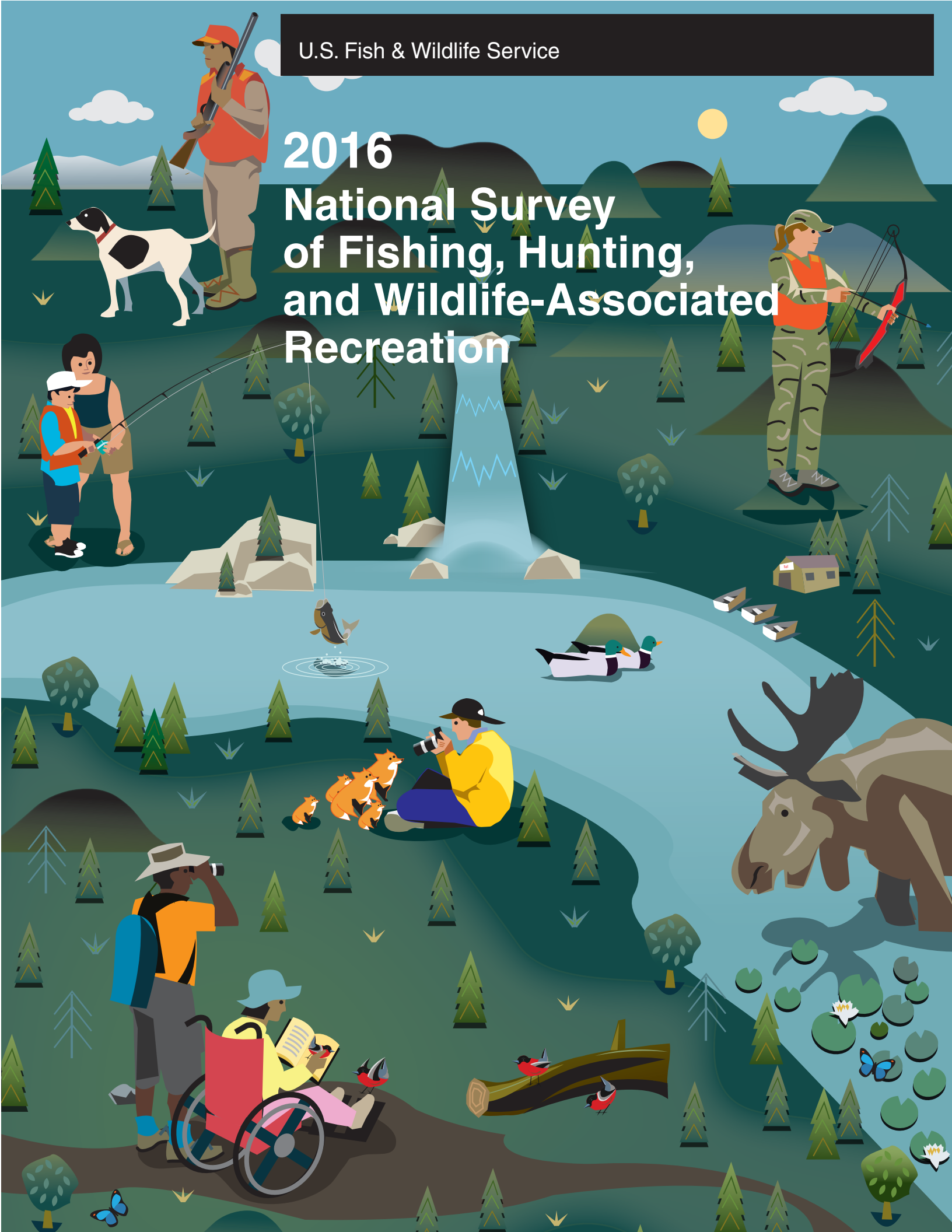
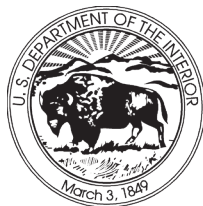


2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation



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Performing the Nonexclusive Functions and
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The U.S. Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities. The mission of the Department's U.S. Fish and Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, and their habitats for the continuing benefit of the American people. The Service is responsible for national programs of vital importance to our natural resources, including administration of the Wildlife and Sport Fish Restoration Programs. These two programs provide financial assistance to the states for projects to enhance and protect fish and wildlife resources and to assure their availability to the public for recreational purposes. Multistate grants from these programs fund the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

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Foreword

Over my nearly 40 years of hunting and fishing, I have been able to pursue a wide variety of fish and game in states across the nation. I've developed deep and enduring friendships through hunting and fishing, and marked the progress of my kids to adulthood with every passing season we spent together in the field and on the water.

I've been fortunate to pursue species ranging from mule deer to elk, waterfowl to wild turkeys—and had some of the best days of my life on those hunts. The same goes for fishing. There's nothing quite like standing in a mountain stream, casting into crystal clear waters and seeing the flash of a trout as it takes the fly.

I will carry these memories with me forever, and I'm far from alone. Millions of Americans have grown up hunting, fishing, and spending time in the outdoors with their parents and grandparents, in turn passing those skills on to their children and grandchildren.

Our challenge in today's rapidly urbanizing, fast-paced society is to help them continue to pursue these pastimes, while introducing new generations and communities of Americans to the joys of the outdoors. That's why the *2016 National Survey of Fishing, Hunting and Wildlife-Associated Recreation* is so important.

This final report provides a detailed snapshot of our nation's passion for wildlife and nature. And it serves as a road map to guide our efforts to reach more Americans and provide them with opportunities to hunt, fish, and otherwise enjoy America's wildlife and wild places.

The final 2016 findings largely confirm the positive indications gathered in our preliminary report issued last summer.

These findings represent good news for everyone who cares about the health of our wildlife, natural landscapes, and people.

In 2016, more than 103 million Americans—a staggering 40 percent of the U.S. population 16 years and older—participated in some form of fishing, hunting, or other wildlife-associated recreation such as bird-watching or outdoor photography. And in doing so, we spent an estimated \$156.9 billion on equipment, travel, licenses, and fees. These expenditures represent almost 1 percent of the nation's Gross Domestic Product—creating and supporting thousands of jobs and communities across the nation.

More than 35.8 million Americans went fishing in 2016, while 11.5 million hunted and 86 million watched wildlife. This means that 14 percent of Americans 16 years of age or older fished, 4 percent hunted and 34 percent participated in wildlife watching.

These pastimes aren't just important for the nation's economy. Revenues from the sale of licenses and tags, as well as excise taxes paid by hunters, anglers, and shooters continue to support vital wildlife and habitat conservation efforts in every state. And on a personal level, a growing body of scientific research supports what so many of us have experienced ourselves—that we're all healthier, happier and better off in myriad ways when we spend time in nature.

The National Survey is the result of close coordination with state wildlife agencies—which recommended financial support through the Multi-State Conservation Grant Programs—the Association of Fish and Wildlife Agencies and a number of major

national conservation organizations. I want to express my deep gratitude to these organizations for their commitment and leadership. We look forward to continuing to work closely with our partners to continue this robust and vital survey as we have every five years since 1955.

We also owe thanks to thousands of survey respondents from households across America. Because of you, this Survey continues to serve as the nation's definitive wildlife-related recreation database, a crucial source of accurate information on participation rates, demographics, and purchases nationwide.

We plan to work with our state partners and the broader conservation community to release a series of detailed special reports that further refine and analyze the data we've gathered. This invaluable information will help the Service and our partners effectively engage and connect millions more Americans with the natural world over the next several years.

If you're reading this report, chances are you care deeply about sharing this heritage with your friends, neighbors, and family. Success begins with you! Take the time to mentor a young person in the outdoors, or schedule that long-delayed fishing trip with your college buddies.

The connections and memories you make will last a lifetime. And our nation will be stronger for it.



Gregory J. Sheehan,
Principal Deputy Director,
U.S. Fish and Wildlife Service

Survey Background and Method

The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (Survey) has been conducted since 1955 and is one of the oldest and most comprehensive continuing recreation surveys. The Survey collects information on the number of anglers, hunters, and wildlife watchers, how often they participate, and how much they spend on their activities in the United States.

Preparations for the 2016 Survey began in 2013 when the Association of Fish and Wildlife Agencies (AFWA) asked the Fish and Wildlife Service to coordinate the thirteenth National Survey of wildlife-related recreation. Funding came from the Multistate Conservation Grant Programs, authorized by Sport Fish and Wildlife Restoration Acts, as amended.

A working group consisting of state agency employees and survey experts was set up under the auspices of AFWA to redesign the Survey. The U.S. Census Bureau was contracted to do a national-only survey, and a private contractor did a 50-State survey.

We consulted with state and federal agencies and nongovernmental organizations such as the American Sportfishing Association and National Shooting Sports Foundation to determine survey content. Other sportspersons' organizations and conservation groups, industry representatives, and researchers also provided valuable

advice. Target shooting and archery questions were added to the screening interview.

Data collection for the Survey was carried out in two phases by the Census Bureau. The first phase consisted of a prescreen interview and a screen interview. The prescreen began in January 2016 and was designed to collect household telephone numbers and screen out nonparticipant households. The full screening interview, designed to get full demographics and 2015 activity, began in April 2016. During the first phase, the Census Bureau interviewed a sample of 22,725 households nationwide to determine who in the household had fished, hunted, or wildlife watched in 2015, and who had engaged or planned to engage in those activities in 2016. In most cases, one adult household member provided information for all members. The prescreen and screen primarily covered 2015 activities. For more information on the 2015 data, refer to Appendix B.

The second phase of data collection covered 2016 activities in detail and consisted of three detailed interview waves. The first detailed interview ran concurrent with the screen interview in April 2016, the second detailed interview in September 2016, and the last in January 2017. Interviews were conducted with samples of likely anglers, hunters, and wildlife watchers who were identified in the

initial screening phase. Interviews were conducted both by telephone and in-person. Respondents in the second survey phase were limited to those who were at least 16 years old. Each respondent provided information pertaining only to his or her activities and expenditures. Sample sizes were designed to provide statistically reliable results at the national level. Altogether, interviews were completed for 3,931 anglers and hunters and 3,997 wildlife watchers. More detailed information on sampling procedures and response rates is found in Appendix D.

Comparability With Previous Surveys

The 2016 Survey's questions and methodology were similar to those used in the 2011, 2006, 2001, 1996, and 1991 Surveys. Therefore, the estimates are comparable.

The methodology for these Surveys differs significantly from the 1955 to 1985 Surveys, so these estimates are not directly comparable to those of earlier Surveys. Changes in methodology included reducing the recall period over which respondents had to report their activities and expenditures. Previous Surveys used a 12-month recall period which resulted in greater reporting bias. Research found that the amount of activity and expenditures reported in 12-month recall surveys was overestimated in comparison with that reported using shorter recall periods.



Highlights

Introduction

The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation reports results from interviews with U.S. residents about their fishing, hunting, and wildlife watching. This report focuses on 2016 participation and expenditures of persons 16 years and older.

However, in addition to 2016 numbers, we also provide recent trend information in the Highlights sections and Appendix C of the report. The 2016 numbers reported can be compared with those in the 1991, 1996, 2001, 2006, and 2011 Survey reports because these Surveys used similar methodologies. However, the 2016 estimates should not be directly compared with results from Surveys conducted earlier than 1991 because of changes in methodology. These changes were made to improve accuracy.

The report also provides information on participation in wildlife-related recreation in 2015, particularly of persons 6 to 15 years of age. The 2015 information is provided in Appendix B. Appendix B includes estimates for archery and target shooting with firearms. For the first time, the 2016 Survey included participation questions for these recreational activities. Appendix C has a summary of regional trends and the significant methodological changes from previous Surveys. Information about the scope and coverage of the 2016 Survey can be found in Appendix D. The remainder of this section defines important terms used in the Survey.

Wildlife-Associated Recreation

Wildlife-associated recreation is fishing, hunting, and wildlife-watching activities. These categories are not mutually exclusive because many indi-

viduals participated in more than one activity. Wildlife-associated recreation is reported in two major categories: (1) fishing and hunting, and (2) wildlife watching, which includes observing, photographing, and feeding fish or wildlife.

Fishing and Hunting

This Survey reports information about residents of the United States who fished or hunted in 2016, regardless of whether they were licensed. The fishing and hunting sections report information for three groups: (1) sportspersons, (2) anglers, and (3) hunters.

Sportspersons

Sportspersons are those who fished or hunted. Individuals who fished or hunted commercially in 2016 are reported as sportspersons *only* if they also fished or hunted for recreation. The sportspersons group is composed of the three subgroups shown in the diagram below: (1) those that fished and hunted, (2) those that only fished, and (3) those that only hunted.

The total number of sportspersons is equal to the sum of people who only fished, only hunted, and both hunted and fished. It is not the sum of all

anglers and all hunters because those people who both fished and hunted are included in both the angler and hunter population and would be incorrectly counted twice.

Anglers

Anglers are sportspersons who only fished plus those who fished and hunted. Anglers include not only licensed hook and line anglers, but also those who have no license and those who use special methods such as fishing with spears. Three types of fishing are reported: (1) freshwater, excluding the Great Lakes, (2) Great Lakes, and (3) saltwater. Since many anglers participated in more than one type of fishing, the total number of anglers is less than the sum of the three types of fishing.

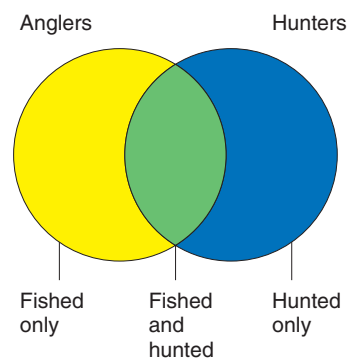
Hunters

Hunters are sportspersons who only hunted plus those who hunted and fished. Hunters include not only licensed hunters using rifles and shotguns, but also those who have no license and those who engage in hunting with archery equipment, muzzleloaders, other primitive firearms, or pistols or handguns. Four types of hunting reported are: (1) big game, (2) small game, (3) migratory bird, and (4) other animals. Since many hunters participated in more than one type of hunting, the sum of hunters for big game, small game, migratory bird, and other animals exceeds the total number of hunters.

Wildlife Watchers

Since 1980, the National Survey has included information on wildlife-watching activities in addition to fishing and hunting. However, unlike the 1980 and 1985 Surveys, the National Surveys since 1991 have

Sportspersons



collected data only for those activities where the primary purpose was wildlife watching (observing, photographing, or feeding wildlife).

The 2016 Survey uses a strict definition of wildlife watching. Participants must either take a "special interest" in wildlife around their homes or take a trip for the "primary purpose" of wildlife watching. Secondary wildlife watching, such as incidentally observing wildlife while pleasure driving, is not included. Two types of wildlife-watching activity are reported: (1) away-from-home (formerly nonresidential) activities and (2) around-the-home (formerly residential) activities. Because some people participated in more than one type of wildlife-watching, the sum of partici-

pants in each type will be greater than the total number of wildlife watchers. Only those engaged in activities whose *primary* purpose was wildlife watching are included in the Survey. The two types of wildlife-watching activity are defined below.

Away-From-Home

This group includes persons who took trips or outings of at least 1 mile from home for the primary purpose of observing, feeding, or photographing fish and wildlife. Trips to fish or hunt or scout and trips to zoos, circuses, aquariums, and museums are not considered wildlife-watching activities.

Around-the-Home

This group includes those who participated within 1 mile of home and involves one or more of the following: (1) closely observing or trying to identify birds or other wildlife; (2) photographing wildlife; (3) feeding birds or other wildlife; (4) maintaining natural areas of at least 1/4 acre where benefit to wildlife is the primary concern; (5) maintaining plantings (shrubs, agricultural crops, etc.) where benefit to wildlife is the primary concern; or (6) visiting parks and natural areas within 1 mile of home for the primary purpose of observing, feeding, or photographing wildlife.

Summary

The 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation revealed that over 103 million U.S. residents 16 years and older participated in wildlife-related recreation. During that year, 35.8 million people fished, 11.5 million hunted, and 86.0 million participated in at least one type of wildlife-watching activity including observing, feeding, or photographing fish and other wildlife in the United States.

The focus of the National Survey is to estimate participation and expenditures of persons 16 years and older in a single year. These estimates are based on data collected in the detailed phase of the 2016 Survey. They are comparable to the estimates of the 1991, 1996, 2001, 2006, and 2011 Surveys but not to earlier Surveys because of changes in methodology. A complete explanation is in Appendix C.

While the focus of the Survey is to estimate wildlife-related recreationists 16 years and older and their associated expenditures in a single year, information collected in the Survey screen can be used to estimate the number of anglers and hunters who were active over a 5-year period. Because many do not participate every year, the following estimates may be more representative of the number of individuals considered to be anglers and hunters in the United States: 53.6 million individuals fished and 17.6 million hunted over the 5 years from 2011 to 2015.

The Survey screen also provides some information about 6- to 15-year-olds' participation which was calculated by using data from the Survey screen. The following are estimates of their participation in 2016—of the 40.5 million 6- to 15-year-olds in the United States, 1.4 million hunted and 8.1 million fished. The number of 6- to 15-year-old wildlife watchers cannot be estimated

due to a change in Survey screening questions. More information about this age group is provided in Appendix B. For the rest of this report, all information pertains to participants 16 years and older, unless otherwise indicated.

For the first time, the number of target shooters who used a firearm and the number of recreational archers were estimated. The questions were in the screening questionnaire, which is asked of a household respondent and covers a year's worth of activity—this results in an unknown amount of overestimation in the estimate due to recall bias. With that caveat, an estimated total of 32.0 million people 6 years and older went target shooting with firearms in 2015. Approximately 12 percent of them (3.8

million) were children 6 to 15 years old, and the remaining 28.2 million were 16 years and older. That means over a tenth of adult Americans (11 percent) went target shooting, either at a range or more informally in the field. As for archery, 12.4 million Americans 6 years and older engaged in archery in 2015. An estimated 21 percent of them (2.6 million) were 6 to 15 years old. About 79 percent (9.8 million) were adults 16 years and older. Their participation rate was 4 percent.

There was a considerable overlap in activities among anglers, hunters, and wildlife watchers. In 2016, 67 percent of hunters also fished, and 21 percent of anglers hunted. Approximately 56 percent of anglers and 55 percent of

Total Wildlife-Related Recreation

| | |
|------------------------|-----------------|
| Participants | 103.7 million |
| Expenditures | \$156.9 billion |

Sportspersons

| | |
|-------------------------------|--------------|
| Total participants* | 39.6 million |
| Anglers | 35.8 million |
| Hunters | 11.5 million |

| | |
|----------------------|-------------|
| Total days | 643 million |
| Fishing | 459 million |
| Hunting | 184 million |

| | |
|------------------------------|----------------|
| Total expenditures | \$81.0 billion |
| Fishing | 46.1 billion |
| Hunting | 26.2 billion |
| Unspecified | 8.7 billion |

Wildlife Watchers

| | |
|--------------------------------|--------------|
| Total participants** | 86.0 million |
| Around the home | 81.1 million |
| Away from home | 23.7 million |

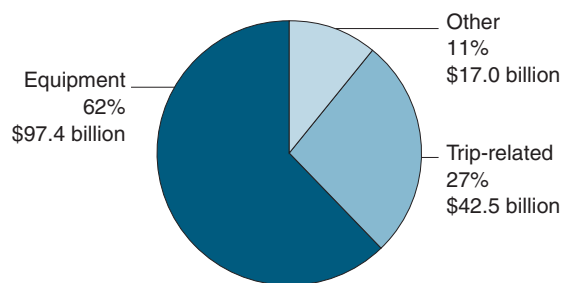
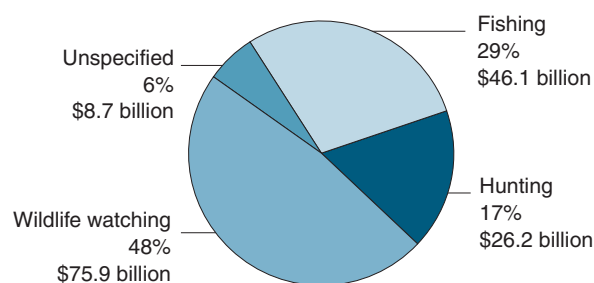
| | |
|------------------------------|----------------|
| Total expenditures | \$75.9 billion |
|------------------------------|----------------|

* 7.7 million both fished and hunted.

** 18.8 million wildlife watched both around the home and away from home.

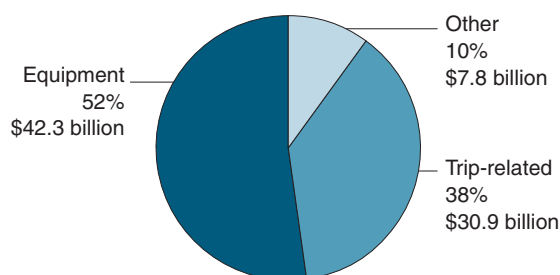
Expenditures for Wildlife-Related Recreation

(Total expenditures: \$156.9 billion)



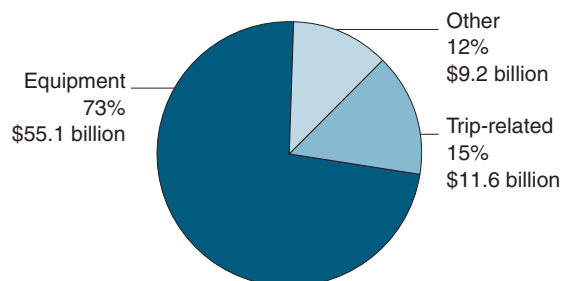
Expenditures by Sportspersons

(Total expenditures: \$81.0 billion)



Expenditures by Wildlife-Watching Participants

(Total expenditures: \$75.9 billion)



hunters wildlife watched, while 25 percent of all wildlife watchers reported hunting and/or fishing during the year.

Wildlife recreationists' avidity also is reflected in the \$157 billion they spent in 2016 on their activities, which was almost 1 percent of the Gross Domestic Product. Of the total amount spent, \$42.5 billion was trip-related, \$97.4 billion was spent on equipment, and \$17.3 billion was spent on other items such as licenses and land leasing and ownership.

Sportspersons spent a total of \$81.0 billion in 2016—\$46.1 billion on fishing, \$26.2 billion on hunting, and \$8.7 billion on items used for both hunting and fishing. Wildlife watchers spent \$75.9 billion on their activities around the home and on trips away from home.

Fishing and Hunting

In 2016, 39.6 million U.S. residents 16 years and older went fishing and/or hunting. This includes 35.8 million¹ who fished and 11.5 million who hunted. Nearly 7.7 million both fished and hunted.

In 2016, expenditures by sportspersons totaled \$81.0 billion. Trip-related expenditures, including those for food, lodging, and transportation, were \$30.9 billion—38 percent of all fishing and hunting expenditures. Total equipment expenditures amounted to \$42.3 billion,² 52 percent of the total. Other expenditures—magazines, membership dues, contributions, land leasing and ownership, and licenses, stamps, tags, and permits—accounted for \$7.8 billion or 10 percent of all sportsperson expenditures.

¹ The difference between people 16 years and older who fished and/or hunted versus people who fished only is not significant.

² The difference between the estimates of trip-related expenditures and equipment expenditures was not statistically significant.

Wildlife-Watching Recreation

Closely observing, feeding, or photographing wildlife was enjoyed by 86.0 million people 16 years and older in 2016. Of this group, 23.7 million people took trips away from home for the purpose of enjoying wildlife, while 81.1 million³ stayed within a mile of home to participate in wildlife-watching activities.

In 2016, wildlife watchers spent \$75.9 billion. Trip-related expenses, including food, lodging, and transportation, totaled \$11.6 billion (15 percent of all expenditures). A total of \$55.1 billion⁴ was spent on equipment, 73 percent of all wildlife-watching expenses. The

³ The difference between the estimates of total participants of wildlife watching and wildlife-watching participants who stayed within a mile of home was not significant.

⁴ The difference between the estimates of total expenditures and total equipment expenditures was not statistically significant.

remaining \$9.2 billion⁵ (12 percent of the total) was spent on magazines, membership dues and contributions made to conservation or wildlife-related organizations, land leasing and owning, and plantings.

2011 and 2016 Comparison

A 5-year comparison of estimates from 2011 to 2016 shows a 16 percent increase in the total number of people 16 years and older participating in wildlife-related recreation activities in the United States. The increase was primarily among those who wildlife watched.

⁵ The difference between the estimates of total trip-related expenditures and total expenditures for magazines, books, DVDs, land leasing and ownership, membership dues and contributions, and plantings was not statistically significant.

Sportspersons rose from 37.4 million in 2011 to 39.6 million⁶ in 2016, and expenditures fell from \$96.1 billion (in 2016 dollars) in 2011 to \$81.0 billion⁷ in 2016.

In 2016, 35.8 million fished and 11.5 million hunted compared with 33.1 million⁸ who fished and 13.7 million who hunted in 2011. Overall expenditures on fishing increased⁹ and expenditures on hunting decreased,¹⁰ in line

⁶ The difference between the estimates of total sportspersons in 2011 and 2016 was not statistically significant.

⁷ The difference between the estimates of sportsperson expenditures in 2011 and 2016 was not statistically significant.

⁸ The difference between estimates of total anglers in 2011 and 2016 was not statistically significant.

⁹ The increase in fishing expenditures from 2011 to 2016 was not statistically significant.

¹⁰ The decrease in hunting expenditures from 2011 to 2016 was not statistically significant.

with their participation numbers. The 62 percent decrease in land leasing and owning expenditures was the single biggest percentage drop in hunting expenditures. The category with the biggest increase in expenditures for angling was auxiliary equipment, which more than doubled.

From 2011 to 2016, the number of wildlife watchers and their expenditures increased 20 percent and 29 percent,¹¹ respectively. Around-the-home photographing was the participation category and special equipment was the expenditure category that increased the most.

¹¹ The increase in wildlife-watching expenditures from 2011 to 2016 was not statistically significant.

2011–2016 Wildlife-Associated Recreation Comparison of Participants

(Numbers in thousands)

| | 2011 | | 2016 | |
|--|---------------|------------|----------------|------------|
| | Number | Percent | Number | Percent |
| Total wildlife-related recreationists | 90,108 | 100 | 103,694 | 100 |
| Total sportspersons | 37,397 | 42 | 39,553 | 38 |
| Anglers | 33,112 | 37 | 35,754 | 34 |
| Hunters | 13,674 | 15 | 11,453 | 11 |
| Total wildlife-watching participants | 71,776 | 80 | 86,042 | 83 |
| Around the home | 68,598 | 76 | 81,128 | 78 |
| Away from home | 22,496 | 25 | 23,720 | 23 |

2011–2016 Wildlife-Associated Recreation Comparison of Expenditures

(Numbers in billions of 2016 dollars)

| | 2011 | | 2016 | |
|--|--------------|------------|--------------|------------|
| | Number | Percent | Number | Percent |
| Total, wildlife-related recreation expenditures . . . | 154.8 | 100 | 156.9 | 100 |
| Total, fishing and hunting expenditures. | 96.1 | 100 | 81.0 | 100 |
| Fishing expenditures, total | 44.7 | 100 | 46.1 | 100 |
| Trip-related. | 23.3 | 52 | 21.7 | 47 |
| Equipment, total. | 16.6 | 37 | 21.1 | 46 |
| Fishing equipment | 6.5 | 15 | 7.4 | 16 |
| Auxiliary equipment. | 1.2 | 3 | 3.2 | 7 |
| Special equipment | 8.9 | 20 | 10.5 | 23 |
| Other | 4.8 | 11 | 3.3 | 7 |
| Hunting expenditures, total. | 36.1 | 100 | 26.2 | 100 |
| Trip-related. | 11.1 | 31 | 9.2 | 35 |
| Equipment, total. | 15.0 | 41 | 12.8 | 49 |
| Hunting equipment | 8.2 | 23 | 7.4 | 28 |
| Auxiliary equipment | 1.9 | 5 | 2.0 | 8 |
| Special equipment. | 4.7 | 13 | 3.4 | 13 |
| Other | 10.0 | 28 | 4.2 | 16 |
| Wildlife-watching expenditures, total | 58.7 | 100 | 75.9 | 100 |
| Trip-related. | 18.5 | 31 | 11.6 | 15 |
| Equipment, total. | 29.1 | 49 | 55.1 | 73 |
| Wildlife-watching equipment | 12.1 | 21 | 12.1 | 16 |
| Auxiliary equipment | 1.7 | 3 | 1.0 | 1 |
| Special equipment. | 15.3 | 26 | 41.9 | 55 |
| Other | 11.2 | 19 | 9.2 | 12 |

Fishing



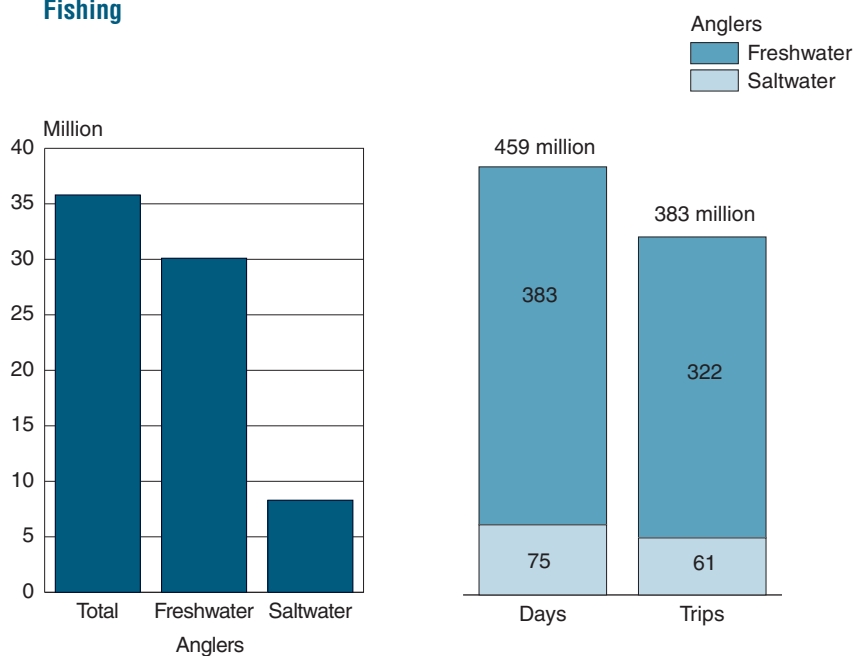
Fishing Highlights

In 2016, 35.8 million residents 16 years and older enjoyed a variety of fishing opportunities throughout the United States. Anglers fished 459 million days and took 383 million fishing trips. They spent over \$46.1 billion

in fishing-related expenses during the year. Freshwater anglers numbered 30.1 million. They fished 383 million days and took 322 million trips to freshwater in 2016. Freshwater anglers spent \$29.9 billion on freshwater fishing trips and

equipment. Saltwater fishing attracted 8.3 million anglers who enjoyed 61 million trips on 75 million days. They spent \$11.2 billion on their trips and equipment.

Fishing



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

Total Fishing

| | |
|-------------------------------|-----------------------|
| Anglers | 35.8 million |
| Freshwater | 30.1 million |
| Saltwater | 8.3 million |
| Days | 459 million |
| Freshwater | 383 million |
| Saltwater | 75 million |
| Trips | 383 million |
| Freshwater | 322 million |
| Saltwater | 61 million |
| Expenditures | \$46.1 billion |
| Freshwater | 29.9 billion |
| Saltwater | 11.2 billion |
| Nonspecific | 5.0 billion |

Note: Freshwater and saltwater expenditures only include trip-related and equipment expenditures.

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

Source: Tables 1, 12, 13, and 16.

Fishing Expenditures

Anglers spent \$46.1 billion in 2016, including \$21.7 billion on trip-related items—47 percent of all fishing expenditures. Food and lodging accounted for \$7.8 billion dollars, 36 percent of all trip-related costs. Spending on transportation totaled \$5.0 billion, 23 percent of trip-related expenditures.¹² Other trip-related expenditures such as land use fees, guide fees, equipment rental, boating expenses, and bait cost anglers \$8.8 billion—41 percent of all trip expenses.¹³

Equipment expenditures totaled \$21.1 billion, 46 percent of all fishing expenditures. Anglers spent \$7.4 billion on fishing equipment such as rods, reels, tackle boxes, depth finders, and artificial lures and flies. This amounted to 35 percent of all equipment expenditures. Auxiliary equipment expenditures, which include camping equipment, binoculars, and special fishing clothing, totaled \$3.2 billion—15 percent of equipment costs. Expenditures for special equipment such as boats, vans, and cabins were \$10.5 billion—50 percent of all equipment costs.¹⁴

Anglers also spent a considerable amount on other fishing-related items, such as land leasing and ownership, membership dues, contributions, licenses, stamps, and permits. Land leasing and ownership spending totaled \$2.4 billion, which is 5 percent of all expenditures. Expenditures on magazines, books, DVDs, membership dues and contributions,¹⁵ licenses, stamps, tags, and permits were \$0.9 billion.

¹² The difference between estimates of food and lodging expenditures and transportation expenditures was not statistically significant.

¹³ The difference between estimates of food and lodging expenditures and other trip-related expenditures was not statistically significant.

¹⁴ The difference between estimates of fishing equipment expenditures and special equipment expenditures was not statistically significant.

¹⁵ The difference between the estimates of expenditures for magazines, books, and DVDs and membership dues and contributions was not statistically significant.

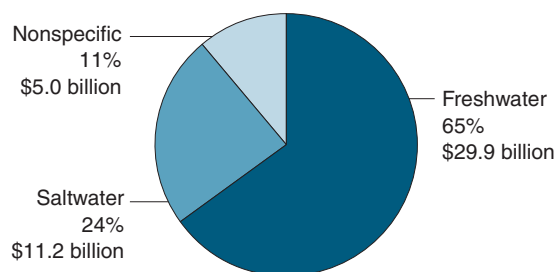
Total Fishing Expenditures

| | |
|---|-----------------------|
| Total fishing expenditures | \$46.1 billion |
| Total trip-related expenditures | \$21.7 billion |
| Food and lodging | 7.8 billion |
| Transportation | 5.0 billion |
| Other trip costs | 8.8 billion |
| Total equipment expenditures | \$21.1 billion |
| Fishing equipment | 7.4 billion |
| Auxiliary equipment | 3.2 billion |
| Special equipment | 10.5 billion |
| Total other fishing expenditures | \$3.3 billion |
| Magazines, books, and DVDs | 0.1 billion |
| Membership dues and contributions | 0.2 billion |
| Land leasing and ownership | 2.4 billion |
| Licenses, stamps, tags, and permits | 0.6 billion |

Source: Table 12.

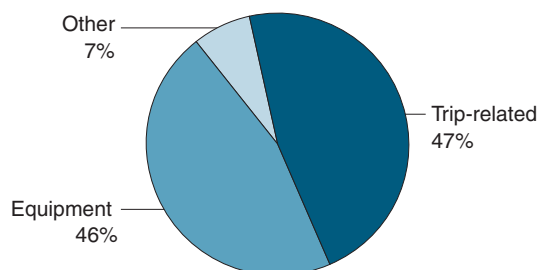
Fishing Expenditures by Type of Fishing

(Total expenditures: \$46.1 billion)



Percent of Total Fishing Expenditures

(Total expenditures: \$46.1 billion)



Freshwater Fishing

| | |
|--|-----------------------|
| Anglers | 30.1 million |
| Freshwater except Great Lakes | 29.5 million |
| Great Lakes | 1.8 million |
| Days | 383 million |
| Freshwater except Great Lakes | 373 million |
| Great Lakes | 13 million |
| Trips | 322 million |
| Freshwater except Great Lakes | 311 million |
| Great Lakes | 11 million |
| Trip and equipment expenditures | \$29.9 billion |
| Freshwater except Great Lakes | 27.5 billion |
| Great Lakes | 2.2 billion |

Note: Detail does not add to total because of multiple response and nonresponse. For trip and equipment expenditures, the total is greater than the sum because some anglers bought equipment for an activity in which they did not participate.

Source: Tables 1, 13, 14, and 15.

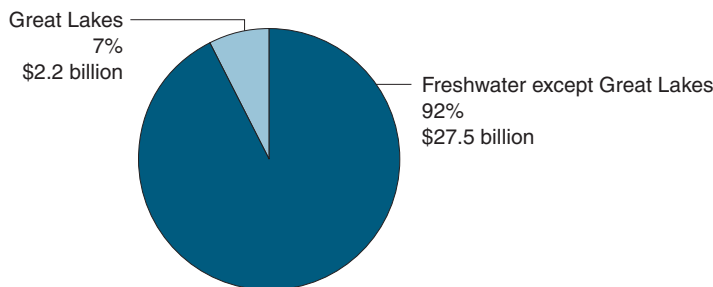
Freshwater Fishing Highlights

Freshwater fishing was the most popular type of fishing. In 2016, 30.1 million Americans fished 383 million days and took 322 million trips. Their expenditures for trips and equipment totaled \$29.9 billion for the year. Excluding those who fished the Great Lakes, freshwater anglers numbered 29.5 million, 82 percent of all anglers. Freshwater anglers in their non-Great Lakes fishing took 311 million trips on 373 million days and spent \$27.5 billion on trips and equipment for an average of \$933 per angler.

Over 1.8 million anglers enjoyed 13 million days and 11 million trips fishing on the Great Lakes. Their trip and equipment expenditures, \$2.2 billion, were 7 percent of the total freshwater trip and equipment expenditures. Great Lakes anglers averaged \$1,232 for the year.

Freshwater Fishing Trip and Equipment Expenditures

(Total expenditures: \$29.9 billion)

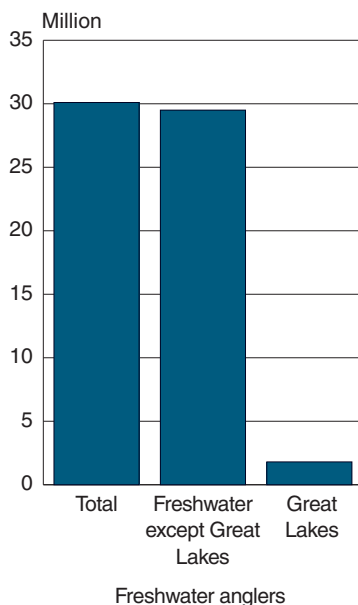


Note: The total is greater than the sum because some anglers bought equipment for an activity in which they did not participate.

Freshwater Fishing Expenditures

Trip and equipment expenditures for freshwater fishing (excluding the Great Lakes) totaled \$27.5 billion in 2016. Total trip-related expenditures came to \$13.5 billion. Food and lodging amounted to \$5.1 billion, 38 percent of all trip costs. Transportation costs were

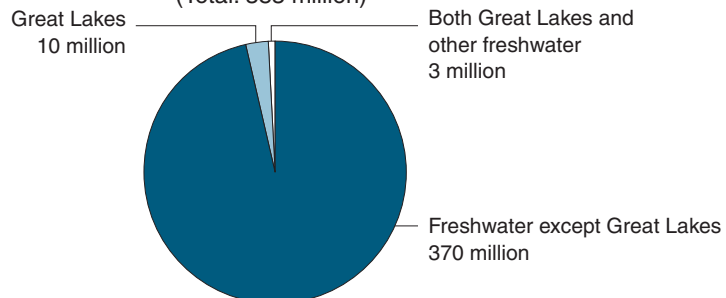
Freshwater Fishing



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

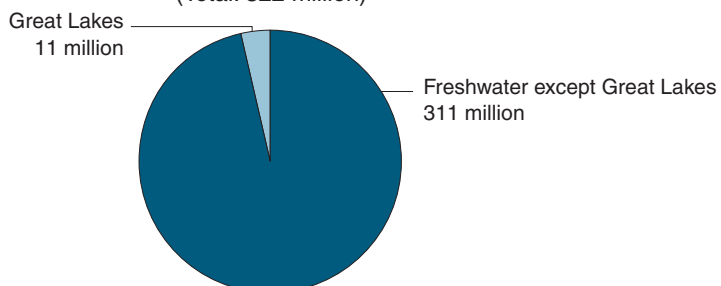
Days

(Total: 383 million)



Trips

(Total: 322 million)



\$3.6 billion, 27 percent of trip costs. Other trip-related expenses amounted to \$4.8 billion and included guide fees, equipment rental, and bait.¹⁶

Over \$14.0 billion was spent on equipment for freshwater fishing, excluding the Great Lakes. Non-Great Lakes freshwater anglers purchased \$4.2 billion of fishing equipment such as rods and reels, tackle boxes, depth finders, and artificial lures and flies. Expenditures for auxiliary equipment, including camping equipment and binoculars, totaled \$2.8 billion for the year. Expenditures for special equipment such as boats, vans, and cabins accounted for \$7.0 billion.¹⁷

Great Lakes anglers spent \$2.2 billion on trips and equipment in 2016. Trip-related expenses totaled \$2.1 billion. Of these expenditures, \$474 million was spent on food and lodging, 23 percent of trip costs; \$306 million went for transportation, 15 percent of trip costs¹⁸; and \$1.3 billion was spent on other items such as guide fees, equipment rental, and bait, 62 percent of trip costs.¹⁹

Great Lakes anglers spent \$184 million on equipment. They bought \$158 million worth of fishing equipment (rods, reels, etc.). The remaining \$26 million was spent on auxiliary and special equipment.²⁰

¹⁶ The differences among estimates of food and lodging expenditures, transportation expenditures, and other trip-related expenditures were not statistically significant.

¹⁷ The differences among estimates of fishing equipment expenditures, auxiliary equipment expenditures, and special equipment expenditures were not statistically significant.

¹⁸ The difference between estimates of food and lodging expenditures and transportation expenditures was not statistically significant.

¹⁹ The difference between estimates of food and lodging expenditures and other item expenditures was not statistically significant.

²⁰ The difference between estimates of fishing equipment expenditures and auxiliary and special equipment expenditures was not statistically significant.

| Saltwater Fishing | |
|--|----------------|
| Anglers | 8.3 million |
| Days | 75 million |
| Trips | 61 million |
| Trips and equipment expenditures | \$11.2 billion |

Source: Tables 1 and 16.

Saltwater Fishing Highlights

In 2016, 8.3 million anglers enjoyed saltwater fishing on 61 million trips, totaling 75 million days. Overall, they spent \$11.2 billion during the year on trips and equipment. Of their expenditures, trip-related costs garnered the largest portion, \$6.2 billion. Food and lodging cost \$2.3 billion, 37 percent of trip expenditures; transportation costs totaled \$1.1 billion, 18 percent of trip costs; and other trip costs such as equipment rental, bait, and guide fees were \$2.8 billion.²¹

Anglers spent a total of \$5.0 billion on equipment for saltwater fishing.²² Of the \$5.0 billion, \$2.7 billion was for fishing equipment (rods, reels, etc.), \$291 million for auxiliary equipment (camping equipment, binoculars, etc.), and \$2.1 billion for special equipment (boats, vans, etc.).²³

²¹ The difference between estimates of food and lodging expenditures and other trip cost expenditures was not statistically significant.

²² The difference between estimates of trip-related expenditures and equipment expenditures was not statistically significant.

²³ The difference between estimates of fishing equipment expenditures and special equipment expenditures was not statistically significant.

Comparative Fishing Highlights

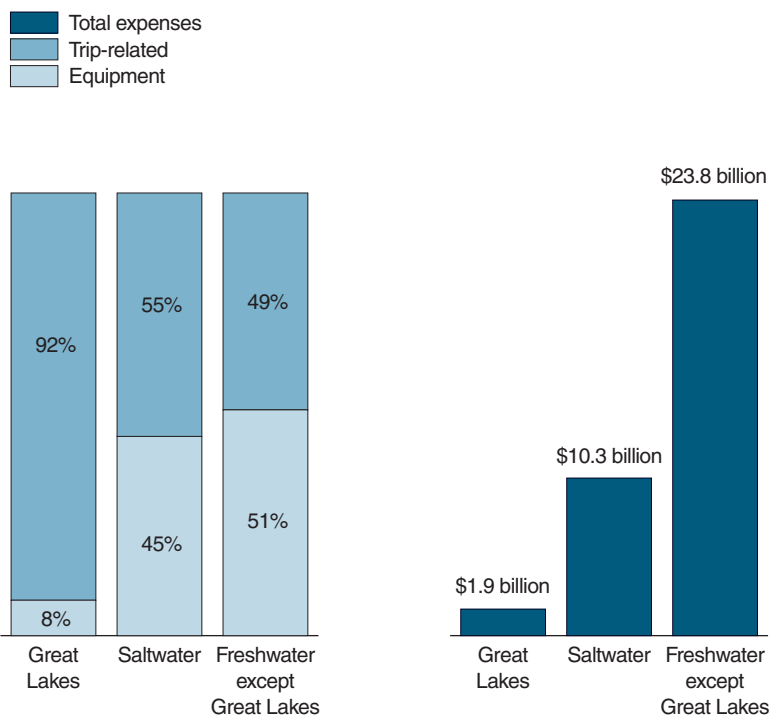
In 2016, anglers spent an average of 13 days fishing and took an average of 11 fishing trips. Freshwater, non-Great Lakes anglers averaged 13 days fishing and 11 trips, while Great Lakes anglers averaged 7 days fishing and 6 trips. Saltwater anglers fished 9 days on average and averaged 7 trips.²⁴

Overall, anglers spent an average of \$1,290 on fishing-related expenses in 2016. They averaged \$608 per angler for their trip-related costs, a daily average of \$47. Freshwater anglers, excluding the Great Lakes, averaged \$458 per participant for their trips in 2016, equaling \$36 per day. Great Lakes anglers spent an average of \$1,131 on trip-related expenses, \$153 per day, the highest average amount. Saltwater anglers had an average expenditure amount of \$739, an average of \$82 per day.²⁵

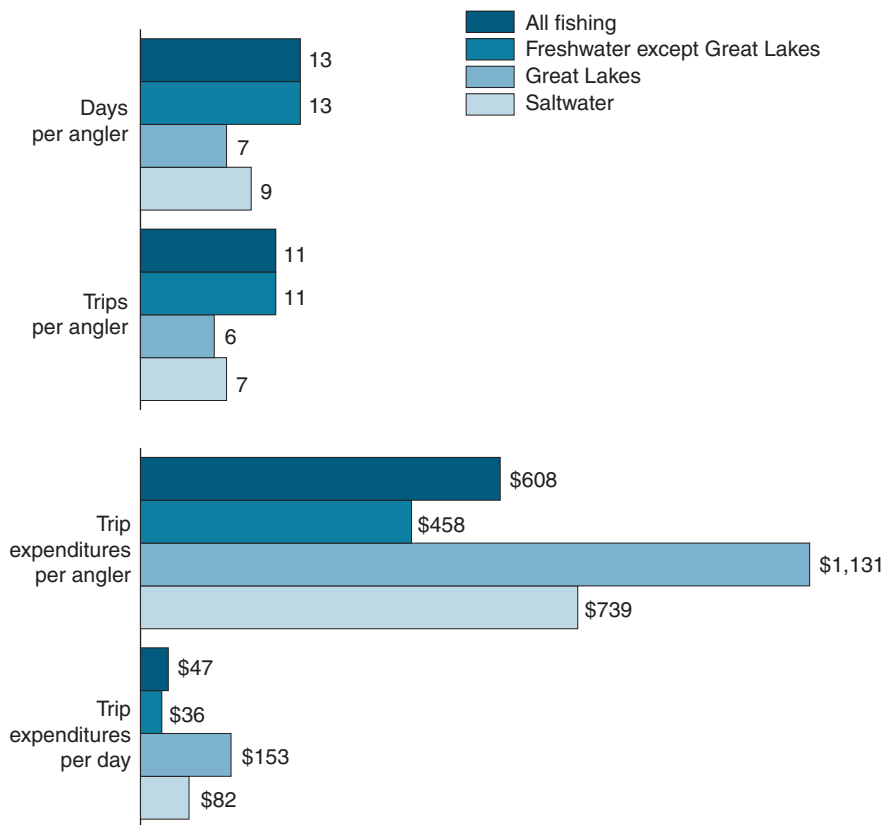
²⁴ The differences between the estimates of days and trips for Great Lakes and saltwater anglers were not statistically significant.

²⁵ The differences between average per angler and average per day for Great Lakes and saltwater anglers were not statistically significant.

Comparative Trip and Equipment Expenditures



Comparative Fishing by Type of Fishing



Fishing for Selected Fish

The most popular fish species among the 29.5 million anglers who fished freshwater, other than the Great Lakes, was black bass. Nearly 9.6 million anglers spent 117 million days fishing for black bass. Panfish were sought by 8.4 million anglers on 110 million days. Catfish and bullheads drew 8.1 million anglers on 74 million days. Trout fishing attracted 7.8 million anglers on 63 million days. Approximately 7.8 million anglers fished for crappie on 107 million days. Almost 5 million anglers fished for white bass and striped bass on 72 million days.²⁶ Freshwater anglers also commonly fished for walleye, northern pike, sauger, salmon, and steelhead. “Anything” was also a common response of anglers.

In 2016, 1.8 million anglers fished the Great Lakes. Salmon, the most commonly sought fish for these waters, attracted 862 thousand anglers, fishing 6 million days. Walleye and sauger drew 508 thousand anglers for 3 million days of fishing. There were 422 thousand steelhead anglers, fishing 2 million days.²⁷ Great Lakes anglers also fished for northern pike, pickerel, and muskie, as well as black bass and lake trout.

Of the 8.3 million saltwater anglers, 2.4 million fished for anything for 13 million days. Over 2.1 million fished for red drum (redfish) for 21 million days. Over 1.1 million anglers fished for striped bass on 10 million days. One million anglers fished for flatfish, which includes flounder and halibut, on 11 million days. Also popular were sea trout (weakfish) with 712 thousand anglers who fished 5.3 million days.²⁸ Other prominent saltwater species sought were bluefish with 610 thousand anglers, tuna with 614 thousand anglers, mackerel with 442 thousand

²⁶ None of the differences between the number of anglers was statistically significant except for white bass/striped bass anglers and each of black bass, panfish, catfish/bullheads, trout, and crappie angler estimates. None of the differences between the days estimates were statistically significant, except for the black bass days and trout days.

²⁷ None of the differences between the angler estimates or days estimates were statistically significant.

²⁸ The differences between estimates of fishing days for anything, red drum, striped bass, flatfish, and sea trout were not statistically significant, except for red drum and sea trout.

Selected Fish by Type of Fishing

(In millions)

| Type of fishing | Anglers | Days |
|---|-------------|------------|
| Freshwater except Great Lakes, total | 29.5 | 373 |
| Black bass | 9.6 | 117 |
| Panfish | 8.4 | 110 |
| Trout | 7.8 | 63 |
| Catfish/bullhead | 8.1 | 74 |
| Crappie | 7.8 | 107 |
| White bass, striped bass, and striped bass hybrids. | 5.0 | 72 |
| Great Lakes, total. | 1.8 | 13 |
| Walleye, sauger | 0.5 | 3 |
| Salmon | 0.9 | 6 |
| Steelhead | 0.4 | 2 |
| Saltwater, total | 8.3 | 75 |
| Red drum (redfish) | 2.1 | 21 |
| Striped bass | 1.1 | 10 |
| Flatfish (flounder, halibut) | 1.0 | 11 |
| Sea trout (weakfish) | 0.7 | 5 |
| Bluefish | 0.6 | 4 |
| Salmon | 0.4 | 4 |

Source: Tables 3, 4, and 5.

anglers, and mahi mahi (dolphinfish) with 261 thousand anglers.²⁹

Participation by Geographic Division

In 2016, 255 million people 16 years and older lived in the United States and 1 of 7 of these U.S. residents went fishing. While the national participation rate was 14 percent, the regional rates ranged from 8 percent in the Pacific to 20 percent in the East South Central Region. The East South Central, West North Central, East North Central, West South Central, South Atlantic, and Mountain Regions all reported participation rates above the national rate.³⁰ The New England, Middle Atlantic, and Pacific Regions fell below the national rate.³¹

Fishing in State of Residence and in Other States

A large majority of the 35.8 million anglers who fished in 2016 did so within their home state. Approximately 32.1 million participants, 90 percent of all anglers, fished in their resident state. Over 8.8 million, 25 percent, fished out-of-state. Percentages do not add to 100 because those anglers who fished both in state and out of state were included in both categories.

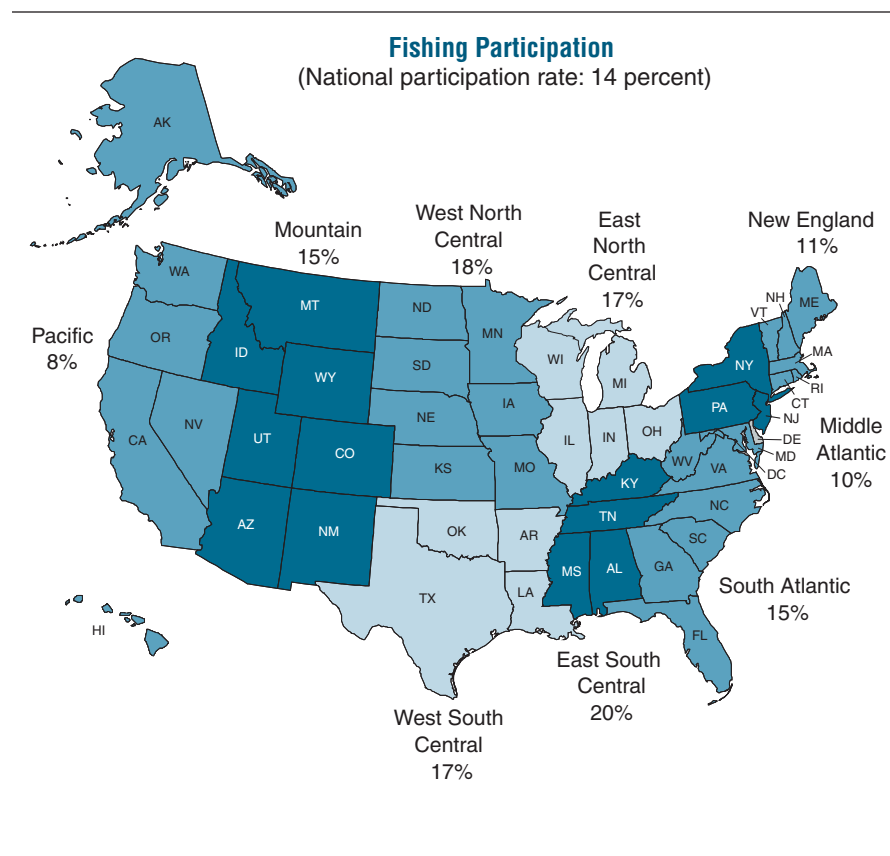
Of the 29.5 million non-Great Lakes freshwater anglers, 92 percent (27.3 million) fished within their resident state. Nearly 6.1 million (21 percent) of these freshwater anglers fished out of state.

An estimated 70 percent (1.3 million) of all Great Lakes anglers enjoyed fishing

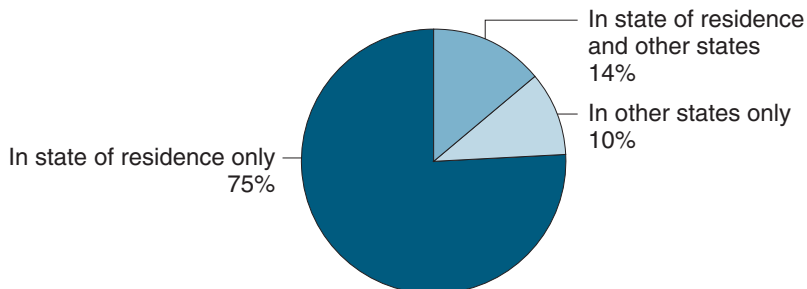
²⁹ The differences between estimates of the number of anglers for anything, red drum, striped bass, flatfish, sea trout, bluefish, tuna, mackerel, and mahi mahi were not statistically significant, except for anything and striped bass, anything and flatfish, anything and sea trout, anything and bluefish, anything and tuna, anything and mackerel, anything and mahi mahi, red drum and flatfish, red drum and sea trout, red drum and bluefish, red drum and tuna, red drum and mackerel, red drum and mahi mahi, striped bass and mahi mahi, and flatfish and mahi mahi.

³⁰ None of the participation rates for resident anglers of the East South Central, West North Central, East North Central, West South Central, South Atlantic, and Mountain Regions were statistically significantly different from the national rate.

³¹ The difference between the national rate and New England's rate was not statistically significant.



Percent of All Fishing in State of Residence and in Other States (Total: 35.8 million participants)



within their home state in 2016. Approximately 36 percent (0.7 million) of all Great Lakes anglers fished out of state.³²

Approximately 27 percent of saltwater anglers fished outside their resident state. The percentage fishing within their resident state was 81 percent. Nonresident saltwater anglers numbered 2.2 million and resident anglers 6.7 million.

³² The difference between the number of Great Lakes anglers fishing in their home state and the number fishing out of state was not statistically significant.

Fishing in State of Residence and in Other States

(In millions)

| | In state | Out of state |
|--------------------------------|-------------|--------------|
| Total anglers | 32.1 | 8.8 |
| Freshwater except | | |
| Great Lakes | 27.3 | 6.1 |
| Great Lakes | 1.3 | 0.7 |
| Saltwater | 6.7 | 2.2 |

Source: Table 2.

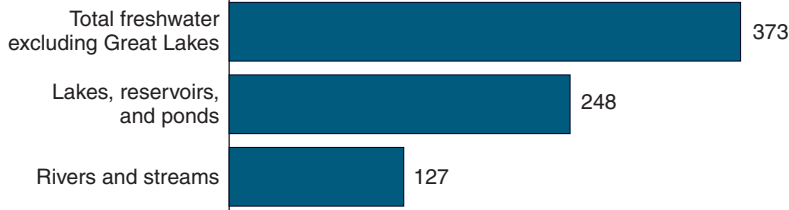
Types of Freshwater Fished, Excluding Great Lakes

(In millions)

Anglers



Days



Types of Freshwater Fished, Excluding Great Lakes

Excluding the Great Lakes, 83 percent or 24.6 million of all freshwater anglers fished in reservoirs, lakes, and ponds; 45 percent or 13.1 million fished in rivers and streams. They spent 248 million days fishing in lakes, reservoirs, and ponds and 127 million days fishing in rivers and streams.

Great Lakes Anglers

Great Lakes fishing includes not only the Great Lakes, but also their tributaries—bodies of water that connect the Great Lakes, and the St. Lawrence River south of the bridge at Cornwall. The most popular of the Lakes among anglers was Lake Michigan, attracting 60 percent of all Great Lakes anglers. They averaged 9 days of fishing in Lake Michigan during 2016. Lake Erie ranked second in popularity, hosting 21 percent of Great Lakes anglers with an average of 7 days per angler.³³ Lake Ontario drew 6 percent of all Great Lakes anglers in 2016. Anglers fished an average of 4 days in Lake Ontario.³⁴ The remaining lakes and tributaries have estimates that are too small to report due to small sample sizes.

Great Lakes Fishing

| | Anglers (thousands) | Percentage of all Great Lakes anglers |
|-------------------------------------|------------------------|---|
| Total, all Great Lakes | 1,824 | 100 |
| Lake Michigan | 1,087 | 60 |
| Lake Erie | 390 | 21 |
| Lake Ontario | 117 | 6 |

Source: Table 26.

Note: Other Great Lakes and tributaries not listed due to small sample sizes.

³³ The differences in the number of Lake Michigan and Lake Erie anglers and their average days were not statistically significant.

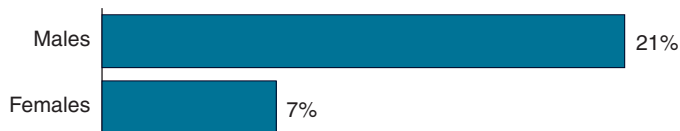
³⁴ The difference in the number of Lake Erie and Lake Ontario anglers was not statistically significant. The difference in the average days estimates for Lake Michigan and Lake Erie was not statistically significant, nor was the difference for Lake Ontario and Lake Erie anglers.

Sex and Age of Anglers

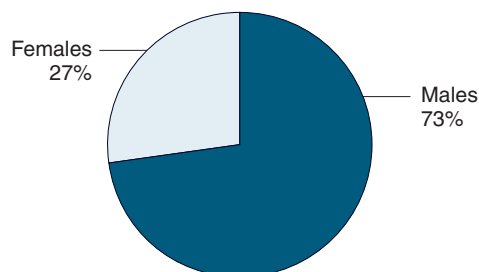
Although more men than women fished in 2016, a substantial number of women, 9.8 million, fished. Approximately 21 percent of all males 16 years and older went fishing, while 7 percent of all females fished. Of the 35.8 million anglers who fished in the United States, 73 percent (26.0 million) were male and 27 percent were female.

Turning to age categories, 7.1 million anglers were 45 to 54 years old. They composed 20 percent of all anglers and had a participation rate of 17 percent. The 25- to 34-year-old age group accounted for 5.0 million anglers, 14 percent of all anglers. They had 11 percent participation. Nearly 6.6 million anglers, 18 percent of all anglers, were 35 to 44 years old. Their participation rate was 16 percent of the U.S. population in that age group. The 6.7 million 55- to 64-year-olds who fished composed 19 percent of all anglers and had a participation rate of 16 percent. The 2.2 million anglers 18 to 24 years old made up 6 percent of the angler population and had a participation rate of 8 percent. Anglers 75 years and older numbered 2.0 million, 6 percent of all anglers, and had a participation rate of 10 percent. The 16- and 17-year-olds added 1.1 million

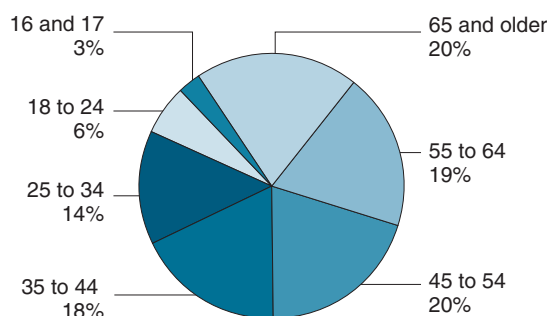
Percent of Males and Females Who Fished in the United States



Percent of Anglers by Sex



Percent of Anglers by Age

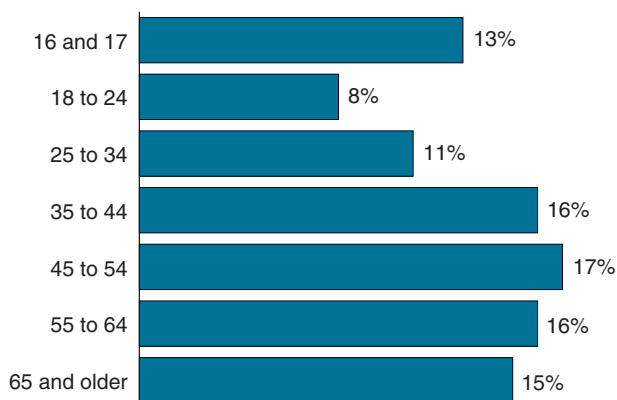


Anglers by Sex and Age

| | |
|--------------------------------|---------------------|
| Total, both sexes . . | 35.8 million |
| Male | 26.0 million |
| Female | 9.8 million |
| Total, all ages | 35.8 million |
| 16 and 17 | 1.1 million |
| 18 to 24 | 2.2 million |
| 25 to 34 | 5.0 million |
| 35 to 44 | 6.6 million |
| 45 to 54 | 7.1 million |
| 55 to 64 | 6.7 million |
| 65 and older | 7.1 million |

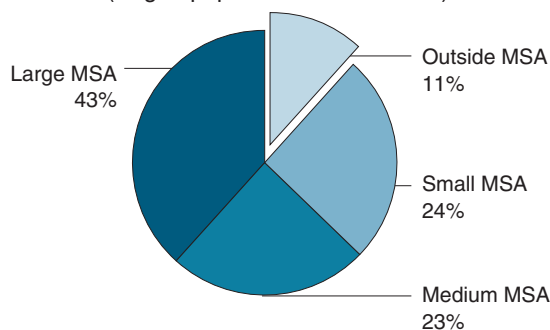
Source: Table 9.

Percent of U.S. Population Who Fished by Age



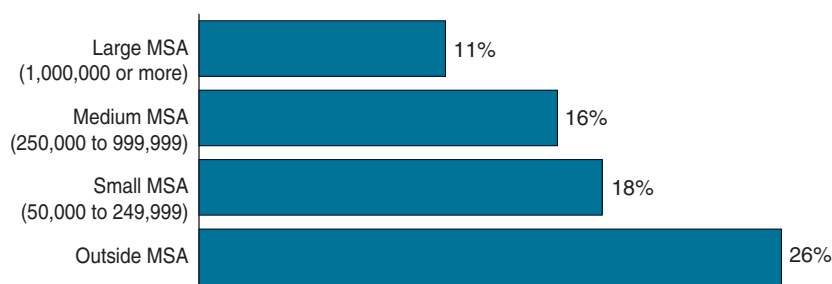
Percent of Anglers by Residence

(Angler population: 35.8 million)

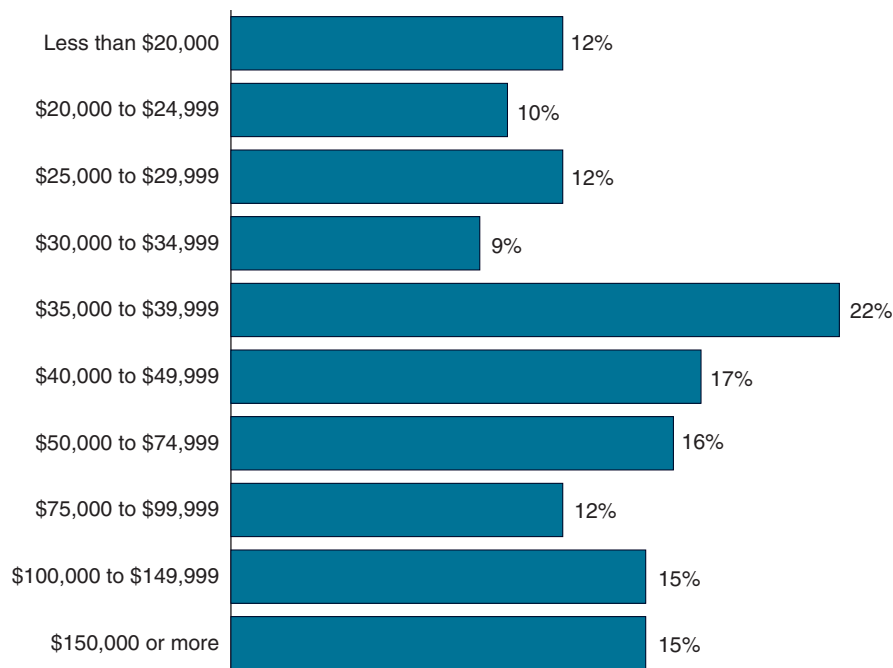


Percent of U.S. Population Who Fished by Residence

(Total U.S. population that fished: 14 percent)



Percent of U.S. Population Who Fished by Household Income



individuals to the angler population.³⁵ They made up 3 percent of all anglers and had a 13 percent participation rate.³⁶

Metropolitan and Nonmetropolitan Anglers

While residents of metropolitan statistical areas (MSA)³⁷ had lower participation rates in fishing than non-MSA residents, they still accounted for the majority of anglers. An estimated 13 percent of all MSA residents fished in 2016, but they composed 89 percent of all anglers. By comparison, non-MSA residents composed 11 percent of all anglers, but their participation rate was twice as high at 26 percent.

Larger MSAs had lower participation rates in fishing than smaller MSAs but composed more of the angler population. Large MSAs with populations of 1,000,000 or more had the lowest participation rate at 11 percent, but they made up 43 percent of all anglers. Medium MSAs with a population of 250,000 to 999,999 had a 16 percent participation rate and made up 23 percent of all anglers. Those MSAs with a population less than 250,000 had a participation rate of 18 percent and composed 24 percent of all anglers.³⁸

³⁵ The differences between estimates of the number of anglers by the following age groups were not statistically significant: 75+ years old and 16- and 17-year-olds; 75+ years old and 18- to 24-year-olds; 25- to 34-year-olds and 35- to 44-year-olds; 25- to 34-year-olds and 55- to 64-year-olds; 35- to 44-year-olds and 45- to 54-year-olds; 35- to 44-year-olds and 55- to 64-year-olds; 35- to 44-year-olds and 65+ years old; 45- to 54-year-olds and 55- to 64-year-olds; 45- to 54-year-olds and 65+ years old; and 55- to 64-year-olds and 65+ years old.

³⁶ The differences between estimates of the participation rates of 16- and 17-year-olds, 18- to 24-year-olds, 25- to 34-year-olds, 35- to 44-year-olds, 45- to 54-year-olds, 55- to 64-year-olds, and 65+ and 75+ years old were not statistically significant, except for the following age groups: 18- to 24- and 35- to 44-year-olds; 18- to 24- and 45- to 54-year-olds; 18- to 24- and 55- to 64-year-olds; 18- to 24-year-olds and 65+ years old; 25- to 34- and 35- to 44-year-olds; 25- to 34- and 45- to 54-year-olds; 25- to 34- and 55- to 64-year-olds; 75+ years old and 35- to 44-year-olds; 75+ years old and 45- to 54-year-olds; and 75+ years old and 55- to 64-year-olds.

³⁷ See Appendix A for definition of metropolitan statistical area.

³⁸ The differences between the participation rates and percentages of total of anglers living in medium and small MSAs were not statistically significant.

Household Income of Anglers

The participation rate in fishing peaked with U.S. households with incomes of \$35,000 to \$39,999. The participation rate is the percentage of each income group that fished. The rate of those who reported incomes of \$35,000 to \$39,999 was the highest at 22 percent. Those with incomes of \$40,000 to \$49,999 had the next highest rate of 17 percent.³⁹ Generally, the participation rate was slightly below 16 percent as income increased beyond the median. Those with incomes in the four income categories less than \$34,999 had participation rates ranging from 9 to 12 percent.⁴⁰

The majority of anglers had household incomes of \$74,999 or less. Of those who reported income, 56 percent had incomes less than \$75,000. Among anglers who reported income, 45 percent were from households with incomes of \$75,000 or more.

³⁹ The difference between the participation rates for anglers with household incomes of \$35,000 to \$39,999 and anglers with incomes of \$40,000 to \$49,999 was not statistically significant.

⁴⁰ The differences in participation rates among the four income categories less than \$34,999 were not statistically significant.

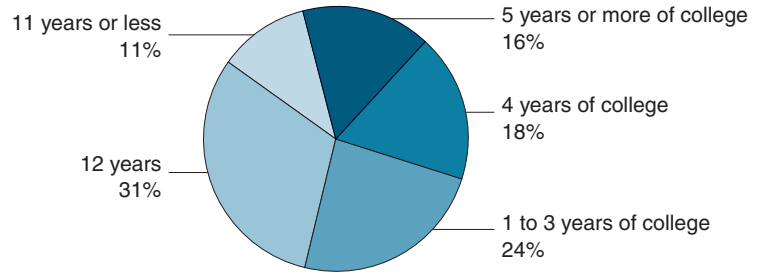
Anglers by Education, Race, and Ethnicity

(In millions)

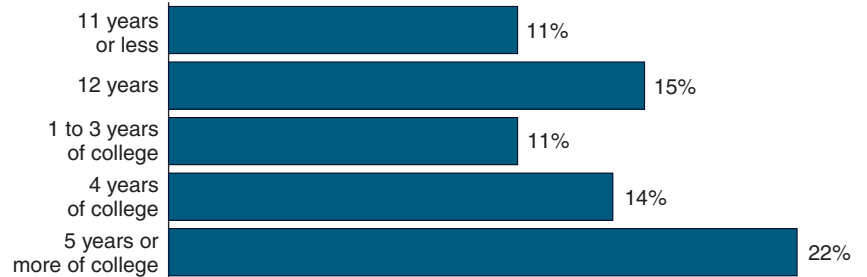
| | |
|--------------------------------------|-------------|
| Total anglers | 35.8 |
| Education | |
| 11 years or less | 3.8 |
| 12 years | 11.2 |
| 1 to 3 years of college | 8.6 |
| 4 years of college | 6.3 |
| 5 years or more of college | 5.9 |
| Race | |
| White | 30.9 |
| African American | 3.1 |
| Asian | 0.7 |
| Other | 1.0 |
| Ethnicity | |
| Hispanic | 3.1 |
| Non-Hispanic | 32.7 |

Source: Table 9.

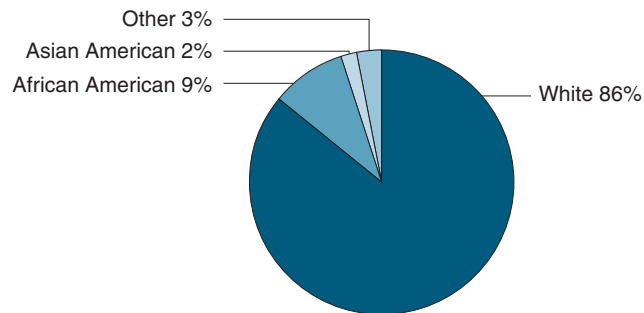
Percent of Anglers by Education



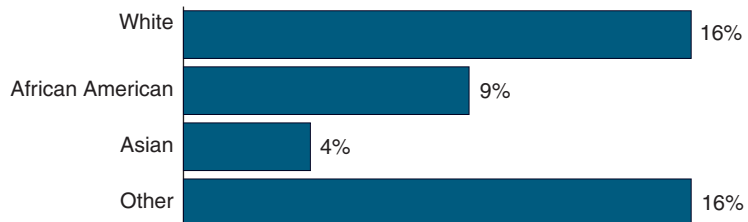
Percent of U.S. Population Who Fished by Education



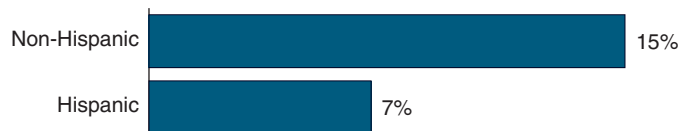
Percent of Anglers by Race



Percent of U.S. Population Who Fished by Race



Percent of U.S. Population Who Fished by Ethnicity



Education, Race, and Ethnicity

People with the highest level of education had the highest participation rate. Those with 11 years of education or less and 1 to 3 years of college had a participation rate of 11 percent. Those with 12 years of education had a participation rate of 15 percent. Those with 4 years of college had a participation rate of 14 percent.⁴¹ The highest participation rate, 22 percent, was held by those with 5 years or more of college.

While the highest participation rate is among those with 5 years or more of college, participants with 12 years of education made up the largest share of anglers. Of all anglers, 31 percent (11.2 million anglers) had 12 years of education.

⁴¹ The differences between the participation rates of anglers with 11 years of education or less and 1 to 3 years of college and anglers with 4 years of college were not significantly different, nor was the difference between the rates of anglers with 4 years of college and those with 12 years of education.

Fishing was most popular among Whites and “All Others,” (i.e., Native Americans, Pacific Islanders, and those of mixed races). Whites and All Others participated at a 16 percent rate.⁴² African Americans participated at a 9 percent rate.⁴³ Asians participated at a 4 percent rate. Of all anglers, 86 percent were White, 9 percent were African American, 3 percent were All Others, and 2 percent were Asian.⁴⁴

2006–2016 Comparison of Fishing Activity

In 2016, the number of people fishing was 8 percent higher than in 2011, although this was not a statistically significant increase. All participation

⁴² The difference between the participation rates of Whites and “All Others” was not statistically significant.

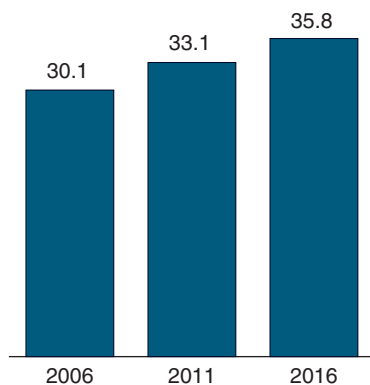
⁴³ The difference between the participation rates of African Americans and All Others was not statistically significant.

⁴⁴ The difference between the percentage of All Others and the percentage of Asian was not statistically significant.

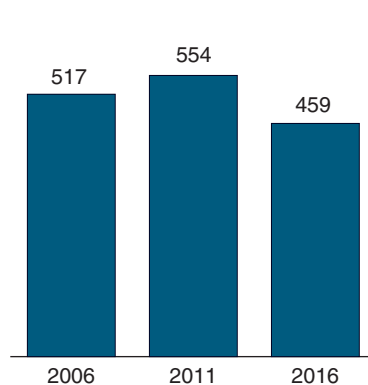
categories of freshwater fishing tended to be higher, although again these are not statistically significant changes. Saltwater fishing participation tended down, not significantly though. Days fishing, similarly, did not have statistically significant changes for any type of fishing, but the estimates tended to be less in 2016 than in 2011.

Comparing fishing in 2016 to that in 2006, there was a large increase in the number of freshwater anglers, particularly the number of non-Great Lakes anglers. Saltwater angling tended up, but not significantly so. The number of fishing days tended down, but not significantly. The increase in participants and the lack of increase in days means the days on the water of the average angler went down from 2006 to 2016. The 2006 to 2016 trend for total expenditures also mirrored the 2011 to 2016 trend, with no significant change.

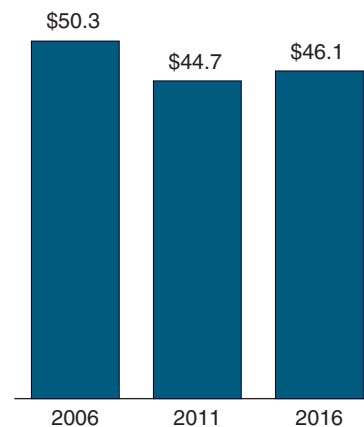
Number of Anglers
(Millions)



Days of Fishing
(Millions)



Fishing Expenditures
(Billions of 2016 dollars)



2011–2016 Fishing Participants, Days, and Expenditures

(U.S. population 16 years and older. Numbers in thousands)

| | 2011 | | 2016 | | 2011–2016 percent change |
|--|---------------------|------------|---------------------|------------|-----------------------------|
| | Number | Percent | Number | Percent | |
| Anglers, total | 33,112 | 100 | 35,754 | 100 | *8 |
| All freshwater | 27,547 | 83 | 30,137 | 84 | *9 |
| Freshwater, except Great Lakes | 27,060 | 82 | 29,490 | 82 | *9 |
| Great Lakes | 1,665 | 5 | 1,824 | 5 | *10 |
| Saltwater | 8,889 | 27 | 8,320 | 23 | *-6 |
| Days, total | 553,841 | 100 | 459,341 | 100 | *-17 |
| All freshwater | 455,862 | 82 | 383,192 | 83 | *-16 |
| Freshwater, except Great Lakes | 443,223 | 80 | 372,660 | 81 | *-16 |
| Great Lakes | 19,661 | 4 | 13,440 | 3 | *-32 |
| Saltwater | 99,474 | 18 | 75,392 | 16 | *-24 |
| Fishing, total (2016 dollars) | \$44,714,162 | 100 | \$46,115,118 | 100 | *3 |
| Trip-related | 23,314,728 | 52 | 21,729,778 | 47 | *-7 |
| Equipment, total | 16,591,883 | 37 | 21,077,638 | 46 | *27 |
| Fishing equipment | 6,571,828 | 15 | 7,430,662 | 16 | *13 |
| Auxiliary equipment | 1,184,346 | 3 | 3,163,575 | 7 | 167 |
| Special equipment | 8,835,710 | 20 | 10,483,401 | 23 | *19 |
| Other | 4,807,550 | 11 | 3,307,702 | 7 | -31 |

* Not statistically different from zero at the 95 percent confidence level.

2006–2016 Fishing Participants, Days, and Expenditures

(U.S. population 16 years and older. Numbers in thousands)

| | 2006 | | 2016 | | 2006–2016 percent change |
|--|---------------------|------------|---------------------|------------|-----------------------------|
| | Number | Percent | Number | Percent | |
| Anglers, total | 29,952 | 100 | 35,754 | 100 | 19 |
| All freshwater | 25,431 | 85 | 30,137 | 84 | 19 |
| Freshwater, except Great Lakes | 25,035 | 84 | 29,490 | 82 | 18 |
| Great Lakes | 1,420 | 5 | 1,824 | 5 | *28 |
| Saltwater | 7,717 | 26 | 8,320 | 23 | *8 |
| Days, total | 516,781 | 100 | 459,341 | 100 | *-11 |
| All freshwater | 433,337 | 84 | 383,192 | 83 | *-12 |
| Freshwater, except Great Lakes | 419,942 | 81 | 372,660 | 81 | *-11 |
| Great Lakes | 18,016 | 3 | 13,440 | 3 | *-25 |
| Saltwater | 85,663 | 17 | 75,392 | 16 | *-12 |
| Fishing, total (2016 dollars) | \$50,346,131 | 100 | \$46,115,118 | 100 | *-8 |
| Trip-related | 21,425,666 | 42 | 21,729,778 | 47 | *1 |
| Equipment, total | 22,478,832 | 44 | 21,077,638 | 46 | *-6 |
| Fishing equipment | 6,390,349 | 13 | 7,430,662 | 16 | *16 |
| Auxiliary equipment | 933,242 | 2 | 3,163,575 | 7 | 239 |
| Special equipment | 15,155,240 | 30 | 10,483,401 | 23 | *-31 |
| Other | 6,441,633 | 13 | 3,307,702 | 7 | -49 |

* Not statistically different from zero at the 95 percent confidence level.

Hunting



Hunting Highlights

In 2016, 11.5 million people 16 years and older enjoyed hunting a variety of animals within the United States. They hunted 184 million days and took 147 million trips. Hunting expenditures totaled \$26.2 billion.

Big game hunting was the most popular type of hunting. There were 9.2 million hunters who pursued big game such as deer and elk on 133 million days. Big game-related expenditures for trips and

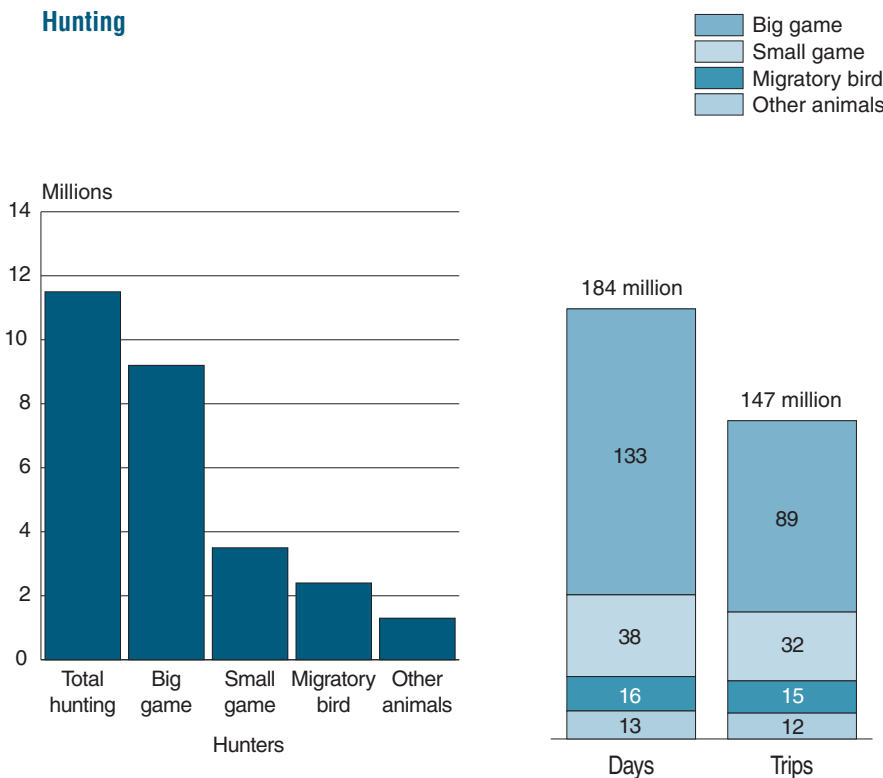
equipment totaled \$14.9 billion. There were 3.5 million hunters of small game including squirrels and rabbits. They hunted small game on 38 million days and spent \$1.7 billion on small game hunting trips and equipment. Migratory bird hunters numbered 2.4 million.⁴⁵ They spent 16 million days hunting birds such as waterfowl and doves.

⁴⁵ The difference between the estimates for migratory bird hunters and small game hunters was not statistically significant.

Migratory bird-related trip and equipment expenditures totaled \$2.3 billion. About 1.3 million⁴⁶ hunters sought other animals such as raccoons and feral pigs on 13 million days, and their expenditures for trips and equipment were \$755 million.

⁴⁶ The difference between the estimates for other animal hunters and migratory bird hunters was not statistically significant.

Hunting



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

Total Hunting

| | |
|-------------------------------|-----------------------|
| Hunters | 11.5 million |
| Big game | 9.2 million |
| Small game | 3.5 million |
| Migratory bird | 2.4 million |
| Other animal | 1.3 million |
| Days | 184 million |
| Big game | 133 million |
| Small game | 38 million |
| Migratory bird | 16 million |
| Other animal | 13 million |
| Trips | 147 million |
| Big game | 89 million |
| Small game | 32 million |
| Migratory bird | 15 million |
| Other animal | 12 million |
| Expenditures | \$26.2 billion |
| Big game | \$14.9 billion |
| Small game | \$1.7 billion |
| Migratory bird | \$2.3 billion |
| Other animal | \$0.8 billion |
| Nonspecific | \$6.5 billion |

Source: Tables 1 and 17-21.

Hunting Expenditures

Of the \$26.2 billion spent by hunters in 2016, 35 percent, \$9.2 billion, was spent on trip-related expenses. Food and lodging totaled \$3.1 billion, 34 percent of all trip-related expenses. Transportation spending was \$3.2 billion, 35 percent of trip expenditures. Other trip expenses such as guide fees, land use fees, and equipment rental were \$2.9 billion⁴⁷ or 32 percent of all trip-related expenses.

Total equipment expenditures for hunting were \$12.8 billion⁴⁸ in 2016, 49 percent of all hunting expenses. Hunting equipment, such as guns and rifles, telescopic sights, and ammunition, totaled \$7.4 billion, or 58 percent of all equipment costs. Expenditures for auxiliary equipment—including camping equipment, binoculars, and special hunting clothing—accounted for \$2.0 billion or 16 percent of all equipment expenses. Special equipment, such as campers or all-terrain vehicles, amounted to \$3.4 billion⁴⁹ or 26 percent of all equipment expenditures.

All other hunting expenditures totaled \$4.2 billion. Land leasing and ownership for hunting was the largest other expenditure category. Hunters spent \$2.9 billion on land leasing and ownership, which was 11 percent of all hunting-related expenditures. Expenditures for magazines, books, membership dues, contributions, licenses, tags, and permits totaled \$1.2 billion⁵⁰ or 4 percent. Expenditures for plantings, \$165 million, was 1 percent of all hunting expenditures.

⁴⁷ The differences between the estimates for expenditures of food and lodging, transportation, and other trip expenses were not statistically significant.

⁴⁸ The difference between the estimates for total equipment expenditures and trip-related expenditures was not statistically significant.

⁴⁹ The differences between the estimates for hunting equipment and special equipment and between the estimates for auxiliary equipment and special equipment were not statistically significant.

⁵⁰ The difference between the estimates for expenditures for magazines, books, licenses, and land leasing and owning was not statistically significant.

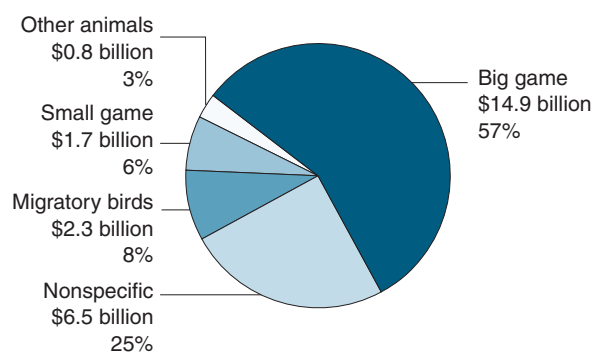
Total Hunting Expenditures

| | |
|---|-----------------------|
| Total hunting expenditures | \$26.2 billion |
| Total trip-related expenditures | \$9.2 billion |
| Food and lodging | 3.1 billion |
| Transportation | 3.2 billion |
| Other trip costs | 2.9 billion |
| Total equipment expenditures | \$12.8 billion |
| Hunting equipment | 7.4 billion |
| Auxiliary equipment | 2.0 billion |
| Special equipment | 3.4 billion |
| Total other hunting expenditures | \$4.2 billion |
| Magazines, books, and DVDs | 0.2 billion |
| Membership dues and contributions | 0.2 billion |
| Land leasing and ownership | 2.9 billion |
| Licenses, stamps, tags, and permits | 0.8 billion |
| Plantings | 0.2 billion |

Source: Table 17.

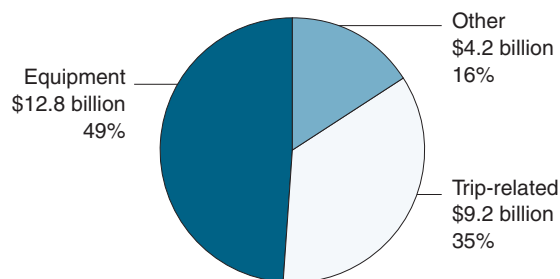
Hunting Expenditures by Type of Hunting

(Total expenditures: \$26.2 billion)



Percent of Total Hunting Expenditures

(Total expenditures: \$26.2 billion)



Big Game Hunting

In 2016, a majority of hunters, 9.2 million, devoted 133 million days to hunting big game including deer, elk, bear, and wild turkey. They took 89 million trips and spent an average of 14 days hunting big game.

Trip and equipment expenditures for big game hunting totaled \$14.9 billion. Trip-related expenses were \$6.2 billion, 42 percent of the total spent for trip-related and equipment expenditures. Of that amount, food and lodging accounted for \$1.9 billion or 30 percent of all trip-related costs. Transportation costs were \$2.3 billion, 37 percent of trip costs. Other trip-related expenses amounted to \$2.1 billion⁵¹ or 33 percent of trip costs.

Approximately 58 percent of big game-related expenditures were on equipment, which totaled \$8.7 billion.⁵² Hunting equipment—including firearms, ammunition, and bows and arrows—accounted for \$4.3 billion or 50 percent of all equipment. Purchases of auxiliary equipment such as tents and binoculars totaled \$1.1 billion

⁵¹ The differences between the estimates for food and lodging, transportation and other trip-related expenditures for big game hunting were not statistically significant.

⁵² The difference between the estimates for total big game equipment expenditures and total big game trip-related expenditures was not statistically significant.

(13 percent). Special equipment such as campers and all-terrain vehicles accounted for \$3.2 billion⁵³ (37 percent).

Small Game Hunting

Small game such as rabbits, squirrels, pheasants, quail, and grouse was also popular with hunters. Just over 3.5 million hunters pursued small game for a total of 38 million days. They took 32 million trips and averaged 11 days in the field hunting small game.

These hunters spent \$1.7 billion on trips and equipment for small game hunting. Trip expenditures totaled \$1.1 billion. Spending on food and lodging was \$459 million or 44 percent of trip expenditures. Transportation costs totaled \$315 million or 30 percent of small game trip expenses. Other trip-related expenditures were \$277 million⁵⁴ or 26 percent of all trip costs.

Equipment expenditures for small game hunting were \$603 million. For the pursuit of small game, hunters spent

⁵³ The difference between the estimates for expenditures on big game hunting equipment and special equipment was not statistically significant. Also, the difference between the estimates on expenditures for big game auxiliary equipment and special equipment was not statistically significant.

⁵⁴ The differences between the estimates for expenditures on food and lodging, transportation, and other trip-related expenditures of small game hunting were not statistically significant.

\$548 million on hunting equipment (firearms, ammunition, etc.) and \$56 million on auxiliary equipment, 91 and 9 percent, respectively.

Migratory Bird Hunting

In 2016, 2.4 million migratory bird hunters devoted 16 million days on 15 million trips for hunting birds such as doves, ducks, and geese. Hunters averaged 7 days pursuing migratory birds for the year.

Migratory bird-related spending for trips and equipment was \$2.3 billion in 2016. Of this amount, \$1.3 billion was spent on hunting trips. An estimated \$528 million or 41 percent of all trip expenditures were on food and lodging, and \$484 million (38 percent) were on transportation. Other trip expenses were \$272 million⁵⁵ (21 percent) of the total trip-related expenditures for migratory bird hunters.

Equipment purchases for migratory bird hunting totaled \$1.0 billion in 2016. Of this amount, \$754 million was spent on hunting equipment (firearms, ammunition, etc.) and \$160 million on auxiliary equipment, 78 and 16 percent of total equipment purchases, respectively.

⁵⁵ The differences between the estimates for expenditures on food and lodging, transportation, and other trip-related expenditures of migratory bird hunting were not statistically significant.

Big Game

| | |
|--|----------------|
| Hunters | 9.2 million |
| Days | 133 million |
| Trips | 89 million |
| Trips and equipment expenditures | \$14.9 billion |

Source: Tables 1 and 18.

Big Game Trip and Equipment Expenditures
(Total expenditures: \$14.9 billion)

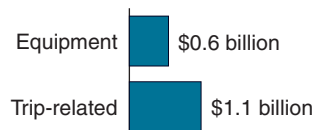


Small Game

| | |
|--|---------------|
| Hunters | 3.5 million |
| Days | 38 million |
| Trips | 32 million |
| Trips and equipment expenditures | \$1.7 billion |

Source: Tables 1 and 19.

Small Game Trip and Equipment Expenditures
(Total expenditures: \$1.7 billion)



Hunting Other Animals

Over 1.3 million hunters reported spending 13 million days on 12 million trips pursuing other animals such as groundhogs, feral pigs, raccoons, foxes, and coyotes. They averaged 10 days of hunting.

These hunters spent \$755 million in 2016 on trips and equipment for the pursuit of other animals. Trip-related costs totaled \$648 million. Of that, food and lodging were \$264 million or 41 percent of all trip costs. Transportation was \$97 million,⁵⁶ 15 percent of trip expenses. The estimate for other trip expenses is not reportable due to a small sample size.

Equipment expenditures for hunting other animals totaled \$107 million. For the pursuit of other animals, hunters spent \$97 million on hunting equipment (firearms, ammunition, etc.), 91 percent of total equipment expenditures. Estimates for auxiliary and special equipment are not reportable due to small sample sizes.

Comparative Hunting Highlights

Big game hunters pursued big game an average of 14 days on 10 trips in 2016. Small game hunters pursued small

⁵⁶ The difference between the estimates for expenditures on food and lodging and transportation for hunting other animals was not statistically significant.

game an average of 11 days on 9 trips.⁵⁷ Migratory bird hunters hunted migratory birds an average of 7 days on 6 trips.⁵⁸ Individuals hunting other animals did so an average of 10 days on 9 trips.⁵⁹

Average spending on trips and equipment was higher for big game hunting than for any other type of hunting. While hunting big game, participants spent an average of \$1,616 in 2016. By comparison, spending on migratory bird hunting by participants averaged \$958;⁶⁰ spending on other animal hunting by participants averaged \$574;⁶¹ and spending on small game hunting averaged \$472.⁶²

Trip-related expenditures for all hunting averaged \$803 per hunter, a daily average of \$50, during 2016. In pursuit of migra-

⁵⁷ The differences between the estimates of average days and average trips for small game and big game hunters were not statistically significant.

⁵⁸ The differences between the estimates of average days and average trips for migratory bird and small game hunters were not statistically significant.

⁵⁹ The differences between the estimates of average days and average trips for other animal hunters and each of big game, small game, and migratory bird hunters were not statistically significant.

⁶⁰ The difference between the summed estimates of trip-related and equipment expenditures by migratory bird hunters and big game hunters was not statistically significant.

⁶¹ The difference between the summed estimates of trip-related and equipment expenditures by other animal hunters and migratory bird hunters was not statistically significant.

⁶² The difference between the summed estimates of trip-related and equipment expenditures by small game hunters and other animal hunters was not statistically significant.

tory birds, hunters spent an average of \$546 (\$82 per day). Other animal hunters averaged \$493⁶³ (\$49 per day⁶⁴). Big game hunters averaged trip-related expenditures of \$675,⁶⁵ which was \$47 per day.⁶⁶ Hunters spent an average of \$300⁶⁷ while seeking small game (\$27 per day⁶⁸).

Hunting for Selected Game

Among big game species, deer was the most popular animal pursued, attracting 8.1 million hunters for 115 million days. Wild turkey attracted 2.0 million hunters for 13 million days, while elk drew 712 thousand for 6 million⁶⁹ days,

⁶³ The difference between the estimates of average trip-related expenditures by other animal hunters and migratory bird hunters was not statistically significant.

⁶⁴ The difference between the estimates of average trip-related expenditures per day by other animal hunters and migratory bird hunters was not statistically significant.

⁶⁵ The differences between the estimates of average trip-related expenditures by big game hunters and each of expenditures by migratory bird hunters and other animal hunters were not statistically significant.

⁶⁶ The differences between the estimates of average trip-related expenditures by day by big game hunters and each of expenditures by migratory bird hunters and other animal hunters were not statistically significant.

⁶⁷ The differences between the estimates of average trip-related expenditures by small game hunters and each of expenditures by migratory bird hunters and other animal hunters were not statistically significant.

⁶⁸ The difference between the estimates of average trip-related expenditures per day by small game hunters and other animal hunters was not statistically significant.

⁶⁹ The difference between the estimates of elk hunting days and wild turkey hunting days was not statistically significant.

Migratory Bird

| | |
|--|---------------|
| Hunters | 2.4 million |
| Days | 16 million |
| Trips | 15 million |
| Trips and equipment expenditures | \$2.3 billion |

Source: Tables 1 and 20.

Migratory Bird Trip and Equipment Expenditures

(Total expenditures: \$2.3 billion)



Other Animals

| | |
|--|-----------------|
| Hunters | 1.3 million |
| Days | 13 million |
| Trips | 12 million |
| Trips and equipment expenditures | \$755.1 million |

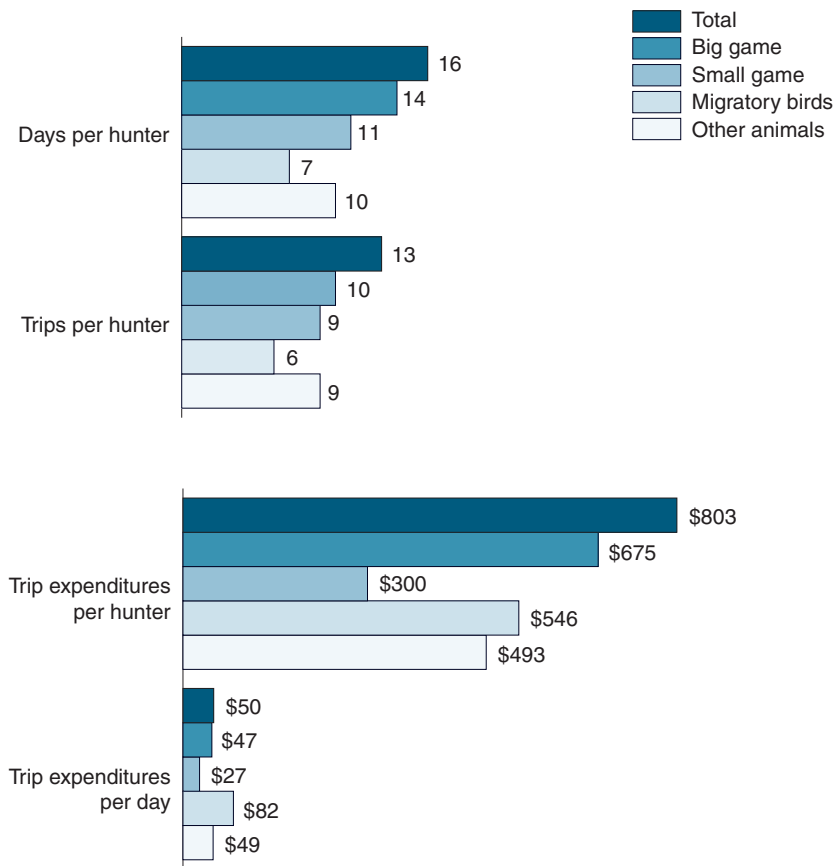
Source: Tables 1 and 21.

Trip and Equipment Expenditures for Hunting Other Animals

(Total expenditures: \$755.1 million)



Comparative Hunting by Type of Hunting



and bear 187 thousand⁷⁰ for 1 million⁷¹ days. In addition, 386 thousand⁷² hunters spent 2 million⁷³ days hunting other big game animals.

Among small game species, squirrels were the most popular quarry with 1.5 million small game hunters hunting them 11 million days in 2016. Rabbits were hunted by 1.3 million⁷⁴ participants for 20 million⁷⁵ days. Quails were flushed by 958 thousand⁷⁶ hunters on 7 million⁷⁷ days, while pheasants were hunted by 726 thousand⁷⁸ hunters on 5 million⁷⁹ days. Grouse and/or prairie chicken were pursued by 438 thousand⁸⁰ hunters on 4 million⁸¹ days. In addition, 131 thousand⁸² hunters spent 726 thousand⁸³ days hunting other small game animals.

Among those hunting migratory birds, 1.2 million pursued ducks for 9 million days. There were 1.2 million⁸⁴ hunters

⁷⁰ The difference between the estimates of elk and bear hunters was not statistically significant.

⁷¹ The difference between the estimates of elk hunting days and bear hunting days was not statistically significant.

⁷² The differences between the estimates of other big game hunters and each of elk hunters and bear hunters were not statistically significant.

⁷³ The differences between the estimates of other big game hunting days and each of elk hunting days and bear hunting days were not statistically significant.

⁷⁴ The difference between the estimates of rabbit hunters and squirrel hunters was not statistically significant.

⁷⁵ The difference between the estimates for rabbit hunting days and squirrel hunting days was not statistically significant.

⁷⁶ The differences between the estimates of quail hunters and each of rabbit hunters and squirrel hunters were not statistically significant.

⁷⁷ The differences between the estimates for quail hunting days and each of squirrel hunting days and rabbit hunting days were not statistically significant.

⁷⁸ The differences between the estimates of pheasant hunters and each of squirrel hunters, rabbit hunters, and quail hunters were not statistically significant.

⁷⁹ The differences between the estimates of pheasant hunting days and each of squirrel hunting days, rabbit hunting days, and quail hunting days were not statistically significant.

⁸⁰ The differences between the estimates of grouse/prairie chicken hunters and each of quail hunters and pheasant hunters were not statistically significant.

⁸¹ The differences between the estimates of grouse/prairie chicken hunting days and each of squirrel hunting days, rabbit hunting days, quail hunting days, and pheasant hunting days were not statistically significant.

⁸² The differences between the estimates of other small game hunters and each of squirrel hunters, rabbit hunters, quail hunters, pheasant hunters, and grouse/prairie chicken hunters were not statistically significant.

⁸³ The differences between the estimates of other small game hunting days and each of pheasant hunting days and grouse/prairie chicken hunting days were not statistically significant.

⁸⁴ The difference between estimates of duck hunters and dove hunters was not statistically significant.

Selected Game by Type of Hunting

(In millions)

| Type of hunting | Hunters | Days |
|-------------------------------------|------------|------------|
| Big game, total | 9.2 | 133 |
| Deer | 8.1 | 115 |
| Wild Turkey | 2.0 | 13 |
| Elk | 0.7 | 6 |
| Bear | 0.2 | 1 |
| Small game, total | 3.5 | 38 |
| Squirrel | 1.5 | 11 |
| Rabbit and hare | 1.3 | 20 |
| Quail | 1.0 | 7 |
| Ptarmigan | ... | 5 |
| Grouse/prairie chicken | 0.4 | 4 |
| Migratory birds, total | 2.4 | 16 |
| Ducks | 1.2 | 9 |
| Doves | 1.2 | 5 |
| Geese | 0.8 | 5 |

Source: Table 7.

... Sample size too small (less than 10) to report estimate reliably.

who pursued dove on 5 million⁸⁵ days. On 5 million⁸⁶ days, 793 thousand⁸⁷ hunters hunted geese in 2016.

Participation by Geographic Divisions

Regionally, participation rates in hunting ranged from 2 percent in the New England and Pacific Divisions to 8 percent in the West North Central and East South Central Divisions. The East North Central, West South Central, and Mountain Divisions also had participation rates above the national average of 4 percent.⁸⁸ Divisions with participation rates below the national rate were New England, Middle Atlantic, South Atlantic, and Pacific.⁸⁹

⁸⁵ The difference between the estimates of dove hunting days and duck hunting days was not statistically significant.

⁸⁶ The differences between the estimates of goose hunting days and each of duck hunting days and dove hunting days were not statistically significant.

⁸⁷ The differences between the estimates of goose hunters and each of duck hunters and dove hunters were not statistically significant.

⁸⁸ The differences between the estimates of the national average percentage and each of East North Central, West South Central, South Atlantic, and Mountain Divisions' percentages were not statistically significant.

⁸⁹ The differences between the estimates of the national average percentage and each of New England, Middle Atlantic, and Pacific Regions' percentages were not statistically significant.

Hunting in State of Residence and in Other States

A large majority of participants, 96 percent or 10.9 million, hunted within their resident state in 2016. Only 1.8 million, 16 percent, hunted in another state. Percentages do not add to 100 because those who hunted both in state and out of state were included in both categories.

The overall resident/nonresident pattern is relatively constant across all types of hunting. Over 8.6 million big game hunters—94 percent of all big game hunters—hunted within their state of residence, while 14 percent (1.3 million people) traveled to another state to hunt big game. Almost 3.3 million small game hunters—93 percent⁹⁰ of all small game hunters—pursued game in their resident state. An estimated 374 thousand small game hunters (11 percent⁹¹) ventured across state lines to hunt small game. As for migratory bird hunters,

⁹⁰ The difference between the estimates of the percentage of small game hunters and big game hunters who hunted in their resident state was not statistically significant.

⁹¹ The difference between the estimates of the percentage of small game hunters and big game hunters who hunted in nonresident states was not statistically significant.

2.3 million⁹² of them—98 percent⁹³ of all migratory bird hunters—hunted within their resident state. An estimated 9 percent⁹⁴ or 202 thousand⁹⁵ hunted out of state. Among sportspersons who hunted other animals, 95 percent⁹⁶ (1.2 million⁹⁷) hunted in state.

⁹² The difference between the estimates of the number of migratory bird hunters and small game hunters hunting in their resident state was not statistically significant.

⁹³ The differences between the estimates of the percentage of migratory bird hunters and each of the percentages of big game and small game hunters who hunted in their resident state were not statistically significant.

⁹⁴ The differences between the estimates of the percentage of migratory bird hunters and each of the percentages of big game and small game hunters who hunted in nonresident states were not statistically significant.

⁹⁵ The difference between the estimates of the number of migratory bird hunters and small game hunters hunting in nonresident states was not statistically significant.

⁹⁶ The differences between the estimates of the percentage of other animal hunters and each of the percentages of big game, small game, and migratory bird hunters who hunted in their resident state were not statistically significant.

⁹⁷ The difference between the estimates of the number of other animal hunters and migratory bird hunters hunting in their resident state was not statistically significant.

Also, the difference between estimates of the number of other animal hunters in the resident state and big game hunters in nonresident states was not statistically significant.

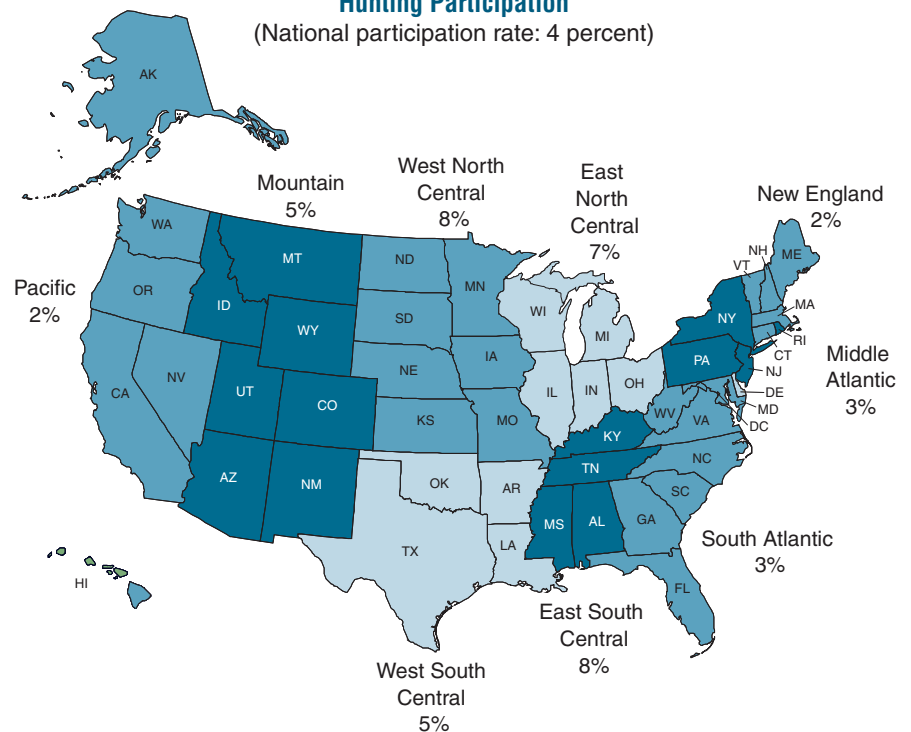
Hunting in State of Residence and in Other States

(In millions)

| | In state | Out of state |
|--------------------------|----------|--------------|
| All hunters | 10.9 | 1.8 |
| Big game | 8.6 | 1.3 |
| Small game | 3.3 | 0.4 |
| Migratory bird | 2.3 | 0.2 |
| Other animals | 1.2 | ... |

Source: Table 6.
 ... Sample size too small (less than 10) to report estimate reliably.

Hunting Participation (National participation rate: 4 percent)



Hunting on Public and Private Lands

In 2016, 11.5 million hunters 16 years and older hunted on public land, private land, or both. Of this number, 3.9 million or 34 percent hunted on publicly-owned lands compared to 9.7 million or 85 percent who hunted on privately-owned land. Some hunters hunted exclusively on public land and others hunted exclusively on private land—1.5 million (13 percent of all hunters) used public lands only, and 7.3 million hunted only on private land (64 percent of all hunters). Over 2.4

million⁹⁸ hunters (21 percent⁹⁹), hunted on both public and private lands.

During 2016, 3.9 million hunters used public lands on 36 million days, which represents 19 percent of all hunting days. Almost 32 percent of big game hunters (2.9 million) pursued big game on public land for 26 million days. About 24 percent¹⁰⁰ of all small game hunters (0.9 million) pursued small game on public land for 5 million days. An estimated 1.1 million migratory bird

hunters (49 percent¹⁰¹) hunted migratory birds on public lands for 7 million¹⁰² days.

Turning to hunting on private land, 81 percent of big game hunters hunted on private land, which compares to 86 percent¹⁰³ seeking small game, 68 percent¹⁰⁴ seeking migratory birds, and 99 percent seeking other animals.

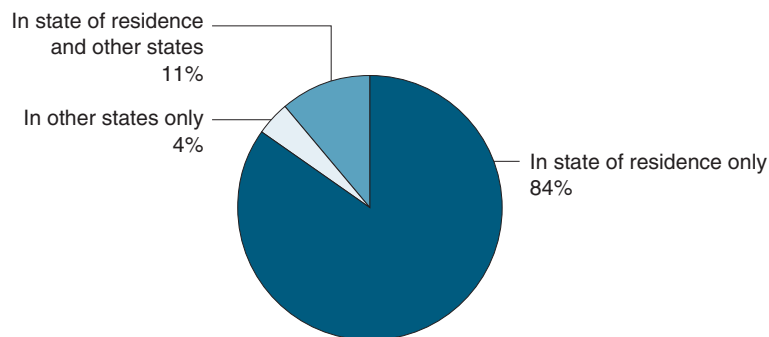
Of all days hunting, 79 percent (145 million hunting days) were on private land. The percentage of hunting days on private land varied in the same pattern as the percentage of hunters. Approximately 79 percent of big game hunting days, 86 percent¹⁰⁵ of small game hunting days, 45 percent¹⁰⁶ of migratory bird hunting days, and 91 percent¹⁰⁷ of other animal hunting days were on private land. Total hunting days pursuing these species on private land were as follows: big game 105 million, small game 33 million, migratory bird 7 million, and other animals 12 million.¹⁰⁸

⁹⁸ The difference between the estimates of hunters using both public and private lands and hunters using public land only was not statistically significant.

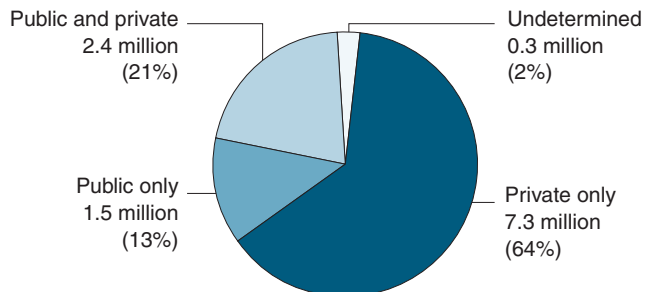
⁹⁹ The difference between the estimates of percentages of hunters using both public and private lands and percentages of hunters using public land only was not statistically significant.

¹⁰⁰ The difference between the estimates of percentages of small game hunters and big game hunters using public land was not statistically significant.

Percent of All Hunting in State of Residence and in Other States
(Total: 11.5 million participants)



People Hunting on Public and Private Lands
(Total: 11.5 million participants)



Sex and Age

Of the U.S. population 16 years and older, 8 percent of males and 1 percent of females enjoyed hunting in 2016. Of the 11.5 million participants who hunted, 90 percent (10.3 million) were male and 10 percent (1.1 million) were female.

The participation rate in hunting tended to increase with age until individuals reached 65 years of age, and thereafter it declined. During 2016, 3 percent or 228

¹⁰¹ The difference between the estimates of percentages of migratory bird hunters and big game hunters using public land was not statistically significant.

¹⁰² The difference between the estimates of days of migratory bird hunting and small game hunting on public land was not statistically significant.

¹⁰³ The difference between the estimates of percentages of small game hunters and big game hunters using private land was not statistically significant.

¹⁰⁴ The differences between the estimates of the percentage of migratory bird hunters and each of the percentages of big game and small game hunters who hunted on private land were not statistically significant.

¹⁰⁵ The difference between the estimates of percentages of hunting days of small game and big game hunters using private land was not statistically significant.

¹⁰⁶ The difference between the estimates of percentages of hunting days of migratory bird and small game hunters using private land was not statistically significant.

¹⁰⁷ The difference between the estimates of percentages of hunting days of migratory bird and small game hunters using private land was not statistically significant.

¹⁰⁸ The difference between the estimates of the number of other animal and migratory bird hunting days on private land was not statistically significant.

thousand 16- and 17-year-olds hunted. The participation rate was 4 percent¹⁰⁹ for 18- to 24-year-olds, 25- to 34-year-olds, and 35- to 44-year-olds. The rate rose to 6 percent¹¹⁰ for 45- to 54-year-olds and 55- to 64-year-olds. People 65 years and older had a participation rate of 3 percent.¹¹¹ However, of the 65 years and older group, those who were 65 to 74 years of age had a 4 percent¹¹² hunting participation rate, while those who were 75 years and older had a 2 percent¹¹³ rate.

The age group that contributed the most hunters was the 55 to 64 years' group. Approximately 2.7 million hunters (24 percent of all hunters) were 55- to 64-year-olds. Individuals 45 to 54 years were close in total number of hunters at 2.5 million.¹¹⁴

¹⁰⁹ The differences between estimates of hunting participation rates of groups 18- to 24-year-olds, 25- to 34-year-olds, 35- to 44-year-olds, and 16- to 17-year-olds were not statistically significant.

¹¹⁰ The differences between estimates of hunting participation rates of groups 45- to 54-year-olds, 55- to 64-year-olds, 18- to 24-year-olds, 25- to 34-year-olds, and 35- to 44-year-olds were not statistically significant. The difference between estimates of 45- to 54-year-olds and 16- to 17-year-olds was not statistically significant.

¹¹¹ The differences between estimates of hunting participation rates of people 65 years and older and rates of groups 16- to 17-year-olds, 18- to 24-year-olds, 25- to 34-year-olds, 35- to 44-year-olds, 65- to 74-year-olds, and 75 years and older were not statistically significant.

¹¹² The differences between estimates of hunting participation rates of people 65 to 74 years and rates of each of groups 16 to 17 years, 18 to 24 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, and 55 to 64 years were not statistically significant.

¹¹³ The differences between estimates of hunting participation rates of people 75 years and older and rates of groups 16 to 17 years, 18 to 24 years, 25 to 34 years, 35 to 44 years, and 65 to 74 years were not statistically significant.

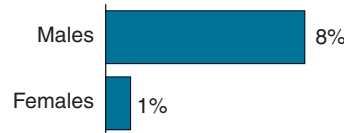
¹¹⁴ The difference between estimates of the number of hunters 45 to 54 years and 55 to 64 years was not statistically significant.

Hunters by Sex and Age

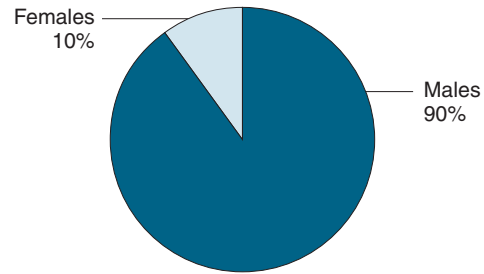
| | |
|--------------------------------|---------------------|
| Total, both sexes . . . | 11.5 million |
| Male | 10.3 million |
| Female | 1.1 million |
| | |
| Total, all ages | 11.5 million |
| 16 and 17 | 0.2 million |
| 18 to 24 | 1.0 million |
| 25 to 34 | 1.8 million |
| 35 to 44 | 1.6 million |
| 45 to 54 | 2.5 million |
| 55 to 64 | 2.7 million |
| 65 and older | 1.6 million |

Source: Table 10.

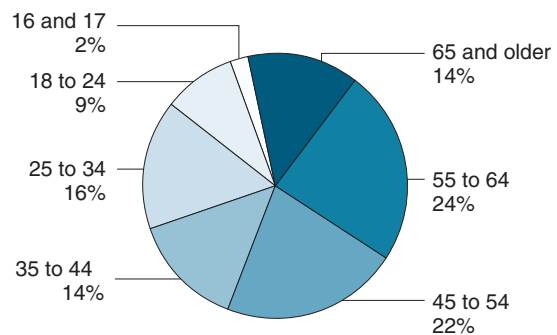
Percent of Males and Females Who Hunted in the United States



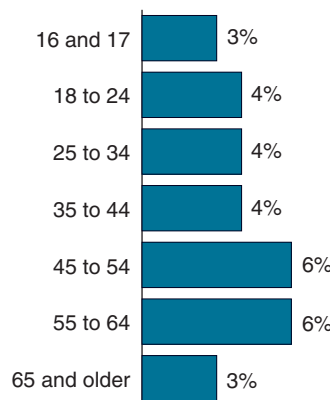
Percent of Hunters by Sex



Percent of Hunters by Age

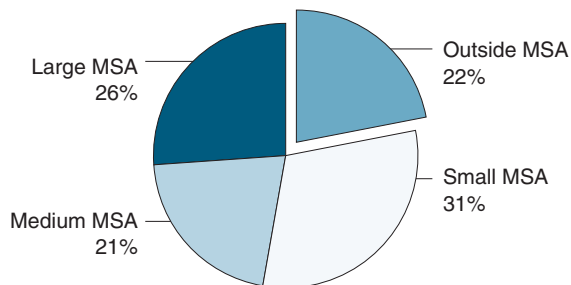


Percent of U.S. Population Who Hunted by Age



Percent of Hunters by Residence

(Hunter population: 11.5 million)



Metropolitan and Nonmetropolitan Hunters

As was the case for fishing, participation rates for hunting were the lowest among residents of the largest

Metropolitan Statistical Areas (MSAs)¹¹⁵ and were the highest among non-MSA residents. Residents of the MSAs with a population of 1 million or more hunted at a 2 percent rate, which compares to 17 percent of those who resided outside MSAs. The smaller the MSA, the higher the participation rate. The rate among residents of MSAs of 50,000 to 249,000 was 8 percent and among residents of MSAs with 250,000–999,999 inhabitants, the rate was 5 percent.

Despite the lower participation rates among MSA residents, they still made up the majority of hunters. Over 8.9 million hunters lived in an MSA, compared to 2.6 million who were nonmetropolitan residents.

Household Income of Hunters

The participation rate in hunting increased as household income increased until it reached incomes of \$100,000 or more. The participation was highest among those with incomes of \$40,000 to \$49,999; \$50,000 to \$74,999; and \$75,000 to \$99,999 at 7 percent. Participation rates for those who reported incomes of \$35,000 to \$39,999; \$100,000 to \$149,999; and \$150,000 or more were lower at 5 percent.¹¹⁶ A participation rate of 2 percent¹¹⁷ was reported for the following four income groups: less

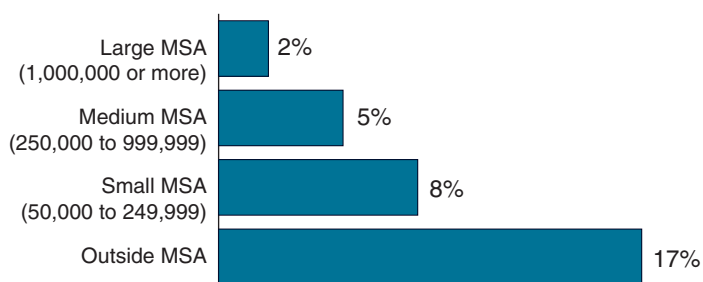
¹¹⁵ See Appendix A for definition.

¹¹⁶ The differences between estimates of participation rates for each of those groups who reported incomes of \$35,000 to \$39,999; \$100,000 to \$149,999; and \$150,000 or more and each of those groups who reported incomes of \$40,000 to \$49,999; \$50,000 to \$74,999; and \$75,000 to \$99,999 were not statistically significant. The differences between estimates of rates for the \$40,000 to \$49,999; \$50,000 to \$74,999; and \$75,000 to \$99,999 groups were not statistically significant.

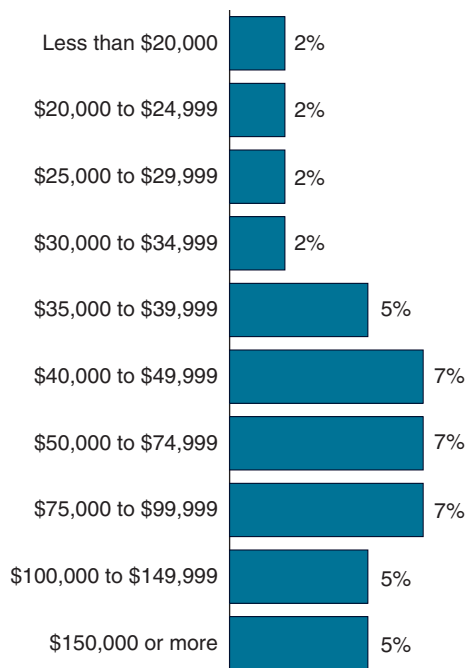
¹¹⁷ The differences between estimates of participation rates for groups who reported incomes of less than \$20,000; \$20,000 to \$24,999; \$25,000 to \$29,999; \$30,000 to \$34,999; \$35,000 to \$39,999; \$100,000 to \$149,999; and \$150,000 or more were not statistically significant. An exception is the difference between the estimates of the participation rates of the groups with income less than \$20,000 and \$100,000 to \$149,999; that difference was significantly different.

Percent of U.S. Population Who Hunted by Residence

(Total U.S. population that hunted: 4 percent)



Percent of U.S. Population Who Hunted by Household Income



than \$20,000; \$20,000 to \$24,999; \$25,000 to \$29,999; and \$30,000 to \$34,999.

The number of hunters was evenly split between those with household incomes of \$75,000 or more and \$74,999 or less. Among hunters who reported income, 51 percent had household incomes of \$74,999 or less, and 49 percent¹¹⁸ had household incomes greater than \$75,000.

Education, Race, and Ethnicity of Hunters

Participation rates in hunting in 2016 were similar among people with different levels of educational attainment. The highest rate attained was 5 percent for the following three levels of attainment: 12 years of school, 4 years of college, and 5 or more years of college. The next highest rate, 4 percent,¹¹⁹ was attained by people with 1 to 3 years of college. And the lowest

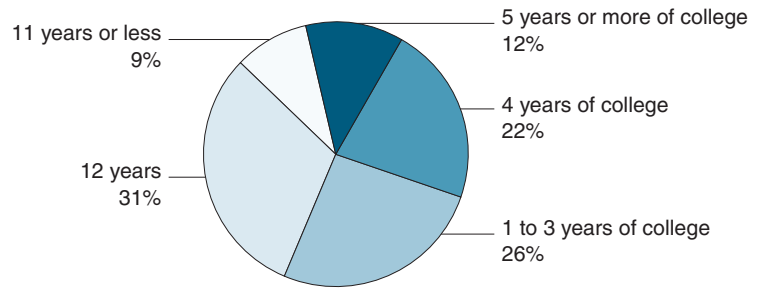
¹¹⁸ The difference between estimates of percentages of hunters with incomes of \$74,999 or less and \$75,000 or more was not statistically significant.

¹¹⁹ The differences between the estimates of hunting participation rates of people with 1 to 3 years of college, 12 years of school, 4 years of college, and 5 or more years of college were not statistically significant.

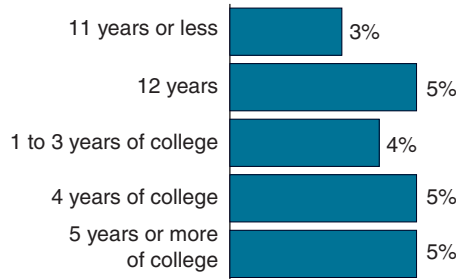
| Hunters by Education, Race, and Ethnicity | |
|---|-------------|
| (In millions) | |
| Total hunters | 11.5 |
| Education | |
| 11 years or less | 1.1 |
| 12 years | 3.6 |
| 1 to 3 years of college | 3.0 |
| 4 years of college | 2.5 |
| 5 years or more of college .. | 1.4 |
| Race | |
| White | 11.1 |
| African American | ... |
| Asian | ... |
| Other | 0.2 |
| Ethnicity | |
| Hispanic | 0.4 |
| Non-Hispanic | 11.1 |

Source: Table 10.
 ... Sample size too small (less than 10) to report estimate reliably.

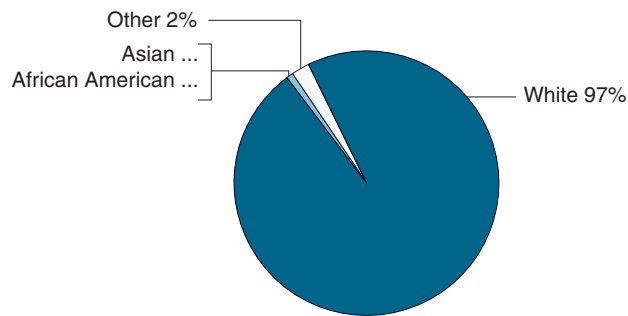
Percent of Hunters by Education



Percent of U.S. Population Who Hunted by Education

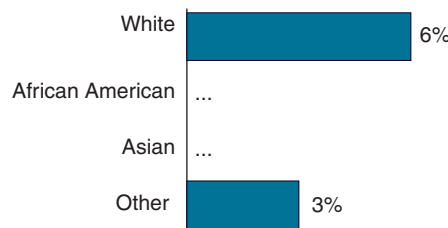


Percent of Hunters by Race



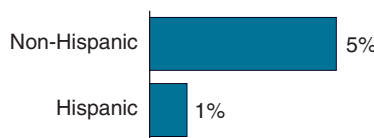
...Sample size too small (less than 10) to report estimate reliably.

Percent of U.S. Population Who Hunted by Race



...Sample size too small (less than 10) to report estimate reliably.

Percent of U.S. Population Who Hunted by Ethnicity



rate, 3 percent,¹²⁰ was for those people with an educational attainment of 11 years or less.

The largest category of education was 12 years. This group was composed of 31 percent of all hunters. Those with 1 to 3 years of college composed 26 percent¹²¹ of all hunters, and those with 4 years of college composed 22 percent¹²² of all hunters. Individuals with 5 years or more of college made up 12 percent of all hunters. Hunters with 11 years or less of education made up 9 percent¹²³ of all hunters.

While people of all races participate in hunting, the majority are White. About

¹²⁰ The differences between the estimates of hunting participation rates of people with 11 years or less of school and the rates of each of the groups of educational attainment of 12 years, 1 to 3 years of college, 4 years of college, and 5 or more years of college were not statistically significant.

¹²¹ The difference between the estimates of the percentage of total hunters who had 1 to 3 years of college and hunters who had 12 years of school was not statistically significant.

¹²² The differences between the estimates of the percentage of total hunters who had 4 years of college and each of the groups of hunters who had 12 years of school and 1 to 3 years of college were not statistically significant.

¹²³ The difference between the estimates of the percentage of total hunters who had 11 years or less of education and 5 years or more of college was not statistically significant.

6 percent of the nation's White population (11.1 million) went hunting in 2016.

Hispanics, who represent a growing percentage of the U.S. population, hunted at a much lower rate than non-Hispanics. Just under 1 percent of all Hispanics hunted in 2016 compared to 5 percent of non-Hispanics. The 379 thousand Hispanics who hunted in 2016 constituted 3 percent of all hunters.

2006, 2011, and 2016 Comparison of Hunting Activity

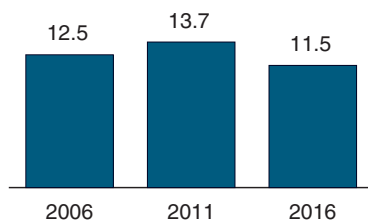
The number of hunters decreased 16 percent from 2011 to 2016. The number of big game hunters decreased 20 percent and other animal hunters decreased 39 percent. The differences in the total number of small game and migratory bird hunters were not statistically significant. Total days of hunting went down 35 percent, primarily due to a 37 percent decrease in big game hunting days. The decrease in other animal hunting days was also worthy of notice. The difference in the number of small game and migratory bird hunting days was not statistically significant. Trip-related, equipment, and other

expenditures went down 26 percent (although this was not a statistically significant difference). No expenditure category differed significantly, except for other expenditures such as land leasing and owning, which decreased 56 percent.

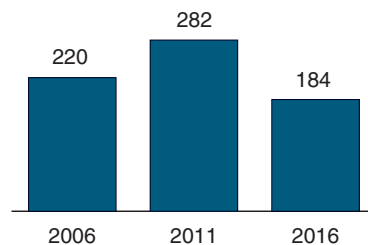
Comparing 2006 and 2016 estimates reveal no statistically significant differences in the number of any category of hunters, except for small game hunting, which dropped 27 percent. There were no statistically significant differences in the number of days and all expenditures, except for "other expenditures" such as land leasing and owning, which went down 38 percent.

The decrease in 2016 hunting participation and day estimates run counter to the 2006 to 2011 upward trend, but aligns with the 2006 Survey estimates. Also, from 1991 to 2006, hunting participation had dropped 11 percent and the number of hunting days had not significantly changed; therefore, the 2011 to 2016 drop is a continuation of that trend. The level of hunting in 2016 puts it at the lowest level in at least the past 25 years.

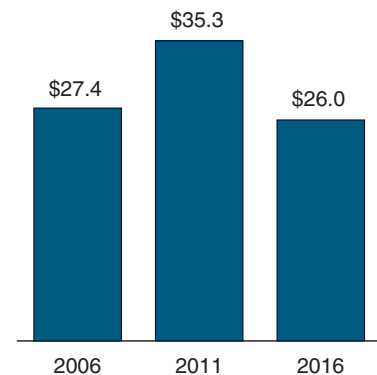
Number of Hunters
(Millions)



Days of Hunting
(Millions)



Hunting Expenditures
(Billions of 2016 dollars)



2011–2016 Hunting Participants, Days, and Expenditures

(U.S. population 16 years and older. Numbers in thousands)

| | 2011 | | 2016 | | 2011–2016 percent change |
|--|-----------------------|------------|-----------------------|------------|-----------------------------|
| | Number | Percent | Number | Percent | |
| Hunters, total | 13,674 | 100 | 11,453 | 100 | -16 |
| Big game | 11,570 | 85 | 9,208 | 80 | -20 |
| Small game | 4,506 | 33 | 3,505 | 31 | *-22 |
| Migratory bird | 2,583 | 19 | 2,353 | 21 | *-9 |
| Other animal | 2,168 | 16 | 1,315 | 11 | -39 |
| Days, total | 281,884 | 100 | 184,021 | 100 | -35 |
| Big game | 212,116 | 75 | 132,665 | 72 | -37 |
| Small game | 50,884 | 18 | 38,306 | 21 | *-25 |
| Migratory bird | 23,263 | 8 | 15,621 | 8 | *-33 |
| Other animal | 34,434 | 12 | 13,275 | 7 | -61 |
| Hunting, total (2016 dollars) | **\$35,309,375 | 100 | **\$26,025,056 | 100 | *-26 |
| Trip-related | 11,150,672 | 32 | 9,196,245 | 35 | *-18 |
| Equipment, total | 14,950,564 | 42 | 12,755,917 | 49 | *-15 |
| Hunting equipment | 8,280,007 | 23 | 7,383,871 | 28 | *-11 |
| Auxiliary equipment | 1,974,022 | 6 | 2,018,696 | 8 | *2 |
| Special equipment | 4,696,536 | 13 | 3,353,350 | 13 | *-29 |
| Other | **9,208,141 | 26 | **4,072,894 | 16 | -56 |

* Not statistically different from zero at the 95 percent confidence level.

** Note: 2011 was the first year plantings were included. Planting expenditures are not included in the Other category to maintain comparability to Survey years prior to 2011.

2006–2016 Hunting Participants, Days, and Expenditures

(U.S. population 16 years and older. Numbers in thousands)

| | 2006 | | 2016 | | 2006–2016 percent change |
|--|---------------------|------------|-----------------------|------------|-----------------------------|
| | Number | Percent | Number | Percent | |
| Hunters, total | 12,510 | 100 | 11,453 | 100 | *-8 |
| Big game | 10,682 | 85 | 9,208 | 80 | *-14 |
| Small game | 4,797 | 38 | 3,505 | 31 | -27 |
| Migratory bird | 2,293 | 18 | 2,353 | 21 | *3 |
| Other animal | 1,128 | 9 | 1,315 | 11 | *17 |
| Days, total | 219,925 | 100 | 184,021 | 100 | *-16 |
| Big game | 164,061 | 75 | 132,665 | 72 | *-19 |
| Small game | 52,395 | 24 | 38,306 | 21 | *-27 |
| Migratory bird | 19,770 | 9 | 15,621 | 8 | *-21 |
| Other animal | 15,205 | 7 | 13,275 | 7 | *-13 |
| Hunting, total (2016 dollars) | \$27,435,158 | 100 | **\$26,025,056 | 100 | *-5 |
| Trip-related | 8,003,651 | 29 | 9,196,245 | 35 | *15 |
| Equipment, total | 12,860,631 | 47 | 12,755,917 | 49 | *-1 |
| Hunting equipment | 6,431,042 | 23 | 7,383,871 | 28 | *15 |
| Auxiliary equipment | 1,594,131 | 6 | 2,018,696 | 8 | *27 |
| Special equipment | 4,835,457 | 18 | 3,353,350 | 13 | *-31 |
| Other | 6,570,876 | 24 | **4,072,894 | 16 | -38 |

*Not statistically different from zero at the 95 percent confidence level.

** Note: 2011 was the first year plantings were included. Planting expenditures are not included in the Other category to maintain comparability to Survey years prior to 2011.



Wildlife Watching

Wildlife Watching Highlights

A third of the U.S. population 16 years and older enjoyed wildlife watching in 2016. Wildlife watching is defined here as closely observing, feeding, and photographing wildlife, visiting parks and natural areas around the home because of wildlife, and maintaining plantings and natural areas around the home for the benefit of wildlife. These activities are categorized as around the home (within 1 mile of home) or away from home (at least 1 mile from home).

The 2016 Survey counts wildlife-watching as recreational activities in which the primary objective was to watch wildlife, as defined above. Secondary or incidental participation, such as observing wildlife while doing something else, was not included in the Survey.

During 2016, 86.0 million U.S. residents, 34 percent of the U.S. population 16 years or older, participated in wildlife-watching activities. People who took

an interest in wildlife around their homes numbered 81.1 million, while those who took trips away from their homes to wildlife watch numbered 23.7 million people.

Wild Bird Observers

Of all the wildlife in the United States, birds attracted the biggest following. Approximately 45.1 million people observed birds around the home and on trips in 2016. A large majority, 86 percent (38.7 million), observed wild birds around the home, while 36 percent (16.3 million) took trips away from home to observe wild birds. Participants averaged a startling 96 days of birding in 2016, primarily due to the 105 days¹²⁴ of around-the-home birders. Away-from-home birders averaged 16 days.

¹²⁴ The difference between the estimates of all average birding days and around-the-home average birding days was not statistically significant.

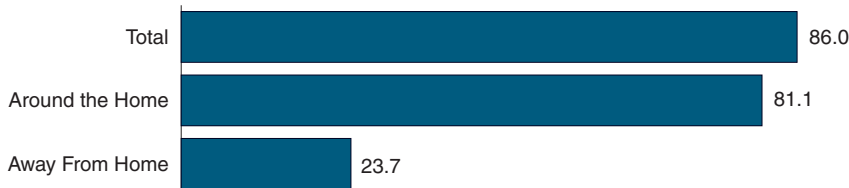
Wildlife-Watching Participants by Activity

(In millions)

| | |
|---|-------------|
| Total wildlife-watching participants | 86.0 |
| Away from home | 23.7 |
| Observers | 19.6 |
| Photographers | 13.7 |
| Feeders | 4.9 |
| Around the home. | 81.1 |
| Feeders | 59.1 |
| Observers | 43.8 |
| Photographers | 30.5 |
| Maintainers of plantings or natural areas. | 11.0 |
| Visitors of public parks or natural areas. | 11.4 |

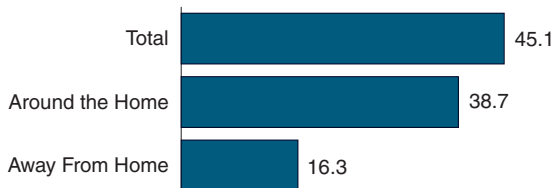
Source: Table 34.

Wildlife-Watching Participants (In millions)



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

Bird Watchers (In millions)



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

Wildlife-Watching Expenditures

Approximately 48 percent of all the dollars spent in 2016 for wildlife-related recreation was due to wildlife watching. Wildlife-watching participants 16 years or older spent \$75.9 billion, an average of \$1,193 per spender. An estimated 75 percent of all wildlife watchers spent money on their avocation.

Wildlife watchers spent \$11.6 billion on trips pursuing their activities. Food and lodging accounted for \$6.1 billion (52 percent of all trip-related expenditures), transportation expenses totaled \$4.2 billion¹²⁵ (36 percent), and other trip costs, such as land use fees and equipment rental, amounted to \$1.3 billion (11 percent) for the year.

These recreationists purchased \$55.1 billion worth of equipment for wildlife watching. They spent \$12.1 billion (22 percent of all equipment expenditures) on wildlife-watching equipment including binoculars, cameras, bird food, and special clothing. Expenditures for auxiliary equipment, such as tents and backpacking equipment, totaled \$1.0 billion (2 percent) for the year. Participants spent \$41.9 billion¹²⁶ (76 percent) on special equipment, including off-road vehicles, campers, and boats.

Also for the year, wildlife watchers spent \$4.2 billion on land leasing and ownership; \$0.9 billion¹²⁷ on plantings for the benefit of wildlife; \$3.8 billion¹²⁸ on membership dues and contributions; and \$0.2 billion on magazines, books, and DVDs.

¹²⁵ The difference between the estimates for expenditures on food and lodging and transportation was not statistically significant.

¹²⁶ The difference between the estimates of total equipment expenditures and special equipment expenditures was not statistically significant.

¹²⁷ The difference between the estimates of the expenditures for plantings and land leasing and owning was not statistically significant.

¹²⁸ The difference between the estimates of the expenditures for membership dues and contributions and land leasing and owning was not statistically significant.

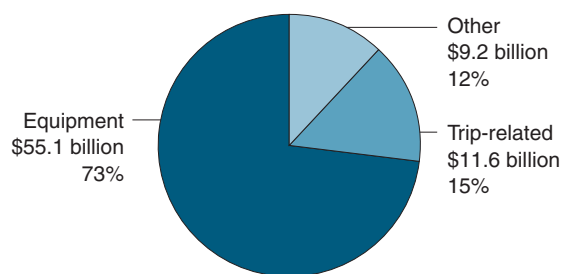
Total Wildlife-Watching Expenditures

| | |
|---|-----------------------|
| Total wildlife-watching expenditures | \$75.9 billion |
| Total trip-related | \$11.6 billion |
| Food and lodging | 6.1 billion |
| Transportation | 4.2 billion |
| Other trip costs | 1.3 billion |
| Total equipment expenditures | \$55.1 billion |
| Wildlife-watching equipment | 12.1 billion |
| Auxiliary equipment | 1.0 billion |
| Special equipment | 41.9 billion |
| Total other expenses | \$9.2 billion |
| Land leasing and owning | 4.2 billion |
| Plantings | 0.9 billion |
| Membership dues and contributions | 3.8 billion |
| Magazines, books, and DVDs | 0.2 billion |

Source: Table 39.

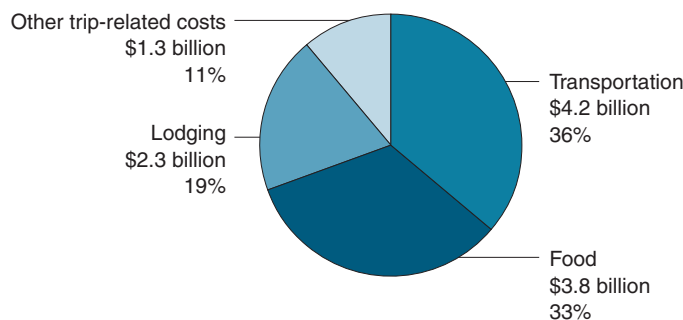
Wildlife-Watching Expenditures

(Total expenditures: \$75.9 billion)



Trip-Related Expenditures

(Total expenditures: \$11.6 billion)

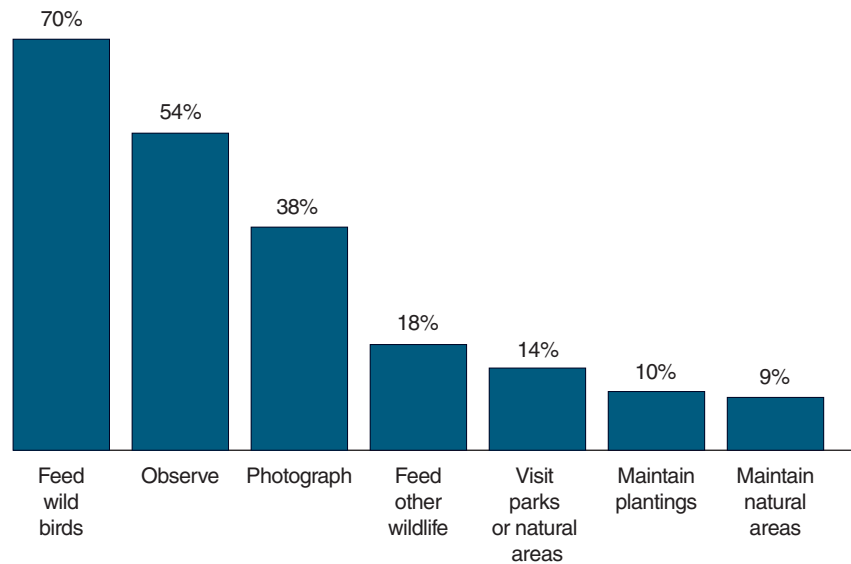


Around-the-Home Wildlife-Watching Highlights

In 2016, around-the-home participants 16 years and older numbered 81.1 million—94 percent of all wildlife-watching recreationists. The most popular activity, feeding birds and other wildlife, accounted for 59.1 million wildlife watchers, 73 percent of all around-the-home participants. Over 43.8 million people observed wildlife, representing 54 percent of all around-the-home participants.

Approximately 30.5 million recreationists (38 percent of all around-the-home wildlife watchers) photographed wildlife. About 11.0 million maintained plantings or natural areas for the benefit of wildlife. They made up 14 percent of all around-the-home participants. Finally, 11.4 million¹²⁹ people visited parks or natural areas within 1 mile of their homes for wildlife watching. They comprised 14 percent of all around-the-home participants. The sum of the percentages exceeds 100 percent because people participated in more than one category.

Percent of Total Around-the-Home Participants by Activity
(Total: 81.1 million participants)



¹²⁹ The difference between the estimates of the number of participants who maintained plantings or natural areas for the benefit of wildlife and the number of participants who visited parks or natural areas within 1 mile of their homes was not statistically significant.

Around-the-Home Participants

(In millions)

| | |
|---|-------------|
| Total participants | 81.1 |
| Feed wildlife | 59.1 |
| Observe wildlife | 43.8 |
| Photograph wildlife | 30.5 |
| Visits parks or natural areas | 11.4 |
| Maintains natural areas | 7.5 |
| Maintains plantings | 7.8 |

Source: Table 36.

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

Wildlife Fed, Observed, or Photographed by Around-the-Home Participants

Of the 59.1 million people feeding wildlife around their homes in 2016, 97 percent (57.2 million) fed wild birds, while 25 percent (14.5 million) fed other wildlife.

Approximately 43.8 million participants closely observed wildlife around their homes, of which 38.7 million¹³⁰ observed birds. Observing mammals was undertaken by 30.1 million participants. Insects and spiders attracted the attention of 13.9 million people; 11.6 million¹³¹ observed amphibians or reptiles; and 8.2 million¹³² people observed fish and other wildlife. The median number of days for around-the-home observations for all animals was a little over 50 days in 2016.

About 30.5 million people photographed wildlife around their homes. The median number of days people took pictures of wildlife around their homes in 2016 was 4 days, although 3.4 million people (11 percent) photographed wildlife 21 days or more.

Around-the-Home Wildlife Watchers by Geographic Region

In 2016, nearly 255 million people 16 years or older lived in the United States. Of those, 32 percent wildlife watched around their homes. The participation rates of these around-the-home participants varied by region.

The percentages of regional populations that wildlife watched around their homes ranged from 26 percent in the West South Central region to 36 percent¹³³ in the New England region. The New

¹³⁰ The difference between the estimates of total participants who observed wildlife around their homes and participants who observed birds around their homes was not statistically significant.

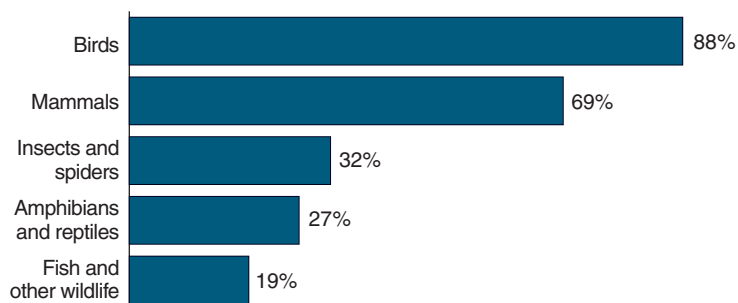
¹³¹ The difference between the estimates of the number of participants who observed insects and spiders and the number of participants who observed amphibians or reptiles was not statistically significant.

¹³² The difference between the estimates of the number of participants who observed amphibians or reptiles and the number of people who observed fish and other wildlife was not statistically significant.

¹³³ The differences between the estimates of the participation rates of participants in all regions were not statistically significant, except for the Middle Atlantic and West South Central comparison.

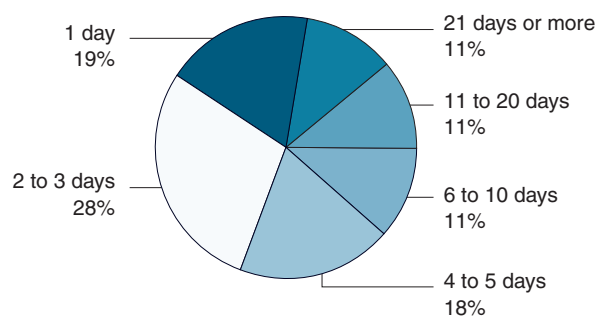
Percent of Around-the-Home Observers by Type of Wildlife Observed

(Total wildlife observers: 43.8 million)



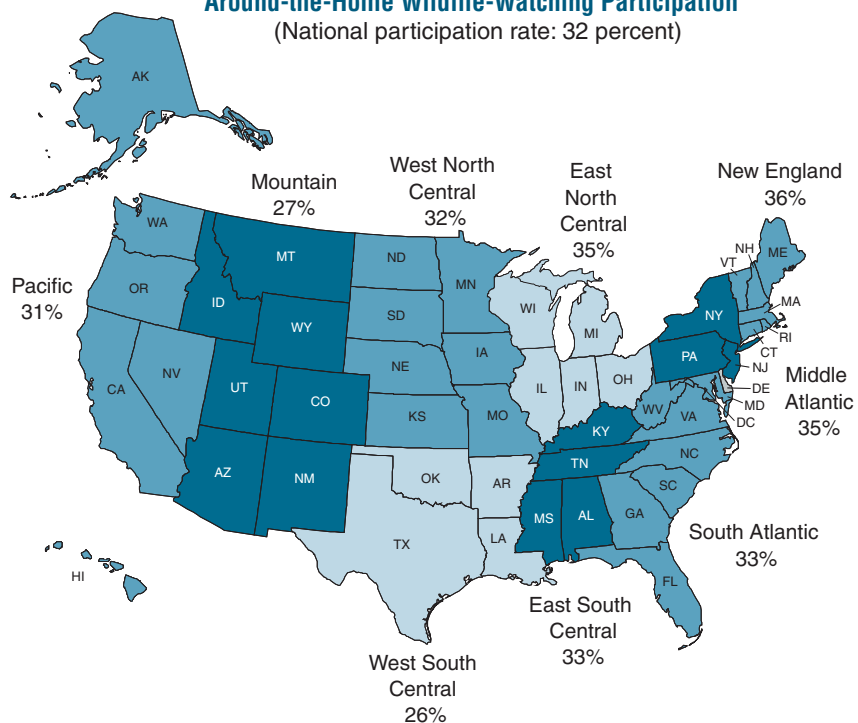
Percent of Around-the-Home Photographers by Days Spent Photographing Wildlife

(Total wildlife photographers: 30.5 million)



Around-the-Home Wildlife-Watching Participation

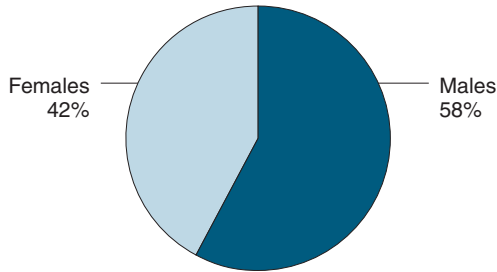
(National participation rate: 32 percent)



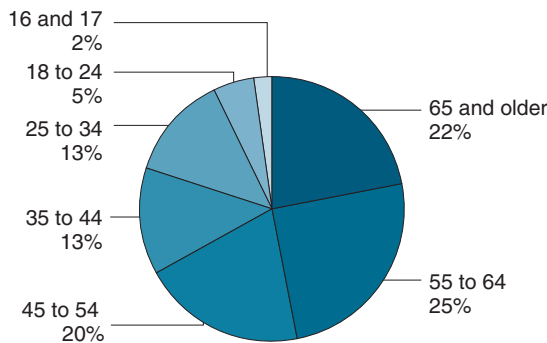
Percent of Males and Females Who Participated Around-the-Home



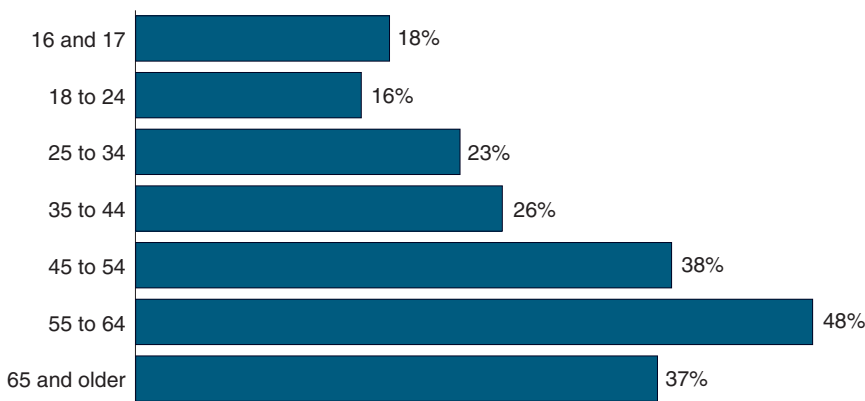
Percent of Around-the-Home Wildlife Watchers by Sex (Total participants: 81.1 million)



Percent of Around-the-Home Wildlife Watchers by Age (Total participants: 81.1 million)



Percent of U.S. Population Who Participated Around-the-Home by Age



England, Middle Atlantic, East North Central, South Atlantic, and East South Central had participation rates above the national average of 32 percent.

The single region that had the highest number of around-the-home wildlife watchers was the South Atlantic (16.5 million participants).¹³⁴

Sex and Age of Around-the-Home Wildlife Watchers

In a change from previous Survey findings, males had a higher participation rate than females for around-the-home wildlife watching. In 2016, 39 percent of males and 26 percent of females enjoyed around-the-home activities. Of the 81.1 million around-the-home wildlife watchers, 58 percent (47.2 million) were males and 42 percent (33.9 million) were females.

People in the 55- to 64-year-old age group were most likely to participate at 48 percent¹³⁵ (20.1 million). People in the 18- to 24-year-old age group were the least likely to participate, with 16 percent¹³⁶ (4.4 million). The disparity in participation rates between people 16 to 34 years old (20 percent) and those 35 years and older (37 percent) is striking.

¹³⁴ The differences between the estimates of the number of participants in all regions were not statistically significant.

¹³⁵ The difference between the estimates of the participation rates of 55- to 64-year-olds and 65- to 74-year-olds was not statistically significant.

¹³⁶ The difference between the estimates of the participation rates of 18- to 24-year-olds and 16- to 17-year-olds was not statistically significant.

Around-the-Home Participants by Sex and Age

(In millions)

Total, both sexes . . . 81.1 million
 Male 47.2 million
 Female 33.9 million

Total, all ages 81.1 million
 16 and 17 1.5 million
 18 to 24 4.4 million
 25 to 34 10.3 million
 35 to 44 10.6 million
 45 to 54 16.2 million
 55 to 64 20.1 million
 65 and older 18.0 million

Source: Table 41.

Metropolitan and Nonmetropolitan Around-the-Home Participants

Approximately 93 percent of around-the-home wildlife watchers lived in metropolitan areas, as defined by the Census Bureau. Metropolitan Statistical Areas, or MSAs,¹³⁷ with populations of 1 million or more had a participation rate of 25 percent, lower than any smaller MSA or non-MSA. Nonetheless, recreationists from the most populous MSAs comprised 44 percent of all around-the-home wildlife watchers. In MSAs of 250,000 to 999,999, the participation rate was 41 percent and they made up 25 percent of all around-the-home recreationists. An estimated 24 percent¹³⁸ of around-the-home wildlife watchers lived in MSAs with a population from 50,000 to 249,999. The population of these areas had a participation rate of 42 percent.¹³⁹

The participation rate for populations who lived outside MSAs was 39 percent.¹⁴⁰ Approximately 6 percent of the total U.S. population lived outside MSAs in 2016 and constituted 7 percent of all around-the-home wildlife watchers.

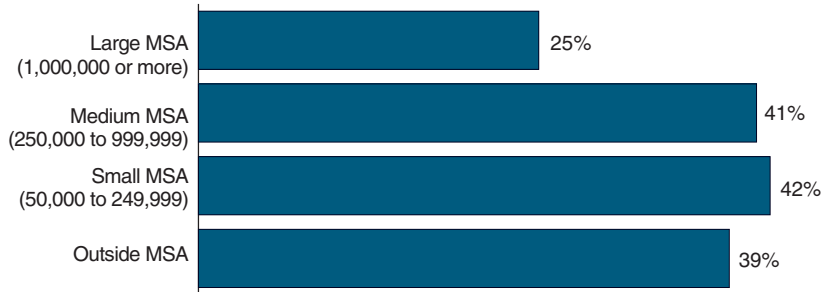
¹³⁷ See Appendix A for a definition of Metropolitan Statistical Areas (MSAs).

¹³⁸ The difference between estimates of the percentages of all around-the-home participants who lived in MSAs with a population of 50,000 to 249,999 and in MSAs of 250,000 to 999,999 was not statistically significant.

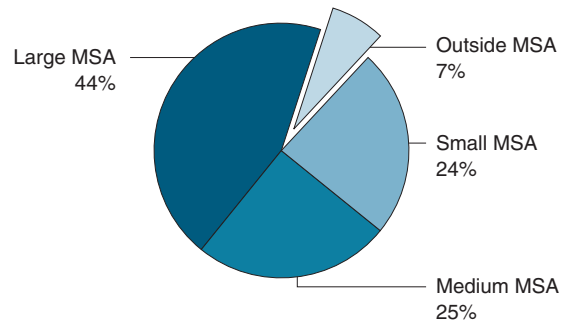
¹³⁹ The difference between estimates of the participation rates of participants who lived in MSAs with a population of 50,000 to 249,999 and in MSAs of 250,000 to 999,999 was not statistically significant.

¹⁴⁰ The differences between estimates of the participation rates of participants who lived outside MSAs and each of the estimates of participation rates of participants who lived in MSAs of 250,000 to 999,999 and in MSAs with a population of 50,000 to 249,999 were not statistically significant.

Percent of U.S. Population Who Participated Around-the-Home by Residence



Percent of Around-the-Home Wildlife Watchers by Residence
(Total participants: 81.1 million)



Household Income of Around-the-Home Participants

Participation rates ranged from 18 percent among U.S. residents living in households earning \$35,000 to \$39,999 per year to 40 percent of those living in households earning \$100,000 to \$149,999 annually. These participants made up 2 percent and 16 percent, respectively, of the 81.1 million around-the-home wildlife watchers in 2016.

Participants in households earning \$100,000 to \$149,999 a year constituted the largest number, 12.8 million

(excluding the 14.4 million¹⁴¹ participants who did not report their income). The income group with the next largest number of participants was \$150,000 or more. This group contributed 11.3 million and had a 37 percent participation rate. The number of around-the-home recreationists contributed by other income groups ranged from 1.6 million participants with \$35,000 to \$39,999 household incomes to 10.8

¹⁴¹ The difference between estimates of the number of participants with \$100,000 to \$149,999 and the number of participants who did not report their income was not statistically significant.

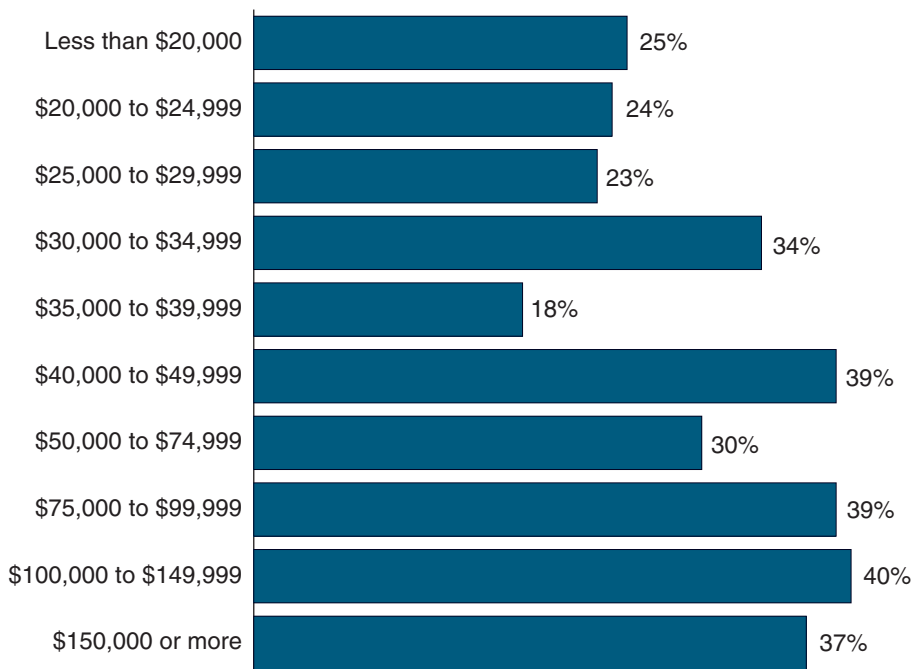
million¹⁴² participants for both the \$50,000 to \$74,999 and the \$75,000 to \$99,999 groups, with 30 percent¹⁴³ and 39 percent¹⁴⁴ participation rates, respectively.

¹⁴² The differences between estimates of the number of participants with \$50,000 to \$74,999, \$75,000 to \$99,999, \$100,000 to \$149,999, \$150,000 or more in income, and participants who did not report income were not statistically significant.

¹⁴³ The difference between estimates of the participation rates of participants with \$50,000 to \$74,999 in income and \$150,000 or more in income was not statistically significant.

¹⁴⁴ The differences between estimates of the participation rates of participants with \$75,000 to \$99,999 in income and each of the estimates of participation rates of participants with \$150,000 or more and \$50,000 to \$74,999 in income were not statistically significant.

Percent of U.S. Population Who Participated Around-the-Home by Household Income



Education, Race, and Ethnicity of Around-the-Home Participants

Looking at the educational background of participants, it was found that the rate of participation in around-the-home wildlife watching generally increased with more education. The highest participation rate was among recreationists with 5 years or more of college, 52 percent. They made up 17 percent of all around-the-home wildlife watchers. The lowest participation rate, 22 percent, was among people with 11 years or less of education—9 percent of all participants. Recreationists with 12 years of education, 30 percent of all around-the-home participants, had a participation rate of 33 percent. Participants with 1 to 3 years of college, 23 percent of all participants, had a participation rate of 25 percent.¹⁴⁵

¹⁴⁵ The difference between estimates of the participation rates of participants with 1 to 3 years of college and 11 years or less of education was not statistically significant.

Around-the-Home Participants by Education, Race, and Ethnicity

(In millions)

Total participants 81.1

Education

| | |
|--------------------------------------|------|
| 11 years of less | 7.6 |
| 12 years | 24.0 |
| 1 to 3 years of college | 19.0 |
| 4 years of college | 16.5 |
| 5 years or more of college | 14.0 |

Race

| | |
|----------------------------|------|
| White | 69.9 |
| African American | 7.4 |
| Asian | 0.7 |
| Other | 3.1 |

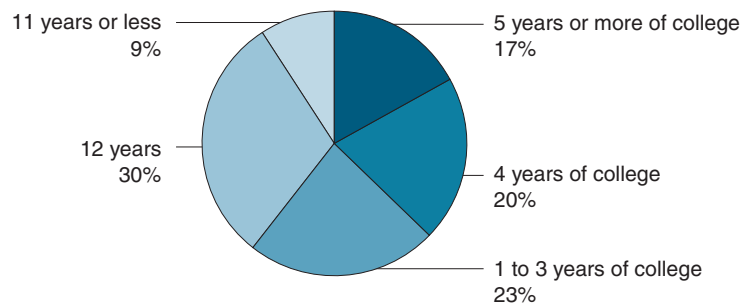
Ethnicity

| | |
|------------------------|------|
| Hispanic | 5.0 |
| Non-Hispanic | 76.2 |

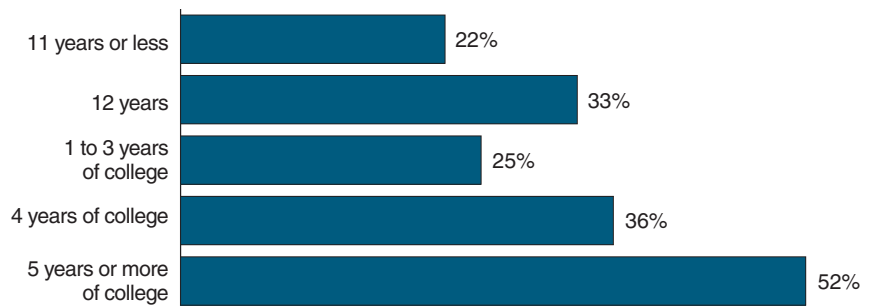
Source: Table 41.

Percent of Around-the-Home Wildlife Watchers by Education

(Total: 81.1 million participants)

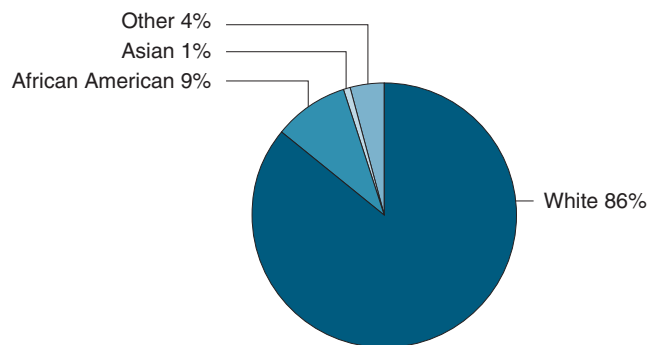


Percent of U.S. Population Who Participated Around-the-Home by Education

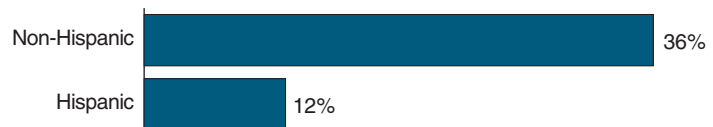


Percent of Around-the-Home Wildlife Watchers by Race

(Total: 81.1 million participants)



Percent of U.S. Population Who Participated Around-the-Home by Ethnicity



Recreationists with 4 years of college, 20 percent¹⁴⁶ of all participants, had a participation rate of 36 percent.¹⁴⁷

A wide range of participation rates were found among the different races and ethnic groups. Approximately 35 percent of the White population engaged in around-the-home wildlife watching, contrasted with 22 percent of the African American population, 4 percent of the Asian population, and 52 percent¹⁴⁸ of individuals comprising the “all others” race category. Of the total number

of around-the-home participants, 86 percent were White, 9 percent were African Americans, 1 percent was Asian, and 4 percent were all other races.

An estimated 12 percent of the U.S. Hispanic population engaged in wildlife watching around their homes in comparison with 36 percent of the non-Hispanic population. The 76.2 million non-Hispanic participants comprised 94 percent of all around-the-home wildlife watchers and the 5.0 million Hispanic participants made up 6 percent.

Away-From-Home Wildlife-Watching Highlights

In 2016, 23.7 million people 16 years and older took trips away from home to feed, observe, or photograph wildlife. They comprised 28 percent of all wildlife watchers. Most popular with

away-from-home participants was closely observing wildlife. About 19.6 million¹⁴⁹ participants, 8 percent of the U.S. population, observed wildlife an average of 16 days in 2016. Photographing wildlife was enjoyed by 13.7 million people, 5 percent of the U.S. population. They averaged 11 days per photographer. Approximately 4.9 million people fed wildlife an average of 15 days¹⁵⁰ and comprised 2 percent of the U.S. population.

About 79 percent of all away-from-home participants took trips within their resident state to participate in

¹⁴⁶ The differences between estimates of the percentages of participants with 4 years of college and each of the groups with 1–3 years of college and 5 years or more of college were not statistically significant.

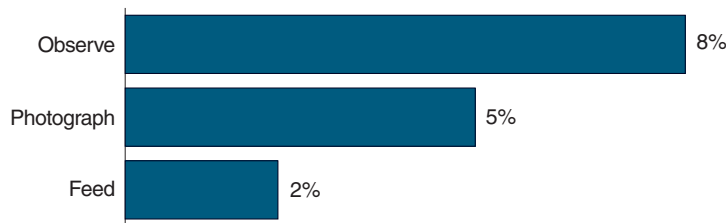
¹⁴⁷ The difference between estimates of the participation rates of participants with 4 years of college and 12 years of education was not statistically significant.

¹⁴⁸ The difference between estimates of the participation rates of the “other” race category and the White category was not statistically significant.

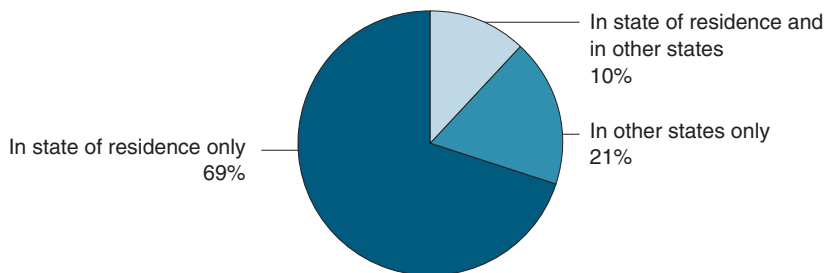
¹⁴⁹ The difference between estimates of total away-from-home wildlife watchers and wildlife observers was not statistically significant.

¹⁵⁰ The differences between estimates of average days of participation for away-from-home feeders and each of the average day estimates for away-from-home observers and away-from-home photographers were not significant.

Percent of U.S. Population Who Participated Away-From-Home by Type of Activity
(Total: 23.7 million participants)



Percent of Away-From-Home Wildlife Watchers in State of Residence and Other States
(Total participants: 23.7 million)



Away-From-Home Participants

(In millions)

| | |
|-------------------------------------|-------------|
| Total participants | 23.7 |
| Observers | 19.6 |
| Photographers | 13.7 |
| Feeders | 4.9 |
| Total days | 386 |
| Observers | 309 |
| Photographers | 152 |
| Feeders | 71 |

Source: Table 35.

Away-From-Home Participants By Type of Wildlife Observed, Fed, or Photographed

(In millions)

| | |
|---|-------------|
| Total participants | 23.7 |
| Birds, total | 17.0 |
| Songbirds | 10.5 |
| Birds of prey | 11.5 |
| Waterfowl | 11.5 |
| Other water birds | 8.8 |
| Other birds | 7.1 |
| Land mammals, total | 14.0 |
| Small land mammals | 10.6 |
| Large land mammals | 11.8 |
| Fish | 4.3 |
| Marine mammals | 2.5 |
| Other (turtles, butterflies, etc.) | 8.7 |

Source: Table 37.

wildlife watching. Approximately 69 percent took trips only in their resident state, 10 percent took trips both inside and outside their resident state, and 21 percent took trips only to other states. Altogether, 31 percent of all away-from-home participants took at least some of their trips to other states.

Wildlife Observed, Fed, or Photographed by Away-From-Home Participants

Wild birds attracted the most interest from wildlife watchers on their trips—17.0 million people or 72 percent of all away-from-home participants. The two most-watched birds, waterfowl (ducks and geese, primarily) and birds of prey, were both watched by 11.5 million¹⁵¹ people. Next on the list of most watched were songbirds with 10.5 million¹⁵² watchers. Herons, shore birds, and other water birds attracted 8.8 million¹⁵³

recreationists. Lastly, other birds, such as road runners and turkeys, attracted 7.1 million¹⁵⁴ wildlife watchers.

Land mammals, such as deer, bears, and coyotes, were observed, fed, or photographed by 14.0 million people—59 percent of all away-from-home participants. Fish attracted the attention of 4.3 million people or 18 percent of all away-from-home recreationists.

About 2.5 million¹⁵⁵ people or 10 percent of all away-from-home participants observed, fed, or photographed marine mammals, such as whales, seals, and dolphins. Other wildlife, such as butterflies, snakes, and turtles, appealed to 8.7 million¹⁵⁶ people or 37 percent of all away-from-home wildlife-watchers.

¹⁵¹ The difference between estimates of the number of birds of prey and waterfowl watchers was not statistically significant.

¹⁵² The differences between estimates of the number of songbird watchers and each of the estimates of waterfowl watchers and birds of prey watchers were not statistically significant.

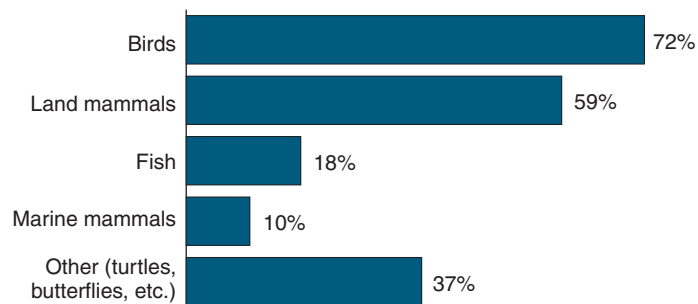
¹⁵³ The differences between estimates of the number of water bird watchers and each of the estimates of waterfowl watchers, birds of prey watchers, and songbird watchers were not statistically significant.

¹⁵⁴ The difference between estimates of the number of other bird watchers and water bird watchers was not statistically significant.

¹⁵⁵ The difference between estimates of the number of marine mammal watchers and fish watchers was not statistically significant.

¹⁵⁶ The differences between estimates of the number of other wildlife watchers and each of the estimates of songbird watchers, birds of prey watchers, waterfowl watchers, water bird watchers, and other bird watchers were not statistically significant.

Percent of Away-From-Home Wildlife Watchers Who Observed, Fed, or Photographed Wildlife
(Total: 23.7 million participants)

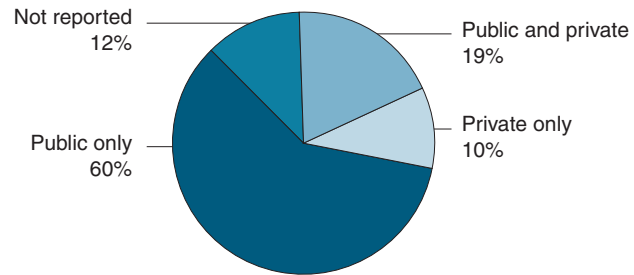


Area Visited by Away-From-Home Participants

In 2016, the most visited areas for Americans to observe, feed, or photograph wildlife were publicly owned. Approximately 79 percent of all trip-taking wildlife watchers used public areas, while just 29 percent visited private areas. About 19 percent of all away-from-home participants, 4.4 million, visited both public and private areas. Approximately 14.1 million, 60 percent, visited only public areas to engage in their activities, while 2.3 million, 10 percent, visited only private areas.

Percent of Away-From-Home Wildlife Watchers by Public and Private Land

(Total participants: 23.7 million)



Away-From-Home Participants By Public and Private Land

(In millions)

| | |
|-------------------------------------|-------------|
| Total participants | 23.7 |
| Public land only | 14.1 |
| Private land only | 2.3 |
| Public and private land . . . | 4.4 |
| Not reported | 2.9 |

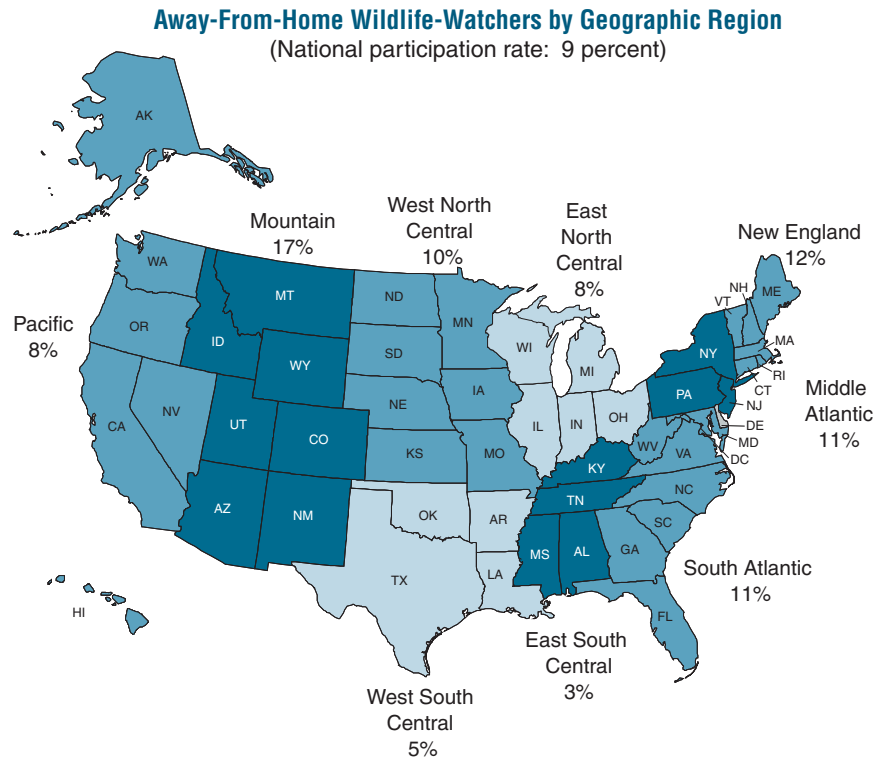
Source: Table 35.

Away-From-Home Wildlife Watchers by Geographic Region

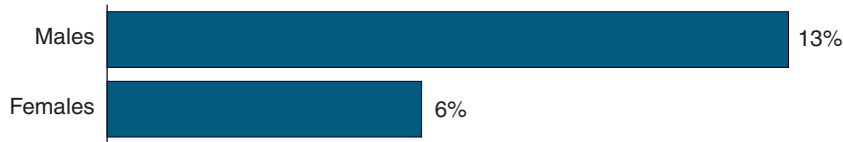
In 2016, 255 million people 16 years and older lived in the United States—9 percent of whom took trips to wildlife watch.

Away-from-home participation rates ranged from 3 percent in the East South Central Division to 17 percent in the Mountain Division. The divisions that had participation rates higher than the national average were New England, Middle Atlantic, West North Central, South Atlantic, and Mountain.¹⁵⁷

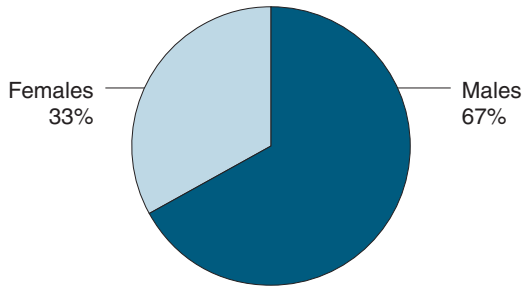
¹⁵⁷ The differences between estimates of regional participation rates and the national average were not statistically significant for the New England, Middle Atlantic, West North Central, and South Atlantic Divisions.



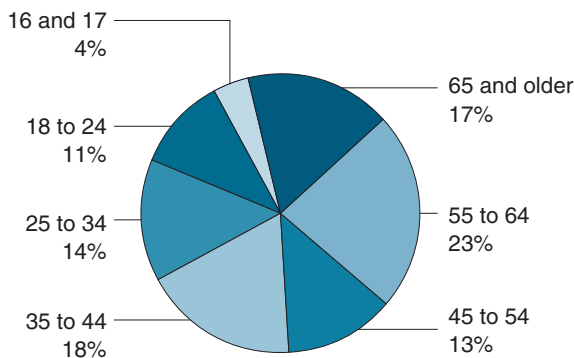
Percent of Males and Females Who Participated Away-From-Home



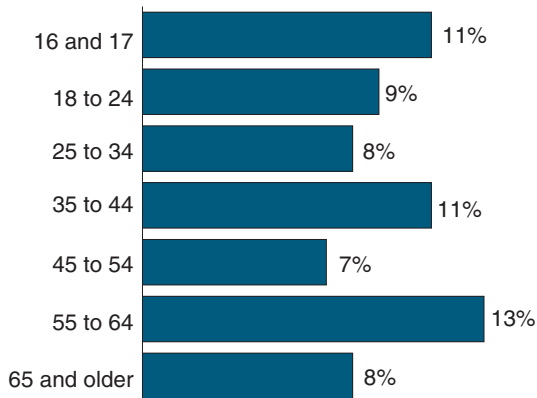
Percent of Away-From-Home Wildlife Watchers by Sex (Total participants: 23.7 million)



Percent of Away-From-Home Wildlife Watchers by Age



Percent of U.S. Population Who Participated Away-From-Home by Age



Sex and Age of Away-From-Home Wildlife Watchers

Twice as many males participated in away-from-home wildlife watching as did females in 2016. Approximately 67 percent (15.8 million) of all participants were males and 33 percent (7.9 million) were females. Thirteen percent of males and 6 percent of females in the United States enjoyed observing, feeding, or photographing wildlife away from home.

The 55- to 64-year-old age group had the most away-from-home recreationists, 5.4 million. This age group, the 55- to 64-year-olds, also had the highest participation rate, 13 percent. Three age groups had the next highest participation rate, 11 percent¹⁵⁸: the 16- and 17-year-olds, the 35- to 44-year-olds, and the 65- to 74-year-olds. The 75 years and older group had the lowest participation rate at 4 percent.¹⁵⁹

¹⁵⁸ The differences among estimates of the participation rates for 55- to 64-year-olds, 16- to 17-year-olds, 35- to 44-year-olds, and 65- to 74-year-olds were not statistically significant.

¹⁵⁹ The difference between estimates of the participation rates for 16- to 17-year-olds and people 75 years and older was not statistically significant.

Away-From-Home Participants by Sex and Age

(In millions)

| | |
|------------------------------------|-------------|
| Total, both sexes | 23.7 |
| Male | 15.8 |
| Female | 7.9 |
| Total, all ages | 23.7 |
| 16 and 17 | 1.0 |
| 18 to 24 | 2.6 |
| 25 to 34 | 3.3 |
| 35 to 44 | 4.3 |
| 45 to 54 | 3.0 |
| 55 to 64 | 5.4 |
| 65 and older | 4.0 |

Source: Table 40.

Metropolitan and Nonmetropolitan Away-From-Home Participants

In 2016, 9 percent of all people living in MSAs (see Appendix A for definition) took trips primarily to enjoy wildlife. MSA residents comprised 93 percent of all away-from-home participants. In contrast, 11 percent¹⁶⁰ of all people outside an MSA watched wildlife away from home.

As was the case with around-the-home wildlife watching, the biggest MSA had both the lowest participation rate and the highest number of participants. Residents of non-MSAs made up 7 percent of both away-from-home and around-the-home participants.

Household Income of Away-From-Home Participants

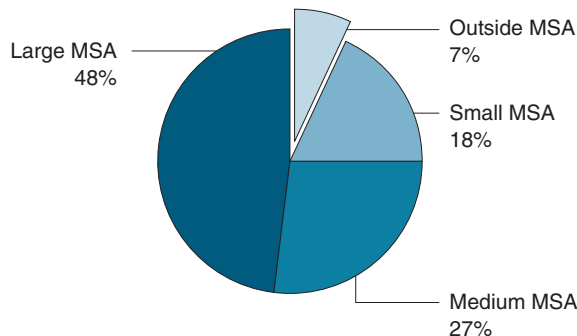
Participation rates ranged from 4 percent for those in households earning \$25,000 to \$29,999 per year to 13 percent¹⁶¹ for those households earning \$20,000 to \$24,999; \$35,000 to \$39,999; and \$100,000 to \$149,999. The income group that had the most participants was \$100,000 to \$149,999, with 4.1 million recreationists.

Median income was higher for away-from-home participants than for Americans as a whole, almost \$79,000 for recreationists compared to about \$71,000 for the U.S. population.

¹⁶⁰ The difference between estimates of the participation rates for people living in MSAs and people living outside MSAs was not statistically significant.

¹⁶¹ The differences between estimates of the participation rates for people with incomes of \$20,000 to \$24,999; \$25,000 to \$29,999; \$35,000 to \$39,999; and \$100,000 to \$149,999 were not statistically significant, except for the people with incomes of \$25,000 to \$29,999 and \$100,000 to \$149,999.

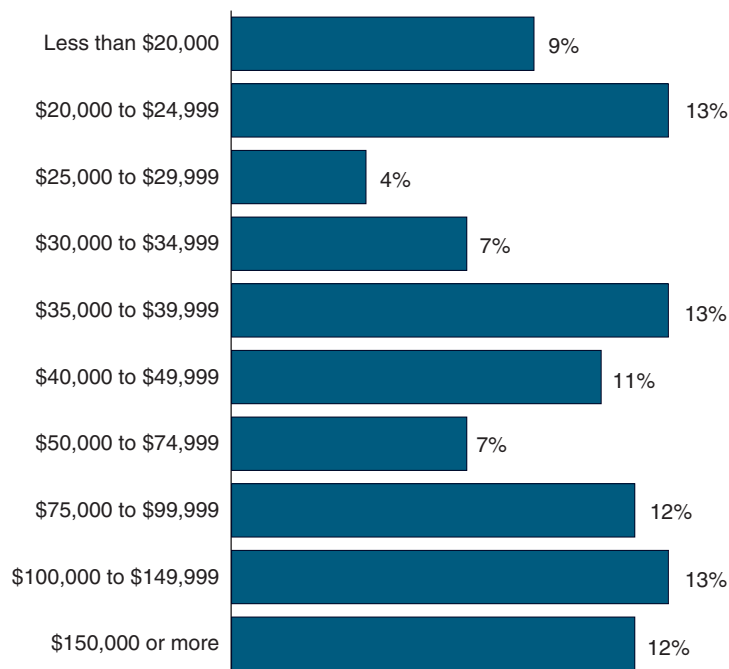
Percent of Away-From-Home Wildlife Watchers by Residence
(Total participants: 23.7 million)



Percent of U.S. Population Who Participated by Residence



Percent of U.S. Population Who Participated Away-From-Home by Household Income



Education, Race, and Ethnicity of Away-From-Home Participants

Educational achievement and participation in away-from-home wildlife watching have a direct correlation—the higher the education level, the more likely the participation. About 4 percent of the U.S. population with 11 years of education or less participated, compared to 20 percent of the population with 5 years or more of college. The educational cohort with the most participants was 1 to 3 years of college, with 6.3 million recreationists. The educational cohort with the fewest recreationists was 11 years or less, with 1.4 million.

The participation rates by race varied greatly. Approximately 11 percent of Whites took trips to wildlife watch. In contrast, 2 percent of African Americans and 1 percent¹⁶² of Asians participated. Finally, 6 percent¹⁶³ of all other races took trips to wildlife watch. Of the total 23.7 million away-from-home participants, 95 percent

¹⁶² The difference between estimates of the African American and Asian participation rates was not statistically significant.

¹⁶³ The estimate of the participation rate of other races was not statistically different from the estimated rates of the three other race categories.

Away-From-Home Participants by Education, Race, and Ethnicity

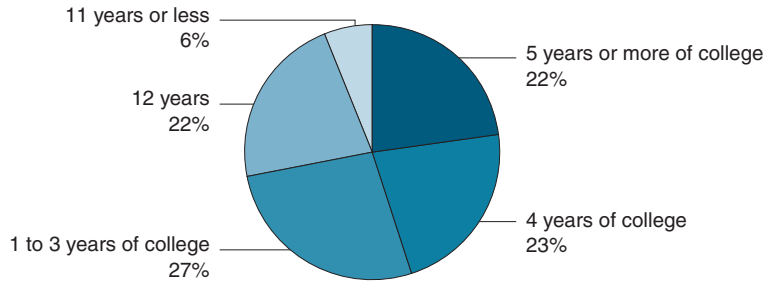
(In millions)

| | |
|--------------------------------------|-------------|
| Total participants | 23.7 |
| Education | |
| 11 years or less | 1.4 |
| 12 years | 5.1 |
| 1 to 3 years of college | 6.3 |
| 4 years of college | 5.5 |
| 5 years or more of college | 5.3 |
| Race | |
| White | 22.6 |
| African American | 0.6 |
| Asian | 0.2 |
| Other | 0.4 |
| Ethnicity | |
| Hispanic | 2.3 |
| Non-Hispanic | 21.5 |

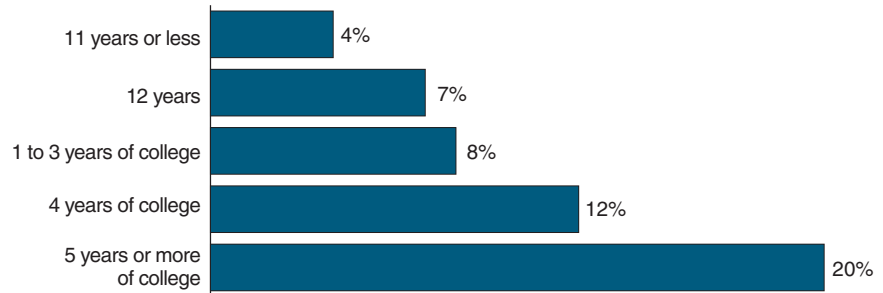
Source: Table 40.

Percent of Away-From-Home Wildlife Watchers by Education

(Total participants: 23.7 million)

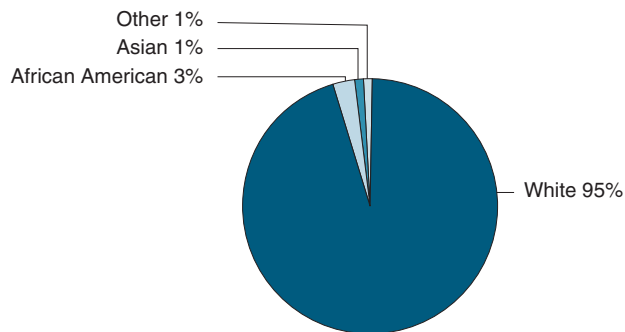


Percent of U.S. Population Who Participated Away-From-Home by Education

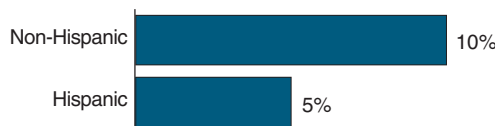


Percent of Away-From-Home Wildlife Watchers by Race

(Total participants: 23.7 million)



Percent of U.S. Population Who Participated Away-From-Home by Ethnicity



were White, 3 percent were African American, 1 percent were Asian, and 1 percent¹⁶⁴ were “all other” races.

About 2.3 million recreationists were Hispanic, 10 percent of all participants. Approximately 5 percent of the U.S. Hispanic population took trips to engage in wildlife watching. Of the non-Hispanic population, 10 percent (21.5 million participants) took trips to wildlife watch. They composed 90 percent of all away-from-home wildlife watchers.

¹⁶⁴ The differences between estimates of the African American, Asian, and “other” races percentages were not statistically significant.

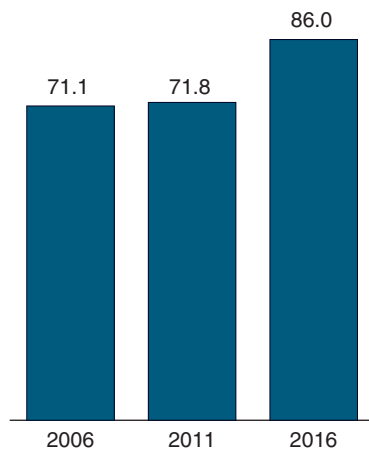
2006–2016 Comparison of Wildlife-Watching Participation

Comparing 2011 and 2016 wildlife-watching measures shows a greatly increased number of total participants and equipment expenditures, 20 percent and 90 percent, respectively. The increase in participants is due to increased photographing and feeding wildlife around the home. Away-from-home wildlife watching stayed level at 9 percent of Americans, 16 years and older. Similarly, the differences in the number of days of away-from-home wildlife watching were not significant for any category. The increase in equipment expenditures was due to a 175 percent increase in special equipment

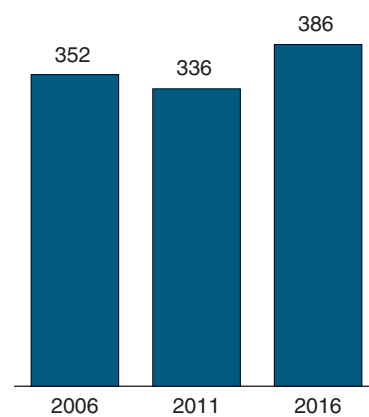
(i.e., high cost items such as off-road vehicles and boats).

The trend from 2006 to 2016 copies the trend from 2011 to 2016: an increase by a fifth in the number of participants and a near doubling of equipment expenditures. The participation increase is due almost entirely to photographing around the home. Overall, away-from-home wildlife watching participant numbers stayed level, as did the number of away-from-home days. Equipment purchases, the largest component of wildlife-watching expenditures, increased solely due to special equipment purchases. All other categories of equipment purchases did not have notable increases or decreases.

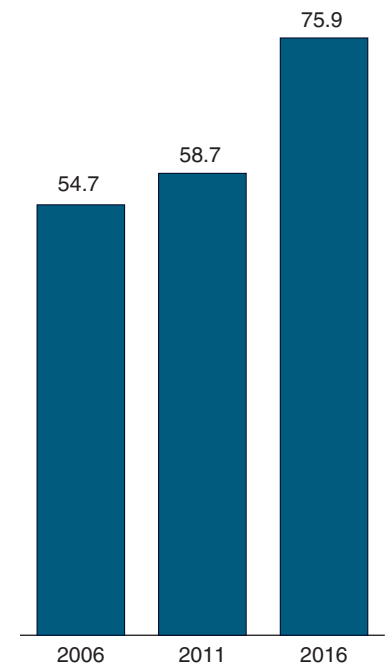
Number of Wildlife Watchers
(Millions)



Days of Away-From-Home Wildlife Watching
(Millions)



Wildlife-Watching Expenditures
(Billions of 2016 dollars)



2011–2016 Wildlife-Watching Participants, Days, and Expenditures

(U.S. population 16 years and older. Numbers in thousands)

| | 2011 | | 2016 | | 2011–2016 percent change |
|---|---------------------|------------|---------------------|------------|-----------------------------|
| | Number | Percent | Number | Percent | |
| Wildlife-watching participants, total | 71,776 | 100 | 86,042 | 100 | 20 |
| Around the home | 68,598 | 96 | 81,128 | 94 | 18 |
| Observers | 45,046 | 63 | 43,829 | 51 | *-3 |
| Photographers | 25,370 | 35 | 30,473 | 35 | 20 |
| Feeders | 52,817 | 74 | 59,083 | 69 | 12 |
| Visitors of parks or natural areas | 12,311 | 17 | 11,359 | 13 | *-8 |
| Maintainers of planting or natural areas | 13,399 | 19 | 11,024 | 13 | *-18 |
| Away from home | 22,496 | 31 | 23,720 | 28 | *5 |
| Observers | 19,808 | 28 | 19,583 | 23 | *-1 |
| Photographers | 12,354 | 17 | 13,721 | 16 | *11 |
| Feeders | 5,399 | 8 | 4,869 | 6 | *-10 |
| Days, away form home | 335,625 | 100 | 386,045 | 100 | *15 |
| Observers | 268,798 | 80 | 308,769 | 80 | *15 |
| Photographers | 110,459 | 33 | 151,559 | 39 | *37 |
| Feeders | 59,255 | 18 | 70,846 | 18 | *20 |
| Wildlife-watching expenditures, total (2016 dollars) | \$58,732,591 | 100 | \$75,867,134 | 100 | *29 |
| Trip-related | \$18,483,902 | 31 | \$11,587,870 | 15 | -37 |
| Equipment, total | \$29,051,485 | 49 | \$55,083,300 | 73 | 90 |
| Wildlife-watching equipment | \$12,115,802 | 21 | \$12,105,745 | 16 | *Z |
| Auxiliary equipment | \$1,664,250 | 3 | \$1,043,932 | 1 | *-37 |
| Special equipment | \$15,271,434 | 26 | \$41,933,623 | 55 | 175 |
| Other | \$11,197,204 | 19 | \$9,195,965 | 12 | *-18 |

* Not statistically different from zero at the 95 percent confidence level.
Z is less than 0.5 percent.

2006–2016 Wildlife-Watching Participants, Days, and Expenditures

(U.S. population 16 years and older. Numbers in thousands)

| | 2006 | | 2016 | | 2006–2016 percent change |
|---|---------------------|------------|---------------------|------------|-----------------------------|
| | Number | Percent | Number | Percent | |
| Wildlife-watching participants, total | 71,132 | 100 | 86,042 | 100 | 21 |
| Around the home. | 67,756 | 95 | 81,128 | 94 | 20 |
| Observers | 44,467 | 36 | 43,829 | 51 | *-1 |
| Photographers | 18,763 | 26 | 30,473 | 35 | 62 |
| Feeders | 55,512 | 78 | 59,083 | 69 | *6 |
| Visitors of parks or natural areas | 13,271 | 19 | 11,359 | 13 | *-14 |
| Maintainers of planting or natural areas | 14,508 | 20 | 11,024 | 13 | -24 |
| Away from home | 22,977 | 32 | 23,720 | 28 | *3 |
| Observers | 21,546 | 30 | 19,583 | 23 | *-9 |
| Photographers | 11,708 | 16 | 13,721 | 16 | *17 |
| Feeders | 7,084 | 10 | 4,869 | 6 | -31 |
| Days, away form home | 352,070 | 100 | 386,045 | 100 | *10 |
| Observers | 291,027 | 83 | 308,769 | 80 | *6 |
| Photographers | 103,872 | 30 | 151,559 | 39 | *46 |
| Feeders | 77,329 | 22 | 70,846 | 18 | *-8 |
| Wildlife-watching expenditures, total (2016 dollars) | \$54,712,904 | 100 | \$75,867,134 | 100 | *39 |
| Trip-related. | \$15,429,582 | 28 | \$11,587,870 | 15 | *-25 |
| Equipment, total. | \$27,771,785 | 51 | \$55,083,300 | 73 | 98 |
| Wildlife-watching equipment | \$11,827,881 | 22 | \$12,105,745 | 16 | *2 |
| Auxiliary equipment | \$1,238,019 | 2 | \$1,043,932 | 1 | *-16 |
| Special equipment. | \$14,705,885 | 27 | \$41,933,623 | 55 | 185 |
| Other | \$11,511,537 | 21 | \$9,195,965 | 12 | *-20 |

* Not statistically different from zero at the 95 percent confidence level.

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 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, 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 U.S. resident (a resident of one of the 50 states or the District of Columbia). No one residing outside the United States (including U.S. citizens) was eligible for interviewing. Therefore, reported national totals do not include participation by those who were not U.S. residents or who were U.S. citizens residing outside the United States.

Comparability of Previous Surveys

The numbers reported can be compared with those in the 1991, 1996, 2001, 2006, and 2011 Survey Reports. The methodology used in 2016 was similar to that used in those Surveys. These results should not be directly compared to results from Surveys earlier than 1991 due to major changes in methodology. These changes beginning with the 1991 Survey were made to improve accuracy in the information provided. Trends further back than 1991 are presented in Appendix C. These trends were developed using parts of the Surveys that were comparable.

Coverage of an Individual Table

Since the 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 1 shows that estimates of anglers and hunters, their days of participation, and their number of trips are reported by type of activity. By contrast, the title of Table 3 indicates that it contains data on freshwater anglers and the days they fished for different species.

Percentages Reported in the Table

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 percentages add to 100 percent (plus or minus a rounding error). For example, Table 1 reports the number of trips taken by big game hunters (60 percent), those taken by small game hunters (22 percent), those taken by migratory bird hunters (10 percent), and those taken by hunters pursuing other animals (8 percent). These comprise 100 percent because they are exclusive categories.

Percentages should not add to 100 when nonexclusive groups are being reported. Using Table 1 as an example again, note that adding the percentages associated with the total number of big game hunters (80 percent), total small game hunters (31 percent), total migratory bird hunters (21 percent), and total hunters of other animals (11 percent) will not 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 6 reports three percentages with different bases:

one for the number of hunters, one for the number of trips, and one for days of hunting. A footnote is used to clarify the bases of the reported percentages.

Footnotes to the Tables

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. These 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.
- W Less than 0.5 dollars.
- 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 ten 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 as an example,

those who fished in saltwater and freshwater appear in each of their totals. Yet each angler is represented only once in the “Total, all fishing” column. Similarly, in Table 6, those who hunt for big game and small game are counted only once as a hunter in the “Total, all hunting” column. 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 27, where the total for days of hunting on all land is greater than the sum of days of hunting on public land and days on private land. This occurs because some respondents did not answer the “days on public/days on private land” questions. As a result,

it is known how many days hunters were in the field due to an earlier question, but not known if how many days were on public or private land. In this case, totals are greater than the sum of subcategories when nonresponses have occurred.

Table 1. Anglers and Hunters 16 Years Old and Older, Days of Participation, and Trips by Type of Fishing and Hunting: 2016

(Population 16 years old and older. Numbers in thousands)

| Type of fishing and hunting | Participants | | Days of participation | | Trips | |
|--------------------------------------|---------------|------------|-----------------------|------------|----------------|------------|
| | Number | Percent | Number | Percent | Number | Percent |
| Total sportspersons | 39,553 | 100 | 643,362 | 100 | 530,167 | 100 |
| FISHING | | | | | | |
| Total, all fishing | 35,754 | 100 | 459,341 | 100 | 383,296 | 100 |
| Total, all freshwater | 30,137 | 84 | 383,192 | 83 | 322,266 | 84 |
| Freshwater, except Great Lakes | 29,490 | 82 | 372,660 | 81 | 311,237 | 81 |
| Great Lakes | 1,824 | 5 | 13,440 | 3 | 11,029 | 3 |
| Saltwater | 8,320 | 23 | 75,392 | 16 | 61,030 | 16 |
| HUNTING | | | | | | |
| Total, all hunting | 11,453 | 100 | 184,021 | 100 | 146,871 | 100 |
| Big game | 9,208 | 80 | 132,665 | 72 | 88,561 | 60 |
| Small game | 3,505 | 31 | 38,306 | 21 | 31,772 | 22 |
| Migratory birds | 2,353 | 21 | 15,621 | 8 | 14,548 | 10 |
| Other animals | 1,315 | 11 | 13,275 | 7 | 11,989 | 8 |

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

Table 2. Anglers, Trips, and Days of Fishing by Type of Fishing: 2016

(Population 16 years old and older. Numbers in thousands)

| Anglers, trips, and days of fishing | Total, all fishing | | Freshwater | | | | | | Saltwater | |
|-------------------------------------|--------------------|------------|-----------------------|------------|--------------------------------|------------|---------------|------------|---------------|------------|
| | | | Total, all freshwater | | Freshwater, except Great Lakes | | Great Lakes | | | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| ANGLERS | | | | | | | | | | |
| Total in United States | 35,754 | 100 | 30,137 | 100 | 29,490 | 100 | 1,824 | 100 | 8,320 | 100 |
| In state of residence | 32,089 | 90 | 27,504 | 91 | 27,259 | 92 | *1,284 | *70 | 6,722 | 81 |
| In other states | 8,826 | 25 | 6,678 | 22 | 6,065 | 21 | *655 | *36 | 2,230 | 27 |
| TRIPS | | | | | | | | | | |
| Total in United States | 383,296 | 100 | 322,266 | 100 | 311,237 | 100 | 11,029 | 100 | 61,030 | 100 |
| In state of residence | 349,211 | 91 | 300,098 | 93 | 290,868 | 93 | *9,230 | *84 | 49,113 | 80 |
| In other states | 34,085 | 9 | 22,168 | 7 | 20,370 | 7 | *1,798 | *16 | 11,917 | 20 |
| DAYS OF FISHING | | | | | | | | | | |
| Total in United States | 459,341 | 100 | 383,192 | 100 | 372,660 | 100 | 13,440 | 100 | 75,392 | 100 |
| In state of residence | 418,461 | 91 | 353,045 | 92 | 345,178 | 93 | *10,550 | *78 | 62,107 | 82 |
| In other states | 45,981 | 10 | 31,297 | 8 | 28,544 | 8 | *2,890 | *22 | 14,274 | 19 |
| Average days per angler | 13 | X | 13 | X | 13 | X | 7 | X | 9 | X |

* Estimate based on a sample size of 10–29. X Not applicable.

Note: Detail for participants does not add to total because of multiple responses. Percents shown are based on the respective “Total in United States” rows.

Table 3. Freshwater Anglers and Days of Fishing by Type of Fish: 2016

(Population 16 years old and older. Numbers in thousands. Excludes Great Lakes fishing)

| Type of fish | Anglers | | Days of fishing | | Average days per angler |
|--|---------------|------------|-----------------|------------|-------------------------|
| | Number | Percent | Number | Percent | |
| Total, all types of fish | 29,490 | 100 | 372,660 | 100 | 13 |
| Black bass (largemouth, smallmouth, etc.) | 9,595 | 33 | 116,911 | 31 | 12 |
| White bass, striped bass, and striped bass hybrids | 4,969 | 17 | 72,173 | 19 | 15 |
| Panfish | 8,409 | 29 | 109,744 | 29 | 13 |
| Crappie | 7,802 | 26 | 106,527 | 29 | 14 |
| Catfish and Bullheads | 8,144 | 28 | 74,235 | 20 | 9 |
| Walleye | 3,353 | 11 | 72,463 | 19 | 22 |
| Sauger | ... | ... | ... | ... | ... |
| Northern pike, pickerel, muskie, muskie hybrids | 1,736 | 6 | 47,850 | 13 | 28 |
| Trout | 7,845 | 27 | 63,285 | 17 | 8 |
| Salmon | 905 | 3 | 8,641 | 2 | 10 |
| Steelhead | *447 | *2 | *4,283 | *1 | *10 |
| Anything ¹ | 3,895 | 13 | 26,168 | 7 | 7 |
| Another type of freshwater fish | 1,499 | 5 | 7,168 | 2 | 5 |

* 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.

Note: Detail for participants does not add to total because of multiple responses.

Table 4. Great Lakes Anglers and Days of Fishing by Type of Fish: 2016

(Population 16 years old and older. Numbers in thousands)

| Type of fish | Anglers | | Days of fishing | | Average days per angler |
|---|--------------|------------|-----------------|------------|-------------------------|
| | Number | Percent | Number | Percent | |
| Total, all types of fish | 1,824 | 100 | 13,440 | 100 | 7 |
| Black bass (largemouth, smallmouth, etc.) | ... | ... | ... | ... | ... |
| Walleye, Sauger | *508 | *28 | *2,608 | *19 | *5 |
| Northern pike, pickerel, muskie, muskie hybrids | ... | ... | ... | ... | ... |
| Perch | ... | ... | ... | ... | ... |
| Salmon | *862 | *47 | *6,383 | *47 | *7 |
| Steelhead | *422 | *23 | *1,707 | *13 | *4 |
| Lake trout | ... | ... | ... | ... | ... |
| Other trout | ... | ... | ... | ... | ... |
| Anything ¹ | ... | ... | ... | ... | ... |
| Another type of Great Lakes 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.

Note: Detail for participants does not add to total because of multiple responses.

Table 5. Saltwater Anglers and Days of Fishing by Type of Fish: 2016

(Population 16 years old and older. Numbers in thousands)

| Type of fish | Anglers | | Days of fishing | | Average days per angler |
|---------------------------------------|--------------|------------|-----------------|------------|-------------------------|
| | Number | Percent | Number | Percent | |
| Total, all types of fish | 8,320 | 100 | 75,392 | 100 | 9 |
| Salmon | *376 | *5 | *3,665 | *5 | *10 |
| Striped bass | 1,122 | 13 | 9,631 | 13 | 9 |
| Flatfish (flounder, halibut) | 989 | 12 | 11,430 | 15 | 12 |
| Bluefish | 610 | 7 | 4,133 | 5 | 7 |
| Red drum (redfish) | 2,140 | 26 | 20,981 | 28 | 10 |
| Sea trout (weakfish) | 712 | 9 | 5,316 | 7 | 7 |
| Mackerel | *442 | *5 | *5,743 | *8 | *13 |
| Mahi Mahi (dolphinfish) | *261 | *3 | *4,450 | *6 | *17 |
| Tuna | *614 | *7 | *7,667 | *10 | *12 |
| Shellfish | 1,027 | 12 | 4,092 | 5 | 4 |
| Anything ¹ | 2,412 | 29 | 13,238 | 18 | 5 |
| Another type of saltwater fish | 2,410 | 29 | 33,188 | 44 | 14 |

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

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

Note: Detail for participants does not add to total because of multiple responses.

Table 6. Hunters, Trips, and Days of Hunting by Type of Hunting: 2016

(Population 16 years old and older. Numbers in thousands)

| Hunters, trips, and days of hunting | Total, all hunting | | Big game | | Small game | | Migratory birds | | Other animals | |
|-------------------------------------|--------------------|------------|----------------|------------|---------------|------------|-----------------|------------|---------------|------------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| HUNTERS | | | | | | | | | | |
| Total in United States | 11,453 | 100 | 9,208 | 100 | 3,505 | 100 | 2,353 | 100 | 1,315 | 100 |
| In state of residence | 10,942 | 96 | 8,649 | 94 | 3,267 | 93 | 2,300 | 98 | 1,248 | 95 |
| In other states | 1,816 | 16 | 1,297 | 14 | *374 | *11 | *202 | *9 | ... | ... |
| TRIPS | | | | | | | | | | |
| Total in United States | 146,871 | 100 | 88,561 | 100 | 31,772 | 100 | 14,548 | 100 | 11,989 | 100 |
| In state of residence | 137,446 | 94 | 82,586 | 93 | 30,533 | 96 | 12,760 | 88 | 11,566 | 96 |
| In other states | 9,425 | 6 | 5,975 | 7 | *1,239 | *4 | *1,788 | *12 | ... | ... |
| DAYS OF HUNTING | | | | | | | | | | |
| Total in United States | 184,021 | 100 | 132,665 | 100 | 38,306 | 100 | 15,621 | 100 | 13,275 | 100 |
| In state of residence | 161,058 | 88 | 113,272 | 85 | 36,775 | 96 | 13,248 | 85 | 12,618 | 95 |
| In other states | 23,617 | 13 | 19,730 | 15 | *1,684 | *4 | *2,373 | *15 | ... | ... |
| Average days per hunter | 16 | X | 14 | X | 11 | X | 7 | X | 10 | X |

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

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

X Not applicable.

Note: Detail does not add to total because of multiple responses. Percents shown are based on the respective “Total in United States” rows.

Table 7. Hunters and Days of Hunting by Type of Game: 2016

(Population 16 years old and older. Numbers in thousands)

| Type of game | Hunters | | Days of hunting | | Average days per hunter |
|--|--------------|------------|-----------------|------------|-------------------------|
| | Number | Percent | Number | Percent | |
| Total, all big game | 9,208 | 100 | 132,665 | 100 | 14 |
| Deer | 8,147 | 88 | 115,042 | 87 | 14 |
| Elk | 712 | 8 | 5,664 | 4 | 8 |
| Bear | *187 | *2 | *1,105 | *1 | *6 |
| Wild turkey | 2,037 | 22 | 13,115 | 10 | 6 |
| Moose | ... | ... | ... | ... | ... |
| Other big game | *386 | *4 | *2,005 | *2 | *5 |
| Total, all small game | 3,505 | 100 | 38,306 | 100 | 11 |
| Rabbit, hare | 1,264 | 36 | 20,344 | 53 | 16 |
| Quail | *958 | *27 | *7,159 | *19 | *7 |
| Grouse/prairie chicken | 438 | 13 | 4,126 | 11 | 9 |
| Squirrel | 1,508 | 43 | 11,248 | 29 | 7 |
| Pheasant | 726 | 21 | 4,973 | 13 | 7 |
| Ptarmigan | ... | ... | ... | ... | ... |
| Other small game | *131 | *4 | *726 | *2 | *6 |
| Total, all migratory birds | 2,353 | 100 | 15,621 | 100 | 7 |
| Waterfowl (geese and/or ducks) | 1,236 | 53 | 9,883 | 63 | 8 |
| Geese | 793 | 34 | *5,335 | *34 | *7 |
| Ducks | 1,189 | 51 | 8,962 | 57 | 8 |
| Doves | 1,235 | 52 | 4,503 | 29 | 4 |
| Other migratory birds | ... | ... | ... | ... | ... |
| Total, all other animals (fox, raccoon, groundhog, alligator, etc.) | 1,315 | 100 | 13,275 | 100 | 10 |

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

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

Table 8. Selected Characteristics of Anglers and Hunters: 2016

(Population 16 years old and older. Numbers in thousands)

| Characteristic | U.S. population | | Sportspersons (fished or hunted) | | | Fished only | | |
|---|-----------------|------------|----------------------------------|--------------------------|------------|---------------|--------------------------|------------|
| | Number | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 254,686 | 100 | 39,553 | 16 | 100 | 28,092 | 11 | 100 |
| Population Density of Residence | | | | | | | | |
| Urban | 208,695 | 82 | 25,943 | 12 | 66 | 20,510 | 10 | 73 |
| Rural | 45,991 | 18 | 13,610 | 30 | 34 | 7,582 | 16 | 27 |
| Population Size of Residence | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 239,722 | 94 | 34,836 | 15 | 88 | 25,926 | 11 | 92 |
| 1,000,000 or more | 144,070 | 57 | 15,967 | 11 | 40 | 13,038 | 9 | 46 |
| 250,000 to 999,999 | 49,208 | 19 | 8,991 | 18 | 23 | 6,616 | 13 | 24 |
| 50,000 to 249,999 | 46,443 | 18 | 9,879 | 21 | 25 | 6,272 | 14 | 22 |
| Outside MSA | 14,964 | 6 | 4,717 | 32 | 12 | 2,166 | 14 | 8 |
| Census Geographic Division | | | | | | | | |
| New England | 12,018 | 5 | 1,485 | 12 | 4 | 1,188 | 10 | 4 |
| Middle Atlantic | 33,368 | 13 | 3,793 | 11 | 10 | 2,909 | 9 | 10 |
| East North Central | 36,893 | 14 | 7,097 | 19 | 18 | 4,360 | 12 | 16 |
| West North Central | 16,502 | 6 | 3,487 | 21 | 9 | 2,123 | 13 | 8 |
| South Atlantic | 50,611 | 20 | 8,181 | 16 | 21 | 6,458 | 13 | 23 |
| East South Central | 14,968 | 6 | 3,386 | 23 | 9 | *2,130 | *14 | *8 |
| West South Central | 30,094 | 12 | 5,694 | 19 | 14 | 4,137 | 14 | 15 |
| Mountain | 18,364 | 7 | 2,941 | 16 | 7 | 1,995 | 11 | 7 |
| Pacific | 41,869 | 16 | 3,489 | 8 | 9 | 2,792 | 7 | 10 |
| Age | | | | | | | | |
| 16 to 17 years | 8,541 | 3 | 1,271 | 15 | 3 | *1,043 | *12 | *4 |
| 18 to 24 years | 28,351 | 11 | 2,444 | 9 | 6 | 1,435 | 5 | 5 |
| 25 to 34 years | 43,977 | 17 | 5,932 | 13 | 15 | 4,148 | 9 | 15 |
| 35 to 44 years | 40,455 | 16 | 6,836 | 17 | 17 | 5,227 | 13 | 19 |
| 45 to 54 years | 42,969 | 17 | 7,930 | 18 | 20 | 5,389 | 13 | 19 |
| 55 to 64 years | 42,022 | 16 | 7,499 | 18 | 19 | 4,796 | 11 | 17 |
| 65 years and older | 48,372 | 19 | 7,641 | 16 | 19 | 6,054 | 13 | 22 |
| 65 to 74 years | 28,895 | 11 | 5,484 | 19 | 14 | 4,276 | 15 | 15 |
| 75 and older | 19,477 | 8 | 2,158 | 11 | 5 | 1,778 | 9 | 6 |
| Sex | | | | | | | | |
| Male, total | 121,775 | 48 | 29,373 | 24 | 74 | 19,026 | 16 | 68 |
| 16 to 17 years | 4,248 | 2 | 948 | 22 | 2 | *795 | *19 | *3 |
| 18 to 24 years | 14,235 | 6 | 1,814 | 13 | 5 | 868 | 6 | 3 |
| 25 to 34 years | 21,621 | 8 | 4,316 | 20 | 11 | 2,693 | 12 | 10 |
| 35 to 44 years | 19,614 | 8 | 4,504 | 23 | 11 | 3,308 | 17 | 12 |
| 45 to 54 years | 20,748 | 8 | 5,579 | 27 | 14 | 3,199 | 15 | 11 |
| 55 to 64 years | 20,054 | 8 | 5,633 | 28 | 14 | 3,053 | 15 | 11 |
| 65 years and older | 21,253 | 8 | 6,579 | 31 | 17 | 5,108 | 24 | 18 |
| 65 to 74 years | 13,306 | 5 | 4,628 | 35 | 12 | 3,503 | 26 | 12 |
| 75 and older | 7,947 | 3 | 1,951 | 25 | 5 | 1,606 | 20 | 6 |
| Female, total | 132,911 | 52 | 10,180 | 8 | 26 | 9,067 | 7 | 32 |
| 16 to 17 years | 4,293 | 2 | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | 14,116 | 6 | *630 | *4 | *2 | *567 | *4 | *2 |
| 25 to 34 years | 22,356 | 9 | 1,615 | 7 | 4 | 1,455 | 7 | 5 |
| 35 to 44 years | 20,841 | 8 | 2,332 | 11 | 6 | 1,920 | 9 | 7 |
| 45 to 54 years | 22,220 | 9 | 2,352 | 11 | 6 | 2,189 | 10 | 8 |
| 55 to 64 years | 21,967 | 9 | 1,866 | 8 | 5 | 1,743 | 8 | 6 |
| 65 years and older | 27,118 | 11 | 1,062 | 4 | 3 | 946 | 3 | 3 |
| 65 to 74 years | 15,589 | 6 | 855 | 5 | 2 | 773 | 5 | 3 |
| 75 and older | 11,530 | 5 | ... | ... | ... | ... | ... | ... |
| Ethnicity | | | | | | | | |
| Hispanic | 42,603 | 17 | 3,250 | 8 | 8 | 2,871 | 7 | 10 |
| Non-Hispanic | 212,083 | 83 | 36,303 | 17 | 92 | 25,221 | 12 | 90 |
| Race | | | | | | | | |
| White | 199,086 | 78 | 34,669 | 17 | 88 | 23,538 | 12 | 84 |
| African American | 33,358 | 13 | 3,151 | 9 | 8 | 3,059 | 9 | 11 |
| Asian | 16,153 | 6 | *738 | *5 | *2 | *708 | *4 | *3 |
| All others | 6,089 | 2 | 996 | 16 | 3 | *788 | *13 | *3 |
| Annual Household Income | | | | | | | | |
| Less than \$20,000 | 22,269 | 9 | 2,948 | 13 | 7 | 2,513 | 11 | 9 |
| \$20,000 to \$24,999 | 8,821 | 3 | 976 | 11 | 2 | *815 | *9 | *3 |
| \$25,000 to \$29,999 | 8,889 | 3 | 1,121 | 13 | 3 | 976 | 11 | 3 |
| \$30,000 to \$34,999 | 9,442 | 4 | 897 | 10 | 2 | 743 | 8 | 3 |
| \$35,000 to \$39,999 | 8,909 | 3 | 2,028 | 23 | 5 | 1,572 | 18 | 6 |
| \$40,000 to \$49,999 | 16,174 | 6 | 2,869 | 18 | 7 | 1,768 | 11 | 6 |
| \$50,000 to \$74,999 | 36,512 | 14 | 6,420 | 18 | 16 | 3,771 | 10 | 13 |
| \$75,000 to \$99,999 | 27,409 | 11 | 3,985 | 15 | 10 | 2,112 | 8 | 8 |
| \$100,000 to \$149,999 | 32,485 | 13 | 5,425 | 17 | 14 | 3,889 | 12 | 14 |
| \$150,000 or more | 30,217 | 12 | 5,159 | 17 | 13 | 3,751 | 12 | 13 |
| Not reported | 53,559 | 21 | 7,724 | 14 | 20 | 6,182 | 12 | 22 |
| Education | | | | | | | | |
| 11 years or less | 33,987 | 13 | 4,420 | 13 | 11 | 3,334 | 10 | 12 |
| 12 years | 72,726 | 29 | 12,308 | 17 | 31 | 8,746 | 12 | 31 |
| 1 to 3 years of college | 75,352 | 30 | 9,512 | 13 | 24 | 6,527 | 9 | 23 |
| 4 years of college | 45,769 | 18 | 7,038 | 15 | 18 | 4,564 | 10 | 16 |
| 5 years or more of college | 26,852 | 11 | 6,275 | 23 | 16 | 4,921 | 18 | 18 |

See footnotes at end of table.

Table 8. Selected Characteristics of Anglers and Hunters: 2016—Continued

(Population 16 years old and older. Numbers in thousands)

| Characteristic | Hunted only | | | Fished and hunted | | |
|---|--------------|--------------------------|------------|-------------------|--------------------------|------------|
| | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 3,799 | 1 | 100 | 7,654 | 3 | 100 |
| Population Density of Residence | | | | | | |
| Urban..... | 1,974 | 1 | 52 | 3,451 | 2 | 45 |
| Rural..... | 1,825 | 4 | 48 | 4,203 | 9 | 55 |
| Population Size of Residence | | | | | | |
| Metropolitan Statistical Area (MSA) | 3,047 | 1 | 80 | 5,856 | 2 | 77 |
| 1,000,000 or more..... | 757 | 1 | 20 | 2,165 | 2 | 28 |
| 250,000 to 999,999..... | 921 | 2 | 24 | 1,454 | 3 | 19 |
| 50,000 to 249,999..... | 1,369 | 3 | 36 | 2,237 | 5 | 29 |
| Outside MSA..... | 752 | 5 | 20 | 1,798 | 12 | 23 |
| Census Geographic Division | | | | | | |
| New England..... | 152 | 1 | 4 | 145 | 1 | 2 |
| Middle Atlantic..... | *322 | *1 | *8 | *562 | *2 | *7 |
| East North Central..... | *761 | *2 | *20 | 1,976 | 5 | 26 |
| West North Central..... | *445 | *3 | *12 | 919 | 6 | 12 |
| South Atlantic..... | 787 | 2 | 21 | 929 | 2 | 12 |
| East South Central..... | ... | ... | ... | *932 | *6 | *12 |
| West South Central..... | *487 | *2 | *13 | 1,069 | 4 | 14 |
| Mountain..... | *254 | *1 | *7 | *692 | *4 | *9 |
| Pacific..... | *266 | *1 | *7 | *432 | *1 | *6 |
| Age | | | | | | |
| 16 to 17 years..... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years..... | ... | ... | ... | *773 | *3 | *10 |
| 25 to 34 years..... | *975 | *2 | *26 | 808 | 2 | 11 |
| 35 to 44 years..... | *241 | *1 | *6 | 1,368 | 3 | 18 |
| 45 to 54 years..... | 800 | 2 | 21 | 1,742 | 4 | 23 |
| 55 to 64 years..... | 779 | 2 | 21 | 1,923 | 5 | 25 |
| 65 years and older..... | 586 | 1 | 15 | 994 | 2 | 13 |
| 65 to 74 years..... | *438 | *2 | *12 | 763 | 3 | 10 |
| 75 and older..... | *148 | *1 | *4 | *231 | *1 | *3 |
| Sex | | | | | | |
| Male, total..... | 3,398 | 3 | 89 | 6,943 | 6 | 91 |
| 16 to 17 years..... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years..... | ... | ... | ... | *710 | *5 | *9 |
| 25 to 34 years..... | *896 | *4 | *24 | 727 | 3 | 9 |
| 35 to 44 years..... | *166 | *1 | *4 | 1,030 | 5 | 13 |
| 45 to 54 years..... | 731 | 4 | 19 | 1,649 | 8 | 22 |
| 55 to 64 years..... | 733 | 4 | 19 | 1,847 | 9 | 24 |
| 65 years and older..... | 527 | 2 | 14 | 936 | 4 | 12 |
| 65 to 74 years..... | *379 | *3 | *10 | 739 | 6 | 10 |
| 75 and older..... | *148 | *2 | *4 | *197 | *2 | *3 |
| Female, total..... | *402 | *Z | *11 | *711 | *1 | *9 |
| 16 to 17 years..... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years..... | ... | ... | ... | ... | ... | ... |
| 25 to 34 years..... | ... | ... | ... | ... | ... | ... |
| 35 to 44 years..... | ... | ... | ... | ... | ... | ... |
| 45 to 54 years..... | ... | ... | ... | ... | ... | ... |
| 55 to 64 years..... | ... | ... | ... | ... | ... | ... |
| 65 years and older..... | ... | ... | ... | ... | ... | ... |
| 65 to 74 years..... | ... | ... | ... | ... | ... | ... |
| 75 and older..... | ... | ... | ... | ... | ... | ... |
| Ethnicity | | | | | | |
| Hispanic..... | ... | ... | ... | ... | ... | ... |
| Non-Hispanic..... | 3,629 | 2 | 96 | 7,446 | 4 | 97 |
| Race | | | | | | |
| White..... | 3,748 | 2 | 99 | 7,375 | 4 | 96 |
| African American..... | ... | ... | ... | ... | ... | ... |
| Asian..... | ... | ... | ... | ... | ... | ... |
| All others..... | ... | ... | ... | *179 | *3 | *2 |
| Annual Household Income | | | | | | |
| Less than \$20,000..... | ... | ... | ... | ... | ... | ... |
| \$20,000 to \$24,999..... | ... | ... | ... | ... | ... | ... |
| \$25,000 to \$29,999..... | ... | ... | ... | *130 | *1 | *2 |
| \$30,000 to \$34,999..... | ... | ... | ... | ... | ... | ... |
| \$35,000 to \$39,999..... | ... | ... | ... | *360 | *4 | *5 |
| \$40,000 to \$49,999..... | ... | ... | ... | 955 | 6 | 12 |
| \$50,000 to \$74,999..... | *723 | *2 | *19 | 1,925 | 5 | 25 |
| \$75,000 to \$99,999..... | *637 | *2 | *17 | 1,236 | 5 | 16 |
| \$100,000 to \$149,999..... | 594 | 2 | 16 | 942 | 3 | 12 |
| \$150,000 or more..... | *576 | *2 | *15 | 832 | 3 | 11 |
| Not reported..... | *503 | *1 | *13 | 1,031 | 2 | 13 |
| Education | | | | | | |
| 11 years or less..... | *580 | *2 | *15 | *506 | *1 | *7 |
| 12 years..... | 1,137 | 2 | 30 | 2,417 | 3 | 32 |
| 1 to 3 years of college..... | 930 | 1 | 24 | 2,054 | 3 | 27 |
| 4 years of college..... | 727 | 2 | 19 | 1,748 | 4 | 23 |
| 5 years or more of college..... | *425 | *2 | *11 | 929 | 3 | 12 |

* Estimate based on a sample size of 10–29. ... Sample size too small (less than 10) to report data reliably. Z Less than 0.5 percent.

Note: Percent who participated columns show the percent of each row's population who participated in the activity named by the column. Percent columns show the percent of each column's participants who are described by the row heading. Demographic variables we could include but haven't are (1) relationship to head of household, (2) marital status, (3) whether or not participant has a job, and (4) whether or not participant is going to school, keeping house, or retired.

Table 9. Selected Characteristics of Anglers by Type of Fishing: 2016

(Population 16 years old and older. Numbers in thousands)

| Characteristic | U.S. population | | Total, all fishing | | | Total freshwater | | |
|---|-----------------|------------|--------------------|--------------------------|------------|------------------|--------------------------|------------|
| | Number | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 254,686 | 100 | 35,754 | 14 | 100 | 30,137 | 12 | 100 |
| Population Density of Residence | | | | | | | | |
| Urban | 208,695 | 82 | 23,968 | 11 | 67 | 19,574 | 9 | 65 |
| Rural | 45,991 | 18 | 11,785 | 26 | 33 | 10,563 | 23 | 35 |
| Population Size of Residence | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 239,722 | 94 | 31,789 | 13 | 89 | 26,264 | 11 | 87 |
| 1,000,000 or more | 144,070 | 57 | 15,210 | 11 | 43 | 12,350 | 9 | 41 |
| 250,000 to 999,999 | 49,208 | 19 | 8,070 | 16 | 23 | 6,498 | 13 | 22 |
| 50,000 to 249,999 | 46,443 | 18 | 8,509 | 18 | 24 | 7,416 | 16 | 25 |
| Outside MSA | 14,964 | 6 | 3,965 | 26 | 11 | 3,872 | 26 | 13 |
| Census Geographic Division | | | | | | | | |
| New England | 12,018 | 5 | 1,333 | 11 | 4 | 1,001 | 8 | 3 |
| Middle Atlantic | 33,368 | 13 | 3,471 | 10 | 10 | 2,419 | 7 | 8 |
| East North Central | 36,893 | 14 | 6,336 | 17 | 18 | 6,074 | 16 | 20 |
| West North Central | 16,502 | 6 | 3,042 | 18 | 9 | 3,002 | 18 | 10 |
| South Atlantic | 50,611 | 20 | 7,394 | 15 | 21 | 4,779 | 9 | 16 |
| East South Central | 14,968 | 6 | 3,061 | 20 | 9 | 2,924 | 20 | 10 |
| West South Central | 30,094 | 12 | 5,206 | 17 | 15 | 4,768 | 16 | 16 |
| Mountain | 18,364 | 7 | 2,687 | 15 | 8 | 2,601 | 14 | 9 |
| Pacific | 41,869 | 16 | 3,224 | 8 | 9 | 2,568 | 6 | 9 |
| Age | | | | | | | | |
| 16 to 17 years | 8,541 | 3 | 1,089 | 13 | 3 | *945 | *11 | *3 |
| 18 to 24 years | 28,351 | 11 | 2,208 | 8 | 6 | 1,761 | 6 | 6 |
| 25 to 34 years | 43,977 | 17 | 4,956 | 11 | 14 | 4,245 | 10 | 14 |
| 35 to 44 years | 40,455 | 16 | 6,595 | 16 | 18 | 6,182 | 15 | 21 |
| 45 to 54 years | 42,969 | 17 | 7,131 | 17 | 20 | 6,014 | 14 | 20 |
| 55 to 64 years | 42,022 | 16 | 6,719 | 16 | 19 | 5,048 | 12 | 17 |
| 65 years and older | 48,372 | 19 | 7,055 | 15 | 20 | 5,942 | 12 | 20 |
| 65 to 74 years | 28,895 | 11 | 5,046 | 17 | 14 | 4,276 | 15 | 14 |
| 75 and older | 19,477 | 8 | 2,010 | 10 | 6 | 1,666 | 9 | 6 |
| Sex | | | | | | | | |
| Male | 121,775 | 48 | 25,975 | 21 | 73 | 22,327 | 18 | 74 |
| Female | 132,911 | 52 | 9,778 | 7 | 27 | 7,810 | 6 | 26 |
| Ethnicity | | | | | | | | |
| Hispanic | 42,603 | 17 | 3,080 | 7 | 9 | 2,806 | 7 | 9 |
| Non-Hispanic | 212,083 | 83 | 32,674 | 15 | 91 | 27,331 | 13 | 91 |
| Race | | | | | | | | |
| White | 199,086 | 78 | 30,921 | 16 | 86 | 26,120 | 13 | 87 |
| African American | 33,358 | 13 | 3,145 | 9 | 9 | 2,708 | 8 | 9 |
| Asian | 16,153 | 6 | *721 | *4 | *2 | *495 | *3 | *2 |
| All others | 6,089 | 2 | 967 | 16 | 3 | 814 | 13 | 3 |
| Annual Household Income | | | | | | | | |
| Less than \$20,000 | 22,269 | 9 | 2,659 | 12 | 7 | 2,385 | 11 | 8 |
| \$20,000 to \$24,999 | 8,821 | 3 | 841 | 10 | 2 | *788 | *9 | *3 |
| \$25,000 to \$29,999 | 8,889 | 3 | 1,106 | 12 | 3 | 1,021 | 11 | 3 |
| \$30,000 to \$34,999 | 9,442 | 4 | 813 | 9 | 2 | 516 | 5 | 2 |
| \$35,000 to \$39,999 | 8,909 | 3 | 1,932 | 22 | 5 | 1,791 | 20 | 6 |
| \$40,000 to \$49,999 | 16,174 | 6 | 2,723 | 17 | 8 | 2,468 | 15 | 8 |
| \$50,000 to \$74,999 | 36,512 | 14 | 5,697 | 16 | 16 | 4,814 | 13 | 16 |
| \$75,000 to \$99,999 | 27,409 | 11 | 3,348 | 12 | 9 | 2,363 | 9 | 8 |
| \$100,000 to \$149,999 | 32,485 | 13 | 4,830 | 15 | 14 | 4,139 | 13 | 14 |
| \$150,000 or more | 30,217 | 12 | 4,583 | 15 | 13 | 3,702 | 12 | 12 |
| Not reported | 53,559 | 21 | 7,221 | 13 | 20 | 6,151 | 11 | 20 |
| Education | | | | | | | | |
| 11 years or less | 33,987 | 13 | 3,840 | 11 | 11 | 3,459 | 10 | 11 |
| 12 years | 72,726 | 29 | 11,171 | 15 | 31 | 9,718 | 13 | 32 |
| 1 to 3 years of college | 75,352 | 30 | 8,582 | 11 | 24 | 7,160 | 10 | 24 |
| 4 years of college | 45,769 | 18 | 6,311 | 14 | 18 | 5,120 | 11 | 17 |
| 5 years or more of college | 26,852 | 11 | 5,850 | 22 | 16 | 4,680 | 17 | 16 |

See footnotes at end of table.

Table 9. Selected Characteristics of Anglers by Type of Fishing: 2016—Continued

(Population 16 years old and older. Numbers in thousands)

| Characteristic | Freshwater | | | | | | Saltwater | | |
|---|--------------------------------|--------------------------|------------|--------------|--------------------------|------------|--------------|--------------------------|------------|
| | Freshwater, except Great Lakes | | | Great Lakes | | | Number | Percent who participated | Percent |
| | Number | Percent who participated | Percent | Number | Percent who participated | Percent | | | |
| Total persons | 29,490 | 12 | 100 | 1,824 | 1 | 100 | 8,320 | 3 | 100 |
| Population Density of Residence | | | | | | | | | |
| Urban | 19,135 | 9 | 65 | 1,229 | 1 | 67 | 6,258 | 3 | 75 |
| Rural | 10,355 | 23 | 35 | ... | ... | ... | 2,062 | 4 | 25 |
| Population Size of Residence | | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 25,677 | 11 | 87 | 1,718 | 1 | 94 | 8,008 | 3 | 96 |
| 1,000,000 or more | 11,862 | 8 | 40 | *1,240 | *1 | *68 | 4,401 | 3 | 53 |
| 250,000 to 999,999 | 6,461 | 13 | 22 | ... | ... | ... | 2,094 | 4 | 25 |
| 50,000 to 249,999 | 7,354 | 16 | 25 | ... | ... | ... | 1,514 | 3 | 18 |
| Outside MSA | 3,813 | 25 | 13 | ... | ... | ... | *312 | *2 | *4 |
| Census Geographic Division | | | | | | | | | |
| New England | 995 | 8 | 3 | ... | ... | ... | 612 | 5 | 7 |
| Middle Atlantic | 2,356 | 7 | 8 | *310 | *1 | *17 | *780 | *2 | *9 |
| East North Central | 5,618 | 15 | 19 | *1,315 | *4 | *72 | ... | ... | ... |
| West North Central | 2,904 | 18 | 10 | ... | ... | ... | ... | ... | ... |
| South Atlantic | 4,756 | 9 | 16 | ... | ... | ... | 3,628 | 7 | 44 |
| East South Central | 2,924 | 20 | 10 | ... | ... | ... | ... | ... | ... |
| West South Central | 4,768 | 16 | 16 | ... | ... | ... | *1,458 | *5 | *18 |
| Mountain | 2,601 | 14 | 9 | ... | ... | ... | ... | ... | ... |
| Pacific | 2,568 | 6 | 9 | ... | ... | ... | 1,251 | 3 | 15 |
| Age | | | | | | | | | |
| 16 to 17 years | *945 | *11 | *3 | ... | ... | ... | *305 | *4 | *4 |
| 18 to 24 years | 1,761 | 6 | 6 | ... | ... | ... | *453 | *2 | *5 |
| 25 to 34 years | 4,245 | 10 | 14 | ... | ... | ... | 1,220 | 3 | 15 |
| 35 to 44 years | 6,053 | 15 | 21 | ... | ... | ... | 1,225 | 3 | 15 |
| 45 to 54 years | 5,809 | 14 | 20 | ... | ... | ... | 1,599 | 4 | 19 |
| 55 to 64 years | 4,858 | 12 | 16 | *470 | *1 | *26 | 2,176 | 5 | 26 |
| 65 years and older | 5,818 | 12 | 20 | *235 | *Z | *13 | 1,342 | 3 | 16 |
| 65 to 74 years | 4,176 | 14 | 14 | ... | ... | ... | 1,002 | 3 | 12 |
| 75 and older | 1,642 | 8 | 6 | ... | ... | ... | *340 | *2 | *4 |
| Sex | | | | | | | | | |
| Male | 21,826 | 18 | 74 | 1,647 | 1 | 90 | 5,142 | 4 | 62 |
| Female | 7,664 | 6 | 26 | ... | ... | ... | 3,178 | 2 | 38 |
| Ethnicity | | | | | | | | | |
| Hispanic | 2,806 | 7 | 10 | ... | ... | ... | *324 | *1 | *4 |
| Non-Hispanic | 26,684 | 13 | 90 | 1,824 | 1 | 100 | 7,996 | 4 | 96 |
| Race | | | | | | | | | |
| White | 25,602 | 13 | 87 | 1,370 | 1 | 75 | 6,923 | 3 | 83 |
| African American | 2,708 | 8 | 9 | ... | ... | ... | *697 | *2 | *8 |
| Asian | *367 | *2 | *1 | ... | ... | ... | *285 | *2 | *3 |
| All others | 814 | 13 | 3 | ... | ... | ... | *416 | *7 | *5 |
| Annual Household Income | | | | | | | | | |
| Less than \$20,000 | 2,385 | 11 | 8 | ... | ... | ... | *452 | *2 | *5 |
| \$20,000 to \$24,999 | *788 | *9 | *3 | ... | ... | ... | ... | ... | ... |
| \$25,000 to \$29,999 | 1,021 | 11 | 3 | ... | ... | ... | ... | ... | ... |
| \$30,000 to \$34,999 | 516 | 5 | 2 | ... | ... | ... | ... | ... | ... |
| \$35,000 to \$39,999 | 1,767 | 20 | 6 | ... | ... | ... | *316 | *4 | *4 |
| \$40,000 to \$49,999 | 2,409 | 15 | 8 | ... | ... | ... | *346 | *2 | *4 |
| \$50,000 to \$74,999 | 4,745 | 13 | 16 | *513 | *1 | *28 | 1,415 | 4 | 17 |
| \$75,000 to \$99,999 | 2,244 | 8 | 8 | ... | ... | ... | 1,170 | 4 | 14 |
| \$100,000 to \$149,999 | 3,923 | 12 | 13 | ... | ... | ... | 1,582 | 5 | 19 |
| \$150,000 or more | 3,671 | 12 | 12 | ... | ... | ... | 1,257 | 4 | 15 |
| Not reported | 6,022 | 11 | 20 | *408 | *1 | *22 | 1,083 | 2 | 13 |
| Education | | | | | | | | | |
| 11 years or less | 3,459 | 10 | 12 | ... | ... | ... | *600 | *2 | *7 |
| 12 years | 9,629 | 13 | 33 | ... | ... | ... | 2,872 | 4 | 35 |
| 1 to 3 years of college | 7,031 | 9 | 24 | *536 | *1 | *29 | 1,842 | 2 | 22 |
| 4 years of college | 4,730 | 10 | 16 | *528 | *1 | *29 | 1,656 | 4 | 20 |
| 5 years or more of college | 4,641 | 17 | 16 | ... | ... | ... | 1,350 | 5 | 16 |

* Estimate based on a sample size of 10–29. ... Sample size too small (less than 10) to report data reliably. Z Less than 0.5 percent.

Note: Percent who participated columns show the percent of each row's population who participated in the activity named by the column. Percent columns show the percent of each column's participants who are described by the row heading. Demographic variables we could include but haven't are (1) relationship to head of household, (2) marital status, (3) whether or not participant has a job, and (4) whether or not participant is going to school, keeping house, or retired.

Table 10. Selected Characteristics of Hunters by Type of Hunting: 2016

(Population 16 years old and older. Numbers in thousands)

| Characteristic | U.S. population | | Total, all hunting | | | Big game | | |
|---|-----------------|------------|--------------------|--------------------------|------------|--------------|--------------------------|------------|
| | Number | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 254,686 | 100 | 11,453 | 4 | 100 | 9,208 | 4 | 100 |
| Population Density of Residence | | | | | | | | |
| Urban | 208,695 | 82 | 5,425 | 3 | 47 | 4,100 | 2 | 45 |
| Rural | 45,991 | 18 | 6,028 | 13 | 53 | 5,108 | 11 | 55 |
| Population Size of Residence | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 239,722 | 94 | 8,903 | 4 | 78 | 6,982 | 3 | 76 |
| 1,000,000 or more | 144,070 | 57 | 2,922 | 2 | 26 | 2,100 | 1 | 23 |
| 250,000 to 999,999 | 49,208 | 19 | 2,375 | 5 | 21 | 1,750 | 4 | 19 |
| 50,000 to 249,999 | 46,443 | 18 | 3,606 | 8 | 31 | 3,132 | 7 | 34 |
| Outside MSA | 14,964 | 6 | 2,551 | 17 | 22 | 2,226 | 15 | 24 |
| Census Geographic Division | | | | | | | | |
| New England | 12,018 | 5 | 297 | 2 | 3 | 213 | 2 | 2 |
| Middle Atlantic | 33,368 | 13 | 884 | 3 | 8 | *764 | *2 | *8 |
| East North Central | 36,893 | 14 | 2,737 | 7 | 24 | 2,548 | 7 | 28 |
| West North Central | 16,502 | 6 | 1,364 | 8 | 12 | 1,058 | 6 | 11 |
| South Atlantic | 50,611 | 20 | 1,716 | 3 | 15 | 1,469 | 3 | 16 |
| East South Central | 14,968 | 6 | *1,256 | *8 | *11 | *959 | *6 | *10 |
| West South Central | 30,094 | 12 | 1,556 | 5 | 14 | 978 | 3 | 11 |
| Mountain | 18,364 | 7 | 946 | 5 | 8 | *617 | *3 | *7 |
| Pacific | 41,869 | 16 | 697 | 2 | 6 | 601 | 1 | 7 |
| Age | | | | | | | | |
| 16 to 17 years | 8,541 | 3 | *228 | *3 | *2 | *195 | *2 | *2 |
| 18 to 24 years | 28,351 | 11 | 1,009 | 4 | 9 | 888 | 3 | 10 |
| 25 to 34 years | 43,977 | 17 | 1,783 | 4 | 16 | 1,165 | 3 | 13 |
| 35 to 44 years | 40,455 | 16 | 1,609 | 4 | 14 | 1,437 | 4 | 16 |
| 45 to 54 years | 42,969 | 17 | 2,542 | 6 | 22 | 2,263 | 5 | 25 |
| 55 to 64 years | 42,022 | 16 | 2,702 | 6 | 24 | 2,058 | 5 | 22 |
| 65 years and older | 48,372 | 19 | 1,580 | 3 | 14 | 1,201 | 2 | 13 |
| 65 to 74 years | 28,895 | 11 | 1,201 | 4 | 10 | 916 | 3 | 10 |
| 75 and older | 19,477 | 8 | *379 | *2 | *3 | *285 | *1 | *3 |
| Sex | | | | | | | | |
| Male | 121,775 | 48 | 10,340 | 8 | 90 | 8,325 | 7 | 90 |
| Female | 132,911 | 52 | 1,113 | 1 | 10 | 883 | 1 | 10 |
| Ethnicity | | | | | | | | |
| Hispanic | 42,603 | 17 | *379 | *1 | *3 | ... | ... | ... |
| Non-Hispanic | 212,083 | 83 | 11,075 | 5 | 97 | 8,842 | 4 | 96 |
| Race | | | | | | | | |
| White | 199,086 | 78 | 11,123 | 6 | 97 | 8,930 | 4 | 97 |
| African American | 33,358 | 13 | ... | ... | ... | ... | ... | ... |
| Asian | 16,153 | 6 | ... | ... | ... | ... | ... | ... |
| All others | 6,089 | 2 | *208 | *3 | *2 | *173 | *3 | *2 |
| Annual Household Income | | | | | | | | |
| Less than \$20,000 | 22,269 | 9 | *436 | *2 | *4 | *304 | *1 | *3 |
| \$20,000 to \$24,999 | 8,821 | 3 | *161 | *2 | *1 | *148 | *2 | *2 |
| \$25,000 to \$29,999 | 8,889 | 3 | *145 | *2 | *1 | *145 | *2 | *2 |
| \$30,000 to \$34,999 | 9,442 | 4 | *154 | *2 | *1 | *154 | *2 | *2 |
| \$35,000 to \$39,999 | 8,909 | 3 | *456 | *5 | *4 | *379 | *4 | *4 |
| \$40,000 to \$49,999 | 16,174 | 6 | 1,101 | 7 | 10 | *936 | *6 | *10 |
| \$50,000 to \$74,999 | 36,512 | 14 | 2,649 | 7 | 23 | 2,071 | 6 | 22 |
| \$75,000 to \$99,999 | 27,409 | 11 | 1,873 | 7 | 16 | 1,652 | 6 | 18 |
| \$100,000 to \$149,999 | 32,485 | 13 | 1,536 | 5 | 13 | 1,289 | 4 | 14 |
| \$150,000 or more | 30,217 | 12 | 1,408 | 5 | 12 | 881 | 3 | 10 |
| Not reported | 53,559 | 21 | 1,534 | 3 | 13 | 1,248 | 2 | 14 |
| Education | | | | | | | | |
| 11 years or less | 33,987 | 13 | 1,086 | 3 | 9 | *1,043 | *3 | *11 |
| 12 years | 72,726 | 29 | 3,555 | 5 | 31 | 3,041 | 4 | 33 |
| 1 to 3 years of college | 75,352 | 30 | 2,984 | 4 | 26 | 2,496 | 3 | 27 |
| 4 years of college | 45,769 | 18 | 2,474 | 5 | 22 | 1,589 | 3 | 17 |
| 5 years or more of college | 26,852 | 11 | 1,354 | 5 | 12 | 1,039 | 4 | 11 |

See footnotes at end of table.

Table 10. Selected Characteristics of Hunters by Type of Hunting: 2016—Continued

(Population 16 years old and older. Numbers in thousands)

| Characteristic | Small game | | | Migratory birds | | | Other animals | | |
|---|--------------|--------------------------|------------|-----------------|--------------------------|------------|---------------|--------------------------|------------|
| | Number | Percent who participated | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 3,505 | 1 | 100 | 2,353 | 1 | 100 | 1,315 | 1 | 100 |
| Population Density of Residence | | | | | | | | | |
| Urban | 1,585 | 1 | 45 | 1,348 | 1 | 57 | *459 | *Z | *35 |
| Rural | 1,920 | 4 | 55 | 1,005 | 2 | 43 | 856 | 2 | 65 |
| Population Size of Residence | | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 2,460 | 1 | 70 | 1,847 | 1 | 78 | 862 | Z | 66 |
| 1,000,000 or more | 1,115 | 1 | 32 | 936 | 1 | 40 | *237 | *Z | *18 |
| 250,000 to 999,999 | 720 | 1 | 21 | *586 | *1 | *25 | *337 | *1 | *26 |
| 50,000 to 249,999 | 625 | 1 | 18 | *325 | *1 | *14 | *288 | *1 | *22 |
| Outside MSA | 1,044 | 7 | 30 | *506 | *3 | *22 | *453 | *3 | *34 |
| Census Geographic Division | | | | | | | | | |
| New England | *120 | *1 | *3 | ... | ... | ... | ... | ... | ... |
| Middle Atlantic | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| East North Central | *726 | *2 | *21 | *746 | *2 | *32 | ... | ... | ... |
| West North Central | 532 | 3 | 15 | *283 | *2 | *12 | ... | ... | ... |
| South Atlantic | 392 | 1 | 11 | *126 | *Z | *5 | *189 | *Z | *14 |
| East South Central | *666 | *4 | *19 | ... | ... | ... | ... | ... | ... |
| West South Central | *486 | *2 | *14 | *581 | *2 | *25 | ... | ... | ... |
| Mountain | *232 | *1 | *7 | *396 | *2 | *17 | ... | ... | ... |
| Pacific | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Age | | | | | | | | | |
| 16 to 17 years | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 25 to 34 years | *364 | *1 | *10 | *544 | *1 | *23 | ... | ... | ... |
| 35 to 44 years | *727 | *2 | *21 | *534 | *1 | *23 | ... | ... | ... |
| 45 to 54 years | 925 | 2 | 26 | *339 | *1 | *14 | *252 | *1 | *19 |
| 55 to 64 years | 872 | 2 | 25 | *433 | *1 | *18 | *287 | *1 | *22 |
| 65 years and older | *444 | *1 | *13 | *280 | *1 | *12 | ... | ... | ... |
| 65 to 74 years | *319 | *1 | *9 | ... | ... | ... | ... | ... | ... |
| 75 and older | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sex | | | | | | | | | |
| Male | 3,142 | 3 | 90 | 2,180 | 2 | 93 | 1,148 | 1 | 87 |
| Female | *362 | *Z | *10 | ... | ... | ... | ... | ... | ... |
| Ethnicity | | | | | | | | | |
| Hispanic | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Non-Hispanic | 3,380 | 2 | 96 | 2,353 | 1 | 100 | 1,315 | 1 | 100 |
| Race | | | | | | | | | |
| White | 3,376 | 2 | 96 | 2,340 | 1 | 99 | 1,274 | 1 | 97 |
| African American | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Asian | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| All others | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Annual Household Income | | | | | | | | | |
| Less than \$20,000 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$20,000 to \$24,999 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$25,000 to \$29,999 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$30,000 to \$34,999 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$35,000 to \$39,999 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$40,000 to \$49,999 | *448 | *3 | *13 | ... | ... | ... | ... | ... | ... |
| \$50,000 to \$74,999 | *818 | *2 | *23 | *1,139 | *3 | *48 | ... | ... | ... |
| \$75,000 to \$99,999 | *623 | *2 | *18 | ... | ... | ... | *310 | *1 | *24 |
| \$100,000 to \$149,999 | *410 | *1 | *12 | *186 | *1 | *8 | ... | ... | ... |
| \$150,000 or more | *550 | *2 | *16 | *471 | *2 | *20 | *223 | *1 | *17 |
| Not reported | *540 | *1 | *15 | *317 | *1 | *13 | ... | ... | ... |
| Education | | | | | | | | | |
| 11 years or less | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 12 years | 1,135 | 2 | 32 | *412 | *1 | *18 | *494 | *1 | *38 |
| 1 to 3 years of college | 811 | 1 | 23 | *748 | *1 | *32 | *385 | *1 | *29 |
| 4 years of college | 827 | 2 | 24 | *610 | *1 | *26 | *286 | *1 | *22 |
| 5 years or more of college | 654 | 2 | 19 | *426 | *2 | *18 | ... | ... | ... |

* Estimate based on a sample size of 10–29. ... Sample size too small (less than 10) to report data reliably. Z Less than 0.5 percent.

Note: Percent who participated columns show the percent of each row's population who participated in the activity named by the column. Percent columns show the percent of each column's participants who are described by the row heading. Demographic variables we could include but haven't are (1) relationship to head of household, (2) marital status, (3) whether or not participant has a job, and (4) whether or not participant is going to school, keeping house, or retired.

Table 11. Summary of Expenditures for Fishing and Hunting: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------------|---|-----------------------|-----------------------------|--|
| | Amount (thousands of dollars) | Average per sportsperson (dollars) ¹ | Number (thousands) | Percent of sportspersons | Average per spender (dollars) ¹ |
| Total, all items | 81,035,416 | 2,049 | 37,045 | 94 | 2,188 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 30,926,023 | 782 | 35,300 | 89 | 876 |
| Food and lodging, total | 10,962,927 | 277 | 30,859 | 78 | 355 |
| Food | 7,266,256 | 184 | 30,598 | 77 | 237 |
| Lodging | 3,696,672 | 93 | 9,922 | 25 | 373 |
| Transportation, total | 8,233,085 | 208 | 30,215 | 76 | 272 |
| Public | 736,002 | 19 | 3,667 | 9 | 201 |
| Private | 7,497,083 | 190 | 29,583 | 75 | 253 |
| Other trip costs² | 11,730,011 | 297 | 27,574 | 70 | 425 |
| EQUIPMENT EXPENDITURES | | | | | |
| Fishing equipment | 7,445,695 | 188 | 22,584 | 57 | 330 |
| Hunting equipment | 7,996,132 | 202 | 10,128 | 26 | 789 |
| Auxiliary equipment ³ | 6,082,746 | 154 | 9,723 | 25 | 626 |
| Special equipment ⁴ | 20,791,143 | 526 | 3,943 | 10 | 5,273 |
| OTHER EXPENDITURES | | | | | |
| Magazines, books, DVDs | 383,617 | 10 | 5,382 | 14 | 71 |
| Membership dues and contributions | 574,450 | 15 | 4,305 | 11 | 133 |
| Land leasing and ownership | 5,257,433 | 133 | 2,434 | 6 | 2,160 |
| Licenses, stamps, tags, and permits | 1,412,745 | 36 | 21,942 | 55 | 64 |
| Plantings (for hunting) | *165,432 | *4 | *1,020 | *3 | *162 |

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

¹ Average expenditures are annual estimates.² Other trip costs include guide fees, pack trip or package fees, public and private land use fees, equipment rental, boating costs (which include launching, mooring, storage, maintenance, insurance, pumpout fees, and fuel), bait, ice, and heating and cooking fuel.³ Auxiliary equipment includes camping equipment, binoculars, special fishing and hunting clothing, processing and taxidermy costs, foul weather gear, boots, waders, field glasses, telescopes, and electronic equipment such as a GPS device.⁴ Special equipment 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.

Note: Detail does not add to total because of multiple responses. Detail in subsequent tables may not add to totals shown here because the primary purpose of the purchase is both fishing and hunting and cannot be attributed to just fishing or hunting.

Table 12. Expenditures for Fishing: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|--|-------------------------------------|---|-----------------------|-----------------------|--|
| | Amount (thousands of dollars) | Average per angler (dollars) ¹ | Number (thousands) | Percent of anglers | Average per spender (dollars) ¹ |
| Total, all items | 46,115,118 | 1,290 | 32,511 | 91 | 1,418 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 21,729,778 | 608 | 31,260 | 87 | 695 |
| Food and lodging, total | 7,848,993 | 220 | 27,127 | 76 | 289 |
| Food | 4,759,403 | 133 | 26,867 | 75 | 177 |
| Lodging | 3,089,591 | 86 | 8,625 | 24 | 358 |
| Transportation, total | 5,048,606 | 141 | 26,337 | 74 | 192 |
| Public | 542,917 | 15 | 2,852 | 8 | 190 |
| Private | 4,505,689 | 126 | 25,622 | 72 | 176 |
| Other trip costs, total | 8,832,179 | 247 | 26,212 | 73 | 337 |
| Guide fees, pack trip or package fees | 924,974 | 26 | 3,431 | 10 | 270 |
| Public land use fees | 305,360 | 9 | 6,304 | 18 | 48 |
| Private land use fees | 493,951 | 14 | 2,901 | 8 | 170 |
| Equipment rental | 308,162 | 9 | 3,045 | 9 | 101 |
| Boating costs ² | 4,536,646 | 127 | 5,876 | 16 | 772 |
| Bait | 1,517,912 | 42 | 20,681 | 58 | 73 |
| Ice | 585,384 | 16 | 13,535 | 38 | 43 |
| Heating and cooking fuel | 159,791 | 4 | 4,187 | 12 | 38 |
| EQUIPMENT EXPENDITURES | | | | | |
| Fishing equipment, total | 7,430,662 | 208 | 22,393 | 63 | 332 |
| Rods, reels, poles, and rodmaking components | 2,463,525 | 69 | 11,021 | 31 | 224 |
| Lines and leaders | 782,801 | 22 | 13,682 | 38 | 57 |
| Artificial lures, flies, baits, and dressing for flies or lines | 1,078,932 | 30 | 16,024 | 45 | 67 |
| Hooks, sinkers, swivels, and other items attached to a line except lures and baits | 584,280 | 16 | 15,408 | 43 | 38 |
| Tackle boxes | 296,906 | 8 | 4,215 | 12 | 70 |
| Creels, stringers, fish bags, landing nets, and gaff hooks | 146,478 | 4 | 2,433 | 7 | 60 |
| Minnow traps, seines, and bait containers | 137,447 | 4 | 2,769 | 8 | 50 |
| Depth finders, fish finders, and other electronic fishing devices | 1,092,287 | 31 | 1,593 | 4 | 686 |
| Ice fishing equipment | 181,867 | 5 | 693 | 2 | 263 |
| Other fishing equipment | 666,140 | 19 | 4,208 | 12 | 158 |
| Auxiliary equipment, total | 3,163,575 | 88 | 4,522 | 13 | 700 |
| Camping equipment | 2,581,833 | 72 | 1,878 | 5 | 1,375 |
| Binoculars, field glasses, telescopes, etc. | *38,378 | *1 | *295 | *1 | *130 |
| Special fishing clothing, rubber boots, waders, and foul weather gear | 457,369 | 13 | 2,923 | 8 | 156 |
| Processing and taxidermy costs | ... | ... | ... | ... | ... |
| Other | *79,344 | *2 | *415 | *1 | *191 |
| Special equipment³ | 10,483,401 | 293 | 2,291 | 6 | 4,576 |
| OTHER EXPENDITURES | | | | | |
| Magazines, books, DVDs | 147,465 | 4 | 3,142 | 9 | 47 |
| Membership dues and contributions | 214,485 | 6 | 1,741 | 5 | 123 |
| Land leasing and ownership | 2,358,811 | 66 | 1,019 | 3 | 2,315 |
| Licenses, stamps, tags, and permits, total | 586,941 | 16 | 15,647 | 44 | 38 |
| Licenses | 535,256 | 15 | 15,052 | 42 | 36 |
| Stamps, tags, and permits | 51,685 | 1 | 3,035 | 8 | 17 |

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

Note: Detail does not add to total because of multiple responses. Detail in Tables 13 to 16 may not add to totals shown here because the primary purpose of the purchase is for general fishing activity and cannot be attributed to just one fishing classification (freshwater, Great Lakes, or saltwater).

Table 13. Trip and Equipment Expenditures for Freshwater Fishing: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|--|-------------------------------------|---|-----------------------|-----------------------|--|
| | Amount (thousands of dollars) | Average per angler (dollars) ¹ | Number (thousands) | Percent of anglers | Average per spender (dollars) ¹ |
| Total, all items | 29,896,064 | 992 | 28,291 | 94 | 1,057 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 15,579,130 | 517 | 27,608 | 92 | 564 |
| Food and lodging, total | 5,581,863 | 185 | 23,757 | 79 | 235 |
| Food | 3,484,236 | 116 | 23,499 | 78 | 148 |
| Lodging | 2,097,626 | 70 | 7,345 | 24 | 286 |
| Transportation, total | 3,926,849 | 130 | 23,261 | 77 | 169 |
| Public | 246,229 | 8 | 2,207 | 7 | 112 |
| Private | 3,680,620 | 122 | 22,812 | 76 | 161 |
| Other trip costs, total | 6,070,418 | 201 | 22,864 | 76 | 266 |
| Guide fees, pack trip or package fees | 403,732 | 13 | 2,102 | 7 | 192 |
| Public land use fees | 242,143 | 8 | 5,439 | 18 | 45 |
| Private land use fees | 429,760 | 14 | 2,685 | 9 | 160 |
| Equipment rental | 215,714 | 7 | 2,440 | 8 | 88 |
| Boating costs ² | 2,954,605 | 98 | 4,832 | 16 | 612 |
| Bait | 1,234,432 | 41 | 18,328 | 61 | 67 |
| Ice | 443,653 | 15 | 11,862 | 39 | 37 |
| Heating and cooking fuel | 146,379 | 5 | 3,950 | 13 | 37 |
| EQUIPMENT EXPENDITURES | | | | | |
| Fishing equipment, total | 4,528,597 | 150 | 18,474 | 61 | 245 |
| Rods, reels, poles, and rodmaking components | 1,439,170 | 48 | 8,601 | 29 | 167 |
| Lines and leaders | 536,284 | 18 | 10,533 | 35 | 51 |
| Artificial lures, flies, baits, and dressing for flies or lines | 852,443 | 28 | 13,346 | 44 | 64 |
| Hooks, sinkers, swivels, and other items attached to a line except lures and baits | 367,274 | 12 | 11,411 | 38 | 32 |
| Tackle boxes | 93,327 | 3 | 2,652 | 9 | 35 |
| Creels, stringers, fish bags, landing nets, and gaff hooks | 73,610 | 2 | 1,621 | 5 | 45 |
| Minnow traps, seines, and bait containers | 81,064 | 3 | 1,729 | 6 | 47 |
| Depth finders, fish finders, and other electronic fishing devices | 459,015 | 15 | 652 | 2 | 704 |
| Ice fishing equipment | 181,867 | 6 | 693 | 2 | 263 |
| Other fishing equipment | 444,544 | 15 | 2,387 | 8 | 186 |
| Auxiliary equipment, total | 2,813,525 | 93 | 2,959 | 10 | 951 |
| Camping equipment | 2,506,596 | 83 | 1,552 | 5 | 1,616 |
| Binoculars, field glasses, telescopes, etc. | ... | ... | ... | ... | ... |
| Special fishing clothing, rubber boots, waders, and foul weather gear | 269,851 | 9 | 1,505 | 5 | 179 |
| Processing and taxidermy costs | ... | ... | ... | ... | ... |
| Other | *20,287 | *1 | *246 | *1 | *82 |
| Special equipment³ | 6,974,811 | 231 | 1,306 | 4 | 5,340 |

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

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

Table 14. Trip and Equipment Expenditures for Freshwater Fishing, Except Great Lakes: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|--|-------------------------------|---|--------------------|--------------------|--|
| | Amount (thousands of dollars) | Average per angler (dollars) ¹ | Number (thousands) | Percent of anglers | Average per spender (dollars) ¹ |
| Total, all items | 27,518,014 | 933 | 27,723 | 94 | 993 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 13,516,757 | 458 | 27,080 | 92 | 499 |
| Food and lodging, total | 5,108,155 | 173 | 23,205 | 79 | 220 |
| Food | 3,155,727 | 107 | 22,954 | 78 | 137 |
| Lodging | 1,952,427 | 66 | 7,088 | 24 | 275 |
| Transportation, total | 3,620,748 | 123 | 22,785 | 77 | 159 |
| Public | 237,542 | 8 | 2,082 | 7 | 114 |
| Private | 3,383,207 | 115 | 22,336 | 76 | 151 |
| Other trip costs, total | 4,787,854 | 162 | 22,375 | 76 | 214 |
| Guide fees, pack trip or package fees | 354,335 | 12 | 2,012 | 7 | 176 |
| Public land use fees | 224,501 | 8 | 5,216 | 18 | 43 |
| Private land use fees | 376,021 | 13 | 2,455 | 8 | 153 |
| Equipment rental | 183,284 | 6 | 2,393 | 8 | 77 |
| Boating costs ² | 1,933,272 | 66 | 4,361 | 15 | 443 |
| Bait | 1,173,287 | 40 | 18,171 | 62 | 65 |
| Ice | 409,025 | 14 | 11,485 | 39 | 36 |
| Heating and cooking fuel | 134,128 | 5 | 3,653 | 12 | 37 |
| EQUIPMENT EXPENDITURES | | | | | |
| Fishing equipment, total | 4,248,150 | 144 | 17,820 | 60 | 238 |
| Rods, reels, poles, and rodmaking components | 1,330,122 | 45 | 7,975 | 27 | 167 |
| Lines and leaders | 491,494 | 17 | 9,688 | 33 | 51 |
| Artificial lures, flies, baits, and dressing for flies or lines | 789,412 | 27 | 12,656 | 43 | 62 |
| Hooks, sinkers, swivels, and other items attached to a line except lures and baits | 351,011 | 12 | 10,624 | 36 | 33 |
| Tackle boxes | 77,763 | 3 | 2,288 | 8 | 34 |
| Creels, stringers, fish bags, landing nets, and gaff hooks | 70,707 | 2 | 1,589 | 5 | 45 |
| Minnow traps, seines, and bait containers | 77,238 | 3 | 1,570 | 5 | 49 |
| Depth finders, fish finders, and other electronic fishing devices | 452,190 | 15 | 618 | 2 | 732 |
| Ice fishing equipment | 179,850 | 6 | 684 | 2 | 263 |
| Other fishing equipment | 428,363 | 15 | 2,341 | 8 | 183 |
| Auxiliary equipment, total | 2,780,025 | 94 | 2,752 | 9 | 1,010 |
| Camping equipment | 2,502,615 | 85 | 1,540 | 5 | 1,626 |
| Binoculars, field glasses, telescopes, etc. | ... | ... | ... | ... | ... |
| Special fishing clothing, rubber boots, waders, and foul weather gear | 246,064 | 8 | 1,369 | 5 | 180 |
| Processing and taxidermy costs | ... | ... | ... | ... | ... |
| Other | *14,555 | *Z | *188 | *1 | *78 |
| Special equipment³ | 6,973,082 | 236 | 1,297 | 4 | 5,375 |

* Estimate based on a sample size of 10–29. ... Sample size too small (less than 10) to report data reliably. Z Less than 0.5 percent.

¹ Average expenditures are annual estimates.

² Boating costs include launching, mooring, storage, maintenance, insurance, pumpout fees, and fuel.

³ Special equipment 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.

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

Table 15. Trip and Equipment Expenditures for Great Lakes Fishing: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|--|-------------------------------|---|--------------------|--------------------|--|
| | Amount (thousands of dollars) | Average per angler (dollars) ¹ | Number (thousands) | Percent of anglers | Average per spender (dollars) ¹ |
| Total, all items | 2,246,114 | 1,232 | 1,656 | 91 | 1,357 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 2,062,373 | 1,131 | 1,656 | 91 | 1,246 |
| Food and lodging, total | 473,708 | 260 | 1,631 | 89 | 290 |
| Food | 328,509 | 180 | 1,609 | 88 | 204 |
| Lodging | *145,199 | *80 | *378 | *21 | *384 |
| Transportation, total | 306,101 | 168 | 1,437 | 79 | 213 |
| Public | ... | ... | ... | ... | ... |
| Private | 297,413 | 163 | 1,437 | 79 | 207 |
| Other trip costs, total | 1,282,564 | 703 | 1,566 | 86 | 819 |
| Guide fees, pack trip or package fees | *49,397 | *27 | *301 | *16 | *164 |
| Public land use fees | *17,642 | *10 | *460 | *25 | *38 |
| Private land use fees | ... | ... | ... | ... | ... |
| Equipment rental | ... | ... | ... | ... | ... |
| Boating costs ² | *1,021,333 | *560 | *845 | *46 | *1,208 |
| Bait | *61,145 | *34 | *708 | *39 | *86 |
| Ice | *34,628 | *19 | *899 | *49 | *39 |
| Heating and cooking fuel | ... | ... | ... | ... | ... |
| EQUIPMENT EXPENDITURES | | | | | |
| Fishing equipment, total | *157,573 | *86 | *610 | *33 | *259 |
| 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 | *14,239 | *8 | *443 | *24 | *32 |
| 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 | ... | ... | ... | ... | ... |
| Auxiliary equipment, total | ... | ... | ... | ... | ... |
| Camping equipment | ... | ... | ... | ... | ... |
| Binoculars, field glasses, telescopes, etc. | ... | ... | ... | ... | ... |
| Special fishing clothing, rubber boots, waders, and foul weather gear | ... | ... | ... | ... | ... |
| Processing and taxidermy costs | ... | ... | ... | ... | ... |
| Other | ... | ... | ... | ... | ... |
| Special equipment³ | ... | ... | ... | ... | ... |

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

³ Special equipment 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.

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

Table 16. Trip and Equipment Expenditures for Saltwater Fishing: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|--|-------------------------------------|---|-----------------------|-----------------------|--|
| | Amount (thousands of dollars) | Average per angler (dollars) ¹ | Number (thousands) | Percent of anglers | Average per spender (dollars) ¹ |
| Total, all items | 11,199,380 | 1,346 | 7,266 | 87 | 1,541 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 6,150,648 | 739 | 7,255 | 87 | 848 |
| Food and lodging, total | 2,267,131 | 272 | 6,415 | 77 | 353 |
| Food | 1,275,167 | 153 | 6,413 | 77 | 199 |
| Lodging | 991,964 | 119 | 2,466 | 30 | 402 |
| Transportation, total | 1,121,756 | 135 | 6,018 | 72 | 186 |
| Public | 296,687 | 36 | 780 | 9 | 380 |
| Private | 825,069 | 99 | 5,628 | 68 | 147 |
| Other trip costs, total | 2,761,761 | 332 | 6,330 | 76 | 436 |
| Guide fees, pack trip or package fees | 521,242 | 63 | 1,486 | 18 | 351 |
| Public land use fees | 63,217 | 8 | 1,156 | 14 | 55 |
| Private land use fees | *64,191 | *8 | *254 | *3 | *252 |
| Equipment rental | 92,448 | 11 | 750 | 9 | 123 |
| Boating costs ² | 1,582,041 | 190 | 1,246 | 15 | 1,270 |
| Bait | 283,480 | 34 | 4,383 | 53 | 65 |
| Ice | 141,731 | 17 | 3,321 | 40 | 43 |
| Heating and cooking fuel | *13,412 | *2 | *585 | *7 | *23 |
| EQUIPMENT EXPENDITURES | | | | | |
| Fishing equipment, total | 2,695,069 | 324 | 3,784 | 45 | 712 |
| Rods, reels, poles, and rodmaking components | 938,877 | 113 | 2,052 | 25 | 458 |
| Lines and leaders | 218,805 | 26 | 2,686 | 32 | 81 |
| Artificial lures, flies, baits, and dressing for flies or lines | 190,815 | 23 | 2,144 | 26 | 89 |
| Hooks, sinkers, swivels, and other items attached to a line except lures and baits | 193,586 | 23 | 2,911 | 35 | 67 |
| Tackle boxes | *196,813 | *24 | *1,387 | *17 | *142 |
| Creels, stringers, fish bags, landing nets, and gaff hooks | *67,851 | *8 | *689 | *8 | *98 |
| Minnow traps, seines, and bait containers | *55,921 | *7 | *902 | *11 | *62 |
| Depth finders, fish finders, and other electronic fishing devices | *622,801 | *75 | *911 | *11 | *683 |
| Other fishing equipment | 209,599 | 25 | 1,579 | 19 | 133 |
| Auxiliary equipment, total | 290,973 | 35 | 1,358 | 16 | 214 |
| Camping equipment | ... | ... | ... | ... | ... |
| Binoculars, field glasses, telescopes, etc. | ... | ... | ... | ... | ... |
| Special fishing clothing, rubber boots, waders, and foul weather gear | *157,512 | *19 | *1,202 | *14 | *131 |
| Processing and taxidermy costs | ... | ... | ... | ... | ... |
| Other | ... | ... | ... | ... | ... |
| Special equipment³ | *2,062,691 | *248 | *858 | *10 | *2,403 |

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

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

Table 17. Expenditures for Hunting: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------------|---|-----------------------|-----------------------|--|
| | Amount (thousands of dollars) | Average per hunter (dollars) ¹ | Number (thousands) | Percent of hunters | Average per spender (dollars) ¹ |
| Total, all items | 26,190,488 | 2,287 | 10,992 | 96 | 2,383 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 9,196,245 | 803 | 9,984 | 87 | 921 |
| Food and lodging, total | 3,113,934 | 272 | 9,065 | 79 | 344 |
| Food | 2,506,853 | 219 | 9,053 | 79 | 277 |
| Lodging | 607,081 | 53 | 1,775 | 16 | 342 |
| Transportation, total | 3,184,479 | 278 | 9,047 | 79 | 352 |
| Public | 193,085 | 17 | 912 | 8 | 212 |
| Private | 2,991,394 | 261 | 8,937 | 78 | 335 |
| Other trip costs, total | 2,897,832 | 253 | 3,664 | 32 | 791 |
| Guide fees, pack trip or package fees | 658,436 | 57 | 943 | 8 | 698 |
| Public land use fees | 18,577 | 2 | 685 | 6 | 27 |
| Private land use fees | 1,813,913 | 158 | 1,024 | 9 | 1,771 |
| Equipment rental | *204,577 | *18 | *617 | *5 | *332 |
| Boating costs ² | *99,058 | *9 | *344 | *3 | *288 |
| Heating and cooking fuel | 103,271 | 9 | 1,872 | 16 | 55 |
| EQUIPMENT EXPENDITURES | | | | | |
| Hunting equipment, total | 7,383,871 | 645 | 8,413 | 73 | 878 |
| Firearms | 2,913,826 | 254 | 2,557 | 22 | 1,140 |
| Rifles | 1,190,129 | 104 | 885 | 8 | 1,345 |
| Shotguns | 553,149 | 48 | 1,120 | 10 | 494 |
| Muzzleloaders, primitive firearms | *109,984 | *10 | *183 | *2 | *601 |
| Pistols, handguns | 1,060,564 | 93 | 1,533 | 13 | 692 |
| Bows, arrows, archery equipment | 1,613,690 | 141 | 2,088 | 18 | 773 |
| Telescopic sights | 220,273 | 19 | 677 | 6 | 325 |
| Decoys and game calls | 204,297 | 18 | 2,069 | 18 | 99 |
| Ammunition | 1,413,839 | 123 | 6,652 | 58 | 213 |
| Hand loading equipment | 228,889 | 20 | 783 | 7 | 292 |
| Hunting dogs and associated costs | 448,563 | 39 | 1,070 | 9 | 419 |
| Other | 340,494 | 30 | 2,742 | 24 | 124 |
| Auxiliary equipment, total | 2,018,696 | 176 | 4,436 | 39 | 455 |
| Camping equipment | 466,096 | 41 | 612 | 5 | 762 |
| Binoculars, field glasses, telescopes, etc. | 165,382 | 14 | 637 | 6 | 260 |
| Special hunting clothing, rubber boots, waders, and foul weather gear | 589,103 | 51 | 2,488 | 22 | 237 |
| Processing and taxidermy costs | 684,858 | 60 | 1,694 | 15 | 404 |
| Other | *113,257 | *10 | *561 | *5 | *202 |
| Special equipment³ | *3,353,350 | *293 | *396 | *3 | *8,461 |
| OTHER EXPENDITURES | | | | | |
| Magazines, books, DVDs | 166,451 | 15 | 1,130 | 10 | 147 |
| Membership dues and contributions | 182,016 | 16 | 1,403 | 12 | 130 |
| Land leasing and ownership | 2,898,622 | 253 | 1,845 | 16 | 1,571 |
| Licenses, stamps, tags, and permits, total | 825,805 | 72 | 8,668 | 76 | 95 |
| Licenses | 698,254 | 61 | 8,172 | 71 | 85 |
| Federal duck stamps | 37,136 | 3 | 1,485 | 13 | 25 |
| Stamps, tags, and permits | 90,415 | 8 | 2,164 | 19 | 42 |
| Plantings | *165,432 | *14 | *1,020 | *9 | *162 |

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

¹ Average expenditures are annual estimates.² Boating costs include launching, mooring, storage, maintenance, insurance, pumpout fees, and fuel.³ Special equipment 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.

Note: Detail does not add to total because of multiple responses and nonresponse. Detail in Tables 18 to 21 may not add to totals shown here because the primary purpose of the purchase is for general hunting activity and cannot be attributed to just one hunting classification (big game, small game, migratory bird, or other animals).

Table 18. Trip and Equipment Expenditures for Big Game Hunting: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|--|-------------------------------------|---|-----------------------|-----------------------|--|
| | Amount (thousands of dollars) | Average per hunter (dollars) ¹ | Number (thousands) | Percent of hunters | Average per spender (dollars) ¹ |
| Total, all items | 14,878,550 | 1,616 | 8,632 | 94 | 1,724 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 6,213,380 | 675 | 8,009 | 87 | 776 |
| Food and lodging, total | 1,863,156 | 202 | 7,137 | 78 | 261 |
| Food | 1,665,030 | 181 | 7,125 | 77 | 234 |
| Lodging | 198,126 | 22 | 1,087 | 12 | 182 |
| Transportation, total | 2,288,658 | 249 | 7,157 | 78 | 320 |
| Public | 139,104 | 15 | 620 | 7 | 225 |
| Private | 2,149,554 | 233 | 7,016 | 76 | 306 |
| Other trip costs, total | 2,061,566 | 224 | 2,640 | 29 | 781 |
| Guide fees, pack trip or package fees | *509,955 | *55 | *647 | *7 | *789 |
| Public land use fees | *6,040 | *1 | *393 | *4 | *15 |
| Private land use fees | *1,250,947 | *136 | *806 | *9 | *1,552 |
| Equipment rental | *200,715 | *22 | *531 | *6 | *378 |
| Boating costs ² | ... | ... | ... | ... | ... |
| Heating and cooking fuel | 89,828 | 10 | 1,661 | 18 | 54 |
| EQUIPMENT EXPENDITURES | | | | | |
| Hunting equipment, total | 4,328,210 | 470 | 5,417 | 59 | 799 |
| Firearms | 1,580,760 | 172 | 1,168 | 13 | 1,353 |
| Rifles | 980,175 | 106 | 609 | 7 | 1,610 |
| Shotguns | ... | ... | ... | ... | ... |
| Muzzleloaders, primitive firearms | *109,984 | *12 | *180 | *2 | *611 |
| Pistols, handguns | *339,904 | *37 | *303 | *3 | *1,121 |
| Bows, arrows, archery equipment | 1,605,974 | 174 | 1,992 | 22 | 806 |
| Telescopic sights | 144,535 | 16 | 552 | 6 | 262 |
| Decoys and game calls | 69,984 | 8 | 1,176 | 13 | 59 |
| Ammunition | 574,040 | 62 | 3,445 | 37 | 167 |
| Hand loading equipment | 71,799 | 8 | 556 | 6 | 129 |
| Hunting dogs and associated costs | ... | ... | ... | ... | ... |
| Other | 227,606 | 25 | 1,880 | 20 | 121 |
| Auxiliary equipment, total | 1,141,785 | 124 | 3,288 | 36 | 347 |
| Camping equipment | *79,730 | *9 | *435 | *5 | *183 |
| Binoculars, field glasses, telescopes, etc. | 147,730 | 16 | 587 | 6 | 252 |
| Special hunting clothing, rubber boots, waders, and foul weather gear | 292,111 | 32 | 1,636 | 18 | 179 |
| Processing and taxidermy costs | 551,622 | 60 | 1,522 | 17 | 363 |
| Other | *70,592 | *8 | *330 | *4 | *214 |
| Special equipment³ | *3,195,176 | *347 | *287 | *3 | *11,147 |

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

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

Table 19. Trip and Equipment Expenditures for Small Game Hunting: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------|---|--------------------|--------------------|--|
| | Amount (thousands of dollars) | Average per hunter (dollars) ¹ | Number (thousands) | Percent of hunters | Average per spender (dollars) ¹ |
| Total, all items | 1,653,408 | 472 | 3,131 | 89 | 528 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 1,050,190 | 300 | 2,778 | 79 | 378 |
| Food and lodging, total | 458,502 | 131 | 2,365 | 67 | 194 |
| Food | 378,662 | 108 | 2,365 | 67 | 160 |
| Lodging | *79,840 | *23 | *304 | *9 | *263 |
| Transportation, total | 315,162 | 90 | 2,142 | 61 | 147 |
| Public | ... | ... | ... | ... | ... |
| Private | 297,108 | 85 | 2,142 | 61 | 139 |
| Other trip costs, total | *276,525 | *79 | *608 | *17 | *455 |
| Guide fees, pack trip or package fees | *82,740 | *24 | *189 | *5 | *438 |
| Public land use fees | ... | ... | ... | ... | ... |
| Private land use fees | ... | ... | ... | ... | ... |
| Equipment rental | ... | ... | ... | ... | ... |
| Boating costs ² | ... | ... | ... | ... | ... |
| Heating and cooking fuel | *5,950 | *2 | *181 | *5 | *33 |
| EQUIPMENT EXPENDITURES | | | | | |
| Hunting equipment, total | 547,639 | 156 | 1,679 | 48 | 326 |
| Firearms | *216,170 | *62 | *283 | *8 | *765 |
| Rifles | ... | ... | ... | ... | ... |
| Shotguns | ... | ... | ... | ... | ... |
| Muzzleloaders, primitive firearms | ... | ... | ... | ... | ... |
| Pistols, handguns | ... | ... | ... | ... | ... |
| Bows, arrows, archery equipment | ... | ... | ... | ... | ... |
| Telescopic sights | ... | ... | ... | ... | ... |
| Decoys and game calls | *17,320 | *5 | *361 | *10 | *48 |
| Ammunition | 98,229 | 28 | 1,262 | 36 | 78 |
| Hand loading equipment | ... | ... | ... | ... | ... |
| Hunting dogs and associated costs | *152,600 | *44 | *173 | *5 | *883 |
| Other | ... | ... | ... | ... | ... |
| Auxiliary equipment, total | *55,580 | *16 | *389 | *11 | *143 |
| Camping equipment | ... | ... | ... | ... | ... |
| Binoculars, field glasses, telescopes, etc. | ... | ... | ... | ... | ... |
| Special hunting clothing, rubber boots, waders, and foul weather gear | *30,287 | *9 | *185 | *5 | *164 |
| Processing and taxidermy costs | ... | ... | ... | ... | ... |
| Other | ... | ... | ... | ... | ... |
| Special equipment³ | ... | ... | ... | ... | ... |

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

³ Special equipment 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.

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

Table 20. Trip and Equipment Expenditures for Migratory Bird Hunting: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------|---|--------------------|--------------------|--|
| | Amount (thousands of dollars) | Average per hunter (dollars) ¹ | Number (thousands) | Percent of hunters | Average per spender (dollars) ¹ |
| Total, all items | 2,253,939 | 958 | 2,208 | 94 | 1,021 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 1,284,351 | 546 | 2,157 | 92 | 596 |
| Food and lodging, total | 528,344 | 225 | 2,069 | 88 | 255 |
| Food | 313,083 | 133 | 2,069 | 88 | 151 |
| Lodging | *215,260 | *91 | *434 | *18 | *496 |
| Transportation, total | 483,581 | 206 | 1,593 | 68 | 304 |
| Public | ... | ... | ... | ... | ... |
| Private | 447,654 | 190 | 1,593 | 68 | 281 |
| Other trip costs, total | *272,426 | *116 | *853 | *36 | *319 |
| Guide fees, pack trip or package fees | ... | ... | ... | ... | ... |
| Public land use fees | ... | ... | ... | ... | ... |
| Private land use fees | ... | ... | ... | ... | ... |
| Equipment rental | ... | ... | ... | ... | ... |
| Boating costs ² | ... | ... | ... | ... | ... |
| Heating and cooking fuel | ... | ... | ... | ... | ... |
| EQUIPMENT EXPENDITURES | | | | | |
| Hunting equipment, total | 753,769 | 320 | 1,282 | 54 | 588 |
| Firearms | ... | ... | ... | ... | ... |
| Rifles | ... | ... | ... | ... | ... |
| Shotguns | ... | ... | ... | ... | ... |
| Muzzleloaders, primitive firearms | ... | ... | ... | ... | ... |
| Pistols, handguns | ... | ... | ... | ... | ... |
| Bows, arrows, archery equipment | ... | ... | ... | ... | ... |
| Telescopic sights | ... | ... | ... | ... | ... |
| Decoys and game calls | *45,609 | *19 | *190 | *8 | *240 |
| Ammunition | *416,205 | *177 | *1,136 | *48 | *366 |
| Hand loading equipment | ... | ... | ... | ... | ... |
| Hunting dogs and associated costs | ... | ... | ... | ... | ... |
| Other | ... | ... | ... | ... | ... |
| Auxiliary equipment, total | *159,753 | *68 | *376 | *16 | *425 |
| Camping equipment | ... | ... | ... | ... | ... |
| Binoculars, field glasses, telescopes, etc | ... | ... | ... | ... | ... |
| Special hunting clothing, rubber boots, waders, and foul weather gear | *129,820 | *55 | *364 | *15 | *356 |
| Processing and taxidermy costs | ... | ... | ... | ... | ... |
| Other | ... | ... | ... | ... | ... |
| Special equipment³ | ... | ... | ... | ... | ... |

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

³ Special equipment 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.

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

Table 21. Trip and Equipment Expenditures for Hunting Other Animals: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------|---|--------------------|--------------------|--|
| | Amount (thousands of dollars) | Average per hunter (dollars) ¹ | Number (thousands) | Percent of hunters | Average per spender (dollars) ¹ |
| Total, all items | 755,073 | 574 | 1,052 | 80 | 718 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 648,325 | 493 | 1,052 | 80 | 617 |
| Food and lodging, total | 263,933 | 201 | 928 | 71 | 284 |
| Food | 150,078 | 114 | 928 | 71 | 162 |
| Lodging | ... | ... | ... | ... | ... |
| Transportation, total | *97,078 | *74 | *683 | *52 | *142 |
| Public | ... | ... | ... | ... | ... |
| Private | *97,078 | *74 | *683 | *52 | *142 |
| Other trip costs, total | ... | ... | ... | ... | ... |
| Guide fees, pack trip or package fees | ... | ... | ... | ... | ... |
| Public land use fees | ... | ... | ... | ... | ... |
| Private land use fees | ... | ... | ... | ... | ... |
| Equipment rental | ... | ... | ... | ... | ... |
| Boating costs ² | ... | ... | ... | ... | ... |
| Heating and cooking fuel | ... | ... | ... | ... | ... |
| EQUIPMENT EXPENDITURES | | | | | |
| Hunting equipment, total | *96,992 | *74 | *326 | *25 | *297 |
| Firearms | ... | ... | ... | ... | ... |
| Rifles | ... | ... | ... | ... | ... |
| Shotguns | ... | ... | ... | ... | ... |
| Muzzleloaders, primitive firearms | ... | ... | ... | ... | ... |
| Pistols, handguns | ... | ... | ... | ... | ... |
| Bows, arrows, archery equipment | ... | ... | ... | ... | ... |
| Telescopic sights | ... | ... | ... | ... | ... |
| Decoys and game calls | ... | ... | ... | ... | ... |
| Ammunition | ... | ... | ... | ... | ... |
| Hand loading equipment | ... | ... | ... | ... | ... |
| Hunting dogs and associated costs | ... | ... | ... | ... | ... |
| Other | ... | ... | ... | ... | ... |
| Auxiliary equipment, total | ... | ... | ... | ... | ... |
| Camping equipment | ... | ... | ... | ... | ... |
| Binoculars, field glasses, telescopes, etc. | ... | ... | ... | ... | ... |
| Special hunting clothing, rubber boots, waders, and foul weather gear | ... | ... | ... | ... | ... |
| Processing and taxidermy costs | ... | ... | ... | ... | ... |
| Other | ... | ... | ... | ... | ... |
| Special equipment³ | ... | ... | ... | ... | ... |

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

³ Special equipment 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.

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

Table 22. Special Equipment Expenditures for Fishing and Hunting: 2016

(Population 16 years old and older)

| Special equipment item | Expenditures | | Spenders | | |
|---|-------------------------------|---|--------------------|--------------------------|--|
| | Amount (thousands of dollars) | Average per sportsperson (dollars) ¹ | Number (thousands) | Percent of sportspersons | Average per spender (dollars) ¹ |
| Total, all items | 20,791,143 | 526 | 3,943 | 10 | 5,273 |
| Motor boat (other than bass boat) | *1,201,229 | *30 | *234 | *1 | *5,142 |
| Bass boat | ... | ... | ... | ... | ... |
| Canoe, other nonmotor boat | *658,059 | *17 | *1,356 | *3 | *485 |
| Boat motor, trailer or hitch, or other boat accessories | 2,051,141 | 52 | 1,460 | 4 | 1,405 |
| Travel or tent trailer, pickup, camper, van, motor home, recreational vehicle (RV), house trailer | 12,479,702 | 316 | 927 | 2 | 13,464 |
| Cabin | ... | ... | ... | ... | ... |
| Trail bike, dune buggy, 4x4 vehicle, 4-wheeler, snowmobile | *1,407,311 | *36 | *681 | *2 | *2,066 |
| Other | *160,073 | *4 | *650 | *2 | *246 |

* 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.

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

Table 23. Anglers and Hunters Who Purchased Licenses or Were Exempt: 2016

(Population 16 years old and older. Numbers in thousands)

| Sportspersons | Anglers | | Hunters | |
|--|---------------|------------|---------------|------------|
| | Number | Percent | Number | Percent |
| Total sportspersons | 35,754 | 100 | 11,453 | 100 |
| Total license purchasers ¹ | 20,407 | 57 | 8,982 | 78 |
| Sportspersons purchasing license | | | | |
| In state of residence | 18,149 | 51 | 8,611 | 75 |
| In other states | 4,017 | 11 | 1,368 | 12 |
| Total exempt from purchasing licenses | 7,025 | 20 | 2,125 | 19 |
| Sportspersons exempt from license purchase | | | | |
| In state of residence | 6,421 | 18 | 2,113 | 18 |
| In other states | 963 | 3 | ... | ... |
| Other ² | 9,550 | 27 | 1,373 | 12 |
| Not reported | *721 | *2 | ... | ... |

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

¹ Includes persons who had licenses bought for them. Does not include persons who purchased licenses and did not fish or hunt in 2016.² Includes persons who engaged in activities requiring no licenses or exemptions and those who failed to buy a license for activities requiring a license.

Note: Detail does not add to total because of multiple responses and nonresponse. Respondents could have been licensed in one state and exempt in another.

Table 24. Selected Characteristics of Anglers and Hunters Who Purchased Licenses: 2016

(Population 16 years old and older. Numbers in thousands)

| Characteristic | Anglers | | | | | | Hunters | | | | | |
|---|---------------|------------|----------------------------------|-----------|---|-----------|---------------|------------|----------------------------------|-----------|---|-----------|
| | Total | | Purchased a license ¹ | | Did not purchase a license ² | | Total | | Purchased a license ¹ | | Did not purchase a license ² | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Total persons | 35,754 | 100 | 20,407 | 57 | 15,346 | 43 | 11,453 | 100 | 8,982 | 78 | 2,472 | 22 |
| Population Density of Residence | | | | | | | | | | | | |
| Urban | 23,968 | 100 | 13,542 | 57 | 10,426 | 43 | 5,425 | 100 | 4,030 | 74 | 1,395 | 26 |
| Rural | 11,785 | 100 | 6,865 | 58 | 4,920 | 42 | 6,028 | 100 | 4,952 | 82 | 1,076 | 18 |
| Population Size of Residence | | | | | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 31,789 | 100 | 17,884 | 56 | 13,905 | 44 | 8,903 | 100 | 6,896 | 77 | 2,007 | 23 |
| 1,000,000 or more | 15,210 | 100 | 8,659 | 57 | 6,551 | 43 | 2,922 | 100 | 2,196 | 75 | 725 | 25 |
| 250,000 to 999,999 | 8,070 | 100 | 4,338 | 54 | 3,732 | 46 | 2,375 | 100 | 1,801 | 76 | *573 | *24 |
| 50,000 to 249,999 | 8,509 | 100 | 4,887 | 57 | 3,622 | 43 | 3,606 | 100 | 2,898 | 80 | 708 | 20 |
| Outside MSA | 3,965 | 100 | 2,523 | 64 | 1,441 | 36 | 2,551 | 100 | 2,086 | 82 | *465 | *18 |
| Census Geographic Division | | | | | | | | | | | | |
| New England | 1,333 | 100 | 783 | 59 | 549 | 41 | 297 | 100 | 222 | 75 | *75 | *25 |
| Middle Atlantic | 3,471 | 100 | 1,876 | 54 | 1,595 | 46 | 884 | 100 | *608 | *69 | ... | ... |
| East North Central | 6,336 | 100 | 4,250 | 67 | *2,087 | *33 | 2,737 | 100 | 2,509 | 92 | ... | ... |
| West North Central | 3,042 | 100 | 2,155 | 71 | 887 | 29 | 1,364 | 100 | 1,114 | 82 | *250 | *18 |
| South Atlantic | 7,394 | 100 | 2,898 | 39 | 4,497 | 61 | 1,716 | 100 | 1,211 | 71 | 504 | 29 |
| East South Central | 3,061 | 100 | *1,309 | *43 | *1,752 | *57 | *1,256 | *100 | *941 | *75 | ... | ... |
| West South Central | 5,206 | 100 | 3,147 | 60 | 2,059 | 40 | 1,556 | 100 | *1,105 | *71 | *451 | *29 |
| Mountain | 2,687 | 100 | 1,888 | 70 | *799 | *30 | 946 | 100 | 627 | 66 | ... | ... |
| Pacific | 3,224 | 100 | 2,102 | 65 | 1,122 | 35 | 697 | 100 | 644 | 92 | ... | ... |
| Age | | | | | | | | | | | | |
| 16 to 17 years | 1,089 | 100 | *362 | *33 | *727 | *67 | *228 | *100 | ... | ... | ... | ... |
| 18 to 24 years | 2,208 | 100 | 1,357 | 61 | *851 | *39 | 1,009 | 100 | *789 | *78 | *221 | *22 |
| 25 to 34 years | 4,956 | 100 | 2,705 | 55 | 2,252 | 45 | 1,783 | 100 | 1,204 | 68 | *579 | *32 |
| 35 to 44 years | 6,595 | 100 | 3,879 | 59 | 2,716 | 41 | 1,609 | 100 | 1,450 | 90 | *159 | *10 |
| 45 to 54 years | 7,131 | 100 | 4,652 | 65 | 2,478 | 35 | 2,542 | 100 | 2,073 | 82 | *468 | *18 |
| 55 to 64 years | 6,719 | 100 | 4,023 | 60 | 2,697 | 40 | 2,702 | 100 | 2,241 | 83 | *462 | *17 |
| 65 years and older | 7,055 | 100 | 3,430 | 49 | 3,626 | 51 | 1,580 | 100 | 1,156 | 73 | 424 | 27 |
| 65 to 74 years | 5,046 | 100 | 2,675 | 53 | 2,371 | 47 | 1,201 | 100 | 871 | 73 | *330 | *27 |
| 75 and older | 2,010 | 100 | *754 | *38 | *1,255 | *62 | *379 | *100 | *285 | *75 | ... | ... |
| Sex | | | | | | | | | | | | |
| Male | 25,975 | 100 | 15,197 | 59 | 10,779 | 41 | 10,340 | 100 | 8,105 | 78 | 2,236 | 22 |
| Female | 9,778 | 100 | 5,210 | 53 | 4,568 | 47 | 1,113 | 100 | 877 | 79 | *236 | *21 |
| Ethnicity | | | | | | | | | | | | |
| Hispanic | 3,080 | 100 | 1,431 | 46 | *1,648 | *54 | *379 | *100 | ... | ... | ... | ... |
| Non-Hispanic | 32,674 | 100 | 18,976 | 58 | 13,698 | 42 | 11,075 | 100 | 8,691 | 78 | 2,383 | 22 |
| Race | | | | | | | | | | | | |
| White | 30,921 | 100 | 18,466 | 60 | 12,454 | 40 | 11,123 | 100 | 8,783 | 79 | 2,340 | 21 |
| African American | 3,145 | 100 | 1,205 | 38 | *1,940 | *62 | ... | ... | ... | ... | ... | ... |
| Asian | *721 | *100 | *231 | *32 | *491 | *68 | ... | ... | ... | ... | ... | ... |
| All others | 967 | 100 | *505 | *52 | *462 | *48 | *208 | *100 | ... | ... | ... | ... |
| Annual Household Income | | | | | | | | | | | | |
| Less than \$20,000 | 2,659 | 100 | *474 | *18 | *2,185 | *82 | *436 | *100 | *335 | *77 | ... | ... |
| \$20,000 to \$24,999 | 841 | 100 | *633 | *75 | ... | ... | *161 | *100 | ... | ... | ... | ... |
| \$25,000 to \$29,999 | 1,106 | 100 | *645 | *58 | *461 | *42 | *145 | *100 | ... | ... | ... | ... |
| \$30,000 to \$34,999 | 813 | 100 | *412 | *51 | *401 | *49 | *154 | *100 | ... | ... | ... | ... |
| \$35,000 to \$39,999 | 1,932 | 100 | 1,059 | 55 | *873 | *45 | *456 | *100 | *423 | *93 | ... | ... |
| \$40,000 to \$49,999 | 2,723 | 100 | 1,700 | 62 | 1,023 | 38 | 1,101 | 100 | *637 | *58 | *464 | *42 |
| \$50,000 to \$74,999 | 5,697 | 100 | 3,503 | 61 | 2,194 | 39 | 2,649 | 100 | 2,102 | 79 | *547 | *21 |
| \$75,000 to \$99,999 | 3,348 | 100 | 2,089 | 62 | 1,259 | 38 | 1,873 | 100 | 1,569 | 84 | *304 | *16 |
| \$100,000 to \$149,999 | 4,830 | 100 | 3,037 | 63 | 1,794 | 37 | 1,536 | 100 | 1,303 | 85 | *233 | *15 |
| \$150,000 or more | 4,583 | 100 | 2,973 | 65 | 1,610 | 35 | 1,408 | 100 | 981 | 70 | *427 | *30 |
| Not reported | 7,221 | 100 | 3,881 | 54 | 3,340 | 46 | 1,534 | 100 | 1,318 | 86 | *216 | *14 |
| Education | | | | | | | | | | | | |
| 11 years or less | 3,840 | 100 | 1,702 | 44 | 2,138 | 56 | 1,086 | 100 | *774 | *71 | *312 | *29 |
| 12 years | 11,171 | 100 | 6,903 | 62 | 4,268 | 38 | 3,555 | 100 | 2,814 | 79 | 741 | 21 |
| 1 to 3 years of college | 8,582 | 100 | 4,777 | 56 | 3,804 | 44 | 2,984 | 100 | 2,330 | 78 | 654 | 22 |
| 4 years of college | 6,311 | 100 | 3,886 | 62 | 2,426 | 38 | 2,474 | 100 | 2,090 | 84 | *384 | *16 |
| 5 years or more of college | 5,850 | 100 | 3,140 | 54 | 2,710 | 46 | 1,354 | 100 | 973 | 72 | *380 | *28 |
| Days of Participation | | | | | | | | | | | | |
| 1 to 5 days | 18,876 | 100 | 8,739 | 46 | 10,137 | 54 | 4,454 | 100 | 3,135 | 70 | 1,319 | 30 |
| 6 to 10 days | 7,625 | 100 | 4,633 | 61 | 2,992 | 39 | 2,295 | 100 | 1,865 | 81 | *430 | *19 |
| 11 to 25 days | 4,753 | 100 | 3,602 | 76 | 1,151 | 24 | 2,562 | 100 | 2,084 | 81 | *478 | *19 |
| 26 days or more | 4,305 | 100 | 3,394 | 79 | 911 | 21 | 2,140 | 100 | 1,898 | 89 | *242 | *11 |

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

¹ Includes persons who purchased a license in 2016 in any state. Respondents could have been licensed in one state and exempt in another.

² Includes those persons who did not purchase a license in any state in 2016 and those who did not specify a license purchase in 2016.

Table 25. Freshwater Anglers and Days of Fishing by Type of Water: 2016

(Population 16 years old and older. Numbers in thousands. Excludes Great Lakes fishing)

| Type of water | Anglers | | Days of fishing | |
|--|---------------|------------|-----------------|------------|
| | Number | Percent | Number | Percent |
| Total, all types of water | 29,490 | 100 | 372,660 | 100 |
| Lakes, reservoirs, and ponds | 24,565 | 83 | 248,447 | 67 |
| Rivers or streams | 13,142 | 45 | 127,401 | 34 |

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

Table 26. Great Lakes Anglers and Days of Fishing by Great Lake: 2016

(Population 16 years old and older. Numbers in thousands)

| Great Lake | Anglers | | Days of fishing | |
|---|--------------|------------|-----------------|------------|
| | Number | Percent | Number | Percent |
| Total, all Great Lakes | 1,824 | 100 | 13,440 | 100 |
| Lake Ontario, including the Niagara River | *117 | *6 | *424 | *3 |
| Lake Erie, including the Detroit River | *390 | *21 | *2,625 | *20 |
| Lake Huron, including St. Mary's River System | ... | ... | ... | ... |
| Lake Michigan | *1,087 | *60 | *9,664 | *72 |
| Lake Superior | ... | ... | ... | ... |
| Lake St. Clair, including the St. Clair River | ... | ... | ... | ... |
| St. Lawrence River | ... | ... | ... | ... |
| Tributaries of the Great Lakes | ... | ... | ... | ... |

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

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

Table 27. Hunters and Days of Hunting on Public and Private Land by Type of Hunting: 2016

(Population 16 years old and older. Numbers in thousands)

| Hunters and days of hunting | Total, all hunting | | Big game | | Small game | | Migratory birds | | Other animals | |
|--------------------------------------|--------------------|------------|----------------|------------|---------------|------------|-----------------|------------|---------------|------------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| HUNTERS | | | | | | | | | | |
| Total, all land | 11,453 | 100 | 9,208 | 100 | 3,505 | 100 | 2,353 | 100 | 1,315 | 100 |
| Public land, total | 3,907 | 34 | 2,928 | 32 | 852 | 24 | 1,144 | 49 | ... | ... |
| Public land only | 1,459 | 13 | 1,490 | 16 | *346 | *10 | *587 | *25 | ... | ... |
| Public and private land | 2,448 | 21 | 1,438 | 16 | 506 | 14 | *556 | *24 | ... | ... |
| Private land, total | 9,742 | 85 | 7,499 | 81 | 3,026 | 86 | 1,599 | 68 | 1,302 | 99 |
| Private land only | 7,294 | 64 | 6,060 | 66 | 2,521 | 72 | 1,042 | 44 | 1,189 | 90 |
| Private and public land | 2,448 | 21 | 1,438 | 16 | 506 | 14 | *556 | *24 | ... | ... |
| DAYS OF HUNTING | | | | | | | | | | |
| Total, all land | 184,021 | 100 | 132,665 | 100 | 38,306 | 100 | 15,621 | 100 | 13,275 | 100 |
| Public land ¹ | 35,878 | 19 | 26,147 | 20 | 4,562 | 12 | 7,405 | 47 | ... | ... |
| Private land ² | 144,974 | 79 | 104,736 | 79 | 32,850 | 86 | 7,060 | 45 | 12,086 | 91 |

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

¹ Days of hunting on public land include both days spent solely on public land and those spent on public and private land.² Days of hunting on private land include both days spent solely on private land and those spent on private and public land.

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

Table 28. Hunters and Days of Hunting on Public Land by Selected Characteristic: 2016

(Population 16 years old and older. Numbers in thousands)

| Characteristic | Hunters | | | | Days of hunting | | | |
|---|--|-------------------------------------|--------------------------|--------------------------------------|-------------------------------------|----------------------------------|-----------------------|--------------------------------|
| | Total hunters, public and private land | Hunters on public land ¹ | | | Total days, public and private land | Days on public land ² | | |
| | | Number | Percent of total hunters | Percent of hunters using public land | | Number | Percent of total days | Percent of days on public land |
| Total persons | 11,453 | 3,907 | 34 | 100 | 184,021 | 35,878 | 19 | 100 |
| Population Density of Residence | | | | | | | | |
| Urban | 5,425 | 2,270 | 42 | 58 | 70,997 | 19,137 | 27 | 53 |
| Rural | 6,028 | 1,637 | 27 | 42 | 113,024 | 16,742 | 15 | 47 |
| Population Size of Residence | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 8,903 | 3,353 | 38 | 86 | 127,729 | 28,957 | 23 | 81 |
| 1,000,000 or more | 2,922 | 1,183 | 40 | 30 | 35,726 | 10,070 | 28 | 28 |
| 250,000 to 999,999 | 2,375 | 926 | 39 | 24 | 25,491 | 6,502 | 26 | 18 |
| 50,000 to 249,999 | 3,606 | 1,244 | 34 | 32 | 66,512 | 12,384 | 19 | 35 |
| Outside MSA | 2,551 | 554 | 22 | 14 | 56,292 | 6,922 | 12 | 19 |
| Census Geographic Division | | | | | | | | |
| New England | 297 | *100 | *34 | *3 | 3,918 | *689 | *18 | *2 |
| Middle Atlantic | 884 | *464 | *52 | *12 | 11,771 | *4,759 | *40 | *13 |
| East North Central | 2,737 | *658 | *24 | *17 | 59,131 | *7,214 | *12 | *20 |
| West North Central | 1,364 | *574 | *42 | *15 | 20,139 | *6,883 | *34 | *19 |
| South Atlantic | 1,716 | *361 | *21 | *9 | 20,210 | *2,208 | *11 | *6 |
| East South Central | *1,256 | ... | ... | ... | *36,040 | ... | ... | ... |
| West South Central | 1,556 | *183 | *12 | *5 | 17,498 | *1,849 | *11 | *5 |
| Mountain | 946 | *820 | *87 | *21 | 9,516 | *7,671 | *81 | *21 |
| Pacific | 697 | 613 | 88 | 16 | 5,799 | 4,049 | 70 | 11 |
| Age | | | | | | | | |
| 16 to 17 years | *228 | ... | ... | ... | *1,382 | ... | ... | ... |
| 18 to 24 years | 1,009 | *381 | *38 | *10 | 30,087 | *8,018 | *27 | *22 |
| 25 to 34 years | 1,783 | *879 | *49 | *23 | 19,000 | *5,130 | *27 | *14 |
| 35 to 44 years | 1,609 | *544 | *34 | *14 | 37,055 | *7,290 | *20 | *20 |
| 45 to 54 years | 2,542 | 949 | 37 | 24 | 36,924 | 7,384 | 20 | 21 |
| 55 to 64 years | 2,702 | 751 | 28 | 19 | 41,622 | 5,169 | 12 | 14 |
| 65 years and older | 1,580 | *371 | *23 | *9 | 17,952 | *2,522 | *14 | *7 |
| 65 to 74 years | 1,201 | *278 | *23 | *7 | 13,622 | *1,707 | *13 | *5 |
| 75 and older | *379 | ... | ... | ... | *4,331 | ... | ... | ... |
| Sex | | | | | | | | |
| Male | 10,340 | 3,772 | 36 | 97 | 170,159 | 35,066 | 21 | 98 |
| Female | 1,113 | ... | ... | ... | 13,863 | ... | ... | ... |
| Ethnicity | | | | | | | | |
| Hispanic | *379 | ... | ... | ... | *1,219 | ... | ... | ... |
| Non-Hispanic | 11,075 | 3,798 | 34 | 97 | 182,803 | 35,694 | 20 | 99 |
| Race | | | | | | | | |
| White | 11,123 | 3,794 | 34 | 97 | 180,066 | 35,099 | 19 | 98 |
| African American | ... | ... | ... | ... | ... | ... | ... | ... |
| Asian | ... | ... | ... | ... | ... | ... | ... | ... |
| All others | *208 | ... | ... | ... | *2,210 | ... | ... | ... |
| Annual Household Income | | | | | | | | |
| Less than \$20,000 | *436 | ... | ... | ... | *3,417 | ... | ... | ... |
| \$20,000 to \$24,999 | *161 | ... | ... | ... | *737 | ... | ... | ... |
| \$25,000 to \$29,999 | *145 | ... | ... | ... | *3,345 | ... | ... | ... |
| \$30,000 to \$34,999 | *154 | ... | ... | ... | *2,106 | ... | ... | ... |
| \$35,000 to \$39,999 | *456 | ... | ... | ... | *2,400 | ... | ... | ... |
| \$40,000 to \$49,999 | 1,101 | *305 | *28 | *8 | 26,768 | *3,413 | *13 | *10 |
| \$50,000 to \$74,999 | 2,649 | 1,136 | 43 | 29 | 58,094 | 10,256 | 18 | 29 |
| \$75,000 to \$99,999 | 1,873 | 614 | 33 | 16 | 29,239 | 5,672 | 19 | 16 |
| \$100,000 to \$149,999 | 1,536 | 718 | 47 | 18 | 19,244 | 7,255 | 38 | 20 |
| \$150,000 or more | 1,408 | *210 | *15 | *5 | 14,787 | *1,893 | *13 | *5 |
| Not reported | 1,534 | *490 | *32 | *13 | 23,885 | *5,078 | *21 | *14 |
| Education | | | | | | | | |
| 11 years or less | 1,086 | *389 | *36 | *10 | 18,811 | *5,881 | *31 | *16 |
| 12 years | 3,555 | 863 | 24 | 22 | 67,788 | 7,039 | 10 | 20 |
| 1 to 3 years of college | 2,984 | 1,265 | 42 | 32 | 53,135 | 10,433 | 20 | 29 |
| 4 years of college | 2,474 | 904 | 37 | 23 | 31,516 | 9,247 | 29 | 26 |
| 5 years or more of college | 1,354 | 486 | 36 | 12 | 12,772 | 3,279 | 26 | 9 |

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

¹ Hunters on public land include those who hunted on both public and private land.

² Days of hunting on public land includes both days spent solely on public land and those spent on public and private land.

Note: Percent of total hunters and percent of total days are based on the total hunters and total days columns for each row. Percent of hunters using public land and percent of days on public land are based on the total numbers of hunters on public land and total numbers of days on public land, respectively.

Table 29. Hunters and Days of Hunting on Private Land by Selected Characteristic: 2016

(Population 16 years old and older. Numbers in thousands)

| Characteristic | Hunters | | | | Days of hunting | | | |
|---|--|--------------------------------------|--------------------------|---------------------------------------|-------------------------------------|-----------------------------------|-----------------------|---------------------------------|
| | Total hunters, public and private land | Hunters on private land ¹ | | | Total days, public and private land | Days on private land ² | | |
| | | Number | Percent of total hunters | Percent of hunters using private land | | Number | Percent of total days | Percent of days on private land |
| Total persons | 11,453 | 9,742 | 85 | 100 | 184,021 | 144,974 | 79 | 100 |
| Population Density of Residence | | | | | | | | |
| Urban | 5,425 | 4,580 | 84 | 47 | 70,997 | 51,973 | 73 | 36 |
| Rural | 6,028 | 5,162 | 86 | 53 | 113,024 | 93,001 | 82 | 64 |
| Population Size of Residence | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 8,903 | 7,477 | 84 | 77 | 127,729 | 92,842 | 73 | 64 |
| 1,000,000 or more | 2,922 | 2,204 | 75 | 23 | 35,726 | 20,711 | 58 | 14 |
| 250,000 to 999,999 | 2,375 | 2,105 | 89 | 22 | 25,491 | 18,450 | 72 | 13 |
| 50,000 to 249,999 | 3,606 | 3,167 | 88 | 33 | 66,512 | 53,681 | 81 | 37 |
| Outside MSA | 2,551 | 2,266 | 89 | 23 | 56,292 | 52,132 | 93 | 36 |
| Census Geographic Division | | | | | | | | |
| New England | 297 | 247 | 83 | 3 | 3,918 | 2,838 | 72 | 2 |
| Middle Atlantic | 884 | *788 | *89 | *8 | 11,771 | *7,521 | *64 | *5 |
| East North Central | 2,737 | 2,336 | 85 | 24 | 59,131 | 48,410 | 82 | 33 |
| West North Central | 1,364 | 1,008 | 74 | 10 | 20,139 | 14,954 | 74 | 10 |
| South Atlantic | 1,716 | 1,656 | 97 | 17 | 20,210 | 16,837 | 83 | 12 |
| East South Central | *1,256 | *1,256 | *100 | *13 | *36,040 | *33,704 | *94 | *23 |
| West South Central | 1,556 | 1,499 | 96 | 15 | 17,498 | 15,747 | 90 | 11 |
| Mountain | 946 | *615 | *65 | *6 | 9,516 | *2,781 | *29 | *2 |
| Pacific | 697 | *338 | *48 | *3 | 5,799 | *2,183 | *38 | *2 |
| Age | | | | | | | | |
| 16 to 17 years | *228 | *215 | *94 | *2 | *1,382 | *1,017 | *74 | *1 |
| 18 to 24 years | 1,009 | 756 | 75 | 8 | 30,087 | 22,032 | 73 | 15 |
| 25 to 34 years | 1,783 | 1,596 | 90 | 16 | 19,000 | 13,354 | 70 | 9 |
| 35 to 44 years | 1,609 | 1,396 | 87 | 14 | 37,055 | 31,174 | 84 | 22 |
| 45 to 54 years | 2,542 | 2,007 | 79 | 21 | 36,924 | 26,005 | 70 | 18 |
| 55 to 64 years | 2,702 | 2,412 | 89 | 25 | 41,622 | 36,447 | 88 | 25 |
| 65 years and older | 1,580 | 1,359 | 86 | 14 | 17,952 | 14,944 | 83 | 10 |
| 65 to 74 years | 1,201 | 1,055 | 88 | 11 | 13,622 | 10,995 | 81 | 8 |
| 75 and older | *379 | *304 | *80 | *3 | *4,331 | *3,949 | *91 | *3 |
| Sex | | | | | | | | |
| Male | 10,340 | 8,767 | 85 | 90 | 170,159 | 133,221 | 78 | 92 |
| Female | 1,113 | 975 | 88 | 10 | 13,863 | 11,753 | 85 | 8 |
| Ethnicity | | | | | | | | |
| Hispanic | *379 | *329 | *87 | *3 | *1,219 | ... | ... | ... |
| Non-Hispanic | 11,075 | 9,413 | 85 | 97 | 182,803 | 143,988 | 79 | 99 |
| Race | | | | | | | | |
| White | 11,123 | 9,427 | 85 | 97 | 180,066 | 141,929 | 79 | 98 |
| African American | ... | ... | ... | ... | ... | ... | ... | ... |
| Asian | ... | ... | ... | ... | ... | ... | ... | ... |
| All others | *208 | *208 | *100 | *2 | *2,210 | *1,787 | *81 | *1 |
| Annual Household Income | | | | | | | | |
| Less than \$20,000 | *436 | *400 | *92 | *4 | *3,417 | *2,681 | *78 | *2 |
| \$20,000 to \$24,999 | *161 | ... | ... | ... | *737 | ... | ... | ... |
| \$25,000 to \$29,999 | *145 | *132 | *91 | *1 | *3,345 | *2,153 | *64 | *1 |
| \$30,000 to \$34,999 | *154 | *142 | *92 | *1 | *2,106 | *1,924 | *91 | *1 |
| \$35,000 to \$39,999 | *456 | ... | ... | ... | *2,400 | ... | ... | ... |
| \$40,000 to \$49,999 | 1,101 | 1,051 | 95 | 11 | 26,768 | 23,844 | 89 | 16 |
| \$50,000 to \$74,999 | 2,649 | 1,967 | 74 | 20 | 58,094 | 44,092 | 76 | 30 |
| \$75,000 to \$99,999 | 1,873 | 1,608 | 86 | 17 | 29,239 | 24,454 | 84 | 17 |
| \$100,000 to \$149,999 | 1,536 | 1,394 | 91 | 14 | 19,244 | 13,847 | 72 | 10 |
| \$150,000 or more | 1,408 | 1,293 | 92 | 13 | 14,787 | 12,672 | 86 | 9 |
| Not reported | 1,534 | 1,286 | 84 | 13 | 23,885 | 16,818 | 70 | 12 |
| Education | | | | | | | | |
| 11 years or less | 1,086 | 904 | 83 | 9 | 18,811 | 12,883 | 68 | 9 |
| 12 years | 3,555 | 3,000 | 84 | 31 | 67,788 | 54,863 | 81 | 38 |
| 1 to 3 years of college | 2,984 | 2,508 | 84 | 26 | 53,135 | 44,115 | 83 | 30 |
| 4 years of college | 2,474 | 2,297 | 93 | 24 | 31,516 | 23,035 | 73 | 16 |
| 5 years or more of college | 1,354 | 1,034 | 76 | 11 | 12,772 | 10,078 | 79 | 7 |

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

¹ Hunters on private land include those who hunted on both private and public land.

² Days of hunting on private land includes both days spent solely on private land and those spent on private and public land.

Note: Percent of total hunters and percent of total days are based on the total hunters and total days columns for each row. Percent of hunters using private land and percent of days on private land are based on the total numbers of hunters on private land and total numbers of days on private land, respectively.

Table 30. Anglers Fishing From Boats and Days of Participation by Type of Fishing: 2016

(Population 16 years old and older. Numbers in thousands)

| Participants and days of fishing | Total, all fishing | | Freshwater, excludes Great Lakes | | Great Lakes | | Saltwater | |
|------------------------------------|--------------------|------------|----------------------------------|------------|---------------|------------|---------------|------------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Total anglers | 35,754 | 100 | 29,490 | 100 | 1,824 | 100 | 8,320 | 100 |
| Anglers fishing from boats | 15,069 | 42 | 11,188 | 38 | 1,366 | 75 | 5,144 | 62 |
| Total days of fishing | 459,341 | 100 | 372,660 | 100 | 13,440 | 100 | 75,392 | 100 |
| Days fishing from boats | 197,338 | 43 | 138,938 | 37 | 10,344 | 77 | 48,056 | 64 |

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

Table 31. Participation in Ice Fishing and Fly-Fishing: 2016

(Population 16 years old and older. Numbers in thousands)

| Anglers and days | Number | Percent |
|------------------------------------|----------------|------------|
| Total anglers | 35,754 | 100 |
| Ice anglers | 1,768 | 5 |
| Fly-anglers | 5,906 | 17 |
| Total days of fishing | 459,341 | 100 |
| Days of ice fishing | 18,175 | 4 |
| Days of fly-fishing | 40,959 | 9 |

Table 32. Hunters Using Bow and Arrow, Muzzleloader, or Other Firearm: 2016

(Population 16 years old and older. Numbers in thousands)

| Hunters | Number | Percent |
|--|----------------|------------|
| Total hunters | 11,453 | 100 |
| Hunters using bow and arrow | 3,630 | 32 |
| Hunters using muzzleloader | 1,367 | 12 |
| Hunters using other firearm (e.g., shotgun, rifle) | 10,009 | 87 |
| Total days of hunting | 184,021 | 100 |
| With bow and arrow | 58,491 | 32 |
| With muzzleloader | 10,287 | 6 |
| With other firearm (e.g., shotgun, rifle) | 97,348 | 53 |

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

Table 33. Land Owned or Leased for the Primary Purpose of Fishing or Hunting: 2016

(Population 16 years old and older. Numbers in thousands)

| Fishing and hunting | Number | Percent |
|-------------------------------------|------------------|------------|
| LAND OWNERSHIP | | |
| Sportspersons Owning Land | | |
| Total sportspersons | 1,716 | 100 |
| Anglers | 820 | 48 |
| Hunters | 1,172 | 68 |
| Acres Owned | | |
| Total acres owned | 162,019 | 100 |
| Acres for fishing | 20,545 | 13 |
| Acres for hunting | 141,474 | 87 |
| Expenditures for Land Owned | | |
| Total expenditures | 2,845,975 | 100 |
| For fishing | *1,298,078 | *46 |
| For hunting | 1,547,897 | 54 |
| LAND LEASING | | |
| Sportspersons Leasing Land | | |
| Total sportspersons | 979 | 100 |
| Anglers | ... | ... |
| Hunters | 901 | 92 |
| Acres Leased | | |
| Total acres leased | 136,833 | 100 |
| Acres for fishing | ... | ... |
| Acres for hunting | 130,581 | 95 |
| Expenditures for Land Leased | | |
| Total expenditures | 2,411,458 | 100 |
| For fishing | ... | ... |
| For hunting | 1,350,725 | 56 |

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

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

Table 34. Wildlife-Watching Participants by Type of Activity: 2016

(Population 16 years old and older. Numbers in thousands)

| Activity | Number | Percent |
|---|---------------|------------|
| Total participants | 86,042 | 100 |
| Away from home | 23,720 | 28 |
| Observe wildlife | 19,583 | 23 |
| Photograph wildlife | 13,721 | 16 |
| Feed wildlife | 4,869 | 6 |
| Around the home | 81,128 | 94 |
| Observe wildlife | 43,829 | 51 |
| Photograph wildlife | 30,473 | 35 |
| Feed wildlife | 59,083 | 69 |
| Visit parks or natural areas ¹ | 11,359 | 13 |
| Maintain plantings or natural areas | 11,024 | 13 |

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

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

Table 35. Participants, Area Visited, Trips, and Days of Participation in Wildlife Watching Away From Home: 2016

(Population 16 years old and older. Numbers in thousands)

| Participants, area visited, trips, and days of participation | Number | Percent |
|--|----------------|------------|
| PARTICIPANTS | | |
| Total participants | 23,720 | 100 |
| Observe wildlife | 19,583 | 83 |
| Photograph wildlife | 13,721 | 58 |
| Feed wildlife | 4,869 | 21 |
| AREA VISITED | | |
| Total, all areas | 23,720 | 100 |
| Public only | 14,126 | 60 |
| Private only | 2,314 | 10 |
| Public and private | 4,424 | 19 |
| Not reported | 2,857 | 12 |
| TRIPS | | |
| Total trips | 257,836 | 100 |
| Average days per trip | 1 | X |
| DAYS | | |
| Total days | 386,045 | 100 |
| Observing wildlife | 308,769 | 80 |
| Photographing wildlife | 151,559 | 39 |
| Feeding wildlife | 70,846 | 18 |
| Average days per participant | 16 | X |
| Observing wildlife | 16 | X |
| Photographing wildlife | 11 | X |
| Feeding wildlife | 15 | X |

X Not applicable.

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

Table 36. Participation in Wildlife-Watching Activities Around the Home: 2016

(Population 16 years old and older. Numbers in thousands)

| Activity | Number | Percent | Activity | Number | Percent |
|---|---------------|------------|--|---------------|------------|
| Total around the home | 81,128 | 100 | PHOTOGRAPH WILDLIFE | | |
| Observe wildlife | 43,829 | 54 | | | |
| Photograph wildlife | 30,473 | 38 | Participants photographing: | | |
| Feed wildlife | 59,083 | 73 | Total, 1 day or more | 30,473 | 100 |
| Visit parks or natural areas ¹ | 11,359 | 14 | 1 day | 5,929 | 19 |
| Maintain natural areas | 7,514 | 9 | 2 to 3 days | 8,641 | 28 |
| Maintain plantings | 7,752 | 10 | 4 to 5 days | 5,423 | 18 |
| | | | 6 to 10 days | 3,477 | 11 |
| | | | 11 to 20 days | 3,310 | 11 |
| | | | 21 days or more | 3,359 | 11 |
| OBSERVE WILDLIFE | | | | | |
| Participants observing: | | | FEED WILDLIFE | | |
| Total, all wildlife | 43,829 | 100 | Participants feeding: | | |
| Birds | 38,741 | 88 | Total, all wildlife | 59,083 | 100 |
| Land mammals, all | 30,065 | 69 | Wild birds | 57,194 | 97 |
| Large mammals | 19,671 | 45 | Other wildlife | 14,509 | 25 |
| Small mammals | 26,080 | 60 | | | |
| Amphibians or reptiles | 11,615 | 27 | MAINTAIN NATURAL AREAS | | |
| Insects or spiders | 13,895 | 32 | Participants maintaining: | | |
| Fish or other wildlife | 8,158 | 19 | Total, all acreages | 7,514 | 100 |
| Participants observing: | | | 1 acre or less | 4,932 | 66 |
| Total, 1 day or more | 43,829 | 100 | 2 to 10 acres | 1,734 | 23 |
| 1 to 10 days | 10,462 | 24 | 11 to 50 acres | 590 | 8 |
| 11 to 20 days | 4,271 | 10 | More than 50 acres | *232 | *3 |
| 21 to 50 days | 6,075 | 14 | | | |
| 51 to 100 days | 4,829 | 11 | MAINTAIN PLANTINGS | | |
| 101 to 200 days | 7,374 | 17 | Participants maintaining plantings | 7,752 | 100 |
| 201 days or more | 9,821 | 22 | Participants spending: | | |
| VISIT PARKS OR NATURAL AREAS¹ | | | Less than \$25 | 2,413 | 31 |
| Participants visiting: | | | \$25 to \$75 | 1,667 | 22 |
| Total, 1 day or more | 11,359 | 100 | More than \$75 | 3,209 | 41 |
| 1 to 5 days | 4,467 | 39 | Average expenditure per participant for plantings ² | 122 | X |
| 6 to 10 days | 1,703 | 15 | | | |
| 11 days or more | 5,146 | 45 | | | |

* Estimate based on a sample size of 10–29. X Not applicable.

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

² Average expenditures are annual estimates.

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

Table 37. Away-From-Home Wildlife Watchers by Wildlife Observed, Photographed, or Fed and Place: 2016

(Population 16 years old and older. Numbers in thousands)

| Wildlife observed, photographed, or fed | Total participants | | Participation by place | | | | | |
|--|--------------------|------------|------------------------|------------|-----------------------|-----------|-----------------|-----------|
| | | | Total | | In state of residence | | In other states | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Total, all wildlife | 23,720 | 100 | 23,720 | 100 | 18,772 | 79 | 7,396 | 31 |
| Total birds | 17,015 | 72 | 17,015 | 100 | 14,216 | 84 | 6,542 | 38 |
| Songbirds (cardinals, robins, etc.) | 10,507 | 44 | 10,507 | 100 | 9,474 | 90 | 3,502 | 33 |
| Birds of prey (hawks, eagles, etc.) | 11,452 | 48 | 11,452 | 100 | 10,079 | 88 | 3,629 | 32 |
| Waterfowl (ducks, geese, etc.) | 11,488 | 48 | 11,488 | 100 | 10,087 | 88 | 3,682 | 32 |
| Other water birds (shorebirds, herons, cranes, etc.) | 8,798 | 37 | 8,798 | 100 | 7,717 | 88 | 2,804 | 32 |
| Other birds (pheasants, turkeys, road runners, etc.) | 7,123 | 30 | 7,123 | 100 | 5,372 | 75 | 2,461 | 35 |
| Total land mammals | 14,018 | 59 | 14,018 | 100 | 12,289 | 88 | 4,644 | 33 |
| Large land mammals (deer, bears, etc.) | 11,828 | 50 | 11,828 | 100 | 9,699 | 82 | 4,072 | 34 |
| Small land mammals (squirrels, prairie dogs, etc.) | 10,586 | 45 | 10,586 | 100 | 9,138 | 86 | 3,274 | 31 |
| Fish (salmon, sharks, etc.) | 4,270 | 18 | 4,270 | 100 | 2,910 | 68 | 1,759 | 41 |
| Marine mammals (whales, dolphins, etc.) | 2,485 | 10 | 2,485 | 100 | 1,365 | 55 | 1,224 | 49 |
| Other wildlife (turtles, butterflies, etc.) | 8,713 | 37 | 8,713 | 100 | 6,616 | 76 | 4,099 | 47 |

Note: Detail does not add to total because of multiple responses. Column showing percent of total participants is based on the "Total, all wildlife" numbers. "Participation by place" percent columns are based on the total numbers of participants for each type of wildlife.

Table 38. Wild Bird Observers and Days of Observation: 2016

(Population 16 years old and older. Numbers in thousands)

| Observers and days of observation | Number | Percent |
|---|------------------|------------|
| OBSERVERS | | |
| Total bird observers | 45,104 | 100 |
| Around-the-home observers | 38,741 | 86 |
| Away-from-home observers | 16,275 | 36 |
| DAYS | | |
| Total days observing birds | 4,324,668 | 100 |
| Around the home | 4,067,994 | 94 |
| Away from home | 256,673 | 6 |

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

Table 39. Expenditures for Wildlife Watching: 2016

(Population 16 years old and older)

| Expenditure item | Expenditures (thousands of dollars) | Spenders | | |
|--|---|-----------------------|--|---|
| | | Number (thousands) | Percent of wildlife- watching participants ¹ | Average per spender (dollars) ² |
| Total, all items³ | 75,867,134 | 63,578 | 74 | 1,193 |
| TRIP-RELATED EXPENDITURES | | | | |
| Total trip-related | 11,587,870 | 20,235 | 85 | 573 |
| Food and lodging, total | 6,068,131 | 17,058 | 72 | 356 |
| Food | 3,809,811 | 16,955 | 71 | 225 |
| Lodging | 2,258,320 | 6,331 | 27 | 357 |
| Transportation, total | 4,228,568 | 19,018 | 80 | 222 |
| Public | 1,232,678 | 3,052 | 13 | 404 |
| Private | 2,995,890 | 17,766 | 75 | 169 |
| Other trip costs, total | 1,291,171 | 8,609 | 36 | 150 |
| Guide fees, pack trip or package fees | 108,341 | 1,876 | 8 | 58 |
| Public land use fees | 169,750 | 5,461 | 23 | 31 |
| Private land use fees | 29,857 | 1,515 | 6 | 20 |
| Equipment rental | 274,867 | 2,814 | 12 | 98 |
| Boating costs ⁴ | 283,150 | 1,704 | 7 | 166 |
| Heating and cooking fuel | 425,205 | 2,985 | 13 | 142 |
| EQUIPMENT AND OTHER EXPENSES | | | | |
| Total | 64,279,264 | 57,496 | 67 | 1,118 |
| Wildlife-watching equipment, total | 12,105,745 | 50,302 | 58 | 241 |
| Binoculars, spotting scopes | 1,835,510 | 4,765 | 6 | 385 |
| Cameras, video cameras, special lenses, and other photographic equipment | 3,575,323 | 7,152 | 8 | 500 |
| Film and photo processing | 73,561 | 1,679 | 2 | 44 |
| Bird food, total | 4,035,357 | 37,609 | 44 | 107 |
| Commercially prepared and packaged wild bird food | 3,269,158 | 36,026 | 42 | 91 |
| Other bulk foods used to feed wild birds | 766,200 | 12,673 | 15 | 60 |
| Food for other wildlife | 816,527 | 9,570 | 11 | 85 |
| Nest boxes, bird houses, feeders, baths | 959,643 | 17,868 | 21 | 54 |
| Day packs, carrying cases, and special clothing | 674,710 | 5,133 | 6 | 131 |
| Other wildlife-watching equipment (such as field guides and maps) | 135,113 | 4,317 | 5 | 31 |
| Auxiliary equipment, total | 1,043,932 | 6,669 | 8 | 157 |
| Tents, tarps | 364,298 | 3,176 | 4 | 115 |
| Frame packs and backpacking equipment | 225,326 | 2,471 | 3 | 91 |
| Other camping equipment | 209,087 | 1,911 | 2 | 109 |
| Other auxiliary equipment (such as blinds and GPS devices) | 245,221 | 765 | 1 | 321 |
| Special equipment, total | 41,933,623 | 3,037 | 4 | 13,810 |
| Off-the-road vehicle | ... | ... | ... | ... |
| Travel or tent trailer, pickup, camper, van, motor home, house trailer, recreational vehicle (RV) | *35,684,266 | *1,843 | *2 | *19,366 |
| Boats, boat accessories | 1,526,530 | 900 | 1 | 1,697 |
| Cabins | ... | ... | ... | ... |
| Other | *56,439 | *281 | *Z | *201 |
| Magazines, books, DVDs | 236,696 | 7,022 | 8 | 34 |
| Land leasing and ownership | 4,196,305 | 1,195 | 1 | 3,512 |
| Membership dues and contributions | 3,817,276 | 10,076 | 12 | 379 |
| Plantings | 945,688 | 7,289 | 8 | 130 |

* Estimate based on a sample size of 10–29. ... Sample size too small (less than 10) to report data reliably. Z Less than 0.5 percent.

¹ Percent of wildlife-watching participants column is based on away-from-home participants for trip-related expenditures. For equipment and other expenditures the percent of wildlife-watching participants is based on total participants.² Average expenditures are annual estimates.³ 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.⁴ Boating costs include launching, mooring, storage, maintenance, insurance, pumpout fees, and fuel.

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

Table 40. Selected Characteristics of Participants of Wildlife-Watching Activities Away From Home: 2016

(Population 16 years old and older. Numbers in thousands)

| Characteristic | U.S. population | | Total wildlife-watching participants | | | Total away-from-home participants | | |
|---|-----------------|------------|--------------------------------------|--------------------------|------------|-----------------------------------|--------------------------|------------|
| | Number | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 254,686 | 100 | 86,042 | 34 | 100 | 23,720 | 9 | 100 |
| Population Density of Residence | | | | | | | | |
| Urban | 208,695 | 82 | 58,008 | 28 | 67 | 18,596 | 9 | 78 |
| Rural | 45,991 | 18 | 28,034 | 61 | 33 | 5,124 | 11 | 22 |
| Population Size of Residence | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 239,722 | 94 | 79,665 | 33 | 93 | 22,051 | 9 | 93 |
| 1,000,000 or more | 144,070 | 57 | 38,458 | 27 | 45 | 11,380 | 8 | 48 |
| 250,000 to 999,999 | 49,208 | 19 | 20,928 | 43 | 24 | 6,460 | 13 | 27 |
| 50,000 to 249,999 | 46,443 | 18 | 20,279 | 44 | 24 | 4,211 | 9 | 18 |
| Outside MSA | 14,964 | 6 | 6,377 | 43 | 7 | 1,669 | 11 | 7 |
| Census Geographic Division | | | | | | | | |
| New England | 12,018 | 5 | 4,430 | 37 | 5 | 1,499 | 12 | 6 |
| Middle Atlantic | 33,368 | 13 | 12,170 | 36 | 14 | 3,688 | 11 | 16 |
| East North Central | 36,893 | 14 | 13,348 | 36 | 16 | 2,847 | 8 | 12 |
| West North Central | 16,502 | 6 | 5,322 | 32 | 6 | 1,590 | 10 | 7 |
| South Atlantic | 50,611 | 20 | 17,832 | 35 | 21 | 5,530 | 11 | 23 |
| East South Central | 14,968 | 6 | 5,062 | 34 | 6 | *498 | *3 | *2 |
| West South Central | 30,094 | 12 | 8,173 | 27 | 9 | 1,541 | 5 | 6 |
| Mountain | 18,364 | 7 | 6,257 | 34 | 7 | 3,119 | 17 | 13 |
| Pacific | 41,869 | 16 | 13,448 | 32 | 16 | 3,408 | 8 | 14 |
| Age | | | | | | | | |
| 16 to 17 years | 8,541 | 3 | 2,219 | 26 | 3 | *980 | *11 | *4 |
| 18 to 24 years | 28,351 | 11 | 4,873 | 17 | 6 | 2,598 | 9 | 11 |
| 25 to 34 years | 43,977 | 17 | 11,260 | 26 | 13 | 3,313 | 8 | 14 |
| 35 to 44 years | 40,455 | 16 | 11,509 | 28 | 13 | 4,336 | 11 | 18 |
| 45 to 54 years | 42,969 | 17 | 17,115 | 40 | 20 | 3,038 | 7 | 13 |
| 55 to 64 years | 42,022 | 16 | 20,910 | 50 | 24 | 5,447 | 13 | 23 |
| 65 years and older | 48,372 | 19 | 18,155 | 38 | 21 | 4,008 | 8 | 17 |
| 65 to 74 years | 28,895 | 11 | 12,154 | 42 | 14 | 3,191 | 11 | 13 |
| 75 and older | 19,477 | 8 | 6,001 | 31 | 7 | 817 | 4 | 3 |
| Sex | | | | | | | | |
| Male, total | 121,775 | 48 | 51,125 | 42 | 59 | 15,777 | 13 | 67 |
| 16 to 17 years | 4,248 | 2 | *1,130 | *27 | *1 | *892 | *21 | *4 |
| 18 to 24 years | 14,235 | 6 | 3,740 | 26 | 4 | *2,012 | *14 | *8 |
| 25 to 34 years | 21,621 | 8 | 6,853 | 32 | 8 | 2,176 | 10 | 9 |
| 35 to 44 years | 19,614 | 8 | 6,717 | 34 | 8 | 3,047 | 16 | 13 |
| 45 to 54 years | 20,748 | 8 | 9,516 | 46 | 11 | 2,025 | 10 | 9 |
| 55 to 64 years | 20,054 | 8 | 12,977 | 65 | 15 | 3,618 | 18 | 15 |
| 65 years and older | 21,253 | 8 | 10,191 | 48 | 12 | 2,008 | 9 | 8 |
| 65 to 74 years | 13,306 | 5 | 7,063 | 53 | 8 | 1,619 | 12 | 7 |
| 75 and older | 7,947 | 3 | 3,128 | 39 | 4 | *389 | *5 | *2 |
| Female, total | 132,911 | 52 | 34,917 | 26 | 41 | 7,943 | 6 | 33 |
| 16 to 17 years | 4,293 | 2 | *1,088 | *25 | *1 | ... | ... | ... |
| 18 to 24 years | 14,116 | 6 | 1,133 | 8 | 1 | *585 | *4 | *2 |
| 25 to 34 years | 22,356 | 9 | 4,407 | 20 | 5 | 1,138 | 5 | 5 |
| 35 to 44 years | 20,841 | 8 | 4,792 | 23 | 6 | 1,289 | 6 | 5 |
| 45 to 54 years | 22,220 | 9 | 7,599 | 34 | 9 | 1,014 | 5 | 4 |
| 55 to 64 years | 21,967 | 9 | 7,933 | 36 | 9 | 1,830 | 8 | 8 |
| 65 years and older | 27,118 | 11 | 7,964 | 29 | 9 | 2,000 | 7 | 8 |
| 65 to 74 years | 15,589 | 6 | 5,091 | 33 | 6 | 1,571 | 10 | 7 |
| 75 and older | 11,530 | 5 | 2,873 | 25 | 3 | *428 | *4 | *2 |
| Ethnicity | | | | | | | | |
| Hispanic | 42,603 | 17 | 5,862 | 14 | 7 | 2,265 | 5 | 10 |
| Non-Hispanic | 212,083 | 83 | 80,181 | 38 | 93 | 21,456 | 10 | 90 |
| Race | | | | | | | | |
| White | 199,086 | 78 | 74,710 | 38 | 87 | 22,552 | 11 | 95 |
| African American | 33,358 | 13 | 7,384 | 22 | 9 | *612 | *2 | *3 |
| Asian | 16,153 | 6 | 757 | 5 | 1 | *204 | *1 | *1 |
| All others | 6,089 | 2 | 3,191 | 52 | 4 | *353 | *6 | *1 |
| Annual Household Income | | | | | | | | |
| Less than \$20,000 | 22,269 | 9 | 5,782 | 26 | 7 | 2,003 | 9 | 8 |
| \$20,000 to \$24,999 | 8,821 | 3 | 2,442 | 28 | 3 | *1,175 | *13 | *5 |
| \$25,000 to \$29,999 | 8,889 | 3 | 2,056 | 23 | 2 | *390 | *4 | *2 |
| \$30,000 to \$34,999 | 9,442 | 4 | 3,511 | 37 | 4 | *683 | *7 | *3 |
| \$35,000 to \$39,999 | 8,909 | 3 | 2,043 | 23 | 2 | *1,157 | *13 | *5 |
| \$40,000 to \$49,999 | 16,174 | 6 | 6,751 | 42 | 8 | 1,840 | 11 | 8 |
| \$50,000 to \$74,999 | 36,512 | 14 | 11,444 | 31 | 13 | 2,671 | 7 | 11 |
| \$75,000 to \$99,999 | 27,409 | 11 | 11,289 | 41 | 13 | 3,385 | 12 | 14 |
| \$100,000 to \$149,999 | 32,485 | 13 | 14,004 | 43 | 16 | 4,148 | 13 | 17 |
| \$150,000 or more | 30,217 | 12 | 12,120 | 40 | 14 | 3,489 | 12 | 15 |
| Not reported | 53,559 | 21 | 14,600 | 27 | 17 | 2,779 | 5 | 12 |
| Education | | | | | | | | |
| 11 years or less | 33,987 | 13 | 8,396 | 25 | 10 | *1,400 | *4 | *6 |
| 12 years | 72,726 | 29 | 24,987 | 34 | 29 | 5,132 | 7 | 22 |
| 1 to 3 years of college | 75,352 | 30 | 20,034 | 27 | 23 | 6,348 | 8 | 27 |
| 4 years of college | 45,769 | 18 | 17,824 | 39 | 21 | 5,507 | 12 | 23 |
| 5 years or more of college | 26,852 | 11 | 14,802 | 55 | 17 | 5,333 | 20 | 22 |

See footnotes at end of table.

Table 40. Selected Characteristics of Participants of Wildlife-Watching Activities Away From Home: 2016—Continued

(Population 16 years old and older. Numbers in thousands)

| Characteristic | Away-from-home participants | | | | | | | | |
|---|-----------------------------|--------------------------|------------|---------------|--------------------------|------------|--------------|--------------------------|------------|
| | Observe | | | Photograph | | | Feed | | |
| | Number | Percent who participated | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 19,583 | 8 | 100 | 13,721 | 5 | 100 | 4,869 | 2 | 100 |
| Population Density of Residence | | | | | | | | | |
| Urban | 15,704 | 8 | 80 | 11,007 | 5 | 80 | 3,757 | 2 | 77 |
| Rural | 3,879 | 8 | 20 | 2,714 | 6 | 20 | 1,112 | 2 | 23 |
| Population Size of Residence | | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 18,392 | 8 | 94 | 12,975 | 5 | 95 | 4,378 | 2 | 90 |
| 1,000,000 or more | 9,440 | 7 | 48 | 7,660 | 5 | 56 | 2,424 | 2 | 50 |
| 250,000 to 999,999 | 5,575 | 11 | 28 | 2,950 | 6 | 21 | 1,170 | 2 | 24 |
| 50,000 to 249,999 | 3,377 | 7 | 17 | 2,366 | 5 | 17 | *784 | *2 | *16 |
| Outside MSA | 1,191 | 8 | 6 | *745 | *5 | *5 | *491 | *3 | *10 |
| Census Geographic Division | | | | | | | | | |
| New England | 1,322 | 11 | 7 | 924 | 8 | 7 | *233 | *2 | *5 |
| Middle Atlantic | 3,283 | 10 | 17 | 1,210 | 4 | 9 | *409 | *1 | *8 |
| East North Central | 2,401 | 7 | 12 | 1,435 | 4 | 10 | *917 | *2 | *19 |
| West North Central | 1,460 | 9 | 7 | 697 | 4 | 5 | ... | ... | ... |
| South Atlantic | 4,354 | 9 | 22 | 3,154 | 6 | 23 | 1,082 | 2 | 22 |
| East South Central | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| West South Central | 1,267 | 4 | 6 | 1,120 | 4 | 8 | *627 | *2 | *13 |
| Mountain | 1,961 | 11 | 10 | 2,651 | 14 | 19 | *796 | *4 | *16 |
| Pacific | 3,188 | 8 | 16 | 2,272 | 5 | 17 | *422 | *1 | *9 |
| Age | | | | | | | | | |
| 16 to 17 years | *532 | *6 | *3 | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | *2,306 | *8 | *12 | *496 | *2 | *4 | ... | ... | ... |
| 25 to 34 years | 2,828 | 6 | 14 | 1,868 | 4 | 14 | *1,237 | *3 | *25 |
| 35 to 44 years | 3,683 | 9 | 19 | 3,312 | 8 | 24 | *418 | *1 | *9 |
| 45 to 54 years | 1,944 | 5 | 10 | 2,020 | 5 | 15 | *480 | *1 | *10 |
| 55 to 64 years | 4,586 | 11 | 23 | 3,249 | 8 | 24 | 1,244 | 3 | 26 |
| 65 years and older | 3,704 | 8 | 19 | 2,225 | 5 | 16 | 1,077 | 2 | 22 |
| 65 to 74 years | 3,001 | 10 | 15 | 1,950 | 7 | 14 | 965 | 3 | 20 |
| 75 and older | 703 | 4 | 4 | *275 | *1 | *2 | ... | ... | ... |
| Sex | | | | | | | | | |
| Male, total | 12,259 | 10 | 63 | 8,794 | 7 | 64 | 3,182 | 3 | 65 |
| 16 to 17 years | *447 | *11 | *2 | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | *1,841 | *13 | *9 | ... | ... | ... | ... | ... | ... |
| 25 to 34 years | 1,699 | 8 | 9 | 1,149 | 5 | 8 | *729 | *3 | *15 |
| 35 to 44 years | 2,400 | 12 | 12 | 2,416 | 12 | 18 | ... | ... | ... |
| 45 to 54 years | 1,173 | 6 | 6 | 1,430 | 7 | 10 | *308 | *1 | *6 |
| 55 to 64 years | 2,929 | 15 | 15 | 2,062 | 10 | 15 | *1,028 | *5 | *21 |
| 65 years and older | 1,770 | 8 | 9 | 1,052 | 5 | 8 | *670 | *3 | *14 |
| 65 to 74 years | 1,451 | 11 | 7 | 966 | 7 | 7 | *609 | *5 | *13 |
| 75 and older | *319 | *4 | *2 | ... | ... | ... | ... | ... | ... |
| Female, total | 7,324 | 6 | 37 | 4,926 | 4 | 36 | 1,687 | 1 | 35 |
| 16 to 17 years | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | *464 | *3 | *2 | ... | ... | ... | ... | ... | ... |
| 25 to 34 years | 1,130 | 5 | 6 | *719 | *3 | *5 | *508 | *2 | *10 |
| 35 to 44 years | 1,283 | 6 | 7 | 896 | 4 | 7 | *222 | *1 | *5 |
| 45 to 54 years | 772 | 3 | 4 | 590 | 3 | 4 | ... | ... | ... |
| 55 to 64 years | 1,657 | 8 | 8 | 1,187 | 5 | 9 | *216 | *1 | *4 |
| 65 years and older | 1,933 | 7 | 10 | 1,173 | 4 | 9 | *407 | *2 | *8 |
| 65 to 74 years | 1,550 | 10 | 8 | 984 | 6 | 7 | *356 | *2 | *7 |
| 75 and older | *383 | *3 | *2 | *189 | *2 | *1 | ... | ... | ... |
| Ethnicity | | | | | | | | | |
| Hispanic | 1,683 | 4 | 9 | *1,408 | *3 | *10 | *893 | *2 | *18 |
| Non-Hispanic | 17,900 | 8 | 91 | 12,313 | 6 | 90 | 3,976 | 2 | 82 |
| Race | | | | | | | | | |
| White | 18,693 | 9 | 95 | 12,993 | 7 | 95 | 4,414 | 2 | 91 |
| African American | *367 | *1 | *2 | ... | ... | ... | ... | ... | ... |
| Asian | *202 | *1 | *1 | *124 | *1 | *1 | ... | ... | ... |
| All others | *321 | *5 | *2 | *204 | *3 | *1 | *232 | *4 | *5 |
| Annual Household Income | | | | | | | | | |
| Less than \$20,000 | *1,856 | *8 | *9 | *279 | *1 | *2 | *297 | *1 | *6 |
| \$20,000 to \$24,999 | *899 | *10 | *5 | ... | ... | ... | ... | ... | ... |
| \$25,000 to \$29,999 | *310 | *3 | *2 | *159 | *2 | *1 | ... | ... | ... |
| \$30,000 to \$34,999 | *643 | *7 | *3 | *313 | *3 | *2 | ... | ... | ... |
| \$35,000 to \$39,999 | *1,113 | *12 | *6 | *594 | *7 | *4 | ... | ... | ... |
| \$40,000 to \$49,999 | 1,308 | 8 | 7 | *1,018 | *6 | *7 | ... | ... | ... |
| \$50,000 to \$74,999 | 1,955 | 5 | 10 | 1,519 | 4 | 11 | *486 | *1 | *10 |
| \$75,000 to \$99,999 | 2,920 | 11 | 15 | 2,305 | 8 | 17 | *1,029 | *4 | *21 |
| \$100,000 to \$149,999 | 3,084 | 9 | 16 | 3,100 | 10 | 23 | *314 | *1 | *6 |
| \$150,000 or more | 2,879 | 10 | 15 | 2,393 | 8 | 17 | *421 | *1 | *9 |
| Not reported | 2,615 | 5 | 13 | 1,473 | 3 | 11 | *457 | *1 | *9 |
| Education | | | | | | | | | |
| 11 years or less | *708 | *2 | *4 | *1,010 | *3 | *7 | ... | ... | ... |
| 12 years | 4,221 | 6 | 22 | 2,894 | 4 | 21 | 1,519 | 2 | 31 |
| 1 to 3 years of college | 5,592 | 7 | 29 | 2,830 | 4 | 21 | 1,529 | 2 | 31 |
| 4 years of college | 4,359 | 10 | 22 | 3,257 | 7 | 24 | *898 | *2 | *18 |
| 5 years or more of college | 4,703 | 18 | 24 | 3,730 | 14 | 27 | *420 | *2 | *9 |

* 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. Percent columns show the percent of each column's participants who are described by the row heading. Demographic variables we could include but haven't are (1) relationship to head of household, (2) marital status, (3) whether or not participant has a job, and (4) whether or not participant is going to school, keeping house, or retired.

Table 41. Selected Characteristics of Participants of Wildlife-Watching Activities Around the Home: 2016

(Population 16 years old and older. Numbers in thousands)

| Characteristic | U.S. population | | Total wildlife-watching participants | | | Total around-the-home participants | | |
|---|-----------------|------------|--------------------------------------|--------------------------|------------|------------------------------------|--------------------------|------------|
| | Number | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 254,686 | 100 | 86,042 | 34 | 100 | 81,128 | 32 | 100 |
| Population Density of Residence | | | | | | | | |
| Urban | 208,695 | 82 | 58,008 | 28 | 67 | 54,094 | 26 | 67 |
| Rural | 45,991 | 18 | 28,034 | 61 | 33 | 27,034 | 59 | 33 |
| Population Size of Residence | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 239,722 | 94 | 79,665 | 33 | 93 | 75,240 | 31 | 93 |
| 1,000,000 or more | 144,070 | 57 | 38,458 | 27 | 45 | 35,822 | 25 | 44 |
| 250,000 to 999,999 | 49,208 | 19 | 20,928 | 43 | 24 | 19,983 | 41 | 25 |
| 50,000 to 249,999 | 46,443 | 18 | 20,279 | 44 | 24 | 19,436 | 42 | 24 |
| Outside MSA | 14,964 | 6 | 6,377 | 43 | 7 | 5,888 | 39 | 7 |
| Census Geographic Division | | | | | | | | |
| New England | 12,018 | 5 | 4,430 | 37 | 5 | 4,336 | 36 | 5 |
| Middle Atlantic | 33,368 | 13 | 12,170 | 36 | 14 | 11,838 | 35 | 15 |
| East North Central | 36,893 | 14 | 13,348 | 36 | 16 | 12,808 | 35 | 16 |
| West North Central | 16,502 | 6 | 5,322 | 32 | 6 | 5,249 | 32 | 6 |
| South Atlantic | 50,611 | 20 | 17,832 | 35 | 21 | 16,502 | 33 | 20 |
| East South Central | 14,968 | 6 | 5,062 | 34 | 6 | 4,907 | 33 | 6 |
| West South Central | 30,094 | 12 | 8,173 | 27 | 9 | 7,763 | 26 | 10 |
| Mountain | 18,364 | 7 | 6,257 | 34 | 7 | 4,883 | 27 | 6 |
| Pacific | 41,869 | 16 | 13,448 | 32 | 16 | 12,842 | 31 | 16 |
| Age | | | | | | | | |
| 16 to 17 years | 8,541 | 3 | 2,219 | 26 | 3 | *1,548 | *18 | *2 |
| 18 to 24 years | 28,351 | 11 | 4,873 | 17 | 6 | 4,449 | 16 | 5 |
| 25 to 34 years | 43,977 | 17 | 11,260 | 26 | 13 | 10,307 | 23 | 13 |
| 35 to 44 years | 40,455 | 16 | 11,509 | 28 | 13 | 10,569 | 26 | 13 |
| 45 to 54 years | 42,969 | 17 | 17,115 | 40 | 20 | 16,184 | 38 | 20 |
| 55 to 64 years | 42,022 | 16 | 20,910 | 50 | 24 | 20,085 | 48 | 25 |
| 65 years and older | 48,372 | 19 | 18,155 | 38 | 21 | 17,987 | 37 | 22 |
| 65 to 74 years | 28,895 | 11 | 12,154 | 42 | 14 | 12,021 | 42 | 15 |
| 75 and older | 19,477 | 8 | 6,001 | 31 | 7 | 5,965 | 31 | 7 |
| Sex | | | | | | | | |
| Male, total | 121,775 | 48 | 51,125 | 42 | 59 | 47,220 | 39 | 58 |
| 16 to 17 years | 4,248 | 2 | *1,130 | *27 | *1 | *480 | *11 | *1 |
| 18 to 24 years | 14,235 | 6 | 3,740 | 26 | 4 | 3,485 | 24 | 4 |
| 25 to 34 years | 21,621 | 8 | 6,853 | 32 | 8 | 5,972 | 28 | 7 |
| 35 to 44 years | 19,614 | 8 | 6,717 | 34 | 8 | 5,954 | 30 | 7 |
| 45 to 54 years | 20,748 | 8 | 9,516 | 46 | 11 | 8,834 | 43 | 11 |
| 55 to 64 years | 20,054 | 8 | 12,977 | 65 | 15 | 12,405 | 62 | 15 |
| 65 years and older | 21,253 | 8 | 10,191 | 48 | 12 | 10,091 | 47 | 12 |
| 65 to 74 years | 13,306 | 5 | 7,063 | 53 | 8 | 6,985 | 52 | 9 |
| 75 and older | 7,947 | 3 | 3,128 | 39 | 4 | 3,106 | 39 | 4 |
| Female, total | 132,911 | 52 | 34,917 | 26 | 41 | 33,908 | 26 | 42 |
| 16 to 17 years | 4,293 | 2 | *1,088 | *25 | *1 | *1,068 | *25 | *1 |
| 18 to 24 years | 14,116 | 6 | 1,133 | 8 | 1 | *964 | *7 | *1 |
| 25 to 34 years | 22,356 | 9 | 4,407 | 20 | 5 | 4,334 | 19 | 5 |
| 35 to 44 years | 20,841 | 8 | 4,792 | 23 | 6 | 4,615 | 22 | 6 |
| 45 to 54 years | 22,220 | 9 | 7,599 | 34 | 9 | 7,351 | 33 | 9 |
| 55 to 64 years | 21,967 | 9 | 7,933 | 36 | 9 | 7,680 | 35 | 9 |
| 65 years and older | 27,118 | 11 | 7,964 | 29 | 9 | 7,896 | 29 | 10 |
| 65 to 74 years | 15,589 | 6 | 5,091 | 33 | 6 | 5,036 | 32 | 6 |
| 75 and older | 11,530 | 5 | 2,873 | 25 | 3 | 2,859 | 25 | 4 |
| Ethnicity | | | | | | | | |
| Hispanic | 42,603 | 17 | 5,862 | 14 | 7 | 4,964 | 12 | 6 |
| Non-Hispanic | 212,083 | 83 | 80,181 | 38 | 93 | 76,164 | 36 | 94 |
| Race | | | | | | | | |
| White | 199,086 | 78 | 74,710 | 38 | 87 | 69,925 | 35 | 86 |
| African American | 33,358 | 13 | 7,384 | 22 | 9 | 7,384 | 22 | 9 |
| Asian | 16,153 | 6 | 757 | 5 | 1 | 679 | 4 | 1 |
| All others | 6,089 | 2 | 3,191 | 52 | 4 | 3,141 | 52 | 4 |
| Annual Household Income | | | | | | | | |
| Less than \$20,000 | 22,269 | 9 | 5,782 | 26 | 7 | 5,633 | 25 | 7 |
| \$20,000 to \$24,999 | 8,821 | 3 | 2,442 | 28 | 3 | 2,132 | 24 | 3 |
| \$25,000 to \$29,999 | 8,889 | 3 | 2,056 | 23 | 2 | 2,053 | 23 | 3 |
| \$30,000 to \$34,999 | 9,442 | 4 | 3,511 | 37 | 4 | 3,233 | 34 | 4 |
| \$35,000 to \$39,999 | 8,909 | 3 | 2,043 | 23 | 2 | 1,624 | 18 | 2 |
| \$40,000 to \$49,999 | 16,174 | 6 | 6,751 | 42 | 8 | 6,303 | 39 | 8 |
| \$50,000 to \$74,999 | 36,512 | 14 | 11,444 | 31 | 13 | 10,834 | 30 | 13 |
| \$75,000 to \$99,999 | 27,409 | 11 | 11,289 | 41 | 13 | 10,814 | 39 | 13 |
| \$100,000 to \$149,999 | 32,485 | 13 | 14,004 | 43 | 16 | 12,839 | 40 | 16 |
| \$150,000 or more | 30,217 | 12 | 12,120 | 40 | 14 | 11,313 | 37 | 14 |
| Not reported | 53,559 | 21 | 14,600 | 27 | 17 | 14,351 | 27 | 18 |
| Education | | | | | | | | |
| 11 years or less | 33,987 | 13 | 8,396 | 25 | 10 | 7,638 | 22 | 9 |
| 12 years | 72,726 | 29 | 24,987 | 34 | 29 | 24,015 | 33 | 30 |
| 1 to 3 years of college | 75,352 | 30 | 20,034 | 27 | 23 | 19,036 | 25 | 23 |
| 4 years of college | 45,769 | 18 | 17,824 | 39 | 21 | 16,462 | 36 | 20 |
| 5 years or more of college | 26,852 | 11 | 14,802 | 55 | 17 | 13,977 | 52 | 17 |

See footnotes at end of table.

Table 41. Selected Characteristics of Participants of Wildlife-Watching Activities Around the Home: 2016—Continued

(Population 16 years old and older. Numbers in thousands)

| Characteristic | Around-the-home participants | | | | | | | | |
|---|------------------------------|--------------------------|------------|---------------|--------------------------|------------|-----------------|--------------------------|------------|
| | Observe | | | Photograph | | | Feed wild birds | | |
| | Number | Percent who participated | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 43,829 | 17 | 100 | 30,473 | 12 | 100 | 57,194 | 22 | 100 |
| Population Density of Residence | | | | | | | | | |
| Urban | 28,560 | 14 | 65 | 23,463 | 11 | 77 | 35,752 | 17 | 63 |
| Rural | 15,269 | 33 | 35 | 7,010 | 15 | 23 | 21,443 | 47 | 37 |
| Population Size of Residence | | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 40,072 | 17 | 91 | 28,729 | 12 | 94 | 52,274 | 22 | 91 |
| 1,000,000 or more | 18,819 | 13 | 43 | 15,077 | 10 | 49 | 22,733 | 16 | 40 |
| 250,000 to 999,999 | 12,543 | 25 | 29 | 7,848 | 16 | 26 | 14,905 | 30 | 26 |
| 50,000 to 249,999 | 8,710 | 19 | 20 | 5,804 | 12 | 19 | 14,635 | 32 | 26 |
| Outside MSA | 3,756 | 25 | 9 | 1,744 | 12 | 6 | 4,920 | 33 | 9 |
| Census Geographic Division | | | | | | | | | |
| New England | 2,422 | 20 | 6 | 2,272 | 19 | 7 | 2,731 | 23 | 5 |
| Middle Atlantic | 8,013 | 24 | 18 | 4,772 | 14 | 16 | 7,301 | 22 | 13 |
| East North Central | 7,443 | 20 | 17 | 3,486 | 9 | 11 | 10,794 | 29 | 19 |
| West North Central | 3,164 | 19 | 7 | 1,928 | 12 | 6 | 4,029 | 24 | 7 |
| South Atlantic | 8,567 | 17 | 20 | 6,007 | 12 | 20 | 10,979 | 22 | 19 |
| East South Central | 2,537 | 17 | 6 | *1,582 | *11 | *5 | 3,833 | 26 | 7 |
| West South Central | 3,203 | 11 | 7 | 2,038 | 7 | 7 | 6,941 | 23 | 12 |
| Mountain | 2,514 | 14 | 6 | 2,808 | 15 | 9 | 3,135 | 17 | 5 |
| Pacific | 5,966 | 14 | 14 | 5,580 | 13 | 18 | 7,451 | 18 | 13 |
| Age | | | | | | | | | |
| 16 to 17 years | *694 | *8 | *2 | ... | ... | ... | *927 | *11 | *2 |
| 18 to 24 years | 3,534 | 12 | 8 | 2,335 | 8 | 8 | 996 | 4 | 2 |
| 25 to 34 years | 2,892 | 7 | 7 | 4,030 | 9 | 13 | 6,776 | 15 | 12 |
| 35 to 44 years | 5,435 | 13 | 12 | 3,618 | 9 | 12 | 6,544 | 16 | 11 |
| 45 to 54 years | 8,758 | 20 | 20 | 5,917 | 14 | 19 | 12,821 | 30 | 22 |
| 55 to 64 years | 10,307 | 25 | 24 | 8,401 | 20 | 28 | 13,849 | 33 | 24 |
| 65 years and older | 12,208 | 25 | 28 | 5,875 | 12 | 19 | 15,280 | 32 | 27 |
| 65 to 74 years | 8,250 | 29 | 19 | 4,371 | 15 | 14 | 9,707 | 34 | 17 |
| 75 and older | 3,958 | 20 | 9 | 1,505 | 8 | 5 | 5,573 | 29 | 10 |
| Sex | | | | | | | | | |
| Male, total | 23,701 | 19 | 54 | 17,314 | 14 | 57 | 30,387 | 25 | 53 |
| 16 to 17 years | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | *2,885 | *20 | *7 | *1,865 | *13 | *6 | *518 | *4 | *1 |
| 25 to 34 years | 1,318 | 6 | 3 | 2,063 | 10 | 7 | 3,473 | 16 | 6 |
| 35 to 44 years | 3,261 | 17 | 7 | 1,596 | 8 | 5 | 3,052 | 16 | 5 |
| 45 to 54 years | 4,246 | 20 | 10 | 3,409 | 16 | 11 | 6,545 | 32 | 11 |
| 55 to 64 years | 5,026 | 25 | 11 | 4,893 | 24 | 16 | 8,380 | 42 | 15 |
| 65 years and older | 6,632 | 31 | 15 | 3,323 | 16 | 11 | 8,183 | 39 | 14 |
| 65 to 74 years | 4,474 | 34 | 10 | 2,466 | 19 | 8 | 5,330 | 40 | 9 |
| 75 and older | 2,157 | 27 | 5 | 857 | 11 | 3 | 2,853 | 36 | 5 |
| Female, total | 20,128 | 15 | 46 | 13,159 | 10 | 43 | 26,807 | 20 | 47 |
| 16 to 17 years | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | *649 | *5 | *1 | *470 | *3 | *2 | *478 | *3 | *1 |
| 25 to 34 years | 1,574 | 7 | 4 | 1,967 | 9 | 6 | 3,303 | 15 | 6 |
| 35 to 44 years | 2,174 | 10 | 5 | 2,022 | 10 | 7 | 3,492 | 17 | 6 |
| 45 to 54 years | 4,512 | 20 | 10 | 2,508 | 11 | 8 | 6,276 | 28 | 11 |
| 55 to 64 years | 5,281 | 24 | 12 | 3,508 | 16 | 12 | 5,470 | 25 | 10 |
| 65 years and older | 5,576 | 21 | 13 | 2,552 | 9 | 8 | 7,097 | 26 | 12 |
| 65 to 74 years | 3,775 | 24 | 9 | 1,904 | 12 | 6 | 4,377 | 28 | 8 |
| 75 and older | 1,801 | 16 | 4 | 648 | 6 | 2 | 2,720 | 24 | 5 |
| Ethnicity | | | | | | | | | |
| Hispanic | 3,939 | 9 | 9 | 1,316 | 3 | 4 | 3,638 | 9 | 6 |
| Non-Hispanic | 39,889 | 19 | 91 | 29,157 | 14 | 96 | 53,556 | 25 | 94 |
| Race | | | | | | | | | |
| White | 37,641 | 19 | 86 | 27,480 | 14 | 90 | 49,014 | 25 | 86 |
| African American | 3,267 | 10 | 7 | *1,449 | *4 | *5 | 5,958 | 18 | 10 |
| Asian | *272 | *2 | *1 | *271 | *2 | *1 | *223 | *1 | *Z |
| All others | 2,649 | 44 | 6 | *1,273 | *21 | *4 | 1,999 | 33 | 3 |
| Annual Household Income | | | | | | | | | |
| Less than \$20,000 | 4,698 | 21 | 11 | 2,627 | 12 | 9 | 3,894 | 17 | 7 |
| \$20,000 to \$24,999 | 1,588 | 18 | 4 | *566 | *6 | *2 | 1,496 | 17 | 3 |
| \$25,000 to \$29,999 | 917 | 10 | 2 | *702 | *8 | *2 | 1,337 | 15 | 2 |
| \$30,000 to \$34,999 | 1,592 | 17 | 4 | *602 | *6 | *2 | 2,304 | 24 | 4 |
| \$35,000 to \$39,999 | 1,353 | 15 | 3 | *484 | *5 | *2 | 1,315 | 15 | 2 |
| \$40,000 to \$49,999 | 3,188 | 20 | 7 | 1,550 | 10 | 5 | 5,029 | 31 | 9 |
| \$50,000 to \$74,999 | 4,914 | 13 | 11 | 5,733 | 16 | 19 | 5,731 | 16 | 10 |
| \$75,000 to \$99,999 | 4,137 | 15 | 9 | 4,392 | 16 | 14 | 9,458 | 35 | 17 |
| \$100,000 to \$149,999 | 7,273 | 22 | 17 | 4,377 | 13 | 14 | 8,598 | 26 | 15 |
| \$150,000 or more | 5,928 | 20 | 14 | 4,627 | 15 | 15 | 6,016 | 20 | 11 |
| Not reported | 8,242 | 15 | 19 | 4,813 | 9 | 16 | 12,016 | 22 | 21 |
| Education | | | | | | | | | |
| 11 years or less | 5,003 | 15 | 11 | 979 | 3 | 3 | 5,765 | 17 | 10 |
| 12 years | 10,615 | 15 | 24 | 8,320 | 11 | 27 | 19,671 | 27 | 34 |
| 1 to 3 years of college | 10,389 | 14 | 24 | 7,474 | 10 | 25 | 12,217 | 16 | 21 |
| 4 years of college | 10,554 | 23 | 24 | 7,612 | 17 | 25 | 11,375 | 25 | 20 |
| 5 years or more of college | 7,268 | 27 | 17 | 6,090 | 23 | 20 | 8,166 | 30 | 14 |

* Estimate based on a sample size of 10–29. ... Sample size too small (less than 10) to report data reliably. Z Less than 0.5 percent.

Note: Percent who participated columns show the percent of each row's population who participated in the activity named by the column. Percent columns show the percent of each column's participants who are described by the row heading. Demographic variables we could include but haven't are (1) relationship to head of household, (2) marital status, (3) whether or not participant has a job, and (4) whether or not participant is going to school, keeping house, or retired.

Table 42. Land Owned or Leased for the Primary Purpose of Wildlife Watching: 2016

(Population 16 years old and older. Numbers in thousands)

| Wildlife watching | Number | Average per person ¹ |
|---|-----------|---------------------------------|
| Land Ownership for Wildlife Watching | | |
| Participants owning land | 1,229 | X |
| Acres owned | 96,917 | 79 |
| Expenditures for owned land | 4,165,314 | 3,390 |
| Land Leasing for Wildlife Watching | | |
| Participants leasing land | ... | X |
| Acres leased | ... | ... |
| Expenditures for leased land | ... | ... |

... Sample size too small (less than 10) to report data reliably. X Not Applicable.

¹ Average expenditures are annual estimates.

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

Table 43. Participation of Wildlife-Watching Participants in Fishing and Hunting: 2016

(Population 16 years old and older. Numbers in thousands)

| Type of fishing and hunting | Total | | Away from home | | Around the home | |
|---------------------------------|---------------|------------|----------------|------------|-----------------|------------|
| | Number | Percent | Number | Percent | Number | Percent |
| Total participants | 86,042 | 100 | 23,720 | 100 | 81,128 | 100 |
| Nonsportspersons | 64,141 | 75 | 14,902 | 63 | 61,229 | 75 |
| Sportspersons | 21,901 | 25 | 8,818 | 37 | 19,899 | 25 |
| Anglers | 20,173 | 23 | 8,247 | 35 | 18,314 | 23 |
| Hunters | 6,281 | 7 | 2,670 | 11 | 5,527 | 7 |

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

Table 44. Participation of Sportspersons in Wildlife-Watching Activities: 2016

(Population 16 years old and older. Numbers in thousands)

| Wildlife-watching activity | Sportspersons | | Anglers | | Hunters | |
|--|---------------|------------|---------------|------------|---------------|------------|
| | Number | Percent | Number | Percent | Number | Percent |
| Total sportspersons | 39,553 | 100 | 35,754 | 100 | 11,453 | 100 |
| Sportspersons who: | | | | | | |
| Did not engage in wildlife-watching activities | 17,652 | 45 | 15,581 | 44 | 5,172 | 45 |
| Engaged in wildlife-watching activities | 21,901 | 55 | 20,173 | 56 | 6,281 | 55 |
| Away from home | 8,818 | 22 | 8,247 | 23 | 2,670 | 23 |
| Around the home | 19,899 | 50 | 18,314 | 51 | 5,527 | 48 |

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

Table 45. Total Wildlife-Related Participants and Expenditures: 2016

(Population 16 years old and older. Numbers in thousands)

| Participants and Expenditures | Number |
|---|--------------------|
| U.S. Population | 254,686 |
| PARTICIPANTS (thousands) | |
| Wildlife-related participants, total | 103,694 |
| Sportspersons | 39,553 |
| Fishing | 35,754 |
| Hunting | 11,453 |
| Wildlife watching | 86,042 |
| EXPENDITURES (thousands of dollars) | |
| Wildlife-related expenditures, total | 156,902,550 |
| Trip-related, total | 42,513,893 |
| Equipment, total | 97,399,017 |
| Other, total | 16,989,641 |

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

Table 46. Total Wildlife-Watching Days Away From Home by State Residents Both Inside and Outside Their State of Residence: 2016

(Population 16 years old and older. Numbers in thousands)

| Wildlife-watching days away from home | Number | Percent |
|---|----------------|------------|
| Total days, residents and nonresidents | 368,957 | 100 |
| Days by residents in state of residence | 299,463 | 81 |
| Days by residents in other states | 85,653 | 23 |

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



Appendix A

Appendix A.

Definitions

Annual household income—Total 2016 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, and museums are not included.

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

Census Divisions

East North Central

Illinois
Indiana
Michigan
Ohio
Wisconsin

East South Central

Alabama
Kentucky
Mississippi
Tennessee

Middle Atlantic

New Jersey
New York
Pennsylvania

Mountain

Arizona
Colorado
Idaho
Montana
Nevada
New Mexico
Utah
Wyoming

New England

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Pacific

Alaska
California
Hawaii
Oregon
Washington

South Atlantic

Delaware
District of Columbia
Florida

Georgia
Maryland
North Carolina
South Carolina
Virginia
West Virginia

West North Central

Kansas
Iowa
Minnesota
Missouri
Nebraska

North Dakota
South Dakota

West South Central

Arkansas
Louisiana
Oklahoma
Texas

Day—Any part of a day spent participating in a given activity. For example, if someone hunted 2 hours one day and 3 hours another day, it would be reported as 2 days of hunting. If someone hunted 2 hours in the morning and 3 hours in the afternoon of the same day, it would be considered 1 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” were books and magazines, membership dues and contributions, land leasing or owning, hunting and fishing licenses, and plantings, all for the purpose of wildlife-related recreation. Expenditures included 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.

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

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

Archery equipment

Telescopic sights

Decoys and game calls

Ammunition

Hand loading equipment

Hunting dogs and associated costs

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 include 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 www.census.gov/population/metro/about/, 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, 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.

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 wildlife watched 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.

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

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

Screening interviews—The first Survey contact with a sample household. Screening interviews are conducted with a household representative to identify respondents who are eligible for in-depth interviews. Screening interviews gather data such as age and sex about individuals in the households. Further information on screening interviews is available on page (add when available) in the “Survey 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, and 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 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-associated recreation—Recreational fishing, hunting, and wildlife watching.

Wildlife watching—There are six types of wildlife watching: (1) closely observing, (2) photographing, (3) feeding, (4) visiting public parks or 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 observed, photographed, or fed—Examples of species that wildlife watchers observe, photograph, and/or feed are (1) Wild birds—songbirds such as cardinals, robins, warblers, jays, buntings, and sparrows; birds of prey such as hawks, owls, eagles, and falcons; waterfowl such as ducks, geese, and swans; other water birds such as shorebirds, herons, pelicans, and cranes; and other birds such as pheasants, turkeys, road runners, and woodpeckers; (2) Land mammals—large land mammals such as bears, bison, deer, moose, and elk; small land mammals such as squirrels, foxes, prairie dogs, and rabbits; (3) Fish such as salmon, sharks, and groupers; (4) Marine mammals such as whales, dolphins, and manatees; and (5) Other wildlife such as butterflies, turtles, spiders, and snakes.

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

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

Appendix B.

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

The 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation was carried out in two phases. The first (or screening) phase began in January 2016. The main purpose of this phase was to collect information about all persons 16 years and older in order to develop a sample of potential sportspeople and wildlife-watchers for the second (or detailed) phase. However, information was also collected on the number of persons 6 to 15 years who participated in wildlife-related recreation activities in 2015.

The information reported from the 2016 screen relates to activity only up to and including 2015. These data are reported by one household respondent speaking for all household members rather than each of the actual participants. These data are based on long-term recall (12-month recall or more), which has been found in Survey research (see

Investigation of Possible Recall/Reference Period Bias in National Surveys of Fishing, Hunting and Wildlife-Associated Recreation, December 1989, Westat, Inc.) to add bias to the resulting estimates. In general, longer recall periods result in over-estimating participation and expenditures for wildlife-related recreation.

Tables B-1 thru B-4 report data on first-time participation and the most recent year of hunting and fishing for participants 6 years of age and older. Tables B-5 through B-7 report data specifically on 6- to 15-year-old participants in 2015. Detailed expenditures and recreational activity data were not gathered for the 6- to 15-year-old participants. Table B-8 lists the trend data for 6- to 15-year-olds. Finally, Table B-9 gives estimates for total recreational archery and target shooting.

Because of differences in methodologies of the screening and the detailed phases of the 2016 Survey, the estimates of the two phases are not comparable. Only participants 16 years and older were eligible for the detailed phase. The screening phase covered activity for 2015 or earlier; the detailed phase has estimates for only 2016. The detailed phase was a series of interviews of the actual participants conducted at 4- to 8-month intervals. The screening phase was a single interview of one household respondent who reported household events with 1 year or more recall. The shorter recall period of the detailed phase enabled better data accuracy.

Table B-1. Anglers and Hunters Participating for the First Time in 2015 by Age Group

(Population 6 years old and older. Numbers in thousands)

| Age group | Total anglers in 2015 | Fishing for first time | | Total hunters in 2015 | Hunting for first time | |
|------------------------------|-----------------------|------------------------|---------------------------------|-----------------------|------------------------|---------------------------------|
| | | Number | Percent of anglers in age group | | Number | Percent of hunters in age group |
| Total, all ages | 36,735 | 2,328 | 6 | 11,866 | 748 | 6 |
| 6 to 8 years | 3,535 | 749 | 21 | *367 | ... | ... |
| 9 to 11 years | 2,943 | *303 | *10 | *481 | ... | ... |
| 12 to 15 years | 3,616 | *284 | *8 | 970 | *239 | *25 |
| 16 to 17 years | 1,183 | ... | ... | *260 | ... | ... |
| 18 to 24 years | 3,212 | ... | ... | 1,442 | ... | ... |
| 25 to 34 years | 4,634 | *305 | *7 | 1,313 | ... | ... |
| 35 to 44 years | 5,016 | *228 | *5 | 1,741 | ... | ... |
| 45 to 54 years | 5,132 | ... | ... | 2,221 | ... | ... |
| 55 to 64 years | 4,196 | *215 | *5 | 1,704 | ... | ... |
| 65 years or older | 3,267 | ... | ... | 1,367 | ... | ... |

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

Note: Data reported on this table are from screening interviews in which one adult household member responded for all household members. The screening interview required the respondent to recall 12 months worth of activity.

Table B-2. Anglers and Hunters Participating in 2014 but Not in 2015 by Age Group

(Population 6 years old and older. Numbers in thousands)

| Age group | Anglers | | Hunters | |
|------------------------------|--------------|------------|--------------|------------|
| | Number | Percent | Number | Percent |
| Total, all ages | 8,414 | 100 | 2,332 | 100 |
| 6 to 8 years | *647 | *8 | ... | ... |
| 9 to 11 years | *290 | *3 | ... | ... |
| 12 to 15 years | 651 | 8 | ... | ... |
| 16 to 17 years | *290 | *3 | ... | ... |
| 18 to 24 years | *505 | *6 | *271 | *12 |
| 25 to 34 years | 1,593 | 19 | *458 | *20 |
| 35 to 44 years | 1,308 | 16 | *316 | *14 |
| 45 to 54 years | 1,026 | 12 | 648 | 28 |
| 55 to 64 years | 967 | 11 | *137 | *6 |
| 65 years or older | 1,136 | 14 | *197 | *8 |

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

Note: Data reported on this table are from screening interviews in which one adult household member responded for all household members. The screening interview required the respondent to recall 12 months worth of activity.

Table B-3. Most Recent Year of Hunting by Age Group

(Population 6 years old and older. Numbers in thousands)

| Age group | Total, all persons who hunted in 2015 or earlier year | | Most recent year of hunting | | | | | | | |
|------------------------------|---|------------|-----------------------------|-----------|--------------|----------|---------------|-----------|-------------|---------|
| | | | 2015 | | 2014 | | 2013 | | | |
| | | | Number | Percent | Number | Percent | Number | Percent | | |
| Total, all ages | 42,937 | 100 | 11,866 | 28 | 2,336 | 5 | 1,094 | 3 | | |
| 6 to 11 years | 1,059 | 100 | 848 | 80 | ... | ... | ... | ... | | |
| 12 to 15 years | 1,345 | 100 | 970 | 72 | ... | ... | ... | ... | | |
| 16 to 17 years | 792 | 100 | *260 | *33 | ... | ... | ... | ... | | |
| 18 to 24 years | 2,803 | 100 | 1,442 | 51 | *273 | *10 | ... | ... | | |
| 25 to 34 years | 5,364 | 100 | 1,313 | 24 | *458 | *9 | *310 | *6 | | |
| 35 to 44 years | 6,652 | 100 | 1,741 | 26 | *316 | *5 | *214 | *3 | | |
| 45 to 54 years | 7,542 | 100 | 2,221 | 29 | 648 | 9 | *215 | *3 | | |
| 55 to 64 years | 8,220 | 100 | 1,704 | 21 | *137 | *2 | ... | ... | | |
| 65 years or older | 9,160 | 100 | 1,367 | 15 | *199 | *2 | *150 | *2 | | |
| | | | Most recent year of hunting | | | | | | | |
| | | | 2012 | | 2011 | | 2010 | | Before 2010 | |
| | | | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Total, all ages | 1,629 | 4 | 700 | 2 | 1,027 | 2 | 18,242 | 42 | | |
| 6 to 11 years | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 12 to 15 years | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 16 to 17 years | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 25 to 34 years | *388 | *7 | ... | ... | ... | ... | ... | *451 | *16 | ... |
| 35 to 44 years | ... | ... | ... | ... | ... | ... | ... | 1,529 | 28 | ... |
| 45 to 54 years | *326 | *4 | ... | ... | ... | ... | ... | 2,515 | 38 | ... |
| 55 to 64 years | *219 | *3 | *130 | *2 | ... | ... | ... | 2,732 | 36 | ... |
| 65 years or older | *217 | *2 | ... | ... | ... | ... | ... | 4,517 | 55 | ... |
| | | | | | | | | 6,364 | 69 | ... |

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

Note: Data reported on this table are from screening interviews in which one adult household member responded for all household members. The screening interview required the respondent to recall 12 months worth of activity.

Table B-4. Most Recent Year of Fishing by Age Group

(Population 6 years old and older. Numbers in thousands)

| Age group | Total, all persons who fished in 2015 or earlier year | | Most recent year of fishing | | | | | |
|------------------------------|---|------------|-----------------------------|-----------|--------------|----------|---------------|-----------|
| | | | 2015 | | 2014 | | 2013 | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Total, all ages | 100,392 | 100 | 36,735 | 37 | 8,520 | 8 | 3,321 | 3 |
| 6 to 11 years | 7,883 | 100 | 6,479 | 82 | 937 | 12 | ... | ... |
| 12 to 15 years | 4,845 | 100 | 3,616 | 75 | 651 | 13 | ... | ... |
| 16 to 17 years | 2,488 | 100 | 1,183 | 48 | *290 | *12 | ... | ... |
| 18 to 24 years | 7,223 | 100 | 3,212 | 44 | *505 | *7 | *383 | *5 |
| 25 to 34 years | 14,164 | 100 | 4,634 | 33 | 1,593 | 11 | 611 | 4 |
| 35 to 44 years | 15,310 | 100 | 5,016 | 33 | 1,308 | 9 | 623 | 4 |
| 45 to 54 years | 15,375 | 100 | 5,132 | 33 | 1,026 | 7 | 524 | 3 |
| 55 to 64 years | 16,052 | 100 | 4,196 | 26 | 990 | 6 | 519 | 3 |
| 65 years or older | 17,050 | 100 | 3,267 | 19 | 1,220 | 7 | 592 | 3 |
| | Most recent year of fishing | | | | | | | |
| | 2012 | | 2011 | | 2010 | | Before 2010 | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Total, all ages | 3,365 | 3 | 1,638 | 2 | 2,081 | 2 | 24,766 | 25 |
| 6 to 11 years | *123 | *2 | ... | ... | ... | ... | *117 | *1 |
| 12 to 15 years | ... | ... | ... | ... | ... | ... | *212 | *4 |
| 16 to 17 years | ... | ... | ... | ... | ... | ... | *218 | *9 |
| 18 to 24 years | *240 | *3 | ... | ... | *303 | *4 | 1,027 | 14 |
| 25 to 34 years | *443 | *3 | *274 | *2 | *378 | *3 | 2,911 | 21 |
| 35 to 44 years | 450 | 3 | *204 | *1 | *318 | *2 | 3,255 | 21 |
| 45 to 54 years | 617 | 4 | *253 | *2 | *159 | *1 | 3,697 | 24 |
| 55 to 64 years | 371 | 2 | *243 | *2 | *361 | *2 | 5,825 | 36 |
| 65 years or older | 917 | 5 | *569 | *3 | 397 | 2 | 7,503 | 44 |

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

Note: Data reported on this table are from screening interviews in which one adult household member responded for all household members. The screening interview required the respondent to recall 12 months worth of activity.

Table B-5. Anglers and Hunters 6 to 15 Years Old: 2015

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

| Sportspersons | Total, 6 to 15 years old | | 12 to 15 years old | | 9 to 11 years old | | 6 to 8 years old | |
|--|--------------------------|------------|--------------------|------------|-------------------|------------|------------------|------------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Total sportspersons, fished or hunted | 10,306 | 100 | 3,654 | 100 | 3,048 | 100 | 3,604 | 100 |
| Total anglers | 10,095 | 98 | 3,616 | 99 | 2,943 | 97 | 3,535 | 98 |
| Fished only | 8,488 | 82 | 2,684 | 73 | 2,567 | 84 | 3,238 | 90 |
| Fished and hunted | 1,607 | 16 | 932 | 26 | *377 | *12 | *298 | *8 |
| Total hunters | 1,818 | 18 | 970 | 27 | *481 | *16 | *367 | *10 |
| Hunted only | ... | ... | ... | ... | ... | ... | ... | ... |
| Hunted and fished | 1,607 | 16 | 932 | 26 | *377 | *12 | *298 | *8 |

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

Note: Detail does not add to total because of multiple responses. 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 fished or hunted only in other countries.

Table B-6. Selected Characteristics of Anglers and Hunters 6 to 15 Years Old: 2015

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

| Characteristic | U.S. population | | Sportspersons, fished or hunted | | | Fished only | | |
|---|-----------------|------------|---------------------------------|--------------------------|------------|--------------|--------------------------|------------|
| | Number | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 40,542 | 100 | 10,306 | 25 | 100 | 8,488 | 21 | 100 |
| Population Density of Residence | | | | | | | | |
| Urban | 33,899 | 84 | 7,440 | 22 | 72 | 6,664 | 20 | 79 |
| Rural | 6,643 | 16 | 2,866 | 43 | 28 | 1,824 | 27 | 21 |
| Population Size of Residence | | | | | | | | |
| Metropolitan Statistical Area (MSA) | 38,063 | 94 | 9,215 | 24 | 89 | 7,892 | 21 | 93 |
| 1,000,000 or more | 22,026 | 54 | 4,922 | 22 | 48 | 4,407 | 20 | 52 |
| 250,000 to 999,999 | 8,502 | 21 | 1,841 | 22 | 18 | 1,533 | 18 | 18 |
| 50,000 to 249,999 | 7,535 | 19 | 2,452 | 33 | 24 | 1,952 | 26 | 23 |
| Outside MSA | 2,479 | 6 | 1,090 | 44 | 11 | 596 | 24 | 7 |
| Census Geographic Division | | | | | | | | |
| New England | 1,657 | 4 | 373 | 22 | 4 | 355 | 21 | 4 |
| Middle Atlantic | 4,868 | 12 | 706 | 15 | 7 | *586 | *12 | *7 |
| East North Central | 5,970 | 15 | 1,139 | 19 | 11 | *1,051 | *18 | *12 |
| West North Central | 2,779 | 7 | 1,145 | 41 | 11 | 913 | 33 | 11 |
| South Atlantic | 7,828 | 19 | 2,280 | 29 | 22 | 1,873 | 24 | 22 |
| East South Central | 2,291 | 6 | *996 | *43 | *10 | *616 | *27 | *7 |
| West South Central | 5,427 | 13 | 1,531 | 28 | 15 | 1,263 | 23 | 15 |
| Mountain | 3,270 | 8 | 905 | 28 | 9 | 758 | 23 | 9 |
| Pacific | 6,454 | 16 | 1,230 | 19 | 12 | 1,073 | 17 | 13 |
| Age | | | | | | | | |
| 6 to 8 years | 12,296 | 30 | 3,604 | 29 | 35 | 3,238 | 26 | 38 |
| 9 to 11 years | 12,579 | 31 | 3,048 | 24 | 30 | 2,567 | 20 | 30 |
| 12 to 15 years | 15,667 | 39 | 3,654 | 23 | 35 | 2,684 | 17 | 32 |
| Sex | | | | | | | | |
| Male, total | 20,433 | 50 | 6,496 | 32 | 63 | 5,097 | 25 | 60 |
| 6 to 8 years | 6,266 | 15 | 2,418 | 39 | 23 | 2,159 | 34 | 25 |
| 9 to 11 years | 6,312 | 16 | 1,844 | 29 | 18 | 1,465 | 23 | 17 |
| 12 to 15 years | 7,856 | 19 | 2,234 | 28 | 22 | 1,472 | 19 | 17 |
| Female, total | 20,109 | 50 | 3,810 | 19 | 37 | 3,391 | 17 | 40 |
| 6 to 8 years | 6,030 | 15 | 1,186 | 20 | 12 | 1,078 | 18 | 13 |
| 9 to 11 years | 6,268 | 15 | 1,204 | 19 | 12 | 1,101 | 18 | 13 |
| 12 to 15 years | 7,812 | 19 | 1,419 | 18 | 14 | 1,211 | 16 | 14 |
| Ethnicity | | | | | | | | |
| Hispanic | 9,852 | 24 | 1,191 | 12 | 12 | 866 | 9 | 10 |
| Non-Hispanic | 30,691 | 76 | 9,114 | 30 | 88 | 7,622 | 25 | 90 |
| Race | | | | | | | | |
| White | 29,297 | 72 | 9,176 | 31 | 89 | 7,411 | 25 | 87 |
| African American | 7,834 | 19 | 534 | 7 | 5 | 534 | 7 | 6 |
| Asian | 2,290 | 6 | *169 | *7 | *2 | *169 | *7 | *2 |
| All others | 1,121 | 3 | *427 | *38 | *4 | *375 | *33 | *4 |
| Annual Household Income | | | | | | | | |
| Less than \$20,000 | 4,917 | 12 | *316 | *6 | *3 | *239 | *5 | *3 |
| \$20,000 to \$24,999 | 1,692 | 4 | *408 | *24 | *4 | *352 | *21 | *4 |
| \$25,000 to \$29,999 | 1,582 | 4 | *340 | *21 | *3 | *202 | *13 | *2 |
| \$30,000 to \$34,999 | 1,411 | 3 | *236 | *17 | *2 | *226 | *16 | *3 |
| \$35,000 to \$39,999 | 2,010 | 5 | *349 | *17 | *3 | *152 | *8 | *2 |
| \$40,000 to \$49,999 | 3,403 | 8 | 957 | 28 | 9 | *566 | *17 | *7 |
| \$50,000 to \$74,999 | 5,260 | 13 | 1,352 | 26 | 13 | 1,058 | 20 | 12 |
| \$75,000 to \$99,999 | 4,469 | 11 | 1,685 | 38 | 16 | 1,365 | 31 | 16 |
| \$100,000 to \$149,999 | 5,444 | 13 | 1,920 | 35 | 19 | 1,784 | 33 | 21 |
| \$150,000 or more | 4,143 | 10 | 1,684 | 41 | 16 | 1,577 | 38 | 19 |
| Not reported | 6,211 | 15 | 1,061 | 17 | 10 | 967 | 16 | 11 |

See footnotes at end of table.

Table B-6. Selected Characteristics of Anglers and Hunters 6 to 15 Years Old: 2015—Continued

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

| Characteristic | Hunted only | | | Fished and hunted | | |
|---|-------------|--------------------------|---------|-------------------|--------------------------|------------|
| | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | ... | ... | ... | 1,607 | 4 | 100 |
| Population Density of Residence | | | | | | |
| Urban | ... | ... | ... | 699 | 2 | 43 |
| Rural | ... | ... | ... | 908 | 14 | 57 |
| Population Size of Residence | | | | | | |
| Metropolitan Statistical Area (MSA) | ... | ... | ... | 1,114 | 3 | 69 |
| 1,000,000 or more | ... | ... | ... | *446 | *2 | *28 |
| 250,000 to 999,999 | ... | ... | ... | *241 | *3 | *15 |
| 50,000 to 249,999 | ... | ... | ... | 427 | 6 | 27 |
| Outside MSA | ... | ... | ... | *492 | *20 | *31 |
| Census Geographic Division | | | | | | |
| New England | ... | ... | ... | ... | ... | ... |
| Middle Atlantic | ... | ... | ... | ... | ... | ... |
| East North Central | ... | ... | ... | ... | ... | ... |
| West North Central | ... | ... | ... | *232 | *8 | *14 |
| South Atlantic | ... | ... | ... | 332 | 4 | 21 |
| East South Central | ... | ... | ... | ... | ... | ... |
| West South Central | ... | ... | ... | *268 | *5 | *17 |
| Mountain | ... | ... | ... | ... | ... | ... |
| Pacific | ... | ... | ... | ... | ... | ... |
| Age | | | | | | |
| 6 to 8 years | ... | ... | ... | *298 | *2 | *19 |
| 9 to 11 years | ... | ... | ... | *377 | *3 | *23 |
| 12 to 15 years | ... | ... | ... | 932 | 6 | 58 |
| Sex | | | | | | |
| Male, total | ... | ... | ... | 1,283 | 6 | 80 |
| 6 to 8 years | ... | ... | ... | *190 | *3 | *12 |
| 9 to 11 years | ... | ... | ... | *341 | *5 | *21 |
| 12 to 15 years | ... | ... | ... | 752 | 10 | 47 |
| Female, total | ... | ... | ... | *324 | *2 | *20 |
| 6 to 8 years | ... | ... | ... | ... | ... | ... |
| 9 to 11 years | ... | ... | ... | ... | ... | ... |
| 12 to 15 years | ... | ... | ... | *180 | *2 | *11 |
| Ethnicity | | | | | | |
| Hispanic | ... | ... | ... | ... | ... | ... |
| Non-Hispanic | ... | ... | ... | 1,406 | 5 | 87 |
| Race | | | | | | |
| White | ... | ... | ... | 1,554 | 5 | 97 |
| African American | ... | ... | ... | ... | ... | ... |
| Asian | ... | ... | ... | ... | ... | ... |
| All others | ... | ... | ... | ... | ... | ... |
| Annual Household Income | | | | | | |
| Less than \$20,000 | ... | ... | ... | ... | ... | ... |
| \$20,000 to \$24,999 | ... | ... | ... | ... | ... | ... |
| \$25,000 to \$29,999 | ... | ... | ... | ... | ... | ... |
| \$30,000 to \$34,999 | ... | ... | ... | ... | ... | ... |
| \$35,000 to \$39,999 | ... | ... | ... | ... | ... | ... |
| \$40,000 to \$49,999 | ... | ... | ... | *312 | *9 | *19 |
| \$50,000 to \$74,999 | ... | ... | ... | *286 | *5 | *18 |
| \$75,000 to \$99,999 | ... | ... | ... | *251 | *6 | *16 |
| \$100,000 to \$149,999 | ... | ... | ... | ... | ... | ... |
| \$150,000 or more | ... | ... | ... | ... | ... | ... |
| Not reported | ... | ... | ... | ... | ... | ... |

* Estimate based on a sample size of 10–29. ... Sample size too small (less than 10) to report 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 fished only, etc.). Percent columns show the percent of each column's participants who are described by the row heading (the percent of those who fished only who lived in urban areas, etc.). Data reported on this table are from screening interviews in which one adult household member responded for all household members. The screening interview required the respondent to recall 12 months worth of activity.

Table B-7. Selected Characteristics of Wildlife-Watching Participants 6 to 15 Years Old: 2015

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

| Characteristic | U.S. population | | Total wildlife-watching participants | | |
|---|-----------------|------------|--------------------------------------|--------------------------|------------|
| | Number | Percent | Number | Percent who participated | Percent |
| Total persons | 40,542 | 100 | 6,284 | 15 | 100 |
| Population Density of Residence | | | | | |
| Urban | 33,899 | 84 | 4,973 | 15 | 79 |
| Rural | 6,643 | 16 | 1,310 | 20 | 21 |
| Population Size of Residence | | | | | |
| Metropolitan Statistical Area (MSA) | 38,063 | 94 | 5,654 | 15 | 90 |
| 1,000,000 or more | 22,026 | 54 | 3,104 | 14 | 49 |
| 250,000 to 999,999 | 8,502 | 21 | 1,461 | 17 | 23 |
| 50,000 to 249,999 | 7,535 | 19 | 1,089 | 14 | 17 |
| Outside MSA | 2,479 | 6 | 629 | 25 | 10 |
| Census Geographic Division | | | | | |
| New England | 1,657 | 4 | 308 | 19 | 5 |
| Middle Atlantic | 4,868 | 12 | *294 | *6 | *5 |
| East North Central | 5,970 | 15 | *654 | *11 | *10 |
| West North Central | 2,779 | 7 | 746 | 27 | 12 |
| South Atlantic | 7,828 | 19 | 1,651 | 21 | 26 |
| East South Central | 2,291 | 6 | ... | ... | ... |
| West South Central | 5,427 | 13 | *820 | *15 | *13 |
| Mountain | 3,270 | 8 | 698 | 21 | 11 |
| Pacific | 6,454 | 16 | 817 | 13 | 13 |
| Age | | | | | |
| 6 to 8 years | 12,296 | 30 | 2,096 | 17 | 33 |
| 9 to 11 years | 12,579 | 31 | 1,604 | 13 | 26 |
| 12 to 15 years | 15,667 | 39 | 2,584 | 16 | 41 |
| Sex | | | | | |
| Male, total | 20,433 | 50 | 3,406 | 17 | 54 |
| 6 to 8 years | 6,266 | 15 | 1,102 | 18 | 18 |
| 9 to 11 years | 6,312 | 16 | 1,024 | 16 | 16 |
| 12 to 15 years | 7,856 | 19 | 1,280 | 16 | 20 |
| Female, total | 20,109 | 50 | 2,878 | 14 | 46 |
| 6 to 8 years | 6,030 | 15 | 994 | 16 | 16 |
| 9 to 11 years | 6,268 | 15 | 580 | 9 | 9 |
| 12 to 15 years | 7,812 | 19 | 1,304 | 17 | 21 |
| Ethnicity | | | | | |
| Hispanic | 9,852 | 24 | 1,035 | 11 | 16 |
| Non-Hispanic | 30,691 | 76 | 5,249 | 17 | 84 |
| Race | | | | | |
| White | 29,297 | 72 | 5,364 | 18 | 85 |
| African American | 7,834 | 19 | *535 | *7 | *9 |
| Asian | 2,290 | 6 | *121 | *5 | *2 |
| All others | 1,121 | 3 | ... | ... | ... |
| Annual Household Income | | | | | |
| Less than \$20,000 | 4,917 | 12 | *321 | *7 | *5 |
| \$20,000 to \$24,999 | 1,692 | 4 | *452 | *27 | *7 |
| \$25,000 to \$29,999 | 1,582 | 4 | ... | ... | ... |
| \$30,000 to \$34,999 | 1,411 | 3 | *167 | *12 | *3 |
| \$35,000 to \$39,999 | 2,010 | 5 | *392 | *19 | *6 |
| \$40,000 to \$49,999 | 3,403 | 8 | *850 | *25 | *14 |
| \$50,000 to \$74,999 | 5,260 | 13 | 704 | 13 | 11 |
| \$75,000 to \$99,999 | 4,469 | 11 | 775 | 17 | 12 |
| \$100,000 to \$149,999 | 5,444 | 13 | 970 | 18 | 15 |
| \$150,000 or more | 4,143 | 10 | 804 | 19 | 13 |
| Not reported | 6,211 | 15 | 620 | 10 | 10 |

* Estimate based on a sample size of 10–29. ... Sample size too small (less than 10) to report 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 fished only, etc.). Percent columns show the percent of each column's participants who are described by the row heading (the percent of those who fished only who lived in urban areas, etc.). Data reported on this table are from screening interviews in which one adult household member responded for all household members. The screening interview required the respondent to recall 12 months worth of activity.

Note: The wildlife-watching questions in the screening questionnaire were revised in 2016 such that the 2015 wildlife-watching estimates are not comparable with previous Survey estimates.

Table B-8. Participation by 6- to 15-year-olds in 1980, 1985, 1990, 1995, 2000, 2005, 2010, and 2015

(Numbers in thousands)

| Participant | 1980 | | | 1985 | | | 1990 | | |
|--------------------------------------|------------------------|-------------------------------------|---|------------------------|-------------------------------------|---|------------------------|-------------------------------------|---|
| | Number of participants | Percent change from previous survey | Percent of 6- to 15-year-old population | Number of participants | Percent change from previous survey | Percent of 6- to 15-year-old population | Number of participants | Percent change from previous survey | Percent of 6- to 15-year-old population |
| Total sportspersons | 12,141 | NA | 34 | 12,558 | 3 | 36 | 14,011 | 12 | 39 |
| Anglers | 11,787 | NA | 33 | 12,243 | 4 | 35 | 13,790 | 13 | 39 |
| Hunters | 1,962 | NA | 6 | 1,799 | -8 | 5 | 1,730 | -4 | 5 |
| Total wildlife watchers | NA | NA | NA | 17,789 | NA | 51 | 17,136 | -4 | 48 |
| Around the home | NA | NA | NA | 16,151 | NA | 46 | 15,406 | -5 | 43 |
| Away from home | NA | NA | NA | 6,615 | NA | 19 | 7,311 | 11 | 21 |
| | 1995 | | | 2000 | | | 2005 | | |
| | Number of participants | Percent change from previous survey | Percent of 6- to 15-year-old population | Number of participants | Percent change from previous survey | Percent of 6- to 15-year-old population | Number of participants | Percent change from previous survey | Percent of 6- to 15-year-old population |
| Total sportspersons | 15,019 | 7 | 39 | 13,369 | -11 | 33 | 12,318 | -8 | 30 |
| Anglers | 14,808 | 7 | 38 | 13,145 | -11 | 32 | 12,110 | -8 | 30 |
| Hunters | 1,720 | -1 | 4 | 1,741 | 1 | 4 | 1,773 | 2 | 4 |
| Total wildlife watchers | 17,449 | 2 | 45 | 15,066 | -1 | 37 | 13,587 | -10 | 34 |
| Around the home | 15,425 | Z | 40 | 13,542 | -12 | 33 | 12,055 | -11 | 30 |
| Away from home | 8,314 | 14 | 21 | 6,091 | -27 | 15 | 5,850 | -4 | 14 |
| | 2010 | | | 2015 | | | | | |
| | Number of participants | Percent change from previous survey | Percent of 6- to 15-year-old population | Number of participants | Percent change from previous survey | Percent of 6- to 15-year-old population | | | |
| Total sportspersons | 11,673 | -5 | 29 | 10,306 | 29 | 25 | | | |
| Anglers | 11,379 | -6 | 28 | 10,095 | 29 | 25 | | | |
| Hunters | 2,026 | 14 | 5 | 1,818 | 5 | 4 | | | |
| Total wildlife watchers | 12,654 | -7 | 31 | 6,284 | NA | NA | | | |
| Around the home | 11,130 | -8 | 27 | NA | NA | NA | | | |
| Away from home | 5,287 | -11 | 13 | NA | NA | NA | | | |

NA Not Available. Z Less than 0.5 percent.

Note: The wildlife-watching questions in the screening questionnaire were revised in 2016 such that the 2015 wildlife-watching estimates are not comparable with previous Survey estimates.

Table B-9: Participants in Target Shooting and Archery by Age Group: 2015

(Population 6 years old and older. Numbers in thousands)

| Shooting activity | Recreational shooters | |
|-------------------------------------|-----------------------|------------|
| | Number | Percent |
| Total, target shooters | 32,047 | 100 |
| 6 to 15 years old | 3,841 | 12 |
| 16 years old and older | 28,206 | 88 |
| Total, archers | 12,398 | 100 |
| 6 to 15 years old | 2,642 | 21 |
| 16 years old and older | 9,756 | 79 |

Note: Data reported in this table are from screening interviews in which one adult household member responded for all household members. The screening interview required the respondent to recall 12 months worth of activity.

Appendix C



Appendix C.

Significant Methodological Changes From Previous Surveys and Regional Trends

The 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR) was designed to continue the data collection of the 1955 to 2006 Surveys. While complete comparability between any two Surveys cannot be achieved, 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 the following two sections.

The principal characteristics of the 1955 to 2016 Surveys are summarized in Table C-1. The table shows the scope and design of all 12 Surveys.

This appendix provides trend information in two sections (1991 to 2016 and 1955 to 1985). A significant change was made in 1991 in the recall period used in the detailed phase of the FHWAR Surveys. The recall period in 1991 was shortened from the 12 months used in previous Surveys to 4 months in order to improve the accuracy of the data collected. As a result of that change, the Surveys conducted since 1991 cannot be compared with those conducted earlier.

The 1955 to 1985 Surveys required respondents to recall their recreation activities for the survey year at the beginning of the following year. The 1991 to 2016 Surveys went to the respondents two or three times during the survey year to get their activity information. The change in the recall period was due to a study¹ of the effect of the respondent recall length on Survey estimates. The study found significant differences in FHWAR survey results using annual recall periods versus shorter recall periods. Longer recall periods lead to higher estimates.

¹ Investigation of Possible Recall/Reference Period Bias in National Surveys of Fishing, Hunting and Wildlife-Associated Recreation, December 1989, Westat, Inc.

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.

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.

1991 to 2016 Significant Methodological Differences

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

1. 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.
2. The 1991 Survey screening phase was conducted in January and February of 1991, when a house-

hold 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. The Census Bureau 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

Table C-1. Major Characteristics of Surveys: 1955 to 2016

| Characteristic | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1991 | 1996 | 2001 | 2006 | 2011 | 2016 |
|--|--|---|---|---|--|---|---|--|--|--|--|--|--|
| Survey design: | | | | | | | | | | | | | |
| Prescreening interview mode and population of interest | X | X | X | X | X | X | X | X | X | X | X | X | Web/paper, 6 years and older |
| Screening interview mode and population of interest | Combined with detailed phase | Personal interview, 12 years and older | Personal interview, 9 years and older | Mail questionnaire, 9 years and older | Telephone interview, 6 years and older | Telephone/personal interview, 6 years and older | Telephone/personal interview, 6 years and older | Telephone/personal interview, 6 years and older | Telephone/personal interview, 6 years and older | Telephone/personal interview, 6 years and older | Telephone/personal interview, 6 years and older | Telephone/personal interview, 6 years and older | Telephone/personal interview, 6 years and older |
| Detailed interview mode and population of interest | Personal interview, 12 years and older | Personal interview, 12 years and older. Substantial participants ¹ | Personal interview, 12 years and older. Substantial participants ¹ | Personal interview, 12 years and older. Substantial participants ² | Mail questionnaire, 9 years and older | Personal interview, 16 years and older | Personal interview, 16 years and older | Telephone/personal interview, 16 years and older | Telephone/personal interview, 16 years and older | Telephone/personal interview, 16 years and older | Telephone/personal interview, 16 years and older | Telephone/personal interview, 16 years and older | Telephone/personal interview, 16 years and older |
| Respondent's recall period | 1 year | 1 year | 1 year | 1 year | 1 year | 1 year | 1 year | 4 months | 4-8 months | 4-8 months | 4-8 months | 4-12 months | 4-12 months |
| Sample sizes: | | | | | | | | | | | | | |
| Prescreening phase (households) | X | X | X | X | X | X | X | X | X | X | X | X | 22,725 |
| Screening phase (households) | 20,000 | 18,000 | 16,000 | 24,000 | 106,294 | 116,025 | 102,694 | 102,804 | 44,000 | 52,508 | 66,688 | 30,400 | 8,030 |
| Detailed phase (individuals): | | | | | | | | | | | | | |
| Fishing and hunting | 9,328 | 10,300 | 6,400 | 8,700 | 20,211 | 30,291 | 28,011 | 23,179 | 13,222 | 25,070 | 21,938 | 11,330 | 5,640 |
| Wildlife watching ³ | X | X | X | X | X | 5,997 | 26,671 | 22,723 | 9,802 | 15,303 | 11,279 | 9,329 | 6,079 |
| Response rates: | | | | | | | | | | | | | |
| Screening phase | NA | NA | NA | NA | 95 percent | 95 percent | 93 percent | 95 percent | 71 percent | 75 percent | 90 percent | 77 percent | 83 percent |
| Detailed phase: | | | | | | | | | | | | | |
| Fishing and hunting | NA | 93 percent | NA | NA | 37 percent | 90 percent | 92 percent | 95 percent | 80 percent | 88 percent | 77 percent | 67 percent | 67 percent |
| Wildlife watching ³ | X | X | X | X | X | 95 percent | 94 percent | 95 percent | 82 percent | 90 percent | 78 percent | 66 percent | 64 percent |
| Level of reporting | National | National | National | National | State and National | State and National | State and National | State and National | State and National | State and National | State and National | State and National | National |
| Data collection agent | Private contractor | U.S. Census Bureau | U.S. Census Bureau | U.S. Census Bureau | Private contractor | U.S. Census Bureau | U.S. Census Bureau | U.S. Census Bureau | 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; wildlife watching (nonconsumptive) interviews were not conducted prior to 1980. Prescreening interview was introduced in 2016.

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 "nonconsumptive" in 1980, 1985, and 1991 Surveys.

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

1. 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.
2. 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.
3. 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.
4. 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 expendi-

ture 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.

5. 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.
6. 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.
7. 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.
8. The 1991 Survey included questions about average distance traveled to recreation sites. These questions were not included in the 1996 Survey.
9. 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.

10. 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

1. 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.
2. 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.
3. 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.
4. “Recreational vehicles” was added to the sportspersons and wildlife-watchers special equipment section. “House trailer” was added to the sportspersons special equipment section.
5. Total personal income was asked in the detailed phase of the 1996 Survey. This was changed to total household income in the 2001 Survey.

Table C-2. Anglers and Hunters by Census Division: 1991, 1996, 2001, 2006, 2011, and 2016

(U.S. population 16 years and older. Numbers in thousands)

| Area and sportsperson | 1991 | | 1996 | | 2001 | | 2006 | | 2011 | | 2016 | |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| UNITED STATES | | | | | | | | | | | | |
| Total population | 189,964 | 100 | 201,472 | 100 | 212,298 | 100 | 229,245 | 100 | 239,313 | 100 | 254,686 | 100 |
| Sportspersons | 39,979 | 21 | 39,694 | 20 | 37,805 | 18 | 33,916 | 15 | 37,397 | 16 | 39,553 | 16 |
| Anglers | 35,578 | 19 | 35,246 | 17 | 34,067 | 16 | 29,952 | 13 | 33,112 | 14 | 35,754 | 14 |
| Hunters | 14,063 | 7 | 13,975 | 7 | 13,034 | 6 | 12,510 | 5 | 13,674 | 6 | 11,453 | 4 |
| New England | | | | | | | | | | | | |
| Total population | 10,180 | 100 | 10,306 | 100 | 10,575 | 100 | 11,233 | 100 | 11,593 | 100 | 12,018 | 100 |
| Sportspersons | 1,658 | 16 | 1,673 | 16 | 1,504 | 14 | 1,353 | 12 | 1,441 | 12 | 1,485 | 12 |
| Anglers | 1,545 | 15 | 1,520 | 15 | 1,402 | 13 | 1,246 | 11 | 1,355 | 12 | 1,333 | 11 |
| Hunters | 444 | 4 | 465 | 5 | 386 | 4 | 374 | 3 | 420 | 4 | 297 | 2 |
| Middle Atlantic | | | | | | | | | | | | |
| Total population | 29,216 | 100 | 29,371 | 100 | 29,806 | 100 | 31,518 | 100 | 32,392 | 100 | 33,368 | 100 |
| Sportspersons | 4,508 | 15 | 4,192 | 14 | 3,810 | 13 | 3,214 | 10 | 3,966 | 12 | 3,793 | 11 |
| Anglers | 3,871 | 13 | 3,627 | 12 | 3,250 | 11 | 2,550 | 8 | 3,496 | 11 | 3,471 | 10 |
| Hunters | 1,746 | 6 | 1,453 | 5 | 1,633 | 5 | 1,520 | 5 | 1,558 | 5 | 884 | 3 |
| East North Central | | | | | | | | | | | | |
| Total population | 32,188 | 100 | 33,121 | 100 | 34,082 | 100 | 35,609 | 100 | 36,199 | 100 | 36,893 | 100 |
| Sportspersons | 7,202 | 22 | 6,912 | 21 | 6,400 | 19 | 5,975 | 17 | 6,766 | 19 | 7,097 | 19 |
| Anglers | 6,264 | 19 | 6,006 | 18 | 5,655 | 17 | 5,190 | 15 | 5,861 | 16 | 6,336 | 17 |
| Hunters | 2,789 | 9 | 2,712 | 8 | 2,421 | 7 | 2,376 | 7 | 2,688 | 7 | 2,737 | 7 |
| West North Central | | | | | | | | | | | | |
| Total population | 13,504 | 100 | 13,875 | 100 | 14,430 | 100 | 15,458 | 100 | 15,860 | 100 | 16,502 | 100 |
| Sportspersons | 4,143 | 31 | 3,977 | 29 | 4,239 | 29 | 3,836 | 25 | 3,980 | 25 | 3,487 | 21 |
| Anglers | 3,647 | 27 | 3,416 | 25 | 3,836 | 27 | 3,284 | 21 | 3,591 | 23 | 3,042 | 18 |
| Hunters | 1,709 | 13 | 1,917 | 14 | 1,710 | 12 | 1,779 | 12 | 1,661 | 10 | 1,364 | 8 |
| South Atlantic | | | | | | | | | | | | |
| Total population | 33,682 | 100 | 36,776 | 100 | 39,286 | 100 | 43,965 | 100 | 46,417 | 100 | 50,611 | 100 |
| Sportspersons | 6,996 | 21 | 7,282 | 20 | 6,957 | 18 | 6,633 | 15 | 6,749 | 15 | 8,181 | 16 |
| Anglers | 6,441 | 19 | 6,636 | 18 | 6,451 | 16 | 6,116 | 14 | 6,163 | 13 | 7,394 | 15 |
| Hunters | 2,083 | 6 | 2,050 | 6 | 1,875 | 5 | 1,884 | 4 | 1,870 | 4 | 1,716 | 3 |
| East South Central | | | | | | | | | | | | |
| Total population | 11,667 | 100 | 12,459 | 100 | 12,976 | 100 | 13,722 | 100 | 14,206 | 100 | 14,968 | 100 |
| Sportspersons | 2,984 | 26 | 2,907 | 23 | 2,865 | 22 | 2,689 | 20 | 3,010 | 21 | 3,386 | 23 |
| Anglers | 2,635 | 23 | 2,514 | 20 | 2,543 | 20 | 2,436 | 18 | 2,444 | 17 | 3,061 | 20 |
| Hunters | 1,279 | 11 | 1,301 | 10 | 1,164 | 9 | 1,101 | 8 | 1,531 | 11 | *1,256 | *8 |
| West South Central | | | | | | | | | | | | |
| Total population | 19,926 | 100 | 21,811 | 100 | 23,337 | 100 | 25,407 | 100 | 27,195 | 100 | 30,094 | 100 |
| Sportspersons | 5,125 | 26 | 5,093 | 23 | 4,924 | 21 | 4,499 | 18 | 4,855 | 18 | 5,694 | 19 |
| Anglers | 4,592 | 23 | 4,616 | 21 | 4,375 | 19 | 3,952 | 16 | 4,298 | 16 | 5,206 | 17 |
| Hunters | 1,843 | 9 | 1,812 | 8 | 1,988 | 9 | 1,810 | 7 | 1,909 | 7 | 1,556 | 5 |
| Mountain | | | | | | | | | | | | |
| Total population | 10,092 | 100 | 11,966 | 100 | 13,308 | 100 | 15,651 | 100 | 17,013 | 100 | 18,364 | 100 |
| Sportspersons | 2,488 | 25 | 2,761 | 23 | 2,757 | 21 | 2,372 | 15 | 2,976 | 17 | 2,941 | 16 |
| Anglers | 2,079 | 21 | 2,411 | 20 | 2,443 | 18 | 2,084 | 13 | 2,586 | 15 | 2,687 | 15 |
| Hunters | 1,069 | 11 | 1,061 | 9 | 1,020 | 8 | 868 | 6 | 1,043 | 6 | 946 | 5 |
| Pacific | | | | | | | | | | | | |
| Total population | 29,508 | 100 | 31,787 | 100 | 34,498 | 100 | 36,681 | 100 | 38,438 | 100 | 41,869 | 100 |
| Sportspersons | 4,875 | 17 | 4,897 | 15 | 4,349 | 13 | 3,345 | 9 | 3,654 | 10 | 3,489 | 8 |
| Anglers | 4,505 | 15 | 4,501 | 14 | 4,111 | 12 | 3,094 | 8 | 3,319 | 9 | 3,224 | 8 |
| Hunters | 1,101 | 4 | 1,203 | 4 | 837 | 2 | 798 | 2 | 996 | 3 | 697 | 2 |

Table C-3. Wildlife-Watching Participants by Census Division: 1991, 1996, 2001, 2006, 2011, and 2016

(U.S. population 16 years and older. Numbers in thousands)

| Area and wildlife watcher | 1991 | | 1996 | | 2001 | | 2006 | | 2011 | | 2016 | |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| UNITED STATES | | | | | | | | | | | | |
| Total population | 189,964 | 100 | 201,472 | 100 | 212,298 | 100 | 229,245 | 100 | 239,313 | 100 | 254,686 | 100 |
| Total wildlife watchers | 76,111 | 40 | 62,868 | 31 | 66,105 | 31 | 71,132 | 31 | 71,776 | 30 | 86,042 | 34 |
| Away from home | 29,999 | 16 | 23,652 | 12 | 21,823 | 10 | 22,977 | 10 | 22,496 | 9 | 23,720 | 9 |
| Around the home | 73,904 | 39 | 60,751 | 30 | 62,928 | 30 | 67,756 | 30 | 68,598 | 29 | 81,128 | 32 |
| New England | | | | | | | | | | | | |
| Total population | 10,180 | 100 | 10,306 | 100 | 10,575 | 100 | 11,233 | 100 | 11,593 | 100 | 12,018 | 100 |
| Total wildlife watchers | 4,598 | 45 | 3,710 | 36 | 3,875 | 37 | 4,489 | 40 | 3,954 | 34 | 4,430 | 37 |
| Away from home | 1,856 | 18 | 1,443 | 14 | 1,155 | 11 | 1,340 | 12 | 1,187 | 10 | 1,499 | 12 |
| Around the home | 4,544 | 45 | 3,586 | 35 | 3,765 | 36 | 4,310 | 38 | 3,858 | 33 | 4,336 | 36 |
| Middle Atlantic | | | | | | | | | | | | |
| Total population | 29,216 | 100 | 29,371 | 100 | 29,806 | 100 | 31,518 | 100 | 32,392 | 100 | 33,368 | 100 |
| Total wildlife watchers | 10,556 | 36 | 8,185 | 28 | 8,740 | 29 | 8,723 | 28 | 9,118 | 28 | 12,170 | 36 |
| Away from home | 4,166 | 14 | 2,960 | 10 | 2,849 | 10 | 2,729 | 9 | 2,561 | 8 | 3,688 | 11 |
| Around the home | 10,282 | 35 | 8,023 | 27 | 8,452 | 28 | 8,451 | 27 | 8,744 | 27 | 11,838 | 35 |
| East North Central | | | | | | | | | | | | |
| Total population | 32,188 | 100 | 33,121 | 100 | 34,082 | 100 | 35,609 | 100 | 36,199 | 100 | 36,893 | 100 |
| Total wildlife watchers | 14,511 | 45 | 11,731 | 35 | 11,631 | 34 | 12,215 | 34 | 12,840 | 35 | 13,348 | 36 |
| Away from home | 5,572 | 17 | 4,501 | 14 | 3,571 | 10 | 3,792 | 11 | 3,168 | 9 | 2,847 | 8 |
| Around the home | 14,175 | 44 | 11,297 | 34 | 11,196 | 33 | 11,845 | 33 | 12,492 | 35 | 12,808 | 35 |
| West North Central | | | | | | | | | | | | |
| Total population | 13,504 | 100 | 13,875 | 100 | 14,430 | 100 | 15,458 | 100 | 15,860 | 100 | 16,502 | 100 |
| Total wildlife watchers | 6,924 | 51 | 5,089 | 37 | 6,206 | 43 | 6,741 | 44 | 5,479 | 35 | 5,322 | 32 |
| Away from home | 2,654 | 20 | 1,927 | 14 | 2,059 | 14 | 2,163 | 14 | 1,783 | 11 | 1,590 | 10 |
| Around the home | 6,722 | 50 | 4,900 | 35 | 5,938 | 41 | 6,447 | 42 | 5,201 | 33 | 5,249 | 32 |
| South Atlantic | | | | | | | | | | | | |
| Total population | 33,682 | 100 | 36,776 | 100 | 39,286 | 100 | 43,965 | 100 | 46,417 | 100 | 50,611 | 100 |
| Total wildlife watchers | 13,047 | 39 | 11,252 | 31 | 11,395 | 29 | 12,862 | 29 | 13,315 | 29 | 17,832 | 35 |
| Away from home | 4,450 | 13 | 3,992 | 11 | 3,469 | 9 | 3,208 | 7 | 4,393 | 9 | 5,530 | 11 |
| Around the home | 12,813 | 38 | 10,964 | 30 | 10,911 | 28 | 12,432 | 28 | 12,767 | 28 | 16,502 | 33 |
| East South Central | | | | | | | | | | | | |
| Total population | 11,667 | 100 | 12,459 | 100 | 12,976 | 100 | 13,722 | 100 | 14,206 | 100 | 14,968 | 100 |
| Total wildlife watchers | 4,864 | 42 | 3,904 | 31 | 4,514 | 35 | 4,931 | 36 | 4,663 | 33 | 5,062 | 34 |
| Away from home | 1,592 | 14 | 1,118 | 9 | 1,086 | 8 | 1,758 | 13 | 1,456 | 10 | *498 | *3 |
| Around the home | 4,765 | 41 | 3,795 | 30 | 4,390 | 34 | 4,683 | 34 | 4,394 | 31 | 4,907 | 33 |
| West South Central | | | | | | | | | | | | |
| Total population | 19,926 | 100 | 21,811 | 100 | 23,337 | 100 | 25,407 | 100 | 27,195 | 100 | 30,094 | 100 |
| Total wildlife watchers | 7,035 | 35 | 5,933 | 27 | 5,747 | 25 | 6,764 | 27 | 7,164 | 26 | 8,173 | 27 |
| Away from home | 2,459 | 12 | 2,096 | 10 | 1,822 | 8 | 2,127 | 8 | 1,728 | 6 | 1,541 | 5 |
| Around the home | 6,817 | 34 | 5,773 | 26 | 5,490 | 24 | 6,319 | 25 | 7,087 | 26 | 7,763 | 26 |
| Mountain | | | | | | | | | | | | |
| Total population | 10,092 | 100 | 11,966 | 100 | 13,308 | 100 | 15,651 | 100 | 17,013 | 100 | 18,364 | 100 |
| Total wildlife watchers | 4,437 | 44 | 4,099 | 34 | 4,619 | 35 | 4,968 | 32 | 5,189 | 30 | 6,257 | 34 |
| Away from home | 2,215 | 22 | 1,967 | 16 | 2,019 | 15 | 2,004 | 13 | 2,230 | 13 | 3,119 | 17 |
| Around the home | 4,145 | 41 | 3,855 | 32 | 4,282 | 32 | 4,605 | 29 | 4,716 | 28 | 4,883 | 27 |
| Pacific | | | | | | | | | | | | |
| Total population | 29,508 | 100 | 31,787 | 100 | 34,498 | 100 | 36,681 | 100 | 38,438 | 100 | 41,869 | 100 |
| Total wildlife watchers | 10,139 | 34 | 8,966 | 28 | 9,377 | 27 | 9,439 | 26 | 10,054 | 26 | 13,448 | 32 |
| Away from home | 5,035 | 17 | 3,648 | 11 | 3,793 | 11 | 3,856 | 11 | 3,990 | 10 | 3,408 | 8 |
| Around the home | 9,641 | 33 | 8,558 | 27 | 8,504 | 25 | 8,664 | 24 | 9,337 | 24 | 12,842 | 31 |

6. 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.
7. Boating questions were added to the fishing section. The respondent was asked about the extent of boat usage for the three types of fishing.
8. The 1996 Survey included questions about the months around-the-home wildlife watchers fed birds. These questions were not repeated in the 2001 Survey.
9. 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

1. 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.
2. 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.
3. The proportion of hunting done with a rifle or shotgun, as contrasted with muzzleloader or archery equipment, was asked.
4. 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."

5. Questions concerning hunting, fishing, or wildlife watching in other countries were taken out of the Survey.
6. Questions about the reasons for not going hunting or fishing, or not going as much as expected, were deleted.
7. Disability of participants questions were taken out.
8. Determination of the types of sites for wildlife watching was discontinued.
9. The birding questions regarding the use of birding life lists and the ability to identify birds based on their sight or sounds were deleted.
10. 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

1. The series of boating questions added in 2006 was deleted.
2. 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.

3. Questions about plantings expenditures for the purpose of hunting were added.
4. "Feral pig" was recategorized from big game to other animals for all states except Hawaii.
5. "Ptarmigan" was included as its own small game category, instead of lumped in "other."
6. 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 50 states.
7. 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 50 states.
8. 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."
9. The "Steelhead" category was deleted from the saltwater fish species section, with the idea that it would be included in "other."
10. 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.
11. The 2006 wildlife watching equipment category "Film and developing" was rewritten to "Film and photo processing."

Section V. Important instrument changes in the 2016 Survey

1. Recreational archery and target shooting with firearms questions were added to the screening instrument. These questions were not asked only of hunters; they were general population questions.

2. The around-the-home wildlife watching questions in the screening instrument were changed from asking about four types of wildlife watching (observing, photographing, feeding, and maintaining natural areas or plantings for the benefit of wildlife) to asking one question (wildlife watching around the home).
3. The contingent valuation questions were deleted. These were the valuation questions for moose, elk, and deer hunting, walleye, trout, and black bass fishing, and away-from-home wildlife watching.
4. The questions in the special equipment section asking if the respondent would have bought the item if they had not gone hunting, fishing, or wildlife watching were deleted.

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.

1. Alaska and Hawaii were not included in the 1955 Survey.
2. Expenditure categories were more detailed in 1970 than in earlier Surveys.
3. The 1960 to 1970 classification of some expenditures differs from

the 1955 Survey in the following respects:

- a. “Boats and boat motors” shown under “auxiliary equipment” were included in “equipment, other” in 1955.
 - b. “Entrance and other privilege fees” asked separately were included in “trip expenditures, other” in 1955.
 - c. “Snacks and refreshments” not included with “food” expenditures in the 1960 to 1970 reports were under “trip expenditures, other” in 1955.
 - d. 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.
 - e. Compared with 1955, the 1960 to 1970 Surveys reported fewer expenditures within the “other” category because selected items were transferred to more appropriate categories.
 - f. Expenditures on alcoholic beverages were reported separately in the 1970 Survey.
4. 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 sportspeople 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

Table C-4. Comparison of Major Findings of the National Surveys: 1955 to 1985

(U.S. population 12 years and older. Numbers in thousands)

| Sportspersons | 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 |
| Expenditures¹ | 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 the estimates in this table not comparable with the estimates in Tables C-2 and C-3.

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

Section I. Most recent trends

This trends section covers the period from 1991 to 2016. The 1991, 1996, 2001, 2006, 2011, and 2016 Surveys used similar methodologies, making all published information for the six Surveys directly comparable.

Section II. Historical trends

This trends section covers the period from 1955 to 1985. The methodology of these Surveys differed (see above), but approximate correction factors were estimated.

Table C-5. Anglers and Hunters by Census Division: 1955 to 1985

(U.S. population 12 years and older. Numbers in thousands)

| Year | Population | | Sportsperson, fished or hunted | | Anglers | | Hunters | |
|---------------------------|------------|---------|-----------------------------------|---------|---------|---------|---------|---------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 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 |
| 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 |

Table C-5. Anglers and Hunters by Census Division: 1955 to 1985—Continued

(U.S. population 12 years old and older. Numbers in thousands)

| Year | Population | | Sportsperson, fished or hunted | | Anglers | | Hunters | |
|---------------------------|------------|---------|-----------------------------------|---------|---------|---------|---------|---------|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 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 |
| 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 the estimates in this table not comparable with the estimates in Tables C-2 and C-3.



Appendix D

Appendix D.

Sample Design and Statistical Accuracy

This appendix is presented in two parts. The first part is the U.S. Census Bureau Source and Accuracy Statement. This statement describes the sampling design for the 2016 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 information about errors characteristic of surveys and formulas and parameters to calculate an approximate standard error or confidence interval for each number published in this report. The second part, Tables D-1 through D-5, reports approximate standard errors and 95-percent confidence intervals for selected measures of participation and expenditures for wildlife-related recreation.

Source and Accuracy Statement for the United States of America National Report of the 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

SOURCE OF DATA

The estimates in this report are based on data collected in the 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR) conducted by the U.S. Census Bureau and sponsored by the U.S. Fish and Wildlife Service.

The eligible universe for the FHWAR is the household population.

The 2016 Survey was designed to provide national-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 three stages: an initial brief prescreening of households to identify households with likely sportspersons and wildlife-watching participants, a more in-depth personal screener, and a series of follow-up interviews of selected persons to collect detailed data about their wildlife-related recreation during 2016.

SAMPLE DESIGN

The 2016 FHWAR sample was selected from the Census Bureau's master address file (MAF).

The FHWAR is a multistage probability sample, with coverage in all 50 states and the District of Columbia. In the first stage of the sampling process, primary sampling units (PSUs) are selected for sample. The PSUs are defined to correspond to the Office of Management and Budget definitions of Core Based Statistical Area definitions and to improve efficiency in field operations. The United States was divided into 2,013 PSUs. These PSUs were grouped into 753 strata. Within each stratum, a single PSU was chosen for the sample, with its probability of selection proportional to the household population of the PSU. This PSU represents the entire stratum from which it was selected. In the case of strata consisting of only one PSU, the PSU was chosen with certainty.

Within the selected PSUs, the FHWAR sample was selected from the MAF.

FHWAR Prescreener and Screening Sample

A prescreener, self-response questionnaire for the 2016 FHWAR was used to determine whether any members in the selected households were planning to participate in fishing, hunting or wildlife-watching activities in 2016. Those indicating that a household

member was planning to participate received a more in-depth follow-up screener interview to determine which household members were participants. A subsample of households not responding to the prescreener were selected for the more in-depth follow-up screener via personal visit by a Census Bureau field representative.

The total prescreening sample in United States consisted of about 22,700 households. The prescreener data collection was conducted during January and February 2016. A total of 4,030 households were selected from the responding prescreener households to receive a computer assisted telephone interview (CATI). An additional 4,000 households were selected from prescreener households where a phone number was not reported and nonresponding prescreener households to receive the more in-depth screener interviews via a personal computer assisted interview (CAPI). About 2,800 prescreener households indicated that nobody in the household was going to participate. These households were considered complete interviews and no further follow-up was conducted. Interviewing for the in-depth screener was conducted during April and May 2016. Noncontacts and refusal cases via the screener CATI resulted in an additional attempt via personal visit in September and October 2016. Of all housing units in sample, about 9,980 were determined to be eligible for interview. Interviewers obtained interviews at 8,890 of these units for a national response rate of 89 percent.¹ The national weighted response rate was 83 percent. The interviewers asked screening questions for all household members 6 years and older. Noninterviews occurred when the occupants were not found at home after repeated calls or were unavailable for some other reason.

¹ Response rates are calculated by using AAPOR's Response Rate 2 formula.

Data for the FHWAR sportsperson sample and wildlife-watcher sample were collected in three waves. The first wave started in April 2016, the second in September 2016, and the third in January 2017. In the sportsperson sample, all persons who hunted or fished in 2016 by the time of the screening interview were interviewed in the first wave. The remaining sportspersons in sample were interviewed in the second wave. The reference period was the preceding 4 months for Waves 1 and 2.² In Wave 3, the reference period was either 4, 8, or 12 months depending on when the sample person was first interviewed.

Detailed Samples

Two independent detailed samples were chosen from the FHWAR screening sample. One consisted of sportspersons (people who hunt or fish) and the other of wildlife watchers (people who observe, photograph, or feed wildlife).

A. Sportspersons

The Census Bureau selected the detailed samples based on information reported during the in-depth screening phase. Based on information collected from the household respondent, every person 16 years and older in the FHWAR screening sample was assigned to a sportsperson stratum. The criteria for the strata included time devoted to hunting or fishing in previous years, participation in hunting or fishing in 2016 by the time of the in-depth screening interview, and intentions to participate in hunting and fishing activities during the remainder of 2016. The four sportsperson categories were:

1. *Active*—a person who had already participated in hunting or fishing in 2016 at the time of the in-depth screener interview.
2. *Likely*—a person who had not participated in 2016 at the time of the in-depth screener, but had participated in 2015 or was likely to participate in 2016.
3. *Inactive*—a person who had not participated in 2015 or 2016

² The reference period for the Wave 1 CATI sample cases selected for a Wave 2 personal visit was between 8 and 10 months.

and was somewhat unlikely to participate in 2016.

4. *Nonparticipant*—a person who had not participated in 2015 or 2016 and was very unlikely or not going to participate in 2016.

Active sportspersons were given the detailed interview twice—at the time of the in-depth screening interview (in April or May 2016) and again in January or February 2017. Likely sportspersons and inactive sportspersons were also interviewed twice—first in September or October 2016, then in January or February 2017. Almost 5,650 persons were designated for interviews in the United States. During each interview period, about 30 percent of the designated persons were not found at home or were unavailable for some other reason. Overall, about 3,950 detailed sportsperson interviews were completed at a response rate of 70 percent. The weighted response rate for the sportsperson interviews was 67 percent.

B. Wildlife Watchers

The wildlife-watching detailed sample was also selected based on information reported during the in-depth screening phase. Based on information collected from the household respondent, every person 16 years and older was assigned to a stratum. The criteria for the strata included time devoted to wildlife-watching activities in previous years, participation in wildlife-watching activities in 2016 by the time of the in-depth screening interview, and intentions to participate in wildlife-watching activities during the remainder of 2016. The five wildlife-watching categories were:

1. *Active*—a person who had already participated in 2016 at the time of the in-depth screening interview.
2. *Avid*—a person who had not yet participated in 2016, but in 2015 had taken trips to participate in wildlife-watching activities for 21 or more days or had spent \$300 or more.
3. *Average*—a person who had not yet participated in 2016, but in 2015 had taken trips to wildlife

watch for less than 21 days and had spent less than \$300 or had not participated in wildlife-watching activities but was very likely to in the remainder of 2016.

4. *Infrequent*—a person who had not participated in 2015 or 2016 but was somewhat likely or somewhat unlikely to participate in the remainder of 2016.
5. *Nonparticipant*—a person who had not participated in 2015 or 2016 and was very unlikely to participate during the remainder of 2016.

Wildlife-watching participants were given the detailed interview twice. Some received their first detailed interview at the same time as the in-depth screening interview (in April or May 2016). The rest received their first detailed interview in September or October 2016. All wildlife-watching participants received their second interview in January or February 2017. About 6,100 persons were designated for interviews in the United States. During each interview period, about 34 percent of the designated persons were not found at home or were unavailable for some other reason. Overall, about 4,000 detailed wildlife-watcher interviews were completed at a response rate of 66 percent. The weighted response rate for the wildlife-watchers was 64 percent.

ESTIMATION PROCEDURE

Several stages of adjustments were used to derive the final 2016 FHWAR 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 in-depth screening interview. Statistics for the population 16 years and older come from both the in-depth screening and detailed interviews. Estimates that come from the in-depth screening sample are presented in Appendix B.

A. Screening Sample

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

1. *Base Weight*. The base weight is the inverse of the household's prob-

ability of selection including the subsampling from the prescreener sample.

2. Household Noninterview

Adjustment. The noninterview adjustment inflates the weight assigned to interviewed households to account for households eligible for interview but for which no in-depth interview was obtained.

3. *First-Stage Adjustment.* The 753 areas designated for our samples were selected from 2,013 such areas of the United States. Some sample areas represent only themselves and are referred to as self-representing. The remaining areas represent other areas similar in selected characteristics and are thus designated non-self-representing. The first-stage factor reduces the component of variation arising from sampling the non-self-representing areas.

4. *Second-Stage Adjustment.* This adjustment brings the estimates of the total population into agreement with census-based estimates of the household population.

B. Sportsperson Sample

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

1. *Screening Weight.* This is the person's final weight from the in-depth screening sample.
2. *Sportspersons Noninterview Adjustment.* This factor adjusts the weights of the interviewed sportspersons to account for sportspersons selected for the detailed sample for whom no detail interview was obtained. A person was considered a noninterview if he or she was not interviewed in the third wave of interviewing.
3. *Sportspersons Ratio Adjustment Factor.* This is a ratio adjustment of the detailed sample to the in-depth screening sample within the sportspersons sampling strata. This adjustment brings the population

estimates of persons aged 16 and older from the detailed sample into agreement with the same estimates from the screening sample, which was a much larger sample.

C. Wildlife-Watchers Sample

Every interviewed person in the wildlife-watchers detailed sample received a weight that was the product of the following factors:

1. *Screening Weight.* This is the person's final weight from the in-depth screening sample.
2. *Wildlife-Watchers Noninterview Adjustment.* This factor adjusts the weights of the interviewed wildlife-watching participants to account for wildlife watchers selected for the detailed sample for whom no in-depth interview was obtained. A person was considered a noninterview if he or she was not interviewed in the third wave of interviewing.
3. *Wildlife-Watchers Ratio Adjustment Factor.* This is a ratio adjustment of the detailed sample to the in-depth screening sample within the wildlife-watchers sampling strata. This adjustment brings the population estimates of persons 16 years and older from the detailed sample into agreement with the same estimates from the in-depth screening sample.

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 interviewer, the respondent, the survey instrument, or the way the data are collected and processed. For example, errors could occur because:

- The interviewer records the wrong answer, 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 keyed, coded, or recoded, etc. (processing error).

The Census Bureau 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 interviewers and coders, 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 FHWAR in-depth screener interview in the United States, the household-level nonresponse rate was 11 percent. The person-level nonresponse rate for the detailed sportsperson interview in the United States was an additional 30 percent and for the wildlife watchers, it was 34 percent. Since the in-depth 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 FHWAR

have the same number of persons as the households successfully interviewed, combining these rates would result in an overestimate of the “true” person-level overall nonresponse rate for the detailed interviews.

Coverage. Overall screener undercoverage is estimated to be about 14 percent. Ratio estimation to independent population controls, as described previously, partially corrects for the bias due to survey undercoverage. However, biases exist in the estimates to the extent that missed persons in missed households or missed persons in interviewed households have different characteristics from those of interviewed persons in the same age group.

Comparability of Data. Data obtained from the 2016 FHWAR and other sources are not entirely comparable. This results from differences in interviewer training and experience and in differing 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.)

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. The Census Bureau recommends 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) probably do not reveal useful information when computed on a subpopulation smaller than 997,000 for screener data; 1,605,000 for the detailed sportsperson data; and 1,578,000 for the wildlife-watchers data.

SAMPLING ERROR

Since the FHWAR estimates come from a sample, they may differ from figures from an enumeration of the entire population using the same questionnaires, instructions, and enumera-

tors. 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. However, one can say with specified confidence that the interval includes the average estimate calculated 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.

Estimating Standard Errors. The Census Bureau uses replication methods to estimate the standard errors of FHWAR 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.

Generalized Variance Parameters. While it is possible to compute and present an estimate of the standard error based on the survey data for each estimate in a report, there are a number of reasons why this is not done. A presentation of the individual standard errors would be of limited use, since one could not possibly predict all of the combinations of results that may be of interest to data users. Additionally, data users have access to FHWAR microdata files, and it is impossible to compute in advance the standard error for every estimate one might obtain from those data sets. Moreover, variance estimates are based on sample data and have variances of their own. Therefore, some methods of stabilizing these estimates of variance, for example, by generalizing or averaging over time, may be used to improve their reliability. Experience has shown that certain groups of estimates have similar relationships between their variances and expected values. Modeling or generalizing may provide more stable variance estimates by taking advantage of these similarities. The generalized variance function is a simple model that expresses the variance as a function of the expected value of the survey estimate. The parameters of the generalized variance function are estimated using direct replicate variances. These generalized variance parameters provide a relatively easy method to obtain approximate standard errors for numerous characteristics. Table D-5 provides the generalized variance parameters for FHWAR data. Methods for using the parameters to calculate standard errors of various estimates are given in the next sections.

Standard Errors of Estimated Numbers. The approximate standard error, s_x , of an estimated number shown in this report can be obtained using the following formulas. Formula (1) is used to calculate the standard errors of levels of sportspersons and wildlife watchers.

$$s_x = \sqrt{ax^2 + bx} \quad (1)$$

Here, x is the size of the estimate and a and b are the parameters in the tables associated with the particular characteristic.

Formula (2) is used for standard errors of aggregates, i.e., trips, days, and expenditures.

$$s_x = \sqrt{ax^2 + bx + \frac{cx^2}{y}} \quad (2)$$

Here, x is again the size of the estimate; y is the base of the estimate; and a , b , and c are the parameters in the tables associated with the particular characteristic.

Illustration of the Computation of the Standard Error of an Estimated Number

Suppose there were an estimated 39,553,000 persons 16 years and older who either fished or hunted in the United States in 2016. Using formula (1) with the parameters $a = -0.000345$ and $b = 87,738$ from Table D-5, the approximate standard error of the estimated number of 39,553,000 sportspersons 16 years and older is

$$s_x = \sqrt{-0.000345 * 39,553,000^2 + 87,738 * 39,553,000} = 1,711,891$$

The 95-percent confidence interval for the estimated number of sportspersons 16 years and older is from 36,198,000 to 42,908,000, i.e., $39,553,000 \pm 1.96 \times 1,711,891$. Therefore, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 95 percent of all possible samples.

Suppose there were an estimated 11,453,000 hunters 16 years and older who engaged in 184,021,000 days of participation in 2016. Using formula (2) with the parameters $a = 0.006569$, $b = -1,131,130$, and $c = 303,313$ from Table D-5, the approximate standard error on 184,021,000 estimated days on an estimated base of 11,453,000 hunters is

$$s_x = \sqrt{0.006569 * 184,021,000^2 - 1,131,130 * 184,021,000 + \frac{303,313 * 184,021,000^2}{11,453,000}} = 30,185,000$$

The 95-percent confidence interval on the estimate of 184,021,000 days is from 124,858,000 to 243,184,000, i.e., $184,021,000 \pm 1.96 \times 30,185,000$. Again, a conclusion that the average estimate derived from all possible samples lies within a range computed in this way would be correct for roughly 95 percent of all possible samples.

Standard Errors of Estimated Percentages. The reliability of an estimated percentage, computed using sample data for both numerator and denominator, depends on the size of the percentage and its base. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. When the numerator and the denominator of the percentage are in different categories, use the parameter in the tables indicated by the numerator.

The approximate standard error, $s_{x,p}$, can be obtained by use of the formula

$$s_{x,p} = \sqrt{\frac{bp(100-p)}{x}} \quad (3)$$

Here, x is the total number of sportspersons, hunters, etc., which is the base of the percentage; p is the percentage; and b is the parameter in the tables associated with the characteristic in the numerator of the percentage.

Illustration of the Computation of the Standard Error of an Estimated Percentage

Suppose there were an estimated 11,453,000 hunters 16 years and older of whom 20.5 percent hunted migratory birds. From Table D-5, the appropriate b parameter is 82,275. Using formula (3), the approximate standard error on the estimate of 20.5 percent is

$$s_{x,p} = \sqrt{\frac{82,275 * 20.5 * (100 - 20.5)}{11,453,000}} = 3.42$$

Consequently, the 95-percent confidence interval for the estimate percentage of migratory bird hunters 16 years and older is from 13.8 percent to 27.2 percent, i.e., $20.5 \pm 1.96 \times 3.42$.

Standard Error of a Difference. The standard error of the difference between two sample estimates is approximately equal to

$$s_{x-y} = \sqrt{s_x^2 + s_y^2} \quad (4)$$

where s_x and s_y are the standard errors of the estimates x and y . The estimates can be numbers, percentages, ratios, etc. This will represent the actual standard error quite accurately for the difference between estimates of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. However, if there is a high positive (negative) correlation between the two characteristics, the formula will overestimate (underestimate) the true standard error.

Illustration of the Computation of the Standard Error of a Difference

Suppose there were an estimated 10,463,000 females in the age range of 18 to 24 years of whom 630,000 or 6.0 percent were sportspersons. Similarly, suppose there were an estimated 11,205,000 males in the same age range of whom 1,814,000 or 16.2 percent were sportspersons. The apparent difference between the percentage of female and male sportspersons is 10.2 percent. Using formula (3) and the appropriate b parameter from table D-5, the approximate standard errors of 6.0 percent and 16.2 percent are 2.17 and 3.26, respectively. Using formula (4), the approximate standard error of the estimated difference of 10.2 percent is

$$s_{x-y} = \sqrt{2.17^2 + 3.26^2} = 3.92$$

The 95-percent confidence interval on the difference between 18- to 24-year-old female and male sportspersons is from 2.5 to 17.9, i.e., $10.2 \pm 1.96 \times 3.92$. Since the interval does not contain zero, we can conclude with 95 percent confidence that the percentage of 18- to 24-year-old female sportspersons is less than the percentage of 18- to 24-year-old male sportspersons.

Standard Errors of Estimated Averages. Certain mean values for sportspersons, anglers, etc., shown in the report were calculated as the ratio of two numbers. For example, average days per angler is calculated as:

$$\frac{x}{y} = \frac{\text{total days}}{\text{total anglers}}$$

Standard errors for these averages may be approximated by the use of formula (5) below.

$$s_{x/y} = \frac{x}{y} \sqrt{\left[\frac{s_x}{x}\right]^2 + \left[\frac{s_y}{y}\right]^2 - 2r \frac{s_x s_y}{xy}} \quad (5)$$

In formula (5), r represents the correlation coefficient between the numerator and the denominator of the estimate. In the above formula, use 0.7 as an estimate of r .

Illustration of the Computation of the Standard Error of an Estimated Average

Suppose that the estimated number of the average days per angler 16 years and older for all fishing was 12.8 days. Using formulas (1) and (2) above, we compute the standard error on total days, 459,341,000, and total anglers, 35,754,000, to be 55,698,627 and 1,641,936, respectively. The approximate standard error on the estimated average of 12.8 days is

$$s_{x/y} = \frac{459,341,000}{35,754,000} \sqrt{\left[\frac{55,698,627}{459,341,000}\right]^2 + \left[\frac{1,641,936}{35,754,000}\right]^2 - 2 * 0.7 \frac{55,698,627 * 1,641,936}{459,341,000 * 35,754,000}} = 1.22$$

Therefore, the 95-percent confidence interval on the estimated average of 12.8 days is from 10.4 to 15.2, i.e., $12.8 \pm 1.96 \times 1.22$.

Table D-1. Approximate Standard Errors and 95-Percent Confidence Intervals for Selected Fishing Estimates: 2016

| Anglers, days, and expenditures | Estimate | Standard error | Lower 95 percent | Upper 95 percent |
|--|---------------------|--------------------|---------------------|---------------------|
| ANGLERS (thousands) | | | | |
| Total | 35,754 | 1,642 | 32,536 | 38,972 |
| Freshwater | 30,137 | 1,527 | 27,145 | 33,129 |
| Freshwater, except Great Lakes | 29,490 | 1,512 | 26,526 | 32,454 |
| Great Lakes | 1,824 | 399 | 1,043 | 2,605 |
| Saltwater | 8,320 | 840 | 6,673 | 9,967 |
| DAYS OF FISHING (thousands) | | | | |
| Total | 459,341 | 55,699 | 350,170 | 568,512 |
| Freshwater | 383,192 | 48,551 | 288,032 | 478,352 |
| Freshwater, except Great Lakes | 372,660 | 47,465 | 279,628 | 465,692 |
| Great Lakes | 13,440 | 4,419 | 4,779 | 22,101 |
| Saltwater | 75,392 | 13,840 | 48,265 | 102,519 |
| Average Days Per Angler | | | | |
| Total | 12.8 | 1.2 | 10.5 | 15.2 |
| Freshwater | 12.7 | 1.2 | 10.3 | 15.2 |
| Freshwater, except Great Lakes | 12.6 | 1.2 | 10.2 | 15.1 |
| Great Lakes | 7.4 | 1.7 | 4.0 | 10.8 |
| Saltwater | 9.1 | 1.2 | 6.7 | 11.4 |
| FISHING EXPENDITURES (thousands of dollars) | | | | |
| Total | \$46,115,118 | \$7,250,349 | \$31,904,435 | \$60,325,801 |
| Freshwater | \$29,896,064 | \$4,749,974 | \$20,586,116 | \$39,206,012 |
| Freshwater, except Great Lakes | \$27,518,014 | \$4,379,278 | \$18,934,630 | \$36,101,398 |
| Great Lakes | \$2,246,114 | \$676,207 | \$920,748 | \$3,571,480 |
| Saltwater | \$11,199,380 | \$2,154,666 | \$6,976,234 | \$15,422,526 |
| Average Expenditure Per Angler (dollars) | | | | |
| Total | \$1,290 | \$167 | \$963 | \$1,617 |
| Freshwater | \$992 | \$128 | \$742 | \$1,242 |
| Freshwater, except Great Lakes | \$933 | \$120 | \$698 | \$1,168 |
| Great Lakes | \$1,232 | \$265 | \$713 | \$1,751 |
| Saltwater | \$1,346 | \$190 | \$973 | \$1,719 |

Table D–2. Approximate Standard Errors and 95-Percent Confidence Intervals for Selected Hunting Estimates: 2016

| Hunters, days, and expenditures | Estimate | Standard error | Lower 95 percent | Upper 95 percent |
|--|---------------------|------------------|-------------------|-------------------|
| HUNTERS (thousands) | | | | |
| Total | 11,453 | 949 | 9,594 | 13,312 |
| Big game | 9,208 | 854 | 7,533 | 10,883 |
| Small game | 3,505 | 533 | 2,460 | 4,550 |
| Migratory birds | 2,353 | 438 | 1,495 | 3,211 |
| Other animals | 1,315 | 328 | 672 | 1,958 |
| DAYS OF HUNTING (thousands) | | | | |
| Total | 184,021 | 30,185 | 124,859 | 243,183 |
| Big game | 132,665 | 23,352 | 86,896 | 178,434 |
| Small game | 38,306 | 9,659 | 19,375 | 57,237 |
| Migratory birds | 15,621 | 3,923 | 7,932 | 23,310 |
| Other animals | 13,275 | 5,176 | 3,130 | 23,420 |
| Average Days Per Hunter | | | | |
| Total | 16.1 | 2.0 | 12.2 | 19.9 |
| Big game | 14.4 | 1.9 | 10.8 | 18.1 |
| Small game | 10.9 | 2.0 | 7.0 | 14.8 |
| Migratory birds | 6.6 | 1.2 | 4.3 | 9.0 |
| Other animals | 10.1 | 2.8 | 4.6 | 15.6 |
| HUNTING EXPENDITURES (thousands of dollars) | | | | |
| Total | \$26,190,488 | 5,906,739 | 14,613,279 | 37,767,697 |
| Big game | \$14,878,550 | 3,435,793 | 8,144,396 | 21,612,704 |
| Small game | \$1,653,408 | 442,980 | 785,168 | 2,521,648 |
| Migratory birds | \$2,253,939 | 663,959 | 952,579 | 3,555,299 |
| Other animals | \$755,073 | 276,753 | 212,637 | 1,297,509 |
| Average Expenditure Per Hunter (dollars) | | | | |
| Total | \$2,287 | \$406 | \$1,490 | \$3,083 |
| Big game | \$1,616 | \$289 | \$1,050 | \$2,182 |
| Small game | \$472 | \$92 | \$292 | \$652 |
| Migratory birds | \$958 | \$202 | \$561 | \$1,355 |
| Other animals | \$574 | \$150 | \$280 | \$869 |

Table D-3. Approximate Standard Errors and 95-Percent Confidence Intervals for Selected Fishing and Hunting Expenditure Estimates: 2016

(Thousands of dollars)

| Expenditures | Estimate | Standard error | Lower 95 percent | Upper 95 percent |
|---|---------------------|---------------------|---------------------|----------------------|
| FISHING AND HUNTING EXPENDITURES | | | | |
| Total | \$81,035,416 | \$12,629,137 | \$56,282,308 | \$105,788,524 |
| Trip-related | \$30,926,023 | \$4,834,276 | \$21,450,842 | \$40,401,204 |
| Food and lodging | \$10,962,927 | \$1,729,380 | \$7,573,343 | \$14,352,511 |
| Transportation | \$8,233,085 | \$1,300,552 | \$5,684,003 | \$10,782,167 |
| Other trip costs | \$11,730,011 | \$1,866,935 | \$8,070,818 | \$15,389,204 |
| Equipment, total | \$42,315,716 | \$6,508,669 | \$29,558,724 | \$55,072,708 |
| Fishing | \$7,445,695 | \$1,206,066 | \$5,081,806 | \$9,809,584 |
| Hunting | \$7,996,132 | \$1,441,940 | \$5,169,929 | \$10,822,335 |
| Auxiliary | \$6,082,746 | \$1,104,636 | \$3,917,660 | \$8,247,832 |
| Special | \$20,791,143 | \$4,667,568 | \$11,642,710 | \$29,939,576 |
| Other, total | \$7,628,245 | \$1,194,474 | \$5,287,077 | \$9,969,413 |
| Magazines, books, DVDs | \$383,617 | \$78,322 | \$230,105 | \$537,129 |
| Membership dues and contributions | \$574,450 | \$124,997 | \$329,457 | \$819,443 |
| Land leasing and ownership | \$5,257,433 | \$1,375,744 | \$2,560,974 | \$7,953,892 |
| Licenses, stamps, tags, and permits | \$1,412,745 | \$228,612 | \$964,665 | \$1,860,825 |
| Fishing Expenditures | | | | |
| Total | \$46,115,118 | \$7,250,349 | \$31,904,435 | \$60,325,801 |
| Trip-related | \$21,729,778 | \$3,425,620 | \$15,015,563 | \$28,443,993 |
| Food and lodging | \$7,848,993 | \$1,250,570 | \$5,397,876 | \$10,300,110 |
| Transportation | \$5,048,606 | \$806,013 | \$3,468,821 | \$6,628,391 |
| Other trip costs | \$8,832,179 | \$1,411,463 | \$6,065,712 | \$11,598,646 |
| Equipment, total | \$21,077,638 | \$3,340,072 | \$14,531,098 | \$27,624,178 |
| Fishing | \$7,430,662 | \$1,204,627 | \$5,069,594 | \$9,791,730 |
| Auxiliary | \$3,163,575 | \$682,643 | \$1,825,595 | \$4,501,555 |
| Special | \$10,483,401 | \$2,802,497 | \$4,990,508 | \$15,976,294 |
| Other, total | \$3,307,702 | \$537,685 | \$2,253,840 | \$4,361,564 |
| Magazines, books, DVDs | \$147,465 | \$34,737 | \$79,380 | \$215,550 |
| Membership dues and contributions | \$214,485 | \$62,810 | \$91,377 | \$337,593 |
| Land leasing and ownership | \$2,358,811 | \$863,974 | \$665,423 | \$4,052,199 |
| Licenses, stamps, tags, and permits | \$586,941 | \$98,127 | \$394,613 | \$779,269 |
| Hunting Expenditures | | | | |
| Total | \$26,190,488 | \$5,906,739 | \$14,613,279 | \$37,767,697 |
| Trip-related | \$9,196,245 | \$2,085,668 | \$5,108,336 | \$13,284,154 |
| Food and lodging | \$3,113,934 | \$705,383 | \$1,731,384 | \$4,496,484 |
| Transportation | \$3,184,479 | \$721,807 | \$1,769,737 | \$4,599,221 |
| Other trip costs | \$2,897,832 | \$757,540 | \$1,413,054 | \$4,382,610 |
| Equipment, total | \$12,755,917 | \$2,823,776 | \$7,221,317 | \$18,290,517 |
| Hunting | \$7,383,871 | \$1,704,057 | \$4,043,920 | \$10,723,822 |
| Auxiliary | \$2,018,696 | \$504,598 | \$1,029,684 | \$3,007,708 |
| Special | \$3,353,350 | \$1,855,829 | -\$284,074 | \$6,990,774 |
| Other, total | \$4,072,894 | \$894,057 | \$2,320,543 | \$5,825,245 |
| Magazines, books, DVDs | \$166,451 | \$52,920 | \$62,727 | \$270,175 |
| Membership dues and contributions | \$182,016 | \$53,315 | \$77,518 | \$286,514 |
| Land leasing and ownership | \$2,898,622 | \$901,530 | \$1,131,622 | \$4,665,622 |
| Licenses, stamps, tags, and permits | \$825,805 | \$178,731 | \$475,492 | \$1,176,118 |

Table D-4. Approximate Standard Errors and 95-Percent Confidence Intervals for Selected Wildlife-Watching Estimates: 2016

| Participants and expenditures | Estimate | Standard error | Lower 95 percent | Upper 95 percent |
|---|---------------------|---------------------|---------------------|---------------------|
| WILDLIFE-WATCHING PARTICIPANTS (thousands) | | | | |
| Total | 86,042 | 3,136 | 79,896 | 92,188 |
| Nonresidential | 23,720 | 1,928 | 19,942 | 27,498 |
| Observe wildlife | 19,583 | 1,767 | 16,119 | 23,047 |
| Photograph wildlife | 13,721 | 1,498 | 10,786 | 16,656 |
| Feed wildlife | 4,869 | 908 | 3,088 | 6,650 |
| Residential | 81,128 | 3,089 | 75,073 | 87,183 |
| Observe wildlife | 43,829 | 2,504 | 38,922 | 48,736 |
| Photograph wildlife | 30,473 | 2,153 | 26,254 | 34,692 |
| Feed wildlife | 59,083 | 2,799 | 53,596 | 64,570 |
| Visit public parks | 11,359 | 1,369 | 8,675 | 14,043 |
| Maintain natural areas or plantings | 11,024 | 1,350 | 8,378 | 13,670 |
| DAYS OF PARTICIPATION IN NONRESIDENTIAL ACTIVITIES (thousands) | | | | |
| Total | 386,045 | 48,861 | 290,278 | 481,812 |
| Observe wildlife | 308,769 | 42,708 | 225,061 | 392,477 |
| Photograph wildlife | 151,559 | 24,670 | 103,205 | 199,913 |
| Feed wildlife | 70,846 | 19,156 | 33,300 | 108,392 |
| Average Days of Participation in Nonresidential Activities | | | | |
| Total | 16.3 | 1.48 | 13.4 | 19.2 |
| Observe wildlife | 15.8 | 1.56 | 12.7 | 18.8 |
| Photograph wildlife | 11.0 | 1.29 | 8.5 | 13.6 |
| Feed wildlife | 14.6 | 2.81 | 9.0 | 20.1 |
| EXPENDITURES (thousands) | | | | |
| Total | \$75,867,134 | \$11,486,095 | \$53,354,388 | \$98,379,880 |
| Trip-related | \$11,587,870 | \$2,019,178 | \$7,630,280 | \$15,545,460 |
| Food and lodging | \$6,068,131 | \$1,088,656 | \$3,934,366 | \$8,201,896 |
| Transportation | \$4,228,568 | \$739,070 | \$2,779,990 | \$5,677,146 |
| Other trip costs | \$1,291,171 | \$268,236 | \$765,429 | \$1,816,913 |
| Equipment and other, total | \$64,279,264 | \$9,810,357 | \$45,050,965 | \$83,507,563 |
| Equipment, total | \$55,083,300 | \$8,375,081 | \$38,668,142 | \$71,498,458 |
| Wildlife watching equipment, total | \$12,105,745 | \$1,860,579 | \$8,459,011 | \$15,752,479 |
| Auxiliary equipment, total | \$1,043,932 | \$233,961 | \$585,368 | \$1,502,496 |
| Special equipment, total | \$41,933,623 | \$12,895,894 | \$16,657,672 | \$67,209,574 |
| Other, total | \$9,195,965 | \$1,536,597 | \$6,184,236 | \$12,207,694 |
| Magazines, books, DVDs | \$236,696 | \$45,410 | \$147,692 | \$325,700 |
| Land leasing and ownership | \$4,196,305 | \$1,922,344 | \$428,510 | \$7,964,100 |
| Membership dues and contributions | \$3,817,276 | \$774,133 | \$2,299,975 | \$5,334,577 |
| Plantings | \$945,688 | \$204,922 | \$544,040 | \$1,347,336 |

Table D-5. Parameters a, b, and c for Calculating Approximate Standard Errors for United States Screener Sample, Detailed Sportsperson Sample, and Wildlife-Watching Sample for Levels, Expenditures, and Days of Trip

| Sample | Parameters | | |
|---|------------|------------|---------|
| | a | b | c |
| Screener sample | | | |
| Sportspersons, anglers, hunters, and wildlife-watching participants— 6 years old and older | -0.000132 | 39,040 | X |
| Sportspersons, anglers, hunters, and wildlife-watching participants— 6 to 15 years old | -0.001137 | 46,852 | X |
| Detailed sportsperson sample—16 years old and older | | | |
| Sportspersons and anglers | -0.000345 | 87,738 | X |
| Hunters | -0.000324 | 82,275 | X |
| Expenditures for sportspersons and anglers | 0.021181 | -350,933 | 115,275 |
| Expenditures for hunters | 0.041478 | -5,623,134 | 105,525 |
| Days or trips for sportspersons and anglers | 0.007257 | -1,421,928 | 376,919 |
| Days or trips for hunters | 0.006569 | -1,131,130 | 303,313 |
| Wildlife-watching sample | | | |
| Levels of wildlife-watching—away-from-home participants | -0.000583 | 148,001 | X |
| Levels of wildlife-watching—wildlife-watching participants ¹ | -0.000680 | 172,804 | X |
| Expenditures for wildlife-watching | 0.019372 | -3,580,707 | 228,652 |
| Days of trips for wildlife-watching | 0.001217 | -146,287 | 360,102 |

X Not applicable.

¹ Use these parameters for total wildlife-watching participants and around-the-home participants.



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