



National Wildlife Refuge Visitor Survey 2010/2011: Individual Refuge Results for Sonny Bono Salton Sea National Wildlife Refuge

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It isn't a park as much as it is a real connection to wildlife and their habitat. Refuges provide more face-to-face experiences with wildlife and plants providing better opportunities to be educated on habitat, conservation, and environmental impacts.—Survey comment from visitor to Sonny Bono Salton Sea National Wildlife Refuge.



Sonny Bono Salton Sea National Wildlife Refuge. Photo credit: U.S. Fish and Wildlife Service.

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Introduction

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

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

Organization of Results

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

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

Methods

Selecting Participating Refuges

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

Developing the Survey Instrument

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

Contacting Visitors

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

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

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

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

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

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

Interpreting the Results

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

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

Refuge Description for Sonny Bono Salton Sea National Wildlife Refuge

The Sonny Bono Salton Sea National Wildlife Refuge was established as a sanctuary and breeding ground for birds and other wildlife when nearly 33,000 acres were set aside in 1930. Located within the Pacific Flyway, this refuge is an important migration route as well as a resting place and wintering area for these birds. Named after congressman Sonny Bono who played an active role in restoring the health of the Salton Sea, this refuge is located in California's Imperial Valley, 40 miles north of the Mexican border at the southern end of the Salton Sea. Because of its southern latitude, elevation of 227 feet below sea level, and location within the Sonoran Desert, the refuge sees some of the hottest temperatures (116° to 120°F) in the nation.

This refuge holds two separately managed units, each unit containing wetland habitats, farms fields and tree rows managed for native species and biodiversity. The land in this refuge is mostly flat except for Rock Hill, a small, inactive volcano. The refuge is bordered by the Salton Sea on the north and farmlands on the east, south, and west. The New and Alamo Rivers run through the refuge, providing fresh water to the Salton Sea. However, because the Sea has no outlet, the salt content of the water has increased steadily over time. Due to agricultural runoff and the rise in the level of the Salton Sea, most of the original refuge area has been covered completely by the salty lake. At present, only about 2,000 acres are farmed and managed for wetlands. Rye grass is grown on the refuge as food for wintering geese in the area. However, as farming practices have changed, less water is being used on neighboring crops and therefore runoff into the Salton Sea

With close to 30,000 visitors each year (based on 2008 RAPP database; U.S. Fish and Wildlife Service, 2011, written comm.), the refuge offers a variety of activities including use of the Visitor Center, waterfowl hunting, fishing, hiking along the Rock Hill and Michael Hardenberger Trails, wildlife observation, photography, and environmental education and interpretation programs. Figure 1 below displays a map of the refuge. For more information, please visit the refuge website: <http://www.fws.gov/saltonsea/>.

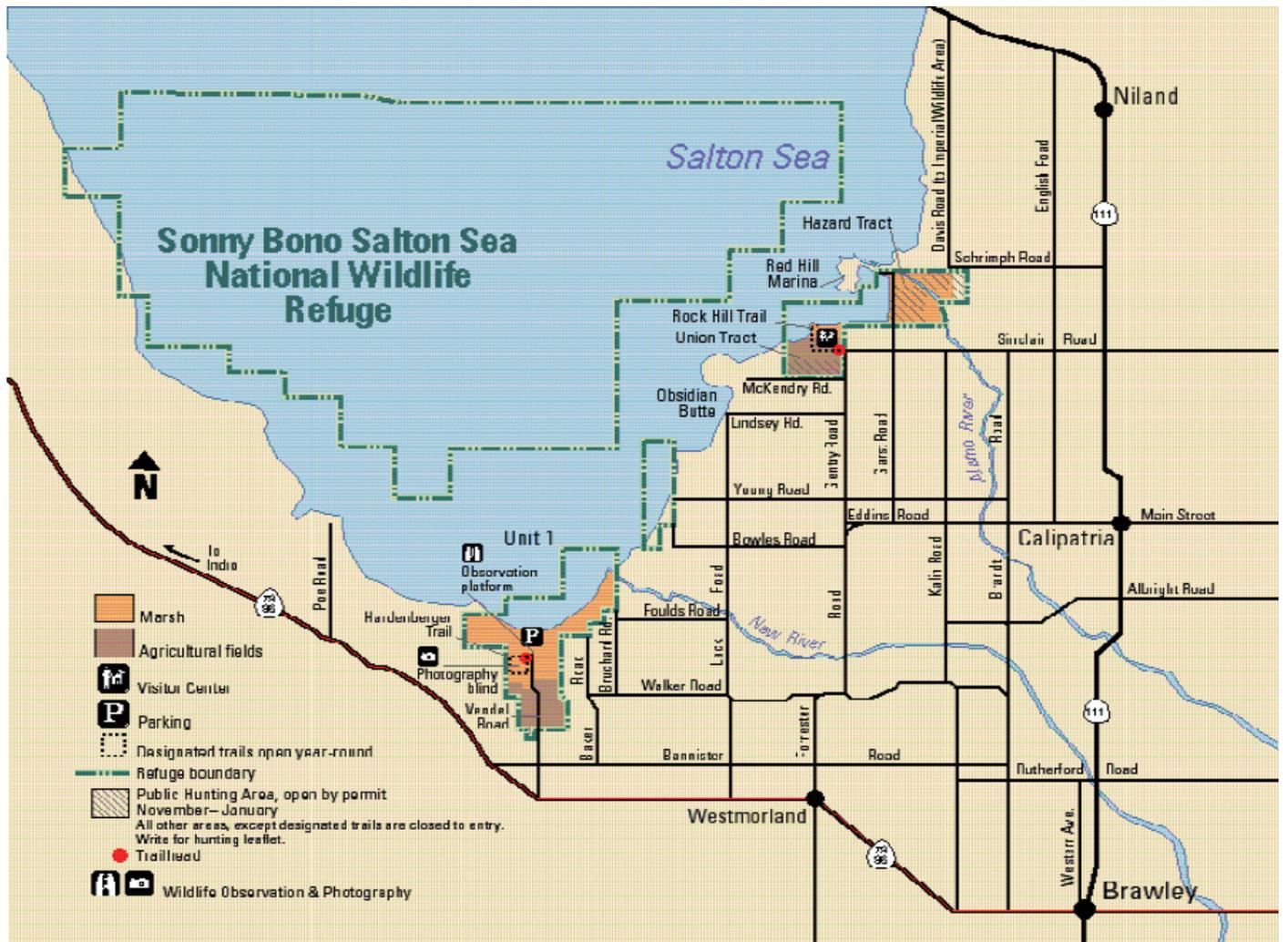


Figure 1. Map of Sonny Bono Salton Sea NWR, courtesy of U.S. Fish and Wildlife Service.

Sampling at Sonny Bono Salton Sea National Wildlife Refuge

A total of 298 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Sonny Bono Salton Sea NWR (table 2). In all, 241 visitors completed the survey for an 83% response rate and $\pm 5\%$ margin of error at the 95% confidence level.¹

Table 2. Sampling and response rate summary for Sonny Bono Salton Sea NWR.

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	11/13/2010 to 11/27/2010	Visitor Center Unit 1 Trailhead	155	6	122	82%
2	2/12/2011 to 2/26/2011	Visitor Center Unit 1 Trailhead	143	1	119	84%
Total			298	7	241	83%

Selected Survey Results

Visitor and Trip Characteristics

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

Familiarity with the Refuge System

While we did not ask visitors to identify the mission of the National Wildlife Refuge System or the U.S. Fish and Wildlife Service, visitors to Sonny Bono Salton Sea NWR reported that before participating in the survey, they were aware of the role of the U.S. Fish and Wildlife Service in managing national wildlife refuges (88%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants and their habitat (94%). Positive responses to these questions concerning the management and mission of the Refuge System do not indicate the degree to which these visitors understand the day-to-day management practices of individual refuges, only that visitors feel they have a basic knowledge of who manages refuges and why. Compared to other public lands, many visitors feel that refuges provide a unique

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

recreation experience (87%; see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System. Most visitors to Sonny Bono Salton Sea NWR had been to at least one other National Wildlife Refuge in the past year (78%), with an average of 5 visits to other refuges during the past 12 months.

Visiting This Refuge

Most surveyed visitors (63%) had only been to Sonny Bono Salton Sea NWR once in the past 12 months, while others had been multiple times (37%). These repeat visitors went to the refuge an average of 5 times during that same 12-month period. Visitors used the refuge during only one season (72%), during multiple seasons (22%), and year-round (5%).

Most visitors first learned about the refuge from friends/relatives (38%), signs on the highway (22%), or a recreation club/organization (14%; fig. 2). Key information sources used by visitors to find their way to this refuge include signs on highways (56%), previous knowledge (42%), or a road atlas/highway map (38%; fig. 3).

Few visitors (10%) lived in the local area (within 50 miles of the refuge), whereas 90% were nonlocal visitors. For most local visitors, Sonny Bono Salton Sea NWR was the primary purpose or sole destination of their trip (44%) or one of many equal purposes (44%; table 3). For most nonlocal visitors, the refuge was the primary purpose or sole destination of their trip (45%). Local visitors (n = 25) reported that they traveled an average of 33 miles to get to the refuge, while nonlocal visitors (n = 214) traveled an average of 305 miles. ***It is important to note that summary statistics based on a small sample size (n < 30) may not provide a reliable representation of the population.*** Figure 4 shows the residence of visitors travelling to the refuge. About 57% of visitors travelled to Sonny Bono Salton Sea NWR were from California.

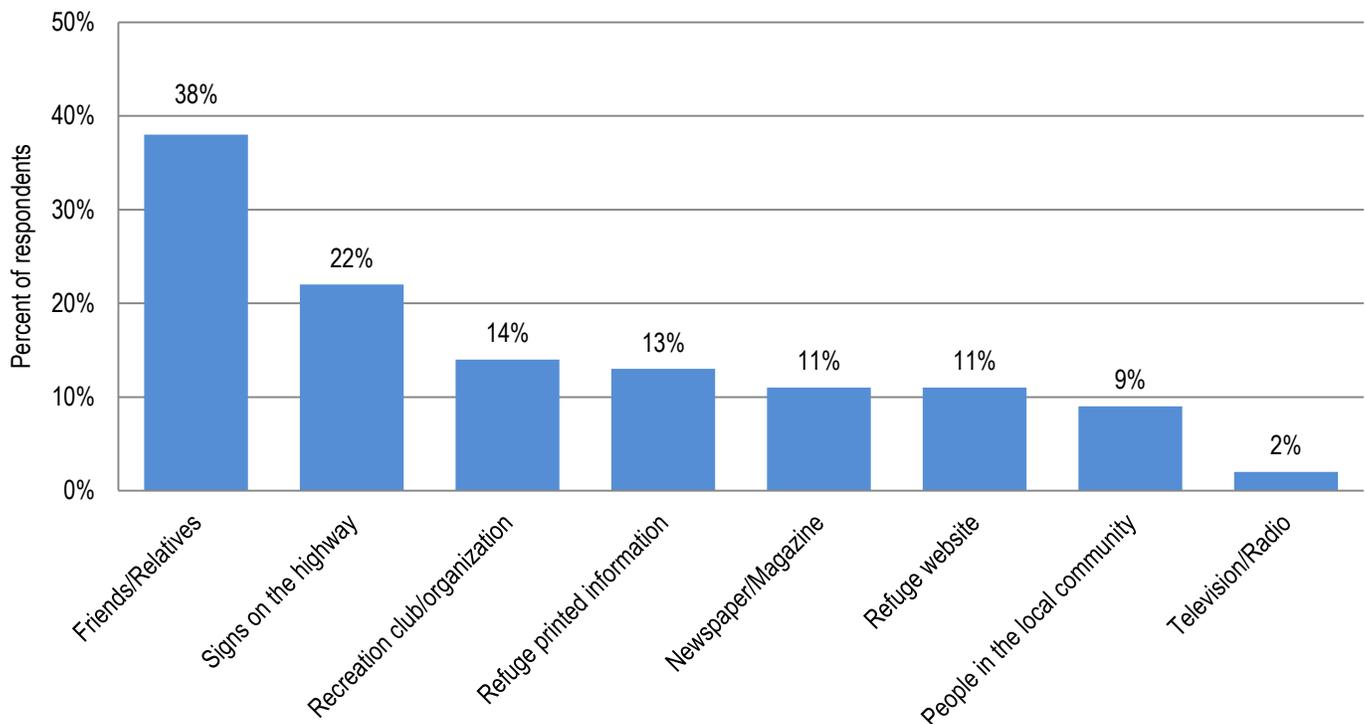


Figure 2. How visitors first learned or heard about Sonny Bono Salton Sea NWR (n = 233).

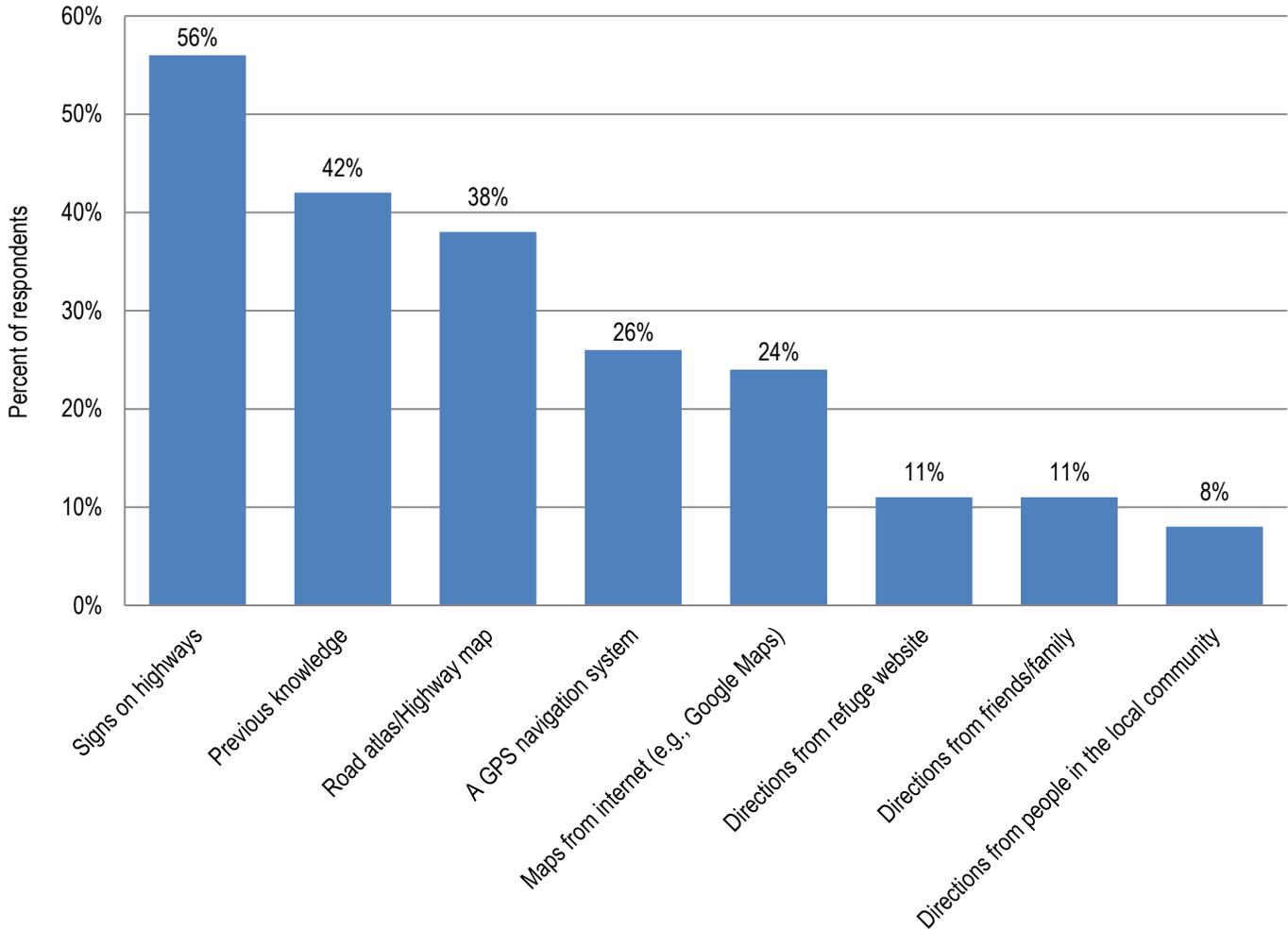


Figure 3. Resources used by visitors to find their way to Sonny Bono Salton Sea NWR during *this* visit (n = 235).

Table 3. Influence of Sonny Bono Salton Sea NWR on visitors' decision to take *this* trip.

Visitors	Visiting this refuge was...		
	the primary reason for trip	one of many equally important reasons for trip	an incidental stop
Nonlocal	45%	37%	18%
Local	44%	44%	12%
Total	45%	38%	17%

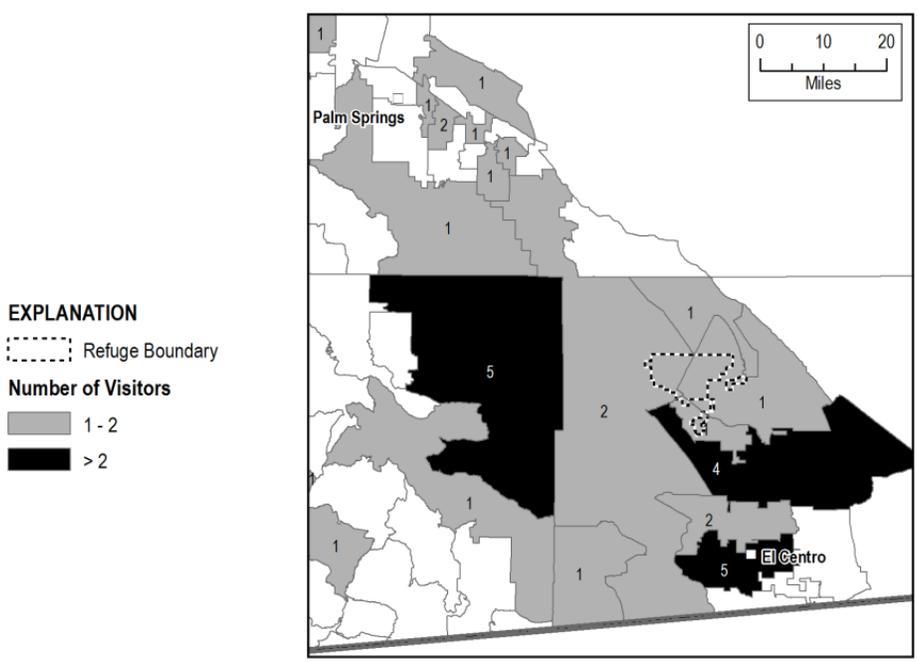
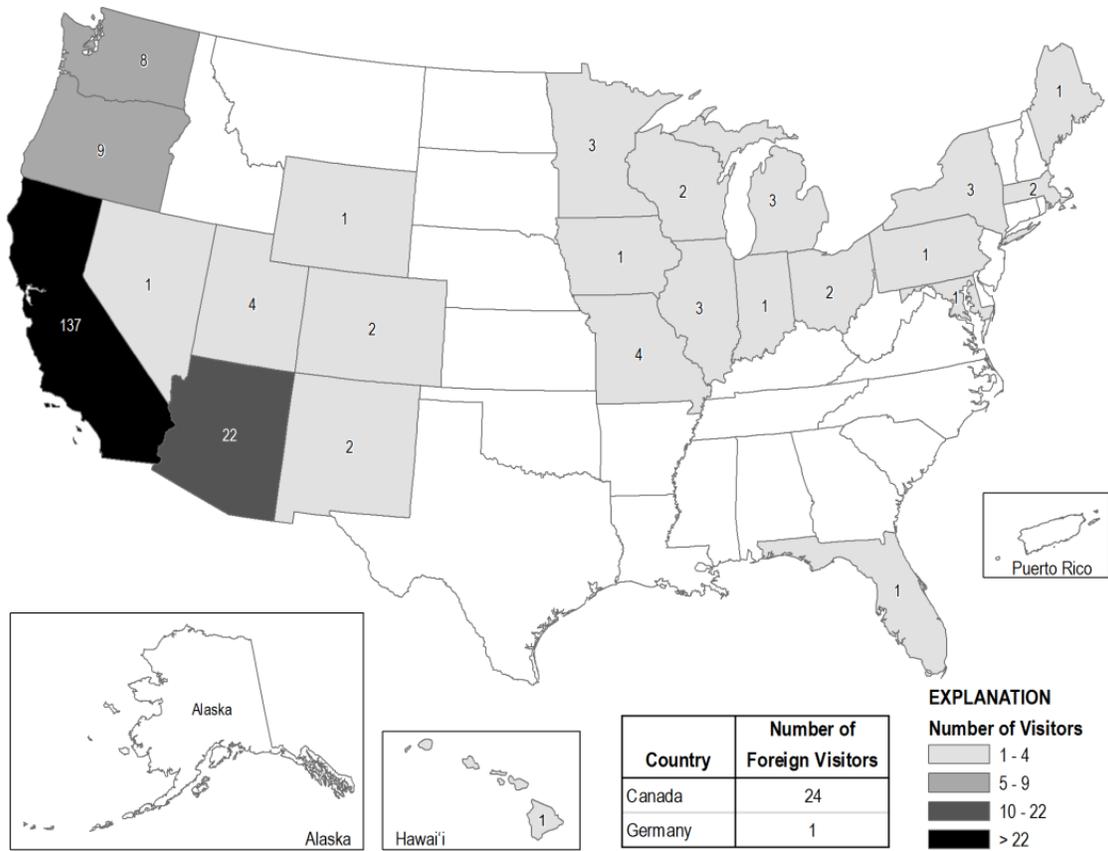


Figure 4. Number of visitors travelling to Sonny Bono Salton Sea NWR by residence. Top map shows residence by state and bottom map shows residence by zip codes near the refuge (n = 240).

Surveyed visitors reported that they spent an average of 4 hours at Sonny Bono Salton Sea NWR during one day there (a day visit is assumed to be 8 hours). However, the most frequently reported length of visit during one day was actually 8 hours (29%). The key modes of transportation used by visitors to travel around the refuge were private vehicle (96%) and walking/hiking (27%; fig. 5). Most visitors indicated they were part of a group on their visit to this refuge (67%), travelling primarily with family and friends (table 4).

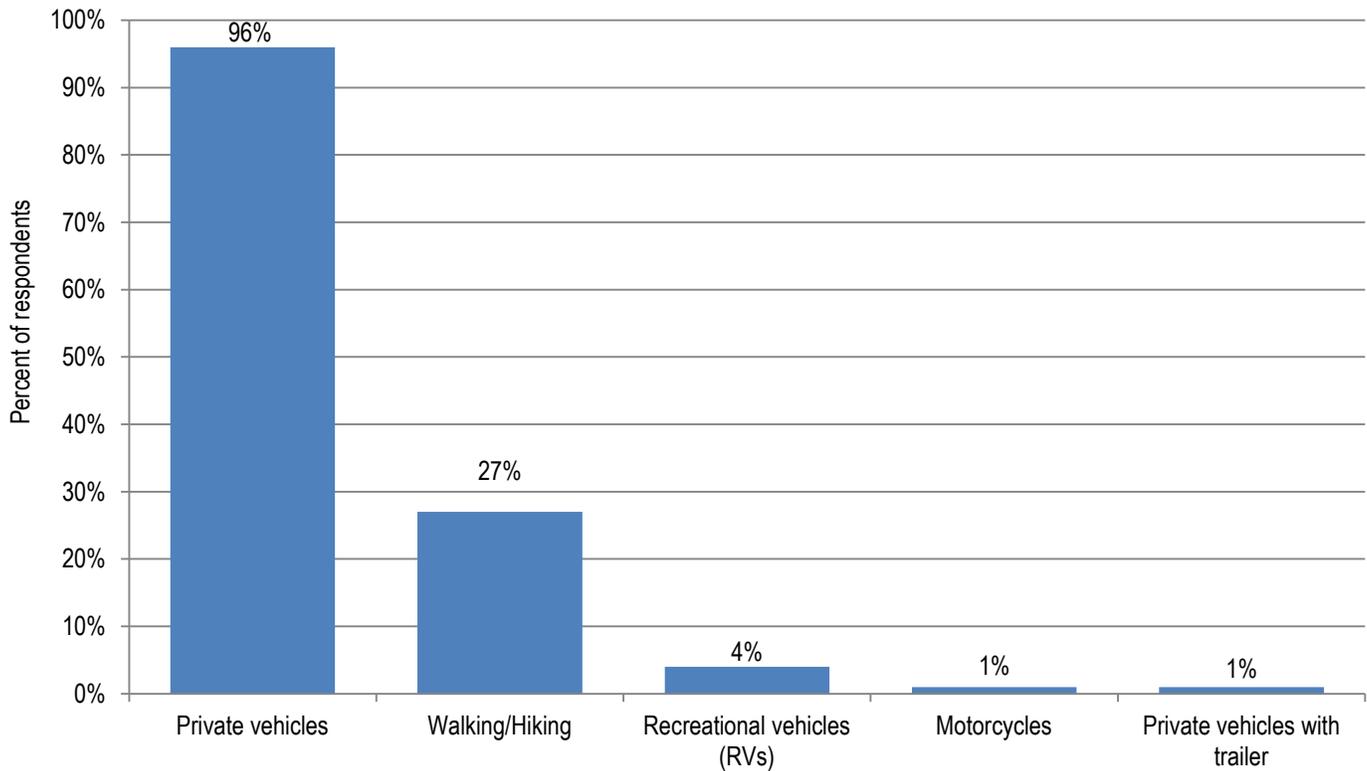


Figure 5. Modes of transportation used by visitors to Sonny Bono Salton Sea NWR during *this* visit (n = 234).

Table 4. Type and size of groups visiting Sonny Bono Salton Sea NWR (for those who indicated they were part of a group, n = 161).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	90%	3	0	3
Commercial tour group	0%	0	0	0
Organized club/School group	8%	20	1	21
Other group type	2%	11	0	11

Surveyed visitors participated in a variety of refuge activities during the past 12 months (fig. 6); the top three activities reported were bird watching (88%), wildlife observation (64%), and photography (53%). The primary reasons for their most recent visit included bird watching (68%), wildlife observation (8%), and photography (6%; fig. 7). The visitor center was used by 92% of visitors, mostly to ask information of staff/volunteers (84%), stop to use the facilities (for example, get water, use the restroom; 81%), and view the exhibits (79%; fig. 8).

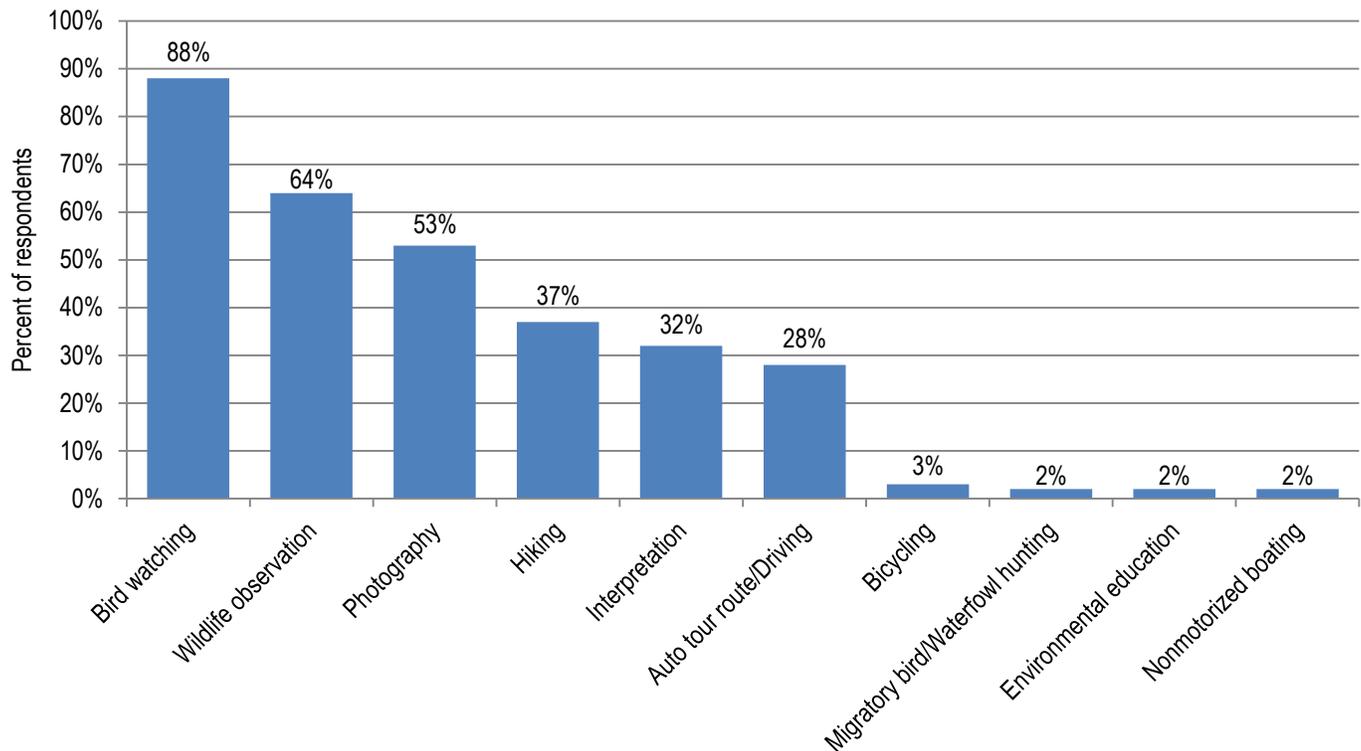


Figure 6. Activities in which visitors participated during the past 12 months at Sonny Bono Salton Sea NWR (n = 240). See Appendix B for a listing of “other” activities.

Visitor Characteristics

Nearly all (89%) surveyed visitors to Sonny Bono Salton Sea NWR indicated that they were citizens or permanent residents of the United States. Only those visitors 18 years or older were sampled. Visitors were a mix of 58% male with an average age of 59 years and 42% female with an average age of 58 years. Visitors, on average, reported they had 17 years of formal education (graduate or professional school). The median level of income was \$75,000–\$99,000. See Appendix A for more demographic information. In comparison, the 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation found that participants in wildlife watching and hunting on public land were 55% male and 45% female with an average age of 46 years, an average level of education of 14 years (associate degree or two years of college), and a median income of \$50,000–\$74,999 (Harris, 2011, personal communication). Compared to the U.S. population, these 2006 survey participants are more likely to be male, older, and have higher education and income levels (U.S. Department of the Interior and U.S. Department of Commerce, 2007).

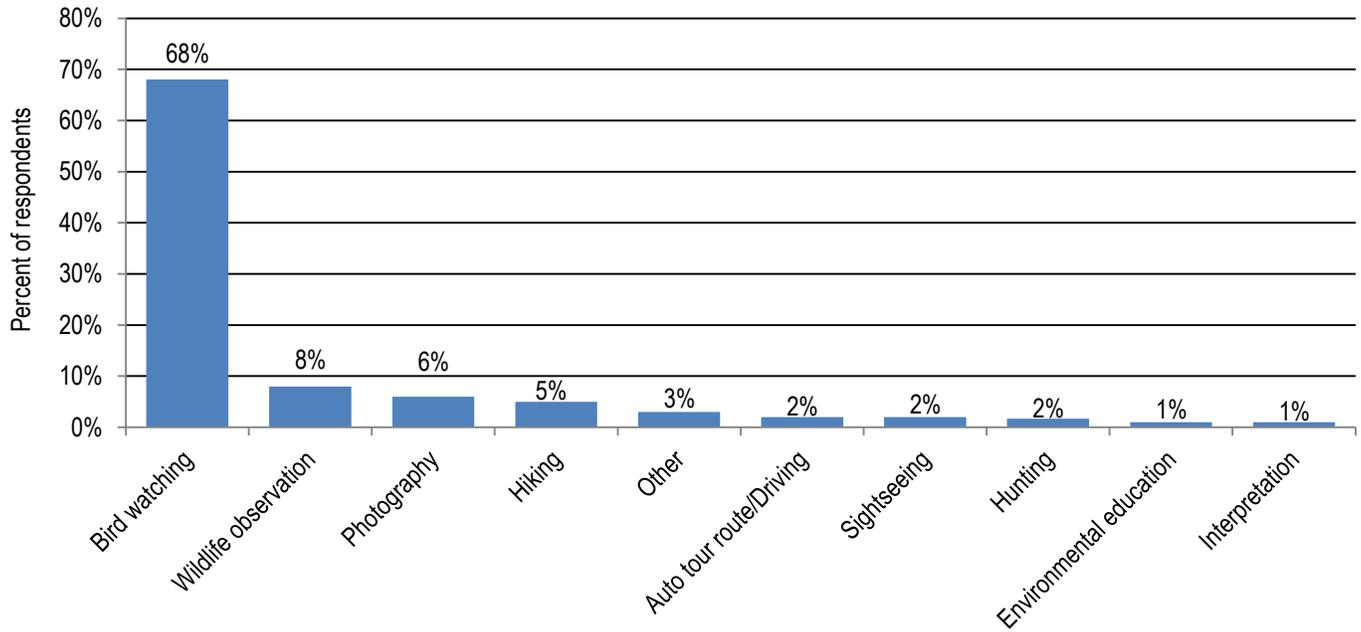


Figure 7. The primary activity in which visitors participated during *this* visit to Sonny Bono Salton Sea NWR (n = 229). See Appendix B for a listing of “other” activities.

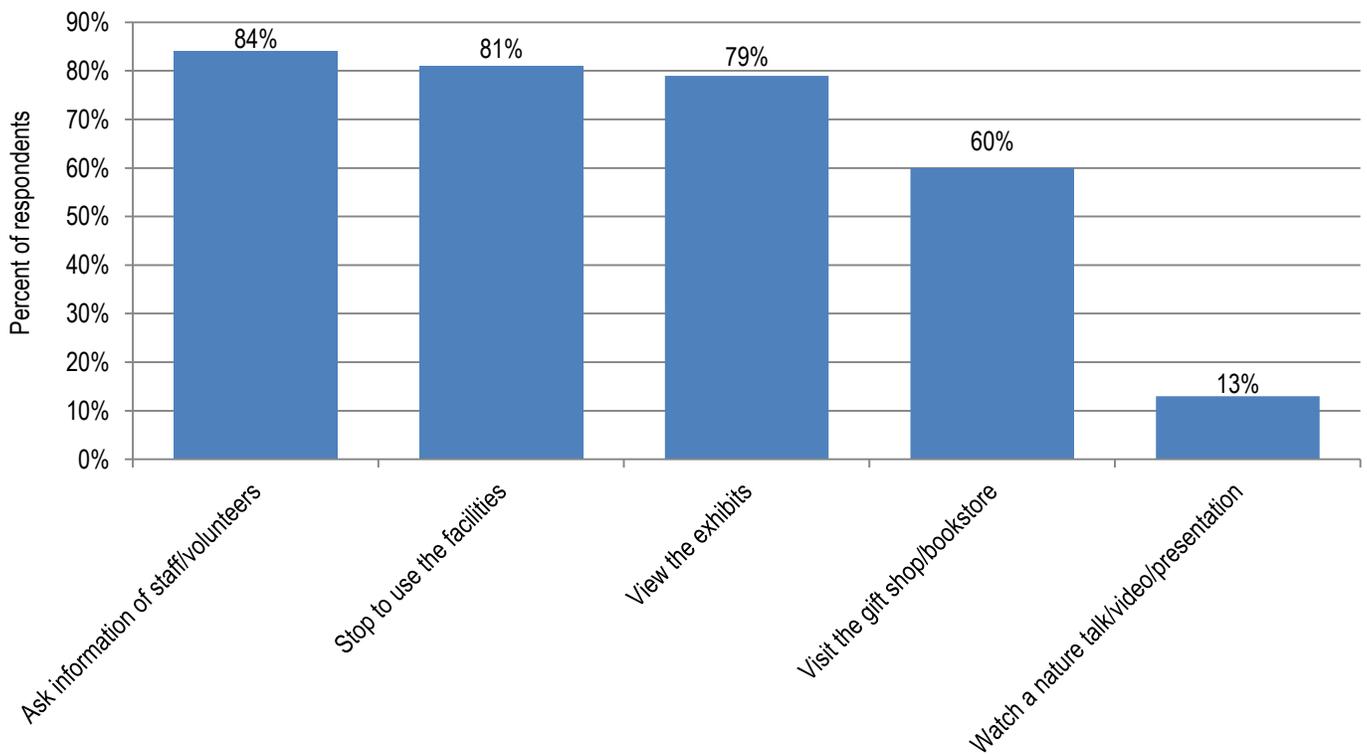


Figure 8. Use of the visitor center at Sonny Bono Salton Sea NWR (for those visitors who indicated they used the visitor center, n = 220).

Visitor Spending in Local Communities

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

A region (and its economy) is typically defined as all counties within 50 miles of a travel destination (Stynes, 2008). Visitors that live within the local 50-mile area of a refuge typically have different spending patterns than those that travel from longer distances. During the two sampling periods, 10% of surveyed visitors to Sonny Bono Salton Sea NWR indicated that they live within the local area. Nonlocal visitors (90%) stayed in the local area, on average, for 3 days. Table 5 shows summary statistics for local and nonlocal visitor expenditures in the local communities and at the refuge, with expenditures reported on a per person per day basis. ***It is important to note that summary statistics based on a small sample size ($n < 30$) may not provide a reliable representation of that population.*** During the two sampling periods, nonlocal visitors spent an average of \$53 per person per day and local visitors spent an average of \$42 per person per day in the local area. Several factors should be considered when estimating the economic importance of refuge visitor spending in the local communities. These include the amount of time spent at the refuge, influence of refuge on decision to take this trip, and the representativeness of primary activities of the sample of surveyed visitors compared to the general population. Controlling for these factors is beyond the scope of the summary statistics presented in this report. Detailed refuge-level visitor spending profiles which do consider these factors will be developed during the next phase of analysis.

Table 5. Total visitor expenditures in local communities and at Sonny Bono Salton Sea NWR expressed in dollars per person per day.

Visitors	n ¹	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	186	\$41	\$53	\$47	\$0	\$250
Local	16	\$25	\$42	\$34	\$6	\$115

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

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

Visitor Opinions about This Refuge

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

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

- 89% were satisfied with the recreational activities and opportunities,
- 90% were satisfied with the information and education about the refuge and its resources,
- 93% were satisfied with the services provided by employees or volunteers, and
- 90% were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

Although 15% of visitors (n = 36) indicated they paid a fee to enter Sonny Bono Salton Sea NWR, the refuge does not have an entrance fee. There are state fees associated with hunting on the refuge; it may be that some visitors were referencing these fees when answering this question.

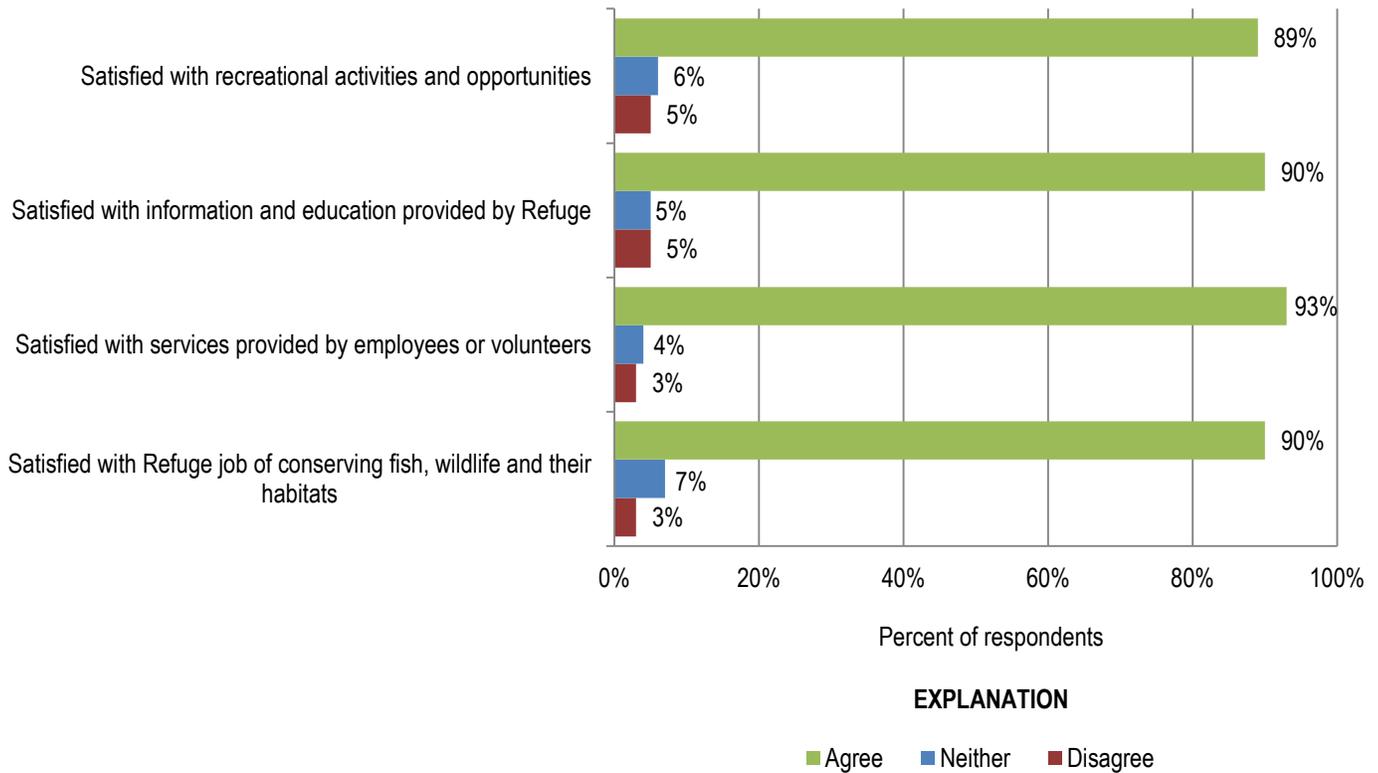


Figure 9. Overall satisfaction with Sonny Bono Salton Sea NWR during *this* visit (n ≥ 231).

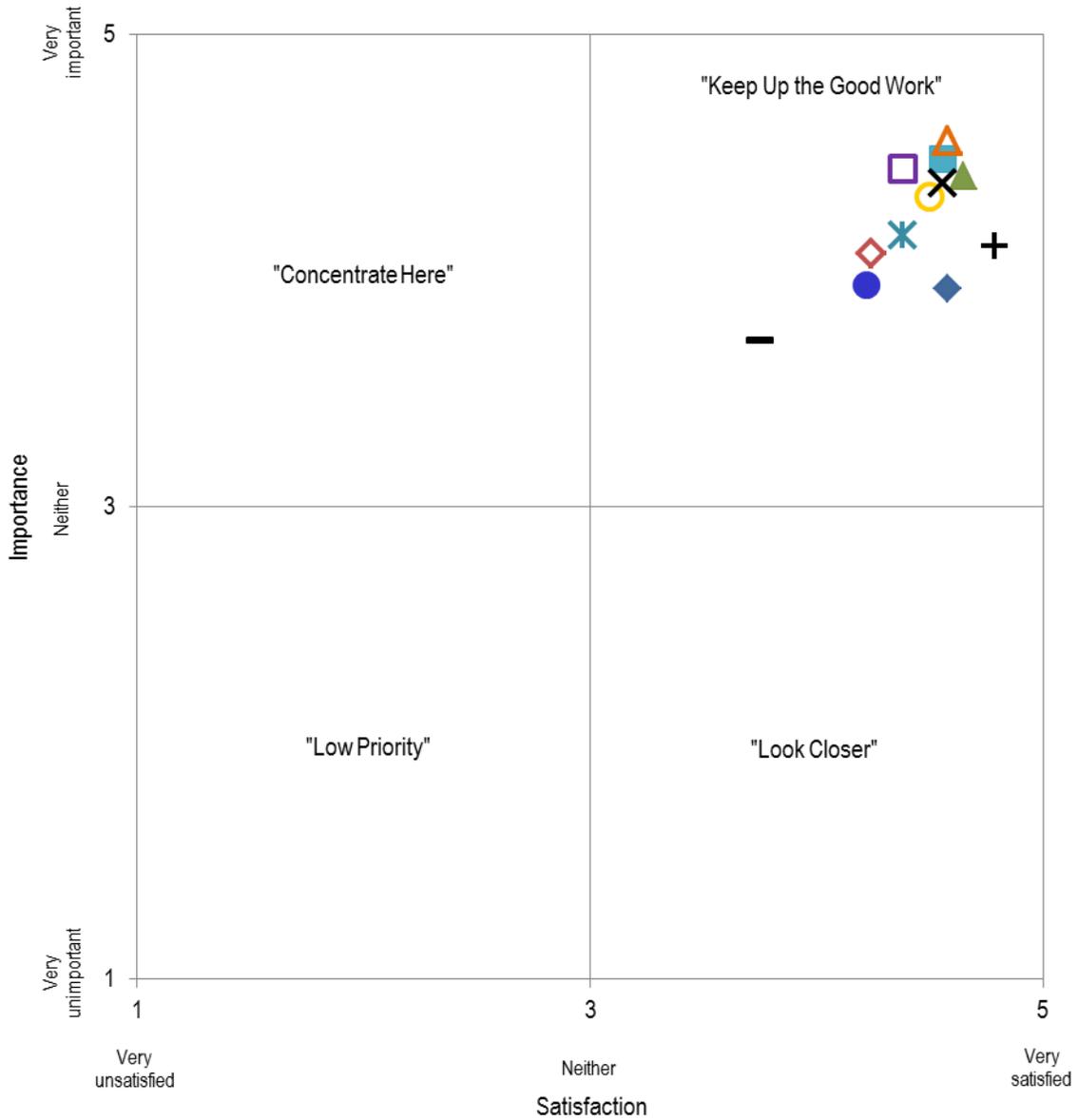
Importance/Satisfaction Ratings

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

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

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

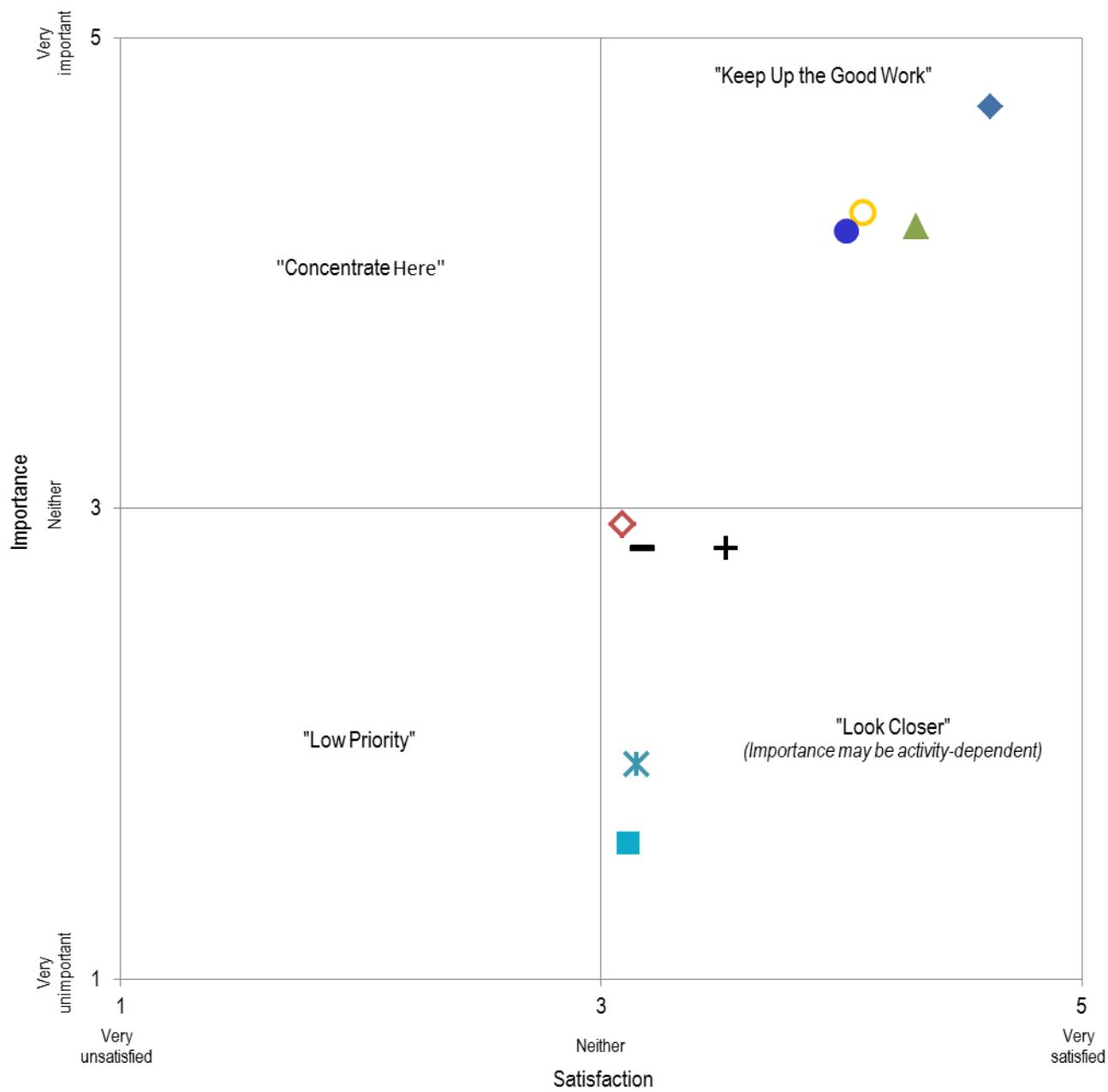
Figures 10-12 depict surveyed visitors' importance-satisfaction results for refuge services and facilities, recreational opportunities, and transportation-related features at Sonny Bono Salton Sea NWR, respectively. All refuge services and facilities fell in the "Keep Up the Good Work" quadrant (fig. 10). Some refuge recreational opportunities fell in the "Keep Up the Good Work" quadrant except hunting, fishing, canoe/kayak, volunteering and bicycling opportunities, which fell into the "Look Closer" quadrant (fig. 11). The average importance of hunting, fishing, canoe/kayak, and bicycling activities in the "Look Closer" quadrant may be higher among visitors who have participated in these activities during the past 12 months; however, there were not enough individuals in the sample to evaluate the responses of such participants. It is not known how many visitors in the sample volunteered at the refuge. All transportation-related features fell in the "Keep Up the Good Work" quadrant (fig. 12).



EXPLANATION

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

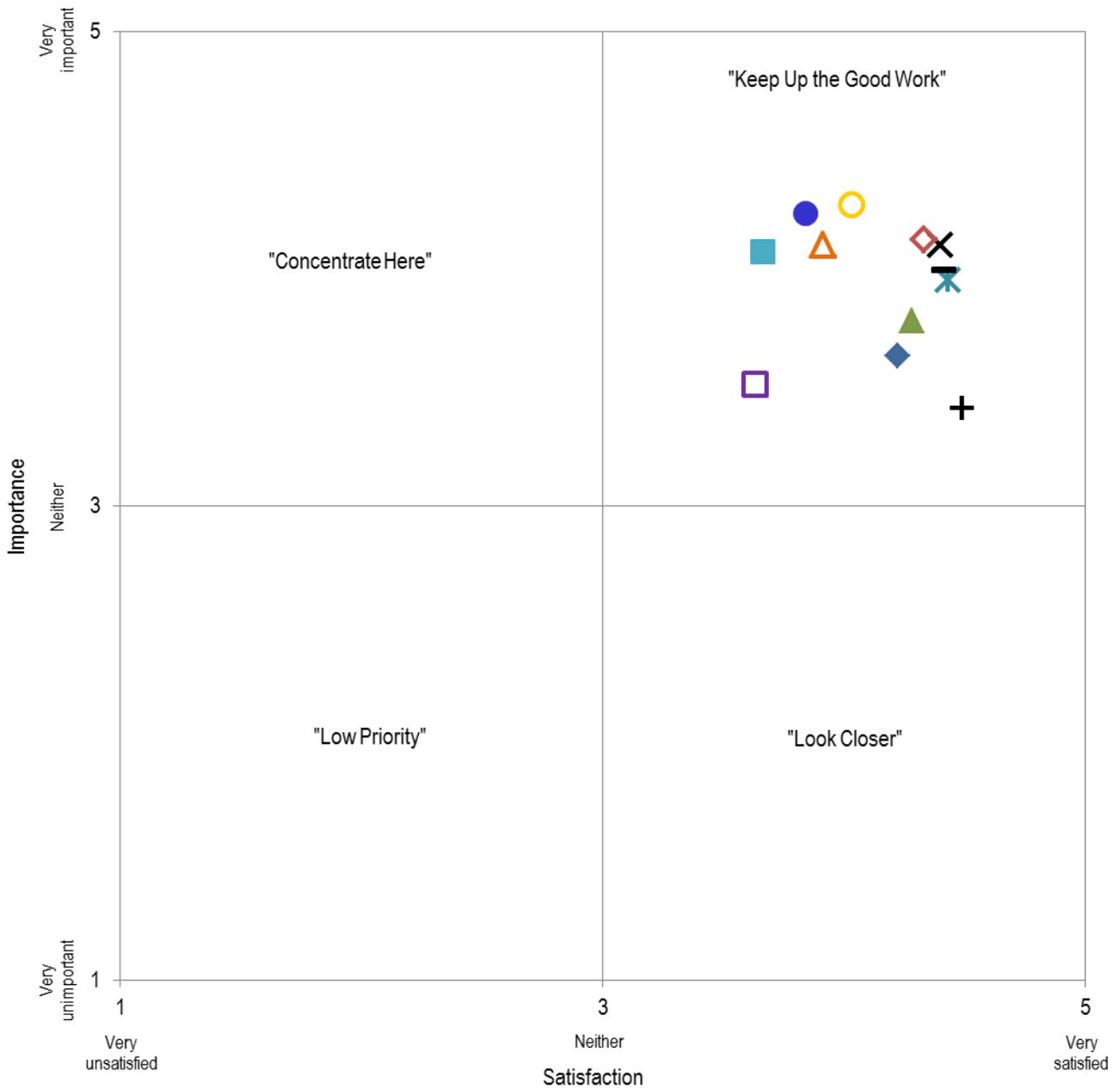
Figure 10. Importance-satisfaction ratings of services and facilities provided at Sonny Bono Salton Sea NWR.



EXPLANATION

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

Figure 11. Importance-satisfaction ratings of recreational opportunities provided at Sonny Bono Salton Sea NWR.



EXPLANATION

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

Figure 12. Importance-satisfaction ratings of transportation-related features at Sonny Bono Salton Sea NWR.

Visitor Opinions about National Wildlife Refuge System Topics

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

Alternative Transportation and the National Wildlife Refuge System

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

Of the six Refuge System-wide alternative transportation options listed on the survey, the majority of Sonny Bono Salton Sea NWR visitors who were surveyed were likely to use the following options at national wildlife refuges in the future (fig. 13):

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

The majority of visitors were *not* likely to use a bike share program at national wildlife refuges in the future (fig. 13).

When asked about using alternative transportation at Sonny Bono Salton Sea NWR specifically, 44% of visitors indicated they were unsure whether it would enhance their experience; however, some visitors thought alternative transportation would enhance their experience (27%) and others thought it would not (29%).

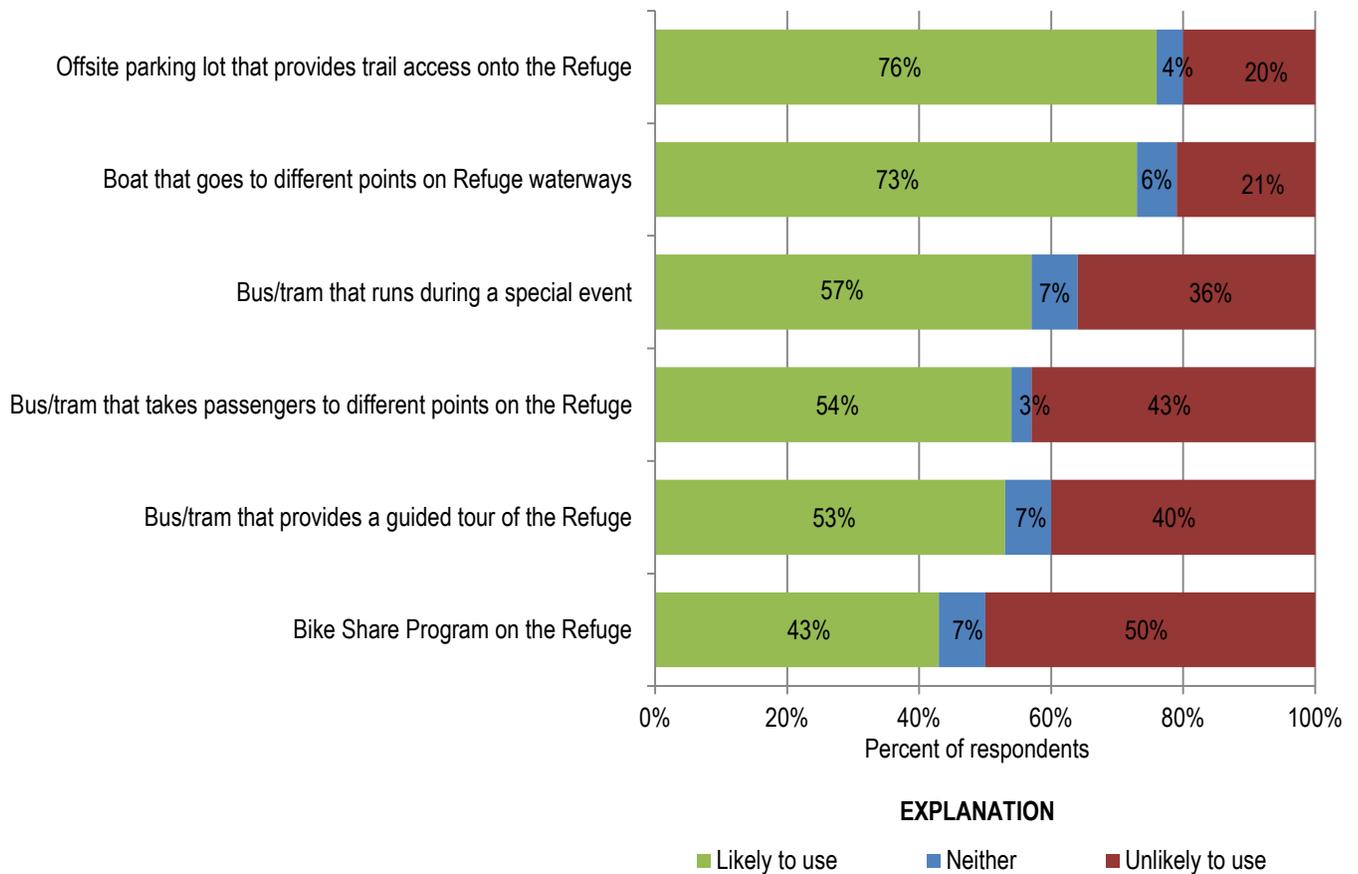


Figure 13. Visitors’ likelihood of using alternative transportation options at national wildlife refuges in the future (n ≥ 229).

Climate Change and the National Wildlife Refuge System

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

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

wildlife and their habitats. The majority of surveyed visitors to Sonny Bono Salton Sea NWR agreed with the following statements (fig. 14):

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

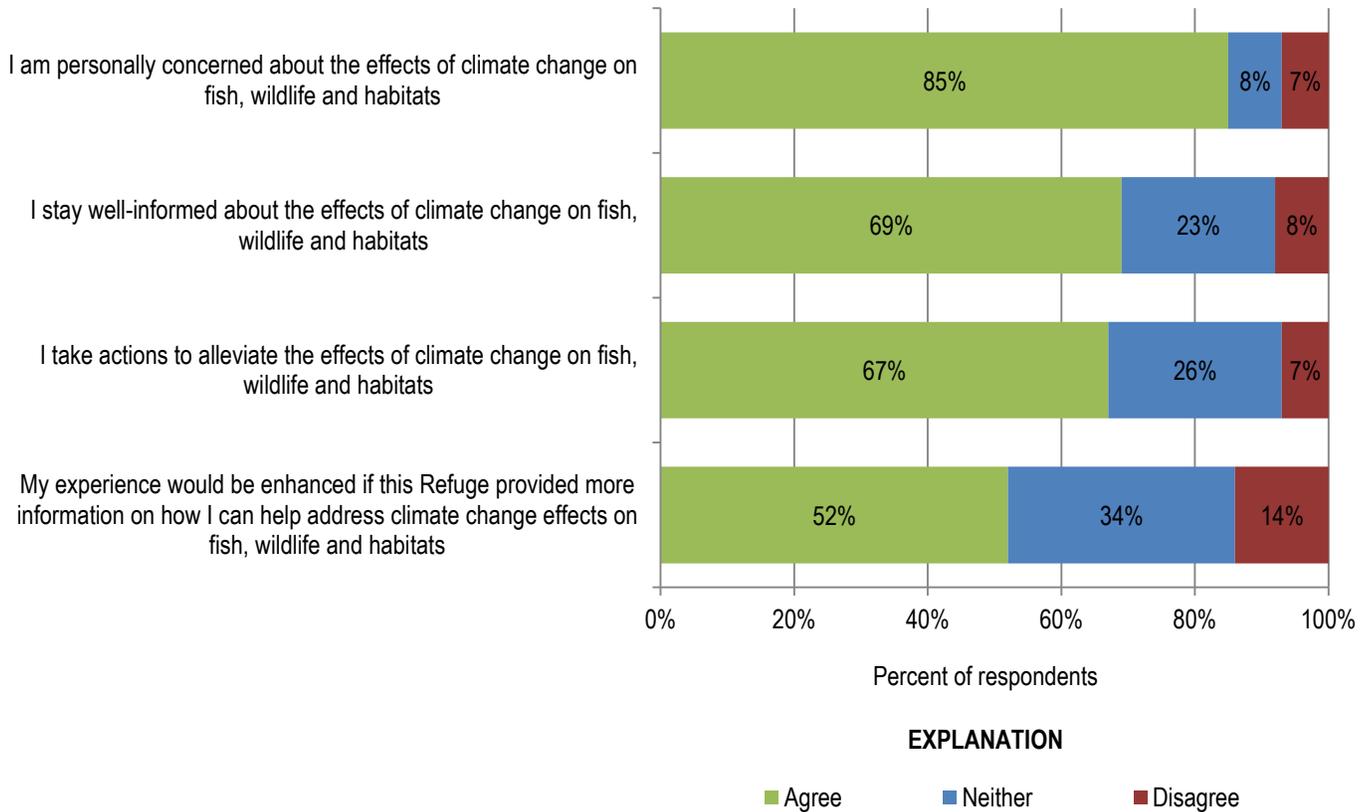


Figure 14. Visitors’ personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 233).

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

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

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

The majority of visitors did *not* believe:

- “There has been too much emphasis on the catastrophic effects of climate change;” and
- “There is too much scientific uncertainty to adequately understand climate change effects.”

Such information suggests that certain beliefs resonate with a greater number of visitors than other beliefs do. This information is important to note because more than half of visitors (52%) indicated that their experience would be enhanced if Sonny Bono Salton Sea NWR provided information about how they could help address the effects of climate change on fish, wildlife, and their habitats (fig. 14), and framing the information in a way that resonates most with visitors may result in a more engaged public who support strategies aimed at alleviating climate change pressures. Data will be analyzed further at the aggregate, or national level, to inform the development of a comprehensive communication strategy about climate change.

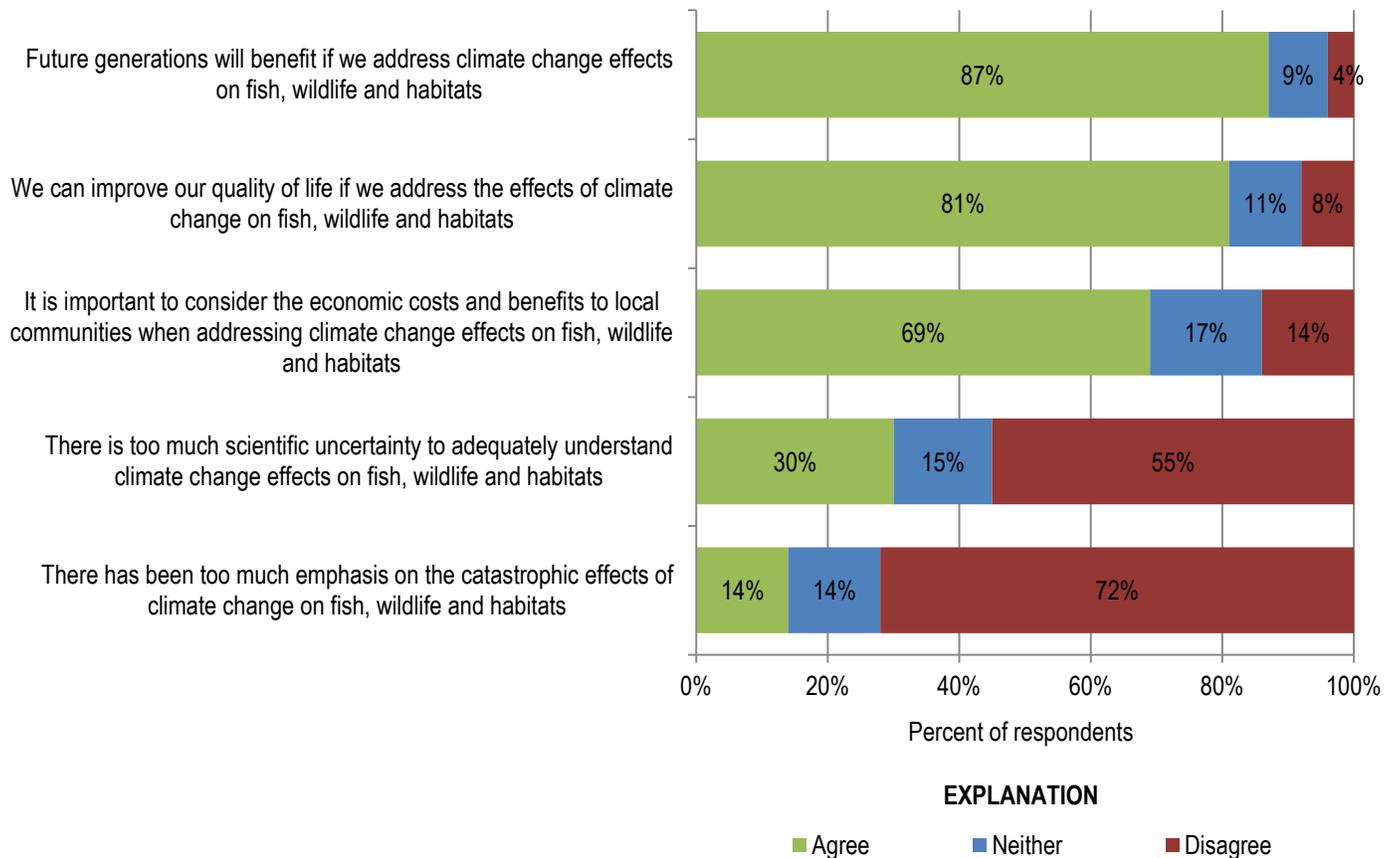


Figure 15. Visitors’ beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 233).

Conclusion

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

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

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National Wildlife Refuge Visitor Survey



PLEASE READ THIS FIRST:

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

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

SECTION 1. Your visit to this Refuge

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

- | | | |
|--|---|--|
| <input type="checkbox"/> 0% Big game hunting | <input type="checkbox"/> 37% Hiking | <input type="checkbox"/> 2% Environmental education (for example, classrooms or labs, tours) |
| <input type="checkbox"/> 0% Upland/Small-game hunting | <input type="checkbox"/> 3% Bicycling | |
| <input type="checkbox"/> 2% Migratory bird/Waterfowl hunting | <input type="checkbox"/> 28% Auto tour route/Driving | <input type="checkbox"/> 0% Special event (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 64% Wildlife observation | <input type="checkbox"/> 0% Motorized boating | <input type="checkbox"/> 3% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 88% Bird watching | <input type="checkbox"/> 2% Nonmotorized boating (including canoes/kayaks) | <input type="checkbox"/> 0% Other (<i>please specify</i>)
<u>See Appendix B</u> |
| <input type="checkbox"/> 0% Freshwater fishing | | |
| <input type="checkbox"/> 0% Saltwater fishing | <input type="checkbox"/> 32% Interpretation (for example, exhibits, kiosks, videos) | |
| <input type="checkbox"/> 53% 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?

- 8% No
- 92% Yes → If yes, what did you do there? (Please mark **all that apply.**)
- | | |
|--|---|
| <input type="checkbox"/> 60% Visit the gift shop or bookstore | <input type="checkbox"/> 13% Watch a nature talk/video/presentation |
| <input type="checkbox"/> 79% View the exhibits | <input type="checkbox"/> 81% Stopped to use the facilities (for example, get water, use restroom) |
| <input type="checkbox"/> 84% Ask information of staff/volunteers | <input type="checkbox"/> 12% Other (<i>please specify</i>) <u>See Appendix B</u> |

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

Nonlocal	Local	Total	
45%	44%	45%	It was the primary purpose or sole destination of my trip.
38%	44%	38%	It was one of many equally important reasons or destinations for my trip.
18%	12%	17%	It was just an incidental or spur-of-the-moment stop on a trip taken for other purposes or to other destinations.

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

Nonlocal 305 number of miles

Local 33 number of miles

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

See Report for Results

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

33% No (*skip to question #9*)

67% Yes → What **type of group** were you with on your visit? (*Please mark **only one.***)

90% Family and/or friends

7% Organized club or school group

0% Commercial tour group

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

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

 4 number 18 years and over

 0 number 17 years and under

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

38% Friends or relatives

11% Refuge website

22% Signs on highway

10% Other website (*please specify*) See Appendix B

14% Recreation club or organization

2% Television or radio

9% People in the local community

11% Newspaper or magazine

13% Refuge printed information (brochure, map)

18% Other (*please specify*) See Appendix B

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

21% Spring
(March-May)

10% Summer
(June-August)

50% Fall
(September-November)

64% Winter
(December-February)

11. How many times have you visited...

...this Refuge (including this visit) in the last 12 months? 2 number of visits

...other National Wildlife Refuges in the last 12 months? 4 number of visits

SECTION 2. Transportation and access at this Refuge

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

- | | | | | | |
|------------------------------|---|-----------------------------|----------------------------------|------------------------------|---------------------------------------|
| <input type="checkbox"/> 96% | Private vehicle without a trailer | <input type="checkbox"/> 0% | Refuge shuttle bus or tram | <input type="checkbox"/> 0% | Bicycle |
| <input type="checkbox"/> 0% | Private vehicle with a trailer
(for boat, camper or other) | <input type="checkbox"/> 0% | Motorcycle | <input type="checkbox"/> 27% | Walk/Hike |
| <input type="checkbox"/> 0% | Commercial tour bus | <input type="checkbox"/> 0% | ATV or off-road vehicle | <input type="checkbox"/> 1% | Other (<i>please specify below</i>) |
| <input type="checkbox"/> 4% | Recreational vehicle (RV) | <input type="checkbox"/> 0% | Boat | <u>See Appendix B</u> | |
| | | <input type="checkbox"/> 0% | Wheelchair or other mobility aid | | |

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

- | | | | |
|------------------------------|--|------------------------------|---|
| <input type="checkbox"/> 56% | Signs on highways | <input type="checkbox"/> 11% | Directions from Refuge website |
| <input type="checkbox"/> 26% | A GPS navigation system | <input type="checkbox"/> 8% | Directions from people in community near this Refuge |
| <input type="checkbox"/> 38% | A road atlas or highway map | <input type="checkbox"/> 11% | Directions from friends or family |
| <input type="checkbox"/> 24% | Maps from the Internet (for example,
MapQuest or Google Maps) | <input type="checkbox"/> 42% | Previous knowledge/I have been to this Refuge before |
| | | <input type="checkbox"/> 8% | Other (<i>please specify</i>) <u>See Appendix B</u> |

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

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 28%	<input type="checkbox"/> 15%	<input type="checkbox"/> 3%	<input type="checkbox"/> 39%	<input type="checkbox"/> 15%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 35%	<input type="checkbox"/> 14%	<input type="checkbox"/> 7%	<input type="checkbox"/> 27%	<input type="checkbox"/> 16%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 26%	<input type="checkbox"/> 14%	<input type="checkbox"/> 7%	<input type="checkbox"/> 34%	<input type="checkbox"/> 18%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 11%	<input type="checkbox"/> 9%	<input type="checkbox"/> 6%	<input type="checkbox"/> 34%	<input type="checkbox"/> 38%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 22%	<input type="checkbox"/> 14%	<input type="checkbox"/> 7%	<input type="checkbox"/> 35%	<input type="checkbox"/> 22%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 13%	<input type="checkbox"/> 7%	<input type="checkbox"/> 4%	<input type="checkbox"/> 38%	<input type="checkbox"/> 38%
...some other alternative transportation option? (<i>please specify</i>) <u>See Appendix B</u>	<input type="checkbox"/> 16%	<input type="checkbox"/> 5%	<input type="checkbox"/> 16%	<input type="checkbox"/> 37%	<input type="checkbox"/> 26%

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

- 27% Yes 29% No 44% Not Sure

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

Importance						Satisfaction					
Circle one for each item.						Circle one for each item.					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important		Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
2%	19%	11%	52%	17%	Surface conditions of roads	4%	7%	5%	31%	53%	NA
5%	20%	16%	48%	11%	Surface conditions of parking areas	4%	1%	9%	16%	70%	NA
4%	7%	23%	41%	26%	Condition of bridges	2%	0%	21%	23%	54%	NA
2%	6%	6%	51%	35%	Condition of trails and boardwalks	1%	5%	7%	25%	61%	NA
2%	8%	10%	53%	27%	Number of places for parking	2%	4%	5%	26%	63%	NA
1%	5%	11%	39%	45%	Number of places to pull over along Refuge roads	3%	14%	13%	36%	34%	NA
3%	4%	11%	43%	40%	Safety of driving conditions on Refuge roads	2%	3%	11%	31%	54%	NA
3%	7%	11%	47%	32%	Safety of Refuge road entrances/exits	1%	1%	11%	28%	59%	NA
3%	4%	4%	41%	48%	Signs on highways directing you to the Refuge	1%	15%	7%	35%	43%	NA
3%	7%	9%	43%	39%	Signs directing you around the Refuge roads	3%	19%	15%	34%	29%	NA
5%	5%	9%	41%	41%	Signs directing you on trails	2%	10%	19%	34%	35%	NA
6%	12%	30%	29%	23%	Access for people with physical disabilities or who have difficulty walking	2%	9%	39%	23%	27%	NA

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

See Appendix B

SECTION 3. Your expenses related to your Refuge visit

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

10% Yes

90% No → How much time did you spend **in local communities** on this trip?

 3 number of hours OR 7 number of days

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

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

See Report for Results

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

 2 number of people sharing expenses

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

\$0	\$10	\$20	\$35	\$50	\$75	\$100	\$125	\$150	\$200	\$250
4%	10%	13%	10%	21%	5%	18%	1%	4%	4%	9%

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

6%	Far too low	31%	Too low	61%	About right	3%	Too high	0%	Far too high	85%	Did not pay a fee <i>(skip to Section 4)</i>
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6. Please indicate whether you disagree or agree with the following statement. *(Please mark **only one**.)*

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

3%	Strongly disagree	3%	Disagree	6%	Neither agree or disagree	44%	Agree	44%	Strongly agree
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SECTION 4. Your experience at this Refuge

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Applicable
Overall, I am satisfied with the recreational activities and opportunities provided by this Refuge.	1%	4%	6%	51%	39%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	1%	4%	5%	42%	49%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	1%	2%	4%	28%	66%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	1%	2%	7%	35%	54%	NA

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

Importance					Refuge Services, Facilities, and Activities	Satisfaction					
Circle one for each item.						Circle one for each item.					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important		Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
4%	10%	8%	45%	33%	Availability of employees or volunteers	1%	2%	9%	15%	73%	NA
5%	6%	5%	45%	40%	Courteous and welcoming employees or volunteers	0%	0%	5%	10%	85%	NA
2%	4%	2%	37%	55%	Knowledgeable employees or volunteers	1%	0%	6%	18%	74%	NA
1%	2%	5%	42%	49%	Printed information about this Refuge and its resources (for example, maps and brochures)	0%	3%	6%	21%	70%	NA
0%	5%	9%	52%	35%	Informational kiosks/displays about this Refuge and its resources	0%	5%	9%	28%	58%	NA
1%	7%	16%	47%	28%	Signs with rules/regulations for this Refuge	1%	1%	17%	33%	46%	NA
1%	5%	10%	53%	30%	Exhibits about this Refuge and its resources	1%	3%	11%	39%	45%	NA
2%	12%	23%	40%	24%	Environmental education programs or activities	1%	3%	39%	33%	24%	NA
2%	2%	5%	44%	46%	Visitor Center	1%	3%	7%	24%	65%	NA
0%	0%	3%	44%	53%	Convenient hours and days of operation	1%	0%	8%	23%	68%	NA
0%	0%	4%	34%	61%	Well-maintained restrooms	0%	3%	7%	20%	71%	NA
1%	2%	3%	41%	53%	Wildlife observation structures (decks, blinds)	2%	5%	9%	23%	62%	NA
1%	0%	5%	13%	81%	Bird-watching opportunities	0%	2%	4%	22%	71%	NA
1%	1%	9%	49%	40%	Opportunities to observe wildlife other than birds	1%	3%	17%	45%	34%	NA
3%	4%	11%	36%	47%	Opportunities to photograph wildlife and scenery	1%	4%	10%	33%	52%	NA
75%	4%	15%	3%	4%	Hunting opportunities	7%	2%	73%	9%	9%	NA
59%	9%	19%	9%	4%	Fishing opportunities	2%	5%	77%	7%	9%	NA
2%	3%	7%	48%	39%	Trail hiking opportunities	2%	5%	14%	51%	29%	NA
23%	8%	29%	32%	8%	Water trail opportunities for canoeing or kayaking	5%	9%	66%	11%	8%	NA
24%	13%	28%	28%	8%	Bicycling opportunities	7%	6%	60%	14%	12%	NA
25%	10%	33%	24%	9%	Volunteer opportunities	0%	1%	62%	20%	17%	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?

88%

Yes

12%

No

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

94%

Yes

6%

No

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

87%

Yes

13%

No

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

See Appendix B

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

Statements about climate change	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I am personally concerned about the effects of climate change on fish, wildlife and their habitats.	2%	5%	8%	32%	54%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	2%	6%	11%	32%	49%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	28%	26%	15%	23%	7%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	1%	7%	23%	46%	23%
It is important to consider the economic costs and benefits to local communities when addressing the effects of climate change on fish, wildlife and their habitats.	3%	10%	17%	53%	16%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	2%	5%	26%	49%	18%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	43%	29%	14%	8%	6%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	2%	2%	9%	30%	57%
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%	9%	34%	39%	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?

89% Yes 11% No → If not, what is your home country? See Figure 4 in Report

2. Are you? 58% Male 42% Female

3. In what year were you born? 1952 (YYYY)

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

1 (elementary)	2	3	4	5	6 (junior high or middle school)	7	8	9	10 (high school)	11	12	13 (college or technical school)	14	15	16	17	18	19	20+ (graduate or professional school)
<input type="checkbox"/> 0%					<input type="checkbox"/> 8%					<input type="checkbox"/> 41%					<input type="checkbox"/> 51%				

5. What ethnicity do you consider yourself? 3% Hispanic or Latino 97% Not Hispanic or Latino

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

- 2% American Indian or Alaska Native 1% Black or African American 97% White
 2% Asian 0% Native Hawaiian or Pacific Islander

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

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

- | | | |
|---|--|--|
| <input type="checkbox"/> 0% Less than \$10,000 | <input type="checkbox"/> 13% \$35,000 - \$49,999 | <input type="checkbox"/> 21% \$100,000 - \$149,999 |
| <input type="checkbox"/> 2% \$10,000 - \$24,999 | <input type="checkbox"/> 23% \$50,000 - \$74,999 | <input type="checkbox"/> 10% \$150,000 - \$199,999 |
| <input type="checkbox"/> 7% \$25,000 - \$34,999 | <input type="checkbox"/> 18% \$75,000 - \$99,999 | <input type="checkbox"/> 5% \$200,000 or more |

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

 21 number of trips

Thank you for completing the survey.

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

See Appendix B for Comments

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Appendix B: Visitor Comments to Open-Ended Survey Questions for Sonny Bono Salton Sea National Wildlife Refuge

Survey Section 1

Question 1: "Including your most recent visit, which activities have you participated in during the past 12 months at this Refuge?"

Special Event	Frequency
Bird Festival	1

Other Activity	Frequency
Family outing, gathering point	1
Meetings about Salton Sea	1
Picnic	1
Shopping at Visitors Center	1
Sightseeing	1
To see the Tiaga Bean Goose	1
To view environmental disaster	1
Total	7

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
Explore	1
First Time Tour	1
I ran across the refuge trying to find Salvation Mountain.	1
Salton Sea Tour	1

Status of Salton Sea	1
To receive information about the area.	1
View Environmental Effects	1
Work brought me to the vicinity.	1
Total	8

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

Other Visitor Center Activity	Frequency
Asked for a bird list	1
Bird watching	5
Borrowed binoculars	1
Check the list of recently viewed birds	5
Hiked the nearby trail to observe birds and other wildlife	1
Kayaking	1
Learned snow goose sounds, monuments, habitat, and enjoyed seeing the large amount of snow geese. They are very beautiful.	1
Looked for special birds (common Ground Doves)	1
Maps, guides, brochures	1
Observed the wildlife around the building and trees, took pictures, ate snack. Wonderful!	1
Pick up map	1
Picnic	5
Purchased a hat and picked up pamphlets	1
Watched the feeders	1
Wildlife viewing platform	1
Total	27

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

Other Group Type	Frequency
Anza Borrego Foundation group tour	2
Hired a guide to take us birding	1
Noncommercial	1
Total	4

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

Other Website	Frequency
Arizona bird list	1
Audubon	2
Bird watching comments and e-mails	1
Bird watching community	1
Bird website, Birders	1
Birding listservs on internet and rare bird alerts from http://ebird.org	1
Birding listserv	5
Birding.com	1
Calbirds	1
California birding web-sites	1
Google	1
http://avconline.avc.edu/cyorke/fieldnotes	1
North American Rare Bird Alert (NARBA)	2
Online bird list	1
Top 10 birding sites in California	1

www.sialia.com (a bird watching website)	2
Total	23

Other Ways Heard about This Refuge	Frequency
A Birder's Guide to Southern California by Brad Schram	3
A Birder's Guide to Southern California, American Birding Association	1
AAA map	2
AAA, Southern California guide	1
Anza Borrego Visitor Center	1
Bird reference books, books on NWRs	1
Bird watching guidebook	2
Birding guides to California	1
Birding places book	1
Booklet of local attractions	1
By word of mouth from other bird watchers.	1
Calbirds - Taiga Bean Goose	1
California AAA Tour Guide	1
California State Highway map	1
College of Desert, Palm Desert, CA - Wildlife Class	1
First visited in 1960 on a field trip	1
From the Lane Guide	1
From two women we met hiking in Anza Borrego.	1
GPS map	1
I saw a movie about it.	1

I visited with people at a campground who had gone to the Sonny Bono.	1
Included in carton	1
Information in birding guide	1
Map	2
Noticed it on a map of the area	2
Other bird watchers	1
Part of information about the Salton Sea	1
Rare bird reports	1
Road atlas	1
Salton Sea State Park	1
Saw it at a distance from Joshua Tree Park	1
Saw it on the paper map (CSAA) of Southern California	1
State map	1
Teacher	1
Tijuana National Wildlife Refuge	1
Travel guides	1
Western Outdoor News	1
Total	43

Survey Section 2

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

Other Forms of Transportation	Frequency
School van	1
Van	1
Total	2

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

Other Ways Found This Refuge	Frequency
A Birder's Guide to Southern California by Brad Schram	1
Bird watching guidebook	1
Birding listserv/Birding site guide	1
DeLorme	1
Directions from other bird watchers.	1
Directions on a birding listserv.	1
Information in Yuma Information Package	1
Instructor led convoy	1
Map from Information Center	1
Map from Salton Sea State Park	1
Map in birding magazine	1
Other birders	1
Other members of my group used all of the above.	1
Part of a tour group caravan	1
Rare bird alert listserv on internet	1

Refuge Brochure	2
Refuge hunting maps	1
Total	18

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

Other Transportation Option Likely to Use	Frequency
A sailboat would be great.	1
Alternative energy powered vehicles	1
Any	1
ATV	1
Bicycle	1
Boat that takes us to various areas in the Salton Sea	1
Canoes, kayaks or non-motorized boats	1
Car	2
Chopper	1
Disabled friendly transport	1
Horse or mule	1
Kayak rental	2
Kayak/Car rental	1
Moped	1
Pedal cart, paddle boat, etc.	1
Personal kayak	1
Private transportation	1

Safari-like vehicle, especially set up for photography of wildlife	1
Shuttle with off-site parking to reduce traffic and pollution	1
Train	1
Van pool; Bus from Orange County; Inland Empire to Wister, Sonny Bono and farm unit (Westmoreland).	1
Total	23

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 = 39)

All seemed fine to me; however, I am not physically handicapped. They may have a different view.

Bikes would be good. Boating in the Salton Sea might be fun. Busses do not seem likely at this refuge. Water craft rentals for the Salton Sea would be nice.

Highway signs are faded and not very visible in Brawley and too few.

I didn't go on trails.

I drive a 4-wheel vehicle in the refuge.

I go to see wildlife, especially birds. I appreciate reasonable travel conditions, but that is not the reason I go.

I would like to see greater access to birding areas.

I would like to see more trails that allow viewing of marsh areas. Also, road signs between Unit 1 and Unit 2 would be helpful, especially as it relates to access to the water's edge.

In rainy weather conditions, the road to Unit 1 of Sonny Bono is practically impassable. More gravel would be helpful. Some other local unpaved roads (e.g., to Obsidian Butte) are also problematic, but I'm not sure which roads are actually refuge roads.

It had rained the night before so trails were extremely muddy.

It was hard to find "Slab City" and "mud pots"; there are no signs that clearly show the turn offs.

It would be great if there were strategically placed photography blinds scattered throughout the refuge.

It's nice to have public transport on weekends and hunting days.

Money is limited but some people may take advantage of a golf cart type vehicle to go out onto the berms. (For a fee?)

No problems, easy directions and access.

Please smooth the washboards in the roads.

Provide better signage on the main freeways.

Small refuge - we just park and walk.

Some of the roads around Sonny Bono are being changed. We had a bit of difficulty finding the main entrance.

Sonny Bono refuge is well maintained!

Staff was friendly. Bathrooms and restroom area were clean and nice.

The best viewing areas are two miles from the parking lot. It is not handicapped accessible because there is mud in the trail.

The road at Sonny Bono did not have any signs about where we were going. We had to rely on the birder's guide we brought with us.

The Road into Unit 1 is in bad shape, many washboard roads, we had to drive VERY slow in our small motor home.

The signs to find the refuge are VERY hard to follow, especially on the rural roads.

The trail marker was hidden behind palm trees and not visible to users.

The walking trail is straight and not integrated into the property. It could use vegetative ID markers along trees and bushes.

There is no place to launch a kayak, possibly Obsidian Butte, but I have yet to try it. Red Hill is too far from the water now.

There seemed to be unnecessary restriction to roads beyond the observatory platform in Unit 1. The large goose flock didn't seem to mind observers on the main road. Why not let people walk all the way to the Salton Sea to the North.

This refuge had two separate areas, one of which had the Visitors Center. It was somewhat confusing by signage- which area to go to for the Visitors Center.

This was a dirt road into Unit 1 of Salton Sea. There is a parking area and bathroom. This is more than enough for this area. Signs to the area would be great on Route 86.

Trails are old roads, boring and ugly. Trails should be attractive and provide good views and access to wildlife without threatening wildlife.

Trails can be quite long for the young and elderly so it might be nice to have some benches along the way.

Very muddy after the rains

Walking and hiking are the best ways to enjoy the Sonny Bono Salton Sea National Wildlife Refuge. Other modes of transportation disturb the natural course of things and cause an incomplete experience.

We didn't get out into the refuge as we arrived late in the day, so I can't evaluate the roads and signage.

We drive through the Wister Waterfowl Management area which is off-road so to speak, all dirt roads around the mud pots-then into Sonny Bonn Salton Sea National Wildlife Refuge.

We had considerable trouble finding the Marina Campground- NO SIGNS. Since we travel in our RV this is a very important issue. Being birdwatchers, it is important to be able to camp near the rare bird being sought- so as to get to its location at first light.

Where we were there wasn't much to see and no facilities suited for 80 year olds who were with me.

Survey Section 4

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

Comments on Services, Facilities, and Activities at This Refuge (n = 73)

My interest in the refuge is primarily for birding. I am not into blood sports, hence my lack of interest in hunting and fishing.

All of the staff we met were courteous, friendly, knowledgeable and helpful.

Better opportunities to access other parts of the refuge would be most helpful.

Biking paths around the refuge would be a lot of fun. Folks might go further and see more. I did not see an opportunity to rent kayaks anywhere. Perhaps you have your reasons.

Bird wise, the Salton Sea is an exceptional place, but it is dynamic. A few decades ago it was thought the sea would consume the refuge. Now the sea seems to be receding in the former Salton Sink. This makes management of this refuge difficult. Broadly speaking, I think they have done a good job.

During the season we avoid "refuges" that allow hunting. We find the wildlife particularly nervous and difficult to observe. In fact, we find the practice of hunting in a refuge curious, at best. We think that wildlife in a refuge should be protected rather than hunted.

Enjoyed our visit, good facilities and volunteer assistance. Exhibits do not reflect reality of the death of the Salton Sea. Exhibits give the impression that everything is good, when it's not.

[Name], who manages the kayaking program, and [Name], a frequent volunteer, are absolutely superb in every way. They are the most knowledgeable and helpful people one can imagine in such a setting.

I always enjoy my visit to the Sonny Bono. It is a well maintained facility. I paid a fee at the South of \$5 and I paid at Wister \$2.50...but no fee station at Sonny Bono. It is confusing what to pay and where. I ran into locals who have been in the area for 30 years birding and they state that they never pay..which is sad because they utilize the Salton Sea frequently.

I always enjoy my visits, even though this was my third trip.

I commend the staff who were very knowledgeable and friendly. My only issue is that I tried to call the Visitors Center a number of times before I left on a five hour trip to the refuge to get an idea on how many birds were still there. No one picked up the phone. I did receive an email response to my earlier email, however it came on the morning after I left. Website - it would be very helpful to post a general description of what birds are at the refuge and relative numbers of birds.

I find it very unthinkable that you invite birds to come in during their migration, then you allow hunters to pick them off.

I have always been impressed with the welcoming staff at the Visitor Center.

I just wish there was more to see and do at the Salton Sea.

I only spent an hour there, as we got in late, so I didn't get to take it all in. It looked very interesting, and I had no idea how neat it was, so I am definitely planning to go back and spend a lot of time taking it in. It was a total surprise to me that something like this existed in the area.

I think the U.S. Fish and Wildlife Service provides a unique environment during the winter months (October-February). It would be nice to photograph during the spring migration (birds) with water ponds, trees, bird friendly environment, etc. Posting pictures (8.5x11) of birds and mammals that were taken at the refuge would be of interest. Visitors would provide some too.

I visit Sonny Bono Salton Sea once or twice per year purely for bird watching. I appreciate the parking, restrooms, and picnic tables, but have little demand for other services. Thank you for protecting the wildlife!

I was impressed by the knowledge and helpfulness of the "refugers."

I was slightly disappointed that a number of areas at Unit 1 were closed to birders due to hunting season.

I went there to see an "environmental disaster." Bombay Beach and other places look like a complete waste. I have been there six times and have never seen any fishing or boating.

I wish there were some blinds where one could get closer to the shore birds and migratory birds.

I would have liked closer access to photograph the birds.

If I lived in the same time zone as the volunteer opportunities I would have marked it of higher importance. I flew out from Milwaukee to visit; I can't volunteer there.

In general I am opposed to hunting being allowed in a National Wildlife Refuge.

In past years, a bird sighting list was posted in the picnic area outside of the building since people often come when the building is closed. I hope you post it outside again.

In the Flaming Unit on the observation tower: it would be helpful to have some small diagrams or interpretation devices pointing out or naming various landmarks and ponds and the Salton Sea, etc.

It is unfortunate that hunting waterfowl occurs all around the refuge.

It is very nice.

It was just hard to find your way around...wish there were more hiking trails - but the information kiosks were terrific!

It would be nice to have access to more varied habitats, assuming it was not too detrimental to resting wildlife.

It's a great opportunity to enjoy wildlife and the serenity away from the hustle and bustle of crowded cities. I enjoyed the experience and certainly want to go again.

It's a great refuge--an important habitat for the birds!

It's a terrific place for bird watching.

More and better photography blinds are needed for two reasons: 1. To avoid disturbing the birds 2. To get better photographs (closer to more kinds of birds). Regarding photography, this refuge could take lessons from the Bosque del Apache Refuge in New Mexico.

More direct viewing opportunities at unit away from Visitor Center would be nice

My wife and I periodically go to this wildlife refuge to watch birds. We do not engage in hunting, fishing, or boating (which are offered at this refuge) ... although we recognize this is important for other people who have these interests.

Need more seating at overlook of Tern Colony. More trails to other parts of the refuge. Tower at Unit 1 is in poor shape and birders need to get closer to the lake beyond the marsh. The trail at Unit 1 goes through a boring habitat. It would be nice to gain access to the Sea in more locations on refuge property. It would be great to have a Salton Sea Birding Route that could introduce first time visitors to the major birding hot spots.

Nice Visitors Center. Need more bird shirts.

No other comments, though updating displays would be helpful.

Off-limits areas set aside for waterfowl should be open to bird watching during months which waterfowl are not present. More signage stating where a person may or may not enter.

People who really know what birds are present, and where they are located within the refuges is most important.

Pleasant volunteers!

Please do not allow hunting!

Refuge decks and blinds are great for long distance bird watching, but awful for water bird photography. I could not get close enough to water birds driving on refuge roads, on decks, or in blinds to get good photos.

Refuges are very helpful.

Restrictions on hunting are often ignored. I have never seen a refuge employee attempt to enforce the rules.

Small refuge, friendly volunteers, nice bathrooms and observation decks, nice Visitors Center and gift shop. Thank you!

Staff was very helpful, courteous, and knowledgeable. Everything was clean and orderly.

Terrific place for bird watching and bird photography. Very helpful staff and volunteers at the Visitors Center.

The facility appears old and worn; the Visitor Center was shaky.

The interpretive signs on the way out to the overlook over the Salton Sea were a good start, but I had so many questions that could have easily been answered with a couple of other informational signs. The trail itself is kind of ugly and almost feels like you are walking around a sewage treatment plant rather than a wildlife refuge - some of that may be out of the hands of the wildlife refuge, though. The Visitors Center was very small and did not have much information, which was disappointing. I would have loved to know more about the cultural history of the area with respect to the Salton Sea. The volunteer on duty was very knowledgeable, however, and very friendly - she was a real plus.

The lack of directions and information about the Marina Campground.

The refuge was very informative. I have visited this refuge in previous years.

The Salton Sea must be preserved. Do anything you need to do to accomplish this. Also, get those photography blinds built.

The staff at the Visitors Center were friendly and well-informed, as well as eager to assist. I am sorry that we did not ask their names to mention

here.

The staff is knowledgeable and extremely helpful! Thank you!

The staff was very kind and knowledgeable. Bathrooms were very clean!

The Visitors Center could be updated or have new exhibits added.

There is a nice surprise at the end of the Salton Sea. National Wildlife Refuge should work with California State Parks and Forest Service to market the Salton Sea area.

There is not enough access to the lake.

This Refuge is a real jewel and you should or could be marketing it in the Palm Springs area as well as the Borrego Springs State Park. We had only a short time to visit, but we will try to get back again soon. LIMIT THOSE HUNTERS!

Too many trails are regularly closed and access is not possible.

Very friendly staff.

Visitors Center was well kept and employee was courteous and helpful. Special blinds should be constructed to allow closer observation of wildlife and provide photography opportunities.

Volunteers were great but I was more disappointed by the employees. Wish the Visitors Center was open more hours (understand it is all dependent on budget and volunteers).

Wanted T-shirt from Visitors Center, but they didn't have any my size.

We enjoyed our short visit. There is extremely friendly and knowledgeable staff at the Visitor Center.

We liked the kids display.

We live in Oregon, but we stop here probably every three years to bird. We rely on the farm field for some of the time in the area. Our hours and miles reflect this.

We need more hunting opportunities at Unit 1.

We were at the refuge while a variety of birds were there. It was disconcerting to hear the gunshots from the hunting area.

You need more signs at crossroads.

You need more water and seed for refuge. Let hunters harvest.

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 = 183)

The quality of the bird life, together with the management of habitat, to attract migrating birds.

A place for wildlife to live.

A refuge for wildlife is necessary due to the unchecked population growth of humans. Without them we could be alone on this planet. What a sad thought.

A refuge's priority is to maintain a habitat for those species that live there with a secondary priority to provide a good experience for visitors. Therefore roads, signs, and any other structures must be carefully designed and placed taking wildlife into consideration first.

Ability to almost always view and photograph different species of wildlife, especially birds, that are not seen where I live.

Ability to enjoy nature, especially within a few hours from urbanization.

Ability to observe wildlife in their natural habitat.

Abundance of birds and wildlife with well-maintained walkways and blinds for photography.

Abundance of wildlife, safety of visitors, preservation of the land and wildlife. Typically good access.

Area is protected from hunting, development, pollution. Area is important to migrating birds.

As a photographer, I have more opportunities to photograph water birds at this refuge. However, the opportunities could be improved.

As the human population expands, wildlife refuges shrink and we need to set aside as much land as possible to preserve space for wildlife.

Availability of wildlife, visit of the Bean Goose.

Because at the end of the day, the refuge exists for the environment and the wildlife - the human consideration is secondary.

Because their mission is to conserve wildlife and their habitats, refuges are often ideal for wildlife observation. In this particular case, better access to more of the refuge would be something to strive for.

Better protection of resources.

Bird and wildlife viewing and habitat maintenance are emphasized at refuges (USFWS) while at many other public lands it is secondary.

Bird diversity.

Birding! Conservation of migratory routes!

Birding.

Birds, inland sea.

Close access to waterfowl.

Committed to preserving the land for birds and animals.

Everything was well maintained.

Free access with good facilities and volunteers.

Generally provide a high concentration of wildlife and wildlife viewing opportunities.

Getting closer to wildlife.

Gives one a chance to see good numbers of animals.

Habitat to observe nature, especially birds, and to attract them, shelter them, and help them during migration.

Having them available to the public is essential to top quality of life for so many of all generations and backgrounds.

Hiking trails and viewing facilities make it unique.

Huge body of water for birding habitat.

I am very pleased to know great areas of protection exist for birds that also allows hunting. It is important to me that habitat be as protected as possible and have areas where new habitat is created.

I do not consciously think about this is a wildlife refuge vs. a recreation area (e.g., Santa Monica Mountains) or vs. a National Park (Yosemite).

I have not been along a major migratory flyway. There was a diverse bird population in large numbers.

I have visited refuges all over the country, some multiple times. I am most impressed when refuges restore and protect the "less glamorous" environment, such as native grasslands and vernal pools.

I love to see the geese on the refuge.

I value and appreciate that National Wildlife Refuges focus on providing habitat for wildlife as opposed to providing recreational opportunities for humans.

Important for preserving habitat and a resting place for migrating waterfowl and shorebirds.

Interesting locations that should be protected.

It creates a unique and accessible habitat for viewing a large number (and species) of birds.

It doesn't seem to attract a big crowd.

It gave me the opportunity to observe wild birds, and the Visitor Center showed the names of birds and wildlife.

It gives people an opportunity to see wildlife in their natural environment.

It has both land and water environments; it is easily accessed by reasonable roads and is situated where conveniences (food, etc.) are relatively easy to find.

It is a controlled environment to protect and enhance wildlife.

It is a place specifically set aside and managed for wildlife, not just scenery.

It is good to try to make the best of a bad situation, but I would not spend any recreational time there.

It is important to preserve open lands for wildlife management and research.

It is on the Salton Sea.

It is so nice to see that there are still areas in the wilderness for wildlife, waterfowl, and fish that are there for their conservation and for our experiences.

It is well maintained, and there is knowledgeable staff.

It isn't a park as much as it is a real connection to wildlife and their habitat. Refuges provide more face-to-face experiences with wildlife and plants providing better opportunities to be educated on habitat, conservation, and environmental impacts.

It lets me enjoy, take an active part of the natural environment, and take a small piece of nature back for food and fond memories. With work seeming more like a prison cell, hunting helps me feel free, even if it is only for 5-6 days a year. It helps with the stresses of life and helps balance out the bad things that happen in life.

It preserves, and enhances habitat for wildlife, when such habitat is decreasing under development pressure. Its mission is most important.

It protects and preserves this natural habitat.

It provides habitat for wildlife, and recreation is secondary to habitat preservation.

It was a pleasant stop on our drive from Palm Springs and around the area on our day trip.

Its location!

Large concentrations of wildlife, especially birds.

Location on the Salton Sea.

Managed for hunting and bird watching.

Management of the resources for a variety of uses.

Many opportunities to observe waterfowl and natural terrain. Available all over the U.S.

Mix of hunting and wildlife conservation. Protect the birds and then hunt the birds.

Moderately undisturbed habitats providing animals with appropriate resources and shelter.

More focus on wildlife and natural resource appreciation, less tourism.

More quiet, less people, able to see wildlife without pressure of camping. Simpler to visit, more "in tune" with nature.

Most are for wildlife conservation and viewing rather than public agencies.

Most refuges that I have visited seem to have more accessible staff. On BLM land, for example, I have never seen a staff member.

National Wildlife Refuges are incredibly important for the conservation of endangered and threatened species. They should truly be "refuges" that protect these species from anthropogenic influences.

National Wildlife Refuges provide unique opportunities to view wildlife in well managed and preserved habitats.

No restrictions with dogs on leash. Less crowded than National Parks. Relaxed atmosphere for walking, observing, camping.

Numbers and types of bird species.

Observing the great number of migratory waterfowl.

Often they provide many ecosystems because wildlife requires more than just one habitat. Often have the feeding of animals/birds to reduce burden on private lands. Hunting may be an efficient management technique.

One of the highest concentrations of water birds in the Western U.S. The Salton Sea is a spectacular migratory bird wintering location, unequaled in Southern California, and hosts a remarkable variety of vagrant species.

Opportunities to view wildlife are exciting.

Opportunity to observe nature in as close to pristine conditions as possible.

Opportunity to spend as much time as I want studying and enjoying birdlife.

Personnel and displays, especially giving information about location of blinds and recent sightings, make use of the refuges easier. Providing such care for wildlife and birds is an essential component.

Protection of birds of the Pacific Flyway and other Flyways in a time of decreasing wetlands.

Provide a place for wildlife to rest, feed, breed in a quiet atmosphere. As mentioned previously, I see no reason to allow any hunting in the refuge.

Provides a focus for bird watching in Southern California, generally too rare here. Provides a center of excellence for conservation, sadly lacking elsewhere.

Provides necessary habitat for migratory birds in areas that would not merit protection as National Park or Monuments. Provides protection in areas that most people would not consider in need of protection due to their lack of scenic beauty. Provides a location for the lawful pursuit of game animals and fish.

Proximity to the Salton Sea.

Public access for bird watching, suitable habitat to attract and allow birds to congregate.

Public access without costs.

Refuges are absolutely essential in protecting habitat and wildlife. Keep up the good work!

Refuges are kept as natural as they can be.

Refuges are normally created in the areas that are most attractive to large numbers of birds and allow unique observation opportunities.

Refuges are preserving wildlife that would not be so prevalent otherwise.

Refuges are unique in their focus on conservation of animals and the habitat, an issue that is very important to me.

Refuges combine observation along with use (i.e., hunting etc), thus appealing to a wide cross-section of the community.

Refuges focus on wildlife, protecting wildlife and maintaining their habitats. They also focus on public education about wildlife.

Refuges have the best waterfowl habitat.

Refuges are needed to help wildlife survive and remain accessible to people.

Refuges preserve nature at a time when population and development are destroying natural areas of our country. Refuges give nature a chance to survive and give us a chance to enjoy nature.

Refuges provide a safe environment for birds and wildlife so we have the opportunity to view them in their natural habitat.

Refuges provide and preserve valuable wildlife habitat.

Refuges provide some of the best birding opportunities. In addition, the work that they do in preserving natural areas along major migration routes is critical for the survival of many species. The balance between hunting and non-hunting periods/areas seems appropriate and in the best interest of the wildlife.

Refuges tend to be less commercialized and touristy than National Parks. I like the openness and wildness, and I don't mind if the area is "underdeveloped". Also, places that allow hunting also tend to be more natural.

Safe places for migratory birds to stop and rest, feed, etc. Pristine conditions to the flora and fauna. Controlled hunting and fishing.

Tend to be less developed; more opportunity for observation of nature; unique habitats.

That their mission is not exclusively sport hunting focused.

The bird watching is usually very good at refuges, with the habitat maintenance. The bad news is protecting habitat so that the hunters can come and shoot the birds? In Minnesota, our best spot is the National Refuge in Bloomington. They are always worth a visit. Great USA refuge maps.

The bird watching opportunities make it unique.

The diversity and density of birds.

The effort made to provide an experience for the visitor makes it unique. For example, National Parks really make no effort for an experience. Wildlife in a National Park is either there or not.

The emphasis on the quality of natural habitat and opportunities to experience the life of the habitat.

The extremely wide range of birds that can be seen in a relatively short period of time due to the multiplicity of habitats makes it unique.

The fact that their primary mission is to conserve, manage and restore fish, wildlife, plants and their habitat is very interesting.

The focus on providing refuges for migrating and wintering bird species provides a unique viewing opportunity for those whose hobby is bird watching.

The great number of different birds was very amazing.

The information boards along the hiking route are a nice touch.

The location and access and information make it unique.

The location, history, services, and wildlife information.

The main purpose is to conserve and manage wildlife/habitat. The people working for the refuges tend to understand the dynamics involved. When I go to the Nature Conservancy, they tend to not focus in on the dynamics. In most cases, they just focus in on the land...in my experience. Refuges appear more "natural" and give a nice mix of animal, land and total environment.

The migratory birds, endangered species, and Salton Sea (which is an amazing place).

The numbers and variety of migratory birds.

The refuges are designed primarily for the wildlife first. Although visitors are encouraged, they are allowed access only to the extent that it does not interfere with wildlife conservation as the primary goal of the refuge. National Parks are wonderful, but often overused to the extent that wildlife in the parks suffers.

The Refuges provide a niche factor. They highlight and protect a special example within public lands.

The remarkable degree to which the refuges succeed in a difficult task - keeping the effect of human activity to a minimum. One has a fighting chance of seeing wildlife doing their thing in a reasonable facsimile of "the wild."

The Salton Sea area is one of a kind and there are lots of birds.

The Salton Sea is an unusual place to visit due to its location and history, along with the abundance of migratory birds.

The true beauty and importance for setting aside land and resources for humans and wildlife.

The undisturbed viewing of indigenous wildlife, birds, and the migration of such with the photography opportunities that they give. They provide knowledge for our children and grandchildren.

The unique habitat and the birds.

The various opportunities for viewing wildlife as well as hunting/fishing.

The wildlife habitat.

Their large size makes it possible to manage habitat for a wide variety of wildlife and also allows for the diverse activities and interests of the public who support and visit these locations. It is most important that these refuges continue to be created and maintained for future generations.

Their mission statement.

Their mission.

There are big tracts of open space where one can observe thousands of migrating geese, ducks, cranes, and other birds and wildlife.

There are opportunities for wildlife viewing and they are not often as productive at other National Parks and Monuments.

There are so many things. Refuges let the visitor see wildlife migrating, breeding, and living as they normally would without commercialism and development getting in the way. It is so much better of an experience than State and National Parks for that reason.

There is a concentration of wildlife (mostly birds) in an area that is easy to get to, drive around in, and that provides a good ability to observe said wildlife.

There is a great number of birds and visitors have easy access to observe them. Sonny Bono was a great experience.

There is an opportunity to see wildlife up close and personal, plus they provide habitat for the birds. It also is a peaceful place to go.

There is access to good bird habitat.

There is an emphasis on wildlife conservation and observation.

There is an opportunity to see nature undisturbed.

There is better wildlife viewing.

There is excellent bird watching.

There is generally an expectation that one will be able to view interesting wildlife at a refuge, unlike most other forms of public lands. In most cases this expectation is met. It's important that most citizens have access to the opportunity to come face to face with some of the other creatures with which we share the earth.

Their purpose is for wildlife and not people.

They are "local" and feature local flora and fauna. Each has its own unique features, whether in North Dakota or California, or Salton Sea.

They are a fabulous resource that protects and conserves wildlife and land for now and future generations.

They are chosen for features that attract wildlife and provide habitat for them. They also provide viewing sites. National Parks seem more oriented to geological features.

They are protected lands with the goal to protect land and animals from man and for man to enjoy. Areas untouched by man are absolutely beautiful.

They are reserves tailored for wildlife compared to other reserves where wildlife is not the primary focus necessarily. Often times they are the most convenient or accessible location to find a particular species, which is invaluable.

They are well managed and administered as Sonny Bono! What makes them unique is their accessibility without disturbing the wildlife. Sonny Bono does this best!

They conserve important ecosystems and allow access to birds and wildlife under natural conditions.

They encompass many different habitats and provide critical food, water, and shelter for many different species of plants and animals. They

also tend to be more active in wildlife management.

They offer educational opportunities to learn more about particular environments and the living things that inhabit those environments.

They often provide excellent bird and duck watching - the emphasis is on the wildlife rather than the landscape, as is the case with National Parks. There are also generally cool habitats to check out that are relatively accessible - so it's possible to visit a refuge and feel like you have seen something interesting over a relatively limited time period, like a weekend. Plus it is important to provide and protect habitat for the critters that use the refuges.

They preserve types of habitat and communities of organisms that are often scarce and at risk of becoming more so. They provide excellent opportunities for persons to learn about what is being lost and to cause them to begin to value wild and natural places, and in doing so they contribute to maintaining a proper balance in the human mind and on the earth.

They protect wildlife and contain areas important to wildlife, especially birds.

They provide a safe habitat for birds and great opportunities for the public to view them.

They provide an opportunity to view wildlife in their natural setting. This refuge also provided a food source with planted fields for geese and cranes.

They provide large tracts of land and water for the purpose of preservation of wildlife, including birds. Other public lands may not have the intention of providing this for birds.

They restore habitats, which we desperately need done.

They tend to specialize in waterfowl and wetland habitats.

This one certainly is, as it is in such an unusual location.

This was my third year in a row for our annual Salton Sea birding trip over the President's Day weekend. We typically get well over 100 species and thousands of individuals.

Unimproved sites with few facilities, very natural and quiet.

Unique birding opportunities for the U.S.

Viewing wildlife.

Visitor Center information, trail hiking opportunities, exhibits of area.

Visitors Centers, washroom facilities, staff, information, safety, etc.

We have enjoyed unique bird watching opportunities because of the viewing platforms and interpretation information.

We like the information and displays about the wildlife as it is different from the area where we live in Canada.

We like watching and seeing wildlife.

Wild birds and animals can be viewed in a somewhat natural environment.

Wildlife comes first, people second. Refuges are often productive, producing food as well as habitat squeezed in here and there are opportunities for birding, hunting, fishing, etc.

Wildlife is generally more visible on NWR sites than BLM, Forest Service, or other lands, including many National Parks.

Wildlife refuges provide good opportunities for bird watching and other wildlife viewing. They generally provide decent roads to provide access to viewing areas, trails, restrooms, visitor centers, maps, and bird checklists. Visitors Center personnel can provide information about any recent rare bird sightings.

Wildlife should be the primary reason for visitors to go to refuges.

Wonderful nature preserves.

You allow hunting. I am not in favor of hunting except as a necessity for food.

You get to see animals in the wild, natural habitats, and the land is less changed.

You get to see wildlife in their own environment.

You get to see wildlife living on the edge, normally because of mankind.

Additional Comments (n = 163)

This particular trip was to see the Taiga Bean Goose, which was wintering in Unit 1. I enjoyed seeing the large flocks of Snow and Ross Geese.

"Travel information" based on travel from Palm Springs (our temporary 'home'); not from Canada.

Although you have set aside a whole section on climate change, species adaptability has always evened out as the Earth has gone through its history of environmental change, both gradual and catastrophic! I believe the flora and fauna can and will adapt more easily than we can! Finally, your questions are written with bias to support the idea of global warming, which isn't a balanced way to acquire true data. You are trying to sneak through the back door!

Better online maps would be helpful, especially those that differentiated paved, from unpaved roads.

Bird blinds would help within 1/4 mile of the road. Fees could be changed. Many people would pay \$25 for a half day to photograph the cranes. I drive the Oregon border (Tule Lake area) to photograph the bald eagles and to Red-Grande Valley for colorful and unusual birds and mammals.

Came to see Taiga Bean Goose. Excellent views!

Drove my tow vehicle (4W drive) from a camp ground 90 miles away. I would like to see a campground closer, enabling me to visit more frequently.

Excellent experience!

Exhibits at Salton Sea would be more useful if they recognized the loss of habitat for birds and fish from rising levels of salt and pollutants due to water transfers to urban areas in Southern California.

Facilities and staff were excellent.

Glad that the habitat was available to attract the Bean Goose, a species that is very rarely seen in North America.

Have regularly visited this refuge and have always had extremely enjoyable visits

I came to this refuge on this date solely to see the Bean Goose which was a first record for California.

I didn't get the name of the USGS Biologist at Vendel Road who kindly provided useful information regarding locations of interesting birds and who obtained my name for this survey (Nov. 23, 2010). He was very helpful!

I had a degree in biology before I became a health care professional and my biological past always pulls me back. The refuge reminded me of why I studied biology and gave me a lot of those old pleasures.

I lead field trips to the Salton Sea and elsewhere for the L.A. Audubon Society and my wife and I are bird watching enthusiasts. The very rare Bean Goose that visited our reserve was the reason for our visit.

I love the cover of this survey!

I love the refuge and have always appreciated its unique offerings.

I thank you for your efforts to maintain quality programs at this and other refuges, especially during times of economic despair.

I think it would be very worthwhile and quite interesting to expand the exhibits at Sonny Bono to include an examination of the effects of industrial agriculture in the Imperial Valley on birds and waterfowl, and on the Salton Sea itself. I was really curious about the pesticide use in the region and what might be reaching the Salton Sea, but of course there was no mention of that anywhere. I also think information about the effects of climate change would be quite valuable. The Salton Sea could certainly see some dramatic changes, and it would be informative to know what climate scientists foresee and what sorts of effects might be expected in this region.

I truly hope that the Sonny Bono Refuge remains open and is able to continue the bird festivals. It would be nice to have more activities and events at this refuge.

I visited primarily for the spectacular views of the Salton Sea.

I'm retired, live in Hawaii, and do a lot of volunteering with various organizations. I also do a lot of bird watching on the mainland each year. I found the staff at this refuge to be among the best!

Is the recession of the Salton Sea climate change? Is it natural or artificial? If it is the latter, what steps are the "powers that be" taking to restore water to this refuge, in particular Red Hill boat ramp?

It was rather magical and other-worldly. Magnificent wildlife. I loved the experience.

Keep the grasslands for the geese.

Keep up the good work! Do all you can to make people aware that global warming is real and an unprecedented danger.

Keep up the great work!

My family and I would like to see every park if we could afford it, but the cost at some places make us pass it up. I would like to see a bus trip organized at a reasonable cost, like for 2 days, 5 days, and 12 days.

Please keep the roads and trails open within the refuge.

Thank you for keeping and saving this refuge and thank you for the survey! We thank you for Sonny Bono and Brigantine! Whistler Refuge really needs a lot of work, please pay attention and put money into it. We are also very concerned about the Salton Sea and would really like to see more action taken to preserve and improve the Sea. We are willing to support the efforts!

Thanks for your important work at this refuge. I hope to return here several more times in my lifetime.

The farming practices for growing food for the geese on the Sonny Bono Refuge have gotten worse over the past three years. I have noticed the poor ground preparation and replanting fields more than once. What a waste of our money. I think the Snow Goose population has decreased because of this and the local refuge management does not seem to care.

The only negative thing about our trip was the presence of hunters. Please consider banning hunting, it goes against the principles of preservation and maintaining habitats for native species. The Snow Geese travel so far to get to the Salton Sea and it's a shame that they are at risk for getting shot just for someone's sport and enjoyment.

The opportunities for wildlife viewing at this refuge are generally quite good, and probably better than other refuges on average, but large parts of the refuge are still off-limits.

The rangers were very informative and friendly. Great staff!!

The Sonny Bono Salton Sea National Wildlife Refuge is a very important resource for migrating birds. Over the years I have viewed several rare birds here. The increasing salinity is a concern, and I hope that the Fish & Wildlife Service will work with other organizations and agencies to assure that the resource continues to support life.

The Sonny Bono Salton Sea Wildlife Refuge is a precious resource and they're doing a good job, but money is always needed. It's important to keep it funded!

The staff was exceptional. They knew where the rare birds were and stayed to help find it! Thanks.

The surrounding community's appearance is dismal.

The terrain along the walking trail is flat and without much character so you need to do a lot of landscaping and planting with native plants to improve its appearance.

The trips above include day trips for bird watching. I support increased funding for refuges by increasing the SR Golden Pass fees for National Parks. Ten dollars lifetime is too low!

There was a very friendly volunteer at the Visitors Center. We enjoyed talking with her about her experiences volunteering at a variety of recreational sites in the US.

They seem to be set up for hunting more than any other activity.

This refuge is a wonderful winter/spring birding location. We will visit again, probably with our Audubon group, but also possibly by ourselves now that we have the 'lay of the land'.

This refuge provides excellent bird watching opportunities. Could use a little more parking by the viewing deck at Unit 1. The portable toilets at Unit 1 (end of Vendel Road) were very clean and well stocked.

This visit was part of a four month trip where I visited several National Monuments, Parks and Refuges. It would have been better if the roads were marked as we were never sure we were on the right one that staff had directed us to and some did not have very good turn around which made it difficult when driving a full size truck. Fortunately, I was not driving my motor home. Better mapping would be a definite asset.

Very enjoyable!

Very interesting!

We always enjoy our visit to the Salton Sea as it offers great birding opportunities. We were disappointed that the main Visitors Center was closed when we were there, however the Visitors Center at Sonny Bono was open and the staff were helpful.

We enjoyed our visit to the Sonny Bono Wildlife Refuge. It is an interesting place and the birding is wonderful, plus the information at the Visitors Center is interesting. Volunteers at the Visitors Center were friendly and knowledgeable.

We flew from Seattle, WA and stayed in Palm Springs with a friend, and then drove to the refuge on two different days. That is why the expenses within 50 miles of the refuge were zero. We did a lot of driving to see both sides of the Salton Sea and the country southwest of Brawley, CA (Mexico). Birders like us tend to drive a lot, wanting to visit many sites in the course of a day, and trying to maximize the number of birds we see. I realize this is counter to my concern about global warming, but it is one area in my life that I haven't been able to find a good solution to, wanting to see birds in remote locations and not put carbon dioxide into the atmosphere. I think about this a lot. Hopefully, we will be able to figure out a way to do this. Electric vehicles or mixed gas and electric vehicles may be the answer.

We have regularly visited the Salton Sea for bird watching. Thank you for maintaining a natural environment for migratory birds.

We look forward every February to visiting this refuge, viewing the geese and cranes, etc.

We must visit the Salton Sea ten times a year for birding and wildlife photography.

We only visited the segment of the Sonny Bono Refuge that had the Visitors Center. We did not visit the south portion of the refuge. We are not "birders", but the birders at the viewing platform were very kind and shared their viewing equipment and information with us. We were able to see a rather unusual gray colored "morph" Snow Goose in the middle of the flock. It was a good experience.

We stay with two friends in Palm Springs every February and March and we make every effort to visit the refuge at least three times during that period to bird watch. The Salton Sea is a very important migratory bird area. It is sad that the water levels are declining and that it will be so very expensive to maintain it if ever a viable solution is found to save it. People must realize that all creatures on this earth are interconnected and healthy wildlife means a healthy economy and a healthy population. Thank you for giving me the opportunity to participate in this survey. (Signed)

We visit the refuge at least once a year in the fall and occasionally in the spring. Every year we find something new and interesting.

Wildlife Refuges are very important to us, not only because we love being out in nature but also because we know how critical our responsibilities are to co-create balanced, usable environments for wildlife. We would be willing to pay more in fees to make sure wildlife refuges are not neglected. We appreciate those who work and volunteer on refuges, helping us learn to become better educated on habitat and resources.

You need to fix the roads. I had to drive on the shoulder to keep us from bruising our kidneys. You do the same thing they do in Coachella Valley with the big horn sheep lambing areas. You block all access to allow nesting, but the birds have moved to the areas without humans so why promote an area if you don't want human interaction with the wildlife?

You need to more clearly spell out what areas of the refuge are accessible by people on foot or bicycle versus in cars or trucks; movable signs are not clear enough about this.
