



U.S. Fish & Wildlife Service

NATIONAL WILDLIFE REFUGE VISITOR SURVEY

*2018 Results for
Tualatin River National Wildlife Refuge*



THE OHIO STATE
UNIVERSITY



Acknowledgments

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Front cover: A field of wildflowers at Tualatin River National Wildlife Refuge. Photo credit: Kylie Campbell.

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Understanding Wildlife Refuge Visitors & Their Experiences

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

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

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

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

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

This report summarizes visitors and their experiences at Tualatin River 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

Tualatin River National Wildlife Refuge is located less than 30 minutes outside of Portland in northwestern Oregon. The refuge was established in 1992 through a grassroots effort by local community members. The first 12 acres of the wildlife refuge were donated by a local couple who recognized how quickly the open spaces in their community were being commercially developed. The public continues to be heavily involved in the restoration efforts at the refuge. Prior to establishment as a refuge, the area was primarily agricultural with cattle and onion farms. The refuge now contains 1,856-acres, which are split into five units all within the Tualatin River watershed. The refuge, while only making up a very small portion of this watershed, provides habitat for a large majority of the wildlife in the mostly urban area. Located along the Pacific Flyway, the refuge provides winter habitat for migratory waterfowl and is home to birds of all sizes from large hawks to tiny hummingbirds. In addition, the refuge provides habitat for a variety of mammals, amphibians, and reptiles. For example, early morning visitors could expect to see deer, coyotes, and foxes along the trails.



Tualatin River National Wildlife Refuge. Photo credit: Michelle Ferguson.

Tualatin River National Wildlife Refuge attracts over 149,954 visitors annually (U.S. Fish and Wildlife Service, 2018, written comm.). Only one unit of the refuge is open to the public, but visitors still have a variety of recreational opportunities. Four miles of trails invite visitors to observe wildlife and watch birds along the Tualatin River and wetlands. A visitor center offers environmental education opportunities as well as a number of interpretive programs for children and families.

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 364 visitors agreed to participate in the survey by providing their names and addresses.
- In all, 226 visitors completed the survey online (54%) or by mail (46%) after their refuge visit, resulting in a 63% 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.

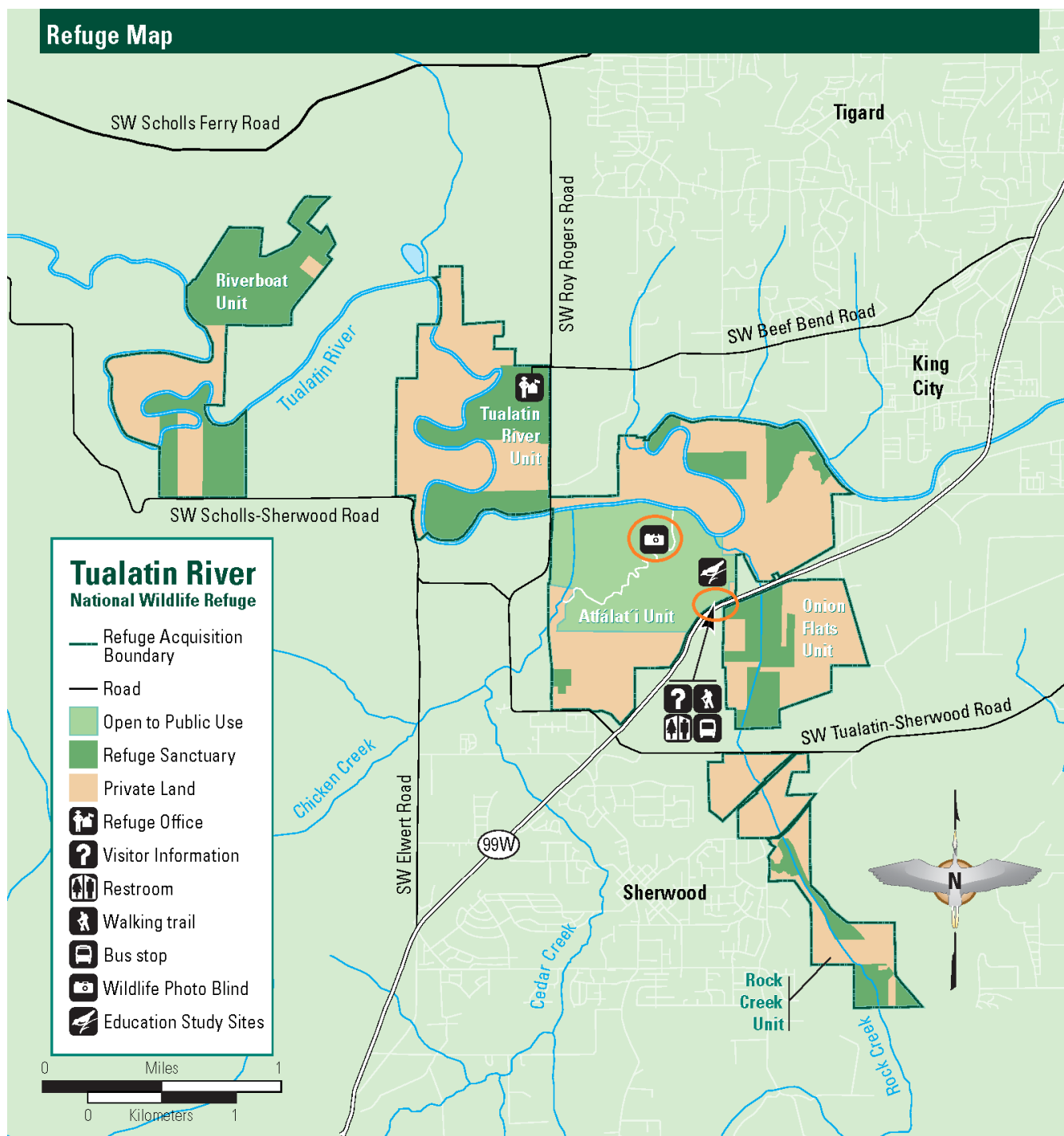


Fig. 2: Map of Tualatin River National Wildlife Refuge. Visitors were contacted at the circled locations from 5/31/2018–6/23/2018 and 9/20/2018–10/14/2018.

Visitor Characteristics

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

AGE & GENDER

- 56% of visitors were female with an average age of 55 years (Fig. 3).
- 44% were male with an average age of 55 years.

EDUCATION

- 5% of visitors had a high school degree or less.
- 49% had at least some college.
- 45% had an advanced degree.

RACE & ETHNICITY

Most prevalent race or ethnicity (Fig. 4):

- White (93%).
- Hispanic (2%).
- Some other race (2%).

INCOME

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

OTHER TRIP CHARACTERISTICS

- Average group size of 2 people.
- 31% visited the refuge alone.
- 49% visited with at least one other adult.
- 20% visited with a combination of at least 1 adult and 1 child.

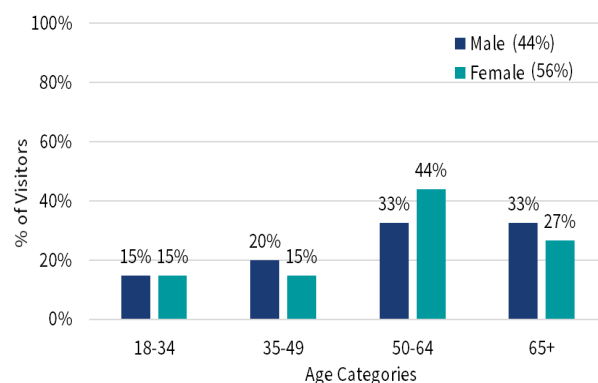


Fig. 3: Distribution of visitors to this refuge by gender and age group.

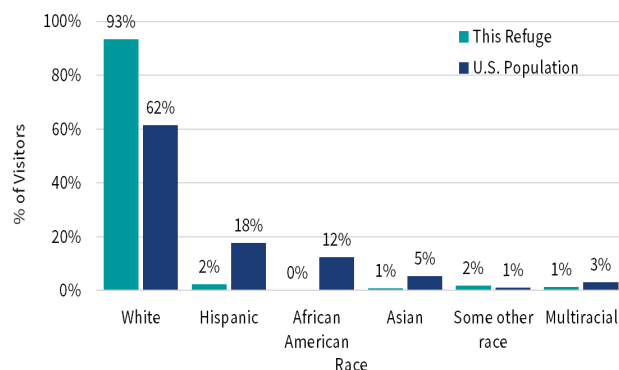


Fig. 4: Race and ethnicity of visitors to this refuge compared to the national average.

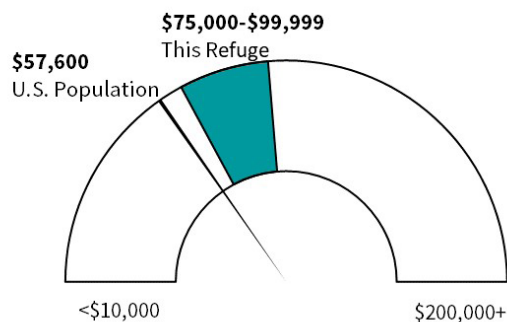


Fig. 5: Mean income range of visitors to this refuge compared to the national median income.

Trip Characteristics

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

LOCAL VISITORS

Highlights of trip characteristics for local visitors to this wildlife refuge (89%) include:

- For locals, this refuge was the primary reason for their trip (85%) (Fig. 6).
- Local visitors traveled an average of 20 minutes to arrive at this refuge (Fig. 7).

NONLOCAL VISITORS

Highlights of trip characteristics for nonlocal visitors to this wildlife refuge (11%) include:

- For nonlocals, this refuge was an incidental stop as part of a trip taken for other purposes (46%) (Fig. 6).
- Nonlocal visitors traveled an average of 13 hours to arrive at this refuge (Fig. 8).
- Of the 100% of visitors who lived in the U.S., nonlocal visitors were most often from Oregon (92%).

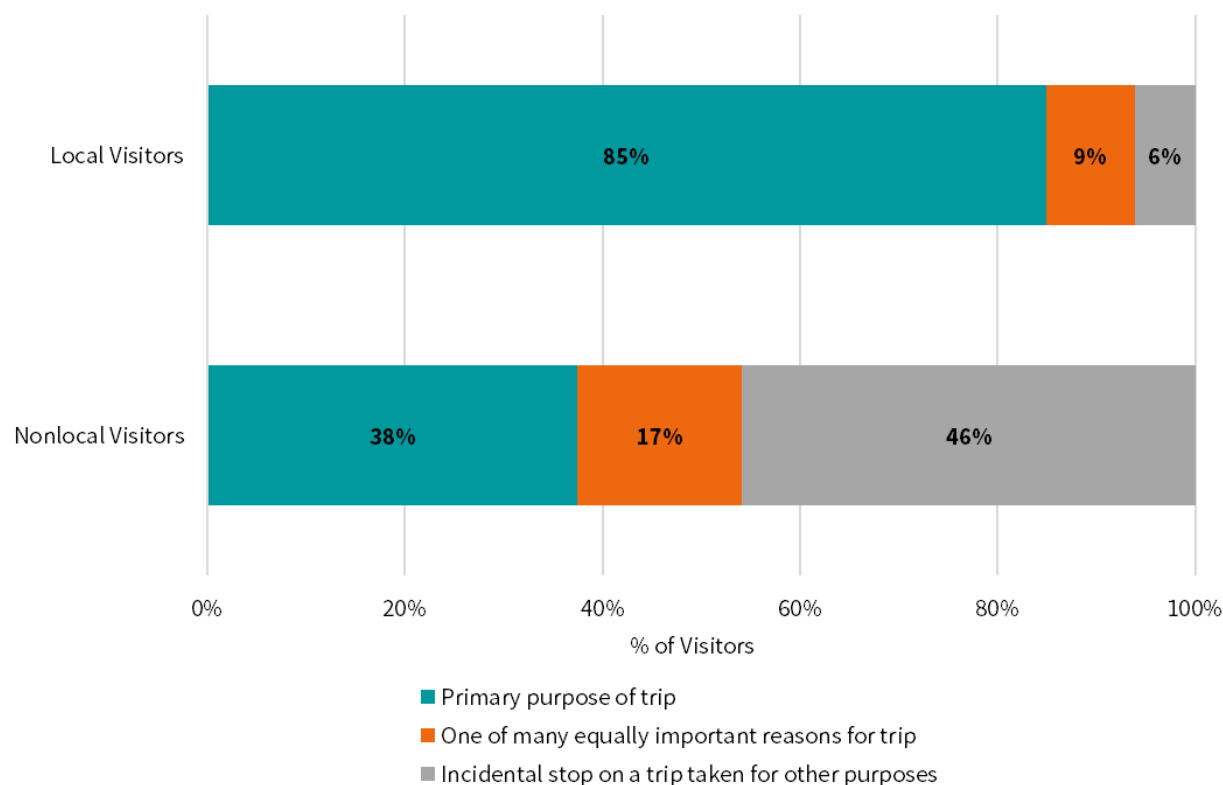


Fig. 6: Purpose of most recent refuge visit for local (living ≤ 50 miles from the refuge) and nonlocal (living > 50 miles from the refuge) visitors.

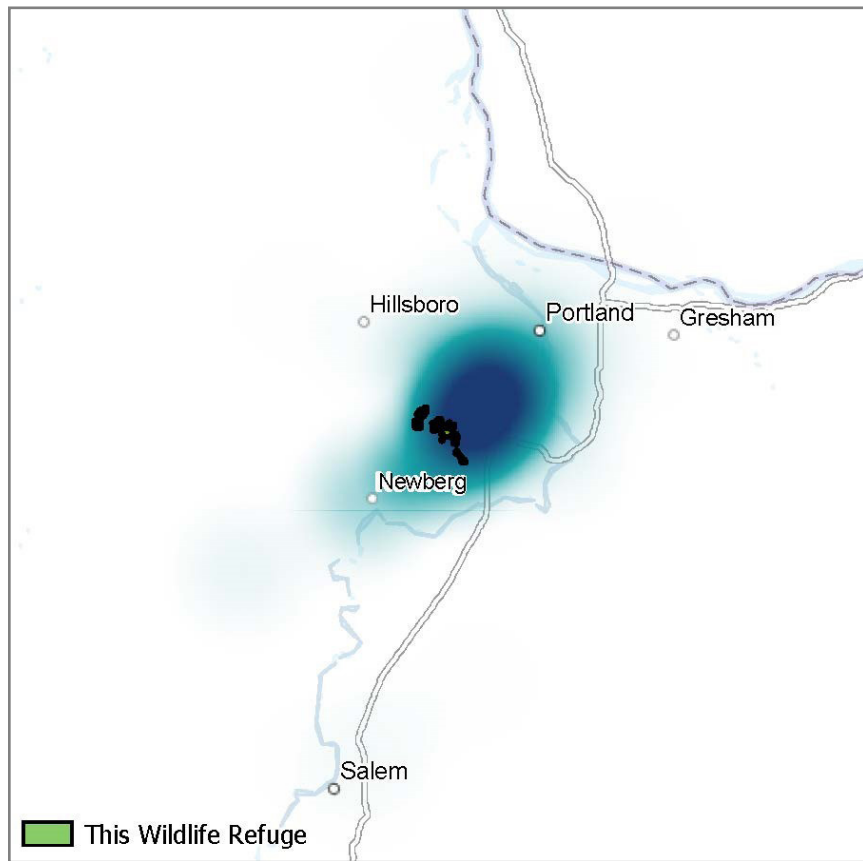


Fig. 7: Map showing residence of local visitors to this refuge. Darker shading represents relatively higher visitation from that area.

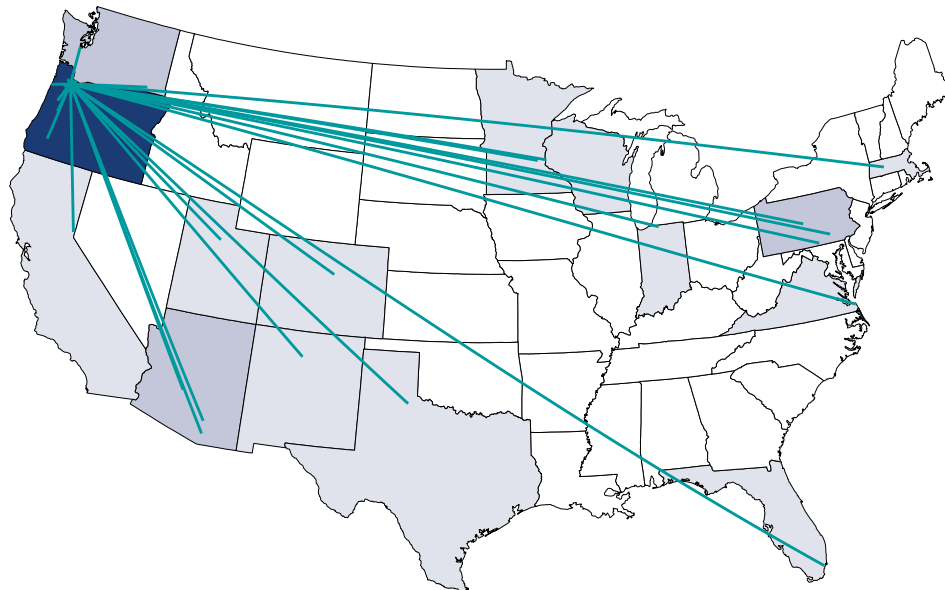


Fig. 8: Map showing residence of visitors to this refuge by zip code, with each line representing visitation from a different zip code. The convergence point of the lines is the geographical center of the refuge. Darker shading of the states represents higher visitation from that state.

OTHER TRIP CHARACTERISTICS

Other trip characteristics include:

- To get to this wildlife refuge, visitors primarily traveled by private vehicle without a trailer (93%) and by foot (4%) (Fig. 9).
- Once on the refuge, visitors primarily traveled by foot (58%) and by private vehicle without a trailer (13%) (Fig. 9).
- Visits occurred during winter (37%), spring (72%), summer (75%), and fall (73%).
- 98% of visitors made a single-day trip to this refuge, spending an average of 2 hours, while 2% of visitors were on a multi-day trip to this wildlife refuge that averaged 3 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:

- 77% were repeat visitors to this wildlife refuge, visiting an average of 20 times.
- 61% visited other national wildlife refuges, averaging 4 visits.
- 81% visited other public lands, averaging 10 visits.

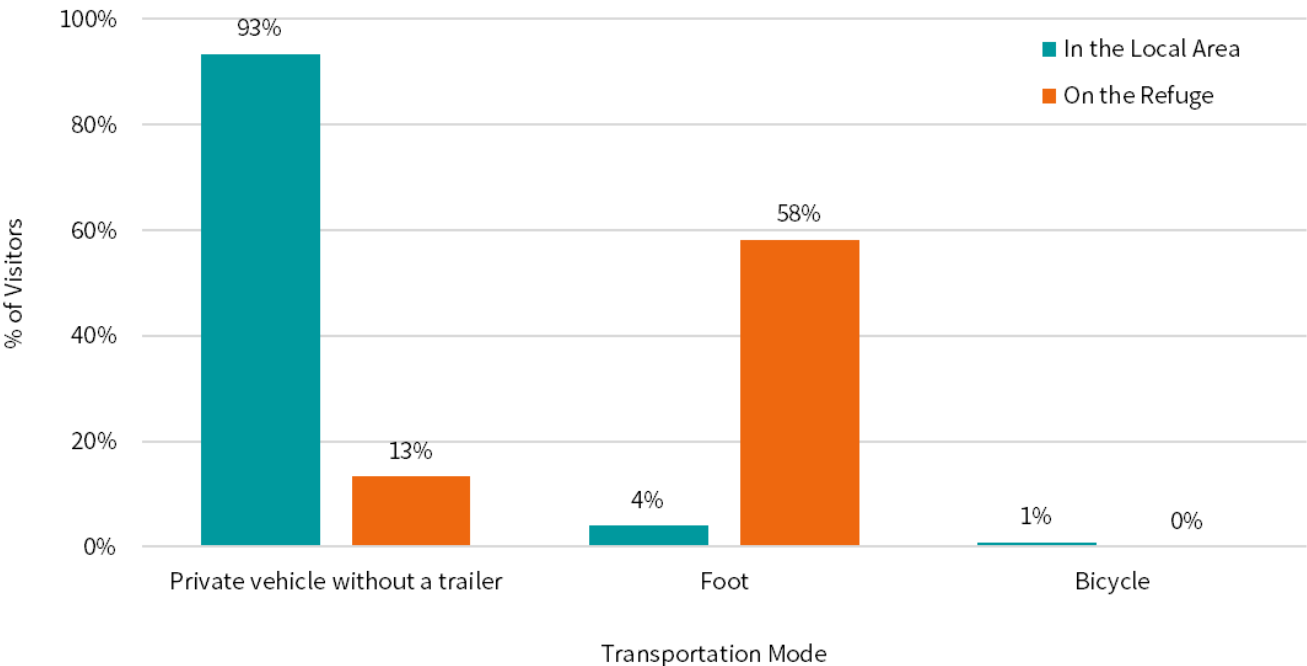


Fig. 9: Modes of transportation used by visitors to get from the local area to this refuge and within the boundaries of this refuge.

Information Sources Used for Trip Planning

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

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

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

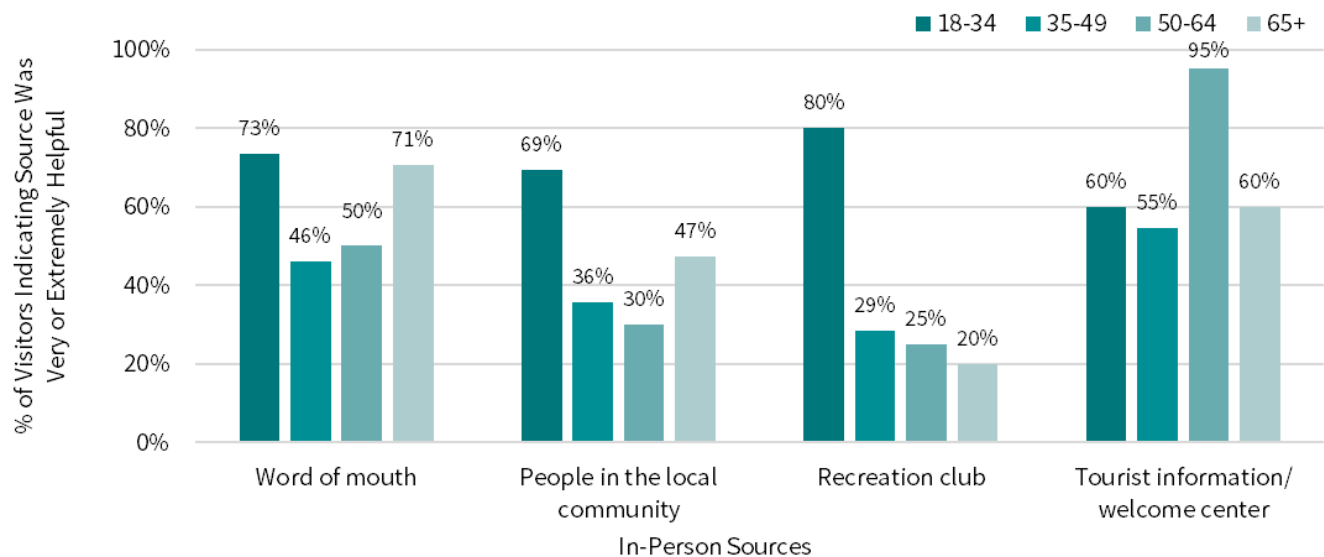


Fig. 10: Percent of visitors by age group who found in-person information sources very or extremely helpful in planning their trip.

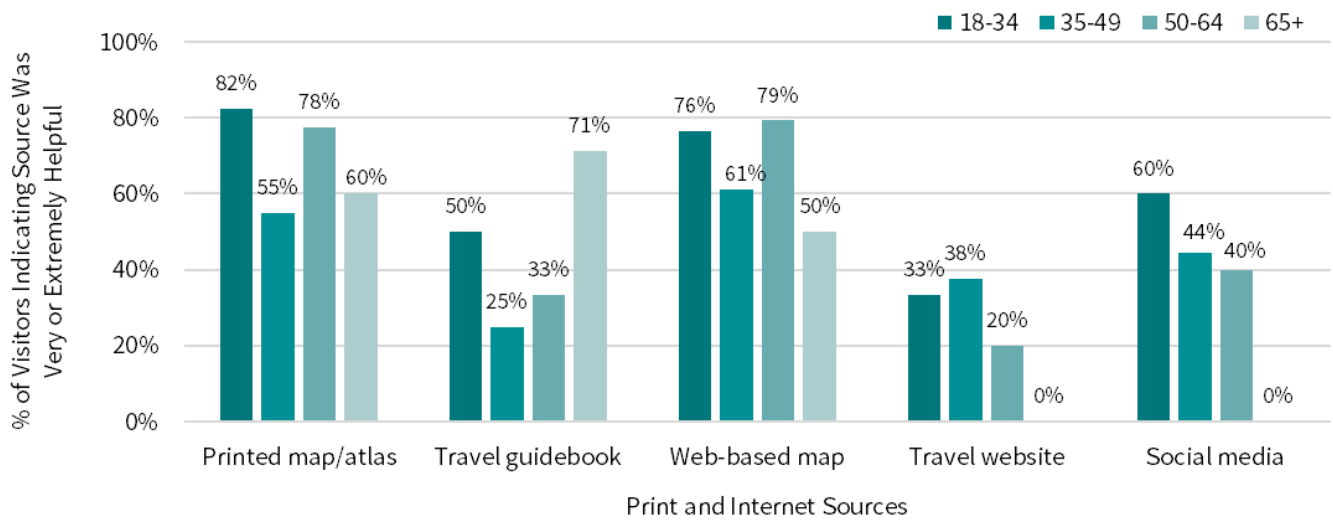


Fig. 11: Percent of visitors by age group who found print and internet information sources very or extremely helpful in planning their trip.

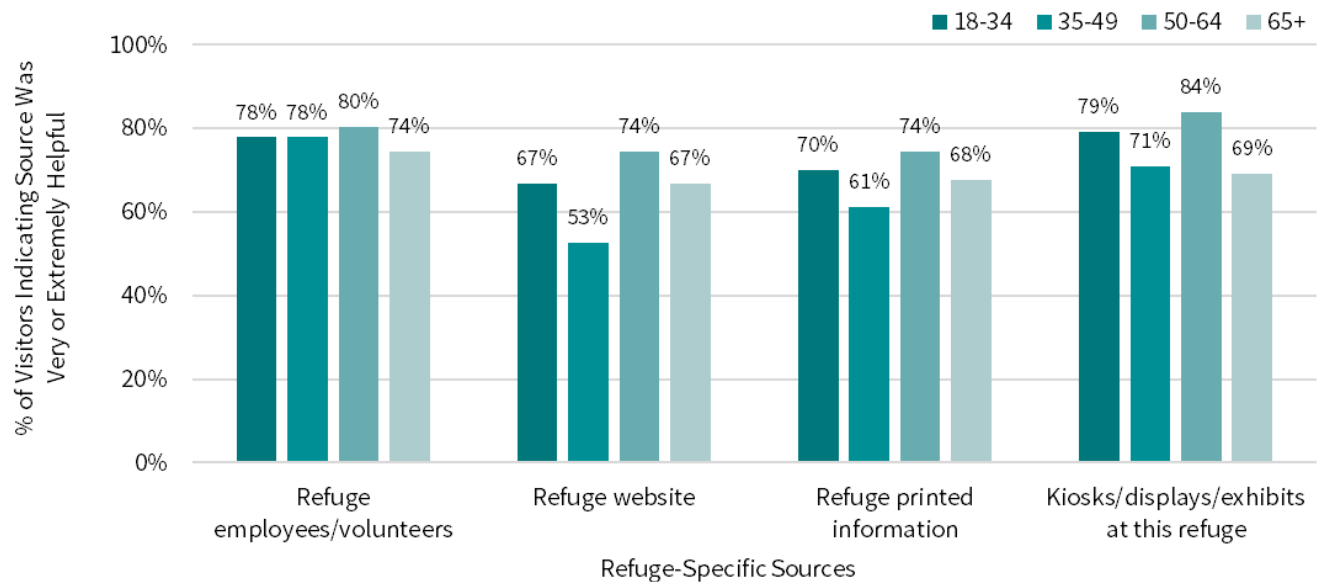


Fig. 12: Percent of visitors by age group who found refuge-specific information sources very or extremely helpful in planning their trip.

Use of Social Media

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

Social media was used by 42% 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 Instagram (50%) and Facebook (20%).
- Visitors 35-49 years old preferred to use Facebook (37%) and Instagram (22%).
- Visitors 50-64 years old preferred to use Facebook (32%) and Instagram (12%).
- Visitors 65 or older preferred to use Facebook (26%).

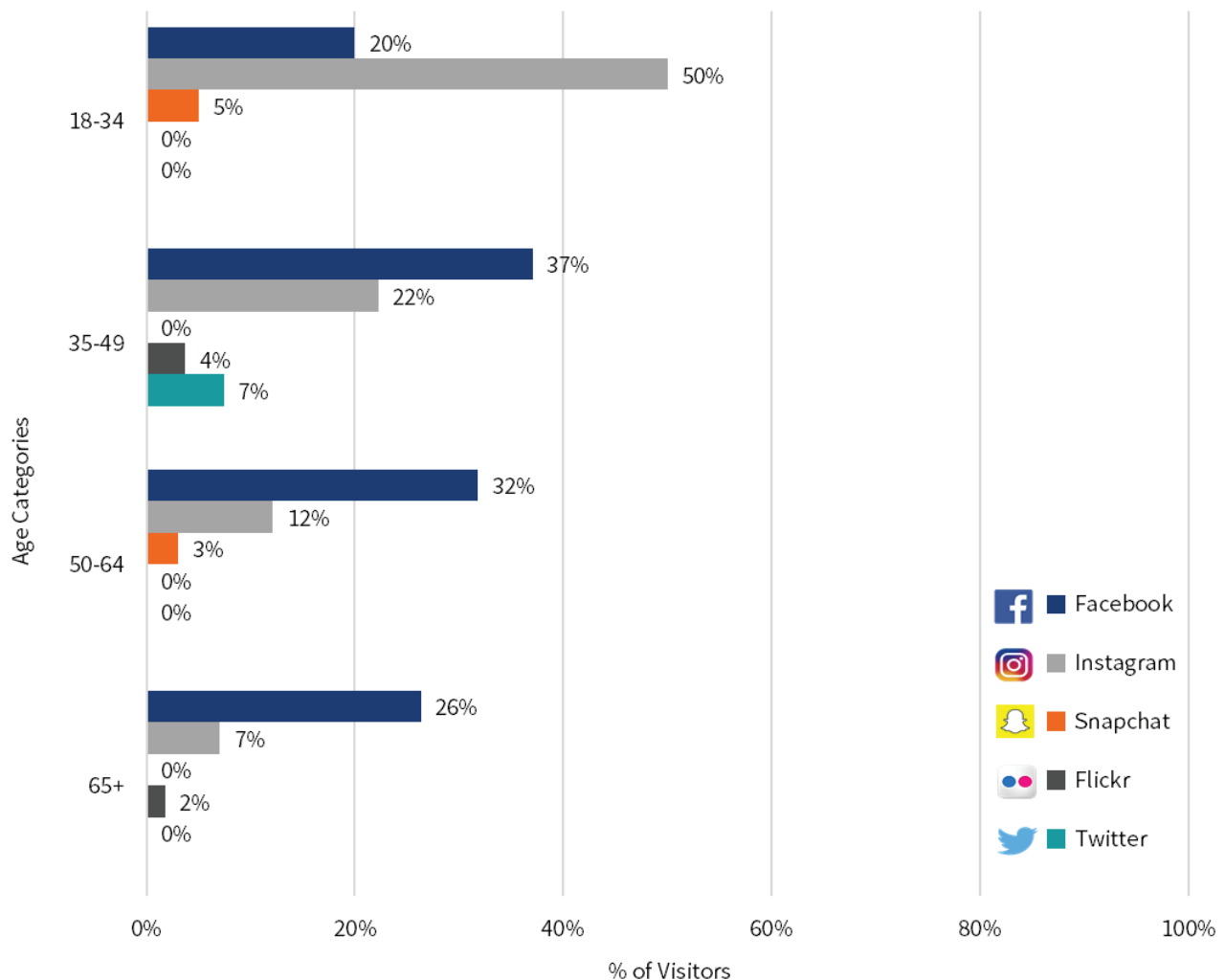


Fig. 13: Percent of visitors by age group who used various social media platforms to share their experience on this refuge with others.

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 hiking (93%), wildlife observation (83%), and bird watching (69%) (Fig. 14).
- The top three activities noted as their primary activity on the day visitors were contacted to participate in the survey were hiking (57%), bird watching (17%), and wildlife observation (9%) (Fig. 14).
- Approximately 46% of visitors went to the visitor center, and they most often viewed the exhibits (70%), used the facilities (64%), and visited the gift shop or bookstore (63%) (Fig. 15).



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

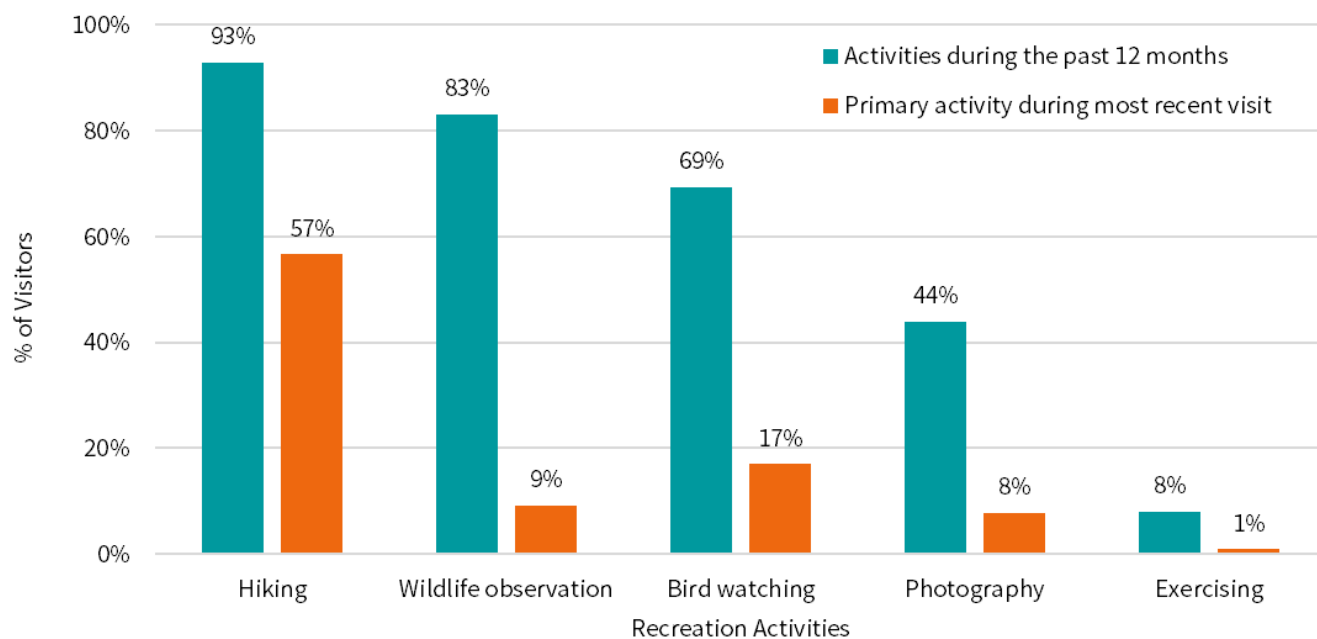


Fig. 14: Recreational activities visitors participated in during the past 12 months and their primary activity during their most recent visit to this refuge.

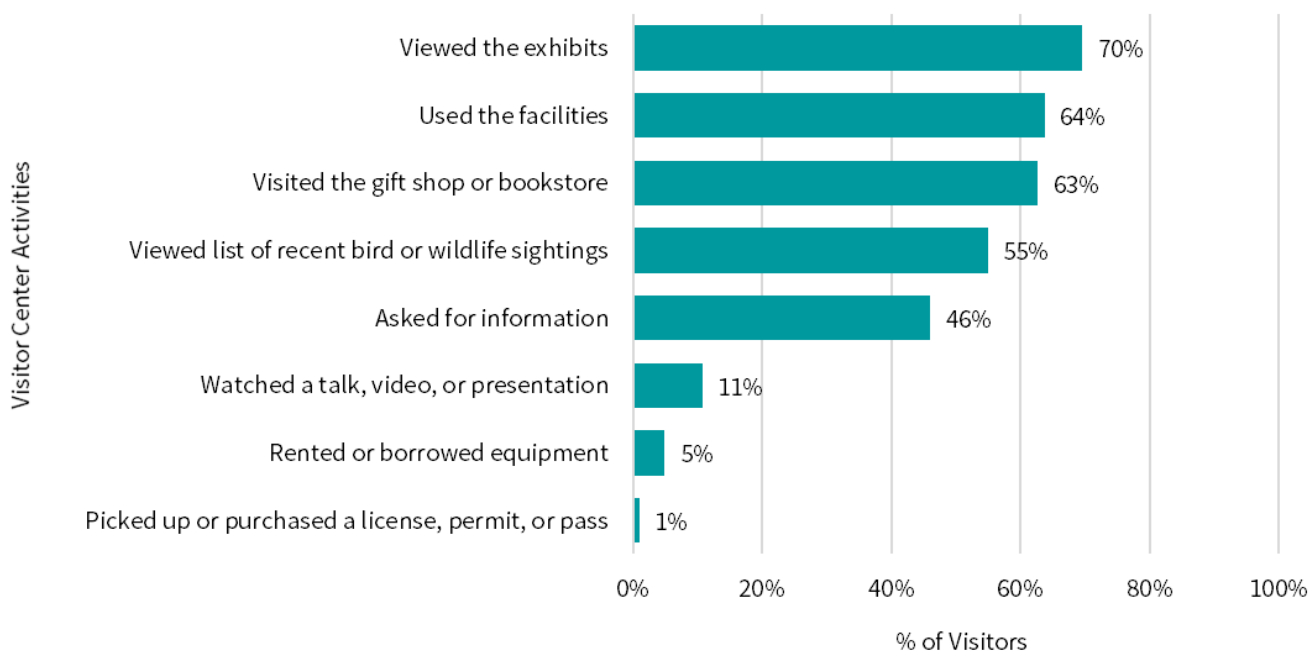


Fig. 15: Reasons visitors used the visitor center during their most recent visit to this refuge.

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:

- 93% of visitors felt welcome during their refuge visit (Fig. 16).
- 98% of visitors felt safe during their refuge visit (Fig. 16).
- 100% of visitors felt comfortable in nature, but 8% did not like being in nature alone (Fig. 17).

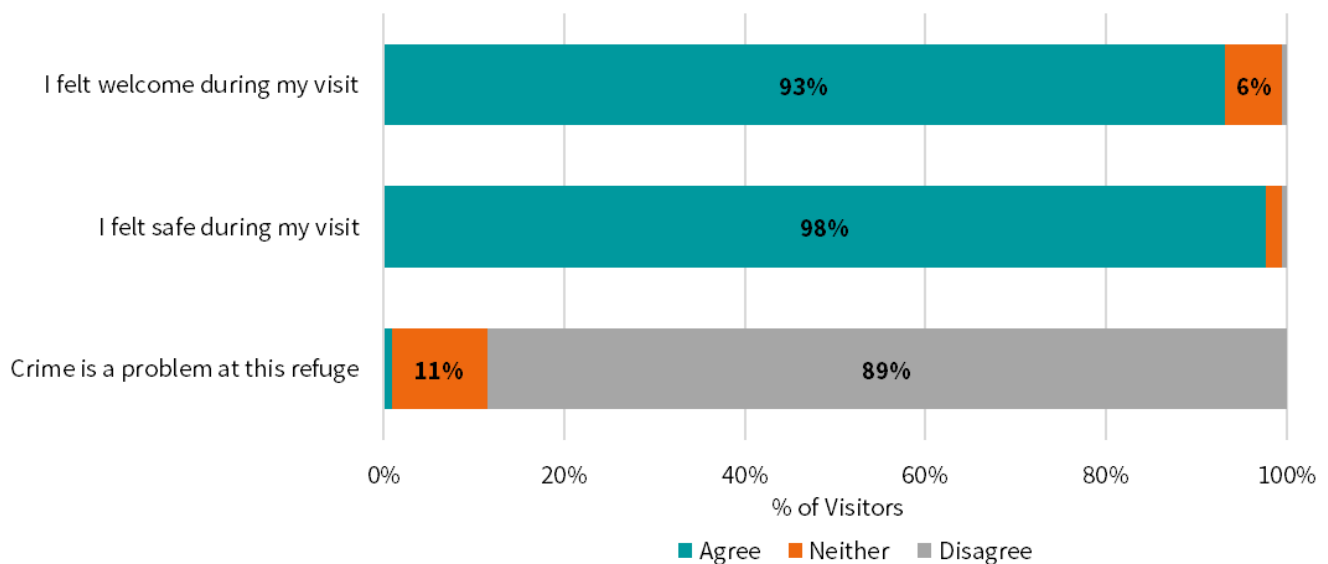


Fig. 16: Visitors' perceptions of safety and feeling welcome at this refuge during their visit.

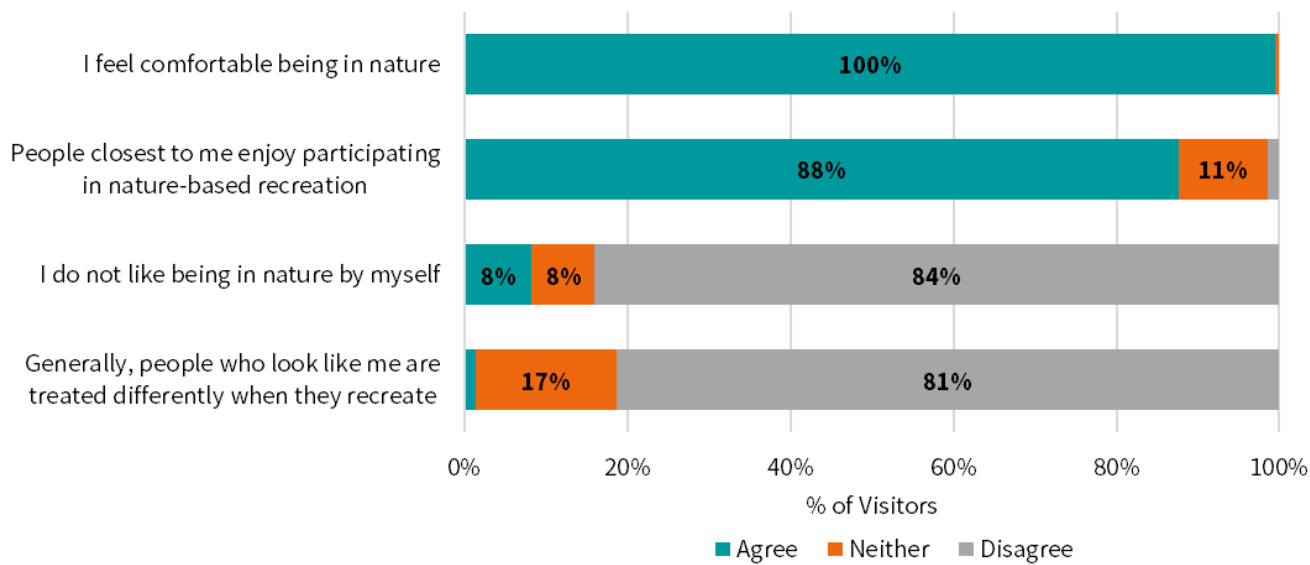


Fig. 17: Visitors' comfort with being in nature.



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:

- 94% of visitors were very or extremely satisfied with the overall experience at this wildlife refuge (Fig. 18).
- 88% 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):

- visitor center (93%),
- restrooms (92%),
- refuge hours/days of operation (91%), and
- courteous and welcoming employees/volunteers (90%).

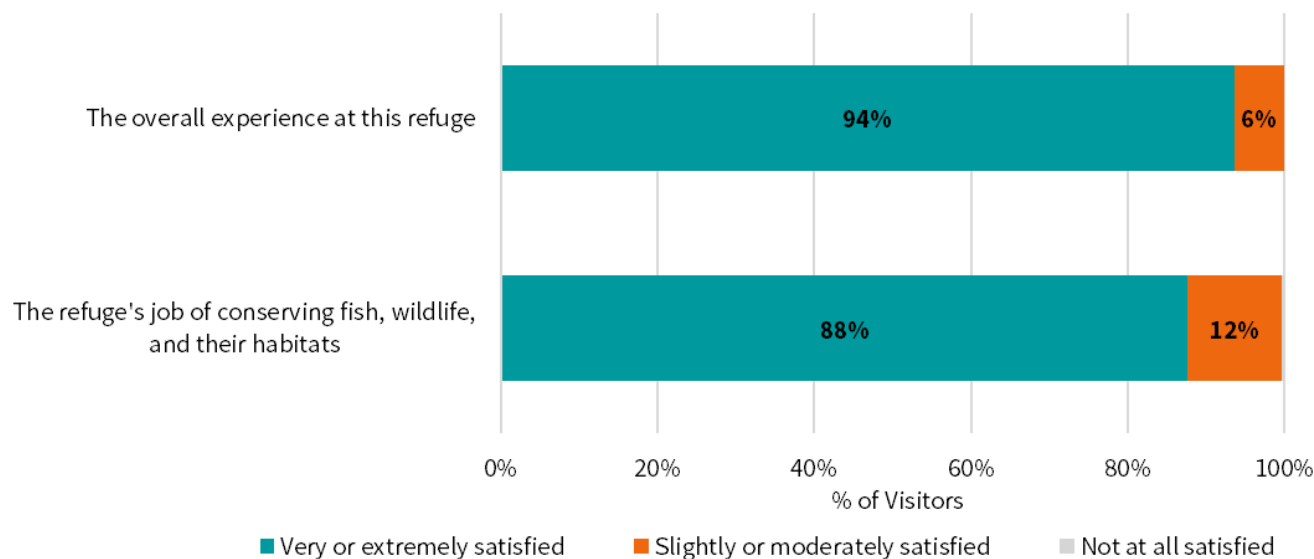


Fig. 18: Visitors' satisfaction with their experience at this refuge and with this refuge's job of conserving fish, wildlife, and habitats.

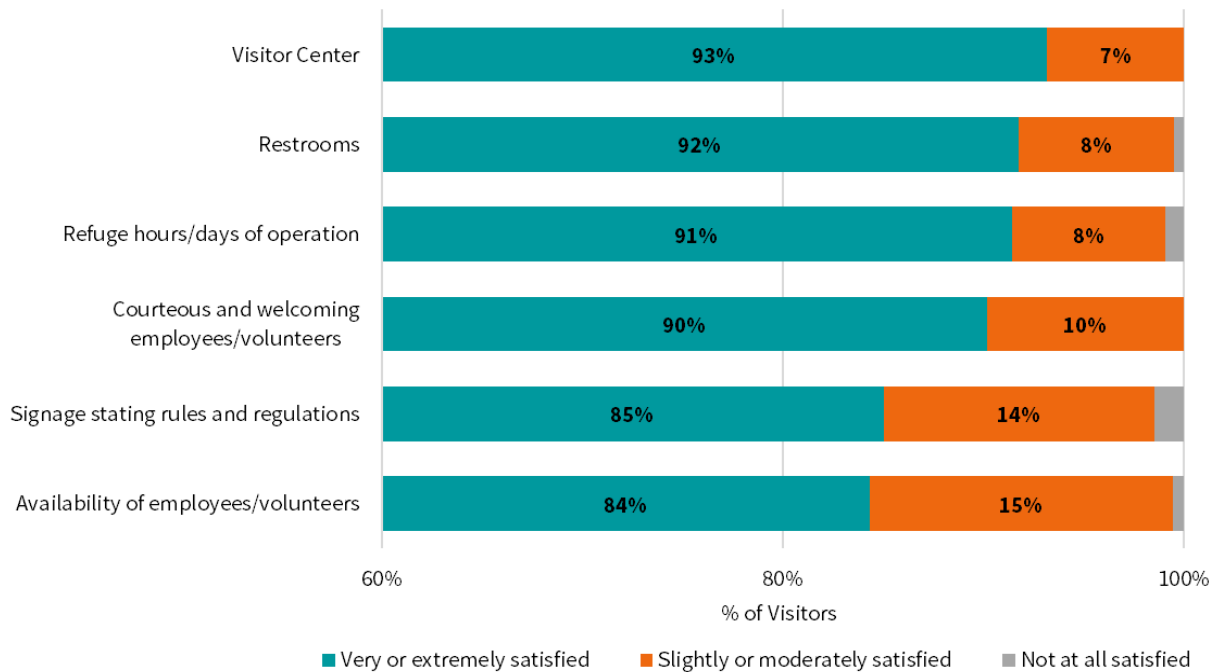


Fig. 19: Visitors' satisfaction with customer service and amenities at this refuge.

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):

- bird watching (89%),
- trail hiking (87%), and
- photography (85%).

"We love Tualatin River National Wildlife Refuge. I often take my children there once a week. My two year old recognizes it whenever we drive by it and immediately asks to go there. My kids love walking on the easy trails, exploring the terrain and seeing various birds and the occasional wildlife. I feel completely safe out there and I love being outside with my kids." – Visitor to Tualatin River National Wildlife Refuge

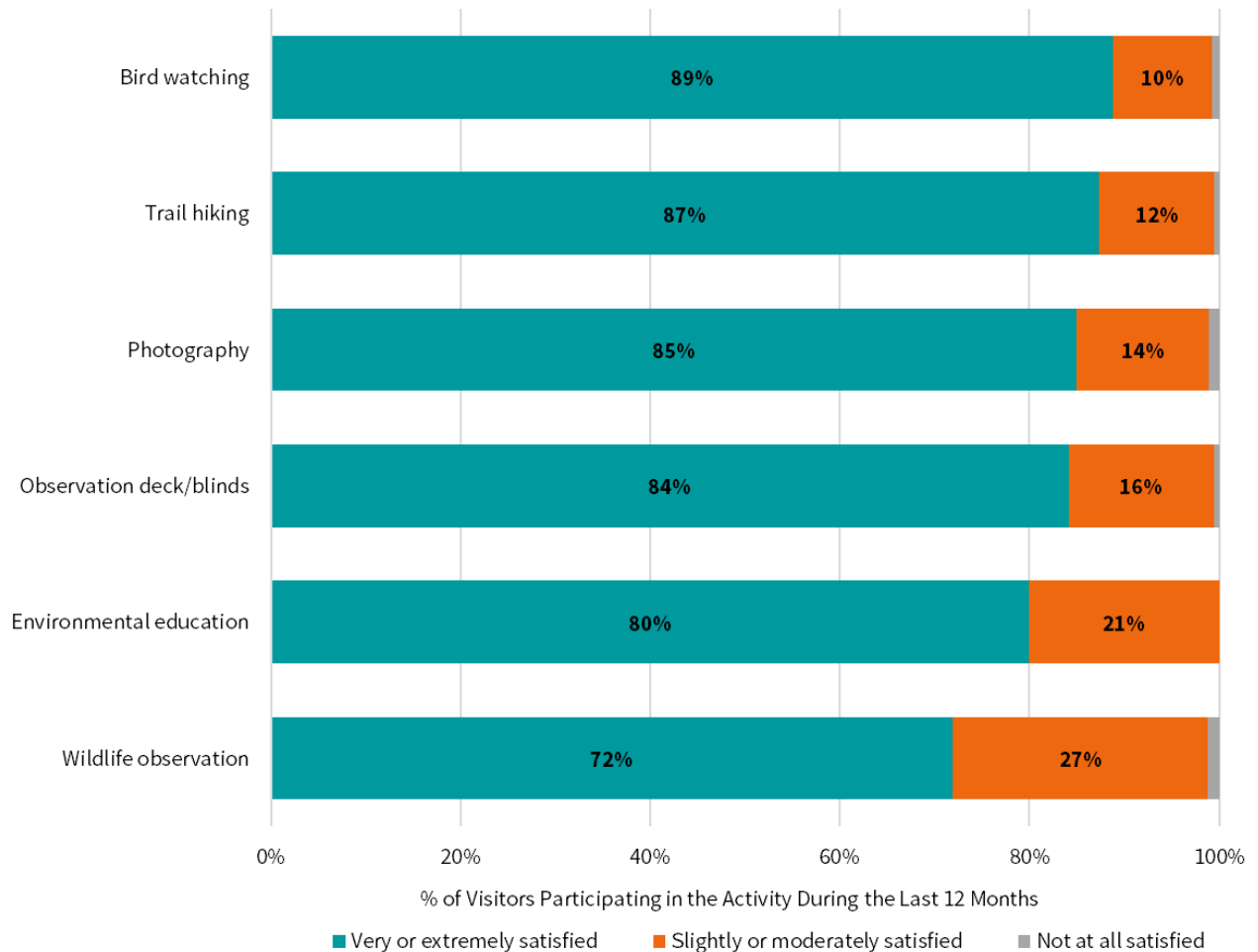


Fig. 20: Visitors' satisfaction with recreational opportunities at this refuge. Only visitors (10 or more) who participated in activities related to each opportunity at this refuge during the last 12 months were included.

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 (81%).
- Getting around this wildlife refuge, visitors were most satisfied with condition of parking areas (95%), safety of driving conditions on refuge roads (95%), and condition of bridges on roadways (91%).
- Accessing recreation on this wildlife refuge, visitors were most satisfied with safety of roads or trails for nonmotorized use (93%), and condition of trails and boardwalks (92%).

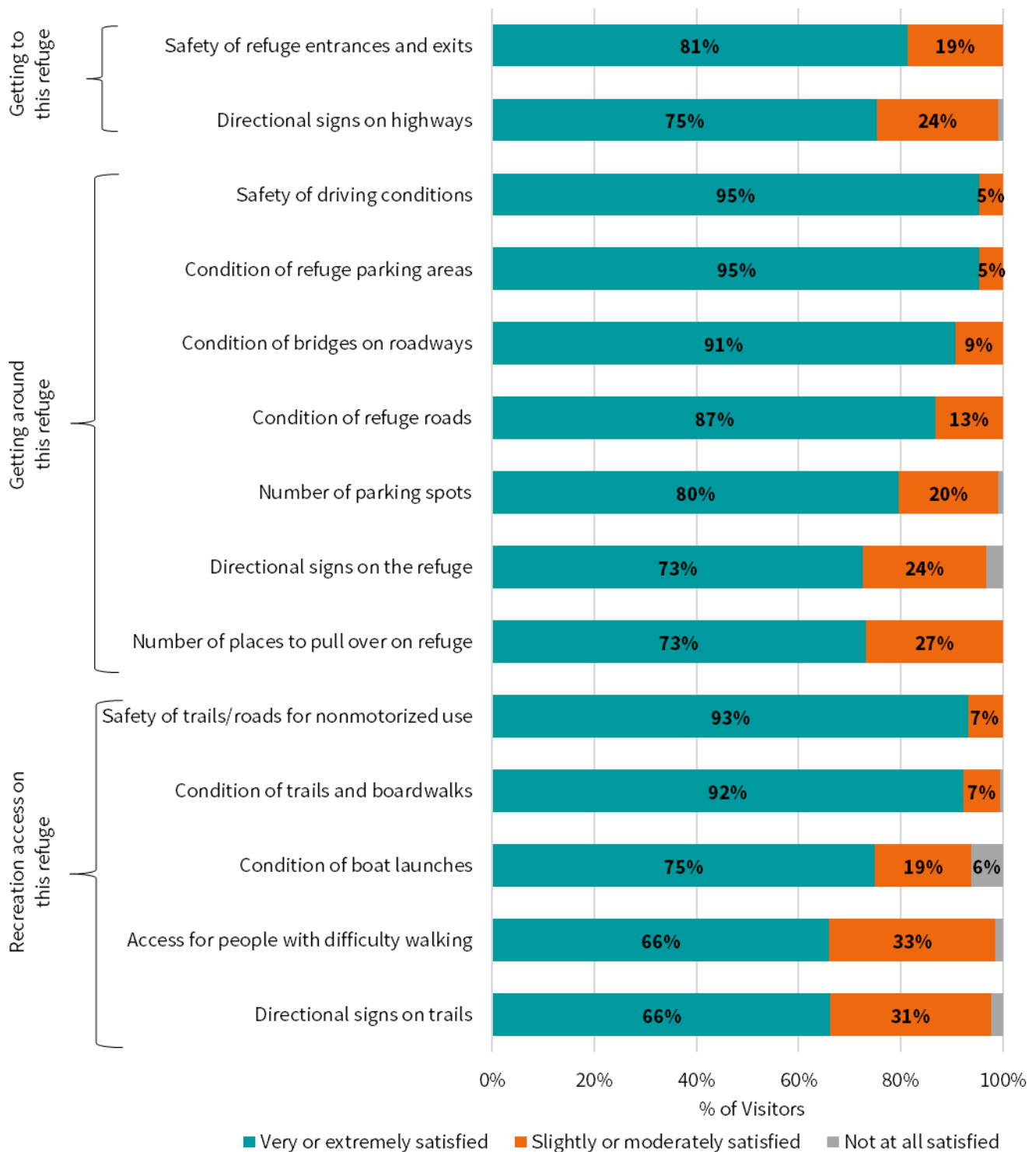


Fig. 21: Visitors' satisfaction with how the refuge is managing transportation-related features.

Economic Benefits to Local Communities & Visitors

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

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

Results for local visitors (those living ≤ 50 miles from this wildlife refuge; 89%) are as follows:

- On average, local visitors accounted for 62% 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 \$18 per person per day (Fig. 22).
- Local visitors were personally willing to pay an additional \$30 per day on average to visit this wildlife refuge (Fig. 23).

Results for nonlocal visitors (those living >50 miles from this wildlife refuge; 11%) are as follows:

- On average, nonlocals accounted for 38% of expenditures.
- Top trip expenditures by nonlocals were for food/drink and lodging (Fig. 22).
- The average amount paid by nonlocals to visit this wildlife refuge was \$51 per person per day (Fig. 22).
- Nonlocal visitors were personally willing to pay an additional \$96 per day on average to visit this wildlife refuge (Fig. 23).
- Nonlocal visitors spent an average of 7 days in the local community during this visit.





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

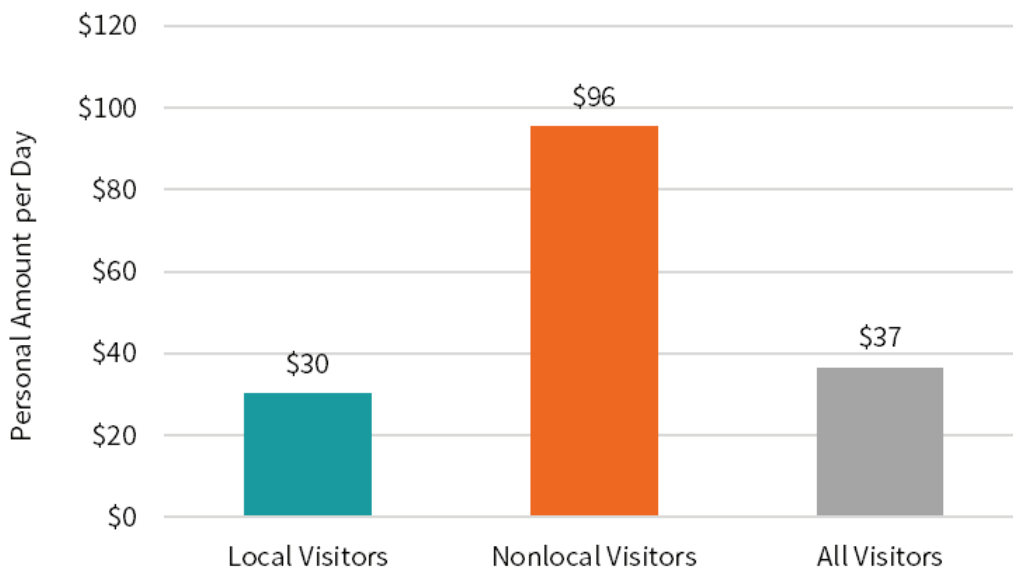


Fig. 23: Total personal willingness to pay per day above and beyond most recent trip expenses if costs were to increase for local, nonlocal, and all visitors. Due to the fixed-response question format, estimates of willingness to pay may underestimate the amount visitors would actually pay. Responses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

Encouraging Return Visits & Future Recreation Participation

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

PROGRAMS AND OTHER OFFERINGS

Programming and other offerings that are compatible with the purpose of a refuge and the Refuge System mission can encourage people to continue visiting the refuge. Additionally, changes to regulations and access for improving

resource availability may increase or decrease future participation, or have little effect at all.

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

- Programs most likely to encourage visitors to return to this wildlife refuge included those focused on skill-building (68%), and highlighting unique local culture (53%) (Fig. 24).
- The top two factors likely to increase visitors' future participation in their primary recreation activity were more infrastructure (19%) and recreation equipment available for rent (15%) (Fig. 25).
- The top two factors likely to decrease visitors' future participation in their primary recreation activity were less regulations on hunting (58%) and less regulations on fishing (34%) (Fig. 25).

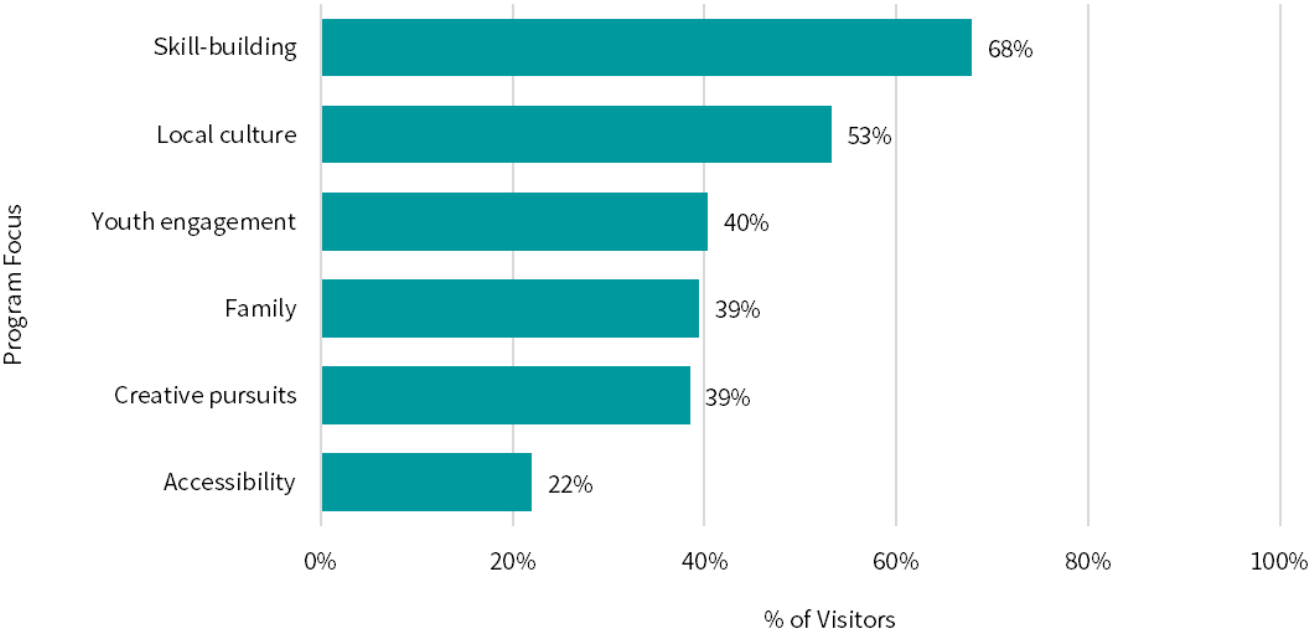


Fig. 24: Types of programs that would encourage visitors to return to this refuge.

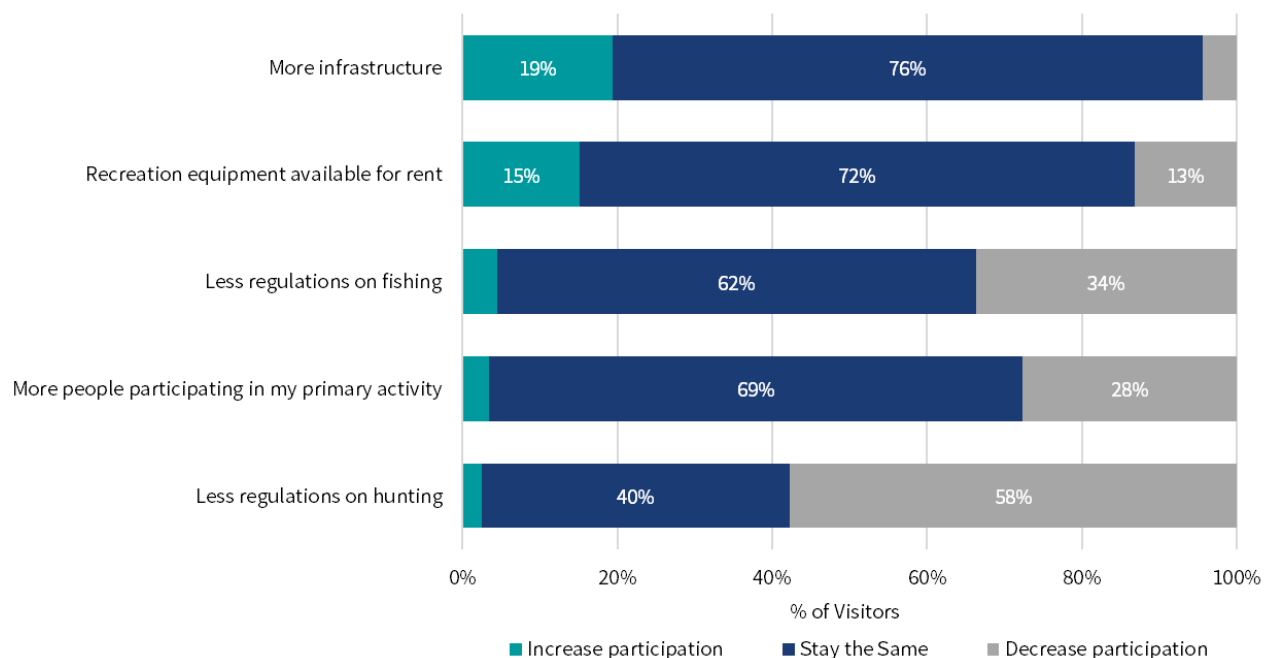


Fig. 25: Changes in visitors’ participation in their primary activity if the listed recreation factors were to change.

ALTERNATIVE TRANSPORTATION

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

The top future alternative transportation options supported by visitors at this wildlife refuge included (Fig. 26):

- pedestrian paths (31%),
- public transit systems that stops at or near this refuge (7%), and
- a bike-share program (7%).

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 three resource changes likely to increase visitors’ future participation in their primary recreation activity were a greater diversity of species (68%), an improvement in the quality of wildlife habitat other than wetlands (62%), and improve in the quality of 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 (65%) and less water available for recreation (31%).

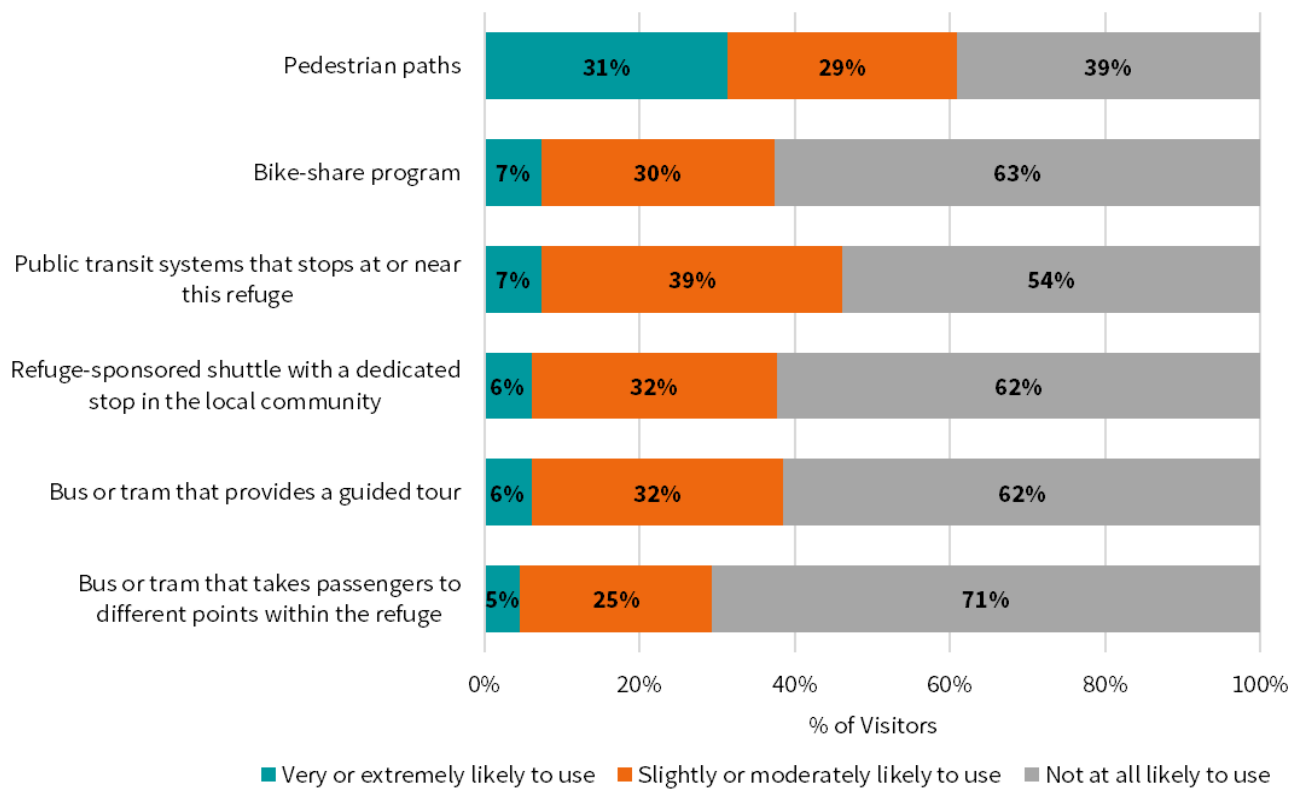


Fig. 26: Visitors' likelihood of using alternative transportation options if offered at this refuge.

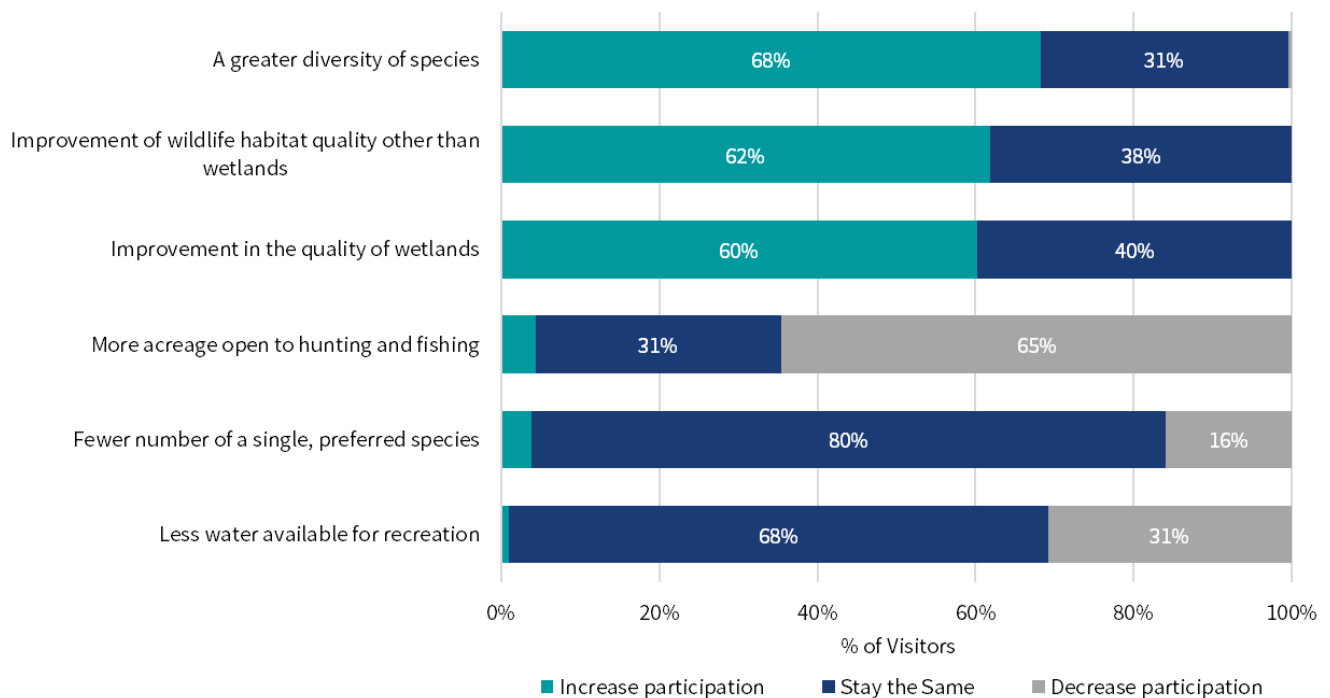


Fig. 27: Changes in visitors' participation in their primary activity if the listed resources were to change.

Conclusion

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

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



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

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Appendix A: Survey Methodology

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

SAMPLING SCHEDULE

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

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

CONTACTING VISITORS ONSITE

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

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

COMPLETING A SURVEY AT HOME

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

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

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

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

DATA ENTRY & ANALYSIS

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

LIMITATIONS OF RESULTS

The degree to which these results represent overall visitation at a wildlife refuge depends on the number of visitors who completed the survey (sample size), and how well the sample reflects the degree of use at the refuge (Scheaffer et al., 2011). Many respondents completing the survey will produce a smaller margin of error, leading to greater confidence in results, but only to a point. For example, a margin of error of $\pm 5\%$ at a 95% confidence level signifies that if a reported percentage is 55%, then 95 out of 100 times that sample estimate would fall between 50% and 60% (if the same question was asked in the same way of the same sample). The margin of error for this survey was calculated with an 80/20

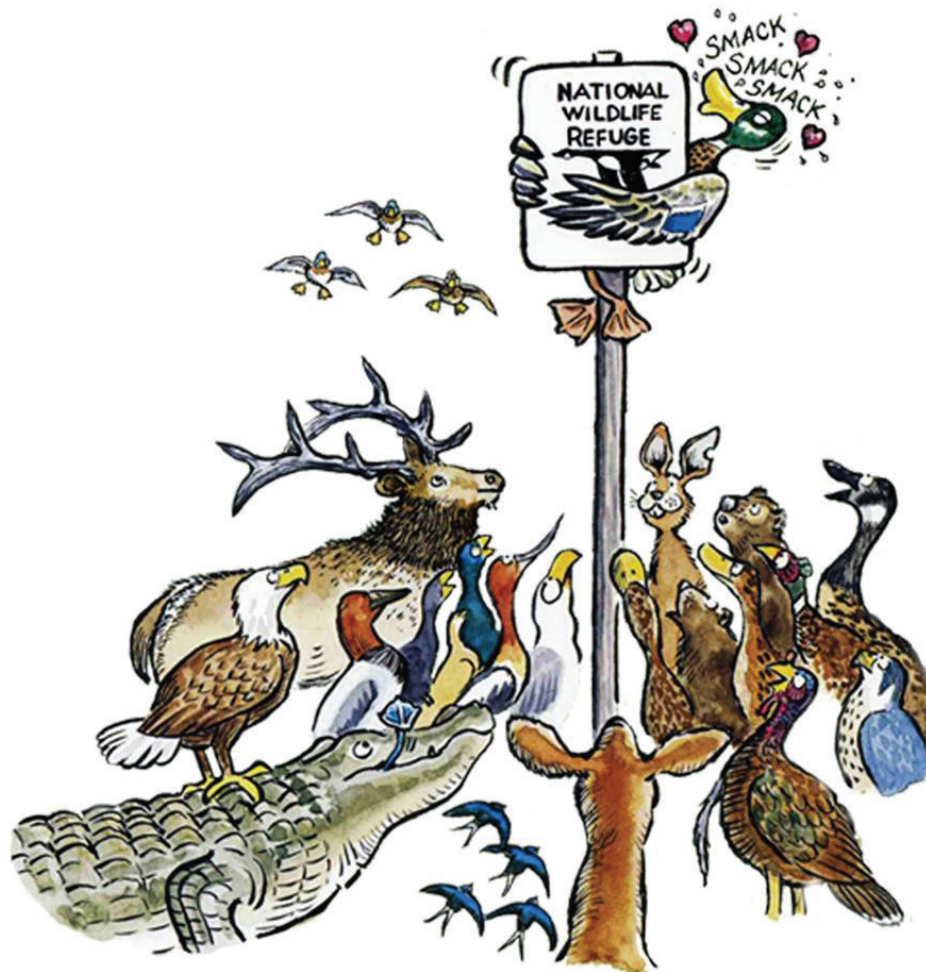
response distribution, meaning if respondents were given a dichotomous choice question, approximately 80% of respondents would select one choice and 20% would select the other (Salant & Dillman, 1994).

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

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National Wildlife Refuge Visitor Survey



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

PLEASE READ THIS FIRST:

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

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

SECTION 1. Your visit to this refuge

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

<input type="checkbox"/> 83% Wildlife observation	<input type="checkbox"/> 93% Hiking/Walking	<input type="checkbox"/> 4% Volunteering
<input type="checkbox"/> 69% Bird watching	<input type="checkbox"/> 8% Jogging/Running/Exercising	<input type="checkbox"/> 6% Environmental education program (classroom visits, labs)
<input type="checkbox"/> 44% Photography	<input type="checkbox"/> 2% Bicycling	
<input type="checkbox"/> 0% Big game hunting	<input type="checkbox"/> 2% 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"/> 0% Motorized boating	
<input type="checkbox"/> 0% Waterfowl/Migratory bird hunting	<input type="checkbox"/> 1% Nonmotorized boating (canoeing, kayaking)	<input type="checkbox"/> 7% Refuge special event (<i>specify</i>) <u>See Appendix C</u>
<input type="checkbox"/> 1% Freshwater fishing	<input type="checkbox"/> 4% Foraging (berries, nuts, other)	<input type="checkbox"/> 3% Other (<i>specify</i>) <u>See Appendix C</u>
<input type="checkbox"/> 0% Saltwater fishing	<input type="checkbox"/> 6% 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"/> 80% It was the primary purpose or sole destination of my trip.
<input type="checkbox"/> 10% It was one of many equally important reasons or destinations for my trip.
<input type="checkbox"/> 10% It was just an incidental or spur-of-the-moment stop on a trip taken for other purposes or to other destinations.

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

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

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

☐ 54% No / Not Applicable

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

☐ 46% Asked information of employees/volunteers

☐ 55% Looked at list of recent bird/wildlife sightings

☐ 11% Attended a talk/video/presentation

☐ 64% Stopped to use the facilities (for example, got water, used restroom)

☐ 70% Viewed the exhibits

☐ 1% Picked up/purchased a license, permit, or pass

☐ 5% Rented/borrowed equipment (for example, binoculars, fishing rod, snowshoes)

☐ 63% Visited the gift shop or bookstore

☐ 5% 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: 2 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)?

☐ 89% Yes

☐ 11% 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: 7 hour(s)

If you spent one day or more in the local area, enter the number of days: 7 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: 20 minutes

If you travelled more than one hour, round to the nearest hour: 10 hours

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

☐ 72% Spring
(March-May)

☐ 75% Summer
(June-August)

☐ 73% Fall
(September-November)

☐ 37% Winter
(December-February)

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

...this refuge (including this visit?) 15 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? 10 number of visits

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

<input type="checkbox"/> 29% Facebook	<input type="checkbox"/> 2% Snapchat	<input type="checkbox"/> 1% Personal blog (for example, Tumblr, Wordpress)
<input type="checkbox"/> 1% Flickr	<input type="checkbox"/> 2% Twitter	<input type="checkbox"/> 3% Travel-related website (for example, Trip Advisor)
<input type="checkbox"/> 16% Instagram	<input type="checkbox"/> 0% Vimeo	<input type="checkbox"/> 3% Other (<i>specify</i>) <u>See Appendix C</u>
<input type="checkbox"/> 1% Pinterest	<input type="checkbox"/> 2% YouTube	<input type="checkbox"/> 58% I do not use social media

SECTION 2. Information about this refuge and its resources

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

Information source	For those who used a source, the % who found it to be...					Did not use
	Not at all helpful	Slightly helpful	Moderately helpful	Very helpful	Extremely helpful	
Personal knowledge from previous visit(s)	<input type="checkbox"/> 2%	<input type="checkbox"/> 2%	<input type="checkbox"/> 9%	<input type="checkbox"/> 36%	<input type="checkbox"/> 51%	<input type="checkbox"/> 17%
Word of mouth (for example, a friend or relative)	<input type="checkbox"/> 7%	<input type="checkbox"/> 9%	<input type="checkbox"/> 24%	<input type="checkbox"/> 28%	<input type="checkbox"/> 31%	<input type="checkbox"/> 50%
People in the local community near the refuge	<input type="checkbox"/> 17%	<input type="checkbox"/> 14%	<input type="checkbox"/> 28%	<input type="checkbox"/> 21%	<input type="checkbox"/> 21%	<input type="checkbox"/> 67%
Refuge employees or volunteers	<input type="checkbox"/> 3%	<input type="checkbox"/> 4%	<input type="checkbox"/> 16%	<input type="checkbox"/> 38%	<input type="checkbox"/> 39%	<input type="checkbox"/> 29%
Printed map or atlas	<input type="checkbox"/> 4%	<input type="checkbox"/> 7%	<input type="checkbox"/> 22%	<input type="checkbox"/> 38%	<input type="checkbox"/> 29%	<input type="checkbox"/> 48%
Web-based map (for example, Google Maps, Waze)	<input type="checkbox"/> 8%	<input type="checkbox"/> 8%	<input type="checkbox"/> 17%	<input type="checkbox"/> 33%	<input type="checkbox"/> 34%	<input type="checkbox"/> 62%
Refuge website	<input type="checkbox"/> 3%	<input type="checkbox"/> 6%	<input type="checkbox"/> 24%	<input type="checkbox"/> 40%	<input type="checkbox"/> 26%	<input type="checkbox"/> 57%
Travel website (for example, TripAdvisor)	<input type="checkbox"/> 48%	<input type="checkbox"/> 13%	<input type="checkbox"/> 17%	<input type="checkbox"/> 13%	<input type="checkbox"/> 9%	<input type="checkbox"/> 89%
Other website (<i>specify</i>) <u>See Appendix C</u>	<input type="checkbox"/> 27%	<input type="checkbox"/> 9%	<input type="checkbox"/> 27%	<input type="checkbox"/> 0%	<input type="checkbox"/> 36%	<input type="checkbox"/> 94%
Social media (for example, Facebook, Instagram)	<input type="checkbox"/> 38%	<input type="checkbox"/> 13%	<input type="checkbox"/> 16%	<input type="checkbox"/> 28%	<input type="checkbox"/> 6%	<input type="checkbox"/> 85%
Recreation club or organization	<input type="checkbox"/> 43%	<input type="checkbox"/> 4%	<input type="checkbox"/> 21%	<input type="checkbox"/> 18%	<input type="checkbox"/> 14%	<input type="checkbox"/> 87%
Refuge printed information (for example, brochure)	<input type="checkbox"/> 6%	<input type="checkbox"/> 7%	<input type="checkbox"/> 21%	<input type="checkbox"/> 37%	<input type="checkbox"/> 30%	<input type="checkbox"/> 50%
Kiosks/displays/exhibits at the refuge	<input type="checkbox"/> 3%	<input type="checkbox"/> 4%	<input type="checkbox"/> 18%	<input type="checkbox"/> 40%	<input type="checkbox"/> 35%	<input type="checkbox"/> 27%
Travel guidebook or other book	<input type="checkbox"/> 52%	<input type="checkbox"/> 0%	<input type="checkbox"/> 5%	<input type="checkbox"/> 19%	<input type="checkbox"/> 24%	<input type="checkbox"/> 90%
Tourist information or welcome center	<input type="checkbox"/> 13%	<input type="checkbox"/> 5%	<input type="checkbox"/> 13%	<input type="checkbox"/> 33%	<input type="checkbox"/> 36%	<input type="checkbox"/> 72%
Other source (<i>specify</i>) <u>See Appendix C</u>	<input type="checkbox"/> 20%	<input type="checkbox"/> 0%	<input type="checkbox"/> 40%	<input type="checkbox"/> 20%	<input type="checkbox"/> 20%	<input type="checkbox"/> 97%

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
13%	14%	40%	23%	10%	Surface conditions of refuge roads	0%	2%	11%	39%	47%	NA
10%	15%	42%	23%	9%	Surface conditions of parking areas	0%	1%	4%	35%	61%	NA
11%	11%	33%	32%	14%	Condition of bridges on roadways	0%	3%	7%	41%	50%	NA
2%	4%	22%	45%	26%	Condition of trails and boardwalks	0%	0%	7%	40%	52%	NA
60%	11%	13%	14%	2%	Condition of boat launches	6%	0%	19%	44%	31%	NA
1%	9%	31%	42%	17%	Number of places for parking	1%	4%	15%	38%	41%	NA
34%	10%	28%	21%	7%	Number of places to pull over on refuge roads	0%	7%	20%	46%	27%	NA
19%	6%	18%	36%	21%	Safety of driving conditions on refuge roads	0%	0%	5%	45%	50%	NA
5%	5%	21%	40%	30%	Safety of refuge road entrances/exits	0%	5%	14%	43%	38%	NA
9%	7%	15%	33%	37%	Safety of roads/trails for nonmotorized users (for example, bicyclists and hikers)	0%	0%	7%	41%	53%	NA
5%	9%	27%	41%	18%	Signs on highways directing you to this refuge	1%	2%	21%	41%	35%	NA
11%	11%	25%	35%	18%	Signs directing you around refuge roads	3%	4%	20%	33%	40%	NA
2%	5%	24%	43%	25%	Signs directing you on trails	2%	6%	26%	34%	32%	NA
14%	12%	18%	38%	18%	Access for people with physical disabilities or who have difficulty walking	1%	6%	27%	36%	30%	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%	13%
Private/rental vehicle with a trailer (for boat, camper, or other)	0%	0%
Recreational vehicle (RV)	0%	0%
Refuge shuttle bus/tram	0%	0%
Tour bus/van	0%	0%
Public transportation	0%	0%
Motorcycle	0%	0%
Bicycle	1%	0%
Foot (for example, walking/hiking)	4%	58%
Boat	0%	0%
Other (<i>specify</i>): <u>See Appendix C</u>	1%	1%
Other (<i>specify</i>): <u>See Appendix C</u>	0%	0%

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

Transportation options	Not at all Likely	Slightly Likely	Moderately Likely	Very Likely	Extremely Likely
Bus or tram that takes passengers to different points within refuge boundaries (such as the Visitor Center)	71%	14%	11%	4%	1%
Bus or tram that provides a guided tour of the refuge with information about this refuge and its resources	62%	18%	14%	4%	2%
Refuge-sponsored shuttle with a dedicated stop in the local community for picking up people at set times	62%	16%	16%	3%	3%
Public transit system that stops at or near this refuge	54%	24%	15%	3%	4%
Bike-share program that offers bicycles for rent on or near this refuge	63%	16%	14%	5%	2%
Pedestrian paths for access to this refuge from the local community	39%	11%	18%	14%	17%

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"/> 17% \$0	<input type="checkbox"/> 20% \$30	<input type="checkbox"/> 4% \$100	<input type="checkbox"/> 0% \$250
<input type="checkbox"/> 19% \$5	<input type="checkbox"/> 3% \$45	<input type="checkbox"/> 0% \$125	<input type="checkbox"/> 1% \$350
<input type="checkbox"/> 17% \$10	<input type="checkbox"/> 1% \$60	<input type="checkbox"/> 1% \$150	<input type="checkbox"/> 0% \$500
<input type="checkbox"/> 15% \$20	<input type="checkbox"/> 2% \$75	<input type="checkbox"/> 1% \$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
0%	2%	9%	46%	43%	Convenient hours/days of operation for this refuge	1%	1%	6%	48%	44%	NA
13%	22%	34%	24%	7%	Availability of employees or volunteers	1%	2%	13%	47%	37%	NA
13%	15%	23%	33%	17%	Courteous and welcoming employees or volunteers	0%	3%	7%	41%	49%	NA
1%	9%	26%	40%	25%	Signs with rules/regulations for this refuge	1%	1%	13%	48%	37%	NA
7%	11%	32%	34%	16%	Visitor center	0%	0%	7%	44%	49%	NA
1%	3%	15%	37%	44%	Well-maintained restrooms	1%	0%	8%	40%	52%	NA
3%	10%	31%	43%	14%	Recreational structures (decks, blinds, platforms)	1%	1%	14%	44%	40%	NA
6%	6%	16%	37%	35%	Bird-watching opportunities	1%	2%	10%	39%	48%	NA
2%	3%	20%	42%	33%	Opportunities to observe wildlife other than birds	1%	6%	20%	38%	35%	NA
8%	7%	15%	38%	32%	Opportunities to photograph wildlife and scenery	1%	3%	14%	41%	42%	NA
8%	15%	31%	31%	15%	Environmental education opportunities	0%	3%	26%	38%	33%	NA
92%	3%	2%	2%	2%	Hunting opportunities	35%	4%	9%	26%	26%	NA
77%	6%	10%	5%	2%	Fishing opportunities	30%	9%	9%	35%	17%	NA
1%	1%	7%	31%	60%	Trail hiking opportunities	0%	1%	11%	38%	49%	NA
39%	17%	19%	15%	10%	Bicycling opportunities	23%	2%	16%	32%	27%	NA
36%	15%	21%	18%	9%	Water trail opportunities for canoeing or kayaking	27%	5%	18%	27%	23%	NA
31%	18%	24%	18%	9%	Volunteer opportunities	1%	2%	23%	46%	28%	NA
19%	10%	25%	22%	24%	Wilderness experience opportunities	3%	4%	22%	34%	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%	6%	39%	54%
I felt safe during my visit to this refuge.	0%	0%	2%	38%	59%
Crime <u>is</u> a problem at this refuge.	57%	31%	11%	0%	0%
I feel comfortable being in nature.	0%	0%	0%	29%	70%
I do <u>not</u> like being in nature by myself.	65%	19%	8%	7%	1%
People closest to me enjoy participating in nature-based recreation.	1%	0%	11%	42%	45%
Generally, people who look like me are treated differently when they participate in nature-based recreation.	59%	22%	17%	1%	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%	12%	50%	37%
The quality of the overall experience when visiting this refuge.	0%	0%	6%	47%	47%

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	31%	68%	1%
More acreage open to hunting and fishing	65%	31%	4%
More infrastructure (for example, bathrooms, observation decks)	4%	76%	19%
Recreation equipment available for rent (for example, fishing rods, binoculars, snowshoes)	13%	72%	15%
Less regulations on fishing	34%	62%	4%
Less regulations on hunting	58%	40%	2%
A greater diversity of species	0%	31%	68%
Fewer numbers of a single, preferred species	16%	80%	4%
More people participating in my primary activity	28%	69%	3%
An improvement in the quality of wetlands	0%	40%	60%
An improvement in the quality of wildlife habitat other than wetlands	0%	38%	62%

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

86% Yes 5% No 9% 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:

40% Programs that engage youth

39% Programs that focus on creative pursuits (for example, art, writing, meditation)

39% Programs that focus on family/multiple-generations

22% Programs that support people with accessibility concerns (for example, difficulty walking, in a wheelchair)

68% Programs that teach skills to visitors

7% Other (*specify*) See Appendix C

53% 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? ☐ 44% Male ☐ 56% Female

2. In what year were you born? 1963 (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"/> 5%				<input type="checkbox"/> 49%				<input type="checkbox"/> 45%			

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

<input type="checkbox"/> 97% 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"/> 1% Asian	<input type="checkbox"/> 2% Some other race or ethnicity

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

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

<input type="checkbox"/> 1% Less than \$10,000	<input type="checkbox"/> 10% \$35,000 - \$49,999	<input type="checkbox"/> 21% \$100,000 - \$149,999
<input type="checkbox"/> 4% \$10,000 - \$24,999	<input type="checkbox"/> 19% \$50,000 - \$74,999	<input type="checkbox"/> 12% \$150,000 - \$199,999
<input type="checkbox"/> 5% \$25,000 - \$34,999	<input type="checkbox"/> 19% \$75,000 - \$99,999	<input type="checkbox"/> 9% \$200,000 or more

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

<input type="checkbox"/> 37% Employed full-time	<input type="checkbox"/> 0% Unemployed	<input type="checkbox"/> 39% Retired
<input type="checkbox"/> 6% Employed part-time	<input type="checkbox"/> 7% Homemaker/caregiver	<input type="checkbox"/> 1% Disabled/unable to work
<input type="checkbox"/> 7% Self-employed	<input type="checkbox"/> 2% Student	<input type="checkbox"/> 0% Other (specify): <u>See Appendix C</u>

Thank you for completing the survey.

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

Comments?

See Appendix C

PAPERWORK REDUCTION ACT STATEMENT: The Paperwork Reduction Act requires us to tell you why we are collecting this information, how we will use it, and whether or not you have to respond. The information that we collect in this survey will help us understand visitor satisfaction with and use of national wildlife refuges and to inform management and policy decisions. Your response is voluntary. An agency may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a valid OMB Control Number. We estimate it will take an average of 25 minutes to complete this survey. You may send comments concerning the burden estimate or any aspect of the survey to the Information Collection Clearance Officer, Fish and Wildlife Service, 4401 North Fairfax Drive, MS 222-ARLSQ, Arlington, VA 22203. OMB CONTROL # 0596-0236 EXPIRATION DATE 11/30/2020

Appendix C: Open-Ended Survey Responses by Question

Survey Section 1

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

Special Event	Frequency
Bird surveys	1
Bird watch	1
Birdfest, refuge day	1
Kids day	1
Open house, Birdfest	1
Puddle stompers	1
Tualatin River Bird Festival	7
Urban refuge day	1
Wildflower mapping training for nonprofit conservation group	1

Other Activity	Frequency
Family outing with young kids	1
First time visit/visitors center	1
Observing land & water scape	1
Outing with grandchildren	1
Pokémon Go	2

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

Primary Activity	Frequency
Art	1
Bird watching	37
Environmental education	2
Exercising	2
Hiking	123
Other	4
Photography	17
Running	2
Sightseeing	1
Special event	7
Volunteering	1
Wildlife observation	20

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
Center was closing up, just as we entered. Wanted to view the exhibits and cross check what we saw in the refuge.	1
Kids played activities provided at kids' table	1
Looked at young eagle through telescope	1
Used spotting scope	1
Wanted to but it closed too early!!!	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
eBird	2
Fitbit	1
Meetup	1
Twitch & discord	1
WeChat	1

Survey Section 2

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

Other Websites	Frequency
eBird	5
Friends of tualatin refuge.org	1
Google	1

Other Information Sources	Frequency
Oregon birders online	1
Refuge signs	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
Coffee	1
Donation	1
NWR donation	1

Survey Section 6

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

Other Programs	Frequency
Bird-related programs	1
General environmental education	2
Hiking-related programs	1
Local history programs	1
Nature-related programs	2

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=38)

Getting in and out of entrance to refuge from highway is very challenging during afternoon commuter hours; lacks adequate signage on trails and non-motorized roads. Needed to rely on kiosk map for bearings the first few visits to refuge.

Hard to access from the highway. Needed to make a U-turn up the road to get into the correct direction home.

I am surprisingly pleased at the efficiency of the park-and-ride shuttle service available during the annual bird festival. Pedestrian access trails from the neighborhoods to the south would be a great addition.

I frequently use the small wayside parking lot off of Roy Rogers Rd. The turn is not particularly well marked and it is difficult to see if another vehicle is approaching. A refuge turn lane and sign marking the wildlife area would improve safety.

I go to the wildlife refuge to observe animals (and take photos). Screaming kids, kids making monster noises, etc., directly affect the experience of people like me. Noisy children also scare the animals. It's a wildlife refuge! Not a park. Refuge employees and volunteers should do more to ask people to respect the wildlife and respect people who want a peaceful experience.

I really like that there are not cars on the refuge - only at parking area.

I think it would be hard for a person with a wheelchair or walker, but I'm against adding asphalt to the refuge as it has a negative environmental impact. Plus there is some access already for handicapped individuals.

I worry about car theft. Cars block sight of nature center employees. No security or observation.

I've only taken my motorcycle here, but there's plenty of parking for cars, and I'm almost positive the bus goes right to the refuge.

If the refuge continues to gain popularity as it has over the last few years, additional parking and trails should be added.

It is a very well kept area. More parking would be helpful during peak times.

Keep surface soft, not gravel.

More maps along the trail would be helpful. There are a couple places where you can go one way for a longer route or another way for shorter route and it would be helpful to see a map.

More trail signs would be helpful.

My family and I love coming to this refuge.

Need more parking spaces.

No signs at all on the road to show entrance on Roy Rogers Rd.

On our second visit, we used the back entrance, which was hard to find and difficult if turning across traffic.

Refuge entrance/exit is a little tricky due to busy split highway location, but in general is ok. Parking seems limited, but has never been an issue-just something to consider for medium-large attendance events. Shuttles ok, but a little tricky with kids/carseat safety. Some trail signage is a little vague- also might be fun to incorporate learning for kids?

Signage on the highway was visible but not obvious, and the directions given ("next left") were not clear. I did not see a sign at the next left, or any subsequent left. I had to pull over and ask where the refuge was at a local nursery. I had a map for the refuge trails, but some on-trail signage would have been helpful to confirm location.

Signage on trails could be better marked, otherwise this is a beautiful place to go hiking with my children and see wildlife.

Signs describing 'no dogs/no jogging/no bicycles' etc. etc. are understated. Some people jog on these trails and refuse to stop. Also, some trails have seasonal closures, yet some people ignore them or choose to since the signs are few and again pretty understated.

So popular that more parking space is needed.

The condition of natural habitats: should it be closely resembling what nature has to offer? I saw a lot of rocks. It was well preserved. It should have grass, other plants, and when people step on it, it shouldn't have killed the grass. Maybe design a better path.

The gravel roads that make up the majority of walking trails, no vehicles except now & then wildlife ranger truck are quite rocky, making it hard to walk for older people or uncomfortable for the rest of us. Really only complaint in entire wonderful refuge. :)

The lane to turn into the refuge is fairly short - better than it used to be, but could be longer for additional cars of access.

The parking lot always is maintained very well with plenty of parking available. The restroom is very nice and clean.

The refuge is located on very busy Highway 99. Sometimes it is difficult to exit the highway from a stopped position and pick up enough speed to enter the flow of traffic. Maybe a merge lane would help? One where you could accelerate.

There is unclear information posted by the refuge when spraying glyphosate or other herbicides. The signs should state specifically which area or trail is being sprayed, and when. The spray should be color tinted so we can see clearly what areas to avoid.

This is not a drive-through or around refuge.

This refuge has no roads other than the entrance.

Trail gravel is too noisy and scares birds.

Trails are not marked, mileages would be helpful.

Walking trails are too restrictive during the fall and winter season.

Was really looking forward to interpretive displays and gift shop/bookstore. 4 pm is too early to close. Birdwatching is good.

We enjoy going to the refuge.

We were walking, so many of the questions didn't apply!

Wish the access road was covered with something quieter than gravel for walking, but I can understand that you need the gravel for the vehicles.

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=64)

A canoe launch would be very nice addition - to the river bordering the refuge.

Amazing events done by Friends of the refuge and staff and community partners. Great volunteers! Fun crafts and education programs for kids. Modern interpretive center with great views and bird watching. Wonderful trails. Thank you for this wonderful resource. A favorite destination for our family.

As a retiree, if costs of my visit were to be implemented, my visits would decrease. With a limited budget, I enjoy the opportunity to do what I enjoy--nearby hiking and bird watching. Thank you for providing this.

As this refuge is adjacent to a river, there might be opportunities to have a dock for people that might want to kayak to it.

Better wildlife viewing areas, the existing overlook is so overgrown you can't "over look" anything but bushes and trees about 50 to 100 feet.

Birding is very good, but with all of the herbicides and extreme trimming, it is losing ground. The refuge will be rearranged somewhat to all remeandering of Chicken Creek. That will wipe out opportunities to see unique and specific birds in places where they return yearly.

Excellent maintenance and friendly staff.

Facilities are very family friendly and staff and volunteers are awesome!

Gravel road potholes can be dangerous at times when you are watching other things.

Great local multi-use resource in urban area w/easy access to several towns/communities; however having limited access to all refuge roads from Oct 1 through April 30 is a drawback for me personally since the remaining trails do not offer enough open space to walk and explore away from other visitors.

I do not like that half of the refuge closes for half the year due to bird nesting. This is unnecessary.

I like Chincoteague and Blackwater better.

I live in Wisconsin and was visiting family in Portland for a week. My son and I visited Tualatin for the day. We were both very impressed with the facility and all it had to offer. I was also impressed with how the refuge was created and that it is close to a large metropolitan area.

I love the Tualatin Refuge.

I wish there were more trails to access, but also understand that space is limited and must be prioritized to accommodate the wildlife.

I would like to see the refuge expand its publicly available acreage. I understand that it is necessary to close trails during the fall and winter months due to the migrating and mating activities of the birds, but I miss having the opportunity to access those areas when they are closed. I am also against allowing jogging and bicycling in this refuge. It is disturbing to nature and to people who want to walk and enjoy the scenery at their own pace.

I would like to walk my dog when I take my walks!! Would like paved paths for people with difficulties walking.

I would suggest that a port-a-potty be placed in the area of the wetlands overlook. It's a long ways from the visitors center and consequently there are many remnants of toilet paper/Kleenex alongside the trails - not healthy for wildlife or humans.

I've only visited the visitor center of the Tualatin Wildlife Refuge twice. Each time, the volunteer behind the desk was engaging, friendly and I left having learned something new!

It would be wonderful to have bike paths, but I fear that would disturb the wildlife.

Jogging not allowed on trails. If jogging was allowed I would use the trails an average of 2-3 times per week. Also, the long trail around the perimeter of the refuge is only open in the summer, if it was open year around I would visit more often in non-summer months.

Love all the benches. Volunteer in visitor center pointed out the two bald eagles sitting in a tree. She set up the telescope for us to view.

Lovely restrooms, beautiful refuge-themed tiles showing local animal and plant life (turtles, leaves, insects, birds).

More interaction with staff at refuge.

More visible volunteers outdoors would be useful.

Need more areas open to public during winter (closed) season.

On one of our walks a refuge employee or volunteer was sharing w/guide that passed by what is in the water pointing out some of the wildlife we wouldn't see otherwise. It was great!

Opportunities to attend the park as dawn arrives or as dusk finishes would give extra chances to see wildlife, beyond daylight only hours.

People who live locally will have very different answers to many of these questions than people on vacation.

Personal and professional staff/volunteers, great wildlife photo notebook!!

Refuge is too close to the highway and should be larger.

Relatively small refuge with walking/observation - the seemingly primary purpose.

Restrooms are very much appreciated! Beautiful and inviting buildings! I plan to bring a lunch someday for my husband and I to sit in your picnic table area. :)

Restrooms were clean and supplied w/paper products.

Seasonal closures to protect wildlife makes sense. Would be nice to have other ways to get in to see things when the main parts are closed. Sorry - that's not very helpful. :)

Several large potholes in gravel road loop. (west side road) hard to bird watch and walk without looking down.

So fortunate to have this refuge within easy access of the suburban area I have recently moved to. I tell everyone how lucky they are to have this reserve nearby.

The facilities are great and very well maintained. I appreciate the kind volunteers in the welcome center and the staff maintain grounds beautifully!

The section on how much money was spent in the area is not applicable in my case. I could walk to the wildlife refuge from my home. It's simply a place I like to visit on occasion for a little piece of mind and relaxation. I might be interested in small boat access in the future.

The services, facilities, and volunteers are fine.

The Tualatin Valley National Wildlife Refuge is a valuable resource to the wildlife and the people of the Pacific Northwest. The only critical comment I can offer is to remove the disturbing portrait behind the counter at the visitors center.

The volunteer was very friendly and helpful. The visitor center was closed. Our group of five could only stay a short time. We only walked and observed the wildlife. It was very enjoyable.

The wild and peaceful aspect of TRNWR is its major appeal-many species here, peaceful and yet, near large city so it's accessible. Please do not create loud, narrated bus service w/tours in the refuge! And thanks for additional out house/restrooms at the end of refuge!

They are excellent.

They close the road from Oct 1st till April. I don't feel this is necessary, as the birds are well acquainted with people. So they will still nest as we walk through.

This is a beautiful place to walk. We are fairly new to the area. We have been here twice. I really wish there was a nature trail from our neighborhood heading south along the Tualatin River, so we could walk to the refuge.

This is a beautiful site.

This is an urban refuge and many visitors do not see, usually, the entrance to the refuge, blocked by signs. This is a problem at several refuges in Oregon and Washington.

This NWR needs canoe boat launch. This NWR should allow biking and jogging. More land along the Tualatin River should be purchased to expand the refuge.

This refuge is more important for the wildlife than it is for me!

This was the first time here. As I explore this refuge, I'm sure I will partake in more of the services offered here. I enjoyed this refuge a great deal.

Too much spraying of herbicides when people are present. Overuse of herbicides now known to be carcinogenic endangers all of us but there are often toddlers on the trails during such activities. The spraying has totally ruined the wildflower population which also decimated insect populations. This makes for a war zone sort of appearance.

Trails and facilities are well maintained. The only drawback to this refuge is not being able to access the whole refuge for a good portion of the year. I understand the need for this to protect the wildlife but I always look forward to the time in the spring when access is opened to all the trails.

TRNWR is doing a great job.

Tualatin River National Wildlife Refuge has a great and welcoming visitor center. I believe it serves a very important function in helping educate the public in expanding their awareness of wildlife creatures and importance of habitat, and the role of humans in preserving this. Great place for kids and adults!!! It is a beautiful refuge.

Very impressed with the refuge.

Visitor center is awesome. Staffed by nice people.

Visitors center is great when I do decide to visit.

Wayside entrance was unmarked.

We appreciate this refuge and the friendly staff in the visitor center with nice restrooms.

We were not able to access the visitor center after walking thru the refuge, because it had closed for the day. I wish it had stayed open longer.

Would like to see the visitor center open during daylight hours seven days a week if volunteers and staff were available. Daylight hours=7am to dusk.

Would like to see visitors center open 7 days a week for visitors experience and questions. Bathrooms closed for plumbing issues 2 to 3 times a year, need a long term fix. Water fountains down for long stretches of time, like to drink before and after hike. For 6 months of year main part of refuge where birds are is closed. I understand why and looking for compromise to protect birds and allow better bird watching on flyway.

Would love to see the visitor center open more hours and perhaps coordinated youth program/guided hikes for pre-K.

End of Survey

General Comments (n=39)

Additional walks during the migration season would be welcome.

Allow dogs on leashes, heavy fines for off leash dogs. Bike trails can easily be designated for bikes only so walkers don't clash with bikers. I don't feel this would affect the well-being of the wildlife. I especially feel my tiny dog should be with me.

Bird hunting similar to what is offered on Sauvie Island would be welcome here, even if it was highly limited or if it was only available at satellite units.

Great place. Able to unwind from daily stress, be with friends.

Had a nice visit to this refuge. Good trail, saw some wildlife, a few nice observation points. It was a spur of the moment decision to go with two friends when we realized we had some extra time in our schedule and wanted to get some exercise. I would return if I lived anywhere nearby but given that it takes a long flight for me to visit Oregon, I probably won't get back there anytime soon.

I appreciate being able to visit the refuge to make art. I do wish I could bring my dog. While I do feel safe here, it is nice to be able to get her out for a walk too. I do use a leash and understand that others do not - but if you can hunt (on other refuges) then why not be able to bring a dog. TRNWR is an awesome, close to home experience. Thank you for preserving habitat! The only improvement I could ask for is a few more trailhead access points. Just small ones - I like to get away from the main roadway to paint, so just looking for more viewpoints/places to be away from people. Thank you for the beautiful trails - it's really nice to get off the "roads" there and in the trees.

I enjoy and know how lucky I am to have a large wildlife refuge so close to where I live. I frequently visit there after work during the summertime.

I hope someday there is a nature trail along the Tualatin River heading south from our neighborhood to the refuge. The refuge is a beautiful place! We would rather walk to it instead of having to drive.

I hope that this document will not be used to cut funding to this refuge! Go wildlife!!

I love this refuge and visit very often. For several years, I was there every day year-round. There are more and more people coming, and more human intervention in using herbicides, mowing and interfering with wildflowers and wildlife. It was much more enjoyable when they let it be natural.

I love this refuge. I am excited about the expansion of the wetlands that is underway. My only negative is, I would prefer to not have people running or jogging on the trails, as I feel it disrupts the birds.

I really like this refuge. I wish there were opportunities to expand the boundaries of the protected land.

I thoroughly enjoy this refuge on a regular basis. I think the experience could be improved by making volunteer opportunities easier to find.

I try to walk every day and this is my favorite place to go. It is on my way home from work so it is convenient for me to stop and walk the trails. I enjoy photographing nature and this is a great place to do so. Not a lot of people, which I prefer. I moved to this more suburban area two years ago from a small logging town in the mountains. The refuge seems more like 'home' to me.

I would like to see trails that lead into the refuge from other areas. There have been discussions along these lines in the past for this area with interconnecting trails.

I would like to walk the roads in the winter as well as the summer.

I'm a photographer. Tualatin River wildlife sanctuary offers a nearby venue to combine exercise and excellent opportunity for both wildlife (birds) and landscapes, all seasons. Every time I go there's something new. Note I don't care - at all - about hybrid car parking places, nor do I subscribe to the larger global warming hysteria. I just love beauty.

I'm not a very "out-doorsy" person, but sometimes I just want to relax and feel like I'm getting away from the fast-paced city. I truly appreciate being able to take a walk at your facility! It is so beautiful and inviting. Thank you so much! [name].

If there is a snake, I am afraid. So, I walk with one. Call stick. But, I saw an old man I thought, what is it there is to lost? I am supposed to be responsible for the safety of my infant daughter and wife. But I put it along the stroller. Scarely, irresponsible, in time once broken.

In June, there was not much wildlife activity when we visited. Better in January and February. Still, a nice place to go for a walk. Was told that some osprey had just gathered some fish, but we missed that. Saw some beavers a few years ago. Not this time. I expect this location to get better as time goes on.

It was a good experience. I will be excited to visit when more waterfowl are at the peak. It was my first time just to check out the refuge. I'm glad it's here.

Love this place! It is such a treasure to have in our area.

My view is that these environments are best served by remaining undisturbed by human influence, albeit there exists a need for protecting select species. My suggestion is to find ways of educating without disturbing.

Our family loves the Tualatin Wildlife Refuge. What a treat to have it in our neighborhood!

Refuge manager should control or even eliminate the population of nutria which is an invasive species and degrades the natural environment.

Saw a good variety of wildlife on this first visit. Looking forward to returning to explore more and find more.

Since my husband has dialysis treatments 3 times a week and I drive him to the clinic, I began to realize that I can't sit beside him for the 4 hour treatment and I realized that the Tualatin National Wildlife Refuge is just a mile or two from the clinic. We have been there before with a young grandson and enjoyed our visit, so I began to go there 3 times a week and plan to walk for 1 hour. When I was a little girl, we lived on a 400-acre grass seed ranch in the Willamette Valley and there was a stream and 40 acres of wetlands on the ranch. I tried to go and explore the wetlands every day. This refuge is similar in some ways and I can quickly shed the cares of today and enjoy the birdsong and the rustling in the grass and the ducks and geese and the eagles and even the nutria. I call my 3 hours a week at Tualatin refuge my therapy.

Thank you for providing this open space to our community. It encourages me to "get out and walk".

Thank you for the opportunity to participate in this survey. I hope you will be able to do something that preserves and enhances the natural habitat for nonhuman species, and increases awareness of the public re: the huge impact human activity is having on the great extinctions occurring, and what we as people can do to improve that. I love this refuge and hope you personally have a chance to visit it. And Oregon.

This wildlife refuge is one of the great finds in a lifetime. This evening I saw two otters in the canal. Last week a bald eagle snagging a fish. A month ago a redwing blackbird riding on the back of a great heron. And the diversity of wildflowers is such a joy. The diversity of birds There is a great and humbling symphony of life layer upon layer here. Over the past 3 years I find myself visiting more and more often. There is always a gift to experience.

Tualatin River Wildlife Refuge is a very attractive and welcoming place. I live about 13 miles away.

Volunteering here is a very strong likelihood for me. I look forward to constant learning and enjoyment. It is becoming my outdoor several-times-weekly retreat.

We brought a picnic lunch to the refuge and were accosted by a volunteer - who said no food is allowed. I read all available rules and saw nothing - he was annoying at best. We never leave trash anywhere, last of all at our favorite refuge.

We enjoy having this refuge so close to our home. We drive by it a lot and it seems like lots of people stop to enjoy it as well. would like to see more of these in our area... And throughout the country.

We enjoyed our visit very much. We are not local so whenever we return to visit our Tigard friends we would probably visit the refuge again, however we don't visit every year. The refuge appears to be very well run and everyone was very friendly.

We live in Arizona, visiting our daughter in Portland.

We love the Tualatin River National Wildlife Refuge. I often take my children there once a week. My two year old recognizes it whenever we drive by it and immediately asks to go there. My kids love walking on the easy trails, exploring the terrain and seeing various birds and the occasional wildlife. I appreciate the big, open parking lot that instantly gets us on the trail (or to an overlook of a pond) and the well-maintained trails which are double stroller friendly. I feel completely safe out there and I love being outside with my kids.

We love visiting Tualatin River National Wildlife Refuge. It is a great space to bring our young children outdoors. We are lucky to live nearby to this amazing resource. Thank you to everyone who makes it happen!

Your folks were actively surveying on the weekend that Oregon state parks were free to the public. Likely affected your sample population so not sure what good your results will be for those dates in Oregon.