



U.S. Fish & Wildlife Service

NATIONAL WILDLIFE REFUGE VISITOR SURVEY

*2018 Results for
Sherburne National Wildlife Refuge*



**THE OHIO STATE
UNIVERSITY**



Acknowledgments

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Front cover: A visitor photographs sandhill cranes at Sherburne National Wildlife Refuge. Photo credit: Michelle Ferguson.

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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 Sherburne National Wildlife Refuge, referred to as “this wildlife refuge” or “refuge” throughout this report. Percentages noted throughout the report were rounded



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

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

Sherburne National Wildlife Refuge is located in north-central Minnesota, about an hour north of Minneapolis. The refuge was established in 1965 to promote the health and wellbeing of migratory birds and is home to a wide diversity of species including sandhill cranes, bald eagles, river otters, beavers, and plenty of other captivating species. This refuge contains 30,700 acres of habitat including marshes, lakes, and wet meadows. Another type of habitat at Sherburne National Wildlife Refuge is the unique oak savannah which includes scattered pockets of oak trees surrounded by wildflowers and tall prairie grasses. This habitat once covered large areas of the Midwest, yet only a small percentage remains today. The refuge is currently being actively maintained and restored with prescribed burning.

Sherburne National Wildlife Refuge attracts over 91,124 visitors annually (U.S. Fish and Wildlife Service, 2018, written comm.). Visitors have numerous recreational opportunities that vary with the seasons. Hunting opportunities include those related to ruffed grouse, gray and fox squirrels, pheasants, and hares. Hunting for ducks, coots, geese, rails, woodcocks, snipes,



A visitor takes in a view from the Blue Hill Trail at Sherburne National Wildlife Refuge. Photo credit: Kylie Campbell.

and white tailed deer is also allowed. The most popular area on the refuge is the 7.3-mile auto tour loop, which visitors use for a variety of activities including wildlife photography, observation, and bird watching. In addition, this wildlife refuge has a few hiking trails, the most popular of which is called the Blue Hill Trail. The overlook of this trail gives visitors an opportunity to see the refuge from a new perspective.

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 283 visitors agreed to participate in the survey by providing their names and addresses.
- In all, 156 visitors completed the survey online (51%) or by mail (49%) after their refuge visit, resulting in a 58% 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.

Sherburne National Wildlife Refuge

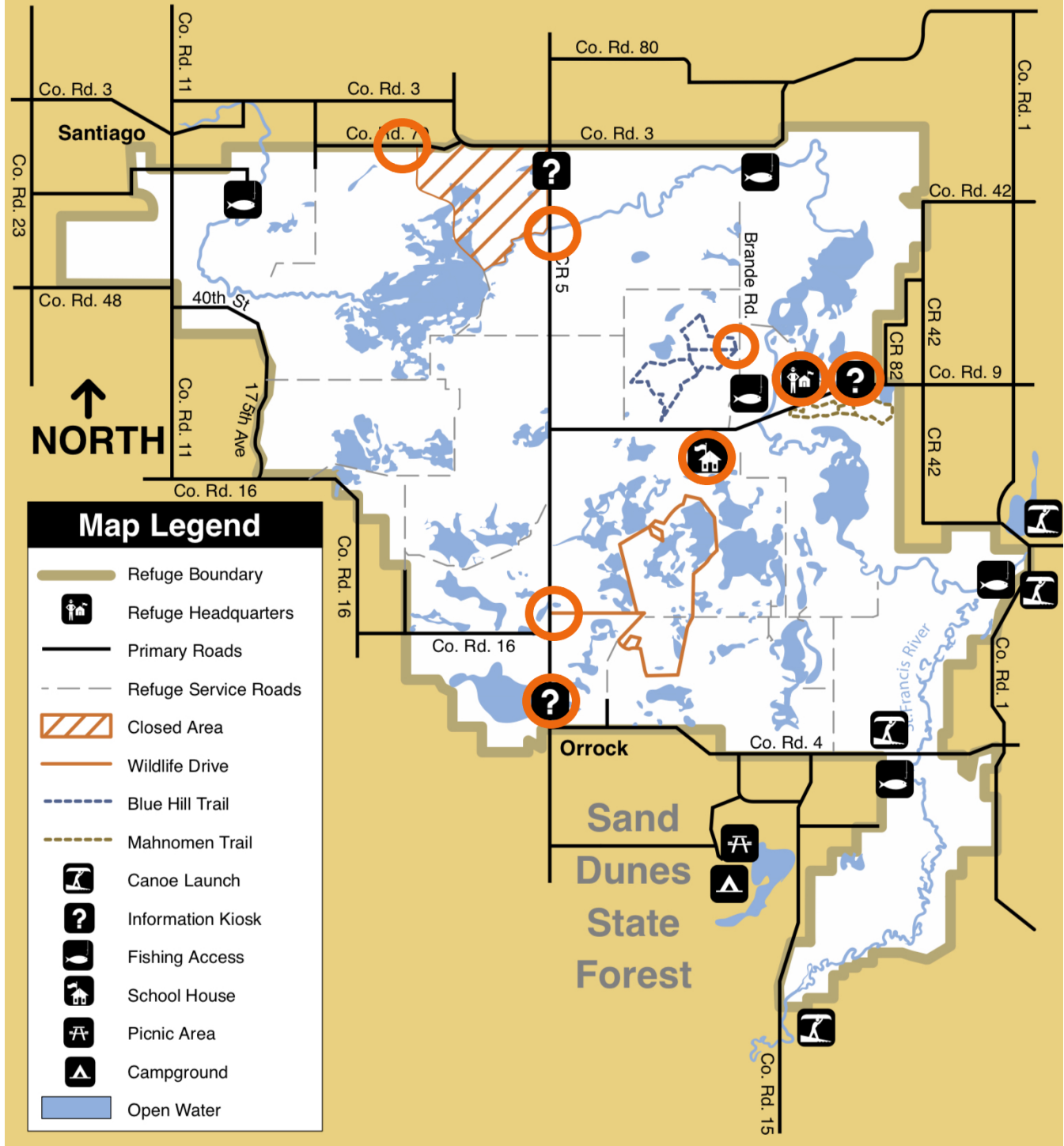


Fig. 2: Map of Sherburne National Wildlife Refuge. Visitors were contacted at the circled locations from 5/17/2018–5/26/2018 and 11/2/2018–11/12/2018.

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; www.socialexplorer.com).

AGE & GENDER

- 32% of visitors were female with an average age of 54 years (Fig. 3).
- 68% were male with an average age of 57 years.

EDUCATION

- 13% of visitors had a high school degree or less.
- 56% had at least some college.
- 32% had an advanced degree.

RACE & ETHNICITY

Most prevalent race or ethnicity (Fig. 4):

- White (94%).
- Multiracial (3%).
- Hispanic (2%).

INCOME

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

OTHER TRIP CHARACTERISTICS

- Average group size of 3 people.
- 32% visited the refuge alone.
- 47% visited with at least one other adult.
- 21% visited with a combination of at least 1 adult and 1 child.

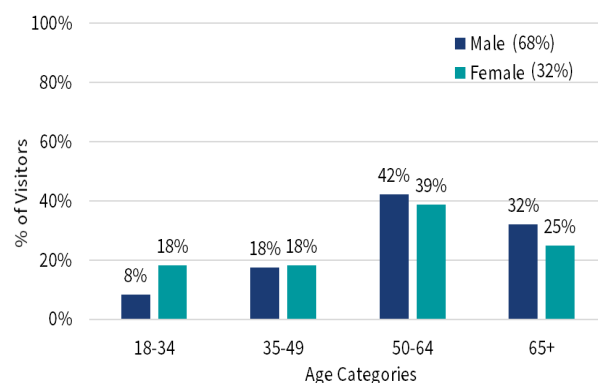


Fig. 3: Distribution of visitors to this refuge by gender and age group.

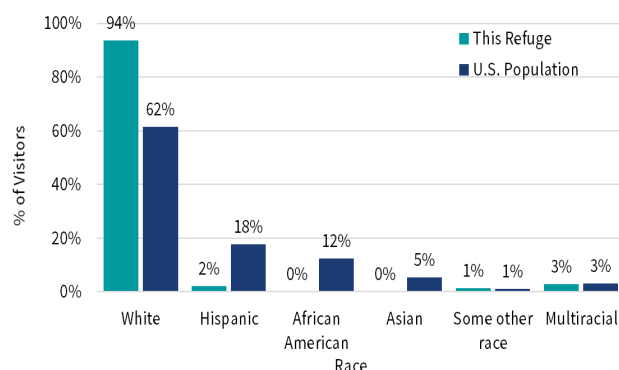


Fig. 4: Race and ethnicity of visitors to this refuge compared to the national average.

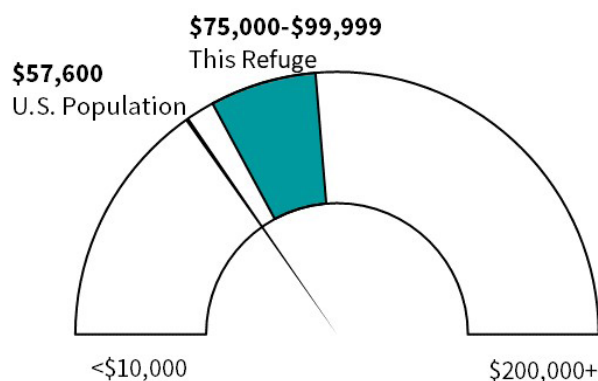


Fig. 5: Mean income range of visitors to this refuge compared to the national median income.

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 ≤ 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 (86%) include:

- For locals, this refuge was the primary reason for their trip (85%) (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 (14%) include:

- For nonlocals, this refuge was the primary reason for their trip (64%) (Fig. 6).
- Nonlocal visitors traveled an average of 3 hours to arrive at this refuge (Fig. 8).
- Of the 100% of visitors who lived in the U.S., nonlocal visitors were most often from Minnesota (97%) and Wisconsin (1%).

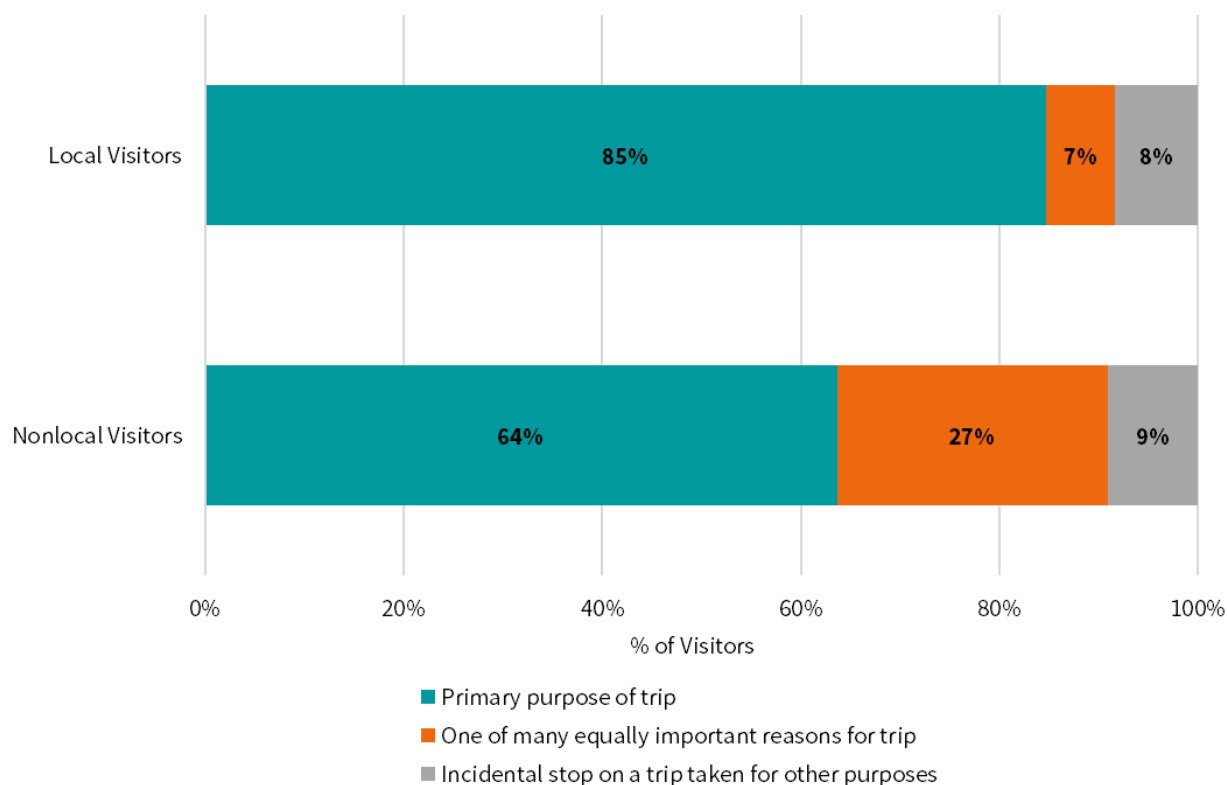


Fig. 6: Purpose of most recent refuge visit for local (living ≤ 50 miles from the refuge) and nonlocal (living > 50 miles from the refuge) visitors.

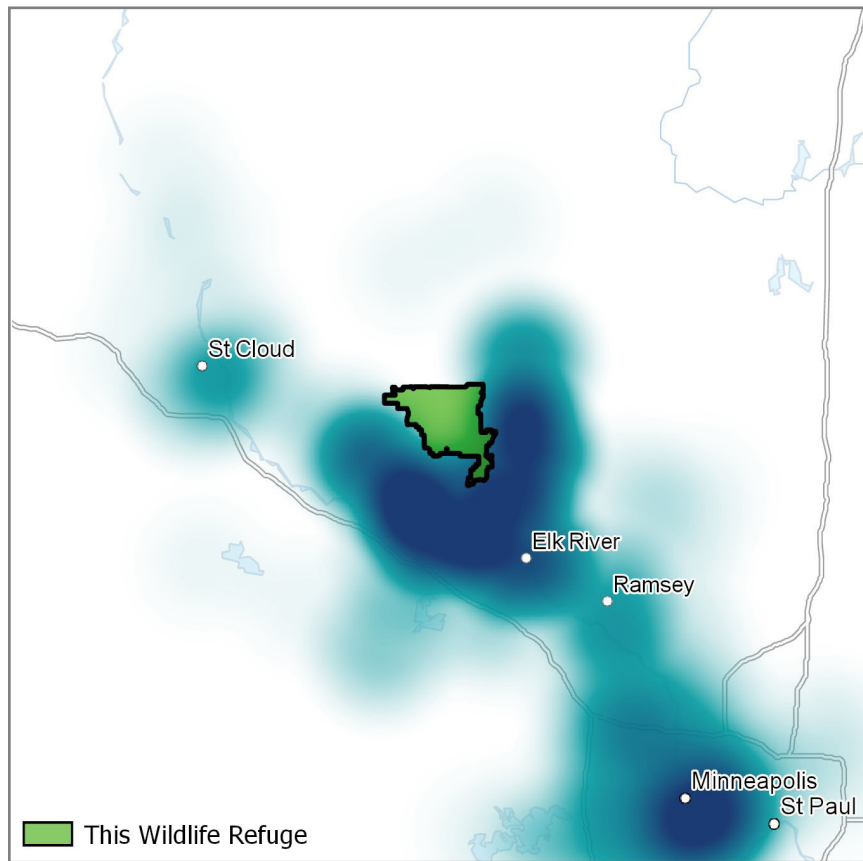


Fig. 7: Map showing residence of local visitors to this refuge. Darker shading represents relatively higher visitation from that area.

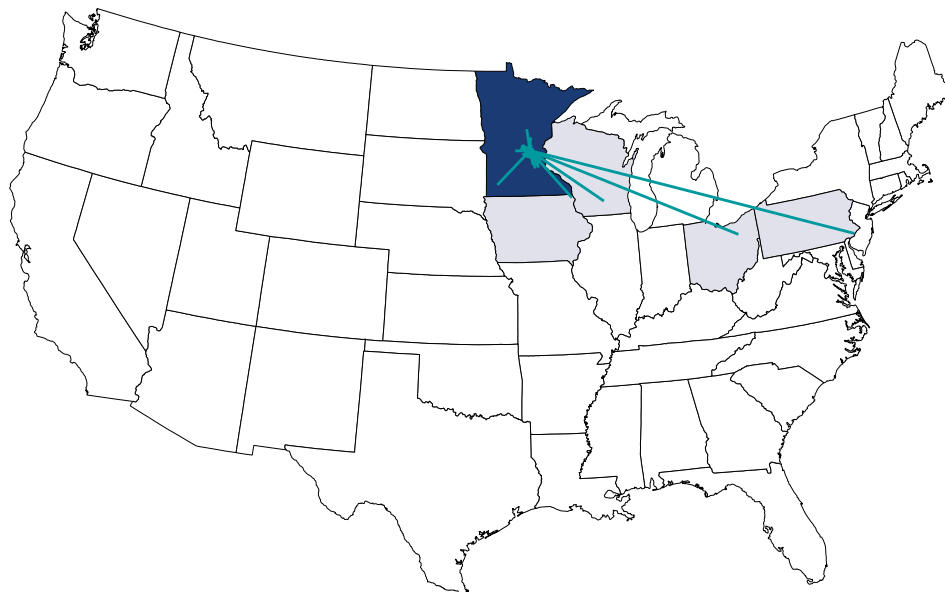


Fig. 8: Map showing residence of visitors to this refuge by zip code, with each line representing visitation from a different zip code. The convergence point of the lines is the geographical center of the refuge. Darker shading of the states represents higher visitation from that state.

OTHER TRIP CHARACTERISTICS

Other trip characteristics include:

- To get to this wildlife refuge, visitors primarily traveled by private vehicle without a trailer (88%) and by foot (12%) (Fig. 9).
- Once on the refuge, visitors primarily traveled by private vehicle without a trailer (63%) and by foot (47%) (Fig. 9).
- Visits occurred during winter (21%), spring (75%), summer (59%), and fall (76%).
- 89% of visitors made a single-day trip to this refuge, spending an average of 3 hours, while 11% 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:

- 78% were repeat visitors to this wildlife refuge, visiting an average of 17 times.
- 49% visited other national wildlife refuges, averaging 3 visits.
- 75% visited other public lands, averaging 10 visits.

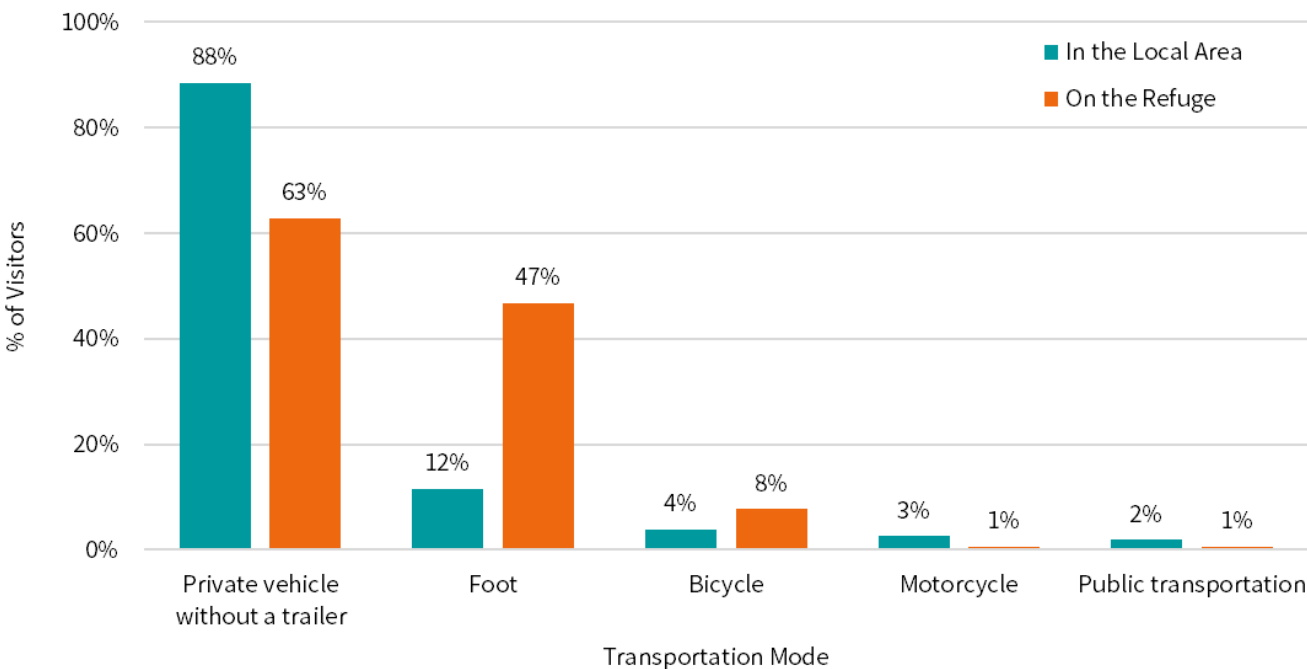


Fig. 9: Modes of transportation used by visitors to get from the local area to this refuge and within the boundaries of this refuge.

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

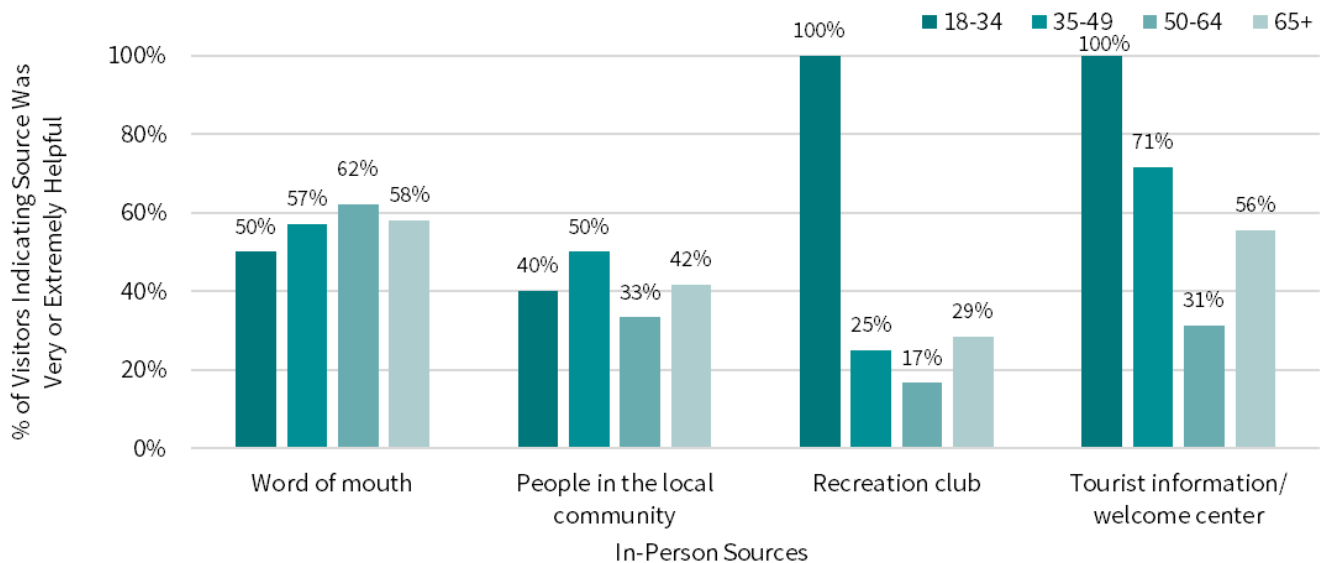


Fig. 10: Percent of visitors by age group who found in-person information sources very or extremely helpful in planning their trip.

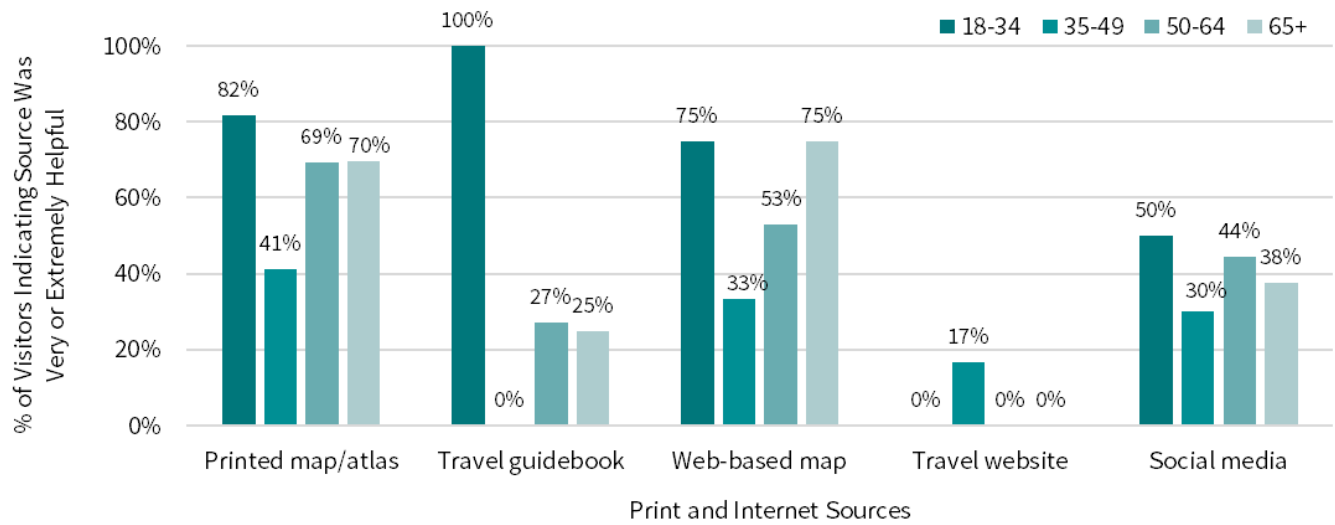


Fig. 11: Percent of visitors by age group who found print and internet information sources very or extremely helpful in planning their trip.

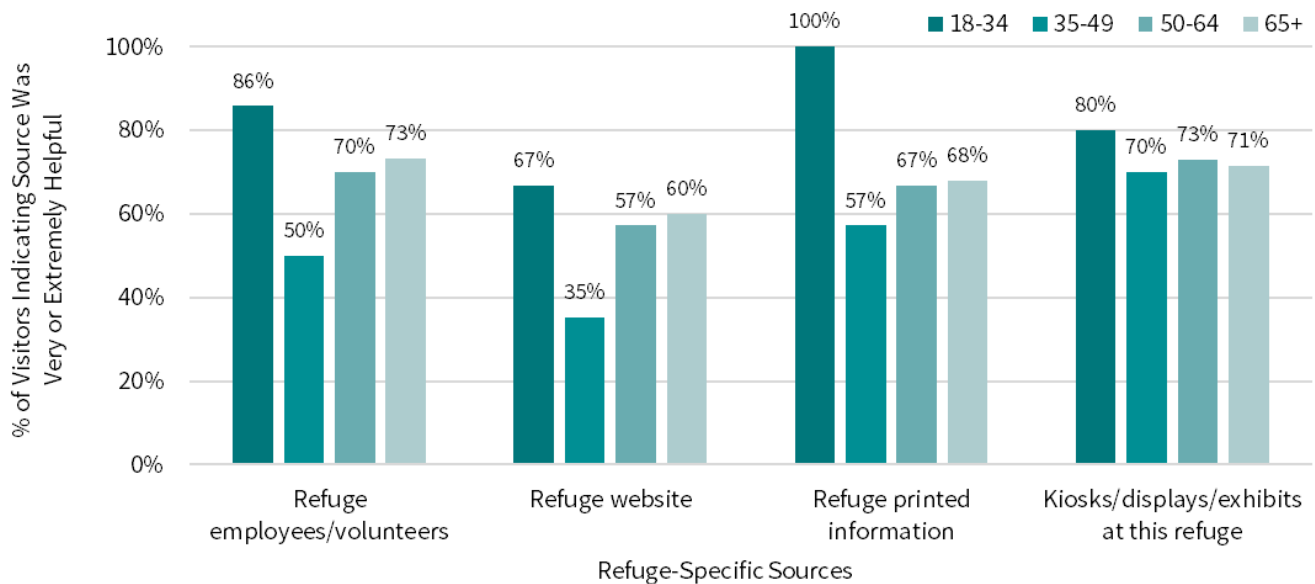


Fig. 12: Percent of visitors by age group who found refuge-specific information sources very or extremely helpful in planning their trip.

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 45% 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 (33%), Instagram (27%), and Snapchat (27%).
- Visitors 35-49 years old preferred to use Facebook (52%) and Instagram (14%).
- Visitors 50-64 years old preferred to use Facebook (40%).
- Visitors 65 or older preferred to use Facebook (23%).

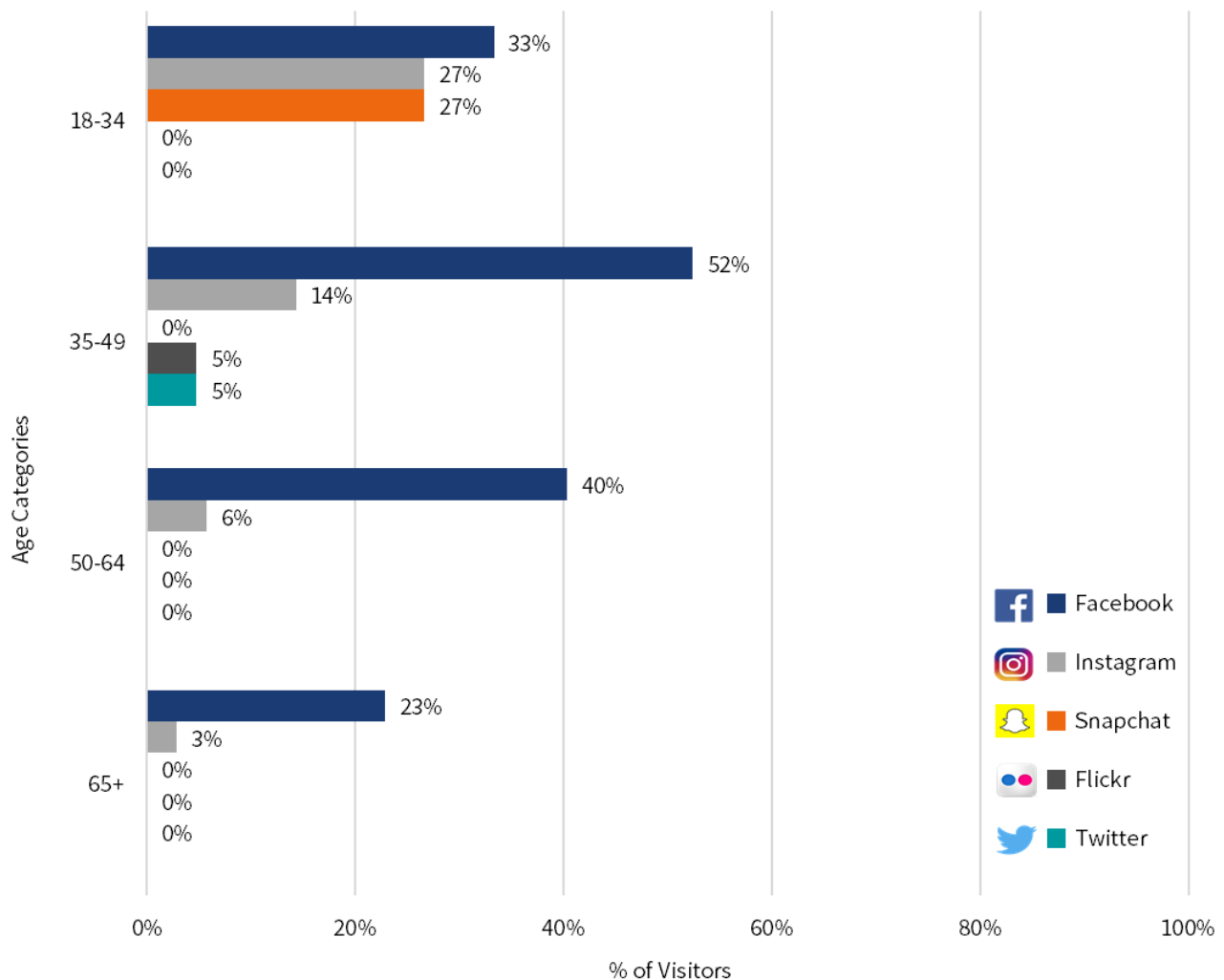


Fig. 13: Percent of visitors by age group who used various social media platforms to share their experience on this refuge with others.

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 (78%), bird watching (64%), and hiking (61%) (Fig. 14).
- The top three activities noted as their primary activity on the day visitors were contacted to participate in the survey were hiking (19%), bird watching (18%), and wildlife observation (18%) (Fig. 14).
- Approximately 39% of visitors went to the visitor center, and they most often viewed a list of recent bird or wildlife sightings (18%), asked for information (17%), and used the facilities (17%) (Fig. 15).



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

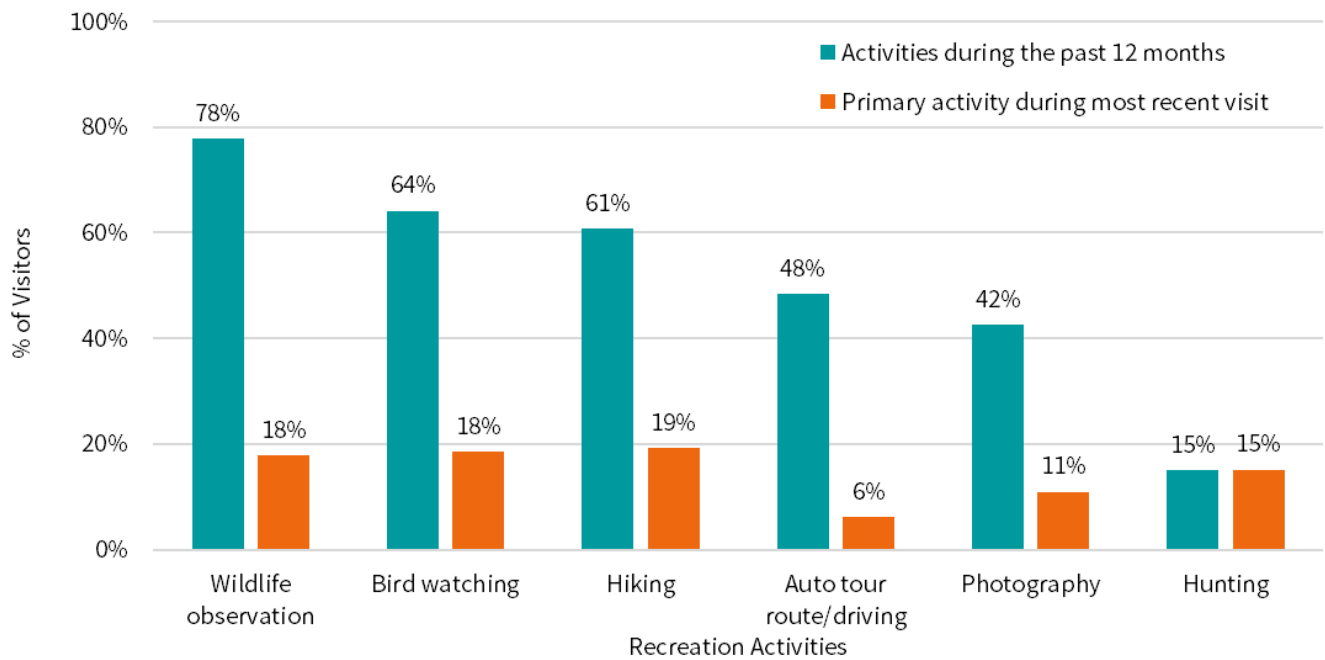


Fig. 14: Recreational activities visitors participated in during the past 12 months and their primary activity during their most recent visit to this refuge.

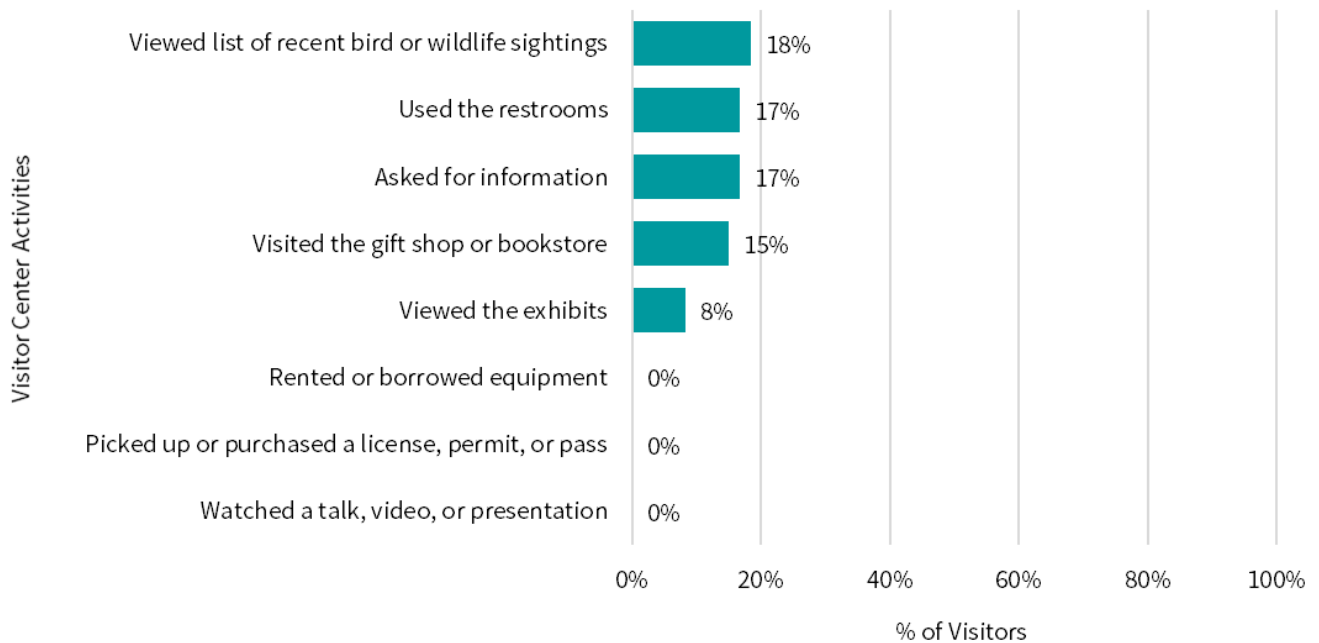


Fig. 15: Reasons visitors used the visitor center during their most recent visit to this refuge.

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:

- 87% of visitors felt welcome during their refuge visit (Fig. 16).
- 97% of visitors felt safe during their refuge visit (Fig. 16).
- 100% of visitors reported that they feel comfortable being in nature, but 7% do not like being in nature alone (Fig. 17).

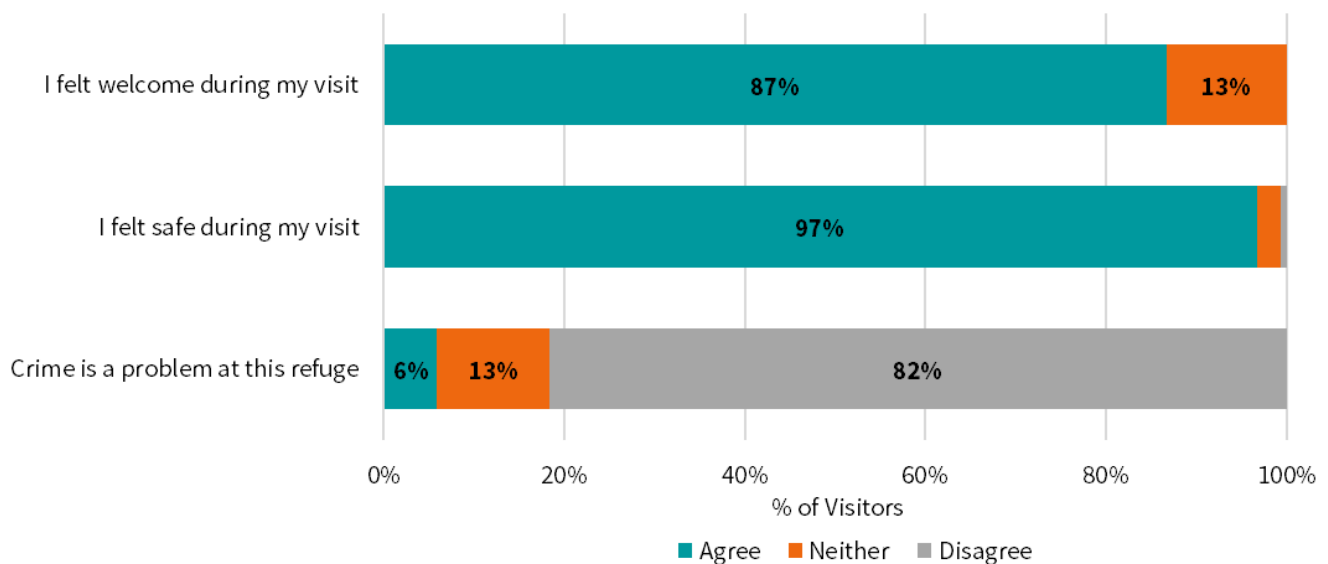


Fig. 16: Visitors' perceptions of safety and feeling welcome at this refuge during their visit.

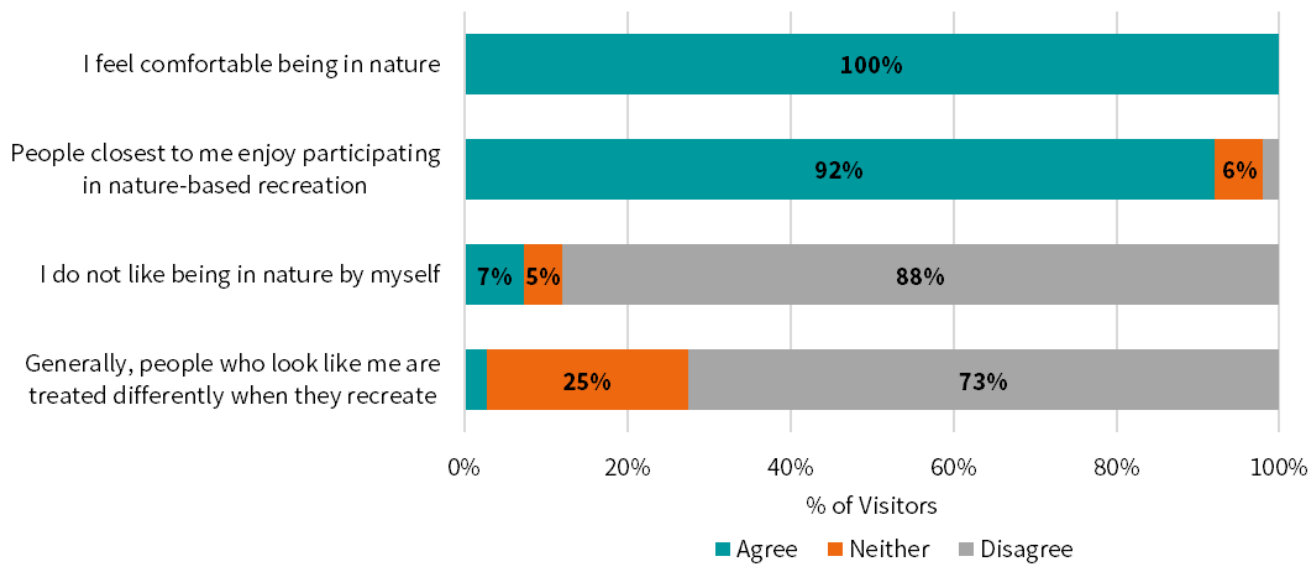


Fig. 17: Visitors' comfort with being in nature.



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:

- 86% of visitors were very or extremely satisfied with the overall experience at this wildlife refuge (Fig. 18).
- 83% 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 (88%),
- courteous and welcoming employees/volunteers (76%),
- restrooms (76%), and
- signage stating rules and regulations (76%).

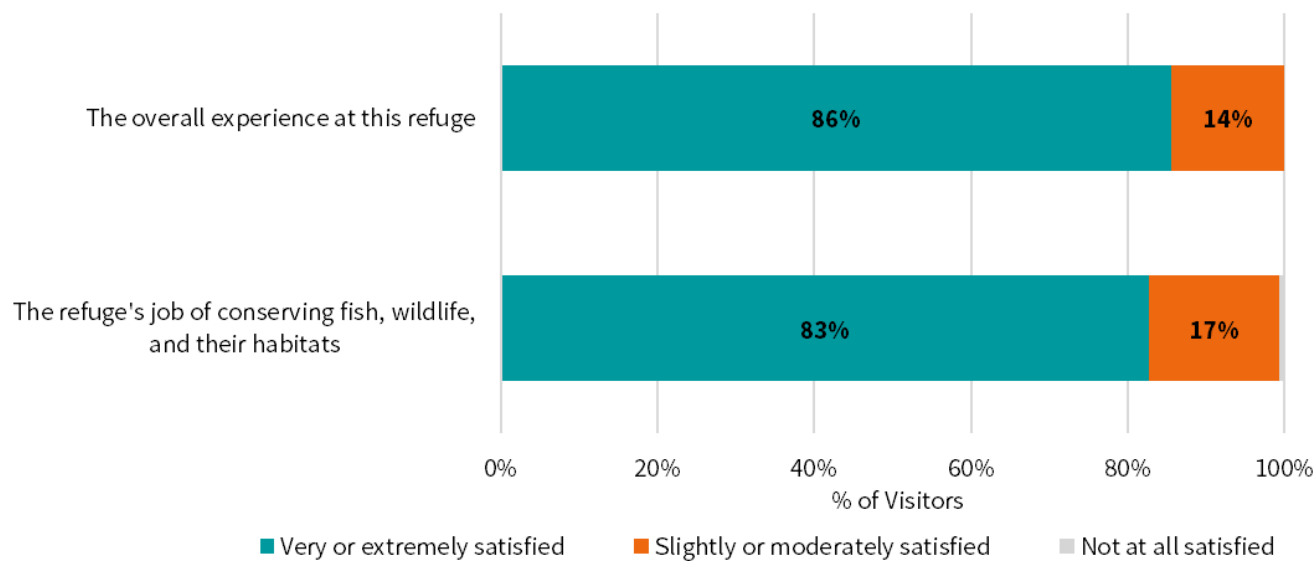


Fig. 18: Visitors' satisfaction with their experience at this refuge and with this refuge's job of conserving fish, wildlife, and habitats.

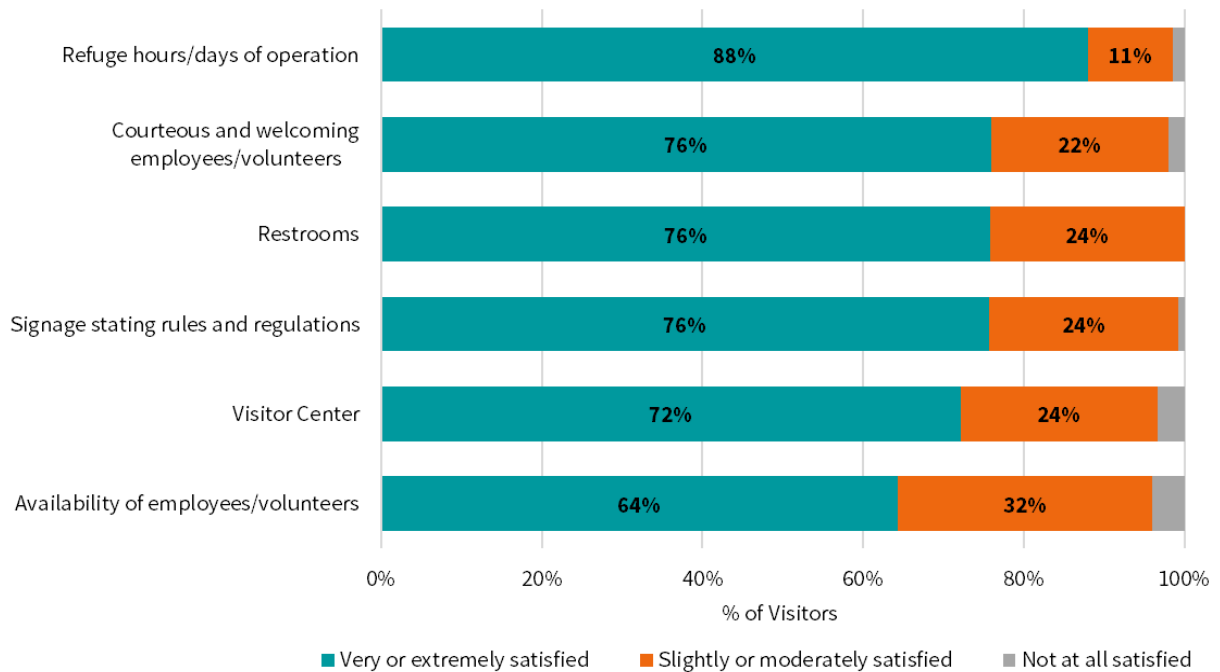


Fig. 19: Visitors' satisfaction with customer service and amenities at this refuge.

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):

- photography (87%),
- bird watching (84%),
- trail hiking (83%), and
- observation deck/blinds (83%).

"We love [Sherburne National Wildlife Refuge]. In addition to the valuable opportunities to view wildlife, the refuge provides the communities outside its boundaries with wide and wonderful varieties of birds to view." – Visitor to Sherburne National Wildlife Refuge

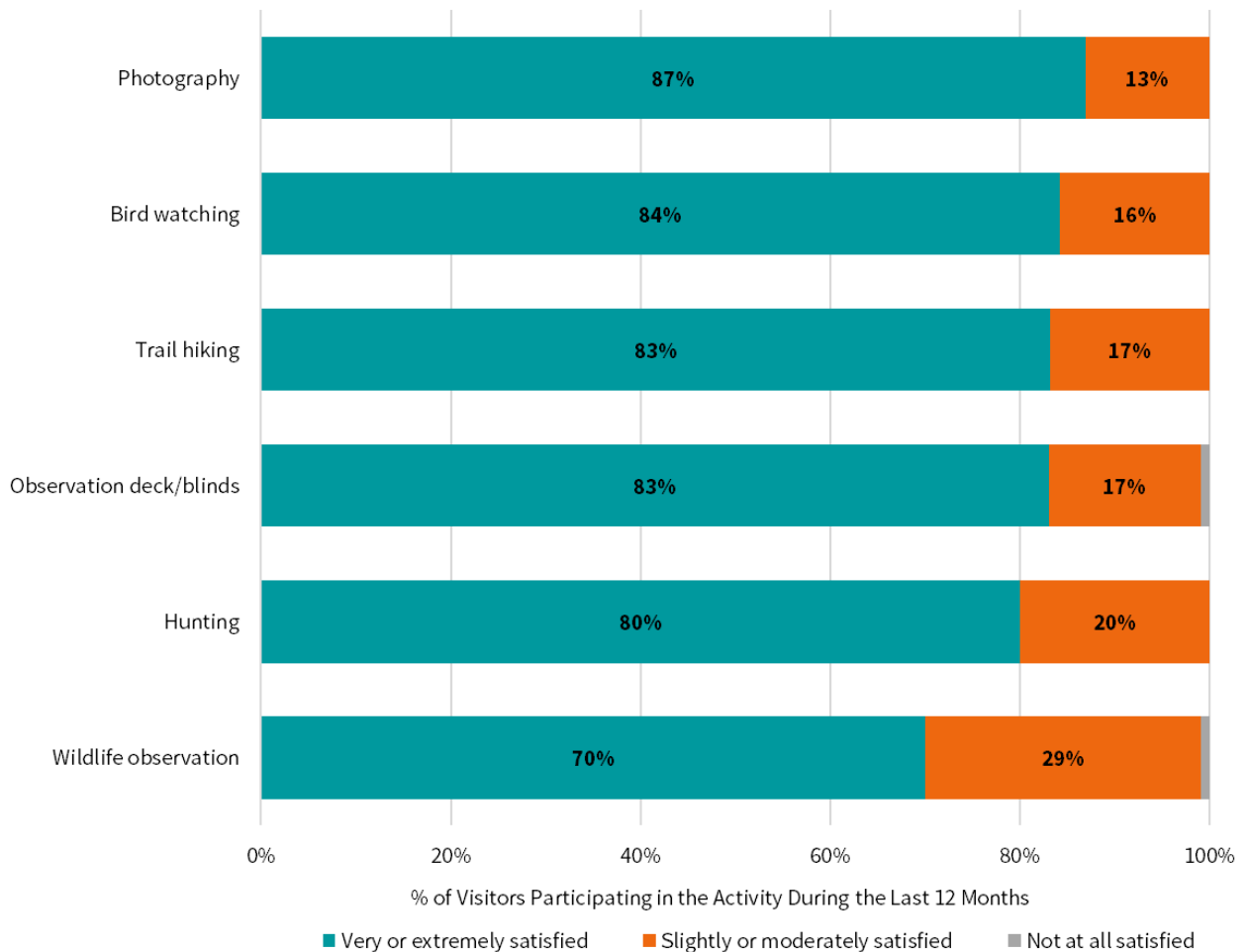


Fig. 20: Visitors' satisfaction with recreational opportunities at this refuge. Only visitors (10 or more) who participated in activities related to each opportunity at this refuge during the last 12 months were included.

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 safety of refuge road entrances and exits (87%).
- Getting around this wildlife refuge, visitors were most satisfied with condition of bridges on roadways (89%), condition of parking areas (88%), and safety of driving conditions on refuge roads (86%).
- Accessing recreation on this wildlife refuge, visitors were most satisfied with condition of trails and boardwalks (84%), and safety of roads or trails for nonmotorized use (84%).

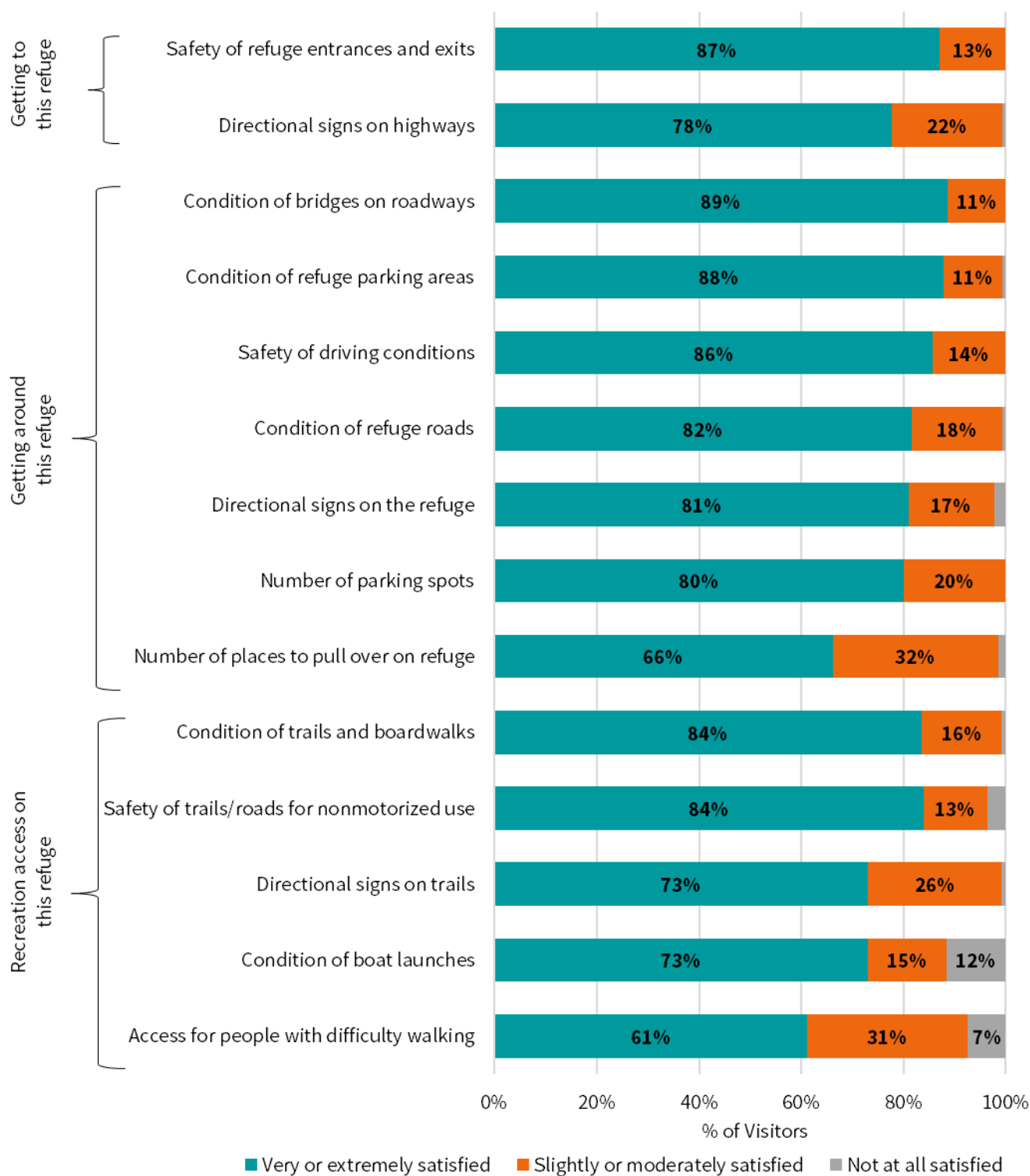


Fig. 21: Visitors' satisfaction with how the refuge is managing transportation-related features.

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 ≤ 50 miles from this wildlife refuge; 86%) are as follows:

- On average, local visitors accounted for 70% 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 \$29 per person per day (Fig. 22).
- Local visitors were personally willing to pay an additional \$41 per day on average to visit this wildlife refuge (Fig. 23).

Results for nonlocal visitors (those living >50 miles from this wildlife refuge; 14%) are as follows:

- On average, nonlocals accounted for 30% 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 \$52 per person per day (Fig. 22).
- Nonlocal visitors were personally willing to pay an additional \$83 per day on average to visit this wildlife refuge (Fig. 23).
- Nonlocal visitors spent an average of 3 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.

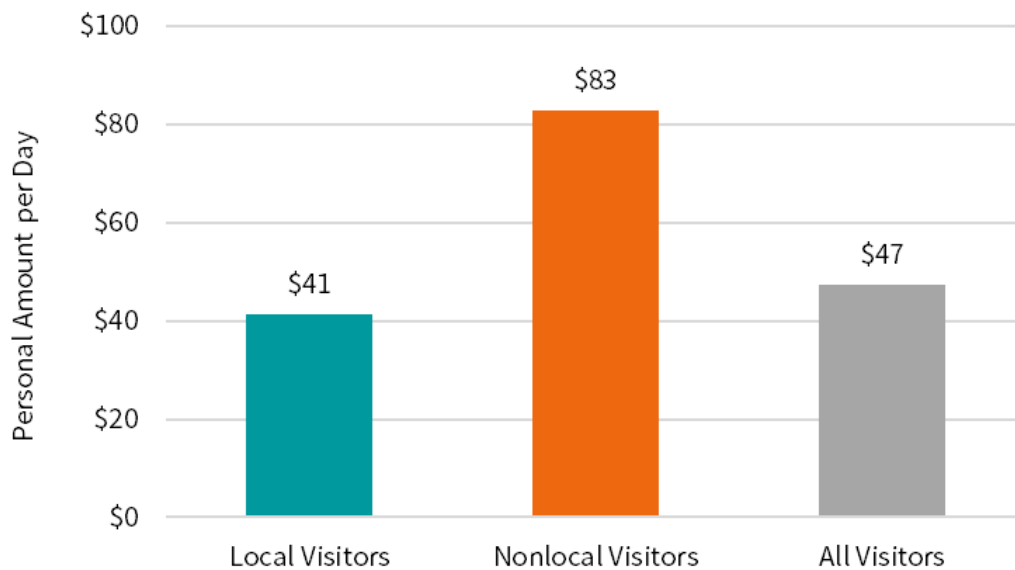


Fig. 23: Total personal willingness to pay per day above and beyond most recent trip expenses if costs were to increase for local, nonlocal, and all visitors. Due to the fixed-response question format, estimates of willingness to pay may underestimate the amount visitors would actually pay. Responses 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 (65%), highlighting unique local culture (34%), and engaging families and multiple generations (29%) (Fig. 24).
- The top two factors likely to increase visitors' future participation in their primary recreation activity were more infrastructure (29%) and recreation equipment available for rent (17%) (Fig. 25).
- The top two factors likely to decrease visitors' future participation in their primary recreation activity were more people participating in their primary activity (28%) and less regulations on hunting (28%) (Fig. 25).

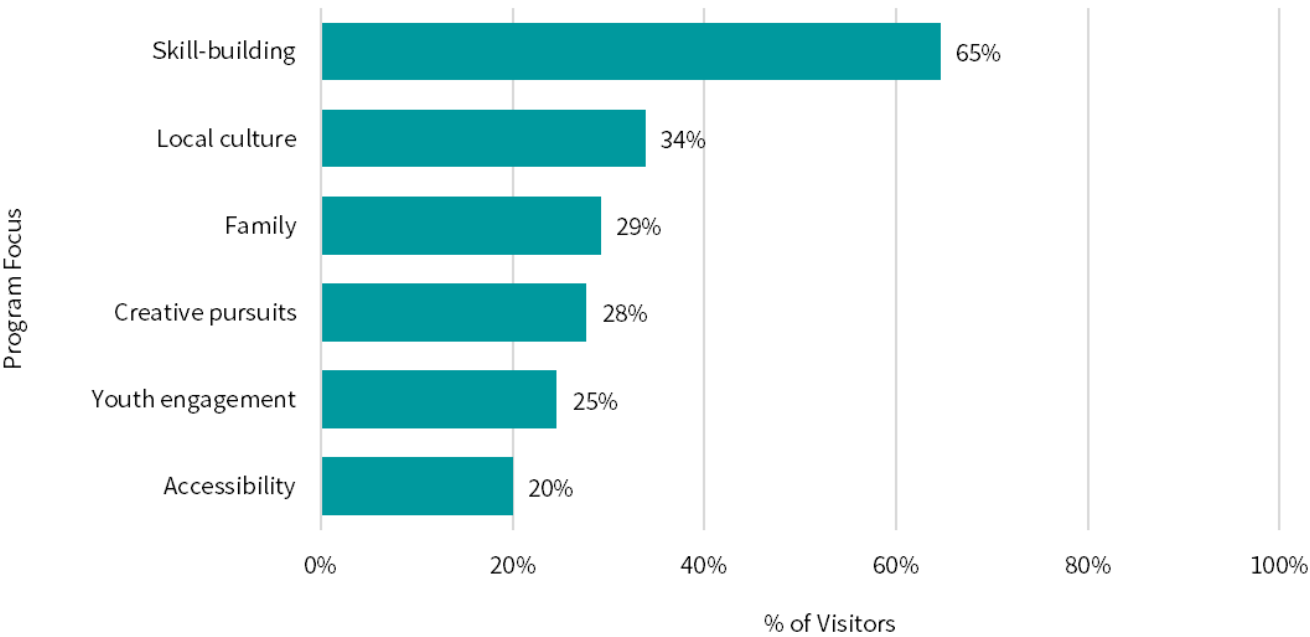


Fig. 24: Types of programs that would encourage visitors to return to this refuge.

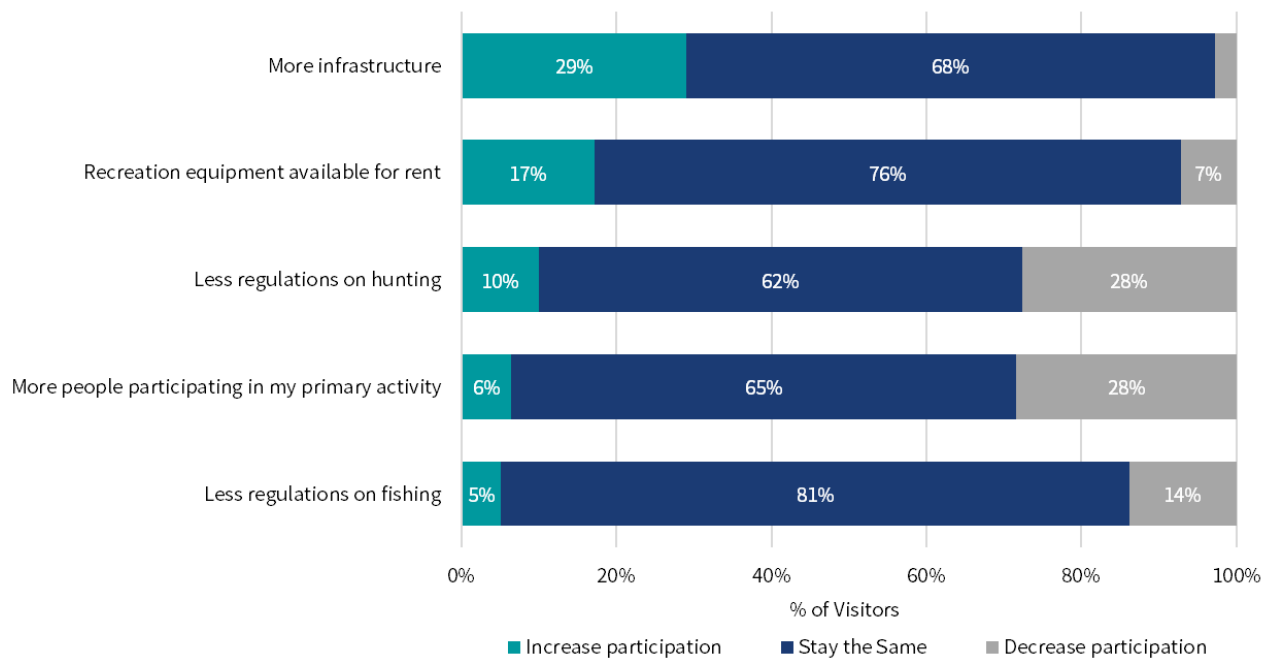


Fig. 25: Changes in visitors’ participation in their primary activity if the listed recreation factors were to change.

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 (Fig. 26):

- pedestrian paths (14%),
- bus/tram that provides a guided tour (11%),
- a bike-share program (9%).

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 a greater diversity of species (62%) 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 more acreage open to hunting and fishing (29%) and less water available for recreation (24%).

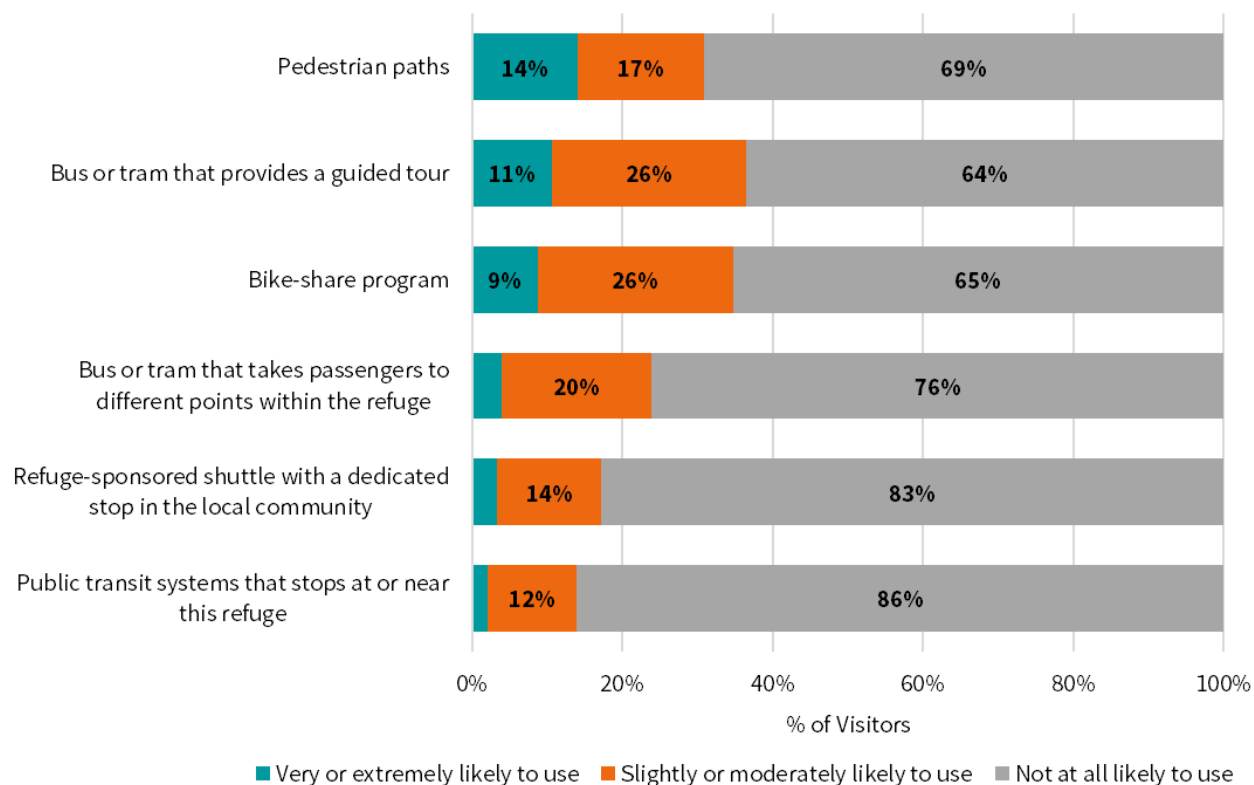


Fig. 26: Visitors' likelihood of using alternative transportation options if offered at this refuge.

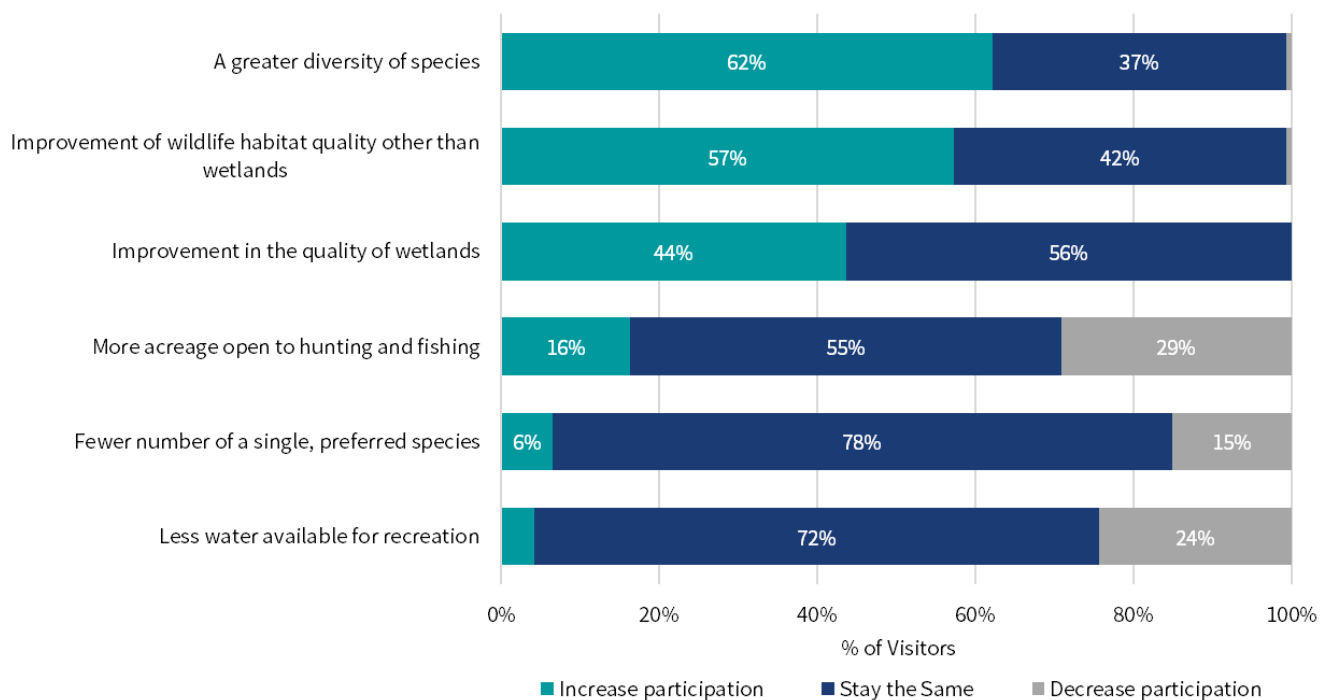


Fig. 27: Changes in visitors' participation in their primary activity if the listed resources were to change.

Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to Sherburne 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

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

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

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

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

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

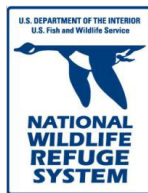
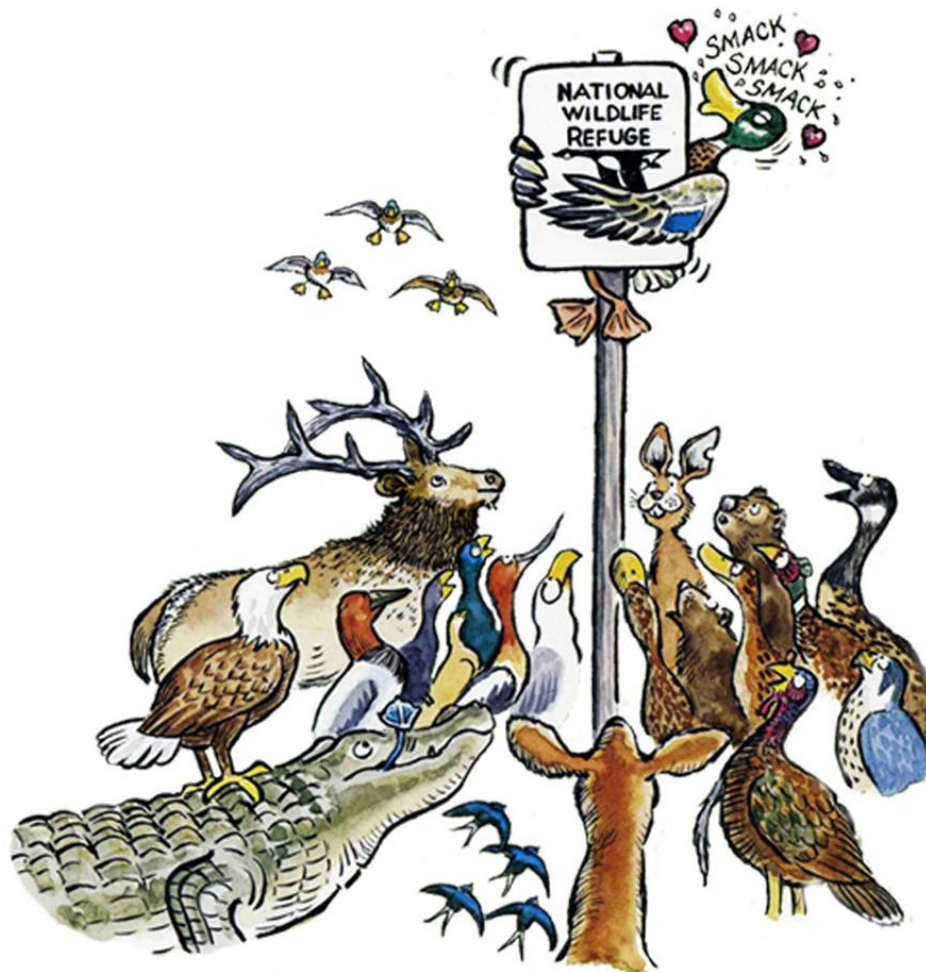
response distribution, meaning if respondents were given a dichotomous choice question, approximately 80% of respondents would select one choice and 20% would select the other (Salant & Dillman, 1994).

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.

SECTION 1. Your visit to this refuge

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"/> 78% Wildlife observation	<input type="checkbox"/> 61% Hiking/Walking	<input type="checkbox"/> 6% Volunteering
<input type="checkbox"/> 64% Bird watching	<input type="checkbox"/> 7% Jogging/Running/Exercising	<input type="checkbox"/> 4% Environmental education program (classroom visits, labs)
<input type="checkbox"/> 42% Photography	<input type="checkbox"/> 6% Bicycling	
<input type="checkbox"/> 13% Big game hunting	<input type="checkbox"/> 48% Auto tour route/Driving	<input type="checkbox"/> 4% Interpretative program (bird walks, staff/volunteer-led talks)
<input type="checkbox"/> 4% Upland/Small game hunting	<input type="checkbox"/> 1% Motorized boating	
<input type="checkbox"/> 3% Waterfowl/Migratory bird hunting	<input type="checkbox"/> 1% Nonmotorized boating (canoeing, kayaking)	<input type="checkbox"/> 5% Refuge special event (<i>specify</i>) _____ See Appendix C
<input type="checkbox"/> 1% Freshwater fishing	<input type="checkbox"/> 5% Foraging (berries, nuts, other)	<input type="checkbox"/> 3% Other (<i>specify</i>) _____ See Appendix C
<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.)

☐ 82% It was the primary purpose or sole destination of my trip.

☐ 10% It was one of many equally important reasons or destinations for my trip.

☐ 8% 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?

☐ 61% No / Not Applicable

☐ 39% Yes → If yes, what did you do there? (*Mark all that apply.*)

☐ 17% Asked information of employees/volunteers

☐ 18% Looked at list of recent bird/wildlife sightings

☐ 0% Attended a talk/video/presentation

☐ 17% Stopped to use the facilities (for example, got water, used restroom)

☐ 8% Viewed the exhibits

☐ 0% Picked up/purchased a license, permit, or pass

☐ 0% Rented/borrowed equipment (for example, binoculars, fishing rod, snowshoes)

☐ 15% Visited the gift shop or bookstore

☐ 3% 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: 3 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)?

☐ 86% Yes

☐ 14% 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: 4 hour(s)

If you spent one day or more in the local area, enter the number of days: 3 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: 26 minutes

If you travelled more than one hour, round to the nearest hour: 2 hours

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

☐ 75% Spring
(March-May)

☐ 59% Summer
(June-August)

☐ 76% Fall
(September-November)

☐ 21% Winter
(December-February)

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

...this refuge (including this visit?) 13 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"/> 37% Facebook	<input type="checkbox"/> 3% Snapchat	<input type="checkbox"/> 2% Personal blog (for example, Tumblr, Wordpress)
<input type="checkbox"/> 1% Flickr	<input type="checkbox"/> 1% Twitter	<input type="checkbox"/> 1% Travel-related website (for example, Trip Advisor)
<input type="checkbox"/> 8% Instagram	<input type="checkbox"/> 0% Vimeo	<input type="checkbox"/> 2% Other (<i>specify</i>) <u>See Appendix C</u>
<input type="checkbox"/> 1% Pinterest	<input type="checkbox"/> 1% YouTube	<input type="checkbox"/> 55% 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"/> 2%	<input type="checkbox"/> 4%	<input type="checkbox"/> 10%	<input type="checkbox"/> 28%	<input type="checkbox"/> 56%	<input type="checkbox"/> 12%
Word of mouth (for example, a friend or relative)	<input type="checkbox"/> 12%	<input type="checkbox"/> 12%	<input type="checkbox"/> 20%	<input type="checkbox"/> 31%	<input type="checkbox"/> 26%	<input type="checkbox"/> 44%
People in the local community near the refuge	<input type="checkbox"/> 22%	<input type="checkbox"/> 22%	<input type="checkbox"/> 18%	<input type="checkbox"/> 22%	<input type="checkbox"/> 16%	<input type="checkbox"/> 63%
Refuge employees or volunteers	<input type="checkbox"/> 8%	<input type="checkbox"/> 6%	<input type="checkbox"/> 17%	<input type="checkbox"/> 34%	<input type="checkbox"/> 35%	<input type="checkbox"/> 44%
Printed map or atlas	<input type="checkbox"/> 8%	<input type="checkbox"/> 6%	<input type="checkbox"/> 19%	<input type="checkbox"/> 37%	<input type="checkbox"/> 30%	<input type="checkbox"/> 38%
Web-based map (for example, Google Maps, Waze)	<input type="checkbox"/> 15%	<input type="checkbox"/> 6%	<input type="checkbox"/> 24%	<input type="checkbox"/> 34%	<input type="checkbox"/> 21%	<input type="checkbox"/> 59%
Refuge website	<input type="checkbox"/> 13%	<input type="checkbox"/> 9%	<input type="checkbox"/> 25%	<input type="checkbox"/> 34%	<input type="checkbox"/> 19%	<input type="checkbox"/> 48%
Travel website (for example, TripAdvisor)	<input type="checkbox"/> 71%	<input type="checkbox"/> 19%	<input type="checkbox"/> 5%	<input type="checkbox"/> 0%	<input type="checkbox"/> 5%	<input type="checkbox"/> 86%
Other website (<i>specify</i>) <u>See Appendix C</u>	<input type="checkbox"/> 55%	<input type="checkbox"/> 9%	<input type="checkbox"/> 9%	<input type="checkbox"/> 9%	<input type="checkbox"/> 18%	<input type="checkbox"/> 91%
Social media (for example, Facebook, Instagram)	<input type="checkbox"/> 35%	<input type="checkbox"/> 10%	<input type="checkbox"/> 18%	<input type="checkbox"/> 15%	<input type="checkbox"/> 23%	<input type="checkbox"/> 74%
Recreation club or organization	<input type="checkbox"/> 54%	<input type="checkbox"/> 12%	<input type="checkbox"/> 12%	<input type="checkbox"/> 15%	<input type="checkbox"/> 8%	<input type="checkbox"/> 83%
Refuge printed information (for example, brochure)	<input type="checkbox"/> 6%	<input type="checkbox"/> 10%	<input type="checkbox"/> 16%	<input type="checkbox"/> 44%	<input type="checkbox"/> 24%	<input type="checkbox"/> 39%
Kiosks/displays/exhibits at the refuge	<input type="checkbox"/> 11%	<input type="checkbox"/> 4%	<input type="checkbox"/> 12%	<input type="checkbox"/> 39%	<input type="checkbox"/> 35%	<input type="checkbox"/> 44%
Travel guidebook or other book	<input type="checkbox"/> 59%	<input type="checkbox"/> 9%	<input type="checkbox"/> 9%	<input type="checkbox"/> 14%	<input type="checkbox"/> 9%	<input type="checkbox"/> 85%
Tourist information or welcome center	<input type="checkbox"/> 21%	<input type="checkbox"/> 8%	<input type="checkbox"/> 21%	<input type="checkbox"/> 28%	<input type="checkbox"/> 23%	<input type="checkbox"/> 74%
Other source (<i>specify</i>) <u>See Appendix C</u>	<input type="checkbox"/> 67%	<input type="checkbox"/> 11%	<input type="checkbox"/> 22%	<input type="checkbox"/> 0%	<input type="checkbox"/> 0%	<input type="checkbox"/> 91%

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
4%	17%	34%	34%	11%	Surface conditions of refuge roads	1%	5%	12%	57%	25%	NA
8%	21%	39%	27%	5%	Surface conditions of parking areas	1%	2%	9%	63%	25%	NA
6%	11%	24%	49%	10%	Condition of bridges on roadways	0%	3%	9%	60%	29%	NA
6%	6%	25%	46%	18%	Condition of trails and boardwalks	1%	4%	12%	54%	30%	NA
63%	5%	13%	16%	3%	Condition of boat launches	12%	8%	8%	46%	27%	NA
9%	15%	35%	34%	6%	Number of places for parking	0%	4%	16%	50%	30%	NA
6%	9%	30%	39%	16%	Number of places to pull over on refuge roads	2%	9%	23%	47%	19%	NA
4%	9%	26%	42%	20%	Safety of driving conditions on refuge roads	0%	4%	10%	56%	30%	NA
4%	6%	28%	42%	19%	Safety of refuge road entrances/exits	0%	2%	11%	58%	29%	NA
10%	5%	25%	40%	20%	Safety of roads/trails for nonmotorized users (for example, bicyclists and hikers)	4%	5%	7%	54%	29%	NA
6%	14%	31%	36%	13%	Signs on highways directing you to this refuge	1%	2%	19%	52%	26%	NA
5%	9%	31%	43%	11%	Signs directing you around refuge roads	2%	2%	15%	59%	22%	NA
5%	6%	29%	41%	18%	Signs directing you on trails	1%	6%	20%	53%	20%	NA
18%	7%	28%	33%	14%	Access for people with physical disabilities or who have difficulty walking	7%	13%	18%	39%	22%	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	88%	63%
Private/rental vehicle with a trailer (for boat, camper, or other)	2%	1%
Recreational vehicle (RV)	0%	1%
Refuge shuttle bus/tram	0%	1%
Tour bus/van	1%	0%
Public transportation	2%	1%
Motorcycle	3%	1%
Bicycle	4%	8%
Foot (for example, walking/hiking)	12%	47%
Boat	0%	1%
Other (<i>specify</i>): <u>See Appendix C</u>	2%	1%
Other (<i>specify</i>): <u>See Appendix C</u>	0%	0%

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)	76%	13%	7%	3%	1%
Bus or tram that provides a guided tour of the refuge with information about this refuge and its resources	64%	12%	14%	9%	2%
Refuge-sponsored shuttle with a dedicated stop in the local community for picking up people at set times	83%	9%	5%	2%	1%
Public transit system that stops at or near this refuge	86%	11%	1%	1%	1%
Bike-share program that offers bicycles for rent on or near this refuge	65%	12%	14%	3%	5%
Pedestrian paths for access to this refuge from the local community	69%	9%	7%	3%	11%

SECTION 4. Your expenses related to your refuge visit

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>	

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"/> 7% \$0	<input type="checkbox"/> 13% \$30	<input type="checkbox"/> 19% \$100	<input type="checkbox"/> 1% \$250
<input type="checkbox"/> 11% \$5	<input type="checkbox"/> 13% \$45	<input type="checkbox"/> 1% \$125	<input type="checkbox"/> 2% \$350
<input type="checkbox"/> 9% \$10	<input type="checkbox"/> 4% \$60	<input type="checkbox"/> 1% \$150	<input type="checkbox"/> 1% \$500
<input type="checkbox"/> 13% \$20	<input type="checkbox"/> 3% \$75	<input type="checkbox"/> 2% \$200	<input type="checkbox"/> 0% \$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
5%	3%	12%	47%	33%	Convenient hours/days of operation for this refuge	1%	1%	10%	54%	35%	NA
26%	31%	25%	12%	6%	Availability of employees or volunteers	4%	4%	28%	46%	19%	NA
24%	22%	22%	19%	12%	Courteous and welcoming employees or volunteers	2%	2%	20%	40%	36%	NA
4%	9%	28%	38%	21%	Signs with rules/regulations for this refuge	1%	3%	21%	50%	26%	NA
18%	17%	26%	28%	10%	Visitor center	3%	3%	21%	50%	22%	NA
5%	5%	18%	47%	26%	Well-maintained restrooms	0%	6%	18%	48%	28%	NA
9%	13%	27%	37%	14%	Recreational structures (decks, blinds, platforms)	1%	2%	14%	59%	24%	NA
8%	5%	17%	31%	38%	Bird-watching opportunities	1%	2%	16%	43%	38%	NA
3%	4%	22%	38%	33%	Opportunities to observe wildlife other than birds	1%	4%	27%	42%	25%	NA
6%	10%	22%	26%	35%	Opportunities to photograph wildlife and scenery	1%	3%	18%	47%	31%	NA
12%	21%	33%	20%	14%	Environmental education opportunities	2%	2%	33%	49%	13%	NA
59%	9%	12%	5%	15%	Hunting opportunities	10%	4%	22%	42%	22%	NA
56%	15%	14%	11%	5%	Fishing opportunities	13%	5%	26%	39%	16%	NA
9%	3%	13%	38%	38%	Trail hiking opportunities	2%	5%	17%	45%	32%	NA
34%	16%	22%	16%	12%	Bicycling opportunities	10%	12%	27%	24%	27%	NA
35%	15%	23%	18%	10%	Water trail opportunities for canoeing or kayaking	15%	11%	21%	38%	15%	NA
31%	23%	24%	15%	8%	Volunteer opportunities	7%	9%	25%	43%	16%	NA
20%	13%	21%	31%	15%	Wilderness experience opportunities	2%	7%	30%	40%	20%	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.	0%	0%	13%	43%	44%
I felt safe during my visit to this refuge.	1%	0%	3%	48%	49%
Crime <u>is</u> a problem at this refuge.	50%	32%	13%	4%	2%
I feel comfortable being in nature.	0%	0%	0%	32%	68%
I do <u>not</u> like being in nature by myself.	64%	25%	5%	6%	1%
People closest to me enjoy participating in nature-based recreation.	1%	1%	6%	53%	39%
Generally, people who look like me are treated differently when they participate in nature-based recreation.	53%	19%	25%	1%	1%

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.	1%	1%	15%	53%	30%
The quality of the overall experience when visiting this refuge.	0%	1%	14%	51%	35%

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	24%	72%	4%
More acreage open to hunting and fishing	29%	55%	16%
More infrastructure (for example, bathrooms, observation decks)	3%	68%	29%
Recreation equipment available for rent (for example, fishing rods, binoculars, snowshoes)	7%	76%	17%
Less regulations on fishing	14%	81%	5%
Less regulations on hunting	28%	62%	10%
A greater diversity of species	1%	37%	62%
Fewer numbers of a single, preferred species	15%	78%	6%
More people participating in my primary activity	28%	65%	6%
An improvement in the quality of wetlands	0%	56%	44%
An improvement in the quality of wildlife habitat other than wetlands	1%	42%	57%

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

90% Yes 2% No 8% 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.*)

55% 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:

25% Programs that engage youth

28% Programs that focus on creative pursuits (for example, art, writing, meditation)

29% Programs that focus on family/multiple-generations

20% Programs that support people with accessibility concerns (for example, difficulty walking, in a wheelchair)

65% Programs that teach skills to visitors

11% Other (*specify*) See Appendix C

34% Programs that highlight unique local culture

SECTION 7. A little about you

**** 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? ☐ 68% Male ☐ 32% Female

2. In what year were you born? 1962 (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"/> 13%				<input type="checkbox"/> 56%				<input type="checkbox"/> 32%			

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

<input type="checkbox"/> 97% White	<input type="checkbox"/> 2% American Indian or Alaska Native
<input type="checkbox"/> 2% Hispanic, Latino, or Spanish	<input type="checkbox"/> 0% Middle Eastern or North African
<input type="checkbox"/> 0% Black or African American	<input type="checkbox"/> 0% Native Hawaiian or Other Pacific Islander
<input type="checkbox"/> 1% Asian	<input type="checkbox"/> 1% Some other race or ethnicity

5. How many people (including yourself) live in your household? 3 persons

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

<input type="checkbox"/> 0% Less than \$10,000	<input type="checkbox"/> 7% \$35,000 - \$49,999	<input type="checkbox"/> 22% \$100,000 - \$149,999
<input type="checkbox"/> 5% \$10,000 - \$24,999	<input type="checkbox"/> 31% \$50,000 - \$74,999	<input type="checkbox"/> 7% \$150,000 - \$199,999
<input type="checkbox"/> 4% \$25,000 - \$34,999	<input type="checkbox"/> 18% \$75,000 - \$99,999	<input type="checkbox"/> 7% \$200,000 or more

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

<input type="checkbox"/> 46% Employed full-time	<input type="checkbox"/> 1% Unemployed	<input type="checkbox"/> 34% Retired
<input type="checkbox"/> 3% Employed part-time	<input type="checkbox"/> 3% Homemaker/caregiver	<input type="checkbox"/> 1% Disabled/unable to work
<input type="checkbox"/> 7% Self-employed	<input type="checkbox"/> 1% Student	<input type="checkbox"/> 5% 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?

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
Bird watch, plant sale, plant & flower walk	1
Fall Wildlife Festival	3
Spring Fling	1
Wildlife events	1

Other Activity	Frequency
Looking at plants/wildflowers	1
Meditation	1
Plant material observation	1
Self-made scavenger hunt with friends	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)	4
Auto tour route/driving	9
Bicycling	4
Bird watching	27
Camping	1
Environmental education	1
Hiking	28
Hunting	22
Nature observation	1
Other	1
Photography	16
Picnicking	1
Running	3
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
Area of deer hunting	1
Drove through to observe birds	1
Picked up map	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
Capture minnesota.com	1
eBird	3

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
AllTrails	1
Bird watching type website	1

Other Information Sources	Frequency
Brochure indicated Oak Savanna Visitor Center was only open by appt. Otherwise, would have loved to go. I was not aware of it until I read the brochure.	1
Newspaper	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
Car expense	1
Licencia (<i>translation to English: license</i>)	1
Map	1
Shells, batteries, hand warmers	1
We were also going to pick up a meat order from a farm at a local butcher shop in Foley, MN.	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
Biking-related activities	1
Bird-related programs	1
General environmental education	1
Local history programs	1
Nature-related programs	2
Photography-related programs	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."

Comments on Transportation-Related Features at This Refuge (n=28)

All refuge roads closed to motor vehicles; walk in and out.

Could use a couple more car pull-off areas along the prairie and water areas for photography so cars don't have to wait.

Cross country skiing is tough when the trails are tracked up by hikers and dogs.

Gravel road going north of Blue Mound Cemetery has washboard surface; needs grading.

I enjoy the auto route! Lots of habitat and nice trails spread throughout!

I have deer hunted at the refuge for over 20 years. The cattle fences are a disruption to climb over or under. Snow plow trucks show no concern for vehicles parked along refuge roads and will plow heavy wet snow on anyone standing too close to the road or by the vehicles. They will often break off your mirrors. I personally was hit by the snow from a snow plow while hunting and could have been seriously injured in 2017. I filed a complaint with the county. I have also seen photos of deer caught in the barbwire fence that have died hanging from the fence. There are not enough cattle in the state to eat all the vegetation available on the refuge. Dead and fallen trees litter the oak forests and should be cleaned up. Wood cutting permits could be available so the general public could help with this matter in all areas of the refuge. Bow hunters should be required to register as proof of deer killed and taken by them personally on the refuge so they do not come back and gun hunt deer as well. The refuge restrooms by Blue Hill indicates no hunters. Hunters pay taxes and should not be restricted from using them. We as deer hunters are not allowed to use roads on the refuge during hunting season. Animals killed have to be dragged or carted out a mile or better in some cases. The refuge is a fine and challenging place to deer hunt. Please continue to make it better for all to use. Thanks!

I like places to be well-kept and functional but not too slick - I'm here for the natural setting after all. I like the refuge set-up as well. Perhaps a few more signs at the trail junctions would be my only request.

I love going through this wildlife refuge - this is so important - our children need this.

I think more pull-offs are important. Birders tend to go slowly, others not so much.

It was a wonderful experience, hoping to come back soon!

Keep the wildlife drive open in the winter.

Many roads show up on the map as usable, and when biked there were intermittent large holes. I hit a hole with my bike and flew over the handlebars. Mark as bikeable or not so people don't get hurt. Many roads are ground up for firebreak, which is a huge drawback for people who want to go into different areas. Do you have to grind up these roads until they are a sandy beach, or could they still be hard and usable after firebreak is done?

Most people that come to the refuge are respectful of the roadways and wildlife, but this year I have noticed damage on the drive from vehicles doing burn-outs on the drive and donuts in the parking areas. I personally witnessed a male in a teal pickup, after passing me, go down the drive about 300 feet and then stop and peel out creating a large dust cloud and sending dirt and gravel flying. This is deplorable behavior. I took a picture, but the dust cloud obscured his license plate.

Needs signage to encourage vehicles to pull to the side of the road if stopping so that others can pass by.

Parking areas are not plowed during winter. So, it's impossible to park to access the refuge for snowshoeing, etc. Refuge is open to some activities September till February 28.

Refuge drive opened later than it should have in the spring because of unsafe road conditions or deteriorated surfaces.

Signs marking level of inclines on hiking trails for those that are able to walk, but have significant issues with inclines.

Some of the hiking trails could be better maintained. Some become impassable for months at a time.

The road I take to arrive at the hiking trailhead .3 is a county road, do you consider that a refuge road?

The road into the wildlife loop is rough.

The roads in the refuge are not marked well. The map is not clear either.

The Sherburne refuge takes very good care of their roads. This is important since their Wildlife Drive is my primary access to the park.

This refuge is so special, and I love that driving the loop is low key, with minimal impact on nature. I can see room for improvement in creating more safe areas to pull over and park but hope that the impact on nature is extremely minimal.

We know this refuge very well from many visits for the last 20 years. We do not need any instructions or directions.

We love the refuge and all the opportunities it provides for our family.

We wanted to drive around more, but some roads were not paved.

We were here shortly after the burn, so about half the hike was charred landscape. It was still nice, though.

What can you say about no paved roads? We can get around and that is important. :)

Survey Section 5

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

Comments on Services, Facilities, and Opportunities at This Refuge (n=33)

Bathroom needs fixed.

Boardwalk on Mahnomen Trail at Sherburne NWR has a hole from a broken board that is a hazard and needs repair. I notified staff of the problem nearly 2 weeks ago and repair has not been done.

Building exists for schools groups not open to public - use for naturalists with displays etc. Open 7 days (get rid of some maintenance to defer costs).

Centers should be open on weekends during spring migration and early summer.

Dedicated cross-country ski trails in the winter trails are destroyed by hikers, dogs, horses, and their waste.

Do the controlled burns. Very thick vegetation in spots that make it hard to get around.

Excellent.

Few spots specifically set up for viewing scenery or wildlife. Growth along roads specifically made to view wildlife obscure many viewpoints of scenic or wildlife areas. More foot path access to scenic or wildlife viewing areas are needed.

Great visit, but the restrooms needed servicing!! :)

I enjoy all of this at this refuge. Hopefully, our younger children see how important it is to have this land preserved for the wildlife.

I enjoy going to Sherburne National Wildlife Refuge every year to see the sandhill cranes, but I can hear people shooting/hunting, which makes me nervous. I haven't heard of any fatal accidents out there, but I would stop going if that happened.

I grew up very near. My mother and father lived by Blue Hill in the 40s - 50s. I enjoy the area very much.

I have a sister with a condition that causes sound to be terribly painful, so she spends most of her time at home. The Sherburne County Wildlife Refuge is only 10 miles or so from her house and has been such a blessing to us! She doesn't have a lot of energy and is always dealing with pain, so the wilderness drive, with all of its opportunities to see and photograph animals, has been a source of great joy to us over the years. We thank you for all that you provide!!

I have been in love with this place since I first stumbled upon it a few years ago. The information at the loop kiosk is great. But I would love to be able to go to a visitors center or talk with an employee who knows more about the wildlife, habitat, trail access, camping, and really understand how to access all areas of the park. It's hard to figure out where to go from the website, or from a map, especially to see more of the dune area. I went to the horse campground to photograph the map and had to figure out on my own how to try to get closer to the dunes. I accessed through the campground, but never did find a way to see this area from a trail. At the campground, I saw a sign about the Uncas Dunes and really wanted to view this. It indicated a trail to the right of the sign, but I could not find a trail. The wildlife loop is well marked at the beginning, lots of good info. But a brochure indicated that the Oak Savanna Visitor Center was by appt only, so I did not attempt to go. If there is another visitor center, it was not clear from my 2 visits in the last few years. I did enjoy 2 trails off of the wildlife loop - one short in the prairie, and one short one in the oaks. I would love to camp here also, but I had to go to the campsites in person to see if I would want to (and I would) - there is very little info that I could find on the website about it. It may also be unclear if the campground and dunes are part of the refuge? But if not, some cross promotion would be helpful since I wanted to do both in one day, driving from St. Paul. I love the refuge, the peacefulness (not a lot of busses and traffic). I think biking and canoeing would be amazing here. I loved that one of the brochures allowed foraging within 100 feet of trails. I think this could be a big draw for people, and love that it is allowed and also protects wildlife with the 100-foot rule, and I was there in morel season, so I did look for mushrooms a bit (but did not find any). It would be great to see more of the info on brochures on your website. There is a lot of important content. A visitors center with regular hours would be extremely helpful. I posted about this place on social media, and it received a lot of activity and prompted at least one person to visit within the same week.

I look forward to other recreation opportunities (fishing, canoeing, biking, and volunteering) as my children get older. For now, we can only do short hikes and driving.

I have deer hunted at the refuge for over 20 years. The cattle fences are a disruption to climb over or under. Snow plow trucks show no concern for vehicles parked along refuge roads and will plow heavy wet snow on anyone standing too close to the road or by the vehicles. They will often break off your mirrors. I personally was hit by the snow from a snow plow while hunting and could have been seriously injured in 2017. I filed a complaint with the county. I have also seen photos of deer caught in the barbwire fence that have died hanging from the fence. There are not enough cattle in the state to eat all the vegetation available on the refuge. Dead and fallen trees litter the oak forests and should be cleaned up. Wood cutting permits could be available so the general public could help with this matter in all areas of the refuge. Bow hunters should be required to register as proof of the deer killed and taken by them personally on the refuge, so that they do not come back and gun hunt deer as well. The refuge restrooms by Blue Hill indicates no hunters. Hunters pay taxes and should not be restricted from using them. We as deer hunters are not allowed to use roads on the refuge during hunting season. Animals killed have to be dragged or carted out a mile or better in some cases. The refuge is a fine and changing place to deer hunt. Please continue to make it better for all to use. Thanks!

I like the idea of bike trails. I am not aware that this is offered at present.

I suggest adding some picnic tables near parking lots.

I wish all or most refuge roads would be open to hiking and biking during the summer season.

If weather/snow permits, I wish the wildlife drive could be open a greater part of the year.

It would be nice if the wildlife drive were open year-round.

It would be really nice if basic wall blinds were in place to allow visitors to watch from and not spook wildlife and more boardwalks through wetlands.

It would be wonderful to have more hiking opportunities, but with it being a refuge of course, the wildlife is more important.

Maybe signs for limited or no access, to say like a road, could be more colorful or larger so better to be seen.

Most refuges we have visited (MN, SD, NE, ND, MT) have no staff available nor visitor centers open on weekends. Saturday and Sunday are days when time is most available for a visit, yet the refuge operation seems to shut down on those days. Makes no sense to me.

Restroom was clean.

The buckthorn removal is very important to your neighbors and I am one.

They could add boardwalks on hiking trails that are wet/flooded. Sometimes you hike a couple miles and run into a flooded trail and have to turn around.

This is a fairly lightly used facility. I almost never interact with staff, occasionally I will see a volunteer, we exchange pleasantries but not much more.

Visitor center is closed Saturday and Sunday, why?

We like Sherburne Refuge for hiking, birding, general photography and even the drive. Could use a few more pull offs on the drive. Appreciate hiking trails. The more, the better.

Wish there was access to waterways.

Would like to see owners clean up after their pets, it's getting pretty bad on the trails.

End of Survey

General Comments (n=33)

A very clear and accessible survey. Perhaps some question/s on pets, such as dogs, would have been useful. I had no problem hiking with my dog.

Addition of birding stations/blinds like I've seen in Europe.

Again, staffing on weekends is a big plus for us, and I suspect for many visitors. If refuge professional staff cannot meet this need, it certainly beckons volunteers.

Antler restriction in refuge itself. Less doe tags. Increase deer population. Agriculture some areas, for winter food for deer and other wildlife.

As always, it was greatly enjoyed and memorable for all the species of birds I was able to see!

As for me personally, I feel a wildlife refuge should be just that. A place where animals, both land and those in the water, can be at peace and not be hunted or fished. A place where the land is maintained with that in consideration. Trees left for them even if not in a growth stage. Enough acreage. Animals do need to have places where they can live and nest and be allowed just to be. The land use for species is getting critical. And on a similar matter, farms being turned more and more into developed spaces and parking lots need to be factored into any hope for the future of this planet.

Could use more benches along the trails that would allow people to sit. So important.

Deer hunters seem to get a bad rap when hunting. They think we are just killing animals to kill. People around the refuge tell us to please take as many deer as possible as they are tired of hitting them with cars. We get our hunting licenses checked and rechecked by game wardens, federal game wardens, sheriff deputies and sometimes local staff from the refuge. This is not a bad thing. We have taught our children to respect the refuge and its rules and regulations. Some hunters do not abide by these rules and regulations. All said and done, we harvested 1 deer for 6 hunters. I am currently looking for a better place to hunt next year - if not found, I may be back.

Good place, please leave it be.

I can't help but wish that Sherburne National Wildlife Refuge had a longer season of being open to hiking. So much of the open hiking season occurs during hunting season when I feel it is unsafe to hike in many parts of the refuge. After hunting season, it is usually too cold.

I find the area well maintained for prairie and the burning of the land to improve vegetation growth is fierce, but there are no other animals to observe such as rabbits, foxes, hawks, coyotes and so on. I noted plenty of pocket gopher mounds for food for other species. One of the things I really enjoy is seeing the geese and swarms of hatching and seeing the eagle's nest with the eaglets.

I love Sherburne. I use the wildlife drive as often as I can. I am an avid bird watcher and amateur photographer. I usually pull off and enjoy the drive-side trails. Perhaps if I were to retire, I would consider volunteering.

I love to go there; the refuge is a beautiful place.

I would like to see more hiking trails.

I really question the amount and timing of all the prescribed burns done on the refuge. I use the refuge for bird watching and they did several burns fairly late this spring. In fact, several days before the last burn I observed an eastern towhee carrying nesting material in the burn area. I also bird at a state wildlife refuge where they do

far less burning, and there are still many great birds there. Also, do we need to have so many oak savannahs? Just because we had them one hundred years ago, doesn't mean we need them everywhere today. Even the former ones would have been changed by now. Sometimes there is just too much "managing".

I'm writing a book and making art prints to raise awareness about unique areas, environmental issues, and connecting to nature throughout the Midwest. [website]. Sherburne Wildlife Refuge and Sand Dunes State Forest drew me back to it after reading that there is less than .02 wild oak savanna in the Midwest. This is why I have been to so many refuges and state and national parks in the last few years, I've driven through 8000 miles through all the Midwest states, hiking, camping, and writing. Sherburne Refuge and the sand dunes are very special, and I am so happy that I stumbled upon it on my way back from the north shore a few years ago, after stopping at the Mile Lacs Indian Museum. Tying these points of interest together can be very powerful. Creating a map for people so that they have more than one destination. Strong relationships with museums or state forests seems like a very good idea. And a clear understanding of where the trails and points of interest are within the refuge. Compared to what I learned at the refuge from brochures and displays, the refuge website only scratches the surface. Nice to learn about habitat, but the sand dunes and oak savannas make this place special.

It would be nice to have access to more areas for nature photography.

Just love to see all the different birds and animals. A person never knows what you will see in the refuge.

Living close to the Sherburne National Wildlife Refuge for the last year has given us an opportunity to learn about national wildlife refuges and has opened a whole new weekend day trip and vacation stops for us.

Love Sherburne NWR. As a birder, the wildlife drive and hiking trails provide excellent opportunities for both photography and identification. Have visited 3 other refuges in MN for the same activities.

Love this refuge and living by it. Thanks for all you do.

Me encanta la caceria y me facino mucho andar por el bosque. Me ayuda mucha a destresarse. Gracias por todo y le pido una disculpa hubo algunas preguntas que no entendi perfectamente. Gracias por proteger el bosque por que el bosque es vida. (*translation to English: I love hunting and really love walking through the forest. It helps me a lot to get out. Thank you for everything and I apologize, there were some questions that I did not understand perfectly. Thank you for protecting the forest because the forest is life.*)

Need to do a better job of maintaining water levels in the wetland areas. There is too much variation of water level that hinders use of the area and attraction of migratory waterfowl. At one point of the season, the area was mostly drained and unusable and then within a couple of weeks, it was at flood level. If they monitored the levels better, the levels would not fluctuate so much. This seems to have a pretty direct effect on how much migratory waterfowl use the area. I have been hunting the area for over 30 years and have seen a wide range on how well this is monitored. For the most part, I think the area is a great resource and the staff does a good job of providing a quality outing.

Sherburne National Wildlife Refuge is a great community asset! Please keep the wildlife drive open in the winter.

Thank you for all your hard work!!

The refuge is a jewel of our community. Although I appreciate hunting, I feel the safest walking/exploring areas that are banned from hunting.

They had recently done a controlled burn at the refuge. I would have liked to have known this. It was not that day, very little shade on the trail and very few birds to be seen. Had I known this; we would have chosen different trails to hike.

Value the diversity of habitat and species. Incredible learning opportunities and appreciate the conservation and management efforts.

Volunteers were so great. They helped with maps and described where to go. When leaving, my kids used the restroom and a volunteer showed them a bird making a nest nearby.

We love Sherburne!!!

We love the Sherburne Refuge. We have a lake house nearby and in addition to the valued opportunities to view wildlife within the refuge, the refuge provides the communities outside its boundaries with wide and wonderful varieties of birds to view.

We stumbled upon this refuge when looking for a place to visit on our way to a wedding. We enjoyed the day we were able to spend here. Great place.

We visited the refuge to observe sandhill cranes staging at the refuge prior to southerly migration. There were lots of birds to observe and we were pleased that we were able to observe them so closely. I will try to get out there more frequently in the future as we live so close to the refuge.