



**U.S. Fish & Wildlife Service**

# **NATIONAL WILDLIFE REFUGE VISITOR SURVEY**

*2018 Results for  
Arthur R. Marshall Loxahatchee  
National Wildlife Refuge*



**THE OHIO STATE  
UNIVERSITY**



## Acknowledgments

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*Front cover: A sunset view over Arthur R. Marshall Loxahatchee National Wildlife Refuge. Photo credit: Kylie Campbell.*

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# Understanding Wildlife Refuge Visitors & Their Experiences

A hundred years in the making, the National Wildlife Refuge System (Refuge System) is a vast network of habitats that supports over 2,000 species of birds, mammals, reptiles, amphibians, and fish across the United States on national wildlife refuges (wildlife refuges). Wildlife refuges also provide unparalleled outdoor recreation experiences and health benefits to people by offering a chance to unplug from the stresses of modern life and reconnect with their natural surroundings. The National Wildlife Refuge System Improvement Act of 1997 specifically identified six priority recreational uses: hunting, fishing, wildlife observation and photography, environmental education, and interpretation (Fig. 1). These recreational activities are prioritized on every refuge where compatible with the refuge's stated purposes. Visitors may also engage in many other activities (for example, hiking, paddling, boating, and auto tour routes) where compatible.

At least one wildlife refuge exists within an hour's drive of most major metropolitan areas. With over 55 million visits per year, the Refuge System is committed to maintaining customer satisfaction and public engagement while helping people and wildlife to thrive. Increased

visitation is not limited to the Refuge System—over the past few years, there has been a rise in the number of people traveling to public lands and waters for recreation (Outdoor Foundation, 2018). This nationwide trend demands effective management of visitor access and use to ensure benefits for present and future generations.

The need to understand visitors and their experiences, as well as preferences for future opportunities, is further underscored by widespread societal changes that are shaping how people engage with nature and wildlife (Kellert et al., 2017; Manfredo et al., 2018). Researchers and land management professionals alike recognize the need to connect the next generation to nature and wildlife to enhance mental and physical well-being and build a broader conservation constituency (Charles & Louv, 2009; Larson, Green, & Cordell, 2011).

The National Wildlife Refuge Visitor Survey is a Refuge System-wide effort to monitor visitor characteristics, experience, and satisfaction with refuge experiences, as well as visitor economic contributions to local communities. The survey is conducted every five years on a rotating basis on wildlife refuges that have at least 50,000 visits per year. This effort provides refuge professionals with reliable baseline information and trend data that can be used to plan, design, and deliver quality visitor experiences, communicate the value of wildlife refuges to different audiences, and set future priorities. The National Wildlife Refuge Visitor Survey is a collaboration between the U.S. Fish & Wildlife Service (Service), The Ohio State University (OSU), and American Conservation Experience (ACE).

This report summarizes visitors and their experiences at Arthur R. Marshall Loxahatchee National Wildlife Refuge, referred to as “this wildlife refuge” or “refuge” throughout this report. Percentages noted throughout the



*Fig. 1: Priority recreational uses of National Wildlife Refuges.*

report were rounded to the nearest whole number and, when summarized per survey question, may not equal 100%. Additionally, most figures do not display a percentage for any category containing less than 5% of visitors.

See Appendix A for the survey methodology and limitations of findings. See Appendix B and C for visitor responses to specific survey questions for this wildlife refuge.



*2018 National Visitor Survey interns in action at wildlife refuges across the United States. Photo credit: U.S. Fish & Wildlife Service.*



# Surveying Visitors at This Wildlife Refuge

## REFUGE DESCRIPTION

Arthur R. Marshall Loxahatchee National Wildlife Refuge is located in southeastern Florida, about 30 miles north of Fort Lauderdale. The levee that surrounds the refuge was built by the U.S. Army Corps of Engineers in the 1940s and the resulting water storage area was put under management by the South Florida Water Management District, a Florida state agency. In 1951, the U.S. Fish and Wildlife Service entered a license agreement with the South Florida Water Management District that established the wildlife refuge. The 145,189 acres protect one of the last remnants of northern Everglades habitat. This wetland habitat is a mosaic of wet prairies, sawgrass ridges, sloughs, tree islands, cattail communities, and the largest intact cypress swamp remaining in southeastern Florida. The refuge is home to more than 250 species of birds, including the endangered snail kite and threatened wood stork. In addition, the refuge provides vast habitat for American alligators as well as many other reptiles.

Arthur R. Marshall Loxahatchee National Wildlife Refuge attracts over 432,837 visitors annually (U.S. Fish and Wildlife Service, 2018), observation and photography from one of



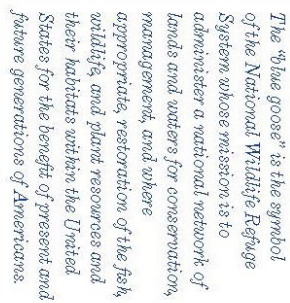
*A fisherman navigates his boat through the Hillsboro Area at Arthur R. Marshall Loxahatchee National Wildlife Refuge. Photo credit: Nicole Stagg.*

the refuge's many hiking trails. A particularly popular hiking area is the Cypress Swamp Boardwalk trail located near the visitor center. Boating and biking are also popular recreational activities. This wildlife refuge also offers fishing and hunting opportunities; specifically, hunting of waterfowl and alligator are permitted during designated seasons.

## SAMPLING

Refuge professionals at this wildlife refuge identified two separate 14-day sampling periods and one or more sampling locations that best reflected the primary uses of the refuge as well as the diversity of activities that occur (Fig. 2). For more details on methodology for the National Wildlife Refuge Visitor Survey, see Appendix A.

- During the two sampling periods, a total of 385 visitors agreed to participate in the survey by providing their names and addresses.
- In all, 181 visitors completed the survey online (35%) or by mail (65%) after their refuge visit, resulting in a 49% response rate.
- Results for this wildlife refuge have a  $\pm 6\%$  margin of error at the 95% confidence level. For more details on limitations of results and survey methodology, see Appendix A.



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# Visitor Characteristics

An important first step in managing visitor experiences is to understand the characteristics of those who currently visit wildlife refuges. Refuge professionals can compare visitor demographics to the demographic composition of nearby communities or the nation to inform engagement efforts with new audiences. Useful tools for these comparisons include Headwaters Economics' Economic Profile System and their Populations at Risk (<https://headwaterseconomics.org>) or U.S. Census Bureau products ([www.census.gov](http://www.census.gov); [www.socialexplorer.com](http://www.socialexplorer.com)).

## AGE & GENDER

- 37% of visitors were female with an average age of 60 years (Fig. 3).
- 63% were male with an average age of 61 years.

## EDUCATION

- 20% of visitors had a high school degree or less.
- 50% had at least some college.
- 30% had an advanced degree.

## RACE & ETHNICITY

Most prevalent race or ethnicity (Fig. 4):

- White (90%).
- Hispanic (5%).

## INCOME

- Visitors had a mean income range of \$75,000-\$99,999 (Fig. 5).

## OTHER TRIP CHARACTERISTICS

- Average group size of 2 people.
- 26% visited the refuge alone.
- 65% visited with at least one other adult.
- 9% visited with a combination of at least 1 adult and 1 child.

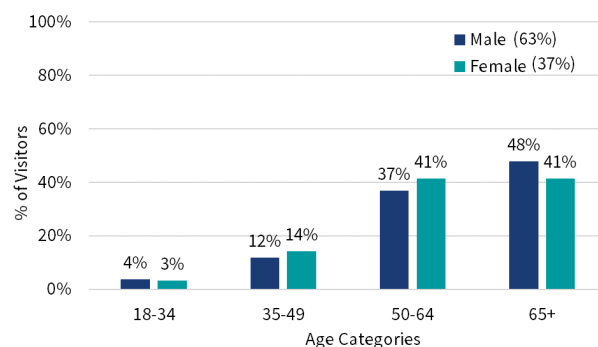


Fig. 3: Distribution of visitors to this refuge by gender and age group.

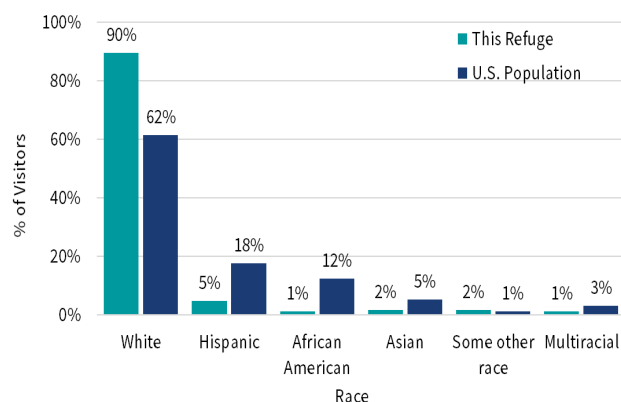


Fig. 4: Race and ethnicity of visitors to this refuge compared to the national average.

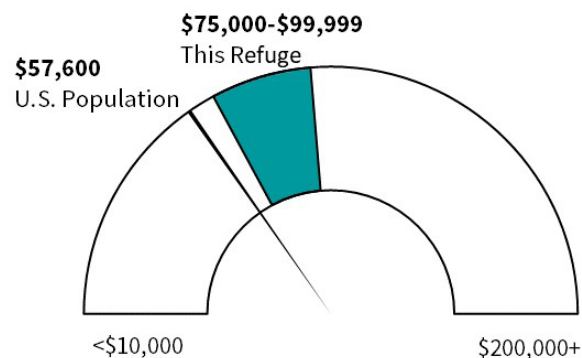


Fig. 5: Mean income range of visitors to this refuge compared to the national median income.

# Trip Characteristics

Understanding the travel patterns of visitors and why they choose to visit wildlife refuges is important for effective visitor use management. Comparisons of responses from local visitors (those living  $\leq 50$  miles from the refuge) and nonlocal visitors (those living  $> 50$  miles from the refuge) can inform communication efforts with current visitors and those who have yet to visit. Understanding seasonality helps refuge professionals better understand visitor use patterns and gauge supply and demand.

## LOCAL VISITORS

Highlights of trip characteristics for local visitors to this wildlife refuge (76%) include:

- For locals, this refuge was the primary reason for their trip (79%) (Fig. 6).
- Local visitors traveled an average of 26 minutes to arrive at this refuge (Fig. 7).

## NONLOCAL VISITORS

Highlights of trip characteristics for nonlocal visitors to this wildlife refuge (24%) include:

- For nonlocals, this refuge was one of many equally important reasons for their trip (39%) (Fig. 6).
- Nonlocal visitors traveled an average of 11 hours to arrive at this refuge (Fig 8).
- Of the 96% of visitors who lived in the U.S., nonlocal visitors were most often from Florida (79%) and New York (3%).
- 4% of respondents were international visitors.

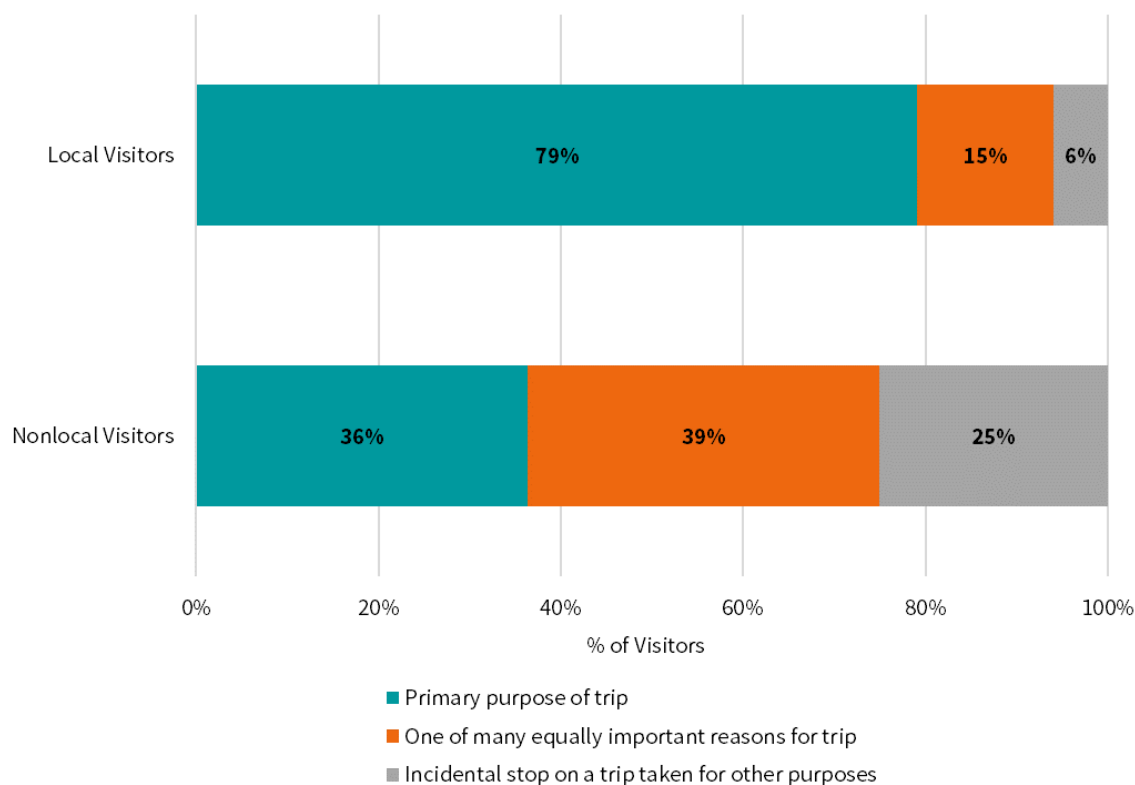


Fig. 6: Purpose of most recent refuge visit for local (living  $\leq 50$  miles from the refuge) and nonlocal (living  $> 50$  miles from the refuge) visitors.

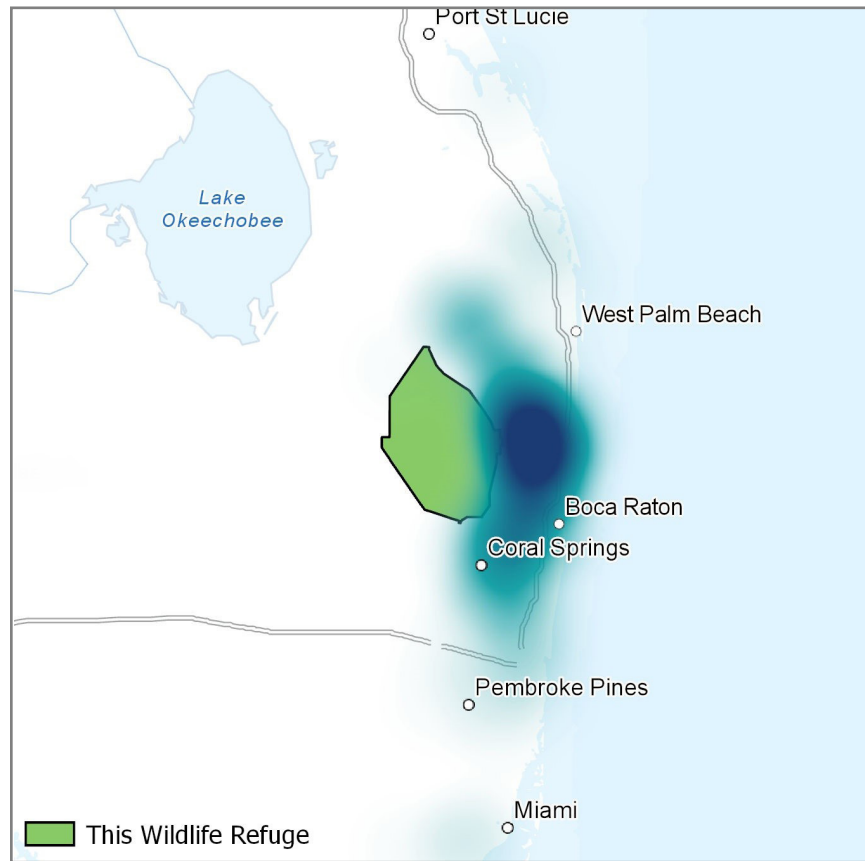


Fig. 7: Map showing residence of local visitors to this refuge. Darker shading represents relatively higher visitation from that area.

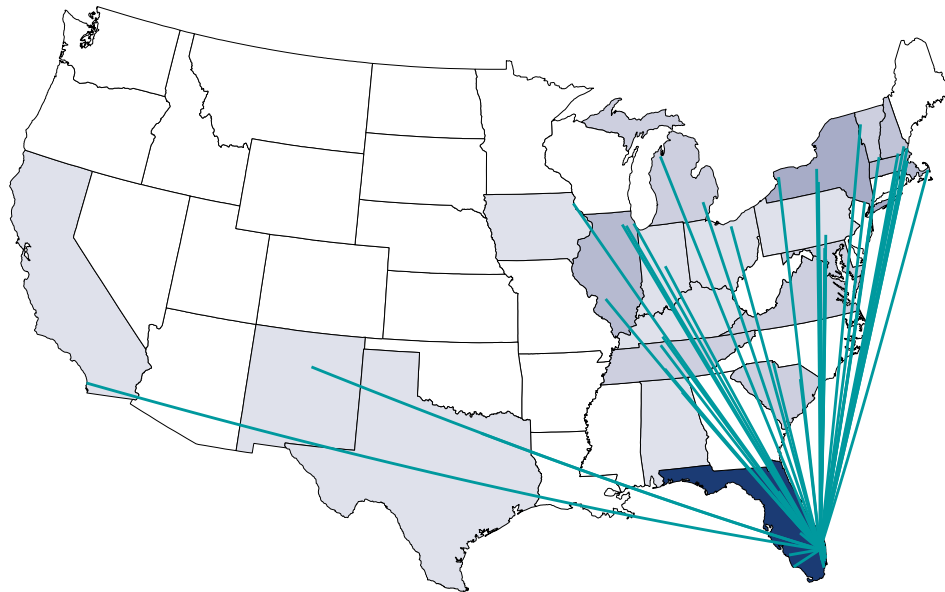


Fig. 8: Map showing residence of visitors to this refuge by zip code, with each line representing visitation from a different zip code. The convergence point of the lines is the geographical center of the refuge. Darker shading of the states represents higher visitation from that state.

## OTHER TRIP CHARACTERISTICS

Other trip characteristics include:

- To get to this wildlife refuge, visitors primarily traveled by private vehicle without a trailer (77%) and by private vehicle with a trailer (22%) (Fig. 9).
- Once on the refuge, visitors primarily traveled by private vehicle without a trailer (41%) and by foot (39%) (Fig. 9).
- Visits occurred during winter (85%), spring (62%), summer (42%), and fall (63%).
- 95% of visitors made a single-day trip to this refuge, spending an average of 4 hours, while 5% of visitors were on a multi-day trip to this wildlife refuge that averaged 4 days.

During the 12 months prior to completing the survey, visitors also made multiple trips to this wildlife refuge, other wildlife refuges, and other public lands:

- 81% were repeat visitors to this wildlife refuge, visiting an average of 19 times.
- 52% visited other national wildlife refuges, averaging 3 visits.
- 64% visited other public lands, averaging 10 visits.

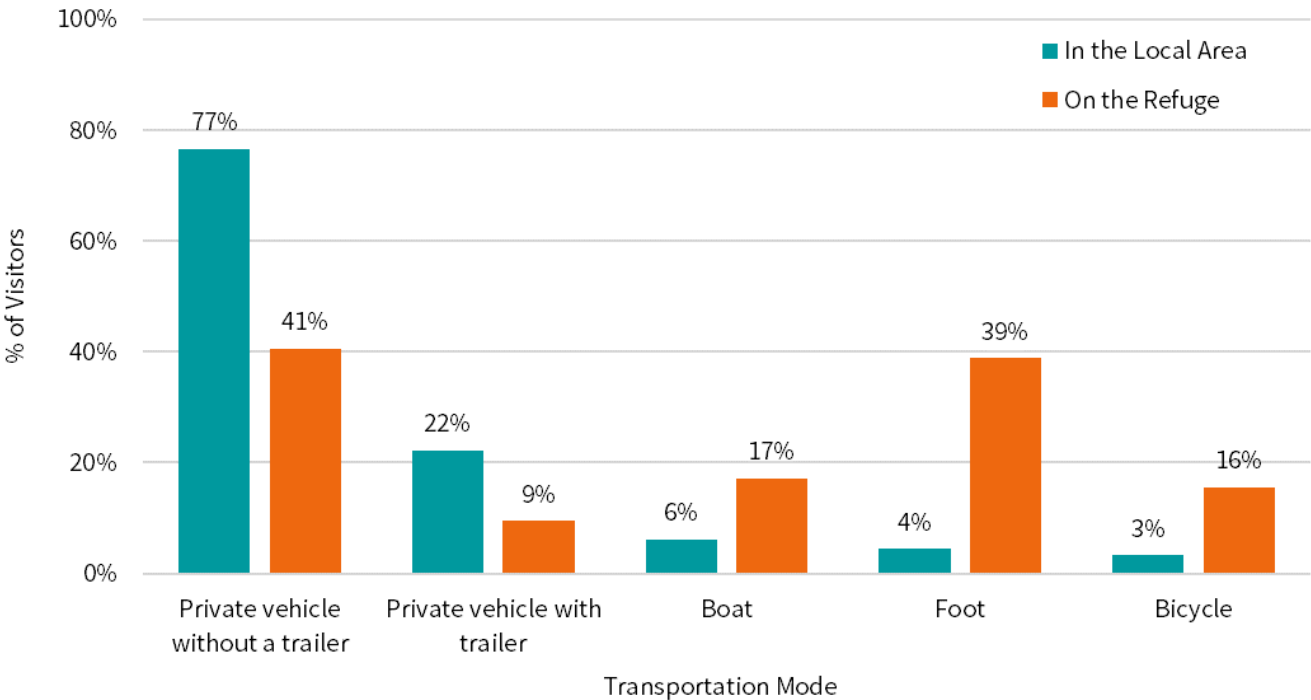


Fig. 9: Modes of transportation used by visitors to get from the local area to this refuge and within the boundaries of this refuge.



## Information Sources Used for Trip Planning

Knowing more about which information sources visitors use (or do not use) to plan their trips can improve communication strategies and facilitate positive experiences on refuges. The Refuge System's success in reaching new and diverse audiences as well as current visitors also depends on its ability to keep pace with communication trends (U.S. Fish & Wildlife Service, 2016a).

Visitors to this wildlife refuge found a variety of in-person, print/internet, and refuge-specific information sources helpful when planning their trips. Details for information sources identified as very or extremely helpful include:

- In-person sources that were most helpful to visitors regardless of age included word of mouth and tourist information/welcome center.
- Print and internet sources that were most helpful to visitors regardless of age included web-based map and printed map/atlas.
- Refuge-specific sources that were most helpful to visitors regardless of age included refuge employees/volunteers and kiosks/displays/exhibits at this refuge.
- Use of information sources varied by age groups (see Figs. 10-12 for details).

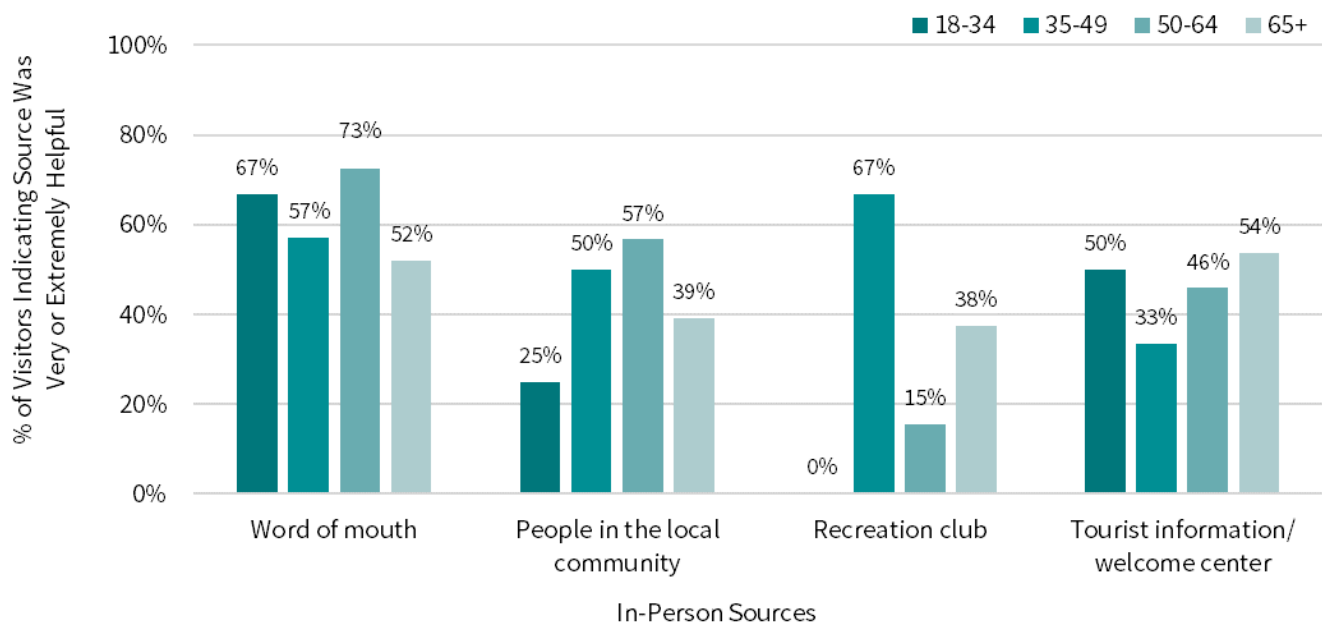


Fig. 10: Percent of visitors by age group who found in-person information sources very or extremely helpful in planning their trip.

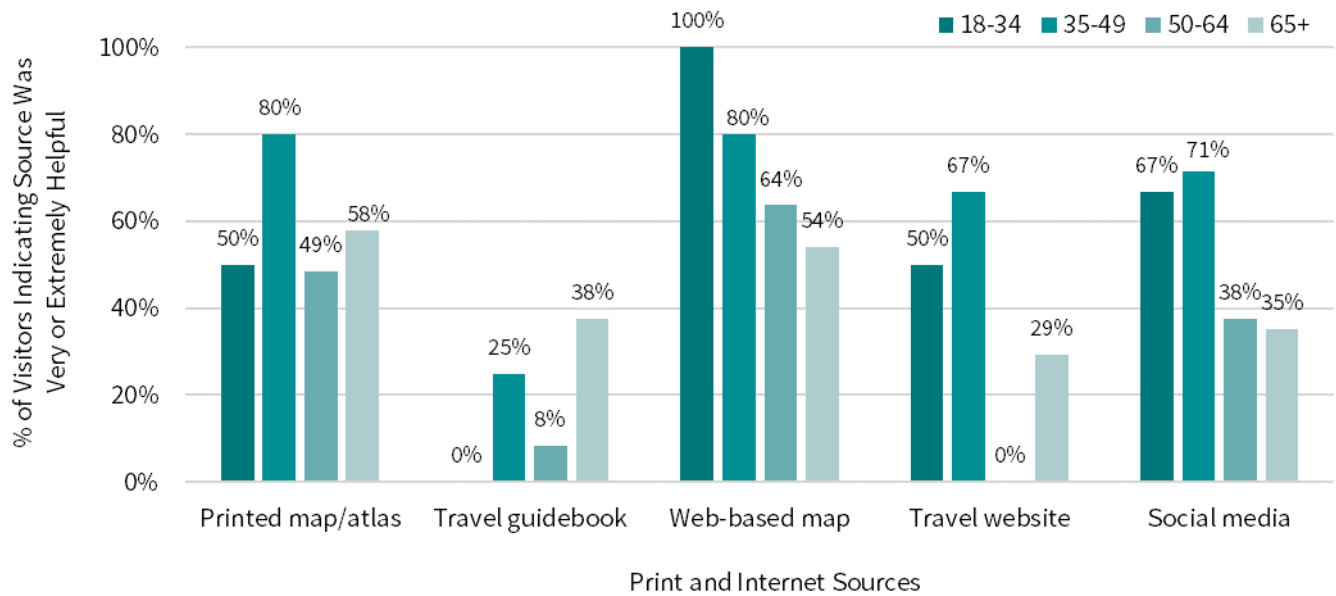


Fig. 11: Percent of visitors by age group who found print and internet information sources very or extremely helpful in planning their trip.

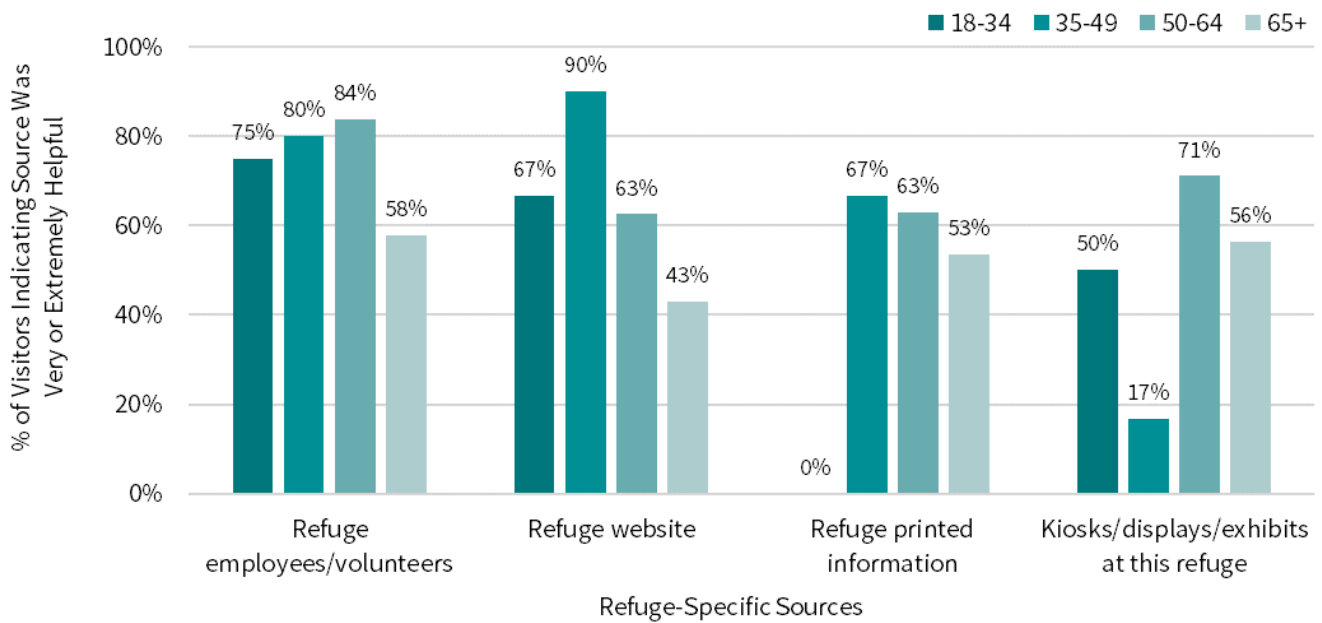


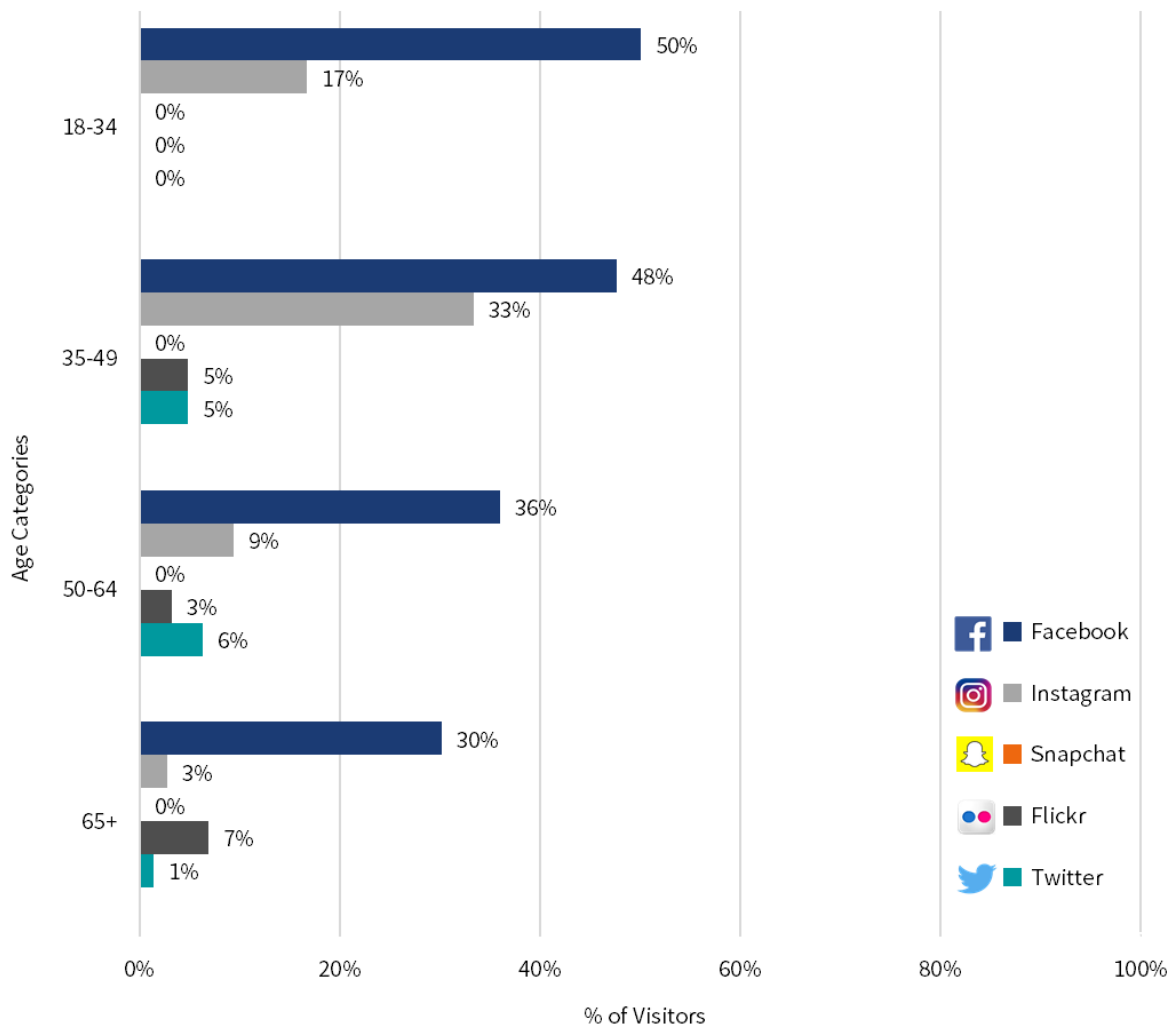
Fig. 12: Percent of visitors by age group who found refuge-specific information sources very or extremely helpful in planning their trip.

## Use of Social Media

Around 70% of Americans use social media to connect with one another, engage with news content, share information, and entertain themselves (Smith & Anderson, 2018). Social media posts can act as a virtual “word of mouth” method for increasing awareness about the refuge to the visitor’s network and beyond. A social media presence can further generate awareness of the refuge and its resources among audiences that do not use or did not otherwise learn about the refuge through traditional advertising outlets.

Social media was used by 47% of visitors to share their experience on this refuge with others. Use of specific social media platforms varied by age group (Fig. 13):

- Visitors 18-34 years old preferred to use Facebook (50%) and Instagram (17%).
- Visitors 35-49 years old preferred to use Facebook (48%) and Instagram (33%).
- Visitors 50-64 years old preferred to use Facebook (36%) and Instagram (9%).
- Visitors 65 or older preferred to use Facebook (30%) and Flickr (7%).



*Fig. 13: Percent of visitors by age group who used various social media platforms to share their experience on this refuge with others.*

## Participation in Recreational Activities

Some research shows that rates of participation in outdoor recreation activities have increased (Outdoor Foundation, 2018), while other studies have indicated declines in participation in heritage activities such as hunting (U.S. Fish & Wildlife Service, 2016a). In light of these trends it is important to understand recreation participation on refuges to create quality visitor experiences and foster personal and emotional connections to the refuge and its resources (U.S. Fish & Wildlife Service, 2011). Understanding what people do while visiting refuges can also aid in developing programs that facilitate meaningful interactions between visitors and refuge professionals. Finally, such information can help to ensure impacts to resources and conflicts among visitor groups are minimized.

Participation in recreational activities at this wildlife refuge can be characterized as follows:

- The top three activities in which visitors participated during the past 12 months were wildlife observation (74%), bird watching (56%), and hiking (55%) (Fig. 14).
- The top three activities noted as their primary activity on the day visitors were contacted to participate in the survey were fishing (26%), hiking (17%), and wildlife observation (15%) (Fig. 14).
- Approximately 46% of visitors went to the visitor center, and they most often viewed the exhibits (74%), used the facilities (71%), and asked for information (65%) (Fig. 15).



*Photo credit: U.S. Fish & Wildlife Service.*



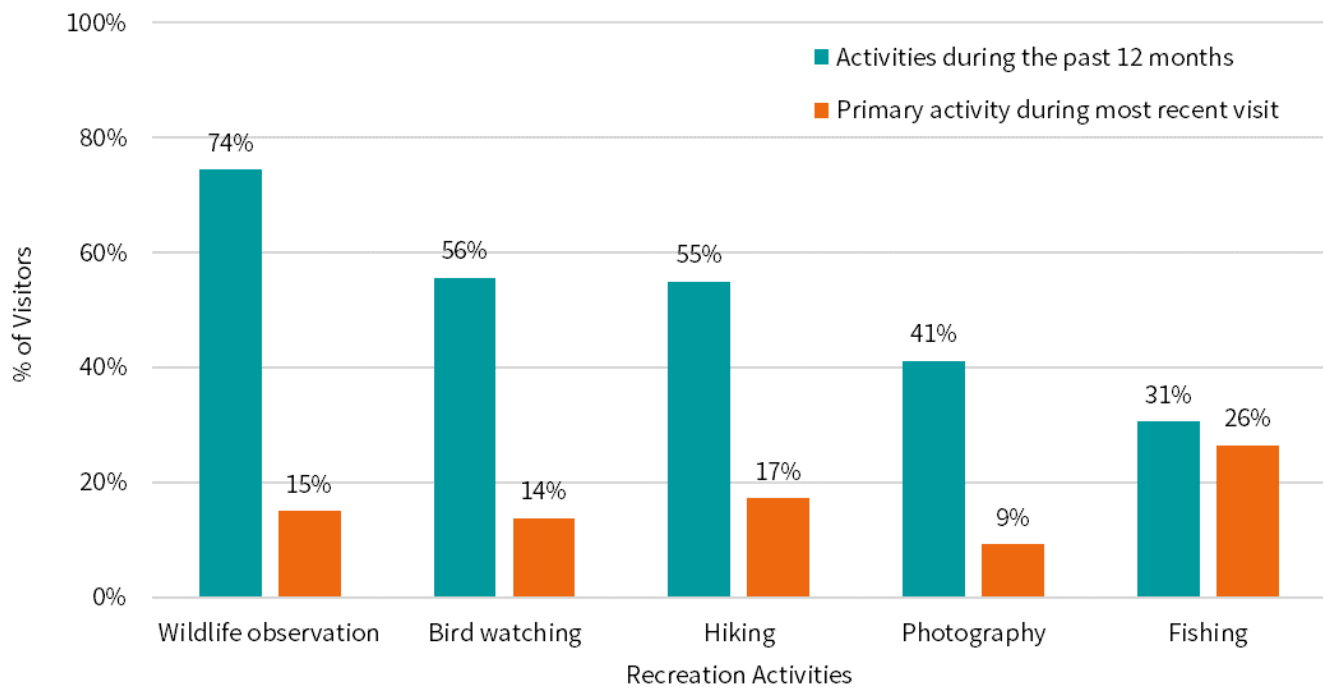


Fig. 14: Recreational activities visitors participated in during the past 12 months and their primary activity during their most recent visit to this refuge.

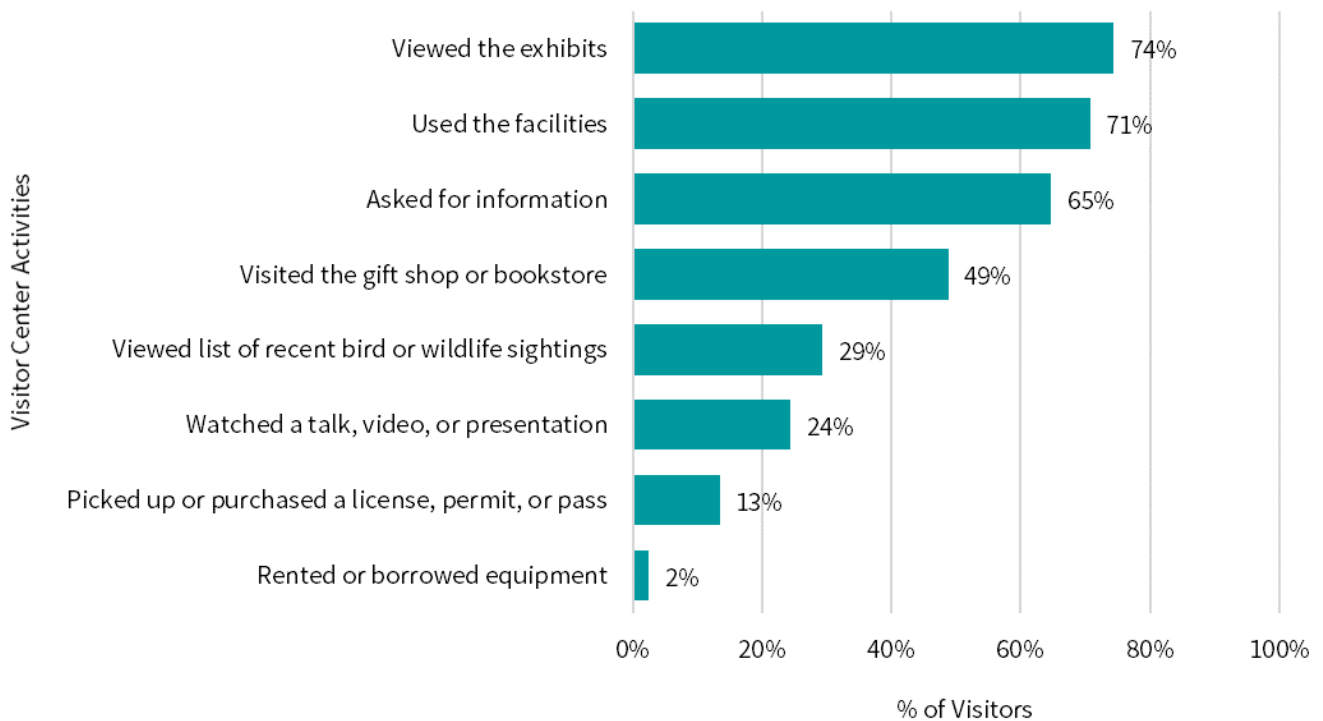


Fig. 15: Reasons visitors used the visitor center during their most recent visit to this refuge.

## Comfort in Nature/Feeling Safe & Welcome

While many people are repeat visitors to refuges, each year thousands of people experience these lands and waters for the first time. One barrier for some visitors, particularly those living in urban areas or with little past exposure to nature-based recreation, is the perception that being in nature is dangerous or unsafe (U.S. Fish & Wildlife Service, 2014). There may also be negative stigmas associated with outdoor spaces that arise from social contexts (for example, people associating being outdoors with poverty or ‘dirty’ contexts) and historical contexts in which being ‘in the woods’ was dangerous and unsafe (Sexton, Ross-Winslow, Pradines, & Dietsch, 2015).

While ensuring that visitors feel safe and welcome is a foundational standard of the Urban Wildlife Conservation Program (<https://www.fws.gov/urban>), these basic needs apply across the Refuge System.

Before visitors can appreciate the wonders of nature, their basic need for safety and belonging must be met. Thus, an understanding of how visitors perceive safety, belonging, accessibility, and comfort in nature is critical to ensure real threats to safety are minimized, and that individuals from all demographic groups feel as welcome and comfortable in nature as possible.

Visitors to this wildlife refuge shared the following about safety, belonging, and their comfort while being in nature:

- 84% of visitors felt welcome during their refuge visit (Fig. 16).
- 93% of visitors felt safe during their refuge visit (Fig. 16).
- 97% of visitors felt comfortable in nature, but 13% did not like being in nature alone (Fig. 17).

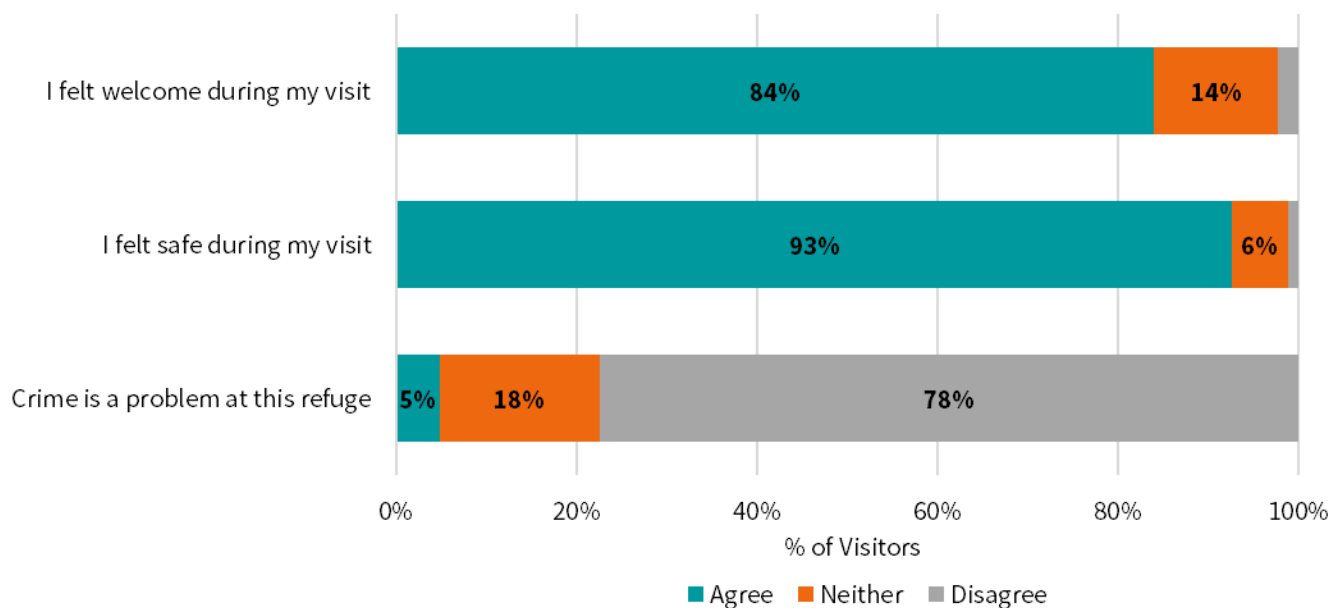


Fig. 16: Visitors' perceptions of safety and feeling welcome at this refuge during their visit.

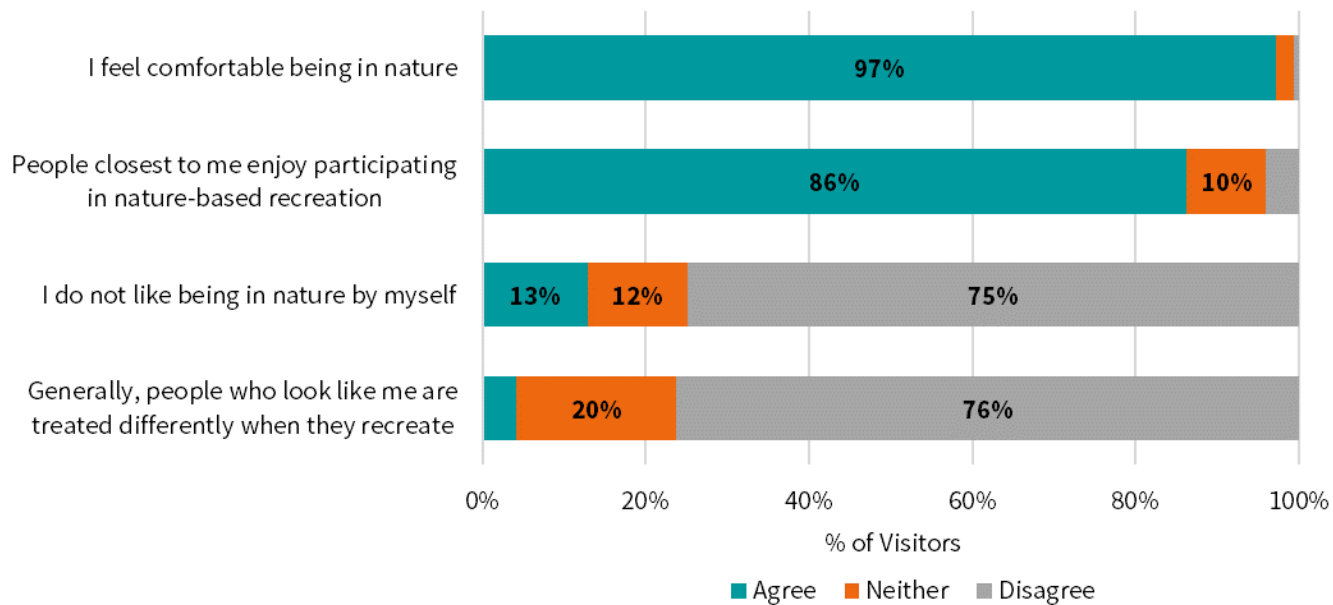


Fig. 17: Visitors' comfort with being in nature.



Photo credit: U.S. Fish & Wildlife Service.

# Satisfaction with Refuge Experiences

## OVERALL SATISFACTION

Refuge professionals strive to maintain a high level of customer satisfaction by operating visitor centers; designing, installing, and maintaining accessible trails; constructing viewing blinds; and much more to facilitate quality recreational experiences. A solid understanding of visitors' perceptions of their experiences provides a framework for monitoring and responding to trends across time. Overall satisfaction with this wildlife refuge is summarized as follows:

- 84% of visitors were very or extremely satisfied with the overall experience at this wildlife refuge (Fig. 18).
- 80% of visitors were very or extremely satisfied with this wildlife refuge's job of conserving fish, wildlife, and their habitats (Fig. 18).

## CUSTOMER SERVICE

Refuge professionals regularly interact with visitors and maintain facilities to ensure high quality experiences. From greeting visitors, to keeping bathrooms clean, to clearly stating regulations, providing quality customer service is important to ensuring overall satisfaction.

Satisfaction with customer service was highest among visitors for the following (Fig. 19):

- refuge hours/days of operation (90%),
- visitor center (80%), and
- courteous and welcoming employees/volunteers (80%).

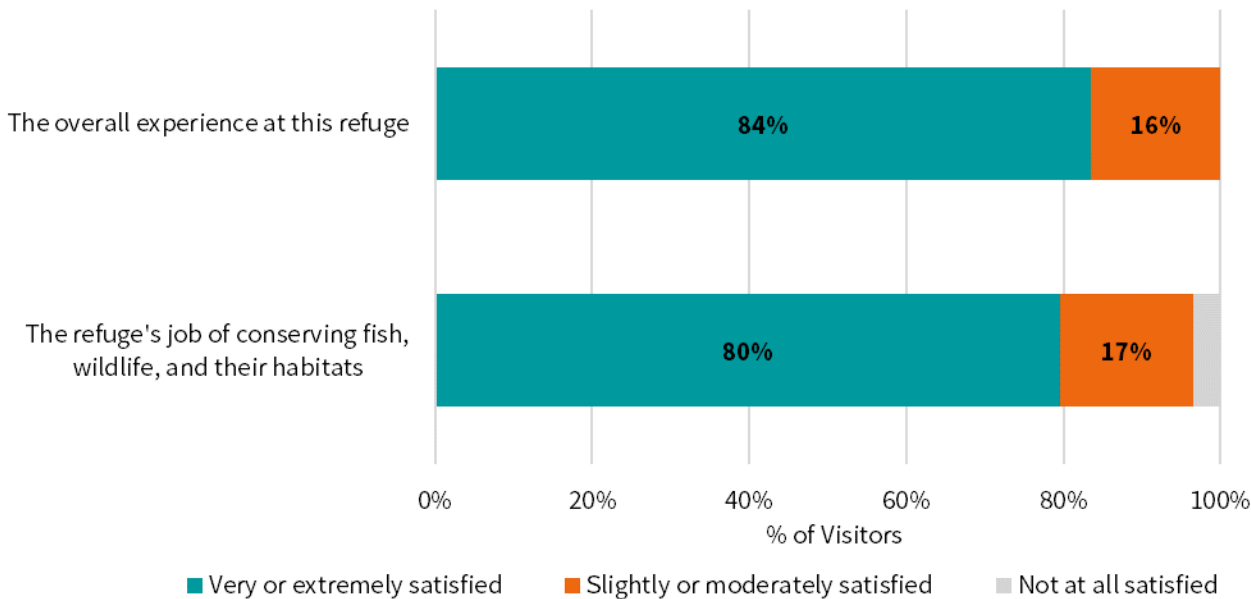


Fig. 18: Visitors' satisfaction with their experience at this refuge and with this refuge's job of conserving fish, wildlife, and habitats.



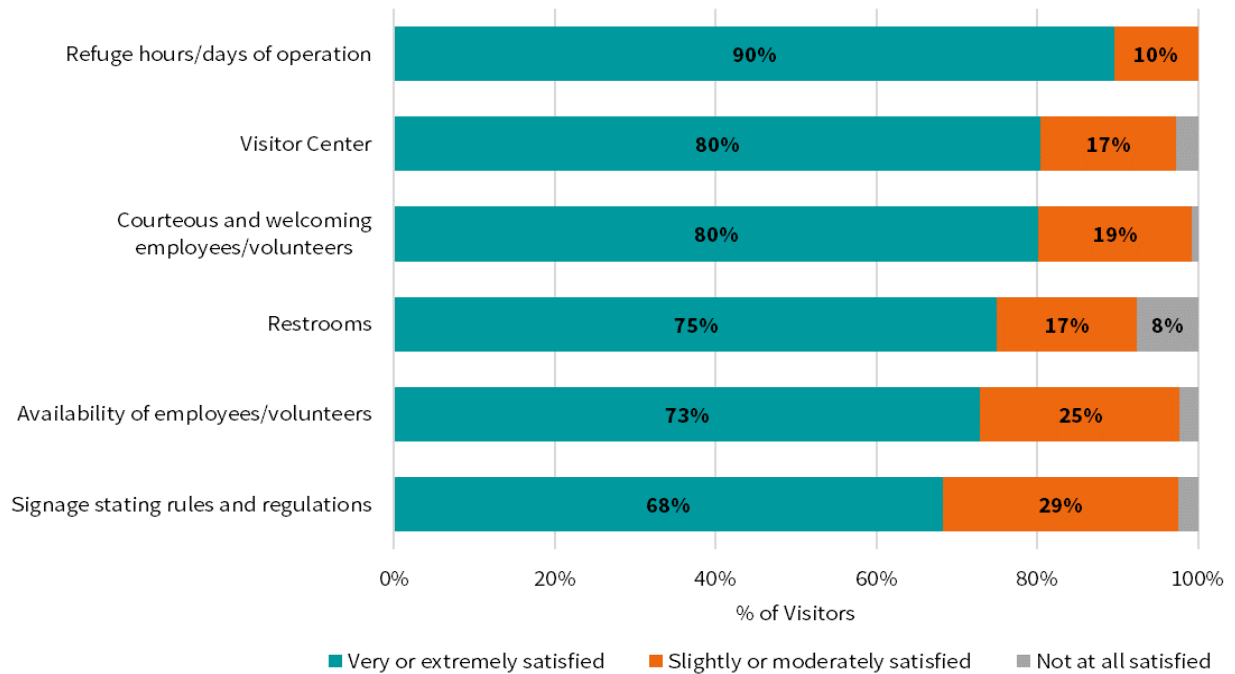


Fig. 19: Visitors' satisfaction with customer service and amenities at this refuge.

## RECREATIONAL OPPORTUNITIES

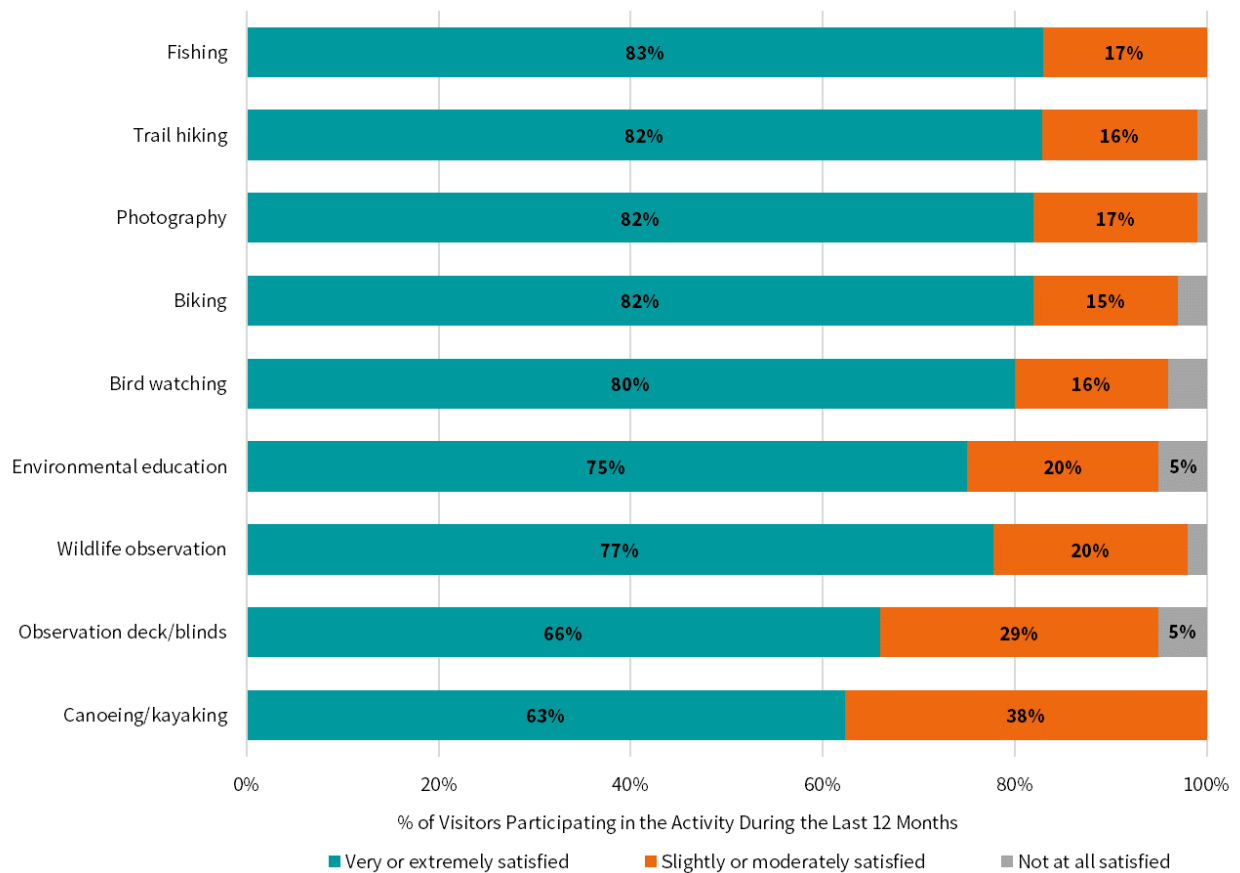
Outdoor recreation on wildlife refuges is a fundamental part of a visit. As American's values toward wildlife and their relationship with nature continue to shift (Kellert et al., 2017; Manfredo et al., 2018), public desires for recreational experiences on public lands are also likely to shift. In addition, researchers and land management professionals recognize the need to connect the next generation to nature and wildlife (Charles & Louv, 2009; Larson et al., 2011). A solid understanding of visitors' perceptions of their experiences provides a

framework for monitoring and responding to these recreation trends across time.

Satisfaction with recreation opportunities among visitors who had participated in the activity during the last 12 months was highest for the following (Fig. 20):

- fishing (83%),
- hiking (82%),
- photography (82%), and
- biking (82%).

*"I'm a local and visit here often for peace, tranquility and keeping in touch with the natural world." – Visitor to Arthur R. Marshall Loxahatchee National Wildlife Refuge*



*Fig. 20: Visitors' satisfaction with recreational opportunities at this refuge. Only visitors who participated in the above recreational activities at this refuge during the last 12 months were included.*

## TRANSPORTATION SAFETY & ACCESS

Transportation networks connect local communities to refuges and are critical to visitors' experiences there. Visitors access refuges by plane, car, train, boat, bike, and foot. The Service works to ensure that the roads, trails, and parking areas are welcoming and safe for visitors of all abilities. A goal of the Service's National Long-Range Transportation Plan is to enhance experiences on wildlife refuges and fish hatcheries through improvement to the transportation network (U.S. Fish & Wildlife Service, 2016b). How visitors perceive different transportation features can be used to prioritize access and transportation improvements.

Visitors were satisfied with transportation safety and access at this wildlife refuge as follows (Fig. 21):

- Getting to this wildlife refuge, visitors were most satisfied with the safety of refuge road entrances and exits (81%).
- Getting around this wildlife refuge, visitors were most satisfied with safety of driving conditions on refuge roads (85%) and condition of parking areas (78%).
- Accessing recreation on this wildlife refuge, visitors were most satisfied with safety of roads or trails for nonmotorized use (81%) and the condition of trails and boardwalks (80%).

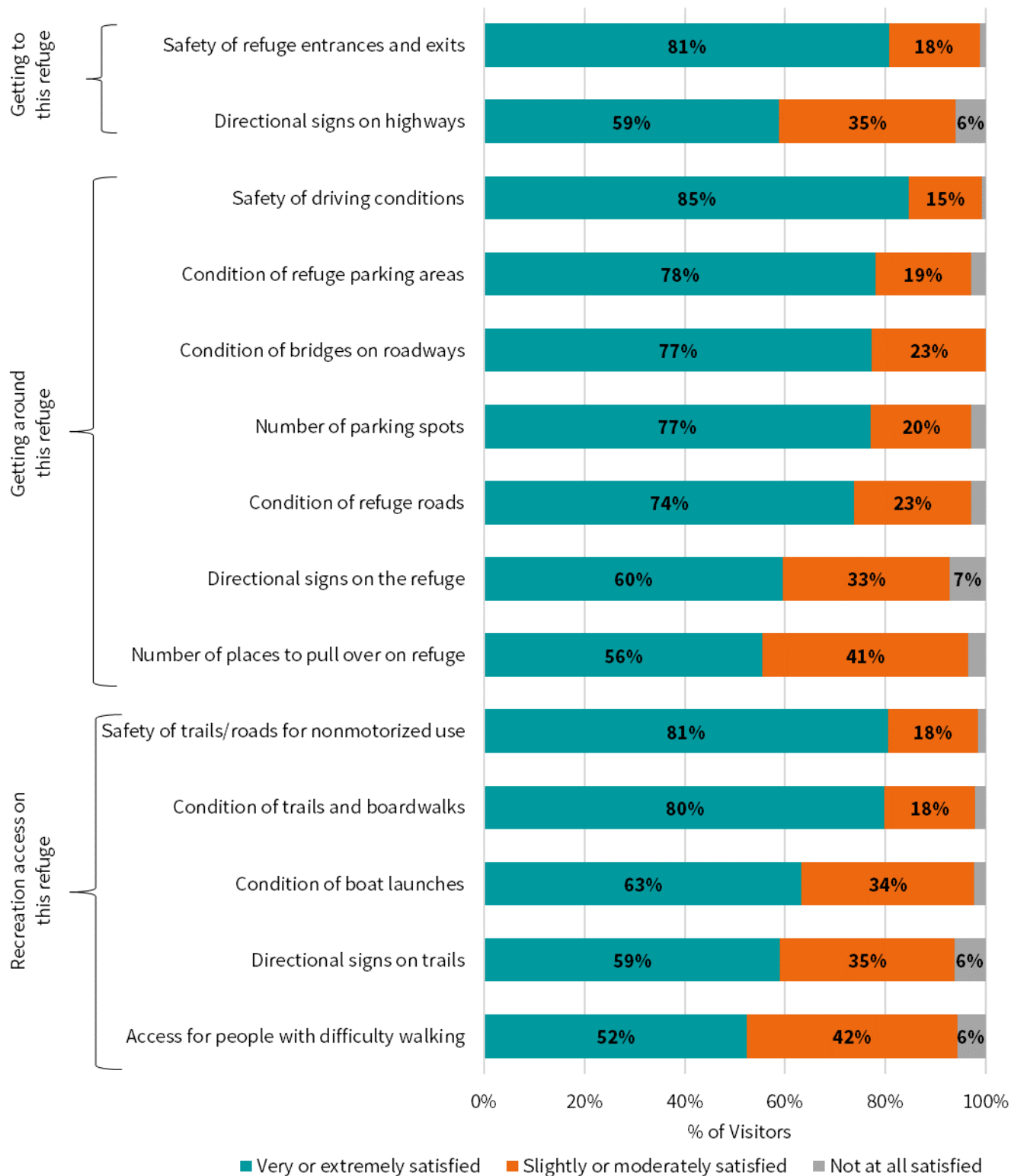


Fig. 21: Visitors' satisfaction with how the refuge is managing transportation-related features.

## Economic Benefits to Local Communities & Visitors

The value of any commodity is comprised of two elements: 1) the amount paid and 2) the additional benefit derived above and beyond what is paid. The first element equates to direct expenditures. Visitors to wildlife refuges pay for a variety of things, including nearby lodging, gas, food, and other purchases from local businesses. This spending has a significant positive contribution to local economies. The *Banking on Nature* report (Caudill & Carver, 2017) highlights how nearly 54 million visits to wildlife refuges during 2017 generated \$3.2 billion of economic output in local communities and supported over 41,000 jobs. The report further indicates that recreational spending on wildlife refuges generated \$229 million in tax revenue at the local, county, and state levels.

Determining benefits derived above and beyond what is paid is commonly estimated by “willingness to pay” for an experience. Studies show people are often willing to pay more for a recreational experience than what they actually spent (Neher, Duffield, & Patterson, 2011; Rosenberger & Loomis, 2001). For example, a visitor may have spent \$500 on lodging, food, and gasoline to make the trip possible, while also indicating that they would be willing to pay an additional \$50 to visit this wildlife refuge if total trip costs were to increase.

Results for local visitors (those living  $\leq 50$  miles from this wildlife refuge; 76%) are as follows:

- On average, local visitors accounted for 17% of expenditures.
- Top trip expenditures by locals were for food/drink and transportation (Fig. 22).
- The average amount paid by locals to visit this wildlife refuge was \$40 per person per day (Fig. 22).
- Local visitors were personally willing to pay an additional \$47 per day on average to visit this wildlife refuge (Fig. 23).

Results for nonlocal visitors (those living  $>50$  miles from this wildlife refuge; 24%) are as follows:

- On average, nonlocals accounted for 83% of expenditures.
- Top trip expenditures by nonlocals were for lodging and food/drink (Fig. 22).
- The average amount paid by nonlocals to visit this wildlife refuge was \$110 per person per day (Fig. 22).
- Nonlocal visitors were personally willing to pay an additional \$126 per day on average to visit this wildlife refuge (Fig. 23).
- Nonlocal visitors spent an average of 14 days in the local community during this visit.



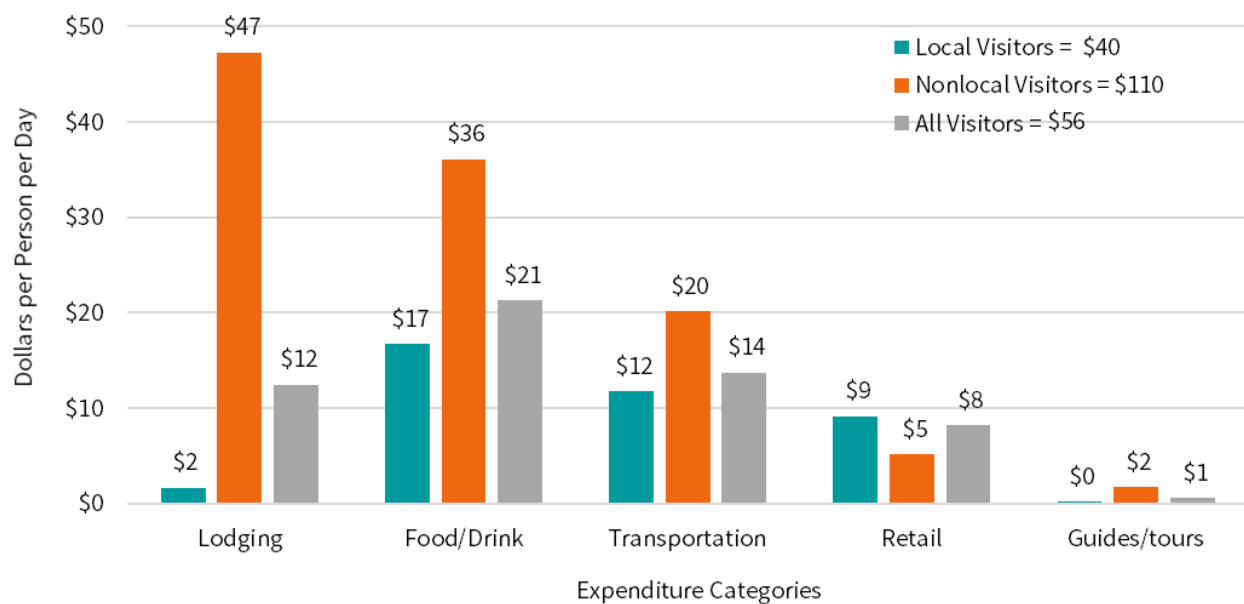


Fig. 22: Individual daily expenditures in the local community for local, nonlocal, and all visitors. Expenditures were reported by respondents on a per group basis; the total expenditures were divided by the number of people in the group who shared trip expenditures and the number of days spent in the local community. The number of people sharing trip expenditures was often smaller than the total group size.

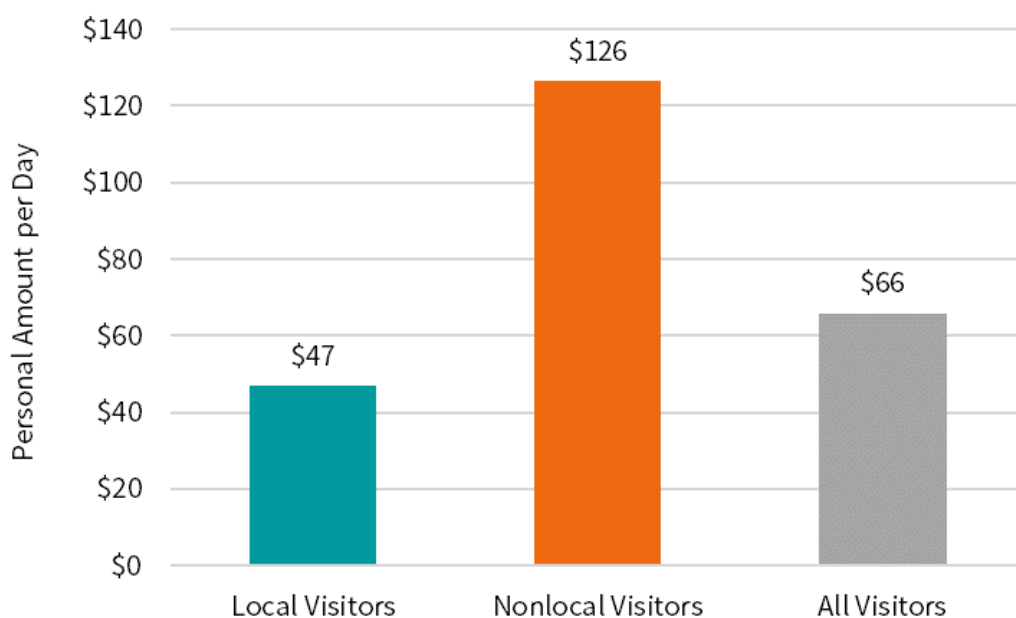


Fig. 23: Total personal willingness to pay per day above and beyond most recent trip expenses if costs were to increase for local, nonlocal, and all visitors. Due to the fixed-response question format, estimates of willingness to pay may underestimate the amount visitors would actually pay. Responses were divided by the number of days spent at the refuge.



# Encouraging Return Visits & Future Recreation Participation

Public land managers strive to maximize benefits for visitors while achieving and maintaining desired resource conditions. This complex task requires that managers accurately estimate visitor numbers, as well as where visitors go, what they do, their impacts on resources, how they perceive their experiences, and their desires for future visits. Gaining a sense of what would encourage visitors to return and how management activities affect their likelihood of returning can lead to improved visitor use and resource management (U.S. Fish & Wildlife Service, 2014).

## PROGRAMS AND OTHER OFFERINGS

Programming and other offerings that are compatible with the purpose of a refuge and the Refuge System mission can encourage people to continue visiting the refuge. Additionally, changes to regulations and access for improving resource availability may increase or decrease future participation, or have little effect at all.

In the future, changes in programming, offerings, or regulations would have an effect on visitation to this wildlife refuge as follows:

- Programs most likely to encourage visitors to return to this wildlife refuge included those focused on skill-building (49%), highlighting unique local culture (40%), and engaging families and multiple generations (34%) (Fig. 24).
- The top two factors likely to increase visitors' future participation in their primary recreation activity were more infrastructure (35%) and recreation equipment available for rent (18%) (Fig. 25).
- The top two factors likely to decrease visitors' future participation in their primary recreation activity were less regulations on hunting (33%) and more people participating in their primary activity (27%) (Fig. 25).

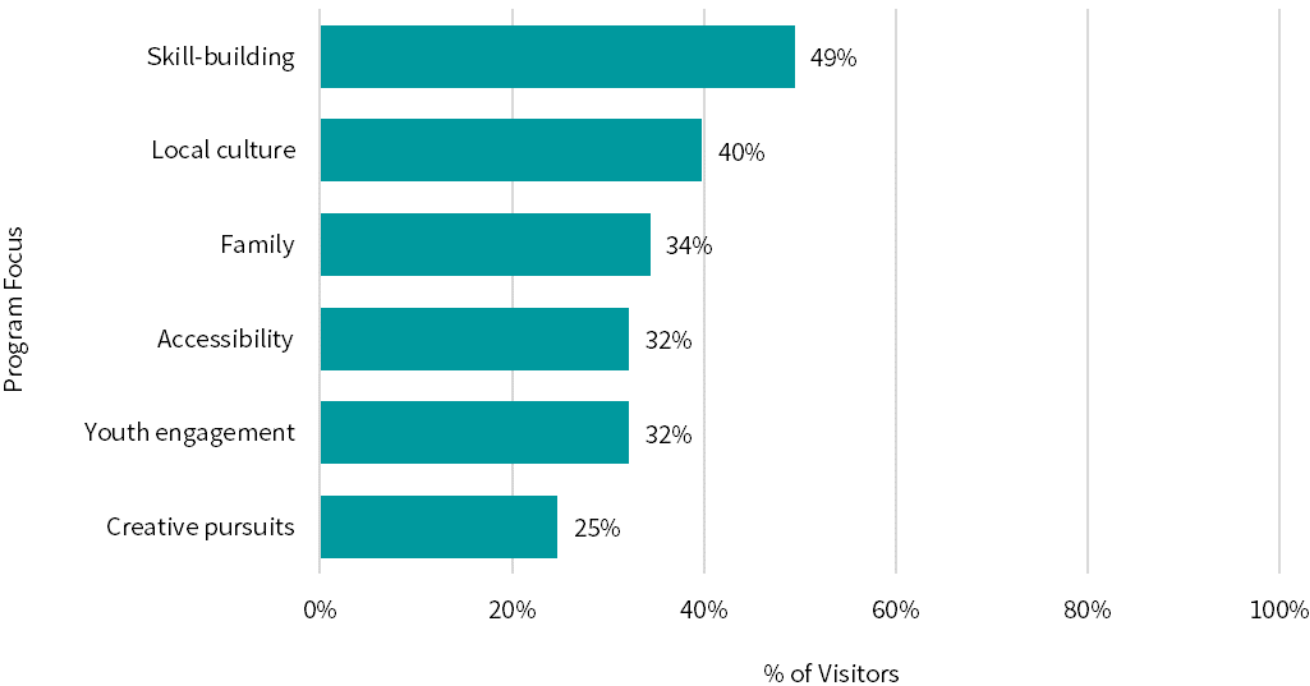


Fig. 24: Types of programs that would encourage visitors to return to this refuge.

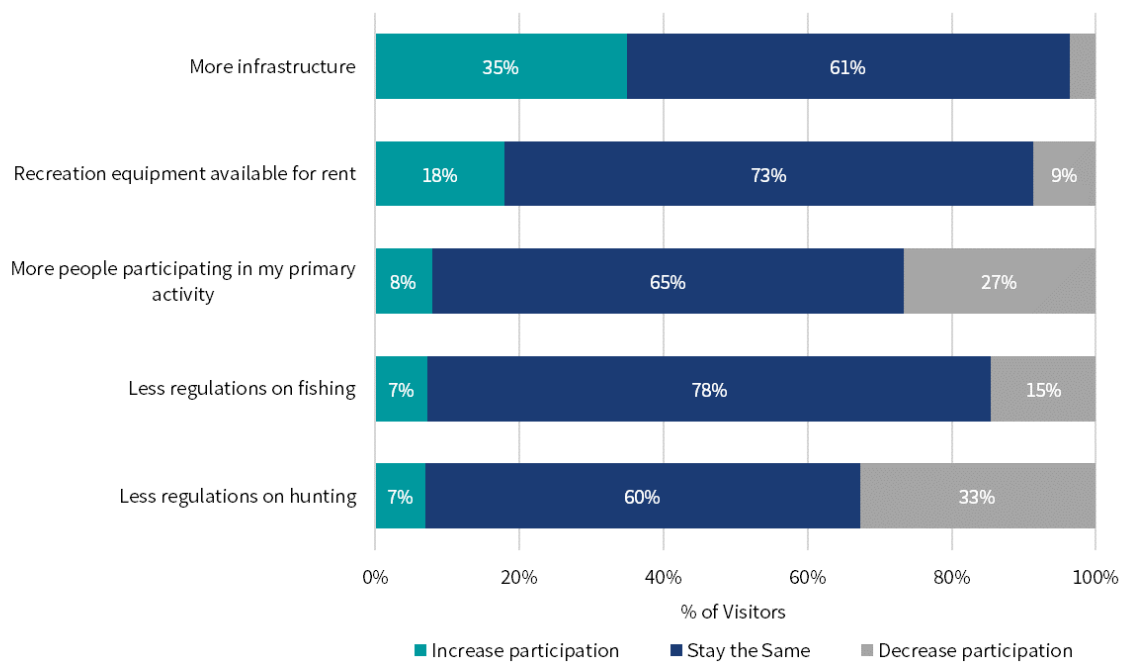


Fig. 25: Changes in visitors' participation in their primary activity if the listed recreation factors were to change.

## ALTERNATIVE TRANSPORTATION

Understanding visitor demand for alternative transportation options is a goal of the Service's National Long-Range Transportation Plan (U.S. Fish & Wildlife Service, 2016b). Alternative transportation options can be valuable in realizing refuge goals to conserve natural resources, reduce visitors' carbon footprint (Volpe Center, 2010), and improve visitor experiences. Even though demand may be relatively small, any use of alternative transportation that is feasible at a wildlife refuge can help to meet goals.

The top future alternative transportation options supported by visitors at this wildlife refuge included:

- bus or tram that provides a guided tour (27%), bus or tram that takes passengers to different points within refuge boundaries (18%), a bike-share program (15%), and pedestrian paths (15%) (Fig. 26).

## ECOSYSTEM SERVICES

Natural processes associated with wildlife refuges can provide benefits to people, including provisioning services such as food

and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and educational benefits; and supporting services such as nutrient cycling (Millennium Ecosystem Assessment, 2005). Understanding how changes in natural resources and related processes may impact future visitation and participation in certain recreation activities can improve resource and visitor management, as well as inform communication efforts with stakeholders and policy-makers (Patton, Bergstrom, Covich, & Moore, 2012).

In the future, changes to resources would affect visitation to this refuge as follows (Fig. 27):

- The top two resource changes likely to increase visitors' future participation in their primary recreation activity were an improvement in the quality of wetlands (58%) and an improvement in the quality of wildlife habitat other than wetlands (57%).
- The top two resource changes likely to decrease visitors' future participation in their primary recreation activity were less water available for recreation (42%) and more acreage open to hunting and fishing (33%).

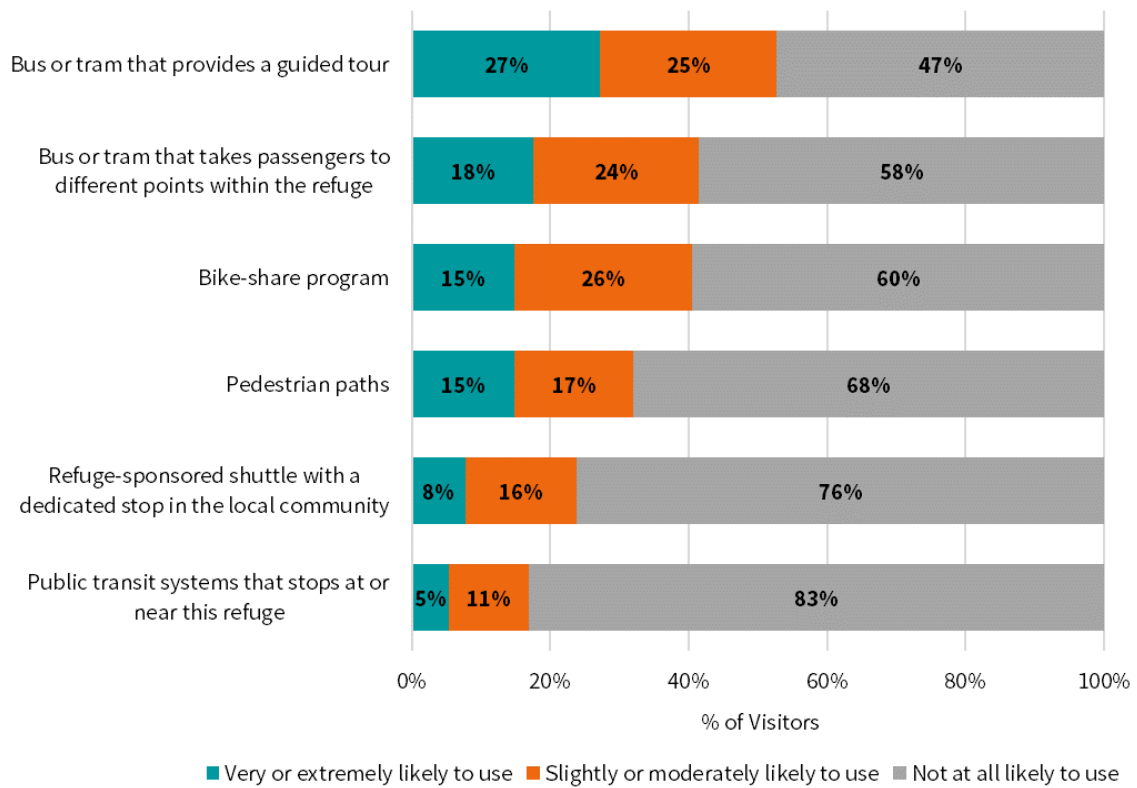


Fig. 26: Visitors' likelihood of using alternative transportation options if offered at this refuge.

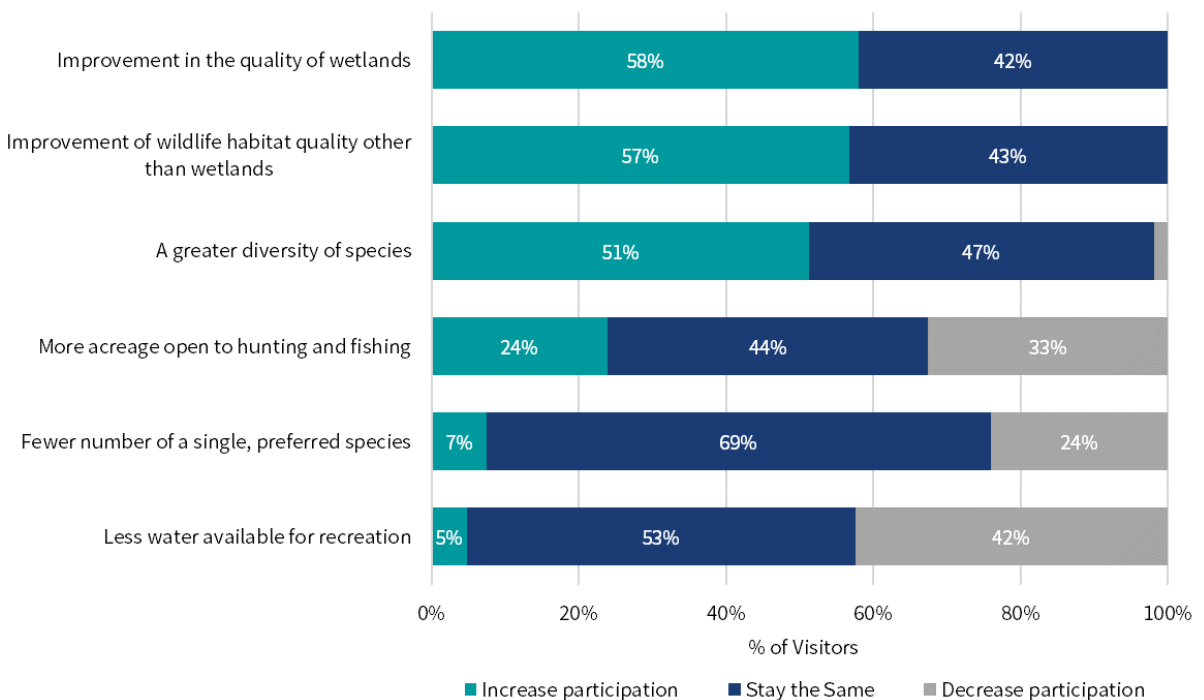


Fig. 27: Changes in visitors' participation in their primary activity if the listed resources were to change.

## Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to Arthur R. Marshall Loxahatchee National Wildlife Refuge during 2018. They are intended to inform refuge planning, including the management of natural resources, recreation, and the design and delivery of programs for visitors. These results offer a baseline that can be used to monitor and evaluate efforts over time. Refuge professionals

who understand visitor demographics, trip characteristics, and desires for future conditions can make informed decisions for proactive visitor management and resource protection. Integrating this social science with biophysical science ensures that management decisions are consistent with the Refuge System mission while fostering a continued public interest in and connection with these special places we call national wildlife refuges.



*Photo credit: U.S. Fish & Wildlife Service.*



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## Appendix A: Survey Methodology

The National Wildlife Refuge Visitor Survey (NVS) team consisted of staff from The Ohio State University (OSU), U.S. Fish & Wildlife Service (Service), and American Conservation Experience (ACE) who collectively developed the following NVS methodology. Staff from OSU and the Service designed the survey instrument with multiple reviewers within the Refuge System providing feedback about content and wording. The logistical coordinator and interns from ACE conducted sampling on refuges. OSU staff coordinated survey mailings, analyzed data, and in cooperation with Service staff, designed the report template and created each refuge report.

### SAMPLING SCHEDULE

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Interns (survey recruiters) sampled on each participating refuge for two 14-day sampling periods between March 2018 and February 2019. Refuge staff identified the sampling periods and locations that best reflected the diversity of use and visitation patterns of the refuge.

The national visitor survey team developed a sampling schedule for each refuge that included eight randomly selected sampling shifts during each 14-day sampling period. Shifts were four-hour time bands stratified across mornings and afternoons/evenings. The NVS team customized the schedule as needed to accommodate the individual refuge sampling locations and specific spatial and temporal patterns of visitation. The target number of contacts was 25 adult visitors (18 years of age or older) per shift for a total of 375 participants contacted per refuge. Shifts were moved, added, or extended to address logistical limitations (for example, bad weather or low visitation).

### CONTACTING VISITORS ONSITE

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ACE interns received a multi-day training that included role-play exercises on a refuge to

simulate engagement of visitors. Once onsite, the interns contacted visitors following a protocol developed by OSU and Service staff. Interns surveyed across the entire sampling shift and only one visitor per group was asked to participate. If a visitor declined to participate, interns recorded a direct refusal. Visitors willing to participate provided their name, mailing address, language preference (English or Spanish), and answered a few initial questions about their experience that could be used for nonresponse comparisons. Willing visitors were also given a small token incentive (for example, sticker) as a thank you and reminder of their participation.

### COMPLETING A SURVEY AT HOME

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All visitors that agreed onsite to participate in the survey received a postcard mailed to their address within 10 days. The postcard thanked visitors for agreeing to participate, provided a weblink and unique password, and invited the visitor to complete the survey online. All participants then received the following sequence of correspondence by mail from OSU until a survey was returned and the address removed from the mailing list (as suggested by Dillman et al., 2014):

- 1) A packet consisting of a cover letter, survey, and postage-paid return envelope approximately seven days after the first postcard was mailed.
- 2) A reminder postcard mailed 14 days after the first packet was mailed.
- 3) A final packet consisting of a cover letter, survey, and postage-paid return envelope mailed seven days after the reminder postcard.

All printed correspondence and online material were provided in the language chosen by visitors onsite; however, visitors who went online to complete the survey were able to switch between English and Spanish. The

survey was designed to take no more than 25 minutes to complete, and the average completion time recorded by the online survey software was approximately 20 minutes.

## DATA ENTRY & ANALYSIS

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The NVS team used Qualtrics survey software to collect survey data online. OSU staff then exported the data for cleaning (for example, treatment of missing data) and analyses. The team entered data from the paper surveys into Microsoft Excel using a standardized survey codebook and data entry procedures. All data from the two sources (paper and online) were merged and analyzed using Statistical Package for the Social Sciences (SPSS, v.25) software.

## LIMITATIONS OF RESULTS

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The degree to which these results represent overall visitation at a wildlife refuge depends on the number of visitors who completed the survey (sample size), and how well the sample reflects the degree of use at the refuge (Scheaffer et al., 2011). Many respondents completing the survey will produce a smaller margin of error, leading to greater confidence in results, but only to a point. For example, a margin of error of  $\pm 5\%$  at a 95% confidence level signifies 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 of the same sample). The margin of error for this survey was calculated with an 80/20

response distribution, meaning if respondents were given a dichotomous choice question, approximately 80% of respondents would select one choice and 20% would select the other (Salant & Dillman, 1994).

While OSU designed the standardized sampling protocol to account for spatial and temporal visitation patterns, the geography and infrastructure of wildlife refuges vary widely. This variation can affect who is ‘captured’ as part of the survey. For example, contacting visitors is much easier if everyone must pass through a single-entry point and much more difficult if a refuge has multiple access points over a large area. Additionally, the two 14-day sampling periods may not have effectively captured all visitor activities throughout the year on some wildlife refuges (for example, visitors who solely engage in ice fishing). As such, results presented in any one of these reports are aimed at representing overall visitation at a wildlife refuge while recognizing that particular visitor groups may vary in their beliefs and activities.

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# National Wildlife Refuge Visitor Survey



Front cover of the 2018 National Wildlife Refuge Visitor Survey instrument. Artwork credit: Kent Olson.

PLEASE READ THIS FIRST:

Thank you for visiting a national wildlife refuge and agreeing to participate in this study! We hope that you had an enjoyable experience. The U.S. Fish and Wildlife Service and The Ohio State University are conducting this survey to learn more about refuge visitors and their experiences in order to improve management and enhance visitor opportunities.

Please respond regarding the refuge and the visit for which you were asked to participate in this survey. The cover letter indicates the refuge you visited.

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SECTION 1. Your visit to this refuge

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1. Including your most recent visit, which activities did you participate in during the past 12 months at this refuge? (Mark all that apply.)

<input type="checkbox"/> 74% Wildlife observation	<input type="checkbox"/> 55% Hiking/Walking	<input type="checkbox"/> 3% Volunteering
<input type="checkbox"/> 56% Bird watching	<input type="checkbox"/> 7% Jogging/Running/Exercising	<input type="checkbox"/> 6% Environmental education program (classroom visits, labs)
<input type="checkbox"/> 41% Photography	<input type="checkbox"/> 19% Bicycling	
<input type="checkbox"/> 0% Big game hunting	<input type="checkbox"/> 4% Auto tour route/Driving	<input type="checkbox"/> 9% Interpretative program (bird walks, staff/volunteer-led talks)
<input type="checkbox"/> 0% Upland/Small game hunting	<input type="checkbox"/> 16% Motorized boating	
<input type="checkbox"/> 3% Waterfowl/Migratory bird hunting	<input type="checkbox"/> 6% Nonmotorized boating (canoeing, kayaking)	<input type="checkbox"/> 5% Refuge special event ( <i>specify</i> ) <u>See Appendix C</u>
<input type="checkbox"/> 31% Freshwater fishing	<input type="checkbox"/> 0% Foraging (berries, nuts, other)	<input type="checkbox"/> 2% Other ( <i>specify</i> ) <u>See Appendix C</u>
<input type="checkbox"/> 0% Saltwater fishing	<input type="checkbox"/> 7% Picnicking	

2. Which of the activities above was the primary purpose of your most recent visit to this refuge?

(Please write **only one activity** here.) See Appendix C

3. Which of the following best describes your most recent visit to this Refuge? (Mark only one.)

☐ 69% It was the primary purpose or sole destination of my trip.

☐ 21% It was one of many equally important reasons or destinations for my trip.

☐ 11% It was just an incidental or spur-of-the-moment stop on a trip taken for other purposes or to other destinations.

4. How many people were in your personal group, including yourself, on your most recent visit to this refuge? (Please answer each category.)

2 number of people 18 years and older      0 number of people under 18 years

5. Did you go to a visitor center at this refuge during your most recent visit?

☐ 54% No / Not Applicable

☐ 46% Yes → If yes, what did you do there? (*Mark all that apply.*)

☐ 65% Asked information of employees/volunteers

☐ 29% Looked at list of recent bird/wildlife sightings

☐ 24% Attended a talk/video/presentation

☐ 71% Stopped to use the facilities (for example, got water, used restroom)

☐ 74% Viewed the exhibits

☐ 13% Picked up/purchased a license, permit, or pass

☐ 2% Rented/borrowed equipment (for example, binoculars, fishing rod, snowshoes)

☐ 49% Visited the gift shop or bookstore

☐ 4% Other (*specify*) See Appendix C

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

If you spent less than one day at this refuge, enter the number of hours: 4 hour(s)

If you spent one day or more at this refuge, enter the number of days: 4 day(s)

7. Do you live in the local area (within 50 miles of this refuge)?

☐ 76% Yes

☐ 24% No → How much time did you spend in **the local area** on this trip?

If you spent less than one day in the local area, enter the number of hours: 5 hour(s)

If you spent one day or more in the local area, enter the number of days: 14 day(s)

8. Approximately how many hours/minutes (one-way) did you travel from your home to this refuge?

If you travelled less than one hour, enter the number of minutes: 27 minutes

If you travelled more than one hour, round to the nearest hour: 8 hours

9. Including this visit, during which seasons did you visit this refuge in the last 12 months? (*Mark all that apply.*)

☐ 62% Spring  
(March-May)

☐ 42% Summer  
(June-August)

☐ 63% Fall  
(September-November)

☐ 85% Winter  
(December-February)

10. In the last 12 months, how many times have you visited...

...this refuge (including this visit)? 16 number of visits

...other national wildlife refuges? 3 number of visits

...other public lands (for example, national or state parks) to participate in the same primary activity as this visit? 10 number of visits



11. Which, if any, of the following social media outlets did you use to share your refuge experience with other people? (*Mark all that apply.*)

<input type="checkbox"/> 36% Facebook	<input type="checkbox"/> 0% Snapchat	<input type="checkbox"/> 2% Personal blog (for example, Tumblr, Wordpress)
<input type="checkbox"/> 5% Flickr	<input type="checkbox"/> 4% Twitter	<input type="checkbox"/> 2% Travel-related website (for example, Trip Advisor)
<input type="checkbox"/> 9% Instagram	<input type="checkbox"/> 0% Vimeo	<input type="checkbox"/> 4% Other ( <i>specify</i> ) <u>See Appendix C</u>
<input type="checkbox"/> 0% Pinterest	<input type="checkbox"/> 2% YouTube	<input type="checkbox"/> 53% I do not use social media

## SECTION 2. Information about this refuge and its resources

1. How helpful was each of the following sources to get information about this refuge and its resources? (*Circle one number for each source, or mark the box if you did **not** use a source.*)

Information source	For those who used a source, the % who found it to be...					Did not use
	Not at all helpful	Slightly helpful	Moderately helpful	Very helpful	Extremely helpful	
Personal knowledge from previous visit(s)	<input type="checkbox"/> 0%	<input type="checkbox"/> 3%	<input type="checkbox"/> 7%	<input type="checkbox"/> 30%	<input type="checkbox"/> 59%	<input type="checkbox"/> 18%
Word of mouth (for example, a friend or relative)	<input type="checkbox"/> 5%	<input type="checkbox"/> 13%	<input type="checkbox"/> 21%	<input type="checkbox"/> 31%	<input type="checkbox"/> 29%	<input type="checkbox"/> 36%
People in the local community near the refuge	<input type="checkbox"/> 24%	<input type="checkbox"/> 15%	<input type="checkbox"/> 14%	<input type="checkbox"/> 26%	<input type="checkbox"/> 21%	<input type="checkbox"/> 61%
Refuge employees or volunteers	<input type="checkbox"/> 9%	<input type="checkbox"/> 8%	<input type="checkbox"/> 12%	<input type="checkbox"/> 34%	<input type="checkbox"/> 37%	<input type="checkbox"/> 35%
Printed map or atlas	<input type="checkbox"/> 14%	<input type="checkbox"/> 10%	<input type="checkbox"/> 19%	<input type="checkbox"/> 25%	<input type="checkbox"/> 32%	<input type="checkbox"/> 48%
Web-based map (for example, Google Maps, Waze)	<input type="checkbox"/> 11%	<input type="checkbox"/> 3%	<input type="checkbox"/> 22%	<input type="checkbox"/> 29%	<input type="checkbox"/> 35%	<input type="checkbox"/> 47%
Refuge website	<input type="checkbox"/> 11%	<input type="checkbox"/> 10%	<input type="checkbox"/> 22%	<input type="checkbox"/> 30%	<input type="checkbox"/> 27%	<input type="checkbox"/> 52%
Travel website (for example, TripAdvisor)	<input type="checkbox"/> 49%	<input type="checkbox"/> 16%	<input type="checkbox"/> 11%	<input type="checkbox"/> 16%	<input type="checkbox"/> 8%	<input type="checkbox"/> 78%
Other website ( <i>specify</i> ) <u>See Appendix C</u>	<input type="checkbox"/> 38%	<input type="checkbox"/> 6%	<input type="checkbox"/> 6%	<input type="checkbox"/> 25%	<input type="checkbox"/> 25%	<input type="checkbox"/> 88%
Social media (for example, Facebook, Instagram)	<input type="checkbox"/> 36%	<input type="checkbox"/> 11%	<input type="checkbox"/> 7%	<input type="checkbox"/> 18%	<input type="checkbox"/> 27%	<input type="checkbox"/> 74%
Recreation club or organization	<input type="checkbox"/> 54%	<input type="checkbox"/> 3%	<input type="checkbox"/> 9%	<input type="checkbox"/> 14%	<input type="checkbox"/> 20%	<input type="checkbox"/> 79%
Refuge printed information (for example, brochure)	<input type="checkbox"/> 13%	<input type="checkbox"/> 8%	<input type="checkbox"/> 22%	<input type="checkbox"/> 32%	<input type="checkbox"/> 26%	<input type="checkbox"/> 45%
Kiosks/displays/exhibits at the refuge	<input type="checkbox"/> 11%	<input type="checkbox"/> 7%	<input type="checkbox"/> 20%	<input type="checkbox"/> 32%	<input type="checkbox"/> 30%	<input type="checkbox"/> 49%
Travel guidebook or other book	<input type="checkbox"/> 47%	<input type="checkbox"/> 15%	<input type="checkbox"/> 12%	<input type="checkbox"/> 24%	<input type="checkbox"/> 3%	<input type="checkbox"/> 80%
Tourist information or welcome center	<input type="checkbox"/> 31%	<input type="checkbox"/> 7%	<input type="checkbox"/> 13%	<input type="checkbox"/> 28%	<input type="checkbox"/> 21%	<input type="checkbox"/> 64%
Other source ( <i>specify</i> ) <u>See Appendix C</u>	<input type="checkbox"/> 33%	<input type="checkbox"/> 0%	<input type="checkbox"/> 8%	<input type="checkbox"/> 17%	<input type="checkbox"/> 42%	<input type="checkbox"/> 89%

### SECTION 3. Transportation and access at this refuge

1. First rate how important each of the following transportation-related features 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 have a specific feature or you did not experience it during this visit, please rate how important it is to you and then circle NA “Not Applicable” under the satisfaction column.*

Importance <i>Circle one for each item.</i>					Transportation-Related Features	Satisfaction <i>Circle one for each item.</i>					
Not at all Important	Slightly Important	Moderately important	Very Important	Extremely Important		Not at all Satisfied	Slightly Satisfied	Moderately Satisfied	Very Satisfied	Extremely Satisfied	Not Applicable
7%	15%	35%	24%	19%	Surface conditions of refuge roads	3%	5%	19%	48%	26%	NA
6%	11%	37%	27%	18%	Surface conditions of parking areas	3%	6%	13%	47%	31%	NA
6%	7%	31%	32%	25%	Condition of bridges on roadways	0%	3%	19%	46%	31%	NA
5%	6%	21%	39%	29%	Condition of trails and boardwalks	2%	5%	13%	47%	33%	NA
36%	9%	10%	18%	27%	Condition of boat launches	2%	11%	23%	38%	25%	NA
4%	8%	27%	36%	25%	Number of places for parking	3%	4%	16%	43%	34%	NA
17%	13%	30%	23%	17%	Number of places to pull over on refuge roads	3%	9%	32%	31%	25%	NA
5%	6%	20%	43%	26%	Safety of driving conditions on refuge roads	1%	2%	13%	50%	35%	NA
3%	6%	19%	46%	26%	Safety of refuge road entrances/exits	1%	3%	15%	48%	33%	NA
11%	6%	15%	34%	34%	Safety of roads/trails for nonmotorized users (for example, bicyclists and hikers)	1%	3%	15%	46%	34%	NA
9%	7%	23%	33%	29%	Signs on highways directing you to this refuge	6%	5%	31%	33%	25%	NA
10%	7%	24%	34%	25%	Signs directing you around refuge roads	7%	6%	27%	38%	22%	NA
11%	6%	23%	34%	26%	Signs directing you on trails	6%	10%	25%	38%	21%	NA
23%	11%	18%	25%	22%	Access for people with physical disabilities or who have difficulty walking	6%	15%	27%	35%	17%	NA

2. If you have any comments about transportation-related features at this refuge, please write them here.

See Appendix C

3. What modes of transportation did you use to travel from the local area to this refuge and within this refuge during your most recent trip? (*Mark all that apply.*)

Transportation modes used to travel...	...from the local area to this refuge	...within the boundaries of this refuge
Private/rental vehicle without a trailer	77%	41%
Private/rental vehicle with a trailer (for boat, camper, or other)	22%	9%
Recreational vehicle (RV)	1%	1%
Refuge shuttle bus/tram	2%	3%
Tour bus/van	1%	2%
Public transportation	0%	1%
Motorcycle	1%	1%
Bicycle	3%	16%
Foot (for example, walking/hiking)	4%	39%
Boat	6%	17%
Other ( <i>specify</i> ): <u>See Appendix C</u>	1%	1%
Other ( <i>specify</i> ): <u>See Appendix C</u>	0%	1%

4. Please tell us how likely you would be to use each transportation option **at this refuge** if it were available in the future. Not all options are currently available at every refuge. (*Circle one number for each option.*)

Transportation options	Not at all Likely	Slightly Likely	Moderately Likely	Very Likely	Extremely Likely
Bus or tram that takes passengers to different points within refuge boundaries (such as the Visitor Center)	58%	11%	13%	9%	9%
Bus or tram that provides a guided tour of the refuge with information about this refuge and its resources	47%	14%	12%	13%	14%
Refuge-sponsored shuttle with a dedicated stop in the local community for picking up people at set times	76%	8%	8%	4%	4%
Public transit system that stops at or near this refuge	83%	7%	4%	3%	2%
Bike-share program that offers bicycles for rent on or near this refuge	60%	12%	14%	8%	7%
Pedestrian paths for access to this refuge from the local community	68%	10%	7%	5%	9%

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## SECTION 4. Your expenses related to your refuge visit

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1. Record the amount of money that you and other members of your group spent in the local 50-mile area during your most recent visit to this refuge. Your group would include you and those with whom you shared expenses (for example, family members, traveling companions). *Enter the amount spent or enter 0 (zero) if you did not spend any money in a particular category.*

Categories	Amount spent in the local area/communities & at this refuge (within 50 miles of this refuge)
Hotel, bed & breakfast, cabin, etc.	
Camping fees (for example, tent, RV)	
Restaurants and bars	
Groceries	
Gasoline and oil (for private vehicles, boats, RVs, or other motors)	
Local transportation (for example, public transit, rental car)	See report for summary of visitor expenditures
Guides and tour fees	
Equipment rental (for example, bicycle, canoe, kayak)	
Sporting goods (for example, bait, binoculars)	
Souvenirs/clothing and other retail	
Other (specify) <u>See Appendix C</u>	

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

2 number of people sharing expenses

3. As you know, costs of travel such as gasoline, hotels, and public transportation often increase. If your total trip costs were to increase, what is the maximum extra amount you would pay and still visit this refuge? (*Mark the dollar amount that represents your response.*)

<input type="checkbox"/> 9% \$0	<input type="checkbox"/> 11% \$30	<input type="checkbox"/> 15% \$100	<input type="checkbox"/> 1% \$250
<input type="checkbox"/> 16% \$5	<input type="checkbox"/> 5% \$45	<input type="checkbox"/> 0% \$125	<input type="checkbox"/> 0% \$350
<input type="checkbox"/> 14% \$10	<input type="checkbox"/> 3% \$60	<input type="checkbox"/> 1% \$150	<input type="checkbox"/> 3% \$500
<input type="checkbox"/> 15% \$20	<input type="checkbox"/> 1% \$75	<input type="checkbox"/> 4% \$200	<input type="checkbox"/> 2% \$750



## SECTION 5. Your experience at this refuge

1. First rate how important each of the following services, facilities, and opportunities 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 item or you did not experience it on this visit, please rate how important it is to you and then circle NA "Not Applicable" under the satisfaction column.*

Importance <i>Circle one for each item.</i>					Refuge Services, Facilities, and Opportunities	Satisfaction <i>Circle one for each item.</i>					
Not at all Important	Slightly Important	Moderately important	Very Important	Extremely Important		Not at all Satisfied	Slightly Satisfied	Moderately satisfied	Very Satisfied	Extremely Satisfied	Not Applicable
1%	1%	10%	40%	48%	Convenient hours/days of operation for this refuge	0%	1%	9%	32%	58%	NA
20%	11%	31%	21%	18%	Availability of employees or volunteers	2%	2%	23%	40%	33%	NA
15%	9%	27%	24%	24%	Courteous and welcoming employees or volunteers	1%	2%	18%	37%	43%	NA
4%	4%	24%	34%	34%	Signs with rules/regulations for this refuge	2%	4%	25%	39%	29%	NA
13%	7%	22%	28%	30%	Visitor center	3%	4%	13%	37%	43%	NA
5%	4%	11%	27%	53%	Well-maintained restrooms	8%	6%	11%	31%	44%	NA
8%	8%	24%	26%	35%	Recreational structures (decks, blinds, platforms)	4%	9%	22%	36%	29%	NA
12%	5%	19%	20%	44%	Bird-watching opportunities	3%	4%	18%	30%	46%	NA
8%	4%	17%	26%	46%	Opportunities to observe wildlife other than birds	2%	5%	16%	35%	41%	NA
13%	6%	20%	21%	41%	Opportunities to photograph wildlife and scenery	1%	6%	14%	33%	46%	NA
14%	10%	29%	27%	19%	Environmental education opportunities	6%	5%	27%	29%	33%	NA
76%	7%	5%	4%	8%	Hunting opportunities	19%	16%	22%	22%	22%	NA
41%	6%	16%	7%	30%	Fishing opportunities	4%	4%	19%	29%	43%	NA
12%	6%	21%	24%	37%	Trail hiking opportunities	2%	2%	20%	37%	39%	NA
25%	10%	23%	16%	25%	Bicycling opportunities	2%	3%	26%	30%	38%	NA
23%	13%	25%	20%	20%	Water trail opportunities for canoeing or kayaking	3%	4%	22%	32%	38%	NA
43%	13%	23%	15%	7%	Volunteer opportunities	11%	9%	39%	26%	16%	NA
12%	6%	23%	21%	38%	Wilderness experience opportunities	5%	2%	27%	30%	37%	NA

2. If you have comments about the services, facilities, and opportunities at this refuge, please write them here.

See Appendix C

3. How much do you disagree or agree with each statement below? (*Circle one number for each statement.*)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
I felt welcome during my visit to this refuge.	1%	1%	14%	37%	47%
I felt safe during my visit to this refuge.	1%	1%	6%	45%	48%
Crime <u>is</u> a problem at this refuge.	51%	27%	18%	3%	2%
I feel comfortable being in nature.	1%	0%	2%	30%	67%
I do <u>not</u> like being in nature by myself.	54%	21%	12%	10%	3%
People closest to me enjoy participating in nature-based recreation.	0%	4%	10%	44%	42%
Generally, people who look like me are treated differently when they participate in nature-based recreation.	55%	21%	20%	2%	2%

4. How satisfied are you with the following? (*Circle one number for each statement.*)

	Not at all Satisfied	Slightly Satisfied	Moderately satisfied	Very Satisfied	Extremely Satisfied
The job this refuge is doing of conserving fish, wildlife, and their habitats.	3%	2%	15%	47%	33%
The quality of the overall experience when visiting this refuge.	0%	2%	14%	44%	39%

## SECTION 6. Future visits to this refuge

1. Considering **the primary activity** you participated in during your most recent visit to this refuge, please tell us how the following factors, if they occurred, could affect your future participation in that activity at this refuge. (*Circle one number for each factor.*)

If there was...	My participation in my primary activity would...		
	Decrease	Stay the same	Increase
Less water in lakes, rivers, or streams available for recreation	42%	53%	5%
More acreage open to hunting and fishing	33%	44%	24%
More infrastructure (for example, bathrooms, observation decks)	4%	61%	35%
Recreation equipment available for rent (for example, fishing rods, binoculars, snowshoes)	9%	73%	18%
Less regulations on fishing	15%	78%	7%
Less regulations on hunting	33%	60%	7%
A greater diversity of species	2%	47%	51%
Fewer numbers of a single, preferred species	24%	69%	7%
More people participating in my primary activity	27%	65%	8%
An improvement in the quality of wetlands	0%	42%	58%
An improvement in the quality of wildlife habitat other than wetlands	0%	43%	57%

2. Do you plan to return to this refuge in the next 12 months?

84% Yes      6% No      10% Not sure

3. Which of the following types of programs, if offered, would encourage you to return to this refuge in the future? (*Mark all that apply.*)

43% I do not typically participate in refuge programs

For those that do participate in refuge programs, the % that would be encouraged to return if the following programs were offered:

32% Programs that engage youth

25% Programs that focus on creative pursuits (for example, art, writing, meditation)

34% Programs that focus on family/multiple-generations

32% Programs that support people with accessibility concerns (for example, difficulty walking, in a wheelchair)

49% Programs that teach skills to visitors

14% Other (*specify*) See Appendix C

40% Programs that highlight unique local culture

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## SECTION 7. A little about you

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**\*\* Please tell us a little bit about yourself. Your answers to these questions will help us to know more about who visits national wildlife refuges. Answers will not be linked to any individual taking this survey. \*\***

1. Are you? ☐ 63% Male ☐ 37% Female

2. In what year were you born?  1957 (YYYY)

3. How many years of formal schooling have you had? (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)			
					<input type="checkbox"/> 0%			<input type="checkbox"/> 20%				<input type="checkbox"/> 50%				<input type="checkbox"/> 30%			

4. What race or ethnicity do you consider yourself? (Mark all that apply.)

<input type="checkbox"/> 92% White	<input type="checkbox"/> 0% American Indian or Alaska Native
<input type="checkbox"/> 5% Hispanic, Latino, or Spanish	<input type="checkbox"/> 1% Middle Eastern or North African
<input type="checkbox"/> 1% Black or African American	<input type="checkbox"/> 0% Native Hawaiian or Other Pacific Islander
<input type="checkbox"/> 3% Asian	<input type="checkbox"/> 2% Some other race or ethnicity

5. How many people (including yourself) live in your household?  2 persons

6. What was your approximate household income from all sources (before taxes) last year? (Mark only one.)

<input type="checkbox"/> 1% Less than \$10,000	<input type="checkbox"/> 8% \$35,000 - \$49,999	<input type="checkbox"/> 22% \$100,000 - \$149,999
<input type="checkbox"/> 5% \$10,000 - \$24,999	<input type="checkbox"/> 19% \$50,000 - \$74,999	<input type="checkbox"/> 8% \$150,000 - \$199,999
<input type="checkbox"/> 4% \$25,000 - \$34,999	<input type="checkbox"/> 15% \$75,000 - \$99,999	<input type="checkbox"/> 17% \$200,000 or more

7. Which of the following best describes your current employment situation? (Mark only one.)

<input type="checkbox"/> 30% Employed full-time	<input type="checkbox"/> 1% Unemployed	<input type="checkbox"/> 52% Retired
<input type="checkbox"/> 3% Employed part-time	<input type="checkbox"/> 1% Homemaker/caregiver	<input type="checkbox"/> 1% Disabled/unable to work
<input type="checkbox"/> 12% Self-employed	<input type="checkbox"/> 0% Student	<input type="checkbox"/> 1% Other (specify): <u>See Appendix C</u>

**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?

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See Appendix C

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 inform 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 # 0596-0236 EXPIRATION DATE 11/30/2020

## Appendix C: Open-Ended Survey Responses by Question

### Survey Section 1

Question 1: “Including your most recent visit, which activities did you participate in during the past 12 months at this refuge?”

Special Event	Frequency
Everglades Day Festival	5
Friends annual membership meeting	1
Friends of Lox activities	1
Night walk	1
Visitor center experience	1

Other Activity	Frequency
Dog walking	1
Look for some flowers	1
Lunch break	1
Purchase annual pass	1

Question 2: “Which of the activities above was the primary purpose of your most recent visit to this refuge?”

Primary Activity	Frequency
Activity with dog(s)	1
Bicycling	11
Bird watching	24
Environmental education	1
Fishing	46
Hiking	30
Hunting	4
Interpretation	5
Motorized boating	3
Nature observation	1
Nonmotorized boating	1
Other	1
Photography	16
Running	2
Sightseeing	1
Wildlife observation	26

Question 3: “Did you go to a visitor center at this refuge during your most recent visit?”; If Yes, “What did you do there?”

Other Visitor Center Activity	Frequency
Got out of the rain	1
Paid fee at fee station	1

Question 11: “Which, if any, of the following social media outlets did you use to share your refuge experience with other people?”

Other Social Media Outlets	Frequency
AllTrails	1
eBird	1
Etsy	1
Strava	2
WeChat	1

## Survey Section 2

Question 1. “How helpful was each of the following sources to get information about this refuge and its resources?”

Other Websites	Frequency
eBird	2
FL bird trail	1
Florida visit information	1
Google	1
National park website	1

Other Information Sources	Frequency
Extensive web research for birding in FL	1
Hotel	1
Local visit information	1
Sign on road point to the refuge	1

#### Survey Section 4

Question 1: “Record the amount of money that you and other members of your group spent in the local 50-mile area during your most recent visit to this refuge. Your group would include you and those with whom you shared expenses (for example, family members, traveling companions).”

Other Expenses	Frequency
Air boat ride	1
Annual pass	1
Annual refuge entrance pass	1
Cruise	1
Entrance fee	2
Fishing license	1
My husband has a senior citizen hat park pass	1
Parking fees	1
Refuge entrance fee	1
Sporting event	1
Strawberry picking at Bedner's (located nearby this refuge)	1

#### Survey Section 6

Question 3: “Which of the following types of programs, if offered, would encourage you to return to this refuge in the future?”

Other Programs	Frequency
Bird-related programs	4
General environmental education	4
Nature-related programs	3
Other	1
Photography-related programs	1
Water-based activities	1
Wildlife-related programs	1



### Survey Section 3

Question 2: "If you have any comments about transportation-related features at this refuge, please write them here."

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#### Comments on Transportation-Related Features at This Refuge (n=44)

A few years ago, my buddy damaged the bottom of his motor backing down a ramp off Lee Road entrance.

A trail I took was closed off. I asked a refuge volunteer about how I could go another route (since that one was closed off) but she did not seem knowledgeable of its closure. So I was a little lost, and along my path I saw other hikers that were lost, too. They gave up and turned around and left. I tried it one more time and finally figured out a different trail to walk on.

As far as I know, there are no trails at 20-Mile Bend, just a boat ramp. Never seen any trails.

As far as the marsh trails go, there are not enough walking bridges over the canals. There should be more accessibility to all the walking trails out on the marsh trails.

Bike surface soft in several places (soft sand or gravel). Had to shift to alternate track to improve ride. Suggest packing road.

Boat launch needs some work. Far too steep of a drop off. Need a far more gradual slope regardless of water level.

Boat ramps are very nice except for a couple of "drop offs" at the edge of ramps potholes need some concrete or block top to fill them in.

Do not expand current/existing number of roads.

Dock cleat tiedowns need to be replaced.

Enjoy every day, life, nature. Soothing, calming, quiet water, people some interest and respect.

Excellent place to fish!!

Have in past travel to many NWR w/our elderly disabled parent. Lack of areas to view birds and other wildlife from car and/or by wheelchair is common at many NWRs. The best NWRs we have been to have a wildlife drive and therefore allow disabled access to nature.

I expected more paved trails. I have a road bike. If more paved bicycle paths, I would return.

I know there has been a lot of construction to fix the bridges and park entrance, however it has been very difficult when trailering a boat to the boat launches to maneuver safely.

I park and then walk everywhere, so I am not very sure about this page.

I was at the south entrance away from the main center. The main center is very good! I have been there for kids tournaments, gifts, tour, etc.

I wish the surface of the berm was smoother so that I could comfortably ride my bike on it.

I wonder why cars cannot go to more locations in wildlife areas.

Improve signage if budget allows. Tram tour was highlight of my visit. Covered much more than I could on foot and driver shared wonderful, interesting information.

It appeared the levee width of Boynton had just been graded so was loose to bike on.

It would be awesome to have a bike path system that connects our residential area to the refuge (that has bridges that go over the highways).

Lee Road main entrance need boat docks for 3 ramps windy conditions cause problems and safety concern.

March 23rd- Tram ride 2.5 hours brought our friends [names]. Driver was very informed, knew all the birds and animals-amazing.

More open roads.

Needs bigger signage on main road. Signage on dike trail would be great. It is located on a busy state road, and if you have to cross traffic to get in or out it can be tricky. Only solution would be a light.

No need to expand vehicular access, in my opinion.

No outboard motor trails are maintained to get into interior of refuge for purpose of waterfowl hunting, waterfowl scouting or fishing. No mud motors or airboats are allowed and access to interior for legal refuge area in years of average water levels. But I also support keeping the ban on mud motors & airboats, which can access almost all water habitats, and keeping lox outboard only.

Parking here is rough.

Parts of refuge closed during our visit, which was disappointing since in a previous visit I was able to spend much more time walking.

Roads/traffic/parking - never a problem - all good.

Roadway to boat ramps & parking lot in bad shape. Please grade on black top.

The dirt/limestone roads need constant refilling.

The map provided had incorrect information regarding the trails and resulted in a lengthy detour, which was rather frustrating. Otherwise, it was good.

The roads are pitted and need to be scraped more often, there is a pile of dirt in parking spaces that should be used to fill in large holes.

The shell rock road and the 2 boat ramps inside the southern Lox Road entrance are adequate.

There only one small sign directly in front of refuge. It is easy to miss it.

There should be an access road from the "open space" parking lot down to the southern edge of those fields with parking for 30-40 cars so older folks can enjoy the beauty. Parking lot open, open, open.

There's just one short road from the entrance to the boat ramp with a turn-off to the visitor's center.

They need more parking spaces.

This part of my survey is for the refuge at the end of Loxahatchee Road. The refuge at Lee Road is in excellent condition. Roads and boat ramp.

This survey is in regard to the south end boat ramp entrance. The launch ramps and parking lots need attention.

Very good upkeep and road condition.

Very poor signage! No maps at kiosks! Boardwalk at parking area has been closed for months, not welcoming!!

Wheelchair to rent or borrow would have been helpful.

## Survey Section 5

Question 2: "If you have comments about these services, facilities, and opportunities at this refuge, please write them here."

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

Add more porta potties, get more ducks to south Florida!

Airboat tours as currently airboats used by invasive species removal. Would appreciate GPS map for download to assist in mapping fishing locations.

At the beginning of the tram tour, we passed a sign at head of trail that said: "First Amendment" Expression Area designated for the assembly, demonstration, and public expression of views and for the sale and distribution of printed matter in accordance with Title 50... Is this legal? Or even appropriate? Weird!!

Bathroom is not being maintained properly.

Boat launch needs work.

Do not allow deer hunting and air boats.

Everything needs to be improved here! It is as if the leadership doesn't want the public to use the refuge.

Fishing dock closed for months - please fix and reopen at Arthur R Marshall Loxahatchee-Fla.

Fishing dock closed on second visit. Overall a special place. You can't have enough opportunities to be in and among nature. Very important for all ages especially children.

Great resource to have available.

I am not a fan of hunting in our National Wildlife Refuges. It seems contradictory to providing a refuge. I am opposed to making our refuges overly commercial with non-wildlife/nature-oriented vendors and activities. I very much appreciate the biking opportunities at this refuge and the excellent staff and volunteers.

I feel that jet skis should be allowed. As long as they stay on the main channel and obey the speed limit.

I feel they should have picnic tables and benches for visitors!

I live very close to this refuge (5-10 minutes away), so I visit frequently, mostly for nature, wildlife and landscape photography. I've always found the visitor center staff/volunteers and volunteers met on the trails to be friendly and helpful. I like that the refuge is more "wild" than some of the other wildlife refuges.

I spend most of my time at the refuge in the wind. I normally check in with the staff to see what's new in terms of wildlife which is posted on the board at the refuge.

I think waterfowl hunting should be expanded to 7 days a week, not 5. Access trails to interior should be created and/or improved. More vegetable and S.A.V. should be done to improve waterfowl habitat which seems to steadily degrade. Spend more on habitat and not the glitter!

I was at the south entrance and I have a golden eagle pass. The entrance fee is voluntary and more don't pay.

I wish there were more feeders and blinds and bird watching and photography of birds.

I would like to explore further into the refuge but I cannot walk that far, a tram would be welcomed... where I could get off and explore then be picked back up later. Or maybe be able to rent a car so I could go further.

I would like to walk my dog in the cypress forest boardwalk area. There is a shortage of dog parks and this is a perfect place to unleash my dog for a closed area walk in safety and with very limited persons there. I go early in the morning to walk my dog there on occasion even though I know dogs are not welcomed. Please welcome them!

I'm a local and visit here often for peace and tranquility and keeping in touch with the natural world.

It is well-maintained and allows for a very peaceful retreat from civilization.

It should be open 24 hours a day. People like night fishing. Be able to take children and grandkids night fishing. More lighting.

It would be nice if the porta john by the boat ramps was of the larger size. Need a little more room to maneuver. The water containment areas need better management to attract more birds like in the past years.

Keep up the good work.

Moon light canoe exp good.

More enforcement for rules like people bringing dogs in the park and feeding the alligators.

My husband and I love this refuge and visit it very frequently (at least once per week). It provides a major source of our happiness/satisfaction with living full time in FL.

Need to open more trails to access the interior (flats) of the refuge north of the boundary line that is at the southern end for fishing and hunting. And to stop spraying the aquatic vegetation so much.

Nice visitor center with adjacent nature trail; volunteers we encountered at the visitor center were not particularly helpful and not at all knowledgeable with respect to birding opportunities.

Other than the constant gun fire or canon fire from the adjacent farms, Lox is a very peaceful refuge in overdeveloped south Florida. Hopefully it will always stay a refuge and more will be done to conserve and keep this beautiful area natural and a place for wildlife for the future.

Our migration season for some birds is limited down in Florida. It always seems that minor and major repairs are done during migration season.

Porta potty disgusting. There was no soap.

Sad to learn of invasive species taking over and horrified that dogs and hunters will be allowed in soon.

Satisfactory.

Service is good, trails with camping could be good but wildlife here is dangerous!

Service is great at the Loxahatchee refuge.

Should open the entrance kiosk and charge a fee, the honor system does not work.

Snack stand.

Staff friendly, clean restrooms, beautiful refuge.

Staff were very friendly and helpful. Maps should be reviewed for accuracy as noted above.

The entire levee should be accessible to cyclists.

The maintenance of boardwalk and pavilion needs more attention. Often, the wear and tear of decking is not safe. Also, bathrooms need repair and to be kept clean.

The refuge has visitors from all over the world and language can be a problem. I often see people with dogs (not service dogs) on the boardwalk. Or talking in loud voices. Or sitting on railings. If there can be signs made at the entrance to the boardwalk and trails with circles and pictures to indicate no pets, etc. It would be helpful.

The refuge was close to closing time - we were hence restricted to what we could do.

The roads, boat ramps and parking at this refuge are terrible. They are not maintained. Full of holes and very dusty.

The staff were very friendly extremely courteous and knowledgeable about the area. You could tell they enjoyed their job.

There needs to be more and well-maintained porta potties. A lot of us old farts have prostate issues. One old [expletive] took a leak in the observation shack. My girlfriend discovered his mess. The building on east side of park. Would like more boardwalks!!

They need to keep the cells mowed - we've had great opportunities since they mowed - but this wasn't done for years! Would like to see bird feeders in certain areas by visitor center.

Too much of refuge was inaccessible during this visit.

Very satisfied, staff was very helpful and extremely knowledgeable about the refuge.

Very well cared for- very good experience. Thank you.

Volunteers (Karen and Harvey) are very friendly and helpful. Lew, the guy at the guardhouse does a great job welcoming people to the refuge.

Wanted to go on a tram or golf-cart tour, but it was not available.

We are appreciative of the opportunity to get away from the hustle/bustle traffic of S Fla and experience the quiet and solitude of the Everglades!

We were appreciative of the benches placed on the boardwalk. It was good to sit down when my back hurt.



We're pleased when we go.

Well maintained refuge and facilities with amiable staff.

Would like more information about environmental maintenance.

## End of Survey

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### General Comments (n=41)

A major part of this refuge was closed for maintenance. This should have been posted on their website, as well as how long it will be closed.

Although I live near Loxahatchee, I bring all my visitors there, usually to kayak. The hiking trails could be improved, offering more variety. The people who work there are fantastic - it is clear that they want you to have a great experience and will do anything to help you. We always rent kayaks there but I would be interested in renting bikes also. I don't believe I've ever seen bikes for rent there. Thank you, national park system!

At the Loxahatchee Wildlife Refuge they need to drastically cut back on the spraying of the aquatic vegetation. They need to concentrate on the habitat for the waterfowl and the fish, no vegetation below the water, like hydrilla or coontail, hurts the forage which in turn hurts the bass population and the feeding for waterfowl. Accessibility should be made to be able to access the interior or flats of the entire refuge for waterfowl hunting and fishing. Also major fish kills have happened recently and nothing was done to re-stock the area with baitfish or largemouth bass which were the two main fatalities in the fish kill. Management is needed.

Boardwalk pier should be repaired at Arthur R Marshall location on Rt 441 Boynton Beach, FL.

Greetings! I am a board member of the Palm Beach Co. Sports Commission. We met with the leadership of the Loxahatchee Wildlife Refuge in 2017 to bring a bike race to the park on 1 weekend. I have to say that the refuge leadership were awful to work with. It was as if they did not want the public to enjoy this wonderful park! I was meeting to talk about folks on bicycles! Not hunters, not motorized vehicles, etc. They need to understand that protecting wildlife and encouraging public use is key! We are working on this bike race again for 2020! Hopefully they will want to work together. [name] Palm Beach County Sports Commission board member. P.S. I love this park and walk there frequently.

Hello, I am very satisfied with the refuge the way it is. Morning hunts and no airboats/surface drives allowed. This makes for a great day/hunt. The birds are a hit and miss but that's ok. We have hunted this place for at least 5+ years. Know why? Because we choose to get away from the crowds and the airboats. We are several generation Floridians, and we like to find our own path into the woods. We hate mixing it up with the crowds at say a STA, or Lake O. Lox is nice. Airboats to take over the refuge. They [expletive] everything up, including habitat, safety, and hunts. Thank you for your time. And please take into consideration the outboard hunters who try to avoid the air boaters. Thank you. P.S. Airboats and surface drives would be detrimental to this area and ecosystem. Habitats would be destroyed, hunters safety would be compromised, and the urge to support the refuge would decrease.

I encourage any surveys that lead to more or better experience in nature, as I see it as essential to one's wellbeing.

I feel very strongly that hunting should not be allowed at the refuge. Very important to preserve the northern access to the Everglades!

I have been fishing Lox. almost 40 years. It has changed many times over the years. I have fished many other areas around South Fla. Lox. is close to home and my favorite.

I have not been anywhere else in this refuge other than 20-Mile Bend. I'm sure the other parts of the refuge have all types of facilities and rentals, etc.

I love Loxahatchee National Wildlife Refuge!! My husband and I really enjoyed the program about pythons. It was awesome!

I love this refuge. It is a safe peaceful retreat for people and wildlife. I have met many new friends there and I often go there to eat my lunch during the day. Please do not open it to hunting. The number of bird species has declined by about 50% over the last 15 years. The snail kite needs the refuge!

I realize turkey vultures are protected but they have become a huge problem at the southern entrance parking lot of Loxahatchee. They are scratching vehicles and picking apart plastic and rubber parts. I know people that have had \$100's - \$1,000's of damage. Something must be done to correct this. I'm sure it's impacting refuge usage.

I thoroughly enjoy my visits to the refuge. I visit often and purchased an annual pass. It is my happy place.

I will repeat what I wrote in the survey. Please consider making dogs welcome. Perhaps an introduction of dogs for limited hours, say, 8-10am.

I would be very upset if there was more hunting and airboats allowed at the refuge. My friends and I would go to other parks in the area. There are lots of nature lovers and photographers that come to Palm Beach, Florida from all over the world and other parts of the US, because of the great parks - Green Cay, Wakodahatchee, Peaceful Waters, Riverbend, Grassy Waters and many more areas. It is a great destination for wildlife and nature photography. You should promote more wildlife in the refuge with less hunting and less noise. There are many more hikers, birders and photographers in this area then there are the very few hunters and air boaters that use the refuge.

I'm not aware of any phone number other than the main office on Lee Road to call during a boat malfunction. After 5+ years fishing I have never seen any law enforcement on the water, only boat ramp monitoring. I always keep my boat well maintained and wonder how a rescue tow would occur. All boat ramps should have signage explaining boater responsibilities and ability to notify law enforcement in case of various emergencies. Gators are very prevalent and often come close if fish are landed indicating possibility some fisherman are feeding or enticing them. A gator encounter would be very negative for the future of the preserve!

It would have been good if there were personnel available at the different locations to answer questions or explain what was being observed. A tram or golf cart trip, with a guide, would have been good for senior citizens to view the entire park as an overview, before they set out to visit specific areas.

Love the isolation in my birding and exercising at Loxahatchee opposed to the winter crowds in other local wetlands.

Me gusta mucho visitar el refugio, solo falta banios publicos gracias. [translation to English: I really enjoy visiting the refuge, only missing public bathrooms, thanks.]

More open trails towards the north together with some comfortable benches.

My brothers and myself have been bass fishing at Arthur R Marshall Loxahatchee National Wildlife Refuge for over 40 years and love it. Fishing for the most part is great. Every time we go it is a great experience love the peace and quiet and the sunrise early mornings. Keep up the great work.

Please keep it wild. Between farming and development, south Florida has no land left for wildlife. Lox. needs to stay wild to support what little wildlife is left.

See comment in Section 5 (1) about "First Amendment" expression area. I do not understand why the sign is there or why it was necessary. I thought we all had First Amendment rights and was offended by the sign. I have never seen this sign before, anywhere.

Snail kites were the main reason we came to this NWR. Had good looks at them. Was disappointed that there were no side roads near boat launch to view water birds from our car. NWR with good wildlife drives (ex, savannah, Merrit Island, Montezuma) allow birding for individuals who cannot hike the trails.

Thank you for collecting this data to help the USFWS to manage National Wildlife Refuges.

Thank you so much for your time and efforts in potentially making this refuge area a much better place than it already is. I have answered this survey with genuine interest and hope that it will help you in your quest for positive efforts.

Thank you!

The Arthur R. Marshall Nat Wildlife Refuge needs no further development. There is a visitor center at the main entrance. There are boat ramps at the main entrance and at the south (Lox Rd.) entrance. There is fishing and duck hunting. There is no need for expanded hunting for other than duck hunting. There is a need for great expenditures to attack the "old world climbing vine" that is growing out of control within the refuge.

The cost of 10 bombs with directed funds instead to the USNWR would allow for some pretty fancy one-holers out in that park. War is such a waste of tax payers money. I was but an 18 yr. kid dropped to the killing fields of Vietnam. As a combat marine. I saw the waste.

The Loxahatchee National Wildlife Refuge is a real treasure. I am aware that discussions are underway to make some changes. While I am not a hunter, as long as allowing hunting does not impact my safety, I am okay with it. I think that anything that brings more people to the refuge is good...as long as they treat the refuge with respect.

The Loxahatchee Wildlife Refuge is a wonderful place. They should open the entire perimeter levee for cyclists. It would also be nice to have at least one or two primitive campsites on the loop.

The two young people who asked us to participate in the survey were very polite and enthusiastic. It was a pleasure to meet and talk with them.

This is a great place to fish but alligators are more populous than necessary. Especially when water is low, they start chasing your catch back to the boat. Too many 12-15 gators eating smaller ones. Recent opening of gator hunting will be good. Thanks!

Too much fussing with water levels within a mile to the visitor center at Loxahatchee National Conservancy west of Delray beach, bird life, I do not visit the facility. Not enough blinds for observing birds and getting photographs. This facility is a great every use to the everglades experience. 26 Dec 18

Very important to keep native habitats for future generations.

We came to bike but the staff told us the birds were feeding by the board walk. We spent more time on board walk than expected. Enjoyed birds.

We do not live in the area. We were vacationing in Florida. We enjoy visiting a refuge or park in addition to the usual tourist activities. We love paddling and went to refuge for the paddling opportunity. We returned on another day for the volunteer led educational experience that the visitor center staff recommended.

We only came for a short visit. This part of the refuge is not particularly beautiful or interesting and there is not a lot of wildlife to see. However, we love nature and come here locally for walks and cycling. Would come much more often otherwise. Thank you!

We use this facility only for fishing

Why is the upper deck of dock out by the water closed? When will we be able to walk on viewing deck for the alligators? Will there ever be a place to have a picnic and so to view the wildlife? Will you ever offer airboat rides? Willing to supply them for visitors. You might want to add water fountains.