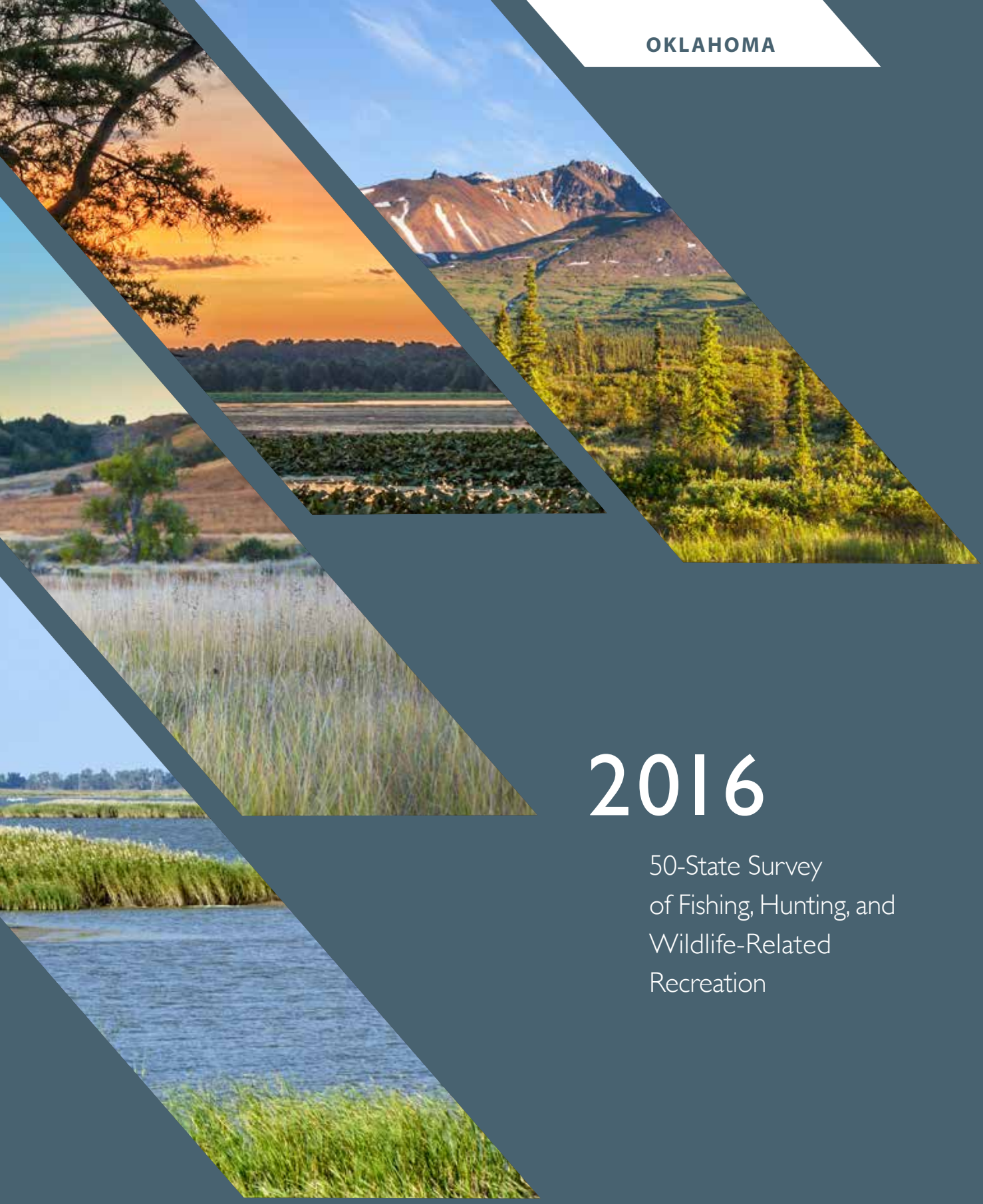
OKLAHOMA



2016

50-State Survey of Fishing, Hunting, and Wildlife-Related Recreation

THE ROCKVILLE INSTITUTE, FOR
STATE FISH AND WILDLIFE AGENCIES

Wildlife & Sport Fish Restoration

Association of Fish & Wildlife Agencies

The Rockville Institute

The 50-State Survey was conducted by the Rockville Institute for state fish and wildlife agencies under the aegis of the Association of Fish and Wildlife Agencies. The Survey was funded by the Multistate Conservation Grant Program (Grant Number 15AP00164) administered by the U.S. Fish and Wildlife Service.

Suggested reference: Rockville Institute. 2018. 2016 50-State Survey of Fishing, Hunting and Wildlife-Related Recreation: Oklahoma.

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LETTER FROM THE AFWA PRESIDENT

To: AFWA State Fish and Wildlife Agency Directors
CC: State National Survey Coordinators

Dear Directors:

Wildlife and the outdoors are a big part of my life and a big reason why I am so proud to be President of the Association of Fish and Wildlife Agencies this year. State Fish and Wildlife Agencies, together with our federal and NGO partners, make hunting and fishing possible for millions of Americans every day. It is both a joy to be a part of this continental scale conservation machine and a serious responsibility to be a steward of this public trust.

State agencies, corporations and the public all need reliable data to help guide our decision making and, since 1955 one of the most important sources of data has been The National Survey of Hunting, Fishing and Wildlife Associated Recreation providing all of us with information on participation in hunting, fishing and wildlife associated recreation, and the contribution of these activities to the economy.

As stewards of the survey, AFWA leadership grapples with the question of how best to conduct the survey. How do we obtain reliable data in the face of changing behaviors and changing demographics which make the survey more and more expensive, and less accurate with each cycle? How do we balance the expense of the survey with using those same funds to put conservation on the ground?

Concerned about increasing costs, consequent decreasing sample sizes and a trend toward less reliable results AFWA leadership requested that the 2016 National survey be split into two surveys:

- A National level survey conducted by the U.S. Census Bureau using the same methodologies as previous surveys; primarily computer assisted in-person and telephone interviews. This survey is the official national survey for 2016.
- A State level survey conducted by Rockville Institute (a not-for-profit subsidiary of Westat) using a mail-only approach. This report you are reading now is a detailed report of one state's results from this survey.
- Additionally, the Association conducted an independent evaluation of both surveys. While each has its own strengths and weaknesses both meet all reasonable standards for conducting the survey. Both Census and Rockville Institute are world-class survey organizations capable of implementing highly reliable survey instruments.

- Every effort was made to keep the survey questions on both surveys as similar as possible. Nonetheless, given the different methodologies employed, the two surveys predictably had different results. While we expected this going into the process, no one expected the differences to be as great as they appear to be.

There are really two questions here. First, how to treat these state results which are, in most cases, very different from previous surveys? Second, what have we learned about this effort that can inform future surveys so that they best serve our needs?

Regarding the first question, the utility of this state report is going to require some judgement calls. In some states these results, when compared to other available sources of data, may correlate and be highly informative. In other cases, given the different methodology compared to previous surveys the data in this report may require further consideration and study.

Regarding the second question, the future of the survey, one thing we have learned is that neither of these two surveys on its own is the future. The Census efforts are too expensive to continue given the limited funding we have and the survey instrument in its current form does not work as well as it could in a mail only version. With this in mind I have created a task force of AFWA leadership and other key stakeholders and charged them with developing a new vision for the National Survey which we expect to implement with the next survey, scheduled for 2021.*

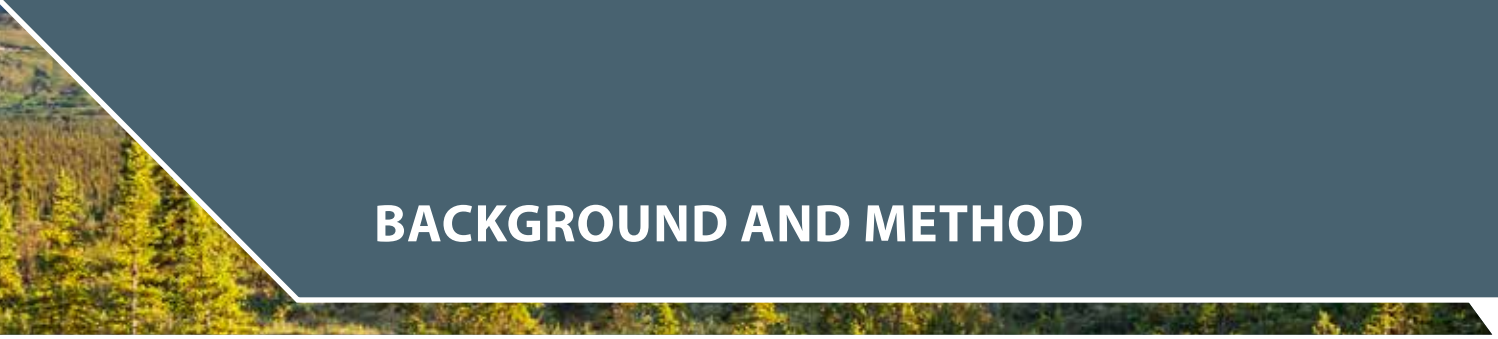
The Association treats the stewardship of our nation's natural resources with the utmost seriousness and we view our stewardship of the National Survey in the same light. Our efforts are designed to provide useful, cost-effective information about hunting, fishing and wildlife associated recreation. We have already started planning for the next national survey and we will continue to build upon what we have learned to date to ensure its long-term viability.

Thank you for your continued support of the National Survey.

Best regards,

Virgil Moore, AFWA President

*Membership of the National Survey President's Task Force includes Kelly Hepler (SD), Dale Garner (IA) (Midwest); Bill Hyatt (CT) and Cathy Spark (RI) (Northeast); Bob Duncan (VA) and Sara Pauley (MO) (Southeast); Curt Melcher (OR) and Ty Gray (AZ) (Western). Other members of the task force include representatives from the U.S. Fish and Wildlife Service, American Sport Fishing Association, Archery Trade Association and the National Shooting Sports Foundation.



BACKGROUND AND METHOD

Background

The 50-State Survey was conducted by the Rockville Institute (RI) for the state fish and wildlife agencies, under the auspices and guidance of the Association of Fish and Wildlife Agencies (AFWA). The survey questionnaire and the structure of this report have drawn heavily from previous surveys of wildlife recreation conducted by the U.S. Bureau of the Census for the U.S. Fish and Wildlife Service. However, estimates from the RI 50-State Survey should not be compared with those from the Census surveys because of significant differences in survey design and execution.

Methodology

Phase I: Screening

The 50-State Survey was conducted entirely via mail. RI carried out data collection in two phases: (1) a screening survey, sent to sampled addresses across the United States in March 2016 and (2) detailed surveys on hunting, fishing, and wildlife watching. The screening survey could be completed by any adult in the household, and asked about all household members age 6 or older. The survey obtained information about each household member's previous participation in fishing, hunting, and wildlife-watching recreation activities, likely future participation in 2016 by those 16 and older, and demographic information about each household member. A total of 61,570 households completed the screening survey. A sample of household members age 16 and older identified by the screening survey was then contacted for the second phase, the detailed surveys. Please see Appendix D for more details about selection of the samples for the screening and detailed surveys, including response rate calculations.

Phase II: Detailed Surveys

Detailed surveys were sent to individual household members age 16 and older identified by and sampled from the screening survey. A separate non-overlapping sample was drawn for each type of activity (hunting, fishing, and wildlife watching), and each activity had its own detailed questionnaire. This meant that each person received surveys for one and only one activity; other members in the household could be sampled to receive the same or different activities. The samples for the detailed surveys included both likely participants and likely non-participants, classified by screener responses. Each individual sampled as a likely participant was sent a detailed survey at Wave 1 (late spring and summer of 2016), and a subsample of those completing the Wave 1 surveys were sent a Wave 2 survey (late summer and fall 2016). Wave 1 and Wave 2 surveys were identical in content within activity type. All those responding to Wave 1 were sent a Wave 3 questionnaire in winter 2017, which included all of the Wave 1 and 2 content as well as questions on annual expenditures for wildlife-related recreation. The Wave 2 and Wave 3 surveys covered the period beginning after the previous survey was completed up to December 31, 2016. Persons sampled as likely non-participants were sent only the Wave 3 questionnaire, covering all of 2016. At each wave, multiple copies of the survey and a reminder postcard were sent as needed to each individual to provide more than one opportunity to respond.

The detailed surveys asked about the individual's 2016 participation in their designated activity, including specific types of participation, days spent and trips taken related to the activity, and expenditures related to trips taken and equipment purchased related to the activity. To be included in the dataset used for reporting, a person had to have completed the Wave 3 survey. A total of 12,778 individuals completed the Wave 3 fishing survey, 9,470 completed the Wave 3 hunting survey, and 8,422 completed the Wave 3 wildlife watching survey.

Comparison with Previous Surveys

The 2016 50-State Survey used similar questions to the surveys conducted by the U.S. Census Bureau in recent years, including 2016. As with those surveys, multiple waves of data collection during the year were used to reduce recall bias.

However, the change to a mail survey for the 2016 50-State Survey represents a significant departure in methodology that reduces comparability to the U.S. Census Bureau's survey results for 2016 and earlier, especially for estimates of totals. More information about comparability with U.S. Census Bureau results is ongoing and may be available in the future. Additional discussion regarding methodology changes is available in Appendix C.

INTRODUCTION

This report is based on data collected in the 50-State Survey of Fishing, Hunting, and Wildlife-Associated Recreation, conducted by Rockville Institute. This report focuses on the 2016 participation and expenditures of U.S. residents age 16 and older. Unless specified otherwise, information presented in the report reflects participation or expenditures for U.S. residents age 16 and older.

Although the report focuses on data from the Phase II detailed surveys, covering the 2016 participation of U.S. residents age 16 and older, some information from the Phase I screening surveys is also discussed, primarily regarding participation in 2015 by children aged 6 to 15. This information will be specifically identified as referring to these children. Resources for additional information about wildlife-related recreation include the Association of Fish and Wildlife Agencies, www.fishwildlife.org, and the U.S. Fish and Wildlife Service, which publishes data about licenses for fishing and hunting at wsfrprograms.fws.gov. Subsequent portions of the introduction describe terms that will be used to discuss participation throughout the report.

Wildlife-Related Recreation

Wildlife-related recreation is the umbrella term for the three primary activities asked about in the 2016 50-State Survey: fishing, hunting, and wildlife watching. Thus, anyone participating in one or more of these activities would be a participant in wildlife-related recreation. Because people may participate in more than one activity, the total number of participants in wildlife-related recreation is less than the sum of participants in each individual activity. Participation in any activity is included only if it is for recreational, not commercial, purposes and conducted in 2016.

Fishing and Hunting

For the 2016 50-State Survey, each person was surveyed in detail about only one activity, a constraint of conducting the survey by mail. Previous surveys included fishing and hunting in a single questionnaire, and individuals could be sampled for both the resulting sportsperson questionnaire and for the wildlife-watching questionnaire. Although the 2016 50-State Survey did not request detailed information about multiple activities from participants, each survey did ask whether the person participated in the other activity types, to allow estimates of those participating in more than one type of activity, such as fishing and wildlife watching.

Individuals who participated in fishing or hunting (or both) are referred to in this report as sportspersons. The total number of sportspersons is the sum of the participants who fished only, hunted only, and both fished and hunted. Sportspersons are not the sum of all anglers and all hunters because of the overlap of people who do both types of activity.

Anglers

Anglers are all those who fished, even if they also hunted. Fishing includes all types of recreational fishing, whether or not a license was obtained, and regardless of fishing method. In this report, fishing participation will be described as taking place in a) freshwater other than the Great Lakes, b) the Great Lakes, or c) saltwater. Because individuals frequently fish in more than one type of water, the sum of people participating in each of the three fishing water types is greater than the total number of anglers.

Hunters

Hunters are all those who hunted, even if they also fished. Hunting includes all types of recreational hunting, whether or not a license was obtained, and regardless of hunting equipment used. In this report, hunting participation will be described by type of game pursued: big game, small game, migratory birds, or other animals. Because individuals frequently hunted for more than one type of game, the sum of people participating in each type of game hunting is greater than the total number of hunters.

Wildlife Watchers

Wildlife watchers are those who do activities where wildlife watching (such as observing, photographing, or feeding wildlife) is the primary goal. The survey does not ask about participation in activities where wildlife watching occurred while pursuing another goal. Wildlife watching can occur both away from home and around the home, which are described next. Because individuals can participate both away from home and around the home, the sum of people participating in each type of wildlife watching is greater than the total number of wildlife watchers.

Away From Home

Away-from-home wildlife watching is trips or outings taken at least 1 mile away from home for the primary purpose of wildlife watching (observing, feeding, or photographing wildlife). Trips to fish or hunt, or to scout for those activities, are not considered wildlife watching. Trips to zoos, circuses, aquariums, and museums are also not considered wildlife watching in this survey.

Around the Home

Around-the-home wildlife-watching is activities conducted within 1 mile of home for the primary purpose of wildlife watching. These activities can include observing, feeding, or photographing wildlife.

ESTIMATING PARTICIPATION IN WILDLIFE-RELATED RECREATION

Because individual respondents to the 50-State Survey provided detailed information about only one type of activity (fishing, hunting, or wildlife watching), there are several ways to estimate the total number of wildlife-related recreation participants and sportspersons (those who hunted or fished). One method used in this report is "composite estimation," combining the estimates from all 3 surveys or from just the fishing and hunting surveys. (See Appendix D for more details on composite estimation.) In most tables with estimates of anglers and hunters as well as of sportspersons, for example, all of the estimates are composites. Tables showing anglers and/or hunters but not sportspersons, or wildlife watchers but not sportspersons, estimate participation directly from the relevant single survey. The composite and single-survey estimates of anglers, hunters, and wildlife watchers are likely to be different, which may seem confusing. In this report, composite participation estimates are footnoted in both the text and the tables. Some expenditure estimates are also composites, as indicated in footnotes.

OKLAHOMA

WILDLIFE-RELATED RECREATION SUMMARY

ANGLERS	HUNTERS	WATCHERS
1.1 million	**515** Thousand	**2.0** Million
Total Days 24.3 Million	Total Days 9.7 Million	Total Days 24.0 Million
Total Expenses $2.5 Billion	Total Expenses $1.2 Billion	Total Expenses $1.5 Billion

Participation[1]

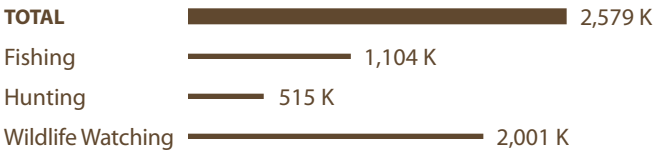
In 2016, 2,578,851 people age 16 and older fished, hunted, or watched wildlife in Oklahoma, including both residents and nonresidents. Of the total number of participants, 1,420,068 (55%) were sportspersons (hunted and/or fished) and 2,000,996 (78%) participated in wildlife-watching activities in Oklahoma. Of the sportspersons, 1,104,091 fished and 514,546 hunted in Oklahoma. The sum of anglers, hunters, and wildlife watchers is greater than the overall number of participants in wildlife-related recreation because many of the individuals engaged in more than one wildlife-related activity.

Participation of 6- to 15-Year-Olds

The main focus of the 2016 50-State Survey is on the activity and expenditures of U.S. residents age 16 and older in 2016. However, the screening survey allows estimates of 6- to 15-year-olds participating in wildlife recreation activities in 2015. Among residents of Oklahoma age 6 to 15 who participated in the activity in their home state or elsewhere in the United States, there were 361,989 sportspersons, of whom 356,998 fished and 125,628 hunted. There were also 382,768 wildlife watchers, some of whom also hunted and/or fished.

1 All participation estimates for adults (those 16 years old and older) in this Wildlife Recreation Summary, including figures, are composites from the combined fishing, hunting, and wildlife watching surveys. In the subsequent fishing, hunting, and wildlife watching sections, all estimates are from only the relevant single survey and may be different from those on this page. See Appendix D for more details.

PARTICIPATION BY ACTIVITY IN OKLAHOMA



SOURCE: Composite estimate from fishing, hunting, and wildlife-watching surveys

Expenditures

In 2016, state residents and nonresidents spent a total of $5,422,612,979 on wildlife recreation in Oklahoma. Of that total, trip-related expenditures were $1,869,219,248 (34%), equipment expenditures were $3,110,189,481 (57%), and other expenditures were $443,204,250 (8%). Other expenditures are for items such as licenses, contributions, land ownership and leasing, among others.

EXPENDITURES FOR WILDLIFE RECREATION IN OKLAHOMA

	MILLIONS	%
TOTAL EXPENDITURES	**$5,422.6**	**100**
Trip-related	$1,869.2	34
Equipment	$3,110.2	57
Other	$443.2	8

SOURCE: Derived from Tables 16 and 31

FISHING AND HUNTING

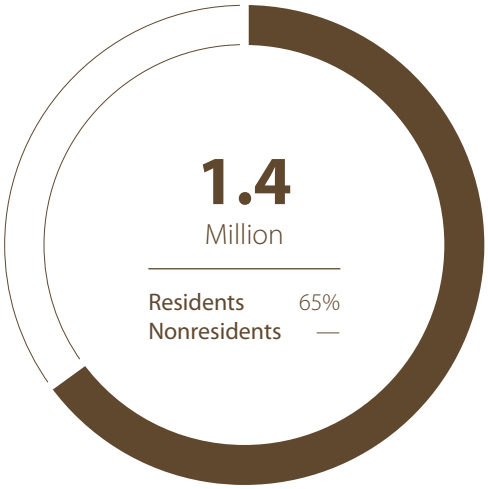
Fishing in Oklahoma

In 2016, a total of 1,386,404 state residents and nonresidents fished in Oklahoma, for a total of 24,254,081 days of fishing in Oklahoma. That is an average of 17 days per angler. Of these anglers, 899,581 (65%) were state residents. State residents fished 22,128,345 days in Oklahoma (91% of all fishing days in the state). The sample sizes for anglers who were nonresidents were too small for reliable estimates.

SPORTSPERSONS

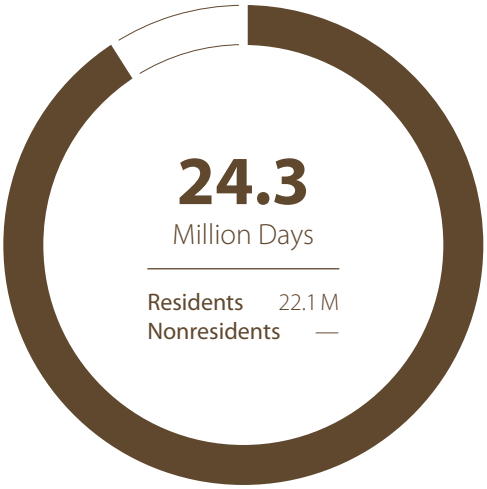
The 2016 fishing survey estimates indicate that 1,559,901 state residents and nonresidents fished and/or hunted, and were categorized as sportspersons. Of these, 1,386,404 (89%) fished, including 1,069,302 who only fished and 317,102 who both fished and hunted in Oklahoma.

PERCENT ANGLERS BY RESIDENCE



— Sample size too small (less than 10) to report data reliably
SOURCE: Table 3

DAYS FISHING BY RESIDENCE



— Sample size too small (less than 10) to report data reliably
SOURCE: Table 3

Type of Fishing

There were 1,386,404 state residents and nonresidents who fished in Oklahoma in 2016, and all fishing was in freshwater. There were a total of 24,254,081 days of fishing.

Fishing Expenditures

In 2016, fishing-related expenditures in Oklahoma totaled $2,485,691,000. The portion of expenditures related to taking trips for fishing in Oklahoma, such as food, lodging, transportation, and other expenditures during a trip totaled $1,073,745,946 (43% of all fishing expenditures). Each angler in Oklahoma spent, on average, $774 on trip-related costs during 2016.

The portion of fishing-related expenditures spent on equipment in Oklahoma in 2016 was $1,294,148,637 (52% of all fishing expenditures). Expenditures on the subset of equipment specifically for fishing (rods, reels, lines, etc.) totaled $495,442,793, while expenditures on the subset of auxiliary equipment (tents, special fishing clothing, etc.) totaled $180,763,068. The sample size for expenditures on the subset of special equipment (boats, vans, etc.) was too small for reliable estimates. Special and auxiliary equipment are items that were purchased for fishing but could also be used in activities other than fishing. Expenditures on other items, such as magazines, membership dues, licenses, permits, stamps, and land leasing and ownership, totaled $117,796,417 (5% of all fishing expenditures).

EXPENDITURES FOR FISHING IN OKLAHOMA

	MILLIONS	%
TOTAL EXPENDITURES	**$2,485.7**	**100**
Trip-related	$1,073.7	43
Equipment	$1,294.1	52
Fishing equipment	$495.4	20
Auxiliary equipment	$180.8	7
Special equipment	—	—
Other	$117.8	5

— Sample size too small (less than 10) to report data reliably
SOURCE: Table 19
NOTE: Includes all expenditures for fishing in state by both residents and nonresidents.

TRIP EXPENDITURES BY TYPE OF FISHING

PER ANGLER

TOTAL	$774
Freshwater	$774
Great Lakes	Not Applicable
Saltwater	Not Applicable

PER DAY

TOTAL	$44
Freshwater	$44
Great Lakes	Not Applicable
Saltwater	Not Applicable

SOURCE: Derived from Tables 2 and 17
NOTE: Includes all expenditures for fishing trips in state by both residents and nonresidents.

WHAT DO OKLAHOMANS DO IN AND OUT OF STATE?

A total of 939,773 Oklahomans fished in the United States in 2016, fishing for a total of 24,229,241 days. Of the Oklahomans who fished, 899,581 (96%) did so in their home state, and 201,203 (21%) fished elsewhere in the United States. Oklahomans spent a total of 22,128,345 (91%) days fishing in their home state and a total of 2,100,896 (9%) days fishing in other states.

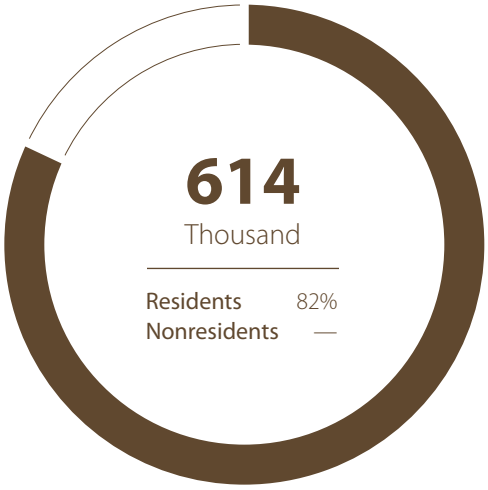
Hunting in Oklahoma

In 2016, a total of 613,508 state residents and nonresidents hunted in Oklahoma, for a total of 9,659,190 days of hunting in Oklahoma. That is an average of 16 days per hunter. Of these hunters, 500,668 (82%) were state residents. State residents hunted 9,215,003 days in Oklahoma (95% of all hunting days in the state). The sample sizes for hunters who were nonresidents were too small for reliable estimates.

SPORTSPERSONS

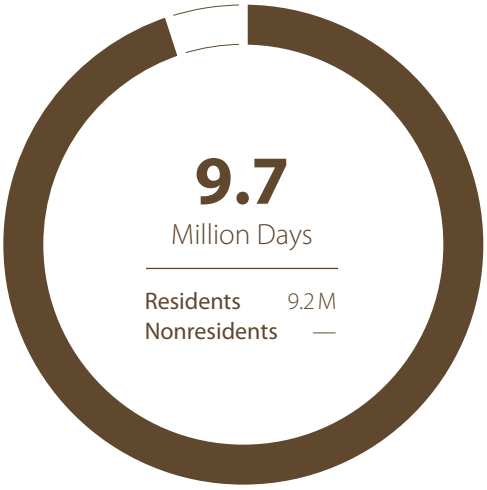
The 2016 hunting survey estimates indicate that 1,313,915 state residents and nonresidents fished and/or hunted, and were categorized as sportspersons. Of these, 613,508 (47%) hunted, including 216,349 who only hunted and 397,159 who both hunted and fished in Oklahoma.

PERCENT HUNTERS BY RESIDENCE



— Sample size too small (less than 10) to report data reliably
SOURCE: Table 3

DAYS HUNTING BY RESIDENCE



— Sample size too small (less than 10) to report data reliably
SOURCE: Table 3

Type of Hunting in Oklahoma

Among the 613,508 state residents and nonresidents who hunted in Oklahoma in 2016, a total of 416,077 (68%) hunted big game, 216,450 (35%) hunted small game, 277,492 (45%) hunted migratory birds, and 106,765 (17%) hunted other animals. There were a total of 4,855,805 days hunting big game, 1,943,802 days hunting small game, 2,740,272 days hunting migratory birds, and 1,268,472 days hunting other animals.

Expenditures for Hunting in Oklahoma

In 2016, hunting-related expenditures in Oklahoma were a total of $1,165,937,311. The portion of expenditures related to taking trips for hunting in Oklahoma, such as food, lodging, transportation, and other expenditures during a trip was $349,717,429 (30% of all hunting expenditures). Each hunter in Oklahoma spent, on average, $570 on trip-related costs during 2016.

The portion of hunting-related expenditures spent on equipment in Oklahoma in 2016 was $558,357,885 (48% of all hunting expenditures). Expenditures on the subset of equipment specifically for hunting (guns, ammunition, etc.) totaled $450,969,516, while expenditures on the subset of auxiliary equipment (tents, special hunting clothing, etc.) totaled $82,604,865. Sample sizes for expenditures on special equipment were too small for reliable estimates. Special and auxiliary equipment are items that were purchased for hunting but could also be used in activities other than hunting. Expenditures on other items, such as magazines, membership dues, licenses, permits, and land leasing and ownership, totaled $257,861,997 (22% of all hunting expenditures).

EXPENDITURES FOR HUNTING IN OKLAHOMA

	MILLIONS	%
TOTAL EXPENDITURES	**$1,165.9**	**100**
Trip-related	$349.7	30
Equipment	$558.4	48
Hunting equipment	$451.0	39
Auxiliary equipment	$82.6	7
Special equipment	—	—
Other	$257.9	22

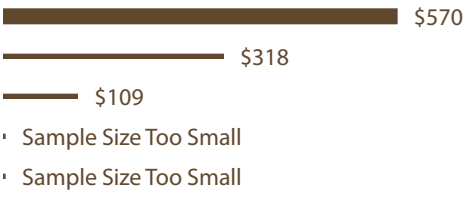
— Sample size too small (less than 10) to report data reliably

SOURCE: Table 20

NOTE: Includes all expenditures for hunting in state by both residents and nonresidents.

TRIP EXPENDITURES BY TYPE OF HUNTING

PER HUNTER



PER DAY

SOURCE: Derived from Tables 2 and 18

NOTE: Includes all expenditures for hunting trips in state by both residents and nonresidents.

WHAT DO OKLAHOMANS DO IN AND OUT OF STATE?

A total of 508,481 Oklahomans hunted in the United States in 2016, hunting for a total of 10,017,812 days. Of the Oklahomans who hunted, 500,668 (98%) did so in their home state. Oklahomans spent a total of 9,215,003 (92%) days hunting in their home state. The sample size for those hunting out of state was too small for reliable estimates.

WILDLIFE WATCHING

In 2016, 2,514,928 state residents and nonresidents participated in wildlife watching (feeding, observing, or photographing wildlife) in Oklahoma. Of these wildlife watchers, 1,350,502 (54%) participated in away-from-home wildlife watching in Oklahoma, with activities occurring at least one mile away from home. In addition, a total of 1,887,193 (75%) state residents participated in around-the-home wildlife watching in Oklahoma. By definition of around-the-home wildlife watching, nonresidents do not meet the criteria for this activity in Oklahoma.

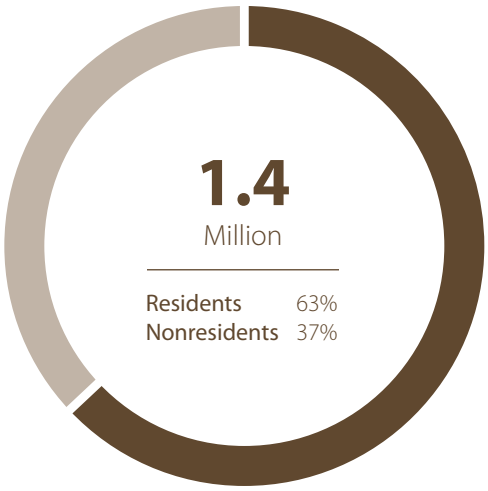
Away-From-Home Wildlife Watching in Oklahoma

In 2016, a total of 1,350,502 state residents and nonresidents participated in away-from-home wildlife watching in Oklahoma, for a total of 23,960,873 days of away-from-home wildlife watching in Oklahoma. That is an average of 18 days per away-from-home wildlife watcher. Of these away-from-home wildlife watchers, 854,982 (63%) were state residents and 495,520 (37%) were nonresidents. State residents participated in away-from-home wildlife watching for 22,753,110 days in Oklahoma (95% of all away-from-home wildlife watching days in the state) and nonresidents participated in away-from-home wildlife watching for 1,207,763 days in Oklahoma (5% of all away-from-home wildlife watching days in the state).

Type of Away-From-Home Wildlife Watching

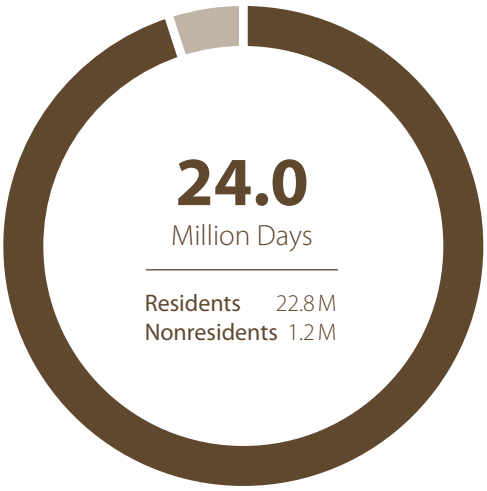
Among the 1,350,502 state residents and nonresidents who participated in away-from-home wildlife watching in Oklahoma in 2016, a total of 1,290,974 (96%) observed wildlife, 737,371 (55%) photographed wildlife, and 394,141 (29%) fed wildlife. There were a total of 18,386,993 days observing wildlife, 4,098,102 days photographing wildlife, and 13,980,789 days feeding wildlife.

PERCENT AWAY-FROM-HOME WILDLIFE WATCHERS BY RESIDENCE



SOURCE: Table 26

DAYS AWAY-FROM-HOME WILDLIFE WATCHING BY RESIDENCE



SOURCE: Table 25

Around-the-Home Wildlife Watching in Oklahoma

In 2016, a total of 2,514,928 state residents and nonresidents participated in wildlife watching (feeding, observing, or photographing wildlife) in Oklahoma. Of these wildlife watchers, 1,887,193 (75%) were state residents who participated in around-the-home wildlife watching in Oklahoma, with activities occurring within 1 mile of home.

Type of Around-the-Home Wildlife Watching

Among the 1,887,193 state residents who participated in around-the-home wildlife watching in Oklahoma in 2016, a total of 1,314,858 (70%) observed wildlife, 810,469 (43%) photographed wildlife, 1,383,713 (73%) fed wildlife, and 476,194 (25%) visited parks or natural areas within 1 mile of home. Among participants observing wildlife, 255,647 observed for 1 to 10 days, 331,021 observed for 11 to 50 days, 368,657 observed for 51 to 200 days, and 232,974 observed for 201 or more days. Among participants photographing wildlife, 300,480 photographed for 1 to 3 days, 200,634 photographed for 4 to 10 days, and 273,598 photographed for 11 or more days. Among participants visiting parks or natural areas, 137,523 did so for 1-5 days and 305,864 did so for 11 or more days. Sample sizes for those visiting parks or natural areas for 6 to 10 days were too small for reliable estimates.

Expenditures
(Away From Home and Around the Home)

In 2016, wildlife watching-related expenditures in Oklahoma were a total of $1,470,227,859. The portion of expenditures related to taking trips for wildlife watching in Oklahoma, such as food, lodging, transportation, and other expenditures during a trip was $445,755,873 (30% of all wildlife watching expenditures). Each away-from-home wildlife watcher in Oklahoma spent, on average, $330 on trip-related costs during 2016.

The portion of wildlife watching-related expenditures spent on equipment in Oklahoma in 2016 was $969,531,699 (66% of all wildlife watching expenditures). Expenditures on the subset of equipment specifically for wildlife watching (binoculars, etc.) totaled $361,795,107. Sample sizes for expenditures on auxiliary and special equipment were too small for reliable estimates. Special and auxiliary equipment are items that were purchased for wildlife watching but could also be used in activities other than wildlife watching. Expenditures on other items, such as magazines, membership dues, plantings, and land leasing and ownership, totaled $54,940,287 (4% of all wildlife-watching expenditures).

EXPENDITURES FOR WILDLIFE-WATCHING IN OKLAHOMA

	MILLIONS	%
TOTAL EXPENDITURES	**1,470.2**	**100**
Trip-related	445.8	30
Equipment	969.5	66
Wildlife watching equipment	361.8	25
Auxiliary equipment	—	—
Special equipment	—	—
Other	54.9	4

— Sample size too small (less than 10) to report data reliably
SOURCE: Table 31

TABLES

FISHING AND HUNTING TABLES

WILDLIFE WATCHING

NATIONAL TABLES

Guide to Statistical Tables

Purpose and Coverage of Tables

The statistical tables of this report were designed to meet a wide range of needs for those interested in wildlife-related recreation. Special terms used in these tables are defined in Appendix A.

The tables are based on responses to the 2016 50-State Survey, which was designed to collect data about participation in wildlife-related recreation. To have taken part in the survey, a respondent must have been a resident of one of the 50 states or the District of Columbia in 2016 when the survey was conducted. No one residing outside the United States at the time the screening surveys were sent (including U.S. citizens) was eligible for being surveyed, and therefore, reported national totals do not include participation by those individuals.

Comparability With Previous Surveys

The 2016 estimates in this report should not be directly compared to results from surveys conducted by the U.S. Census Bureau since substantial methodological changes were made to the 2016 50-State Survey. These changes and their impact on the comparability with previous surveys are outlined in Appendix C. Nevertheless, Appendix C does present some trends with results from 2016 and of prior survey years. Data from 1991 through 2001, and from prior to 1991, are shown; each of these should also be compared separately due to major changes to the methodology in 1991.

Coverage of an Individual Table

Since the 50-State Survey covers many activities in various places by participants of different ages, all table titles, headnotes, stubs, and footnotes are designed to identify and articulate each item being reported in the table. For example, the title of Table 2 in this report shows that data about anglers and hunters, their days of participation, and their number of trips in the state are reported by type of activity. By contrast, the title of Table 7 indicates that it contains data specifically about freshwater anglers and the days they fished for different species of fish in the state.

Reported Percentages

Percentages are reported in the tables for the convenience of the user. When exclusive groups are being reported, the base of a percentage is apparent from its context because the percents add to 100 percent (plus or minus a rounding error). For example, Table 2 presents the number of trips taken for big game hunting, those taken for small game hunting, those taken by for migratory bird hunting, and those taken by hunters pursuing other animals. These four categories comprise 100 percent of trips for hunting because they are exclusive categories.

Percents should not add to 100 when nonexclusive groups are being reported. Using Table 2 as an example again, note that adding the percentages associated with the number of participants hunting big game, small game, migratory birds, and other animals will not necessarily yield total hunters (100 percent) because respondents could hunt for more than one type of game.

When the base of the percentage is not apparent in context, it is identified in a footnote. For example, Table 15 reports two percentages with different bases: one base being the number of total participants at the head of the column and the other base being the total population that is described by the row category. Footnotes are used to clarify the bases of the reported percentages.

Footnotes

Footnotes are used to clarify the information or items that are being reported in a table. Symbols in the body of a table indicate important footnotes. The following symbols are used in the tables to refer to the same footnote each time they appear:

*	Estimate based on a sample size of 10-29.
—	Sample size too small to report data reliably.
†	Composite estimate used.
Z	Less than 0.5 percent.
x	Not applicable.
NA	Not available.

Estimates based upon fewer than ten responses are regarded as being based on a sample size that is too small for reliable reporting. An estimate based

upon at least 10 but fewer than 30 responses is treated as an estimate based on a small sample size. Other footnotes appear, as necessary, to qualify or clarify the estimates reported in the tables. In addition, these two important footnotes appear frequently:

- Detail does not add to total because of multiple responses.
- Detail does not add to total because of multiple responses and nonresponse.

"Multiple responses" is a term used to reflect the fact that individuals or their characteristics fall into more than one category. Using Table 2 in each state report as an example, those who fished in saltwater and freshwater appear in both of these totals. Yet each angler is represented only once in the "All Fishing" row. Similarly, those who hunt for big game and small game are counted only once as a hunter in the "All Hunting" row. Therefore, totals will be smaller than the sum of subcategories when multiple responses exist.

"Nonresponse" exists because the survey questions were answered voluntarily, and some respondents did not or could not answer all the questions. The effect of nonresponse is illustrated in Table 14 in each state report, where the total days of hunting can be greater than the sum of hunting days on private land and hunting days on public land. This occurs because some respondents did not answer the days hunted on private/public land questions. As a result, it is known how many days hunters hunted but not known if those days were on public or private land. In this case, totals are greater than the sum of subcategories when nonresponses have occurred.

Source of Estimates

Estimates in the tables can come from an individual survey (fishing, hunting, or wildlife watching), or can come from a composite of two or three of the surveys. Composite estimates are likely to differ from the same estimates based on the fishing, hunting, or wildlife watching survey alone (see Appendix D).

Table 1 Anglers and Hunters in Oklahoma, by Residency: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL		STATE RESIDENTS		NONRESIDENTS	
	#	%	#	%	#	%
SPORTSPERSONS	**1,461**	**100**	**1,068**	**100**	***393**	***100**
ANGLERS	**1,270**	**87**	**945**	**88**	***325**	***83**
Fished only	920	63	608	57	*312	*79
Fished and hunted	349	24	337	32	—	—
HUNTERS	**540**	**37**	**459**	**43**	***81**	***21**
Hunted only	191	13	122	11	*68	*17
Hunted and fished	349	24	337	32	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are composites from the fishing and hunting surveys (see Appendix D).

NOTE: Detail does not add to total because of multiple responses.

Table 2 Anglers and Hunters, Days of Participation and Trips in Oklahoma, by Type of Fishing and Hunting: 2016

(Population 16 years and older. Numbers in thousands)

	PARTICIPANTS		DAYS OF PARTICIPATION		TRIPS	
	#	%	#	%	#	%
ALL FISHING	**1,386**	**100**	**24,254**	**100**	**19,744**	**100**
All freshwater	1,386	100	24,254	100	19,744	100
Freshwater, except Great Lakes	1,386	100	24,254	100	19,744	100
Great Lakes	x	x	x	x	x	x
Saltwater	x	x	x	x	x	x
ALL HUNTING	**614**	**100**	**9,659**	**100**	**8,800**	**100**
Big game	416	68	4,856	50	3,560	40
Small game	216	35	1,944	20	1,661	19
Migratory birds	*277	*45	*2,740	*28	*2,505	*28
Other animals	*107	*17	*1,268	*13	*1,075	*12

* Estimate based on a sample size of 10-29 x Not applicable

SOURCE: Estimates in this table are from the fishing and hunting surveys, respectively.

NOTE: Detail does not add to total because of multiple responses.

Table 3 Anglers and Hunters, Days of Participation and Trips In and Out of Oklahoma, by Residency: 2016

(Population 16 years and older. Numbers in thousands)

	ACTIVITY IN OKLAHOMA						ACTIVITY BY OKLAHOMA RESIDENTS IN UNITED STATES					
	Total		State residents		Nonresidents		Total		In state of residence		In other states	
	#	%	#	%	#	%	#	%	#	%	#	%
FISHING												
Total anglers	1,386	100	900	65	—	—	940	100	900	96	*201	*21
Total trips	19,744	100	18,378	93	—	—	19,087	100	18,378	96	*709	*4
Total days of fishing	24,254	100	22,128	91	—	—	24,229	100	22,128	91	*2,101	*9
Average days of fishing	17	x	25	x	—	x	26	x	25	x	*10	x
HUNTING												
Total hunters	614	100	501	82	—	—	508	100	501	99	—	—
Total trips	8,800	100	8,392	95	—	—	9,153	100	8,392	92	—	—
Total days of hunting	9,659	100	9,215	95	—	—	10,018	100	9,215	92	—	—
Average days of hunting	16	x	18	x	—	x	20	x	18	x	—	x

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably x Not applicable

SOURCE: Estimates in this table are from the fishing and hunting surveys, respectively.

NOTE: Detail does not add to total because of multiple responses.

Table 4 Oklahoma Resident Anglers and Hunters In and Out of State: 2016

(Population 16 years and older. Numbers in thousands)

	ANGLERS		HUNTERS	
	#	%	#	%
ALL PLACES	**940**	**100**	**508**	**100**
In state only	739	79	466	92
In state and other states	*161	*17	—	—
In other states only	—	—	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are from the fishing and hunting surveys, respectively.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 5 Oklahoma Resident Anglers and Hunters, Days of Participation and Trips in the United States, by Type of Fishing and Hunting: 2016

(Population 16 years and older. Numbers in thousands)

	PARTICIPANTS		DAYS OF PARTICIPATION		TRIPS	
	#	%	#	%	#	%
ALL FISHING	**940**	**100**	**24,229**	**100**	**19,087**	**100**
All freshwater	940	100	24,031	99	19,051	100
Freshwater, except Great Lakes	940	100	24,031	99	19,051	100
Great Lakes	—	—	—	—	—	—
Saltwater	—	—	—	—	—	—
ALL HUNTING	**508**	**100**	**10,018**	**100**	**9,153**	**100**
Big game	410	81	5,011	50	3,677	40
Small game	200	39	1,939	19	1,669	18
Migratory birds	*185	*36	*2,932	*29	*2,733	*30
Other animals	*105	*21	*1,264	*13	*1,073	*12

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are from the fishing and hunting surveys, respectively.

NOTE: Detail does not add to total because of multiple responses.

Table 6 Freshwater Anglers, Days of Participation and Trips in Oklahoma, by Type of Water and Residency: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL		STATE RESIDENTS		NONRESIDENTS	
	#	%	#	%	#	%
ANGLERS	**1,386**	**100**	**900**	**65**	**—**	**—**
Ponds, lakes or reservoirs	1,238	100	820	66	—	—
Rivers or streams	292	100	292	100	—	—
TRIPS	**19,744**	**100**	**18,378**	**93**	**—**	**—**
DAYS	**24,254**	**100**	**22,128**	**91**	**—**	**—**
Ponds, lakes or reservoirs	20,492	100	18,565	91	—	—
Rivers or streams	6,215	100	6,215	100	—	—
Average days	17	x	25	x	—	x

— Sample size too small (less than 10) to report data reliably x Not applicable

SOURCE: Estimates in this table are from the fishing survey.

NOTE: Detail does not add to total because of multiple responses.

Table 7 Freshwater Anglers, Days of Participation in Oklahoma, by Type of Fish and Residency: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL			STATE RESIDENTS		NONRESIDENTS	
	#	% of total types	% of anglers or days	#	% of anglers or days	#	% of anglers or days
ANGLERS, ALL TYPES OF FISH	**1,386**	**100**	**100**	**900**	**65**	**—**	**—**
Crappie	737	53	100	676	92	—	—
Panfish	873	63	100	500	57	—	—
White bass, striped bass, striped bass hybrids	937	68	100	564	60	—	—
Black bass	941	68	100	544	58	—	—
Catfish, bullheads	596	43	100	564	95	—	—
Walleye, sauger	*101	*7	*100	*67	*66	—	—
Northern pike, pickerel, muskie, muskie hybrids	—	—	—	—	—	—	—
Steelhead	—	—	—	—	—	—	—
Trout	*203	*15	*100	*177	*87	—	—
Salmon	—	—	—	—	—	—	—
Anything[1]	*341	*25	*100	*272	*80	—	—
Other freshwater fish	—	—	—	—	—	—	—
DAYS, ALL TYPES OF FISH	**24,254**	**100**	**100**	**22,128**	**91**	**—**	**—**
Crappie	11,691	48	100	11,518	99	—	—
Panfish	9,539	39	100	8,793	92	—	—
White bass, striped bass, striped bass hybrids	14,084	58	100	12,991	92	—	—
Black bass	14,380	59	100	13,230	92	—	—
Catfish, bullheads	11,107	46	100	11,049	99	—	—
Walleye, sauger	*3,434	*14	*100	—	—	—	—
Northern pike, pickerel, muskie, muskie hybrids	—	—	—	—	—	—	—
Steelhead	—	—	—	—	—	—	—
Trout	*1,283	*5	*100	*1,179	*92	—	—
Salmon	—	—	—	—	—	—	—
Anything[1]	*1,338	*6	*100	*1,269	*95	—	—
Other freshwater fish	—	—	—	—	—	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Respondent fished for no specific species and identified "Anything" from a list of categories of fish.

SOURCE: Estimates in this table are from the fishing survey.

NOTE: Detail does not add to total because of multiple responses.

Table 8 Great Lakes Anglers, Days of Participation and Trips in Oklahoma, by Type of Water and Residency: 2016

(Population 16 years and older. Numbers in thousands)

This table does not apply to this state

Table 9 Great Lakes Anglers, Days of Participation in Oklahoma, by Type of Fish and Residency: 2016

(Population 16 years and older. Numbers in thousands)

This table does not apply to this state

Table 10 Saltwater Anglers, Days of Participation and Trips in Oklahoma, by Type of Water and Residency: 2016

(Population 16 years and older. Numbers in thousands)

This table does not apply to this state

Table 11 Saltwater Anglers, Days of Participation in Oklahoma, by Type of Fish and Residency: 2016

(Population 16 years and older. Numbers in thousands)

This table does not apply to this state

Table 12 Hunters, Days of Participation and Trips in Oklahoma, by Type of Hunting and Residency: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL		STATE RESIDENTS		NONRESIDENTS	
	#	%	#	%	#	%
HUNTERS	**614**	**100**	**501**	**82**	**—**	**—**
Big game	416	100	403	97	—	—
Small game	216	100	199	92	—	—
Migratory birds	*277	*100	*185	*67	—	—
Other animals	*107	*100	*105	*98	—	—
TRIPS	**8,800**	**100**	**8,392**	**95**	**—**	**—**
Big game	3,560	100	3,522	99	—	—
Small game	1,661	100	1,643	99	—	—
Migratory birds	*2,505	*100	*2,154	*86	—	—
Other animals	*1,075	*100	*1,073	*100	—	—
DAYS	**9,659**	**100**	**9,215**	**95**	**—**	**—**
Big game	4,856	100	4,813	99	—	—
Small game	1,944	100	1,909	98	—	—
Migratory birds	*2,740	*100	*2,353	*86	—	—
Other animals	*1,268	*100	*1,264	*100	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are from the hunting survey.

NOTE: Detail does not add to total because of multiple responses.

Table 13 Hunters, Days of Participation in Oklahoma, by Type of Game: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL HUNTERS		DAYS OF HUNTING	
	#	%	#	%
ALL GAME	**614**	**100**	**9,659**	**100**
BIG GAME	**416**	**100**	**4,856**	**100**
Deer	372	89	3,972	82
Elk	—	—	—	—
Bear	—	—	—	—
Wild turkey	*142	*34	*643	*13
Other big game	—	—	—	—
SMALL GAME	**216**	**100**	**1,944**	**100**
Rabbit, hare	*102	*47	*427	*22
Quail	*125	*58	*314	*16
Grouse/prairie chicken	—	—	—	—
Squirrel	*109	*50	*926	*48
Pheasant	—	—	—	—
Other small game	—	—	—	—
MIGRATORY BIRDS	***277**	***100**	***2,740**	***100**
Waterfowl	*233	*84	*2,497	*91
Geese	*188	*68	—	—
Ducks	*233	*84	*1,643	*60
Doves	*83	*30	*759	*28
Other migratory birds	—	—	—	—
OTHER ANIMALS[1]	***107**	***100**	***1,268**	***100**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are from the hunting survey.

NOTE: Detail does not add to total because of multiple responses. "Other animals" includes groundhog, raccoon, fox, coyote, crow, prairie dog, etc.

Table 14 Hunters, Days of Participation in Oklahoma, by Type of Land and Residency: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL		STATE RESIDENTS		NONRESIDENTS	
	#	%	#	%	#	%
HUNTERS, ALL TYPES OF LAND	**614**	**100**	**501**	**100**	**—**	**—**
Public land only	—	—	—	—	—	—
Private land only	428	70	333	66	—	—
Public and private land	*140	*23	*122	*24	—	—
DAYS, ALL TYPES OF LAND	**9,659**	**100**	**9,215**	**100**	**—**	**—**
Public land	*1,813	*19	*1,794	*19	—	—
Private land	7,269	75	7,127	77	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are from the hunting survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse. Days of hunting on public land includes both days spent solely on public land and those spent on public and private land. Days of hunting on private land includes both days spent solely on private land and those spent on private and public land.

Table 15 Oklahoma Resident Anglers and Hunters, by Selected Characteristics: 2016

(State population 16 years and older. Numbers in thousands)

	POPULATION		SPORTSPERSONS			ANGLERS			HUNTERS		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
TOTAL	**3,037**	**100**	**1,119**	**37**	**100**	**983**	**32**	**100**	**488**	**16**	**100**
RESIDENCE DENSITY											
Urban	1,958	64	620	32	55	561	29	57	251	13	51
Rural	1,079	36	499	46	45	422	39	43	237	22	49
RESIDENCE SIZE											
Metropolitan Statistical Area (MSA)	2,387	79	843	35	75	744	31	76	359	15	74
1,000,000 or more	1,150	38	421	37	38	352	31	36	*172	*15	*35
250,000 to 999,999	941	31	291	31	26	278	30	28	*147	*16	*30
50,000 to 249,999	296	10	*130	*44	*12	*114	*39	*12	—	—	—
Outside MSA	650	21	276	43	25	239	37	24	129	20	26
SEX											
Male	1,585	52	725	46	65	652	41	66	373	24	76
Female	1,451	48	394	27	35	330	23	34	*115	*8	*24
AGE											
16 to 17 years	—	—	—	—	—	—	—	—	—	—	—
18 to 24 years	*311	*10	—	—	—	—	—	—	—	—	—
25 to 34 years	511	17	*297	*58	*27	*254	*50	*26	*111	*22	*23
35 to 44 years	488	16	*158	*32	*14	*145	*30	*15	*88	*18	*18
45 to 54 years	456	15	175	38	16	164	36	17	*59	*13	*12
55 to 64 years	479	16	155	32	14	145	30	15	71	15	15
65 years and older	681	22	173	25	15	151	22	15	67	10	14
65 to 74 years	450	15	116	26	10	98	22	10	57	13	12
75 and older	231	8	*58	*25	*5	*53	*23	*5	—	—	—
ETHNICITY											
Hispanic	*255	*8	—	—	—	—	—	—	—	—	—
Non-Hispanic	2,782	92	1,094	39	98	958	34	97	464	17	95
RACE											
White	2,304	76	878	38	78	757	33	77	366	16	75
African American	*235	*8	*54	*23	*5	*54	*23	*5	—	—	—
All Others	497	16	187	38	17	172	35	17	*107	*21	*22

(continued on next page)

Table 15 Oklahoma Resident Anglers and Hunters, by Selected Characteristics: 2016 (continued)
(State population 16 years and older. Numbers in thousands)

(continued from previous page)

	POPULATION		SPORTSPERSONS			ANGLERS			HUNTERS		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
ANNUAL HOUSEHOLD INCOME											
Less than $20,000	395	13	*139	*35	*12	*133	*34	*14	—	—	—
$20,000 to $29,999	276	9	130	47	12	*100	*36	*10	*61	*22	*13
$30,000 to $39,999	362	12	154	42	14	*147	*41	*15	*54	*15	*11
$40,000 to $49,999	311	10	*96	*31	*9	*91	*29	*9	*31	*10	*6
$50,000 to $74,999	617	20	245	40	22	202	33	21	*106	*17	*22
$75,000 to $99,999	335	11	*91	*27	*8	*74	*22	*8	—	—	—
$100,000 to $149, 999	387	13	*123	*32	*11	*101	*26	*10	*87	*23	*18
$150,000 or more	192	6	*115	*60	*10	*110	*57	*11	*76	*40	*16
Not reported	161	5	*26	*16	*2	*26	*16	*3	*19	*12	*4
EDUCATION											
8 years or less	*106	*3	—	—	—	—	—	—	—	—	—
9 to 12 years	1,103	36	322	29	29	289	26	29	103	9	21
1 to 3 years of college	916	30	415	45	37	370	40	38	160	17	33
4 years or more of college	911	30	372	41	33	315	35	32	220	24	45

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table, including population totals, are composites from the fishing and hunting surveys (see Appendix D). The population total estimates are different from those in Table 30, which are based on a single survey.

NOTE: Detail does not add to total because of multiple responses. Percent population (% Pop.) columns show the percentage of each row's population who participated in the activity named by the column (the percentage of the population living in urban areas who fished, etc.). Columns labeled "%" under Sportspersons, Anglers, and Hunters show the percentage of each column's participants who are described by the row heading (the percentage of anglers who lived in urban areas, etc.).

Table 16 Expenditures in Oklahoma for Fishing and Hunting by State Residents and Nonresidents Combined: 2016
(Population 16 years and older)

	AMOUNT (thousands of $)	AVERAGE PER SPORTSPERSON ($)[1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)
FISHING AND HUNTING†	**3,952,385**	**2,706**	**2,377**	**1,663**
Food and lodging	528,766	362	388	1,363
Transportation	420,868	288	313	1,345
Other trip costs [2]	473,830	324	392	1,208
Equipment (fishing, hunting)	957,751	656	918	1,043
Auxiliary equipment [3]	291,533	200	371	785
Special equipment [4]	*891,375	*610	*6,277	*142
Magazines, books, and DVDs	*3,221	*2	*25	*130
Membership dues/contributions	*28,073	*19	*138	*204
Other [5]	356,970	244	332	1,074
FISHING	**2,485,691**	**1,793**	**1,821**	**1,365**
Food and lodging	388,910	281	338	1,150
Transportation	298,824	216	253	1,182
Other trip costs [2]	386,012	278	342	1,130
Fishing equipment	495,443	357	603	822
Auxiliary equipment [3]	*180,763	*130	*811	*223
Special equipment [4]	—	—	—	—
Magazines, books, and DVDs	—	—	—	—
Membership dues/contributions	*8,450	*6	*80	*105
Other [5]	107,973	78	129	836
HUNTING	**1,165,937**	**1,900**	**1,899**	**614**
Food and lodging	139,855	228	282	496
Transportation	122,044	199	277	441
Other trip costs [2]	*87,818	*143	*336	*261
Hunting equipment	450,970	735	889	507
Auxiliary equipment [3]	*82,605	*135	*273	*303
Special equipment [4]	—	—	—	—
Magazines, books, and DVDs	—	—	—	—
Membership dues/contributions	—	—	—	—
Other [5]	248,958	406	484	514
UNSPECIFIED† [6]	**251,649**	**172**	**399**	**630**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Includes boating costs, equipment rental, guide fees, access fees, heating and cooking fuel, and ice and bait (for fishing only).

3 Includes sleeping bags, packs, duffel bags, tents, binoculars and field glasses, special fishing and hunting clothing, foul weather gear, boots and waders, maintenance and repair of equipment, processing and taxidermy costs, and electronic equipment such as a GPS device.

4 Includes big-ticket items bought primarily for hunting and fishing, including boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

5 Includes land leasing and ownership, licenses, stamps, tags, permits, and plantings (for hunting only).

6 Respondent could not specify whether expenditure was primarily for either fishing or hunting.

† Estimates of sportspersons for combined fishing and hunting rows and of unspecified expenditures are composites from the fishing and hunting surveys. Estimates of spenders for combined fishing and hunting rows are partially composited (see Appendix D).

SOURCE: Estimates other than those specified (†) are from the fishing and hunting surveys, respectively.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 17 Expenditures in Oklahoma for Fishing Trips and Equipment by State Residents and Nonresidents Combined, by Type of Fishing: 2016

(Population 16 years and older)

	AMOUNT (thousands of $)	AVERAGE PER ANGLER ($)[1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)
ALL FISHING	**2,367,895**	**1,708**	**1,742**	**1,359**
Food and lodging	388,910	281	338	1,150
Transportation	298,824	216	253	1,182
Other trip costs	386,012	278	342	1,130
Equipment	1,294,149	933	1,452	891
FRESHWATER	**2,345,258**	**1,692**	**1,746**	**1,343**
Food and lodging	388,910	281	338	1,150
Transportation	298,824	216	253	1,182
Other trip costs	386,012	278	342	1,130
Equipment	1,271,512	917	1,498	849
FRESHWATER, EXCEPT GREAT LAKES	**2,345,258**	**1,692**	**1,746**	**1,343**
Food and lodging	388,910	281	338	1,150
Transportation	298,824	216	253	1,182
Other trip costs	386,012	278	342	1,130
Equipment	1,271,512	917	1,498	849
GREAT LAKES	**—**	**—**	**—**	**—**
Food and lodging	—	—	—	—
Transportation	—	—	—	—
Other trip costs	—	—	—	—
Equipment	—	—	—	—
SALTWATER	**—**	**—**	**—**	**—**
Food and lodging	—	—	—	—
Transportation	—	—	—	—
Other trip costs	—	—	—	—
Equipment	—	—	—	—

— Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

SOURCE: Estimates in this table are from the fishing survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse. See Table 19 for detailed listing of expenditure items.

Table 18 Expenditures in Oklahoma for Hunting Trips and Equipment by State Residents and Nonresidents Combined, by Type of Hunting: 2016

(Population 16 years and older)

	AMOUNT (thousands of $)	AVERAGE PER HUNTER ($)[1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)
ALL HUNTING	**908,075**	**1,480**	**1,585**	**573**
Food and lodging	139,855	228	282	496
Transportation	122,044	199	277	441
Other trip costs	*87,818	*143	*336	*261
Equipment	558,358	910	1,088	513
BIG GAME	**294,761**	**708**	**750**	**393**
Food and lodging	62,155	149	192	324
Transportation	44,466	107	158	282
Other trip costs	*25,484	*61	*250	*102
Equipment	162,656	391	623	261
SMALL GAME	***40,216**	***186**	***247**	***163**
Food and lodging	*9,969	*46	*66	*151
Transportation	*13,584	*63	*108	*126
Other trip costs	—	—	—	—
Equipment	—	—	—	—
MIGRATORY BIRDS	***158,422**	***571**	***698**	***227**
Food and lodging	—	—	—	—
Transportation	—	—	—	—
Other trip costs	—	—	—	—
Equipment	*146,923	*529	*835	*176
OTHER ANIMALS	***39,897**	***374**	***464**	***86**
Food and lodging	—	—	—	—
Transportation	—	—	—	—
Other trip costs	—	—	—	—
Equipment	—	—	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

SOURCE: Estimates in this table are from the hunting survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse. See Table 20 for detailed listing of expenditure items.

Table 19 Expenditures in Oklahoma for Fishing by State Residents and Nonresidents Combined: 2016

(Population 16 years and older)

	AMOUNT (thousands of $)	AVERAGE PER ANGLER ($) [1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)	PERCENT OF ANGLERS
ALL EXPENDITURES	**2,485,691**	**1,793**	**1,821**	**1,365**	**98**
TRIP-RELATED EXPENDITURES	**1,073,746**	**774**	**856**	**1,255**	**91**
Food and lodging	388,910	281	338	1,150	83
Food	198,719	143	173	1,150	83
Lodging	*190,191	*137	*338	*563	*41
Transportation	298,824	216	253	1,182	85
Other trip costs	386,012	278	342	1,130	82
Privilege and other fees [2]	56,963	41	158	361	26
Boating costs [3]	233,857	169	882	265	19
Bait	48,779	35	71	684	49
Ice	24,761	18	28	898	65
Heating and cooking fuel	*21,652	*16	*130	*167	*12
EQUIPMENT	**1,294,149**	**933**	**1,452**	**891**	**64**
Fishing equipment	495,443	357	603	822	59
Reels, rods, and rod-making components	156,324	113	313	500	36
Lines, hooks, sinkers, etc.	82,334	59	112	738	53
Artificial lures and flies	88,330	64	165	535	39
Creels, stringers, fish bags, landing nets, and gaff hooks	*7,238	*5	*49	*148	*11
Minnow seines, traps, and bait containers	*8,849	*6	*62	*142	*10
Other fishing equipment [4]	152,367	110	462	330	24
Auxiliary equipment [5]	*180,763	*130	*811	*223	*16
Special equipment [6]	—	—	—	—	—
OTHER FISHING COSTS [7]	**117,796**	**85**	**132**	**890**	**64**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Includes boat or equipment rental and fees for guides, pack trip (party and charter boats, etc.), public land use, and private land use.

3 Includes boat launching, mooring, storage, maintenance, insurance, pumpout fees, and fuel.

4 Includes electronic fishing devices (depth finders, fish finders, etc.), tackle boxes, ice fishing equipment, and other fishing equipment.

5 Includes sleeping bags, packs, duffel bags, tents, binoculars and field glasses, special fishing clothing, foul weather gear, boots and waders, maintenance and repair of equipment, processing and taxidermy costs, and electronic equipment such as a GPS device.

6 Includes big-ticket items bought primarily for fishing, including boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

7 Includes magazines, books, and DVDs, membership dues and contributions, land leasing and ownership, and licenses, stamps, tags, and permits.

SOURCE: Estimates in this table are from the fishing survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse. Percent of anglers may be greater than 100 because spenders who did not fish in this state are included.

Table 20 Expenditures in Oklahoma for Hunting by State Residents and Nonresidents Combined: 2016

(Population 16 years and older)

	AMOUNT (thousands of $)	AVERAGE PER HUNTER ($)[1]	AVERAGE PER SPENDER ($)[1]	NUMBER OF SPENDERS (thousands)	PERCENT OF HUNTERS
ALL EXPENDITURES	**1,165,937**	**1,900**	**1,899**	**614**	**100**
TRIP-RELATED EXPENDITURES	**349,717**	**570**	**680**	**514**	**84**
Food and lodging	139,855	228	282	496	81
Food	96,906	158	196	494	80
Lodging	*42,949	*70	*259	*166	*27
Transportation	122,044	199	277	441	72
Other trip costs	*87,818	*143	*336	*261	*42
Privilege and other fees[2]	*80,366	*131	*462	*174	*28
Boating costs[3]	—	—	—	—	—
Heating and cooking fuel	*4,268	*7	*50	*85	*14
EQUIPMENT	**558,358**	**910**	**1,088**	**513**	**84**
Hunting equipment	450,970	735	889	507	83
Firearms	215,656	352	914	236	38
Ammunition	49,255	80	158	311	51
Other hunting equipment[4]	186,059	303	547	340	55
Auxiliary equipment[5]	*82,605	*135	*273	*303	*49
Special equipment[6]	—	—	—	—	—
OTHER HUNTING COSTS[7]	**257,862**	**420**	**502**	**514**	**84**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Includes guide fees, pack trip and package fees, public and private land use access fees, and rental of equipment such as boats and hunting or camping equipment.

3 Boating costs include launching, mooring, storage, maintenance, insurance, pumpout fees, and fuel.

4 Includes telescopic sights, decoys and game calls, handloading equipment and components, hunting dogs and associated costs, hunting knives, bows, arrows, archery equipment, and other hunting equipment.

5 Includes sleeping bags, packs, duffel bags, tents, binoculars and field glasses, special hunting clothing, foul weather gear, boots and waders, maintenance and repair of equipment, processing and taxidermy costs, and electronic equipment such as a GPS device.

6 Includes big-ticket items bought primarily for hunting, including boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

7 Includes magazines, books, and DVDs, membership dues and contributions, land leasing and ownership, and licenses, stamps, tags, and permits.

SOURCE: Estimates in this table are from the hunting survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse. Percent of hunters may be greater than 100 because spenders who did not hunt in this state are included.

Table 21 Expenditures in Oklahoma for Fishing and Hunting Trips and Equipment, by Residency: 2016

(Population 16 years and older)

	AMOUNT (thousands of $)	AVERAGE PER SPORTSPERSON ($) [1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)
STATE RESIDENTS AND NONRESIDENTS	**3,514,941**	**2,407**	**2,220**	**1,583**
FISHING EXPENDITURES	**2,367,895**	**1,708**	**1,916**	**1,236**
Food and lodging	388,910	281	338	1,150
Transportation	298,824	216	253	1,182
Boating costs [2]	233,857	169	882	265
Other trip costs [3]	152,155	110	136	1,120
Equipment for fishing [4]	1,294,149	933	1,452	891
HUNTING EXPENDITURES	**908,075**	**1,480**	**2,609**	**348**
Food and lodging	139,855	228	282	496
Transportation	122,044	199	277	441
Boating costs [2]	—	—	—	—
Other trip costs [3]	*84,635	*138	*365	*232
Equipment for hunting [4]	558,358	910	1,088	513
UNSPECIFIED EQUIPMENT † [4]	***238,971**	***164**	***516**	***463**
STATE RESIDENTS	**3,050,319**	**2,857**	**3,072**	**993**
FISHING EXPENDITURES	**2,173,046**	**2,416**	**2,871**	**757**
Food and lodging	309,221	344	422	732
Transportation	216,026	240	283	764
Boating costs [2]	232,935	259	906	257
Other trip costs [3]	133,275	148	184	724
Equipment for fishing [4]	1,281,590	1,425	1,592	805
HUNTING EXPENDITURES	**658,988**	**1,316**	**2,792**	**236**
Food and lodging	97,633	195	255	383
Transportation	81,816	163	238	344
Boating costs [2]	—	—	—	—
Other trip costs [3]	*25,846	*52	*189	*137
Equipment for hunting [4]	450,509	900	1,026	439
UNSPECIFIED EQUIPMENT † [4]	***218,285**	***204**	***1,882**	***116**
NONRESIDENTS	***464,622**	***1,182**	***786**	***591**
FISHING EXPENDITURES	**—**	**—**	**—**	**—**
Food and lodging	—	—	—	—
Transportation	—	—	—	—
Boating costs [2]	—	—	—	—
Other trip costs [3]	—	—	—	—
Equipment for fishing [4]	—	—	—	—
HUNTING EXPENDITURES	**—**	**—**	**—**	**—**
Food and lodging	—	—	—	—
Transportation	—	—	—	—
Boating costs [2]	—	—	—	—
Other trip costs [3]	—	—	—	—
Equipment for hunting [4]	—	—	—	—
UNSPECIFIED EQUIPMENT † [4]	**—**	**—**	**—**	**—**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Includes boat launching, mooring, storage, maintenance, insurance, pumpout fees, and fuel.

3 Includes equipment rental, guide and access fees, ice and bait for fishing, and heating and cooking oil.

4 Equipment for fishing or for hunting is activity specific equipment in addition to auxiliary and special equipment purchased for that activity. Unspecified equipment occurs when respondent could not specify whether an item was for hunting or fishing.

† Estimates of expenditures, sportspersons, and spenders for unspecified equipment are composites from the fishing and hunting surveys (see Appedix D).

SOURCE: Estimates other than those specified (†) are from the fishing and hunting surveys, respectively.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 22 Expenditures by Oklahoma Residents for Fishing and Hunting Both In and Out of Oklahoma: 2016

(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of $)	AVERAGE PER SPORTSPERSON ($) [1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)
FISHING AND HUNTING†	**3,990,605**	**3,569**	**3,811**	**1,047**
Food and lodging	619,686	554	706	878
Transportation	401,693	359	463	867
Other trip costs [2]	576,188	515	785	734
Equipment (fishing, hunting)	885,705	792	959	924
Auxiliary equipment [3]	246,604	221	825	299
Special equipment [4]	*868,009	*776	*6156	*141
Magazines, books, and DVDs	*3,628	*3	*27	*134
Membership dues/contributions	*26,789	*24	*140	*191
Other [5]	362,303	324	544	666
FISHING	**2,769,020**	**2,946**	**3,066**	**903**
Food and lodging	508,296	541	655	776
Transportation	306,674	326	386	795
Other trip costs [2]	546,885	582	725	754
Fishing equipment	500,762	533	611	820
Auxiliary equipment [3]	*176,405	*188	*1145	*154
Special equipment [4]	—	—	—	—
Magazines, books, and DVDs	—	—	—	—
Membership dues/contributions	*8,450	*9	*80	*105
Other [5]	102,231	109	231	442
HUNTING	**990,796**	**1,949**	**1,950**	**508**
Food and lodging	111,390	219	284	392
Transportation	95,019	187	269	353
Other trip costs [2]	*29,302	*58	*168	*174
Hunting equipment	384,943	757	877	439
Auxiliary equipment [3]	*64,473	*127	*266	*242
Special equipment [4]	—	—	—	—
Magazines, books, and DVDs	—	—	—	—
Membership dues/contributions	—	—	—	—
Other [5]	260,072	511	516	504
UNSPECIFIED† [6]	***230,788**	***206**	***816**	***283**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Includes boating costs, equipment rental, guide fees, access fees, heating and cooking fuel, and ice and bait (for fishing only).

3 Includes sleeping bags, packs, duffel bags, tents, binoculars and field glasses, special fishing and hunting clothing, foul weather gear, boots and waders, maintenance and repair of equipment, processing and taxidermy costs, and electronic equipment such as a GPS device.

4 Includes big-ticket items bought primarily for hunting and fishing, including boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

5 Includes land leasing and ownership, licenses, stamps, tags, permits, and plantings (for hunting only).

6 Respondent could not specify whether expenditure was primarily for either fishing or hunting.

† Estimates of expenditures, sportspersons, and spenders are composites from the fishing and hunting surveys, as is the estimate of sportspersons for the combined fishing and hunting rows. The estimates of combined fishing and hunting total spenders is partially a composite, as are estimates of combined auxiliary equipment, special equipment, magazines etc., and membership expenditures and spenders (see Appendix D).

SOURCE: Estimates other than those specified (†) are from the fishing and hunting surveys, respectively.

NOTE: Detail does not add to total because of multiple responses and nonresponse. See Tables 19–20 for a detailed listing of expenditure items.

Table 23 Expenditures by Oklahoma Residents for Fishing and Hunting, by whether In State or Out of State: 2016

(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of $)	AVERAGE PER SPORTSPERSON ($) [1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)
IN STATE				
FISHING AND HUNTING†	**3,430,232**	**3,213**	**3,340**	**1,027**
Trip-related	1,099,934	1,030	1,188	926
Equipment (fishing, hunting)	853,427	799	934	914
Auxiliary equipment [2]	242,941	228	826	294
Special equipment [2]	*856,099	*802	*6,115	*140
Other [2]	377,831	354	538	702
FISHING	**2,285,300**	**2,540**	**2,576**	**887**
Trip-related	891,456	991	1,064	838
Fishing equipment	491,871	547	606	811
Auxiliary equipment [2]	*173,859	*193	*1,129	*154
Special equipment [2]	—	—	—	—
Other [2]	110,172	122	246	448
HUNTING	**915,363**	**1,828**	**1,827**	**501**
Trip-related	208,479	416	520	401
Hunting equipment	361,556	722	835	433
Auxiliary equipment [2]	*64,169	*128	*265	*242
Special equipment [2]	—	—	—	—
Other [2]	256,376	512	517	496
UNSPECIFIED† [3]	***229,569**	***215**	***832**	***276**
OUT OF STATE				
FISHING AND HUNTING†	**560,372**	**2,089**	**2,734**	**205**
Trip-related	*497,633	*1,855	*2,962	*168
Equipment (fishing, hunting)	*32,277	*120	*329	*98
Auxiliary equipment [2]	—	—	—	—
Special equipment [2]	—	—	—	—
Other [2]	*14,889	*56	*222	*67
FISHING	***483,720**	***2,404**	***2,383**	***203**
Trip-related	*470,400	*2,338	*2,529	*186
Fishing equipment	*8,891	*44	*90	*99
Auxiliary equipment [2]	—	—	—	—
Special equipment [2]	—	—	—	—
Other [2]	—	—	—	—
HUNTING	***75,433**	***1,776**	***887**	***85**
Trip-related	—	—	—	—
Hunting equipment	—	—	—	—
Auxiliary equipment [2]	—	—	—	—
Special equipment [2]	—	—	—	—
Other [2]	—	—	—	—
UNSPECIFIED† [3]	**—**	**—**	**—**	**—**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 See Table 22 for list of auxiliary equipment and special equipment. Other equipment includes expenditures for magazines, books, DVDs, membership dues and contributions, land leasing and ownership, licenses, stamps, tags, and permits, and plantings.

3 Respondent could not specify whether expenditure was primarily for either fishing or hunting.

† Estimates of expenditures, sportspersons, and spenders are composites from the fishing and hunting surveys, as is the estimate of sportspersons for the combined fishing and hunting rows. The estimates of combined fishing and hunting total spenders is partially a composite, as are estimates of combined auxiliary equipment, special equipment, and other expenditures and spenders (see Appendix D).

SOURCE: Estimates other than those specified (†) are from the fishing and hunting surveys, respectively.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 24 Wildlife Watching in Oklahoma by State Residents and Nonresidents Combined: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL	
	#	%
ALL WILDLIFE WATCHERS	**2,515**	**100**
AWAY FROM HOME	**1,351**	**54**
Observe wildlife	1,291	51
Photograph wildlife	737	29
Feed wildlife	*394	*16
AROUND THE HOME	**1,887**	**75**
Observe wildlife	1,315	52
Photograph wildlife	810	32
Feed wildlife	1,384	55
Visit parks or natural areas [1]	*476	*19
Maintain plantings or natural areas	*328	*13

* Estimate based on a sample size of 10-29

1 Includes visits only to parks or natural areas within one mile of home.

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses.

Table 25 Away-From-Home Wildlife Watchers, Days of Participation and Trips in Oklahoma, by Type of Activity: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL		STATE RESIDENTS		NONRESIDENTS	
	#	%	#	%	#	%
WILDLIFE WATCHERS	**1,351**	**100**	**855**	**100**	***496**	***100**
Observe wildlife	1,291	96	806	94	*485	*98
Photograph wildlife	737	55	*365	*43	—	—
Feed wildlife	*394	*29	*377	*44	—	—
TRIPS	**13,491**	**999**	**12,771**	**1494**	***720**	***145**
Average days per trip	2	x	2	x	*2	x
DAYS						
Total days	23,961	100	22,753	100	*1,208	*100
Observe wildlife	18,387	77	17,265	76	*1,122	*93
Photograph wildlife	4,098	17	*3,144	*14	—	—
Feed wildlife	*13,981	*58	*13,950	*61	—	—
Average days per watcher	18	x	27	x	*2	x
Observe wildlife	14	x	21	x	*2	x
Photograph wildlife	6	x	*9	x	—	x
Feed wildlife	*35	x	*37	x	—	x

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably x Not applicable

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 26 Away-From-Home Wildlife Watchers in Oklahoma, by Type of Watching and Residency: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL		STATE RESIDENTS		NONRESIDENTS	
	#	%	#	%	#	%
ALL WILDLIFE	**1,351**	**100**	**855**	**63**	***496**	***37**
BIRDS	**1,117**	**100**	**655**	**59**	***462**	***41**
Songbirds (cardinals, robins, warblers, etc.)	442	100	*366	*83	—	—
Birds of prey (hawks, owls, eagles, etc.)	478	100	*322	*67	—	—
Waterfowl (ducks, geese, swans, etc.)	959	100	*504	*53	*455	*47
Other water birds (shorebirds, herons, cranes, etc.)	*490	*100	*346	*71	—	—
Other birds (pheasants, turkeys, road runners, etc.)	*602	*100	*247	*41	—	—
LAND MAMMALS	**1,174**	**100**	**701**	**60**	***473**	***40**
Large land mammals (bears, bison, elk, etc.)	862	100	*403	*47	—	—
Small land mammals (prairie, dogs, squirrels, etc.)	1,094	100	634	58	*460	*42
FISH (SALMON, SHARKS, ETC.)	***384**	***100**	***334**	***87**	**—**	**—**
MARINE MAMMALS (WHALES, DOLPHINS, ETC.)	**—**	**—**	**—**	**—**	**—**	**—**
OTHER WILDLIFE (BUTTERFLIES, TURTLES, ETC.)	**826**	**100**	***428**	***52**	***398**	***48**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses.

Table 27 Around-the-Home Wildlife Watchers in Oklahoma, by Type of Activity and Days of Participation: 2016

(State population 16 years and older. Numbers in thousands)

	#	%
TOTAL	**1,887**	**100**
OBSERVE WILDLIFE	**1,315**	**70**
DAYS		
1 to 10 days	*256	*19
11 to 50 days	*331	*25
51 to 200 days	*369	*28
201 days or more	*233	*18
SPECIES		
Bird	1,079	82
Land mammals	1,075	82
Large mammals	507	39
Small mammals	1,063	81
Amphibians or reptiles	462	35
Insects or spiders	545	41
Fish and other wildlife	469	36
PHOTOGRAPH WILDLIFE	**810**	**43**
DAYS		
1 to 3 days	*300	*37
4 to 10 days	*201	*25
11 days or more	*274	*34
FEED WILDLIFE	**1,384**	**73**
SPECIES		
Wild birds	1,372	99
Other wildlife	575	42
VISIT PARKS OR NATURAL AREAS [1]	***476**	***25**
DAYS		
1 to 5 days	*138	*29
6 to 10 days	—	—
11 days or more	*306	*64
MAINTAIN PLANTINGS OR NATURAL AREAS	***328**	***17**

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Includes visits only to parks or natural areas within one mile of home.

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 28 Oklahoma Resident Wildlife Watchers Both In and Out of Oklahoma: 2016

(State population 16 years and older. Numbers in thousands)

	#	% OF WILDLIFE WATCHERS	% OF POPULATION
WILDLIFE WATCHERS	**2,019**	**100**	**67**
Away from home	881	44	29
Around the home	1,887	93	62
Observe wildlife	1,315	65	43
Photograph wildlife	810	40	27
Feed wildlife	1,384	69	46
Visit parks or natural areas [1]	*476	*24	*16
Maintain plantings or natural areas	*328	*16	*11

* Estimate based on a sample size of 10-29

1 Includes visits only to parks or natural areas within one mile of home.

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses. The column showing percent of participants is based on total participants. The column showing percent of population is based on the state population 16 years old and older, including those who did not participate in wildlife watching.

Table 29 Wild Bird Observers and Days of Participation in Oklahoma, by Residency: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL		STATE RESIDENTS		NONRESIDENTS	
	#	%	#	%	#	%
BIRD OBSERVERS	**1,711**	**100**	**1,225**	**100**	***486**	***100**
Away from home	1,085	63	599	49	*486	*100
Around the home	1,079	63	1,079	88	x	x
DAYS	**93,506**	**100**	**92,863**	**100**	***643**	***100**
Away from home	11,547	12	10,904	12	*643	*100
Around the home	81,959	88	81,959	88	x	x

* Estimate based on a sample size of 10-29 x Not applicable

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses.

Table 30 Oklahoma Resident Wildlife Watchers, by Selected Characteristics: 2016

(State population 16 years and older. Numbers in thousands)

	POPULATION		TOTAL			AWAY FROM HOME			AROUND THE HOME		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
TOTAL	**3,037**	**100**	**2,019**	**67**	**100**	**881**	**29**	**100**	**1,887**	**62**	**100**
RESIDENCE DENSITY											
Urban	1,961	65	1,182	60	59	*391	*20	*44	1,182	60	63
Rural	1,076	35	838	78	42	*490	*46	*56	705	66	37
RESIDENCE SIZE											
Metropolitan Statistical Area (MSA)	2,358	78	1,557	66	77	*586	*25	*67	1,465	62	78
1,000,000 or more	1,296	43	808	62	40	*219	*17	*25	747	58	40
250,000 to 999.999	642	21	496	77	25	*274	*43	*31	*466	*73	*25
50,000 to 249,999	*421	*14	*252	*60	*12	—	—	—	*252	*60	*13
Outside MSA	678	22	463	68	23	*295	*43	*33	422	62	22
SEX											
Male	1,554	51	1,052	68	52	*521	*34	*59	920	59	49
Female	1,482	49	967	65	48	*360	*24	*41	967	65	51
AGE											
16 to 17 years	—	—	—	—	—	—	—	—	—	—	—
18 to 24 years	—	—	—	—	—	—	—	—	—	—	—
25 to 34 years	*441	*15	—	—	—	—	—	—	—	—	—
35 to 44 years	*565	*19	*386	*68	*19	—	—	—	—	—	—
45 to 54 years	*358	*12	*269	*75	*13	—	—	—	*269	*75	*14
55 to 64 years	599	20	500	83	25	*137	*23	*16	500	83	26
65 years and older	684	23	515	75	26	*167	*24	*19	499	73	26
65 to 74 years	471	16	*375	*80	*19	—	—	—	*367	*78	*19
75 and older	*212	*7	*140	*66	*7	—	—	—	*131	*62	*7
ETHNICITY											
Hispanic	—	—	—	—	—	—	—	—	—	—	—
Non-Hispanic	2,892	95	1,944	67	96	842	29	96	1,812	63	96
RACE											
White	2,380	78	1,634	69	81	759	32	86	1,596	67	85
African American	—	—	—	—	—	—	—	—	—	—	—
All Others	*505	*17	*269	*53	*13	—	—	—	*175	*35	*9

(continued on next page)

Table 30 Oklahoma Resident Wildlife Watchers, by Selected Characteristics: 2016 (continued)
(State population 16 years and older. Numbers in thousands)

(continued from previous page)

	POPULATION		TOTAL			AWAY FROM HOME			AROUND THE HOME		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
ANNUAL HOUSEHOLD INCOME											
Less than $20,000	*507	*17	*350	*69	*17	—	—	—	*318	*63	*17
$20,000 to $29,999	*177	*6	*165	*94	*8	—	—	—	*165	*94	*9
$30,000 to $39,999	*316	*10	*220	*70	*11	—	—	—	*159	*50	*8
$40,000 to $49,999	*236	*8	—	—	—	—	—	—	—	—	—
$50,000 to $74,999	697	23	*452	*65	*22	—	—	—	*445	*64	*24
$75,000 to $99,999	*312	*10	*266	*85	*13	—	—	—	*244	*78	*13
$100,000 to $149, 999	*300	*10	*214	*71	*11	—	—	—	*214	*71	*11
$150,000 or more	—	—	—	—	—	—	—	—	—	—	—
Not reported	*160	*5	*118	*74	*6	—	—	—	—	—	—
EDUCATION											
8 years or less	—	—	—	—	—	—	—	—	—	—	—
9 to 12 years	975	32	709	73	35	*339	*35	*38	655	67	35
1 to 3 years of college	1,112	37	601	54	30	*301	*27	*34	594	53	31
4 years or more of college	891	29	681	76	34	*224	*25	*25	610	68	32

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table, including population totals, are from the wildlife survey. The population total estimates are different from those in Table 15, which are composites from the fishing and hunting surveys.

NOTE: Detail does not add to total because of multiple responses and nonresponse. Percent population (% Pop.) columns show the percentage of each row's population who participated in the activity named by the column (the percentage of those living in urban areas who participated, etc.). Columns labeled "%" under Wildlife Watching, Away From Home, and Around the Home show the percentage of each column's participants who are described by the row heading (the percentage of those who participated in away-from-home wildlife watching who live in urban areas, etc.).

Table 31 Expenditures in Oklahoma for Wildlife Watching by State Residents and Nonresidents Combined: 2016
(Population 16 years and older)

	AMOUNT (thousands of $)	AVERAGE PER WILDLIFE WATCHER ($) [1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)	PERCENT OF WILDLIFE WATCHERS [2]
ALL EXPENDITURES	**1,470,228**	**585**	**743**	**1,980**	**79**
TRIP-RELATED EXPENDITURES	**445,756**	**330**	**363**	**1,227**	**91**
Food and lodging	224,043	166	197	1,140	84
Food	114,397	85	108	1,055	78
Lodging	*109,647	*81	*237	*462	*34
Transportation	130,347	97	116	1,119	83
Other trip costs [3]	*91,365	*68	*481	*190	*14
EQUIPMENT AND OTHER EXPENDITURES	**1,024,472**	**407**	**840**	**1,219**	**48**
Wildlife watching equipment	361,795	144	304	1,191	47
Binoculars, spotting scopes	*56,985	*23	*192	*297	*12
Film and photo processing	—	—	—	—	—
Cameras. special lenses, video cameras, and other photographic equipment, including memory cards	*64,896	*26	*295	*220	*9
Day packs, carrying cases, and special clothing	*42,183	*17	*186	*227	*9
Bird food	113,942	45	128	893	35
Food for other wildlife	*43,271	*17	*122	*356	*14
Nest boxes, bird houses, bird feeders, and bird baths	35,304	14	61	583	23
Other equipment (including field guides)	—	—	—	—	—
Auxiliary equipment [4]	—	—	—	—	—
Special equipment [5]	—	—	—	—	—
Magazines, books, and DVDs	*7,309	*3	*32	*231	*9
Membership dues and contributions	*10,797	*4	*68	*159	*6
Land leasing and ownership	—	—	—	—	—
Plantings	*33,252	*13	*190	*175	*7

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Percent of wildlife-watching participants column for trip-related expenditures is based on away-from-home participation. For equipment and other expenditures, the percent of wildlife-watching participants column is based on total wildlife-watching participants.

3 Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

4 Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

5 Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 32 Expenditures in Oklahoma for Wildlife Watching Trips and Equipment, by Residency: 2016

(Population 16 years and older)

	AMOUNT (thousands of $)	AVERAGE PER WILDLIFE WATCHER ($) [1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)
STATE RESIDENTS AND NONRESIDENTS	**1,415,288**	**563**	**715**	**1,980**
Food and lodging	224,043	166	197	1,140
Transportation	130,347	97	116	1,119
Other trip costs [2]	*91,365	*68	*481	*190
Equipment [3]	969,532	386	804	1,206
STATE RESIDENTS	**1,327,049**	**657**	**899**	**1,476**
Food and lodging	175,025	205	261	670
Transportation	95,956	112	145	663
Other trip costs [2]	*89,464	*105	*559	*160
Equipment [3]	966,604	479	831	1,163
NONRESIDENTS	***88,238**	***178**	***175**	***504**
Food and lodging	*49,018	*99	*104	*470
Transportation	—	—	—	—
Other trip costs [2]	—	—	—	—
Equipment [3]	—	—	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Includes equipment rental and fees for guides, pack trips, public land use, private land use, boat fuel, other boating costs, and heating and cooking fuel.

3 Includes wildlife-watching auxiliary and special equipment.

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse. See Table 33 for detailed listed of expenditure items.

Table 33 Expenditures by Oklahoma Residents for Wildlife Watching Both In and Out of Oklahoma: 2016

(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of $)	AVERAGE PER WILDLIFE WATCHER ($) [1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)	PERCENT OF WILDLIFE WATCHERS [2]
ALL EXPENDITURES	**1,972,888**	**977**	**1,313**	**1,503**	**74**
TRIP-RELATED EXPENDITURES	**832,823**	**945**	**1,062**	**784**	**89**
Food and lodging	414,013	470	580	714	81
Food	158,320	180	224	706	80
Lodging	*255,692	*290	*1,052	*243	*28
Transportation	304,293	345	441	690	78
Other trip costs [3]	*114,517	*130	*489	*234	*27
EQUIPMENT AND OTHER EXPENDITURES	**1,140,064**	**565**	**957**	**1,191**	**59**
Wildlife-watching equipment	425,101	211	361	1,176	58
Binoculars, spotting scopes	*65,389	*32	*201	*325	*16
Film and photo processing	—	—	—	—	—
Cameras, special lenses, video cameras, and other photographic equipment, including memory cards	*74,055	*37	*305	*243	*12
Day packs, carrying cases, and special clothing	*52,899	*26	*214	*247	*12
Bird food	134,537	67	151	890	44
Food for other wildlife	*45,142	*22	*125	*362	*18
Nest boxes, bird houses, bird feeders, and bird baths	46,398	23	70	659	33
Other equipment (including field guides)	—	—	—	—	—
Auxiliary equipment [4]	*50,836	*25	*377	*135	*7
Special equipment [5]	—	—	—	—	—
Magazines, books, and DVDs	*10,033	*5	*41	*243	*12
Membership dues and contributions	*14,641	*7	*82	*179	*9
Land leasing and ownership	—	—	—	—	—
Plantings	*33,252	*16	*190	*175	*9

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Percent of wildlife-watching participants column for trip-related expenditures is based on away-from-home participation. For equipment and other expenditures, the percent of wildlife-watching participants column is based on total wildlife-watching participants.

3 Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

4 Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

5 Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 34 Expenditures by Oklahoma Residents for Wildlife Watching, by whether In State or Out of State: 2016

(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of $)	AVERAGE PER WILDLIFE WATCHER ($) [1]	AVERAGE PER SPENDER ($) [1]	NUMBER OF SPENDERS (thousands)
IN STATE				
WILDLIFE WATCHING [2]	**1,093,320**	**541**	**907**	**1,205**
Trip-related [3]	*158,317	*185	*315	*502
Wildlife-watching equipment [4]	310,488	154	323	960
Auxiliary equipment [5]	—	—	—	—
Special equipment [6]	—	—	—	—
Other [7]	*41,112	*20	*120	*343
OUT OF STATE				
WILDLIFE WATCHING [2]	***190,670**	***513**	***855**	***223**
Trip-related [3]	—	—	—	—
Wildlife-watching equipment [4]	—	—	—	—
Auxiliary equipment [5]	—	—	—	—
Special equipment [6]	—	—	—	—
Other [7]	—	—	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 Average expenditures are annual estimates.

2 Information on trip-related expenditures was collected for away-from-home participants only. Equipment and other expenditures are based on information collected from both away-from-home and around-the-home participants.

3 Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

4 Includes binoculars, spotting scopes, cameras, special lenses, videocameras, other photography equipment, memory cards, film and photo processing, commercially prepared and packaged wild bird food, other bulk food used to feed wild birds, food used to feed other wildlife, nest boxes, bird houses, feeders, baths, and other wildlife-watching equipment.

5 Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

6 Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

7 Includes magazines, books, DVDs, membership dues and contributions, and land leasing and ownership.

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 35 Oklahoma Resident Wildlife Watchers Participating in Fishing or Hunting: 2016

(State population 16 years and older. Numbers in thousands)

	TOTAL		AWAY FROM HOME		AROUND THE HOME	
	#	%	#	%	#	%
ALL WILDLIFE WATCHERS	**2,019**	**100**	**881**	**100**	**1,887**	**100**
Did not fish or hunt	1,317	65	*446	*51	1,300	69
Fished or hunted	703	35	*435	*49	587	31
Fished	566	28	*378	*43	*450	*24
Hunted	*322	*16	—	—	*306	*16

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are from the wildlife watching survey.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 36 Oklahoma Resident Sportspersons Participating in Wildlife Watching: 2016

(State population 16 years and older. Numbers in thousands)

	SPORTSPERSONS		ANGLERS		HUNTERS	
	#	%	#	%	#	%
ALL SPORTSPERSONS	**1,024**	**100**	**832**	**100**	**482**	**100**
Did not watch wildlife	271	26	177	21	157	33
Watched wildlife	753	74	656	79	325	67
Away from home	494	48	433	52	199	41
Around the home	666	65	574	69	298	62

SOURCE: Estimates in this table are composites from the fishing, hunting, and wildlife surveys (see Appendix D).

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 37 Wildlife-Related Recreation Participation in United States, by Resident State: 2016

(Population 16 years and older. Numbers in thousands)

		TOTAL PARTICIPANTS		SPORTSPERSONS		WILDLIFE WATCHERS	
	POPULATION	#	% Pop.	#	% Pop.	#	% Pop.
UNITED STATES [1]	**254,956**	**156,600**	**61**	**68,192**	**27**	**137,211**	**54**
Alabama	3,871	2,688	69	1,437	37	2,189	57
Alaska	550	350	64	231	42	294	53
Arizona	5,370	3,265	61	949	18	2,922	54
Arkansas	2,347	1,486	63	844	36	1,258	54
California	30,900	16,019	52	4,498	15	14,461	47
Colorado	4,302	2,870	67	1,083	25	2,462	57
Connecticut	2,916	1,858	64	681	23	1,608	55
Delaware	761	466	61	194	25	407	53
Florida	16,577	10,168	61	4,850	29	9,016	54
Georgia	7,929	4,850	61	2,066	26	3,964	50
Hawaii	1,104	552	50	258	23	441	40
Idaho	1,266	930	73	489	39	791	63
Illinois	10,216	5,900	58	2,411	24	5,178	51
Indiana	5,220	3,493	67	1,524	29	3,026	58
Iowa	2,476	1,571	63	772	31	1,374	55
Kansas	2,248	1,451	65	676	30	1,238	55
Kentucky	3,510	2,237	64	1,214	35	1,903	54
Louisiana	3,661	2,328	64	1,616	44	1,893	52
Maine	1,104	872	79	363	33	779	71
Maryland	4,781	2,852	60	827	17	2,592	54
Massachusetts	5,570	3,330	60	980	18	3,054	55
Michigan	7,979	5,402	68	2,424	30	4,841	61
Minnesota	4,345	3,171	73	1,611	37	2,834	65
Mississippi	2,333	1,483	64	1,189	51	1,144	49
Missouri	4,836	3,366	70	1,669	35	3,058	63
Montana	828	635	77	357	43	543	66
Nebraska	1,470	945	64	493	34	767	52
Nevada	2,285	1,217	53	465	20	1,073	47
New Hampshire	1,099	762	69	238	22	679	62
New Jersey	7,186	3,932	55	1,554	22	3,482	48
New Mexico	1,632	1,024	63	414	25	892	55
New York	16,045	8,755	55	3,460	22	7,703	48
North Carolina	7,907	4,814	61	1,861	24	4,265	54
North Dakota	593	364	61	243	41	311	52
Ohio	9,286	5,886	63	2,249	24	5,515	59
Oklahoma	3,037	1,960	65	1,024	34	1,690	56
Oregon	3,262	2,288	70	723	22	2,083	64
Pennsylvania	10,426	6,455	62	2,960	28	5,620	54
Rhode Island	867	518	60	196	23	445	51
South Carolina	3,886	2,545	66	1,213	31	2,221	57

(continued on next page)

Table 37 Wildlife-Related Recreation Participation in United States, by Resident State: 2016 (continued)
(Population 16 years and older. Numbers in thousands)

(continued from previous page)

		TOTAL PARTICIPANTS		SPORTSPERSONS		WILDLIFE WATCHERS	
	POPULATION	#	% Pop.	#	% Pop.	#	% Pop.
South Dakota	666	460	69	290	44	348	52
Tennessee	5,252	3,432	65	1,485	28	3,093	59
Texas	20,921	13,643	65	7,467	36	11,399	54
Utah	2,174	1,365	63	617	28	1,177	54
Vermont	521	369	71	156	30	331	64
Virginia	6,610	3,924	59	2,009	30	3,339	51
Washington	5,684	3,313	58	1,161	20	2,994	53
West Virginia	1,507	1,025	68	600	40	905	60
Wisconsin	4,624	3,470	75	1,885	41	3,116	67
Wyoming	459	306	67	157	34	262	57

1 U.S. totals include responses from participants residing in the District of Columbia, as described in Appendix D.
SOURCE: Estimates in this table, including population totals, are composites from the fishing, hunting, and wildlife watching surveys (see Appendix D).
NOTE: Detail does not add to total because of multiple responses.

Table 38 Anglers and Hunters in the United States, by Resident State: 2016

(Population 16 years and older. Numbers in thousands)

		FISHED AND/OR HUNTED		FISHED ONLY		HUNTED ONLY		FISHED AND HUNTED	
	POPULATION	#	% Pop.	#	% Pop.	#	% Pop.	#	% Pop.
UNITED STATES [1]	**254,956**	**67,972**	**27**	**42,146**	**17**	**8,510**	**3**	**17,175**	**7**
Alabama	3,871	1,343	35	677	18	*220	*6	446	12
Alaska	550	209	38	94	17	*27	*5	87	16
Arizona	5,370	1,022	19	741	14	*54	*1	*226	*4
Arkansas	2,347	802	34	432	18	*108	*5	263	11
California	30,900	5,200	17	4,241	14	*509	*2	*450	*1
Colorado	4,302	1,126	26	679	16	*146	*3	300	7
Connecticut	2,916	689	24	564	19	—	—	*83	*3
Delaware	761	185	24	133	17	—	—	*24	*3
Florida	16,577	4,992	30	3,924	24	—	—	*984	*6
Georgia	7,929	2,175	27	1,268	16	*137	*2	754	10
Hawaii	1,104	268	24	235	21	—	—	*28	*2
Idaho	1,266	489	39	266	21	75	6	148	12
Illinois	10,216	2,102	21	1,549	15	*182	*2	*370	*4
Indiana	5,220	1,550	30	959	18	182	3	409	8
Iowa	2,476	690	28	314	13	117	5	260	10
Kansas	2,248	672	30	366	16	82	4	224	10
Kentucky	3,510	1,271	36	586	17	282	8	396	11
Louisiana	3,661	1,400	38	810	22	142	4	440	12
Maine	1,104	403	37	212	19	56	5	132	12
Maryland	4,781	750	16	519	11	*126	*3	*105	*2
Massachusetts	5,570	1,070	19	858	15	*75	*1	*123	*2
Michigan	7,979	2,524	32	1,498	19	389	5	606	8
Minnesota	4,345	1,683	39	840	19	386	9	457	11
Mississippi	2,333	972	42	*444	*19	*103	*4	424	18
Missouri	4,836	1,541	32	737	15	252	5	553	11
Montana	828	367	44	144	17	63	8	160	19
Nebraska	1,470	459	31	262	18	86	6	110	8
Nevada	2,285	506	22	304	13	*70	*3	*132	*6
New Hampshire	1,099	200	18	121	11	*42	*4	*37	*3
New Jersey	7,186	1,652	23	1,386	19	—	—	*226	*3
New Mexico	1,632	451	28	309	19	*47	*3	95	6
New York	16,045	3,475	22	1,840	11	722	4	913	6
North Carolina	7,907	2,090	26	1,520	19	*170	*2	394	5
North Dakota	593	198	33	78	13	*36	*6	84	14
Ohio	9,286	2,056	22	1,068	12	*575	*6	*413	*4
Oklahoma	3,037	1,119	37	631	21	136	4	352	12
Oregon	3,262	768	24	553	17	*55	*2	160	5
Pennsylvania	10,426	2,843	27	1,196	11	730	7	917	9
Rhode Island	867	185	21	164	19	—	—	*11	*1
South Carolina	3,886	1,162	30	671	17	156	4	335	9

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Table 38 Anglers and Hunters in the United States, by Resident State: 2016 (continued)
(Population 16 years and older. Numbers in thousands)

(continued from previous page)

		FISHED AND/OR HUNTED		FISHED ONLY		HUNTED ONLY		FISHED AND HUNTED	
	POPULATION	#	% Pop.	#	% Pop.	#	% Pop.	#	% Pop.
South Dakota	666	268	40	120	18	64	10	82	12
Tennessee	5,252	1,403	27	957	18	*197	*4	213	4
Texas	20,921	7,595	36	4,417	21	*495	*2	2,682	13
Utah	2,174	611	28	400	18	93	4	119	5
Vermont	521	153	29	51	10	37	7	64	12
Virginia	6,610	1,807	27	1,178	18	*197	*3	433	7
Washington	5,684	933	16	694	12	*73	*1	*165	*3
West Virginia	1,507	513	34	220	15	109	7	181	12
Wisconsin	4,624	1,835	40	804	17	478	10	540	12
Wyoming	459	172	38	87	19	*21	*5	64	14

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

1 U.S. totals include responses from participants residing in the District of Columbia, as described in Appendix D.

SOURCE: Estimates for population totals are composites from the fishing, hunting, and wildlife watching surveys. All other estimates are composites of the fishing and hunting surveys (see Appendix D).

Table 39 Wildlife-Related Recreation by State Residents and Nonresidents Combined, by State of Activity: 2016

(Population 16 years and older. Numbers in thousands)

	TOTAL PARTICIPANTS		SPORTSPERSONS		WILDLIFE WATCHERS	
	#	%	#	%	#	%
UNITED STATES [1]	**156,600**	**100**	**68,192**	**44**	**137,211**	**88**
Alabama	3,679	100	1,980	54	2,730	74
Alaska	1,265	100	561	44	915	72
Arizona	5,096	100	1,230	24	4,465	88
Arkansas	2,537	100	1,248	49	1,985	78
California	17,852	100	4,211	24	16,418	92
Colorado	5,041	100	1,853	37	4,260	85
Connecticut	2,383	100	731	31	2,051	86
Delaware	955	100	484	51	647	68
Florida	14,634	100	6,678	46	11,962	82
Georgia	5,940	100	2,377	40	5,020	85
Hawaii	1,125	100	387	34	937	83
Idaho	1,796	100	839	47	1,545	86
Illinois	6,603	100	2,187	33	5,833	88
Indiana	4,144	100	1,723	42	3,629	88
Iowa	2,457	100	1,127	46	2,142	87
Kansas	2,085	100	1,163	56	1,455	70
Kentucky	3,081	100	1,576	51	2,584	84
Louisiana	2,915	100	1,799	62	2,345	80
Maine	2,145	100	883	41	1,740	81
Maryland	4,257	100	1,421	33	3,556	84
Massachusetts	4,748	100	1,439	30	4,220	89
Michigan	6,687	100	3,028	45	5,839	87
Minnesota	4,092	100	2,035	50	3,362	82
Mississippi	2,007	100	1,559	78	1,538	77
Missouri	4,511	100	2,450	54	3,770	84
Montana	2,121	100	1,298	61	1,745	82
Nebraska	1,266	100	663	52	1,003	79
Nevada	2,387	100	773	32	2,093	88
New Hampshire	1,655	100	569	34	1,455	88
New Jersey	4,821	100	1,798	37	4,108	85
New Mexico	2,010	100	607	30	1,757	87
New York	10,288	100	4,340	42	8,890	86
North Carolina	7,120	100	2,684	38	6,134	86
North Dakota	576	100	391	68	437	76
Ohio	6,639	100	2,483	37	5,969	90
Oklahoma	2,579	100	1,420	55	2,001	78
Oregon	4,151	100	1,212	29	3,663	88
Pennsylvania	8,090	100	3,507	43	7,120	88
Rhode Island	947	100	400	42	741	78
South Carolina	3,510	100	1,660	47	3,009	86

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Table 39 Wildlife-Related Recreation by State Residents and Nonresidents Combined, by State of Activity: 2016 (continued)
(Population 16 years and older. Numbers in thousands)

(continued from previous page)

	TOTAL PARTICIPANTS		SPORTSPERSONS		WILDLIFE WATCHERS	
	#	%	#	%	#	%
South Dakota	1,855	100	1,182	64	1,435	77
Tennessee	5,341	100	2,130	40	4,758	89
Texas	14,720	100	7,955	54	12,228	83
Utah	2,747	100	1,198	44	2,450	89
Vermont	1,013	100	552	54	817	81
Virginia	5,166	100	2,552	49	4,397	85
Washington	3,987	100	1,376	35	3,622	91
West Virginia	1,529	100	863	56	1,337	87
Wisconsin	5,444	100	3,055	56	4,544	83
Wyoming	2,406	100	1,515	63	2,150	89

1 U.S. totals include responses from participants residing in the District of Columbia, as described in Appendix D.
SOURCE: Estimates in this table are composites from the fishing, hunting, and wildlife surveys (see Appendix D).
NOTE: Detail does not add to total because of multiple responses.

Table 40 Anglers and Hunters, by State of Activity: 2016

(Population 16 years and older. Numbers in thousands)

	ANGLERS						HUNTERS					
	Total		Residents		Nonresidents		Total		Residents		Nonresidents	
	#	%	#	%	#	%	#	%	#	%	#	%
UNITED STATES [1]	**59,404**	**100**	**53,813**	**91**	**15,044**	**25**	**25,742**	**100**	**23,687**	**92**	**4,695**	**18**
Alabama	1,498	100	1,020	68	478	32	887	100	663	75	—	—
Alaska	603	100	175	29	428	71	155	100	114	74	—	—
Arizona	997	100	844	85	153	15	514	100	269	52	—	—
Arkansas	1,058	100	660	62	398	38	573	100	349	61	*224	*39
California	4,674	100	4,417	95	258	6	*650	100	*622	*96	—	—
Colorado	1,414	100	890	63	525	37	584	100	404	69	179	31
Connecticut	610	100	497	81	*112	*18	*130	*100	*115	*88	—	—
Delaware	339	100	121	36	*218	*64	*77	*100	*52	*68	—	—
Florida	6,753	100	4,396	65	2,358	35	*811	100	*805	*99	—	—
Georgia	2,106	100	1,908	91	199	9	1,039	100	881	85	*159	*15
Hawaii	534	100	252	47	*282	*53	*36	*100	*30	*83	—	—
Idaho	768	100	374	49	395	51	288	100	215	75	—	—
Illinois	1,740	100	1,466	84	*275	*16	511	100	445	87	—	—
Indiana	1,367	100	1,206	88	*162	*12	637	100	539	85	—	—
Iowa	604	100	488	81	116	19	347	100	308	89	—	—
Kansas	731	100	542	74	*189	*26	707	100	304	43	*403	*57
Kentucky	1,120	100	931	83	*189	*17	850	100	662	78	*188	*22
Louisiana	1,422	100	1,206	85	*216	*15	561	100	528	94	—	—
Maine	729	100	340	47	389	53	343	100	184	54	*159	*46
Maryland	1,049	100	568	54	481	46	298	100	215	72	*83	*28
Massachusetts	1,370	100	856	62	514	38	163	100	159	98	—	—
Michigan	2,482	100	1,923	77	559	23	1,059	100	978	92	—	—
Minnesota	1,836	100	1,238	67	599	33	909	100	811	89	*98	*11
Mississippi	966	100	818	85	*147	*15	614	100	504	82	*111	*18
Missouri	1,637	100	1,050	64	587	36	1,010	100	742	73	*269	*27
Montana	698	100	300	43	398	57	333	100	223	67	*110	*33
Nebraska	397	100	349	88	*48	*12	281	100	179	64	*102	*36
Nevada	357	100	316	89	*41	*11	*442	*100	*144	*33	—	—
New Hampshire	450	100	130	29	320	71	92	100	74	80	*18	*20
New Jersey	1,916	100	1,444	75	472	25	*227	*100	*213	*94	—	—
New Mexico	483	100	341	71	*142	*29	218	100	136	62	*82	*38
New York	3,197	100	2,387	75	810	25	1,449	100	1,309	90	*140	*10
North Carolina	2,678	100	1,796	67	882	33	653	100	510	78	—	—
North Dakota	195	100	136	70	*59	*30	247	100	117	47	*130	*53
Ohio	1,710	100	1,331	78	380	22	1,118	100	988	88	*130	*12
Oklahoma	1,270	100	945	74	*325	*26	540	100	459	85	*81	*15
Oregon	869	100	675	78	193	22	250	100	211	84	—	—
Pennsylvania	2,404	100	1,834	76	570	24	1,688	100	1,590	94	*97	*6
Rhode Island	355	100	152	43	*203	*57	*25	*100	*21	*84	—	—
South Carolina	1,462	100	963	66	499	34	494	100	453	92	—	—

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Table 40 Anglers and Hunters, by State of Activity: 2016 (continued)
(Population 16 years and older. Numbers in thousands)

(continued from previous page)

	ANGLERS						HUNTERS					
	Total		Residents		Nonresidents		Total		Residents		Nonresidents	
	#	%	#	%	#	%	#	%	#	%	#	%
South Dakota	330	100	194	59	137	42	620	100	146	24	473	76
Tennessee	1,477	100	988	67	489	33	531	100	406	76	*125	*24
Texas	7,020	100	6,809	97	211	3	3,382	100	3,177	94	205	6
Utah	603	100	460	76	143	24	229	100	205	90	—	—
Vermont	333	100	107	32	*226	*68	99	100	79	80	*21	*21
Virginia	1,833	100	1,397	76	436	24	633	100	590	93	*43	*7
Washington	916	100	780	85	136	15	213	100	209	98	—	—
West Virginia	415	100	345	83	*69	*17	388	100	286	74	*102	*26
Wisconsin	2,142	100	1,313	61	829	39	1,207	100	982	81	*225	*19
Wyoming	412	100	136	33	276	67	313	100	82	26	*231	*74

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably
1 U.S. totals include responses from participants residing in the District of Columbia, as described in Appendix D.
SOURCE: Estimates in this table are composites from the fishing and hunting surveys (see Appendix D).
NOTE: For the U.S. row, detail does not add to total because of multiple responses.

APPENDIX A

Definitions[1]

Annual household income
Total 2015 income of household members before taxes and other deductions.

Around-the-home wildlife watching
Activity within 1 mile of home with one of six primary purposes: (1) taking special interest in or trying to identify birds or other wildlife; (2) photographing wildlife; (3) feeding birds or other wildlife; (4) maintaining natural areas of at least one-quarter acre for the benefit of wildlife; (5) maintaining plantings (such as shrubs and agricultural crops) for the benefit of wildlife; and (6) visiting parks and natural areas to observe, photograph, or feed wildlife.

Auxiliary equipment
Equipment owned primarily for wildlife-associated recreation. For the sportspersons section, these include sleeping bags, packs, duffel bags, tents, binoculars and field glasses, special fishing and hunting clothing, foul weather gear, boots and waders, maintenance and repair of equipment, and processing and taxidermy costs. For the wildlife-watching section, these include tents, tarps, frame packs, backpacking and other camping equipment, and blinds. For both sportspersons and wildlife watchers, it also includes electronic auxiliary equipment such as Global Positioning Systems.

Away-from-home wildlife watching
Trips or outings at least 1 mile from home for the primary purpose of observing, photographing, or feeding wildlife. Trips to zoos, circuses, aquariums, museums or trips for hunting, fishing or scouting for game are not included.

Big game
Bear, deer, elk, moose, wild turkey, and similar large animals hunted.

Day
Any part of a day spent participating in a given activity. For example, if someone hunted two hours one day and three hours another day, it would be reported as two days of hunting. If someone hunted two hours in the morning and three hours in the afternoon of the same day, it would be considered one day of hunting.

Education
The highest completed grade of school or year of college.

Expenditures
Money spent in 2016 for wildlife-related recreation trips in the United States, wildlife-related recreational equipment purchased in the United States, and other items. The "other items" are books, magazines, and DVDs; membership dues and contributions; land leasing or owning; hunting and fishing licenses; and plantings, all for the purpose of wildlife-related recreation. Expenditures include both money spent by participants for themselves and the value of gifts they received.

Fishing
The sport of catching or attempting to catch fish with a hook and line, bow and arrow, or spear; it also includes catching or gathering shellfish (clams, crabs, etc.); and the noncommercial seining or netting of fish, unless the fish are for use as bait. For example, seining for smelt is fishing, but seining for bait minnows is not included as fishing.

1 Due to intentional consistencies in data collection, these definitions predominantly match those provided by U.S. Census in their 2011 reports.

Fishing equipment

Items owned primarily for fishing:

- Rods, reels, poles, and rodmaking components
- Lines and leaders
- Artificial lures, flies, baits, and dressing for flies or lines
- Hooks, sinkers, swivels, and other items attached to a line, except lures and baits
- Tackle boxes
- Creels, stringers, fish bags, landing nets, and gaff hooks
- Minnow traps, seines, and bait containers
- Depth finders, fish finders, and other electronic fishing devices
- Ice fishing equipment
- Other fishing equipment (such as scales, knives, fishing hook disgorgers, fish fighting chairs, outriggers, down-riggers, rod holders and rod belts, fishing vests, and spear fishing and scuba equipment)

Freshwater

Reservoirs, lakes, ponds, and the nontidal portions of rivers and streams.

Great Lakes fishing

Fishing in Lakes Superior, Michigan, Huron, St. Clair, Erie, and Ontario, their connecting waters such as the St. Mary's River system, Detroit River, St. Clair River, and the Niagara River, and the St. Lawrence River south of the bridge at Cornwall, New York. Great Lakes fishing includes fishing in tributaries of the Great Lakes for smelt, steelhead, and salmon.

Home

The starting point of a wildlife-related recreational trip. It may be a permanent residence or a temporary or seasonal residence such as a cabin.

Hunting

The sport of shooting or attempting to shoot wildlife with firearms or archery equipment.

Hunting equipment

Items owned primarily for hunting:

- Rifles, shotguns, muzzleloaders, and handguns
- Bows, arrows or other archery equipment
- Telescopic sights
- Decoys and game calls
- Ammunition
- Hand loading equipment and components
- Hunting dogs and associated items
- Other hunting equipment

Land leasing and owning

Leasing or owning land either singly or in cooperation with others for the primary purpose of fishing, hunting, or wildlife watching on it.

Maintain natural areas

To set aside 1/4 acre or more of natural environment, such as wood lots or open fields, for the primary purpose of benefiting wildlife.

Maintain plantings

To introduce or encourage the growth of food and cover plants for the primary purpose of benefiting wildlife.

Metropolitan Statistical Area (MSA)

A Metropolitan Statistical Area is a grouping of one or more counties or equivalent entities that contain at least one urbanized area of 50,000 or more inhabitants. The "Outside MSA" classification includes census-defined Micropolitan Statistical Areas (or Micro areas). A Micro area is defined as a grouping of one or more counties or equivalent entities that contain at least one urban cluster of at least 10,000 but less than 50,000 inhabitants. Refer to https://www.census.gov/programs-surveys/metro-micro.html, for a more detailed definition of the Metropolitan Statistical Area.

Migratory birds

Birds that regularly migrate from one region or climate to another such as ducks, geese, and doves and other birds that may be hunted.

Multiple responses
The term used to reflect the fact that individuals or their characteristics fall into more than one reporting category. An example of a big game hunter who hunted for deer and elk demonstrates the effect of multiple responses. In this case, adding the number of deer hunters (one) and elk hunters (one) would overstate the number of big game hunters (one) because deer and elk hunters are not mutually exclusive categories. In contrast, for example, total participants is the sum of male and female participants, because "male" and "female" are mutually exclusive categories.

Nonresidents
Individuals who do not live in the state being reported. For example, a person living in Texas who watches whales in California is a nonresidential wildlife-watcher in California.

Nonresponse
A term used to reflect the fact that some survey respondents provide incomplete sets of information. For example, a survey respondent may have been unable to identify the primary type of hunting for which a gun was bought. Total hunting expenditure estimates will include the gun purchase, but it will not appear as spending for big game or any other type of hunting. Nonresponses result in reported totals that are greater than the sum of their parts.

Nonresponse also refers to households or individuals who were sampled and sent questionnaires, but did not respond to them.

Observe
To take special interest in or try to identify birds, fish or other wildlife.

Other animals
Coyotes, crows, foxes, groundhogs, prairie dogs, raccoons, alligators, and similar animals that can be legally hunted and are not classified as big game, small game, or migratory birds. They may be classified as unprotected or predatory animals by the state in which they are hunted. Feral pigs are classified as "other animals" in all states except Hawaii, where they are considered big game.

Participants
Individuals who engage in fishing, hunting, or a wildlife-watching activity. Unless otherwise stated, a person has to have hunted, fished, or watched wildlife in 2016 to be considered a participant.

Plantings
See "Maintain plantings."

Primary purpose
The principal motivation for an activity, trip, or expenditure.

Private land
Land owned by a business, nongovernmental organization, private individual, or a group of individuals such as an association or club.

Public land
Land that is owned by local governments (such as county parks and municipal watersheds), state governments (such as state parks and wildlife management areas), or the federal government (such as National Forests, Recreational Areas, and Wildlife Refuges).

Residents
Individuals who lived in the state being reported. For example, a person who lives in California and watches whales in California is a residential wildlife watcher in California. Residency was based on the location of the sampled address that the household screener was mailed to.

Rural
All territory, population, and housing units located outside of urbanized areas and urban clusters, as determined by the U.S. Census Bureau.

Saltwater
Oceans, tidal bays and sounds, and the tidal portions of rivers and streams.

Screening surveys

A screening survey was mailed to sampled addresses with the instruction for an adult in the household to complete the survey and return by mail. The screening survey gathered data such as age and sex and activity participation history for all individuals age six and older in the household. Responses were used to identify respondents eligible to receive the in-depth surveys about participation in 2016. Further information on screening surveys is available on page v in the "Background and Method" section of this report.

Small game

Grouse, pheasants, quail, rabbits, squirrels, and similar small animals for which states have small game seasons and bag limits.

Special equipment

Big-ticket equipment items that are owned primarily for wildlife-related recreation:

- Bass boats
- Other types of motor boats
- Canoes and other types of nonmotor boats
- Boat motors, boat trailer/hitches, and other boat accessories
- Pickups, campers, vans, travel or tent trailers, motor homes, house trailers, recreational vehicles (RVs)
- Cabins
- Off-the-road vehicles such as trail bikes, all terrain vehicles (ATVs), dune buggies, four-wheelers, 4x4 vehicles, and snowmobiles
- Other special equipment

Spenders

Individuals who spent money on fishing, hunting, or wildlife-watching activities or equipment and also participated in those activities.

Sportspersons

Individuals who engaged in fishing, hunting, or both.

Trip

An outing involving fishing, hunting, or wildlife watching. A trip may begin from an individual's principal residence or from another place, such as a vacation home or the home of a relative. A trip may last an hour, a day, or many days.

Type of fishing

There are three types of fishing: (1) freshwater except Great Lakes, (2) Great Lakes, and (3) saltwater.

Type of hunting

There are four types of hunting: (1) big game, (2) small game, (3) migratory bird, and (4) other animal.

Unspecified expenditure

An item that was purchased for use in both fishing and hunting, rather than primarily one or the other. Auxiliary equipment, special equipment, magazines and books, and membership dues and contributions are the items for which a purchase could be categorized as "unspecified."

Urban

All territory, population, and housing units located within boundaries that encompass densely settled territory, consisting of core census block groups or blocks that have a population density of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile. Under certain conditions, less densely settled territory may be included, as determined by the U.S. Census Bureau.

Visit parks or natural areas

A visit to places accessible to the public and that are owned or leased by a governmental entity, nongovernmental organization, business, or a private individual or group such as an association or club.

Wildlife

Animals such as birds, fish, insects, mammals, amphibians, and reptiles that are living in natural or wild environments. Wildlife does not include animals living in aquariums, zoos, and other artificial surroundings or domestic animals such as farm animals or pets.

Wildlife observed, photographed, or fed

Examples of species that wildlife watchers observe, photograph, and/or feed are (1) Wild birds—songbirds such as cardinals, robins, and warblers; birds of prey such as hawks, owls, and eagles; waterfowl such as ducks, geese, and swans; other water birds such as shorebirds, herons, pelicans, and cranes; and other birds such as pheasants,turkeys, and road runners; (2) Land mammals— large land mammals such as deer and bears; small land mammals such as squirrels, prairie dogs, and groundhogs; (3) Fish; (4) Marine mammals such as seals, whales, and dolphins; and (5) Other wildlife such as frogs, turtles, crabs, and butterflies.

Wildlife-related recreation

Recreational fishing, hunting, and wildlife watching.

Wildlife watching

There are six types of wildlife watching that fulfill a special interest in wildlife in ways other than hunting and fishing: (1) closely observing, (2) photographing, (3) feeding, (4) visiting parks or natural areas, (5) maintaining plantings, and (6) maintaining natural areas. These activities must be the primary purpose of the trip or the around-the-home undertaking.

Wildlife-watching equipment

Items owned primarily for observing, photographing, or feeding wildlife:

- Binoculars and spotting scopes
- Cameras, video cameras, special lenses, and other photographic equipment including memory cards
- Film and developing
- Commercially prepared and packaged wild bird food
- Other bulk food used to feed wild birds
- Food for other wildlife
- Nest boxes, bird houses, feeders, and baths
- Day packs, carrying cases, and special clothing
- Other items such as field guides and maps

APPENDIX B

2015 Participation of 6- to 15-Year-Olds: Data From Screening Interviews

The 2016 50-State Survey was carried out in two phases. The first (or screening) phase began in March 2016. The main purpose of this phase was to collect information about up to four adults 16 years and older per household in order to develop a sample of potential anglers, hunters and wildlife watchers for three waves of follow-up questionnaires. However, information was also collected on up to four persons 6 to 15 years old per household who participated in wildlife-related recreation activities in 2015.

It is important to emphasize that the information reported from the 2016 screening survey relates to activities reported from January 1 to December 31, 2015. Also, these data are reported by one household respondent speaking for all household members rather than the actual participants. In addition, data from the screener are based on longer recall periods than the follow-ups, asking about the full year of 2015 and earlier (for questions about ever having done an activity) in the single screener sent in early 2016, while the follow-up survey was sent up to three times in 2016 to ask about activity during that year.

Because of differences in methodologies of the screening and the detailed follow-up questionnaires of the 2016 50-State Survey, the estimates of the two phases are not comparable. Only participants 16 years old and older were eligible for the detailed follow-up phases. The screening phase covered activities from January 1 to December 31, 2015. Three waves of follow-up questionnaires included Wave 1 which covered approximately the first half of 2016; Wave 2, covered about the third quarter of 2016 and Wave 3, which covered the remainder of 2016 and all of 2016 for those sampled as non-participants, and also included questions about "big-ticket" expenditures in all of 2016. The screening phase was a single mail questionnaire expected to be filled by one of the household members who reported household events from January 1 to December 2015 for up to four adults and four children. The detailed follow-up phase had three follow-up questionnaire tracks, fishing, hunting and wildlife watching, and was sent to the selected participants, 16 or older, in 2016 and early 2017.

The following Appendix B tables present data from the screening survey about the participation of 6- to 15-year-olds in 2015.

TABLE B1 Oklahoma Residents 6 to 15 Years Old Fishing and/or Hunting Both In-and-Out of Oklahoma: 2015

(Population 6 to 15 years old. Numbers in thousands)

	TOTAL	% SPORTSPERSONS	% POPULATION
SPORTSPERSONS	**362**	**100**	**68**
ANGLERS	**357**	**99**	**67**
Fished only	236	65	44
Fished and hunted	121	33	23
HUNTERS	**126**	**35**	**24**
Hunted only	—	—	—
Hunted and fished	121	33	23

— Sample size too small (less than 10) to report data reliably

NOTE: Detail does not add to total because of multiple responses. Column showing percent of sportspersons is based on the "Total sportspersons" row. Column showing percent of population is based on the state population 6 to 15 years old, including those who did not fish or hunt. Data reported on this table are from screening interviews in which one adult household member responded for household members 6 to 15 years old. The screening interview required the respondent to recall 12 months worth of activity. Includes state residents who fished or hunted only in other countries.

TABLE B2 Oklahoma Residents 6 to 15 Years Old Wildlife Watching Both In-and-Out of Oklahoma: 2015

(Population 6 to 15 years old. Numbers in thousands)

The screening survey of the 2016 50-State Survey did not include questions about participation in different types of wildlife-watching activities, so this table from the 2011 state report by the U.S. Census Bureau is not applicable. Information about wildlife-watching participation in general can be found in table B4.

TABLE B3 Oklahoma Resident Anglers or Hunters 6 to 15 Years Old by Selected Characteristics: 2015
(Population 6 to 15 years old. Numbers in thousands)

	POPULATION		SPORTSPERSONS			ANGLERS			HUNTERS		
	Total	%	Total	%	% Population	Total	%	% Population	Total	%	% Population
TOTAL	**534**	**100**	**362**	**100**	**68**	**357**	**100**	**67**	**126**	**100**	**24**
RESIDENCE DENSITY											
Urban	392	73	240	66	61	236	66	60	72	57	19
Rural	143	27	122	34	86	121	34	85	53	42	37
RESIDENCE SIZE											
Metropolitan Statistical Area (MSA)	414	78	256	71	62	251	70	61	79	63	19
1,000,000 or more	206	39	136	38	66	135	38	66	*39	*31	*19
250,000 to 999.999	123	23	59	16	48	58	16	47	—	—	—
50,000 to 249,999	85	16	61	17	72	58	16	68	*27	*21	*32
Outside MSA	120	22	106	29	88	106	30	88	47	37	39
AGE											
6 to 8 years	175	33	102	28	58	102	29	58	*19	*15	*11
9 to 11 years	160	30	118	33	74	118	33	74	*36	*29	*23
12 to 15 years	199	37	143	40	72	138	39	69	71	56	36
SEX											
Male	292	55	205	57	70	201	56	69	94	75	32
Female	243	46	157	43	65	156	44	64	*32	*25	*13
ETHNICITY											
Hispanic	56	10	*30	*8	*53	*29	*8	*51	—	—	—
Non-Hispanic	478	90	332	92	69	328	92	69	117	93	25
RACE											
White	320	60	223	62	70	218	61	68	72	57	22
African American	*37	*7	*14	*4	*38	*14	*4	*38	—	—	—
All Others	177	33	125	35	70	125	35	70	51	40	29
ANNUAL HOUSEHOLD INCOME											
Less than $20,000	68	13	43	12	63	43	12	63	—	—	—
$20,000 to $29,999	54	10	*37	*10	*69	*36	*10	*67	—	—	—
$30,000 to $39,999	56	10	*38	*10	*68	*38	*11	*68	—	—	—
$40,000 to $49,999	35	7	*28	*8	*78	*28	*8	*78	*16	*13	*44
$50,000 to $74,999	119	22	86	24	73	84	24	70	*26	*21	*22
$75,000 to $99,999	48	9	*31	*9	*66	*31	*9	*66	—	—	—
$100,000 or more	126	24	84	23	67	83	23	66	*39	*31	*31
Not reported	*29	*5	*14	*4	*50	*14	*4	*50	—	—	—

* Estimate based on a sample size of 10-29 — Sample size too small (less than 10) to report data reliably

NOTE: Percent who participated columns show the percent of each row's population who participated in the activity named by the column (the percent of those living in urban areas who watched wildlife, etc.). Remaining percent columns show the percent of each column's participants who are described by the row heading (the percent of wildlife watchers who lived in urban areas, etc.). Data reported on this table are from screening interviews in which one adult household member responded for household members 6 to 15 years old. The screening interview required the respondent to recall 12 months worth of activity. Includes state residents who fished, hunted, or watched wildlife only in other countries.

TABLE B4 Oklahoma Resident Wildlife Watchers 6 to 15 Years Old by Selected Characteristics: 2015
(Population 6 to 15 years old. Numbers in thousands)

	POPULATION		WILDLIFE WATCHERS		
	Total	%	Total	%	% Population
TOTAL	**534**	**100**	**383**	**100**	**72**
RESIDENCE DENSITY					
Urban	392	73	258	67	66
Rural	143	27	125	33	88
RESIDENCE SIZE					
Metropolitan Statistical Area (MSA)	414	78	272	71	66
1,000,000 or more	206	39	143	37	69
250,000 to 999.999	123	23	62	16	50
50,000 to 249,999	85	16	67	17	79
Outside MSA	120	22	110	29	92
AGE					
6 to 8 years	175	33	113	30	64
9 to 11 years	160	30	125	33	78
12 to 15 years	199	37	145	38	73
SEX					
Male	292	55	217	57	75
Female	243	46	165	43	68
ETHNICITY					
Hispanic	56	10	*31	*8	*55
Non-Hispanic	478	90	352	92	74
RACE					
White	320	60	236	62	74
African American	*37	*7	*18	*5	*51
All Others	177	33	128	33	72
ANNUAL HOUSEHOLD INCOME					
Less than $20,000	68	13	45	12	67
$20,000 to $29,999	54	10	*41	*11	*75
$30,000 to $39,999	56	10	42	11	76
$40,000 to $49,999	35	7	*28	*7	*78
$50,000 to $74,999	119	22	89	23	75
$75,000 to $99,999	48	9	35	9	72
$100,000 or more	126	24	87	23	69
Not reported	*29	*5	*16	*4	*55

* Estimate based on a sample size of 10-29

NOTE: Detail does not add to total because of multiple responses. The column showing percent of participation is based on total participants. The column showing percent of population is based on the state population 6 to 15 years old, including those who did not participate in wildlife watching. Data reported on this table are from screening interviews in which one adult household member responded for all household members 6 to 15 years old. The screening interview required the respondent to recall 12 months worth of activity. Includes persons who watched wildlife only in other countries.

APPENDIX C

Significant Methodological Changes from Previous Surveys and Regional Trends

The 2016 50-State Survey of Fishing, Hunting, and Wildlife-Related Recreation was designed to continue the data collection of the 1955 to 2011 surveys. While no two surveys are completely comparable, this appendix compares major findings of all the surveys and presents trends for the major categories of wildlife-related recreation where feasible. Differences among the surveys are discussed in three sections (2016, 1991 to 2011, and 1955 to 1985). The years of the three sections reflect significant changes in methodology in 1991 and 2016, so data from surveys conducted before and after those years cannot be compared. Thus, these data are presented separately because reliable trends analysis needs to use data compiled from surveys in which the important elements, such as the sample design and recall period, are not significantly different. All comparison data and text from 1955 to 2011 comes from Appendix C of the *2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation* report produced by the U.S. Census Bureau.

The principal scope and design characteristics of all 13 of the surveys conducted from 1955 to 2016 are summarized in Table C1, and a brief summary of the most significant changes follows.

The 1955 to 1985 surveys required respondents to recall their recreation activities for the full survey year at the beginning of the following year. Beginning in 1991 and continuing through the 2011 survey, respondents were contacted two or three times during the survey year to get their activity information. The change in the recall period was due to a study of the effect of the respondent recall length on survey estimates (Chu, et al., 1992)[1]. The study found significant differences in survey results using annual recall periods versus shorter recall periods. Longer recall periods lead to higher estimates. Even when everything else was held constant, such as questionnaire content and sample design, increasing the respondent's recall period resulted in significantly higher estimates for the same phenomenon.

The recall study also found that the extent of recall bias varied for different types of fishing and hunting participation and expenditures. For example, annual recall respondents gave an estimate of average annual days of saltwater fishing that was 46 percent higher than the trimester recall estimate, while the annual recall estimate of average annual saltwater fishing trips was 30 percent higher than the trimester recall estimate. This means there is no single correction factor for all survey estimates when calculating trends from surveys using different recall periods.

The 2016 50-State Survey was administered by the Rockville Institute with paper questionnaires sent by mail to an address sample. A screener survey was mailed in March 2016. Detailed surveys followed and were mailed one, two, or three times between May 2016 and January 2017. Questions were kept as similar as possible to the 2011 data collection effort, although some changes were necessary for self-administration on paper, as compared with computer-assisted administration by an interviewer. Information from the interviewer guide for the U.S. Census 2011 data collection effort helped inform some changes needed for self-administration.

The U.S. Census Bureau separately conducted a simultaneous data collection based on the 2011 methodology in 2016. Census will provide a separate report documenting the methodology and results of their survey; estimates in their report will likely differ from those in this report.

1 Chu, A., Eisenhower, D., Hay, M, Morganstein, D., Neter, J. and Waksberk, J. 1992. Measuring the Recall Error in Self-Reported Fishing and Hunting Activities. *Journal of Official Statistics*, 8(1), 19-39.

2016 Significant Methodological Differences

Significant methodological and design changes were tested in the 2016 50-State Survey. As a result, estimates from this survey are not directly comparable with those from previous surveys. The most significant methodological differences are described below.

- The 2011 survey data were collected in person or by telephone, by interviewers using computer-assisted questionnaires. The 2016 50-State Survey sent paper questionnaires to sampled addresses.
- Previous surveys from 1955 to 2011 had two types of interviews, covering either wildlife-watching activities and expenditures or both hunting and fishing activities and expenditures. Some respondents were asked to complete both of these interviews. The 2016 50-State Survey had three questionnaires, each covering only hunting, fishing, or wildlife-watching activities and expenditures. No respondents were asked to complete more than one type of questionnaire. Survey designers felt that combining fishing and hunting or asking respondents to complete more than one type of questionnaire would significantly reduce response rates.
- In another difference from previous years because of the paper questionnaire, respondents to the 50-State Survey were asked to report on no more than four states for each activity in each wave. Very few respondents reported activities in more than four states in 2011, so this change likely had little effect on 2016 estimates.
- The 2011 sample design included only likely participants based upon their screener responses. The 50-State Survey also selected likely non-participants for each of the 3 questionnaire types. Likely non-participants received one follow-up survey that covered all of 2016. This change was intended to improve coverage of actual 2016 participants.

Important instrument changes in the 2016 Survey

- The 2016 screener instructions were modified from 2011 to specify that respondents should include all members of their household when completing the screener instrument, even those who did not participate in fishing, hunting, or wildlife-associated activities.
- In 2011, the screener asked a series of questions to ascertain if respondents engaged in any of the following wildlife-associated recreation activities around their home: observing, feeding, photographing, or maintaining natural areas or plantings for wildlife. In the 2016 screener, these questions were condensed into one item that asked about any special interest in wildlife, whether around the home or away from home. The specific activities used in 2011 were provided as examples in the instruction prior to the question.
- In the 2011 screener, respondents were asked the number of days they engaged in an activity in the previous year. The responses were later collapsed into categories ranging from "1 to 3 days" to "30 or more days." In 2016, the items were changed to "yes/no," asking if the respondent had fished or hunted for 10 or more days, or watched wildlife for 21 or more days in 2015.
- In the 2011 screener, respondents were asked their share of activity expenses (for equipment, travel, lodging, license fees, etc.) in the previous year. The responses were later collapsed into categories ranging from "$25 or less" to "$600 or more." In 2016, the items were changed to "yes/no," asking if the respondent spent $100 or more for fishing or hunting and $300 or more for wildlife activities in 2015.
- The series of questions about target shooting and use of a shooting range in preparation for hunting added in 2011 were deleted from the detailed surveys for 2016. Instead, a modified version of these items was added to the 2016 screener: a single yes/no item asking if respondents did any target shooting or sport shooting with a firearm, not including hunting, in 2015.
- A single item asking if respondents participated in any archery activities in 2015, not including hunting, was also added to the 2016 screener.
- The contingent valuation sections of the wildlife questionnaire were dropped for 2016.
- In 2011, respondents were asked which of their reported trips occurred most recently and the month, which were used as bounding for the next wave's interview. These items were dropped from the 2016 50-State Survey because they could not be easily accommodated in the paper questionnaire. Instead, instructions at the beginning of each section included the month when the respondent had submitted their survey in the previous wave, and reminded the respondent to report trips occurring since that last survey.

- Previous annual surveys included questions to identify equipment reported in a prior wave to avoid double-counting. These questions were dropped from the 2016 50-State Survey, again because of limitations of the paper questionnaire design. Similarly as above, the instructions to each respondent include the month they returned the previous questionnaire, and a note to exclude expenditures previously reported.
- In the 2011 Wave 3 surveys, the equipment expenditure sections included experimental questions about whether respondents would have purchased particular items if they had never planned to participate in the associated activity. These experimental questions were not included in the 2016 self-administered survey.
- Since 2001, the trip-related expenditure sections of the detailed surveys included a question about how much was spent on an out-of-state activity in the respondent's home state: "The total amount you spent on your [associated activity] trip(s) to [state] was [dollar amount]. How much of this was spent in your resident state of [resident state]?" The bracketed terms were filled by the questionnaire program. Since such a fill was not possible with a paper questionnaire, the 2016 50-State Survey item read, "What percentage or how much of the total amount you spent on your trip(s) in or to this state was spent in your home state of residence? In other words, how much of what you paid for your trip(s) to another state was paid for in your home state? (Please do not include airfare.)"
- The following note was added to instructions for the equipment expenditure sections in the 2016 50-State Survey: "Do NOT include gifts you purchased for others or hand me downs and inherited items." This language was taken from the field representative (FR) manual for the 2011 survey, and would have been offered by the FR if appropriate.
- In the 2016 50-State Survey, "TOTAL" was added before "days" in the item, "From January 1, 2016, to today, how many days did you [hunt/fish] in the United States?" This was done to clarify that this question asked for an overall count of days, not days per state or sub-activity (e.g., big game, small game, etc.)
- In the 2016 50-State Survey, instructions for the Other Animals section included the note, "ONLY include animals you hunted for sport" to help distinguish it from the Small Game section. This wording followed language in the 2011 FR manual, including the description that Other Animals only includes animals that are considered pests or varmints.
- In previous surveys, "Mourning dove" was included as its own category only for Hawaii. For 2016, the "Mourning dove" response option was removed to capture this species under the "Dove" category for all fifty states.
- For the 2016 50-State Survey, "Feral pig" was differentiated with the note "(Any state but Hawaii)" in the Other Animals section, contrasting with the existing note "(Hawaii only)" used for "Feral pig" in the Big Game section.
- To clarify public land ownership in the hunting questions, the note "(Do not include land leased by the government.)" was added after the item "Did you do any [big game/small game/migratory bird/other animal] hunting in this state on land owned by the local, State, or Federal Government?" This language followed the 2011 FR manual.
- Similar notes were added in the trip expenditures sections:

  "On your trips in or to this state from January 1, 2016 to today, how much was spent for YOUR SHARE of..."

  > "Public land use or access fees? (Include fees for any land owned by the local, state or Federal government. Do not include leases.)"

  > "Private land use or access fees? ((Include entrance, privilege, or admittance fees for [hunting/fishing] on private lands or [game/shooting or fishing preserves]. Do not include leases.)"
- A note to include brackish water in recreational saltwater fishing was added to the 50-State Survey, "From January 1, 2016 to today, did you do any recreational saltwater fishing? Saltwater fishing means fishing for finfish or shellfish in oceans, bays, sounds, and tidal waters of rivers and streams. Fishing in brackish water, such as the Chesapeake Bay, should be considered saltwater fishing." This wording followed the 2011 FR manual.

- In 2016, examples of shellfish were added to the following question: "On your saltwater trip(s) in or to this state from January 1, 2016 to today, was one type of fish you fished for... Shellfish such as crabs, clams, oysters, lobsters, etc.?"
- The 2011 wildlife watching equipment category "Cameras, videocameras, special lenses, or other photography equipment" was rewritten for 2016 to include "memory cards."

1991 to 2011 Significant Methodological Differences

The most significant design differences in the five surveys are as follows:

- The 1991 Survey data was collected by interviewers filling out paper questionnaires. The data entries were keyed in a separate operation after the interview. The 1996, 2001, 2006, and 2011 Survey data were collected by the use of computer-assisted interviews. The questionnaires were programmed into computers, and the interviewer keyed in the responses at the time of the interview.
- The 1991 Survey screening phase was conducted in January and February of 1991, when a household member of the sample households was interviewed on behalf of the entire household. The screening interviews for the 1996, 2001, and 2006 Surveys were conducted April through June of their survey years in conjunction with the first wave of the detailed interviews. The 2011 Survey also conducted screening interviews and the first detailed interviews April through June of 2011, but furthermore had an additional screening and detailed effort from February 2012 to the end of May 2012. The April–June 2011 screening effort had a high noncontact rate because of poor results using sample telephone numbers obtained from a private firm. Census went back to the noncontacted component of the original sample in February-May 2012 and interviewed a subsample, requiring annual recall for those respondents. The Wave 3 screen sample was 12,484 of the total 48,600 household screen sample. A modification of the 2011 sampling scheme was to oversample counties that had relatively high proportions of hunting license purchases.

The screening interviews for all five Surveys consisted primarily of demographic questions and wildlife-related recreation questions concerning activity in the previous year (1990, 1995, etc.) and intentions for recreating in the survey year.

In the 1991 Survey, an attempt was made to contact every sample person in all three detailed interview waves. In 1996, 2001, 2006, and 2011 respondents who were interviewed in the first detailed interview wave were not contacted again until the third wave (unless they were part of the other subsample, i.e., a respondent in both the sportsperson and wildlife watching subsamples could be in the first and third wave of sportsperson interviewing and the second and third wave of wildlife watching interviewing). Also, all interviews in the second wave were conducted only by telephone. In-person interviews were only conducted in the first and third waves. The 2011 wave 3 screen phase was composed of both telephone and in-person interviews.

Section I.
Important Instrument Changes in the 1996 Survey

- The 1991 Survey collected information on all wildlife-related recreation purchases made by participants without reference to where the purchase was made. The 1996 Survey asked in which state the purchase was made.
- In 1991, respondents were asked what kind of fishing they did, i.e., Great Lakes, other freshwater, or saltwater, and then were asked in what states they fished. In 1996, respondents were asked in which states they fished and then were asked what kind of fishing they did. This method had the advantage of not asking about, for example, saltwater fishing when they only fished in a noncoastal state.
- In 1991, respondents were asked how many days they "actually" hunted or fished for a particular type of game or fish and then how many days they "chiefly" hunted or fished for the same type of game or fish rather than another type of game or fish. To get total days of hunting or fishing for a particular type of game or fish, the "actually" day response was used, while to get the sum of all days of hunting or fishing, the "chiefly" days were summed. In 1996, respondents were asked their total days of hunting or fishing in the country and each state, then how many days they hunted or fished for a particular type of game or fish.

- Trip-related and equipment expenditure categories were not the same for all Surveys. "Guide fee" and "Pack trip or package fee" were two separate trip-related expenditure items in 1991, while they were combined into one category in the 1996 Survey. "Boating costs" was added to the 1996 hunting and wildlife-watching trip-related expenditure sections. "Heating and cooking fuel" was added to all of the trip-related expenditure sections. "Spearfishing equipment" was moved from a separate category to the "other" list. "Rods" and "Reels" were two separate categories in 1991 but were combined in 1996. "Lines, hooks, sinkers, etc." was one category in 1991 but split into "Lines" and "Hooks, sinkers, etc." in 1996. "Food used to feed other wildlife" was added to the wildlife-watching equipment section, "Boats" and "Cabins" were added to the wildlife-watching special equipment section, and "Land leasing and ownership" was added to the wildlife-watching expenditures section.
- Questions asking sportspersons if they participated as much as they wanted were added in 1996. If the sportspersons said no, they were asked why not.
- The 1991 Survey included questions about participation in organized fishing competitions; anglers using bows and arrows, nets or seines, or spearfishing; hunters using pistols or handguns and target shooting in preparation for hunting. These questions were not asked in 1996.
- The 1996 Survey included questions about catch and release fishing and persons with disabilities participating in wildlife-related recreation. These questions were not part of the 1991 Survey.
- The 1991 Survey included questions about average distance traveled to recreation sites. These questions were not included in the 1996 Survey.
- The 1996 Survey included questions about the last trip the respondent took. Included were questions about the type of trip, where the activity took place, and the distance and direction to the site visited. These questions were not asked in 1991.
- The 1991 Survey collected data on hunting, fishing, and wildlife watching by U.S. residents in Canada. The 1996 Survey collected data on fishing and wildlife-watching by U.S. residents in Canada.

Section II.
Important instrument changes in the 2001 Survey

- The 1991 and 1996 single race category "Asian or Pacific Islander" was changed to two categories "Asian" and "Native Hawaiian or Other Pacific Islander". In 1991 and 1996, the respondent was required to pick only one category, while in 2001 the respondent could pick any combination of categories. The next question stipulated that the respondent could only be identified with one category and then asked what that category was.
- The 1991 and 1996 land leasing and ownership sections asked the respondent to combine the two types of land use into one and give total acreage and expenditures. In 2001, the two types of land use were explored separately.
- The 1991 and 1996 wildlife-watching sections included questions on birdwatching for around-the-home participants only. The 2001 Survey added a question on birdwatching for away-from-home participants. Also, questions on the use of birding life lists and how many species the respondent can identify were added.
- "Recreational vehicles" was added to the sportspersons and wildlife-watchers special equipment section. "House trailer" was added to the sportspersons special equipment section.
- Total personal income was asked in the detailed phase of the 1996 Survey. This was changed to total household income in the 2001 Survey.
- A question was added to the trip-related expenditures section to ascertain how much of the total was spent in the respondent's state of residence when the respondent participated in hunting, fishing, or wildlife watching out-of-state.
- Boating questions were added to the fishing section. The respondent was asked about the extent of boat usage for the three types of fishing.
- The 1996 Survey included questions about the months around-the-home wildlife watchers fed birds. These questions were not repeated in the 2001 Survey.
- The contingent valuation sections of the three types of wildlife-related recreation were altered, using an open-ended question format instead of 1996's dichotomous choice format.

Section III.
Important instrument changes in the 2006 Survey

- A series of boating questions was added. The new questions dealt with anglers using motorboats and/or nonmotorboats, length of boat used most often, distance to boat launch used most often, needed improvements to facilities at the launch, whether or not the respondent completed a boating safety course, who the boater fished with most often, and the source and type of information the boater used for his or her fishing.
- Questions regarding catch and release fishing were added. They were whether or not the respondent caught and released fish and, if so, the percent of fish released.
- The proportion of hunting done with a rifle or shotgun, as contrasted with muzzleloader or archery equipment, was asked.
- In the contingent valuation section, where the value of wildlife-related recreation was determined, two quality-variable questions were added: the average length of certain fish caught and whether a deer, elk, or moose was killed. Plus the economic evaluation bid questions were rephrased, from "What is the most your [species] hunting in [State name] could have cost you per trip last year before you would NOT have gone [species] hunting at all in 2001, not even one trip, because it would have been too expensive?", for the hunters, for example, to "What is the cost that would have prevented you from taking even one such trip in 2006? In other words, if the trip cost was below this amount, you would have gone [species] hunting in [State name], but if the trip cost was above this amount, you would not have gone."
- Questions concerning hunting, fishing, or wildlife watching in other countries were taken out of the Survey.
- Questions about the reasons for not going hunting or fishing, or not going as much as expected, were deleted.
- Disability of participants questions were taken out.
- Determination of the types of sites for wildlife watching was discontinued.
- The birding questions regarding the use of birding life lists and the ability to identify birds based on their sight or sounds were deleted.
- Public transportation costs were divided into two sections, "public transportation by airplane" and "other public transportation, including trains, buses, and car rentals, etc.".

Section IV.
Important instrument changes in the 2011 Survey

- The series of boating questions added in 2006 was deleted.
- Questions about target shooting and the usage of a shooting range in preparation for hunting were added. The types of weapon used at the shooting range were quantified.
- Questions about plantings expenditures for the purpose of hunting were added.
- "Feral pig" was recategorized from big game to other animals for all states except Hawaii.
- "Ptarmigan" was included as its own small game category, instead of lumped in "other."
- In previous Surveys, "Moose" was included as its own category only for Alaska. For 2011, "Moose" was included as its own big game category, instead of lumped in "other," for all fifty states.
- In previous Surveys, "Wolf" was included as its own category only for Alaska. For 2011, "Wolf" was included as its own other animal category, instead of lumped in "other," for all fifty states.
- The household income categories were modified. The top categories were changed from "$100,000 or more" to "$100,000 to $149,999" and "$150,000 or more."
- The "Steelhead" category was deleted from the saltwater fish species section, with the idea that it would be included in "other."
- The 2006 around-the-home wildlife-watching category that quantified visitors of "public parks or areas" was rewritten to wildlife watching at "parks or natural areas." This change was to make clear that respondents should include recreating at quasi-governmental and private areas.
- The 2006 wildlife watching equipment category "Film and developing" was rewritten to "Film and photo processing."

1955 to 1985 Significant Methodological Differences

1955 to 1970 Surveys

The 1955 to 1970 Surveys included only substantial participants. Substantial participants were defined as people who participated at least three days and/or spent at least $5 (the 1955–1965 Surveys) or $7.50 (the 1970 Survey) during the surveyed year. Under most circumstances, the Surveys may be compared for totals, but the effects of differences should be considered when comparing the details of the Surveys.

The 1960, 1965, and 1970 Surveys differed from the 1955 National Survey in classification of expenditures as outlined below:

- Alaska and Hawaii were not included in the 1955 Survey.
- Expenditure categories were more detailed in 1970 than in earlier Surveys.
- The 1960 to 1970 classification of some expenditures differs from the 1955 Survey in the following respects:
  - > "Boats and boat motors" shown under "auxiliary equipment" were included in "equipment, other" in 1955.
  - > "Entrance and other privilege fees" asked separately were included in "trip expenditures, other" in 1955.
  - > "Snacks and refreshments" not included with "food" expenditures in the 1960 to 1970 reports were under "trip expenditures, other" in 1955.
  - > Starting in 1960, expenditures on equipment, magazines, club dues, licenses, and similar items were classified by the one sport activity for which expenditures were chiefly made. In 1955, these expenditures were evenly divided among all the activities in which the sportsperson took part.
  - > Compared with 1955, the 1960 to 1970 Surveys reported fewer expenditures within the "other" category because selected items were transferred to more appropriate categories.
  - > Expenditures on alcoholic beverages were reported separately in the 1970 Survey.
- The number of waterfowl hunters in the 1970 Survey is not comparable with those reported in the 1960 and 1965 Surveys. In 1960 and 1965, respondent sportspersons were not included in the waterfowl hunter total if they reported that they went waterfowl hunting but did not take the trip chiefly to hunt waterfowl. In 1970, all respondents who reported that they had hunted waterfowl during 1970, regardless of trip purpose, were included in the total. The number of hunters who did not take trips chiefly to hunt waterfowl in 1970 was 1,054,000.

1975 Survey

In contrast to previous Surveys which covered substantial participants 12 years old and older, the 1975 Survey based all the estimates on responses from individuals 9 years of age and older and did not select respondents based upon substantial participation as defined above. As a result, individuals who participated fewer than three days or spent less than $7.50 on hunting or fishing were included in the estimates of participants, days of activity, and expenditures.

Categories of hunting and fishing expenditures differed from the previous four Surveys in that only major categories were reported. For example, hunting equipment expenditures were not further delineated by subcategory. Similarly, no detail was provided within the category of fishing equipment expenditures. Expenses for items such as daily entrance fees, magazines, club dues, and dogs were categorized as "other" in the 1975 report.

In addition to the above differences, the 1975 Survey gathered data on species sought for the favorite hunting and fishing activity. This data replaced the "chiefly" category where hunting or fishing was the primary purpose of the trip or day of activity. Data omitted in the 1975 Survey that were included in previous Surveys include the respondents' population density of residence, occupation, and level of education.

1980 to 1985 Surveys

The 1980 and 1985 Surveys were similar. Each measured participants, rather than substantial participants. Questions were incorporated into the 1980 and 1985 Survey questionnaires to facilitate the construction of categories of data for comparisons with earlier Surveys. The use of "chiefly" to delimit primary purpose appeared in the 1970 and prior

Surveys, and its use was continued in the 1980 and 1985 Surveys. The expenditure categories in 1980 and 1985 are similar to the 1970 categories with the addition of fish finders, motor homes, and camper trucks as separate categories. The definition of fishing included the use of nets or seines and spearfishing. An extensive wildlife watching section was added in 1980, necessitating a separate detailed phase subsample.

As in the 1970 and 1975 Surveys, the 1980 and 1985 Surveys used a two-phase process to gather information from households and individuals. In the first phase, household respondents were asked to identify each participant six years of age and older who resided in their household. In comparison, the 1975 and 1970 Surveys screened households for participants who were nine years of age and older. In the second phase, the detailed interview phase, interviews were conducted in person for the 1985, 1980, and 1970 Surveys and were conducted by mail for the 1975 Survey. Participants were included in the detailed phase of the Survey if they were at least 12 years old in 1970, 9 years old in 1975, and 16 years old in 1980 and 1985. As a result, the population of hunters and anglers was more narrowly defined in 1980 and 1985. However, estimates of sportspersons 6 years old and older, 9 years old and older, and 12 years old and older, derived from the screening phase, are available for comparison with past Surveys.

Regional Trends

This trends section contains tables covering 2016, 1991 to 2011, and 1955 to 1985, presented in that order. Table C1 describes important methodological differences covering all survey years. The 2016 50-State Survey differed substantially from the 1991 to 2011 surveys, so data from the 2016 50-State Survey are reported separately in tables C2, C3, and C4. The 1991 to 2011 surveys used similar methodologies, making published information for those five Surveys directly comparable, so trends from those years are reported together in tables C5, C6, and C7. The 1955 to 1985 surveys differed significantly from 1991, so trends from these years are reported separately, in tables C8 and C9. Although there were some methodological changes within those years, approximate correction factors have been estimated. Tables C5 through C9 are from the 2011 data collection report by the U.S. Census Bureau.

Table C1a Major Characteristics of Surveys: 1955 to 1975

	1955	1960	1965	1970	1975
SURVEY DESIGN					
Screening interview mode and population of interest	Combined with detailed phase	Personal interview, 12 years old and older	Personal interview, 9 years old and older	Mail questionnaire, 9 years old and older	Telephone interview, 6 years old and older
Detailed interview mode and population of interest	Personal interview, 12 years old and older	Personal interview, 12 years old and older. Substantial participants[1]	Personal interview, 12 years old and older. Substantial participants[1]	Personal interview, 12 years old and older. Substantial participants[2]	Mail questionnaire, 9 years old and older
RESPONDENT'S RECALL PERIOD	1 year	1 year	1 year	1 year	1 year
SAMPLE SIZES					
Screening phase (households)	20,000	18,000	16,000	24,000	106,294
Detailed phase (individuals)					
Fishing and hunting	9,328	10,300	6,400	8,700	20,211
Fishing[4]					
Hunting[4]					
Wildlife watching[3]	x	x	x	x	x
RESPONSE RATES					
Screening phase (households)	NA	NA	NA	NA	95 percent
Detailed phase					
Fishing and hunting	NA	93 percent	NA	NA	37 percent
Fishing[4]					
Hunting[4]					
Wildlife watching[3]	x	x	x	x	x
LEVEL OF REPORTING	National	National	National	National	State and National
DATA COLLECTION AGENT	Private Contractor	U.S. Census Bureau	U.S. Census Bureau	U.S. Census Bureau	Private Contractor

NA Not available x Not applicable; widlife-watching (nonconsumptive) interviews were not conducted prior to 1980.

1 Spent $5.00 or more or participated 3 days or more during the year.

2 Spent $7.50 or more or participated 3 days or more during the year.

3 Termed "noncomsumptive" in 1980, 1985, and 1991 surveys.

4 In the 2016 50-State Survey, the fishing and hunting surveys were not combined as they had been in previous years, so separate numbers are reported for each.

5 The 2016 50-State Survey included three separate waves of data collection in the detailed phase. Respondents completing the Wave 3 survey are counted here.

Table C1b Major Characteristics of Surveys: 1980 to 2001

	1980	1985	1991	1996	2001
SURVEY DESIGN					
Screening interview mode and population of interest	Telephone/personal interview, 6 years old and older	Telephone/personal interview, 6 years old and older	Telephone/personal interview, 6 years old and older	Telephone/personal interview, 6 years old and older	Telephone/personal interview, 6 years old and older
Detailed interview mode and population of interest	Personal interview, 16 years old and older	Personal interview, 16 years old and older	Telephone/personal interview, 16 years old and older	Telephone/personal interview, 16 years old and older	Telephone/personal interview, 16 years old and older
RESPONDENT'S RECALL PERIOD	1 year	1 year	4 months	4–8 months	4–8 months
SAMPLE SIZES					
Screening phase (households)	116,025	102,694	102,804	44,000	52,508
Detailed phase (individuals)					
Fishing and hunting	30,291	28,011	23,179	13,222	25,070
Fishing[4]					
Hunting[4]					
Wildlife watching[3]	5,997	2,667	22,723	9,802	15,303
RESPONSE RATES					
Screening phase (households)	95 percent	93 percent	95 percent	71 percent	75 percent
Detailed phase					
Fishing and hunting	90 percent	92 percent	95 percent	80 percent	88 percent
Fishing[4]					
Hunting[4]					
Wildlife watching[3]	95 percent	94 percent	95 percent	82 percent	90 percent
LEVEL OF REPORTING	State and National	State and National	State and National	State and National	State and National
DATA COLLECTION AGENT	U.S. Census Bureau	U.S. Census Bureau	U.S. Census Bureau	U.S. Census Bureau	U.S. Census Bureau

NA Not available x Not applicable; widlife-watching (nonconsumptive) interviews were not conducted prior to 1980.

1 Spent $5.00 or more or participated 3 days or more during the year.

2 Spent $7.50 or more or participated 3 days or more during the year.

3 Termed "noncomsumptive" in 1980, 1985, and 1991 surveys.

4 In the 2016 50-State Survey, the fishing and hunting surveys were not combined as they had been in previous years, so separate numbers are reported for each.

5 The 2016 50-State Survey included three separate waves of data collection in the detailed phase. Respondents completing the Wave 3 survey are counted here.

Table C1c Major Characteristics of Surveys: 2006 to 2016

	2006	2011	2016 50-STATE SURVEY
SURVEY DESIGN			
Screening interview mode and population of interest	Telephone/personal interview, 6 years old and older	Telephone/personal interview, 6 years old and older	Mail questionnaire, 6 years old and older
Detailed interview mode and population of interest	Telephone/personal interview, 16 years old and older	Telephone/personal interview, 16 years old and older	Mail questionnaire, 16 years old and older
RESPONDENT'S RECALL PERIOD	4–8 months	4–12 months	4–12 months
SAMPLE SIZES			
Screening phase (households)	66,688	30,400	61,570
Detailed phase (individuals)			
Fishing and hunting	21,938	11,330	
Fishing[4]			12,778[5]
Hunting[4]			9,470[5]
Wildlife watching[3]	11,279	9,329	8,422[5]
RESPONSE RATES			
Screening phase (households)	90 percent	77 percent	25 percent
Detailed phase			
Fishing and hunting	77 percent	67 percent	
Fishing[4]			36 percent
Hunting[4]			37 percent
Wildlife watching[3]	78 percent	66 percent	38 percent
LEVEL OF REPORTING	State and National	State and National	State and National
DATA COLLECTION AGENT	U.S. Census Bureau	U.S. Census Bureau	Rockville Institute

NA Not available x Not applicable; widlife-watching (nonconsumptive) interviews were not conducted prior to 1980.

1 Spent $5.00 or more or participated 3 days or more during the year.

2 Spent $7.50 or more or participated 3 days or more during the year.

3 Termed "noncomsumptive" in 1980, 1985, and 1991 surveys.

4 In the 2016 50-State Survey, the fishing and hunting surveys were not combined as they had been in previous years, so separate numbers are reported for each.

5 The 2016 50-State Survey included three separate waves of data collection in the detailed phase. Respondents completing the Wave 3 survey are counted here.

Table C2 Anglers and Hunters by Census Division: 2016†

(Population 16 years and older. Numbers in thousands)

	2016	
	#	%
UNITED STATES POPULATION	**254,956**	**100**
Sportspersons	67,972	27
Anglers	59,404	23
Hunters	25,742	10
NEW ENGLAND POPULATION	**12,077**	**100**
Sportspersons	2,699	22
Anglers	2,434	20
Hunters	715	6
MIDDLE ATLANTIC POPULATION	**33,657**	**100**
Sportspersons	7,970	24
Anglers	6,477	19
Hunters	3,548	11
EAST NORTH CENTRAL POPULATION	**37,325**	**100**
Sportspersons	10,066	27
Anglers	8,219	22
Hunters	4,185	11
WEST NORTH CENTRAL POPULATION	**16,633**	**100**
Sportspersons	5,513	33
Anglers	4,489	27
Hunters	2,793	17
SOUTH ATLANTIC POPULATION	**50,519**	**100**
Sportspersons	13,698	27
Anglers	12,688	25
Hunters	4,219	8
EAST SOUTH CENTRAL POPULATION	**14,965**	**100**
Sportspersons	4,989	33
Anglers	4,186	28
Hunters	2,283	15
WEST SOUTH CENTRAL POPULATION	**29,966**	**100**
Sportspersons	10,916	36
Anglers	10,028	33
Hunters	4,625	15

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Table C2 Anglers and Hunters by Census Division: 2016† (continued)
(Population 16 years and older. Numbers in thousands)

(continued from previous page)

	2016	
	#	%
MOUNTAIN POPULATION	**18,315**	**100**
Sportspersons	4,744	26
Anglers	4,175	23
Hunters	1,814	10
PACIFIC POPULATION	**41,500**	**100**
Sportspersons	7,377	18
Anglers	6,708	16
Hunters	1,559	4

† Estimates in this table are composites from the fishing and hunting surveys (see Appendix D).
NOTE: Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C5-C9.

Table C3 Wildlife-Watching Participants by Census Division: 2016

(Population 16 years and older. Numbers in thousands)

	2016	
	#	%
UNITED STATES POPULATION	**254,956**	**100**
Wildlife watchers	176,413	69
Away from home	76,955	30
Around the home	171,186	67
NEW ENGLAND POPULATION	**12,077**	**100**
Wildlife watchers	8,669	72
Away from home	3,756	31
Around the home	8,453	70
MIDDLE ATLANTIC POPULATION	**33,657**	**100**
Wildlife watchers	23,054	68
Away from home	10,004	30
Around the home	22,173	66
EAST NORTH CENTRAL POPULATION	**37,325**	**100**
Wildlife watchers	27,010	72
Away from home	11,193	30
Around the home	26,791	72
WEST NORTH CENTRAL POPULATION	**16,633**	**100**
Wildlife watchers	12,685	76
Away from home	5,898	35
Around the home	12,493	75
SOUTH ATLANTIC POPULATION	**50,519**	**100**
Wildlife watchers	33,872	67
Away from home	15,146	30
Around the home	32,625	65
EAST SOUTH CENTRAL POPULATION	**14,965**	**100**
Wildlife watchers	10,744	72
Away from home	4,394	29
Around the home	10,585	71
WEST SOUTH CENTRAL POPULATION	**29,966**	**100**
Wildlife watchers	21,686	72
Away from home	9,128	30
Around the home	21,034	70

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Table C3 Wildlife-Watching Participants by Census Division: 2016 (continued)
(Population 16 years and older. Numbers in thousands)

(continued from previous page)

	2016	
	#	%
MOUNTAIN POPULATION	**18,315**	**100**
Wildlife watchers	13,099	72
Away from home	6,061	33
Around the home	12,246	67
PACIFIC POPULATION	**41,500**	**100**
Wildlife watchers	25,594	62
Away from home	11,375	27
Around the home	24,787	60

NOTE: Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C5-C9.

Table C4 Wildlife Recreation in the United States: 2016
(Numbers in thousands)

	2016
HUNTING	
Hunters, total	26,323
Hunting days, total	553,949
Hunting expenditures, total	$89,684,882
FISHING	
Anglers, total	55,551
Fishing days, total	900,763
Fishing expenditures, total	$103,981,667
WILDLIFE WATCHING	
Wildlife watchers, total	176,413
Around the home	171,186
Away from home	76,955
Wildlife-watching days, away from home	2,528,329
Wildlife-watching expenditures, total	$275,621,282

NOTE: Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C5-C9.

Table C5 Anglers and Hunters by Census Division: 1991, 1996, 2001, 2006, and 2011

(Population 16 years and older. Numbers in thousands)

	1991		1996		2001		2006		2011	
	#	%	#	%	#	%	#	%	#	%
UNITED STATES POPULATION	**189,964**	**100**	**201,472**	**100**	**212,298**	**100**	**229,245**	**100**	**239,313**	**100**
Sportspersons	39,979	21	39,694	20	37,805	18	33,916	15	37,397	16
Anglers	35,578	19	35,246	17	34,067	16	29,952	13	33,112	14
Hunters	14,063	7	13,975	7	13,034	6	12,510	5	13,674	6
NEW ENGLAND POPULATION	**10,180**	**100**	**10,306**	**100**	**10,575**	**100**	**11,233**	**100**	**11,593**	**100**
Sportspersons	1,658	16	1,673	16	1,504	14	1,353	12	1,441	12
Anglers	1,545	15	1,520	15	1,402	13	1,246	11	1,355	12
Hunters	444	4	465	5	386	4	374	3	420	4
MIDDLE ATLANTIC POPULATION	**29,216**	**100**	**29,371**	**100**	**29,806**	**100**	**31,518**	**100**	**32,392**	**100**
Sportspersons	4,508	15	4,192	14	3,810	13	3,214	10	3,966	12
Anglers	3,871	13	3,627	12	3,250	11	2,550	8	3,496	11
Hunters	1,746	6	1,453	5	1,633	5	1,520	5	1,558	5
EAST NORTH CENTRAL POPULATION	**32,188**	**100**	**33,121**	**100**	**34,082**	**100**	**35,609**	**100**	**36,199**	**100**
Sportspersons	7,202	22	6,912	21	6,400	19	5,975	17	6,766	19
Anglers	6,264	19	6,006	18	5,655	17	5,190	15	5,861	16
Hunters	2,789	9	2,712	8	2,421	7	2,376	7	2,688	7
WEST NORTH CENTRAL POPULATION	**13,504**	**100**	**13,875**	**100**	**14,430**	**100**	**15,458**	**100**	**15,860**	**100**
Sportspersons	4,143	31	3,977	29	4,239	29	3,836	25	3,980	25
Anglers	3,647	27	3,416	25	3,836	27	3,284	21	3,591	23
Hunters	1,709	13	1,917	14	1,710	12	1,779	12	1,661	10
SOUTH ATLANTIC POPULATION	**33,682**	**100**	**36,776**	**100**	**39,286**	**100**	**43,965**	**100**	**46,417**	**100**
Sportspersons	6,996	21	7,282	20	6,957	18	6,633	15	6,749	15
Anglers	6,441	19	6,636	18	6,451	16	6,116	14	6,163	13
Hunters	2,083	6	2,050	6	1,875	5	1,884	4	1,870	4
EAST SOUTH CENTRAL POPULATION	**11,667**	**100**	**12,459**	**100**	**12,976**	**100**	**13,722**	**100**	**14,206**	**100**
Sportspersons	2,984	26	2,907	23	2,865	22	2,689	20	3,010	21
Anglers	2,635	23	2,514	20	2,543	20	2,436	18	2,444	17
Hunters	1,279	11	1,301	10	1,164	9	1,101	8	1,531	11
WEST SOUTH CENTRAL POPULATION	**19,926**	**100**	**21,811**	**100**	**23,337**	**100**	**25,407**	**100**	**27,195**	**100**
Sportspersons	5,125	26	5,093	23	4,924	21	4,499	18	4,855	18
Anglers	4,592	23	4,616	21	4,375	19	3,952	16	4,298	16
Hunters	1,843	9	1,812	8	1,988	9	1,810	7	1,909	7

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Table C5 Anglers and Hunters by Census Division: 1991, 1996, 2001, 2006, and 2011 (continued)
(Population 16 years and older. Numbers in thousands)

(continued from previous page)

	1991		1996		2001		2006		2011	
	#	%	#	%	#	%	#	%	#	%
MOUNTAIN POPULATION	**10,092**	**100**	**11,966**	**100**	**13,308**	**100**	**15,651**	**100**	**17,013**	**100**
Sportspersons	2,488	25	2,761	23	2,757	21	2,372	15	2,976	17
Anglers	2,079	21	2,411	20	2,443	18	2,084	13	2,586	15
Hunters	1,069	11	1,061	9	1,020	8	868	6	1,043	6
PACIFIC POPULATION	**29,508**	**100**	**31,787**	**100**	**34,498**	**100**	**36,681**	**100**	**38,438**	**100**
Sportspersons	4,875	17	4,897	15	4,349	13	3,345	9	3,654	10
Anglers	4,505	15	4,501	14	4,111	12	3,094	8	3,319	9
Hunters	1,101	4	1,203	4	837	2	798	2	996	3

NOTE: Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C4 and C8-C9.

Table C6 Wildlife-Watching Participants by Census Division: 1991, 1996, 2001, 2006, and 2011

(Population 16 years and older. Numbers in thousands)

	1991		1996		2001		2006		2011	
	#	%	#	%	#	%	#	%	#	%
UNITED STATES POPULATION	**189,964**	**100**	**201,472**	**100**	**212,298**	**100**	**229,245**	**100**	**239,313**	**100**
Wildlife watchers	76,111	40	62,868	31	66,105	31	71,132	31	71,776	30
Away from home	29,999	16	23,652	12	21,823	10	22,977	10	22,496	9
Around the home	73,904	39	60,751	30	62,928	30	67,756	30	68,598	29
NEW ENGLAND POPULATION	**10,180**	**100**	**10,306**	**100**	**10,575**	**100**	**11,233**	**100**	**11,593**	**100**
Wildlife watchers	4,598	45	3,710	36	3,875	37	4,489	40	3,954	34
Away from home	1,856	18	1,443	14	1,155	11	1,340	12	1,187	10
Around the home	4,544	45	3,586	35	3,765	36	4,310	38	3,858	33
MIDDLE ATLANTIC POPULATION	**29,216**	**100**	**29,371**	**100**	**29,806**	**100**	**31,518**	**100**	**32,392**	**100**
Wildlife watchers	10,556	36	8,185	28	8,740	29	8,723	28	9,118	28
Away from home	4,166	14	2,960	10	2,849	10	2,729	9	2,561	8
Around the home	10,282	35	8,023	27	8,452	28	8,451	27	8,744	27
EAST NORTH CENTRAL POPULATION	**32,188**	**100**	**33,121**	**100**	**34,082**	**100**	**35,609**	**100**	**36,199**	**100**
Wildlife watchers	14,511	45	11,731	35	11,631	34	12,215	34	12,840	35
Away from home	5,572	17	4,501	14	3,571	10	3,792	11	3,168	9
Around the home	14,175	44	11,297	34	11,196	33	11,845	33	12,492	35
WEST NORTH CENTRAL POPULATION	**13,504**	**100**	**13,875**	**100**	**14,430**	**100**	**15,458**	**100**	**15,860**	**100**
Wildlife watchers	6,924	51	5,089	37	6,206	43	6,741	44	5,479	35
Away from home	2,654	20	1,927	14	2,059	14	2,163	14	1,783	11
Around the home	6,722	50	4,900	35	5,938	41	6,447	42	5,201	33
SOUTH ATLANTIC POPULATION	**33,682**	**100**	**36,776**	**100**	**39,286**	**100**	**43,965**	**100**	**46,417**	**100**
Wildlife watchers	13,047	39	11,252	31	11,395	29	12,862	29	13,315	29
Away from home	4,450	13	3,992	11	3,469	9	3,208	7	4,393	9
Around the home	12,813	38	10,964	30	10,911	28	12,432	28	12,767	28
EAST SOUTH CENTRAL POPULATION	**11,667**	**100**	**12,459**	**100**	**12,976**	**100**	**13,722**	**100**	**14,206**	**100**
Wildlife watchers	4,864	42	3,904	31	4,514	35	4,931	36	4,663	33
Away from home	1,592	14	1,118	9	1,086	8	1,758	13	1,456	10
Around the home	4,765	41	3,795	30	4,390	34	4,683	34	4,394	31
WEST SOUTH CENTRAL POPULATION	**19,926**	**100**	**21,811**	**100**	**23,337**	**100**	**25,407**	**100**	**27,195**	**100**
Wildlife watchers	7,035	35	5,933	27	5,747	25	6,764	27	7,164	26
Away from home	2,459	12	2,096	10	1,822	8	2,127	8	1,728	6
Around the home	6,817	34	5,773	26	5,490	24	6,319	25	7,087	26

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Table C6 Wildlife-Watching Participants by Census Division: 1991, 1996, 2001, 2006, and 2011 (continued)
(Population 16 years and older. Numbers in thousands)

(continued from previous page)

	1991		1996		2001		2006		2011	
	#	%	#	%	#	%	#	%	#	%
MOUNTAIN POPULATION	**10,092**	**100**	**11,966**	**100**	**13,308**	**100**	**15,651**	**100**	**17,013**	**100**
Wildlife watchers	4,437	44	4,099	34	4,619	35	4,968	32	5,189	30
Away from home	2,215	22	1,967	16	2,019	15	2,004	13	2,230	13
Around the home	4,145	41	3,855	32	4,282	32	4,605	29	4,716	28
PACIFIC POPULATION	**29,508**	**100**	**31,787**	**100**	**34,498**	**100**	**36,681**	**100**	**38,438**	**100**
Wildlife watchers	10,139	34	8,966	28	9,377	27	9,439	26	10,054	26
Away from home	5,035	17	3,648	11	3,793	11	3,856	11	3,990	10
Around the home	9,641	33	8,558	27	8,504	25	8,664	24	9,337	24

NOTE: Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C4 and C8-C9. This data is from Appendix C of the 2011 report from the U.S. Census Bureau. Reference: U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Table C7a Comparison of Wildlife-Related Recreation in the United States: 1991–1996
(Population 16 years and older. Numbers in thousands)

	1991	1996	PERCENT CHANGE
HUNTING			
Hunters, total	14,063	13,975	[NS]–1
Hunting days, total	235,806	256,676	[NS]9
Hunting expenditures, total	$20,399,152	$29,259,999	43
FISHING			
Anglers, total	35,578	35,246	[NS]–1
Fishing days, total	511,329	625,893	22
Fishing expenditures, total	$39,669,337	$54,224,581	37
WILDLIFE WATCHING			
Wildlife watchers, total	76,111	62,868	–17
Around the home	73,904	60,751	–18
Away from home	29,999	23,652	–21
Wildlife-watching days, away from home	342,406	313,790	[NS]–8
Wildlife-watching expenditures, total	$30,574,499	$36,924,875	21

[NS] Not different from zero at the 5 percent level of significance.

NOTE: All expenditures in 2011 dollars. 1996 expenditures categories made comparable to 1991. Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C4 and C8-C9. This data is from Appendix C of the 2011 report from the U.S. Census Bureau. Reference: U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Table C7b Comparison of Wildlife-Related Recreation in the United States: 1996–2001

(Population 16 years and older. Numbers in thousands)

	1996	2001	PERCENT CHANGE
HUNTING			
Hunters, total	13,975	13,034	–7
Hunting days, total	256,676	228,368	–11
Hunting expenditures, total	$29,259,999	$25,993,960	[NS]–11
FISHING			
Anglers, total	35,246	34,071	–3
Fishing days, total	625,893	557,394	–11
Fishing expenditures, total	$54,224,581	$45,076,739	–17
WILDLIFE WATCHING			
Wildlife watchers, total	62,868	66,105	5
Around the home	60,751	62,928	4
Away from home	23,652	21,823	–8
Wildlife-watching days, away from home	313,790	372,006	19
Wildlife-watching expenditures, total	$36,924,875	$42,904,872	16

[NS] Not different from zero at the 5 percent level of significance.

NOTE: All expenditures in 2011 dollars. 1996 and 2001 expenditures categories made comparable to 1991. Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C4 and C8-C9. This data is from Appendix C of the 2011 report from the U.S. Census Bureau. Reference: U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Table C7c Comparison of Wildlife-Related Recreation in the United States: 2001–2006

(Population 16 years and older. Numbers in thousands)

	2001	2006	PERCENT CHANGE
HUNTING			
Hunters, total	13,034	12,510	[NS]–4
Hunting days, total	228,368	219,925	[NS]–4
Hunting expenditures, total	$25,993,960	$25,265,523	[NS]–3
FISHING			
Anglers, total	34,071	29,952	–12
Fishing days, total	557,394	516,781	–7
Fishing expenditures, total	$45,076,739	$46,909,364	[NS]4
WILDLIFE WATCHING			
Wildlife watchers, total	66,105	71,132	8
Around the home	62,928	67,756	8
Away from home	21,823	22,977	[NS]5
Wildlife-watching days, away from home	372,006	352,070	[NS]–5
Wildlife-watching expenditures, total	$42,904,872	$40,023,078	[NS]–7

[NS] Not different from zero at the 5 percent level of significance.

NOTE: All expenditures in 2011 dollars. 2001 and 2006 expenditures categories made comparable to 1991. Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C4 and C8-C9. This data is from Appendix C of the 2011 report from the U.S. Census Bureau. Reference: U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Table C7d Comparison of Wildlife-Related Recreation in the United States: 2006–2011

(Population 16 years and older. Numbers in thousands)

	2006	2011	PERCENT CHANGE
HUNTING			
Hunters, total	12,510	13,674	9
Hunting days, total	219,925	281,884	28
Hunting expenditures, total	$25,265,523	$32,579,640	29
FISHING			
Anglers, total	29,952	33,112	11
Fishing days, total	516,781	553,841	[NS]7
Fishing expenditures, total	$46,909,364	$41,624,599	[NS]–11
WILDLIFE WATCHING			
Wildlife watchers, total	71,132	71,776	[NS]1
Around the home	67,756	68,598	[NS]1
Away from home	22,977	22,496	[NS]–2
Wildlife-watching days, away from home	352,070	335,625	[NS]–5
Wildlife-watching expenditures, total	$40,023,078	$43,636,608	[NS]9

[NS] Not different from zero at the 5 percent level of significance.

NOTE: All expenditures in 2011 dollars. 2006 and 2011 expenditures categories made comparable to 1991. Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C4 and C8-C9. This data is from Appendix C of the 2011 report from the U.S. Census Bureau. Reference: U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Table C7e Comparison of Wildlife-Related Recreation in the United States: 1991–2011

(Population 16 years and older. Numbers in thousands)

	1991	2011	PERCENT CHANGE
HUNTING			
Hunters, total	14,063	13,674	[NS]–3
Hunting days, total	235,806	281,884	20
Hunting expenditures, total	$20,399,152	$32,579,640	60
FISHING			
Anglers, total	35,578	33,112	–7
Fishing days, total	511,329	553,841	8
Fishing expenditures, total	$39,669,337	$41,624,599	[NS]5
WILDLIFE WATCHING			
Wildlife watchers, total	76,111	71,776	–6
Around the home	73,904	68,598	–7
Away from home	29,999	22,496	–25
Wildlife-watching days, away from home	342,406	335,625	[NS]–2
Wildlife-watching expenditures, total	$30,574,499	$43,636,608	43

[NS] Not different from zero at the 5 percent level of significance.

NOTE: All expenditures in 2011 dollars. 2011 expenditures categories made comparable to 1991. Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C4 and C8-C9. This data is from Appendix C of the 2011 report from the U.S. Census Bureau. Reference: U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Table C8 Comparison of Major Findings of the National Surveys: 1955 to 1985

(Population 12 years and older. Numbers in thousands)

	1955	1960	1965	1970	1975	1980	1985
TOTAL SPORTSPERSONS	**24,917**	**30,435**	**32,881**	**36,277**	**45,773**	**46,966**	**49,827**
Anglers	20,813	25,323	28,348	33,158	41,299	41,873	45,345
Freshwater	18,420	21,677	23,962	29,363	36,599	35,782	39,122
Saltwater	4,557	6,292	8,305	9,460	13,738	11,972	12,893
Hunters	11,784	14,637	13,583	14,336	17,094	16,758	16,340
Small game	9,822	12,105	10,576	11,671	14,182	12,496	11,130
Big game	4,414	6,277	6,566	7,774	11,037	11,047	12,576
Waterfowl	1,986	1,955	1,650	2,894	4,284	3,177	3,201
EXPENDITURES[1]	11,401,464	13,948,974	14,991,502	19,618,548	33,398,677	34,517,421	42,058,860
Anglers	7,655,522	9,743,971	9,952,411	13,699,311	23,498,506	23,387,469	28,585,686
Freshwater	5,700,187	7,476,454	7,231,851	10,315,966	17,333,212	16,663,239	18,942,060
Saltwater	1,955,336	2,267,512	2,720,574	3,383,345	6,165,294	5,581,976	7,191,387
Hunters	3,745,942	4,204,997	3,814,303	5,919,236	9,900,171	10,812,058	10,256,668
Small game	1,975,707	2,629,360	2,093,137	2,612,390	4,525,942	3,335,852	2,342,860
Big game	1,295,357	1,251,800	1,424,711	2,631,532	4,238,341	5,638,395	5,345,606
Waterfowl	474,878	323,840	296,452	675,315	1,135,889	766,033	783,315
DAYS	566,870	658,308	708,578	909,876	1,459,551	1,300,983	1,415,379
Fishing	397,447	465,769	522,759	706,187	1,058,075	952,420	1,064,986
Freshwater	338,826	385,167	426,922	592,494	890,576	788,392	895,027
Saltwater	58,621	80,602	95,837	113,694	167,499	164,040	171,055
Hunting	169,423	192,539	185,819	203,689	401,476	348,543	350,393
Small game	118,630	138,192	128,448	124,041	269,653	225,793	214,544
Big game	30,834	39,190	43,845	54,536	100,600	117,406	135,447
Waterfowl	19,959	15,158	13,526	25,113	31,223	26,179	25,933

1 In 1985 dollars.

NOTE: Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C7e. This data is from Appendix C of the 2011 report from the U.S. Census Bureau. Reference: U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

Table C9 Anglers and Hunters by Census Division: 1955 to 1985

(Population 12 years and older. Numbers in thousands)

	POPULATION		SPORTSPERSON, FISHED OR HUNTED		ANGLERS		HUNTERS	
	#	%	#	%	#	%	#	%
UNITED STATES								
1955	118,366	100	24,917	21.1	20,813	17.6	11,784	10.0
1960	131,226	100	30,435	23.2	25,323	19.3	14,637	11.2
1965	141,928	100	32,881	23.2	28,348	20.0	13,585	9.6
1970	155,230	100	36,277	23.4	33,158	21.4	14,336	9.2
1975	171,860	100	45,773	26.6	41,299	24.0	17,094	9.9
1980	184,691	100	46,966	25.4	41,873	22.7	16,758	9.1
1985	195,659	100	49,827	25.5	45,345	23.2	16,340	8.4
NEW ENGLAND								
1955	7,919	100	1,224	15.4	1,002	12.7	589	7.4
1960	8,349	100	1,368	16.4	1,205	14.4	517	6.2
1965	9,256	100	1,650	17.8	1,488	16.0	583	6.3
1970	8,652	100	1,579	18.3	1,430	16.5	582	6.7
1975	9,910	100	2,004	20.2	1,861	18.8	566	5.7
1980	10,205	100	1,974	19.3	1,788	17.5	572	5.6
1985	10,554	100	2,058	19.5	1,914	18.1	552	5.2
MIDDLE ATLANTIC								
1955	24,869	100	3,539	14.2	2,811	11.3	1,608	6.5
1960	26,493	100	3,432	13.0	2,569	9.7	1,723	6.5
1965	27,346	100	3,602	13.2	2,760	10.1	1,631	6.0
1970	28,244	100	4,539	16.1	4,504	14.4	1,731	6.1
1975	30,449	100	5,919	19.4	5,097	16.7	2,096	6.9
1980	30,256	100	5,181	17.1	4,332	14.3	2,001	6.6
1985	31,099	100	5,565	17.9	4,820	15.5	1,972	6.3
EAST NORTH CENTRAL								
1955	25,733	100	5,489	21.3	4,583	17.8	2,538	9.9
1960	26,833	100	6,316	32.5	5,317	19.8	2,985	11.1
1965	28,124	100	6,214	22.1	5,336	19.0	2,563	9.1
1970	31,550	100	7,284	23.1	6,699	21.2	2,812	8.9
1975	32,796	100	9,049	27.6	8,181	24.9	3,392	10.3
1980	33,526	100	8,725	26.0	7,891	23.5	2,955	8.8
1985	33,747	100	8,973	26.6	8,270	24.5	2,814	8.3

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Table C9 Anglers and Hunters by Census Division: 1955 to 1985 (continued)
(Population 12 years and older. Numbers in thousands)

(continued from previous page)

	POPULATION		SPORTSPERSON, FISHED OR HUNTED		ANGLERS		HUNTERS	
	#	%	#	%	#	%	#	%
WEST NORTH CENTRAL								
1955	9,201	100	2,913	31.7	2,346	25.5	1,534	16.7
1960	10,149	100	3,383	33.3	2,855	28.1	1,709	16.8
1965	11,681	100	3,678	31.5	3,226	27.6	1,620	13.9
1970	12,904	100	4,000	31.0	3,579	27.7	1,783	13.8
1975	13,564	100	4,524	33.3	4,089	30.1	1,863	13.7
1980	13,826	100	4,770	34.5	4,220	30.5	1,965	14.2
1985	14,137	100	5,140	36.4	4,681	33.1	1,971	13.9
SOUTH ATLANTIC								
1955	14,336	100	3,223	22.5	2,805	19.6	1,449	10.1
1960	17,798	100	4,423	24.9	3,695	20.8	2,045	11.5
1965	20,593	100	5,626	27.3	5,054	24.5	1,900	9.2
1970	23,539	100	5,461	23.2	5,129	21.8	1,904	8.1
1975	27,127	100	7,110	26.2	6,479	23.9	2,494	9.2
1980	30,512	100	7,769	25.5	7,086	23.2	2,444	8.0
1985	33,636	100	8,721	25.9	8,056	24.0	2,467	7.3
EAST SOUTH CENTRAL								
1955	7,959	100	1,963	24.7	1,665	20.9	989	12.4
1960	9,277	100	2,778	29.9	2,207	23.8	1,510	16.3
1965	9,652	100	2,587	26.8	2,201	22.8	1,294	13.4
1970	9,862	100	2,660	27.0	2,464	25.0	1,162	11.8
1975	10,798	100	3,007	27.8	2,689	24.9	1,355	12.5
1980	11,771	100	3,614	30.7	3,173	27.0	1,567	13.3
1985	12,364	100	3,671	29.7	3,308	26.8	1,441	11.7
WEST SOUTH CENTRAL								
1955	10,250	100	2,560	25.0	2,237	21.8	1,165	11.4
1960	11,837	100	3,666	31.0	3,133	26.5	1,750	14.8
1965	12,724	100	3,713	29.2	3,278	25.8	1,571	12.3
1970	14,624	100	4,380	30.0	4,006	27.4	1,918	13.1
1975	16,628	100	5,781	34.8	5,267	31.7	2,563	15.4
1980	19,136	100	5,862	30.6	5,136	26.8	2,456	12.8
1985	21,184	100	6,418	30.3	5,704	26.9	2,572	12.1

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Table C9 Anglers and Hunters by Census Division: 1955 to 1985 (continued)
(Population 12 years and older. Numbers in thousands)

(continued from previous page)

	POPULATION		SPORTSPERSON, FISHED OR HUNTED		ANGLERS		HUNTERS	
	#	%	#	%	#	%	#	%
MOUNTAIN								
1955	4,529	100	1,369	30.2	1,112	24.6	796	17.6
1960	5,222	100	1,646	31.5	1,372	26.3	1,120	21.4
1965	5,029	100	1,565	31.1	1,261	25.1	988	19.6
1970	5,656	100	2,044	36.1	1,769	31.3	980	17.3
1975	7,576	100	2,570	33.9	2,252	29.7	1,159	15.3
1980	9,160	100	2,903	31.7	2,500	27.3	1,268	13.8
1985	10,215	100	3,128	30.6	2,765	27.1	1,241	12.1
PACIFIC								
1955	13,570	100	2,637	19.4	2,252	16.6	1,116	8.2
1960	15,268	100	3,422	22.4	2,971	19.5	1,279	8.4
1965	17,523	100	4,246	24.2	3,744	21.4	1,433	8.2
1970	20,199	100	4,332	21.4	4,030	20.0	1,466	7.3
1975	23,012	100	5,811	25.2	5,386	23.4	1,607	7.0
1980	26,299	100	6,168	23.5	5,747	21.9	1,531	5.0
1985	38,725	100	6,154	21.4	5,829	20.3	1,310	4.6

NOTE: Methodological differences described in the text make estimates in this table not comparable with the estimates in Tables C2-C7e. This data is from Appendix C of the 2011 report from the U.S. Census Bureau. Reference: U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

APPENDIX D

Sample Design and Statistical Accuracy

This appendix is presented in two parts. The first part is a Source and Accuracy Statement. This statement describes the sampling design for the 2016 50-State Survey and highlights the steps taken to produce estimates from the completed questionnaires. The statement explains the use of standard errors and confidence intervals. It also provides comprehensive information about errors characteristic of surveys and contains discussion and illustrations of methods that may be used to compute standard errors for estimates published in this report.

Source of Data

The estimates in this report are based on data collected in the 2016 50-State Survey conducted by the Rockville Institute.

The eligible universe for the 50-State Survey is the civilian noninstitutionalized and nonbarrack military population living in the United States. The institutionalized population, which is excluded from the population universe, is composed primarily of the population in correctional institutions and nursing homes.

The 2016 50-State Survey was designed to provide state-level estimates of the number of participants in recreational hunting and fishing and in wildlife watching activities (e.g., wildlife observation). Information was collected on the number of participants, where and how often they participated, the type of wildlife encountered, and the amounts of money spent on wildlife-related recreation.

The survey was conducted in two stages: an initial screening of households to identify the number of individuals in a household and their likelihood of participating in fishing, hunting or wildlife watching, and then a series of follow-up surveys of selected persons to collect detailed data about their fishing, hunting and wildlife watching participation and expenditures during 2016.

Sample Design

The 2016 50-State Survey sample design was a stratified, single-stage sample of 292,044 addresses selected via address-based sampling or ABS. A total of 85,955 persons, split across the three activity types, was selected from sampled households completing the screener survey. In order to support state-level estimates with expected levels of precision, the ABS sample was stratified by state, and a sample of addresses was selected from an ABS frame within each state. County-level hunting license counts were acquired to substratify the ABS frame within state by hunting license population density where the counts were available and found useful. These screener and detailed questionnaire sample sizes resulted in 61,570 completed household screeners and 30,670 adults with detailed questionnaire data (split across the three activity types). Some 24,577 addresses were determined to be ineligible (e.g. vacant, nondeliverable).

2016 50-State Survey Screening Sample

The total screening sample in Oklahoma consisted of 8,648 addresses, or housing units. Screening surveys were mailed to these addresses in February 2016; additional mailings were sent to non-respondents. Of all housing units in the sample, 974 were determined to be ineligible for the survey. A total of 1,580 eligible units completed the screening survey for an unweighted response rate of 21% in Oklahoma.[1] Oklahoma's weighted response rate was 23%. Nonresponse occurred when the occupants did not return any of the copies of the screening questionnaires sent to the household.

1 Unweighted response rates are calculated using AAPOR's RR2 formula. Weighted response rates are calculated using the RR4 formula for screener response rates and the RR2 formula for detailed survey response rates.

The screening survey asked about participation in wildlife-related recreation by all household members ages 6 and older. Those 16 and older were assigned to a Participant or Nonparticipant group for fishing, hunting, or wildlife watching. (See next section for details.)

2016 50-State Survey Detailed Samples

Three detailed questionnaire samples were chosen from the 2016 50-State Survey screening sample. One questionnaire asked about participation in fishing activities, another about participation in hunting activities, and a third about wildlife watching activities (i.e., observing, photographing, or feeding wildlife). Each individual age 16 and older was assigned a positive probability of being selected into the fishing sample, a positive probability of being selected into the hunting sample, and a positive probability of being selected into the wildlife watching sample, where those probabilities depended on the individual's participation status (from the screener) in each of those activities. A given person could be sampled for no more than one detailed survey. Note that in contrast to the approach taken in the 2011 National Survey, the 2016 50-State Survey person sample included likely nonparticipants. For example, a person classified as unlikely to hunt based on screener responses still had a chance of selection for the hunting survey. For ease of discussion, we refer to these groups as the "nonparticipant" samples. The sampling of nonparticipants was done to improve coverage of persons who participate in each activity. Since the participant/nonparticipant designation is based on responses given in the screener, which are not necessarily self-reports and do not cover the entire 2016 calendar year, misclassification is possible. So by giving persons classified as nonparticipants the chance to be sampled for the particular detailed survey, we eliminate noncoverage due to such misclassification.

Detailed data for the 2016 50-State Survey were collected in up to three waves. Respondents sampled into participant groups all received the Wave 1 survey starting in late spring of 2016. Some of those who responded to the Wave 1 were sent the Wave 2 survey in late summer of 2016, allowing review of the impact of reference periods. All respondents who completed Wave 1, regardless of their selection or completion of the second wave, were sent a Wave 3 survey in early winter of 2017. All respondents sampled as nonparticipants were included only in Wave 3. The reference period for the participant groups was approximately 4 months for Waves 1 and 2, and either 4 months or 8 months for Wave 3, depending on whether the respondent completed Wave 2. For the nonparticipant groups, the reference period was 12 months.

Fishing

The Rockville Institute selected the detailed questionnaire samples based on information reported during the screening phase regarding the years 2015 and 2016. Specifically, an affirmative response to one or more of the following three questions was used as an indicator that the person was a participant in a particular activity, in this case, fishing. A negative response to all three questions was the indicator that the person was a nonparticipant[2].

- From January 1 to December 31, 2015, did this person do any recreational fishing?
- Since January 1, 2016, has this person done any fishing?
- How likely is it that this person will do any (more) fishing before December 31, 2016?

Those sampled as active and likely anglers were sent the Wave 1 detailed survey in late spring 2016 and, if they responded to Wave 1, the Wave 3 survey in early winter 2017. A subsample of those responding to Wave 1 was also sent the Wave 2 survey in late summer 2016. Those sampled as nonparticipants were sent the Wave 3 detailed survey in early winter 2017.

986 persons were designated to receive the fishing survey in Oklahoma. The sample sizes varied by state to yield targeted levels of precision for state-level estimates. The unweighted nonresponse rate for the fishing survey was 65%, reflecting sampled individuals who did not complete Wave 3 (including those who did not complete Wave 1 and were therefore not sent Wave 3). Overall, 340 of the sampled residents completed the detailed fishing survey, for an unweighted response rate of 35%.

2 In the case of the first two question types, "Yes" responses were considered to be affirmative, while "No" and missing responses were considered negative. In the case of the third question type, responses of "Very likely", "Somewhat likely" and "Somewhat unlikely" were considered to be to the affirmative, while responses of "Very unlikely" and missing were considered negative.

Hunting

The Rockville Institute selected the detailed questionnaire samples based on information reported during the screening phase regarding the years 2015 and 2016. Specifically, an affirmative response to one of more of the following three questions was used as an indicator that the person was a likely participant in a particular activity, in this case, hunting. A negative response to all three questions was the indicator that the person was a nonparticipant[3].

- From January 1 to December 31, 2015, did this person hunt game or other wildlife?
- Since January 1, 2016, has this person done any hunting?
- How likely is it that this person will do any (more) hunting before December 31, 2016?

Those sampled as active or likely hunters were sent the Wave 1 detailed survey in late spring 2016, and, if they responded to Wave 1, the Wave 3 survey in early winter 2017. A subsample of those responding to Wave 1 was also sent the Wave 2 survey in late summer 2016. Those sampled as nonparticipants were sent the Wave 3 detailed survey in early winter 2017.

733 persons were designated to receive the hunting survey in Oklahoma. The sample sizes varied by state to yield targeted levels of precision for state-level estimates. The unweighted nonresponse rate for the hunting survey was 70%, reflecting sampled individuals who did not complete Wave 3 (including those who did not complete Wave 1 and were therefore not sent Wave 3). Overall, 215 of the sampled residents completed the detailed hunting survey, for an unweighted response rate of 30%.

Wildlife Watchers

The Rockville Institute selected the detailed questionnaire samples based on information reported during the screening phase regarding the years 2015 and 2016. Specifically, an affirmative response to one of more of the following three questions was used as an indicator that the person was a participant in a particular activity, in this case, wildlife watching. A negative response to all three questions was the indicator that the person was a nonparticipant[3]. Prior to the questions, respondents were given the following instructions defining a special interest in wildlife: The next questions ask about SPECIAL INTEREST in wildlife in ways OTHER THAN hunting and fishing. We are interested in whether you closely observe, photograph, feed, or maintain natural areas or plantings for wildlife. Please do not include noticing wildlife while doing other activities. Do not include trips to zoos, circuses, aquariums, museums or scouting for game. By wildlife we mean birds, mammals, fish, insects, reptiles such as snakes and lizards, and amphibians such as frogs. DO NOT include farm animals and pets.

- During 2015, did this person take any SPECIAL INTEREST in wildlife?
- Since January 1, 2016, has this person taken any SPECIAL INTEREST in wildlife?
- How likely is it that this person will take any (more) SPECIAL INTEREST in wildlife before December 31, 2016?

Those sampled as active or likely wildlife watchers were sent the Wave 1 detailed survey in late spring 2016 and, if they responded to Wave 1, the Wave 3 survey in early winter 2017. A subsample of those responding to Wave 1 was also sent the Wave 2 survey in late summer 2016. Those sampled as nonparticipants were sent the Wave 3 detailed survey in early winter 2017.

516 persons were designated to receive the wildlife watching survey in Oklahoma. The sample sizes varied by state to yield targeted levels of precision for state-level estimates. The unweighted nonresponse rate for the wildlife watching survey was 68%, reflecting sampled individuals who did not complete Wave 3 (including those who did not complete Wave 1 and were therefore not sent Wave 3). Overall, 164 of the sampled residents completed the detailed wildlife watching surveys, for an unweighted response rate of 32%.

3 In the case of the first two question types, "Yes" responses were considered to be affirmative, while "No" and missing responses were considered negative. In the case of the third question type, responses of "Very likely", "Somewhat likely" and "Somewhat unlikely" were considered to be to the affirmative, while responses of "Very unlikely" and missing were considered negative.

Estimation Procedure

Several stages of adjustments were used to derive the final 2016 50-State Survey person weights. A brief description of the major components of the weights is given below. All statistics for the population 6 to 15 years of age were derived from the screening survey; estimates for this age group are presented in Appendix B. Statistics for the population 16 years old and older come from both the screening and detailed surveys.

Screening Sample

Every interviewed person in the screening sample received a screening weight that was the product of the following factors:

Base Weight

The base weight is equal to the reciprocal of the probability of selection of the address.

Screener Nonresponse Follow-up Subsampling Adjustment

A bit more than half of the sample was designated to receive a third screener mailing (by FedEx) if they had not yet responded; the remainder was not sent the third screener mailing. The subsample assigned to receive this mailing were assigned a screener weight adjustment factor to account for this subsampling.

Unknown Eligibility Adjustment

In an address-based sampling (ABS) mail study such as the 50-State Survey, there is typically a very large proportion of sampled addresses for which no result is returned; i.e., no questionnaire is returned either by the household or by the USPS. While many of these are expected to be eligible nonrespondents, some proportion are ineligible. In such cases, an "adjustment for unknown eligibility" is normally undertaken. This adjustment involves applying the value *e* from the AAPOR response rate formulas to the weights of nonrespondents with unknown eligibility; see AAPOR (2016).

Screener Nonresponse Adjustment

The cases that either responded or were deemed ineligible prior to the third screener mailing or were included in the third screener mailing were used in an adjustment for screener nonresponse. Among these cases, the unknown eligibility-adjusted screener weights of those that finalized as nonrespondents were redistributed to those that finalized as respondents. This redistribution of weights was done within weighting class adjustment cells. The adjustment cells were formed by modeling the probability of response using a classification tree algorithm.

Poststratification Adjustment

To compute final person-level screener weights, the non-response-adjusted household weights were poststratified to control totals for each state/DC by age. The control totals were obtained from the U.S. Census Bureau's Population Estimates Program, and correspond to the civilian non-institutionalized population (including non-barracks military population).

Fishing, Hunting and Wildlife Watching Detailed Survey Samples

Every successfully surveyed person in a given detailed survey sample received a weight that was the product of the following factors:

Screening Weight

This is the person's final weight from the screening sample.

Detailed Survey Sampling Adjustment

The final person-level screener weight was adjusted by the reciprocal of the probability of selection of the person for the particular detailed survey. Each eligible person has an independent, non-zero probability of selection based on responses in the screener classifying them as participants or non-participants in the three activities.

Detailed Survey Nonresponse Adjustment

The person-level weights (which include the factors for person sampling) of those that finalized as nonrespondents were redistributed to those that finalized as respondents. This redistribution of weights was done within weighting class adjustment cells. Within each state, 12 cells were formed initially, using a cross of sampled participation status (participants vs. nonparticipants), 2 metro status categories, and 3 age by gender categories (males 16-44, males 45 or older, and females 16 or older).

Person-level Poststratification Adjustment

To compute final person-level detailed survey weights, the nonresponse-adjusted detailed survey weights were poststratified to control totals, by age, for each state/DC. These are the same control totals (for ages 16 and older) that were used in the poststratification of the person-level screener weights, but with a different number of levels.

Please note that the above describes the procedures for deriving the detailed questionnaire sample weight for each of the three detailed questionnaire sample types (fishing, hunting, wildlife watching.) In some instances, a given estimate is derivable from more than one of the detailed questionnaire samples. Such estimates can be computed either using one of the detailed survey samples alone or with a composite estimator (Hartley, 1962[4]) from the hunting and fishing surveys combined or from all three survey surveys combined.

Composite Estimates

Persons ages 16 and older were sampled for each of the detailed surveys (the fishing survey, the hunting survey, and the wildlife watching survey) and those samples were weighted such that the sample for each individual survey represents the full noninstitutionalized population aged 16 and older. For a limited number of characteristics, estimates may be computed from more than one of the detailed surveys. For example, each of the three detailed surveys asked about participation in fishing in 2016. Thus, to estimate the total number of anglers in 2016, a population estimate could be computed from any of the three detailed surveys. Alternatively, estimates from all three surveys (or from any two of the three) surveys could be averaged together.

This approach of averaging (or, more generally, taking a weighted average of) independent estimates of the same population characteristic, which is referred to as compositing, has the benefit of producing an estimate that is more precise than any of the component estimates. Thus, for certain estimates from the 50-State Survey, estimates from two or more of the surveys were composited, with the relative weights assigned to each of the estimates (in computing the weighted average) proportional to the effective sample sizes of the surveys. For example, a composite estimate of the number of anglers in 2016 (denoted $\hat{T}$ here), computed using survey-specific estimates from both the fishing and hunting surveys, is

$$\hat{T} = \frac{n_{eff,F}}{n_{eff,F} + n_{eff,H}}\hat{T}_F + \frac{n_{eff,H}}{n_{eff,F} + n_{eff,H}}\hat{T}_H,$$

where $n_{eff,F}$ and $n_{eff,H}$ are the effective sample sizes for the fishing and hunting surveys, respectively, and $\hat{T}_F$ and $\hat{T}_H$ are the estimated numbers of anglers from the fishing survey alone and from the hunting survey alone, respectively. The factors $\frac{n_{eff,F}}{n_{eff,F}+n_{eff,H}}$ and $\frac{n_{eff,H}}{n_{eff,F}+n_{eff,H}}$ are referred to as *compositing factors.* Compositing factors for estimates based on the full sample from each survey are given in Table D1. An alternative to using effective sample sizes in the computation of the compositing factors is to use nominal (i.e., actual) sample sizes; for subpopulation estimates, compositing factors based on nominal sample sizes could be used without much loss of precision in general.

Table D2 contains estimates (based on all respondents, including those sampled as nonparticipants) of the total number of sportspersons (those who either hunted or fished, or both), anglers, hunters, and wildlife watchers computed from each of the three surveys separately as well as composite estimates. For the 50-State Survey, in some instances, the separate survey-specific estimates appeared to have different error properties. For example, for estimating wildlife watching participation, the wildlife watching survey used a different, more extensive set of questions than either the fishing or hunting surveys. For estimating the number of sportspersons, the estimate of anglers from the hunting survey exceeds the

4 Hartley, Herman O. 1962. "Multiple Frame Surveys." *Proceedings of the Social Statistics Section, American Statistical Association*, 203-206.

Table D1 Composite factors by sample/survey type combination

	COMPOSITE FACTOR Using all 3 Samples/Surveys	**COMPOSITE FACTOR** Using Fishing and Hunting
Fishing	0.375851124	0.596115556
Hunting	0.254649323	0.403884444
Wildlife Watching	0.369499553	n/a

Table D2 Effects of Compositing: Estimated Total Numbers of Activity Participants–All respondents
(Population 16 years and older. Numbers in thousands)

	SPORTSPERSONS		ANGLERS		HUNTERS		WILDLIFE WATCHERS	
	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error
Fishing Survey	63,665	2,260	55,551	2,205	25,348	1,879	117,941	2,911
Hunting Survey	74,328	3,648	65,091	3,533	26,323	1,208	108,768	3,404
Wildlife Survey	68,569	2,426	61,237	2,434	26,771	1,679	176,413	3,194
2-way composite (Fishing and Hunting)	67,972	2,058	59,404	1,998	25,742	1,259	114,236	2,401
3-way composite (all three surveys)	68,192	1,608	60,082	1,569	26,122	1,046	137,211	1,918

corresponding estimate from the fishing survey, suggesting there may be differential biases affecting these estimates. In such cases, combining the estimates having different error properties or measuring different characteristics using compositing may not be advisable.

The estimates in Tables D3-D5 below all assume the use of single-survey (i.e., not composite) data and weights. Some of the tables in this report do include composite estimates, as indicated in footnotes. As evidenced in Table D2, the composite estimates will likely differ from single-survey estimates of the same characteristics in other tables.

Accuracy of The Estimates

A sample survey estimate has two types of error: sampling and nonsampling. The accuracy of an estimate depends on both types of error. The nature of the sampling error is known given the survey design; the full extent of the nonsampling error is unknown.

Nonsampling Error

For a given estimator, the difference between the estimate that would result if the sample were to include the entire population and the true population value being estimated is known as nonsampling error. There are several sources of nonsampling error that may occur during the development or execution of the survey. It can occur because of circumstances created by the respondent, the survey instrument, or the way the data are collected and processed. For example, errors could occur because:

- The respondent provides incorrect information, the respondent estimates the requested information, or an unclear survey question is misunderstood by the respondent (measurement error).
- Some individuals who should have been included in the survey frame were missed (coverage error).
- Responses are not collected from all those in the sample or the respondent is unwilling to provide information (nonresponse error).
- Values are estimated imprecisely for missing data (imputation error).
- Forms may be lost; data may be incorrectly read during scanning, or recoded in error, etc. (processing error).

The Rockville Institute employs quality control procedures throughout the production process, including the overall design of surveys, the wording of questions, and the review of the work of data processing to minimize these errors. Two types of nonsampling error that can be examined to a limited extent are nonresponse and undercoverage.

Nonresponse

The effect of nonresponse cannot be measured directly, but one indication of its potential effect is the nonresponse rate. For the 2016 50-State Survey in Oklahoma, the household-level nonresponse rate for the screener was 79%. The person-level nonresponse rate for the fishing survey was 65%, for the hunting survey it was 70% and for the wildlife watching survey it was 68%. Since the screener nonresponse rate is a household-level rate and the detailed interview

nonresponse rate is a person-level rate, we cannot combine these rates to derive an overall nonresponse rate. Since it is unlikely the nonresponding households to the 50-State Survey have the same number of persons as the households successfully responding, combining these rates would result in an overestimate of the "true" person-level overall nonresponse rate for the detailed interviews.

Coverage

ABS frames provide excellent coverage of the population as a whole; for surveys like the 50-State Survey that make contact with households via mail (so that households with nonlocatable addresses such as PO box addresses or rural route addresses are included), the coverage is estimated nationally to be about 98 percent (see Link et. al., 2010)[5].

Comparability of Data

Data obtained from the 2016 50-State Survey and other sources are not entirely comparable. This results from differences in survey methodologies and differences in survey processes. This is an example of nonsampling variability not reflected in the standard errors. Therefore, caution should be used when comparing results from different sources (see Appendix C).

A Nonsampling Error Warning

Since the full extent of the nonsampling error is unknown, one should be particularly careful when interpreting results based on small differences between estimates. We recommend that data users incorporate information about nonsampling errors into their analyses, as nonsampling error could impact the conclusions drawn from the results. Caution should also be used when interpreting results based on a relatively small number of cases. Summary measures (such as medians and percentage distributions) may not be very useful when computed on a small subgroup; the data user should examine both the standard error of the estimate and the sample size contributing to the estimate, in order to gauge whether the estimate is useful.

Sampling Error

Since the 2016 50-State Survey estimates come from a sample, they may differ from figures from an enumeration of the entire population using the same questionnaires, instructions, and procedures. For a given estimator, the difference between an estimate based on a sample and the estimate that would result if the sample were to include the entire population is known as sampling error. Standard errors, as calculated by methods described in "Standard Errors and Their Use," are primarily measures of the magnitude of sampling error. However, they may include some nonsampling error.

Standard Errors and Their Use

The sample estimate and its standard error enable one to construct a confidence interval. A confidence interval is a range that has a known probability of including the average result of all possible samples. For example, if all possible samples were surveyed under essentially the same general conditions and using the same sample design, and if an estimate and its standard error were calculated from each sample, then approximately 95 percent of the intervals from 1.96 standard errors below the estimate to 1.96 standard errors above the estimate would include the average result of all possible samples. A particular confidence interval may or may not contain the average estimate derived from all possible samples.

Standard errors may also be used to perform hypothesis testing, a procedure for distinguishing between population parameters using sample estimates. The most common type of hypothesis is that the population parameters are different. An example would be comparing the proportion of anglers to the proportion of hunters. Tests may be performed at various levels of significance. A significance level is the probability of concluding that the characteristics are different when, in fact, they are the same. For example, to conclude that two characteristics are different at the 0.05 level of significance, the absolute value of the estimated difference between characteristics must be greater than or equal to 1.96 times the standard error of the difference. This report uses 95-percent confidence intervals and 0.05 level of significance to determine statistical validity. Consult standard statistical textbooks for alternative criteria.

5 Link, M. W. (2010). Address based sampling: What do we know so far? American Statistical Association webinar, http://ww2.amstat.org/sections/srms/AddressBasedSampling11-29-2010.pdf (Accessed February 23, 2018).

Estimating Standard Errors

The Rockville Institute uses replication methods to estimate the standard errors of the 50-State Survey estimates. These methods primarily measure the magnitude of sampling error. However, they do measure some effects of nonsampling error as well. They do not measure systematic biases in the data associated with nonsampling error. Bias is the average over all possible samples of the differences between the sample estimates and the true value.

Because the data for the 50-State Survey were collected using a complex sample design and the computation of estimates from these surveys involves complex estimation procedures (involving the use of weights computed as described above), software designed for analysis of complex sample survey data should be used. There are many widely available software packages for analysis of complex sample surveys. The SAS SURVEY PROCs, Stata, SUDAAN, WesVar, and the R survey package are a few examples.

When using software designed for analysis of complex sample survey data, in general, a user must specify that jackknife replicate weights are used (for some software, such as R and WesVar, it is necessary to further specify that the replicate weights are JK1), and input the appropriate full-sample weight and replicate weights. There are 160 replicate weights on each data file, but the weight names vary by file (screener, detailed questionnaire).

Examples of how to produce estimates and their variances from the SAS SURVEY PROCs, the R survey[6] package and Excel follow. Each example assumes that the data file in each case is called "MAIN" and the variable of interest is called "&VAR".

6 T. Lumley (2016). "Survey: Analysis of Complex Survey Samples". R package version 3.31-5. https://cran.r-project.org/web/packages/survey/survey.pdf

PRODUCING MEAN ESTIMATES AND VARIANCES USING SAS SURVEY PROCS

Using screener data:

```
PROC SURVEYFREQ DATA=MAIN VARMETHOD=JACKKNIFE NOSUMMARY;
 TABLES &VAR/CLWT VARWT;
 WEIGHT SCRWTD0;
 ODS OUTPUT ONEWAY=RESULTSFCOMP_NATIONAL;
 REPWEIGHTS SCRWTD1 - SCRWTD160;
RUN;
```

Using detailed questionnaire data for participation estimates:

```
PROC SURVEYFREQ DATA=MAIN VARMETHOD=JACKKNIFE NOSUMMARY;
 TABLES &VAR/CLWT VARWT;
 WEIGHT PERS_ADJ3_WGT0;
 ODS OUTPUT ONEWAY=RESULTSFCOMP_NATIONAL;
 REPWEIGHTS PERS_ADJ3_WGT1 - PERS_ADJ3_WGT160;
RUN;
```

Using detailed questionnaire data for days, trips and expenditures:

```
PROC SURVEYMEANS DATA=MAIN VARMETHOD=JACKKNIFE SUM VARSUM;
 VAR &VAR;
 WEIGHT PERS_ADJ3_WGT0;
 ODS OUTPUT STATISTICS=RESULTSFCOMP_NATIONAL;
 REPWEIGHTS PERS_ADJ3_WGT1 - PERS_ADJ3_WGT160;
RUN;
```

PRODUCING MEAN ESTIMATES AND VARIANCES USING THE R SURVEY PACKAGE

Create the survey design object for the detailed questionnaire data. Ensure that all weight variables are numeric, not character, or it will cause an "argument is not numeric or logical" error.

```
library(survey)

dmain<- svrepdesign(data= main, weights= ~PERS_ADJ3_WGT0,
repweights="PERS_ADJ3_WGT[1-9]", type="JK1", scale=159/160,
rscales= rep(1, 160))
```

For participation estimates:

(IMPORTANT: The participation variable MUST be coded so that 0=did not participate, 1=did participate, and NA=missing)

```
svyciprop(~&VAR, dmain, na.rm=T)
```

For days, trips, and expenditures:

Estimation for totals:

```
svytotal(~&VAR, dmain, na.rm=T)
```

Estimation for means:

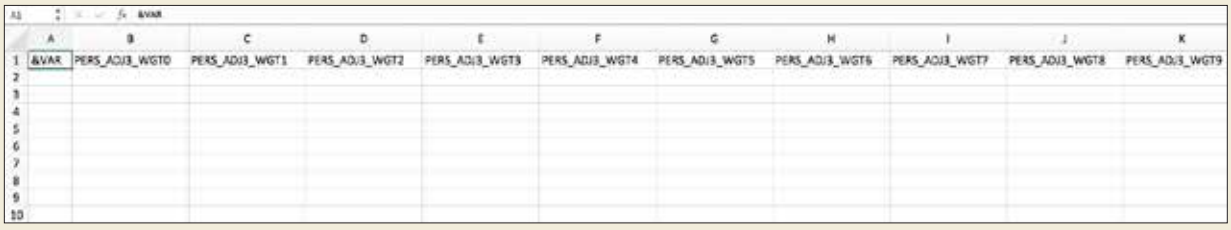
```
svymean(~&VAR, dmain, na.rm=T)
```

Estimation for frequency distribution:

```
svymean(~factor(&VAR),dmain,na.rm=T)
```

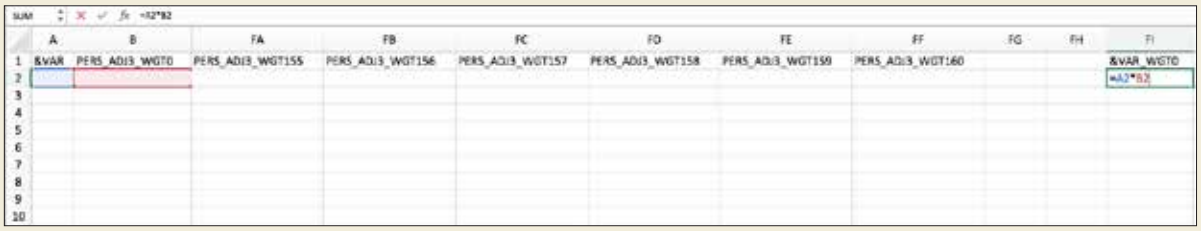
PRODUCING MEAN ESTIMATES AND VARIANCES USING EXCEL

1. Input the variable of interest (`&VAR`), the full-sample weight (`PERS_ADJ3_WGT0`), and all the replicate weights (`PERS_ADJ3_WGT1-PERS_ADJ3_WGT160`) to Excel. Ensure that the data structure is such that the rows are the unique observations and the columns are the variables (including the analysis variable of interest and the aforementioned weights). Here we suppose `&VAR` is in column A, the full-sample weight is in column B, and the replicate weights are in Columns C through FF.



(continued on next page)

2. To compute the point estimate:
   a. Multiply `&VAR` by the full-sample weight `PERS_ADJ3_WGT0`. For example, for the first observation, multiply cell A2 by cell B2; for the second observation, multiply cell A3 by cell B3. Repeat the step for all the observations. Suppose we perform this multiplication in Column FG. We name this column "`&VAR_WGT0`".
   b. Using the values of "`&VAR_WGT0`", use Excel functions or calculations to either sum the weighted values (for estimation of totals) or compute the weighted average of the values by summing the weighted values and dividing by the sum of `PERS_ADJ3_WGT0` (for estimation of means).



3. For each replicate:
   a. Repeat step 2a.
   b. Repeat step 2b.
4. Calculate the squared difference between each of the sum or mean values from step 3b and the values from step 2b.
5. Sum up all the squared differences from step 4. Multiply the sum by the scaling constant, (160-1)/160. The outcome is the estimated variance of the total or the mean (depending on which estimator was used in the above steps).

Standard Errors of Composite Estimates

The above examples of computation of standard errors demonstrate these computations using the single-survey weights. To compute standard errors of composite estimates, the following steps should be taken:

1. Compute a composite full-sample weight by applying the appropriate compositing factors to the full-sample weights that feed into the estimates. For example, to compute an estimate of the total number of anglers by compositing the fishing survey and hunting survey data, compute the composite weights by multiplying each fishing survey respondent's weight by the factor 0.596115556 and multiplying each hunting survey respondent's weight by the factor 0.403884444.
2. Repeat step 1 for each of the replicate weights, to obtain a set of composite replicate weights.
3. Use the resulting composite weights (full-sample and replicate) in applying the instructions for computing standard errors given above.

Table D3 Approximate Standard Errors of Resident Anglers, Days of Fishing by State Residents, and Expenditures for Fishing by State Residents (Numbers in thousands)

	PARTICIPATION		SPENDERS		DAYS		EXPENDITURES ($)	
	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error
Alabama	1,043	174	867	147	14,704	3,236	1,812,794	794,377
Alaska	176	41	172	42	3,031	1,103	522,754	210,627
Arizona	839	180	839	180	14,739	8,651	2,414,844	1,733,617
Arkansas	668	147	643	146	13,770	4,223	801,991	313,493
California	3,130	638	3,130	638	32,545	8,745	6,775,477	1,957,652
Colorado	978	237	945	237	18,276	10,390	1,629,662	627,168
Connecticut	644	128	616	128	8,447	2,304	851,296	308,554
Delaware	163	29	157	29	2,338	551	193,800	59,580
Florida	4,488	1,104	4,139	1,017	45,746	12,232	6,030,826	2,110,017
Georgia	1,918	306	1,918	306	37,187	10,637	4,806,530	2,123,861
Hawaii	196	32	192	32	4,245	1,840	409,215	191,803
Idaho	443	53	416	53	5,641	1,000	610,133	115,303
Illinois	1,845	273	1,745	278	22,360	4,466	2,748,761	844,403
Indiana	1,268	149	1,231	144	19,319	3,729	2,793,252	1,148,891
Iowa	557	81	531	79	7,498	1,713	615,977	145,436
Kansas	562	71	546	70	13,510	4,594	999,208	271,350
Kentucky	994	135	969	136	18,221	4,398	1,463,206	422,572
Louisiana	1,139	148	1,111	145	25,400	5,318	2,445,330	622,380
Maine	316	50	302	50	6,571	1,346	569,980	155,318
Maryland	492	76	454	71	7,230	2,365	762,065	379,863
Massachusetts	921	104	877	105	22,231	4,808	3,105,351	1,088,810
Michigan	1,856	289	1,844	289	36,476	9,509	3,038,379	980,548
Minnesota	1,102	142	1,094	142	20,878	3,462	4,153,332	1,393,826
Mississippi	*696	*172	*586	*194	*28,746	*14,948	*1,807,078	*1,252,439
Missouri	1,193	173	1,155	171	18,218	3,503	2,109,183	983,444
Montana	292	37	276	38	4,735	937	713,462	297,986
Nebraska	331	47	321	46	5,479	1,359	378,706	96,903
Nevada	572	120	568	120	4,978	1,720	1,031,347	344,450
New Hampshire	*139	*48	*135	*49	*2,208	*980	*135,422	*54,469
New Jersey	1,781	221	1,732	212	44,650	14,997	2,795,261	626,321
New Mexico	370	73	368	72	5,369	2,155	866,447	316,153
New York	2,556	631	2,469	629	37,238	11,104	4,254,271	1,551,465
North Carolina	1,746	273	1,694	272	32,865	7,863	2,784,961	609,995
North Dakota	162	31	159	30	2,129	968	221,666	120,260
Ohio	1,290	275	1,256	272	28,921	13,753	3,952,453	2,017,619
Oklahoma	940	121	897	120	23,928	5,439	2,791,701	1,166,691
Oregon	685	115	671	114	7,481	1,687	1,502,302	643,991
Pennsylvania	2,062	254	2,019	255	46,125	8,102	3,698,769	941,681
Rhode Island	147	28	140	27	1,609	452	134,783	35,424
South Carolina	938	114	910	114	18,107	3,376	1,547,004	411,957
South Dakota	190	33	190	33	3,054	685	329,197	92,953
Tennessee	1,283	235	1,224	238	19,987	5,692	3,007,168	1,059,920
Texas	7,720	1,258	7,630	1,258	84,326	19,350	13,277,415	6,556,074
Utah	439	56	437	55	5,911	1,661	368,035	71,166
Vermont	126	33	121	32	2,529	730	140,355	54,483
Virginia	1,590	230	1,517	219	28,423	7,202	2,471,676	867,062
Washington	830	165	787	164	16,128	6,179	1,259,044	424,022
West Virginia	332	55	308	52	5,189	1,437	363,057	111,439
Wisconsin	1,187	187	1,158	188	19,016	4,058	2,010,983	711,356
Wyoming	173	30	172	30	2,463	644	288,832	128,843

* Estimate based on a sample size of 10–29.

SOURCE: Estimates in this table are from the fishing survey. Reported expenditures are included regardless of state-specific participation, and estimates may therefore be different from those in Tables 22 and 23.

NOTE: Detail does not add to total because of multiple responses. U.S. totals include responses from participants residing in the District of Columbia.

Table D4 Approximate Standard Errors of Resident Hunters, Days of Hunting by State Residents, and Expenditures for Hunting by State Residents (Numbers in thousands)

	PARTICIPATION		SPENDERS		DAYS		EXPENDITURES ($)	
	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error
Alabama	688	193	680	191	26,010	8,562	3,080,846	1,228,301
Alaska	*131	*43	*105	*39	*2,532	*1,734	*543,318	*212,126
Arizona	*456	*143	*456	*143	*7,047	*2,764	*2,354,505	*834,262
Arkansas	511	107	510	106	13,875	3,403	3,161,239	995,629
California	*1,452	*395	*1,452	*395	*27,601	*10,424	*4,545,038	*1,872,082
Colorado	386	72	378	72	5,175	1,362	2,132,318	1,041,009
Connecticut	—	—	—	—	—	—	—	—
Delaware	*29	*10	*29	*10	*685	*293	*36,149	*25,431
Florida	*985	*398	*862	*327	*13,913	*6,317	*3,204,979	*1,643,660
Georgia	856	166	845	166	23,749	6,478	2,685,202	628,370
Hawaii	*50	*21	—	—	*963	*462	—	—
Idaho	231	31	226	31	3,094	521	962,085	319,978
Illinois	*587	*149	*577	*149	*9,800	*2,739	*1,572,542	*866,280
Indiana	522	95	518	96	9,383	2,402	1,839,101	671,926
Iowa	337	63	336	62	5,640	1,198	732,181	161,494
Kansas	340	58	319	53	5,393	985	1,262,517	389,981
Kentucky	622	88	586	85	16,014	4,207	2,151,104	886,154
Louisiana	601	93	572	89	16,704	3,331	3,711,646	1,346,832
Maine	189	31	179	32	4,088	1,019	326,521	110,360
Maryland	*273	*71	*273	*71	*3,953	*1,010	*757,447	*264,097
Massachusetts	*196	*46	*173	*41	*5,024	*1,812	*1,472,578	*1,048,720
Michigan	1,057	181	1,028	178	18,922	3,873	2,743,377	910,714
Minnesota	809	115	809	115	11,194	1,860	2,388,051	546,932
Mississippi	726	169	710	167	24,854	5,873	3,259,274	926,820
Missouri	773	121	693	114	14,531	3,552	2,986,898	1,393,811
Montana	236	36	225	36	3,825	950	552,884	140,013
Nebraska	220	41	210	41	2,583	550	457,188	125,050
Nevada	*120	*34	*120	*34	*1,989	*699	*1,158,823	*529,908
New Hampshire	*112	*44	*111	*44	*2,480	*1,047	*191,633	*81,296
New Jersey	*178	*68	*178	*68	*5,652	*3,237	*446,431	*253,033
New Mexico	181	44	181	44	2,418	792	525,136	199,152
New York	1,543	342	1,498	343	31,472	9,211	4,269,357	1,634,155
North Carolina	765	165	759	165	18,221	5,214	2,254,060	927,386
North Dakota	111	23	109	23	1,613	400	191,249	40,805
Ohio	*899	*231	*899	*231	*18,077	*5,703	*5,338,072	*2,585,283
Oklahoma	508	89	475	87	9,984	2,753	988,236	246,395
Oregon	274	52	274	52	5,802	2,110	1,556,473	611,960
Pennsylvania	1,570	215	1,528	212	31,269	5,647	3,677,613	692,785
Rhode Island	—	—	—	—	—	—	—	—
South Carolina	603	100	581	99	19,191	5,180	2,857,815	956,446
South Dakota	112	21	112	21	2,737	779	349,966	96,712
Tennessee	484	102	471	101	14,385	4,088	1,659,983	483,406
Texas	2,616	606	2,503	600	53,324	16,081	6,890,034	1,849,614
Utah	171	30	170	30	2,811	637	1,069,175	414,697
Vermont	83	15	81	15	2,095	434	307,134	86,357
Virginia	653	123	621	122	12,904	3,016	1,936,982	567,197
Washington	*321	*76	*321	*76	*5,770	*1,972	*1,006,371	*371,825
West Virginia	386	54	346	48	9,743	1,947	1,431,931	453,515
Wisconsin	1,196	345	1,196	345	22,204	6,648	1,944,518	522,068
Wyoming	77	24	77	24	1,012	244	133,332	41,566

* Estimate based on a sample size of 10–29 — Sample size too small (less than 10) to report data reliably

SOURCE: Estimates in this table are from the hunting survey. Reported expenditures are included regardless of state-specific participation, and estimates may therefore be different from those in Tables 22 and 23.

NOTE: Detail does not add to total because of multiple responses. U.S. totals include responses from participants residing in the District of Columbia.

Table D5 Approximate Standard Errors of Away-From-Home Wildlife Watching Participation, Spenders, Days, and Trip-Related Expenditures by State Residents (Numbers in thousands)

	PARTICIPATION		SPENDERS		DAYS		EXPENDITURES ($)	
	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error	Estimate	Standard error
Alabama	*933	*195	*910	*193	*11,747	*3,549	*3,174,297	*1,220,982
Alaska	191	83	158	62	3,309	1,748	443,152	205,564
Arizona	1,134	240	1,127	240	24,822	8,922	4,457,909	2,300,213
Arkansas	836	149	836	149	24,483	6,083	3,301,330	1,393,364
California	7,867	1,186	7,779	1,189	174,051	42,365	23,889,853	6,950,180
Colorado	1,936	247	1,698	194	56,040	15,510	5,207,969	1,186,239
Connecticut	730	146	*720	*145	*23,228	*11,256	*1,601,989	*800,915
Delaware	288	63	267	62	9,821	3,280	280,313	97,192
Florida	6,073	985	6,073	985	198,912	67,980	17,707,576	5,093,403
Georgia	*1,471	*514	*1,471	*514	*37,851	*17,436	*3,056,804	*1,575,846
Hawaii	223	39	216	39	4,576	1,191	373,363	121,879
Idaho	454	67	439	65	9,089	2,367	1,894,338	684,541
Illinois	2,529	465	2,515	466	77,182	20,082	8,803,399	3,730,131
Indiana	1,449	284	1,428	284	50,626	21,719	3,588,598	990,746
Iowa	785	113	755	110	34,428	7,806	3,886,539	1,561,998
Kansas	724	98	701	98	22,722	9,811	668,556	143,887
Kentucky	1,007	164	940	162	26,280	7,692	3,168,725	930,561
Louisiana	1,119	178	1,070	164	27,962	6,789	4,063,544	1,114,992
Maine	435	61	430	61	15,929	3,983	724,912	279,881
Maryland	1,503	239	1,349	244	51,432	16,811	2,954,425	853,869
Massachusetts	1,936	199	1,936	199	65,940	16,132	7,233,637	2,779,627
Michigan	2,499	496	2,468	496	62,491	24,575	7,015,947	2,960,588
Minnesota	1,581	310	1,567	310	45,331	9,588	7,140,340	3,007,619
Mississippi	*991	*331	*981	*331	*56,609	*46,380	*1,624,063	*773,073
Missouri	1,930	259	1,871	262	45,408	13,685	4,274,268	1,963,491
Montana	271	46	268	46	9,763	2,535	1,516,510	390,135
Nebraska	446	62	396	56	11,236	3,470	705,520	186,229
Nevada	906	136	891	137	18,235	3,944	2,148,008	553,589
New Hampshire	*194	*67	*194	*67	*4,458	*1,798	*577,530	*225,705
New Jersey	2,038	319	1,892	329	64,931	19,815	4,469,706	1,377,825
New Mexico	534	82	505	78	14,021	3,264	1,238,171	308,336
New York	5,033	787	4,590	730	137,812	43,036	10,365,561	2,405,468
North Carolina	2,087	361	1,999	358	48,656	19,492	2,336,337	648,381
North Dakota	*214	*50	*199	*49	*4,961	*1,844	*370,183	*148,239
Ohio	3,282	444	3,282	444	125,750	49,471	4,734,823	1,226,553
Oklahoma	881	150	881	150	26,799	7,504	1,639,765	561,580
Oregon	1,207	162	1,164	161	61,036	17,328	4,706,162	1,703,556
Pennsylvania	2,933	376	2,834	372	97,505	24,830	6,351,651	1,123,465
Rhode Island	308	40	274	37	9,009	2,378	592,385	125,934
South Carolina	1,100	173	1,087	172	31,580	10,793	5,741,603	2,897,428
South Dakota	219	44	200	43	2,447	604	1,089,089	816,090
Tennessee	*1,463	*328	*1,417	*329	*142,554	*98,120	*6,341,463	*2,756,727
Texas	*6,292	*1,420	*5,865	*1,326	*297,235	*179,218	*26,687,499	*16,389,760
Utah	695	82	667	81	11,352	2,740	879,023	201,358
Vermont	153	27	149	26	4,078	911	196,621	59,767
Virginia	2,104	363	2,104	363	142,137	42,581	6,140,978	2,167,891
Washington	1,887	299	1,698	251	33,753	9,227	3,502,860	907,558
West Virginia	433	115	433	115	16,711	6,035	1,620,645	867,520
Wisconsin	1,435	358	1,435	358	50,205	17,365	4,595,028	1,503,382
Wyoming	*132	*41	*131	*41	*1,120	*337	*1,309,405	*1,410,564

* Estimate based on a sample size of 10–29.

SOURCE: Estimates in this table are from the wildlife watching survey. Reported expenditures are included regardless of state-specific participation, and estimates may therefore be different from those in Tables 33 and 34.

NOTE: Detail does not add to total because of multiple responses. U.S. totals include responses from participants residing in the District of Columbia.