



National Wildlife Refuge Visitor Survey 2012: Individual Refuge Results for Kofa National Wildlife Refuge

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

Every trip I make out I see and learn something new. It's a gorgeous and rugged place that has not been run down by cross country travel like other places in the desert.

— *Survey comment from a visitor to Kofa National Wildlife Refuge*



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

Contents

Acknowledgments	iv
Introduction	1
Organization of Results	2
Methods	3
Selecting Participating Refuges.....	3
Developing the Survey Instrument	3
Contacting Visitors	3
Interpreting the Results	5
Refuge Description.....	5
Sampling at This Refuge	8
Selected Survey Results	9
Visitor and Trip Characteristics.....	9
Visitor Spending in Local Communities	17
Visitor Opinions about This Refuge	18
Visitor Opinions about National Wildlife Refuge System Topics	23
Conclusion	27
References Cited	28
Appendix A: Survey Frequencies for This Refuge.....	A-1
Appendix B: Visitor Comments for This Refuge	B-1

Figures

1.	Map of this refuge	7
2.	How visitors first learned or heard about this refuge	10
3.	Resources used by visitors to find their way to this refuge during this visit.	10
4.	Number of visitors travelling to this refuge by place of residence.....	12
5.	Modes of transportation used by visitors to this refuge during this visit.....	13
6.	Activities in which visitors participated during the past 12 months at this refuge.....	14
7.	The primary activity in which visitors participated during this visit to this refuge	15
8.	Visitor Center activities in which visitors participated at this refuge.....	15
9.	Overall satisfaction with this refuge during this visit	18
10.	Importance-satisfaction ratings of services and facilities provided at this refuge	20
11.	Importance-satisfaction ratings of recreational opportunities provided at this refuge	21
12.	Importance-satisfaction ratings of transportation-related features at this refuge	22
13.	Visitors' likelihood of using alternative transportation options at refuges in the future.....	24
14.	Visitors' personal involvement with climate change related to fish, wildlife and their habitats.	26
15.	Visitors' beliefs about the effects of climate change on fish, wildlife and their habitats.	26

Tables

1.	Refuges participating in the 2012 national wildlife refuge visitor survey.....	4
2.	Sampling and response rate summary for this refuge.....	8
3.	Influence of this refuge on visitors' decisions to take their trips.....	11
4.	Type and size of groups visiting this refuge	13
5.	Total visitor expenditures in local communities and at this refuge expressed in dollars per person per day	17

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Introduction

The National Wildlife Refuge System (Refuge System), established in 1903 and managed by the U.S. Fish and Wildlife Service (Service), is the leading network of protected lands and waters in the world specifically dedicated to the conservation of fish, wildlife, and their habitats. There are 560 national wildlife refuges (refuges) and 38 wetland management districts nationwide, including possessions and territories in the Pacific and Caribbean, encompassing more than 150 million acres (U.S. Fish and Wildlife Service, 2013). As stated in the National Wildlife Refuge Improvement Act of 1997, the mission of the Refuge System is “to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” Part of achieving this mission is the goal “to foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants, and their habitats” and the goal “to provide and enhance opportunities to participate in compatible wildlife-dependent recreation” (U.S. Fish and Wildlife Service, 2006, p. 2). The Refuge System attracts nearly 45 million visitors annually, including 34.8 million people who observe and photograph wildlife, 9.6 million who hunt and fish, and nearly 675,000 teachers and students who use refuges as “outdoor classrooms” (U.S. Fish and Wildlife Service, 2012). Understanding visitor perceptions of refuges and characterizing their experiences on refuges are critical elements of managing these lands and meeting the goals of the Refuge System.

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

Organization of Results

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

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

Methods

Selecting Participating Refuges

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

Developing the Survey Instrument

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

Contacting Visitors

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

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

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

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

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

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

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

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

Interpreting the Results

The extent to which these results accurately represent the total population of visitors to this refuge is dependent on the number of visitors who completed the survey (sample size) and the ability of the variation

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

resulting from that sample to reflect the beliefs and interests of different visitor user groups (Scheaffer and others, 1996). The composition of the sample is dependent on the ability of the standardized sampling protocol for this study to account for the spatial and temporal patterns of visitor use unique to each refuge. Spatially, the geographical layout and public-use infrastructure varies widely across refuges. Some refuges can be accessed only through a single entrance, while others have multiple unmonitored access points across large expanses of land and water. As a result, the degree to which sampling locations effectively captured spatial patterns of visitor use will vary from refuge to refuge. Temporally, the two 15-day sampling periods may not have effectively captured all of the predominant visitor uses/activities on some refuges during the course of a year, which may result in certain survey measures such as visitors' self-reported "primary activity during their visit" reflecting a seasonality bias. Results contained within this report may not apply to visitors during all times of the year or to visitors who did not visit the survey locations.

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

Refuge Description for Kofa National Wildlife Refuge

Kofa NWR is located in an arid and rugged area of southwestern Arizona. Of the 665,400 acres the refuge spans, 80% is federally designated wilderness which prohibits the use of motor vehicles or mechanical transport. The Kofa and Castle Dome mountain ranges and desert plains are the dominating features of the refuge and provide critical habitat for desert bighorn sheep, desert tortoise, desert kit fox, the white-winged dove, the Kofa Mountain Barberry (found only in southwest Arizona), and the California Fan Palm, among other plants and animals.

Prior to its establishment as a refuge in 1939, mountainous areas were mined for gold. One of the most notable mines, the King of Arizona ("K of A") mine, is where the name of the refuge and mountain range originates. Refuge lands were also used during the Second World War (WWII) for desert military training exercises. In 1936, the Arizona Boy Scouts campaigned to save the declining desert bighorn sheep population which led to the creation of both Kofa NWR and Cabeza Prieta NWR, which is located just southeast of Kofa NWR. Desert bighorn sheep numbers have since rebounded, and stabilized, due in large part to these habitat preservation efforts. Approximately 59,500 visitors use the refuge each year (2011 Refuge Annual Performance Plan measures; Rob Miller, U.S. Fish and Wildlife Service, 2012, written commun.). Visitors can participate in a number of opportunities and activities including wildlife observation,

photography, hunting, camping, and hiking. A half-mile trail allows visitors to see Palm Canyon, which includes native palms that are remnants from a wetter and cooler period. Figure 1 displays a map of the refuge. For more information, please visit <http://www.fws.gov/southwest/refuges/arizona/kofa/index.html>.

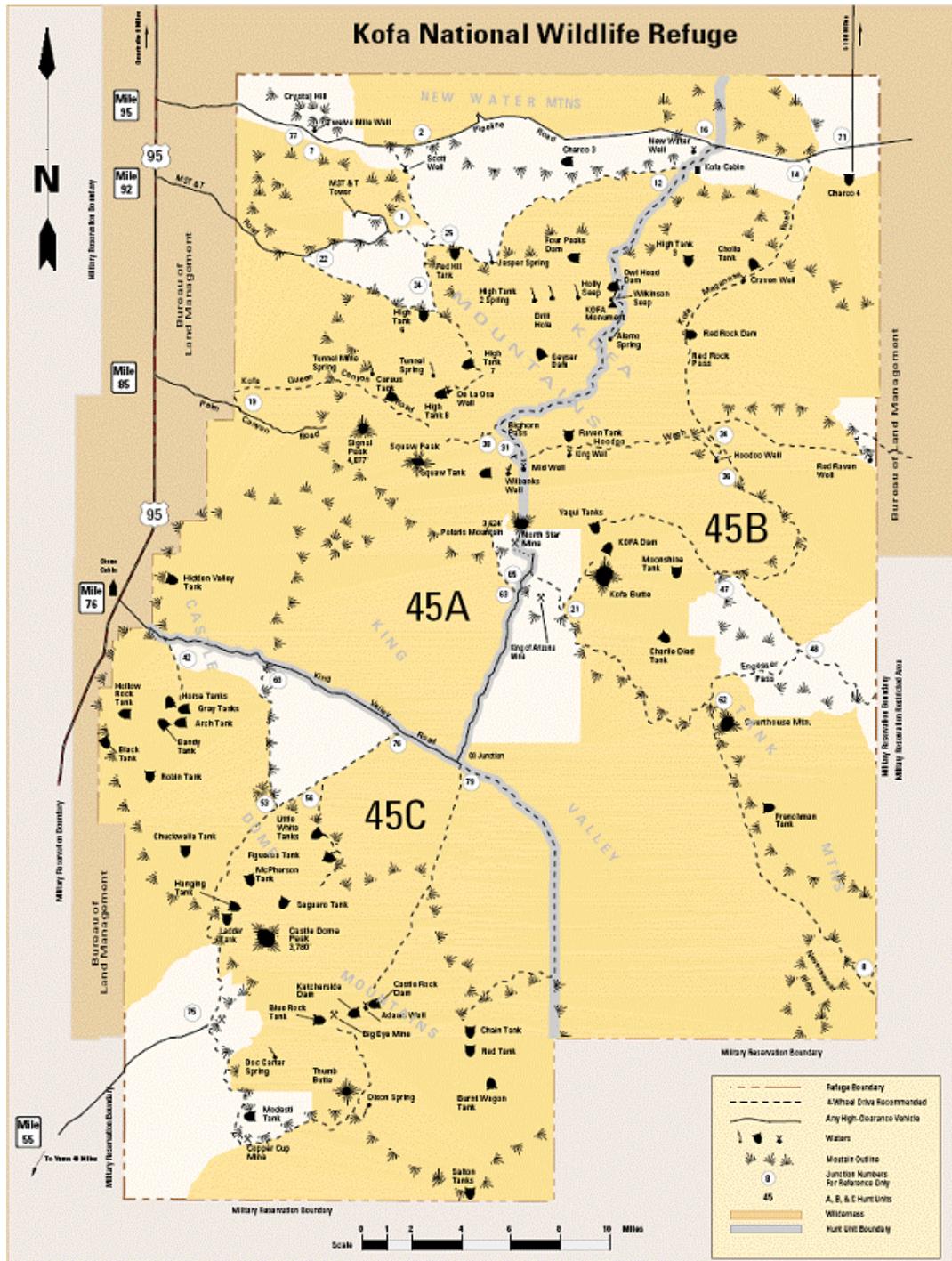


Figure 1. Map of Kofa NWR, courtesy of U.S. Fish and Wildlife Service.

Sampling at Kofa National Wildlife Refuge

A total of 377 visitors agreed to participate in the survey during the two sampling periods at the identified locations at Kofa NWR (table 2). In all, 262 visitors completed the survey for a 71% response rate, and $\pm 4.8\%$ margin of error at the 95% confidence level.²

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

Sampling period	Dates	Locations	Total contacts	Undeliverable addresses	Completed surveys	Response rate
1	1/28/2012 to 2/11/2012	King Valley Road Kiosk				
		Castle Dome Road Kiosk				
		Palm Canyon Trailhead				
		Junction 19				
SP1 Totals			182	5	133	75%
2	11/3/2012 to 11/17/2012	Palm Canyon Trailhead				
		King Valley Road Kiosk				
		Castle Dome Road Kiosk				
		Junction 19				
SP2 Totals			195	5	129	68%
Combined Totals			377	10	262	71%

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

Selected Survey Results

Visitor and Trip Characteristics

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

Familiarity with the Refuge System

Most visitors to Kofa NWR reported that before participating in the survey, they were aware of the role of the Service in managing refuges (86%) and that the Refuge System has the mission of conserving, managing, and restoring fish, wildlife, plants, and their habitats (88%). It is important to note that we did not ask visitors to identify the mission of the Refuge System or the Service, and positive responses to these questions concerning the management and mission of the Refuge System do not necessarily indicate that these visitors fully understand the day-to-day management practices of individual refuges, only that visitors feel they have a basic knowledge of who manages refuges and why.

Many visitors (81%) feel that refuges, compared to other public lands, provide a unique recreation experience (see Appendix B for visitor comments on “What Makes National Wildlife Refuges Unique?”); however, reasons for why visitors find refuges unique are varied and may not directly correspond to their understanding of the mission of the Refuge System.

Some visitors to Kofa NWR had been to at least one *other* national wildlife refuge in the past year (42%), with an average of 4 visits to *other* refuges during the past 12 months.

Visiting This Refuge

Almost half of surveyed visitors (48%) had only been to Kofa NWR once in the past 12 months, while more than half had been multiple times (52%). These repeat visitors went to the refuge an average of 4 times during that same 12-month period. Visitors used the refuge during only one season (68%), during multiple seasons (29%), and year-round (3%).

Visitors first learned about the refuge from friends or relatives (61%), signs on the highway (22%), or people in the local community (18%; fig. 2). Key information sources used by visitors to find their way to this refuge include previous knowledge (55%), signs on the highways (35%), or directions from friends and family (24%; fig. 3).

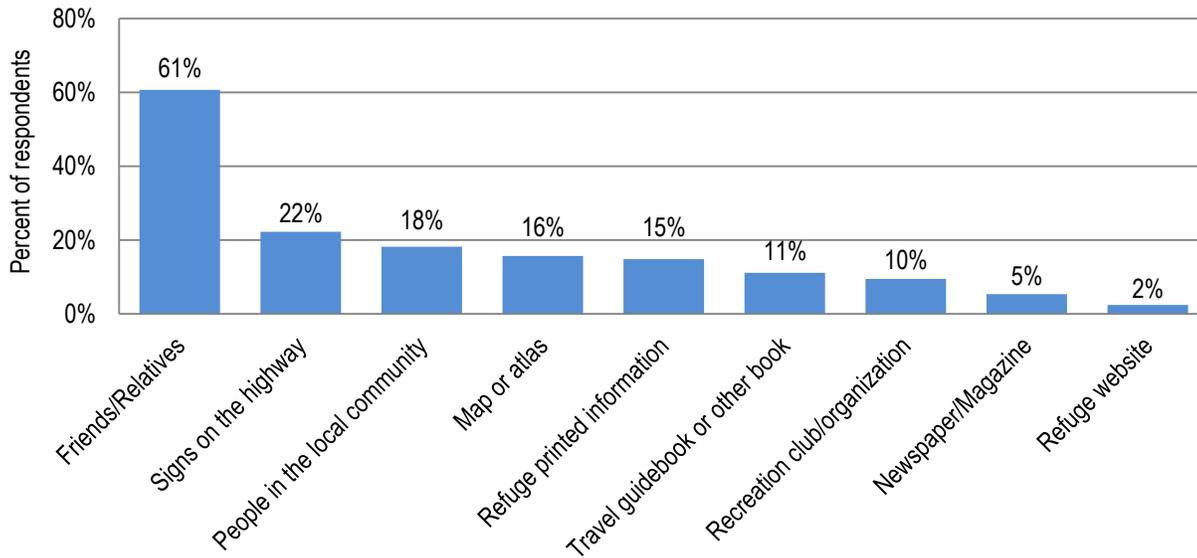


Figure 2. How visitors first learned or heard about Kofa NWR (n = 242).

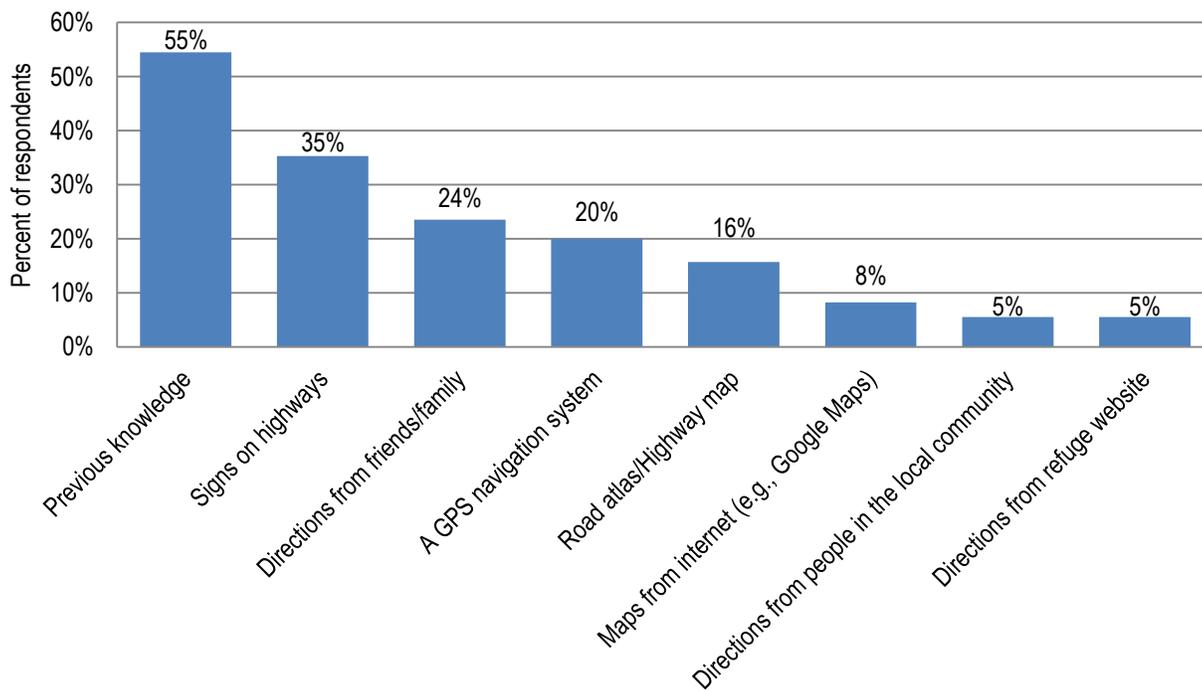


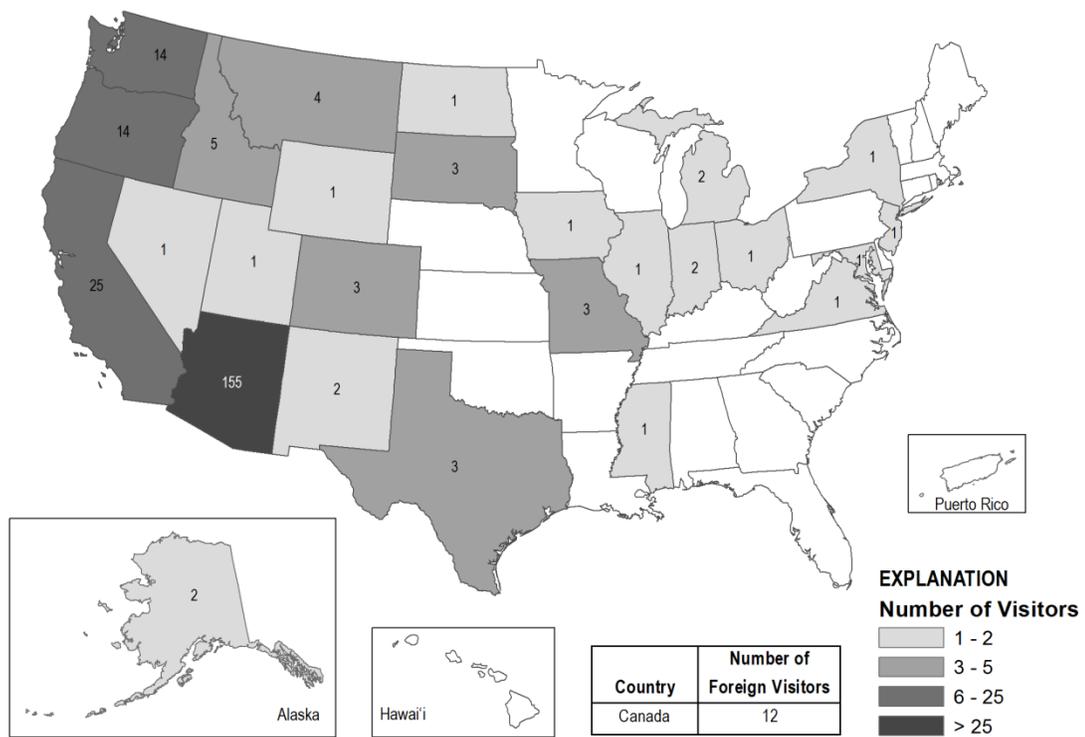
Figure 3. Resources used by visitors to find their way to Kofa NWR during this visit (n = 255).

Some visitors (46%) lived in the local area (within 50 mi of the refuge), whereas 54% were nonlocal visitors. For most local visitors, Kofa NWR was the primary purpose or sole destination of their trips (82%; table 3). For about half of the nonlocal visitors, the refuge was also the primary purpose or sole destination of their trips (49%).

Local visitors reported that they traveled an average of 37 mi to get to the refuge, while nonlocal visitors traveled an average of 479 mi. The average distance traveled for all visitors to this refuge was 262 mi, while the median was 63 mi. Figure 4 shows the residences of visitors traveling to this refuge. About 62% of visitors traveling to Kofa NWR were from Arizona.

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

Visitors	Visiting this refuge was...		
	the primary reason for trip	one of many equally important reasons for trip	an incidental stop
Nonlocal	49%	30%	22%
Local	82%	12%	6%
All visitors	63%	22%	15%



Explanation

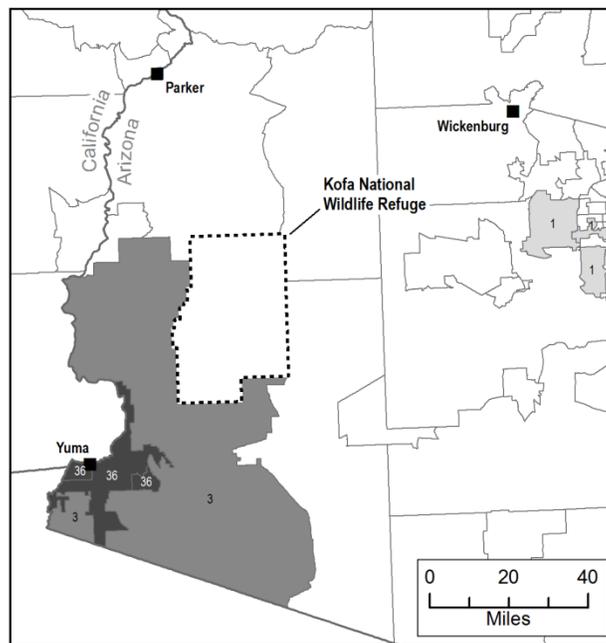
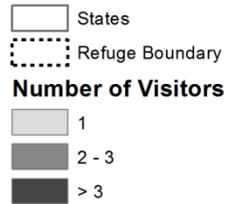


Figure 4. Number of visitors travelling to Kofa NWR by place of residence. The top map shows visitors residence by state and the bottom map shows residence by zip codes near the refuge (n = 261).

Surveyed visitors reported that they spent an average of 7 hr at the refuge during one day there, while the most frequently reported length of a day visit (the modal response) was 8 hr (59%). Most visitors indicated they were part of a group on their visit to this refuge (94%). Of those people who indicated they traveled with a group, visitors primarily traveled with family/friends (table 4).

Table 4. Type and size of groups visiting Kofa NWR (for those who indicated they were part of a group, n = 239).

Group type	Percent (of those traveling in a group)	Average group size		
		Number of adults	Number of children	Total group size
Family/Friends	85%	5	1	6
Commercial tour group	0%	1	0	1
Organized club/School group	8%	16	1	17
Other group type	6%	19	4	23

The key mode of transportation used by visitors to travel around the refuge was private vehicles (79%), and to a lesser degree, walking/hiking (24%; fig. 5).

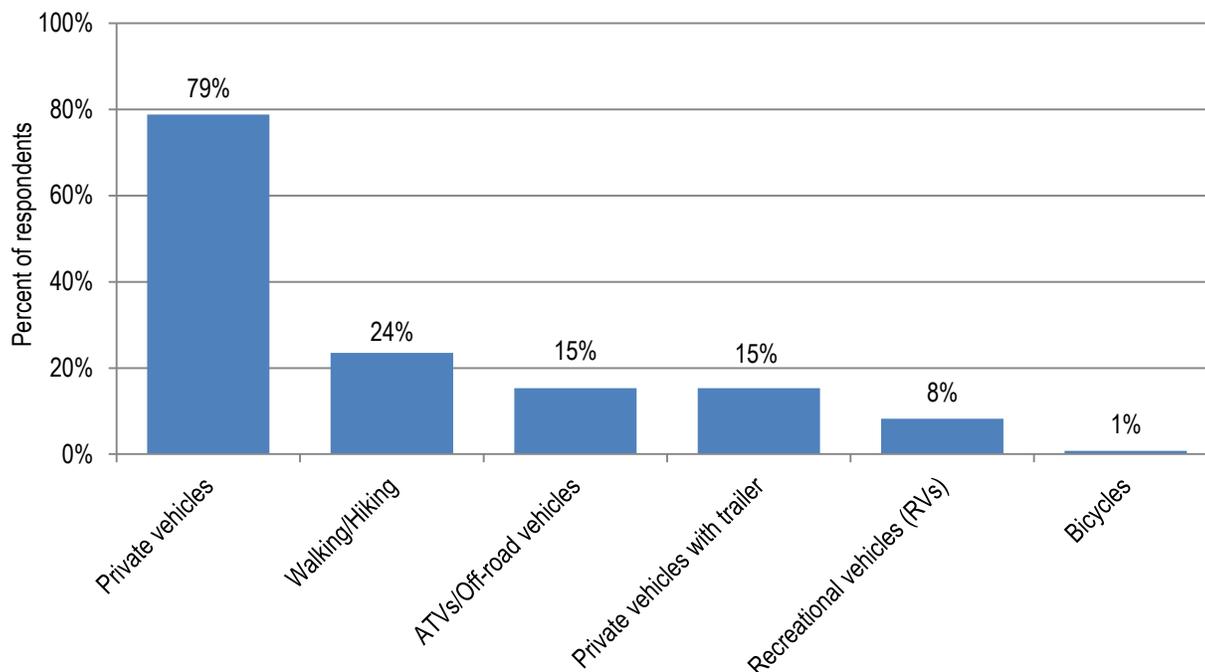


Figure 5. Modes of transportation used by visitors to Kofa NWR during this visit (n = 255).

Surveyed visitors participated in a variety of refuge activities during the 12 months prior to completing the survey (fig. 6); the top three activities in which people reported participating were hiking (55%), photography (47%), and auto tour route/driving (44%). The primary reasons for visitors' most recent visits included hunting (25%), hiking (21%), and auto tour route/driving (13%; fig. 7). Some visitors also used the Visitor Center during their trips (20%), mostly to view the exhibits (54%), ask information of staff or volunteers (50%), and visit the gift shop/bookstore (38%; fig. 8).

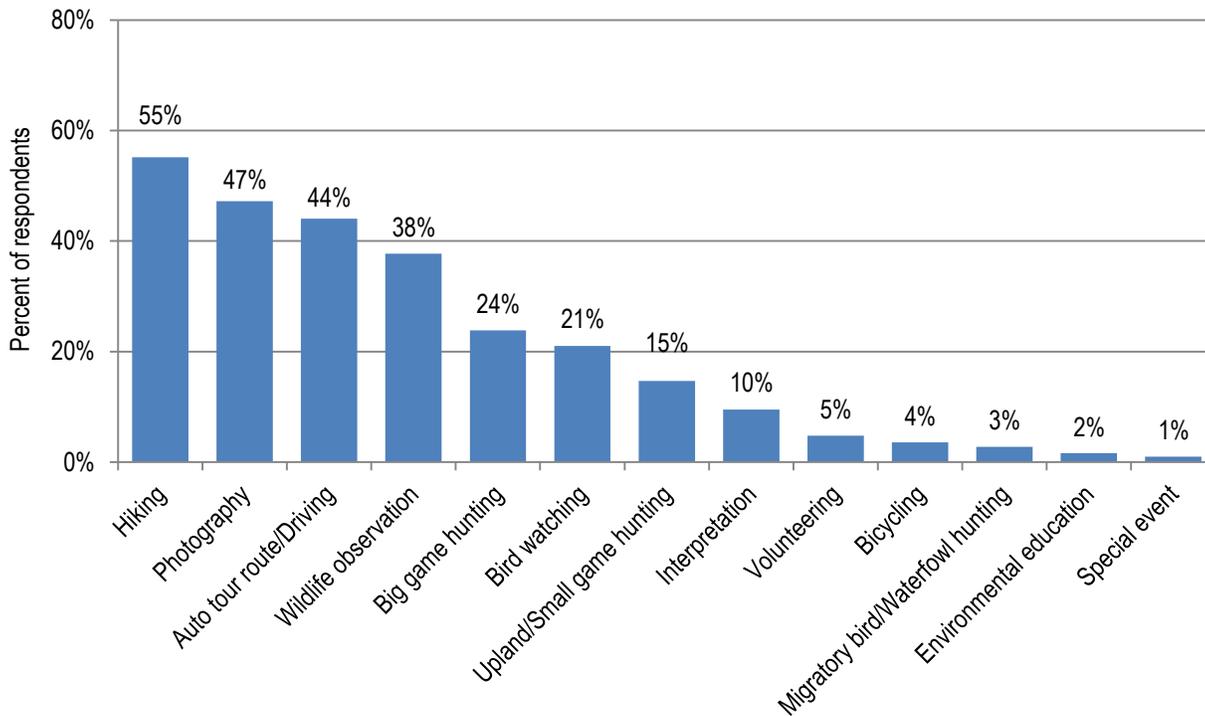


Figure 6. Activities in which visitors participated during the past 12 months at Kofa NWR (n = 252). See Appendix B for a listing of “other” activities.

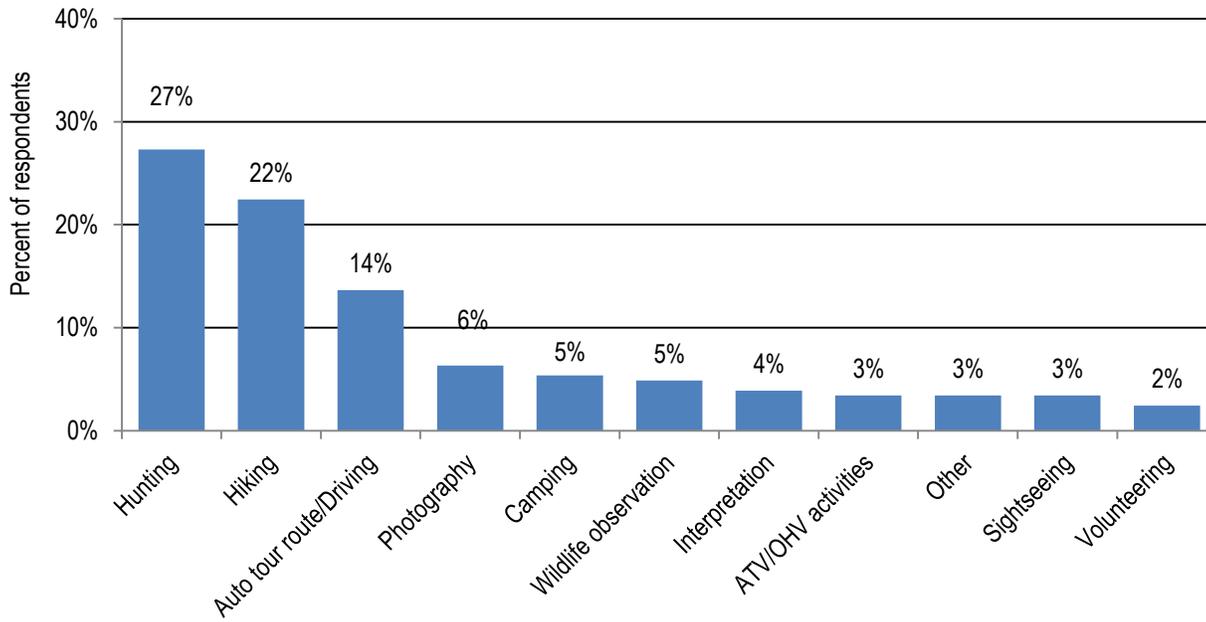


Figure 7. The **primary** activity in which visitors participated during this visit to Kofa NWR (n = 222). See Appendix B for a listing of “other” activities.

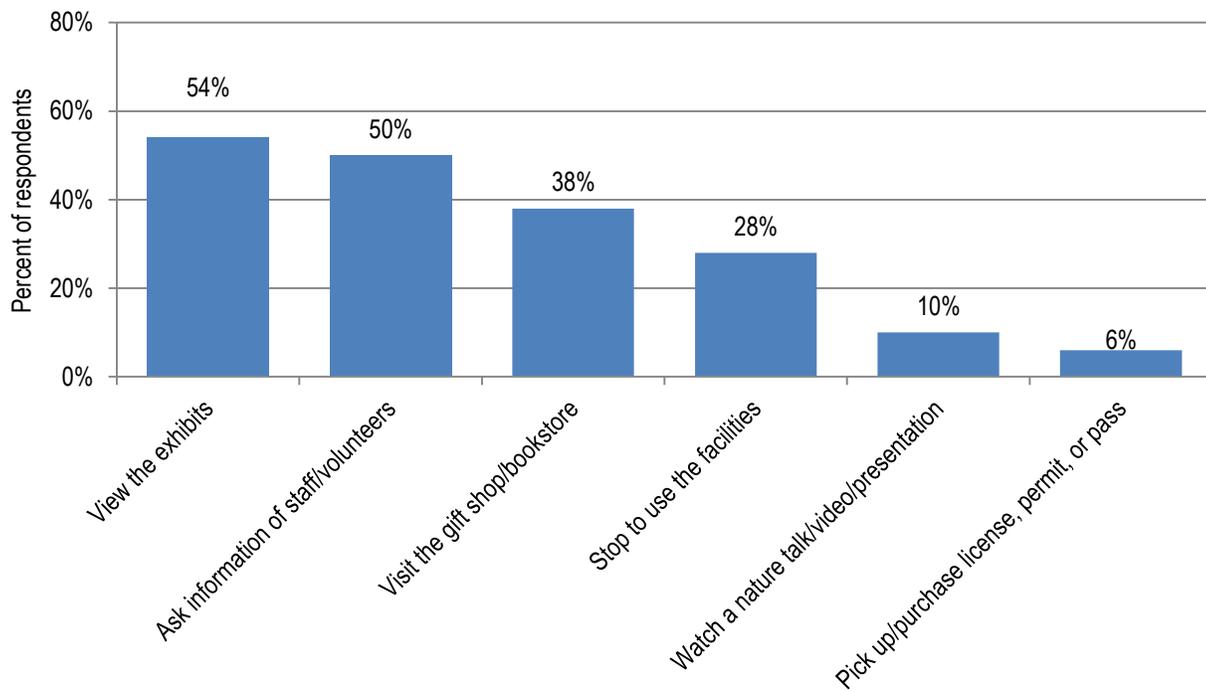


Figure 8. Visitor Center activities in which visitors participated at Kofa NWR (n = 50).

Visitor Characteristics

Most (90%) visitors who participated in the survey at Kofa NWR indicated that they were citizens or permanent residents of the United States. These visitors were a mix of 68% male (with an average age of 60 years) and 32% female (with an average age of 58 years). Visitors, on average, reported they had 15 years of formal education (equivalent to three years of college or technical school). The median level of income was \$50,000 – \$74,999. See Appendix A for more demographic information.

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

Visitor Spending in Local Communities

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

Visitors that live within the local 50-mi area of a refuge typically have different spending patterns than those that travel from longer distances. During the two sampling periods, 46% of surveyed visitors to Kofa NWR indicated that they live within the local 50-mi area while nonlocal visitors (54%) stayed in the local area, on average, for 18 days. Table 5 shows summary statistics for local and nonlocal visitor expenditures in the local communities and at the refuge, with expenditures reported on a per person per day basis. During the two sampling periods, nonlocal visitors spent an average of \$40 per person per day and local visitors spent an average of \$31 per person per day in the local area. Several factors should be considered when estimating the economic importance of refuge-visitor spending in the local communities. These factors include the amount of time spent at the refuge, influence of the refuge on the visitors' decision to take this trip, and the representativeness of primary activities of the sample of surveyed visitors compared to the general population. Controlling for these factors is beyond the scope of the summary statistics presented in this report.

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

Visitors	n ¹	Median	Mean	Standard deviation	Minimum	Maximum
Nonlocal	113	\$17	\$40	\$55	\$0	\$300
Local	91	\$21	\$31	\$32	\$0	\$170

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

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

Visitor Opinions about this Refuge

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

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

- 86% of visitors were satisfied with the recreational activities and opportunities,
- 82% of visitors were satisfied with the information and education about the refuge and its resources,
- 82% of visitors were satisfied with the services provided by employees or volunteers, and
- 85% of visitors were satisfied with the refuge's job of conserving fish, wildlife and their habitats.

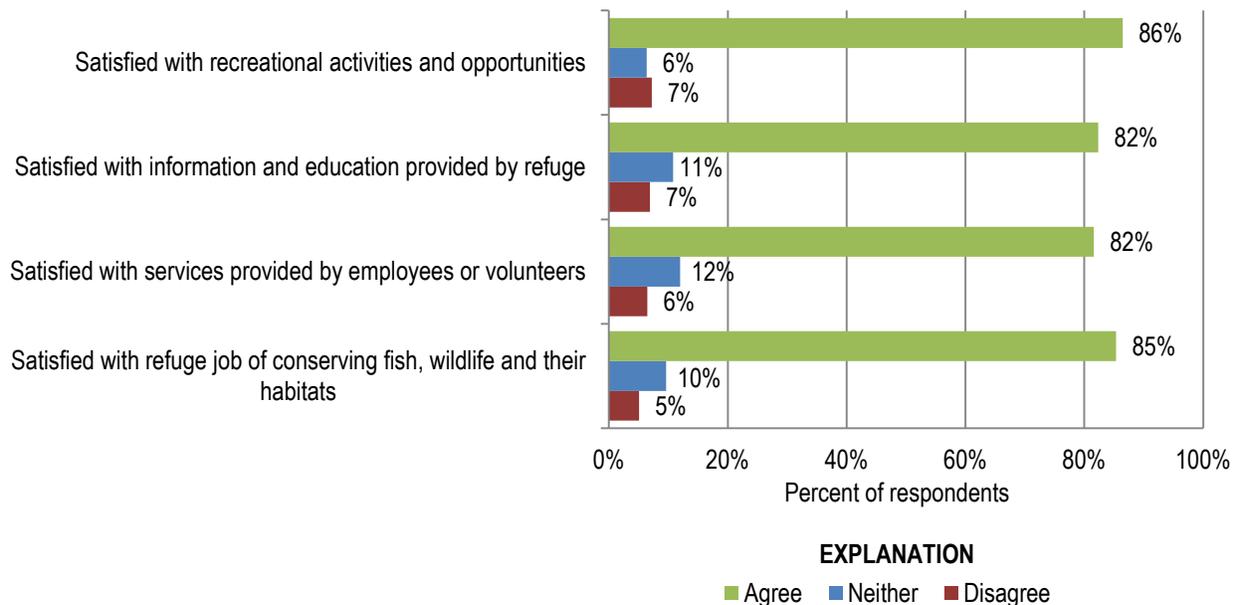


Figure 9. Overall satisfaction with Kofa NWR during this visit (n ≥ 217).

Importance/Satisfaction Ratings

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

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

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

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

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

- All *transportation-related features* fell in the “Keep Up the Good Work” quadrant except condition of parking areas, which fell into the “Look Closer” quadrant (fig. 12).

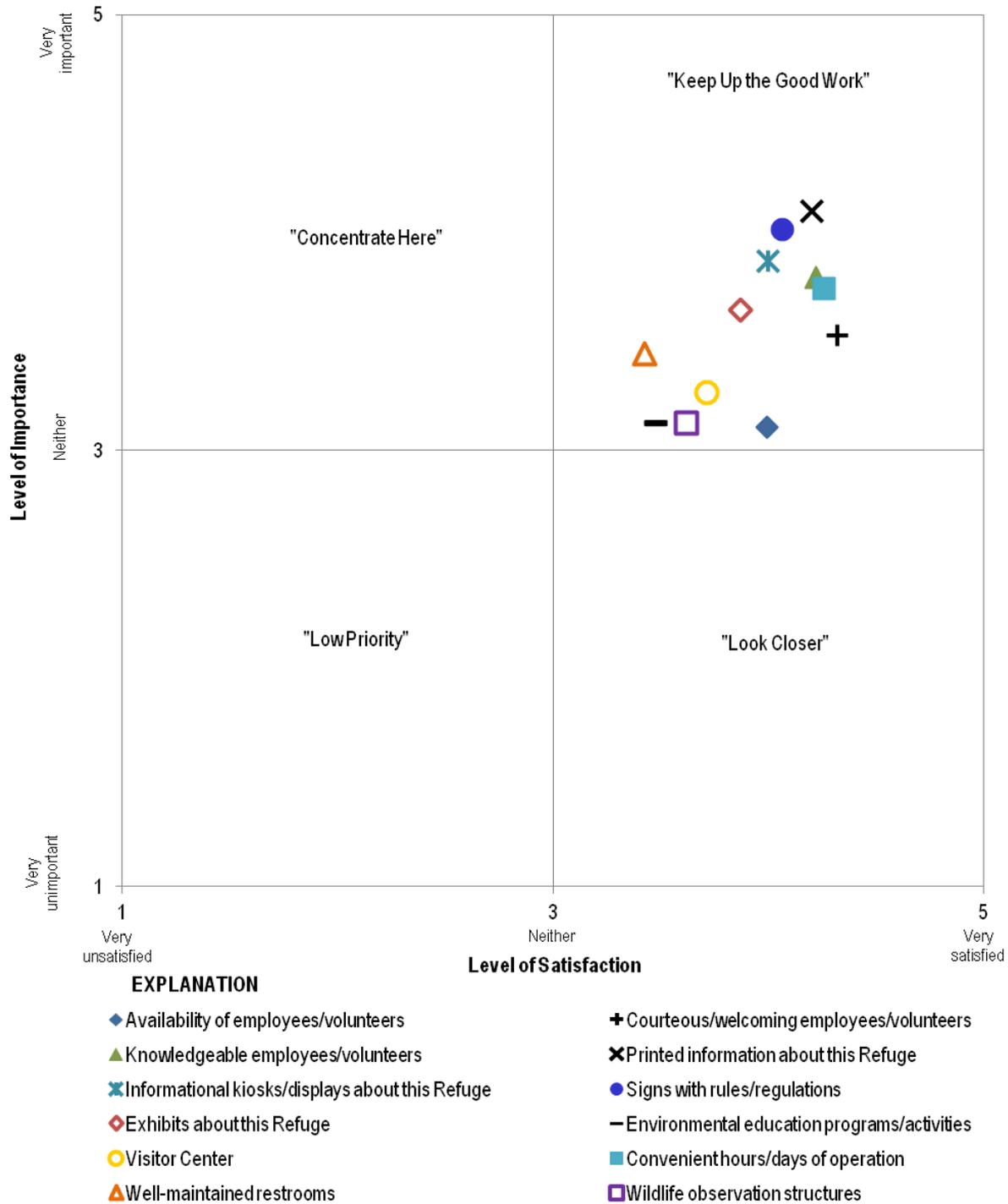
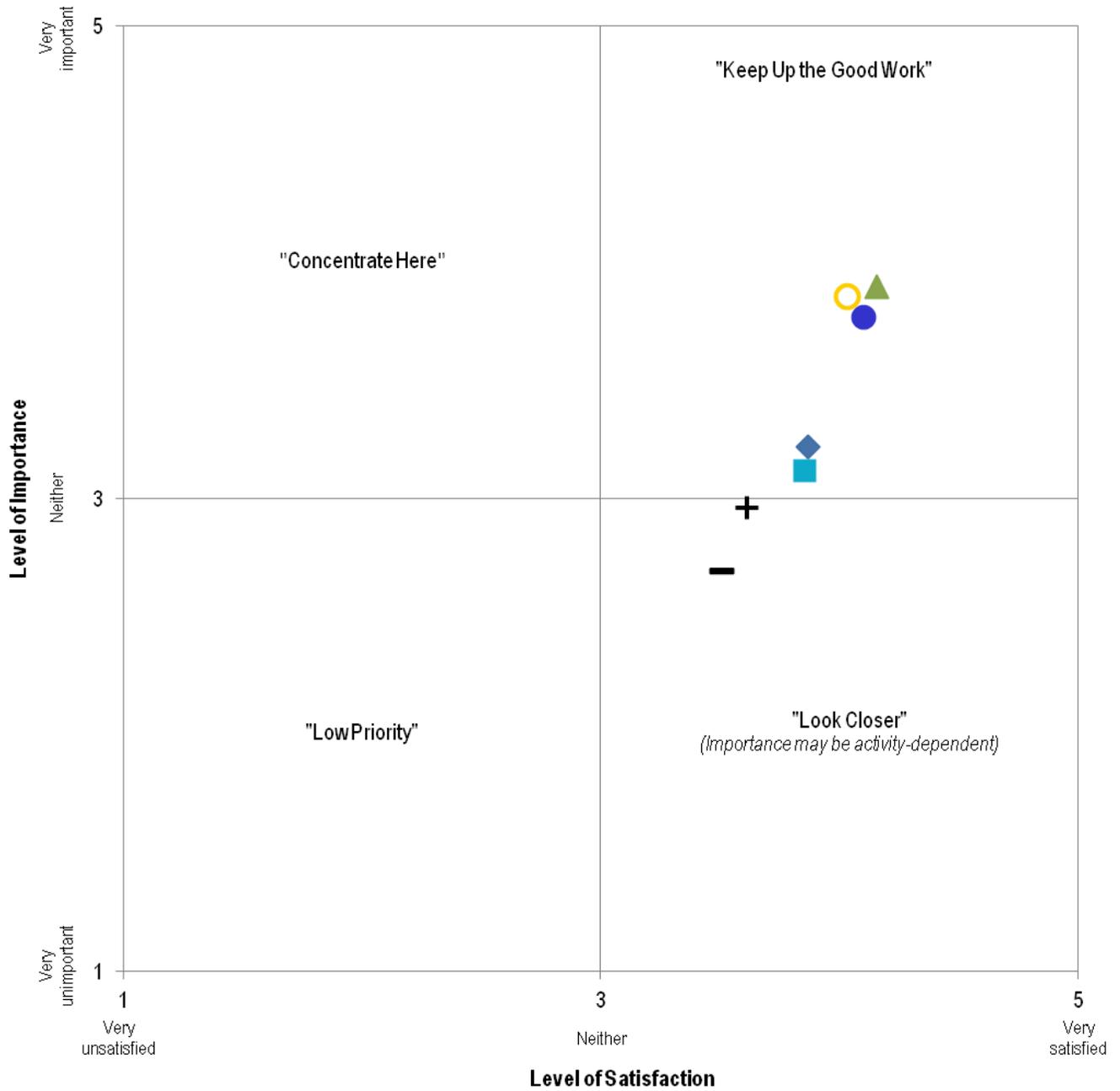


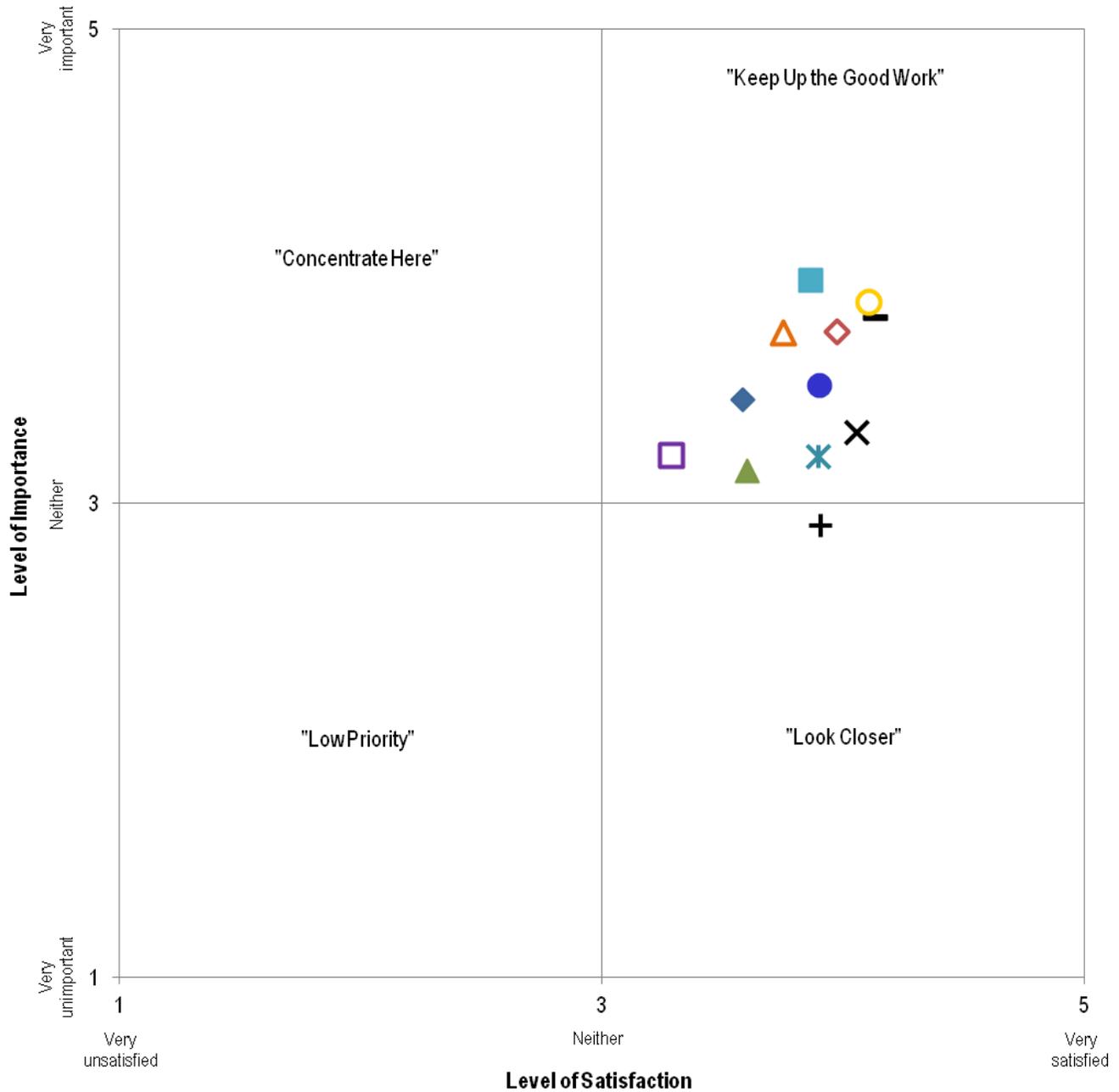
Figure 10. Importance-satisfaction ratings of services and facilities provided at Kofa NWR.



EXPLANATION

- ◆ Bird watching opportunities ● Wildlife viewing opportunities ▲ Photography opportunities ■ Hunting opportunities
- Hiking opportunities - Bicycling opportunities + Volunteer opportunities

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



EXPLANATION

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

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

Visitor Opinions about National Wildlife Refuge System Topics

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

Alternative Transportation and the Refuge System

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

Of six alternative transportation options listed on the survey, a majority of Kofa NWR visitors indicated they were likely to use an offsite parking lot that provides trail access to refuges in the future (fig. 13): A majority of visitors indicated they were *not* likely to use a bike share program, a bus/tram that takes passengers to different points on the refuge, a bus/tram that provides a guided tour of the refuge, a bus/tram that runs during a special event, or a boat that goes to different points on refuge waterways.

When asked specifically about using alternative transportation at Kofa NWR, few visitors thought alternative transportation would enhance their experience (11%) while a majority thought it would not (57%). An additional 32% of surveyed visitors indicated they were unsure whether alternative transportation would enhance their experiences.

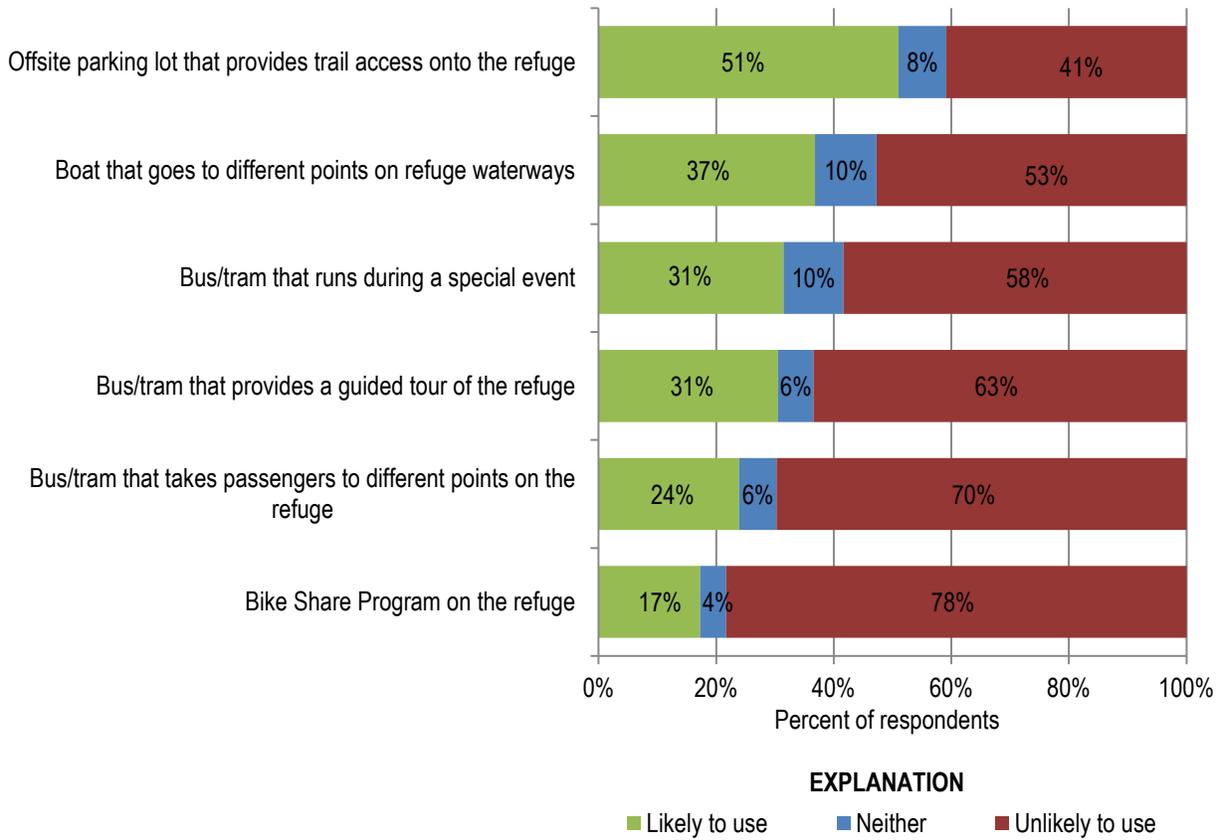


Figure 13. Visitors' likelihood of using alternative transportation options at refuges in the future (n ≥ 239).

Climate Change and the National Wildlife Refuge System

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

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

Almost half (49%) of visitors to Kofa NWR indicated they were personally concerned about the effects of climate change on fish, wildlife and habitats (fig. 14). Less than half indicated they stayed well-informed about the effects and took action to reduce those effects.

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

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

Results regarding such beliefs are important to consider when communicating with visitors about this topic, since some visitors (32%) indicated their experiences would be enhanced if Kofa NWR provided information about how visitors can help to address climate change impacts on fish, wildlife, and their habitats (fig. 14).

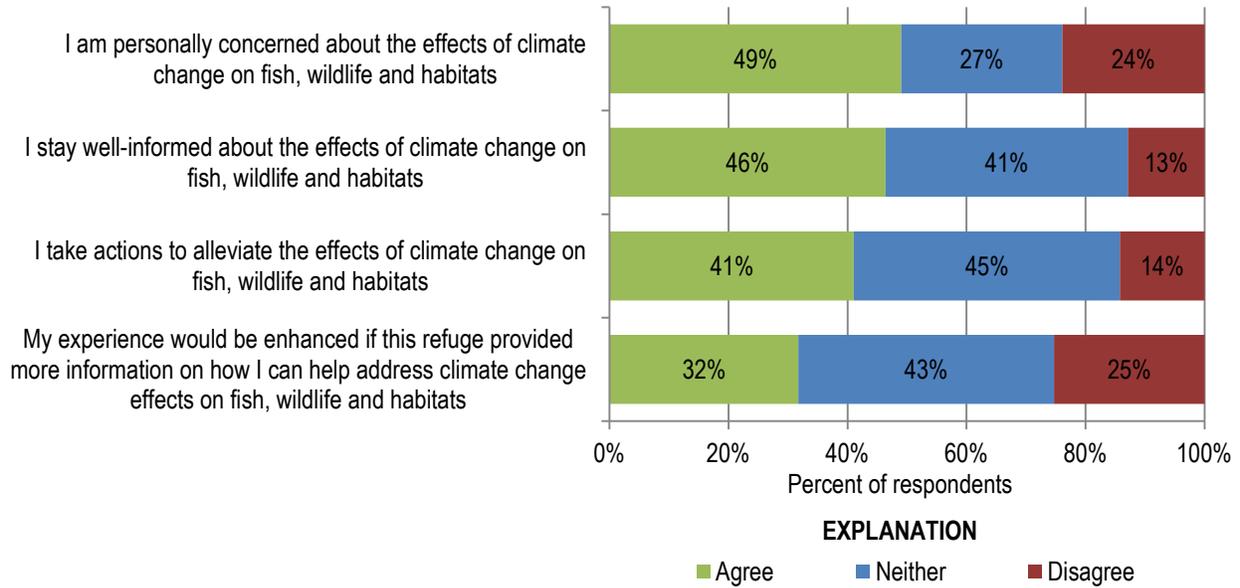


Figure 14. Visitors' personal involvement with climate change related to fish, wildlife and their habitats (n ≥ 246).

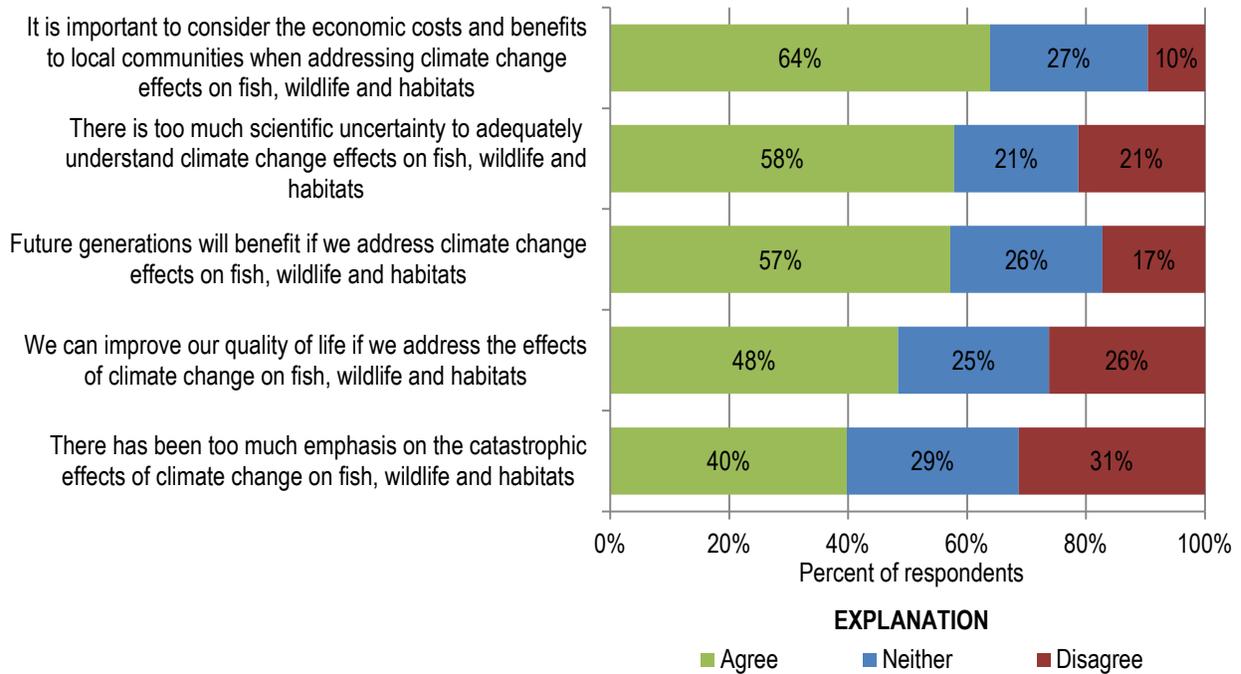


Figure 15. Visitors' beliefs about the effects of climate change on fish, wildlife and their habitats (n ≥ 248).

Conclusion

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

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

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National Wildlife Refuge Visitor Survey



PLEASE READ THIS FIRST:

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

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

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.***) (** indicates the activity is not offered/allowed at Kofa National Wildlife Refuge*)

<input type="checkbox"/> 24%	Big game hunting	<input type="checkbox"/> 55%	Hiking	<input type="checkbox"/> 2%	Environmental education (for example, classrooms or labs)
<input type="checkbox"/> 15%	Upland/Small game hunting	<input type="checkbox"/> 4%	Bicycling	<input type="checkbox"/> 10%	Interpretation (for example, exhibits, kiosks, videos)
<input type="checkbox"/> 3%	Migratory bird/Waterfowl hunting	<input type="checkbox"/> 44%	Auto tour route/Driving	<input type="checkbox"/> 1%	Refuge special event (<i>please specify</i>) See Appendix B
<input type="checkbox"/> 38%	Wildlife observation	<input type="checkbox"/> *	Motorized boating	<input type="checkbox"/> 15%	Other (<i>please specify</i>) See Appendix B
<input type="checkbox"/> 21%	Bird watching	<input type="checkbox"/> *	Nonmotorized boating (including canoes/kayaks)		
<input type="checkbox"/> *	Freshwater fishing	<input type="checkbox"/> 5%	Volunteering		
<input type="checkbox"/> *	Saltwater fishing				
<input type="checkbox"/> 47%	Photography				

are unsure of which refuge you visited.

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

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

<input type="checkbox"/> 80%	No		
<input type="checkbox"/> 20%	Yes → If yes, what did you do there? (Please mark <i>all that apply.</i>)		
<input type="checkbox"/> 38%	Visit the gift shop or bookstore	<input type="checkbox"/> 6%	Pick up/purchase a license, permit, or pass
<input type="checkbox"/> 54%	View the exhibits	<input type="checkbox"/> 28%	Stop to use the facilities (for example, get water, use restroom)
<input type="checkbox"/> 50%	Ask information of staff/volunteers	<input type="checkbox"/> 14%	Other (<i>please specify</i>) See Appendix B
<input type="checkbox"/> 10%	Watch a nature talk/video/presentation		

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

Nonlocal	Local	All visitors	
<input type="checkbox"/> 49%	<input type="checkbox"/> 82%	<input type="checkbox"/> 64%	It was the primary purpose or sole destination of my trip.
<input type="checkbox"/> 30%	<input type="checkbox"/> 12%	<input type="checkbox"/> 22%	It was one of many equally important reasons or destinations for my trip.
<input type="checkbox"/> 22%	<input type="checkbox"/> 6%	<input type="checkbox"/> 15%	It was just an incidental or spur-of-the-moment stop on a trip taken for other purposes or to other destinations.

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

Nonlocal	<u> 9 </u> Hours	<u> 15 </u> Minutes	<i>and</i>	<u> 479 </u> Miles
Local	<u> 0 </u> Hours	<u> 52 </u> Minutes	<i>and</i>	<u> 37 </u> Miles
All visitors	<u> 5 </u> Hours	<u> 8 </u> Minutes	<i>and</i>	<u> 265 </u> Miles

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

6% None, I visited this Refuge alone

(of those visiting with a group)

85% Family and/or friends

8% Organized club or school group (for example, Boy/Girl Scouts, hiking club, bird watching group)

0% Commerical tour group

6% Other (*please specify*) See Appendix B

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

 7 number 18 years and over

 1 number 17 years and under

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

61% Family and/or friends

2% Refuge website

22% Signs on highway

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

10% Recreation club or organization

0% Television or radio

18% People in the local community

5% Newspaper or magazine

15% Refuge printed information (brochure, map)

11% Travel guidebook or other book

16% Map or atlas

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

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

23% Spring
(March-May)

4% Summer
(June-August)

56% Fall
(September-November)

66% Winter
(December-February)

10. How many times have you visited...

...this Refuge (including this visit) in the last 12 months? 3 number of visits

...other National Wildlife Refuges in the last 12 months? 1 number of visits

SECTION 2. Transportation and access at this Refuge

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

- | | | | | | |
|------------------------------|---|------------------------------|----------------------------------|------------------------------|---------------------------------------|
| <input type="checkbox"/> 79% | Private vehicle without a trailer | <input type="checkbox"/> 0% | Refuge shuttle bus or tram | <input type="checkbox"/> 1% | Bicycle |
| <input type="checkbox"/> 15% | Private vehicle with a trailer
(for boat, camper or other) | <input type="checkbox"/> 0% | Motorcycle | <input type="checkbox"/> 24% | Walk/Hike |
| <input type="checkbox"/> 0% | Commercial tour bus | <input type="checkbox"/> 15% | ATV or off-road vehicle | <input type="checkbox"/> 0% | Other (<i>please specify below</i>) |
| <input type="checkbox"/> 8% | Recreational vehicle (RV) | <input type="checkbox"/> 0% | Boat | <u>See Appendix B</u> | |
| | | <input type="checkbox"/> 0% | Wheelchair or other mobility aid | | |

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

- | | | | |
|------------------------------|--|------------------------------|---|
| <input type="checkbox"/> 55% | Previous knowledge/I have been to this Refuge before | <input type="checkbox"/> 8% | Maps from the Internet (for example, MapQuest or Google Maps) |
| <input type="checkbox"/> 35% | Signs on highways | <input type="checkbox"/> 5% | Directions from Refuge website |
| <input type="checkbox"/> 20% | A GPS navigation system | <input type="checkbox"/> 5% | Directions from people in community near this Refuge |
| <input type="checkbox"/> 16% | A road atlas or highway map | <input type="checkbox"/> 24% | Directions from friends or family |
| | | <input type="checkbox"/> 9% | Other (<i>please specify</i>) <u>See Appendix B</u> |

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

How likely would you be to use...	Very Unlikely	Somewhat Unlikely	Neither	Somewhat Likely	Very Likely
...a bus or tram that takes passengers to different points on the Refuge (such as the Visitor Center)?	<input type="checkbox"/> 54%	<input type="checkbox"/> 16%	<input type="checkbox"/> 6%	<input type="checkbox"/> 16%	<input type="checkbox"/> 8%
...a bike that was offered through a Bike Share Program for use while on the Refuge?	<input type="checkbox"/> 67%	<input type="checkbox"/> 11%	<input type="checkbox"/> 4%	<input type="checkbox"/> 11%	<input type="checkbox"/> 6%
...a bus or tram that provides a guided tour of the Refuge with information about the Refuge and its resources?	<input type="checkbox"/> 53%	<input type="checkbox"/> 10%	<input type="checkbox"/> 6%	<input type="checkbox"/> 21%	<input type="checkbox"/> 10%
...a boat that goes to different points on Refuge waterways?	<input type="checkbox"/> 45%	<input type="checkbox"/> 8%	<input type="checkbox"/> 10%	<input type="checkbox"/> 26%	<input type="checkbox"/> 11%
...a bus or tram that runs during a special event (such as an evening tour of wildlife or weekend festival)?	<input type="checkbox"/> 47%	<input type="checkbox"/> 11%	<input type="checkbox"/> 10%	<input type="checkbox"/> 23%	<input type="checkbox"/> 9%
...an offsite parking lot that provides trail access for walking/hiking onto the Refuge?	<input type="checkbox"/> 33%	<input type="checkbox"/> 8%	<input type="checkbox"/> 8%	<input type="checkbox"/> 30%	<input type="checkbox"/> 21%
...some other alternative transportation option? (<i>please specify</i>) <u>See Appendix B</u>	<input type="checkbox"/> 4%	<input type="checkbox"/> %	<input type="checkbox"/> %	<input type="checkbox"/> 33%	<input type="checkbox"/> 63%

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

- 11% Yes 57% No 32% Not Sure

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

Importance						Satisfaction					
Circle one for each item.						Circle one for each item.					
Very Unimportant	Somewhat Unimportant	Neither	Somewhat Important	Very Important		Very Unsatisfied	Somewhat Unsatisfied	Neither	Somewhat Satisfied	Very Satisfied	Not Applicable
11%	18%	8%	42%	21%	Surface conditions of roads	9%	18%	7%	40%	27%	NA
21%	14%	25%	33%	6%	Surface conditions of parking areas	5%	6%	20%	31%	38%	NA
21%	3%	39%	16%	21%	Condition of bridges	3%	5%	49%	15%	28%	NA
16%	8%	21%	39%	15%	Condition of trails and boardwalks	3%	3%	20%	35%	40%	NA
19%	8%	20%	41%	12%	Number of places for parking	2%	10%	25%	22%	41%	NA
13%	8%	15%	45%	19%	Number of places to pull over along Refuge roads	4%	9%	21%	25%	41%	NA
11%	7%	13%	37%	32%	Safety of driving conditions on Refuge roads	5%	8%	13%	31%	42%	NA
11%	4%	14%	40%	32%	Safety of Refuge road entrances/exits	3%	4%	14%	33%	46%	NA
10%	7%	11%	34%	39%	Signs on highways directing you to the Refuge	4%	7%	10%	32%	47%	NA
8%	3%	11%	42%	35%	Signs directing you around the Refuge roads	3%	13%	13%	34%	36%	NA
12%	6%	15%	32%	35%	Signs directing you on trails	5%	13%	18%	30%	34%	NA
17%	10%	29%	25%	19%	Access for people with physical disabilities or who have difficulty walking	12%	12%	35%	19%	23%	NA

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

See Appendix B

SECTION 3. Your expenses related to your Refuge visit

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

46% Yes

54% No → How much time did you spend **in the local area** on this trip?

Nonlocals If you spent one day or more in the local area, enter the number of days: 23 day(s)

only If you spent less than one day in the local area, enter the number of hours: 4 hour(s)

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

If you spent one day or more at this Refuge, enter the number of days: 6 day(s)

If you spent less than one day at this Refuge, enter the number of hours: 5 hour(s)

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

Categories	Amount Spent in <u>Local Communities & at this Refuge</u> <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

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

2 number of people sharing expenses

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

\$0	\$10	\$20	\$35	\$50	\$75	\$100	\$125	\$150	\$200	\$250
17%	13%	15%	6%	16%	2%	15%	1%	1%	1%	13%

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

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

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

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

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

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

SECTION 4. Your experience at this Refuge

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Not Applicable
Overall, I am satisfied with the recreational activities and opportunities provided by this Refuge.	<input type="checkbox"/> 3%	<input type="checkbox"/> 4%	<input type="checkbox"/> 6%	<input type="checkbox"/> 47%	<input type="checkbox"/> 40%	NA
Overall, I am satisfied with the information and education provided by this Refuge about its resources.	<input type="checkbox"/> 3%	<input type="checkbox"/> 4%	<input type="checkbox"/> 11%	<input type="checkbox"/> 50%	<input type="checkbox"/> 33%	NA
Overall, I am satisfied with the services provided by employees or volunteers at this Refuge.	<input type="checkbox"/> 3%	<input type="checkbox"/> 3%	<input type="checkbox"/> 12%	<input type="checkbox"/> 43%	<input type="checkbox"/> 38%	NA
This Refuge does a good job of conserving fish, wildlife and their habitats.	<input type="checkbox"/> 3%	<input type="checkbox"/> 2%	<input type="checkbox"/> 10%	<input type="checkbox"/> 43%	<input type="checkbox"/> 42%	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 <i>(* indicates the refuge does not offer this)</i>	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
14%	14%	30%	31%	11%	Availability of employees or volunteers	4%	5%	25%	22%	44%	NA
11%	7%	25%	34%	24%	Courteous and welcoming employees or volunteers	4%	0%	17%	20%	59%	NA
8%	7%	19%	31%	35%	Knowledgeable employees or volunteers	3%	3%	18%	19%	56%	NA
6%	4%	8%	39%	43%	Printed information about this Refuge and its resources (for example, maps and brochures)	5%	5%	7%	31%	52%	NA
5%	4%	18%	44%	29%	Informational kiosks/displays about this Refuge and its resources	5%	6%	15%	33%	42%	NA
6%	5%	13%	35%	41%	Signs with rules/regulations for this Refuge	4%	5%	14%	34%	43%	NA
6%	6%	25%	44%	19%	Exhibits about this Refuge and its resources	2%	6%	25%	36%	31%	NA
13%	10%	39%	28%	10%	Environmental education programs or activities	2%	8%	50%	21%	19%	NA
12%	8%	38%	29%	14%	Visitor Center	4%	3%	44%	17%	32%	NA
8%	1%	29%	32%	30%	Convenient hours and days of operation	0%	1%	24%	24%	51%	NA
14%	4%	30%	25%	26%	Well-maintained restrooms	12%	9%	33%	19%	28%	NA
13%	7%	42%	31%	7%	Wildlife observation structures (decks, blinds)	2%	4%	49%	19%	26%	NA
13%	9%	31%	37%	10%	Bird-watching opportunities	3%	3%	32%	28%	34%	NA
6%	4%	16%	46%	28%	Opportunities to observe wildlife other than birds	2%	4%	20%	37%	37%	NA
7%	5%	15%	41%	33%	Opportunities to photograph wildlife and scenery	2%	3%	18%	31%	46%	NA
30%	3%	25%	10%	33%	Hunting opportunities	6%	4%	31%	18%	41%	NA
*	*	*	*	*	Fishing opportunities	*	*	*	*	*	100%
10%	5%	18%	36%	32%	Trail hiking opportunities	2%	5%	20%	27%	46%	NA
*	*	*	*	*	Water trail opportunities for canoeing or kayaking	*	*	*	*	*	100%
27%	9%	40%	15%	9%	Bicycling opportunities	5%	2%	51%	20%	22%	NA
19%	8%	41%	23%	9%	Volunteer opportunities	4%	1%	53%	17%	26%	NA

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

See Appendix B

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

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

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

86% Yes

14% No

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

88% Yes

12% No

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

81% Yes

19% No

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

See Appendix B

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.	13%	11%	27%	33%	16%
We can improve our quality of life if we address the effects of climate change on fish, wildlife and their habitats.	14%	13%	25%	33%	16%
There is too much scientific uncertainty to adequately understand how climate change will impact fish, wildlife and their habitats.	9%	12%	21%	39%	18%
I stay well-informed about the effects of climate change on fish, wildlife and their habitats.	3%	10%	41%	36%	10%
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%	7%	27%	50%	14%
I take actions to alleviate the effects of climate change on fish, wildlife and their habitats.	7%	7%	45%	32%	9%
There has been too much emphasis on the catastrophic effects of climate change on fish, wildlife and their habitats.	10%	21%	29%	25%	14%
Future generations will benefit if we address the effects of climate change on fish, wildlife and their habitats.	6%	11%	26%	38%	19%
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.	13%	12%	43%	24%	7%

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?

90% Yes 10% No → *If not, what is your home country?* See Figure 2 in Report

2. Are you? 68% Male 32% Female

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

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+				
(elementary)				(junior high or middle school)				(high school)				(college or technical school)				(graduate or professional school)							
					0%						25%						52%						23%

5. What ethnicity do you consider yourself? 7% Hispanic or Latino 93% Not Hispanic or Latino

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

<input type="checkbox"/> 6% American Indian or Alaska Native	<input type="checkbox"/> 0% Black or African American	<input type="checkbox"/> 97% White
<input type="checkbox"/> 1% Asian	<input type="checkbox"/> 0% Native Hawaiian or Pacific Islander	

7. How many members are in your household? 2 persons

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

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

<input type="checkbox"/> 0% Less than \$10,000	<input type="checkbox"/> 17% \$35,000 - \$49,999	<input type="checkbox"/> 14% \$100,000 - \$149,999
<input type="checkbox"/> 5% \$10,000 - \$24,999	<input type="checkbox"/> 28% \$50,000 - \$74,999	<input type="checkbox"/> 3% \$150,000 - \$199,999
<input type="checkbox"/> 9% \$25,000 - \$34,999	<input type="checkbox"/> 20% \$75,000 - \$99,999	<input type="checkbox"/> 4% \$200,000 or more

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

12 number of trips

Thank you for completing the survey.

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

Comments?

See Appendix B for Comments

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

Appendix B: Visitor Comments to Open-Ended Survey Questions for Kofa 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
Junior Quail Hunt for children under 14 years old	1
Old West Shootout	1
Wednesday AM Guided Tour and Imperial National Wildlife Refuge	1

Other Activity	Frequency
ATV/OHV	3
Camping	14
Camping, ATV/OHV	2
Construction of sprinkler system for Sonoran Pronghorn pen, never sweat drinker, and dog leg drinker with AZGFD.	1
Geocaching	1
Ghost town	1
Lunch and visiting	1
Observe old mines	1
Rockhounding	3
See native palm trees of Arizona	1
Sightseeing	4
Site visit: Yuma, AZ	1
Touring	1
Tourist attraction	1
Water holes	1

Question 2: "Which of the activities above was the primary purpose of your visit to this Refuge?"

Primary activities are categorized in the main report; the table below lists the "other" miscellaneous primary activities listed by survey respondents.

Other Miscellaneous Primary Activities	Frequency
Church outing	1
Dome mountain	1
Just to see it	1
Palm trees	1
Pronghorn water system	1
Relaxing	1
See native palm trees of Arizona	1

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

Other Visitor Center Activity	Frequency
Checked for restrictions.	1
Get a map.	2
It was the starting point for the tour.	1
Pick up rules on refuge.	1
Picnic	1

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

Other Group Type	Frequency
AZGF	3
Church group	6
Paranormal group	1
Pronghorn pen	1
R & G Yuma	1
Work group for wildlife forage enhancement	1

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

Other Website	Frequency
AZGF	2
Castle Dome Mine Museum website	2
Google Earth	1
Googled "hikes near Yuma, AZ"	1
hikearizona.com	1
Yuma visitor website	1

Other Ways Heard about This Refuge	Frequency
Arizona hunting regulations	1
AZGF Region IV	1
BLM Office	1
Business partner	1
Castle Dome Mines	1
Cibola NWR Volunteers	1
I spent four years working on Arizona Desert Wilderness Act which includes Kofa NWR (1986-1990).	1
Local bulletin from Chamber of Commerce	1
Quartzsite Visitor Center	1
Ranger	1
Saw Castle Dome Peak in the far distance, decided to hike it.	1
Visitor Center - Yuma	1

Survey Section 2

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

Other Ways Found This Refuge	Frequency
Arizona recreation map	1
Cibola NWR Volunteers	1
Club trip leader	1
Directions from guidebook	2
Licensed hunting guide	1
Looking for mining camps and towns vacated	1
Magazine advertisement	1
Map at kiosk	1
Map from Yuma Visitor's Magazine	1
Ranger	1
Refuge brochure	4
Refuge map	3
Refuge map at campground and the entrance.	1
Refuge map, and posted signs at intersections.	1
Saw road to it on a map, but parked outside.	1
Yuma area "What to Do" book	1

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

Other Transportation Option Likely to Use	Frequency
4WD vehicle	2
Aircraft/Plane	1
ATV	6
ATV Tour	4
Horses	4
Horses or mules	1
Jeep club	1
Kayak	1
Personal bike	1
Personal vehicle	5
Quad, motorcycle, 4x4 jeep	1
RV	1
Shuttle with drop-off/pick-up points	1
Small SUV - But would be nice to have informational signs to read on what the points of interests are in the refuge.	1

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

Comments on Transportation-related Items at This Refuge (n = 66)

A wildlife refuge should be a natural experience, not Disneyworld.

ATV access to certain trails and roads.

ATVs have to be kept on designated roads.

Better surface conditions of the roads and better signs directing you around the roads would be beneficial and would open availability of use of the refuge to more people. Also road entrances/exits from Highway 95 could use improvement in many places. There are numerous marks on the asphalt at some of the entrances/exits where vehicles have bottomed out entering or exiting the highway (see entrance to Refuge at mm 92 on Highway 95 for an example).

Could not use ATV because we are from CA. Should be able to purchase temporary registration.

Due to many miles of dirt road on this refuge, we understand, and expect that there will be rough spots. We understand that due to weather and erosion rough spots can be created and can remain for some time.

Each year during our hunts, we see vehicle tracks off roads. It is these people that ruin it for us people that follow laws and regulations. I use a Polaris on the refuge at times but never would drive off designated roads.

Everything about the refuge is great, except the primary road through the mountains needs attention/grading.

For a hiking park, transportation in the park is not important.

I believe ATV trails and roads are very important. Also these trails should access most areas and ATV riders should stay on trails and roads only.

I believe it is important to keep the roads somewhat difficult to travel so that not every car on the road can come into the refuge. Making it a challenge is all a part of the experience being with nature.

I completely agree with the rule "You can only park 100 feet off the road" and I do like that you do not let people off road with their vehicles.

I do wish more of the trails were connected so we would not have to back track.

I have a condition called PVD and walking is difficult and I managed to walk about six miles in one day (approximately). Next year wildlife will be better hopefully.

I know from word of mouth that there are many more trails but only a few are mentioned on your website. I would like to see more trails on your website.

I liked the ranger that talked to us. It is a beautiful area. It makes me sad that this refuge might be closed down to motorized vehicles. That would affect my peace greatly! I could not walk or bike into this place. I would have hated to miss this beautiful place.

I observed several ATV operators driving around "No Vehicles" signs, and traveling across pipeline roads at far too high speeds. Traveling in groups (large) creates lots of dust and disturbs land and wildlife.

I think that commercializing the refuge with busses or trams would disrupt the natural beauty of the land and life living there. We traveled in with small SUV's and had no problems. The only thing that would have made the visit better for us is we went to the "Tanks" I think they were called but would be nice to have informational signs of how the land was used by the natives, purpose of the grinding holes in the ground, Mah-ta-ta's (spelled wrong probably) and what they used to grind in them. Any informational boards at sites of interest would be greatly appreciated. The lady warden was informational at the entrance of the refuge who gave us this survey but I'm sure she isn't there every day to answer questions. I do agree with ATV's to stay on designated marked roads only. We had a great time taking photographs of the land's layout and native activity that took place there long ago. Thanks!

I understand that Kofa is considered a 4-wheel area but after the monsoon this year we feel a little more road work would have been should have taken place. Perhaps a small fee for entrance could pay for some road work to make the area available to more people.

It is a very rock covered roadway and is dangerous for flat tires, poor parking areas, and limited signs.

It is wilderness, and if you go you should be prepared for everything.

It would be nice to trailer with an ATV/UTV and unload inside the refuge. There are none large enough for a group.

Keep it open for unpaved road travel.

Keep Kofa primitive!

Kofa is a good place for hunting. There is no off-road travel - vehicle or bicycle.

Kofa National Wildlife Refuge does not need transportation related improvements! It is primitive and should remain that way.

Kofa NWR is naturally very wild and has a rough landscape. "Improving" it for accessible reasons, beyond perhaps a small interpretive area with examples of flora, etc. would be at cross purposes with the objective of preserving the Kofa in its natural state.

Kofa roads are in terrible condition and need an upgrade.

Kofa, Arizona! We had a good time being jeepers, used to and appreciate primitive land (except restrooms).

More signage and road conditions information would be helpful.

Most roads in Kofa are usable for 4WD. A few locations could use some grading to avoid damage to vehicles and people.

Open washes to travel.

Palm Canyon Trailhead and parking areas: you need a port-a-potty real bad! The parking lot was full of vehicles but no place to pee!

Please open up more areas for roads and stop closing existing roads.

Someone has plowed ridges on both sides of the road making it difficult to pull over. This is in the vicinity of Castle Dome Museum.

The access to this refuge mostly depends on weather as most roads are primitive.

The condition of the dirt gravel road was poor. There were sharp gravel rocks and very certain we had a flat.

The dirt road is such a long drive to go to your destination.

The gravel road was real bad.

The refuge consists of unimproved dirt roads with intersections marked with numbered posts. Users assume responsibility for themselves.

The refuge manager/ regional director should open some roads that are currently closed and are not in designated wilderness! (Telephone Number Given) I can further explain.

The refuge offers an excellent "remote" adventure via improved roads. This opportunity leads to desire to protect our heritage, open lands, and resources.

The road in and out of the refuge was in terrible shape. Had to go very slow in order to not shimmy uncontrollably while driving.

The road is terrible to the Castle Dome Museum. It caused us a flat tire.

The road to Big Eye Mine really could be improved!

The roads for side trips to some historic mine sites of interest are not maintained and impassable unless you have a 4WD truck or ATV.

The roads in the refuge got worse the farther in I went. Which is fine by me, It makes for less traffic and dust. I probably would not have been here had the roads been in pristine condition, causing too much traffic and congestion.

The rocky road chipped the car paint.

There are a lot of old roads that are not accessible by vehicles anymore that I used to enjoy taking as a younger kid, that I would like to see re-opened.

There are too many restricted roads.

There is a great deal of speeding, even racing, on refuge roads.

There was no other way to see the Palm Canyon except to walk in, which is okay. Don't spoil the hike by paving the trails.

This is almost a totally 4WD refuge. I like that. It is enjoyable and less crowded.

This is not a trip unless you can walk.

This year the county didn't blade the Kofa King Road until 2 days before deer season. There are still a few people that live out there and would like to see if it could be bladed after the monsoon and rains so hunters don't have to dodge the grader and the grader can do his job uninterrupted. Maybe the end of September but prior to quail season to avoid the hunters. Just my 2 pesos.

Trail at Palm Canyon would be very difficult for a person with certain disabilities.

Trail maps are important. Signs on trails are very important.

We are using a 4-wheel drive car.

We enjoy the primitive roads and backcountry access by roads on the refuge.

We found this refuge hugely disappointing, hard to find, no signs, and terrible roads!

We go to this refuge once or twice every year. We feel the road conditions are very good. It is good to keep these roads as they are and not become super highways. We need to preserve our lands.

We used a rugged entrance and expected relatively rugged conditions. It was fine.

We would enjoy riding our 4 wheelers (ATVs) here. We would have camped at the refuge if the roads in and around were in better condition, but we are not willing to beat up our truck and 5th wheel trailer to get there.

While the trail was not friendly to the disabled, I am not sure this can always be accomplished. An admirable goal, but not always achievable.

Would like to see more OHV trails opened.

You need to fix the roads and fix the bushes because they scratch vehicles.

Survey Section 4

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

Comments on Services, Facilities, and Activities at This Refuge (n = 58)

A map on the trail board might be nice.

As far as hunting goes, there is a terrible mountain lion problem that needs to be addressed as soon as possible to ensure this refuge's purpose.

Be able to drive more than 100ft off main road.

Campground area at Crystal Hill needs to be more clearly defined: campsites outlined as to prevent motorized vehicles driving everywhere. Please do not turn area into a community site.

Desert. At the Castle Dome entrance there are no facilities, no employees or volunteers, no exhibits, and no Visitor Center. It is just a roadway strewn with rocks into the desert.

Having the Visitor Center 35 miles from the refuge doesn't make sense.

Hiking, photography, camping opportunities abound! I dislike seeing trash, broken glass, dirty and multiple fire rings, and improperly disposed human waste and shot gun shells strewn about many of the existing camp sites.

I am a true believer in the beauty of rocks! I never saw any notices of if we are allowed to keep a treasure for art. Also is our small dog required to wear a leash?

I believe the county maintains the King Valley Road to North Star Mine. They should be notified ahead of time, before big game hunting seasons if there are any bad washouts.

I did not care for the unpaved road.

I did not get the opportunity to see a Visitor Center. I don't think there is one at this refuge. I just wished there would be signs to describe the activity that took place years ago in the points of interest areas. Still it is beautiful, clean, and well taken care of.

I didn't like the fact that the refuge has to haul water to the tanks on protected land for the wildlife. This is a real nice place. The next time I go south, I am going to camp for 10 days and enjoy the early mornings and evenings there. It is a peaceful, wonderful place.

I don't remember any facilities at Kofa.

I prefer you leave Kofa NWR the way it is and do not add any facilities or services. This limits the amount of people, but the people that currently use Kofa take care of it and are just as proud of it as the employees. If facilities were added you would end up with people that would not otherwise be out there and not have the respect we all currently have. The only facilities that should be considered for Kofa is for the animals that live there. Otherwise, leave it the way it is!

I would be very disappointed if this area was closed to RV and ATV access. I can walk short distances, but without vehicle access I could not enjoy the area. We plan to return annually. It would be nice to have water and dump and trash services for camping.

It is beautiful. Please don't change it!

It is somewhat restrictive at this time. If it does not increase it will be fine. Do not consider requiring a fee to visit. I have been coming here almost my entire life. I resent the idea.

It is unfortunate this guided walking tour (by volunteers) is only given once a week. There is a dearth of nature tours, hikes, etc. in the Yuma, AZ region.

Kiosks do not indicate that hunting is allowed. You can't use game cameras. You can't hunt lions on KNWR. You can only hunt predators until you've filled your tag.

Kofa is very much accessible wilderness and the level of service and facilities fits this category without impinging on the enjoyment of visitors, most of who seem to be more experienced rather than occasional visitors to National Park type of facility.

Kofa, Arizona. Pretty primitive. We are really pleased; cabin was so well kept and available.

Main washes should be drivable to a point just to retrieve game. No off road. Relax some of the horse regulations. Open burro season (to eat).

Management has allowed wildlife populations to be decimated!

More roads.

Of course, increased funding for this refuge and the Palm Canyon Trail could improve many conditions.

Palm Canyon Trailhead: The parking lot was full and people were standing around looking for a place to pee! There is no port-a-potty available and bushes are sparse.

Please continue primary focus on ecological preservation.

Recommend consideration of restroom facilities near information ramada.

Restrooms would be nice.

Some of the roads are closed. Why?

The area we were in (Palm Canyon) wasn't very busy. The volunteers we met gave us a lot of information about the area. I would have liked a picnic table by the parking lot.

The officer that we met was very interesting to talk to and would be nice to see them more often. Been there 5 times and first time to see an officer.

The old cabins and structures should be preserved and not destroyed by Fish & Wildlife or the Forest Service. It's our history.

The only place we saw restrooms was at the museum and western town. There were no guides to more remote areas and road are bad.

The roads are somewhat repaired by the US winter visitors that come to use them.

The signage for restricted areas needs improvement. We were told we were on private property and I never saw any sign.

There are no facilities or activities at this refuge, which makes it ideal for me to be outdoors with no other sounds but wildlife. Hiking.

There are no restrooms except at the Visitor Center. The trail is 30-45 min from any facilities. A simple outhouse would suffice rather than finding a bush and toilet paper litter near the trailhead.

There are little or no services at Kofa.

There should be better road info showing road conditions and distance.

This is a very natural and out of the way place and it should stay that way. The desert is very fragile.

This is a wilderness area and it should remain that way. No facilities are necessary. Some road maintenance could be done.

This refuge is primitive and should stay that way. Just let people have access and leave it alone. Don't need bureaucracy involved, nor a money pit for government.

This was the worst marked refuge that we have ever visited. There is nothing here, or if there is, it is impossible to find because of the poor signage, etc.

Very seldom I see any refuge employees or volunteers. The Kofa NWR is pretty desolate.

Walk into Palm Canyon was great. Scenery wonderful. Most questions on survey didn't apply to this area. A picnic table near parking area would be nice. We have had two picnics up there in the last two years.

We enjoyed our stay and the lady ranger was very pleasant and nice.

We had a very nice hike. Park benches could be implemented.

We had visits from Susannah, a F & G officer. She is very sensible and friendly.

We met one employee and one volunteer at the Palm Canyon. Both were friendly, informative, and obviously liked their job and the desert.

We met the lady who manages the area. She was friendly, respectful, and very helpful to us. She represents you well. Thank you.

We only went to the Palms Trail. If there was more, I was not aware of the hunting or fishing opportunities.

We were greeted when we entered the refuge. She was very helpful and answered all the questions we had.

You need potty stops for us old people.

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 = 154)

1. You learn a lot about other wildfowl and wildlife on the desert. 2. You learn about plant life and desert survival techniques. 3. There is great landscape views, sunsets, history, etc. 4. Star gazing at night is awesome! 5. Hunting season this particular year was a week earlier than it has been in the past 3 years. It was really hot and a full moon made hunting much more difficult. At best, temperatures were in the nineties. Deer feed at night and lie down most of the day the first week and became more active as the weather changed during the following weekend which is the normal hunting season.

Any time land is saved so people can enjoy it is a good thing and in a refuge where you can see wildlife in its habitat - sometimes up close and preserved.

Areas not traveled by many people and the area are unspoiled except for the people who leave garbage behind. More time spent by officers could maybe cut down on them.

As stated earlier, this area should remain undeveloped.

Beautiful and well maintained but we were only passing through to the ghost town.

Because of the wildlife, and it is not commercialized which makes it unique. It's been the same for years and years, but still changes with weather systems. It is so serene and beautiful just the way it is.

Because the focus is preservation, we had the opportunity to see native palms as well as flowered cacti and birds.

Being able to enjoy walks and animals makes it unique.

Bighorn sheep and deer.

Bighorn sheep, wild burros, native palms, and desert with the river.

By not allowing off-road driving, the natural features of the Kofa are still intact.

During my visit, which was primarily to hunt mule deer, there were not a lot of people thus not spooking the game I was pursuing.

Every year I look forward to hunt and camp in the refuge. Since 1972, I've enjoyed the scenery and just walking in the desert even though I can't walk as far as I used to I still give it to heck.

Firearm restrictions.

For those of us 70+, who cannot hike as far as before in life, the ATV let us enjoy the great outdoors. Public lands in Arizona let us do this, but in Washington, ATVs are very limited.

Geography and topography.

Habitat enhancement and wildlife accessibility makes it unique.

I appreciate camping and visiting wildlife refuges, and visit frequently. We do not support wilderness areas. Keeping people out is foolish. Wildlife flourishes in national forests and refuge areas.

I appreciate the protection of wildlife.

I don't know about other refuges but this one is unique because its main purpose is to protect bighorn sheep.

I enjoy looking around and hiking Crystal Hill and seeing the cactus.

I feel that they are less utilized than State or National Parks and I enjoy the seclusion.

I like it that you have to stay on designated roads for access. I have hunted on the Kofa refuge for 45 years and have been able to harvest much game. It is sad to see what the lions are doing to the sheep and deer populations.

I like the 4 wheel vehicle trails in the park. These trails provide looking, photographing and being close to nature.

I like the rules and regulations set forth on the KNWR which limits the amount of people that choose to hunt or visit this land. My hunting experiences each year is just as fair as the next hunter because we don't have to worry about people driving off-road to ruin your many mile walks hunting for that buck.

I love its wild and primitive nature.

I mainly visit the Kofa Refuge. Every trip I make out there I see and learn something new. It's a gorgeous rugged place that has not been run down by cross country travel like other places in the desert.

I spent all day there and only saw about 6 people. It was nice to be all alone, in a place like that.

I think the words "Wildlife Refuge" say it all. We need to keep it as it is.

I visited the Kofa National Wildlife Refuge and it was a ghost town and was well preserved and made you feel like you were there back in the days of its operation.

I'm from Idaho. The desert is unique and different than the Owyhee Mountains. It is wild and rugged in its own desert setting. The rocks and crystals make it a unique place. It's a great place for those who don't get out much and it is kind to the faint at heart. I love the trees with green bark and the creek bed. I can't wait to go back. The visitors seem to be respectful, at least when I was there.

If they are left alone for people to see what, where, and when, they won't.

If you want to explore you have to walk and not just drive around like other refuges.

Important.

In the KNWR in particular, the lack of off-road driving ability. This leaves this little place in the southwest to native wildlife and plant life, unaffected by human destruction. I do enjoy the ability to drive through and admire the scenery, and utilize the facilities.

It conserves a desert type environment. This is something special!

It has a beautiful landscape and scenery. The hiking; there are places to walk where there are no cans, shot gun shells, etc. There are many different plants, trees, rocks, and animals: and the photography and solitude.

It has a lot of open range, very nice views, wildlife and scenery.

It has an interesting heritage of the mining industry.

It has more information than BLM lands.

It is a lot more restricted so that it keeps a lot of the ATVs out of the area.

It is a special place!

It is a unique experience and location. It has a great history of people that live in this town.

It is a very nice, low-maintenance area.

It is a wilderness area and natural outdoors area where we can observe nature and history. I like recreational hiking.

It is generally not overcrowded. There is very little trash. They have courteous employees and volunteers.

It is great to go to a place of and try to vision what life must have been like. There are so many different things to see. It is our favorite place to bring people for an outing and a picnic lunch.

It is in a great location.

It is natural not resort-like or conformed to the public.

It is quiet and not over-run with people.

It is unique - not better. Just more restrictive!

It is unique because it is close to Yuma.

It is unique to inform us about the area we're visiting (history, geology, animals, weather). It is so important to keep it open to inform the public (Name Signed).

It is very clean and has well-maintained roads. It is not as crowded as other parks.

It is very nice and well-maintained.

It protects wildlife. There are no off road vehicles. It is well-managed for deer and sheep. You need to have open season on mountain lions and coyotes.

It supports wildlife and nature's geography.

It was an unusual place and enjoyable as all outdoors are.

It was wilderness and there was no one there. It was wonderful.

It's a better natural environment to see wildlife more than mankind.

It's wild and natural.

Its unspoiled land and natural beauty make it unique.

KNWR is primarily managed for desert big horn sheep and they used to provide sheep to other areas in the state and abroad before the lion problem. KNWR is also managed as an "alternative deer management area" which keeps tags/hunters with the ability to take a quality animal. KNWR is also attempting to increase the population of Sonoran Pronghorn with animals being released. Hopefully the control of loin depredation will increase if possible since the pronghorn are endangered species! Provision of additional water for pronghorn will also benefit many other species of wildlife... mule deer, quail, passenger birds, etc.!

Kofa is a rustic location when you travel in. It is great because not too many people are there. The desert in Kofa has a rare beauty about it and I enjoy spotting the wildlife.

Kofa is a unique desert experience. It is not heavily used so is a wonderful place to explore and birdwatch. We have been using this area for twelve years and love it. We rarely see an employee or ranger so cannot speak to their actions. Thank you for this beautiful place.

Loved the fact that you can have a few crystals from crystal hill. Thought that was fun.

Maintenance of the desert pristine look by not allowing off road vehicles to drive anywhere.

Many National Wildlife Refuges, especially in the West, are large enough, "unimproved" enough, to allow one to easily walk away from roads in order to experience great landscapes, vast watershed, flora, and fauna in natural settings. We need more refuges; they have a stabilizing effect of what's left of our natural world.

More opportunities for exploration, safety of animals and preservation of natural lands, plants, etc.

My family has been going to this refuge for more than 25 years and we meet and camp out there every year at the same time!

Native foliage, native animals, and native birds make it unique.

Necessary to preserve natural habitat for future generations, wildlife, and visitors.

No commercialization.

Open, undeveloped area with few signs, roads, parking lots, buildings and other man-made ugliness.

Opportunity for off road sightseeing.

Other wildlife "refuges" are mainly to provide hunting opportunities, including stocking game. I prefer to visit those with an emphasis on conservation of natural habitat and ecosystems.

Preservation and education of environment.

Preserving the beauty of the desert and the surroundings makes it unique.

Protection of natural resources and wildlife makes it unique.

Refuges are often much less crowded and non-commercialized which I value. I appreciate that refuge 'interpretive' information is good quality and is not overdone as is often the case in national parks.

Refuges provide an "adventure" and a remote experience versus National Parks with pavement, buildings, automobiles, etc., everywhere. Wildlife experiences are much more rich in refuges versus parks, etc. It is less like a zoo and more natural.

Roads.

Roads are accessible to 4WD or less. The wildflowers are abundant. It is a beautiful experience.

Rules and regulations.

Rules are enforced better and there is very little trash along roads.

Sheep hunting.

Size, access, and wildlife make it unique.

Tend to be less commercially developed/exploited.

The access to land - resources that have not been changed from what nature created for us and the ability to use their land makes it unique.

The amount of different hiking trails available.

The bighorn sheep make it unique.

The chance to see wild animals in their own environment makes it unique.

The environment and the desert, make this refuge unique and interesting.

The fact that you get away from bright city lights makes it unique.

The gold and silver mines make it unique.

The historic value and the future value for others make it unique.

The history of the old mining town in Arizona makes it unique.

The Kofa mountains are trying to save the pronghorn species. If it wasn't for them, they would slowly go away.

The Kofa National Wildlife Refuge offers a unique experience because it is so "untouched" and natural. It's hard to find places like this that have been so well preserved.

The land needs to be open to the public.

The location makes it unique.

The maintenance of and accessibility to unique landscapes with their equally unique habitat and life support systems makes it unique.

The natural beauty of the area makes it unique.

The opportunity to do outdoor activities makes it unique. It is just not the one we visited outside of Yuma as we went to see what used to be a small mining town.

The opportunity to observe scenery and wildlife without having to look around or through many other people. Most parks are very crowded and fortunately, wildlife refuges are not.

The opportunity to observe wildlife in a natural habitat and to do so in a quiet, undisturbed manner makes it unique.

The opportunity to see areas not visited by large groups makes it unique. Also, we do not enjoy areas set up as shooting areas with no regard to other visitors as we see in some areas around Yuma.

The opportunity to witness nature with limited commerce.

The option of a guided tour by experienced guides makes it unique. Otherwise, it would have been just another "walk in the desert".

The scenic views and the type of wildlife and plants all make it somewhat unique. In this case, the Sonoran Pronghorns made it very unique.

The surroundings make it unique.

The tanks of water for wildlife make it unique.

The trails for the most part are kept open. Old trails should be reopened. Camping is a good experience. Cougars may need to be kept at lower numbers to protect other wildlife.

The water in the rocks makes it unique.

There are additional regulations over National Forests (i.e. use restrictions).

There are fewer people so we can really enjoy nature in peace and quiet. I like that areas are less developed.

There are less people and no off roading. The bigger challenge is to hunt, but it's good exercise and provides peace and quiet.

There are many opportunities to learn about the wildlife and the land's past.

There are rugged mountains, volcanic areas, sandy washes, varied scenery, and wildlife.

There is good exposure to animals that normally are seen only on postcards. Plus, the fact that someone is making an effort to conserve/ preserve our natural wonders makes it unique.

There is more of an emphasis on preserving wildlife and environment and making it available to the public with interpretive services so that it becomes more meaningful and educational to the public.

They allow an individual to explore and enjoy nature with minimal influence of large groups.

They are controlled areas and as such, limit usage and monitor wildlife and maintain an atmosphere of stewardship and protection of resources.

They are for the most part left in their natural state.

They are much closer to reality than many National Parks where the environment, wildlife, flora and fauna is pretty much left as it was with the addition of reasonable access. Most of the visitors seem to want to have access to more wilderness type of environments and be left to their own devices rather than be organized!

They are not well traveled. It's like having your own private park. They are extremely quiet and you find little evidence of "man" around!

They are user friendly. I live in AK and worked for the Department of Fish and Game there back in the 70's. We worked with the refuges and supported them (not necessarily the National Parks).

They are usually kept as natural as possible. We like wilderness without lots of people. Also the cost is often free or cheap enough for families.

They are very welcoming and keep up the maintenance of their facilities.

They are well kept up, not all ripped up by ATVs and left pretty untouched as far as the caverns carved into the mountains which natives must have lived in long ago. Keep up the good managing of our NWRs!

They have different elevations and they have different plants.

They offer a more primitive experience with nature as the focus, not the visitor.

They offer an opportunity to explore unique wild areas and view native wildlife.

They provide areas to preserve and observe specific habitats, plants, and animal species. This is good!

They seem to have more control over the misuse and damages to public land caused by some uncaring or careless citizens.

To be able to view and enjoy the desert without it being commercialized makes it unique.

To us it was as if we were the first people to have been there... so untouched and natural. Beautiful. You're doing an amazing job. Thank you.

Unfortunately at a NWR you may encounter hunters and the remains they leave behind; gunshots in the distance and a certain potential danger exists at NWRs that is less present when visiting USFS land, National Parks, or State Parks.

Unspoiled beauty.

Vehicle travel restrictions.

Very clean environment to take my children; all the great places to hike.

We all liked that it was natural and you had to actually hike to see the beauty of the refuge.

We enjoy all the wilderness areas!

We enjoy being out in the open and camping out without being in crowds.

What it provides for the wildlife is unique. The scenery is by far great.

Whether or not there is a guided tour, there needs to be access to public lands for the purpose of recreation. NWRs do a good job of keeping these accesses maintained. Thank you.

Wilderness preservation.

Wildlife (birds) observation.

Wildlife and the solitude.

Wildlife is the top priority.

Wildlife observations and attractions make it unique.

You are able to see wildlife in their native habitat.

You can experience wildlife in their own habitat.

You can hunt and walk your dog.

Additional Comments (n = 41)

A lot of people in this area like to go out to the desert to see animals, plants, cactus, rocks, etc. They buy 4x4s, ATVs, and others. They don't want the government to mess it up. It is fine the way it is.

Climate change happens/has happened forever. The idea we can fix it is very remote. There are a lot of things we can actually accomplish.

Climate change has happened for thousands of years and flora and wildlife adapt. Why spend large sums of money and fight the environment. Let nature do most of the balancing. We should guard in trying to control nature and the environment. We should limit large amounts of human pollution and human damage. Let us take a balanced position.

Climate change: Humans have been recording weather for the past 250 years or so. We do not have enough information to judge global warming. The trails which have been closed should be reopened in some cases. Wildlife can and will adjust to human travel. It seems before Kofa was declared a refuge, the wildlife survived just fine. Hunting should not be allowed in the Kofa. Wildlife numbers adjust themselves. I believe the cougar population should be kept in check.

Considering I was leaving camp before dawn and returning after dark, I was really impressed with the nocturnal wildlife. It was almost like the old Disney movie "The Living Desert". I was impressed with all the wildlife, it was worth the trip. I will come back to this refuge. Thanks.

Fix the roads for auto travel. So many people with money to travel and visit parks are seniors. We cannot walk long distances and the biggest parts of these parks are totally unusable by senior citizens. We are still important and pay our share of taxes all our lives and you shut us out. I guess you think parks are only for the young and very physically healthy to enjoy remote areas. Shame of the parks in the name of preservation.

From my personal observation I feel that motorized vehicles need more regulation enforcement, especially ATV traffic. As in the surrounding desert, the Kofa area is being quickly destroyed by people who choose to observe trail and speed signs. I even found ATV tracks on the west and north slopes at Crystal Hill. I also feel that, if we are to successfully maintain and preserve a natural wildlife habitat "refuge," we need to limit noise, dust, erosion, and pollution caused by motorized vehicles and un-caring people. My wife and I were camped at Crystal Hill, enjoying the peace and quiet for five days (the silence is an awesome experience!). At least two or three groups of ATVs "roared" through the area each day, creating a huge cloud of dust and very annoying "racket," (very annoying indeed). And we are humans, used to noise and disturbances such as this. Just imagine what the same does to wildlife! No wonder we rarely see the bighorn or other wildlife without hiking far away from roadways, pipelines, etc. "Wildlife Refuge" should be just that - a "refuge!" Please take action to reduce traffic, especially ATVs. Keep it a "refuge!"

Get the lions off the refuge. Lions are not part of the refuge plan. Lions have all but destroyed the sheep herd and must be removed!

Great, loved it.

Keep all public land open to US citizens. Increase accessibility to lands and water resources. Nice artwork on cover. Do not propagate false science of climate change. In case you need to review your elementary school science - climate change is a natural process that was active before humans were on the face of the earth. There is fossil evidence of water creatures in the Sahara; rivers change course; glaciers advance and recede. Perhaps some of you are old enough to remember the threats during the 1950's to 1970's of the coming ice age - which scientists warned about. It seems their primary goal is getting grant money by crying wolf. Of course all of us who enjoy the outdoors want to keep our land, air, and water clean and sustain healthy populations of fish and wildlife.

I do believe there has been global warming in the past centuries and I firmly believe we will survive this one.

I like that this is a very large refuge, very remote, and undeveloped. It has many interesting aspects including wildlife, geology, and desert plants.

I took some close up pictures of living creatures in the pools of water at the "tanks" and was wondering what the living things are and who I could send a copy of the picture to get these questions answered. My email is (e-mail given) if someone could identify the things in the pictures I have. Then send me an email and I will forward the pictures. Thanks!

I would like mountain lions eliminated on Kofa Wildlife Refuge so as to protect desert big horn sheep and deer populations. The same goes for wild burros.

I would like to see more water holes installed for the wildlife, otherwise leave the Kofa alone.

It needs more maps of the trails and easier access to get the maps.

It's a shame the Big Eye Mine has been spoiled by the destruction of the mine.

If I was director of FWS, I would be more concerned with the negative effects that wilderness designation has on KNWR and the CPNWR before I ever spend another tax dollar on anything related to climate change anywhere in the US. I and many others have probably worked closely with the FWS primarily as it relates to Kofa and Cabeza and I would be happy to explain my firm beliefs regarding wilderness designation as it relates to wildlife and wildlife dependent outdoor recreation on National Wildlife Refuges, particularly those in Arizona! (Name Given, Address Given, Telephone Number Given).

Keep up the good work to enhance the environment and maintain nature's best. Thank you. (name given)

Kofa National Wildlife Refuge near Yuma, AZ has been so poorly run for so many years. It is questionable whether it can ever be reviewed as a wildlife refuge. Decision making has been contrary to the best advice of the state game and fish department and the local sportsmen clubs. The original and primary responsibility of maintaining bighorn sheep populations has been usurped by environmentalists preferences of allowing increased protection for other species, i.e. mountain lions!

Love it! Keep it beautiful.

Pleasant.

Please leave things as they are so future generations have a place to experience past history as we are doing.

Sadly, many users of refuges (including Kofa) choose to vandalize their campsites by leaving trash, broken glass, shotgun shells, improperly disposed human waste, dirty and numerous fire rings, etc. This seems to occur much more frequently in refuges versus wilderness areas, preserves, parks, etc. Not only is this a health hazard and unsightly, but it is also hazardous to the wildlife - broken glass, contamination, etc. Furthermore, it makes it necessary for the next "user" to find and make a new camp site thus increasing the disturbance to habitat, flora, etc. (visually also). I have no solution to offer but wonder if perhaps a huge reminder at entrances saying something like, "Leave your campsite like a place you'd like to return to," or something. Maybe a photo of vandalized litter box campsite next to a minimally disturbed one. Great job! Thanks for all you do!

Thank you for your persistence!

Target shooting is becoming more common. Shooting often goes on non-stop for hours, with thousands of rounds fired. Federal officers, on the rare occasions that they can be reached, do not respond. Sheriff deputies will come only when they are not busy. The most recent event (a week ago) involved three heavily armed men, firing in three (at least) different directions nonstop for nearly three hours. A deputy did arrive, and then called for backup. Soon two border patrol officers and a dog were there to help. I know from experience that shooters are sometimes hostile. These three men turned out not to be. They claimed they did not know they were in a wildlife refuge. They did not know that off-road driving or target shooting were illegal. The refuge brochure, available at the entrance, is obsolete, poorly written, and does not address target shooting. Anyway, almost no one stops to pick up a brochure. Just a few signs in direct, simple, and clear English, such as: "No Target Shooting," would prevent most of these dangerous events.

Thank you for the opportunity to visit and enjoy the part of beauty in Arizona. (Name Signed)

Thank you. We enjoyed our visit to the Kofa. Please open more roads on the Kofa and stop closing existing roads.

The gold and silver mines are why I go to the refuge.

The Kofa National Wildlife Refuge is a very nice area rich in history; it's a shame more of this was not preserved.

The trail was very poorly maintained. We had difficulty determining where the trail head was and whether we were on the trail or not. We appreciated we could bring our dogs.

The welcome volunteers, a couple, were helpful and very good people. The refuge is beautiful. I plan to return with my wife for hiking and back country camping. Trail maps would be helpful.

There needs to be more of a presence of Kofa trucks on the refuge roads. There are many people who have questions that are important to them. Then there are those who have mechanical problems. Cell phones do not work in the refuge. Also, a white pickup is a great deterrent to those who disobey rules and regulations. ATVs are slowly taking over. There's trash to be picked up; not much, fortunately, but enough to ruin a day. It doesn't have to be a full time employee, volunteers would be fine. There are people available to do the labor intensive jobs; volunteers shouldn't have to do them. This seems to be the policy. The old story of we don't have fuel available doesn't wash; that's not a valid argument. I have seen a lot over the 18 years I have enjoyed the refuge, but it is slowly deteriorating mostly because of the ATVs. The refuge needs to be preserved. Thank you for the opportunity and the privilege of enjoying Kofa National Wildlife Refuge.

This place needs a lot of work, especially signs telling strangers where the area is!

We drove through this refuge to visit the Castle Dome Mine.

We really like camping in natural areas. We stay in state parks as much as possible rather than RV parks, even though there might not be power.

We have enjoyed the Kofa NWR since the 1970s. Due to a lack of predator control, we have experienced a decline in watchable, huntable wildlife. Due to lack of knowledge and effort on the part on the Yuma-headed Fish and Wildlife personnel, large predators have allowed the precious resource of wildlife to decline. My recommendation is to first train the people to keep a herd of cattle alive for a few years before releasing them to watch our wildlife.

Wildlife employee was courteous and knowledgeable and appeared to enjoy his job. This country needs more like him.

You are a worthy cause! As an outdoorsman, I truly appreciate your efforts and challenges. So many of us will not stop to pick up a beer can, but will drink and add to the pile. A shame, a bad example for others and the start of potential loss of the natural beauty of America. Thank you all.

You may believe climate change is something new and novel, but it isn't. There has been climate change throughout the history of mankind. We certainly need to keep habitat for fish and wildlife our main concern in today's ever changing rules and regulations. Climate change is a somewhat political nuisance. Al Gore has certainly profited from his belief on the subject (\$8,000,000 mansion on the Malibu coast). Most advocates don't even take an actual self invested time interest in ensuring proper habitat for all wildlife throughout the world. Mostly, as always, their concerns are about money and what is in it for them in this me-first world. This is just an observation. (Name Signed)
