in dollars per person per day.

Visitors	n ¹	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	31	\$63	\$68	\$64	\$2	\$280
Local	111	\$19	\$23	\$24	\$0	\$104

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

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

Visitor Opinions about This Refuge

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

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

- 89% were satisfied with the recreational activities and opportunities,
- 85% were satisfied with the information and education about the refuge and its resources,
- 87% were satisfied with the services provided by employees or volunteers, and
- 94% were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

Of the 67% of visitors who indicated that they paid a fee to enter the refuge, 87% agreed that the opportunities and services were at least equal to the fee they paid; 85% felt the fee was about right, whereas 15% felt that the fee was too low or too high (fig. 10).

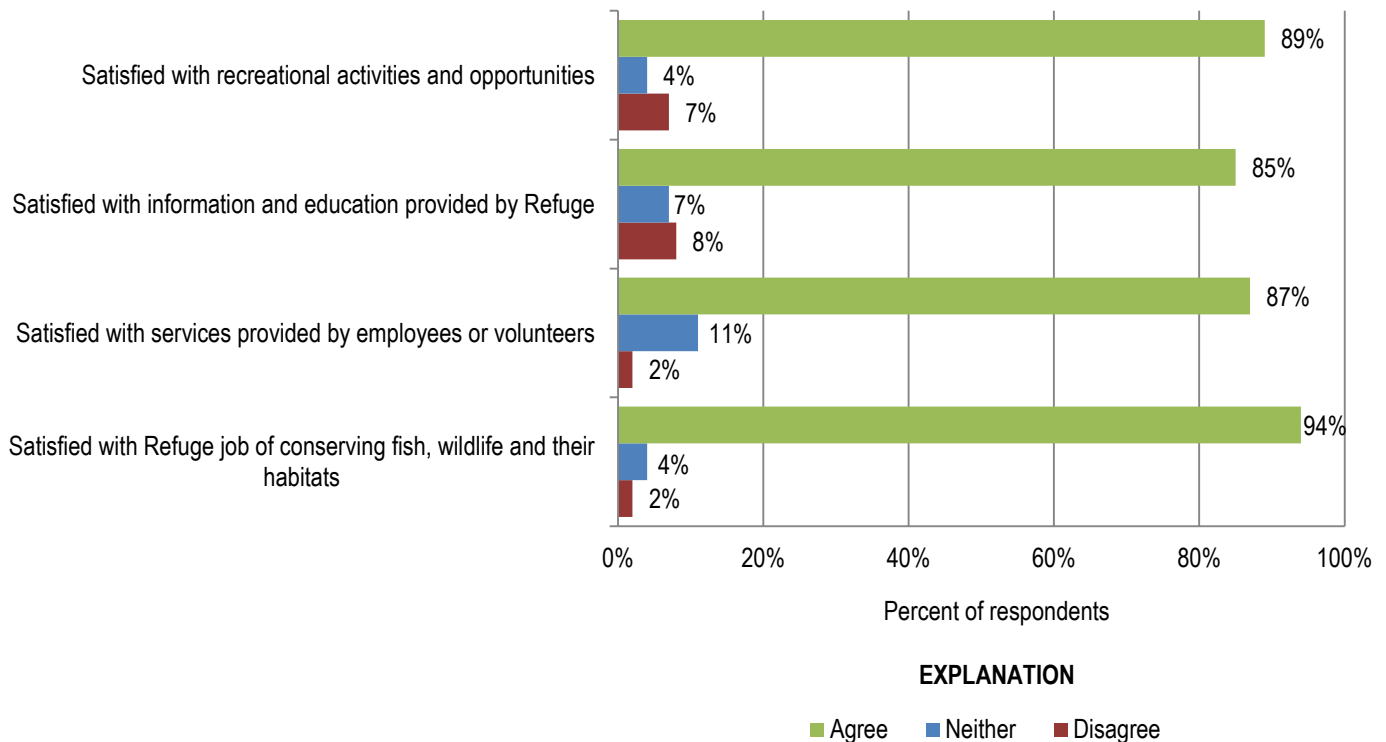


Figure 9. Overall satisfaction with Turnbull NWR during *this* visit (n ≥ 164).

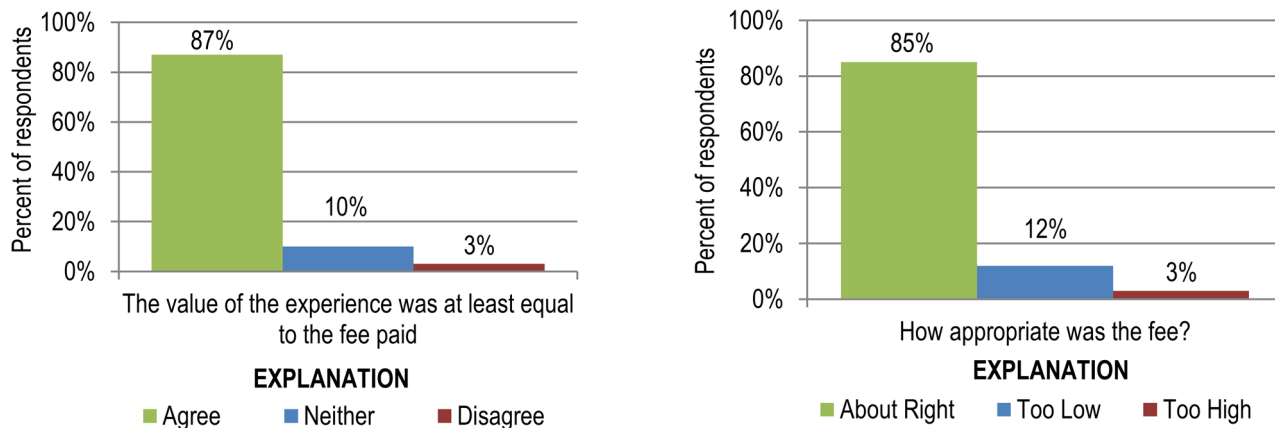


Figure 10. Opinions about fees at Turnbull NWR (for those visitors who indicated they paid a fee, n = 114).

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 Turnbull NWR. This consideration is especially important when reviewing the attributes that fall into the "Look Closer" quadrant. In some cases, these attributes may represent specialized recreational activities in which a small subset of visitors participate (for example, hunting, kayaking) or facilities and services that only some visitors experience (for example, exhibits about the refuge). For these visitors, the average importance of (and potentially the satisfaction with) the attribute may be much higher than it would be for the overall population of visitors.

Figures 11-13 depict surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at Turnbull NWR, respectively. All

refuge services and facilities fell in the “Keep Up the Good Work” quadrant (fig. 11). Nearly all refuge recreational opportunities fell in the “Keep Up the Good Work” quadrant except hunting and fishing opportunities, which fell into the “Look Closer” quadrant (fig. 12). The average importance of hunting and fishing activities in the “Look Closer” quadrant may be higher among visitors who have participated in these activities during the past 12 months; however, there were not enough individuals in the sample to evaluate the responses of such participants. All transportation-related features fell in the “Keep Up the Good Work” quadrant (fig. 13).

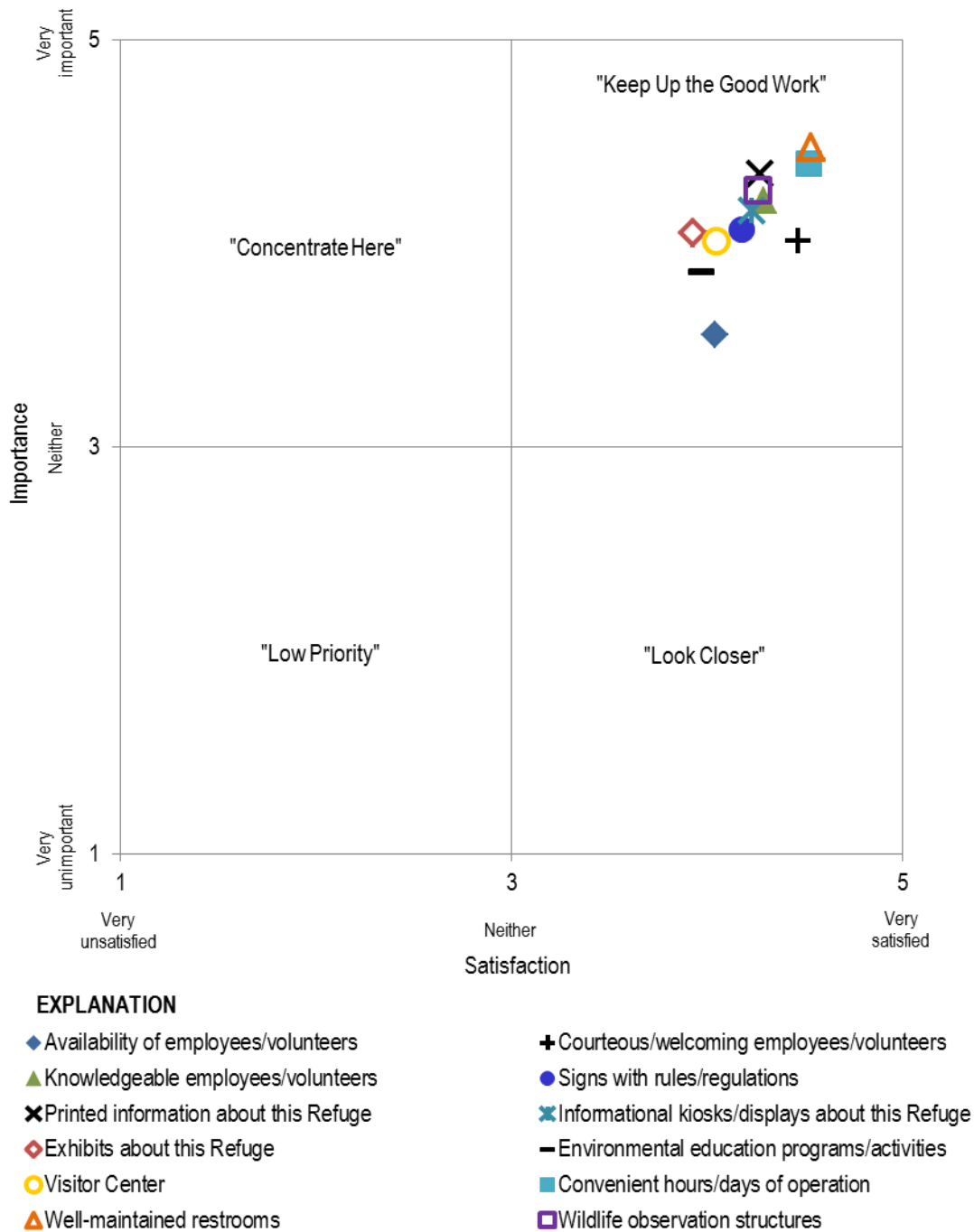
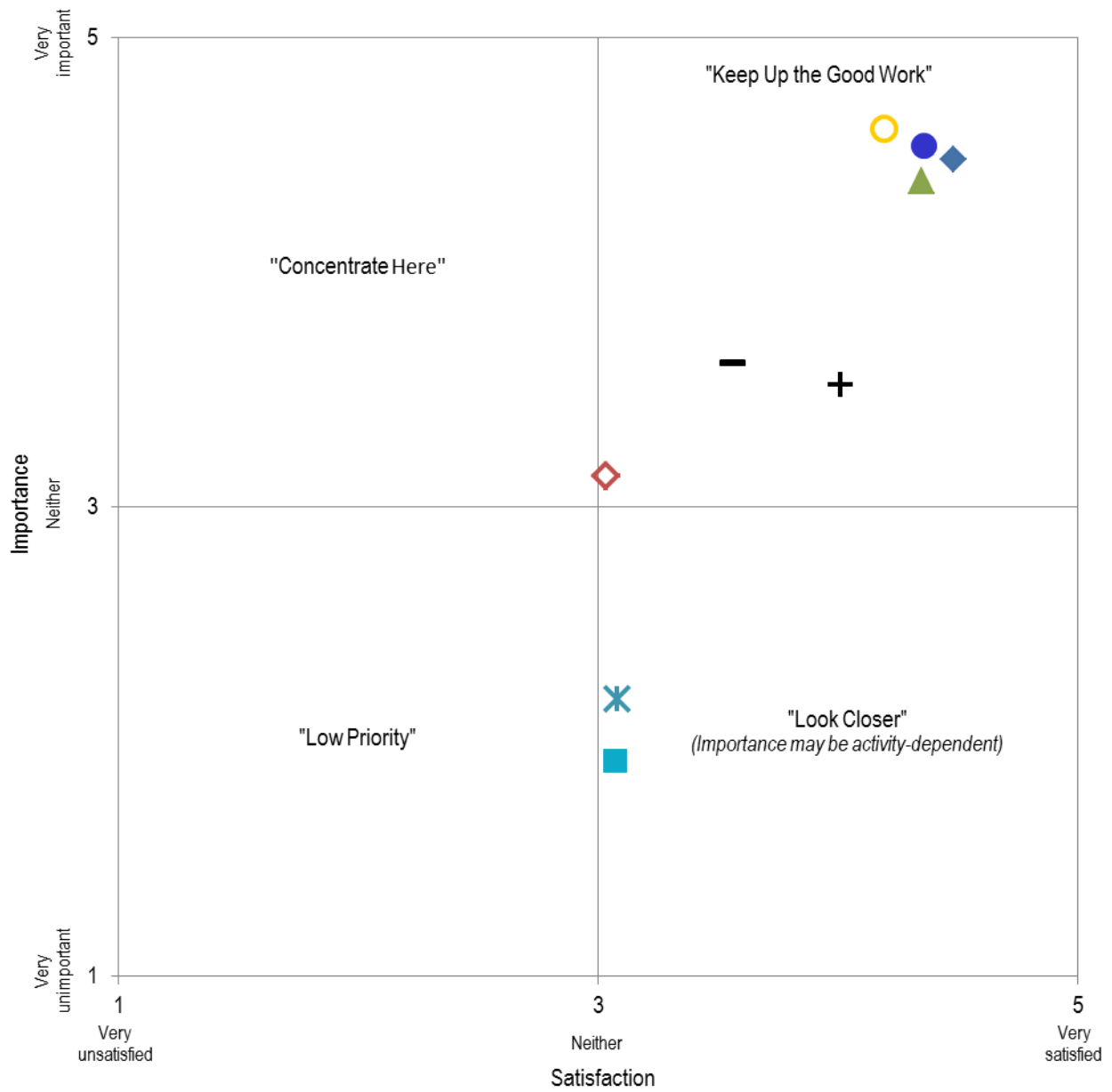


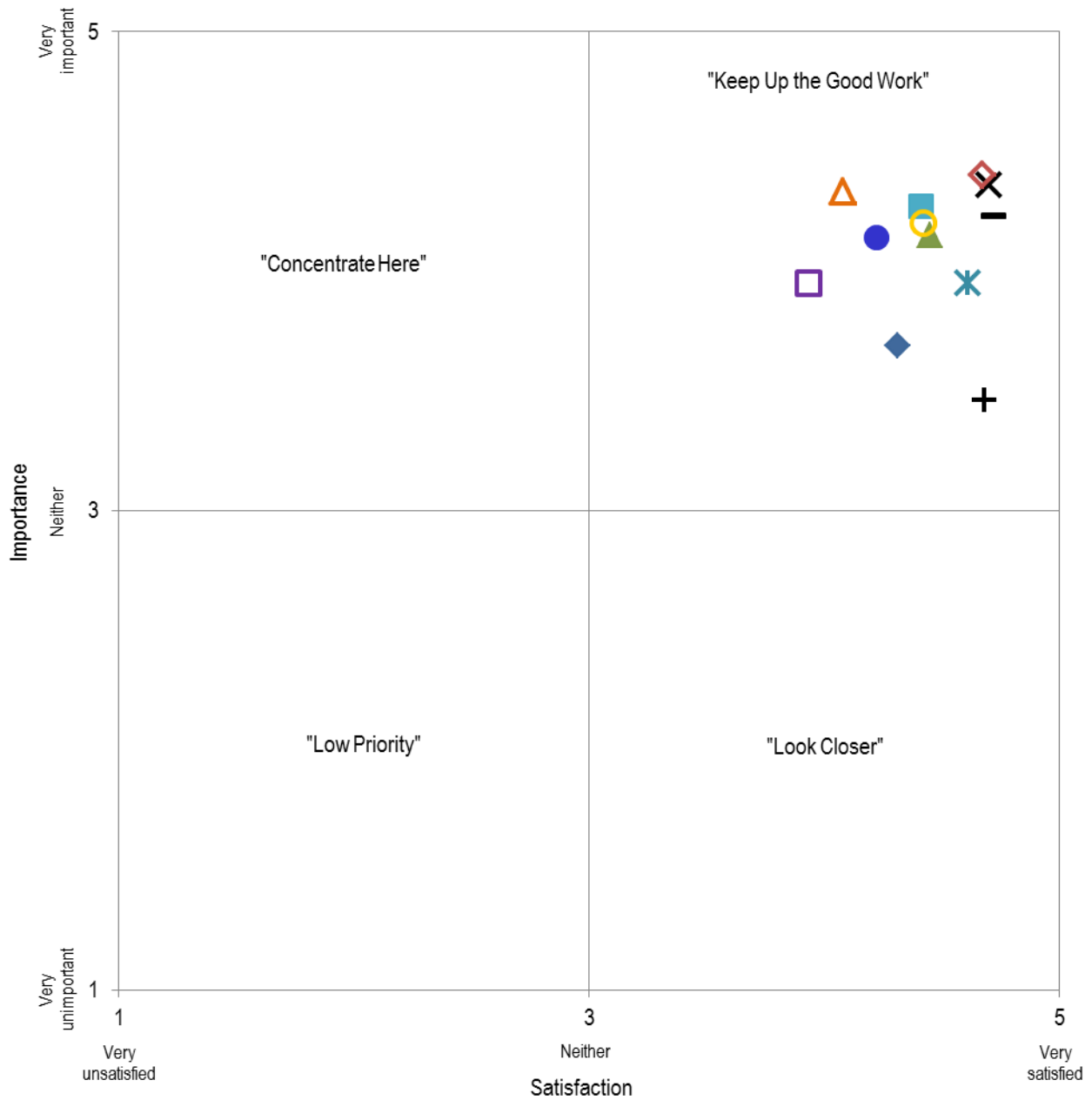
Figure 11. Importance-satisfaction ratings of services and facilities provided at Turnbull NWR.



EXPLANATION

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

Figure 12. Importance-satisfaction ratings of recreational opportunities provided at Turnbull NWR.



EXPLANATION

- ◆ Condition of roads
- ✚ Condition of parking areas
- ▲ Condition of bridges
- ✕ Condition of trails/boardwalks
- ✕ Number of parking places
- Number of pullovers
- Directional signs on Refuge
- ◇ Safety of driving conditions
- Safety of Refuge entrances
- Directional signs on highways
- ▲ Directional signs on trails
- Disabled access

Figure 13. Importance-satisfaction ratings of transportation-related features at Turnbull 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 Turnbull 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 Turnbull NWR visitors who were surveyed were likely to use the following options at national wildlife refuges in the future (fig. 14) :

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

The majority of visitors were *not* likely to use a bus/tram that takes passengers to different points on national wildlife refuges in the future (fig. 14).

When asked about using alternative transportation at Turnbull NWR specifically, 42% of visitors indicated they were unsure whether it would enhance their experience; however, some visitors thought alternative transportation would enhance their experience (19%) and others thought it would not (39%).

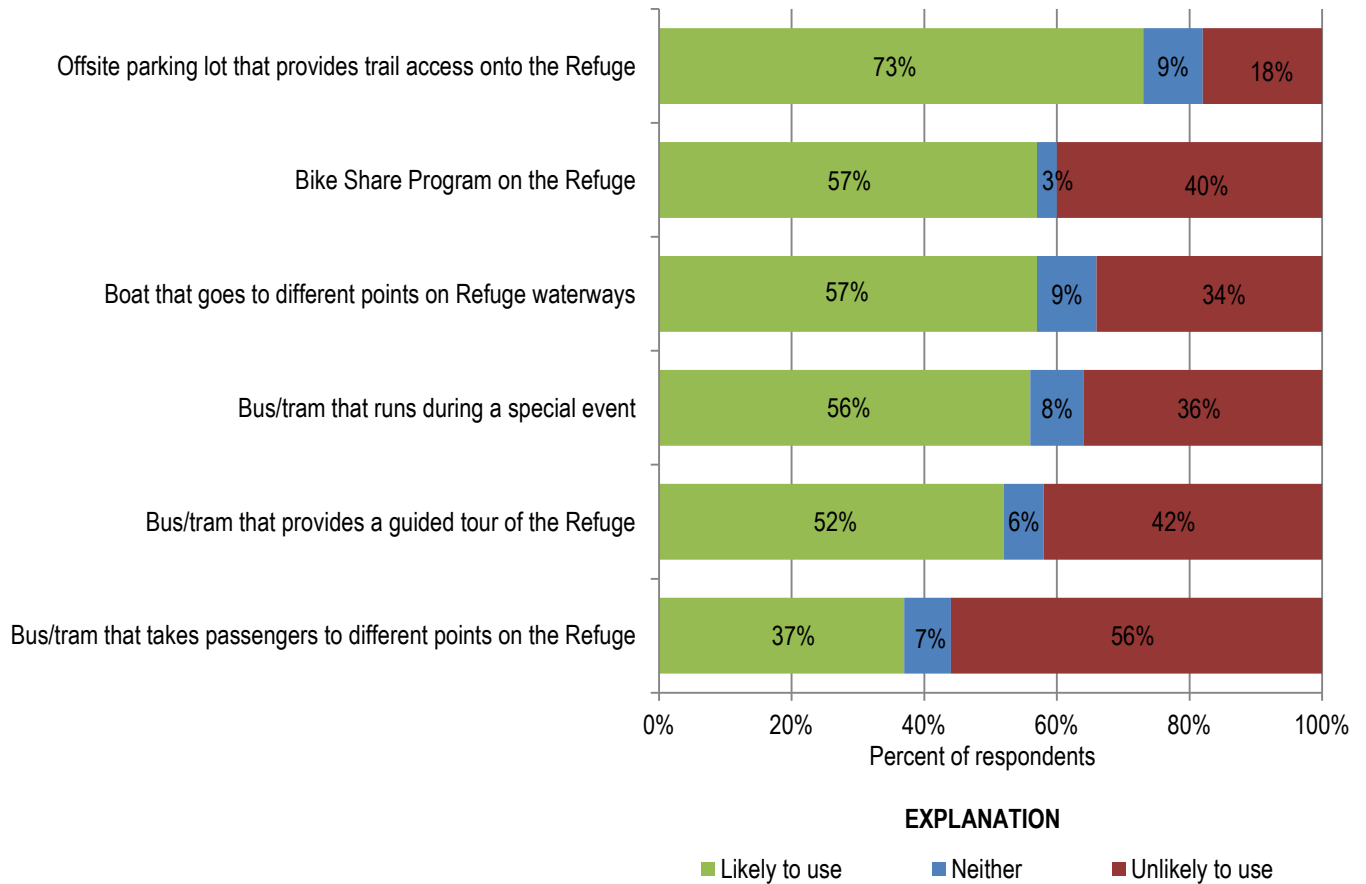


Figure 14. Visitors’ likelihood of using alternative transportation options at national wildlife refuges in the future (n ≥ 168).

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 Turnbull NWR agreed with the following statements (fig. 15):

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

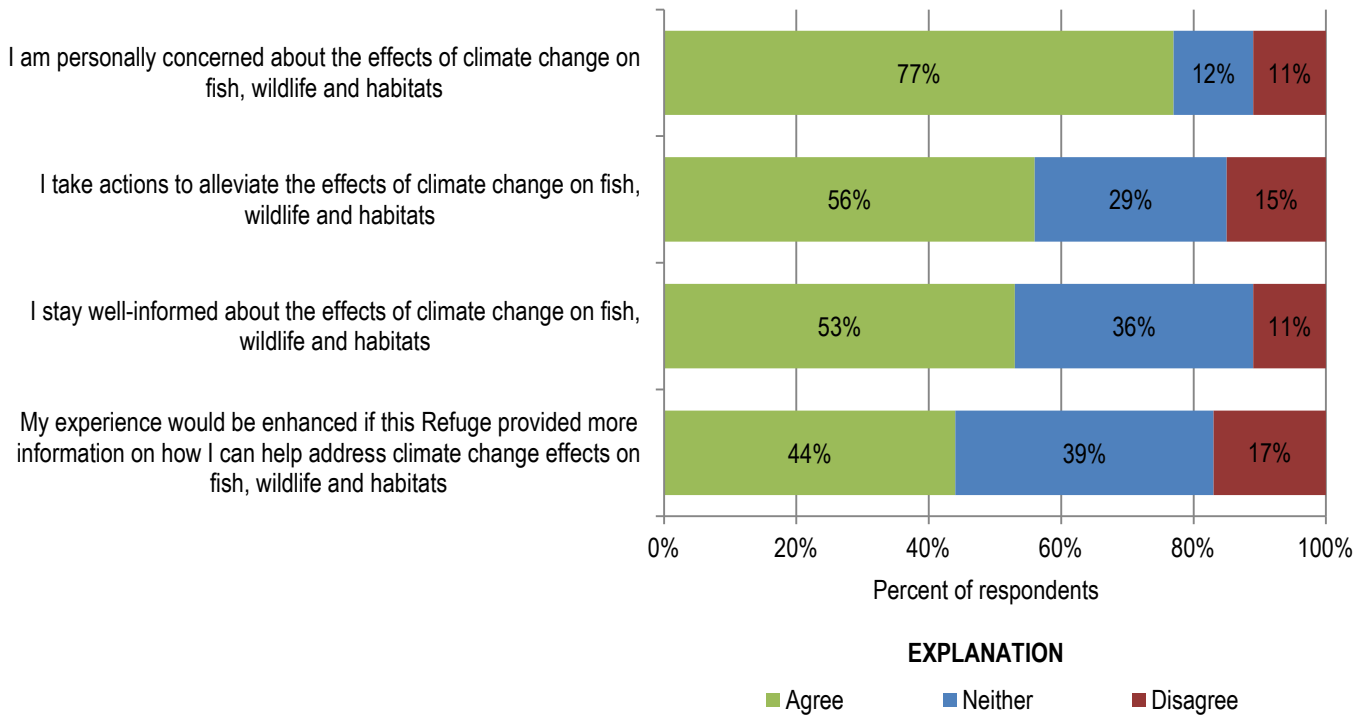


Figure 15. Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 166).

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

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

The majority of visitors did *not* believe:

- “There has been too much emphasis on the catastrophic effects of climate change.”

Such information suggests that certain beliefs resonate with a greater number of visitors than other beliefs do. This information is important to note because some visitors (44%) indicated that their experience would be enhanced if Turnbull NWR provided information about how they could help address the effects of climate change on fish, wildlife, and their habitats (fig. 15), and framing the information in a way that resonates most with visitors may result in a more engaged public who support strategies aimed at alleviating climate change pressures. Data will be analyzed further at the aggregate, or national level, to inform the development of a comprehensive communication strategy about climate change.

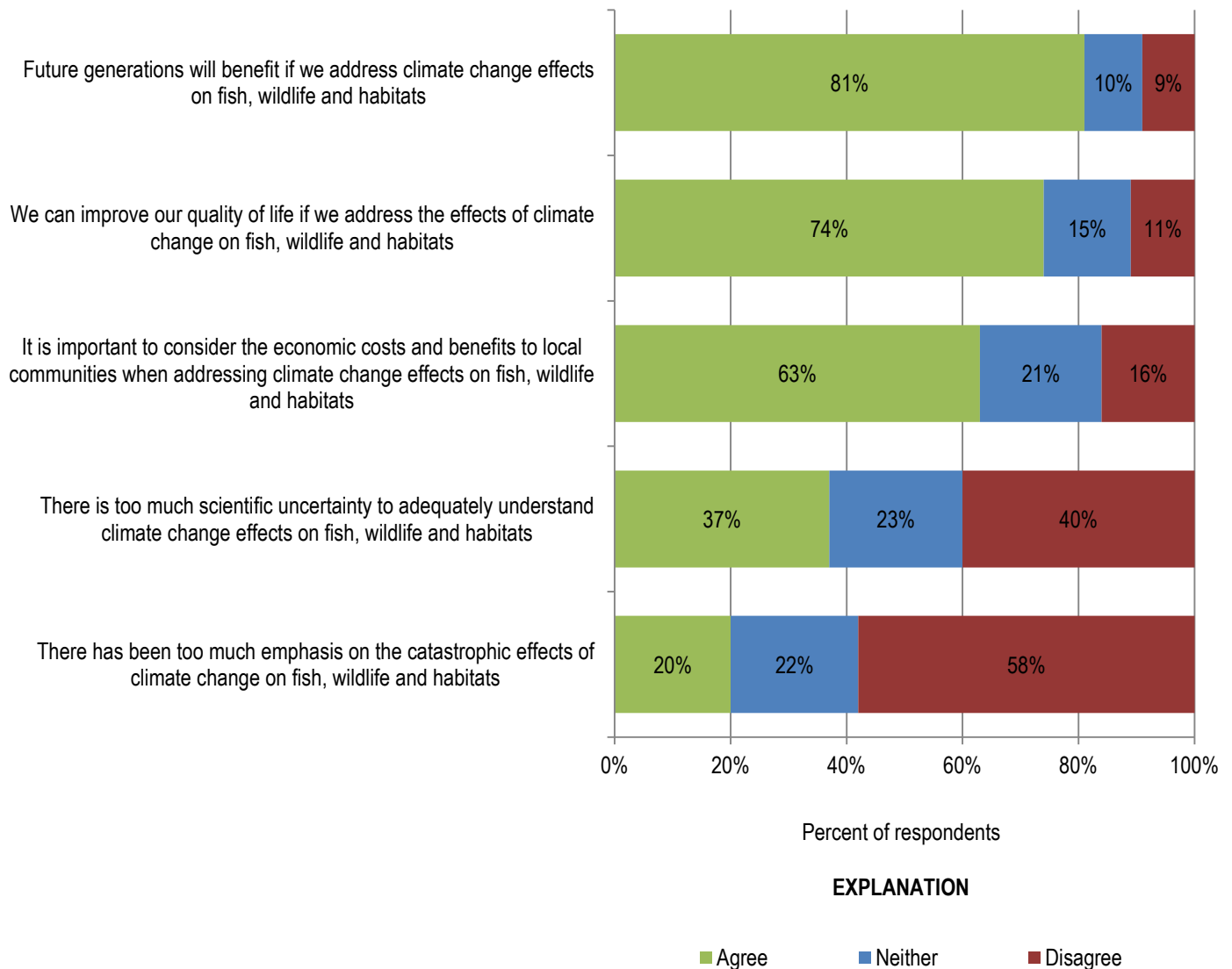


Figure 16. Visitors’ beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 168).

Conclusion

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

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

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National Wildlife Refuge Visitor Survey



PLEASE READ THIS FIRST:

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

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

SECTION 1. Your visit to this Refuge

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

- | | | |
|--|---|---|
| <input type="checkbox"/> 1% Big game hunting | <input type="checkbox"/> 58% Hiking | <input type="checkbox"/> 16% Environmental education (for example, classrooms or labs, tours) |
| <input type="checkbox"/> 0% Upland/Small-game hunting | <input type="checkbox"/> 9% Bicycling | |
| <input type="checkbox"/> 2% Migratory bird/Waterfowl hunting | <input type="checkbox"/> 67% Auto tour route/Driving | <input type="checkbox"/> 15% Special event (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 82% Wildlife observation | <input type="checkbox"/> 1% Motorized boating | |
| <input type="checkbox"/> 71% Bird watching | <input type="checkbox"/> 1% Nonmotorized boating (including canoes/kayaks) | <input type="checkbox"/> 18% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 0% Freshwater fishing | | |
| <input type="checkbox"/> 0% Saltwater fishing | <input type="checkbox"/> 21% Interpretation (for example, exhibits, kiosks, videos) | <input type="checkbox"/> 5% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 47% 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?

- 53% No
- 47% Yes → If yes, what did you do there? (Please mark **all that apply.**)
- | | |
|--|---|
| <input type="checkbox"/> 54% Visit the gift shop or bookstore | <input type="checkbox"/> 10% Watch a nature talk/video/presentation |
| <input type="checkbox"/> 46% View the exhibits | <input type="checkbox"/> 63% Stopped to use the facilities (for example, get water, use restroom) |
| <input type="checkbox"/> 48% Ask information of staff/volunteers | <input type="checkbox"/> 15% 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	
43%	84%	76%	It was the primary purpose or sole destination of my trip.
23%	9%	12%	It was one of many equally important reasons or destinations for my trip.
34%	7%	13%	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 349 number of miles

Local 23 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?

38% No (*skip to question #9*)

62% Yes → What **type of group** were you with on your visit? (*Please mark **only one.***)

75% Family and/or friends

22% Organized club or school group

0% Commercial tour group

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

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

 5 number 18 years and over

 2 number 17 years and under

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

43% Friends or relatives

10% Refuge website

36% Signs on highway

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

10% Recreation club or organization

3% Television or radio

33% People in the local community

16% Newspaper or magazine

17% Refuge printed information (brochure, map)

11% 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.***)

74% Spring
(March-May)

73% Summer
(June-August)

44% Fall
(September-November)

34% Winter
(December-February)

11. How many times have you visited...

...this Refuge (including this visit) in the last 12 months? 10 number of visits

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

SECTION 2. Transportation and access at this Refuge

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

- | | | | | | |
|------------------------------|---|-----------------------------|----------------------------------|------------------------------|---------------------------------------|
| <input type="checkbox"/> 95% | Private vehicle without a trailer | <input type="checkbox"/> 3% | Refuge shuttle bus or tram | <input type="checkbox"/> 5% | Bicycle |
| <input type="checkbox"/> 1% | Private vehicle with a trailer
(for boat, camper or other) | <input type="checkbox"/> 3% | Motorcycle | <input type="checkbox"/> 40% | Walk/Hike |
| <input type="checkbox"/> 0% | Commercial tour bus | <input type="checkbox"/> 0% | ATV or off-road vehicle | <input type="checkbox"/> 2% | Other (<i>please specify below</i>) |
| <input type="checkbox"/> 0% | Recreational vehicle (RV) | <input type="checkbox"/> 0% | Boat | <u>See Appendix B</u> | |
| | | <input type="checkbox"/> 2% | Wheelchair or other mobility aid | | |

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

- | | | | |
|------------------------------|--|------------------------------|---|
| <input type="checkbox"/> 56% | Signs on highways | <input type="checkbox"/> 9% | Directions from Refuge website |
| <input type="checkbox"/> 9% | A GPS navigation system | <input type="checkbox"/> 6% | Directions from people in community near this Refuge |
| <input type="checkbox"/> 13% | A road atlas or highway map | <input type="checkbox"/> 10% | Directions from friends or family |
| <input type="checkbox"/> 11% | Maps from the Internet (for example,
MapQuest or Google Maps) | <input type="checkbox"/> 58% | Previous knowledge/I have been to this Refuge before |
| | | <input type="checkbox"/> 2% | Other (<i>please specify</i>) <u>See Appendix B</u> |

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

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 36%	<input type="checkbox"/> 19%	<input type="checkbox"/> 8%	<input type="checkbox"/> 23%	<input type="checkbox"/> 14%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 28%	<input type="checkbox"/> 12%	<input type="checkbox"/> 3%	<input type="checkbox"/> 35%	<input type="checkbox"/> 22%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 25%	<input type="checkbox"/> 16%	<input type="checkbox"/> 7%	<input type="checkbox"/> 37%	<input type="checkbox"/> 14%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 22%	<input type="checkbox"/> 12%	<input type="checkbox"/> 9%	<input type="checkbox"/> 38%	<input type="checkbox"/> 19%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 25%	<input type="checkbox"/> 11%	<input type="checkbox"/> 8%	<input type="checkbox"/> 36%	<input type="checkbox"/> 20%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 11%	<input type="checkbox"/> 7%	<input type="checkbox"/> 9%	<input type="checkbox"/> 30%	<input type="checkbox"/> 43%
...some other alternative transportation option? (<i>please specify</i>) <u>See Appendix B</u>	<input type="checkbox"/> 5%	<input type="checkbox"/> 0%	<input type="checkbox"/> 11%	<input type="checkbox"/> 11%	<input type="checkbox"/> 74%

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

- 19% Yes 39% No 42% 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
<input type="checkbox"/> 3%	<input type="checkbox"/> 15%	<input type="checkbox"/> 12%	<input type="checkbox"/> 50%	<input type="checkbox"/> 20%	Surface conditions of roads	<input type="checkbox"/> 5%	<input type="checkbox"/> 6%	<input type="checkbox"/> 2%	<input type="checkbox"/> 28%	<input type="checkbox"/> 59%	NA
<input type="checkbox"/> 5%	<input type="checkbox"/> 19%	<input type="checkbox"/> 14%	<input type="checkbox"/> 49%	<input type="checkbox"/> 13%	Surface conditions of parking areas	<input type="checkbox"/> 3%	<input type="checkbox"/> 1%	<input type="checkbox"/> 2%	<input type="checkbox"/> 12%	<input type="checkbox"/> 81%	NA
<input type="checkbox"/> 1%	<input type="checkbox"/> 3%	<input type="checkbox"/> 14%	<input type="checkbox"/> 43%	<input type="checkbox"/> 39%	Condition of bridges	<input type="checkbox"/> 3%	<input type="checkbox"/> 1%	<input type="checkbox"/> 11%	<input type="checkbox"/> 19%	<input type="checkbox"/> 66%	NA
<input type="checkbox"/> 1%	<input type="checkbox"/> 4%	<input type="checkbox"/> 4%	<input type="checkbox"/> 44%	<input type="checkbox"/> 48%	Condition of trails and boardwalks	<input type="checkbox"/> 2%	<input type="checkbox"/> 2%	<input type="checkbox"/> 1%	<input type="checkbox"/> 16%	<input type="checkbox"/> 80%	NA
<input type="checkbox"/> 1%	<input type="checkbox"/> 8%	<input type="checkbox"/> 10%	<input type="checkbox"/> 57%	<input type="checkbox"/> 24%	Number of places for parking	<input type="checkbox"/> 2%	<input type="checkbox"/> 3%	<input type="checkbox"/> 2%	<input type="checkbox"/> 17%	<input type="checkbox"/> 75%	NA
<input type="checkbox"/> 2%	<input type="checkbox"/> 5%	<input type="checkbox"/> 9%	<input type="checkbox"/> 43%	<input type="checkbox"/> 40%	Number of places to pull over along Refuge roads	<input type="checkbox"/> 1%	<input type="checkbox"/> 9%	<input type="checkbox"/> 9%	<input type="checkbox"/> 27%	<input type="checkbox"/> 53%	NA
<input type="checkbox"/> 2%	<input type="checkbox"/> 1%	<input type="checkbox"/> 7%	<input type="checkbox"/> 37%	<input type="checkbox"/> 54%	Safety of driving conditions on Refuge roads	<input type="checkbox"/> 3%	<input type="checkbox"/> 1%	<input type="checkbox"/> 3%	<input type="checkbox"/> 13%	<input type="checkbox"/> 80%	NA
<input type="checkbox"/> 2%	<input type="checkbox"/> 3%	<input type="checkbox"/> 12%	<input type="checkbox"/> 35%	<input type="checkbox"/> 48%	Safety of Refuge road entrances/exits	<input type="checkbox"/> 2%	<input type="checkbox"/> 1%	<input type="checkbox"/> 3%	<input type="checkbox"/> 13%	<input type="checkbox"/> 82%	NA
<input type="checkbox"/> 3%	<input type="checkbox"/> 4%	<input type="checkbox"/> 8%	<input type="checkbox"/> 42%	<input type="checkbox"/> 44%	Signs on highways directing you to the Refuge	<input type="checkbox"/> 3%	<input type="checkbox"/> 4%	<input type="checkbox"/> 5%	<input type="checkbox"/> 22%	<input type="checkbox"/> 65%	NA
<input type="checkbox"/> 2%	<input type="checkbox"/> 3%	<input type="checkbox"/> 6%	<input type="checkbox"/> 45%	<input type="checkbox"/> 44%	Signs directing you around the Refuge roads	<input type="checkbox"/> 2%	<input type="checkbox"/> 6%	<input type="checkbox"/> 4%	<input type="checkbox"/> 26%	<input type="checkbox"/> 62%	NA
<input type="checkbox"/> 1%	<input type="checkbox"/> 1%	<input type="checkbox"/> 10%	<input type="checkbox"/> 39%	<input type="checkbox"/> 49%	Signs directing you on trails	<input type="checkbox"/> 3%	<input type="checkbox"/> 11%	<input type="checkbox"/> 7%	<input type="checkbox"/> 31%	<input type="checkbox"/> 47%	NA
<input type="checkbox"/> 2%	<input type="checkbox"/> 4%	<input type="checkbox"/> 26%	<input type="checkbox"/> 31%	<input type="checkbox"/> 36%	Access for people with physical disabilities or who have difficulty walking	<input type="checkbox"/> 5%	<input type="checkbox"/> 3%	<input type="checkbox"/> 24%	<input type="checkbox"/> 29%	<input type="checkbox"/> 38%	NA

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

See Appendix B

SECTION 3. Your expenses related to your Refuge visit

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

79% Yes

21% No → How much time did you spend **in local communities** on this trip?

 5 number of hours OR 4 number of days

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

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

See Report for Results

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

 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
11%	32%	29%	9%	9%	3%	6%	0%	1%	1%	1%

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

0%	Far too low	12%	Too low	85%	About right	2%	Too high	1%	Far too high	33%	Did not pay a fee (skip to Section 4)
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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.

2%	Strongly disagree	1%	Disagree	11%	Neither agree or disagree	39%	Agree	48%	Strongly agree
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SECTION 4. Your experience at this Refuge

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Applicable
Overall, I am satisfied with the recreational activities and opportunities provided by this Refuge.	2%	5%	4%	44%	45%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	1%	7%	8%	47%	37%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	1%	1%	10%	43%	44%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	2%	0%	4%	29%	64%	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
7%	12%	18%	45%	18%	Availability of employees or volunteers	1%	9%	19%	25%	45%	NA
5%	6%	11%	39%	39%	Courteous and welcoming employees or volunteers	1%	3%	13%	15%	68%	NA
4%	2%	12%	35%	48%	Knowledgeable employees or volunteers	2%	3%	15%	25%	55%	NA
1%	2%	8%	40%	48%	Printed information about this Refuge and its resources (for example, maps and brochures)	3%	6%	9%	27%	55%	NA
2%	2%	7%	54%	34%	Informational kiosks/displays about this Refuge and its resources	1%	4%	13%	38%	45%	NA
2%	4%	10%	51%	32%	Signs with rules/regulations for this Refuge	1%	5%	16%	29%	48%	NA
2%	2%	14%	54%	28%	Exhibits about this Refuge and its resources	2%	9%	18%	35%	35%	NA
4%	6%	20%	39%	31%	Environmental education programs or activities	2%	3%	32%	24%	40%	NA
3%	3%	17%	44%	33%	Visitor Center	2%	5%	20%	32%	41%	NA
2%	2%	6%	37%	54%	Convenient hours and days of operation	1%	3%	9%	17%	70%	NA
1%	1%	5%	37%	56%	Well-maintained restrooms	1%	3%	5%	24%	67%	NA
1%	1%	9%	47%	42%	Wildlife observation structures (decks, blinds)	1%	7%	7%	36%	49%	NA
1%	1%	7%	33%	59%	Bird-watching opportunities	1%	3%	4%	34%	59%	NA
1%	0%	3%	27%	68%	Opportunities to observe wildlife other than birds	1%	11%	5%	36%	48%	NA
3%	1%	10%	27%	59%	Opportunities to photograph wildlife and scenery	1%	7%	6%	29%	57%	NA
61%	7%	19%	8%	6%	Hunting opportunities	10%	3%	69%	7%	11%	NA
48%	11%	24%	11%	7%	Fishing opportunities	6%	5%	74%	6%	9%	NA
2%	1%	4%	27%	66%	Trail hiking opportunities	1%	5%	3%	35%	55%	NA
18%	7%	30%	33%	12%	Water trail opportunities for canoeing or kayaking	6%	11%	64%	11%	7%	NA
11%	2%	22%	44%	21%	Bicycling opportunities	4%	14%	27%	30%	25%	NA
10%	4%	32%	31%	23%	Volunteer opportunities	1%	2%	36%	19%	43%	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?

92%

Yes

8%

No

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

96%

Yes

4%

No

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

89%

Yes

11%

No

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

See Appendix B

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

Statements about climate change	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I am personally concerned about the effects of climate change on fish, wildlife and their habitats.	8%	3%	13%	37%	40%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	8%	3%	15%	39%	36%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	13%	27%	23%	24%	13%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	2%	9%	36%	37%	16%
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.	3%	13%	21%	47%	16%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	5%	10%	30%	43%	13%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	23%	35%	22%	11%	8%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	4%	5%	11%	37%	44%
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.	6%	11%	39%	30%	14%

SECTION 6. A Little about You

**** Please tell us a little bit about yourself. Your answers to these questions will help further characterize visitors to National Wildlife Refuges. Answers are not linked to any individual taking this survey. ****

1. Are you a citizen or permanent resident of the United States?

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

2. Are you? 50% Male 50% Female

3. In what year were you born? 1956 (YYYY)

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
(elementary)					(junior high or middle school)			(high school)				(college or technical school)				(graduate or professional school)			
					0%			9%				49%				41%			

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.**)*

- 3% American Indian or Alaska Native 0% Black or African American 100% White
 1% Asian 0% Native Hawaiian or Pacific Islander

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

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

- | | | |
|--|--|--|
| <input type="checkbox"/> 3% Less than \$10,000 | <input type="checkbox"/> 17% \$35,000 - \$49,999 | <input type="checkbox"/> 18% \$100,000 - \$149,999 |
| <input type="checkbox"/> 6% \$10,000 - \$24,999 | <input type="checkbox"/> 20% \$50,000 - \$74,999 | <input type="checkbox"/> 7% \$150,000 - \$199,999 |
| <input type="checkbox"/> 13% \$25,000 - \$34,999 | <input type="checkbox"/> 14% \$75,000 - \$99,999 | <input type="checkbox"/> 2% \$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.)?

21 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 Turnbull 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
"Friends" events	1
Audubon bird walk	1
Audubon Society bird watching	1
Botany Washington field trip	1
Conservation Project	1
Elk Festival	2
First Aid Class	2
Friends activities	1
Friends picnic	1
Habitat and stream bank improvement	1
Holiday event	1
Mushroom lecture	1
Potluck dinner	1
Ranger Programs	1
Spokane Audubon Society beginner birding field trip	1
Talk about Ice Age Floods	1
Tree planting	5
Wildflower field trip	1
Total	24

Other Activity	Frequency
Bird Point Counts	1
Bluebird Trail Monitoring	1
Checking bluebird boxes for biologist	1
Dog walking	1
First visit to the refuge - just wanted to see it.	1
Friends of Turnbull Activities	1
Graduate thesis research	1
I run in the refuge	1
Looking for elk tour in a company van	1
MAPS	1
Marsh Bird Survey	1
Pairs Survey of Waterfowl	1
Picnicking	1
Public Volunteer, Planting Days, Fall, Spring	1
Sightseeing	1
Training for half marathon	1
Tree planting	1
Tree Planting	1
Various classes	1
Visiting the Center on our way to the restaurant	1
Volunteer at bookstore	1
volunteer work	1
Volunteering	3

Walk with granddaughter	1
Walking	1
Weekly visits to maintain air monitoring site on the refuge.	1
Wildflowers	1
Work at Friends of Turnbull bookstore	1
Work-site visit.	1
Total	31

2 nd Other Activity	Frequency
Friends of Turnbull Volunteer	1
I am the Friends of Turnbull NWR Activities Chair and provide knowledgeable folks to guide various programs.	1
Point Counts, Marsh Bird & Duck Pair Surveys	1
Riparian Restoration (tree planting) along Pine Creek	1
Snowshoeing	1
Volunteer - Riparian Area Renewal - Watering	1
Volunteering	1
Wildflower Identification	1
Total	8

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
Air monitoring work.	1
Bluebird Trail Monitoring	1
College labs	1
Graduate thesis research	1
MAPS	1
Mushroom hunting	1
Nature viewing	1
Work-site visit	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
Auto tour	1
Auto tour, volunteering	1
Bought annual pass	1
Class	1
Hiked on my own	1
Purchase yearly pass	1
Signed up for Friends of Turnbull	1
Taught classes	1
Volunteer work	1

Volunteered in the bookstore	1
Volunteering	1
Worked as a gift/book store volunteer	1
Total	12

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
Giving Educational Guides	1
Vet Corps	1
Volunteer group	1
Total	3

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

Other Website	Frequency
City of Spokane	1
Friends group	1
Google	1
Online Maps	1
Spokane Visitor's Bureau	1
Total	5

Other Ways Heard about This Refuge	Frequency
An employee of USFWS	1
Audubon Society Guidebook	1
College information	1
Eastern Washington University	2
Friends of Turnbull	1
Map	1
Moose	1
Ornithology College Class Field Trip	1
Printed maps, RV Park activities information	1
School	1
School Children's Program	1
SFCC (College)	1
Spokane Tourism Magazine	1
Teachers at Discovery School	1
University Staff	1
Visitor Center	1
Volunteered for 25 years	1
Wildlife book	1
Total	19

Survey Section 2

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

Other Forms of Transportation	Frequency
Refuge vehicle	1
Run	1
School van	1
Shuttle bus from college	1
Total	4

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

Other Ways Found This Refuge	Frequency
Directions from brochure	1
Directions from hiking book	1
Tourism Magazine	1
Total	3

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/motorcycle	1
Access through the bike trails from Spokane or Cheney	1
ATV	1
Bicycling	1
Bike access/trails; cross-country skis	1

Boardwalk or nature interpretive trail	1
Canoe	1
Foot	1
Golf cart rental	1
Horse	2
Kayak/canoe	1
More bicycle trails alongside roads in the refuge.	1
Off-site parking/bicycling trails	1
Personal bicycle	3
Private vehicle	3
Recumbent bicycles	1
Snowmobile	1
Total	22

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 = 33)

A more extensive trail network with maps would be helpful. It seems like there is a lot more available area for walks that appear to be more welcoming to refuge vehicles than visitors. More/longer/loop hikes would be great! (I also must confess that I am a boardwalk junky and am kind of disappointed with the changes made to Turnbull's one short board walk.)

A safari-like driving tour would be nice, along with more than one auto-tour route to minimize congestion and monotony.

A self-guided auto-bike tour loop is a great idea. We plan on returning for a "bike" experience.

All trails on the refuge map are easily located by signs.

Asphalt is very expensive, but paved roads and the lack of dust make for a more pleasant visitor experience. This is especially true when nearly all of the visitor areas are within sight of the gravel roads.

At the beginning of the auto tour there is a "dump" on the right. It would be nice if that was better concealed.

Could use some interpretive signs of various geological, ecological, and important wildlife areas.

Do not place barriers in the way of the handicapped for walking. An accommodation would be the use of 4-wheelers or motorcycles on walking trails.

I think the refuge offers trails for every level of abilities from wheelchair bound and elderly to its polar opposite.

I was disappointed to find the Bluebird Trail closed.

I wish there were a couple legal turnouts along the highway leading to the refuge where it would be possible to look into the refuge at distant ponds and forests with binoculars and cameras. All there is now are steep ditches or gated refuge access roads that have "no parking" signs.

I would like more roads to be open for driving or walking.

I would like the trail distances to be posted and a loop trail or out and back, if possible.

I would not like to see off road vehicles allowed on the refuge.

I'd like to see more single track walking trails instead of access roads that are not used, and more hikeable variable terrain routes, as there is not very much access on the site.

In the big parking lot, broken tree parts were standing unsafe for over 5 weeks. Bridge railings are falling apart. Trees are ready to fall. Employees drive the wrong way on a one way road. There are no signs on trails. There is no way to open bathroom doors.

It would be nice to have mile markers on roads and trails.

It would be very nice to have access to more parts of the refuge, both by bicycle and car.

More or larger signs would be nice.

More parking pull outs along the driving route would be appreciated. Also, the parking lot is quite small with room for maybe 10 vehicles.

None of the trails were identified, and staff was not able to point out the trails.

Putting buses in a wildlife refuge would reduce the chances of seeing wildlife.

Signs on Cheney Road are not easy to see - I've missed the turn off twice before figuring out I passed the turn off a ways back. It's the sign coming from Spokane that's not clear. The one in the other direction is clearer (once you've passed the turn off and turn around to go back towards Cheney).

Since we visited 25 years ago, it has changed a lot. You cannot get anywhere near the water (the roads are too far from the water), so it was very disappointing and there were less birds to see. Last time we went, we took a picnic lunch and were able to sit right next to the water and we photographed birds. I could never do that now. You need either trails to the water, boats, or to change the roads!

The entrance road gets very washboard-like, even though I know the refuge staff does gravel-rake it occasionally.

The refuge could provide bicycles on loan or for rent.

There are no transportation choices. Driving gas-powered cars on gravel roads kicking up dust is not the way to encourage the public to support wildlife refuges.

There are only two trails on this refuge for physical disability issues.

There are very few parking spots or places to pull over, but it wasn't an issue because there weren't a lot of other people there.

We liked the ability to drive our car around so much of the refuge and stop in interesting spots and walk; this was especially true since we had limited time.

We loved it and plan to go back again soon!!!

When you come to the first parking lot in the refuge, there is a paved trail across the road leading down to the lake. It would be nice to have an alternate handicap parking and a flatter paved trail where the old road comes out just beyond that point, as people with walkers like my mother cannot make it down the incline on the main path.

Would like to see more bicycle access.

Survey Section 4

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

Comments on Services, Facilities, and Activities at This Refuge (n = 42)

Allow hunting!

Bats are outside the restrooms. No toilet paper in the ladies' room. Lots of broken and damaged trees ready to fall on cars and people. Employees drive the wrong way all the time.

Bicycling is limited to the auto tour route when there are many other roads and trails that are closed to cyclists. I understand that seasonal closures are helpful to nesting/breeding/birthing animals, but year-round closures serve no purpose.

Each refuge is unique. I accept whatever they have; I don't compare experiences.

I enjoyed our visit and plan to return for hiking and picnicking in the near future.

I love the refuge and have done a lot of work there through my university. It was a great opportunity.

I stopped at the main office and there was no one to talk to.

I would like canoe and kayak opportunities at Turnbull please!

In a refuge, I think the most important thing is the wildlife viewing, not services for humans.

Information about what kinds of animals live in the refuge and when are the best times for viewing them would be nice.

It would be great if there were more access to trails and roads on the refuge. We are very limited at Turnbull.

It would be nice to be able to see more of the acreage used for hiking, even within the 5.5 mile loop, just so you can get out there away from the

road on a loop trail. The best hike right now is one-way and is a 30 acre lake on a road; not that great, but my favorite at this time. I'd like to see some long single track trails.

It would be nice to have staff available on the weekends to answer questions and give advice.

It would be nice to have the tall weeds trimmed in front of the blinds for viewing and photography. The only person at the office on the weekends is the volunteer store person. It would be nice to have one refuge person there to talk to.

Many of the educational programs are of necessity held on the trail and those with mobility issues are not able to participate. I feel very strongly that a refuge should not have hunting within its boundaries. There must be another way to keep animal populations under control rather than having an elk and bird hunt, as are scheduled at our local refuge, for the first time this fall.

One of the roads was not available to cars (except to service vehicles) and I wish that had been state handicap sticker accessible, as my husband would have really enjoyed that particular view of a lake full of ducks and baby ducks.

Opening as early as daylight hours helps with birding.

Opportunities for hunting small-game only would be welcomed. No deer, moose, or elk hunts (single elk or moose tag raffles would be welcomed too). The aspen is in poor shape and I've seen a lot of moose here.

Photographers and bicyclists can disturb and disperse the elk herds just as well as the hunters, but they are not given the same opportunity. Coordinating with a local mountain bike group might be a good way to bring about additional visitor options or events.

The bathrooms could be better maintained.

The improvements to the viewing sites and walkways were very nice. The info boards at these sites were also appreciated. We were very pleased with our visit.

The refuge seems under used. More programs could be offered to get people out there caring about their environment. The Visitor Center/bookstore hours are not convenient for early hours or later in the evening when wildlife viewing is at its best. Half a million people live within 25-35 miles of this refuge and very little is known about it by the average citizen. The center is brand new, but not manned like at other refuges. No one to handout information or to talk with. One map is displayed, but with little information on it.

The roads have improved much. More miles need 4-wheeler or motorcycle trails for helping the handicapped.

The staff is dedicated and knowledgeable. They are important for wildlife survival.

The store is only open on the weekends.

There are strong environmental education program for kids.

There has been a noticeable cut in employees and volunteers due to lack of funding. They do their best with the help of student/senior volunteers in their services.

There should be more management of habitats to enhance wildlife viewing. A limited entry on wild turkeys should be established at Turnbull.

This refuge is a hidden treasure, with much to offer to visitors of all ages and abilities and has an amazing, dedicated, hard-working staff. How they accomplish all they do with the many funding cuts is nothing short of a miracle.

This refuge recently opened an elk hunt, which I can understand why it was needed, but I do not agree with the youth waterfowl hunt! I do not think this activity belongs on a wildlife REFUGE, especially as there is a large amount of access to this activity in areas near the refuge.

This refuge, and others, needs additional funds and personnel to serve the public. This refuge offers great educational opportunities for thousands of students with an overworked coordinator and mostly volunteers. They need and deserve a paid, permanent education officer.

To start, I will say I am not against hunting. I use to bird hunt and I love shooting, but with that said, I think that the IDIOT!!!! that thought up hunting in a wildlife REFUGE!!! needs to get their head examined and needs to get their dictionary out and look up the term REFUGE!!!! Definition: a shelter from danger or hardship, a safe place, etc. I fail to see how hunting blends with this word. There are hundreds of thousands of acres in this state to hunt. If you need to hunt on a REFUGE!!!! in order to bag game, you probably should stop hunting. This has irritated me so much that I am looking for some place else to go, and that is too bad because I love Turnbull. I love to watch the seasons change and all the new things that happen; that is why I come out there almost every week. I see that someone with a gun tried to shoot a hole through one of the signs at Black Horse Lake. Maybe guns should not be on the refuge. I have to have my dogs on a leash that is no more than five feet long, I guess so they won't bother the wildlife. Maybe that is so the animals won't be stressed out when they get shot! It is stupid and unnecessary.

Trails are made of gravel, making wheelchair access difficult, if not unusable.

Turnbull welcomes and values visitors and volunteers. I enjoy the activities I am involved with at the refuge.

We enjoy the drive through every time we go. We wished that we saw something every time, but we understand it's not that kind of place.

We enjoyed the trip; wildlife abound, and we even saw a moose in mid-day. Thank you.

With limited money and man-power, the refuge staff and volunteers do a fabulous job!

Would appreciate more guided tours (birds, wildlife, flora, etc.). Those I've been on were good. If there were more, then I'd go on more.

Would like to see more photography opportunities and backroad trails. Also, open more trails for bicycles and foot travel.

You guys all rock!

You need more public notice of educational programs.

You're able to access the facilities for photography. They have nice programs for children and adults. I have helped plant some trees and been to some programs.

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 =119)

A place where animals can flourish rather than a place where people can view creatures on display.

A restored habitat in this geographical region.

A well maintained facility, which is not overly crowded and not burdened with off trail and noisy vehicles.

Abundance and protection of many species.

Because the refuges are protected, it is a great experience to see the ducks and birds in their natural habitat. It also preserves a unique geological landscape for people to observe, as well as wildlife. And it is quiet. I hope to visit the refuge in each season.

Bird habitat and opportunities to observe birds.

Bird watching; the refuge encompasses "pot-holes" carved out of the basalt by the Glacial Lake Missoula Floods. This area is unique and is a natural gathering place and refuge for wildlife coming in from the semi-arid areas surrounding these little lakes.

Birds, moose, elk, and no hunting make it unique.

Easy access, educational opportunities, shared and protected space to observe wildlife and nature makes it unique.

Even though it conflicts with some of my earlier answers, I really appreciate that refuges are primarily for the plants and critters that live there. Accommodation of visitors is secondary to that mission, and it should continue to be that way!

Excellent opportunity to study nature with convenient access.

For the most part, refuges that I have visited provide great wildlife habitat, which seems to be lacking in many other public lands.

Habitats are protected. Lots of environmental education and wildlife studies for everyone. Many chances for volunteers of all ages and abilities.

Hunting as a part of the wildlife experience is very important to me on refuges and this helps to make refuges unique. The cost of federal duck stamps has been used to save habitats and many species as well.

I appreciate knowing that I am visiting an area where habitats are not disturbed.

I got to actually see some animals. This place makes sure that the wildlife still has a habitat.

I've never seen a moose closer than I have at Turnbull. Turnbull beats a manicured State Park by a long shot.

Integrity of the protection offered.

It depends on how available they are to use and how much educational information they provide.

It gives people the opportunity to get out of the city and stress in their everyday life and remember what life is all about. It's a great place to learn about nature and see it first-hand. I think that parents need to take their kids more often and get them in touch with real life and not video games or TV.

It gives people the opportunity to see wildlife in undisturbed areas and helps them appreciate nature and the animals that live in it.

It gives the opportunity to observe a wide range of birds and animals in their natural environment.

It has a different feel than many other public lands. The purpose of the refuge is to be a guest in the environment instead of a consumer or an active participant. In that way, it is a more relaxing environment where the role of the visitors is a more polite presence. The wildlife feels less trampled by the masses. The wildlife is more all-encompassing.

It is a good location for observing migratory waterfowl.

It is an interdisciplinary approach for the experience.

It is in a lovely setting with pine woods, wildflowers and lot of wildlife (birds, deer, wild cats, etc.). Lots of hiking and biking paths make it unique.

It is quiet and peaceful; thus, a wonderful experience.

It is solitary, quiet, and has natural surroundings.

It is unique because most of the refuge is for wildlife and not for public use.

It just feels so natural out there. Like that is how it is supposed to be.

It provides a chance to see animals in their natural environment and that would not be seen without spending days or weeks in a wilderness area. The recent change in having a chance to hunt in our local refuge has sparked a lot of interest in our group.

It provides a place to feel at home. It's relaxing and fun to visit.

It was in a place we could access and enjoy on the spur of the moment - didn't know it was there even though I grew up in the Spokane area and had grandparents living in Cheney. My brothers have previously visited over 30 years ago on school field trips.

It's a good area to see the wildlife and fauna of this region.

It's a place to go that has public access. Visitors are welcomed. I can take my time and enjoy the photography of birds, mammals or flowers.

It's close to the city, yet it seems far away and remote.

Keeps birds or other wildlife safe.

Knowing that the animals are safe there makes it unique.

Larger areas of undisturbed habitat provide much better viewing of **wildlife**.

Less crowded than parks and more accessible.

Less people than at National Parks. Friendly unobtrusive staff and low key opportunity to get into nature.

Location and the resources they protect.

Lots of wildlife, great scenery, not too crowded, and some fishing, hunting, hiking, camping, and learning opportunities.

Management is for wild plants and animals.

More availability to wildlife.

More ducks and wildlife to see here. It is a quiet and peaceful place to observe wildlife.

More natural.

More opportunities to see bird and wildlife make it unique.

Natural habitat.

NWRs offer visitors appropriately set observation opportunities, keeping us from disturbing, I hope, the habitat and animals, yet allowing them to

observe these things. These are quite valuable elements of the national endowment of lands!

Observing plants and animals not available at other places makes it unique.

Offers a chance to experience wildlife that's not caged.

Peaceful and well taken care of.

Preservation of a unique habitat with limitation of man's footprint.

Preservation of the natural environment.

Primary concern for wildlife, not people.

Protects wildlife environments from development.

Providing habitats for wildlife in perpetuity.

Refuges are greener than even State Parks, in my opinion. The focus is on the wildlife rather than the consumer. That's refreshing. The nurturing atmosphere and respect for natural habitat is a positive influence on my thinking.

Refuges are our favorite places to go because a day hike at a refuge allows us to see and photograph so many animals and birds.

Refuges are unique because of the emphasis on wildlife preservation and the habitat, not on subsidizing various special interest for-profit activities like mining, logging, and ORVs.

Refuges focus first on the needs of the wildlife they protect. At the same time, they try to educate the public and help the visitors enjoy an experience in a place that belongs to all of us.

Refuges offer the opportunity to enjoy nature in the optimum way, without motorized recreational vehicles and other noisy, irritating intrusions. A refuge by its definition should be as natural a habitat as possible for its animal inhabitants with as little human invasion as possible.

Separate and far away from city life, quiet and peaceful, no technology and industrial noises all make it unique.

So much of it is not available to the public, creating different habitats which make it unique.

Sole purpose of preserving wildlife.

That their primary purpose is to manage the land and the animals, as opposed to just offer pretty scenery.

The ability to learn about a new ecosystem makes it unique. It is a unique place to exercise and view wildlife.

The ability to observe nature in its natural setting makes it unique.

The ability to see wildlife and photograph it in its natural habitat makes it unique.

The areas are designated to protecting wildlife, which makes them unique.

The availability of hiking trails and the unique setting makes it unique.

The availability to readily see deer, elk, and moose that are all within a five mile radius.

The conservation of the habitat makes it unique.

The degree of maintenance and care to have a minimal effect on the natural state of the property.

The diversity of wildlife and the quiet; you can expect to see something every time and not have to worry about huge bunches of people.

The drive around and hiking trails.

The education of the younger generation about stewardship of our environment and the research done here to best maintain these wonderful places.

The emphasis is on "natural settings" and refuges are not as commercial.

The emphasis on conservation and restoration of wildlife and habitats.

The experience.

The fact that we can observe animals and flora in their natural habitat.

The focus is on the wildlife habitat and not on people, which makes it unique.

The opportunity to see and photograph more than you would in the National Forest.

The primary focus of the refuge is on maintaining the conditions conducive to the flora and fauna as it has existed since before humans arrived in the area. What I don't understand is why refuges allowing hunting and fishing in the refuge. Human predation does not further this primary mission.

The refuge provides the least intrusive environment for the wildlife and a minimum of human noise-producing activities. Tranquility is key.

The roads and trails lead one to photo opportunities in undisturbed land. My interests are in nature photography and the NWRs provide an opportunity for me.

The terrain is beautiful.

The wetlands and the amazing staff to help explain it all!

The wildlife I see at refuges seems more unafraid of people and present better photography opportunities.

The wildlife is protected and seems more abundant than other areas I have visited.

The wildlife makes it unique.

Their primary purpose is wildlife protection, but they also afford opportunities for the public to experience wildlife and their habitat without undue disturbance.

There are more opportunities for bird watching and photography.

Their commitment to remain natural makes it unique.

There is clearly less emphasis on tax-payer subsidized for-profit activities such as resource extraction, grazing, road building, and ATV use.

There is minimal human encroachment.

They are generally still primitive and you can view nature the way it is supposed to be. It's a good place to take my children to learn about nature.

They are more natural than other areas. Refuges feel like a little piece of heaven on earth; so peaceful, so beautiful, and so natural.

They are more untouched than other areas.

They are primarily dedicated to wildlife, not humans. People are gone overnight which is a breather for wildlife. People who visit are primarily interested in wildlife, not other recreation such as camping, ATVs, drinking, singing, throwing frisbees, etc.

They are there for the wildlife and plants, not for the recreation of the public. So, there should be, and is, less emphasis on recreation, and more on conservation.

They focus on active management for wildlife.

They have more interpretive signs than National Forests or BLM areas. There is better wildlife habitat and less human use of land. It's like a National Park without the crowds.

They have the ability to preserve habitats for wildlife.

They offer trails and observation decks.

They provide a peaceful visit for people. They provide an essential place for wildlife away from human disturbance.

They provide a unique window into minimally impacted wildlife habitats and allow me to share this with my family.

This refuge is unique because the emphasis is on local wild animals, not just taking advantage of the land.

Turnbull is unique because it is channel scrublands and is on the migratory flyway.

Turnbull provides a participatory experience by actively engaging school groups to contribute to the science work at the refuge. Our students are contributing to the data collection about the annual Bluebird nest boxes' success, and are contributing to the planting and care of new trees and shrubs in the riparian area.

Unique geologic features and habitat.

Usually well-managed and usually an excellent opportunity for bird watching.

Very special place, beautiful and exceptional habitat for local wildlife. Should be cherished for all generations and maintained just the way you're doing it now. I am sure you provide educational experiences for children and adults alike, but I did not visit the center there.

Whereas other public lands focus on our recreational desires, a refuge never lets you forget that you're a silent visitor to a natural sanctuary.

Wildlife and habitat are their first priority.

Wildlife.

Wonderful staff and volunteer opportunities. I love Turnbull.

You can see wildlife and not have to worry about someone coming up to you with a gun.

Additional Comments (n = 36)

Attended a Volunteer Day to help stream bank habitat with grandson's cub scout program. This made the day special in multiple ways, and hopefully provided a seed for another generation to hold the environment as special.

Beautiful refuge; lovely day; pleasantly surprised.

Excellent facility.

I am glad it is open to the public. The new restriction of not going off trail for certain months, I think, is unnecessary. All the people I have met are very respectful of wildlife.

I feel lucky to have this area so close to my home. My husband and I with our two dogs are there every week; rain, snow or sun.

I had difficulty with the refuge services because I wasn't sure if the Visitor Center was open and if we would have to use the entrance loop to go back to it, so we did not go there.

I have lived in this area for all my life (78 years). I fish, but I feel that the cost for all of the hunting and fishing are too high for seniors. A lot of us only live on our social security, and even though fishing is about \$5, which is not bad, it is still hard to get by on social security. But for hunting, it is not fair; we have to have someone to go with us and the costs are high. I have not hunted in years, but I hope to try next fall in Turnbull. With this area, you could let more people hunt. Thank you. (Name)

I love this place!

I think it would be nice if the refuge would acknowledge it when someone sends them photos and a letter about their visit. I sent some photos that I took on my last visit and I don't even know if they got there, because I did not hear anything back. Just a simple thank you would have been nice.

I visit the refuge regularly; about twice a month. I am a senior, so I have a lifetime pass, which cost \$10 and includes entrance to all National Parks for life. I feel this amount is woefully too low. I would have happily paid ten times that amount to support these wonderful places.

I would like more areas open to photography opportunities.

I would like to see a guided tour through the other parts of the refuge that are closed. Maybe something that could be setup by appointment, and could be charged for.

I would like to see a visitor envelope collection point at a place where a handicapped person could access it without getting out of his/her vehicle.

I would like to see more open to the public trails created within Turnbull.

It is a fabulous local resource that is well managed and benefits from the hard work of a great staff and many volunteers. They enjoy an excellent image in the local media, and strive to make the most of limited revenue.

It is always a fine place to visit.

It was a very nice trip. A few more pull outs would be nice.

It was beautiful and peaceful - a lovely place for a walk.

It would be nice if more of the protected area were open to public use.

Just an amazing place in the different seasons, and has an excellent one way road that loops around very nicely with plenty of places to stop or let others pass. Excellent park you all keep for me. Thanks.

Leave climate change and political agendas out of public lands. No one wants to come to a refuge and be lectured about hypothetical climate change effects.

More open acres at Turnbull - too many areas are closed.

My visit to Turnbull was one of the most beautiful and peaceful ever.

Please open up more areas to foot or auto travel.

The refuge is great for the area kids and I would like to see expanded programs, not only for viewing, learning and hiking, but for vocational training at the refuge towards environmental professions. Some vocational schools in the east teach this kind of hands-on vocational program, but we don't seem to have that locally. It is also great for old folks like me who love to spend some quiet time drawing or just watching nature. If possible, it would be great to see the refuge I visited track and study climate change, although I am really disappointed in the science behind "global warming." It is now an opportunity to start fresh and get some solid scientific data on what climate changes are occurring, how that is affecting wildlife at the refuge, and look with fresh eyes towards the reasons.

The refuge is the ideal place to spend early morning during summer and fall months. Access is getting better by auto in the winter, but is sometimes not available due to weather conditions.

This refuge is a gem; a local treasure and needs to be protected. Locals continue to donate land to this refuge; its continuing existence, expansion, and protection should be a high priority for your agency.

This refuge is a treasure. We visit it almost every two weeks and often bring visitors to see it.

Too many joggers; they should not be allowed in the refuges, or dogs either, as they all scare the wildlife when others are trying to observe it.

Turnbull is and will be important to wildlife in our area as urbanization occurs. **The staff at Turnbull** is excellent.

Turnbull NWR is a treasure.

We have been able to enjoy the refuge more now that we have retired.

We have seen such an amazing number of birds and animals on our trips to Turnbull. I can't say enough about how much my family and I like our visits. Our daughter Vivian turns two in August, and we look forward to making many more visits with her as she grows up. Thank you!

We went on a Sunday, so not all of your resources were open. Your volunteers were great!

When questioning refuge employees about increasing bicycle access, it was clear that their focus was on the destructive activities of a very small percentage of bicycle riders. There are some people using all forms of travel that abuse our refuges and parks. Proper restrictions, good signage and prompt enforcement can improve conditions of the roads and trails, making banning opportunities outright unnecessary. Bicycles, in particular, are very unlikely to cause damage when used responsibly in areas where trails are provided for hikers.

Wildlife refuges are vital for the survival of species, whether or not humans are allowed to visit, especially in the future with uncontrolled human population growth and habitat destruction! I strongly support wildlife refuges and all public lands. (Initialed)
