



National Wildlife Refuge Visitor Survey 2012: Individual Refuge Results for Assabet River National Wildlife Refuge

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

Refuges are wild living spaces we can immerse ourselves in. The emphasis is on the natural, living world; not "scenery", not "wonders of geology", not tour buses, not checking off "been there, done that." They are refuges for people as well as for wildlife. Deep in our DNA, we are wildlife too. We need these places.

— *Survey comment from a visitor to Assabet River National Wildlife Refuge*



Assabet River 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 specifically dedicated to the conservation of fish, wildlife, and their habitats. There are 560 national wildlife refuges (refuges) and 38 wetland management districts nationwide, including possessions and territories in the Pacific and Caribbean, encompassing more than 150 million acres (U.S. Fish and Wildlife Service, 2013). As stated in the National Wildlife Refuge Improvement Act of 1997, the mission of the Refuge System is “to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” Part of achieving this mission is the goal “to foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants, and their habitats” and the goal “to provide and enhance opportunities to participate in compatible wildlife-dependent recreation” (U.S. Fish and Wildlife Service, 2006, p. 2). The Refuge System attracts nearly 45 million visitors annually, including 34.8 million people who observe and photograph wildlife, 9.6 million who hunt and fish, and nearly 675,000 teachers and students who use refuges as “outdoor classrooms” (U.S. Fish and Wildlife Service, 2012). Understanding visitor perceptions of refuges and characterizing their experiences on refuges are critical elements of managing these lands and meeting the goals of the Refuge System.

The Service contracted with the U.S. Geological Survey (USGS) to conduct a national survey of visitors regarding their experiences on refuges. The purpose of the survey was to better understand visitor experiences and trip characteristics, to gauge visitors’ levels of satisfaction with existing recreational opportunities, and to garner feedback to inform the design of programs and facilities. The survey results will inform performance, planning, budget, and communications goals. Results will also inform Comprehensive Conservation Plans (CCPs), visitor services, and transportation planning processes.

Organization of Results

These results are specific to visitors who were contacted at Assabet River National Wildlife Refuge (NWR) (this refuge) during the specified sampling periods and are part of USGS Data Series 754. All refuges participating in the 2012 survey effort will receive individual refuge results specific to the visitors to that refuge. Each set of results is organized by the following categories:

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

Methods

Selecting Participating Refuges

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

Developing the Survey Instrument

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

Contacting Visitors

Refuge staff identified two separate 15-day sampling periods, and one or more locations at which to sample, that best reflected the diversity of use and specific visitation patterns of each participating refuge. Sampling periods and locations were identified by refuge staff and submitted to the USGS via an internal website that included a customized mapping tool. A standardized sampling schedule was created for all refuges that included eight randomly selected sampling shifts during each of the two sampling periods. Sampling shifts were 3–5 hour (hr) time bands, stratified across AM and PM as well as weekend and weekdays. In coordination with refuge staff, any necessary customizations were made to the standardized schedule to accommodate the identified sampling locations and to address specific spatial and temporal patterns of visitation.

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

Table 1. Refuges participating in the 2012 national wildlife refuge visitor survey.

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

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

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

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

Each mailing included instructions for completing the survey online, so visitors had an opportunity to complete an online survey with each mailing. Those visitors indicating a preference for Spanish were sent Spanish versions of all correspondence (including the survey). Finally, a short survey of six questions was sent to nonrespondents four weeks after the second survey packet to determine any differences between respondents and nonrespondents at the aggregate level. Online survey data were exported and paper survey data were entered into Microsoft Excel using a standardized survey codebook and data entry procedure. All survey data were analyzed using *Statistical Package for the Social Sciences* (SPSS, v.20) software¹.

Interpreting the Results

The extent to which these results accurately represent the total population of visitors to this refuge is dependent on the number of visitors who completed the survey (sample size) and the ability of the variation resulting from that sample to reflect the beliefs and interests of different visitor user groups (Scheaffer and others, 1996). The composition of the sample is dependent on the ability of the standardized sampling

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

protocol for this study to account for the spatial and temporal patterns of visitor use unique to each refuge. Spatially, the geographical layout and public-use infrastructure varies widely across refuges. Some refuges can be accessed only through a single entrance, while others have multiple unmonitored access points across large expanses of land and water. As a result, the degree to which sampling locations effectively captured spatial patterns of visitor use will vary from refuge to refuge. Temporally, the two 15-day sampling periods may not have effectively captured all of the predominant visitor uses/activities on some refuges during the course of a year, which may result in certain survey measures such as visitors' self-reported "primary activity during their visit" reflecting a seasonality bias. Results contained within this report may not apply to visitors during all times of the year or to visitors who did not visit the survey locations.

In this report, visitors who responded to the survey are referred to simply as "visitors." However, when interpreting the results for Assabet River NWR, any potential spatial and temporal sampling limitation specific to this refuge needs to be considered when generalizing the results to the total population of visitors. For example, a refuge that sampled during a special event (for example, birding festival) held during the spring may have contacted a higher percentage of visitors who traveled greater than 50 miles (mi) to get to the refuge than the actual number of these people who would have visited throughout the calendar year (that is, oversampling of nonlocals). Another refuge may not have enough nonlocal visitors in the sample to adequately represent the beliefs and opinions of that group type. If the sample for a specific group type (for example, nonlocals, hunters) is too low ($n < 30$), a warning is included in the text. Finally, the term "this visit" is used to reference the visit during which people were contacted to participate in the survey.

Refuge Description for Assabet River National Wildlife Refuge

Assabet River NWR, located approximately 20 miles west of Boston, Massachusetts, is comprised of several land parcels totaling over 2,300 acres. The refuge is one of eight refuges that comprise the Eastern Massachusetts NWR Complex. Habitat in the refuge includes a mix of pine/hardwood forest, grasslands, shrublands, and wetlands including swamp, bogs, and vernal pools. The land has an extensive history, once home to Native Americans, colonists, and the site of Fort Devens Sudbury Training Annex before becoming a refuge in 2000. This relatively recent land transfer was made under the Defense Base Closure and Realignment Act of 1990, particularly because of the area's potential in providing habitat for migratory birds. Today, the presence of a wide range of bird, mammal, reptile, amphibian, fish, and invertebrate species have resulted in the refuge being identified as a high biodiversity focus area in the Sudbury-Assabet-Concord Watershed Biodiversity Protection and Stewardship Plan.

A little over 41,000 visitors spent time at the refuge in 2010 engaging in a variety of opportunities and activities including wildlife observation, bird watching, photography, hiking on 15 miles of trails, bicycling, hunting, and fishing (2010 Refuge Annual Performance Plan measures; Rob Miller, U.S. Fish and Wildlife Service, 2011, written commun.). A Visitor Center opened in 2010, offering a range of educational exhibits, displays, and activities that communicate the ecological and historical significance of the area, as well as a nature store run by the Friends of Assabet River NWR. Figure 1 displays a map of the refuge.

Please visit <http://www.fws.gov/northeast/assabriver/assabriver/index.html> for more information.

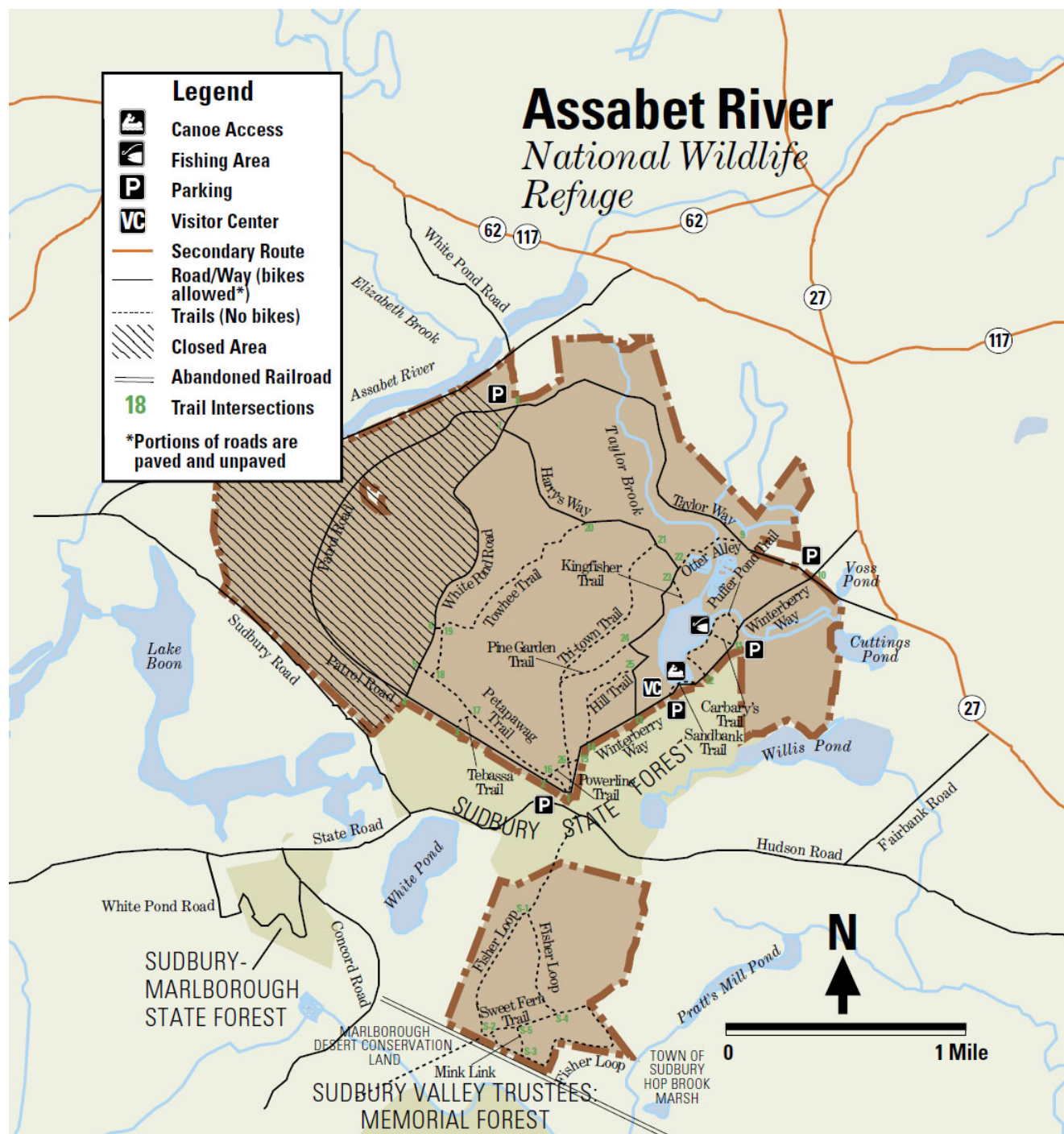


Figure 1. Map of Assabet River NWR, courtesy of U.S. Fish and Wildlife Service.

Sampling at Assabet River National Wildlife Refuge

A total of 272 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Assabet River NWR (table 2). In all, 186 visitors completed the survey for a 71% response rate, and $\pm 5.8\%$ margin of error at the 95% confidence level.²

Table 2. Sampling and response rate summary for Assabet River NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	4/12/2012 to 4/26/2012	Visitor Center				
		Hudson Road				
		White Pond Road				
		Old Marlborough Road				
SP1 Totals			160	4	107	69%
2	10/6/2012 to 10/20/2012	White Pond Road				
		Hudson Road				
		Visitor Center				
SP2 Totals			112	5	79	74%
Combined Totals			272	9	186	71%

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

Selected Survey Results

Visitor and Trip Characteristics

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

Familiarity with the Refuge System

Many visitors to Assabet River NWR reported that before participating in the survey, they were aware of the role of the Service in managing refuges (86%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants, and their habitats (89%). It is important to note that we did not ask visitors to identify the mission of the Refuge System or the Service, and positive responses to these questions concerning the management and mission of the Refuge System do not necessarily indicate that these visitors fully understand the day-to-day management practices of individual refuges, only that visitors feel they have a basic knowledge of who manages refuges and why.

Most visitors (80%) feel that refuges, compared to other public lands, provide a unique recreation experience (see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System.

Many visitors to Assabet River NWR had been to at least one *other* national wildlife refuge in the past year (69%), with an average of 7 visits to *other* refuges during the past 12 months.

Visiting This Refuge

Few surveyed visitors (14%) had only been to Assabet River NWR once in the past 12 months, while most had been multiple times (86%). These repeat visitors went to the refuge an average of 24 times during that same 12-month period. Visitors used the refuge during only one season (22%), during multiple seasons (36%), and year-round (42%).

Most visitors first learned about the refuge from friends/relatives (40%), people in the local community (23%) or newspaper/magazine (12%; fig. 2). Key information sources used by visitors to find their way to this refuge include previous knowledge (79%), maps from the internet such as Google Maps (9%), or a GPS navigation system (9%; fig. 3).

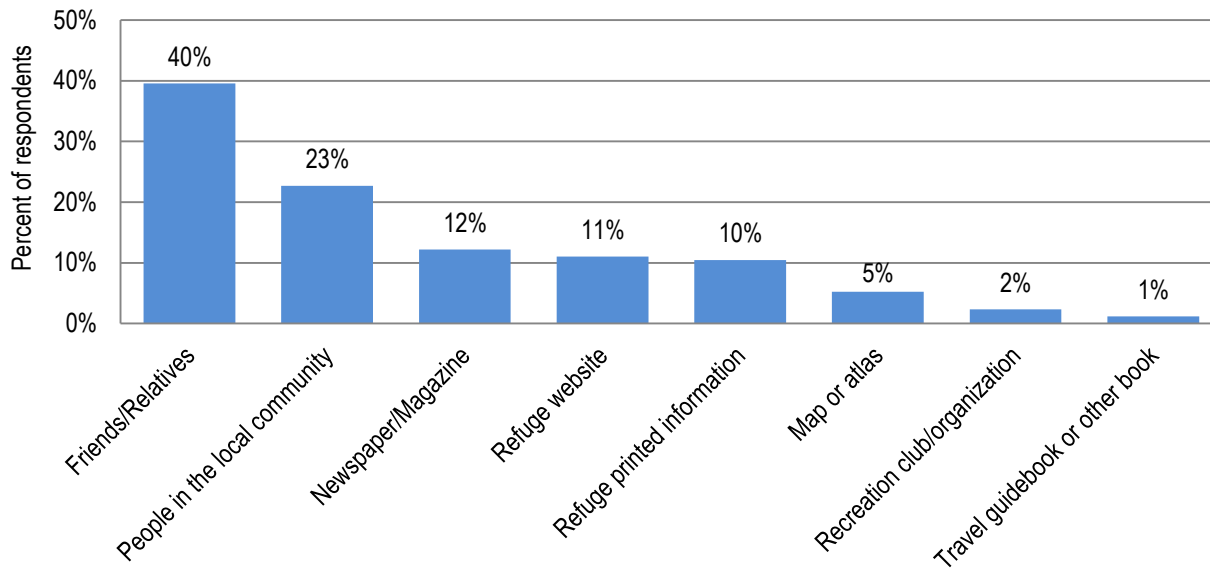


Figure 2. How visitors first learned or heard about Assabet River NWR (n = 172).

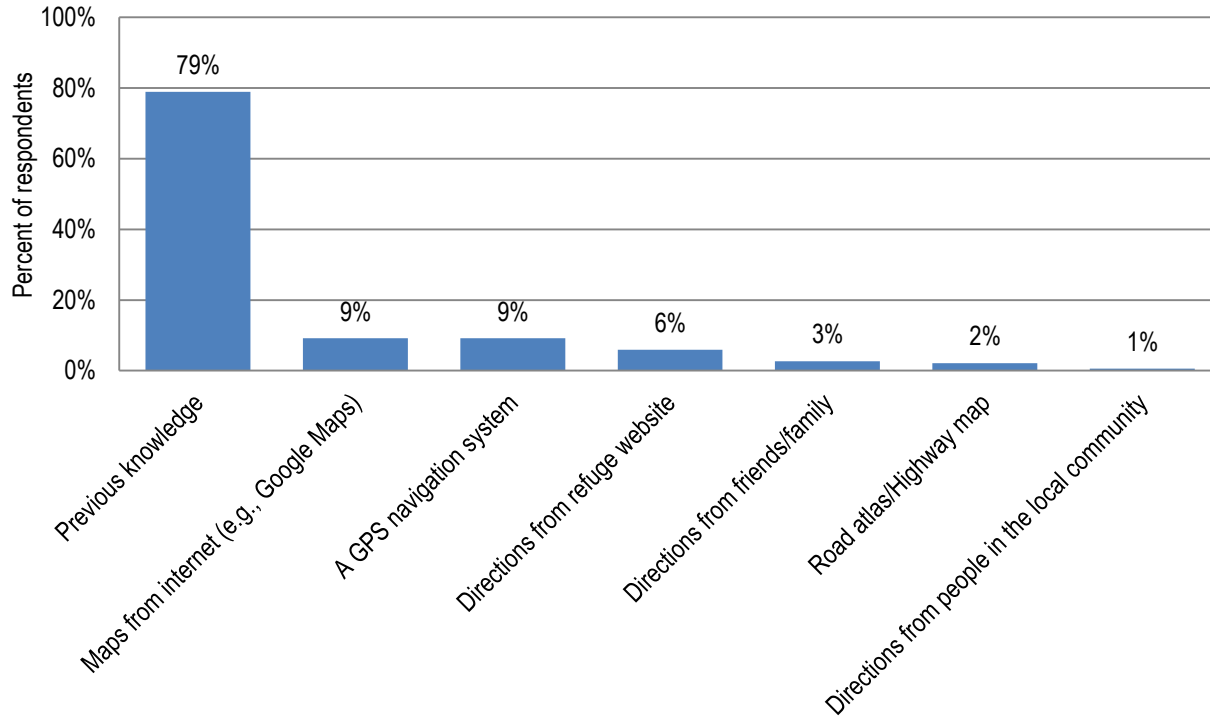


Figure 3. Resources used by visitors to find their way to Assabet River NWR during this visit (n = 185).

Most visitors (98%) lived in the local area (within 50 mi of the refuge), whereas 2% were nonlocal visitors. For most local visitors, Assabet River NWR was the primary purpose or sole destination of their trips (88%; table 3).

Local visitors reported that they traveled an average of 7 mi to get to the refuge. There were not enough nonlocal visitors ($n = 4$) to adequately estimate their travel distance. Figure 4 shows the residences of visitors traveling to this refuge. About 98% of visitors traveling to Assabet River NWR were from Massachusetts.

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

Visitors	Visiting this refuge was...		
	the primary reason for trip	one of many equally important reasons for trip	an incidental stop
Nonlocal	<i>The sample size of nonlocals was too low ($n = 4$) to adequately report these data.</i>		
Local	88%	6%	6%
All visitors	88%	5%	7%

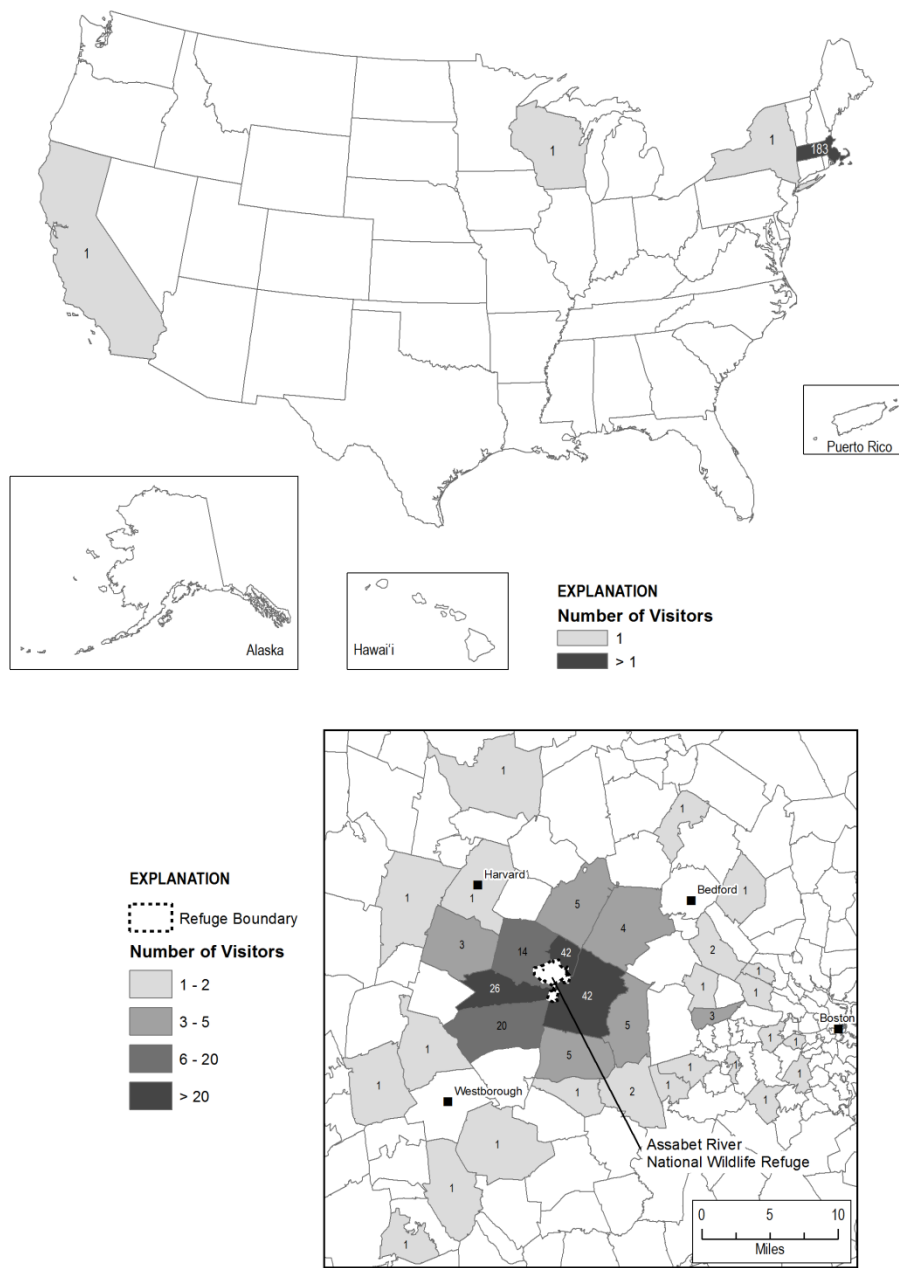


Figure 4. Number of visitors travelling to Assabet River NWR by place of residence. The top map shows visitors residence by state and the bottom map shows residence by zip codes near the refuge (n = 186).

Surveyed visitors reported that they spent an average of 2 hr at the refuge during one day there, while the most frequently reported length of a day visit (the modal response) was also 2 hr (32%). A majority of visitors indicated they were part of a group on their visit to this refuge (67%). Of those people who indicated they traveled with a group, visitors primarily traveled with family/friends (table 4).

Table 4. Type and size of groups visiting Assabet River NWR (for those who indicated they were part of a group, n = 185).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	96%	2	1	3
Commercial tour group	0%	0	0	0
Organized club/School group	2%	7	21	28
Other group type	2%	11	20	31

The key modes of transportation used by visitors to travel around the refuge were private vehicles (71%) and walking/hiking (39%; fig. 5).

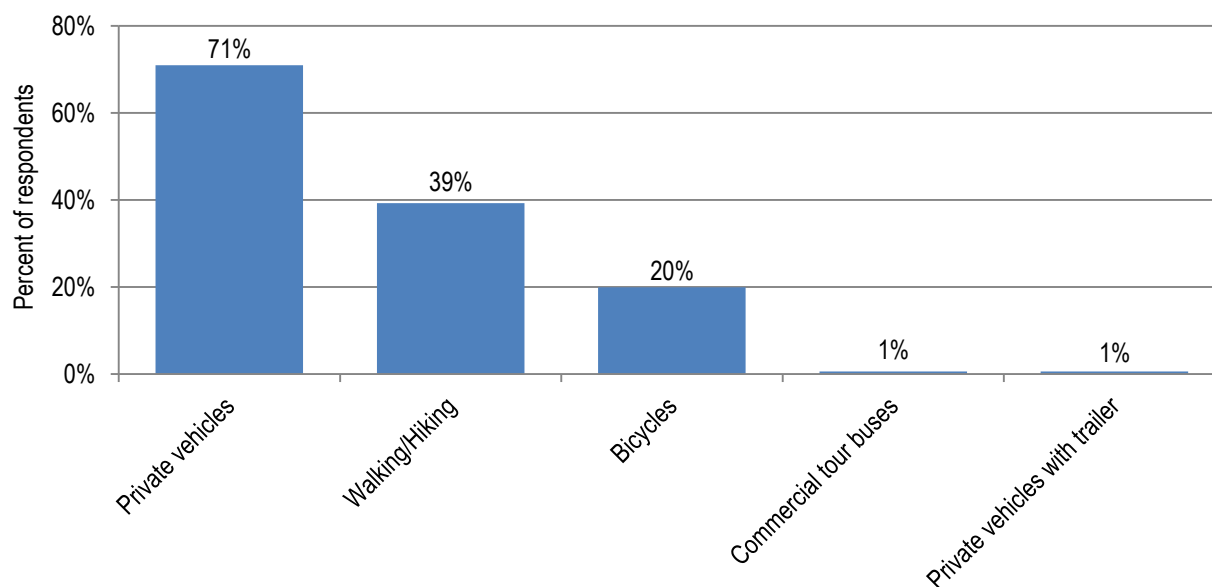


Figure 5. Modes of transportation used by visitors to Assabet River NWR during this visit (n = 186).

Surveyed visitors participated in a variety of refuge activities during the 12 months prior to completing the survey (fig. 6); the top three activities in which people reported participating were hiking (85%), wildlife observation (61%), and bird watching (45%). The primary reasons for visitors' most recent visits included hiking (62%), bicycling (16%), and running (7%; fig. 7). Many visitors also used the Visitor Center during their trips (76%), mostly to view the exhibits (83%), stop to use the facilities (62%), and ask information of staff or volunteers (49%; fig. 8).

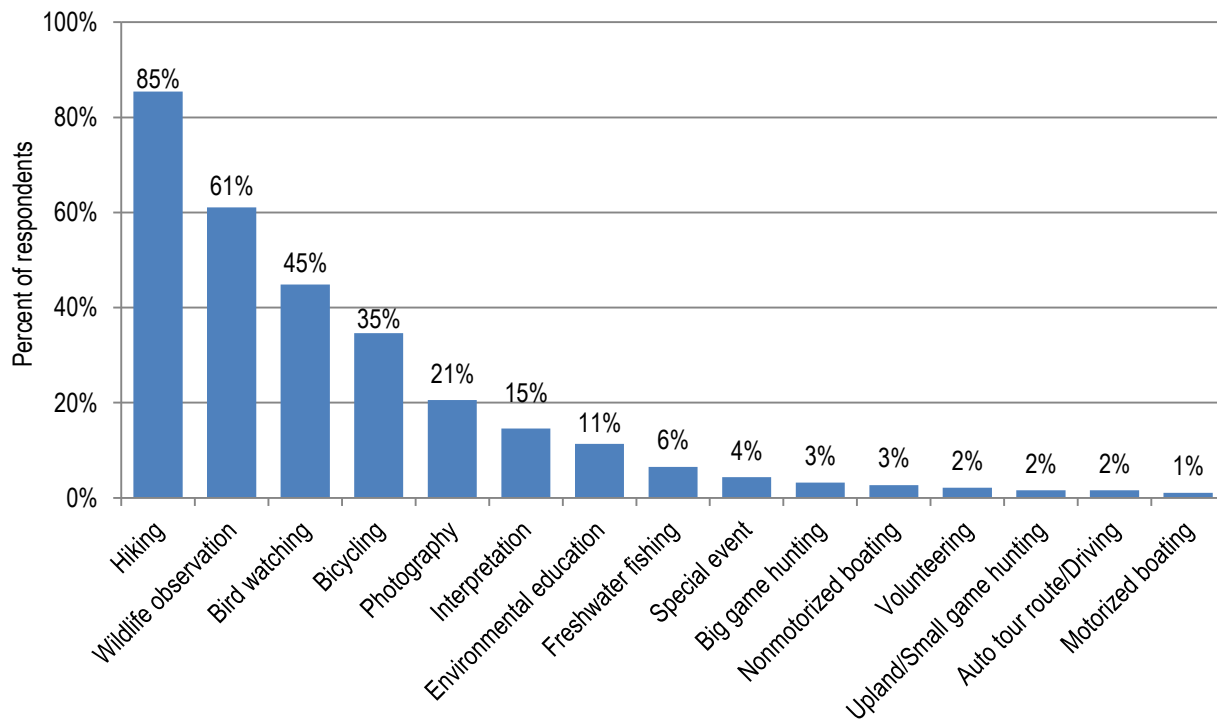


Figure 6. Activities in which visitors participated during the past 12 months at Assabet River NWR (n = 185). See Appendix B for a listing of “other” activities.

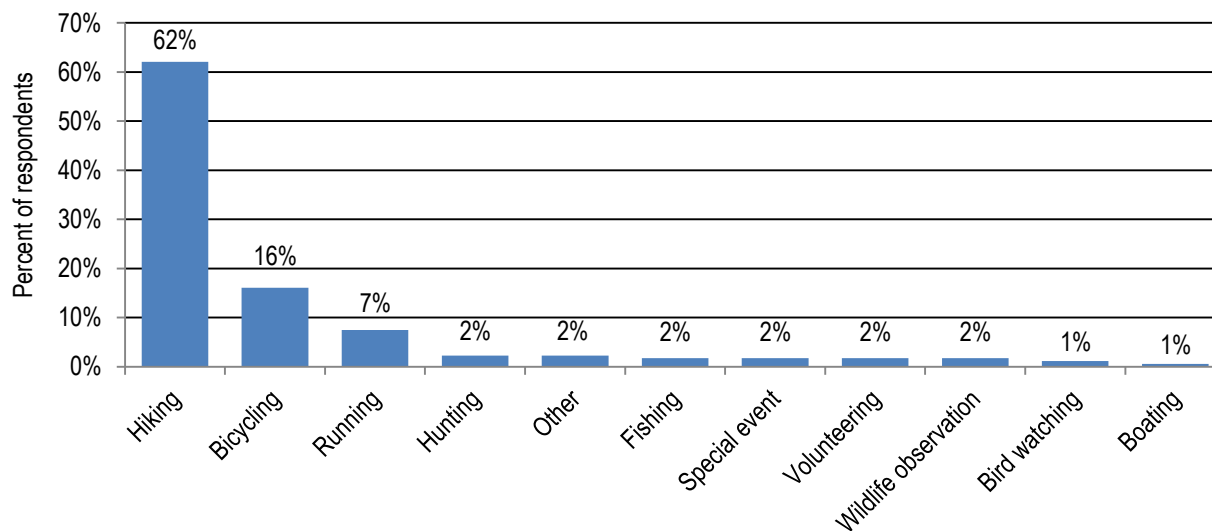


Figure 7. The **primary** activity in which visitors participated during this visit to Assabet River NWR (n = 174). See Appendix B for a listing of “other” activities.

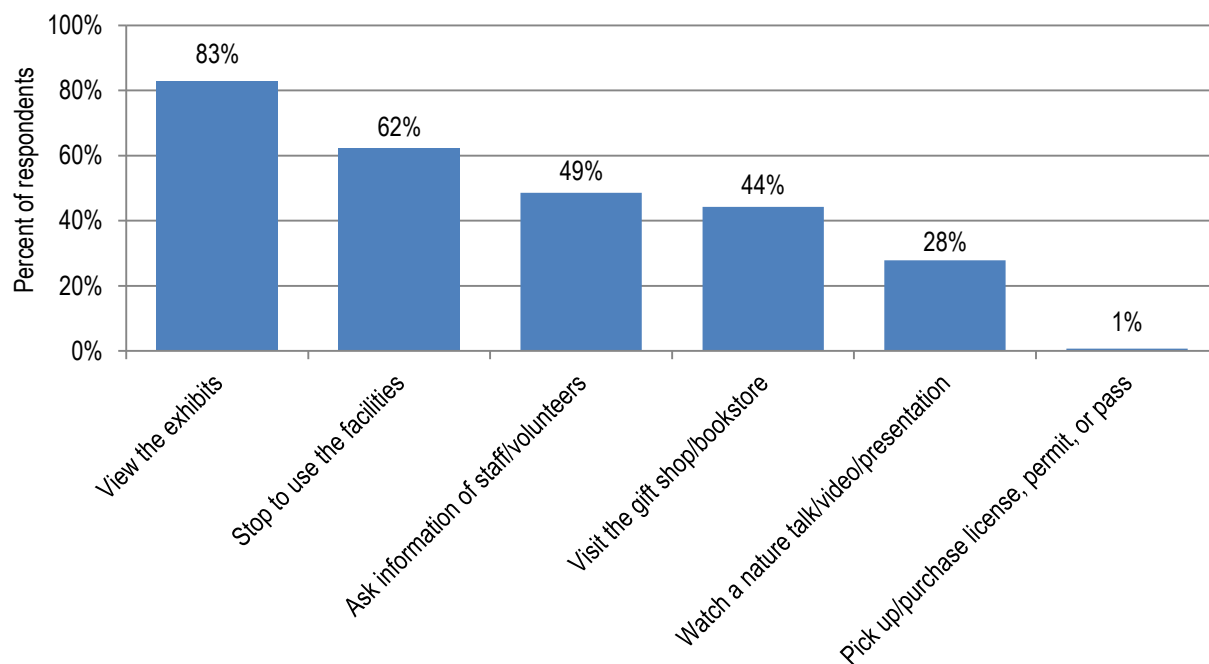


Figure 8. Visitor Center activities in which visitors participated at Assabet River NWR (n = 140).

Visitor Characteristics

Nearly all (97%) visitors who participated in the survey at Assabet River NWR indicated that they were citizens or permanent residents of the United States. These visitors were a mix of 56% male (with an average age of 52 years) and 44% female (with an average age of 51 years). Visitors, on average, reported they had 17 years of formal education (equivalent to one year of graduate or professional school). The median level of income was \$100,000-\$149,999. See Appendix A for more demographic information.

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

Visitor Spending in Local Communities

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

Visitors that live within the local 50-mi area of a refuge typically have different spending patterns than those that travel from longer distances. During the two sampling periods, 98% of surveyed visitors to Assabet River NWR indicated that they live within the local 50-mi area, while 2% of visitors were nonlocals. Due to the very low numbers of nonlocals visitors ($n = 4$), economic data for this visitor group are not reported. Table 5 shows summary statistics for local visitor expenditures in the local communities and at the refuge, with expenditures reported on a per person per day basis. During the two sampling periods, local visitors spent an average of \$7 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 factors include the amount of time spent at the refuge, influence of the refuge on the visitors' decision to take this trip, and the representativeness of primary activities of the sample of surveyed visitors compared to the general population. Controlling for these factors is beyond the scope of the summary statistics presented in this report.

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

Visitors	n ¹	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	<i>The sample size of nonlocals ($n = 4$) was too low to adequately represent this visitor group.</i>					
Local	101	\$1	\$7	\$13	\$0	\$73

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

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

Visitor Opinions about this Refuge

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

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

- 94% of visitors were satisfied with the recreational activities and opportunities,
- 93% of visitors were satisfied with the information and education about the refuge and its resources,
- 93% of visitors were satisfied with the services provided by employees or volunteers, and
- 89% of visitors were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

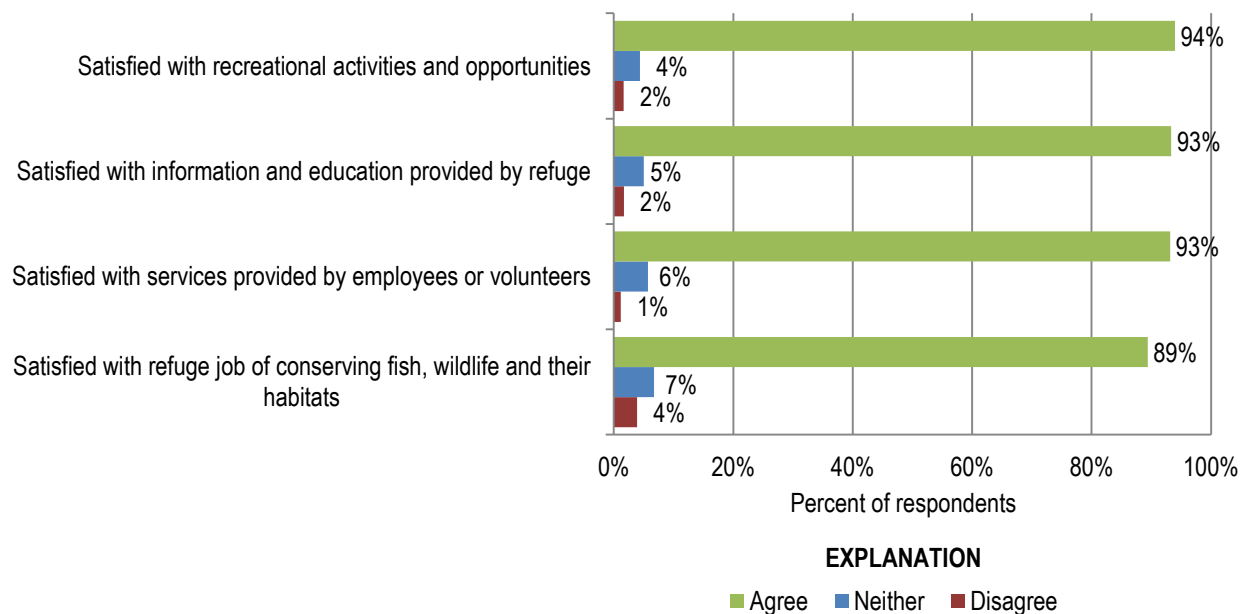


Figure 9. Overall satisfaction with Assabet River NWR during this visit (n ≥ 175).

Importance/Satisfaction Ratings

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

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

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

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

- All refuge *services and facilities* fell in the "Keep Up the Good Work" quadrant (fig. 10).
- All refuge *recreational opportunities* fell in the "Keep Up the Good Work" quadrant except hunting and fishing opportunities, which fell into the "Look Closer" quadrant (fig. 11). The average importance of these activities is likely higher among visitors to Assabet River NWR who actually participated in the activity during the 12 months prior to taking the survey than the score reported

here. For example, hunters, as part of the 2010–2011 national visitor survey, had an average importance score of 4.6 for this recreational opportunity, while the average importance score of hunting opportunities across all visitors was lower.

- All *transportation-related features* fell in the “Keep Up the Good Work” quadrant except the “Number of Pullovers” feature (fig. 12). Visitors were satisfied with this feature, but on average, felt that it was slightly unimportant feature.

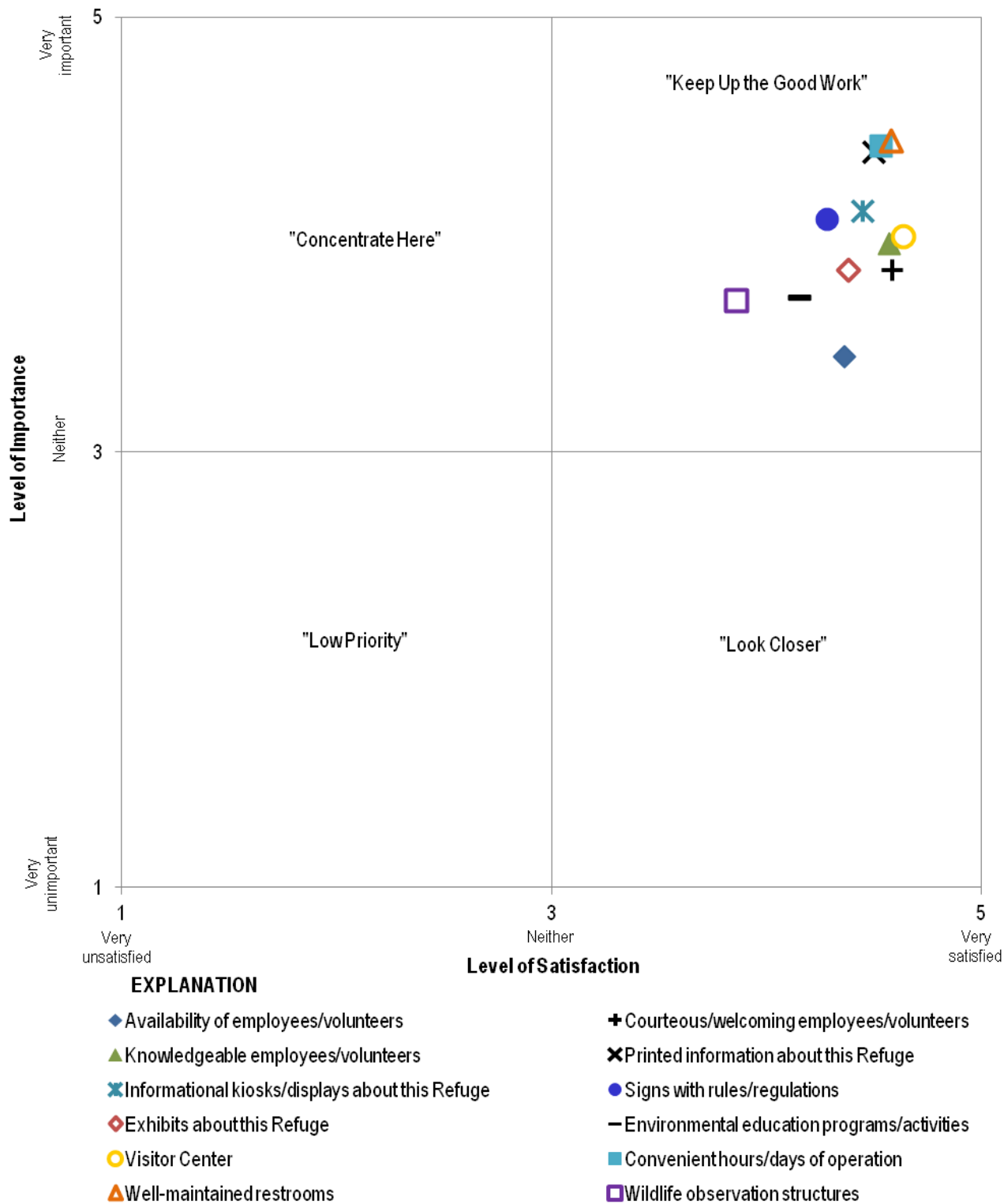
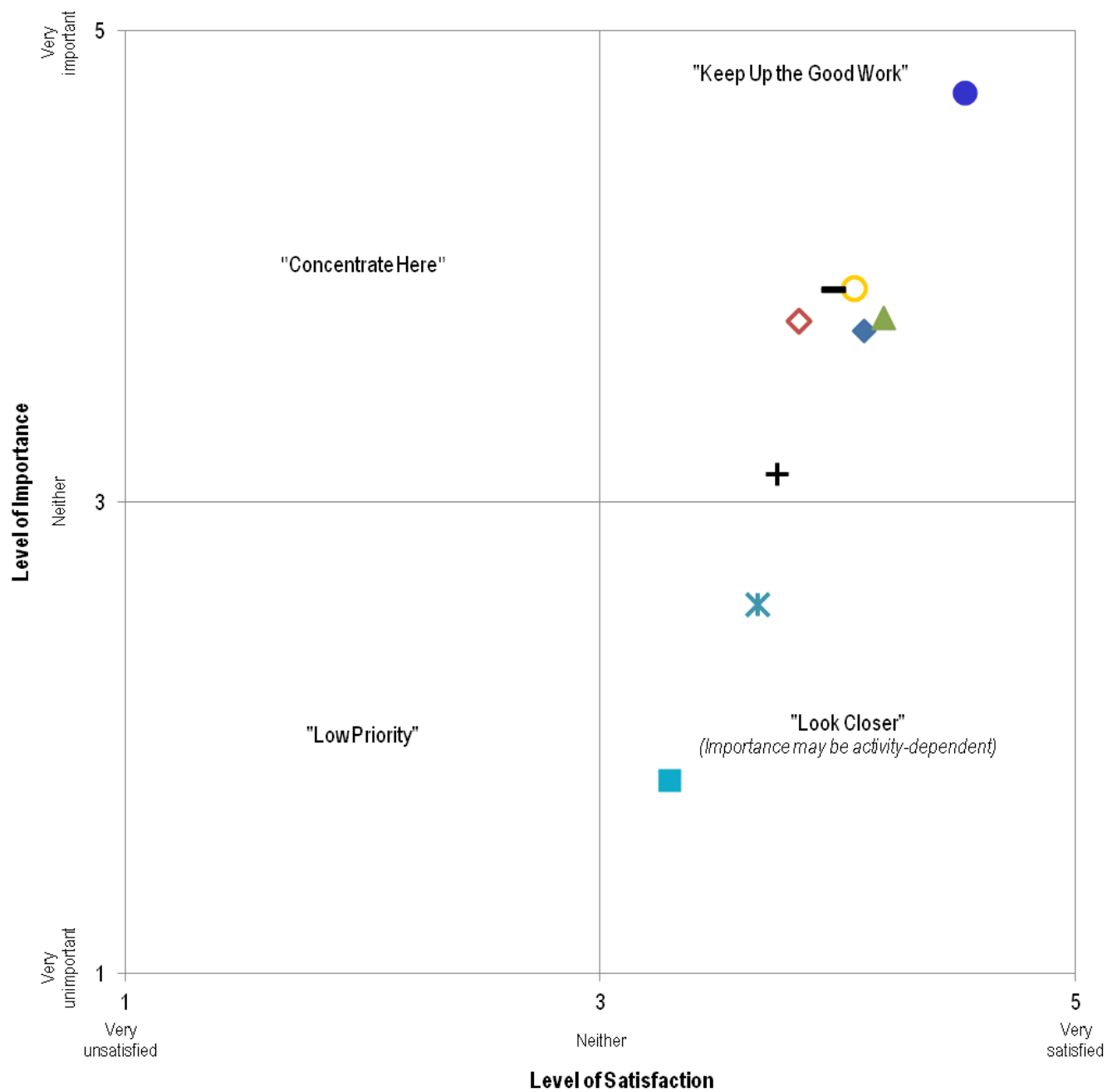


Figure 10. Importance-satisfaction ratings of services and facilities provided at Assabet River NWR.



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 Assabet River NWR.

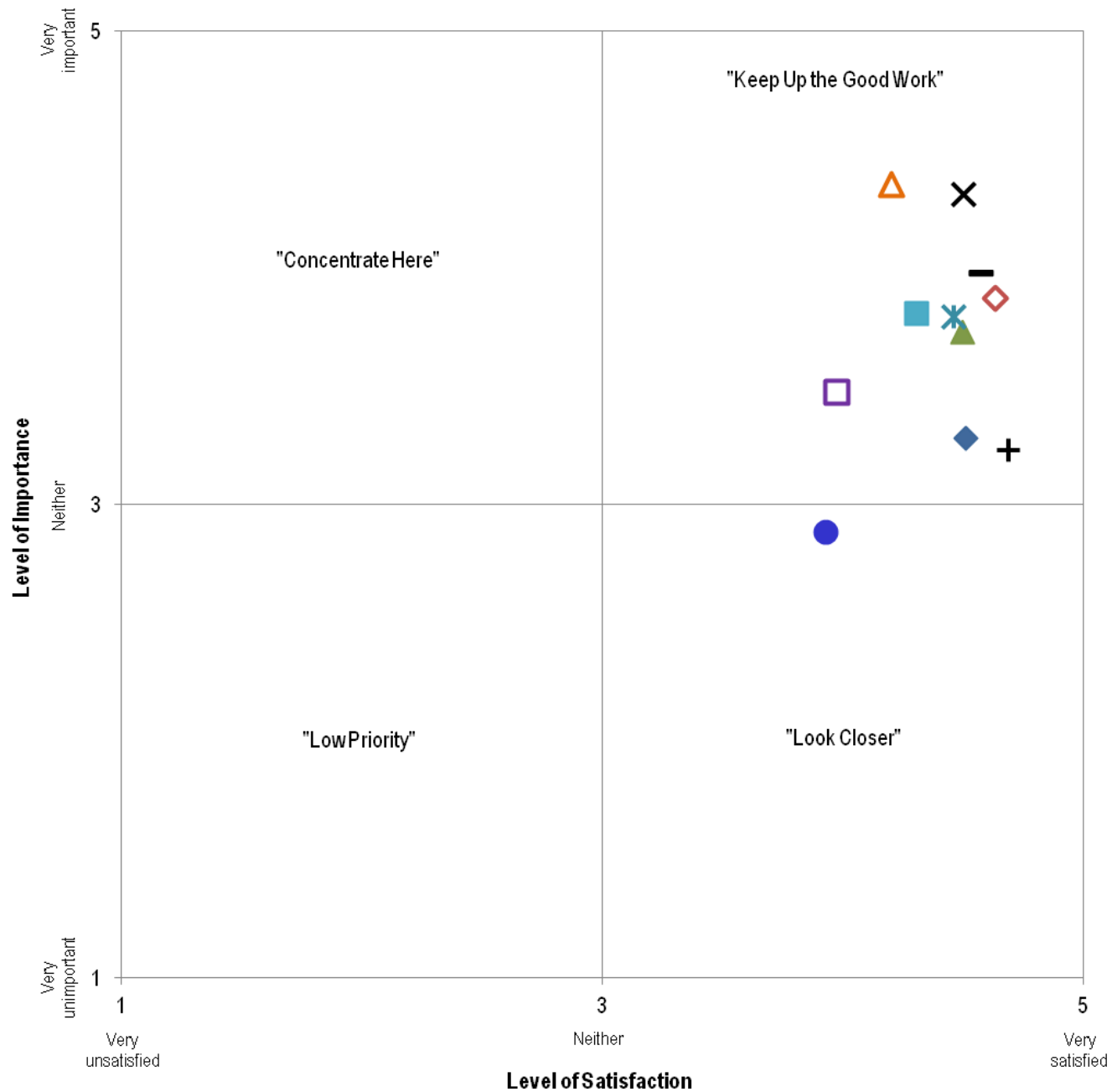


Figure 12. Importance-satisfaction ratings of transportation-related features at Assabet River NWR.

Visitor Opinions about National Wildlife Refuge System Topics

One goal of this national visitor survey was to identify visitor trends across the Refuge System to more effectively manage refuges and provide visitor services. Two important issues to the Refuge System are transportation on refuges and communicating with visitors about climate change. The results of these questions will be evaluated in aggregate form (data from all participating refuges together) to better address national-level goals. Basic results for Assabet River NWR are reported here.

Alternative Transportation and the Refuge System

Visitors use various types of transportation to access and enjoy refuges. While many visitors arrive at the refuge in private vehicles, alternatives such as buses, trams, watercraft, and bicycles are increasingly becoming a part of the visitor experience. Previous research has identified a growing need for transportation alternatives within the Refuge System (Krechmer and others, 2001), and recent efforts are beginning to characterize the use of transit and non-motorized transportation modes for visitor access to refuges (Volpe Center, 2010). However, less is known about how visitors perceive these new transportation options. An understanding of visitors' likelihood of using certain alternative transportation options can help in future planning efforts. Visitors were asked their likelihood of using alternative transportation options at refuges in the future.

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

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

A majority of visitors indicated they were *not* likely to use a bus/tram that takes passengers to different points on the refuge or a bus/tram that provides a guided tour.

When asked specifically about using alternative transportation at Assabet River NWR, some visitors thought alternative transportation would enhance their experience (13%) while others thought it would not (52%). An additional 35% of surveyed visitors indicated they were unsure whether alternative transportation would enhance their experiences.

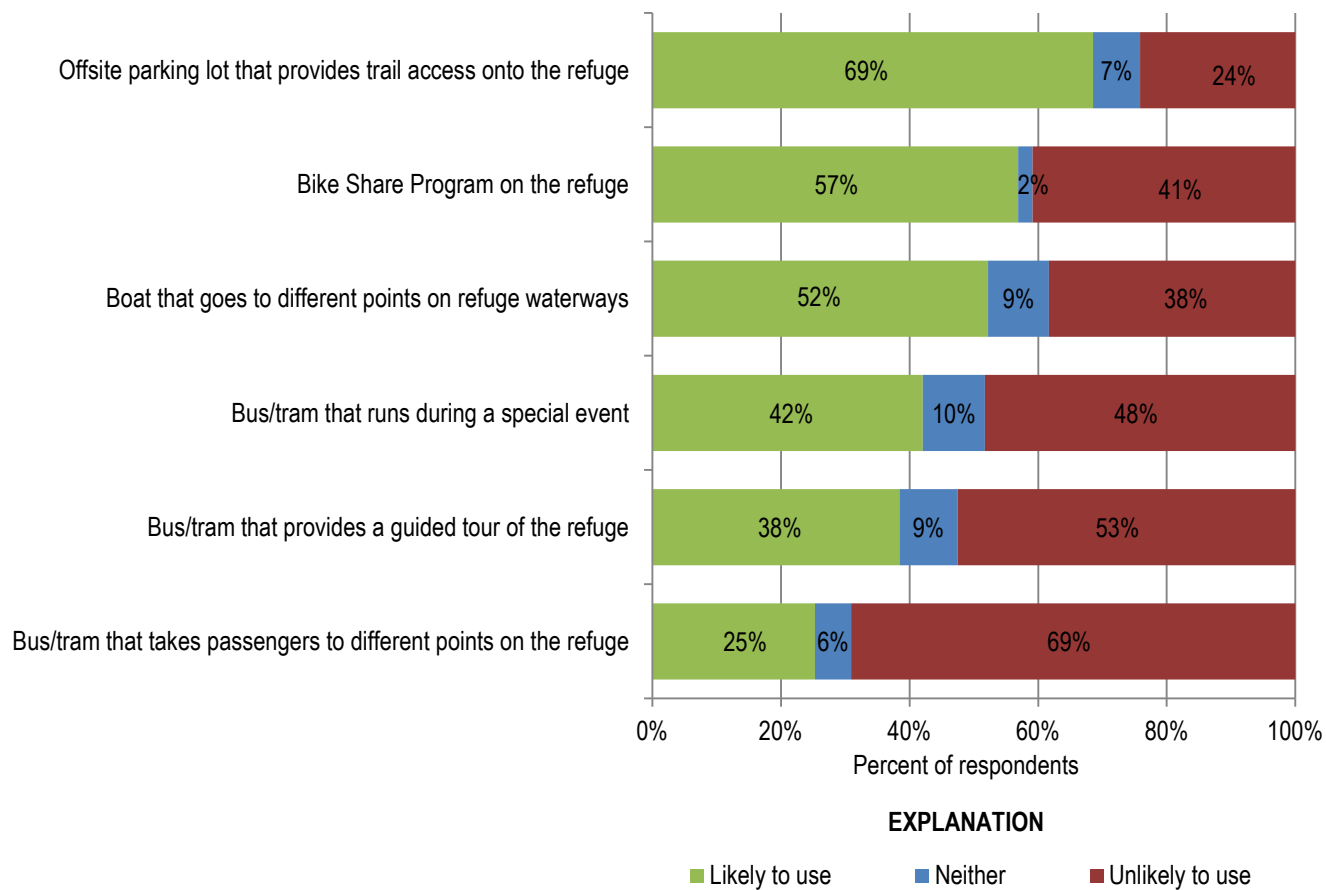


Figure 13. Visitors' likelihood of using alternative transportation options at refuges in the future (n ≥ 176).

Climate Change and the National Wildlife Refuge System

Climate change represents a growing concern for refuge management. The Service's climate-change strategy, titled "Rising to the Urgent Challenge," establishes a basic context for the agency to work within a larger conservation community to ensure wildlife, plant, and habitat sustainability (U.S. Fish and Wildlife Service, 2010). To support the guiding principles of the strategy, refuges will be exploring options for more effective engagement with visitors on the topic of climate change. Previous research suggests that human thought about climate change is influenced by individuals' levels of concern, levels of involvement, preferences for policies, and associated behaviors (Maibach and others, 2009). The results presented below provide baseline information on these factors in relation to the effects of climate change on fish, wildlife, and their habitats.

These results are most useful when coupled with responses to belief statements, because such beliefs may be used to develop message frames (or ways to communicate) about climate change with a broad coalition of visitors. Framing science-based findings does not alter the overall message, but rather places the issue in a context in which different audience groupings can relate (Nisbet, 2009). The need to mitigate impacts of climate change on refuges could be framed as a quality-of-life issue (for example, preserving the ability to enjoy fish, wildlife, plants, and their habitat) or an economic issue (for example, maintaining tourist revenues or supporting economic growth through new jobs/technology). Framing information in ways that resonate with visitors' beliefs may result in more engaged audiences who support strategies aimed at alleviating climate-change pressures. Data will be analyzed further at the national level to inform the development of a comprehensive climate change communication and engagement strategy.

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

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

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

- Future generations will benefit if we address climate change effects;
- 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.

Results regarding such beliefs are important to consider when communicating with visitors about this topic, since more than half of visitors (54%) indicated their experiences would be enhanced if Assabet River NWR provided information about how visitors can help to address climate change impacts on fish, wildlife, and their habitats (fig. 14).

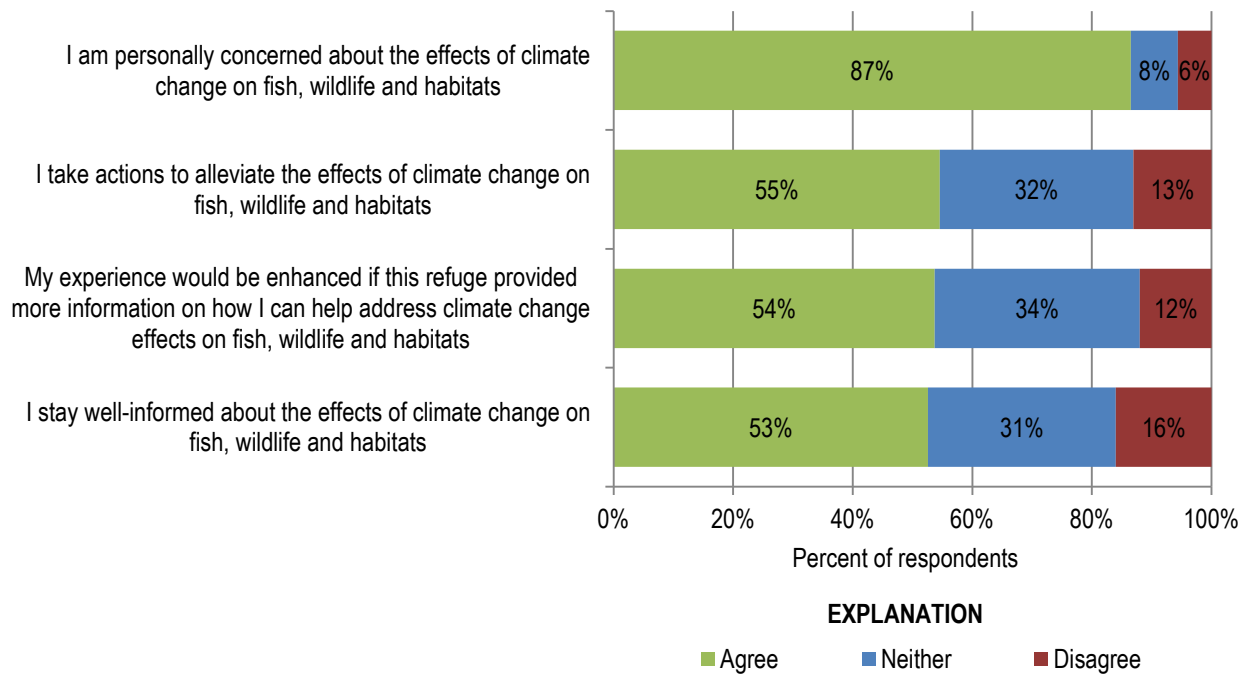


Figure 14. Visitors' personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 175).

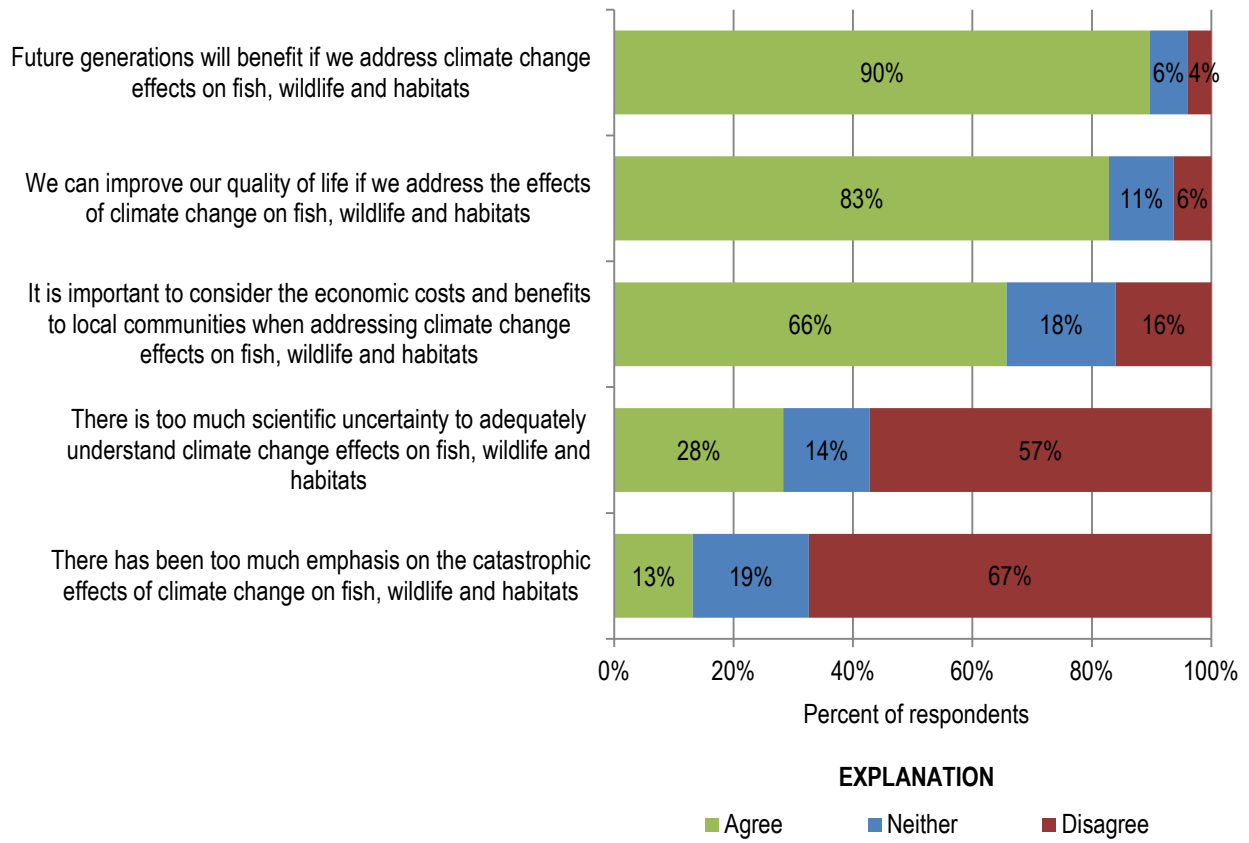


Figure 15. Visitors' beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 173).

Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to Assabet River NWR during 2012 and are intended to inform decision-making efforts related to visitor services and transportation at the refuge. Additionally, the results from this survey can be used to inform planning efforts, such as a refuge's Comprehensive Conservation Plan. With an understanding of visitors' trip and activity characteristics and visitor-satisfaction ratings with existing offerings, refuge managers are able to make informed decisions about possible modifications (whether reducing or enhancing) to visitor facilities, services, or recreational opportunities. This information can help managers gauge demand for refuge opportunities and inform both implementation and communication strategies. Similarly, an awareness of visitors' satisfaction ratings with refuge offerings can help determine if potential areas of concern need to be investigated further. As another example of the utility of these results, community relations may be improved or bolstered through an understanding of the value of the refuge to visitors, whether that value is attributed to an appreciation of the refuge's uniqueness, enjoyment of its recreational opportunities, or spending contributions of nonlocal visitors to the local economy. Such data about visitors and their experiences, in conjunction with an understanding of biophysical data on the refuge and its resources, can ensure that management decisions are consistent with the Refuge System mission while fostering a continued public interest in these special places.

Individual refuge results are available for downloading at <http://pubs.usgs.gov/ds/754/>. For additional information about this project, contact the USGS researchers at national_visitor_survey@usgs.gov or 970.226.9205.

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National Wildlife Refuge Visitor Survey



PLEASE READ THIS FIRST:

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

Even if you have recently visited more than one National Wildlife Refuge or made more than one visit to the same Refuge, please respond regarding only the Refuge and the visit when you were asked to participate in this survey for any question that uses the phrase “this Refuge.” Please reference the cover letter included with this survey if you are unsure of which refuge you visited.

SECTION 1. Your visit to this Refuge

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

<input type="checkbox"/> 3% Big game hunting	<input type="checkbox"/> 85% Hiking	<input type="checkbox"/> 11% Environmental education (for example, classrooms or labs)
<input type="checkbox"/> 2% Upland/Small game hunting	<input type="checkbox"/> 35% Bicycling	
<input type="checkbox"/> 1% Migratory bird/Waterfowl hunting	<input type="checkbox"/> 2% Auto tour route/Driving	<input type="checkbox"/> 15% Interpretation (for example, exhibits, kiosks, videos)
<input type="checkbox"/> 61% Wildlife observation	<input type="checkbox"/> 1% Motorized boating	
<input type="checkbox"/> 45% Bird watching	<input type="checkbox"/> 3% Nonmotorized boating (including canoes/kayaks)	<input type="checkbox"/> 4% Refuge special event (<i>please specify</i>) See Appendix B
<input type="checkbox"/> 12% Freshwater fishing		
<input type="checkbox"/> 0% Saltwater fishing	<input type="checkbox"/> 2% Volunteering	<input type="checkbox"/> 13% Other (<i>please specify</i>) See Appendix B
<input type="checkbox"/> 21% Photography		

2. Which of the activities above was the **primary** purpose of your visit to this Refuge?
(Please write **only one activity** on the line.) See report for categorized results; see Appendix B for miscellaneous responses
-

3. Did you go to a Visitor Center at this Refuge?

<input type="checkbox"/> 24% No	
<input type="checkbox"/> 76% Yes → If yes, what did you do there? (Please mark <u>all that apply.</u>)	
<input type="checkbox"/> 44% Visit the gift shop or bookstore	<input type="checkbox"/> 1% Pick up/purchase a license, permit, or pass
<input type="checkbox"/> 83% View the exhibits	<input type="checkbox"/> 62% Stop to use the facilities (for example, get water, use restroom)
<input type="checkbox"/> 49% Ask information of staff/volunteers	
<input type="checkbox"/> 28% Watch a nature talk/video/presentation	<input type="checkbox"/> 4% Other (<i>please specify</i>) See Appendix B

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

Nonlocal Local All visitors * *There were too few nonlocal visitors to report these data.*

<input type="checkbox"/> *	<input type="checkbox"/> 88%	<input type="checkbox"/> 88%	It was the primary purpose or sole destination of my trip.
<input type="checkbox"/> *	<input type="checkbox"/> 6%	<input type="checkbox"/> 5%	It was one of many equally important reasons or destinations for my trip.
<input type="checkbox"/> *	<input type="checkbox"/> 6%	<input type="checkbox"/> 7%	It was just an incidental or spur-of-the-moment stop on a trip taken for other purposes or to other destinations.

5. Approximately how many **hours/minutes and miles** (one-way) did you travel from your home to this Refuge?

Nonlocal

The sample size was too low (n=4) to adequately represent travel time and distance for nonlocals.

Local 0 Hours 23 Minutes and 7 Miles

All visitors 0 Hours 40 Minutes and 26 Miles

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

☐ 33% None, I visited this Refuge alone

(of those visiting with a group)

☐ 96% Family and/or friends

☐ 2% Organized club or school group (for example, Boy/Girl Scouts, hiking club, bird watching group)

☐ 0% Commerical tour group

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

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

2 number 18 years and over

1 number 17 years and under

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

☐ 40% Family and/or friends

☐ 11% Refuge website

☐ * Signs on highway

☐ 5% Other website (*please specify*) See Appendix B

☐ 2% Recreation club or organization

☐ 0% Television or radio

☐ 23% People in the local community

☐ 12% Newspaper or magazine

☐ 10% Refuge printed information (brochure, map)

☐ 1% Travel guidebook or other book

☐ 5% Map or atlas

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

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

☐ 88% Spring
(March-May)

☐ 63% Summer
(June-August)

☐ 77% Fall
(September-November)

☐ 52% Winter
(December-February)

10. How many times have you visited...

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

21 number of visits

...other National Wildlife Refuges in the last 12 months?

5 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"/> 71% Private vehicle without a trailer	<input type="checkbox"/> 0% Refuge shuttle bus or tram	<input type="checkbox"/> 20% Bicycle
<input type="checkbox"/> 1% Private vehicle with a trailer (for boat, camper or other)	<input type="checkbox"/> 0% Motorcycle	<input type="checkbox"/> 39% Walk/Hike
<input type="checkbox"/> 1% Commercial tour bus	<input type="checkbox"/> 0% ATV or off-road vehicle	<input type="checkbox"/> 3% Other (<i>please specify below</i>)
<input type="checkbox"/> 0% Recreational vehicle (RV)	<input type="checkbox"/> 0% Boat	<u>See Appendix B</u>
	<input type="checkbox"/> 0% Wheelchair or other mobility aid	

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

<input type="checkbox"/> 79% Previous knowledge/I have been to this Refuge before	<input type="checkbox"/> 9% Maps from the Internet (for example, MapQuest or Google Maps)
<input type="checkbox"/> * Signs on highways	<input type="checkbox"/> 6% Directions from Refuge website
<input type="checkbox"/> 9% A GPS navigation system	<input type="checkbox"/> 1% Directions from people in community near this Refuge
<input type="checkbox"/> 2% A road atlas or highway map	<input type="checkbox"/> 3% Directions from friends or family
	<input type="checkbox"/> 0% Other (<i>please specify</i>) <u>See Appendix B</u>

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

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 58%	<input type="checkbox"/> 11%	<input type="checkbox"/> 6%	<input type="checkbox"/> 18%	<input type="checkbox"/> 7%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 31%	<input type="checkbox"/> 10%	<input type="checkbox"/> 2%	<input type="checkbox"/> 33%	<input type="checkbox"/> 24%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 42%	<input type="checkbox"/> 10%	<input type="checkbox"/> 9%	<input type="checkbox"/> 27%	<input type="checkbox"/> 12%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 32%	<input type="checkbox"/> 7%	<input type="checkbox"/> 9%	<input type="checkbox"/> 34%	<input type="checkbox"/> 18%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 39%	<input type="checkbox"/> 10%	<input type="checkbox"/> 10%	<input type="checkbox"/> 30%	<input type="checkbox"/> 13%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 18%	<input type="checkbox"/> 6%	<input type="checkbox"/> 4%	<input type="checkbox"/> 33%	<input type="checkbox"/> 36%
...some other alternative transportation option? (<i>please specify</i>) <u>See Appendix B</u>	<input type="checkbox"/> 0%	<input type="checkbox"/> 0%	<input type="checkbox"/> 25%	<input type="checkbox"/> 38%	<input type="checkbox"/> 38%

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

☐ 13% Yes ☐ 52% No ☐ 35% Not Sure

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

Importance						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%	19%	14%	43%	13%	Surface conditions of roads	5%	4%	4%	11%	76%	NA
10%	22%	15%	42%	11%	Surface conditions of parking areas	4%	1%	3%	7%	85%	NA
9%	5%	20%	37%	29%	Condition of bridges	2%	1%	10%	20%	67%	NA
6%	3%	3%	32%	56%	Condition of trails and boardwalks	3%	3%	2%	24%	68%	NA
10%	9%	6%	44%	32%	Number of places for parking	5%	2%	4%	17%	71%	NA
23%	13%	27%	26%	11%	Number of places to pull over along Refuge roads	4%	5%	28%	22%	41%	NA
9%	6%	16%	26%	42%	Safety of driving conditions on Refuge roads	3%	1%	5%	10%	80%	NA
9%	4%	10%	36%	42%	Safety of Refuge road entrances/exits	4%	2%	4%	14%	76%	NA
*	*	*	*	*	Signs on highways directing you to the Refuge	*	*	*	*	*	NA
11%	6%	9%	38%	35%	Signs directing you around the Refuge roads	2%	4%	11%	27%	55%	NA
5%	2%	5%	28%	60%	Signs directing you on trails	4%	9%	4%	31%	53%	NA
10%	9%	28%	29%	24%	Access for people with physical disabilities or who have difficulty walking	3%	3%	28%	26%	40%	NA

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

See Appendix B

SECTION 3. Your expenses related to your Refuge visit

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

☐ 98% Yes

☐ 2% No → How much time did you spend **in the local area** on this trip?

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

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

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

If you spent one day or more at this Refuge, enter the number of days: 1 day(s)

If you spent less than one day at this Refuge, enter the number of hours: 2 hour(s)

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

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

See Report for Results

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

 2 number of people sharing expenses

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

\$0	\$10	\$20	\$35	\$50	\$75	\$100	\$125	\$150	\$200	\$250
28%	47%	16%	3%	6%	6%	1%	0%	0%	0%	0%

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

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

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

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

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

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

SECTION 4. Your experience at this Refuge

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Applicable
Overall, I am satisfied with the recreational activities and opportunities provided by this Refuge.	<input type="checkbox"/> 1%	<input type="checkbox"/> 1%	<input type="checkbox"/> 4%	<input type="checkbox"/> 37%	<input type="checkbox"/> 57%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	<input type="checkbox"/> 1%	<input type="checkbox"/> 1%	<input type="checkbox"/> 5%	<input type="checkbox"/> 31%	<input type="checkbox"/> 62%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	<input type="checkbox"/> 1%	<input type="checkbox"/> 1%	<input type="checkbox"/> 6%	<input type="checkbox"/> 32%	<input type="checkbox"/> 61%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	<input type="checkbox"/> 1%	<input type="checkbox"/> 3%	<input type="checkbox"/> 7%	<input type="checkbox"/> 26%	<input type="checkbox"/> 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 <i>Circle one for each item.</i>					Refuge Services, Facilities, and Activities	Satisfaction <i>Circle one for each item.</i>					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important		Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
9%	13%	18%	45%	15%	Availability of employees or volunteers	2%	3%	17%	15%	64%	NA
8%	11%	7%	40%	35%	Courteous and welcoming employees or volunteers	1%	1%	14%	7%	77%	NA
6%	7%	8%	45%	35%	Knowledgeable employees or volunteers	1%	1%	12%	14%	72%	NA
2%	4%	2%	39%	54%	Printed information about this Refuge and its resources (for example, maps and brochures)	2%	2%	6%	22%	68%	NA
4%	3%	8%	48%	36%	Informational kiosks/displays about this Refuge and its resources	1%	2%	8%	27%	61%	NA
3%	5%	44%	43%	38%	Signs with rules/regulations for this Refuge	2%	2%	12%	31%	52%	NA
4%	5%	18%	48%	25%	Exhibits about this Refuge and its resources	1%	1%	15%	22%	60%	NA
4%	5%	27%	44%	20%	Environmental education programs or activities	1%	2%	28%	21%	49%	NA
5%	7%	8%	44%	36%	Visitor Center	1%	0%	8%	15%	75%	NA
2%	1%	5%	35%	56%	Convenient hours and days of operation	2%	2%	7%	19%	70%	NA
3%	1%	4%	34%	59%	Well-maintained restrooms	2%	1%	7%	15%	74%	NA
6%	4%	26%	42%	22%	Wildlife observation structures (decks, blinds)	0%	10%	28%	28%	34%	NA
4%	6%	23%	46%	21%	Bird-watching opportunities	0%	1%	27%	32%	40%	NA
6%	4%	16%	45%	30%	Opportunities to observe wildlife other than birds	1%	5%	21%	35%	39%	NA
7%	6%	17%	41%	28%	Opportunities to photograph wildlife and scenery	1%	2%	21%	27%	49%	NA
65%	6%	18%	5%	6%	Hunting opportunities	10%	2%	56%	12%	20%	NA
42%	10%	13%	22%	14%	Fishing opportunities	2%	3%	49%	19%	27%	NA
2%	0%	1%	15%	82%	Trail hiking opportunities	1%	0%	3%	36%	60%	NA
7%	6%	20%	39%	29%	Water trail opportunities for canoeing or kayaking	2%	8%	29%	25%	36%	NA
10%	2%	14%	33%	40%	Bicycling opportunities	1%	8%	19%	34%	38%	NA
12%	9%	46%	22%	11%	Volunteer opportunities	0%	1%	54%	16%	30%	NA

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

See Appendix B

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

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

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

☐ 86% Yes

☐ 14% 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?

☐ 80% Yes

☐ 20% No

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

See Appendix B

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

Statements about climate change	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I am personally concerned about the effects of climate change on fish, wildlife and their habitats.	3%	3%	8%	39%	47%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	3%	3%	11%	41%	42%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	23%	35%	14%	21%	8%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	3%	13%	31%	41%	12%
It is important to consider the economic costs and benefits to local communities when addressing the effects of climate change on fish, wildlife and their habitats.	5%	11%	18%	54%	12%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	3%	10%	32%	39%	15%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	35%	33%	19%	8%	5%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	2%	2%	6%	27%	53%
My experience at this Refuge would be enhanced if this Refuge provided more information about how I can help address the effects of climate change on fish, wildlife and their habitats.	5%	7%	34%	41%	13%

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?

Yes No → *If not, what is your home country?* See Figure 2 in Report

2. Are you? Male 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%			4%				42%				54%			

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

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

<input type="checkbox"/> 1% American Indian or Alaska Native	<input type="checkbox"/> 0% Black or African American	<input type="checkbox"/> 97% White
<input type="checkbox"/> 3% Asian	<input type="checkbox"/> 0% Native Hawaiian or Pacific Islander	

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

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

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

<input type="checkbox"/> 1% Less than \$10,000	<input type="checkbox"/> 6% \$35,000 - \$49,999	<input type="checkbox"/> 25% \$100,000 - \$149,999
<input type="checkbox"/> 3% \$10,000 - \$24,999	<input type="checkbox"/> 15% \$50,000 - \$74,999	<input type="checkbox"/> 16% \$150,000 - \$199,999
<input type="checkbox"/> 4% \$25,000 - \$34,999	<input type="checkbox"/> 15% \$75,000 - \$99,999	<input type="checkbox"/> 16% \$200,000 or more

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

31 number of trips

Thank you for completing the survey.

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

Comments?

See Appendix B for Comments

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

Appendix B: Visitor Comments to Open-Ended Survey Questions for Assabet River

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
Birdwatching programs, FARNWR meetings, invasive plant removal	1
Friends of ARNWR programs	1
Fundraising event	1
Grand opening of Visitor Center	1
Historic tour	1
Native plants - Girl Scouts	1
Talks/lectures	1
Tour of bunker	1

Other Activity	Frequency
Cross-country skiing	4
Cross-country skiing and snowshoeing	1
Guided tour	1
I was enjoying nature with my family - young son and a baby.	1
Oil painting	1
Running	13
Running and walking	2
Stow Golden Club	1

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
Educating grandchildren	1
Enjoying nature and being outdoors	1
Look over the park	1
Oil painting	1

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

Other Visitor Center Activity	Frequency
Bunker tour	1
Donate US Flag.	1
Historical bus tour started/ended at the Visitor Center.	1
I worked with an urban education program at this refuge.	1
Volunteer for a children's school visit.	1
Volunteering	1

Question 6: "Were you part of a group on your visit to this Refuge?"; If Yes, "What type of group were you with on your visit?"

Other Group Type	Frequency
Volunteer Education Group	2

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

Other Website	Frequency
Drove by, then checked website	1
google.com	1
Hikes in metro west Boston website	1
Internet -- trails	1
mapmyride.com	1
maps.google.com	3

Other Ways Heard about This Refuge	Frequency
Bike riding	1
Friends of NWR group	1
I know a volunteer at this refuge.	1
I worked prior to it being part of the USFWS refuge system to get it established and opened to the public.	1

Survey Section 2

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

Other Forms of Transportation	Frequency
Own car	1
Running	4
Stroller for child	1

Question 3: "Below are different alternative transportation options that could be offered at some National Wildlife Refuges in the future...please tell us how likely you would be to use each transportation option."

Other Transportation Option Likely to Use	Frequency
"Ride along/job shadow" with FWS personnel	1
Bike	1
Golf cart	1
Horseback riding, horse carriage ride	1
Our car	1
Personal kayak	1
Segway	1
Some sort of kayak rental would be interesting, but I see the risk to the habitat.	1

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

Comments on Transportation-related Items at This Refuge (n = 30)

A golf cart would be a great addition to help those with mobility problems get to the pond. Special "walks" could be arranged for the elderly if there were golf carts.

An amazing, quiet place we have been using for recreation for more than 6 years. It was great even before huge renovation, but now, with new roads, Visitor Center with lots of exhibitions, store, good facilities and very well maintained trails we have even more enjoyable experiences for our entire family.

Continue to remove old debris from along the paths (from old neighborhood).

Could use better signage on trails. Adding a paved bike trail would be great too!

Difficulty walking on the path next to the road when it snows. Would be helpful if it could be plowed to the far parking lot. Many people like to walk all winter.

Entrance at White Pond Road is very badly potholed.

Good roads and easy parking.

I am concerned about the crosswalk on Hudson Road to the refuge. It is not well marked and cars go speeding on this road. It would be nice to have a flashing light, or at the very least, signs warning drivers of the cross walk.

I don't want parking all along the refuge road but a couple of spots for people and boats near the pond would be great.

I think there should be more signs on the main roads like Route 27.

I would have preferred better trail signage. We did not stop at the Visitor Center first for trail map/description and relied only on signage. A map of trails posted on an information board would have been helpful.

I would like to see a place to park by the canoe/kayak launch site, while using my boat.

It was difficult to find on the internet. The name is not distinctive and needs marketing locally.

More parking spaces would be nice; sometimes it is hard to find a spot, but that is rare.

Most open and main trails have heavy ruts from service vehicles. I would also like to see some of the "off limits" trails opened.

Open up more trails.

Please post a sign at the gate saying what time gates will be closed. I get locked out once in a while.

Road entrance from White Pond Road in Stow is substandard and needs a complete repaving.

Roads and trails are top rate. Signs are not as clear as they could be. For instance, there is a turn for a trail to a lake where there is a dock with seating. The sign off the road notes a trail name like "Puffer Trail." Why not add "trail to the lake/dock"? Off the same refuge road there is another trail that goes to a canoe launch - but that is only marked for those approaching from the main entrance. Walkers like me who want to identify that turn from the inside of the park as we walk back out to the entrance cannot see the sign noting that is the trail to the canoe put-in. Clearer markings visible from both directions would be great.

Roads to bike trails should be passable. Trails to run and bike on are fine.

Stow entrance road needs work.

The Assabet River NWR is at once a surprise and a quiet triumph in land preservation for myself and the communities abutting it. I did not expect it to be so defined as a destination, but am pleased it was successfully brought into existence through the concerted efforts of people I know and respect.

The condition of the walking trails is very important to me. I found them to be excellent. This supports multi use by hikers, runners, and those with difficulty walking.

The south entrance is perfectly safe and smooth, however the north entrance is pretty rough and really needs to be repaved.

There are some sidewalks along the road but no boardwalk, sidewalk, or hardened path for wheelchairs on any paths. There should be at least one or two paths with such.

There is no bicycle parking at the Visitor Center.

This is a fairly new park and is very well taken care of.

Trails need brush removed and seating along would help.

We really enjoyed our hike. Beautiful day and we saw 2 turtles, a snake, and lots of butterflies. Nice, clean, peaceful. The Visitor Center was so clean and had a lot of information nicely packed into that one small room. We really loved the back room with the darkened night scene with the narration of what all the sounds were. Very cool!

While it looks family friendly, allowing children below certain age to walk or ride anything is not safe as they can easily venture into water logged areas and there are no signs warning that there is water after this etc.

Survey Section 4

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

Comments on Services, Facilities, and Activities at This Refuge (n = 59)

1. Observation decks right in the middle of wetlands provide close up view of fish, birds etc. 2. Having food in these waters, which the birds love (like krill, plankton etc.), we may have more bird population 3. Increase the wildlife population of deer or elk or anything that can thrive in these type of environment 4. Boardwalk along the rim of the pond will be a good idea 5. \$5 Horse rides, \$10 horse carriage rides, \$5 for bike rentals etc. which will compensate for no entrance fee to the park 6. No idea if there is any danger from hunting in these parks -- are there directions? I felt scared once I read hunting is allowed in these lands. 7. A small wildlife zoo like area dedicated to endangered species wherein people can really pet or play with wildlife like African wild dogs etc. Charge a fee for this, which may bring in more visitors and revenue.

1. Trail maps were faded and hard to read. 2. Trail signs weren't accurate to the map. 3. History about the bunkers would be interesting. 4. More bike trails are needed.

A beautiful, quiet refuge.

ARNWR has been well designed to accommodate the needs of the people in its vicinity, and offers in its Visitor Center a geothermal heated building which provides an additional teaching opportunity by its example of energy-efficient construction for those who are unfamiliar with this technology, and all for free. Please accept my compliments for its coming into being.

Assabet River NWR should be kept in a more natural state. No more paving or bike trails. It should not be turned into a recreation area.

Better lighting needed in outdoor bathrooms (hitting light is just crazy).

Bike trails ought to be better maintained to facilitate biking. Use of gravel and sand makes biking quite difficult in some spots.

Excellent service, facilities, and displays. Good gift shop as well, but only had a few printed maps to hand out.

Great job! I would like to see more parking by the canoe/ kayak launch site.

I am a Girl Scout leader and would love to take my girls to the Visitor Center, but it isn't open on any of the half-day Wednesdays. Can you add Visitor Center hours on the Wednesdays that public school gets out early (say from 1 to 4pm)? Many troops would come!

I love this place. I started walking here when in was Fort Devens Annex (MA).

I mostly love the trails and signs but the furthest out trail from the road needs a cut back or sign letting people know that there are no off-shoots leading back.

I really enjoy trail running at this facility and also the Oxbow in Harvard, MA.

I think the facilities look good from the outside. However, I have only used the trails for running. I support the use for wildlife observation.

I want camping.

I was disappointed that dogs were not allowed in the refuge.

I wish there were more exploring and educational opportunities for kids 11 and up.

I would like more bike access to more trails!

I would really love a few more trails to bike on. Gates on far end of refuge block smooth and easy hiking and biking. I'd love the option to keep the fish I catch. Way too many good trails are not open to hiking or biking. Travel into and out of refuge via hiking and biking to adjacent state or county parks is blocked for no apparent reason. A picnic ground - tables and grills - on top of the hill adjacent to the pavilion, or even behind the pavilion would be ideal. Reservation rustic camping would be ideal.

I'm thrilled that this refuge has opened up to hunting. There are few opportunities for hunters in eastern MA and this is a great draw for me. I'd love to see a fall turkey season and an additional fishing deck. I would also be very in favor of the creation of more openings in dense forest areas that could serve as both rare turtle nesting areas and game hunting areas. More information about refuge wildlife, management activities, and management priorities would be great. The deer shotgun hunting permit is too expensive.

It has a new, attractive Visitor Center, well-maintained trails, no litter, ample parking, and always enjoyable hiking.

It is very well-maintained with friendly, knowledgeable staff.

It would be great to have more distance markers along the trails, say every 1/2 mile, to know how much more walking was necessary.

It would be wonderful if the White Pond Road trail through the center of the refuge was paved better. The more paved trails the better!

More bathrooms/outhouses around the refuge would be a nice thing to add.

More bicycle paths. "Road" from north gate to Puffer Pond is difficult/unsafe to ride using a road bike.

My grandsons, ages 5 and 3 love going to the Visitor Center. They call it "the wild place".

Needs a month-by-month bird check list.

New Visitor Center is environmentally friendly.

No hunting!

Our experience at Assabet National Wildlife Refuge was fun. It was interesting seeing the old ammunitions bunkers. It was very historical. Trails are well-maintained. The bait boxes were interesting too.

Parking needs to be closer to the boat ramp. It is very difficult to walk a canoe or kayak down the trail to the boat ramp.

Please allow more access to off paved roads. I hike two hours mostly on paved surfaces. I enjoy more natural hiking surfaces (single track trails) better. Bird watching is better. Opportunities for trail/mountain bike riding were great. I did not bring my bike but I would bring it next time. Off road riding is much more enjoyable for me and my friends.

Please open more of the trails for hiking.

Reinforcement of no dogs allowed rule would be much appreciated. More bike trails open would be nice.

Should allow dogs on leash only.

Staff and volunteers are very helpful and knowledgeable. Facilities are very clean.

The hiking activity that I use this refuge for is more than satisfactory.

The new Visitor Center is fantastic. Some of the old roads on the perimeter are not in good shape as roads, but they are perfectly fine as walking trails. I hope they do not invest in improving the roads. Cross country skiing is popular here in the winter, too.

The people skills of staff could be better.

The refuge staff is awesome, they are very warm, friendly and courteous people. Love to go there always!

The Visitor Center is outstanding. The staff are very helpful. Programs like Winter Solstice Walk are beautiful. Beach house for children and others to mark sightings is great. Parks are always clean. It is a great resource for our area. The redemption of ammunitions area is a long process. I've learned to think about long term effect of land use by listening to programs.

The volunteers were very nice but did give some misinformation.

The website is poorly updated. I would like to find out what programs are going on for families, but the web site has no information, and the Facebook page is not communicative. I would attend a lot more events if I knew of them ahead of time.

There are occasional bunker tours at Assabet, but they're always at 11 am. I would love a bunker tour in the mid-afternoon, since it takes me a while to get there.

There are almost no deer or turkey in the park. I have spent a lot of time there turkey hunting/scouting this spring and have seen a total of 3 turkeys! There is no deer sign in the woods at all. Too much access to general public. Grounds need to be preserved for animals and the wildlife needs to be actively managed (limited hunting permits given- maybe use a lottery system). Waterfowl hunting not allowed at this site, however, there is an abundance of waterfowl even in May.

They have an excellent educational set-up/displays.

This refuge goes unknown because it competes with other similar places in the area. It needs more visibility!

This Visitor Center and road paving coupled with over hunting of deer has radically changed the number of deer in the refuge and the number of migrating fowl (less).

Too much paving is detracting from the natural environment. Blacktop surfaces are very hot to walk on in the warmer months. Large groups riding bikes run walkers off the roadways. Bike riders do not follow rules to stay off certain paths.

Trails need better signage.

Very polite and friendly people, who love nature, their jobs and have good knowledge about nature, an amazing exhibit which provides information for kids and adults about local wildlife. We enjoyed watching small live turtles they kept to save over this year's winter. Board where people (especially kids) share information about wildlife they saw is good finding. We like well maintained trails, a lot of signs to help everybody with directions, and protective signs to clarify places are dedicated for wildlife. There are plenty of brochures and maps which are useful because the refuge is not small. It is amazing that in the current economy it's still possible to find money to support such beautiful places

Very satisfied.

Water opportunities are very important and the boat launch is not very good here.

Would like maps to be stocked (usually empty) in front parking lot.

Would like more trails able to be used for biking.

Would like more walking trails opened.

Would like to have some history of the refuge available.

Would love to have Assabet open to waterfowl hunting, perhaps from limited blind locations with restricted lottery and dates/times.

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 = 112)

A chance to be involved with natural settings while walking for exercise makes it unique.

A natural unspoiled environment and this one is free. I like that they don't change the natural beauty of the place.

A NWR offers opportunities to enjoy "the outdoors" in a safe and educational way. A NWR (depending on its location) can serve to bring people together enjoying nature.

A place where there are few if any people in a large area of mostly natural woods, fields and water.

Ability to go and enjoy nature and be in peace and quiet makes it unique.

Assabet National Wildlife Refuge is unique because of its history of having been an ammunition storage facility for the military during World War II. The river and its wildlife supported the Native Americans in that area many years prior and was important to industry too.

Availability to visit without a fee, and observe the local species in their true habitat.

Because it is a refuge, there is no access for dogs, snowmobiles, motorized recreational boats, making it a quiet place to experience and appreciate nature.

Better maintenance of trails than other similar resources.

Brings us back to basic nature in this super fast paced society!

Close to home and accessible.

Completeness

Consistently higher standards and management. Other protected areas may also be excellent, but national wildlife refuges are always excellent.

Educational opportunities like those offered in the Visitor Center.

Everything is very well maintained, marked, and kept very accessible for an enjoyable hike.

Good cross country skiing and snowshoeing. The best in central Massachusetts.

I am a Michigan native and I would occasionally visit Shiawassee Flats NWR. There is a pleasant minimalism to NWR. They rarely build Visitor Centers and whatnot, right on the water where screaming kids and littering dolts will trash it up. The natural threshold of having to walk a bit makes them look nicer and more rewarding.

I enjoy hiking through the many trails. It is well maintained and provides many choices in terms of routes to take.

I enjoyed the peace and quiet, and lack of pets allowed. It's better to not let dogs in when you're trying to preserve wildlife and the natural environment. The focus on environmentally friendly building and facilities at this refuge is really nice.

I feel I am much more likely to observe wildlife here.

I have visited over 100 NWRs. Their variety is fantastic. I love seeing the range of types of environments in this country.

I like that the emphasis is on preserving wildlife, natural habitat, and the environment. It's nice to have a place where peoples' services are of secondary importance. Keep it wild and make sure human impacts are kept to a minimum. For these reasons I tend to enjoy my visits to National Wildlife Refuges greater than to National and State Parks.

I like the combination use of being able to run and hike as physical activity in a beautiful area that is also designed for wildlife conservation. I think this combination is good for humans and good for our natural environment.

I like the fact that they are mostly non hunting areas. They are looked after better.

I love the fact that the old bunkers are still there to see and I'm always intrigued by the trails that you can't go down. Just makes me wonder what the land holds.

I love the peace and quiet the refuge allows. I also love the animal tracks in the wintertime and seeing birds.

I really like the bike trails. They are within a reasonable distance from my house.

I thought the staff in the Visitor Center were very friendly and helpful.

I visit many National Parks and National Forests. The experience in many ways is similar. However, when the refuge protects a specific species that is endangered, this makes the experience unique and valuable.

In my experience there are often less people at the refuges, and those there have a purpose, so you are more likely to see birds and other wildlife as it is quieter and people are more respectful.

Incredibly nice facilities - roads, parking lot, lighting, pavilion, etc.; however, too many restrictions, way too many signs, and for this site, the trails are way too boring for an enjoyable hike while other more interesting, historic trails are closed. Need a 1 and a 2 mile loop with a variety of hills, etc.; have one bunker open as a point of interest.

It has a much better Visitor Center.

It has convenient access, is well-maintained, and uncrowded.

It has one of the best natural areas in the county.

It has varied habitats, good trails and good staff.

It is a beautiful area to take daily walks; everyday is a different experience.

It is a beautiful, historic, peaceful property.

It is a dog free environment that also attracts other people interested in nature. Those tend to not be oriented to mechanized methods of transport, boating, and ATV utilization. The refuges are therefore really quiet.

It is a nice place to go to get away from it all. It makes me feel like I'm in New Hampshire, Maine, or Vermont. I enjoy seeing all the birds and wildlife and refuge staff and other people who visit too.

It is a nice place to walk.

It is a nice, quiet place to exercise and relax and get away from the craziness of real life. Trails are very nice and you always feel safe here.

It is a place for the public to go and view wildlife and exercise knowing that their tax dollars pay for it.

It is impossible to find similar hiking opportunities near suburban Boston.

It is nice to have forest trails to visit without dogs running around.

It is quiet, close, and has well maintained well marked trails.

It is unique in that it was in a suburban area. It was very up to date. There were lots of volunteers and an interpreter with a nature center and diorama with live animals to observe.

It is well kept and close to my home.

It is well managed and safe.

It provides a natural habitat for fish, wildlife, and plants.

It's close by my house and gives lots to enjoy.

It's close to my home!

It's great to have a quiet pathway to walk where it's away from cars. I love being out of my normal neighborhood where there are no loud lawn mowers and no leaf blowers. Maybe a few patrols by the rangers would make me feel safer. We very seldom see other people, maybe a drive by ranger truck would be great.

It's nice to be able to go hiking where dogs are not allowed.

Its natural state.

Large conservation area close to home.

Locally available.

Management has good rules which is a must for any natural piece of wild land.

Many refuges are home to rare species, for instance Aransas in Texas hosts whooping cranes in winter, presenting a good chance of seeing them.

Mission limits usage to low impact varieties i.e. foot and non-motorized bicycles only. Though I no longer hunt, pleased that hunters co-exist with conservationists.

Much more information and variety than a typical park.

National Seashore at Cape Cod.

No motorized vehicles, no powerboats, beautiful places to hike, interesting things to see (bunkers, etc.), peaceful and quiet. I'm a little nervous to hike during hunting season.

Open space and hunting opportunities.

Opportunity to experience and see wildlife and nature makes it unique.

Parks are aimed at people. Forests at timber and extraction. Wildlife refuges are about plants, animals, fishing and hunting.

Protection of the wildlife.

Provides relatively easy access to various and multiple wildlife habitats that are protected i.e.. still in a "wild" and natural state. Watching, over time, the contest between the beaver and the refuge staff as to who will win control over the movement of water in the "culverts" and spillways (sic!).

Public availability to wildlife lands. The detail of dedication to wildlife preservation, example - the turtle breeding field that was made last year.

Quiet, natural, no automobile roadways allow nature to appear and live in their environment.

Refuges are wild living spaces we can immerse ourselves in. The emphasis is on the natural, living world; not "scenery", not "wonders of geology", not tour buses, not killing, not checking off "been there, done that". They are refuges for people as well as for wildlife. Deep in our DNA, we are wildlife too. We need these places.

Safe, family oriented atmosphere, with some of them saving different species of plants and animals preserving our environment and help save our ecology.

Saving our birds.

Seeing wildlife in their own habitat was very calming and nice to see, especially for our kids. It was also just nice to get all of us together for a nice, family afternoon rather than the usual race!

Special place to visit. Quieter and people are usually more respectful of nature.

The biggest advantage in wildlife refuges I see is to maintain balance between having a place for wildlife to have their normal life and making this life to be seen to people with no distraction. We like long trails which allow us to observe wildlife in their native environment; we enjoy quiet places to hear nature sounds rather than yelling and loud talking. Despite wide areas covered by trail systems, the overall size of refuge is big, what helps wildlife to have their life with no distraction. No noise, vehicles, external sounds or smells, great air because of huge areas of conserved land and water, a lot of birds and other animals makes wildlife refuge experience unbeatable.

The bunkers add interest and the Assabet location makes it unique.

The care taken to protect wildlife and allow visitors to respectfully experience it makes it unique.

The education and history of the area, trail hiking, and wildlife observation opportunities make it unique.

The focus on wildlife/habitat preservation management makes it unique. The staff are more knowledgeable about this than in State Parks, etc.

The location of the area (Connecticut - not crowded) and the great Visitor Center with the literature makes it unique.

The only thing I dislike is hunting but I recognize the need to hunt deer in order to combat size of herds.

The opportunities for all people to enjoy something they may have never known about makes it unique.

The programs are excellent.

The reclamation of currently unused spaces because of cessation of previous uses.

The refuge is a place where one finds shelter from the world. It is a world within a world which is untouched by man, and it is in its true beautiful self, and the refugees who find shelter here are so much at peace and calm. The atmosphere is so serene and there is an air of refreshing tranquility here, as if we are one with the animals seeking shelter, and for all it becomes a peaceful haven! Well, that's the kind of experience one journeys through once you step into the refuge!

The refuge is educational as well as scenic. You feel as though you are truly in the woods hiking.

The signs stating dogs are not allowed.

The variety of activities that can be done in this area-- walking, biking, canoeing, cross-country skiing. It is a refuge for all seasons.

The Visitor Centers are of the highest quality and provide more information for the areas they manage.

These are one of the rare places in the northeastern US where consumptive and non-consumptive users come together on the same property. I am a hiker, wildlife watcher, and hunter, and refuges are the only local lands where I regularly do all three activities.

They are far better maintained and provide many more educational opportunities than WMAs. They seem to be very well managed and I really appreciate the opportunity to hunt. I think the hunting program is very well managed but I suggest that significant signage and education during current hunt seasons be added. Current signage about seasons at Assabet does not list turkey season.

They are in my view strategically important parcels, better defended against disturbance than other types of reservations. I believe open space preservation is a wise policy against the mentality of "subduing the earth" or maximum development schemes. Common space is, I have found, endorsed by people from all walks of life and livelihoods from independent contractors to corporate executives. We all need a place to step away from our routines, and refuges fit the bill very well.

They have friendly and knowledgeable staff/ volunteers, a regular upgrading on facilities and a mission of education as well as conservation.

They offer more than just hiking and fishing. They have activities and events. They have a number of well marked trails and wildlife viewing areas.

They tend to be a bit less crowded and therefore provide good opportunities to watch birds/wildlife and hike in quietness.

They try to keep things in a natural state.

This one is unique to me because the Assabet River has been abused. I feel this refuge is unshakeable. Being there is witnessing the process of nature trying to retain/renew what humans have ruined. It's important and until now, I'd thought of USFWS locations as "untouched."

This one is untouched and beautiful.

This refuge has some cool history and exploration opportunities with regard to its past use as a military installation.

Type of use of specific areas or trails is often segregated and clearly marked, such as bike or pedestrian or horse. Often excellently maintained and provide spacious and clean parking and access.

Unique environmental protection and maintenance. We appreciate the thoughtful planning, hard work, and efficient use of national resources that make the National Seashore Beaches on Cape Cod and the Assabet NWR unique recreational opportunities.

Unique location and unique habitat.

Usually water; natural setting; undeveloped.

Varieties of habitats represented by each refuge, often several per refuge. Usually less frequented by human visitors than 'parks', increasing chances of appropriate wildlife viewing opportunities.

We, as a family, thoroughly enjoyed the National Wildlife Refuge in our local area. We enjoyed walking the trails, and fishing in a local pond within the refuge.

Well maintained place to hike/cycle.

Well managed mixed use environment, low cost.

Well managed, kept isolated. It's nice to feel like you're away from civilization.

Wellness, a wonderful asset future form of STOW makes it unique.

Wildlife

With this refuge, I visited and felt my federal tax dollars were doing some good. I also am extremely happy that a barren piece of land was turned into something very worth while. Thanks.

You have people right at hand to answer questions. I live locally and this provides an educational experience for what is local to where I live.

Additional Comments (n = 34)

Although there are signs prohibiting dogs on the refuge people still bring dogs. I would like to see better enforcement of the no dog rules.

Areas of the refuge dealing with hunting should be carefully delineated and marked. Many schools and visitors are reluctant to go on the trails where hunting may occur. There is a need for more points of interest along trails. This could be done with signage and enhancement of certain habitats. More opportunities for educating visitors about wildlife and the outdoors should be provided. Assabet River is a great place!

As a dog owner living near the refuge, I wish at least some of the trails were open to dogs (on leash and with owners acting responsibly of course).

Assabet National Wildlife Refuge needs to move parking closer to the boat ramp to make it accessible as well as open up more trails.

Eastern MA is blessed with many refuges. I believe refuges perform a very important role for conserving and protecting wildlife. However, I do not support hunting, and so, primarily visit National Parks. Wildlife viewing and hiking are my most valued activities.

I feel very fortunate having the Assabet River NWR on my doorstep. It has a highly interesting history, and I've had many experiences not often encountered by an urban dweller, such as being attacked by a goshawk that expected I would threaten its chicks -- not to speak of the otters, deer, turkeys and various birds I've encountered there while walking.

I live within walking distance of the Assabet River National Wildlife Refuge. It is the best thing about living in my town. My wife and I walk, explore, and enjoy our trips to the refuge several times a week. It is a delight and a treasure.

I love the Assabet Wildlife Refuge in my town of Maynard, MA. I am always surprised that some people in our town do not know about it!

I only stopped to use the bathroom. It had no lights and no toilet paper. But the refuge seemed nice and I would like to go back.

I visit the Assabet River NWR at least once per week as a destination to exercise by riding a bike from my home. I see lots of wildlife there. Today, a coyote for the first time. It is less than a mile from my house and I consider it one of the best reasons to live in Maynard.

I wish ANWR would open up more trails. I wish you would repair the lumpy access road at the White Pond entrance. I wish hunting would not be allowed near walking trails, or maybe only allow hunters a couple of hours at dawn and dusk.

I would like to be able to ride a bike on more of the trails. Thanks!

It is terrifying to be running on trails alone and encounter a hunter with a massive and lethal looking bow, who doesn't respond to one's greeting--and this was at noon on a weekday. Should hunters be on trails when members of the public are likely to be there too? That experience kept me away from the refuge for at least a month.

Just thanks for the great place to be.

My husband and I are retired and we use the refuge for a pleasant place to walk.

My husband and I mostly go out to walk or hike--viewing the wildlife is a bonus. My husband also takes photos of wildlife. In addition we still do a little camping.

Prior to the re-building of the roads and the addition of the new pavilion and staffing, the roads and trails were excellent. This refuge is a tough place to bring the kids. It is in need of a picnic site and shorter, more interesting hiking trails. Visiting these very long trails via bike is excellent; way too long for the majority of people to hike (though I do regularly).

Thanks for all you do!

Thanks for including me in this survey. Hope some of my tips will be considered in future development plans.

Thanks!

The ANWR is a wonderful addition to the metro-west area outside on Boston. We are fortunate to have it in our "backyard".

The number of trips includes many visits to local conservation land to walk. We also orienteered on some trips.

There are many walking trails in Hudson, MA and the area around it. We try to use them all. But we appreciate the old roads and abandoned railroad beds in the refuge and try to walk on all the allowed ones. It's a beautiful area, even though it was once an ammunition storage area. It's primarily underutilized, but we enjoy the solitude.

There is a convenient trailhead, a nice well paved road to the Visitor Center. A small but very well utilized space with examples of local wildlife. A nice poster size trail map and helpful guides. We walked with lightweight umbrella stroller: sandbank, puffer pond, Taylor Way, Otter Alley, and Harry's Way. The trails are well spread out and well groomed. The fishing dock is small but well constructed. Along Harry's way there are old WWII bunkers which give an interesting and surreal feel to your walk. The area was fantastically quiet with essentially no road noise and sparse aircraft. In the western pine barrens it is sincerely peaceful and pleasant. We did not get a chance to see the rail trail but the newly laid path along the main road was very nice. The only major critique is that the pocket trail map is difficult to use and confusingly noted. The main road (paved) is labeled the same as the other roads (unimproved) and many trails are broad enough to be considered an unimproved road. More thorough notation would make way finding and planning much easier

This refuge has some kind of military observatory on its property. This observatory is surrounded by a very tall fence which is locked. Yet, the roadway on that side of the refuge was closed to visitors. This eliminates a large area and a few trails from public access. With a locked gate, too large to scale, I don't see the point of restricting the public from passing by on a pleasure walk or bike ride. Why the paranoia?

Very disappointed that dogs are not allowed. All you need are signs showing the rules for good behavior. For this reason, I seldom visit.

Very nice location, to run, walk, and bike!

We didn't know much about it but my wife mentioned it. Glad to visit and enjoyed the facilities. Had a very pretty river and a few good, short walks. Seemed like a good spot to ride a bike. We will return.

We need to expand and educate.

Well, let the good work continue as usual!

Wonderful place, I really appreciate that it is here and accessible.

Wonderfully close by! A beautiful place! Thank you!

You need building rocks in your Visitor Center.

You provide a great service to visitors and to the environment!
