



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

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*My wife and I are lifelong NYC residents. Our second home was in part selected on the proximity to Wertheim NWR. We walk there most weekends, have sighted many kinds of wildlife, and love the peace and quiet away from cars, RVs, and runners. The river, ponds, and woods refresh and inspire us year round. Users are friendly and respectful of each other and the refuge, almost without exceptions. We are grateful for the worth of all who labor to make it what it is.—Survey comment from visitor to Wertheim National Wildlife Refuge.*



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

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## Introduction

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

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

## Organization of Results

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

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

## **Methods**

### **Selecting Participating Refuges**

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

### **Developing the Survey Instrument**

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

### **Contacting Visitors**

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

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

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

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

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

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

## Interpreting the Results

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

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

Wertheim NWR lies on the south shore of Long Island, New York, and remains one of the last undeveloped estuary systems remaining on the island. Established in 1947, Wertheim NWR hosts a variety of habitats. Half of Wertheim NWR is made up of aquatic habitats with marine seagrass beds, intertidal saltmarsh and high saltmarsh (which form the largest continuous saltmarsh on Long Island), freshwater marsh, shrub swamp, and red maple swamp. The remaining half of the refuge features the rare Pine Barren habitats of pitch pine, oak-pine, mixed oak, pioneer hardwood, upland shrub, and grasslands. Wertheim NWR also contains the Carmans River Estuary which is a New York State-designated Wild and Scenic river and one of the Island's largest.

With such a variety of habitat, wildlife populations are quite diverse. This 2,550-acre refuge is home to over 300 species of birds, 35 species of mammals, 30 species of reptiles & amphibians, 100 species of fish and more than 500 species of plants, including eight species of Federal and/or New York State protected species. Most visitors take advantage of the abundance of bird species by visiting Wertheim NWR during spring and fall migrations.

With 96,000 visitors each year (based on 2008 RAPP database; U.S. Fish and Wildlife Service, 2011, written comm.), Wertheim NWR offers a variety of activities including big game hunting, fishing, use of the Visitor Center, hiking, canoeing or kayaking, wildlife observation, photography, environmental education, and interpretation. Wertheim NWR is also known for its cross-country skiing which can be enjoyed in the winter time. Figure 1 displays a map of Wertheim NWR. For more information, please visit <http://www.fws.gov/northeast/longislandrefuges/index.html>.

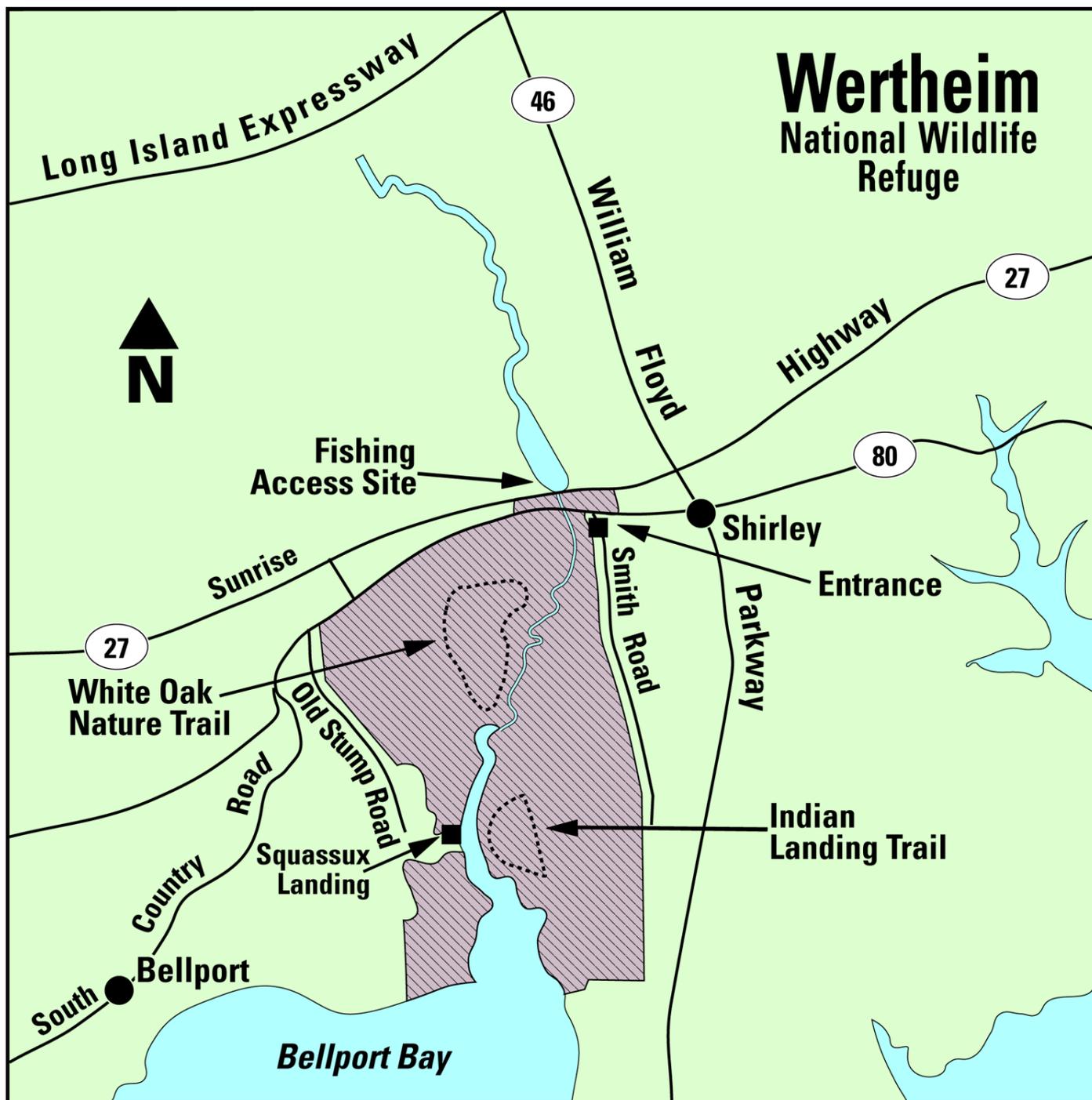


Figure 1. Map of Wertheim NWR, courtesy of U.S. Fish and Wildlife Service.

## Sampling at Wertheim National Wildlife Refuge

A total of 316 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Wertheim NWR (table 2). In all, 188 visitors completed the survey for a 63% response rate and  $\pm 6\%$  margin of error at the 95% confidence level.<sup>1</sup>

**Table 2.** Sampling and response rate summary for Wertheim NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	8/28/2010 to 9/11/2010	Wertheim Visitor Parking Area Carmans River (on the water)	159	12	103	70%
2	6/25/2011 to 7/9/2011	Wertheim Visitor Parking Area Carmans River (on the water)	157	7	85	57%
<b>Total</b>			<b>316</b>	<b>19</b>	<b>188</b>	<b>63%</b>

## Selected Survey Results

### Visitor and Trip Characteristics

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

### Familiarity with the Refuge System

While we did not ask visitors to identify the mission of the National Wildlife Refuge System or the U.S. Fish and Wildlife Service, visitors to Wertheim 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 (83%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants and their habitat (89%). Positive responses to these questions concerning the management and mission of the Refuge System do not indicate the degree to which these visitors understand the day-to-day management practices of individual refuges, only that visitors feel they have a basic knowledge of who manages refuges and why. Compared to other public lands, many visitors feel that refuges provide a unique recreation

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

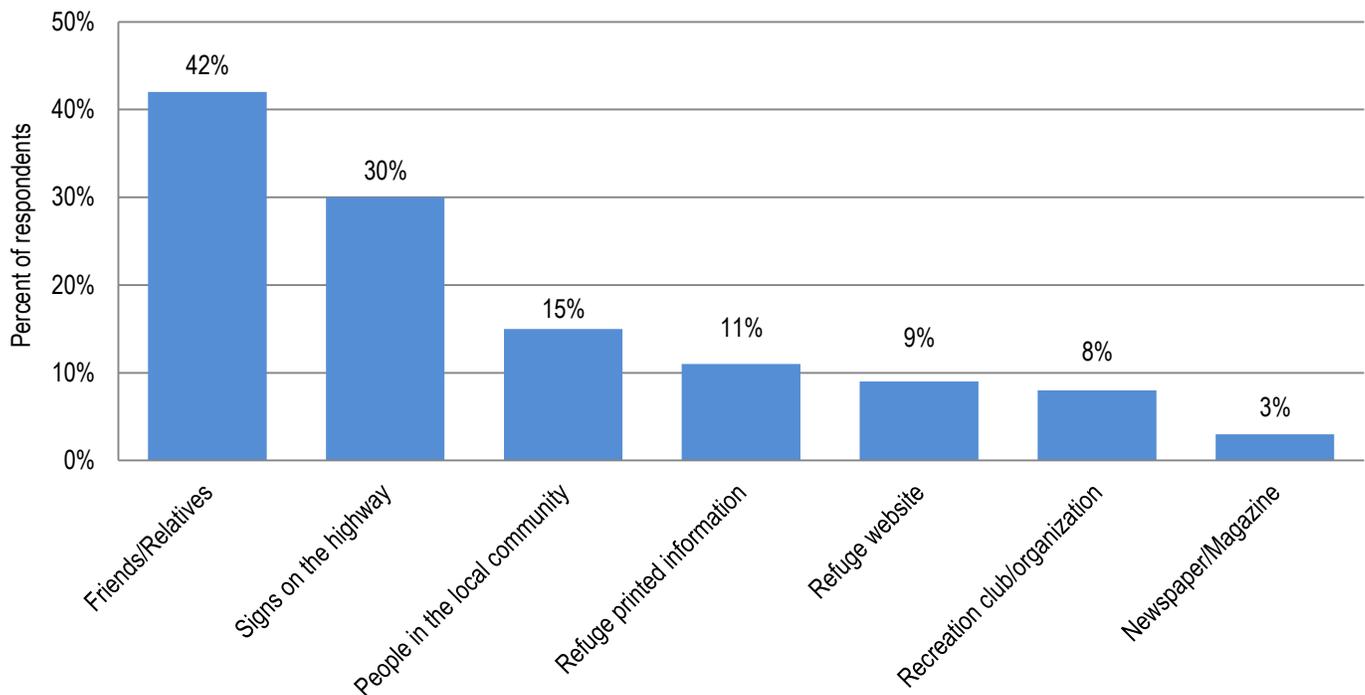
experience (87%; see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System. Most visitors to Wertheim NWR had been to at least one other National Wildlife Refuge in the past year (71%), with an average of 5 visits to other refuges during the past 12 months.

### Visiting This Refuge

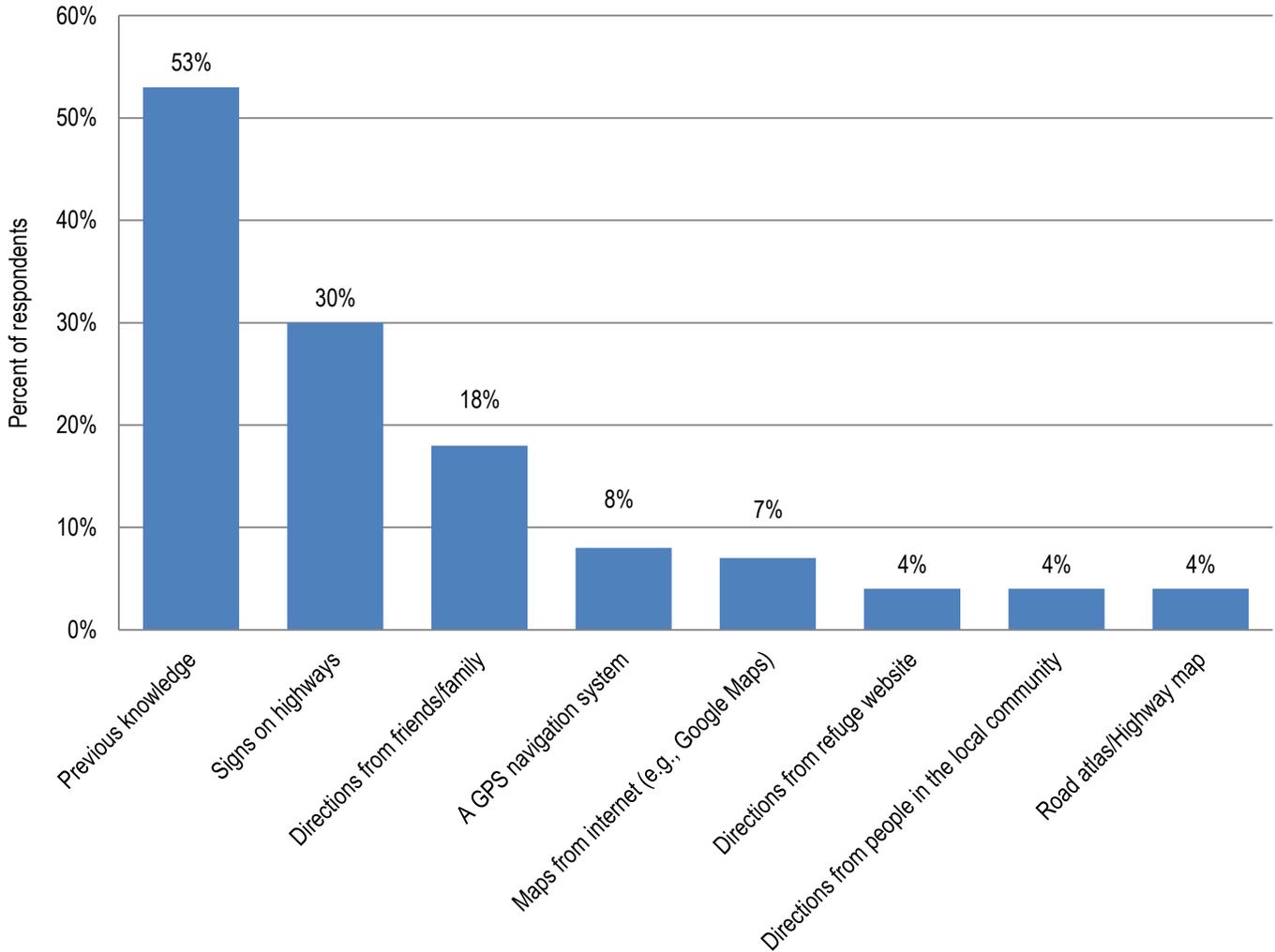
Some surveyed visitors (24%) had only been to Wertheim NWR once in the past 12 months, while most had been multiple times (76%). These repeat visitors went to the refuge an average of 18 times during that same 12-month period. Visitors used the refuge during only one season (33%), during multiple seasons (39%), and year-round (28%).

Most visitors first learned about the refuge from friends/relatives (42%), signs on the highway (30%), or people in the local community (15%; fig. 2). Key information sources used by visitors to find their way to this refuge include previous knowledge (53%), signs on highways (30%), or directions from friends/family (18%; fig. 3).

Most visitors (92%) lived in the local area (within 50 miles of the refuge), whereas 8% were nonlocal visitors. For most local visitors, Wertheim NWR was the primary purpose or sole destination of their trip (76%; table 3). For most nonlocal visitors, the refuge was an incidental or spur-of-the-moment stop on a trip taken for other purposes (50%). Local visitors (n = 169) reported that they traveled an average of 11 miles to get to the refuge, while nonlocal visitors (n = 14) traveled an average of 215 miles. ***It is important to note that summary statistics based on a small sample size (n < 30) may not provide a reliable representation of the population.*** Figure 4 shows the residence of visitors travelling to the refuge. About 96% of visitors travelling to Wertheim NWR were from New York.



**Figure 2.** How visitors first learned or heard about Wertheim NWR (n = 182).



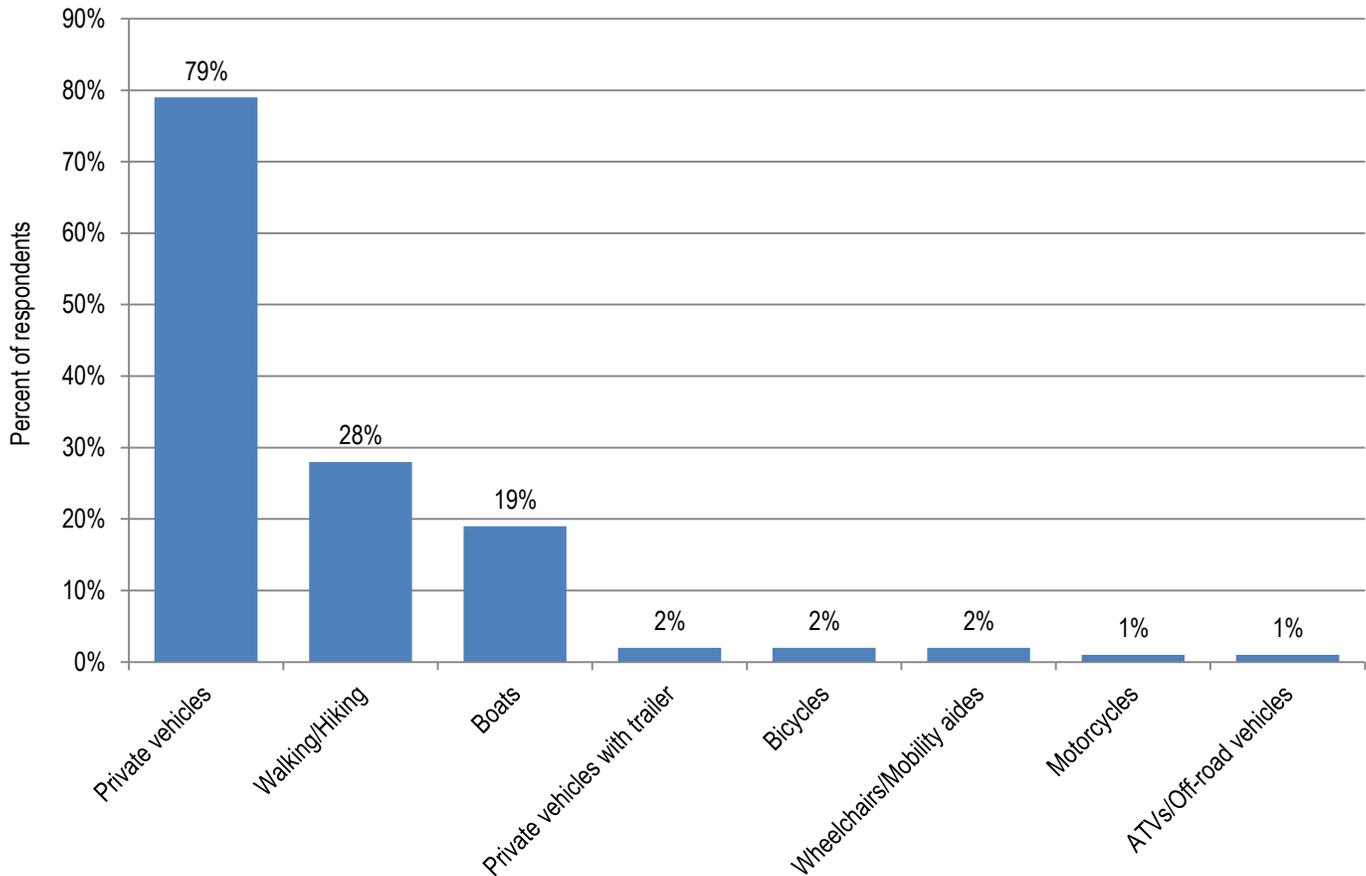
**Figure 3.** Resources used by visitors to find their way to Wertheim NWR during *this* visit (n = 180).

**Table 3.** Influence of Wertheim 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	36%	14%	50%
Local	76%	13%	12%
Total	73%	13%	15%



Surveyed visitors reported that they spent an average of 3 hours at Wertheim NWR during one day there (a day visit is assumed to be 8 hours). However, the most frequently reported length of visit during one day was actually 1 hour (28%). The key modes of transportation used by visitors to travel around the refuge were private vehicle (79%), walking/hiking (28%), and boat (19%; fig. 5). Half of visitors indicated they were part of a group on their visit to this refuge (50%), travelling primarily with family and friends (table 4).

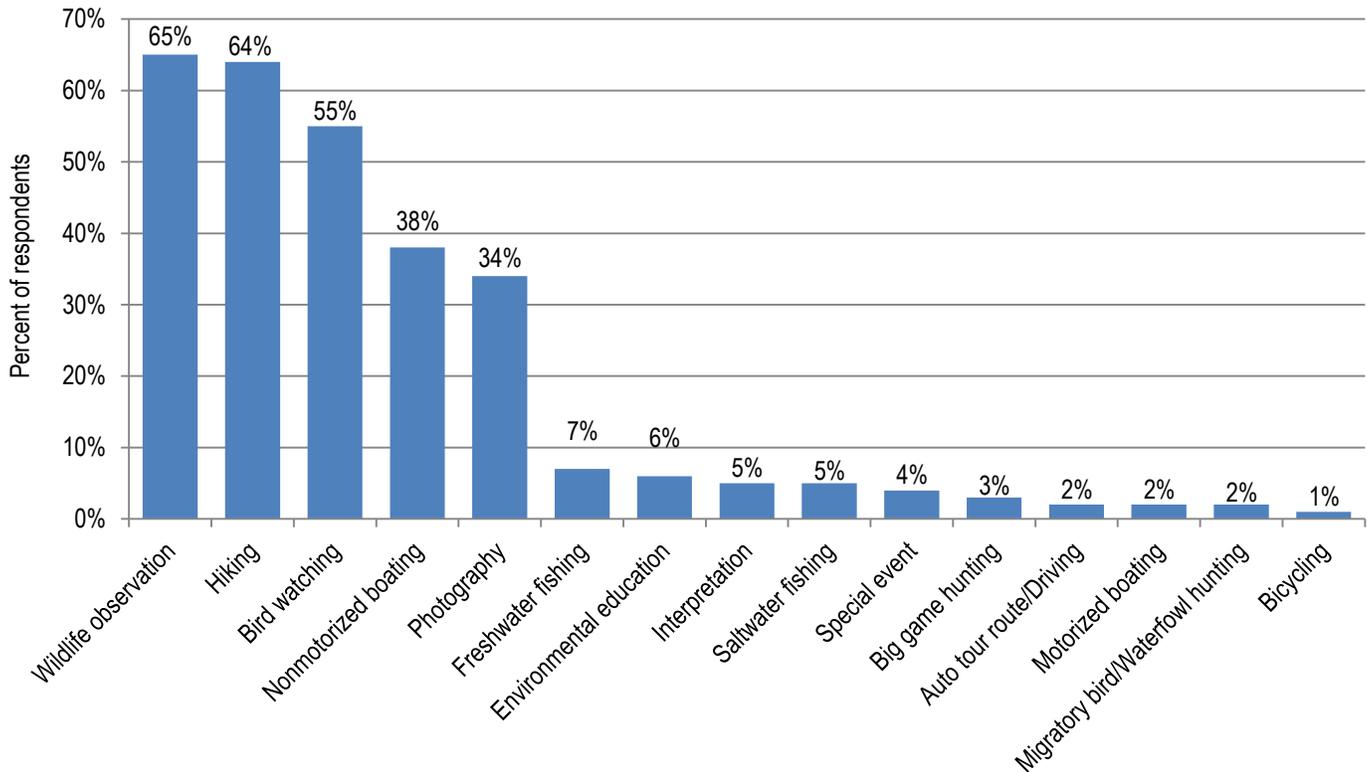


**Figure 5.** Modes of transportation used by visitors to Wertheim NWR during *this* visit (n = 180).

**Table 4.** Type and size of groups visiting Wertheim NWR (for those who indicated they were part of a group, n = 93).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	92%	2	0	2
Commercial tour group	3%	15	7	22
Organized club/School group	3%	7	15	22
Other group type	2%	6	5	11

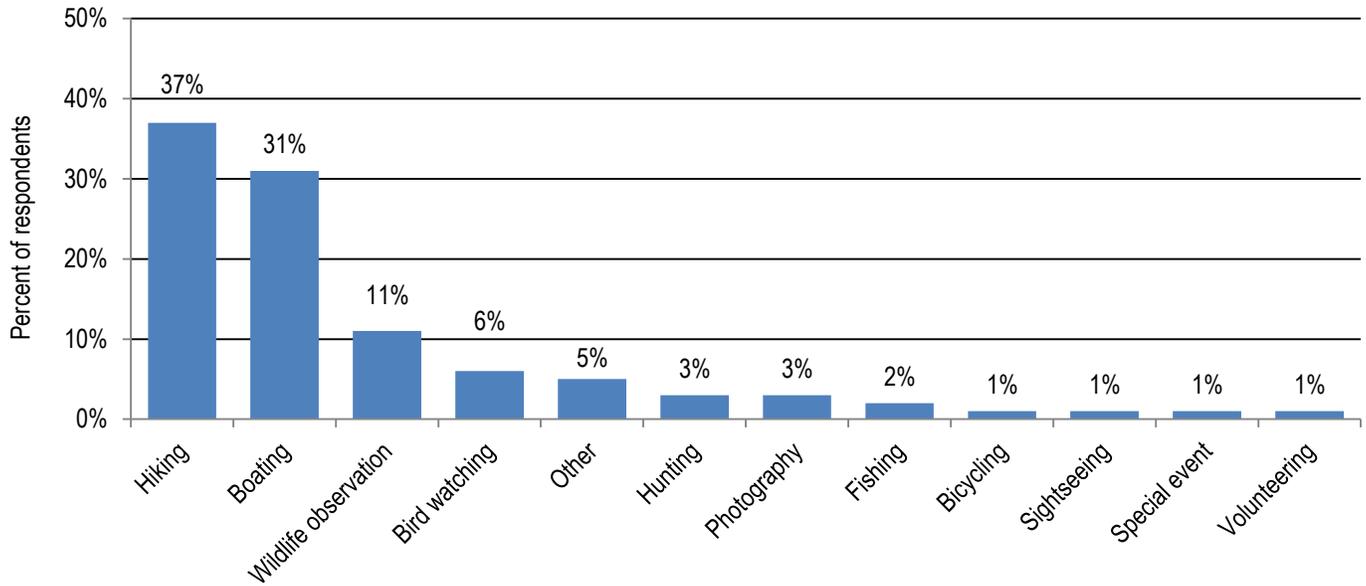
Surveyed visitors participated in a variety of refuge activities during the past 12 months (fig. 6); the top three activities reported were wildlife observation (65%), hiking (64%), and bird watching (55%). The primary reasons for their most recent visit included hiking (37%), nonmotorized boating (31%), and wildlife observation (11%; fig. 7). The visitor center was used by 36% of visitors, mostly to ask information of staff/volunteers (72%), stop to use the facilities (for example, get water, use restroom; 51%), and view the exhibits (27%; fig. 8).



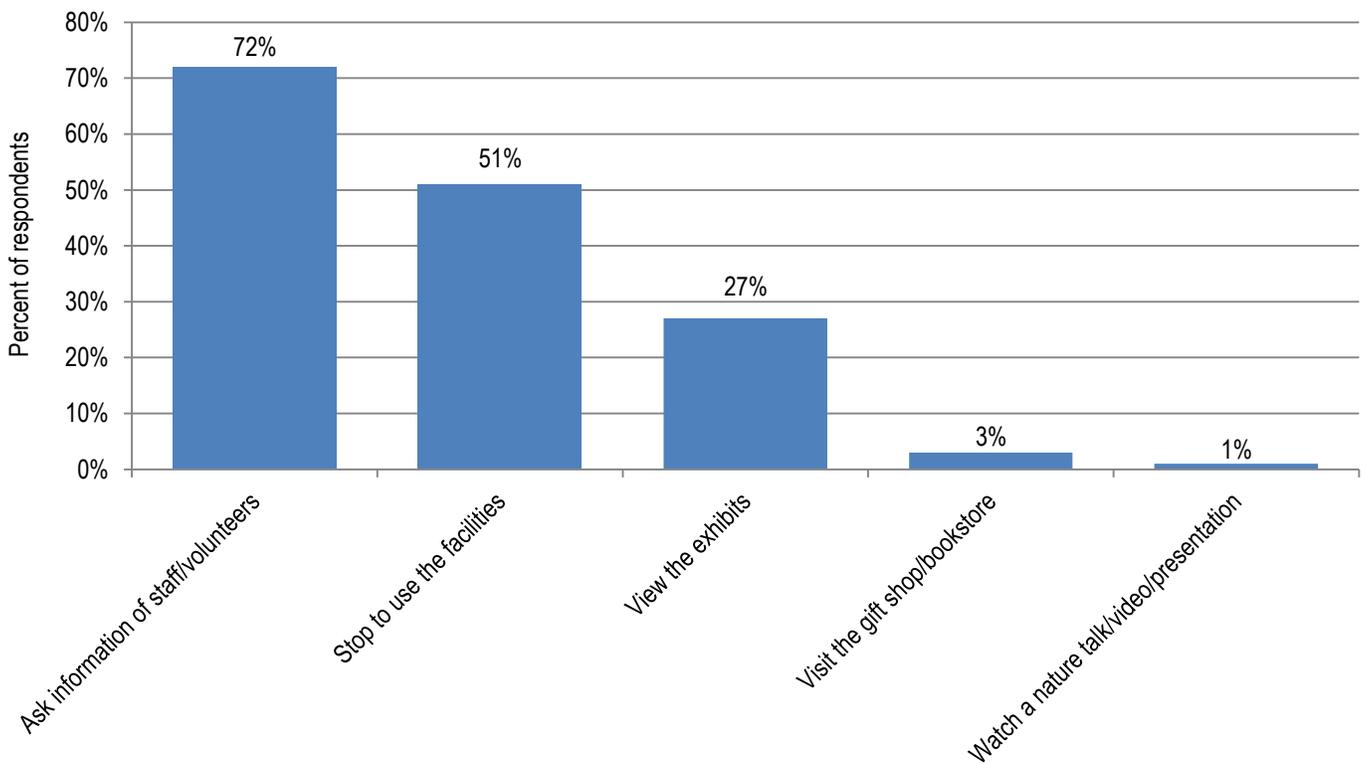
**Figure 6.** Activities in which visitors participated during the past 12 months at Wertheim NWR (n = 184). See Appendix B for a listing of “other” activities.

### Visitor Characteristics

Nearly all (99%) surveyed visitors to Wertheim 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 55% male with an average age of 53 years and 45% female with an average age of 51 years. Visitors, on average, reported they had 15 years of formal education (college or technical school). The median level of income was \$75,000–\$99,000. See Appendix A for more demographic information. In comparison, the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation found that participants in wildlife watching and hunting on public land were 55% male and 45% female with an average age of 46 years, an average level of education of 14 years (associate degree or two years of college), and a median income of \$50,000–\$74,999 (Harris, 2011, personal communication). Compared to the U.S. population, these 2006 survey participants are more likely to be male, older, and have higher education and income levels (U.S. Department of the Interior and U.S. Department of Commerce, 2007).



**Figure 7.** The primary activity in which visitors participated during *this* visit to Wertheim NWR (n = 169). See Appendix B for a listing of “other” activities.



**Figure 8.** Use of the visitor center at Wertheim NWR (for those visitors who indicated they used the visitor center, n = 67).

## 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, 92% of surveyed visitors to Wertheim NWR indicated that they live within the local area. Nonlocal visitors (8%) stayed in the local area, on average, for 3 days. Table 5 shows summary statistics for local and nonlocal visitor expenditures in the local communities and at the refuge, with expenditures reported on a per person per day basis. ***It is important to note that summary statistics based on a small sample size ( $n < 30$ ) may not provide a reliable representation of that population.*** During the two sampling periods, nonlocal visitors spent an average of \$40 per person per day and local visitors spent an average of \$38 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 Wertheim NWR expressed in dollars per person per day.

Visitors	n <sup>1</sup>	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	10	\$20	\$40	\$43	\$0	\$117
Local	91	\$8	\$38	\$78	\$0	\$430

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

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

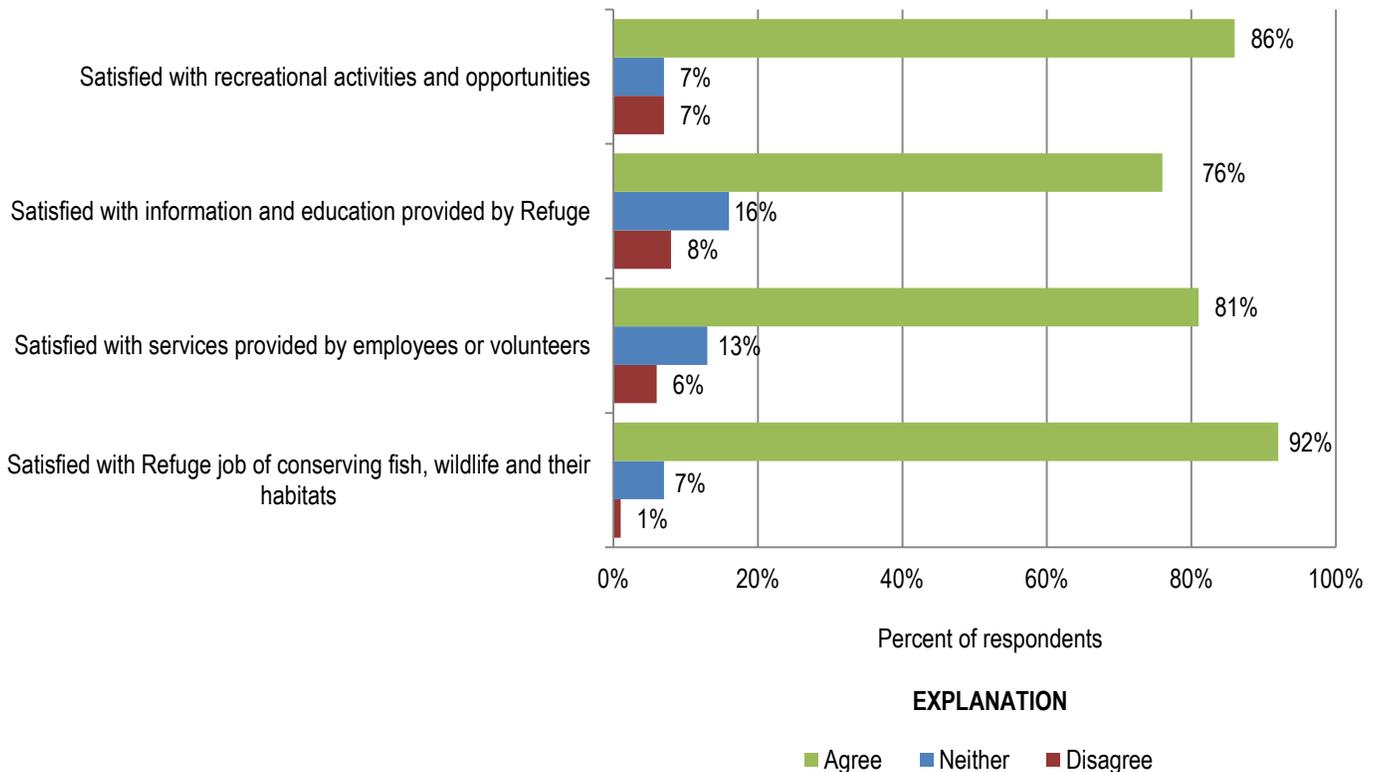
## Visitor Opinions about This Refuge

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

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

- 86% were satisfied with the recreational activities and opportunities,
- 76% were satisfied with the information and education about the refuge and its resources,
- 81% were satisfied with the services provided by employees or volunteers, and
- 92% were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

Although 9% (n = 16) of visitors indicated they paid a fee to enter Wertheim NWR, the refuge does not have an entrance fee. Two of the refuges in the complex (Morton and Target Rock NWRs) do charge a fee and a complex-wide pass is also available. It may be that these visitors were considering this when answering this question.



**Figure 9.** Overall satisfaction with Wertheim NWR during this visit (n ≥ 170).

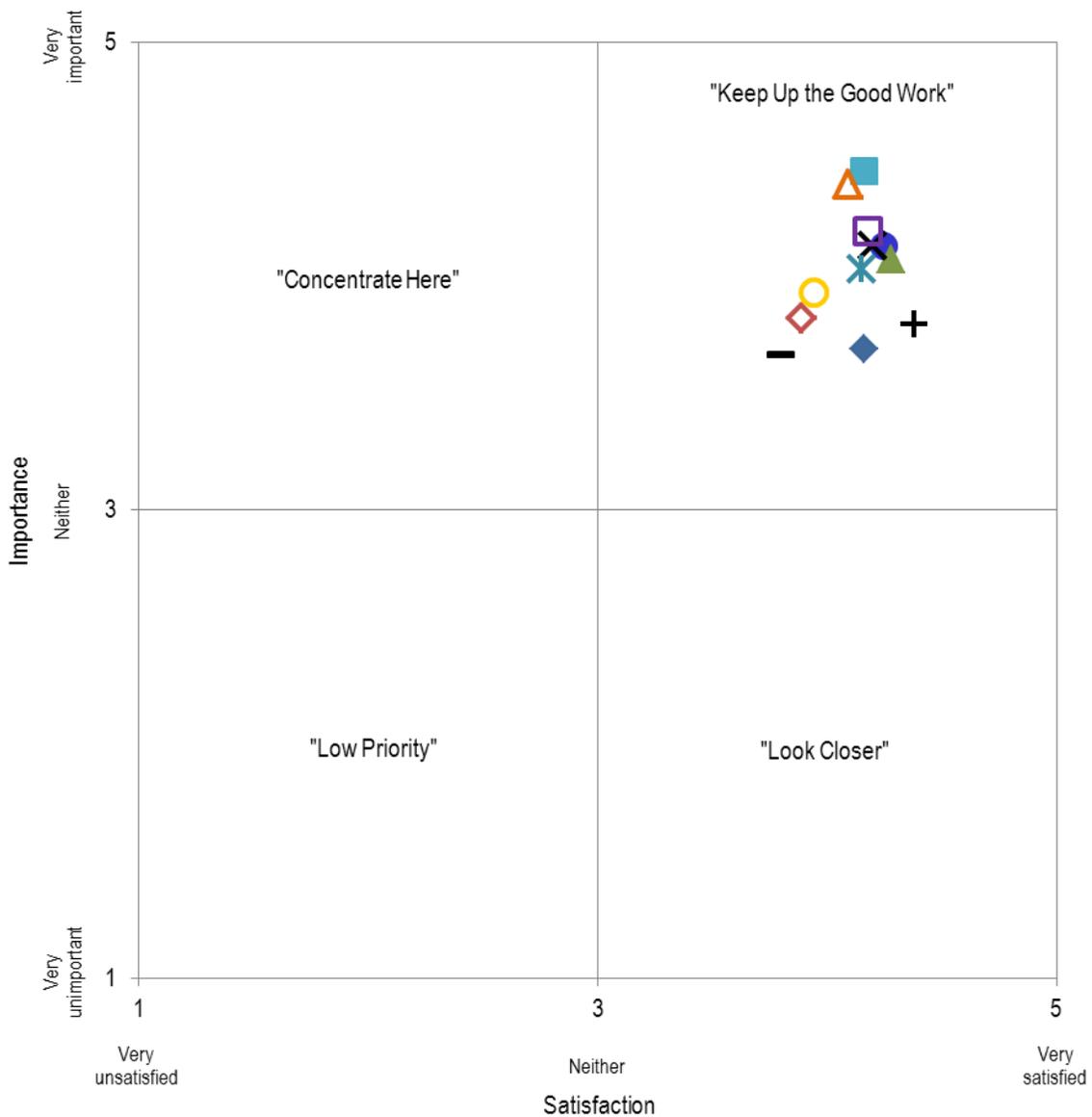
## Importance/Satisfaction Ratings

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

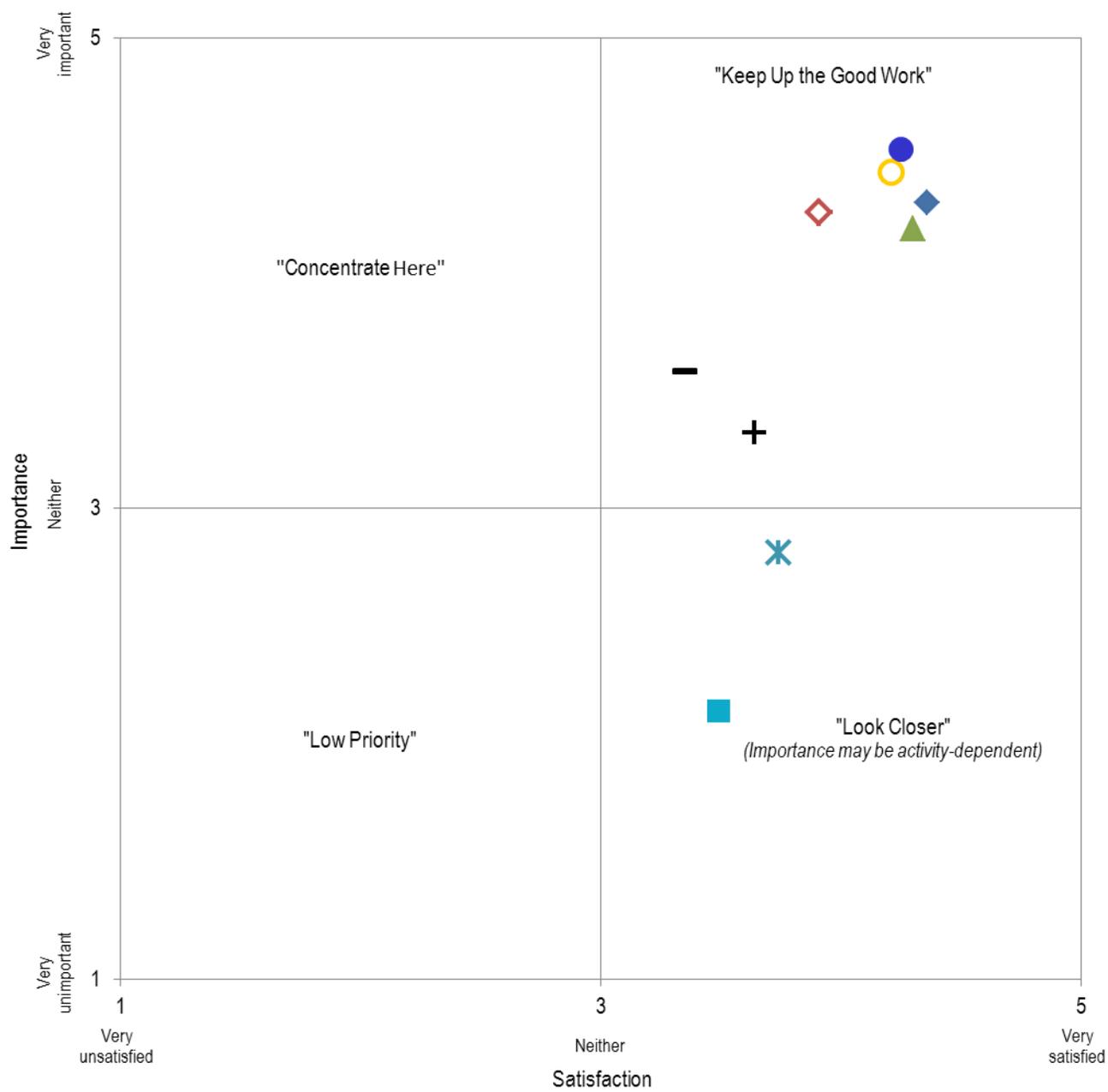
Figures 10-12 depict surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at Wertheim NWR, respectively. All refuge services and facilities fell in the "Keep Up the Good Work" quadrant (fig. 10). Nearly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



**EXPLANATION**

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

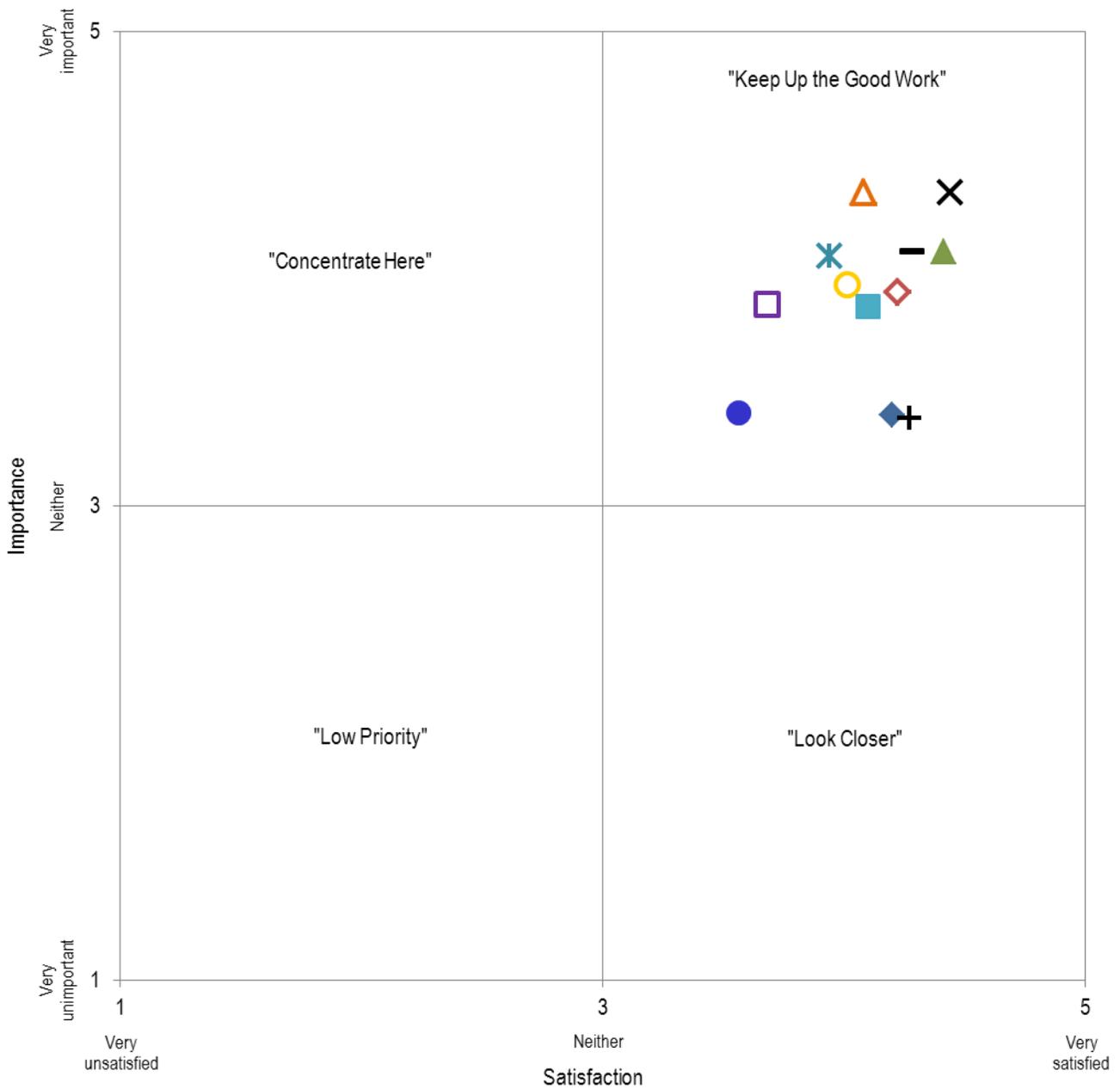
**Figure 10.** Importance-satisfaction ratings of services and facilities provided at Wertheim NWR.



**EXPLANATION**

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

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



**EXPLANATION**

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

**Figure 12.** Importance-satisfaction ratings of transportation-related features at Wertheim 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 Wertheim NWR are reported here.*

### Alternative Transportation and the National Wildlife Refuge System

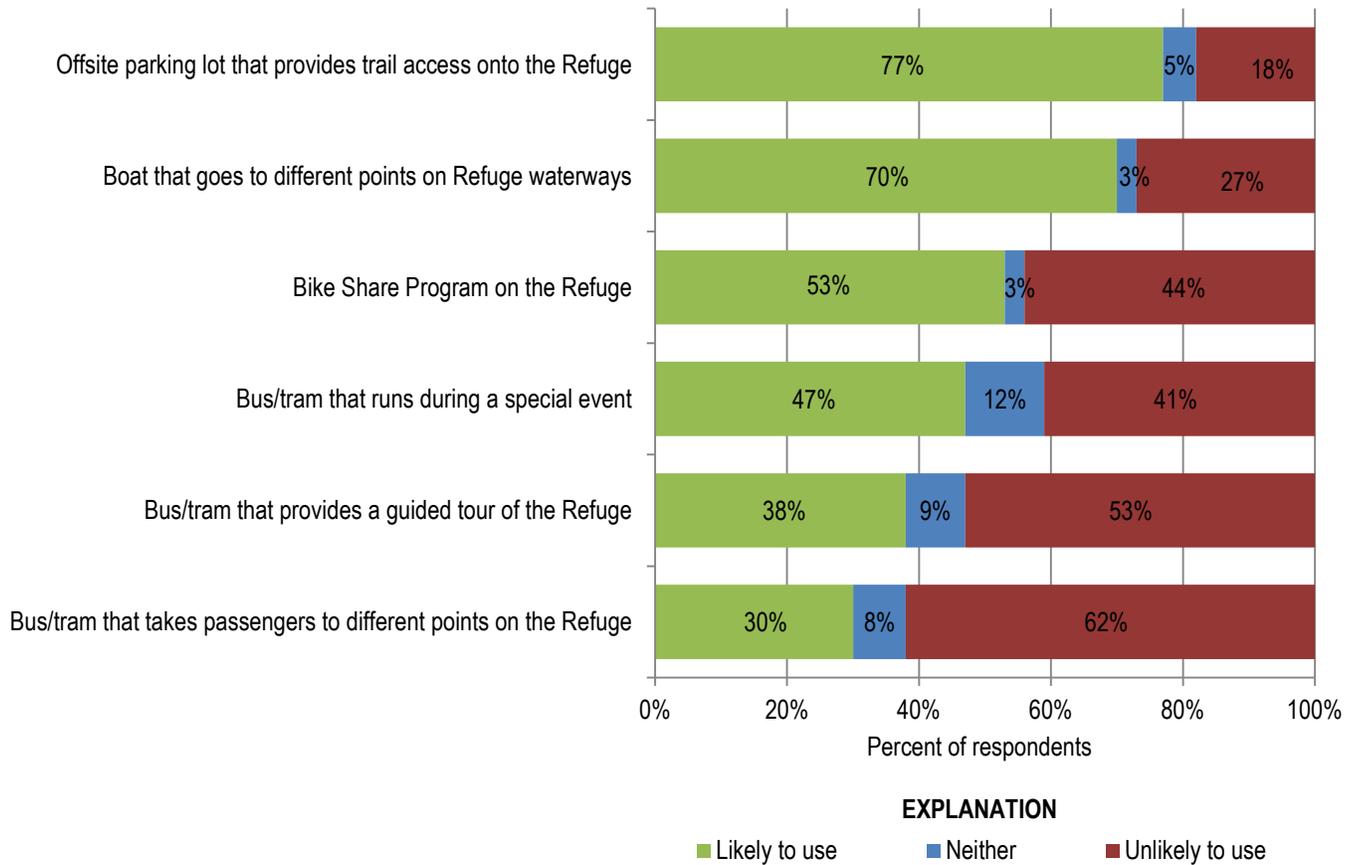
*Visitors use a variety of transportation means to access and enjoy national wildlife refuges. While many visitors arrive at the refuge in a private vehicle, alternatives such as buses, trams, watercraft, and bicycles are increasingly becoming a part of the visitor experience. Previous research has identified 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 Wertheim NWR visitors who were surveyed were likely to use the following options at national wildlife refuges in the future (fig. 13):

- an offsite parking lot that provides trail access;
- a boat that goes to different points on Refuge waterways; and
- a bike share program.

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

When asked about using alternative transportation at Wertheim NWR specifically, 37% of visitors indicated they were unsure whether it would enhance their experience; however, some visitors thought alternative transportation would enhance their experience (24%) and others thought it would not (39%).



**Figure 13.** Visitors’ likelihood of using alternative transportation options at national wildlife refuges in the future (n ≥ 174).

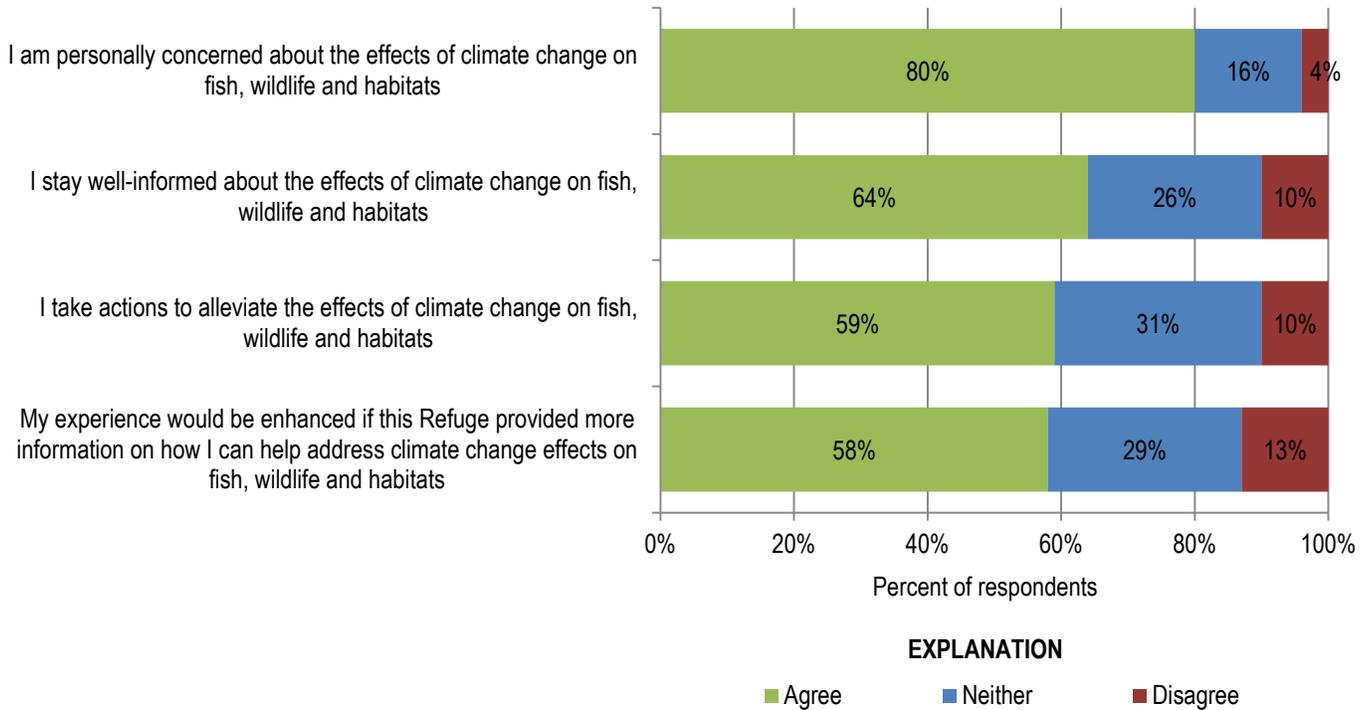
### Climate Change and the National Wildlife Refuge System

*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 Wertheim NWR agreed with the following statements (fig. 14):

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



**Figure 14.** Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 175).

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).

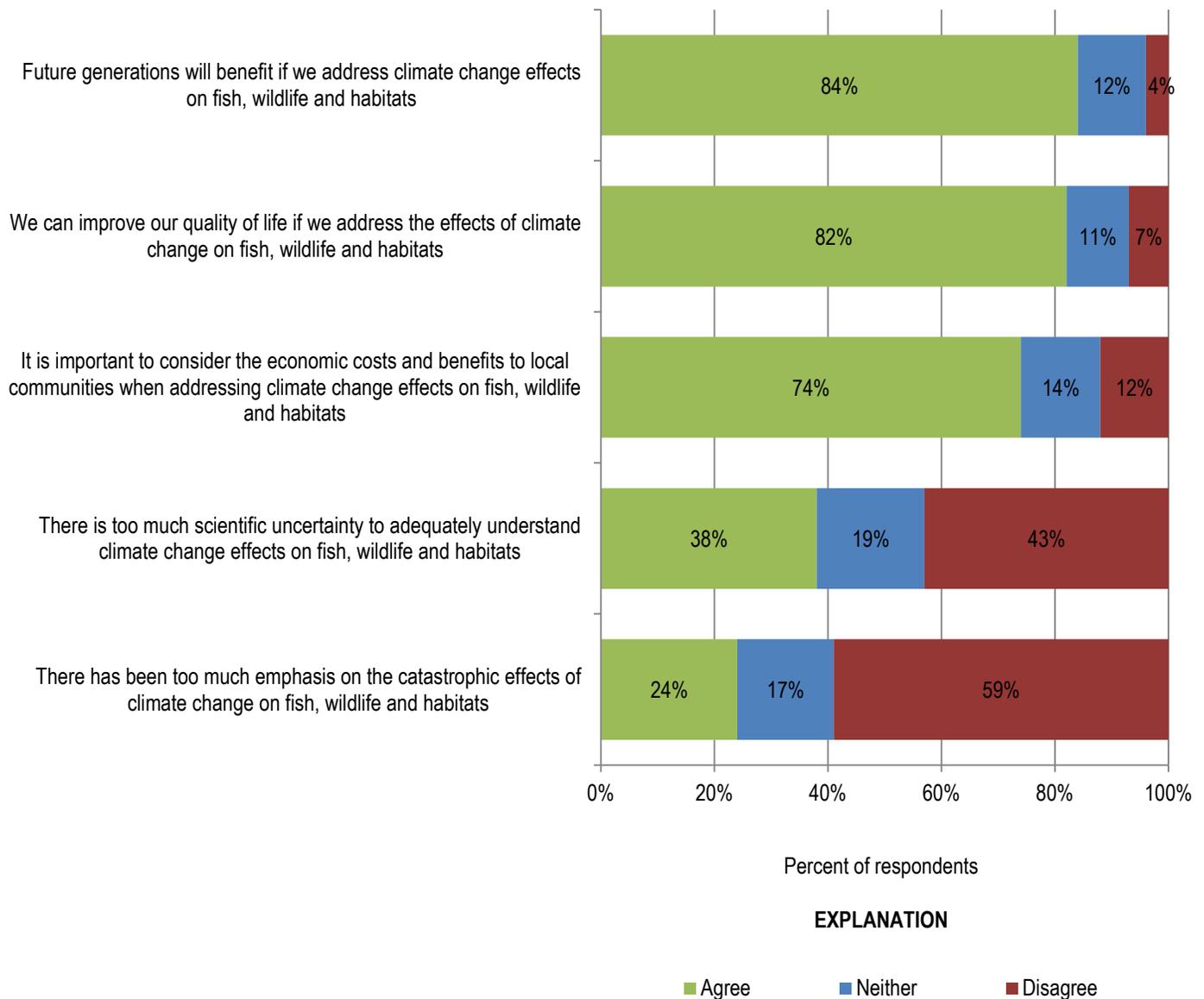
For Wertheim NWR, the majority of visitors believed the following regarding climate change related to fish, wildlife and their habitats (fig. 15):

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

The majority of visitors did *not* believe:

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

Such information suggests that certain beliefs resonate with a greater number of visitors than other beliefs do. This information is important to note because over half of visitors (58%) indicated that their experience would be enhanced if Wertheim NWR provided information about how they could help address the effects of climate change on fish, wildlife, and their habitats (fig. 14), and framing the information in a way that resonates most with visitors may result in a more engaged public who support strategies aimed at alleviating climate change pressures. Data will be analyzed further at the aggregate, or national level, to inform the development of a comprehensive communication strategy about climate change.



**Figure 15.** Visitors’ beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 176).

## Conclusion

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

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

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# National Wildlife Refuge Visitor Survey



**PLEASE READ THIS FIRST:**

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

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

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

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"/> 3% Big game hunting                 | <input type="checkbox"/> 64% Hiking  | <input type="checkbox"/> 6% Environmental education (for example, classrooms or labs, tours) |
| <input type="checkbox"/> 0% Upland/Small-game hunting        | <input type="checkbox"/> 1% Bicycling  |  |
| <input type="checkbox"/> 2% Migratory bird/Waterfowl hunting | <input type="checkbox"/> 2% Auto tour route/Driving                                | <input type="checkbox"/> 4% Special event ( <i>please specify</i> )<br><u>See Appendix B</u> |
| <input type="checkbox"/> 65% Wildlife observation            | <input type="checkbox"/> 2% Motorized boating                                      | <input type="checkbox"/> 5% Other ( <i>please specify</i> )<br><u>See Appendix B</u>         |
| <input type="checkbox"/> 55% Bird watching                   | <input type="checkbox"/> 38% Nonmotorized boating (including canoes/kayaks)        | <input type="checkbox"/> 0% Other ( <i>please specify</i> )<br><u>See Appendix B</u>         |
| <input type="checkbox"/> 7% Freshwater fishing               |  |  |
| <input type="checkbox"/> 5% Saltwater fishing                | <input type="checkbox"/> 5% Interpretation (for example, exhibits, kiosks, videos) |  |
| <input type="checkbox"/> 34% 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?

- 64% No
- 36% Yes → If yes, what did you do there? (Please mark **all that apply.**)
- |  |   |
|--|---|
| <input type="checkbox"/> 3% Visit the gift shop or bookstore     | <input type="checkbox"/> 1% Watch a nature talk/video/presentation                                |
| <input type="checkbox"/> 27% View the exhibits                   | <input type="checkbox"/> 51% Stopped to use the facilities (for example, get water, use restroom) |
| <input type="checkbox"/> 72% Ask information of staff/volunteers | <input type="checkbox"/> 16% Other ( <i>please specify</i> ) <u>See Appendix B</u>                |

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

Nonlocal	Local	Total	
36%	76%	71%	It was the primary purpose or sole destination of my trip.
14%	13%	14%	It was one of many equally important reasons or destinations for my trip.
50%	12%	15%	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** 215 number of miles

**Local** 11 number of miles

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

See Report for Results

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

50% No (*skip to question #9*)

50% Yes → What **type of group** were you with on your visit? (*Please mark **only one.***)

92% Family and/or friends

3% Organized club or school group

3% Commercial tour group

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

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

3 number 18 years and over

1 number 17 years and under

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

42% Friends or relatives

9% Refuge website

30% Signs on highway

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

8% Recreation club or organization

0% Television or radio

15% People in the local community

3% Newspaper or magazine

11% Refuge printed information (brochure, map)

7% 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.***)

58% Spring  
(March-May)

90% Summer  
(June-August)

62% Fall  
(September-November)

33% Winter  
(December-February)

11. How many times have you visited...

...this Refuge (including this visit) in the last 12 months? 14 number of visits

...other National Wildlife Refuges in the last 12 months? 4 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"/> 79% | Private vehicle without a trailer                             | <input type="checkbox"/> 0%  | Refuge shuttle bus or tram       | <input type="checkbox"/> 2%  | Bicycle                               |
| <input type="checkbox"/> 2%  | Private vehicle with a trailer<br>(for boat, camper or other) | <input type="checkbox"/> 1%  | Motorcycle                       | <input type="checkbox"/> 28% | Walk/Hike                             |
| <input type="checkbox"/> 0%  | Commercial tour bus   | <input type="checkbox"/> 1%  | ATV or off-road vehicle          | <input type="checkbox"/> 1%  | Other ( <i>please specify below</i> ) |
| <input type="checkbox"/> 0%  | Recreational vehicle (RV)                                     | <input type="checkbox"/> 19% | 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"/> 30% | Signs on highways  | <input type="checkbox"/> 4%  | Directions from Refuge website                        |
| <input type="checkbox"/> 8%  | A GPS navigation system  | <input type="checkbox"/> 4%  | Directions from people in community near this Refuge  |
| <input type="checkbox"/> 4%  | A road atlas or highway map                                      | <input type="checkbox"/> 18% | Directions from friends or family                     |
| <input type="checkbox"/> 7%  | Maps from the Internet (for example,<br>MapQuest or Google Maps) | <input type="checkbox"/> 53% | Previous knowledge/I have been to this Refuge before  |
|                              |  | <input type="checkbox"/> 3%  | Other ( <i>please specify</i> ) <u>See Appendix B</u> |

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

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 50%	<input type="checkbox"/> 12%	<input type="checkbox"/> 9%	<input type="checkbox"/> 19%	<input type="checkbox"/> 11%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 36%	<input type="checkbox"/> 8%	<input type="checkbox"/> 3%	<input type="checkbox"/> 32%	<input type="checkbox"/> 21%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 39%	<input type="checkbox"/> 14%	<input type="checkbox"/> 9%	<input type="checkbox"/> 25%	<input type="checkbox"/> 14%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 18%	<input type="checkbox"/> 8%	<input type="checkbox"/> 4%	<input type="checkbox"/> 34%	<input type="checkbox"/> 35%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 30%	<input type="checkbox"/> 11%	<input type="checkbox"/> 11%	<input type="checkbox"/> 29%	<input type="checkbox"/> 18%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 12%	<input type="checkbox"/> 6%	<input type="checkbox"/> 6%	<input type="checkbox"/> 34%	<input type="checkbox"/> 42%
...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"/> 10%	<input type="checkbox"/> 19%	<input type="checkbox"/> 67%

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

- 24% Yes       39% No       37% 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
11%	16%	16%	38%	19%	Surface conditions of roads	2%	7%	10%	30%	50%	NA
11%	19%	9%	47%	15%	Surface conditions of parking areas	4%	2%	9%	34%	52%	NA
8%	2%	9%	37%	44%	Condition of bridges	3%	4%	5%	27%	62%	NA
5%	3%	3%	31%	57%	Condition of trails and boardwalks	3%	3%	4%	28%	63%	NA
4%	5%	8%	47%	35%	Number of places for parking	6%	10%	9%	36%	40%	NA
10%	12%	23%	37%	17%	Number of places to pull over along Refuge roads	4%	16%	26%	31%	24%	NA
7%	5%	14%	37%	37%	Safety of driving conditions on Refuge roads	2%	6%	11%	31%	50%	NA
3%	5%	12%	41%	39%	Safety of Refuge road entrances/exits	2%	3%	13%	29%	53%	NA
6%	6%	11%	44%	33%	Signs on highways directing you to the Refuge	3%	8%	18%	27%	44%	NA
8%	5%	14%	40%	33%	Signs directing you around the Refuge roads	2%	8%	15%	30%	46%	NA
6%	1%	6%	30%	57%	Signs directing you on trails	3%	11%	6%	33%	46%	NA
9%	5%	19%	28%	40%	Access for people with physical disabilities or who have difficulty walking	5%	9%	29%	26%	31%	NA

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

See Appendix B

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

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

92% Yes

8% 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	Amount Spent in Local Communities & at this Refuge <i>(within 50 miles of this Refuge)</i>
Motel, bed & breakfast, cabin, etc.	
Camping	
Restaurants & bars	
Groceries	
Gasoline and oil	
Local transportation (bus, shuttle, rental car, etc.)	
Refuge entrance fee	
Recreation guide fees (hunting, fishing, wildlife viewing, etc.)	
Equipment rental (canoe, bicycle, kayak, etc.)	
Sporting good purchases	
Souvenirs/clothing and other retail	
Other <i>(please specify)</i> _____	

See Report for Results

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

  2   number of people sharing expenses

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

\$0	\$10	\$20	\$35	\$50	\$75	\$100	\$125	\$150	\$200	\$250
21%	38%	16%	4%	10%	1%	7%	0%	0%	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	0%	Too low	81%	About right	13%	Too high	6%	Far too high	91%	Did not pay a fee <i>(skip to Section 4)</i>
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6. Please indicate whether you disagree or agree with the following statement. *(Please mark **only one**.)*

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

0%	Strongly disagree	6%	Disagree	19%	Neither agree or disagree	31%	Agree	44%	Strongly agree
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#### SECTION 4. Your experience at this Refuge

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Applicable
Overall, I am satisfied with the recreational activities and opportunities provided by this Refuge.	2%	6%	6%	46%	41%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	2%	5%	16%	39%	37%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	2%	5%	12%	38%	44%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	0%	1%	7%	28%	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
13%	3%	13%	45%	26%	Availability of employees or volunteers	1%	6%	17%	29%	47%	NA
13%	3%	12%	39%	34%	Courteous and welcoming employees or volunteers	4%	2%	10%	20%	64%	NA
9%	3%	8%	33%	47%	Knowledgeable employees or volunteers	0%	6%	12%	28%	53%	NA
5%	1%	9%	45%	40%	Printed information about this Refuge and its resources (for example, maps and brochures)	1%	8%	13%	29%	50%	NA
3%	3%	14%	45%	34%	Informational kiosks/displays about this Refuge and its resources	2%	5%	14%	33%	46%	NA
3%	3%	9%	49%	36%	Signs with rules/regulations for this Refuge	3%	4%	11%	32%	51%	NA
5%	6%	15%	52%	23%	Exhibits about this Refuge and its resources	3%	9%	20%	33%	35%	NA
9%	4%	25%	38%	25%	Environmental education programs or activities	4%	5%	28%	30%	32%	NA
6%	5%	13%	44%	32%	Visitor Center	4%	10%	17%	29%	41%	NA
2%	2%	6%	29%	61%	Convenient hours and days of operation	5%	6%	7%	33%	49%	NA
3%	1%	6%	34%	56%	Well-maintained restrooms	5%	8%	7%	33%	47%	NA
1%	2%	12%	45%	40%	Wildlife observation structures (decks, blinds)	2%	6%	11%	35%	46%	NA
2%	1%	11%	36%	50%	Bird-watching opportunities	1%	5%	8%	28%	58%	NA
1%	0%	7%	38%	54%	Opportunities to observe wildlife other than birds	2%	6%	12%	28%	52%	NA
3%	2%	14%	34%	47%	Opportunities to photograph wildlife and scenery	1%	2%	16%	26%	54%	NA
58%	4%	17%	7%	14%	Hunting opportunities	8%	3%	51%	9%	29%	NA
33%	8%	20%	22%	17%	Fishing opportunities	3%	6%	37%	22%	32%	NA
1%	2%	7%	22%	68%	Trail hiking opportunities	0%	6%	9%	40%	46%	NA
6%	1%	11%	25%	57%	Water trail opportunities for canoeing or kayaking	9%	6%	18%	19%	48%	NA
13%	6%	21%	34%	27%	Bicycling opportunities	11%	9%	35%	27%	19%	NA
16%	4%	31%	31%	18%	Volunteer opportunities	2%	4%	47%	24%	24%	NA

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

See Appendix B

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

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

...are managed by the U. S. Fish and Wildlife Service?  83% Yes  17% No

...have the primary mission of conserving, managing, and restoring fish, wildlife, plants and their habitat?  89% Yes  11% No

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

87% Yes  13% No

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

See Appendix B

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

Statements about climate change	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I am personally concerned about the effects of climate change on fish, wildlife and their habitats.	2%	2%	16%	35%	45%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	3%	3%	11%	42%	40%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	23%	20%	19%	28%	11%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	2%	8%	26%	46%	18%
It is important to consider the economic costs and benefits to local communities when addressing the effects of climate change on fish, wildlife and their habitats.	3%	9%	15%	58%	16%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	5%	6%	30%	45%	14%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	34%	26%	17%	16%	8%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	2%	2%	12%	38%	46%
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.	4%	9%	29%	40%	18%

## 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?  55% Male  45% Female

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

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+
(elementary)					(junior high or middle school)			(high school)				(college or technical school)				(graduate or professional school)			
					0%			18%				50%				32%			

5. What ethnicity do you consider yourself?  2% Hispanic or Latino  98% Not Hispanic or Latino

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

- 3% American Indian or Alaska Native  1% Black or African American  99% 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"/> 1% Less than \$10,000  | <input type="checkbox"/> 12% \$35,000 - \$49,999 | <input type="checkbox"/> 19% \$100,000 - \$149,999 |
| <input type="checkbox"/> 3% \$10,000 - \$24,999 | <input type="checkbox"/> 20% \$50,000 - \$74,999 | <input type="checkbox"/> 13% \$150,000 - \$199,999 |
| <input type="checkbox"/> 6% \$25,000 - \$34,999 | <input type="checkbox"/> 19% \$75,000 - \$99,999 | <input type="checkbox"/> 7% \$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.)?

18 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 Wertheim 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
Audubon Bird Day	2
Ground breaking ceremony for the new wildlife refuge headquarters	1
International Migratory Bird Day	1
Migratory Bird Day	1
Wheelchair hiking	1
Total	6

Other Activity	Frequency
Applied for hunting	1
Came to get "America the Beautiful" pass	1
Cross-country skiing	1
Met wife for lunch	1
Mycology	2
Picnic lunch, searching for peace and quiet	1
Volunteer	1
Volunteering at the welcome cabin for visitors	1
Total	9

2 <sup>nd</sup> Other Activity	Frequency
Field trip with educators	1
Looking for wildlife	1
Nature exposure	1
Other	1
Quiet and peaceful, pretty.	1
Restful interlude in work day	1
Searching for peace and quiet	1
To exercise	1
To view the wonderful overlook areas at the refuge.	1
Volunteering	1
Wandering the paths and introducing children to nature and the life cycle, seeing the seasons change	1
Total	11

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
Brochures	1
Check in for hunting	1
Filled out application for hunting	1
Fishing	1
Got to see inside the lodge	1
Not open	1
Pick up brochures	1

Pick up maps, pamphlets	1
Talked with employee. He was very informative and a gentleman.	1
Volunteer	1
Went to inquire about the opening of the nature center.	1
Total	11

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

Other Visitor Center Activity	Frequency
A Hike Team from Team in Training, Leukemia & Lymphoma Society	1
Summer camp	1
Total	2

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

Other Website	Frequency
Kayaking website	1
Long Island hiking trails	1
Lots of kayaking sites	1
National Parks website	1
Total	4

Other Ways Heard about This Refuge	Frequency
Book about kayaking on Long Island	1
Breeding bird survey	1
Christmas bird survey	1
Events at the refuge	1
Hiking book	1
Map	1
Previous employment/volunteer	1
Professional relationship with staff as former employee of Fire Island National Seashore	1
Published guide to nature hikes on Long Island	1
School trip	1
State road map	1
The New York Gazetteer Map	1
Total	12

## Survey Section 2

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

Other Forms of Transportation	Frequency
School bus	1
Total	1

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

Other Ways Found This Refuge	Frequency
Canoe	1
Directions from kayaking book	1
Directions from Sierra Club	1
DR also told me about 10 years ago	1
Follow the water	1
Glacier Bay Sports	1
Total	6

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

Other Transportation Option Likely to Use	Frequency
Bicycle, ATV	1
Car or 4wd pickup	1
Horse or other pack animal	1
Horseback tour	1
Hydroplane boat	1
Kayak	2
Kayak and canoe rental	1
Kayak or private vehicle	1
Kayak rentals	1
Kayak shop drop off at other trail access points	1
Kayak/canoe launch	1
Make boat launch ramp available for public (kayak, canoe, rowboats only - no power boats!)	1

Paved path for rollerblading	1
Private vehicles	3
Solar powered vehicle	1
Trail biking	1
Transportation to kayak put-in/take out points	1
Wheelchair	2
Wheelchairs for handicap people	1
Wide-tire wheelchairs	1
Wooden walkways	1
Total	25

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 = 30)

A large part of the trail was recently laid with wood chips. This impeded mobility and bred many obnoxious insects along the trail. We were therefore forced to avoid that section during our last visit.

Have not visited the refuge except to use the waterways for kayaking, but the waterways are great and extremely enjoyable and relaxing.

Having limited kayak availability through a reservation system might be a good idea.

Having visited USFWS refuges across the country, it has always been my experience and preference to use a personal vehicle, which I could use as a wildlife blind and so I could park and hike.

I entered the refuge by kayak, so was not able to properly evaluate the roads, parking, or similar conditions.

I liked the turtle crossing signs on the road. Indeed, we saw a turtle crossing the road!

I ride my kayak from an easy-to-use drop in point. I walked around the park a couple of times. I do not care very much about this stuff.

I was not made aware of any of the other activities/experiences offered at this preserve.

I would like more trails.

I'm handicapped and there are no roads I can drive on, except during hunting season. During the rest of the year, I try to walk trails, but the

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wheelchair can't take trails.

If there is free use of wheelchairs, you could bring a handicapped person to certain areas of the refuge. The trails were not clearly marked in some areas and needs signs.

Loose gravel is not a great experience with a motorcycle.

More signs on the White Oak Trail are needed, recognizing that it is used in both directions. A few more guardrails are needed: in winter (snow), it is hard to tell where trail edges end and frozen ponds begin. Making the boat ramp available for public access would greatly enhance enjoyment and fulfillment of mission. Not transportation related, but longer hours would be great. We love Wertheim!

More signs.

Parked on Montauk Highway to launch kayaks. There is no access at the refuge.

Perhaps blacktop or paved roads and parking areas would reduce dust conditions as cars drive through.

So far, I have only kayaked.

The roads can be very dusty at times.

There is a need of a canoe/kayak launch area to get into the waterways of the refuge for bird watching.

There is no landing for kayaks or canoes at the Visitor Center and they should provide one.

They need kayak access from within the refuge.

They need wheelchairs.

This refuge is sub-par in reference to handicap accessibility.

This refuge just has soft-paved roads, not for cars and not sure how good they are for wheelchairs. I've had no trouble pushing a stroller.

This refuge would be enhanced if there were access to kayaks and canoes for visitors with the proper equipment.

Trails need to be clearly marked and some informational signs were missing.

We kayak to and through the refuge and therefore do not use roads. We would be interested in hiking on the trails; however, the refuge does not allow canoes or kayaks to land at the Visitor Center where the major trails are located.

We love Wertheim National Wildlife Refuge - it is a big part of our family time. There have been many maintenance and other updates over the years and we are so happy to see the land prioritized. Thank you!

We were kayaking on the Carmens River. It would have been nice to be able to tie up our boat to enjoy picnic/hiking activities at the park instead of returning to our car and driving over.

When the new center opens, it would be very nice to have a boardwalk across the river, so that it would be easy to walk a loop.

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## Survey Section 4

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

Comments on Services, Facilities, and Activities at This Refuge (n = 72)

8 AM - 4 PM are not the hours I expect at a National Wildlife Refuge.

A non-intrusive opportunity for observation of wildlife and habitat preservation.

Access to refuge is quite limited; water access would greatly enhance the visit.

Although I realize nothing can be done, the noise pollution on the South Carmens is annoying and disturbing - trains and cars, even the ice cream man, are all audible all the way down the river along with the air traffic.

An excellent facility.

At the refuge, the staff seemed much less involved with visitors than at others.

Can't wait to experience the new Visitor Center! It is much needed here and will be a great resource for visitors and the community.

Canoe or kayak access would be great!

Control the mosquitoes - sell water - have an animal rehab center - rent horses.

During the months of July and August, it is impossible to enjoy the refuge due to biting flies and mosquitoes.

Employees were extremely courteous and helpful.

Exiting the park was a little challenging. Had difficulties viewing traffic.

Good place to deer hunt. Run very well.

Have really only kayaking on the refuge.

I came in by kayak and stuck to the waterways, so I don't know about printed materials, restrooms, etc.

I feel the refuge should allow more hunting opportunities and bicycle trails.

I have a friend who is blind and I would love to include him and his guide dog on my visits.

I hiked once at Wertheim and have kayaked about 30 times. Love the Carmen River, but don't care much about the rest.

I like it! Keep it simple. Why do you need so many signs to tell people not to use the dock? Less signs = a better experience.

I like the refuge as it is with mainly just the wildlife and not a lot of people.

I only kayak.

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I visit Wertheim regularly, but rarely see any employees. Wish the trail was longer. More to do. Adding exercise equipment like they have at Belmont Lake State Park along the trails. Having security visible or available along the path.

I wish there had been more information up about deer ticks. I was covered in ticks, though I stayed on the trail and walked to the blinds and observations points. The refuge is beautiful. I wish I could have rented a kayak.

I would like to be able to land a canoe or kayak at the refuge.

I would like wildflower guides, insects, plants, etc. to be available at the refuge.

I'm afraid I don't do anything except put on bug spray and walk as far as I can manage, so I'm not sure if there is much to do here except walk the woods.

It needs better and/or more kayak access points.

It needs better facilities for kayaks and canoes.

It was a great hike in Long Island. The only downside was the large amounts of ticks, but it is the woods...

It would be nice if it stayed open until dusk, so we could walk after work.

It would be nice if it was open until sunset and open at sunrise.

It would be nice to allow bicycling on the trails.

It would be nice to have nature programs and guided hikes.

Just leave it the way it is. Don't spend tax money; it is fine.

Kayak or canoe launch sites would be nice, but are not available. Would like to be able to beach a kayak or canoe to visit the Visitor Center and info kiosk.

Longer hours, especially in the summer. Would prefer no hunting. A bike path would be nice, but not on the main White Oak Trail.

Must not close ever.

My first time at the refuge. Did not know it was a refuge. Saw a volunteer or ranger, and was very surprised and satisfied with meeting him. Will go back to tour the entire refuge with grandchildren.

My husband has a condition in which he had his colon removed. He has to use the bathroom often. He goes in many places, including gas station bathrooms and porta-potties. Many of those places are disgusting, but he never complains. After he left the bathroom at the refuge, he was disgusted. And hearing this, from a man who knows his bathrooms, was shocking. Other than the bathroom situation, everything was great at the refuge!

Needed better nesting areas and explanations of what to look for at marked locations.

No one knows fungi. I asked about borer holes in dead pines and got no answers. The place is very clean, and trails are good. Too many phragmites.

Not allowed to bike or jog currently. I would like to be able to do so. Staff are never or rarely observed on premises.

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Not enough hiking trails.

Offer a kayak/canoe boat launch.

Only went for a 2 mile walk. Cannot answer many of the questions, since I don't live here.

Phragmites block views of water area.

Please add canoeing or kayaking.

Restrooms leave room for improvement.

Submitted a volunteer application to Long Island National Wildlife Refuge Complex in October of 2009 and never given the courtesy of a response. [inserted address] But I am looking forward to the new Visitor Center.

The big game hunting opportunities stink.

The Carmens River goes through the refuge, yet one has to go off-site to access the river. It would be much more convenient if, once at the refuge, one could also put-in without having to leave.

The employee that greeted us made us very welcome, as he did with others throughout the visit. It was a pleasure.

The only activity that I know about at this refuge is hiking and bird watching. Didn't see any other available activities.

The refuge I frequent is Wertheim. I would like to see more hiking trails and a kayak launch area for the Carmens River.

The staff is courteous and helpful and the refuge is well maintained.

There is no landing or docking of small watercraft allowed at the refuge, but for many kayakers/paddlers that would be a great destination rest spot, as well as allowing people to use the restroom facilities and drinking water. It seems unfair that we cannot access this area by boat, especially since there is a dock and shore area.

There should be many more hiking trails with this size park.

There was one turn which created an out and back route that was somewhat confusing.

They take a \$10 fee for hunting, yet very few people get picked. Other parks don't charge for permits and I always get into hunt. Wertheim National Wildlife Refuge has an unfair system.

This place has a lot of opportunities. A Visitor Center would help. Maybe more special events at the refuge would also help.

This refuge is 2 minutes from my house. It would be great if there was canoe access there. There is a dock, but the public cannot use it. Also, there should be children's programs. Not sure if there is. I never get information about the park, no newsletters - an email program would be great.

Very clean and very well maintained.

Was upset I could not dock my canoe at the Visitor Center dock!

We did not participate in activities provided by the refuge other than to kayak on the river and observe wildlife and scenery. When we did encounter refuge staff, they were very courteous and pleasant to talk to.

We kayaked through and didn't use the facilities. However, the refuge does not allow boats to tie up and visit the Visitor Center, which it should.

We visited the facility and were met by friendly workers. Had a chance to ask many questions about volunteering for teens.

Well, I think it is very inconsiderate of you to be building the Visitor Center on a residential street rather than on the main road or within the park. Your action shows how little you care about the public.

Wertheim is a jewel that has so far missed its opportunity of environmental education by limited accessibility and insufficient programming.

While kayaking through the refuge, I would like a place to land, picnic, and use bathroom facilities.

Would like launching site on grounds.

Would like to be able to ride bikes through the trails.

Would like to have the park open until 5pm instead of 4pm. Would also like to see more park rangers on the trail, as for a woman walking alone, it can be somewhat anxious producing. I walk alone at lunch break and have never met a ranger on the trails.

## 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 = 117)

A quiet, beautiful, natural and undeveloped area in which one can observe and enjoy special pleasures.

A unique environment in this area. Don't ruin it with over development!

A way to experience the splendor of nature in a clean, family friendly environment.

A wide variety of activities for a variety of people.

A wide variety of wildlife observation opportunities.

A wonderful opportunity to enjoy the local wildlife and the exercise of a 3-mile hike in good clean air with beauty all around.

Always something new and wonderful to see and experience. Nature is the art of God.

Appreciate the natural environment with very little man made additions. It's peaceful and quietly enjoyable.

Birds, wildlife, peaceful walks, and no big crowds with very little development.

By having to walk on marked trail, one is able to feel as if visiting nature, not a theme park. Also, the Carmens River feels wild and undeveloped.

Chance for a quiet observation of nature.

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Clean, accessible, and wildlife.

Clean, very natural.

Don't change! A place for future generations to enjoy what's left of nature and where all of us can enjoy the view. Not just the owners. A resting place for stressed species to mate, recreate, and habitat. We get to watch, but not touch; no engines, loudspeakers or gunfire.

Fairly pristine environment for Long Island NY.

Good information. Preserves land and wildlife that would otherwise not be preserved.

Great experience to observe the natural wonders of our planet in relative peace and quiet. Thank you.

I am surrounded by nature, beautiful trees, ponds and rivers! The refuge is a delightful conservatory.

I appreciate the conservation aspect. Refuges show respect for wildlife, as do I.

I can go rafting all the way to the bay. On the way, I like looking at all the wildlife and plants out there. It's very relaxing.

I enjoy hunting and fishing. I like this refuge for that.

I have 3 kids; a 15 year old and two 9 year olds. We enjoy the place for walking the trails and enjoying the wildlife, especially the South Haryton Refuges. Great locations.

I like the fact that local wild areas are conserved.

I see wildlife every time I visit. The trails are clean and well maintained.

I've heard they are going to do a deer thinning hunt; otherwise, it's a way to just have a natural setting; quiet, peaceful, no camper garbage, and provides a place to drop the turtles and find plants I don't see elsewhere.

Increased emphasis on biodiversity and the bigger picture approach to resource management as opposed to managing and manipulating for a single species as many of the refuges were originally set aside for.

It appears to have mostly native trees and plants. The waterway is beautiful and the woods are relaxing to walk in.

It is a beautiful sanctuary from the hustle and bustle of Rhode Island life.

It is a footprint of the past (untouched) making it an oasis for everyone to enjoy.

It is a hidden gem. A quiet, beautiful place to hike and enjoy wildlife so close to my home.

It is a nice getaway from the over urbanization of the area.

It is great that they preserve habitats for local and diverse species of plants and animals. It gives people a chance to connect with nature, a true tonic for the soul.

It is on Carmens River, has good hiking, is a tranquil area, and has an excellent Visitor Center with friendly, informative staff.

It is scenic.

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It is secluded from the hustle and bustle of the outside.

It was a beautiful, peaceful oasis from outside life.

It's a unique experience because there are no runners or bikers on the trails.

It's close to where I live and I have a great time hunting and kayaking. Lots of birds.

It's more private, and not as crowded.

It's one of the few places where other creature's habitat is a priority, which makes it much more peaceful and beautiful.

It's unique in that it is nature's element.

Its pristine environment.

Just being outside and the walking and hiking.

Kids who spend lots of time in tune with nature are less prone to become violent and a drag to this country.

Lack of commercial interests and holdings; pristine settings.

Less built up.

Location and the variety of birds and animals that inhabit the refuge.

Location.

Love the Carmen.

More availability of wild spaces for the public to use.

More nature, less people.

Mostly pristine and keeps people on trails... very important. Compost toilets. Most have a gift/book shop.

Much better protection from human intrusion. Vast resources!

Nature trails and hiking.

Nature.

Nice kayaking area.

NWRs try to save the area and keep it in its natural state as best as they can. A great example is Assateague NWR in MD.

Observation decks and blinds. Not busy.

Peace and quiet and real nature.

Peaceful place to "get away from it all"... My kids loved it. Can't wait to visit again! Thanks!

Peaceful, quiet, and great kayaking scenery.

Place to deer hunt.

Quiet, laid back environment. Underdeveloped. You are part of wilderness.

Refuges allow people to see wildlife in their element in a well maintained environment and additionally give people the opportunity to spend time in a natural surrounding without cars and everyday chaos. On a personal note, it allows me to clear my head of all the clutter associated with work and the everyday hustle and bustle.

Refuges are just that - "refuges" from the hustle and bustle of the community. Inside is quiet. The refuge, to my family, is a place for quiet contemplation, walking along and quietly observing. This refuge is a very special place; it's the second "creek" on the "bay" side. What makes this so special are the "singing" frogs. Actually, we've never seen anything like it. The frogs actually swim over to see who you are. Quite amazing, and the children love it. Unfortunately, this trip, the creek was very low and the marsh grasses are taking over. Not seeing frogs this time was a great disappointment. I also was a little concerned, as no frogs is an environmental hazard. I hope the creek fills in with water. The first body of water you come to is fine, so we couldn't understand it. We have seen huge black snakes, red fox, deer of course, and great osprey viewing. Refuges are just what they mean - unfortunately, they have decided to have a "deer kill" to thin out the population. I'm not for this at all. It's just too bad they couldn't be given birth control. Killing is just not right for these beautiful creatures!

Refuges are primarily for the natural habitats of plants and animals, which is unlike most other places. It is refreshing to be in a place that has not been designed for humans and where humans are only visitors.

Refuges help to maintain specific areas that are specific to certain wildlife and help to maintain them for the future. I find it very relaxing when I visit the water in my kayak and see the animals in their habitat. It's very important that their lands stay maintained for my children and their children and so on to enjoy. [signed]

Refuges let people observe wildlife in their natural habitats.

Refuges provide a learning experience, allowing the participant to appreciate his/her surroundings and the importance of conservation.

Relaxing. Great experiences. Wonderful to view natural habitats. I would recommend it to others and I'm going to return more often, especially during the different seasons.

The beauty of the Carmens River that runs through it.

The experience with being in a more truly natural setting that is preserved for wildlife and the visitor, making the connection more real. The quietness, to be able to listen to the atmosphere you are in, accentuates the connection as well.

The focus is more on wildlife and less towards traditional recreational activities such as picnicking, playgrounds and camping (for most). However, it would be nice to have more environmental education/interpretative experiences such as those at Assateague and Blackwater National Wildlife Refuges. Finally, visits to the main refuge would increase, if nonmotorized boat landing was allowed.

The land and surroundings are preserved.

The mission makes it unique, which most people visiting don't understand.

The more projects to save this planet and wildlife the better.

The natural state of the river. Clean. The wildlife.

The naturalness, the watery scenery and the fact that it even exists is unique to a place where development is constantly encroaching.

The overall beauty. I am aware of the freshwater connection to the saltwater. The entire area is kept in pristine condition.

The preservation of land and wildlife along with the programs and fairs offered.

The refuge is clean and well maintained. It has more wildlife preservation (nesting areas), which gives us the opportunity to observe wildlife in their natural setting.

The refuge is unique because it offers a lot of wildlife in one area. I walk to look at wildlife. It also has many birds, wild turkey, and deer.

The refuge gives you the opportunity to enjoy wildlife in their natural settings.

The reservation of land to preserve nature for all to enjoy.

The setup of the blinds.

The special way people treat the visit to the refuge and the care put into keeping the refuge wild.

The trails cover both woodland and water views. The river attracts many birds all year round.

The usually unspoiled habitats.

The variety of educational programs for adults and children.

The various forms of plant and animal life and their ecosystems are the focus, not human recreation. The challenge is to find a balance between access for people (so we can appreciate nature and learn to value its protection) and protecting wildlife.

The wildlife preservation.

There is a strong desire to maintain natural habitats.

These are areas that have the interest of wildlife and flora put before the interests of people.

They allow people to relax and get away from traffic and provide exercise opportunities - for example, hiking and walking.

They are mostly unspoiled nature, which you don't get a lot of in the metro NY area.

They are protected and in their natural state. Enjoyable.

They are quiet and peaceful.

They are quieter than other public facilities.

They are usually safe places, well maintained, and with people to answer questions.

They help preserve the wildlife and keep out developments.

They preserve the chance for people living in urban, suburban and rural agricultural habitats to see wild plants and animals. Knowledge of natural history is our heritage.

To get out and kayak in a wonderful little stream was fun. We saw several deer/fish on the way.

To me, they seem to offer more natural habitat and less parkland and other manicured areas. I really felt like I was getting away from civilization and into nature.

Tranquility in the wild is an opportunity for our wildlife to restore itself in its natural state. However, humans need to be educated on how to interact with wildlife in order to respect and preserve our natural resources for future generations.

Variety of habitats - salt marshes, fresh/saltwater, oak forest, and a variety of wildlife.

Very natural; not overdeveloped, but still safe with basic needs met.

Very secure and undisturbed look at nature.

We love the lack of motorized boats! The land is beautiful, the wildlife is abundant. It feels like a safe haven for the birds, fish, and my family.

Well cleans and peaceful.

Well maintained and secure.

Well taken care of.

Well-maintained.

Wertheim is very scenic with the Carmen River flowing through the NWR. I have always enjoyed natural areas and parks.

While one is enjoying the experience, one also feels part of the stewardship of the wildlife, plants, etc. This is something one does not experience in a "park" per se.

Wonderful bird observation opportunities. Beautiful walking trail, and very clean.

You get to view animals in their wild habitats. The trick is connecting all the modern technology without damaging the habitat at the refuge. I think you can achieve this balance at the refuge.

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Additional Comments (n = 33)

Access to the refuge through a non-motorized boat landing would be a major plus! We are very experienced kayakers. However, many of the people who put in at the old canoe rental place are families and otherwise inexperienced paddlers who are ready to turn around soon after they reach the refuge office landing. If this landing was accessible to these boaters, I am sure many of them would be very happy to stop, rest and look around. They would visit a refuge that they probably had no idea even existed. What a great opportunity to interpret Long Island's environment and promote National Wildlife Refuges.

Although I thoroughly enjoy the Wertheim National Wildlife Refuge, I would like to visit other parks, but I do not know where they are located (I am not computer savvy). Thank you.

Create a water trail for kayaks/canoes and non-motorized boats.

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Everything is excellent, except for the hunting situation. If a person doesn't get picked for hunting, they should refund the application fee. They don't tell you in advance that very few people ever get picked.

I consider the refuge a gem. Although I am sure you would be happy with increased popularity, I rather enjoy the quiet and solitude here, as opposed to so many overcrowded "parks" and recreation areas.

I felt they could use a Visitor Center. If they had one, I did not see it.

I love the Wertheim National Wildlife Refuge!

I love this place. It is very special and unique. It recharges me.

I loved it. Thanks!

I think it is very important to provide educational opportunities to help people understand how their actions impact the environment and how important the environment is to our continued life on this planet. Education should be a must for schools.

I wish the refuge would stay open past 4 pm. Maybe 6 pm, so people could enjoy it after work.

I would appreciate more litter control and garbage receptacles. Encourage visitors, volunteers, and workers to correctly dispose of trash.

I'm afraid I'm not well off enough to go camping or visit many places. I lived locally all my life. I love walking through parts of the RCA property many times. I grew up in Long Island and I've walked the beaches, the north and south shores of Long Island a lot. The only National Park I visited once was Arcadia in Maine; otherwise, I haven't much experience with parks and refuge areas. I go to the Wertheim because it is a local respite to survival, like church. They put up a nice info kiosk last year and are building a huge complex now. I would think there will be more advertisement then, and more activities (for children?) like at the Kaler Pond Audubon Shed. Stuffed animals and kid activities?

I'm sure it will be even nicer when the new center opens.

It was a great discovery that I had not known about, although I have visited other wildlife refuges on Long Island and lived in the area for more than 30 years!

It's great to kayak down the river and see the fish spawning and the various birds. Mostly, the solitude makes you feel like you're in the wilderness. We take the river to the Great South Bay and kayak across to Fire Island. It's a great day and it's free, if you have your own kayaks. Thanks!

Keep up the good work preserving habitats for fish and wildlife around the country. This is the kind of thing I am happy to pay taxes for. :)

More clearly marked trails please.

My last comment would be that perhaps they would consider extending the hours of visitation. Right now the refuge closes at four. We would like to see the park open until sundown for each season.

My wife and I are lifelong NYC residents. Our second home was in part selected on the proximity to Wertheim NWR. We walk there most weekends, have sighted many kinds of wildlife, and love the peace and quiet away from cars, RVs, and runners. The river, ponds, and woods refresh and inspire us year round. Users are friendly and respectful of each other and the refuge, almost without exceptions. We are grateful for the worth of all who labor to make it what it is.

Please keep up the good work. I really appreciate having your facility to hike in.

Put in snack bar, horseback riding, mosquito control, and night tours.

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Thank you for caring about what we think.

The refuge is a hidden gem. We live nearby and drop by every few months on "spur of the moment" excursions.

The refuge opens too late and closes too early!

This is a great spot, although I wish more of it were open to the public.

This was my first trip to this preserve. There didn't seem to be much available and there was nothing in an obvious place to attract you and to let you know of the other activities and programs. My five children (3-12) and I walked on one of the paths and came home with well over 100 deer ticks on our ankles, which gave them poison ivy. We didn't see any birds and really didn't get much out of the experience. We didn't go off the path, so my concern is that other people may also leave with this bad experience and potential health problems as a result.

We (my husband and I) enter the river on 25A, where the old canoe shop was. We don't go to the entrance/Visitor Center, but we go often, stay long, and enjoy every moment. We kayak and fish and bird watch and watch the seasons change.

We also enjoy our kayaking trips to this refuge. It is a very peaceful and rewarding outing.

We boat and kayak locally, and big game fish (catch and release) and freshwater fish. We fish in the bay and keep only keepers and enjoy our community and the others we visit along the way.

We need to protect our land, parks, wildlife and all nature that is connected to it. If we don't, our future will look bleak for our children and grandchildren. If everyone makes the effort to clean up after ourselves and set an example to others, we can preserve the precious commodities we have. It was a nice visit to your park.

Wertheim is a small preserve in a populated area. It should be kept natural. No further development. That is what a preserve is for, no more buildings!

Wertheim National Wildlife Refuge needs some bug control in July, August, and September, as thousands of mosquitoes attack visitors on the trails and they keep people from using the facilities. This is not a problem at the Morton Preserve or the Jamaica Bay NWR, nor is it a problem at the other state and county preserves. I can't understand this, as they all have a similar mix of waterways, swamps, and woodland, but only Wertheim has the serious problem that keeps people away.