



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

# **NATIONAL WILDLIFE REFUGE VISITOR SURVEY**

*2018 Results for  
Blackwater National Wildlife Refuge*



**THE OHIO STATE  
UNIVERSITY**





## Acknowledgments

This study was funded by the U.S. Fish & Wildlife Service/National Wildlife Refuge System's Natural Resource Program Center, Division of Visitor Services & Communications, and Division of Facilities, Equipment, & Transportation. The study design and survey instrument were developed collaboratively with representatives from the U.S. Fish & Wildlife Service and researchers from The Ohio State University. We would also like to thank any staff and volunteers at Blackwater

National Wildlife Refuge who assisted with the implementation of this survey effort. We would like to especially acknowledge the following American Conservation Experience team members for their work in implementing the on-the-ground sampling for the 2018 survey effort: Ellen Bley, Kylie Campbell, Michelle Ferguson, Justin Gole, James Puckett, Nicole Stagg, and Angelica Varela. Lastly, we thank Emily Neidhardt for designing this report.

### Report citation:

Dietsch, A. M., Sexton, N. R., Lyon, K. M., Hartel, C. M., & Mengak, L. F. (2019). National Wildlife Refuge Visitor Survey: 2018 Results for Blackwater National Wildlife Refuge. Columbus, OH: The Ohio State University, School of Environment and Natural Resources.

*Front cover: A Delmarva Peninsula fox squirrel at Blackwater National Wildlife Refuge. Photo credit: Nicole Stagg.*

# Contents

Acknowledgments .....	ii
Understanding Wildlife Refuge Visitors & Their Experiences .....	1
Surveying Visitors at This Wildlife Refuge .....	3
Visitor Characteristics .....	5
Trip Characteristics .....	6
Information Sources Used for Trip Planning.....	9
Use of Social Media .....	11
Participation in Recreational Activities .....	12
Comfort in Nature/Feeling Safe & Welcome .....	14
Satisfaction with Refuge Experiences .....	16
Economic Benefits to Local Communities & Visitors.....	20
Encouraging Return Visits & Future Recreation Participation.....	22
Conclusion.....	25
References .....	26
Appendix A: Survey Methodology .....	27
Appendix B: Response Frequencies and Averages by Survey Question .....	29
Appendix C: Open-Ended Survey Responses by Question.....	41





# 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 Blackwater 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

Blackwater National Wildlife Refuge is located in southern Maryland, 12 miles south of Cambridge, and includes more than 28,000 acres of habitat. The refuge was established in 1933 as a waterfowl sanctuary for birds migrating along the Atlantic Flyway. It is home to an incredible amount of plant and animal diversity, and contains one third of Maryland's tidal wetlands, earning recognition as a "Wetland of International Importance." In addition to the rich tidal marshes, the refuge also contains mixed hardwood and loblolly pine forests, freshwater wetlands, and croplands. These areas provide a home to many species, including the endangered Delmarva Peninsula fox squirrel. Blackwater is the center of the greatest nesting density of bald eagles in the eastern United States north of Florida.

Each year, over 185,000 visitors come to Blackwater National Wildlife Refuge (U.S. Fish and Wildlife Service, 2018, written comm.) Bird watching is a popular activity; there are abundant opportunities throughout the year to see wintering waterfowl, great blue herons, bald eagles, shorebirds, owls, songbirds, and more. The refuge visitor center features

exhibits, an observation area, a butterfly garden, and a bookstore. Visitors also enjoy the wildlife drive and multiple walking trails, which provide opportunities to get a closer look at the scenery and the wildlife.

## 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 377 visitors agreed to participate in the survey by providing their names and addresses.
- In all, 238 visitors completed the survey online (58%) or by mail (42%) after their refuge visit, resulting in a 65% response rate.
- Results for this wildlife refuge have a  $\pm 5\%$  margin of error at the 95% confidence level. For more details on limitations of results and survey methodology, see Appendix A.



*Visitors watch for birds over the wetlands at Blackwater National Wildlife Refuge. Photo credit: Erin Tague.*



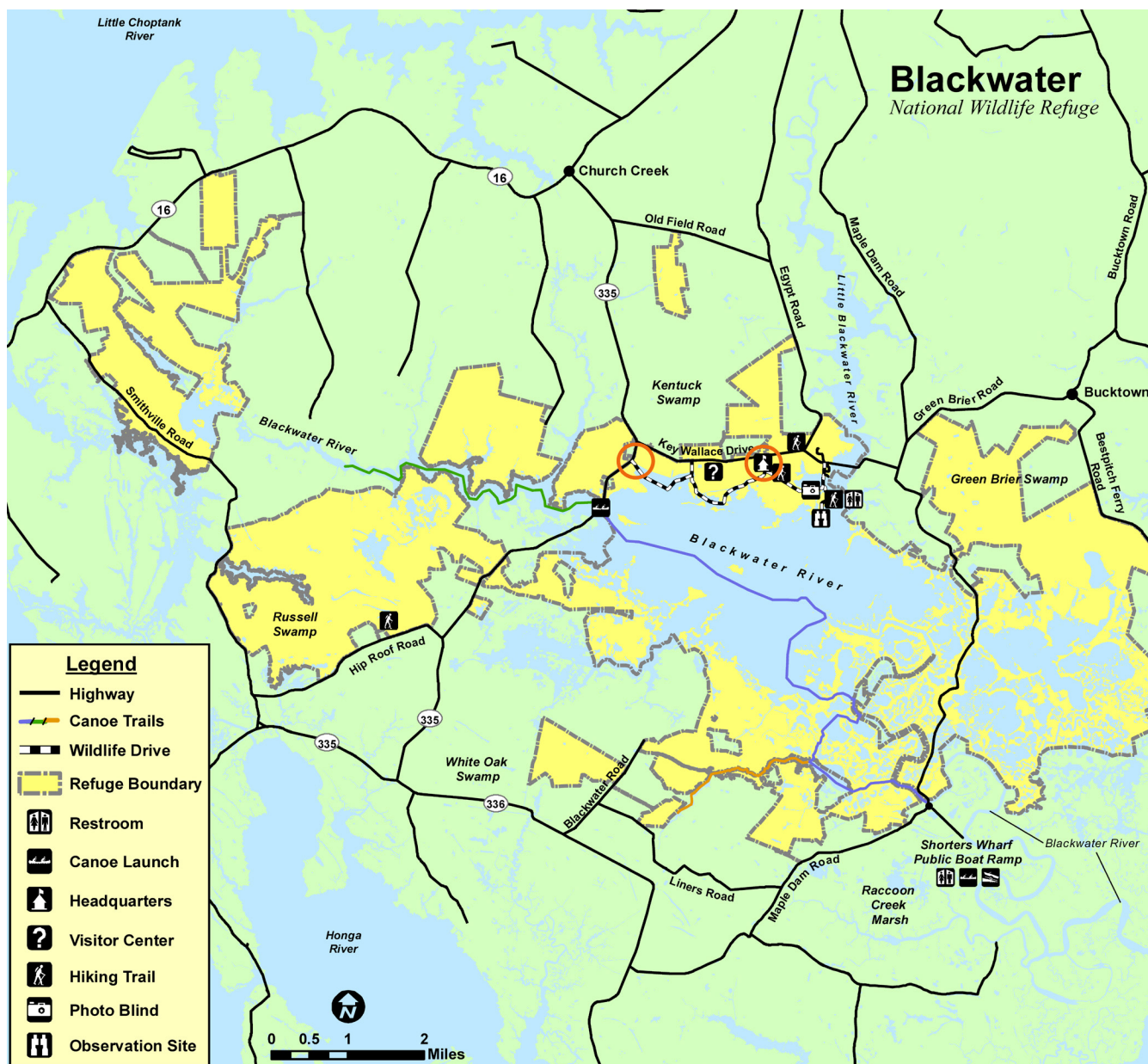


Fig. 2: Map of Blackwater National Wildlife Refuge. Visitors were contacted at the circled locations from 5/3/2018–5/11/2018 and 4/16/2019–4/30/2019.

# 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

- 59% of visitors were female with an average age of 56 years (Fig. 3).
- 41% were male with an average age of 63 years.

## EDUCATION

- 7% of visitors had a high school degree or less.
- 45% had at least some college.
- 47% had an advanced degree.

## RACE & ETHNICITY

Most prevalent race or ethnicity (Fig. 4):

- White (91%).
- Asian (4%).

## INCOME

- Visitors had a mean income range of \$100,000-\$149,999 (Fig. 5).

## OTHER TRIP CHARACTERISTICS

- Average group size of 3 people.
- 13% visited the refuge alone.
- 73% visited with at least one other adult.
- 14% visited with a combination of at least 1 adult and 1 child.

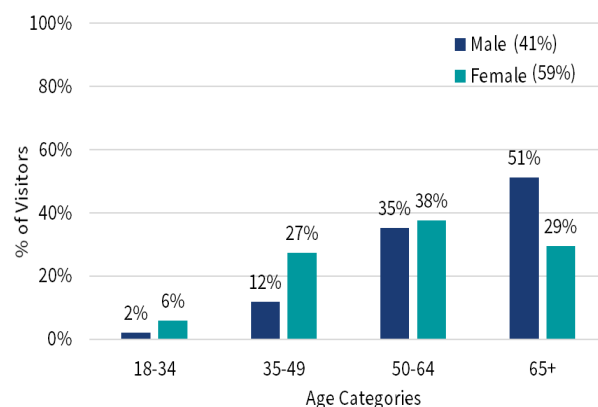


Fig. 3: Distribution of visitors to this refuge by gender and age group.

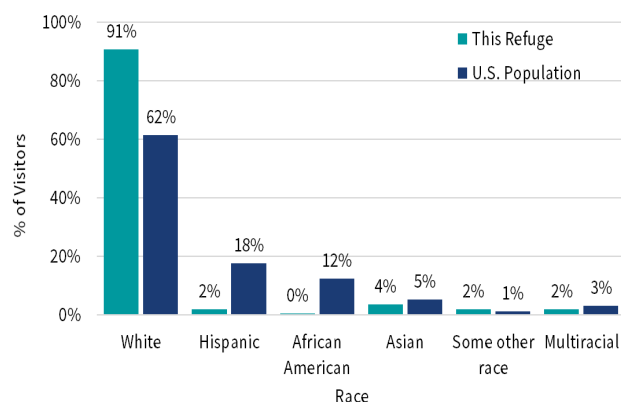


Fig. 4: Race and ethnicity of visitors to this refuge compared to the national average.

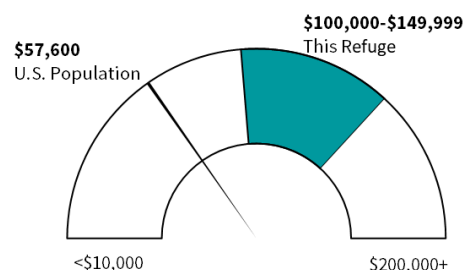


Fig. 5: Mean income range of visitors to this refuge compared to the national median income.

# 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

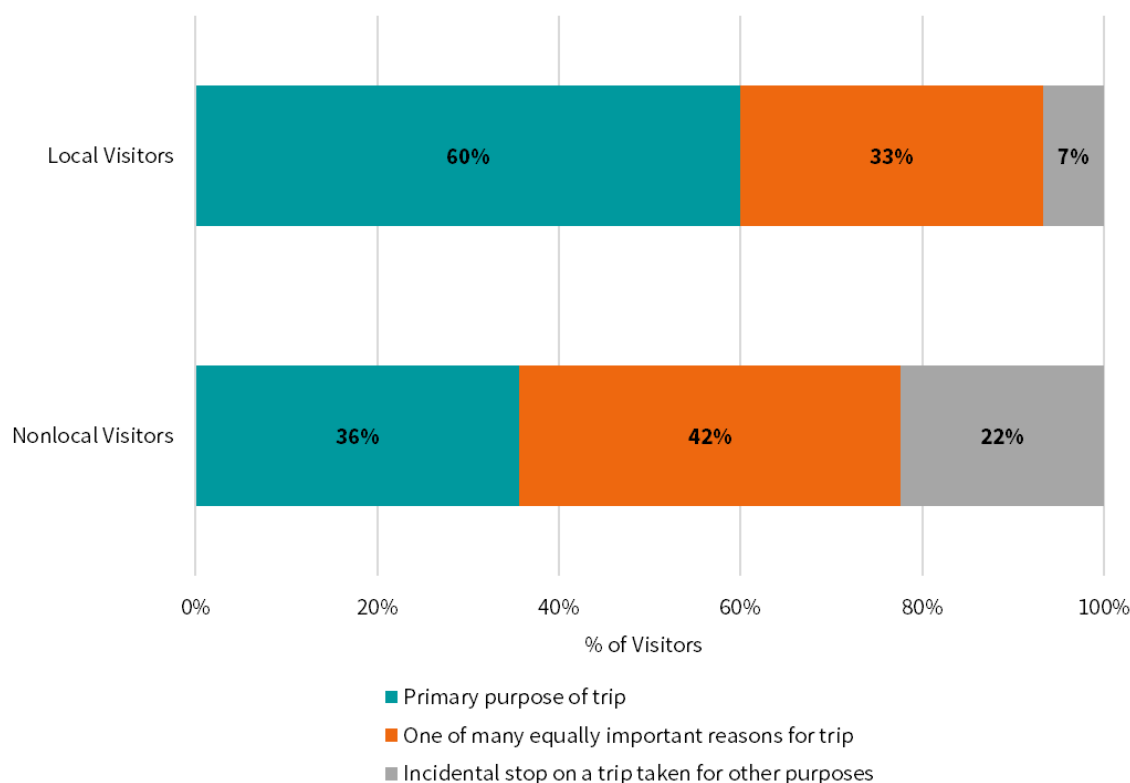
Highlights of trip characteristics for local visitors to this wildlife refuge (26%) include:

- For locals, this refuge was the primary reason for their trip (60%) (Fig. 6).
- Local visitors traveled an average of 32 minutes to arrive at this refuge (Fig. 7).

## NONLOCAL VISITORS

Highlights of trip characteristics for nonlocal visitors to this wildlife refuge (74%) include:

- For nonlocals, this refuge was one of many equally important reasons for their trip (42%) (Fig. 6).
- Nonlocal visitors traveled an average of 3 hours to arrive at this refuge (Fig. 8).
- Of the 98% of visitors who lived in the U.S., nonlocal visitors were most often from Maryland (46%) and Virginia (15%).
- 2% 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.*



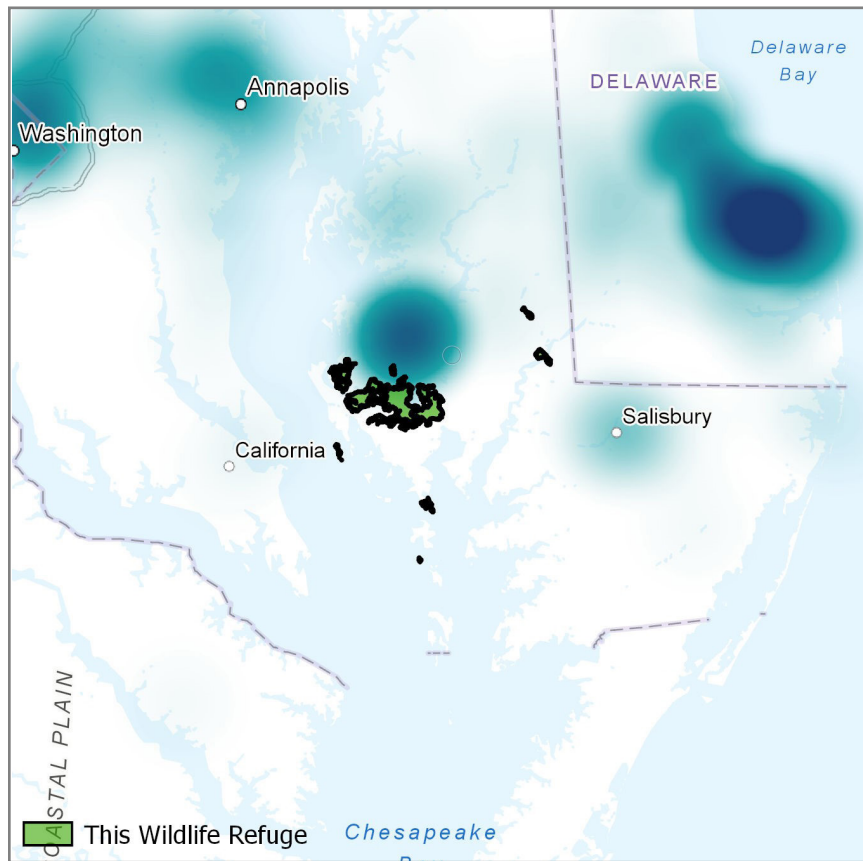


Fig. 7: Map showing residence of local visitors to this refuge. Darker shading represents relatively higher visitation from that area.

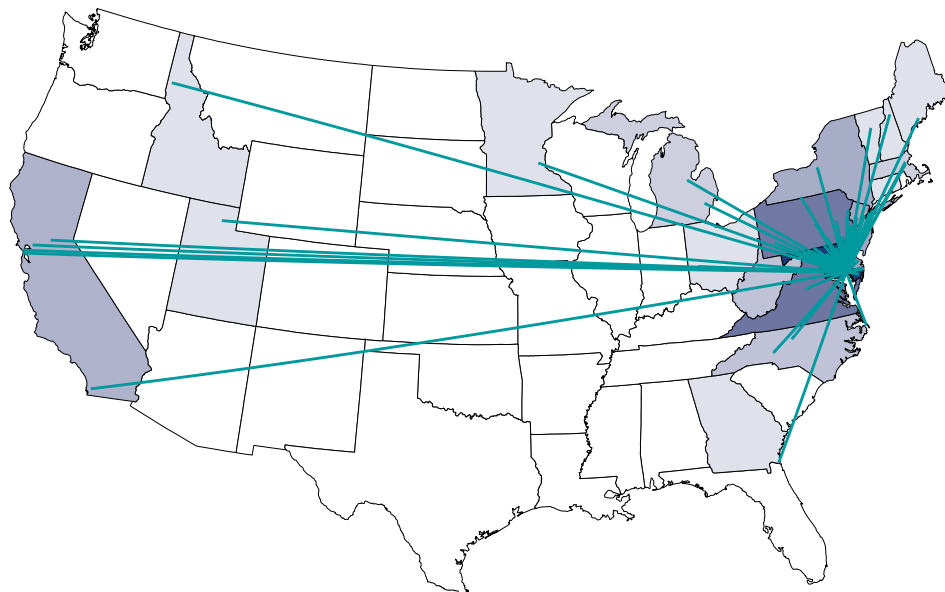


Fig. 8: Map showing residence of visitors to this refuge by zip code, with each line representing visitation from a different zip code. The convergence point of the lines is the geographical center of the refuge. Darker shading of the states represents higher visitation from that state.

## OTHER TRIP CHARACTERISTICS

Other trip characteristics include:

- To get to this wildlife refuge, visitors primarily traveled by private vehicle without a trailer (93%) and by foot (6%) (Fig. 9).
- Once on the refuge, visitors primarily traveled by private vehicle without a trailer (72%) and by foot (41%) (Fig. 9).
- Visits occurred during winter (27%), spring (96%), summer (26%), and fall (34%).
- 92% of visitors made a single-day trip to this refuge, spending an average of 3 hours, while 8% of visitors were on a multi-day trip to this wildlife refuge that averaged 2 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:

- 48% were repeat visitors to this wildlife refuge, visiting an average of 12 times.
- 65% visited other national wildlife refuges, averaging 4 visits.
- 82% visited other public lands, averaging 8 visits.

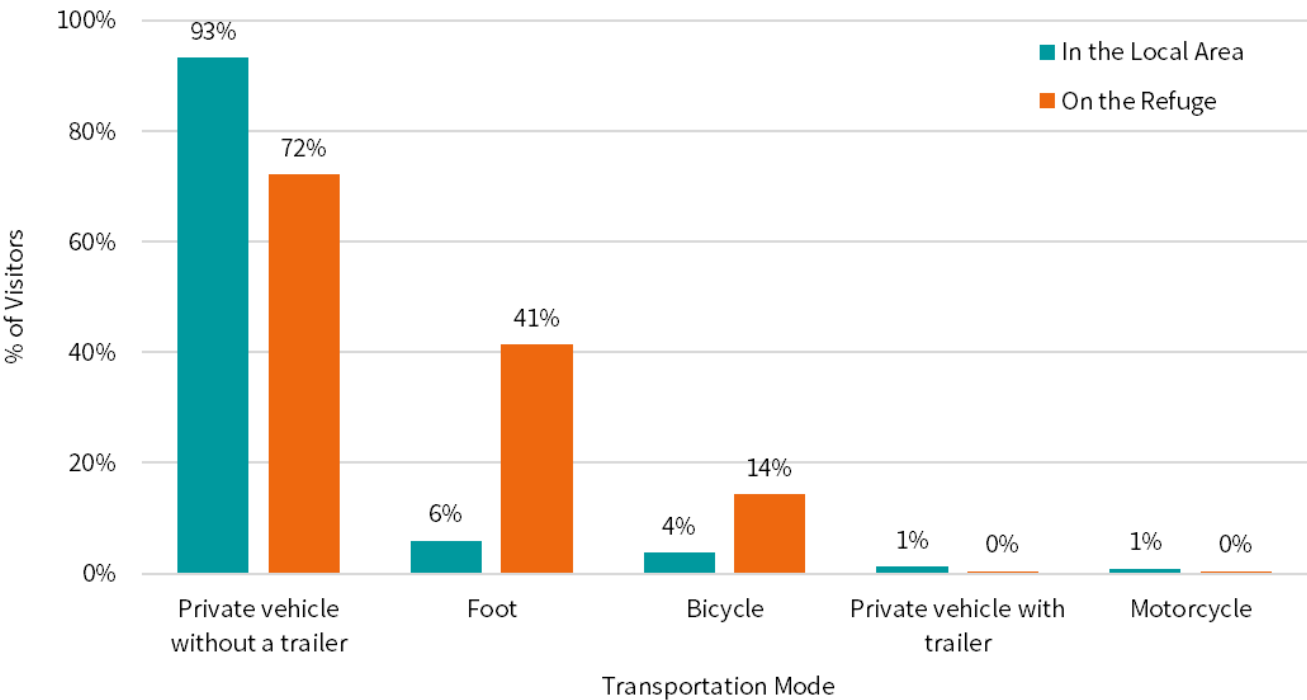


Fig. 9: Modes of transportation used by visitors to get from the local area to this refuge and within the boundaries of this refuge.

## 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 tourist information/welcome center and word of mouth.
- 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 refuge website.
- Use of information sources varied by age groups (see Figs. 10-12 for details).

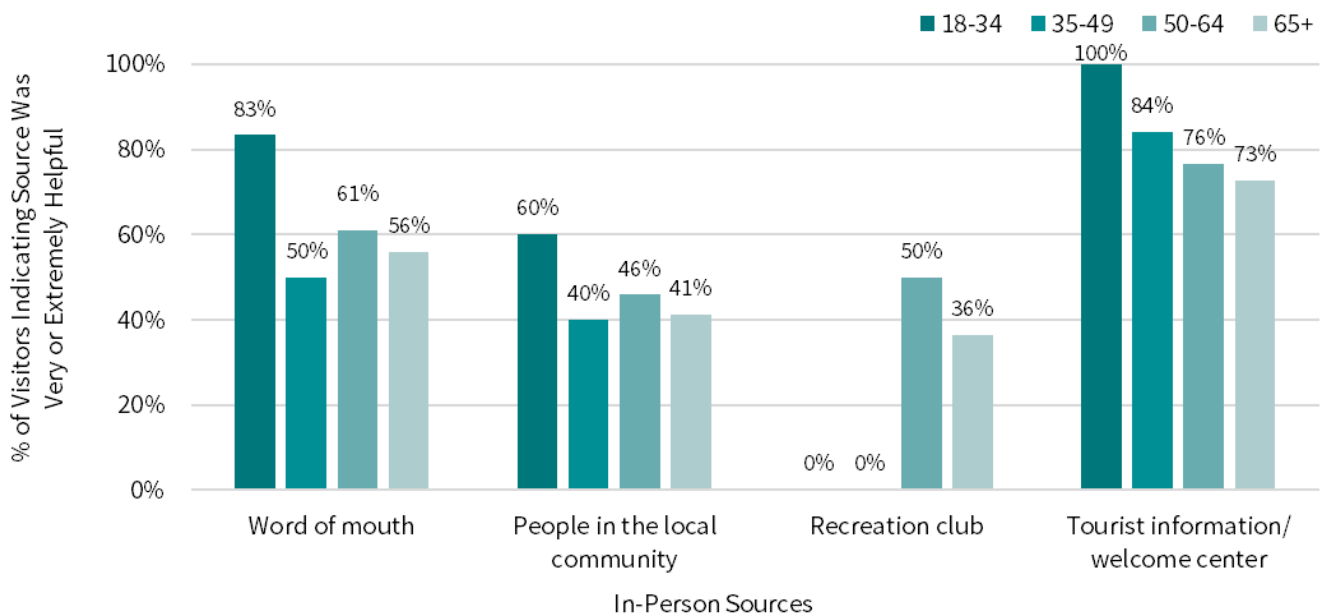


Fig. 10: Percent of visitors by age group who found in-person information sources very or extremely helpful in planning their trip.



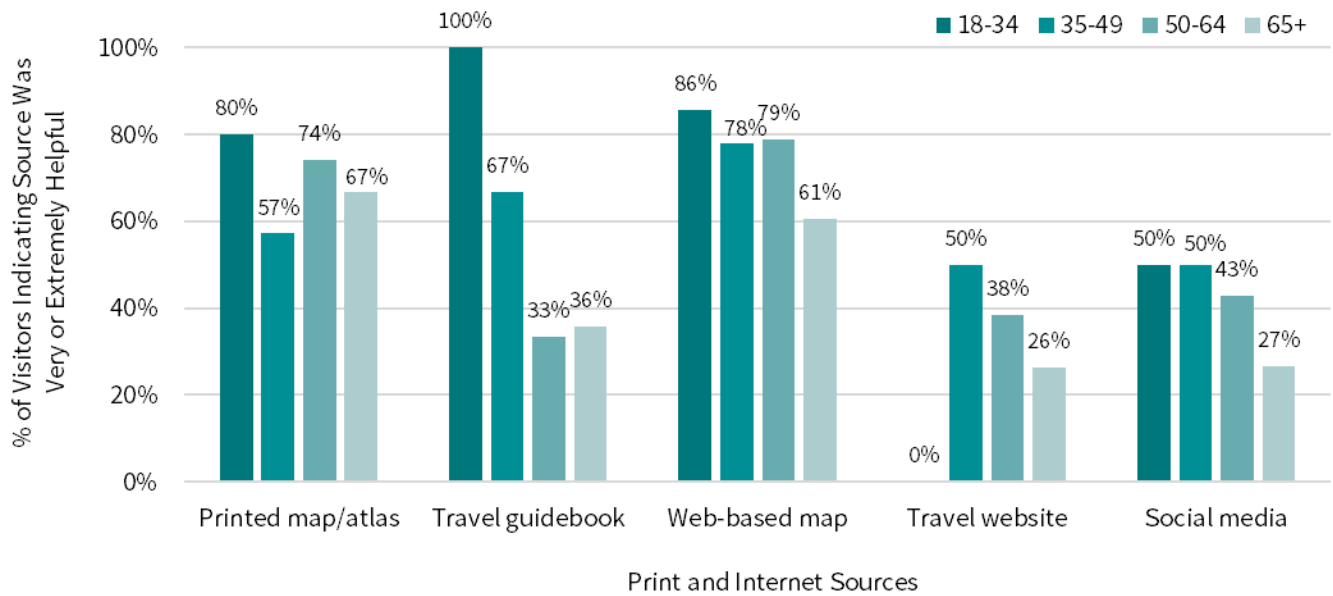


Fig. 11: Percent of visitors by age group who found print and internet information sources very or extremely helpful in planning their trip.

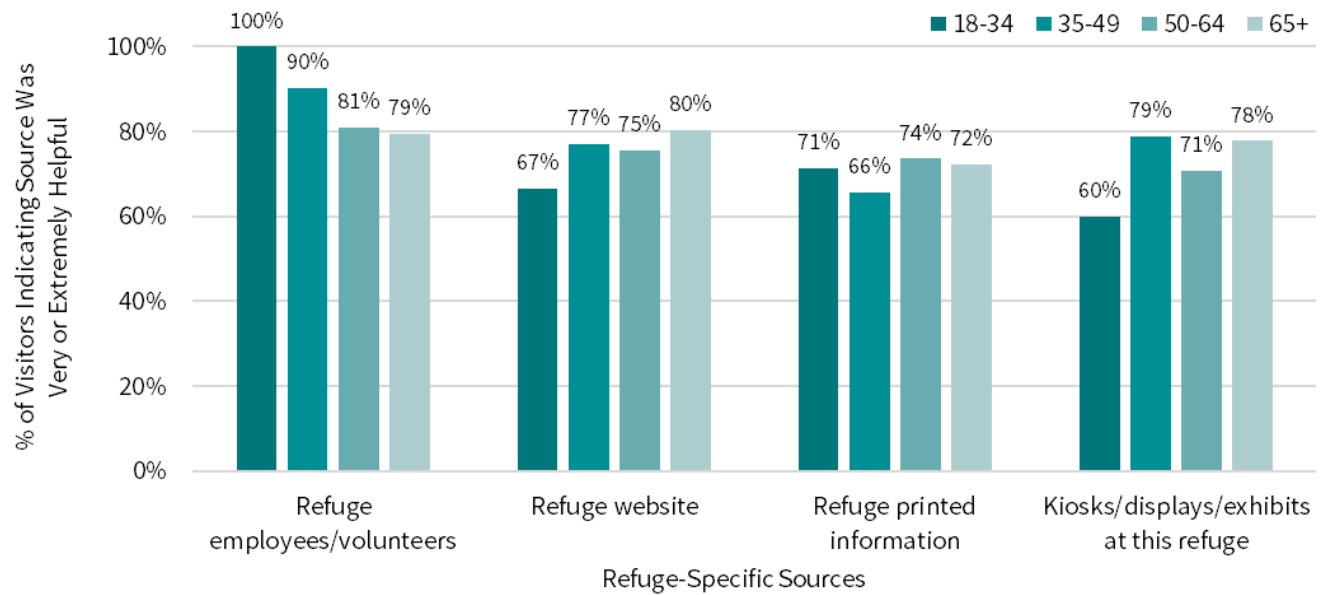


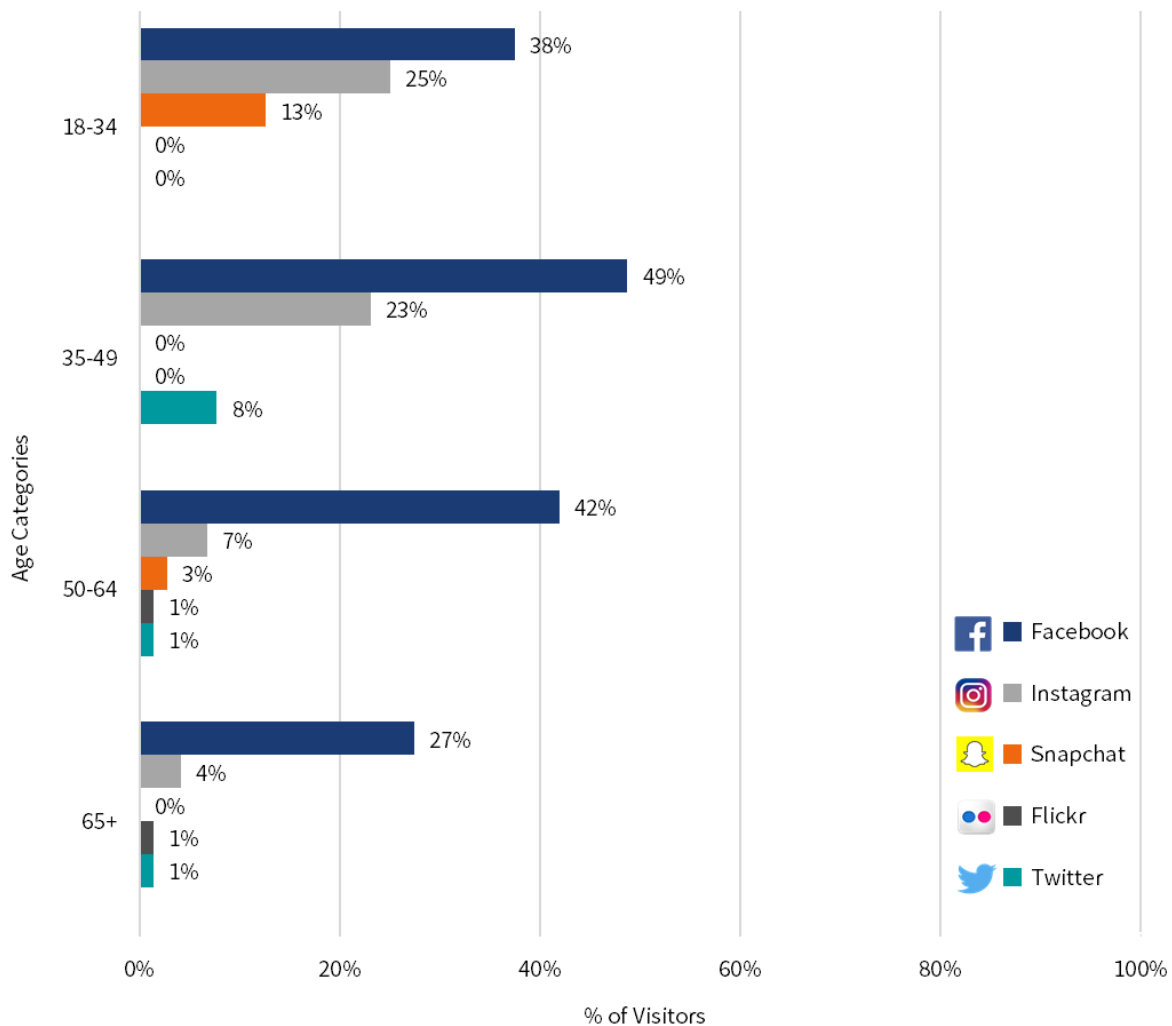
Fig. 12: Percent of visitors by age group who found refuge-specific information sources very or extremely helpful in planning their trip.

## 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 51% 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 (38%) and Instagram (25%).
- Visitors 35-49 years old preferred to use Facebook (49%) and Instagram (23%).
- Visitors 50-64 years old preferred to use Facebook (42%) and Instagram (7%).
- Visitors 65 or older preferred to use Facebook (27%) and Instagram (4%).



*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 (87%), bird watching (84%), and auto tour route/driving (63%) (Fig. 14).
- The top three activities noted as their primary activity on the day visitors were contacted to participate in the survey were bird watching (33%), wildlife observation (23%), and photography (13%) (Fig. 14).
- Approximately 86% of visitors went to the visitor center, and they most often used the restrooms (82%), viewed the exhibits (74%), and visited the gift shop or bookstore (70%) (Fig. 15).



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



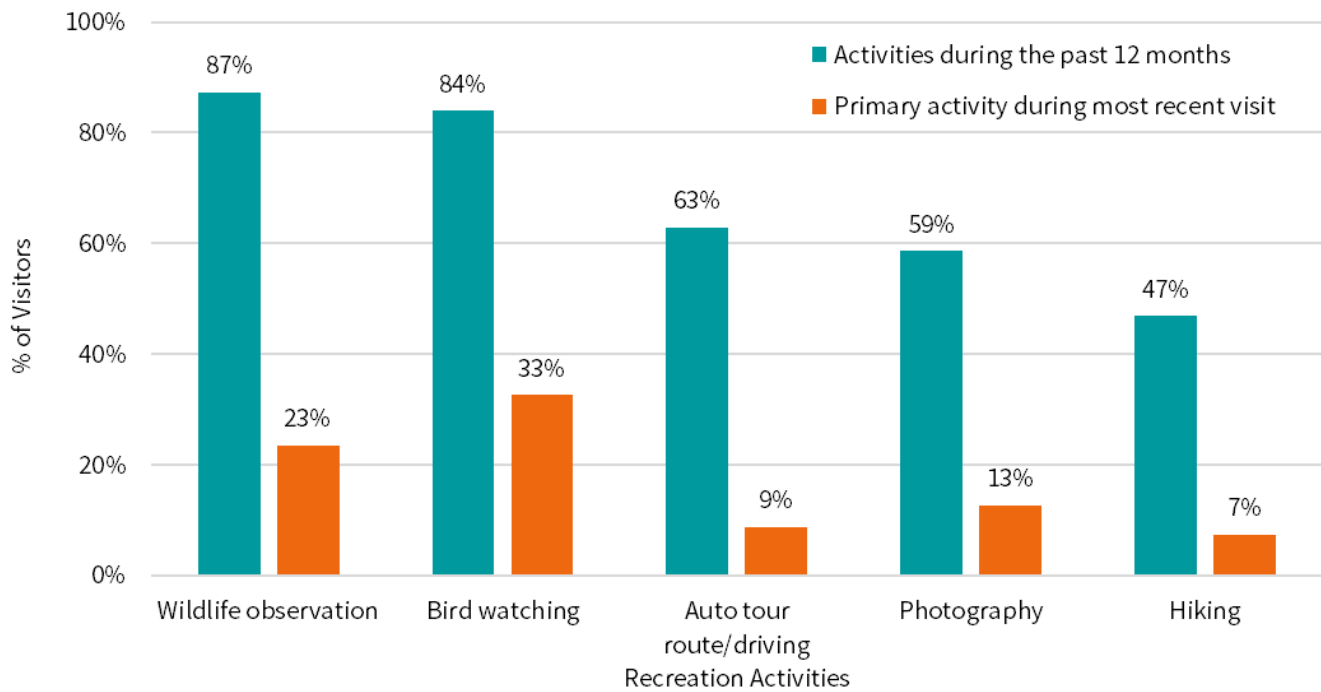


Fig. 14: Recreational activities visitors participated in during the past 12 months and their primary activity during their most recent visit to this refuge.

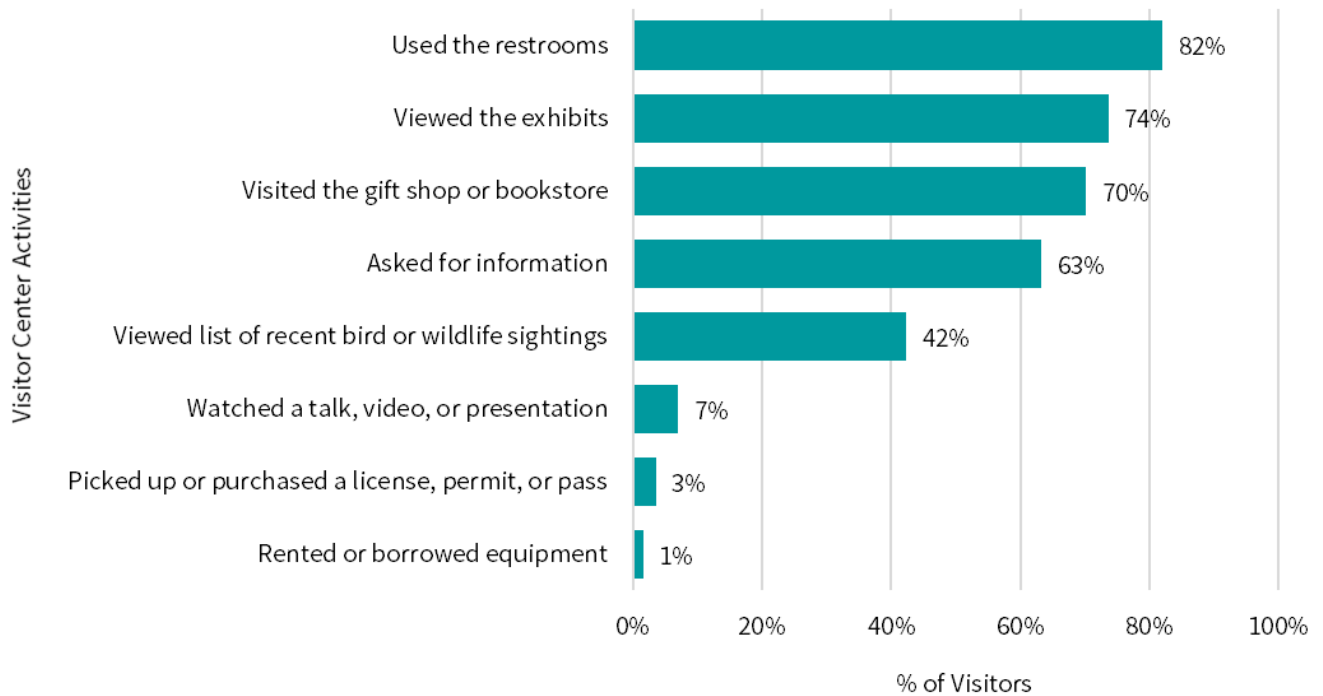


Fig. 15: Reasons visitors used the visitor center during their most recent visit to this refuge.

## Comfort in Nature/Feeling Safe & Welcome

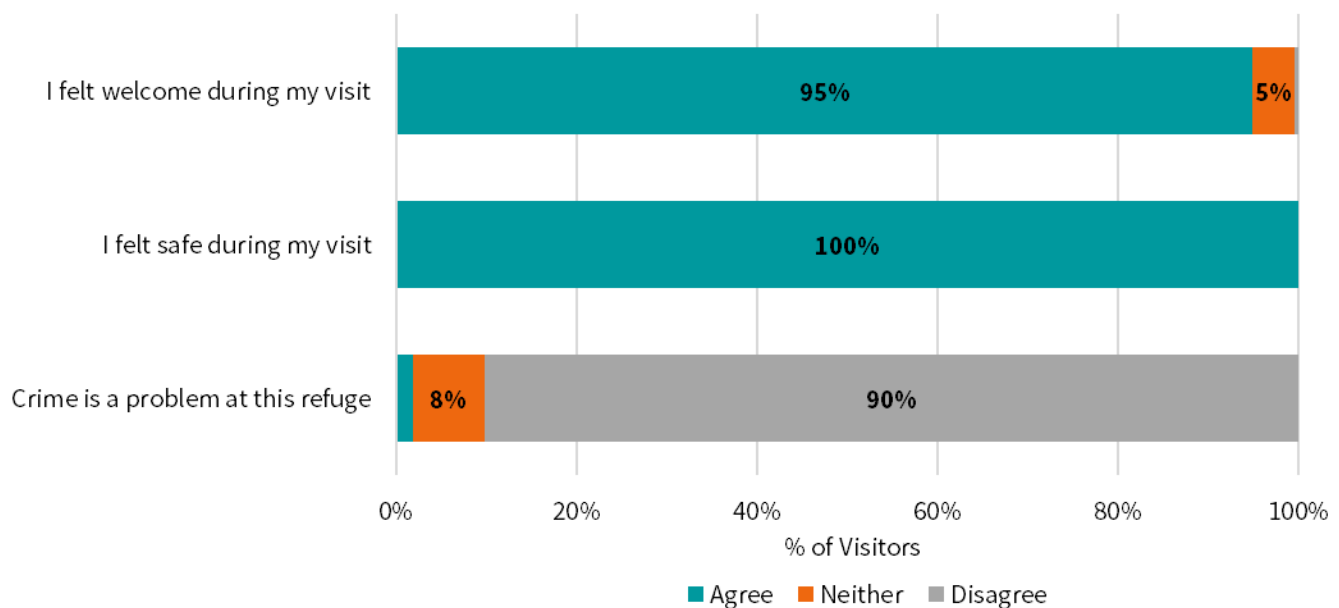
While many people are repeat visitors to refuges, each year thousands of people experience these lands and waters for the first time. One barrier for some visitors, particularly those living in urban areas or with little past exposure to nature-based recreation, is the perception that being in nature 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:

- 95% of visitors felt welcome during their refuge visit (Fig. 16).
- 100% of visitors felt safe during their refuge visit (Fig. 16).
- 98% of visitors felt comfortable in nature, but 6% did not like being in nature alone (Fig. 17).



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

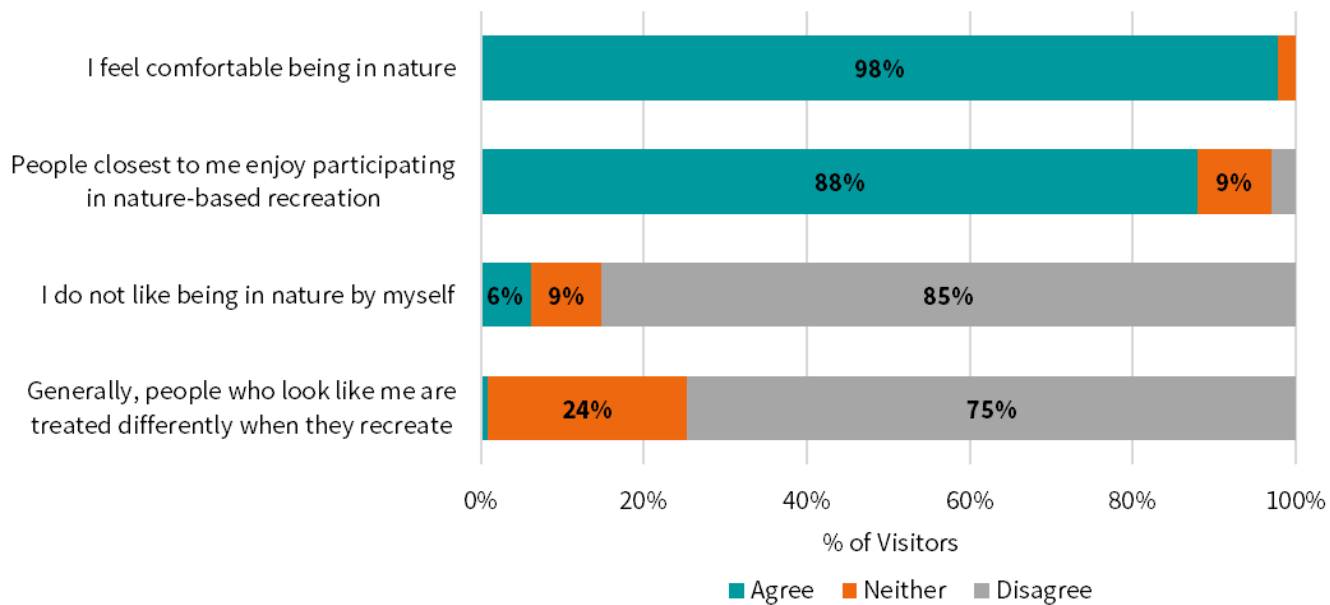


Fig. 17: Visitors' comfort with being in nature.



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:

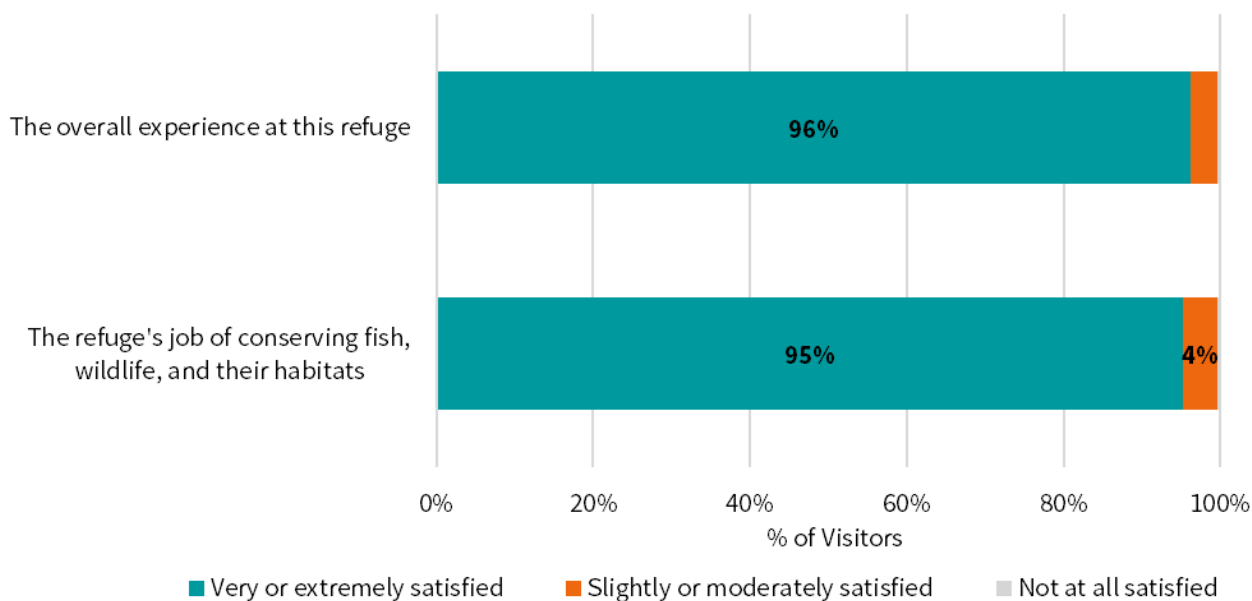
- 96% of visitors were very or extremely satisfied with the overall experience at this wildlife refuge (Fig. 18).
- 95% of visitors were very or extremely satisfied with this wildlife refuge's job of conserving fish, wildlife, and their habitats (Fig. 18).

## 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):

- restrooms (95%),
- visitor center (95%), and
- refuge hours/days of operation (94%).



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



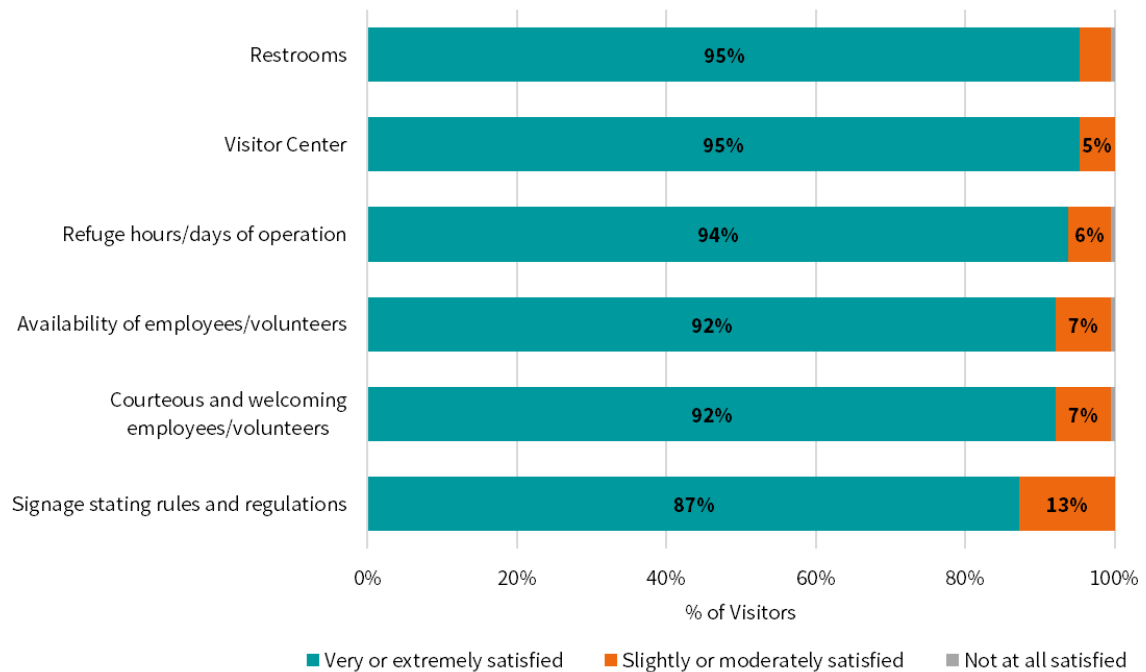


Fig. 19: Visitors' satisfaction with customer service and amenities at this refuge.

## RECREATIONAL OPPORTUNITIES

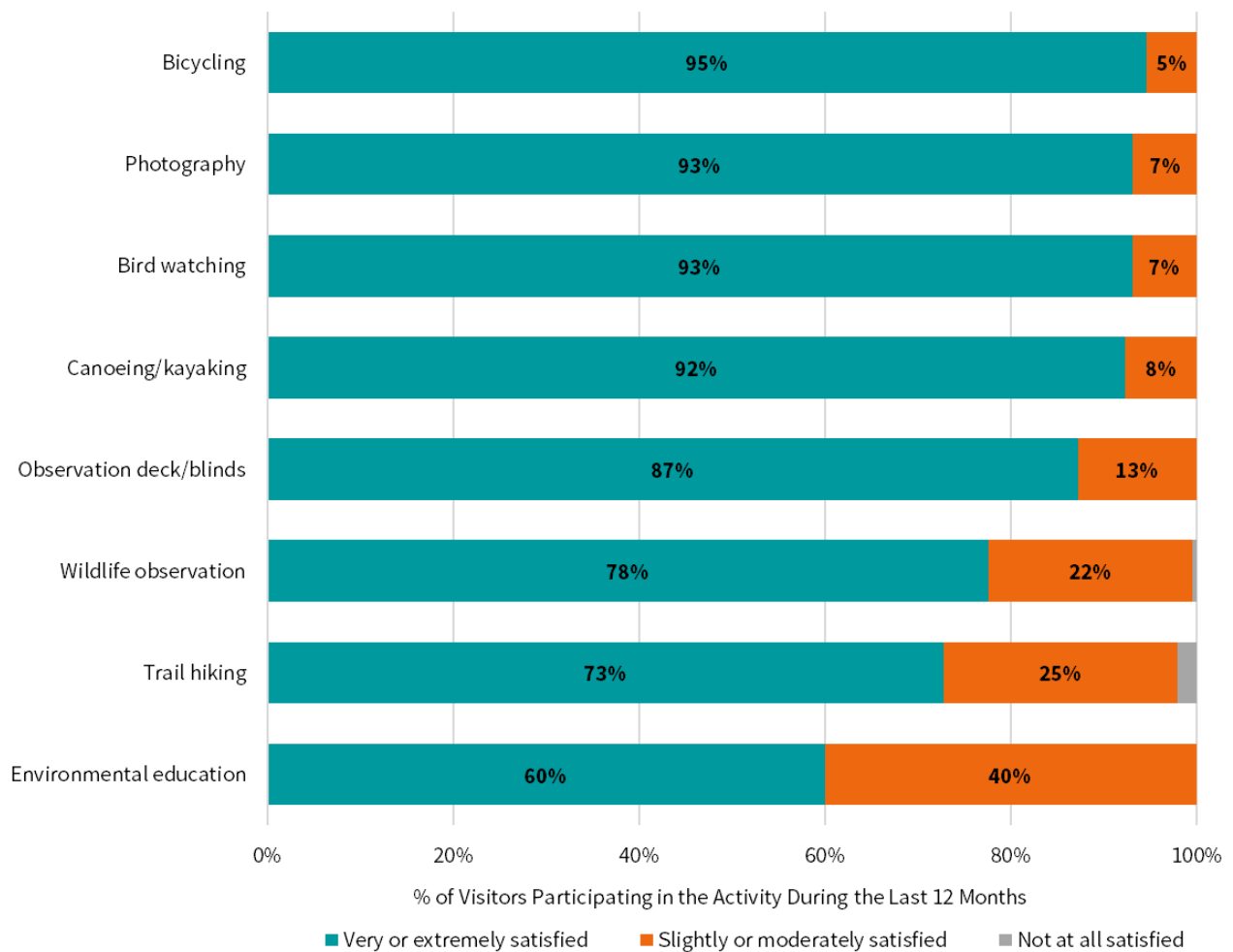
Outdoor recreation on wildlife refuges is a fundamental part of a visit. As American's values toward wildlife and their relationship with nature continue to shift (Kellert et al., 2017; Manfredo et al., 2018), public desires for recreational experiences on public lands are also likely to shift. In addition, 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):

- bicycling (95%),
- photography (93%), and
- bird watching (93%).

*"[Blackwater National Wildlife Refuge] is one of my favorite places on earth." - Visitor to Blackwater 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 (95%) and directional signs on highways (75%).
- Getting around this wildlife refuge, visitors were most satisfied with condition of bridges on roadways (96%), condition of parking areas (94%), and condition of refuge roads (94%).
- Accessing recreation on this wildlife refuge, visitors were most satisfied with condition of boat launches (93%), safety of roads or trails for nonmotorized use (88%), and condition of trails and boardwalks (87%).

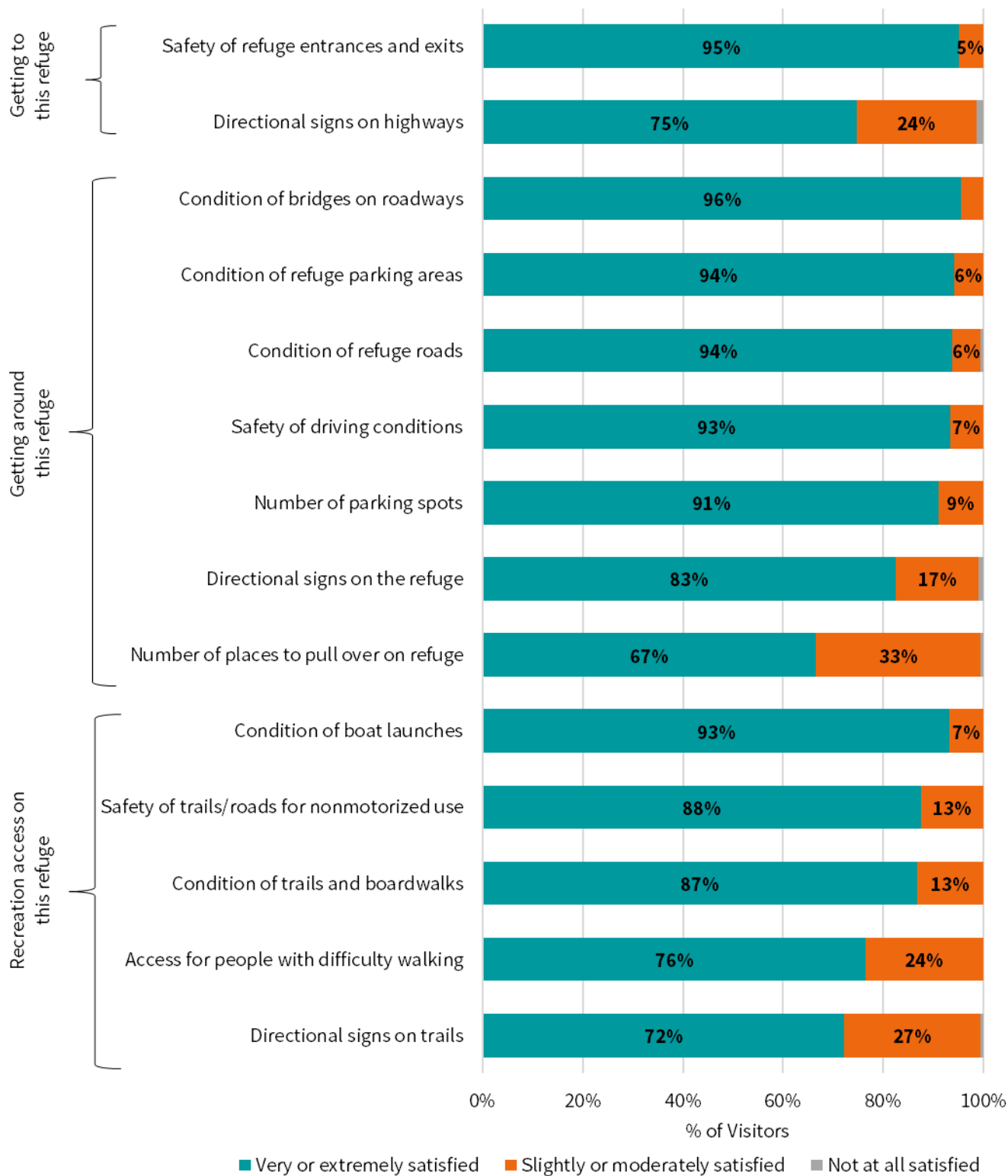


Fig. 21: Visitors' satisfaction with how the refuge is managing transportation-related features.

## 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; 26%) are as follows:

- On average, local visitors accounted for 6% 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 \$45 per person per day (Fig. 22).
- Local visitors were personally willing to pay an additional \$66 per day on average to visit this wildlife refuge (Fig. 23).

Results for nonlocal visitors (those living  $>50$  miles from this wildlife refuge; 74%) are as follows:

- On average, nonlocals accounted for 94% 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 \$99 per person per day (Fig. 22).
- Nonlocal visitors were personally willing to pay an additional \$124 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.





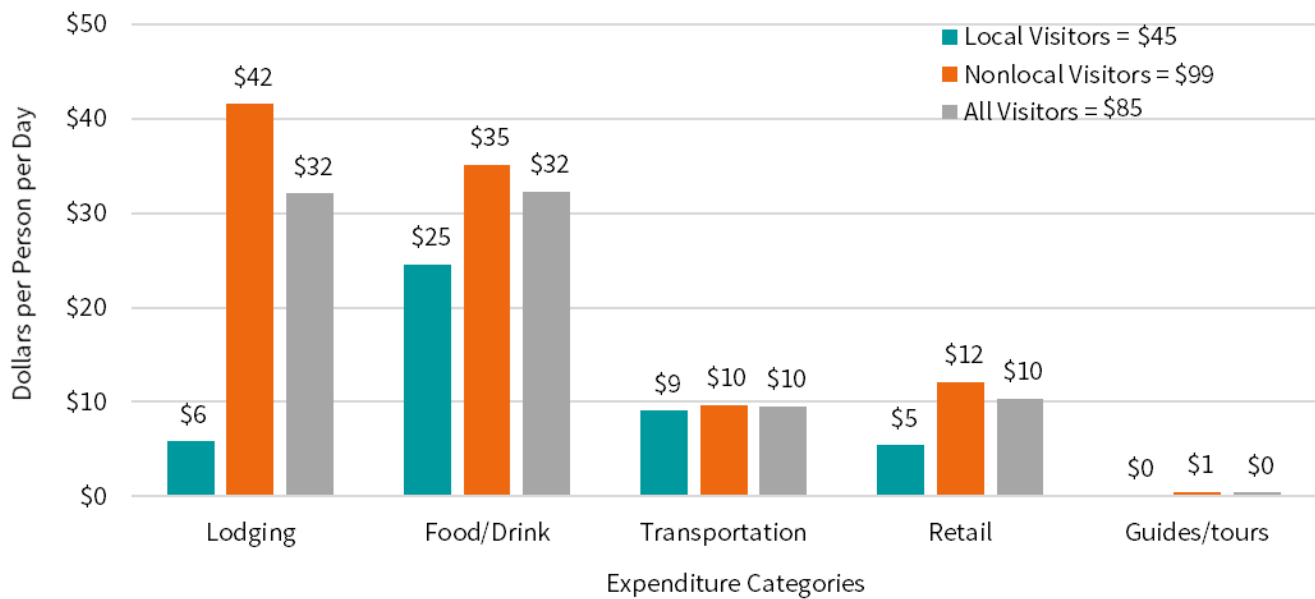


Fig. 22: Individual daily expenditures in the local community for local, nonlocal, and all visitors. Expenditures were reported by respondents on a per group basis; the total expenditures were divided by the number of people in the group who shared trip expenditures and the number of days spent in the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

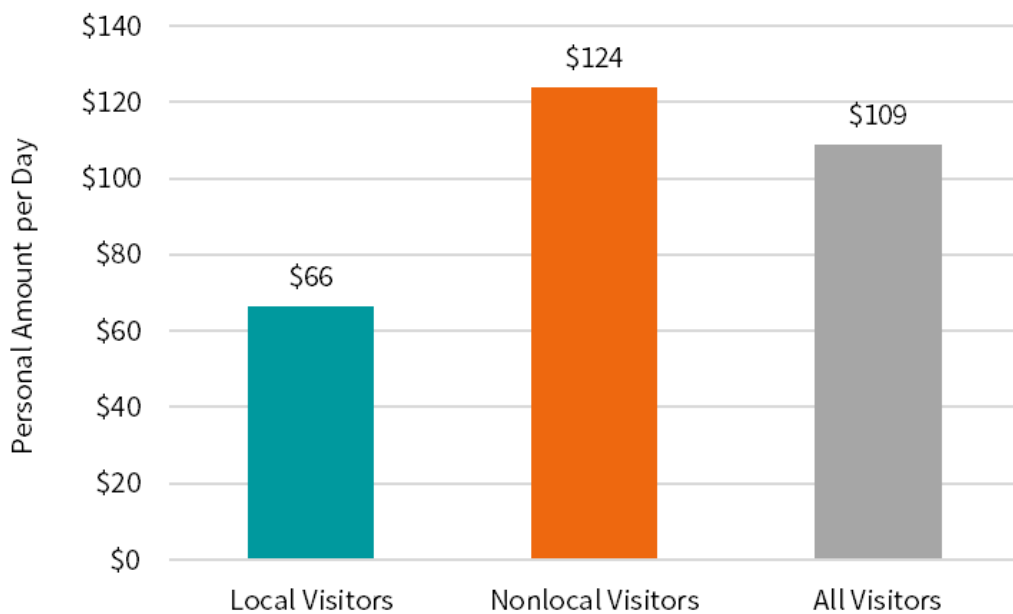


Fig. 23: Total personal willingness to pay per day above and beyond most recent trip expenses if costs were to increase for local, nonlocal, and all visitors. Due to the fixed-response question format, estimates of willingness to pay may underestimate the amount visitors would actually pay. Responses 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 highlighting unique local culture (52%), skill-building (48%), engaging families and multiple generations (33%), and engaging youth (32%) (Fig. 24).
- The top two factors likely to increase visitors' future participation in their primary recreation activity were more infrastructure (20%) and recreation equipment available for rent (19%) (Fig. 25).
- The top two factors likely to decrease visitors' future participation in their primary recreation activity were less regulations on hunting (39%) and less regulations on fishing (23%) (Fig. 25).

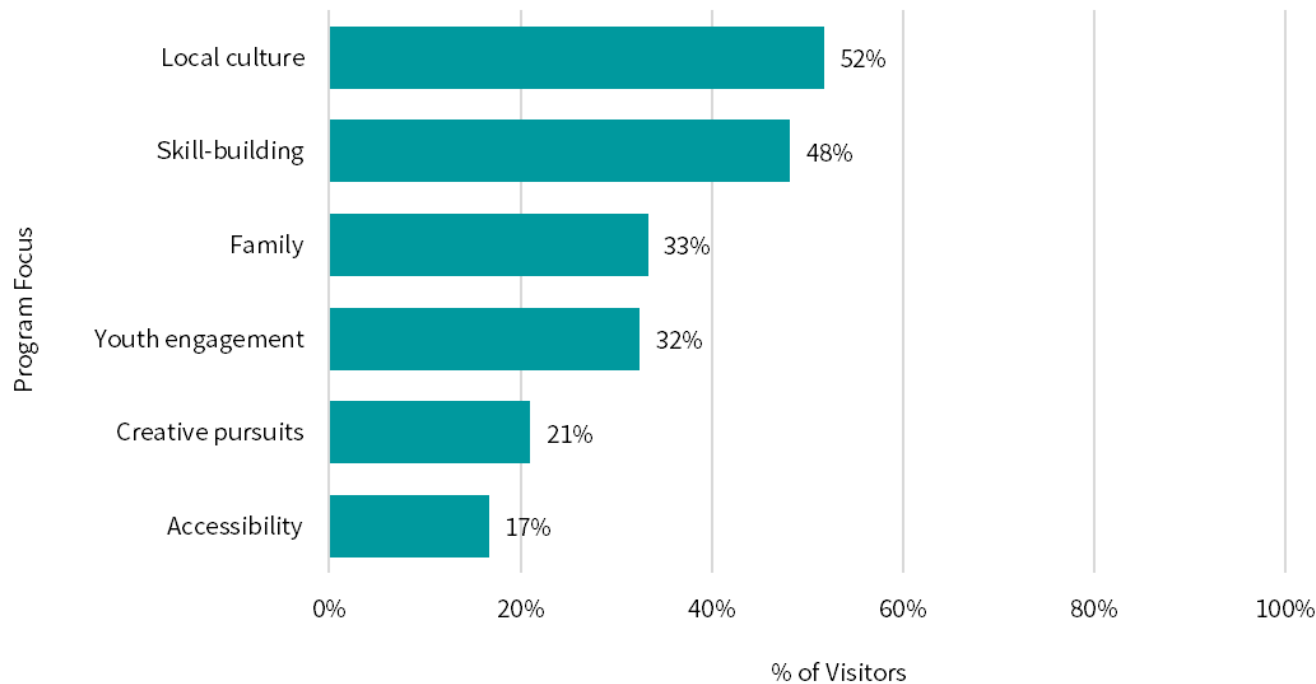


Fig. 24: Types of programs that would encourage visitors to return to this refuge.

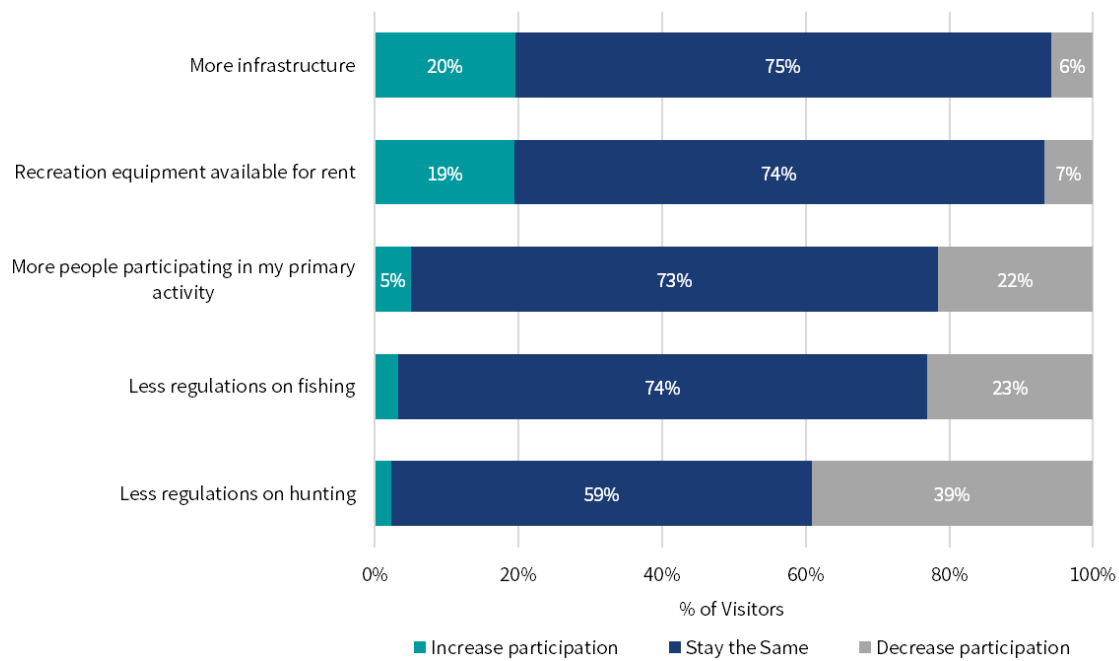


Fig. 25: Changes in visitors' participation in their primary activity if the listed recreation factors were to change.

## 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):

- a bike-share program (19%),
- bus or tram that provides a guided tour (19%), and
- pedestrian paths (13%).

## 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 (70%) and an improvement in the quality of wildlife habitat other than wetlands (60%).
- The top two resource changes likely to decrease visitors' future participation in their primary recreation activity were more acreage open to hunting and fishing (47%) and less water available for recreation (30%).

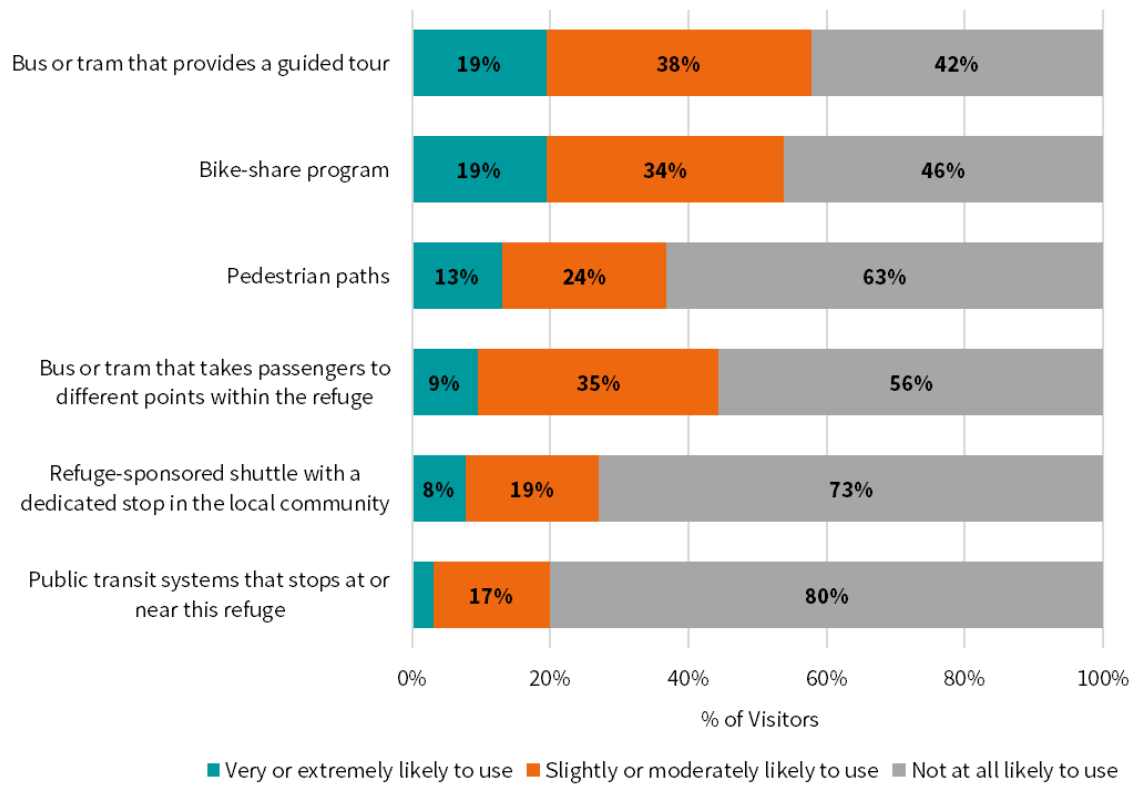


Fig. 26: Visitors' likelihood of using alternative transportation options if offered at this refuge.

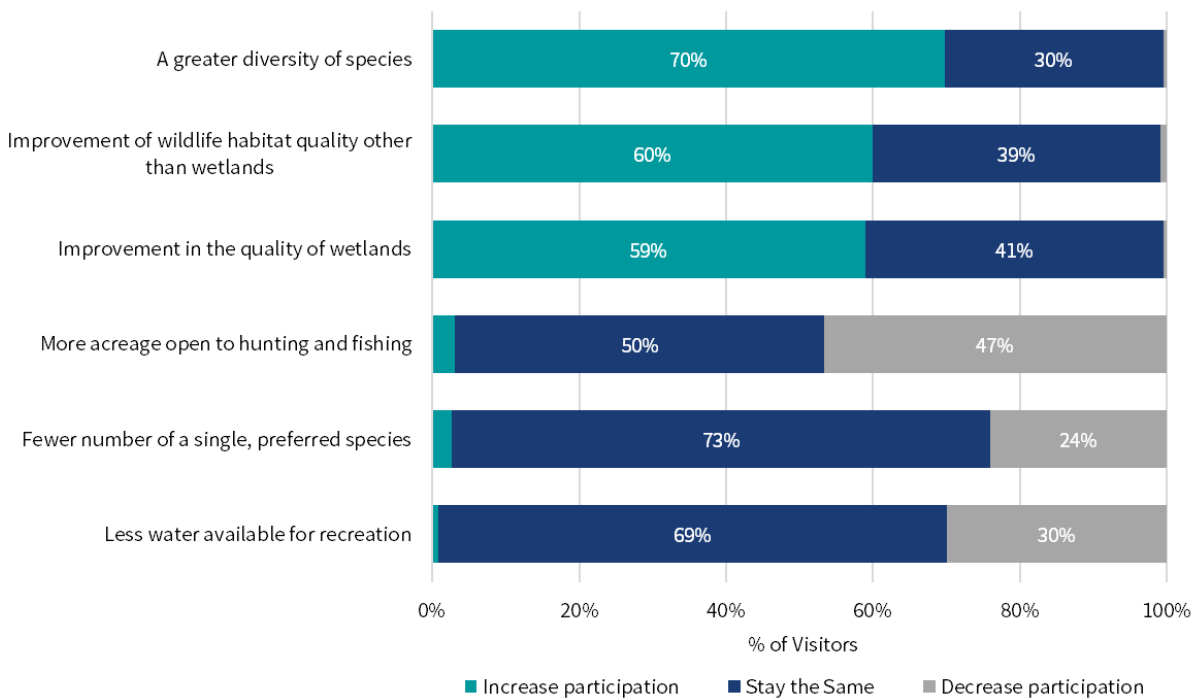


Fig. 27: Changes in visitors' participation in their primary activity if the listed resources were to change.



## Conclusion

These individual refuge results provide a summary of trip characteristics and experiences of a sample of visitors to Blackwater 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.*

# References

- Caudill, J., & Carver, E. (2019). Banking on Nature 2017: The Economic Contributions of National Wildlife Refuge Recreational Visitation to Local Communities. Washington, DC: U.S. Department of the Interior, U.S. Fish & Wildlife Service. Retrieved from <https://www.fws.gov/uploadedFiles/Banking-on-Nature-Report.pdf>.
- Charles, C., & Louv, R. (2009). Children's Nature Deficit: What We Know—And Don't Know. Minneapolis, MN: Children and Nature Network. Retrieved from <https://www.gufsee.org/uploads/6/5/0/5/65052893/cnnevidenceofthedeficit.pdf>.
- Kellert, S. R., Case, D. J., Escher, D., Witter, D. J., Mikels-Carrasco, J., & Seng, P. T. (2017). The Nature of Americans: Disconnection and Recommendations for Reconnection—National Report. Mishawaka, IN: DJ Case & Associates.
- Larson, L. R., Green, G. T., & Cordell, H. K. (2011). Children's Time Outdoors: Results and Implications of The National Kids Survey. Journal of Park and Recreation Administration, 29, 1-20.
- Manfredo, M. J., Sullivan, L., Don Carlos, A. W., Dietsch, A. M., Teel, T. L., Bright, A. D., & Bruskotter, J. (2018). America's Wildlife Values: The Social Context of Wildlife Management in the U.S. National report from the research project entitled "America's Wildlife Values". Fort Collins, CO: Colorado State University, Department of Human Dimensions of Natural Resources.
- Millennium Ecosystem Assessment. (2005). Ecosystems and Human Well-Being: A Framework for Assessment. Washington, DC: Island Press. Retrieved from <https://www.millenniumassessment.org>.
- Neher, C., Duffield, J., & Patterson, D. (2013). Valuation of National Park system visitation: the efficient use of count data models, meta-analysis, and secondary visitor survey data. Environmental Management 52(3), 683-698.
- Outdoor Foundation. (2018). 2018 Outdoor Participation Report. Washington, DC: The Outdoor Foundation. Retrieved from <https://outdoorindustry.org/resource/2018-outdoor-participation-report/>.
- Patton, D., Bergstrom, J., Covich, A., & Moore, R. (2012). National Wildlife Refuge Wetland Ecosystem Service Valuation Model, Phase 1 Report. Washington, DC: U.S. Department of the Interior, U.S. Fish & Wildlife Service. Retrieved from [https://www.fws.gov/economics/Discussion%20Papers/USFWS\\_Ecosystem%20Services\\_Phase%20I%20Report\\_04-25-2012.pdf](https://www.fws.gov/economics/Discussion%20Papers/USFWS_Ecosystem%20Services_Phase%20I%20Report_04-25-2012.pdf).
- Rosenberger, R. S., & Loomis, J. B. (2001). Benefit transfer of outdoor recreation use values: A technical document supporting the Forest Service Strategic Plan (2000 revision). Gen. Tech. Rep. RMRS-GTR-72. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Retrieved from: <https://www.fs.usda.gov/treearch/pubs/4578>.
- Sexton, N. R., Ross-Winslow, D., Pradines, M., & Dietsch, A. M. (2015). The Urban Wildlife Conservation Program: Building a Broader Conservation Community. Cities and the Environment (CATE),8(1), Article 3. Retrieved from <https://digitalcommons.lmu.edu/cate/vol8/iss1/3>.
- Smith, A., & Anderson, M. (2018). Social Media Use in 2018. Washington, DC: Pew Research Center. Retrieved from [http://assets.pewresearch.org/wp-content/uploads/sites/14/2018/03/01105133/PI\\_2018.03.01\\_Social-Media\\_FINAL.pdf](http://assets.pewresearch.org/wp-content/uploads/sites/14/2018/03/01105133/PI_2018.03.01_Social-Media_FINAL.pdf).
- U.S. Fish & Wildlife Service. (2011). Conserving the Future: Wildlife Refuges and the Next Generation. Washington, DC: U.S. Department of the Interior, U.S. Fish & Wildlife Service, National Wildlife Refuge System. Retrieved from <https://www.fws.gov/refuges/pdfs/FinalDocumentConservingTheFuture.pdf>.
- U.S. Fish & Wildlife Service. (2014). Standards of Excellence. Retrieved from <https://www.fws.gov/urban/soe.php>.
- U.S. Fish & Wildlife Service. (2016a). National Wildlife Refuge System Communications Strategy. Retrieved from <https://www.fws.gov/refuges/vision/pdfs/NWRSCommunicationsStrategy.pdf>.
- U.S. Fish & Wildlife Service. (2016b). Plan 2035: The National Long Range Transportation Plan - Moving People, Conserving Wildlife. Retrieved from <https://ecos.fws.gov/ServCat/DownloadFile/118522?Reference=76318>.
- Volpe Center. (2010). Transit and Trail Connections-Assessment of Visitor Access to National Wildlife Refuges. Washington, DC: U.S. Department of Transportation, Volpe National Transportation Systems Center; U.S. Fish & Wildlife Service.

## 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.

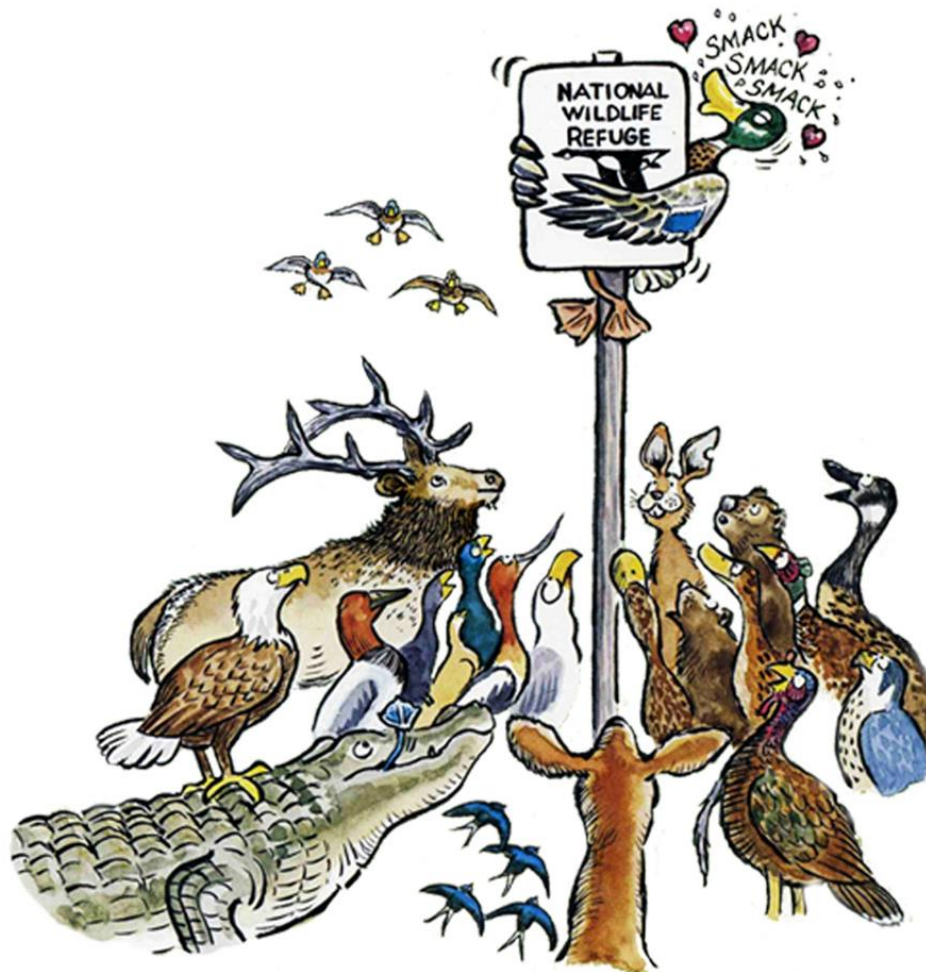
## REFERENCES

---

- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (4th ed.). Hoboken, NJ: Wiley.
- Salant, P., & Dillman, A. D. (1994). *How to Conduct Your Own Survey*. New York, NY: Wiley.
- Scheaffer, R. L., Mendenhall, W. III, Ott, R. L., & Gerow, K. G. (2011). *Elementary Survey Sampling*. Boston, MA: Cengage Learning.



# 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"/> 87% Wildlife observation	<input type="checkbox"/> 47% Hiking/Walking	<input type="checkbox"/> 3% Volunteering
<input type="checkbox"/> 84% Bird watching	<input type="checkbox"/> 3% Jogging/Running/Exercising	<input type="checkbox"/> 3% Environmental education program (classroom visits, labs)
<input type="checkbox"/> 59% Photography	<input type="checkbox"/> 18% Bicycling	
<input type="checkbox"/> 2% Big game hunting	<input type="checkbox"/> 63% Auto tour route/Driving	<input type="checkbox"/> 5% Interpretative program (bird walks, staff/volunteer-led talks)
<input type="checkbox"/> 0% Upland/Small game hunting	<input type="checkbox"/> 1% Motorized boating	
<input type="checkbox"/> 0% Waterfowl/Migratory bird hunting	<input type="checkbox"/> 8% Nonmotorized boating (canoeing, kayaking)	<input type="checkbox"/> 2% Refuge special event ( <i>specify</i> ) <u>See Appendix C</u>
<input type="checkbox"/> 2% Freshwater fishing	<input type="checkbox"/> 0% Foraging (berries, nuts, other)	<input type="checkbox"/> 4% Other ( <i>specify</i> ) <u>See Appendix C</u>
<input type="checkbox"/> 1% Saltwater fishing	<input type="checkbox"/> 11% 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.*)

<input type="checkbox"/> 42% It was the primary purpose or sole destination of my trip.
<input type="checkbox"/> 40% It was one of many equally important reasons or destinations for my trip.
<input type="checkbox"/> 18% 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?

☐ 14% No / Not Applicable

☐ 86% Yes → If yes, what did you do there? (*Mark all that apply.*)

☐ 63% Asked information of employees/volunteers

☐ 42% Looked at list of recent bird/wildlife sightings

☐ 7% Attended a talk/video/presentation

☐ 82% Stopped to use the facilities (for example, got water, used restroom)

☐ 74% Viewed the exhibits

☐ 3% Picked up/purchased a license, permit, or pass

☐ 1% Rented/borrowed equipment (for example, binoculars, fishing rod, snowshoes)

☐ 70% 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: 2 day(s)

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

☐ 26% Yes

☐ 74% 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: 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: 35 minutes

If you travelled more than one hour, round to the nearest hour: 3 hours

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

☐ 96% Spring  
(March-May)

☐ 26% Summer  
(June-August)

☐ 34% Fall  
(September-November)

☐ 27% Winter  
(December-February)

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

...this refuge (including this visit)? 6 number of visits

...other national wildlife refuges? 4 number of visits

...other public lands (for example, national or state parks) to participate in the same primary activity as this visit? 8 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"/> 38% Facebook	<input type="checkbox"/> 2% Snapchat	<input type="checkbox"/> 2% Personal blog (for example, Tumblr, Wordpress)
<input type="checkbox"/> 1% Flickr	<input type="checkbox"/> 3% Twitter	<input type="checkbox"/> 3% Travel-related website (for example, Trip Advisor)
<input type="checkbox"/> 11% Instagram	<input type="checkbox"/> 0% Vimeo	<input type="checkbox"/> 5% Other ( <i>specify</i> ) <u>See Appendix C</u>
<input type="checkbox"/> 0% Pinterest	<input type="checkbox"/> 1% YouTube	<input type="checkbox"/> 49% 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"/> 1%	<input type="checkbox"/> 5%	<input type="checkbox"/> 11%	<input type="checkbox"/> 24%	<input type="checkbox"/> 58%	<input type="checkbox"/> 36%
Word of mouth (for example, a friend or relative)	<input type="checkbox"/> 7%	<input type="checkbox"/> 9%	<input type="checkbox"/> 27%	<input type="checkbox"/> 30%	<input type="checkbox"/> 27%	<input type="checkbox"/> 51%
People in the local community near the refuge	<input type="checkbox"/> 16%	<input type="checkbox"/> 17%	<input type="checkbox"/> 23%	<input type="checkbox"/> 29%	<input type="checkbox"/> 15%	<input type="checkbox"/> 68%
Refuge employees or volunteers	<input type="checkbox"/> 2%	<input type="checkbox"/> 3%	<input type="checkbox"/> 13%	<input type="checkbox"/> 36%	<input type="checkbox"/> 46%	<input type="checkbox"/> 24%
Printed map or atlas	<input type="checkbox"/> 2%	<input type="checkbox"/> 7%	<input type="checkbox"/> 22%	<input type="checkbox"/> 38%	<input type="checkbox"/> 31%	<input type="checkbox"/> 35%
Web-based map (for example, Google Maps, Waze)	<input type="checkbox"/> 4%	<input type="checkbox"/> 9%	<input type="checkbox"/> 15%	<input type="checkbox"/> 40%	<input type="checkbox"/> 32%	<input type="checkbox"/> 44%
Refuge website	<input type="checkbox"/> 2%	<input type="checkbox"/> 4%	<input type="checkbox"/> 18%	<input type="checkbox"/> 40%	<input type="checkbox"/> 37%	<input type="checkbox"/> 40%
Travel website (for example, TripAdvisor)	<input type="checkbox"/> 28%	<input type="checkbox"/> 15%	<input type="checkbox"/> 25%	<input type="checkbox"/> 20%	<input type="checkbox"/> 13%	<input type="checkbox"/> 83%
Other website ( <i>specify</i> ) <u>See Appendix C</u>	<input type="checkbox"/> 45%	<input type="checkbox"/> 0%	<input type="checkbox"/> 9%	<input type="checkbox"/> 27%	<input type="checkbox"/> 18%	<input type="checkbox"/> 94%
Social media (for example, Facebook, Instagram)	<input type="checkbox"/> 21%	<input type="checkbox"/> 15%	<input type="checkbox"/> 28%	<input type="checkbox"/> 13%	<input type="checkbox"/> 23%	<input type="checkbox"/> 83%
Recreation club or organization	<input type="checkbox"/> 32%	<input type="checkbox"/> 7%	<input type="checkbox"/> 25%	<input type="checkbox"/> 18%	<input type="checkbox"/> 18%	<input type="checkbox"/> 87%
Refuge printed information (for example, brochure)	<input type="checkbox"/> 2%	<input type="checkbox"/> 3%	<input type="checkbox"/> 24%	<input type="checkbox"/> 33%	<input type="checkbox"/> 38%	<input type="checkbox"/> 34%
Kiosks/displays/exhibits at the refuge	<input type="checkbox"/> 2%	<input type="checkbox"/> 2%	<input type="checkbox"/> 21%	<input type="checkbox"/> 37%	<input type="checkbox"/> 38%	<input type="checkbox"/> 27%
Travel guidebook or other book	<input type="checkbox"/> 21%	<input type="checkbox"/> 9%	<input type="checkbox"/> 24%	<input type="checkbox"/> 27%	<input type="checkbox"/> 18%	<input type="checkbox"/> 86%
Tourist information or welcome center	<input type="checkbox"/> 4%	<input type="checkbox"/> 7%	<input type="checkbox"/> 12%	<input type="checkbox"/> 38%	<input type="checkbox"/> 39%	<input type="checkbox"/> 58%
Other source ( <i>specify</i> ) <u>See Appendix C</u>	<input type="checkbox"/> 9%	<input type="checkbox"/> 0%	<input type="checkbox"/> 36%	<input type="checkbox"/> 27%	<input type="checkbox"/> 27%	<input type="checkbox"/> 93%



### 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
6%	13%	35%	33%	12%	Surface conditions of refuge roads	0%	0%	6%	45%	48%	NA
10%	17%	39%	25%	9%	Surface conditions of parking areas	0%	0%	6%	45%	49%	NA
5%	11%	28%	40%	16%	Condition of bridges on roadways	0%	0%	4%	46%	49%	NA
4%	6%	19%	52%	20%	Condition of trails and boardwalks	0%	3%	10%	38%	49%	NA
65%	5%	11%	13%	5%	Condition of boat launches	0%	3%	3%	40%	53%	NA
7%	12%	32%	38%	11%	Number of places for parking	0%	1%	8%	38%	53%	NA
2%	7%	21%	43%	26%	Number of places to pull over on refuge roads	0%	6%	27%	35%	31%	NA
4%	5%	18%	43%	31%	Safety of driving conditions on refuge roads	0%	0%	6%	40%	53%	NA
4%	6%	18%	39%	32%	Safety of refuge road entrances/exits	0%	0%	5%	43%	52%	NA
10%	5%	14%	34%	37%	Safety of roads/trails for nonmotorized users (for example, bicyclists and hikers)	0%	1%	12%	40%	48%	NA
6%	8%	23%	43%	20%	Signs on highways directing you to this refuge	1%	4%	20%	38%	36%	NA
4%	9%	27%	42%	19%	Signs directing you around refuge roads	1%	1%	15%	45%	37%	NA
7%	6%	22%	43%	22%	Signs directing you on trails	1%	9%	18%	39%	34%	NA
22%	7%	25%	25%	21%	Access for people with physical disabilities or who have difficulty walking	0%	6%	18%	37%	39%	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	93%	72%
Private/rental vehicle with a trailer (for boat, camper, or other)	1%	0%
Recreational vehicle (RV)	0%	0%
Refuge shuttle bus/tram	0%	0%
Tour bus/van	0%	0%
Public transportation	0%	0%
Motorcycle	1%	0%
Bicycle	4%	14%
Foot (for example, walking/hiking)	6%	41%
Boat	0%	3%
Other ( <i>specify</i> ): <u>See Appendix C</u>	2%	0%
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)	56%	20%	15%	7%	2%
Bus or tram that provides a guided tour of the refuge with information about this refuge and its resources	42%	17%	21%	12%	7%
Refuge-sponsored shuttle with a dedicated stop in the local community for picking up people at set times	73%	12%	8%	5%	3%
Public transit system that stops at or near this refuge	80%	11%	6%	2%	1%
Bike-share program that offers bicycles for rent on or near this refuge	46%	13%	21%	9%	10%
Pedestrian paths for access to this refuge from the local community	63%	13%	10%	5%	8%

---

## 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"/> 1% \$0	<input type="checkbox"/> 16% \$30	<input type="checkbox"/> 21% \$100	<input type="checkbox"/> 5% \$250
<input type="checkbox"/> 2% \$5	<input type="checkbox"/> 5% \$45	<input type="checkbox"/> 2% \$125	<input type="checkbox"/> 3% \$350
<input type="checkbox"/> 8% \$10	<input type="checkbox"/> 4% \$60	<input type="checkbox"/> 2% \$150	<input type="checkbox"/> 4% \$500
<input type="checkbox"/> 10% \$20	<input type="checkbox"/> 4% \$75	<input type="checkbox"/> 9% \$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%	2%	9%	48%	40%	Convenient hours/days of operation for this refuge	0%	1%	5%	42%	52%	NA
4%	19%	25%	33%	19%	Availability of employees or volunteers	0%	1%	6%	42%	50%	NA
5%	9%	20%	34%	32%	Courteous and welcoming employees or volunteers	0%	2%	6%	30%	62%	NA
2%	8%	28%	40%	23%	Signs with rules/regulations for this refuge	0%	2%	11%	49%	38%	NA
2%	3%	21%	35%	39%	Visitor center	0%	1%	3%	32%	64%	NA
0%	2%	10%	36%	51%	Well-maintained restrooms	0%	0%	4%	28%	67%	NA
5%	7%	28%	37%	23%	Recreational structures (decks, blinds, platforms)	0%	1%	11%	44%	44%	NA
0%	3%	14%	34%	49%	Bird-watching opportunities	0%	0%	8%	32%	59%	NA
0%	3%	13%	41%	43%	Opportunities to observe wildlife other than birds	0%	6%	16%	37%	41%	NA
4%	7%	13%	33%	43%	Opportunities to photograph wildlife and scenery	0%	0%	9%	38%	52%	NA
8%	14%	32%	32%	15%	Environmental education opportunities	0%	4%	28%	37%	31%	NA
89%	4%	2%	1%	4%	Hunting opportunities	6%	6%	6%	29%	53%	NA
69%	14%	10%	4%	3%	Fishing opportunities	14%	0%	24%	29%	33%	NA
5%	8%	23%	34%	30%	Trail hiking opportunities	2%	7%	20%	44%	27%	NA
23%	12%	25%	21%	19%	Bicycling opportunities	3%	3%	10%	34%	49%	NA
23%	15%	30%	18%	15%	Water trail opportunities for canoeing or kayaking	3%	3%	16%	41%	36%	NA
47%	20%	17%	8%	8%	Volunteer opportunities	0%	3%	23%	28%	48%	NA
19%	18%	21%	25%	17%	Wilderness experience opportunities	1%	9%	21%	31%	38%	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%	5%	32%	63%
I felt safe during my visit to this refuge.	0%	0%	0%	23%	77%
Crime <u>is</u> a problem at this refuge.	71%	19%	8%	0%	1%
I feel comfortable being in nature.	0%	0%	2%	22%	76%
I do <u>not</u> like being in nature by myself.	63%	22%	9%	5%	1%
People closest to me enjoy participating in nature-based recreation.	0%	3%	9%	37%	51%
Generally, people who look like me are treated differently when they participate in nature-based recreation.	57%	18%	24%	0%	0%

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.	0%	0%	4%	49%	46%
The quality of the overall experience when visiting this refuge.	0%	0%	3%	38%	59%

## 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	30%	69%	1%
More acreage open to hunting and fishing	47%	50%	3%
More infrastructure (for example, bathrooms, observation decks)	6%	75%	20%
Recreation equipment available for rent (for example, fishing rods, binoculars, snowshoes)	7%	74%	19%
Less regulations on fishing	23%	74%	3%
Less regulations on hunting	39%	59%	2%
A greater diversity of species	0%	30%	70%
Fewer numbers of a single, preferred species	24%	73%	3%
More people participating in my primary activity	22%	73%	5%
An improvement in the quality of wetlands	0%	41%	59%
An improvement in the quality of wildlife habitat other than wetlands	1%	39%	60%

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

60% Yes      9% No      31% 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.*)

48% 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	21% Programs that focus on creative pursuits (for example, art, writing, meditation)
33% Programs that focus on family/multiple-generations	17% Programs that support people with accessibility concerns (for example, difficulty walking, in a wheelchair)
48% Programs that teach skills to visitors	13% Other ( <i>specify</i> ) <u>See Appendix C</u>
52% 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? ☐ 41% Male ☐ 59% Female

2. In what year were you born? 1959 (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"/> 7%				<input type="checkbox"/> 45%				<input type="checkbox"/> 47%			

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

<input type="checkbox"/> 92% White	<input type="checkbox"/> 1% 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"/> 4% 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"/> 0% Less than \$10,000	<input type="checkbox"/> 8% \$35,000 - \$49,999	<input type="checkbox"/> 26% \$100,000 - \$149,999
<input type="checkbox"/> 4% \$10,000 - \$24,999	<input type="checkbox"/> 12% \$50,000 - \$74,999	<input type="checkbox"/> 15% \$150,000 - \$199,999
<input type="checkbox"/> 2% \$25,000 - \$34,999	<input type="checkbox"/> 17% \$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"/> 39% Employed full-time	<input type="checkbox"/> 0% Unemployed	<input type="checkbox"/> 39% Retired
<input type="checkbox"/> 7% Employed part-time	<input type="checkbox"/> 3% Homemaker/caregiver	<input type="checkbox"/> 0% Disabled/unable to work
<input type="checkbox"/> 8% 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?

---

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
Bald eagle count	1
Eagle Festival	2
Mentor - first shot program	1

Other Activity	Frequency
Acquaintance with the refuge	1
Botanizing	1
Dragonflies & turtles	1
General knowledge	1
Geocaching	1
Movie presentation & museum	1
Toured visitor center	1
Visitor center	2

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

Primary Activity	Frequency
Auto tour route/driving	20
Bicycling	24
Bird watching	75
Environmental education	1
Exercising	1
Hiking	17
Hunting	2
Nonmotorized boating	3
Other	3
Photography	29
Sightseeing	1
Wildlife observation	54



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
Checked out the butterfly garden & looked for hummingbirds	1
Got change for refuge fees	1
Picnic prior to entering reserve	1
Rangers assisted us	1
Turned in a lost senior wildlife parks pass	1
Watched birds in the refuge from the observation room upstairs	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
Meetup	1
Websites	1
WeChat	1
WhatsApp	2
YouPic	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
AAA	1
Cambridge & Dorchester County tourism websites	1
Friendsofblackwater.org	1
Geocaching.com	1
Nest web cam	1
TripAdvisor	1

Other Information Sources	Frequency
Found it by accident	1
Magazine article	1
Mpt documentary	1
Newspaper	1
Road sign	1
The volunteers at the refuge regularly send an email to me keeping me informed about the refuge.	1
Washingtonian magazine article	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
Entrance fee	1
Local crabmeat	1
This was a guided bike tour. Everything was paid for through the tour.	1
Winery	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
Exercise-related activities	1
Hiking-related programs	1
Nature-related programs	3
Other	1
Photography-related programs	3
Volunteering	1
Water-based activities	1
Wildlife-related programs	4

### 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=46)

A ferry between Chesapeake Beach and the refuge would make the trip much shorter and enjoyable! It seems the transportation within the refuge was pretty good.

A lot of walking for folks who have trouble and must use a cane.

Access to trailheads used to be marked more clearly before roads were changed. This could be improved through better signage and pull-offs.

Additional pull out areas would be wonderful.

As relatively recent residents in this area, this was our first visit to the Blackwater Wildlife Refuge. It will not be our last. I look forward to coming at various times of the year to experience the migration "show".

As this is very car-focused refuge, a few more pull-offs would be great.

Beautiful refuge. We visit often to view wintering waterfowl. If I were going to suggest any changes, it would be that the pullover spaces on the auto trail were bigger and more plentiful. It does get crowded occasionally. But I know the berm roads are limited in space so it's a trade-off.

Blackwater is a nice refuge and the roads, trails, and boardwalks are all very well maintained.

Blackwater NWR is world-class bicycling destination. I have come here from New York almost every year for the past 10 years, because the combination of the extraordinary natural setting and beautiful, safe, low-traffic roads is unique.

Blackwater sometimes is a birding bonanza and the roads are okay and that's good enough for me.

Could have had more or larger pull outs along refuge drive.

Easy to get around. Places to pull off to observe wildlife.

Entrance was a little hard to find.

Everything was great!

For birdwatchers in cars, pull-off areas are very important. This allows us to patiently watch birds or wait for them to arrive. Meanwhile, other cars may pass without inconvenience to either party.

Google maps says you've arrived at the refuge but at that location there is no signage indicating how to start at the driving trail or how to get to the visitor center. Google maps should be updated.

I love taking my grandchildren there to observe the wildlife on scooters and/or bikes.

I've heard that Blackwater is a popular destination for bikers. It seems like there could be more emphasis on bike lanes/travel.

In retrospect it would have been fun to park and then bike ride the "causeway" area of the refuge area. It might also allow for greater view of wildlife with less noise and less negative impact on the refuge.

It was a great visit.

It would be nice to widen road by maybe a foot on each side.

Liked the one-way driving loop; much safer than two-way.

Love this refuge. Very beautiful scenery and the visitors center was very helpful.

Maps and signage could be improved, i.e. better correspondence between the two.

More boardwalks or access areas for handicapped would be nice.

More boat ramps would be nice.

More pull offs would be helpful on busy days.

Needs more trails.

Only concern is tidal flooding that is occurring more frequently on some refuge roads and trails.

Roads in the refuge are good. Would be nice to have a few more pull over areas so we can park and walk.

Some more pullovers would be nice. Basically, however, this refuge and volunteer group is top drawer.

Some trails were closed due to flooding.

The condition of the roads etc. was excellent, but there could be more signage and more pull-overs for observation on the driving route.

The internet maps did not correspond to the entrances of the refuge. Very confusing signage. We drove for 45 mins around until we found way in that we were looking for.

The road through the refuge is one-way and minimalist and I hope it is kept that way for the sake of preserving such a beautiful area.

This is a beautiful place not too far from home that I can get to by myself if need be. It's quiet and pristine away from the big city. It's kept up. There are new buildings from when I came here many years ago. Seems to be excellent land management. I love coming here and to other NWRs as well. There should be many more for people to enjoy to get away from the city mobs. To experience and appreciate real nature. Thank you!

This is unavoidable, but the trail was waterlogged in some places; not sure you can do anything because of all the rain we've had!

Trails were flooded and had tree limbs and other obstacles.

Water feature/pond in parking area - leaving an unmowed strip around littoral margin of pond would enhance small wildlife habitat.

We couldn't complete our walk at Blackwater because the trails were too wet.

We cycled through the refuge, which was a very enjoyable experience.

We drive a Jeep Wrangler, so road conditions are less of a concern to us (i.e. Ruts, potholes, etc.).

We particularly appreciate being able to use our car on the wildlife drive - we are older and can't do a lot of walking and have heavy photo equipment.

Well maintained despite challenging conditions.

Wish it was longer and include other areas from the road that required permits and a car

Wonderful refuge.

## 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=62)

A couple more observation decks/towers might be nice. Most times in winter, the waterfowl are pretty far away from the road due to the way the berms are set up so it is difficult to see them. A good tower might facilitate good viewing along the road. Or, maybe a bridge type blind that goes from the road to the inner berms would help the viewers but not scare the birds too much.

Always enjoy visiting Blackwater. We have been coming here for 10 years as our grandchildren live in the area. Has always been a pleasant experience. Would like to see more programs for older children.

At this particular refuge, I think USFWS has offered everything they can. It's a great place to take my family on a gentle hike.

Because an eagle nest nearby, a major loop trail is closed much of the year. Though I know the wildlife's needs come first, I believe a small section of one trail that leads for an observation pier could be kept open without disturbing the eagle.

Blackwater is a great place for wildlife photography year around.

Everything was great!

Facility and staff were excellent

I enjoy the eagle camera both in the visitor center and while at my home computer. The marsh restoration efforts are making a difference in a good way.

I like that Blackwater has water trails. Would be great if there were more hiking/walking opportunities.

I stumbled on the refuge because I was visiting the Harriet Tubman museum. I found it on trip advisor and am glad I did. Beautiful drive. Peaceful and so many birds. Wonderful decks. Great place.

It would be great if there were more hiking/walking trails as well as bike trails which were accessible from town or from the visitor's center so that you don't have to drive everywhere. I would love to be able to park the car and then walk or bike to slowly explore things but on paths that are not alongside or near the roads, so to avoid car pollution, noise, etc.



I very much appreciate the availability of the visitor's center, the knowledgeable and friendly staff and volunteers there, and the quality of all of the facilities. I wish that it was possible for the visitor's center to keep longer hours, especially during spring, summer, and fall when many people like to stay out for long biking and paddling trips. I don't know if this is within the purview of this survey, but I am thrilled by the Harriet Tubman underground railroad national historic park and the new visitor center, which I visited for the first time this trip. What a fantastic wealth of natural, historical, and cultural resources this area has!

I would like to see more trails open during nesting if it could be arranged and not obstruct the birds.

It would be nice if the visitor center were open earlier in the day--7 or 8 am instead of 9 am.--mainly for access to restroom facilities. Visitors interested in viewing wildlife often arrive in the early morning and would appreciate being able to stop at the visitor center upon arrival.

It's well maintained and the visitor center is beautiful.

Loved the visitors center and movie.

Many of the educational stations in the refuge are aging and difficult to read; the restoration projects for the marshes are so interesting to learn about as much clear information as possible should be available.

More trails would be appreciated.

More trails would be nice.

Never had a bad experience, been to several eagle-fests and I regularly visit. There is always something new to see and every visit is unique.

No one on the trail to answer questions. You have to go to visitor's center for information.

On the second floor where you can observe the wetland, it would be wonderful if you can put in a window with no divider in the middle.

Our group felt the visitors center was well maintained, educational and pretty.

Outstanding!

Please, do not put trams or guided tours in this NWR! The visitors who drive the loop at 25mph+, never get out of their cars, and wonder why they don't see anything is bad enough already. The last thing Blackwater needs is crowds and noise!

Thanks for letting us park a few vehicles while on our ride. Everyone is always so welcoming!

The ADA trail is often closed and is full of sinkholes.

The best.

The bird blind was great for bird photography. Couldn't get close enough to eagles for good photos.

The new visitor center is great. Did not visit on this trip, but have 2 months ago.

The refuge employees were very kind and knowledgeable and provided suggestions for locating birds. The facilities were very clean and well maintained. Overall, a great experience!

The road by the observation deck has potholes that need to be filled in better. Portapotty needs to be pumped out more. It is heavily used.

The staff and volunteers are terrific. We wish the visitor center was open longer hours but do appreciate that that's a lot to ask!

The survey is hard to fill out. The services, facilities, and opportunities were all nice. Mainly we visited because of the environmental landscape. That was the most important piece which really dwarfs the other considerations.

The visitor center is beautiful, clean and very informative nice gift shop too.

The visitor center is excellent - very well maintained and informative - the staff is knowledgeable, friendly, and helpful. Blackwater is our "go to" refuge area - being on the migratory bird path, we always see a wonderful variety of birds in their natural habitat. Additional pull-outs would be helpful but overall, we love the refuge and will continue to come back for many years.

The visitor's center was very well laid out and was quite impressive. Great exhibits and information and observation opportunities.

The visitors center was excellent. We stopped without doing any advance research so the information we found at the center was invaluable. We were able to see animals and plants that we wouldn't have known about without stopping there. Great facility and very helpful staff.

The volunteer that helped us at the welcome center was extremely helpful. The only downside we encountered was the hike we took. We opted to do the three-mile hike through the woods. The trail was flooded the entire route and we had committed to completing the trail and we were a mess by the end of it. Also, there is a section that no trail markers were visible. The section that comes out to the "dirt road" it would have been nice just to see at least two markers in that section just to know we were headed in the right direction. We were able to figure it out but a post or two would have been helpful.

The volunteers are excellent, and the reference books upstairs are appreciated.

This is a beautiful well-managed area that provides opportunities for visitors from other parts of the country and world to experience an important part of the Chesapeake Bay and its environs in a natural state. It also makes it possible to imagine life among the native Americans and the underground railroad.

This is a wonderful place. We've only ever hiked here and been to the visitor center. It's well-maintained and quite lovely. We have yet to take advantage of all the opportunities offered, including kayaking and wilderness opportunities, but hope to do so in the future.

This is very minor, but we took our grandchildren there and used the picnic tables for lunch. It was very warm and sunny and there was no shelter from the sun at any of the tables. That being said, they did at least have some tables.

This refuge is extremely well run with many opportunities. Additional hiking opportunities would be fabulous.

Thought the visitor center closed a little too early.

Trails were super swampy when we came.

Travel 3 hours one way to see photograph eagles were not allowed to go back. One restroom porta potty and no other rest area on drive. The other was back with eagles.

Very nice visitor center; volunteers friendly and helpful.

Visited briefly so no real comments - volunteers were polite.

Visitor center was very informative with numerous displays of birds found in the area. Second floor observation with binoculars was nice feature.

Visitor center well maintained and employees/volunteers very helpful and provide excellent information for newcomers to the refuge.

Was disappointed that there weren't a few more trails available. Otherwise, great refuge.

We love it.

We move to Cambridge full-time two years ago. We have come to Cambridge for the past 22 years and visited every time that we were in town. This year the plant burning was at the wrong time spring. So we came several times and did not see any birds we were very disappointed.

We visited on a Sunday. Didn't encounter many park workers or refuge volunteers, except for young man from the Ohio State/USFWS survey.

We were camping at James Island State Park. We heard about the refuge from another camper. Since we had our bikes we decided to go spend the day at the refuge. A great resource.

Well done on all.

When I go for a birdwatching trip to the area Blackwater is very high on the list because of the birds. The other stuff is a plus but not the whole ballgame.

While I understand the reasons, the nesting eagles causing closure to the vault toilet is problematic for my wife (problem with the visitor center's hours of operation). We're there dawn/dusk.

Wonderful place. Weather very hot and unforgiving, and too worried about ticks (plentiful) to leave paved roads. Deer ticks are a big problem. Would have rented canoes with more time.

Wonderful visitors center. Lots of information and friendly staff.

Would like a walking/hiking trail from visitor center to the refuge.

## End of Survey

---

### General Comments (n=53)

Beautiful area. Places to pull off so other cars could drive around great. I'd love to see signage encouraging drivers to turn cars off while viewing wildlife.

Beautiful refuge. Well maintained. Friendly and very helpful volunteers and staff at visitor's center. Great parking lot, roads, bathrooms. What would lead me to come back more than once a year is if there were bike trails from the closest town all the way to the refuge and if these paved bike trails were not alongside the roads. I would also come back more often if there were more hiking and biking trails. I live in a Washington, D.C and bike commute and when I'm out in nature I really want to get away from cars. Thank you for doing this survey.

Beautiful space! We enjoyed it tremendously and wish we had more time there. We arrived late in the day - just before closing. But still managed to take it in! We hope to return soon. Thanks!

Blackwater is a great place for wildlife observation and photography. I'm a volunteer photographer at the Patuxent research refuge, Laurel, MD. Thank you for allowing me to participate.

Blackwater is fantastic!

Blackwater National Wildlife Refuge is one of my favorite places to see eagles. I really enjoy the driving tour. We stop often along the way to view all of the different birds. This time I only visited the visitor center to use the facilities but in the past I always include time to look at the exhibits, use the binoculars to look for birds, and talk to the refuge employees.

Blackwater refuge is a true treasure. We have enjoyed it every time we visit and all guests we bring really enjoy it too. Please do everything to preserve this beautiful nature experience and habitat to birds and wildlife.

Blackwater Refuge is one of my favorite places on earth.

Could use some picnic areas inside the refuge other than the few tables at the visitor center.

Great staff.

Hello, I really enjoy the refuge except this year. They have done burning at the time that birds are nesting. We came to the refuge a week after the burning we did not see one bird of any kind. That was the time that ducks, geese, birds overall were nesting. It was horrible the only birds that we saw were 2 turkey vultures. That was pathetic. Not only were we disappointed so were a lots of my friends that go to the wildlife center who are bird watchers and photographers equally livid about it. You need to rethink how you do things. Burning should not be allowed period. Since then the pelicans have not returned. I never seen Blackwater looking so pathetic. Last year we had egrets, pelicans, a los of blue heron, ospreys (most of the nests were empty) and quite a few bald eagles not this year. We used to have a lot of turtle in the spring not this year either this is poor management.

I am German and loved it there!

I am very fortunate to have a home near Blackwater. I bike there often. Once when biking with friends, two rangers helped us pull their bike trailer out of a ditch. They were incredibly helpful. I have 5 grandchildren. We hike, bike and take scooters there. We all adore the place. My mother, now deceased, used to have wonderful walks there. I always think of her when there.

I don't want to forget the efforts of the Friends of Blackwater. They do a fabulous job of providing information and being true friends of the refuge. We visit the refuge several times a year. Our trips there are specifically to see the birds and other wildlife. We're lucky that the nearby town of Cambridge is welcoming. And, the addition of the Harriet Tubman Museum at the end of the wildlife drive is most welcome. It only adds to the cache of the refuge. Thank you for this opportunity to comment.

I love the refuge and the area, and hope that federal support for the refuge itself and to its facilities and programs is restored to levels that will allow it to continue to play a vital environmental and economic role.

I really enjoyed my visit. If it was a nicer day when I did visit, I would have spent more time here. It's very far from my home. If I lived closer, I would probably visit very often.

I really enjoyed our brief visit. We stopped briefly on our way to another destination. During our short visit we saw bald eagles, osprey eating a fish, an endangered Delmarva fox squirrel, and lady slipper orchids! Great visit. The only negative was that we didn't think to bring mosquito spray and got all bitten up.

I think BWR is one of the best run refuges. The staff and volunteers were extremely friendly and helpful. All greet you with a smile and are helpful. I have been coming here since a child with my family and friends. I moved away for 37 years and when returned 9 years ago started going to the refuge a few times a week in the past 2 years have frequent up to 9x's weekly. There is a variety of wildlife that I enjoy observing and photographing, daily and yes there are days there aren't any.

I traveled from the eastern panhandle of WV to visit once or twice a year. It is always worth the trip. I am a professional wildlife photographer, and it's a joy to see the variety at Blackwater. I absolutely love the refuge, and find it a very relaxing place to be.

I was very impressed with this refuge, and would like to come back in the future and explore more of the refuge.

I would like to see just a few more educational signs around the refuge that explain what you are looking at, i.e. fresh water impoundment, salt marsh, tree types (species) etc. The brochure pamphlet is very good.

I've been meaning to get to Blackwater for years, especially after my sister did a lot of serious photography there. Now that I'm retired, I finally made it. Peak experience - seeing the eagle wheeling toward its nest. Wow!

Increased access to viewing scopes would enhance our experience bird-watching. Some pull-off parking along the refuge roads would enhance our bird-watching experience.

Keep up the good work!

Met our expectations for first trip and we will be returning in the fall.

My family lives near Blackwater NWR (mother and brother). Mother and my late father used to volunteer at the visitor center. We all like to birdwatch and enjoy the wildlife here. I will be back. I am a big fan of national parks and NWRs, state parks, WMA's etc.

My husband and I give this refuge an A+.

My mom and I had a wonderful visit to the refuge. We went primarily to see the wetlands ecosystem and were also very pleased with the refuge services.

National and state wildlife refuges need to be sufficiently funded in order to restore habitat for wildlife and provide free visitor educational experiences. Starving public lands and nature programs is bad policy and short term thinking. Current leadership at DOI is hell-bent on giving away public resources to special interests including industry, cattlemen and hunters. These policies diminish the lands, wildlife and resources that need to be protected and restored for future generations. More exhibits about climate change and restoration potential are important, as are volunteer opportunities that provide education and that help the land recover are essential.

One of my favorite places for bird watching! I've seen species here that I have not seen anywhere else (like the Virginia rail). Fantastic place and well worth my 3-hour drive!

Really enjoyed all the bald eagles we were able to see from the driving tour through the refuge. Will definitely return in the future.

Taking mom there tomorrow for some kayaking and birding for Mother's Day.

Thank for the opportunity to do the survey.

Thanks for helping me enjoy nature!



The Blackwater Refuge has good display of wildlife at the visitor's center. New addition to building was a good thing. Volunteers are very friendly and knowledgeable about the center. I would recommend a visit to the center for everyone.

The individual that asked us about taking the survey was very friendly. Thank you for conducting this research.

The refuge is a wonderful asset for this area. The amount of waterfowl is amazing. I have been in the area at different times when working, so have had an opportunity to observe the thousands of geese, ducks and other species of wildlife. Being retired I will be going back more often. Thank you.

The volunteers and/or staff at the visitor's center were courteous, helpful and very enthusiastic. The hummingbirds behind the center were enjoyable to watch and photograph.

This is an important refuge and museum area for Harriet Tubman.

We always enjoy our visits to the Blackwater Wildlife Refuge, and hope to enjoy it for many years to come.

We are all in this together. There is no Planet B. Thanks for what you are doing.

We do not like to go to Blackwater during hunting season because the bird/animal behavior is markedly different; vehicles just slowing down frighten them away (ref q #1.9). We will sometimes go to Blackwater NWR for an entire weekend.

We had a great time and upon our exit, there was an injured eagle. We notified the refuge. They thanked us and said they would respond.

We had a wonderful visit. My ten year old son was in awe of being so close to bald eagles and osprey, and was absolutely amazed at the size of the eagle's nest he could see in the trees.

We learned about this refuge through geocaching, but then fell in love with all the waterfowl and the beautiful drive.

We live in Boston. Not likely to do another trip to the area. The area was great. If I lived locally I would certainly visit yearly.

We love visiting Blackwater. We live in New Jersey, about 4 hours from the refuge, but my parents live in Ocean City, MD, and it's only an hour's drive. The serenity and beauty of the refuge bring us back.

We loved our visit! Saw lots of wildlife. Appreciated opportunities to pull over to view wildlife. Visitors center offered informational movie. Attendant at visitor center helpful in giving us information. Wish I lived closer because I would visit often. Keep preserving our wildlife and land.

We opted to do the hike first and as stated earlier caused us to get very wet and muddy. This put a damper on the remainder of our visit to the refuge for my girls. Our group was myself, my husband and our four daughters ages 9,12,14 and 18. While my husband and I were not overly concerned about being wet and dirty our girls (except for our youngest) did not want to go into the Harriet Tubman museum. This was disappointing because we really liked the museum and really wanted our whole family to experience it. That was the only downside to our visit. We knew the hike was wet opted to do it anyway. It would have been more enjoyable if that area had not so flooded.

We were at this refuge a few years ago and enjoyed this visit again. We were sorry that we couldn't go through the section with the eagles but do understand the reasons.