

1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

Illinois



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U.S. Department of the Interior
Bruce Babbitt, Secretary
FISH AND WILDLIFE SERVICE
Jamie Rappaport Clark, Director



U.S. Department of Commerce
William M. Daley, Secretary
Robert L. Mallett, Deputy Secretary
Economics and Statistics Administration
Lee Price, Acting Under Secretary
for Economic Affairs
BUREAU OF THE CENSUS
James F. Holmes, Acting Director



U.S. Department of the Interior

Bruce Babbitt, Secretary



FISH AND WILDLIFE SERVICE

Jamie Rappaport Clark, Director



Division of Federal Aid

Robert E. Lange, Jr., Chief

As the Nation’s principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure their development in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The mission of the Department’s Fish and Wildlife Service is to conserve, protect, and enhance fish and 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 Federal Aid in Sport Fish Restoration and the Federal Aid of Wildlife Restoration Programs. These two grant 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. Funds from the administrative portion of these programs are used to pay for the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.



U.S. Department of Commerce

William M. Daley, Secretary
Robert L. Mallett, Deputy Secretary



Economics and Statistics Administration

Lee Price, Acting Under Secretary for Economic Affairs



BUREAU OF THE CENSUS

James F. Holmes, Acting Director
Bradford R. Huther, Deputy Director
Nancy M. Gordon, Associate Director for Demographic Programs

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Foreword

Ours is a country with a rich tradition of enjoying nature. Whether casting a fly or snapping a shutter, Americans find wildlife-associated recreation a source of lifelong enjoyment and renewal.

The results of the 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation reflect this national passion for wild things and wild places. Seventy-seven million Americans 16 years or older, or 40 percent of the adult population, enjoyed some form of wildlife-related recreation during 1996. In doing so, they pumped \$100 billion into the national economy, supporting hundreds of thousands of jobs.

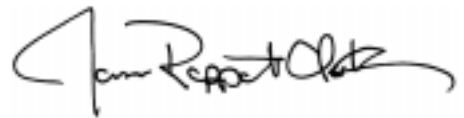
The mission of the U.S. Fish and Wildlife Service is to conserve and enhance our nation's fish and wildlife and its habitat. The Service works in partnership with state wildlife agencies, conservation organizations, sportsmen's groups, local governments, corporations, and individual citizens to perform this mission.

For conservation efforts to be effective, however, natural resource managers need detailed information on how people use fish and wildlife resources. The 1996 National Survey of Fishing, Hunting, and

Wildlife-Associated Recreation is the most comprehensive survey of its kind. It is an important tool for natural resource professionals in planning and managing these resources for the enjoyment and benefit of all Americans.

The 1996 Survey was requested by the States through the International Association of Fish and Wildlife Agencies. It is the ninth in a series of surveys on resource use by anglers, hunters, and those who enjoy observing wildlife. The Survey has been sponsored by the Service since 1955. It is financed by hunters, anglers, and boaters through excise taxes on sporting arms, ammunition, fishing equipment, and motorboat fuels as authorized under the Federal Aid in Sport Fish and Wildlife Restoration Acts.

We can all be gratified that wildlife-related recreation and the conservation ethic that flows from it remain strong in America.



Jamie Rappaport Clark, Director
Fish and Wildlife Service
U.S. Department of the Interior

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 purpose of the Survey is to gather information on the number of anglers, hunters, and wildlife-watching participants (formerly known as primary nonconsumptive wildlife-related participants) in the United States. Information also is collected on how often these recreationists participate and how much they spend on their activities.

The planning process for the 1996 Survey began in 1994 when the International Association of Fish and Wildlife Agencies (IAFWA) passed a resolution asking the Fish and Wildlife Service to conduct the ninth National Survey of wildlife-related recreation. Funding for the Survey came from the administrative portion of the Federal Aid in Sport Fish and Wildlife Restoration Programs.

Consultations with State and Federal agencies and nongovernmental organizations such as the Wildlife Management Institute, American Sportfishing Association, B.A.S.S., Inc., Wild Bird Feeding Institute, and American Fisheries Society started in early 1994 to ascertain survey content. Other sportsmen's organizations and conservation groups, industry representatives, and researchers also provided valuable advice on questionnaire development, data collection, and reporting.

Four regional technical committees were set up under the auspices of the IAFWA to ensure that State fish and wildlife agencies had an opportunity to participate in all phases of survey planning and design. The committees were made up of agency representatives.

The Survey was conducted in two phases by the U.S. Bureau of Census for the Fish and Wildlife Service. The first phase was the screen which began in April 1996. During the screening phase, the Bureau of Census interviewed a sample of 80,000 households nationwide, primarily by telephone, to determine who in the household had fished, hunted, or engaged in wildlife-watching activities in 1995, and who had engaged or planned to engage in those activities in 1996. In most cases, one adult household member provided information for all household members. It is important to note that the screen primarily covered 1995 activities while the next, more in-depth phase covered 1996 activities. For more information on the 1995 data, refer to Appendix B.

The second phase of the Survey consisted of detailed interviews conducted about every four months. The first interview wave began in April 1996, the second in September 1996, and the last in January 1997. Interviews were conducted with samples of likely anglers, hunters, and wildlife-watching participants who were identified in the initial screening phase. These interviews were conducted primarily by

telephone, with in-person interviews for those respondents who could not be reached by telephone.

Respondents in the second survey phase were limited to those 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 State level for fishing, hunting, and wildlife-watching activities. Altogether, interviews were completed for 22,578 anglers and hunters and 11,759 wildlife watchers. More detailed information on sampling procedures and response rates is found in Appendix D.

Comparability with Previous Surveys

The 1996 Survey questions and methodology were similar to those used in the 1991 Survey. Therefore, the 1996 estimates are comparable to the 1991 estimates. The 1996

Survey was the first to use computer-assisted interviews which improved the efficiency and timeliness of data collection.

The methodology of the 1996 and 1991 Surveys did differ significantly from the 1985 and 1980 Surveys, so their estimates are not directly comparable to those earlier surveys. The changes in methodology included reducing the recall period over which respondents had to remember their activities and expenditures. Previous Surveys used a 12-month recall period which resulted in greater reporting bias. Research on recall bias found that the amount of activity and expenditures reported in 12-month recall Surveys was over-estimated in comparison with the amount reported in shorter recall periods.

The trends information presented in this report takes the differences of the 1991 Survey into account in comparing its estimates with those of the 1996 Survey. See the Summary Section and Appendix C.

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 other fish- and wildlife-related recreation. This report focuses on 1996 participation and expenditures of U.S. residents 16 years of age and older.

The numbers reported can be compared with those in the 1991 Survey reports. The methodology used in 1996 was similar to that used in 1991. These results should not be directly compared with the results from Surveys earlier than 1991 because of changes in methodology. These changes in methodology were made in 1991 and 1996 to improve accuracy in the information provided.

The report also provides information on participation in wildlife-related recreation in 1995, particularly of persons 6 to 15 years of age. The 1995 information is provided in Appendix B. Additional information about the scope and coverage of the Survey can be found in the Survey Background and Method section of this report. The remainder of this section defines important terms used in the Survey.

Wildlife-Associated Recreation

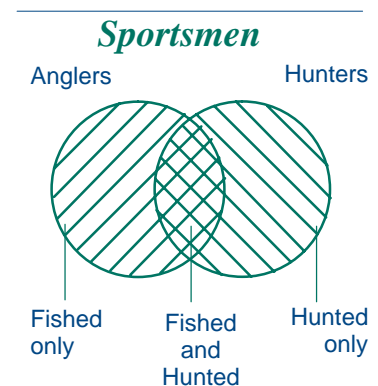
Wildlife-associated recreation includes fishing, hunting, and wildlife-watching activities. These categories are not mutually exclusive because many individuals enjoyed fish and wildlife in several ways in 1996. Wildlife-associated recreation is reported in two major categories: (1) fishing and hunting, and (2) wildlife watching (formerly referred to as nonconsumptive wildlife-related recreation). Wildlife-watching includes observing, photographing, and feeding fish and wildlife.

Fishing and Hunting

This Survey reports information about residents of the United States who fished or hunted in 1996, regardless of whether they were licensed. The fishing and hunting sections of this report are organized to report three groups: (1) sportsmen, (2) anglers, and (3) hunters.

Sportsmen

Sportsmen are persons who fished or hunted. Individuals who fished or hunted commercially in 1996 are reported as sportsmen only if they fished or hunted for recreation. The sportsmen group is composed of the three subgroups in the diagram below: (1) those who fished and



hunted, (2) those who only fished, and (3) those who only hunted. The total number of sportsmen 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 sportsmen who only fished plus those who fished and hunted. The angler group includes 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 enjoyed 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 sportsmen who only hunted plus those who hunted and fished. The hunter group includes not only licensed hunters using common hunting practices, but also those who have no license and those who engaged in hunting with a bow and arrow, muzzleloader, other primitive firearms, or a pistol or handgun. Four types of hunting are

reported: (1) big game, (2) small game, (3) migratory bird, and (4) other animals. Since many hunters enjoyed 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-Watching Activities

(formerly Nonconsumptive Wildlife-Related Recreation)

Since 1980, the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation has included information on wildlife-watching activities in addition to fishing and hunting. However, the 1991 and 1996 Surveys, unlike the 1980 and 1985 Surveys, collected data only for those activities where the primary purpose was wildlife watching (observing, photographing, or feeding wildlife). Secondary wildlife-watching activities, such as incidentally observing wildlife while pleasure driving, are not included.

Many people, including sportsmen, enjoyed wildlife-related recreation other than fishing or hunting. We refer to these nonharvesting activities, such as observing, feeding, or photographing fish and other wildlife, as wildlife-watching activities. Two types of wildlife-watching activity are reported: (1) nonresidential and (2) residential. Because some people participate in more than one type of

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

Nonresidential

This group included persons who took trips or outings of at least 1 mile 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 were not considered wildlife-watching activities.

Residential

This group included those whose activities are within 1 mile of home and involve 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 on a regular basis; (4) maintaining natural areas of at least one-quarter 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 public parks within 1 mile of home for the primary purpose of observing, feeding, or photographing wildlife.

Detail of Tables

Summary

Activities in the U.S. by Illinois Residents 16 Years Old and Older

| Fishing | |
|----------------------------------|-----------------|
| Anglers | 1,591,000 |
| Days of fishing | 26,747,000 |
| Average days per angler | 17 |
| Total expenditures | \$1,967,498,000 |
| Trip-related | \$658,021,000 |
| Equipment and other | \$1,309,477,000 |
| Average per angler | \$1,237 |
| Average trip expenditure per day | \$25 |

| Hunting | |
|----------------------------------|---------------|
| Hunters | 443,000 |
| Days of hunting | 7,176,000 |
| Average days per hunter | 16 |
| Total expenditures | \$527,072,000 |
| Trip-related | \$142,935,000 |
| Equipment and other | \$384,137,000 |
| Average per hunter | \$1,190 |
| Average trip expenditure per day | \$20 |

| Wildlife Watching | |
|--------------------------------------|-----------------|
| Total wildlife-watching participants | 3,137,000 |
| Nonresidential | 1,370,000 |
| Residential | 2,976,000 |
| Total expenditures | \$1,314,508,000 |
| Trip-related | \$683,319,000 |
| Equipment and other | \$631,189,000 |
| Average per participant | \$419 |

Activities by Participants 16 Years Old and Older in Illinois

| Fishing | |
|----------------------------------|-----------------|
| Anglers | 1,351,000 |
| Days of fishing | 20,459,000 |
| Average days per angler | 15 |
| Total expenditures | \$1,568,473,000 |
| Trip-related | \$291,847,000 |
| Equipment and other | \$1,276,626,000 |
| Average per angler | \$998 |
| Average trip expenditure per day | \$14 |

| Hunting | |
|----------------------------------|---------------|
| Hunters | 432,000 |
| Days of hunting | 6,488,000 |
| Average days per hunter | 15 |
| Total expenditures | \$469,850,000 |
| Trip-related | \$110,723,000 |
| Equipment and other | \$359,127,000 |
| Average per hunter | \$1,048 |
| Average trip expenditure per day | \$17 |

| Wildlife Watching | |
|--------------------------------------|---------------|
| Total wildlife-watching participants | 3,229,000 |
| Nonresidential | 1,246,000 |
| Residential | 2,976,000 |
| Total expenditures | \$710,456,000 |
| Trip-related | \$125,529,000 |
| Equipment and other | \$584,928,000 |
| Average per participant | \$205 |

Wildlife-Associated Recreation

Participation by Illinois Residents

The 1996 Survey revealed that 3.7 million Illinois residents 16 years old and older engaged in fishing, hunting, or wildlife-watching activities. Of the total number of participants, 1.6 million fished, 443 thousand hunted, and 3.1 million participated in wildlife-watching activities where the enjoyment of wildlife was the primary purpose of the activity. Wildlife-watching activities included observing, feeding, and photographing wildlife.

The sum of anglers, hunters, and wildlife-watching participants exceeds the total number of

participants in wildlife-related recreation because many individuals engaged in more than one wildlife-related activity.

Expenditures in Illinois

In 1996, state residents and nonresidents spent \$3.4 billion on wildlife-associated recreation in Illinois. Of that total, trip-related expenditures were \$528 million and equipment purchases totaled \$2.6 billion. The remaining \$241 million was spent on licenses, contributions, land ownership and leasing, and other items and services.

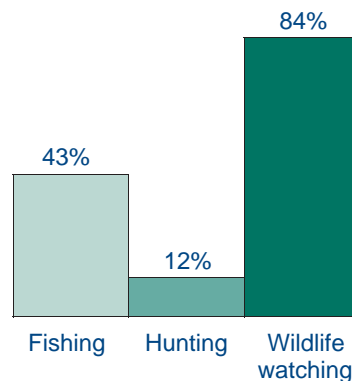
Participants in Wildlife-Associated Recreation

(State residents 16 years old and older)

| | |
|---|--------------------|
| Total | 3.7 million |
| Sportsmen | |
| Total | 1.8 million |
| Anglers | 1.6 million |
| Hunters | 443 thousand |
| Wildlife Watching | |
| Total | 3.1 million |
| Residential | 3.0 million |
| Nonresidential | 1.4 million |
| Source: Table 3, 28, 39, and other survey data | |
| Detail does not add to total because of multiple responses. | |

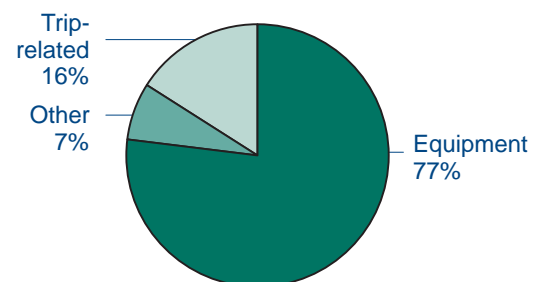
Percent of State Residents Participating, by Activity

Total = 100%



In-State Wildlife-Associated Recreation Expenditures

Total = \$3.4 billion



Sportsmen

In 1996, nearly 1.6 million state resident and nonresident sportsmen 16 years old and older fished or hunted in Illinois. This group included 1.4 million anglers (87 percent of all sportsmen) and 432 thousand hunters (28 percent of all sportsmen). Of the 1.6 million sportsmen who fished or hunted in the state, 1.1 million (72%) fished

but did not hunt in Illinois. Another 200 thousand (13%) hunted but did not fish there. The remaining 231 thousand (15%) fished and hunted in Illinois in 1996.

Sportsmen Participation in State

(State residents and nonresidents 16 years old and older)

| | |
|--|---------------------|
| Sportsmen (fished or hunted) | 1.6 million |
| Anglers | 1.4 million |
| Fished only | 1.1 million |
| Fished and hunted | 231 thousand |
| Hunters | 432 thousand |
| Hunted only | 200 thousand |
| Hunted and fished | 231 thousand |
| <i>Source: Table 1</i> | |
| <i>Detail does not add to total because of multiple responses.</i> | |

Anglers

Participants and Days of Fishing

In 1996, nearly 1.4 million state residents and nonresidents 16 years old and older fished in Illinois. Of this total, 1.2 million anglers (92%) were state residents and 111 thousand anglers (8%) were nonresidents. Anglers fished a total of 20.5 million days in Illinois—an average of 15 days per angler. State residents fished 20.0 million days, 98 percent of all fishing days within Illinois, while nonresidents fished 463 thousand days—2 percent of all fishing days in the state.

Nearly 1.6 million Illinoisans 16 years old and older fished in the

United States in 1996. These anglers fished a total of 26.7 million days. Approximately 1.2 million resident anglers (78%) fished in Illinois. They spent 20.0 million days, 75 percent of their total fishing days, fishing in their resident state.

Some state residents fished only in other states or fished in other states as well as Illinois. In 1996, 833 thousand anglers fished in other states, 52 percent of the resident angler total. They fished 6.8 million days as nonresidents, representing 25 percent of all days fished by Illinois residents. For further details about fishing in Illinois, see Table 3.

Anglers in State

(State residents and nonresidents 16 years old and older)

| | |
|------------------------|---------------------|
| Anglers | 1.4 million |
| Resident | 1.2 million |
| Nonresident | 111 thousand |
| Days of Fishing | 20.5 million |
| Resident | 20.0 million |
| Nonresident | 463 thousand |
| Source: Table 3 | |

In-State/Out-of-State

(State residents 16 years old and older)

| | |
|--|---------------------|
| Illinois anglers | 1.6 million |
| In Illinois | 1.2 million |
| In other states | 833 thousand |
| Days of fishing | 26.7 million |
| In Illinois | 20.0 million |
| In other states | 6.8 million |
| Source: Table 3 | |
| <i>Detail does not add to total because of multiple responses.</i> | |

Fishing Expenditures in Illinois

Anglers 16 years old and older spent \$1.6 billion on fishing expenses in Illinois in 1996. Trip-related expenditures including food and lodging, transportation, and other expenses such as equipment rental or boat fuel totaled \$292 million, 19 percent of all their fishing expenditures. They spent \$120 million on food and lodging and \$62 million on transportation. Other trip-related expenses such as equipment

rental, bait, and fuel totaled \$110 million. Each angler spent an average of \$216 on trip-related costs during 1996.

Anglers spent \$1.2 billion on equipment in Illinois in 1996, 79 percent of all fishing expenditures. Fishing equipment (rods, reels, line, etc.) totaled \$250 million, 20 percent of the equipment total. Auxiliary equipment expenditures (tents, special fishing clothes, etc.) and special equipment expenditures (boats, trail bikes, etc.) amounted to \$990 million, 80 percent of the

equipment total. Special and auxiliary equipment are items that were purchased primarily for fishing, but could be used in activities other than fishing.

The purchase of other items such as magazines, membership dues, licenses, permits, stamps, and land leasing and ownership amounted to \$36 million—2 percent of all fishing expenditures. For more details about fishing expenditures in Illinois, see Tables 18, 20, and 21.

In-State Fishing Expenditures

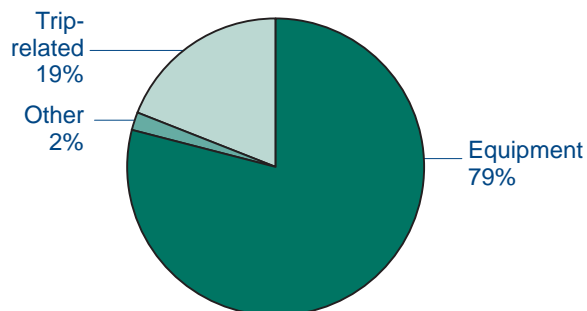
(State residents and nonresidents 16 years old and older)

| | |
|-----------------------|----------------------|
| Total | \$1.6 billion |
| Trip-related | \$292 million |
| Equipment | \$1.2 billion |
| Fishing | \$250 million |
| Auxiliary and special | \$990 million |
| Other | \$36 million |

Source: Table 18

In-State Fishing Expenditures

Total: \$1.6 billion



Hunters

Participants and Days of Hunting

In 1996, there were 432 thousand residents and nonresidents 16 years old and older who hunted in Illinois. Resident hunters numbered 393 thousand accounting for 91 percent of the hunters in Illinois. There were 39 thousand nonresidents who hunted in Illinois—9 percent of the state’s hunters. Residents and nonresidents hunted 6.5 million days in 1996—an average of 15 days per hunter. Residents hunted on 6.2 million days in Illinois or 96 percent of all hunting days, while nonresidents spent 239 thousand days hunting in Illinois, 4 percent of all hunting days.

There were 443 thousand Illinois residents 16 years old and older who hunted in the United States in 1996. Of the total 7.2 million days of hunting by state residents, 6.2 million days (87 percent of the total) were spent pursuing game within Illinois.

Some state residents hunted only in another state or in another state as well as in Illinois. Altogether, 113 thousand Illinois hunters, 25 percent of the total, hunted as nonresidents in other states. Their 926 thousand days of hunting in other states represented 13 percent of all days Illinois residents spent hunting in 1996. For more information on hunting activities by Illinois residents, see Table 3.

Hunters in State

(State residents and nonresidents 16 years old and older)

| | |
|------------------------|---------------------|
| Hunters | 432 thousand |
| Resident | 393 thousand |
| Nonresident | 39 thousand |
| Days of hunting | 6.5 million |
| Resident | 6.2 million |
| Nonresident | 239 thousand |
| Source: Table 3 | |

In-State/Out-of-State

(State residents 16 years old and older)

| | |
|---|---------------------|
| Illinois hunters | 443 thousand |
| In Illinois | 393 thousand |
| In other states | 113 thousand |
| Days of hunting | 7.2 million |
| In Illinois | 6.2 million |
| In other states | 926 thousand |
| Source: Table 3 | |
| Detail does not add to total because of multiple responses. | |

Hunting Expenditures in Illinois

Hunters 16 years old and older spent \$470 million in Illinois in 1996. Trip-related expenses such as food and lodging, transportation, and other trip costs, including equipment rental fees, cost hunters \$111 million, 24 percent of their total expenditures. They spent \$57 million on food and lodging and \$34 million on transportation. Other expenses such as equipment rental totaled \$20 million for the year. The average trip-related expenditure per hunter was \$256.

Hunters spent \$239 million on equipment, 51 percent of all hunting expenditures. Hunting equipment (guns, ammunition, etc.) comprised 55 percent of all equipment costs, \$131 million. Hunters spent \$108 million on auxiliary equipment (tents, special hunting clothes, etc.) and special equipment (boats, trail bikes, etc.), accounting for 45 percent of total equipment expenditures for hunting. Special and auxiliary equipment are items that were purchased primarily for hunting but could be used in activities other than hunting.

The purchase of other items such as magazines, membership dues, licenses, permits, and land leasing and ownership cost hunters \$120 million—26 percent of all hunting expenditures. For more details on hunting expenditures in Illinois, see Tables 19, 20, and 21.

In-State Hunting Expenditures

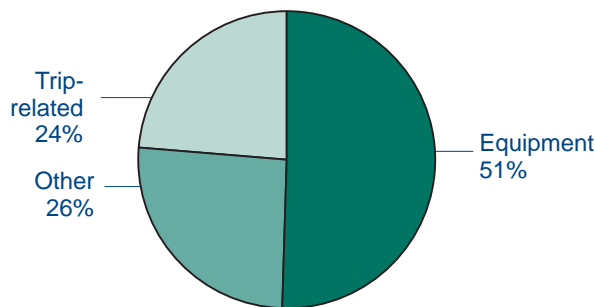
(State residents and nonresidents 16 years old and older)

| | |
|-----------------------|----------------------|
| Total | \$470 million |
| Trip-related | \$111 million |
| Equipment | \$239 million |
| Hunting | \$131 million |
| Auxiliary and special | \$108 million |
| Other | \$120 million |

Source: Table 19

In-State Hunting Expenditures

Total: \$470 million



Wildlife-Watching Activities

Participants and Days of Activity

In 1996, approximately 3.1 million state residents 16 years old and older participated in wildlife-watching activities such as observing, feeding, or photographing wildlife. Some state residents enjoyed their activities close to home and are called “residential” participants. There were 3.0 million residential participants in Illinois in 1996.

Those persons whose primary purpose was to enjoy wildlife at least 1 mile from home are called “nonresidential” participants. People participating in nonresidential activities in Illinois in 1996 numbered

1.2 million, of which 1.1 million were state residents and 102 thousand were nonresidents.

In 1996, more than 1.1 million Illinoisans 16 years old and older enjoyed nonresidential wildlife-watching recreation activities within their state of residence. Of this group, 1.1 million participants observed wildlife, 452 thousand fed wildlife, and 393 thousand photographed wildlife. Since some individuals engaged in more than one of the three nonresidential activities during the year, the sum of wildlife observers, feeders, and photographers exceeds the total number of nonresidential participants.

Nonresidential In-State

(State residents and nonresidents 16 years old and older)

| | |
|----------------------------|--------------------|
| Participants, total | 1.2 million |
| Observe wildlife | 1.2 million |
| Feed wildlife | 489 thousand |
| Photograph wildlife | 418 thousand |
| Days, total | 9.4 million |
| Observe wildlife | 9.0 million |
| Feed wildlife | 2.0 million |
| Photograph wildlife | 2.1 million |

Source: Table 30

Detail does not add to total because of multiple responses.

Illinoisans spent 9.1 million days engaged in nonresidential wildlife-watching activities in their state. During 1996, they spent 8.7 million days observing wildlife, 2.1 million days photographing wildlife, and 1.9 million days feeding wildlife. The sum of days observing, feeding, and photographing wildlife exceeds the total days of wildlife-watching activity because individuals may have engaged in more than one activity on some days. For further details about nonresidential activities, see Table 30.

Illinois residents also took an active interest in wildlife around their homes. In 1996, nearly 3.0 million state residents enjoyed observing, feeding, and photographing wildlife within 1 mile of their homes. Of this residential group, 2.7 million fed wildlife, 2.2 million observed wildlife, and 796 thousand residential participants visited public parks and natural areas within a mile of home. Another 540 thousand photographed wildlife around their homes, 459 thousand participants maintained

plantings for the benefit of wildlife; and 300 thousand participants maintained natural areas of 1/4 acre or more for the primary benefit of wildlife. Adding the participants in these six activities results in a sum that exceeds the total number of residential participants because many people participated in more than one type of residential activity. For further details about Illinois residents participating in residential wildlife-watching activities, see Table 33.

Residential Participants

(State residents 16 years old and older)

| | |
|------------------------|--------------------|
| Total | 3.0 million |
| Feed wildlife | 2.7 million |
| Observe wildlife | 2.2 million |
| Visit public areas | 796 thousand |
| Photograph wildlife | 540 thousand |
| Maintain plantings | 459 thousand |
| Maintain natural areas | 300 thousand |

Source: Table 33

Detail does not add to total because of multiple responses.

Wildlife-Watching Expenditures in Illinois

Participants 16 years old and older spent \$710 million on wildlife-watching activities in Illinois in 1996. Trip-related expenditures for wildlife-watching including food and lodging (\$54 million), transportation (\$52 million), and other expenses such as equipment rental (\$19 million) amounted to \$126 million—18 percent of all wildlife-watching expenditures by participants. The average trip-related expenditure for nonresidential participants was \$101 per person in 1996.

Wildlife-watching participants spent a total of \$515 million on equipment—73 percent of all their expenditures. Specifically, wildlife-watching equipment (binoculars, special clothing, etc.) totaled \$431 million, 84 percent of the equipment total. Auxiliary equipment expenditures (tents, backpacking equipment, etc.) and special equipment expenditures (campers, trucks, etc.) amounted to \$85 million, 16 percent of all equipment costs. Special and auxiliary equipment are items that were purchased primarily for wildlife-watching recreation but can be used in activities other than wildlife-watching activities.

Other items purchased by wildlife-watching participants such as magazines, membership dues, and contributions, land leasing and ownership, and plantings totaled \$69 million, 10 percent of all wildlife-watching expenditures. For more details about wildlife-watching expenditures in Illinois, see Table 35.

In-State Wildlife-Watching Expenditures

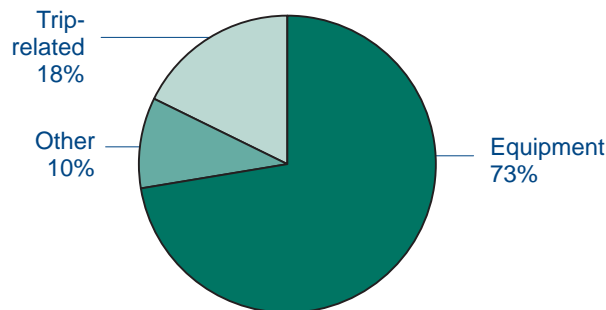
(State residents and nonresidents 16 years old and older)

| | |
|-----------------------|----------------------|
| Total | \$710 million |
| Trip-related | \$126 million |
| Equipment | \$515 million |
| Wildlife-watching | \$431 million |
| Auxiliary and special | \$85 million |
| Other | \$69 million |

Source: Table 35

In-State Wildlife-Watching Expenditures

Total: \$710 million



1991-1996 Survey Comparisons

Comparing the estimates from the 1991 and 1996 National Surveys provides a picture of wildlife-related recreation in the 1990's in Illinois. Only the most general recreation estimates are presented here.

The correct way to compare estimates from two surveys is not to compare the estimates themselves, but to compare the confidence intervals around the estimates. A 90-percent confidence interval around an estimate gives the range of estimates that 90 percent of all possible representative samples would provide. If the 90-percent confidence intervals of two estimates overlap, it is not possible to say the two estimates are statistically different.

The state resident estimates cover the participation and expenditure activity of Illinois residents anywhere in the U.S. The in-state estimates cover the participation, day, and expenditure activity of U.S. residents in Illinois.

The expenditure estimates were made comparable by correcting the 1991 estimate for inflation and subtracting from the 1996 estimate the items that were not included in 1991. These expenditure estimates will not match the estimates presented elsewhere in this report.

Fishing

(Numbers in thousands)

| | 1991 | 1996 | Percent change |
|--|-------------|-------------|----------------|
| State resident anglers | 1,503 | 1,591 | * |
| Anglers in-state | 1,359 | 1,351 | * |
| Days in-state | 16,808 | 20,459 | * |
| In-state trip-related expenditures | \$280,382 | \$290,607 | * |
| Total expenditures by state residents | \$1,280,174 | \$1,964,434 | 53% |
| * No change at the 90-percent level of significance. | | | |

Hunting

(Numbers in thousands)

| | 1991 | 1996 | Percent change |
|--|-----------|-----------|----------------|
| State resident hunters | 457 | 443 | * |
| Hunters in-state | 449 | 432 | * |
| Days in-state | 6,863 | 6,488 | * |
| In-state trip-related expenditures | \$65,019 | \$107,847 | * |
| Total expenditures by state residents | \$376,654 | \$521,968 | * |
| * No change at the 90-percent level of significance. | | | |

Nonresidential Wildlife Watching

(Numbers in thousands)

| | 1991 | 1996 | Percent change |
|--|-------|-------|----------------|
| State resident participants | 1,182 | 1,370 | * |
| Participants in-state | 1,126 | 1,246 | * |
| Days in-state | 8,464 | 9,416 | * |
| * No change at the 90-percent level of significance. | | | |

Residential Wildlife Watching

(Numbers in thousands)

| | 1991 | 1996 | Percent change |
|--|-------|-------|----------------|
| Total participants | 3,411 | 2,976 | -13% |
| Observers | 2,514 | 2,197 | * |
| Feeders | 3,076 | 2,663 | -13% |
| * No change at the 90-percent level of significance. | | | |

Wildlife-Watching Expenditures

(Numbers in thousands)

| | 1991 | 1996 | Percent change |
|--|-----------|-------------|----------------|
| Trip-related expenditures by state residents | \$501,643 | \$683,319 | * |
| Total expenditures by state residents | \$933,235 | \$1,252,956 | * |
| * No change at the 90-percent level of significance. | | | |

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 knowing about wildlife-related recreation. Special terms used in these tables are defined in Appendix A.

The tables are based on responses to the 1996 Survey which was designed to collect data about participation in wildlife-related recreation. To have taken part in the Survey, a respondent must have been a 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 state and national totals do not include participation by those who were not U.S. residents or who were residing outside the United States.

Comparability With Previous Surveys

The numbers reported can be compared with those in the 1991 Survey Reports. The methodology used in 1996 was similar to that used in 1991. These results should not be directly compared to results from Surveys earlier than 1991 since there were major changes in methodology. These changes were made to improve accuracy in the information provided.

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 2 shows that data about anglers and hunters, their days

of participation, and their number of trips are being reported by type of activity. By contrast, the title of Table 6 indicates that it contains data on freshwater anglers and the days they fished for different species of fish.

Percentages Reported in the Tables

Percentages are reported in the tables for the convenience of the user. When exclusive groups are being reported, the base of a percentage is apparent from its context because the percents add to 100 percent (plus or minus a rounding error). For example, if a table reports the number of trips taken by big game hunters (51 percent), those taken by small game hunters (29 percent), those taken by migratory bird hunters (10 percent), and those taken by sportsmen hunting other animals (10 percent), these would form 100 percent because they are exclusive categories.

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

When the base of the percentage may not be apparent in context, it is identified in a footnote. For example, Table 11 reports 3 percentages with different bases: one for the number of hunters, one for the number of trips, and one for days of hunting. Footnotes are 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 small sample size.
- ... Sample size too small to report data reliably.
- W Less than .5 dollars.
- Z Less than .5 percent.
- X Not applicable.
- NA Not asked.

Estimates based upon fewer than 10 responses are regarded as being based on a sample size that is too small for reliable reporting. An estimate based upon at least 10 but fewer than 30 responses is treated as an estimate based on a small sample size. Other footnotes appear, as necessary, to qualify or clarify the estimates reported in the tables.

In addition, these two important footnotes appear frequently:

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

“Multiple responses” is a term used to reflect the fact that individuals or their characteristics fall into more than one category. Using Table 2 as an example, those who fished in saltwater and freshwater appear in both of these totals. Yet each angler is represented only once in the “Total, all fishing” row. Similarly, those who hunt for big game and small game are counted only once as a hunter. Therefore, totals may 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 of the

questions. The effect of nonresponses is illustrated in Table 15, where the reported total for fishing and hunting expenditures is greater than the sum of reported fishing expenditures plus reported hunting expenditures. This occurs because some respondents did not specify either “hunting” or “fishing” as the primary purpose of the purchase. As a result, it is known that the expenditures were for fishing or hunting, but it is not known whether they were primarily for fishing or primarily for hunting, which was the basis for putting them in the individual fishing and hunting expenditure tables. Totals are greater than the sum of subcategories when nonresponses have occurred.

Table 1. Fishing and Hunting In-State, by Resident and Nonresident Sportsmen: 1996

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

| Sportsmen | Total, state residents and nonresidents | | Residents | | Nonresidents | |
|------------------------------|---|----------------------|--------------|-------------------------------|--------------|----------------------------------|
| | Number | Percent of sportsmen | Number | Percent of resident sportsmen | Number | Percent of nonresident sportsmen |
| Total sportsmen | 1,552 | 100 | 1,411 | 100 | 141 | 100 |
| Total anglers | 1,351 | 87 | 1,240 | 88 | 111 | 79 |
| Fished only | 1,120 | 72 | 1,018 | 72 | *102 | *72 |
| Fished and hunted..... | 231 | 15 | 222 | 16 | ... | ... |
| Total hunters | 432 | 28 | 393 | 28 | *39 | *28 |
| Hunted only..... | 201 | 13 | 171 | 12 | *30 | *21 |
| Hunted and fished..... | 231 | 15 | 222 | 16 | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

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

Table 2. Resident Anglers and Hunters, Days of Participation, and Trips, by Type of Fishing and Hunting: 1996

(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 |
| FISHING | | | | | | |
| Total, all fishing | 1,591 | 100 | 26,747 | 100 | 20,235 | 100 |
| Total, all freshwater | 1,446 | 91 | 26,147 | 98 | 19,709 | 97 |
| Freshwater, except Great Lakes | 1,331 | 84 | 21,648 | 81 | 17,698 | 87 |
| Great Lakes..... | 350 | 22 | 1,946 | 7 | 2,011 | 10 |
| Saltwater | *95 | *6 | *776 | *3 | *526 | *3 |
| HUNTING | | | | | | |
| Total, all hunting | 443 | 100 | 7,176 | 100 | 6,227 | 100 |
| Big game | 304 | 69 | 4,144 | 58 | 2,990 | 48 |
| Small game | 292 | 66 | 2,741 | 38 | 2,490 | 40 |
| Migratory bird | *103 | *23 | *750 | *10 | *612 | *10 |
| Other animals..... | *50 | *11 | *153 | *2 | *135 | *2 |

* Estimate based on a small sample size.

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

Table 3. Anglers and Hunters, Trips, and Days of Participation: 1996
(Population 16 years old and older. Numbers in thousands)

| Anglers and hunters, trips, and days of participation | Activity in-state | | | | | | Activity by state residents | | | | | |
|---|---|---------|-----------------|---------|--------------|---------|--|---------|-----------------------|---------|-----------------|---------|
| | Total, state residents and nonresidents | | State residents | | Nonresidents | | Total, in state of residence and in other states | | In state of residence | | In other states | |
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| FISHING | | | | | | | | | | | | |
| Total anglers | 1,351 | 100 | 1,240 | 92 | 111 | 8 | 1,591 | 100 | 1,240 | 78 | 833 | 52 |
| Total trips | 16,904 | 100 | 16,723 | 99 | 180 | 1 | 20,235 | 100 | 16,723 | 83 | 3,511 | 17 |
| Total days of fishing | 20,459 | 100 | 19,996 | 98 | 463 | 2 | 26,747 | 100 | 19,996 | 75 | 6,751 | 25 |
| Average days of fishing | 15 | (X) | 16 | (X) | 4 | (X) | 17 | (X) | 16 | (X) | 8 | (X) |
| HUNTING | | | | | | | | | | | | |
| Total hunters | 432 | 100 | 393 | 91 | *39 | *9 | 443 | 100 | 393 | 89 | *113 | *25 |
| Total trips | 5,706 | 100 | 5,552 | 97 | *153 | *3 | 6,227 | 100 | 5,552 | 89 | *675 | *11 |
| Total days of hunting | 6,488 | 100 | 6,250 | 96 | *239 | *4 | 7,176 | 100 | 6,250 | 87 | *926 | *13 |
| Average days of hunting | 15 | (X) | 16 | (X) | *6 | (X) | 16 | (X) | 16 | (X) | *8 | (X) |

* Estimate based on a small sample size. (X) Not applicable.
Note: Detail does not add to total because of multiple responses.

Table 4. Resident Anglers and Hunters by Place Fished or Hunted : 1996
(Population 16 years old and older. Numbers in thousands)

| Place | Anglers | | Hunters | |
|--|--------------|------------|------------|------------|
| | Number | Percent | Number | Percent |
| PLACE FISHED OR HUNTED | | | | |
| Total, all places | 1,591 | 100 | 443 | 100 |
| In state of residence only | 758 | 48 | 330 | 75 |
| In state of residence and other states | 482 | 30 | *63 | *14 |
| In other states only | 351 | 22 | *50 | *11 |

* Estimate based on a small sample size.
Note: Detail may not add to total because of multiple responses and nonresponse.

Table 5. Freshwater Anglers, Trips, and Days of Fishing, and Type of Water: 1996
(Population 16 years old and older. Numbers in thousands. Excludes Great Lakes fishing)

| Anglers, trips, and days of fishing | Activity in-state | | | | | |
|--|---|------------|-----------------|-----------|--------------|-----------|
| | Total, state residents and nonresidents | | State residents | | Nonresidents | |
| | Number | Percent | Number | Percent | Number | Percent |
| Total anglers | 1,123 | 100 | 1,050 | 93 | *74 | *7 |
| Total trips | 15,202 | 100 | 15,041 | 99 | *161 | *1 |
| Total days of fishing | 17,089 | 100 | 16,832 | 98 | *257 | *2 |
| Average days of fishing..... | 15 | (X) | 16 | (X) | *4 | (X) |
| ANGLERS | | | | | | |
| Total, all types of water | 1,123 | 100 | 1,050 | 93 | *74 | *7 |
| Ponds, lakes or reservoirs..... | 991 | 100 | 932 | 94 | *60 | *6 |
| Rivers or streams..... | 418 | 100 | 404 | 97 | ... | ... |
| DAYS OF FISHING | | | | | | |
| Total, all types of water | 17,089 | 100 | 16,832 | 98 | *257 | *2 |
| Ponds, lakes or reservoirs..... | 12,567 | 100 | 12,373 | 98 | *195 | *2 |
| Rivers or streams..... | 5,227 | 100 | 5,165 | 99 | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably. (X) Not applicable.

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

Table 6. Freshwater Anglers and Days of Fishing, by Type of Fish: 1996
(Population 16 years old and older. Numbers in thousands. Excludes Great Lakes fishing)

| Anglers and days of fishing | Activity in-state | | | | | |
|---|---|------------|-----------------|-----------|--------------|-----------|
| | Total, state residents and nonresidents | | State residents | | Nonresidents | |
| | Number | Percent | Number | Percent | Number | Percent |
| ANGLERS | | | | | | |
| Total, all types of fish..... | 1,123 | 100 | 1,050 | 93 | *74 | *7 |
| Crappie..... | 374 | 100 | 362 | 97 | ... | ... |
| Panfish..... | 413 | 100 | 399 | 97 | ... | ... |
| White bass, striped bass, striped bass hybrids .. | 214 | 100 | 204 | 95 | ... | ... |
| Black bass..... | 602 | 100 | 571 | 95 | ... | ... |
| Catfish, bullheads..... | 430 | 100 | 416 | 97 | ... | ... |
| Walleye, sauger..... | 161 | 100 | 159 | 99 | ... | ... |
| Trout..... | *74 | *100 | *71 | *96 | ... | ... |
| Anything ¹ | *152 | *100 | *145 | *95 | ... | ... |
| Other freshwater fish..... | *98 | *100 | *94 | *95 | ... | ... |
| DAYS OF FISHING | | | | | | |
| Total, all types of fish..... | 17,089 | 100 | 16,832 | 98 | *257 | *2 |
| Crappie..... | 4,640 | 100 | 4,602 | 99 | ... | ... |
| Panfish..... | 4,444 | 100 | 4,389 | 99 | ... | ... |
| White bass, striped bass, striped bass hybrids .. | 2,929 | 100 | 2,864 | 98 | ... | ... |
| Black bass..... | 7,964 | 100 | 7,853 | 99 | ... | ... |
| Catfish, bullheads..... | 5,806 | 100 | 5,766 | 99 | ... | ... |
| Walleye, sauger..... | 4,424 | 100 | 4,414 | 100 | ... | ... |
| Trout..... | *422 | *100 | *416 | *98 | ... | ... |
| Anything ¹ | *1,582 | *100 | *1,562 | *99 | ... | ... |
| Other freshwater fish..... | *1,756 | *100 | *1,729 | *98 | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Respondent identified "Anything" from a list of categories of fish.

Note: Detail does not add to total because of multiple responses. Excludes species where the estimate of the total was based on a sample size that was too small to report data reliably.

Table 7. Great Lakes Anglers, Trips, and Days of Fishing: 1996
(Population 16 years old and older. Numbers in thousands)

| Anglers, trips, and days of fishing | Activity in-state | | | | | |
|-------------------------------------|---|------------|-----------------|-----------|--------------|---------|
| | Total, state residents and nonresidents | | State residents | | Nonresidents | |
| | Number | Percent | Number | Percent | Number | Percent |
| Total anglers | 260 | 100 | 240 | 93 | ... | ... |
| Total trips | 1,701 | 100 | 1,682 | 99 | ... | ... |
| Total days of fishing | 1,543 | 100 | 1,476 | 96 | ... | ... |
| Average days of fishing..... | 6 | (X) | 6 | (X) | ... | (X) |

... Sample size too small to report data reliably. (X) Not applicable.

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

Table 8. Great Lakes Anglers and Days of Fishing, by Type of Fish: 1996
(Population 16 years old and older. Numbers in thousands)

| Anglers and days of fishing | Activity in-state | | | | | |
|---------------------------------------|---|------------|-----------------|-----------|--------------|---------|
| | Total, state residents and nonresidents | | State residents | | Nonresidents | |
| | Number | Percent | Number | Percent | Number | Percent |
| ANGLERS | | | | | | |
| Total, all types of fish | 260 | 100 | 240 | 93 | ... | ... |
| Salmon..... | *114 | *100 | *106 | *93 | ... | ... |
| Lake trout..... | *95 | *100 | *91 | *96 | ... | ... |
| Other trout..... | *63 | *100 | *61 | *97 | ... | ... |
| Anything ¹ | *84 | *100 | ... | ... | ... | ... |
| DAYS OF FISHING | | | | | | |
| Total, all types of fish | 1,543 | 100 | 1,476 | 96 | ... | ... |
| Salmon..... | *668 | *100 | *645 | *97 | ... | ... |
| Lake trout..... | *608 | *100 | *604 | *99 | ... | ... |
| Other trout..... | *311 | *100 | *309 | *99 | ... | ... |
| Anything ¹ | *364 | *100 | ... | ... | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Respondent identified "Anything" from a list of categories of fish.

Note: Detail does not add to total because of multiple responses. Excludes species where the estimate of the total was based on a sample size that was too small to report data reliably.

Table 9. Saltwater Anglers, Trips, and Days of Fishing: 1996

(Not applicable to this state)

Table 10. Saltwater Anglers and Days of Fishing, by Type of Fish: 1996

(Not applicable to this state)

Table 11. Hunters, Trips, and Days of Hunting, by Type of Hunting: 1996
(Population 16 years old and older. Numbers in thousands)

| Hunters, trips, and days of hunting | Activity in-state | | | | | |
|-------------------------------------|---|------------|-----------------|-----------|--------------|-----------|
| | Total, state residents and nonresidents | | State residents | | Nonresidents | |
| | Number | Percent | Number | Percent | Number | Percent |
| HUNTERS | | | | | | |
| Total, all hunting | 432 | 100 | 393 | 91 | *39 | *9 |
| Big game | 265 | 100 | 244 | 92 | ... | ... |
| Small game | 292 | 100 | 278 | 95 | ... | ... |
| Migratory bird | *98 | *100 | *94 | *96 | ... | ... |
| Other animals..... | *50 | *100 | *50 | *100 | ... | ... |
| TRIPS | | | | | | |
| Total, all hunting | 5,706 | 100 | 5,552 | 97 | *153 | *3 |
| Big game | 2,545 | 100 | 2,519 | 99 | ... | ... |
| Small game | 2,369 | 100 | 2,330 | 98 | ... | ... |
| Migratory bird | *662 | *100 | *573 | *87 | ... | ... |
| Other animals..... | *130 | *100 | *130 | *100 | ... | ... |
| DAYS OF HUNTING | | | | | | |
| Total, all hunting | 6,488 | 100 | 6,250 | 96 | *239 | *4 |
| Big game | 3,628 | 100 | 3,519 | 97 | ... | ... |
| Small game | 2,528 | 100 | 2,487 | 98 | ... | ... |
| Migratory bird | *745 | *100 | *656 | *88 | ... | ... |
| Other animals..... | *148 | *100 | *148 | *100 | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

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

Table 12. Hunters and Days of Hunting In-State, by Type of Game: 1996
(Population 16 years old and older. Numbers in thousands)

| Type of game | Hunters, state residents and nonresidents | | Days of hunting | |
|---|---|------------|-----------------|------------|
| | Number | Percent | Number | Percent |
| Total, all types of game | 432 | 100 | 6,488 | 100 |
| Big game, total | 265 | 61 | 3,628 | 56 |
| Deer | 256 | 59 | 3,426 | 53 |
| Small game, total | 292 | 68 | 2,528 | 39 |
| Rabbit, hare | 166 | 38 | 1,203 | 19 |
| Quail | *103 | *24 | *514 | *8 |
| Squirrel | 163 | 38 | 1,185 | 18 |
| Pheasant | 146 | 34 | 851 | 13 |
| Migratory birds, total | *98 | *23 | *745 | *11 |
| Geese | *57 | *13 | *414 | *6 |
| Duck | *52 | *12 | *357 | *6 |
| Dove | *53 | *12 | *331 | *5 |
| Other animals, total¹ | *50 | *12 | *148 | *2 |

* Estimate based on a small sample size.

¹ Includes groundhog, raccoon, fox, coyote, crow, prairie dog, etc.

Note: Detail does not add to total because of multiple responses. Excludes species where the estimate of the total was based on a sample size that was too small to report data reliably.

Table 13. Hunters and Days of Hunting In-State, by Type of Land: 1996
(Population 16 years old and older. Numbers in thousands)

| Hunters and days of hunting | Total, state residents and nonresidents | | State residents | | Nonresidents | |
|---------------------------------------|---|------------|-----------------|------------|--------------|-------------|
| | Number | Percent | Number | Percent | Number | Percent |
| HUNTERS | | | | | | |
| Total, all types of land | 432 | 100 | 393 | 100 | *39 | *100 |
| Public land, total | *133 | *31 | *124 | *32 | ... | ... |
| Public land only | *43 | *10 | ... | ... | ... | ... |
| Public and private land | *90 | *21 | *90 | *23 | ... | ... |
| Private land, total | 379 | 88 | 351 | 89 | *28 | *71 |
| Private land only | 289 | 67 | 261 | 66 | *28 | *71 |
| Private and public land | *90 | *21 | *90 | *23 | ... | ... |
| DAYS OF HUNTING | | | | | | |
| Total, all types of land | 6,488 | 100 | 6,250 | 100 | *239 | *100 |
| Public land ¹ | *893 | *14 | *852 | *14 | ... | ... |
| Private land ² | 5,936 | 91 | 5,742 | 92 | *194 | *81 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Days of hunting on public land includes both days spent solely on public land and those spent on public and private 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: Detail does not add to total because of multiple responses and nonresponse.

Table 14. Selected Characteristics of Resident Anglers and Hunters: 1996
(Population 16 years old and older. Numbers in thousands)

| Characteristic | Population | | Sportsmen (fished or hunted) | | | Anglers | | | Hunters | | |
|---|--------------|------------|---------------------------------|--------------------------|----------------------|--------------|--------------------------|--------------------|------------|--------------------------|--------------------|
| | Number | Percent | Number | Percent who participated | Percent of sportsmen | Number | Percent who participated | Percent of anglers | Number | Percent who participated | Percent of hunters |
| Total persons..... | 8,979 | 100 | 1,761 | 20 | 100 | 1,591 | 18 | 100 | 443 | 5 | 100 |
| Population density of residence: | | | | | | | | | | | |
| Urban..... | 7,403 | 82 | 1,272 | 17 | 72 | 1,186 | 16 | 75 | 245 | 3 | 55 |
| Rural..... | 1,576 | 18 | 489 | 31 | 28 | 405 | 26 | 25 | 198 | 13 | 45 |
| Population size of residence: | | | | | | | | | | | |
| MSA..... | 7,640 | 85 | 1,397 | 18 | 79 | 1,291 | 17 | 81 | 284 | 4 | 64 |
| 1,000,000 or more..... | 6,021 | 67 | 1,019 | 17 | 58 | 956 | 16 | 60 | 170 | 3 | 38 |
| 250,000 to 999,999..... | 707 | 8 | 209 | 30 | 12 | *188 | *27 | *12 | *59 | *8 | *13 |
| 50,000 to 249,999..... | 912 | 10 | 169 | 19 | 10 | *147 | *16 | *9 | *55 | *6 | *12 |
| Outside MSA..... | 1,339 | 15 | 364 | 27 | 21 | 300 | 22 | 19 | 159 | 12 | 36 |
| Sex: | | | | | | | | | | | |
| Male..... | 4,257 | 47 | 1,323 | 31 | 75 | 1,157 | 27 | 73 | 409 | 10 | 92 |
| Female..... | 4,722 | 53 | 438 | 9 | 25 | 433 | 9 | 27 | ... | ... | ... |
| Age: | | | | | | | | | | | |
| 16 to 17 years..... | 321 | 4 | *63 | *20 | *4 | *63 | *20 | *4 | ... | ... | ... |
| 18 to 24 years..... | 916 | 10 | *157 | *17 | *9 | *134 | *15 | *8 | ... | ... | ... |
| 25 to 34 years..... | 1,641 | 18 | 426 | 26 | 24 | 379 | 23 | 24 | *120 | *7 | *27 |
| 35 to 44 years..... | 2,138 | 24 | 496 | 23 | 28 | 452 | 21 | 28 | *126 | *6 | *28 |
| 45 to 54 years..... | 1,496 | 17 | 314 | 21 | 18 | 290 | 19 | 18 | *84 | *6 | *19 |
| 55 to 64 years..... | 1,025 | 11 | *148 | *14 | *8 | *144 | *14 | *9 | ... | ... | ... |
| 65 years and older..... | 1,442 | 16 | *156 | *11 | *9 | *129 | *9 | *8 | ... | ... | ... |
| Race: | | | | | | | | | | | |
| White..... | 7,392 | 82 | 1,601 | 22 | 91 | 1,431 | 19 | 90 | 424 | 6 | 96 |
| Black..... | 952 | 11 | *81 | *9 | *5 | *81 | *9 | *5 | ... | ... | ... |
| All others..... | 636 | 7 | *78 | *12 | *4 | *78 | *12 | *5 | ... | ... | ... |
| Annual household income: | | | | | | | | | | | |
| Less than \$10,000..... | 583 | 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$10,000 to \$19,999..... | 792 | 9 | *156 | *20 | *9 | *124 | *16 | *8 | ... | ... | ... |
| \$20,000 to \$29,999..... | 969 | 11 | 236 | 24 | 13 | 216 | 22 | 14 | ... | ... | ... |
| \$30,000 to \$39,999..... | 914 | 10 | *185 | *20 | *11 | *163 | *18 | *10 | *78 | *9 | *18 |
| \$40,000 to \$49,999..... | 931 | 10 | 225 | 24 | 13 | 190 | 20 | 12 | *66 | *7 | *15 |
| \$50,000 to \$74,999..... | 1,601 | 18 | 428 | 27 | 24 | 397 | 25 | 25 | *103 | *6 | *23 |
| \$75,000 or more..... | 1,458 | 16 | 261 | 18 | 15 | 245 | 17 | 15 | *65 | *4 | *15 |
| Not reported..... | 1,733 | 19 | 225 | 13 | 13 | 212 | 12 | 13 | ... | ... | ... |
| Education: | | | | | | | | | | | |
| 8 years or less..... | 387 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 9 to 11 years..... | 782 | 9 | *120 | *15 | *7 | *116 | *15 | *7 | ... | ... | ... |
| 12 years..... | 3,146 | 35 | 721 | 23 | 41 | 616 | 20 | 39 | 251 | 8 | 57 |
| 1 to 3 years college..... | 2,145 | 24 | 417 | 19 | 24 | 399 | 19 | 25 | *73 | *3 | *16 |
| 4 years college or more..... | 2,520 | 28 | 466 | 19 | 26 | 432 | 17 | 27 | *80 | *3 | *18 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

Note: Detail does not add to total because of multiple responses. "Percent who participated" shows 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, etc.). Remaining percent columns show the percent of each column's participants who are described by the row heading (the percent of anglers who lived in urban areas, etc.).

Table 15. Summary of Expenditures In-State by U.S. Residents for Fishing and Hunting: 1996
(Population 16 years old and older)

| Expenditure item | Fishing and hunting | | | |
|---|-------------------------------------|-------------------------|-------------------------------------|---------------------------------------|
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per sportsman (dollars) |
| Total | 2,669,203 | 1,708 | 1,563 | 1,469 |
| Food and lodging | 176,615 | 1,150 | 154 | 114 |
| Transportation | 96,301 | 1,218 | 79 | 62 |
| Other trip costs | 129,654 | 1,076 | 120 | 84 |
| Equipment (fishing, hunting)..... | 465,946 | 1,205 | 387 | 260 |
| Auxiliary equipment..... | 154,953 | 656 | 236 | 79 |
| Special equipment..... | 1,474,136 | 254 | 5,804 | 772 |
| Magazines and books | 16,424 | 539 | 30 | 9 |
| Membership dues and contributions | 24,906 | 315 | 79 | 12 |
| Other ¹ | 130,269 | 1,119 | 116 | 84 |
| | Fishing | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 1,568,471 | 1,456 | 1,077 | 999 |
| Food and lodging | 120,065 | 995 | 121 | 89 |
| Transportation | 61,917 | 1,023 | 61 | 46 |
| Other trip costs | 109,865 | 1,015 | 108 | 81 |
| Fishing equipment | 250,489 | 990 | 253 | 167 |
| Auxiliary equipment..... | 55,343 | 302 | 183 | 29 |
| Special equipment..... | 934,364 | 182 | 5,145 | 561 |
| Magazines and books | 7,799 | 249 | 31 | 5 |
| Membership dues and contributions | *9,001 | *92 | *98 | *7 |
| Other ¹ | 19,629 | 921 | 21 | 15 |
| | Hunting | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 469,850 | 516 | 910 | 1,049 |
| Food and lodging | 56,550 | 280 | 202 | 131 |
| Transportation | 34,384 | 371 | 93 | 80 |
| Other trip costs | 19,789 | 117 | 170 | 46 |
| Hunting equipment..... | 130,726 | 360 | 363 | 272 |
| Auxiliary equipment..... | 49,598 | 172 | 288 | 110 |
| Special equipment..... | ... | ... | ... | ... |
| Magazines and books | *2,546 | *106 | *24 | *4 |
| Membership dues and contributions | *5,054 | *89 | *57 | *10 |
| Other ¹ | 112,766 | 393 | 287 | 261 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ "Other" is made up of licenses, stamps, tags, permits, and land leasing and ownership.

Note: Detail does not add to total because of multiple responses and nonresponse. See Tables 18 to 20 for a detailed listing of expenditure items. Expenditures reported according to primary use of item.

Table 16. Summary of Trip and Equipment Expenditures In-State by U.S. Residents for Fishing, by Type of Fishing: 1996
(Population 16 years old and older)

| Expenditure item | Total, all fishing | | | |
|------------------------|----------------------------------|-------------------------|----------------------------------|---------------------------------|
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 1,532,043 | 1,394 | 1,099 | 874 |
| Food and lodging | 120,065 | 995 | 121 | 89 |
| Transportation..... | 61,917 | 1,023 | 61 | 46 |
| Other trip costs..... | 109,865 | 1,016 | 108 | 81 |
| Equipment | 1,240,196 | 1,073 | 1,156 | 658 |
| | Total, all freshwater | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 1,394,417 | 1,354 | 1,030 | 959 |
| Food and lodging | 120,065 | 995 | 121 | 97 |
| Transportation..... | 61,917 | 1,023 | 61 | 50 |
| Other trip costs..... | 109,865 | 1,016 | 108 | 89 |
| Equipment | 1,102,570 | 1,001 | 1,102 | 722 |
| | Freshwater, except Great Lakes | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 1,108,932 | 1,267 | 875 | 874 |
| Food and lodging | 78,185 | 886 | 88 | 70 |
| Transportation..... | 49,951 | 915 | 55 | 44 |
| Other trip costs..... | 82,492 | 929 | 89 | 73 |
| Equipment | 898,305 | 936 | 960 | 687 |
| | Great Lakes | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 285,485 | 283 | 1,009 | 768 |
| Food and lodging | 41,880 | 223 | 188 | 161 |
| Transportation..... | 11,966 | 202 | 59 | 46 |
| Other trip costs..... | 27,373 | 183 | 149 | 105 |
| Equipment | *204,266 | *115 | *1,784 | *456 |
| | Saltwater | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | ... | ... | ... | ... |
| Food and lodging | ... | ... | ... | ... |
| Transportation..... | ... | ... | ... | ... |
| Other trip costs..... | ... | ... | ... | ... |
| Equipment | ... | ... | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

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

Table 17. Summary of Trip and Equipment Expenditures In-State by U.S. Residents for Hunting, by Type of Hunting: 1996
(Population 16 years old and older)

| Expenditure item | Total, all hunting | | | |
|------------------------|----------------------------------|-------------------------|----------------------------------|---------------------------------|
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 349,485 | 445 | 785 | 773 |
| Food and lodging | 56,550 | 280 | 202 | 131 |
| Transportation..... | 34,384 | 371 | 93 | 80 |
| Other trip costs..... | 19,789 | 117 | 170 | 46 |
| Equipment | 238,762 | 381 | 627 | 517 |
| | Big game | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 126,048 | 293 | 430 | 430 |
| Food and lodging | 21,962 | 159 | 138 | 83 |
| Transportation..... | 16,235 | 229 | 71 | 61 |
| Other trip costs..... | ... | ... | ... | ... |
| Equipment | 87,527 | 222 | 394 | 285 |
| | Small game | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 101,913 | 290 | 352 | 330 |
| Food and lodging | 23,073 | 185 | 125 | 79 |
| Transportation..... | 11,141 | 233 | 48 | 38 |
| Other trip costs..... | *10,026 | *68 | *148 | *34 |
| Equipment | 57,672 | 176 | 329 | 179 |
| | Migratory bird | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 63,765 | 121 | 529 | 625 |
| Food and lodging | *10,498 | *72 | *146 | *107 |
| Transportation..... | *6,141 | *94 | *65 | *63 |
| Other trip costs..... | *9,416 | *50 | *188 | *96 |
| Equipment | *37,710 | *70 | *538 | *360 |
| | Other animals | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | *21,401 | *63 | *342 | *97 |
| Food and lodging | ... | ... | ... | ... |
| Transportation..... | ... | ... | ... | ... |
| Other trip costs..... | ... | ... | ... | ... |
| Equipment | ... | ... | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

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

Table 18. In-State Expenditures by U.S. Residents for Fishing: 1996
(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------------|------------------------------------|-----------------------|-----------------------|-------------------------------------|
| | Amount (thousands of dollars) | Average per angler (dollars) | Number (thousands) | Percent of anglers | Average per spender (dollars) |
| Total, all items | 1,568,473 | 998 | 1,456 | 108 | 1,077 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related..... | 291,847 | 216 | 1,162 | 86 | 251 |
| Food and lodging, total | 120,065 | 89 | 995 | 74 | 121 |
| Food | 102,533 | 76 | 990 | 73 | 104 |
| Lodging | *17,533 | *13 | *174 | *13 | *101 |
| Transportation | 61,917 | 46 | 1,023 | 76 | 61 |
| Other trip costs, total | 109,865 | 81 | 1,016 | 75 | 108 |
| Privilege and other fees ¹ | 23,881 | 18 | 264 | 20 | 90 |
| Boating costs ² | 50,390 | 37 | 324 | 24 | 155 |
| Bait | 29,066 | 21 | 906 | 67 | 32 |
| Ice | 5,288 | 4 | 513 | 38 | 10 |
| Heating and cooking fuel | *1,241 | *1 | *99 | *7 | *13 |
| EQUIPMENT AND OTHER EXPENDITURES PRIMARILY FOR FISHING | | | | | |
| Fishing equipment, total | 250,491 | 167 | 990 | 73 | 253 |
| Reels, rods, and rod making components | 119,667 | 79 | 597 | 44 | 200 |
| Lines, hooks, sinkers, etc | 37,745 | 25 | 841 | 62 | 45 |
| Artificial lures and flies | 51,153 | 36 | 698 | 52 | 73 |
| Creels, stringers, fish bags, landing nets, and gaff hooks | 3,506 | 2 | 250 | 19 | 14 |
| Minnow seines, traps, and bait containers..... | 2,850 | 2 | 188 | 14 | 15 |
| Other fishing equipment ³ | 35,570 | 22 | 380 | 28 | 94 |
| Auxiliary equipment | 55,343 | 29 | 302 | 22 | 183 |
| Special equipment | 934,364 | 561 | 182 | 13 | 5,145 |
| Other fishing costs ⁴ | 36,428 | 26 | 1,008 | 75 | 36 |

* Estimate based on a small sample size.

¹ Includes boat or equipment rental and fees for guides, pack trip (party and charter boats, etc.), public land use, and private land use.

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

³ Includes electronic fishing devices (depth finders, fish finders, etc.), tackle boxes, ice fishing equipment, and other fishing equipment.

⁴ Includes magazine subscriptions, membership dues and contributions, land leasing and ownership, and licenses, stamps, tags, and permits.

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

Table 19. In-State Expenditures by U.S. Residents for Hunting: 1996

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------------|------------------------------------|-----------------------|-----------------------|-------------------------------------|
| | Amount (thousands of dollars) | Average per hunter (dollars) | Number (thousands) | Percent of hunters | Average per spender (dollars) |
| Total, all items | 469,850 | 1,048 | 516 | 119 | 910 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 110,723 | 256 | 376 | 87 | 295 |
| Food and lodging, total | 56,550 | 131 | 280 | 65 | 202 |
| Food | 43,583 | 101 | 280 | 65 | 156 |
| Lodging | *12,967 | *30 | *68 | *16 | *189 |
| Transportation | 34,384 | 80 | 371 | 86 | 93 |
| Other trip costs, total | *19,789 | *46 | *117 | *27 | *170 |
| Privilege and other fees ¹ | *16,914 | *39 | *71 | *16 | *238 |
| Boating costs | ... | ... | ... | ... | ... |
| Heating and cooking fuel | *1,108 | *3 | *56 | *13 | *20 |
| EQUIPMENT AND OTHER EXPENDITURES PRIMARILY FOR HUNTING | | | | | |
| Hunting equipment, total | 130,726 | 272 | 360 | 83 | 363 |
| Guns and rifles | *49,690 | *97 | *85 | *20 | *583 |
| Ammunition | 13,115 | 29 | 279 | 65 | 47 |
| Other hunting equipment ² | 67,920 | 146 | 259 | 60 | 262 |
| Auxiliary equipment | 49,598 | 110 | 172 | 40 | 288 |
| Special equipment | ... | ... | ... | ... | ... |
| Other hunting costs ³ | 120,366 | 275 | 456 | 106 | 264 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Includes guide fees, pack trip or package fees, public and private land use access fees, and rental of equipment such as boats and hunting or camping equipment.

² Includes bows, arrows, archery equipment, telescopic sights, decoys and game calls, hand loading equipment and components, hunting dogs and associated costs, hunting knives, and other hunting equipment.

³ Includes magazine subscriptions, membership dues and contributions, land leasing and ownership, and licenses, stamps, tags, and permits.

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

Table 20. In-State Expenditures by U.S. Residents for Special and Auxiliary Equipment Purchased Primarily for Fishing or Hunting: 1996

(Population 16 years old and older)

| Equipment item | Expenditures | | Spenders | | |
|--|-------------------------------------|---------------------------------------|-----------------------|-------------------------|-------------------------------------|
| | Amount (thousands of dollars) | Average per sportsman (dollars) | Number (thousands) | Percent of sportsmen | Average per spender (dollars) |
| SPECIAL EQUIPMENT | | | | | |
| Special equipment, total | 1,474,136 | 772 | 254 | 16 | 5,804 |
| Boats and canoes. | *440,351 | *224 | *76 | *5 | *5,802 |
| Boat motors, boat trailer/hitch, and other boat accessories. | *44,498 | *29 | *77 | *5 | *578 |
| Travel or tent trailer, pickup, camper, van, motor home, cabin | *609,047 | *335 | *52 | *3 | *11,712 |
| Trail bike, dune buggy, 4x4 vehicle, 4-wheeler, snowmobile | ... | ... | ... | ... | ... |
| Other special equipment. | *1,718 | *1 | *52 | *3 | *33 |
| AUXILIARY EQUIPMENT | | | | | |
| Auxiliary equipment, total | 154,953 | 79 | 656 | 42 | 236 |
| Camping equipment. | 52,530 | 24 | 254 | 16 | 207 |
| Special fishing or hunting clothing ¹ | 42,133 | 23 | 342 | 22 | 123 |
| Other auxiliary equipment ² | 60,289 | 32 | 296 | 19 | 204 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Also includes foul weather gear, rubber boots, and waders.

² Includes binoculars, field glasses, telescopes, snow shoes and skis, maintenance and repair of equipment, processing and taxidermy costs, and other equipment.

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

Table 21. In-State Trip-Related Expenditures for Fishing and Hunting: 1996
(Population 16 years old and older)

| Expenditure item | Total, state residents and nonresidents | | | | State residents | | | |
|--|---|-------------------------|-------------------------------------|---------------------------------------|-------------------------------------|-----------------------|-------------------------------------|---------------------------------------|
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per sportsman (dollars) | Amount (thousands of dollars) | Spenders (dollars) | Average per spender (dollars) | Average per sportsman (dollars) |
| Trip-related expenditures for fishing and hunting, total..... | 402,570 | 1,343 | 300 | 259 | 373,305 | 1,241 | 301 | 265 |
| TRIP-RELATED EXPENDITURES FOR FISHING | | | | | | | | |
| Total..... | 291,847 | 1,162 | 251 | 216 | 277,438 | 1,088 | 255 | 224 |
| Food and lodging..... | 120,065 | 995 | 121 | 89 | 114,537 | 925 | 124 | 92 |
| Transportation..... | 61,917 | 1,023 | 61 | 46 | 55,376 | 958 | 58 | 45 |
| Privilege and other fees ¹ | 23,881 | 264 | 90 | 18 | 23,289 | 250 | 93 | 19 |
| Boating costs ² | 50,390 | 324 | 155 | 37 | 49,454 | 302 | 164 | 40 |
| Bait..... | 29,066 | 906 | 32 | 22 | 28,543 | 872 | 33 | 23 |
| Ice..... | 5,288 | 513 | 10 | 4 | 5,040 | 476 | 11 | 4 |
| Heating and cooking fuel..... | *1,241 | *99 | *13 | *1 | *1,199 | *90 | *13 | *1 |
| TRIP-RELATED EXPENDITURES FOR HUNTING | | | | | | | | |
| Total..... | 110,723 | 376 | 295 | 256 | 95,867 | 338 | 283 | 244 |
| Food and lodging..... | 56,550 | 280 | 202 | 131 | 50,153 | 245 | 205 | 128 |
| Transportation..... | 34,384 | 371 | 93 | 80 | 29,070 | 334 | 87 | 74 |
| Privilege and other fees ¹ | *16,914 | *71 | *238 | *39 | *14,060 | *64 | *221 | *36 |
| Boating costs ² | ... | ... | ... | ... | ... | ... | ... | ... |
| Heating and cooking fuel..... | *1,108 | *56 | *20 | *3 | *847 | *50 | *17 | *2 |
| Nonresidents | | | | | | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per sportsman (dollars) | | | | |
| Trip-related expenditures for fishing and hunting, total..... | 29,265 | 102 | 286 | 208 | | | | |
| TRIP-RELATED EXPENDITURES FOR FISHING | | | | | | | | |
| Total..... | *14,409 | *74 | *194 | *130 | | | | |
| Food and lodging..... | *5,528 | *69 | *80 | *50 | | | | |
| Transportation..... | *6,541 | *65 | *100 | *59 | | | | |
| Privilege and other fees ¹ | ... | ... | ... | ... | | | | |
| Boating costs ² | ... | ... | ... | ... | | | | |
| Bait..... | *524 | *34 | *15 | *5 | | | | |
| Ice..... | *248 | *37 | *7 | *2 | | | | |
| Heating and cooking fuel..... | ... | ... | ... | ... | | | | |
| TRIP-RELATED EXPENDITURES FOR HUNTING | | | | | | | | |
| Total..... | *14,855 | *37 | *398 | *380 | | | | |
| Food and lodging..... | *6,397 | *35 | *184 | *164 | | | | |
| Transportation..... | *5,313 | *37 | *142 | *136 | | | | |
| Privilege and other fees ¹ | ... | ... | ... | ... | | | | |
| Boating costs ² | ... | ... | ... | ... | | | | |
| Heating and cooking fuel..... | ... | ... | ... | ... | | | | |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Includes boat and equipment rental and fees for guides, pack trips, public land use, and private land use.

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

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

Table 22. Summary of Expenditures in the U.S. by State Residents for Fishing and Hunting: 1996
(Population 16 years old and older)

| Expenditure item | Fishing and hunting | | | |
|---|----------------------------------|-------------------------|----------------------------------|------------------------------------|
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per sportsman (dollars) |
| Total | 3,177,513 | 1,669 | 1,904 | 1,805 |
| Food and lodging | 369,857 | 1,325 | 279 | 210 |
| Transportation | 198,141 | 1,415 | 140 | 113 |
| Other trip costs | 232,958 | 1,260 | 185 | 132 |
| Equipment (fishing, hunting) | 512,308 | 1,218 | 421 | 291 |
| Auxiliary equipment | 167,298 | 694 | 241 | 95 |
| Special equipment | 1,471,345 | 264 | 5,573 | 836 |
| Magazines and books | 16,796 | 525 | 32 | 10 |
| Membership dues and contributions | 28,269 | 321 | 88 | 16 |
| Other ¹ | 180,543 | 1,286 | 140 | 103 |
| | Fishing | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 1,967,498 | 1,494 | 1,317 | 1,237 |
| Food and lodging | 297,043 | 1,188 | 250 | 187 |
| Transportation | 149,279 | 1,245 | 120 | 94 |
| Other trip costs | 211,699 | 1,211 | 175 | 133 |
| Fishing equipment | 271,487 | 1,056 | 257 | 171 |
| Auxiliary equipment | 63,880 | 336 | 190 | 40 |
| Special equipment | 892,443 | 186 | 4,788 | 561 |
| Magazines and books | 8,425 | 261 | 32 | 5 |
| Membership dues and contributions | *11,229 | *111 | *101 | *7 |
| Other ¹ | 62,012 | 1,107 | 56 | 39 |
| | Hunting | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 527,072 | 438 | 1,203 | 1,190 |
| Food and lodging | 72,814 | 286 | 255 | 164 |
| Transportation | 48,862 | 379 | 129 | 110 |
| Other trip costs | *21,259 | *125 | *170 | *48 |
| Hunting equipment | 142,512 | 366 | 390 | 322 |
| Auxiliary equipment | 61,963 | 205 | 302 | 140 |
| Special equipment | ... | ... | ... | ... |
| Magazines and books | *2,237 | *88 | *25 | *5 |
| Membership dues and contributions | *5,027 | *82 | *61 | *11 |
| Other ¹ | 120,737 | 401 | 301 | 273 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ "Other" is made up of licenses, stamps, tags, permits, and land leasing and ownership.

Note: Detail does not add to total because of multiple responses and nonresponse. See Tables 25 to 27 for a detailed listing of expenditure items. Expenditures reported according to primary use of item.

Table 23. Summary of Trip and Equipment Expenditures in the U.S. by State Residents for Fishing, by Type of Fishing: 1996
(Population 16 years old and older)

| Expenditure item | Total, all fishing | | | |
|------------------------|----------------------------------|-------------------------|----------------------------------|---------------------------------|
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 1,885,831 | 1,475 | 1,279 | 988 |
| Food and lodging | 297,043 | 1,188 | 250 | 187 |
| Transportation..... | 149,279 | 1,245 | 120 | 94 |
| Other trip costs..... | 211,699 | 1,211 | 175 | 133 |
| Equipment | 1,227,810 | 1,115 | 1,101 | 574 |
| | Total, all freshwater | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 1,672,227 | 1,433 | 1,167 | 1,031 |
| Food and lodging | 272,495 | 1,165 | 234 | 189 |
| Transportation..... | 130,055 | 1,230 | 106 | 90 |
| Other trip costs..... | 175,415 | 1,202 | 146 | 121 |
| Equipment | 1,094,262 | 1,064 | 1,028 | 631 |
| | Freshwater, except Great Lakes | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 1,349,544 | 1,327 | 1,017 | 942 |
| Food and lodging | 213,913 | 1,087 | 197 | 161 |
| Transportation..... | 111,996 | 1,099 | 102 | 84 |
| Other trip costs..... | 134,907 | 1,142 | 118 | 101 |
| Equipment | 888,727 | 990 | 897 | 595 |
| | Great Lakes | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | 322,683 | 368 | 876 | 677 |
| Food and lodging | 58,582 | 276 | 213 | 168 |
| Transportation..... | 18,059 | 286 | 63 | 52 |
| Other trip costs..... | 40,508 | 245 | 165 | 116 |
| Equipment | *205,535 | *128 | *1,600 | *342 |
| | Saltwater | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per angler (dollars) |
| Total | *82,575 | *103 | *799 | *854 |
| Food and lodging | *24,549 | *80 | *306 | *258 |
| Transportation..... | *19,224 | *62 | *309 | *202 |
| Other trip costs..... | *36,284 | *56 | *654 | *382 |
| Equipment | ... | ... | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

Note: Detail does not add to total because of multiple responses and nonresponse. Includes expenditures by state residents in other states.

Table 24. Summary of Trip and Equipment Expenditures in the U.S. by State Residents for Hunting, by Type of Hunting: 1996
(Population 16 years old and older)

| Expenditure item | Total, all hunting | | | |
|------------------------|----------------------------------|-------------------------|----------------------------------|---------------------------------|
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 399,072 | 415 | 961 | 901 |
| Food and lodging | 72,814 | 286 | 255 | 164 |
| Transportation..... | 48,862 | 379 | 129 | 110 |
| Other trip costs..... | *21,259 | *125 | *170 | *48 |
| Equipment | 256,137 | 375 | 682 | 578 |
| | Big game | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 173,846 | 313 | 556 | 567 |
| Food and lodging | 28,919 | 188 | 154 | 95 |
| Transportation..... | 26,763 | 263 | 102 | 88 |
| Other trip costs..... | *4,748 | *63 | *75 | *16 |
| Equipment | 113,415 | 249 | 456 | 368 |
| | Small game | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | 96,949 | 274 | 354 | 326 |
| Food and lodging | 30,417 | 190 | 160 | 104 |
| Transportation..... | 14,987 | 234 | 64 | 51 |
| Other trip costs..... | *7,344 | *68 | *108 | *25 |
| Equipment | 44,202 | 160 | 276 | 145 |
| | Migratory bird | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | *72,763 | *116 | *628 | *701 |
| Food and lodging | *12,461 | *77 | *163 | *121 |
| Transportation..... | *6,246 | *98 | *63 | *61 |
| Other trip costs..... | *9,144 | *50 | *182 | *89 |
| Equipment | *44,912 | *69 | *649 | *429 |
| | Other animals | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per hunter (dollars) |
| Total | *21,620 | *64 | *340 | *97 |
| Food and lodging | ... | ... | ... | ... |
| Transportation..... | ... | ... | ... | ... |
| Other trip costs..... | ... | ... | ... | ... |
| Equipment | ... | ... | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

Note: Detail does not add to total because of multiple responses and nonresponse. Includes expenditures by state residents in other states.

Table 25. Expenditures in the U.S. by State Residents for Fishing: 1996
(Population 16 years old and older. Includes Great Lakes and saltwater fishing expenditures)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------------|------------------------------------|-----------------------|-----------------------|-------------------------------------|
| | Amount (thousands of dollars) | Average per angler (dollars) | Number (thousands) | Percent of anglers | Average per spender (dollars) |
| Total, all items | 1,967,498 | 1,237 | 1,494 | 94 | 1,317 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 658,021 | 414 | 1,382 | 87 | 476 |
| Food and lodging, total | 297,043 | 187 | 1,188 | 75 | 250 |
| Food | 193,792 | 122 | 1,175 | 74 | 165 |
| Lodging | 103,252 | 65 | 511 | 32 | 202 |
| Transportation | 149,279 | 94 | 1,245 | 78 | 120 |
| Other trip costs, total | 211,699 | 133 | 1,211 | 76 | 175 |
| Privilege and other fees ¹ | 81,865 | 51 | 426 | 27 | 192 |
| Boating costs ² | 76,274 | 48 | 524 | 33 | 146 |
| Bait | 42,148 | 26 | 1,100 | 69 | 38 |
| Ice | 8,348 | 5 | 669 | 42 | 12 |
| Heating and cooking fuel | *3,064 | *2 | *177 | *11 | *17 |
| EQUIPMENT AND OTHER EXPENDITURES PRIMARILY FOR FISHING | | | | | |
| Fishing equipment, total | 271,487 | 171 | 1,056 | 66 | 257 |
| Reels, rods, and rod making components | 123,926 | 78 | 634 | 40 | 196 |
| Lines, hooks, sinkers, etc | 41,260 | 26 | 892 | 56 | 46 |
| Artificial lures and flies | 57,105 | 36 | 822 | 52 | 69 |
| Creels, stringers, fish bags, landing nets, and gaff hooks | 3,653 | 2 | 266 | 17 | 14 |
| Minnow seines, traps, and bait containers | 2,946 | 2 | 206 | 13 | 14 |
| Other fishing equipment ³ | 42,598 | 27 | 430 | 27 | 99 |
| Auxiliary equipment | 63,880 | 40 | 336 | 21 | 190 |
| Special equipment | 892,443 | 561 | 186 | 12 | 4,788 |
| Other fishing costs ⁴ | 81,667 | 51 | 1,171 | 74 | 70 |

* Estimate based on a small sample size.

¹ Includes boat or equipment rental and fees for guides, pack trip (party and charter boats, etc.), public land use, and private land use.

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

³ Includes electronic fishing devices (depth finders, fish finders, etc.), tackle boxes, ice fishing equipment, and other fishing equipment.

⁴ Includes magazine subscriptions, membership dues and contributions, land leasing and ownership, and licenses, stamps, tags, and permits.

Note: Detail does not add to total because of multiple responses and nonresponse. Includes expenditures by state residents in other states.

Table 26. Expenditures in the U.S. by State Residents for Hunting: 1996

(Population 16 years old and older)

| Expenditure item | Expenditures | | Spenders | | |
|---|-------------------------------------|------------------------------------|-----------------------|-----------------------|-------------------------------------|
| | Amount (thousands of dollars) | Average per hunter (dollars) | Number (thousands) | Percent of hunters | Average per spender (dollars) |
| Total, all items | 527,072 | 1,190 | 438 | 99 | 1,203 |
| TRIP-RELATED EXPENDITURES | | | | | |
| Total trip-related | 142,935 | 323 | 388 | 88 | 368 |
| Food and lodging, total | 72,814 | 164 | 286 | 64 | 255 |
| Food | 53,125 | 120 | 286 | 64 | 186 |
| Lodging | *19,689 | *44 | *86 | *19 | *230 |
| Transportation | 48,862 | 110 | 379 | 86 | 129 |
| Other trip costs, total | *21,259 | *48 | *125 | *28 | *170 |
| Privilege and other fees ¹ | *16,156 | *36 | *78 | *18 | *208 |
| Boating costs ² | ... | ... | ... | ... | ... |
| Heating and cooking fuel | *2,885 | *7 | *63 | *14 | *46 |
| EQUIPMENT AND OTHER EXPENDITURES PRIMARILY FOR HUNTING | | | | | |
| Hunting equipment, total | 142,512 | 322 | 366 | 83 | 390 |
| Guns and rifles | *49,200 | *111 | *89 | *20 | *552 |
| Ammunition | 13,037 | 29 | 315 | 71 | 41 |
| Other hunting equipment ³ | 80,275 | 181 | 258 | 58 | 311 |
| Auxiliary equipment | 61,963 | 140 | 205 | 46 | 302 |
| Special equipment | ... | ... | ... | ... | ... |
| Other hunting costs ⁴ | 128,000 | 289 | 410 | 93 | 312 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Includes guide fees, pack trip or package fees, public and private land use access fees, and rental of equipment such as boats and hunting or camping equipment.

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

³ Includes bows, arrows, archery equipment, telescopic sights, decoys and game calls, hand loading equipment and components, hunting dogs and associated costs, hunting knives, and other hunting equipment.

⁴ Includes magazine subscriptions, membership dues and contributions, land leasing and ownership, licenses, stamps, tags, and permits.

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

Table 27. Expenditures in the U.S. by State Residents for Special and Auxiliary Equipment Purchased Primarily for Fishing or Hunting: 1996

(Population 16 years old and older)

| Equipment item | Expenditures | | Spenders | | |
|--|-------------------------------------|---------------------------------------|-----------------------|-------------------------|-------------------------------------|
| | Amount (thousands of dollars) | Average per sportsman (dollars) | Number (thousands) | Percent of sportsmen | Average per spender (dollars) |
| SPECIAL EQUIPMENT | | | | | |
| Special equipment, total | 1,471,345 | 836 | 264 | 15 | 5,573 |
| Boats and canoes. | *404,214 | *230 | *67 | *4 | *6,036 |
| Boat motors, boat trailer/hitch, and other boat accessories. | *44,498 | *25 | *77 | *4 | *578 |
| Travel or tent trailer, pickup, camper, van, motor home, cabin | *605,087 | *343 | *54 | *3 | *11,205 |
| Trail bike, dune buggy, 4x4 vehicle, 4-wheeler, snowmobile | *415,959 | *237 | *51 | *3 | *8,156 |
| Other special equipment. | *1,588 | *1 | *65 | *4 | *24 |
| AUXILIARY EQUIPMENT | | | | | |
| Auxiliary equipment, total | 167,298 | 95 | 694 | 39 | 241 |
| Camping equipment. | 47,849 | 27 | 262 | 15 | 183 |
| Special fishing or hunting clothing ¹ | 50,753 | 29 | 402 | 23 | 126 |
| Other auxiliary equipment ² | 68,696 | 39 | 313 | 18 | 219 |

* Estimate based on a small sample size.

¹ Also includes foul weather gear, rubber boots, and waders.

² Includes binoculars, field glasses, telescopes, snow shoes and skis, maintenance and repair of equipment, processing and taxidermy costs, and other equipment.

Note: Detail does not add to total because of multiple responses and nonresponse. Includes expenditures by state residents in other states.

Table 28. State Residents Participating in Wildlife Watching: 1996

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

| Participants | Number | Percent of participants | Percent of population |
|---|--------------|-------------------------|-----------------------|
| Total participants | 3,137 | 100 | 35 |
| Nonresidential | 1,371 | 44 | 15 |
| Residential | 2,976 | 95 | 33 |
| Observe wildlife | 2,197 | 70 | 24 |
| Photograph wildlife | 540 | 17 | 6 |
| Feed wild birds or other wildlife | 2,663 | 85 | 30 |
| Maintain plantings or natural areas | 611 | 19 | 7 |
| Visit public parks | 796 | 25 | 9 |

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

Table 29. U.S. Residents Participating in Wildlife Watching In-State: 1996

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

| Participants | Number | Percent |
|---------------------------------|--------------|------------|
| Total participants | 3,229 | 100 |
| Nonresidential | 1,247 | 39 |
| Residential | 2,976 | 92 |

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

Table 30. Participants, Trips, and Days of Participation in Nonresidential (Away From Home) Activities: 1996

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

| Participants, trips, and days of participation | Activity in-state | | | | | |
|--|---|------------|-----------------|------------|--------------|-------------|
| | Total, state residents and nonresidents | | State residents | | Nonresidents | |
| | Number | Percent | Number | Percent | Number | Percent |
| PARTICIPANTS | | | | | | |
| Total participants | 1,247 | 100 | 1,144 | 100 | *102 | *100 |
| Observe wildlife | 1,214 | 97 | 1,116 | 98 | *98 | *96 |
| Photograph wildlife | 418 | 33 | *393 | *34 | ... | ... |
| Feed wildlife | 489 | 39 | *453 | *40 | ... | ... |
| TRIPS | | | | | | |
| Total trips | 8,335 | 100 | 8,117 | 100 | *218 | *100 |
| Average days per trip | 1 | (X) | 1 | (X) | *1 | (X) |
| DAYS OF PARTICIPATION | | | | | | |
| Total days | 9,416 | 100 | 9,100 | 100 | *316 | *100 |
| Observing wildlife | 9,012 | 96 | 8,730 | 96 | *282 | *89 |
| Photographing wildlife | 2,149 | 23 | *2,121 | *23 | ... | ... |
| Feeding wildlife | 1,987 | 21 | *1,898 | *21 | ... | ... |
| Average days per participant | 8 | (X) | 8 | (X) | *3 | (X) |
| Observing wildlife | 7 | (X) | 8 | (X) | *3 | (X) |
| Photographing wildlife | 5 | (X) | *5 | (X) | ... | (X) |
| Feeding wildlife | 4 | (X) | *4 | (X) | ... | (X) |

* Estimate based on a small sample size. ... Sample size too small to report data reliably. (X) Not applicable.

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

Table 31. Nonresidential (Away From Home) Participants Visiting Public Areas In-State and Type of Site Visited: 1996
(Population 16 years old and older. Numbers in thousands)

| Participants and sites | Total, state residents and nonresidents | | State residents | | Nonresidents | |
|---------------------------------|---|------------|-----------------|------------|--------------|-------------|
| | Number | Percent | Number | Percent | Number | Percent |
| Total participants | 1,247 | 100 | 1,144 | 100 | *102 | *100 |
| Visited public areas..... | 1,035 | 83 | 965 | 84 | *70 | *68 |
| Did not visit public areas..... | *212 | *17 | *179 | *16 | ... | ... |
| Total, all sites | 1,247 | 100 | 1,144 | 100 | *102 | *100 |
| Lakes and streamsides..... | 908 | 73 | 848 | 74 | *61 | *59 |
| Marsh, wetland, swamp..... | 390 | 31 | *363 | *32 | ... | ... |
| Woodland..... | 1,024 | 82 | 952 | 83 | *73 | *71 |
| Brush-covered areas..... | 604 | 48 | 565 | 49 | ... | ... |
| Open field..... | 788 | 63 | 736 | 64 | *53 | *52 |
| Man-made area..... | 529 | 42 | *482 | *42 | *47 | *45 |
| Other..... | *184 | *15 | *166 | *14 | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

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

Table 32. In-State Nonresidential Participants by Wildlife Observed, Photographed, or Fed: 1996
(Population 16 years old and older. Numbers in thousands)

| Wildlife observed, photographed, or fed | Total, state residents and nonresidents | | State residents | | Nonresidents | |
|---|---|------------|-----------------|-----------|--------------|-----------|
| | Number | Percent | Number | Percent | Number | Percent |
| Total all wildlife | 1,247 | 100 | 1,144 | 92 | *102 | *8 |
| Total birds | 943 | 100 | 883 | 94 | *60 | *6 |
| Birds of prey..... | 395 | 100 | *366 | *93 | ... | ... |
| Waterfowl..... | 803 | 100 | 749 | 93 | *54 | *7 |
| Shorebirds..... | *312 | *100 | *284 | *91 | ... | ... |
| Songbirds..... | 696 | 100 | 656 | 94 | ... | ... |
| Other birds..... | *290 | *100 | *267 | *92 | ... | ... |
| Total land mammals | 898 | 100 | 864 | 96 | ... | ... |
| Large land mammals..... | 625 | 100 | 613 | 98 | ... | ... |
| Small land mammals..... | 717 | 100 | 685 | 96 | ... | ... |
| Fish..... | *364 | *100 | *342 | *94 | ... | ... |
| Other wildlife..... | *450 | *100 | *432 | *96 | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

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

Table 33. Participation in Residential (Around the Home) Activities: 1996

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

| Residential activity | Participants | | Residential activity | Participants | |
|---|--------------|------------|--|--------------|------------|
| | Number | Percent | | Number | Percent |
| Total residential participants | 2,976 | 100 | FEED WILDLIFE | | |
| Observe wildlife | 2,197 | 74 | Participants feeding: | | |
| Visit public parks ¹ | 796 | 27 | Total, all wildlife | 2,663 | 100 |
| Photograph wildlife | 540 | 18 | Wild birds | 2,565 | 96 |
| Feed wildlife | 2,663 | 89 | Other wildlife | 1,061 | 40 |
| Maintain natural areas | *300 | *10 | | | |
| Maintain plantings | 459 | 15 | | | |
| OBSERVE WILDLIFE | | | Months fed wild birds: | | |
| Participants observing: | | | January | 1,900 | 74 |
| Total, all wildlife | 2,197 | 100 | February | 1,845 | 72 |
| Birds | 2,175 | 99 | March | 1,881 | 73 |
| Land mammals | 2,038 | 93 | April | 1,774 | 69 |
| Large mammals | 769 | 35 | May | 1,587 | 62 |
| Small mammals | 1,983 | 90 | June | 1,607 | 63 |
| Amphibians or reptiles | *227 | *10 | July | 1,616 | 63 |
| Insects or spiders | 840 | 38 | August | 1,412 | 55 |
| Fish and other wildlife | 586 | 27 | September | 1,437 | 56 |
| Participants observing: | | | October | 1,578 | 62 |
| Total, 1 day or more | 2,197 | 100 | November | 1,743 | 68 |
| 1 to 10 days | 736 | 33 | December | 1,867 | 73 |
| 11 to 50 days | 563 | 26 | | | |
| 51 to 200 days | 628 | 29 | Average months fed wild birds ² | 8 | (X) |
| 201 days or more | *271 | *12 | Months fed other wildlife: | | |
| VISIT PUBLIC PARKS¹ | | | January | 688 | 65 |
| Participants visiting: | | | February | 688 | 65 |
| Total, 1 day or more | 796 | 100 | March | 692 | 65 |
| 1 to 5 days | *399 | *50 | April | 612 | 58 |
| 6 to 10 days | *172 | *22 | May | 486 | 46 |
| 11 days or more | *225 | *28 | June | 538 | 51 |
| PHOTOGRAPH WILDLIFE | | | July | 530 | 50 |
| Participants photographing: | | | August | 530 | 50 |
| Total, 1 day or more | 540 | 100 | September | 595 | 56 |
| 1 to 3 days | *290 | *54 | October | 537 | 51 |
| 4 to 10 days | *158 | *29 | November | 568 | 54 |
| 11 or more days | ... | ... | December | 547 | 52 |
| | | | Average months fed other wildlife ³ | 7 | (X) |

* Estimate based on a small sample size. ... Sample size too small to report data reliably. (X) Not applicable.

¹ Includes visits only to parks or publicly owned areas within 1 mile of home.

² Based on the number of months where participant fed wild birds at least once a week.

³ Based on the number of months where participant fed other wildlife at least once.

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

Table 34. Selected Characteristics of State Residents Participating in Wildlife Watching: 1996
(Population 16 years old and older. Numbers in thousands)

| Characteristic | Population | | Participants | | | | | | | | |
|---|--------------|------------|--------------|--------------------------|------------|----------------|--------------------------|------------|--------------|--------------------------|------------|
| | | | Total | | | Nonresidential | | | Residential | | |
| | Number | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent | Number | Percent who participated | Percent |
| Total persons | 8,979 | 100 | 3,137 | 35 | 100 | 1,371 | 15 | 100 | 2,976 | 33 | 100 |
| Population density of residence: | | | | | | | | | | | |
| Urban | 7,403 | 82 | 2,418 | 33 | 77 | 1,102 | 15 | 80 | 2,299 | 31 | 77 |
| Rural | 1,576 | 18 | 719 | 46 | 23 | *268 | *17 | *20 | 677 | 43 | 23 |
| Population size of residence: | | | | | | | | | | | |
| MSA | 7,640 | 85 | 2,615 | 34 | 83 | 1,080 | 14 | 79 | 2,509 | 33 | 84 |
| 1,000,000 or more | 6,021 | 67 | 1,859 | 31 | 59 | 718 | 12 | 52 | 1,835 | 30 | 62 |
| 250,000 to 999,999 | 707 | 8 | *225 | *32 | *7 | ... | ... | ... | *211 | *30 | *7 |
| 50,000 to 249,999 | 912 | 10 | 531 | 58 | 17 | *224 | *25 | *16 | 463 | 51 | 16 |
| Outside MSA | 1,339 | 15 | 522 | 39 | 17 | *290 | *22 | *21 | 467 | 35 | 16 |
| Sex: | | | | | | | | | | | |
| Male | 4,257 | 47 | 1,516 | 36 | 48 | 667 | 16 | 49 | 1,369 | 32 | 46 |
| Female | 4,722 | 53 | 1,621 | 34 | 52 | 704 | 15 | 51 | 1,607 | 34 | 54 |
| Age: | | | | | | | | | | | |
| 16 to 17 years | 321 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 18 to 24 years | 916 | 10 | *343 | *37 | *11 | ... | ... | ... | *261 | *28 | *9 |
| 25 to 34 years | 1,641 | 18 | *450 | *27 | *14 | *257 | *16 | *19 | *427 | *26 | *14 |
| 35 to 44 years | 2,138 | 24 | 865 | 40 | 28 | *370 | *17 | *27 | 837 | 39 | 28 |
| 45 to 54 years | 1,496 | 17 | *378 | *25 | *12 | *138 | *9 | *10 | *350 | *23 | *12 |
| 55 to 64 years | 1,025 | 11 | 556 | 54 | 18 | *172 | *17 | *13 | 556 | 54 | 19 |
| 65 years and older | 1,442 | 16 | 482 | 33 | 15 | *182 | *13 | *13 | 482 | 33 | 16 |
| Race: | | | | | | | | | | | |
| White | 7,392 | 82 | 2,842 | 38 | 91 | 1,186 | 16 | 87 | 2,681 | 36 | 90 |
| Black | 952 | 11 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| All others | 636 | 7 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Annual household income: | | | | | | | | | | | |
| Less than \$10,000 | 583 | 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$10,000 to \$19,999 | 792 | 9 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$20,000 to \$29,999 | 969 | 11 | 453 | 47 | 14 | *208 | *21 | *15 | *344 | *36 | *12 |
| \$30,000 to \$39,999 | 914 | 10 | *347 | *38 | *11 | *153 | *17 | *11 | *336 | *37 | *11 |
| \$40,000 to \$49,999 | 931 | 10 | *328 | *35 | *10 | *207 | *22 | *15 | *286 | *31 | *10 |
| \$50,000 to \$74,999 | 1,601 | 18 | 583 | 36 | 19 | *208 | *13 | *15 | 583 | 36 | 20 |
| \$75,000 or more | 1,458 | 16 | 593 | 41 | 19 | *254 | *17 | *19 | 593 | 41 | 20 |
| Not reported | 1,733 | 19 | *536 | *31 | *17 | ... | ... | ... | *536 | *31 | *18 |
| Education: | | | | | | | | | | | |
| 8 years or less | 387 | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 9 to 11 years | 782 | 9 | *192 | *25 | *6 | ... | ... | ... | *192 | *25 | *6 |
| 12 years | 3,146 | 35 | 1,087 | 35 | 35 | *412 | *13 | *30 | 1,019 | 32 | 34 |
| 1 to 3 years college | 2,145 | 24 | 872 | 41 | 28 | *413 | *19 | *30 | 789 | 37 | 27 |
| 4 years college or more | 2,520 | 28 | 931 | 37 | 30 | 478 | 19 | 35 | 921 | 37 | 31 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

Note: Detail does not add to total because of multiple responses and nonresponse. "Percent who participated" shows 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 participated, etc.). Percent columns show the percent of each column's participants who are described by the row heading (the percent of those who participated who live in urban areas, etc.).

Table 35. In-State Expenditures by U.S. Residents for Wildlife Watching: 1996
(Population 16 years old and older)

| Expenditure item | Expenditures (thousands of dollars) | Average per participant (dollars) | Spenders | | |
|--|---|---|-----------------------|--|-------------------------------------|
| | | | Number (thousands) | Percent of wildlife-watching participants ¹ | Average per spender (dollars) |
| Total, all items | 710,456 | 205 | 2,953 | 91 | 241 |
| TRIP EXPENDITURES | | | | | |
| Total trip-related | 125,529 | 101 | 1,135 | 91 | 111 |
| Food and lodging | 54,418 | 44 | 876 | 70 | 62 |
| Food | 46,115 | 37 | 876 | 70 | 53 |
| Lodging | *8,303 | *7 | *173 | *14 | *48 |
| Transportation | 51,916 | 42 | 1,025 | 82 | 51 |
| Other trip costs ² | *19,196 | *15 | *193 | *15 | *100 |
| EQUIPMENT AND OTHER EXPENDITURES | | | | | |
| Total | 584,928 | 166 | 2,804 | 87 | 209 |
| Wildlife-watching equipment, total | 430,823 | 125 | 2,570 | 80 | 168 |
| Binoculars, spotting scopes | *48,945 | *14 | *494 | *15 | *99 |
| Film and developing | 69,271 | 20 | 902 | 28 | 77 |
| Cameras, special lenses, videocameras, and other photographic equipment | *76,130 | *20 | *217 | *7 | *351 |
| Day packs, carrying cases, and special clothing ... | *13,945 | *2 | *134 | *4 | *104 |
| Bird food | 148,100 | 45 | 1,827 | 57 | 81 |
| Food for other wildlife | 21,599 | 7 | 546 | 17 | 40 |
| Nest boxes, bird houses, bird feeders, and bird baths | 38,577 | 12 | 1,095 | 34 | 35 |
| Other equipment | *14,256 | *4 | *186 | *6 | *77 |
| Auxiliary equipment ³ | *45,701 | *8 | *256 | *8 | *179 |
| Special equipment ⁴ | ... | ... | ... | ... | ... |
| Magazines and books | 19,969 | 6 | 572 | 18 | 35 |
| Membership dues and contributions | 23,531 | 7 | 493 | 15 | 48 |
| Land leasing and ownership | ... | ... | ... | ... | ... |
| Plantings | *25,992 | *8 | *285 | *9 | *91 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Percent of wildlife-watching participants column for trip-related expenditures is based on nonresidential participants. For equipment and other expenditures, the percent of wildlife-watching participants column is based on total wildlife-watching participants.

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

³ Includes tents, tarps, frame packs and other backpacking equipment, and other camping equipment.

⁴ Includes travel or tent trailers, off-the-road vehicles, pickups, campers, vans, motor homes, boats, and other special equipment.

Note: Detail does not add to total because of multiple responses and nonresponse. "Percent of wildlife-watching participants" may be greater than 100 percent because spenders who did not participate in wildlife watching in this state are included.

Table 36. In-State Trip-Related Expenditures for Nonresidential (Away From Home) Participation: 1996
(Population 16 years old and older)

| Expenditure item | Total, state residents and nonresidents | | | |
|---|---|-------------------------|----------------------------------|--------------------------------------|
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per participant (dollars) |
| Total | 125,529 | 1,135 | 111 | 101 |
| Food and lodging | 54,418 | 876 | 62 | 44 |
| Transportation | 51,916 | 1,025 | 51 | 42 |
| Privilege and other fees ¹ | *13,161 | *143 | *92 | *11 |
| Other ² | ... | ... | ... | ... |
| | State residents | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per participant (dollars) |
| Total | 113,272 | 1,040 | 109 | 99 |
| Food and lodging | 49,106 | 800 | 61 | 43 |
| Transportation | 46,320 | 938 | 49 | 40 |
| Privilege and other fees ¹ | ... | ... | ... | ... |
| Other ² | ... | ... | ... | ... |
| | Nonresidents | | | |
| | Amount (thousands of dollars) | Spenders (thousands) | Average per spender (dollars) | Average per participant (dollars) |
| Total | *12,257 | *96 | *128 | *120 |
| Food and lodging | *5,312 | *76 | *70 | *52 |
| Transportation | *5,596 | *87 | *64 | *55 |
| Privilege and other fees ¹ | ... | ... | ... | ... |
| Other ² | ... | ... | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Includes equipment rental and fees for guides, pack trips, public land use, and private land use.

² Boat launching, mooring, storage, maintenance, insurance, pumpout fees, fuel, and heating and cooking fuel.

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

Table 37. Expenditures in the U.S. by State Residents for Wildlife Watching: 1996
(Population 16 years old and older)

| Expenditure item | Expenditures (thousands of dollars) | Average per participant (dollars) | Spenders | | |
|--|---|---|-----------------------|--|-------------------------------------|
| | | | Number (thousands) | Percent of wildlife- watching participants ¹ | Average per spender (dollars) |
| Total, all items | 1,314,508 | 419 | 2,777 | 89 | 473 |
| TRIP EXPENDITURES | | | | | |
| Total trip-related | 683,319 | 499 | 1,273 | 93 | 537 |
| Food and lodging | 367,322 | 268 | 1,030 | 75 | 357 |
| Food | 266,855 | 195 | 1,030 | 75 | 259 |
| Lodging | *100,467 | *73 | *392 | *29 | *256 |
| Transportation | 250,327 | 183 | 1,167 | 85 | 214 |
| Other trip costs ² | *65,670 | *48 | *396 | *29 | *166 |
| EQUIPMENT AND OTHER EXPENDITURES | | | | | |
| Total | 631,189 | 201 | 2,714 | 87 | 233 |
| Wildlife-watching equipment, total | 450,827 | 144 | 2,525 | 80 | 179 |
| Binoculars, spotting scopes | *50,717 | *16 | *510 | *16 | *99 |
| Film and developing | 72,536 | 23 | 909 | 29 | 80 |
| Cameras, special lenses, videocameras, and other photographic equipment | *69,146 | *22 | *206 | *7 | *335 |
| Day packs, carrying cases, and special clothing ... | *30,173 | *10 | *231 | *7 | *131 |
| Bird food | 148,709 | 47 | 1,857 | 59 | 80 |
| Food for other wildlife | 21,642 | 7 | 554 | 18 | 39 |
| Nest boxes, bird houses, bird feeders, and bird baths | 39,884 | 13 | 1,156 | 37 | 34 |
| Other equipment | *18,019 | *6 | *225 | *7 | *80 |
| Auxiliary equipment ³ | *38,636 | *12 | *284 | *9 | *136 |
| Special equipment ⁴ | ... | ... | ... | ... | ... |
| Magazines and books | 21,530 | 7 | 592 | 19 | 36 |
| Membership dues and contributions | 34,864 | 11 | 565 | 18 | 62 |
| Land leasing and ownership | ... | ... | ... | ... | ... |
| Plantings | *25,992 | *8 | *285 | *9 | *91 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

¹ Percent of wildlife-watching participants column for trip-related expenditures is based on nonresidential participants. For equipment and other expenditures, the percent of wildlife-watching participants column is based on total wildlife-watching participants.

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

³ Includes tents, tarps, frame packs and other backpacking equipment, and other camping equipment.

⁴ Includes travel or tent trailers, off-the-road vehicles, pickups, campers, vans, motor homes, boats, and other special equipment.

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

Table 38. Participation of State Resident Wildlife-Watching Participants in Fishing and Hunting: 1996
(Population 16 years old and older. Numbers in thousands)

| | Total, nonresidential and residential | | Wildlife-watching activity | | | |
|--|---|------------|----------------------------|------------|--------------|------------|
| | | | Nonresidential | | Residential | |
| | Number | Percent | Number | Percent | Number | Percent |
| Total participants | 3,137 | 100 | 1,371 | 100 | 2,976 | 100 |
| Wildlife-watching participants who: | | | | | | |
| Did not fish or hunt..... | 1,979 | 63 | 707 | 52 | 1,903 | 64 |
| Fished or hunted | 1,159 | 37 | 664 | 48 | 1,074 | 36 |
| Fished | 1,050 | 33 | 598 | 44 | 973 | 33 |
| Hunted | 293 | 9 | 159 | 12 | 262 | 9 |

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

Table 39. Participation of State Resident Sportsmen in Wildlife-Watching Activities: 1996
(Population 16 years old and older. Numbers in thousands)

| Sportsmen | Sportsmen | | Anglers | | Hunters | |
|--|--------------|------------|--------------|------------|------------|------------|
| | Number | Percent | Number | Percent | Number | Percent |
| Total sportsmen | 1,761 | 100 | 1,591 | 100 | 443 | 100 |
| Sportsmen who: | | | | | | |
| Did not engage in wildlife-watching activities . | 602 | 34 | 541 | 34 | 149 | 34 |
| Engaged in wildlife-watching activities | 1,159 | 66 | 1,050 | 66 | 293 | 66 |
| Nonresidential | 664 | 38 | 598 | 38 | 159 | 36 |
| Residential | 1,074 | 61 | 973 | 61 | 262 | 59 |

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

Table 40. Participants in Wildlife-Associated Recreation, by Participant's State of Residence: 1996

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

| Participant's state of residence | Population | Total participants | | Sportsmen | | Wildlife-watching participants | |
|----------------------------------|----------------|--------------------|-----------------------|---------------|-----------------------|--------------------------------|-----------------------|
| | | Number | Percent of population | Number | Percent of population | Number | Percent of population |
| U.S., total | 201,472 | 76,964 | 38 | 39,694 | 20 | 62,868 | 31 |
| Alabama | 3,306 | 1,264 | 38 | 788 | 24 | 988 | 30 |
| Alaska | 432 | 279 | 65 | 187 | 43 | 216 | 50 |
| Arizona | 3,234 | 1,210 | 37 | 497 | 15 | 999 | 31 |
| Arkansas | 1,914 | 890 | 47 | 596 | 31 | 658 | 34 |
| California | 23,777 | 7,097 | 30 | 2,938 | 12 | 5,959 | 25 |
| Colorado | 2,929 | 1,535 | 52 | 732 | 25 | 1,244 | 42 |
| Connecticut | 2,514 | 928 | 37 | 375 | 15 | 774 | 31 |
| Delaware | 560 | 232 | 41 | 118 | 21 | 192 | 34 |
| Florida | 11,239 | 3,642 | 32 | 1,988 | 18 | 2,840 | 25 |
| Georgia | 5,544 | 1,960 | 35 | 1,093 | 20 | 1,622 | 29 |
| Hawaii | 900 | 201 | 22 | 136 | 15 | 123 | 14 |
| Idaho | 879 | 484 | 55 | 336 | 38 | 355 | 40 |
| Illinois | 8,979 | 3,740 | 42 | 1,761 | 20 | 3,137 | 35 |
| Indiana | 4,456 | 1,876 | 42 | 972 | 22 | 1,542 | 35 |
| Iowa | 2,174 | 1,032 | 47 | 607 | 28 | 828 | 38 |
| Kansas | 1,916 | 793 | 41 | 437 | 23 | 607 | 32 |
| Kentucky | 3,001 | 1,206 | 40 | 779 | 26 | 951 | 32 |
| Louisiana | 3,227 | 1,271 | 39 | 927 | 29 | 861 | 27 |
| Maine | 966 | 511 | 53 | 266 | 28 | 443 | 46 |
| Maryland | 3,912 | 1,537 | 39 | 629 | 16 | 1,323 | 34 |
| Massachusetts | 4,726 | 1,835 | 39 | 622 | 13 | 1,638 | 35 |
| Michigan | 7,267 | 3,134 | 43 | 1,748 | 24 | 2,585 | 36 |
| Minnesota | 3,473 | 1,663 | 48 | 1,212 | 35 | 1,325 | 38 |
| Mississippi | 2,032 | 680 | 33 | 519 | 26 | 458 | 23 |
| Missouri | 4,056 | 1,888 | 47 | 1,081 | 27 | 1,623 | 40 |
| Montana | 672 | 394 | 59 | 222 | 33 | 315 | 47 |
| Nebraska | 1,232 | 539 | 44 | 289 | 23 | 428 | 35 |
| Nevada | 1,214 | 365 | 30 | 223 | 18 | 258 | 21 |
| New Hampshire | 887 | 448 | 51 | 181 | 20 | 394 | 44 |
| New Jersey | 6,129 | 1,864 | 30 | 821 | 13 | 1,574 | 26 |
| New Mexico | 1,276 | 501 | 39 | 281 | 22 | 370 | 29 |
| New York | 13,944 | 3,800 | 27 | 1,708 | 12 | 3,169 | 23 |
| North Carolina | 5,605 | 2,364 | 42 | 1,217 | 22 | 1,984 | 35 |
| North Dakota | 483 | 190 | 39 | 148 | 31 | 112 | 23 |
| Ohio | 8,522 | 3,281 | 39 | 1,280 | 15 | 2,816 | 33 |
| Oklahoma | 2,484 | 1,199 | 48 | 798 | 32 | 860 | 35 |
| Oregon | 2,472 | 1,260 | 51 | 619 | 25 | 1,048 | 42 |
| Pennsylvania | 9,298 | 3,886 | 42 | 1,664 | 18 | 3,442 | 37 |
| Rhode Island | 759 | 284 | 37 | 111 | 15 | 243 | 32 |
| South Carolina | 2,842 | 1,093 | 38 | 718 | 25 | 829 | 29 |
| South Dakota | 541 | 249 | 46 | 204 | 38 | 165 | 30 |
| Tennessee | 4,120 | 1,792 | 44 | 820 | 20 | 1,507 | 37 |
| Texas | 14,186 | 4,695 | 33 | 2,772 | 20 | 3,553 | 25 |
| Utah | 1,396 | 558 | 40 | 331 | 24 | 415 | 30 |
| Vermont | 455 | 242 | 53 | 116 | 26 | 217 | 48 |
| Virginia | 5,168 | 2,278 | 44 | 1,090 | 21 | 1,905 | 37 |
| Washington | 4,207 | 1,908 | 45 | 1,018 | 24 | 1,621 | 39 |
| West Virginia | 1,467 | 593 | 40 | 374 | 26 | 452 | 31 |
| Wisconsin | 3,897 | 1,961 | 50 | 1,151 | 30 | 1,651 | 42 |
| Wyoming | 366 | 192 | 53 | 139 | 38 | 143 | 39 |

Note: Detail does not add to total because of multiple responses. U.S. totals include responses from participants residing in the District of Columbia, as described in the statistical reliability appendix.

Appendix A

Appendix A: *Definitions*

Annual household income - Total 1995 income of household members before taxes and other deductions.

Auxiliary equipment - Items of equipment such as camping gear that are owned primarily for wildlife-associated recreation. Items of auxiliary equipment are listed in Table 20 (fishing and hunting) and Table 37 (wildlife watching).

Big game - Antelope, bear, deer, elk, moose, wild turkey, and similar large animals which 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 in a given activity. For example, if someone hunted 2 hours one day and 3 hours another day, it would be recorded as 2 days of hunting. If someone hunted 2 hours in the morning and 3 hours in the evening 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 1996 for wildlife-related recreation trips in the U.S., or wildlife-related recreational equipment purchased in the U.S. (and Canada where specified). Expenditures include both money

spent by participants for themselves and the value of gifts they received.

Federal land - Public land owned by the Federal government such as National Forests and National Wildlife Refuges.

Fishing - The sport of catching or attempting to catch fish with a hook, line, net, bow and arrow, or spear, fishing equipment, also catching or gathering shellfish (clams, crabs, etc.). 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. These items are listed in Table 18.

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. These items are listed in Table 19.

Local land - Public land owned by local government such as county parks or municipal watersheds.

Maintain natural areas - To set aside one-quarter 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.

Migratory birds - Birds that regularly migrate from one region or climate to another. The survey focuses on migratory birds which may be hunted, including bandtailed pigeons, coots, ducks, doves, gallinules, geese, rails, and woodcocks.

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 (1) and elk hunters (1) would overstate the number of big game hunters (1) because deer and elk hunters are not mutually exclusive categories. In contrast, total participants is the sum of male and female participants, because male and female are mutually exclusive categories.

Nonresidential activity - Trips or outings at least one mile from home for the primary purpose of observing, photographing, or feeding wildlife.

Trips to zoos, circuses, aquariums, and museums are not included.

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 nonresident participant in California.

Nonresponse - Nonresponse is 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. Hunting expenditures will reflect 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, and similar animals that are often regarded as varmints or pests. Other animals may be classified as unprotected or nongame animals by the state in which they are hunted.

Participants - Individuals who engaged in fishing, hunting, or a wildlife-watching activity.

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

Public areas - Public lands owned by local, state, or Federal governments.

Public land - Land that is owned by the local, state, or Federal government.

Private land - Land that is owned by a private individual, group of individuals, or nongovernmental organization. Residential activity - Activity within 1 mile of home with a primary purpose that is wildlife-related: (1) closely observing or trying to identify birds or other wildlife, (2) photographing wildlife, (3) feeding birds or other wildlife on a regular basis, (4) maintaining natural areas of at least one-quarter acre for which benefit to wildlife is the primary purpose, (5) maintaining plantings (shrubs, agricultural crops, etc.) for which benefit to wildlife is the primary purpose, or (6) visiting public parks within 1 mile of home for the purpose of observing, photographing, or feeding wildlife.

Residents - Individuals who lived in the state being reported. For example, persons who live in California and watch whales in California are resident participants in California.

Rural - Respondent identified that he/she lived in a rural, nonfarm, or rural, farm area when given the following choices: urban; rural, nonfarm; rural, farm.

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

Screening interviews - The first survey contact with a household. Screening interviews use brief conversations with either the respondent or a household representative in each household to identify respondents who are eligible for in-depth interviews. In addition, screening interviews are used to gather some data about the individuals in the households, such as their age and sex. Screening interviews

are discussed in the Survey Background and Method section of this report.

Small game - Grouse, partridge, pheasants, quail, rabbits, squirrels, and similar small animals and birds for which many states have small game seasons and bag limits.

(MSA) - Metropolitan Statistical Area - Except in the New England States, an MSA is a county or group of contiguous counties containing at least one city of 50,000 or more inhabitants, or twin cities (i.e., cities with contiguous boundaries and constituting, for general social and economic purposes, a single community) with a combined population of at least 50,000. Also included in an MSA are contiguous counties that are socially and economically integrated with the central city. In the New England States, an MSA consists of towns and cities instead of counties. Each MSA must include at least one central city.

Special equipment - Items of equipment including boats and pickup trucks that are owned primarily for wildlife-related recreation. Special equipment items are listed in Table 20 (fishing and hunting) and Table 37 (wildlife watching).

Spenders - Individuals who reported an expenditure value for fishing, hunting, or wildlife-watching activities or equipment.

Sportsmen - Individuals who engaged in fishing, hunting, or both.

State Land - Public land owned by a state such as state parks or state wildlife management areas.

Trip - An outing involving fishing, hunting, or wildlife-watching activities. In the context of this survey, 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 - Three types of fishing are reported: Fishing in (1) freshwater, except Great Lakes, (2) Great Lakes, and (3) saltwater.

Type of hunting - Four types of hunting are reported: Hunting for (1) big game, (2) small game, (3) migratory bird, and (4) other animals.

Urban - Respondent identified that he/she lived in a rural, nonfarm; or rural, farm area when given the following choices: urban; rural, nonfarm; rural, farm.

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, or wildlife watching.

Wildlife-watching activity - An activity engaged in primarily for the purpose of feeding, photographing, or observing fish or other wildlife. In previous years this was termed nonconsumptive activity. (See also residential and nonresidential activities.)

Wildlife-watching equipment - Items owned primarily for observing, photographing, or feeding wildlife. These items are listed in Table 37.

Appendix B

Appendix B: *Selected Data From Screening Interviews*

The 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation was carried out in two phases. The first (or screening) phase began in April 1996. The main purpose of this phase was to collect information about persons 16 years old and older in order to develop a sample of potential sportsmen and wildlife-watching participants for the second (or detailed) phase. Information was also collected on the number of persons 6 to 15 years old who participated in wildlife-related recreation activities in 1995. These data are reported here in order to include the recreation activity of 6- to 15-year-olds in this report.

It is important to emphasize that the information reported here from the 1996 screening questionnaires relates to activity only up to and including 1995. Also, these data were based on long-term recall (at least 12-month recall was required for most of these tables) and were reported, in most cases, by one household respondent

speaking for all household members rather than the shorter term recall of the actual participant, as in the case of the 1996 detailed phase.

Tables B-1 to B-3 report data on participants 6 to 15 years old in 1995. Detailed expenditures and recreational activity data were not gathered for the 6- to 15-year-old participants.

Because of the difference in methodologies of the screening phase and the detailed phase of the 1996 Survey, the data are not comparable. Only participants 16 years old and older were eligible for the detailed phase. The detailed phase was a series of three interviews conducted at 4-month intervals. The screening interviews were 1-year recall. The shorter recall period of the detailed phase had better data accuracy. It has been found in survey studies that in many cases longer recall periods result in over-estimating participation in and expenditures on wildlife-related recreation activities.

Table B-1. State Residents 6- to 15-Years-Old Participating in Fishing and Hunting: 1995
 (State population 6 to 15 years old. Numbers in thousands)

| Sportsmen | Sportsmen 6 to 15 years old | | |
|------------------------------|-----------------------------|----------------------|-----------------------|
| | Number | Percent of sportsmen | Percent of population |
| Total sportsmen | 646 | 100 | 37 |
| Total anglers | 646 | 100 | 37 |
| Fished only | 605 | 94 | 35 |
| Fished and hunted | *41 | *6 | *2 |
| Total hunters | *41 | *6 | *2 |
| Hunted only | ... | ... | ... |
| Hunted and fished | *41 | *6 | *2 |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

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

Table B-2. Selected Characteristics of Resident Anglers and Hunters 6 to 15 Years Old: 1995
(State population 6 to 15 years old. Numbers in thousands)

| Characteristic | Population | | Sportsmen (fished or hunted) | | | Anglers | | | Hunters | | |
|---|--------------|------------|---------------------------------|--------------------------|----------------------|------------|--------------------------|--------------------|------------|--------------------------|--------------------|
| | Number | Percent | Number | Percent who participated | Percent of sportsmen | Number | Percent who participated | Percent of anglers | Number | Percent who participated | Percent of hunters |
| Total persons..... | 1,729 | 100 | 646 | 37 | 100 | 646 | 37 | 100 | *41 | *2 | *100 |
| Population density of residence: | | | | | | | | | | | |
| Urban..... | 1,416 | 82 | 475 | 34 | 74 | 475 | 34 | 74 | ... | ... | ... |
| Rural..... | 313 | 18 | 171 | 55 | 26 | 171 | 55 | 26 | ... | ... | ... |
| Population size of residence: | | | | | | | | | | | |
| MSA..... | 1,438 | 83 | 491 | 34 | 76 | 491 | 34 | 76 | *34 | *2 | *84 |
| 1,000,000 or more..... | 1,147 | 66 | 336 | 29 | 52 | 336 | 29 | 52 | ... | ... | ... |
| 250,000 to 999,999..... | 115 | 7 | *48 | *42 | *7 | *48 | *42 | *7 | ... | ... | ... |
| 50,000 to 249,999..... | 176 | 10 | *107 | *61 | *17 | *107 | *61 | *17 | ... | ... | ... |
| Outside MSA..... | 291 | 17 | 155 | 53 | 24 | 155 | 53 | 24 | ... | ... | ... |
| Sex: | | | | | | | | | | | |
| Male..... | 929 | 54 | 419 | 45 | 65 | 419 | 45 | 65 | *34 | *4 | *83 |
| Female..... | 800 | 46 | 227 | 28 | 35 | 227 | 28 | 35 | ... | ... | ... |
| Age: | | | | | | | | | | | |
| 6 to 8 years..... | 542 | 31 | 180 | 33 | 28 | 180 | 33 | 28 | ... | ... | ... |
| 9 to 11 years..... | 510 | 30 | 225 | 44 | 35 | 225 | 44 | 35 | ... | ... | ... |
| 12 to 15 years..... | 677 | 39 | 241 | 36 | 37 | 241 | 36 | 37 | ... | ... | ... |
| Race: | | | | | | | | | | | |
| White..... | 1,307 | 76 | 566 | 43 | 88 | 566 | 43 | 88 | *41 | *3 | *100 |
| Black..... | 239 | 14 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| All others..... | 183 | 11 | *46 | *25 | *7 | *46 | *25 | *7 | ... | ... | ... |
| Annual household income: | | | | | | | | | | | |
| Less than \$10,000..... | *105 | *6 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| \$10,000 to \$19,999..... | 206 | 12 | *60 | *29 | *9 | *60 | *29 | *9 | ... | ... | ... |
| \$20,000 to \$29,999..... | 186 | 11 | *83 | *45 | *13 | *83 | *45 | *13 | ... | ... | ... |
| \$30,000 to \$39,999..... | 149 | 9 | *42 | *28 | *6 | *42 | *28 | *6 | ... | ... | ... |
| \$40,000 to \$49,999..... | 172 | 10 | *83 | *48 | *13 | *83 | *48 | *13 | ... | ... | ... |
| \$50,000 to \$74,999..... | 385 | 22 | 156 | 41 | 24 | 156 | 41 | 24 | ... | ... | ... |
| \$75,000 or more..... | 297 | 17 | 133 | 45 | 21 | 133 | 45 | 21 | ... | ... | ... |
| Not reported..... | 229 | 13 | *73 | *32 | *11 | *73 | *32 | *11 | ... | ... | ... |

* Estimate based on a small sample size. ... Sample size too small to report data reliably.

Note: Percent who participated shows 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, etc.). Remaining percent columns show the percent of each column's participants who are described by the row heading (the percent of anglers who lived in urban areas, etc.). Data reported on this table are from screening interviews in which one adult household member responded for 6- to 15-year-olds. The screening interview required the respondent to recall 12 months worth of activity. Includes state residents who fished or hunted only in other countries.

Table B-3. State Residents 6- to 15-Years-Old Participating in Wildlife-Watching: 1995
(State population 6 to 15 years old. Numbers in thousands)

| Participants | Number | Percent of participants | Percent of population |
|--|------------|-------------------------|-----------------------|
| Total participants..... | 747 | 100 | 43 |
| Nonresidential..... | 383 | 51 | 22 |
| Residential..... | 682 | 91 | 39 |
| Observe wildlife..... | 531 | 71 | 31 |
| Photograph wildlife..... | 118 | 16 | 7 |
| Feed wild birds or other wildlife..... | 494 | 66 | 29 |
| Maintain plantings or natural areas..... | 132 | 18 | 8 |

* Estimate based on a small sample size.

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

Appendix C

Appendix C.

National and Regional 1991-1996 Comparison

The 1991 and 1996 Surveys used similar methodologies and all published information for the two Surveys is directly comparable.

Comparisons of the 1991 and 1996 Survey estimates at the national level for fishing and hunting show that while participation remained the same expenditures and days increased significantly over that 5 year period. In 1991 there were 35.6 million anglers and 14.1 million hunters. In 1996 there were 35.2 million anglers and 14.0 million hunters. In 1996 anglers spent 37 percent more and hunters spent 45 percent more than they did in 1991 for their trips and equipment. In 1996 hunters were afield 9 percent more days than in 1991, while anglers fished 22 percent more days. Although participation in wildlife (observing, feeding, and photographing wildlife) decreased 17 percent nationally, from 76.1 million in 1991 to 62.9 million in 1996, expenditures for trips and equipment for wildlife watching increased 21 percent. See Tables C-1 through C-3 for the national and regional estimates.

The 1996 Survey underwent a number of changes in order to improve data collection, lower costs, and meet the data needs of its constituents.

The most significant survey design differences between the 1991 Survey and the 1996 Survey are as follows:

1. The 1991 Survey data were collected by interviewers filling out paper questionnaires. The data entries were keyed in a separate operation after the interview. The 1996 Survey data were collected by the use of

computer-assisted interviews, where the questionnaire was 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 the sample households were contacted and a household respondent was interviewed on behalf of the entire household. The 1991 screening interview primarily consisted of socio-demographic questions and wildlife-related recreation questions concerning activity in the year 1990 and intentions for the year 1991. The 1996 Survey screening phase was conducted April through June of 1996 in conjunction with the first wave of the detailed phase. The 1996 screening interview primarily consisted of socio-demographic questions and wildlife-related recreation questions concerning activity in the year 1995 and intentions for the year 1996.
3. In the 1991 Survey an attempt was made to contact every sample person in all three detailed interview waves. In the 1996 Survey the respondents who were interviewed in the first detailed interview wave were not contacted again until the third wave. Also, all interviews in the second wave were conducted by

telephone. In-person interviews were only conducted in the first and third wave.

Important instrument changes:

1. The 1991 Survey instrument expenditure section collected information on all wildlife-related recreation purchases made by participants without reference to where the purchase was made. The 1996 Survey instrument expenditure section included a question for each purchase that 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 asked what states they did it in. In 1996 respondents were asked in which states they fished, and then were asked the pertinent kind of fishing questions. 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 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 both Surveys. “Guide fee” and “Pack trip or package fee” were two separate trip-related expenditure items in 1991, while they were combined into one category in the 1996 Survey. “Boating costs” was added to the 1996 hunting and wildlife-watching trip-related expenditure sections. “Heating and cooking fuel” was added to all of the trip-related expenditure sections. “Spearfishing equipment” was moved from a separate category, to the “other” list. “Rods” and “Reels” were two separate categories in 1991, but were combined in 1996. “Lines, hooks, sinkers, etc.” was one category in 1991, but split into “Lines” and “Hooks, sinkers, etc.” in 1996. “Food used to feed other wildlife” was added to the wildlife-watching equipment section, “Boats” and “Cabins” were added to the wildlife-watching special equipment section, and “Land leasing and ownership” was added to the wildlife-watching expenditures section.

5. Questions asking sportsmen if they participated as much as they wanted were added to the 1996 Survey instrument. If the sportsman 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 included in the 1996 Survey.
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 some questions about the last trip the respondent took during the interview. These included information of the type of trip, where the activity took place, and the distance and direction to the site visited.
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.

Table C-1. Comparison of Wildlife-Related Recreation in the U.S.: 1991 and 1996

(Numbers in millions)

| Participants, days, and expenditures | 1991 number | 1996 number | Percent change |
|--|----------------|----------------|-------------------|
| Hunters, total | 14.1 | 14.0 | no change* |
| Hunting days, total | 235.8 | 256.7 | 9 |
| Hunting expenditures**, total | \$14,187 | \$20,613 | 45 |
| Anglers, total | 35.6 | 35.2 | no change* |
| Fishing days, total | 511.3 | 625.9 | 22 |
| Fishing expenditures**, total | \$27,589 | \$37,797 | 37 |
| Total wildlife watching | 76.1 | 62.9 | -17 |
| Residential | 73.9 | 60.8 | -18 |
| Nonresidential | 30.0 | 23.7 | -21 |
| Days, nonresidential | 342.4 | 313.8 | no change* |
| Total wildlife-watching expenditures** | \$21,242 | \$25,654 | 21 |

* Not different from zero at the 10-percent level. This means that for 90 percent of all possible samples, the estimate for one survey year is not different from the estimate for the other survey year.

**Expenditure estimates were made comparable by correcting the 1991 estimate for inflation and subtracting from the 1996 estimate the items that were not included in 1991.

Table C-2. Anglers and Hunters, by Census Division: 1991 and 1996

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

| Sportsmen | 1991 | | 1996 | |
|---------------------------|---------|---------|---------|---------|
| | Number | Percent | Number | Percent |
| UNITED STATES | | | | |
| Total population | 189,964 | 100 | 201,472 | 100 |
| Sportsmen | 39,979 | 21 | 39,694 | 20 |
| Anglers | 35,578 | 19 | 35,246 | 17 |
| Hunters | 14,063 | 7 | 13,975 | 7 |
| New England | | | | |
| Total population | 10,180 | 100 | 10,306 | 100 |
| Sportsmen | 1,658 | 16 | 1,673 | 16 |
| Anglers | 1,545 | 15 | 1,520 | 15 |
| Hunters | 444 | 4 | 465 | 5 |
| Middle Atlantic | | | | |
| Total population | 29,216 | 100 | 29,371 | 100 |
| Sportsmen | 4,508 | 15 | 4,192 | 14 |
| Anglers | 3,871 | 13 | 3,627 | 12 |
| Hunters | 1,746 | 6 | 1,453 | 5 |
| East North Central | | | | |
| Total population | 32,188 | 100 | 33,121 | 100 |
| Sportsmen | 7,202 | 22 | 6,912 | 21 |
| Anglers | 6,264 | 19 | 6,006 | 18 |
| Hunters | 2,789 | 9 | 2,712 | 8 |
| West North Central | | | | |
| Total population | 13,504 | 100 | 13,875 | 100 |
| Sportsmen | 4,143 | 31 | 3,977 | 29 |
| Anglers | 3,647 | 27 | 3,416 | 25 |
| Hunters | 1,709 | 13 | 1,917 | 14 |
| South Atlantic | | | | |
| Total population | 33,682 | 100 | 36,776 | 100 |
| Sportsmen | 6,996 | 21 | 7,282 | 20 |
| Anglers | 6,441 | 19 | 6,636 | 18 |
| Hunters | 2,083 | 6 | 2,050 | 6 |
| East South Central | | | | |
| Total population | 11,667 | 100 | 12,459 | 100 |
| Sportsmen | 2,984 | 26 | 2,907 | 23 |
| Anglers | 2,635 | 23 | 2,514 | 20 |
| Hunters | 1,279 | 11 | 1,301 | 10 |
| West South Central | | | | |
| Total population | 19,926 | 100 | 21,811 | 100 |
| Sportsmen | 5,125 | 26 | 5,093 | 23 |
| Anglers | 4,592 | 23 | 4,616 | 21 |
| Hunters | 1,843 | 9 | 1,812 | 8 |
| Mountain | | | | |
| Total population | 10,092 | 100 | 11,966 | 100 |
| Sportsmen | 2,488 | 25 | 2,761 | 23 |
| Anglers | 2,079 | 21 | 2,411 | 20 |
| Hunters | 1,069 | 11 | 1,061 | 9 |
| Pacific | | | | |
| Total population | 29,508 | 100 | 31,787 | 100 |
| Sportsmen | 4,875 | 17 | 4,897 | 15 |
| Anglers | 4,505 | 15 | 4,501 | 14 |
| Hunters | 1,101 | 4 | 1,203 | 4 |

Table C-3. Wildlife-Watching Participants, by Census Division: 1991 and 1996

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

| Wildlife watching | 1991 | | 1996 | |
|-------------------------------------|---------|---------|---------|---------|
| | Number | Percent | Number | Percent |
| UNITED STATES | | | | |
| Total population | 189,964 | 100 | 201,472 | 100 |
| Wildlife-watching participants..... | 76,111 | 40 | 62,868 | 31 |
| Nonresidential | 29,999 | 16 | 23,652 | 12 |
| Residential..... | 73,904 | 39 | 60,751 | 30 |
| New England | | | | |
| Total population..... | 10,180 | 100 | 10,306 | 100 |
| Wildlife-watching participants..... | 4,598 | 45 | 3,710 | 36 |
| Nonresidential | 1,856 | 18 | 1,443 | 14 |
| Residential..... | 4,544 | 45 | 3,586 | 35 |
| Middle Atlantic | | | | |
| Total population..... | 29,216 | 100 | 29,371 | 100 |
| Wildlife-watching participants..... | 10,556 | 36 | 8,185 | 28 |
| Nonresidential | 4,166 | 14 | 2,960 | 10 |
| Residential..... | 10,282 | 35 | 8,023 | 27 |
| East North Central | | | | |
| Total population..... | 32,188 | 100 | 33,121 | 100 |
| Wildlife-watching participants..... | 14,511 | 45 | 11,731 | 35 |
| Nonresidential | 5,572 | 17 | 4,501 | 14 |
| Residential..... | 14,175 | 44 | 11,297 | 34 |
| West North Central | | | | |
| Total population..... | 13,504 | 100 | 13,875 | 100 |
| Wildlife-watching participants..... | 6,924 | 51 | 5,089 | 37 |
| Nonresidential | 2,654 | 20 | 1,927 | 14 |
| Residential..... | 6,722 | 50 | 4,900 | 35 |
| South Atlantic | | | | |
| Total population..... | 33,682 | 100 | 36,776 | 100 |
| Wildlife-watching participants..... | 13,047 | 39 | 11,252 | 31 |
| Nonresidential | 4,450 | 13 | 3,992 | 11 |
| Residential..... | 12,813 | 38 | 10,964 | 30 |
| East South Central | | | | |
| Total population..... | 11,667 | 100 | 12,459 | 100 |
| Wildlife-watching participants..... | 4,864 | 42 | 3,904 | 31 |
| Nonresidential | 1,592 | 14 | 1,118 | 9 |
| Residential..... | 4,765 | 41 | 3,795 | 30 |
| West South Central | | | | |
| Total population..... | 19,926 | 100 | 21,811 | 100 |
| Wildlife-watching participants..... | 7,035 | 35 | 5,933 | 27 |
| Nonresidential | 2,459 | 12 | 2,096 | 10 |
| Residential..... | 6,817 | 34 | 5,773 | 26 |
| Mountain | | | | |
| Total population..... | 10,092 | 100 | 11,966 | 100 |
| Wildlife-watching participants..... | 4,437 | 44 | 4,099 | 34 |
| Nonresidential | 2,215 | 22 | 1,967 | 16 |
| Residential..... | 4,145 | 41 | 3,855 | 32 |
| Pacific | | | | |
| Total population..... | 29,508 | 100 | 31,787 | 100 |
| Wildlife-watching participants..... | 10,139 | 34 | 8,966 | 28 |
| Nonresidential | 5,035 | 17 | 3,648 | 11 |
| Residential..... | 9,641 | 33 | 8,558 | 27 |

Appendix D

Appendix D: *Sample Design and Statistical Accuracy*

This Appendix is partitioned into two parts. The first part of this Appendix is the U.S. Bureau of the Census 'Source and Accuracy Statement' for the Survey. This statement describes the sampling design for the 1996 Survey and highlights the steps that were taken to produce estimates from the completed questionnaires. The statement explains the use of standard errors and confidence intervals. Finally, it provides comprehensive information about errors that are characteristic of surveys, and it provides the formulas and parameters that can be used to calculate an approximate standard error or confidence interval for each number published in this report.

The second part, Tables D-1 to D-3, reports approximate standard errors for selected measures of participation and expenditures for wildlife-related recreation.

Source and Accuracy Statement for the Illinois State Report of the 1996 National Survey of Fishing, Hunting, and Wildlife Associated Recreation

Source of Data

The estimates shown in this report are based on the data collected in the **1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation** (FHWAR).

The 1996 FHWAR Survey was designed to provide state-level estimates of the number of people who participated in recreational hunting and fishing, and other forms of wildlife-related activities (e.g., wildlife observation) referred

to as wildlife-watching use. Information was collected on the number of people engaged in the activities, where and how often they went to pursue them, the type of wildlife encountered, and the amounts of money spent for these activities.

The survey was conducted in two stages: an initial screening of households to identify likely sportsmen and wildlife-watching participants, and a series of follow-up interviews of selected persons to collect detailed data about their wildlife-related recreation during 1996.

The 1996 FHWAR sample was selected primarily from the 1991 FHWAR Survey sample. The 1991 sample was selected from expired samples from the Current Population Survey (CPS). The 1996 sample was supplemented with a panel of newly constructed housing units to account for housing units built after the 1991 sample selection. The state samples are multistage stratified samples of the U.S. population within each state.

Sample Design

A. CPS - Current Population Survey

The expired CPS samples used for the 1991 FHWAR Survey, and subsequently the 1996 FHWAR Survey, had been selected initially from the 1980 census files with coverage in all 50 states and the District of Columbia. The samples, while active, had been continually updated to reflect new construction. The sample addresses were located in more than 729 areas comprising more than

1,973 counties, independent cities, and minor civil divisions in the nation.

To save interviewing costs, sample was reduced in some sample areas, and other areas were dropped entirely. The 1996 FHWAR old construction sample addresses were located in 574 areas comprising 1,013 counties, independent cities, and minor civil divisions.

B. Supplemental New Construction Sample

To account for housing units built since the 1991 FHWAR sample was selected, a new construction panel was selected from expired CPS new construction files. These units were last interviewed between March 1994 and June 1995. This sample was added in the same areas that were retained for the 1996 FHWAR old construction sample.

C. The FHWAR Screening Sample

The screening sample consisted of households identified from the above sources. In Illinois, about 2,018 household interviews were assigned. Of these, roughly 18.2 percent were found to be vacant or otherwise not to be enumerated. About 3.4 percent were not completed in telephone centers and were not assigned personal visit interviews due to cost constraints. Of the remaining households, about 25.2 percent could not be enumerated because the occupants were not found at home after repeated calls or were unavailable for some other reason.

Overall, about 1,184 completed household interviews were obtained for a response

rate of approximately 74.8 percent. The field representatives asked the screening questions for all household members 6 years old and older. Interviewing for the screening sample was conducted during April, May, and June of 1996.

D. The Detailed Samples

1. Sportsmen

The State sportsmen detailed sample was selected based on information reported during the screening phase. Every person 16 years of age and older was assigned to a category based on time devoted to hunting/fishing in previous years, participation in hunting/fishing in 1996 by the time of the screening interview, and intentions to fish or hunt during the remainder of 1996.

Each person was placed into one of the following six groups based on their past participation in fishing/hunting activities:

Active - a person who had already participated in 1996 at the time of the screening interview.

Avid - a person who hunted or fished at least 30 days or spent at least \$600 on either hunting or fishing in 1995.

Average - a person who hunted or fished at least 4 days but not more than 29 days or spent between \$26 to \$599 on hunting or fishing in 1995.

Infrequent - a person who hunted or fished at least 1 day but not more than 3 days and spent less than \$26 on hunting or fishing in 1995.

Inactive - a person who did not participate in hunting/fishing in 1995, but did participate in 1991 to 1994.

Nonparticipant - a person who did not participate in hunting/fishing in 1991 to 1995.

Each person not in the Active group was asked their likelihood of going hunting/fishing in 1996:

- Very Likely
- Somewhat Likely
- Somewhat Unlikely
- Very Unlikely

Persons were selected for the detailed phase based on a combination of these two groupings. All Active and Avid sportsmen, and all persons who said they were Very Likely to fish/hunt in 1996 were interviewed. Nonparticipants who said they were Somewhat Unlikely or Very Unlikely to participate in 1996 were not eligible for a detailed interview. All other persons were subsampled to yield the desired number of sportsmen in each state.

Active sportsmen were given the detailed interview twice - at the same time as the screening interview (April to June 1996) and again in January/February 1997. All other sportsmen were also interviewed twice - first in August/September 1996, then in January/February 1997. If we were not able to obtain the first interview, we attempted to interview the person in the final interviewing period with the reference period being the entire year.

About 593 persons were designated for interviews in Illinois. Overall, about 484

detailed sportsmen interviews were completed for a response rate of 81.6 percent.

2. *Wildlife-Watching Participants*

The State wildlife-watching detailed sample was also selected based on information reported during the screening phase. Every person 16 years of age and older was assigned to a category based on time devoted to wildlife-watching activities in previous years, participation in 1996 by the time of the screening interview, and intentions to participate in activities during the remainder of 1996.

Each person was placed into one of the following six groups based on their past participation in wildlife-watching activities:

Active - a person who had already participated in 1996 at the time of the screening interview.

Avid - a person who participated at least 21 days or spent at least \$300 on wildlife-watching activities in 1995.

Average - a person who participated at least 4 days but not more than 20 days or spent between \$26 and \$299 on wildlife-watching activities in 1995.

Infrequent - a person who participated at least 1 day but not more than 3 days and spent less than \$26 on wildlife-watching activities in 1995.

Residential - a person who participated in wildlife-watching activities in 1995 around the home, but did not take any trips to participate in wildlife-watching activities.

Nonparticipant - a person who did not participate in wildlife-watching activities in 1991-1995.

Each person not in the Active group was asked their likelihood of participating in wildlife-watching activities in 1996:

- Very Likely
- Somewhat Likely
- Somewhat Unlikely
- Very Unlikely

Persons were selected for the detailed phase based on a combination of these two groupings. Nonparticipants who said they were Very Unlikely to participate in 1996 were not eligible for a detailed interview. All other persons were subsampled to yield the desired number of wildlife-watching participants in each state.

Wildlife-watching participants were given the detailed interview twice. Some received their first detailed interview at the same time as the screening interview (April to June 1996). The rest received their first interview in August/September 1996. All wildlife-watching participants received their second interview in January/February 1997. If we were not able to obtain the first interview, we attempted to interview the person in the final interviewing period with the reference period being the entire year.

About 277 persons were designated for interviews in Illinois. Overall, about 230 detailed wildlife-watching participant interviews were completed for a response rate of 83.0 percent.

Estimation Procedure

Several stages of adjustments were involved in the estimation procedure used to derive the final 1996 FHWA person weights. A brief description of the major components of the weights is given below.

All statistics for the population 6 to 15 years of age were derived from the screening interview. Statistics for the population 16 and over come from both the screening and detailed interviews. Estimates which come from the screening sample are presented in Appendix B.

A. *Screening Sample*

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

1. *Base Weight*. The base weight is the inverse of the households probability of selection.
2. *Personal Visit Subsampling Factor*. Some households could not be interviewed by telephone because there was not a good telephone number or address for the unit. Due to budget constraints, not all of these cases could be followed up with a personal visit. This factor inflates the weights of those cases which were selected for personal visits to account for those similar cases which were not selected.
3. *Household Noninterview Adjustment*. The noninterview adjustment inflated the weight assigned to interviewed households to account for

households eligible for interview but for which no interview was obtained.

4. *First-Stage Adjustment.* The 574+ areas designated for our samples were selected from roughly 1,900 such areas of the United States. Some of our 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 nonself-representing. The first-stage factor reduces the component of variation arising out of sampling the nonself-representing areas.
5. *Second-Stage Adjustment.* This adjustment brings the estimates of the total population in each state into agreement with census-based estimates of the civilian noninstitutional and nonbarrack military populations for each state.

B. *Sportsmen Sample*

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

1. *Screening Weight.* This is the persons final weight from the screening sample.
2. *Sportsmen Stratum Adjustment.* This factor inflated the weights of persons selected for the

detail sample to account for the subsampling done within each sportsmen stratum.

3. *Sportsmen Noninterview Adjustment.* This factor adjusts the weights of the interviewed sportsmen to account for sportsmen selected for the detailed sample for which no interview was obtained. A person was considered a noninterview if he/she was not interviewed in the third wave of interviewing.
4. *Sportsmen Ratio Adjustment Factor.* This is a ratio adjustment of the detailed sample to the screening sample within sportsmen sampling strata. This adjustment brings the population estimates of persons age 16 or older from the detailed sample into agreement with the same estimates from the screening sample, which was a much larger sample.

C. *Wildlife-Watching Participant Sample*

Every interviewed person in the wildlife-watching participant detailed sample received a weight that was the product of the following factors:

1. *Screening Weight.* This is the persons final weight from the screening sample.
2. *Wildlife-Watching Participant Stratum Adjustment.* This factor inflated the weights of persons selected for the detailed sample to account for the

subsampling done within each wildlife-watching participant stratum.

3. *Wildlife-Watching Participant Noninterview Adjustment.* This factor adjusts the weights of the interviewed wildlife-watching participants to account for wildlife-watching participants selected the detailed sample for which no interview was obtained. A person was considered a noninterview if he/she was not interviewed in the third wave of interviewing.
4. *Wildlife-Watching Participant Ratio Adjustment Factor.* This is a ratio adjustment of the detailed sample to the screening sample within the wildlife-watching participant sampling strata. This adjustment brings the population estimates of persons age 16 or older from the detail sample into agreement with the same estimates from the screening sample, which was a much larger sample.

Accuracy of the Estimates

Since the 1996 estimates came from a sample, they may differ from figures from a complete census using the same questionnaires, instructions, and enumerators. A sample survey estimate has two possible types of error: sampling and nonsampling. The accuracy of an estimate depends on both types of error, but the full extent of

the nonsampling error is unknown. Consequently, one should be particularly careful when interpreting results based on a relatively small number of cases or on small differences between estimates. The standard errors for the 1996 FHWAR estimates primarily indicate the magnitude of sampling error. They also partially measure the effect of some nonsampling errors in responses and enumeration, but do not measure systematic biases in the data. (Bias is the average over all possible samples of the differences between the sample estimates and the actual value.)

Nonsampling Variability

Let us suppose that a comparable complete enumeration was conducted, that is, an interview is attempted for every person 16 years old and over in the United States. Chances are we will not correctly estimate every parameter (for example, the proportion of people who fished) under consideration. In this instance, the difference is due solely to nonsampling errors. Nonsampling errors also occur in sample surveys and can be attributed to several sources including the following:

- The inability to obtain information about all cases in the sample.
- Definitional difficulties.
- Differences in the interpretation of questions.
- Respondents inability or unwillingness to provide correct information.
- Respondents inability to recall information.
- Errors made in data collection such as in recording or coding the data.
- Errors made in the processing of data.
- Errors made in estimating values for missing data.
- Failure to represent all units with the sample (undercoverage).

Overall CPS undercoverage is estimated to be about 8 percent. Generally, undercoverage is larger for males than for females and larger for Blacks and other races combined than for Whites. 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 1996 FHWAR and other sources are not entirely comparable. This results from differences in field interviewer training and experience and in differing survey processes. This is an example of nonsampling variability not reflected in the standard errors. Use caution when comparing results from different sources. (See Appendix C.)

Note When Using Small Estimates. Because of the large standard errors involved, summary measures (such as medians and percentage distributions) would probably not reveal useful information when computed on a base smaller than 100,000. Take care in the interpretation of small differences. For instance, even a small amount of nonsampling error can cause a borderline difference to appear significant or not, thus distorting a seemingly valid hypothesis test.

Sampling Variability

The particular state sample used for the 1996 FHWAR is one of a large number of all possible samples of the same size that could have been selected using the same sample design. Estimates derived from the different sample would differ from each other. This sample-to-sample variability is referred to as sampling variability and is generally measured by the standard error. The exact sampling error is unknown. However, guides to the potential size of the sampling error are provided by the standard error of the estimate.

Since the standard error of a survey estimate attempts to provide a measure of the variation among the estimates from the possible samples, it is a measure of the precision with which an estimate from a particular sample approximates the average result of all possible samples. Standard errors, as calculated by methods described next in “**Standard Errors and Their Use,**” are primarily measures of sampling variability, although they may include some nonsampling error.

The sample estimate and its standard error enable one to construct a confidence interval, a range that would include the average result of all possible samples with a known probability. 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. One 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, where a significance level is the probability of concluding that the characteristics are different when, in fact, they are the same. To conclude that two characteristics are different at the 0.05 level of significance, for example, 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 levels of significance to determine statistical validity. Consult standard statistical textbooks for alternative criteria.

Standard Errors and Their Use. A number of approximations are required to derive, at a moderate cost, standard errors applicable to all the estimates in this report. Instead of providing an individual standard error for each estimate, parameters are provided to calculate standard errors for each type of characteristic. These parameters are listed in Tables D-4 to D-9. 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 sportsmen, anglers, and wildlife-watching participants.

$$s_x = \sqrt{ax^2 + bx} \quad (1)$$

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 that a table shows that 39,694,000 persons 16+ either fished or hunted in the United States in 1996. Using formula (1) with the parameters a = -0.00004 and b = 7,950 from Table D- 5, the approximate standard error of the estimated number of 39,694,000 sportsmen 16+ is

$$s_x = \sqrt{-0.00004 \times 39,694,000^2 + 7,950 \times 39,694,000} = 502,100$$

The 95-percent confidence interval for the estimated number of sportsmen 16+ is from 38,709,900 to 40,678,100, ie., $39,694,000 \pm 1.96 \times 502,100$. 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 that another table shows that 13,975,000 hunters 16+ engaged in 256,676,000 days of participation in 1996 in the United States. Using formula (2) with the parameters a = 0.000284, b = -64,721, and c = 20,674 from Table D-7, the approximate standard error on 256,676,000 estimated days on an estimated base of 13,975,000 hunters is

$$s_x = \sqrt{0.000284 \times 256,676,000^2 + (-64,721) \times 256,676,000 + \frac{20,674 \times 256,676,000^2}{13,975,000}} = 9,978,100$$

The 95-percent confidence interval on the estimate of 256,676,000 days is from 237,118,900 to 276,233,100, ie., $256,676,000 \pm 1.96 \times 9,978,100$. 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 sportsmen, hunters, etc., which is the base of the percentage; p is the percentage (0p100); 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 that a table shows that of the 13,975,000 hunters 16+ in the United States, 22.0 percent hunted migratory birds. From Table D-5, the appropriate b parameter is 5,818. Using formula (3), the approximate standard error on the estimate of 22.0 percent is

$$s_{x,p} = \sqrt{\frac{5,818 \times 22.0 \times 78.0}{13,975,000}} = 0.85$$

Consequently, the 95-percent confidence interval for the estimated percentage of migratory bird hunters 16+ is from 20.3 percent to 23.7 percent, ie. $22.0 \pm 1.96 \times 0.85$.

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 that a table shows that of the 13,975,000 hunters in the United States, 2,783,000 were in the age group 25-34, and 3,819,000 were in the age group 35-44. The corresponding percentages are 19.9 percent and 27.3 percent, respectively. The apparent difference between the percent of hunters 25-34 and hunters 35-44 is 7.4 percent. Using formula (3) and the appropriate b parameter from Table D-5, the approximate standard errors of 19.9 percent and 27.3 percent are 0.81 and 0.91, respectively. Using formula (4), the approximate standard error of the estimated difference of 7.4 percent is

$$s_{x-y} = \sqrt{0.81^2 + 0.91^2} = 1.22$$

The 95-percent confidence interval on the difference between hunters aged 25-34 and hunters aged 35-44 is from 5.0 to 9.8 percent, i.e., $7.4 \pm 1.96 \times 1.22$. Since the interval does not contain zero, we can conclude with 95 percent confidence that the percentage of hunters aged 25-34 is smaller than the percentage of hunters aged 35-44.

Standard Errors of Estimated Averages. Certain mean values for sportsmen, 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, always use 0.7 as an estimate of r .

Illustration of the Computation of the Standard Error of an Estimated Average. Suppose that a table shows that the average days per angler 16+ for all fishing in the United States was 17.8 days. Using formulas (1) and (2) above, we compute the standard error on total days, 625,893,000, and total anglers, 35,246,000, to be 19,183,000 and 480,000, respectively. The approximate standard error on the estimated average of 17.8 days is

$$s_{x/y} = \frac{625,893,000}{35,246,000} \sqrt{\left[\frac{19,183,000}{625,893,000}\right]^2 + \left[\frac{480,000}{35,246,000}\right]^2 - 2 \times 0.7 \times \frac{19,183,000 \times 480,000}{625,893,000 \times 35,246,000}} = 0.41$$

Therefore, the 95-percent confidence interval on the estimated average of 17.8 days is from 17.0 to 18.6, i.e., $17.8 \pm 1.96 \times 0.41$.

Table D-1. Approximate Standard Errors of Resident Anglers, Days of Fishing by State Residents, and Expenditures for Fishing by State Residents

(Numbers in thousands)

| State | Participation | | Days | | Expenditures in dollars | |
|----------------|---------------|----------------|----------|----------------|-------------------------|----------------|
| | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error |
| Alabama | 698 | 46 | 15,337 | 1,338 | \$755,268 | \$138,436 |
| Alaska | 178 | 10 | 3,218 | 628 | \$216,519 | \$38,508 |
| Arizona | 443 | 36 | 4,749 | 1,171 | \$321,813 | \$60,193 |
| Arkansas | 494 | 39 | 8,018 | 1,192 | \$217,913 | \$52,641 |
| California | 2,721 | 186 | 39,158 | 7,197 | \$3,717,430 | \$649,627 |
| Colorado | 671 | 44 | 7,856 | 890 | \$645,469 | \$124,295 |
| Connecticut | 364 | 22 | 6,081 | 684 | \$279,605 | \$42,880 |
| Delaware | 109 | 7 | 2,327 | 280 | \$179,935 | \$30,018 |
| Florida | 1,948 | 133 | 41,489 | 7,050 | \$2,783,806 | \$483,766 |
| Georgia | 982 | 69 | 16,139 | 2,415 | \$1,214,402 | \$203,638 |
| Hawaii | 132 | 10 | 2,667 | 540 | \$88,419 | \$15,379 |
| Idaho | 281 | 20 | 3,724 | 559 | \$235,734 | \$40,592 |
| Illinois | 1,591 | 102 | 26,747 | 3,087 | \$1,967,498 | \$367,424 |
| Indiana | 854 | 54 | 16,405 | 1,588 | \$799,930 | \$107,114 |
| Iowa | 512 | 35 | 8,676 | 654 | \$419,575 | \$64,843 |
| Kansas | 371 | 32 | 7,104 | 1,998 | \$276,642 | \$55,493 |
| Kentucky | 681 | 45 | 10,306 | 939 | \$718,122 | \$149,593 |
| Louisiana | 860 | 61 | 20,934 | 4,414 | \$896,877 | \$142,037 |
| Maine | 207 | 16 | 4,039 | 628 | \$132,921 | \$33,454 |
| Maryland | 569 | 39 | 10,014 | 2,438 | \$666,089 | \$154,595 |
| Massachusetts | 601 | 42 | 11,024 | 1,981 | \$706,802 | \$131,046 |
| Michigan | 1,485 | 107 | 27,602 | 4,721 | \$1,479,968 | \$257,520 |
| Minnesota | 1,078 | 79 | 21,237 | 5,983 | \$1,568,434 | \$254,558 |
| Mississippi | 431 | 34 | 8,476 | 1,016 | \$536,298 | \$99,548 |
| Missouri | 935 | 66 | 15,135 | 1,539 | \$633,269 | \$128,657 |
| Montana | 163 | 12 | 1,857 | 232 | \$101,973 | \$14,913 |
| Nebraska | 239 | 19 | 3,272 | 370 | \$189,386 | \$31,474 |
| Nevada | 208 | 14 | 2,900 | 377 | \$325,513 | \$45,599 |
| New Hampshire | 159 | 11 | 3,159 | 532 | \$219,427 | \$58,661 |
| New Jersey | 788 | 53 | 16,683 | 2,438 | \$1,172,815 | \$212,863 |
| New Mexico | 235 | 17 | 2,761 | 705 | \$181,240 | \$35,300 |
| New York | 1,493 | 97 | 27,570 | 3,961 | \$1,889,112 | \$321,949 |
| North Carolina | 1,122 | 82 | 20,602 | 4,033 | \$1,321,394 | \$309,340 |
| North Dakota | 114 | 8 | 1,793 | 224 | \$137,104 | \$23,234 |
| Ohio | 1,108 | 77 | 19,434 | 1,969 | \$955,254 | \$170,075 |
| Oklahoma | 755 | 54 | 13,834 | 2,197 | \$534,330 | \$128,928 |
| Oregon | 525 | 39 | 8,260 | 1,121 | \$622,533 | \$110,472 |
| Pennsylvania | 1,346 | 95 | 24,284 | 2,358 | \$942,953 | \$148,435 |
| Rhode Island | 104 | 7 | 2,158 | 443 | \$150,002 | \$36,370 |
| South Carolina | 674 | 40 | 14,015 | 2,025 | \$746,607 | \$153,342 |
| South Dakota | 168 | 12 | 2,473 | 244 | \$162,751 | \$27,619 |
| Tennessee | 705 | 48 | 12,927 | 1,702 | \$492,999 | \$86,691 |
| Texas | 2,508 | 197 | 55,884 | 15,339 | \$3,055,911 | \$672,133 |
| Utah | 296 | 20 | 3,261 | 289 | \$190,474 | \$27,859 |
| Vermont | 87 | 7 | 1,868 | 258 | \$136,020 | \$28,065 |
| Virginia | 950 | 59 | 16,256 | 2,958 | \$905,647 | \$142,585 |
| Washington | 945 | 83 | 12,756 | 2,795 | \$677,943 | \$139,915 |
| West Virginia | 269 | 20 | 5,680 | 906 | \$189,992 | \$36,065 |
| Wisconsin | 969 | 68 | 14,546 | 1,343 | \$937,048 | \$144,009 |
| Wyoming | 114 | 8 | 1,412 | 162 | \$96,133 | \$16,703 |

Table D-2. Approximate Standard Errors of Resident Hunters, Days of Hunting by State Residents, and Expenditures for Hunting by State Residents

(Numbers in thousands)

| State | Participation | | Days | | Expenditures in dollars | |
|----------------|---------------|----------------|----------|----------------|-------------------------|----------------|
| | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error |
| Alabama | 266 | 26 | 6,880 | 1,861 | \$536,653 | \$134,646 |
| Alaska | 66 | 7 | 1,031 | 190 | \$143,667 | \$34,649 |
| Arizona | 150 | 18 | 1,611 | 529 | \$208,972 | \$69,489 |
| Arkansas | 329 | 33 | 8,617 | 2,982 | \$541,733 | \$205,459 |
| California | 578 | 87 | 8,500 | 3,234 | \$1,026,171 | \$385,333 |
| Colorado | 248 | 33 | 3,373 | 1,050 | \$477,905 | \$178,762 |
| Connecticut | 68 | 9 | 884 | 226 | \$85,975 | \$23,250 |
| Delaware | 32 | 4 | 680 | 245 | \$31,379 | \$7,786 |
| Florida | 234 | 47 | 5,519 | 1,749 | \$471,602 | \$163,035 |
| Georgia | 365 | 39 | 6,862 | 1,250 | \$858,437 | \$271,517 |
| Hawaii | 24 | 4 | 275 | 75 | \$20,237 | \$7,070 |
| Idaho | 183 | 17 | 2,736 | 479 | \$183,878 | \$39,756 |
| Illinois | 443 | 50 | 7,176 | 1,290 | \$527,072 | \$117,953 |
| Indiana | 347 | 33 | 6,248 | 1,471 | \$280,264 | \$68,074 |
| Iowa | 301 | 23 | 5,063 | 508 | \$223,099 | \$33,170 |
| Kansas | 217 | 25 | 3,786 | 1,147 | \$316,718 | \$105,371 |
| Kentucky | 355 | 37 | 5,619 | 848 | \$342,892 | \$82,115 |
| Louisiana | 366 | 38 | 7,833 | 973 | \$637,690 | \$202,169 |
| Maine | 148 | 14 | 2,694 | 719 | \$215,846 | \$80,540 |
| Maryland | 125 | 17 | 1,744 | 396 | \$97,721 | \$29,454 |
| Massachusetts | 88 | 14 | 1,775 | 439 | \$140,896 | \$39,919 |
| Michigan | 872 | 80 | 18,281 | 3,730 | \$1,836,130 | \$422,666 |
| Minnesota | 573 | 55 | 7,192 | 1,033 | \$522,426 | \$133,582 |
| Mississippi | 300 | 26 | 6,726 | 628 | \$501,561 | \$78,367 |
| Missouri | 500 | 48 | 8,227 | 1,791 | \$663,980 | \$152,380 |
| Montana | 143 | 11 | 1,497 | 188 | \$97,425 | \$15,395 |
| Nebraska | 137 | 15 | 2,234 | 560 | \$98,520 | \$18,819 |
| Nevada | 60 | 7 | 784 | 181 | \$113,991 | \$34,901 |
| New Hampshire | 69 | 7 | 1,240 | 212 | \$61,115 | \$13,026 |
| New Jersey | 93 | 17 | 2,390 | 717 | \$183,188 | \$69,615 |
| New Mexico | 93 | 11 | 681 | 74 | \$86,754 | \$23,088 |
| New York | 608 | 60 | 11,770 | 1,743 | \$865,994 | \$197,814 |
| North Carolina | 352 | 42 | 8,477 | 2,018 | \$561,993 | \$148,641 |
| North Dakota | 81 | 7 | 1,127 | 228 | \$91,150 | \$17,844 |
| Ohio | 453 | 47 | 7,805 | 1,260 | \$489,293 | \$110,236 |
| Oklahoma | 288 | 41 | 5,698 | 1,341 | \$422,999 | \$147,265 |
| Oregon | 275 | 32 | 4,354 | 1,099 | \$604,068 | \$169,586 |
| Pennsylvania | 752 | 65 | 12,806 | 1,822 | \$648,246 | \$168,211 |
| Rhode Island | 22 | 3 | 450 | 122 | \$26,266 | \$9,994 |
| South Carolina | 243 | 23 | 6,517 | 1,201 | \$350,233 | \$75,400 |
| South Dakota | 110 | 9 | 1,895 | 274 | \$98,993 | \$16,448 |
| Tennessee | 381 | 36 | 9,972 | 2,467 | \$824,891 | \$239,492 |
| Texas | 829 | 102 | 16,522 | 5,542 | \$1,276,037 | \$297,063 |
| Utah | 115 | 16 | 1,564 | 460 | \$170,172 | \$64,697 |
| Vermont | 70 | 6 | 1,594 | 195 | \$96,035 | \$16,833 |
| Virginia | 399 | 38 | 7,501 | 2,221 | \$429,472 | \$139,197 |
| Washington | 259 | 43 | 4,828 | 1,455 | \$341,719 | \$124,367 |
| West Virginia | 257 | 22 | 5,647 | 1,209 | \$234,045 | \$40,641 |
| Wisconsin | 598 | 57 | 10,342 | 2,580 | \$1,428,174 | \$250,467 |
| Wyoming | 70 | 7 | 956 | 153 | \$108,288 | \$31,688 |

Table D-3. Approximate Standard Errors of Resident Nonresidential Participants, Days of Nonresidential Participation by State Residents, and Trip-Related Expenditures for Nonresidential Activities by State Residents

(Numbers in thousands)

| State | Participation | | Days | | Expenditures in dollars | |
|----------------|---------------|----------------|----------|----------------|----------------------------|----------------|
| | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error |
| Alabama | 259 | 30 | 3,187 | 614 | \$68,569 | \$15,683 |
| Alaska | 128 | 17 | 2,531 | 507 | \$104,983 | \$21,322 |
| Arizona | 432 | 52 | 7,405 | 3,649 | \$162,431 | \$49,991 |
| Arkansas | 212 | 30 | 3,734 | 1,425 | \$46,341 | \$12,875 |
| California | 2,391 | 323 | 31,795 | 9,133 | \$1,579,434 | \$385,072 |
| Colorado | 603 | 67 | 9,754 | 2,243 | \$320,791 | \$108,916 |
| Connecticut | 257 | 34 | 3,089 | 780 | \$216,133 | \$51,456 |
| Delaware | 77 | 12 | 1,082 | 279 | \$26,850 | \$7,136 |
| Florida | 1,088 | 136 | 12,760 | 3,004 | \$490,757 | \$132,886 |
| Georgia | 553 | 56 | 5,788 | 1,339 | \$247,096 | \$50,348 |
| Hawaii | 57 | 6 | 1,045 | 268 | \$42,814 | \$12,845 |
| Idaho | 157 | 24 | 1,824 | 515 | \$59,370 | \$18,873 |
| Illinois | 1,370 | 146 | 15,203 | 3,144 | \$683,319 | \$165,192 |
| Indiana | 444 | 57 | 6,233 | 2,263 | \$94,865 | \$20,194 |
| Iowa | 367 | 49 | 4,768 | 1,259 | \$97,328 | \$26,118 |
| Kansas | 215 | 25 | 3,740 | 1,005 | \$54,367 | \$13,718 |
| Kentucky | 357 | 44 | 6,007 | 2,717 | \$81,991 | \$22,979 |
| Louisiana | 306 | 42 | 3,661 | 1,007 | \$113,916 | \$26,678 |
| Maine | 140 | 22 | 1,297 | 331 | \$28,781 | \$5,803 |
| Maryland | 528 | 61 | 7,554 | 1,632 | \$329,798 | \$96,876 |
| Massachusetts | 697 | 120 | 10,581 | 2,363 | \$255,819 | \$68,357 |
| Michigan | 1,075 | 142 | 16,765 | 4,220 | \$394,150 | \$114,120 |
| Minnesota | 511 | 81 | 6,572 | 2,365 | \$155,585 | \$46,151 |
| Mississippi | 100 | 16 | 1,812 | 762 | \$51,479 | \$19,296 |
| Missouri | 528 | 68 | 8,410 | 3,616 | \$163,227 | \$45,386 |
| Montana | 162 | 18 | 1,898 | 415 | \$52,978 | \$15,124 |
| Nebraska | 192 | 21 | 2,170 | 601 | \$49,183 | \$11,644 |
| Nevada | 121 | 17 | 1,585 | 460 | \$62,666 | \$18,950 |
| New Hampshire | 169 | 21 | 3,501 | 1,038 | \$43,201 | \$14,227 |
| New Jersey | 623 | 79 | 8,357 | 3,180 | \$475,648 | \$198,687 |
| New Mexico | 186 | 21 | 2,732 | 1,334 | \$43,620 | \$12,952 |
| New York | 1,027 | 132 | 10,731 | 2,779 | \$291,798 | \$84,528 |
| North Carolina | 556 | 61 | 10,693 | 2,844 | \$155,236 | \$36,221 |
| North Dakota | 40 | 5 | 422 | 105 | \$9,969 | \$2,664 |
| Ohio | 921 | 127 | 11,716 | 2,886 | \$196,586 | \$56,321 |
| Oklahoma | 289 | 42 | 6,079 | 2,952 | \$81,166 | \$24,652 |
| Oregon | 408 | 54 | 5,511 | 1,350 | \$179,301 | \$52,096 |
| Pennsylvania | 1,311 | 200 | 15,369 | 4,365 | \$340,351 | \$109,309 |
| Rhode Island | 84 | 12 | 1,352 | 575 | \$28,292 | \$10,382 |
| South Carolina | 274 | 28 | 3,369 | 805 | \$94,479 | \$22,800 |
| South Dakota | 74 | 10 | 1,500 | 617 | \$15,879 | \$3,418 |
| Tennessee | 401 | 54 | 3,683 | 1,051 | \$154,491 | \$58,213 |
| Texas | 1,289 | 186 | 15,280 | 7,154 | \$518,246 | \$206,945 |
| Utah | 220 | 27 | 1,787 | 296 | \$53,985 | \$15,045 |
| Vermont | 96 | 13 | 2,087 | 555 | \$23,582 | \$8,004 |
| Virginia | 757 | 97 | 5,857 | 1,594 | \$241,240 | \$70,011 |
| Washington | 664 | 91 | 8,645 | 1,638 | \$251,781 | \$93,324 |
| West Virginia | 127 | 15 | 1,760 | 458 | \$21,640 | \$5,486 |
| Wisconsin | 691 | 99 | 9,511 | 3,970 | \$163,476 | \$72,601 |
| Wyoming | 86 | 11 | 925 | 200 | \$23,089 | \$6,646 |

Table D-4. a and b Parameters for Calculating Approximate Standard Errors of Sportsmen, Anglers, Hunters, and Wildlife-Watching Participants¹

| State | 6 years old and over | | 6 to 15 year olds only | |
|----------------------------|----------------------|--------------|------------------------|--------------|
| | a | b | a | b |
| United States | -0.000293 | 7,036 | -0.0001730 | 6,802 |
| Alabama..... | -0.0007658 | 3,006 | -0.0045721 | 2,853 |
| Alaska..... | -0.0016494 | 891 | -0.0078073 | 851 |
| Arizona..... | -0.0007435 | 2,905 | -0.0035985 | 2,429 |
| Arkansas..... | -0.0015613 | 3,586 | -0.0093159 | 3,568 |
| California..... | -0.0004437 | 12,684 | -0.0021696 | 10,501 |
| Colorado..... | -0.0010526 | 3,678 | -0.0054729 | 3,136 |
| Connecticut..... | -0.0004624 | 1,370 | -0.0030619 | 1,384 |
| Delaware..... | -0.0007495 | 496 | -0.0048252 | 497 |
| Florida..... | -0.0008158 | 10,724 | -0.0052840 | 10,288 |
| Georgia..... | -0.0008276 | 5,497 | -0.0046706 | 5,161 |
| Hawaii..... | -0.0007649 | 818 | -0.0036491 | 624 |
| Idaho..... | -0.0019908 | 2,158 | -0.0107087 | 2,206 |
| Illinois..... | -0.0005554 | 5,947 | -0.0030051 | 5,259 |
| Indiana..... | -0.0007461 | 3,951 | -0.0043700 | 3,697 |
| Iowa..... | -0.0011081 | 2,877 | -0.0055425 | 2,350 |
| Kansas..... | -0.0014181 | 3,289 | -0.0095877 | 3,883 |
| Kentucky..... | -0.0008677 | 3,095 | -0.0050246 | 2,854 |
| Louisiana..... | -0.0013993 | 5,541 | -0.0067735 | 4,965 |
| Maine..... | -0.0013646 | 1,565 | -0.0089672 | 1,641 |
| Maryland..... | -0.0006731 | 3,125 | -0.0038993 | 2,866 |
| Massachusetts..... | -0.0004201 | 2,322 | -0.0025174 | 2,024 |
| Michigan..... | -0.0011076 | 9,650 | -0.0065555 | 9,512 |
| Minnesota..... | -0.0018230 | 7,669 | -0.0113093 | 8,301 |
| Mississippi..... | -0.0011869 | 2,942 | -0.0063244 | 2,827 |
| Missouri..... | -0.0011350 | 5,510 | -0.0071610 | 5,736 |
| Montana..... | -0.0016020 | 1,309 | -0.0107517 | 1,559 |
| Nebraska..... | -0.0010324 | 1,539 | -0.0059077 | 1,536 |
| Nevada..... | -0.0007191 | 1,034 | -0.0045759 | 1,025 |
| New Hampshire..... | -0.0007429 | 787 | -0.0041897 | 729 |
| New Jersey..... | -0.0004586 | 3,309 | -0.0027233 | 2,982 |
| New Mexico..... | -0.0008985 | 1,407 | -0.0042457 | 1,244 |
| New York..... | -0.0004135 | 6,802 | -0.0024510 | 6,179 |
| North Carolina..... | -0.0009739 | 6,451 | -0.0077718 | 8,005 |
| North Dakota..... | -0.0013156 | 769 | -0.0105784 | 1,079 |
| Ohio..... | -0.0006359 | 6,467 | -0.0040206 | 6,638 |
| Oklahoma..... | -0.0017508 | 5,258 | -0.0086514 | 4,542 |
| Oregon..... | -0.0010579 | 3,113 | -0.0057919 | 2,728 |
| Pennsylvania..... | -0.0006440 | 7,068 | -0.0045985 | 7,730 |
| Rhode Island..... | -0.0004340 | 387 | -0.0027388 | 367 |
| South Carolina..... | -0.0007407 | 2,510 | -0.0039015 | 2,138 |
| South Dakota..... | -0.0013538 | 898 | -0.0093934 | 1,146 |
| Tennessee..... | -0.0009665 | 4,710 | -0.0063386 | 4,792 |
| Texas..... | -0.0009775 | 16,780 | -0.0049099 | 15,196 |
| Utah..... | -0.0010417 | 1,856 | -0.0033747 | 1,306 |
| Vermont..... | -0.0013854 | 751 | -0.0099425 | 865 |
| Virginia..... | -0.0007734 | 4,710 | -0.0040605 | 3,760 |
| Washington..... | -0.0010698 | 5,389 | -0.0060313 | 5,012 |
| West Virginia..... | -0.0012417 | 2,129 | -0.0084177 | 2,096 |
| Wisconsin..... | -0.0015108 | 7,090 | -0.0085200 | 6,833 |
| Wyoming..... | -0.0018715 | 840 | -0.0090238 | 758 |

¹These parameters are to be used only to calculate estimates of standard errors for characteristics developed from the screening sample.

Table D-5. a and b Parameters for Calculating Approximate Standard Errors of Levels for the Detailed Sportsmen Sample

| State | Sportsmen and anglers 16+ | | Hunters 16+ | |
|----------------------------|---------------------------|--------------|------------------|--------------|
| | a | b | a | b |
| United States | -0.000040 | 7,950 | -0.000015 | 5,818 |
| Alabama | -0.001402 | 3,972 | -0.000628 | 2,797 |
| Alaska | -0.001751 | 923 | -0.001244 | 764 |
| Arizona | -0.001249 | 3,555 | -0.000187 | 2,190 |
| Arkansas | -0.002147 | 4,216 | -0.001824 | 3,869 |
| California | -0.000733 | 14,753 | -0.000529 | 13,292 |
| Colorado | -0.000886 | 3,430 | -0.001837 | 4,844 |
| Connecticut | -0.000783 | 1,637 | -0.000336 | 1,265 |
| Delaware | -0.000931 | 539 | -0.001384 | 646 |
| Florida | -0.000784 | 10,579 | -0.000594 | 9,725 |
| Georgia | -0.000936 | 5,750 | -0.000267 | 4,186 |
| Hawaii | -0.000829 | 837 | -0.000660 | 787 |
| Idaho | -0.001461 | 1,852 | -0.001478 | 1,862 |
| Illinois | -0.001269 | 8,507 | -0.000549 | 5,923 |
| Indiana | -0.000783 | 4,024 | -0.000375 | 3,209 |
| Iowa | -0.001202 | 2,989 | -0.000220 | 1,823 |
| Kansas | -0.001474 | 3,340 | -0.001195 | 3,086 |
| Kentucky | -0.001453 | 3,935 | -0.001783 | 4,408 |
| Louisiana | -0.001338 | 5,444 | -0.000572 | 4,229 |
| Maine | -0.001160 | 1,465 | -0.001046 | 1,409 |
| Maryland | -0.000587 | 3,004 | -0.000126 | 2,354 |
| Massachusetts | -0.001367 | 3,732 | -0.000390 | 2,277 |
| Michigan | -0.000980 | 9,209 | -0.000615 | 7,944 |
| Minnesota | -0.001842 | 7,710 | -0.000917 | 5,755 |
| Mississippi | -0.001589 | 3,357 | -0.000709 | 2,449 |
| Missouri | -0.001327 | 5,904 | -0.000891 | 5,010 |
| Montana | -0.000963 | 1,048 | -0.000961 | 1,047 |
| Nebraska | -0.001551 | 1,835 | -0.001693 | 1,916 |
| Nevada | -0.001152 | 1,247 | -0.000461 | 907 |
| New Hampshire | -0.001313 | 996 | -0.000508 | 701 |
| New Jersey | -0.000993 | 4,319 | -0.000417 | 3,230 |
| New Mexico | -0.000960 | 1,443 | -0.000661 | 1,267 |
| New York | -0.000449 | 6,946 | -0.000244 | 6,109 |
| North Carolina | -0.001480 | 7,686 | -0.000462 | 5,203 |
| North Dakota | -0.001258 | 753 | -0.000784 | 621 |
| Ohio | -0.000479 | 5,945 | -0.000206 | 5,040 |
| Oklahoma | -0.001628 | 5,086 | -0.002761 | 6,678 |
| Oregon | -0.001539 | 3,735 | -0.001882 | 4,179 |
| Pennsylvania | -0.000913 | 7,956 | -0.000262 | 5,806 |
| Rhode Island | -0.000950 | 513 | -0.000664 | 443 |
| South Carolina | -0.001246 | 3,184 | -0.000530 | 2,229 |
| South Dakota | -0.002456 | 1,262 | -0.001127 | 823 |
| Tennessee | -0.000148 | 3,323 | -0.000304 | 3,587 |
| Texas | -0.001283 | 18,641 | -0.000320 | 12,769 |
| Utah | -0.000729 | 1,629 | -0.001987 | 2,542 |
| Vermont | -0.001324 | 738 | -0.000788 | 625 |
| Virginia | -0.000551 | 4,219 | -0.000324 | 3,719 |
| Washington | -0.003472 | 10,616 | -0.002192 | 7,830 |
| West Virginia | -0.000612 | 1,688 | -0.001310 | 2,177 |
| Wisconsin | -0.000735 | 5,548 | -0.001007 | 6,088 |
| Wyoming | -0.001124 | 653 | -0.002247 | 934 |

Table D-6. a, b, and c Parameters for Calculating Approximate Standard Errors for Expenditures for the Detailed Sportsmen Sample

| State | Sportsmen and anglers 16+ | | | Hunters 16+ | | |
|----------------------------|---------------------------|-----------------|---------------|-----------------|-----------------|---------------|
| | a | b | c | a | b | c |
| United States | 0.000150 | -192,623 | 34,364 | 0.000277 | -478,142 | 33,707 |
| Alabama | 0.022140 | -31,979 | 7,632 | 0.041030 | -34,071 | 5,795 |
| Alaska | 0.023245 | -15,072 | 1,467 | 0.043010 | -17,754 | 1,016 |
| Arizona | 0.025451 | -1,413 | 4,134 | 0.073680 | -289,994 | 5,746 |
| Arkansas | 0.046100 | -35,277 | 6,033 | 0.128750 | -223,947 | 4,961 |
| California | 0.020212 | -180,816 | 28,097 | 0.121120 | -136,518 | 11,478 |
| Colorado | 0.027113 | -31,215 | 6,499 | 0.126930 | -19,131 | 3,212 |
| Connecticut | 0.014369 | -20,672 | 3,246 | 0.051520 | 30,475 | 1,407 |
| Delaware | 0.019906 | -3,294 | 842 | 0.035500 | -5,858 | 785 |
| Florida | 0.018422 | -54,019 | 21,952 | 0.051760 | -276,536 | 15,998 |
| Georgia | 0.017194 | 38,491 | 10,236 | 0.077200 | -264,814 | 8,387 |
| Hawaii | 0.019313 | -3,794 | 1,361 | 0.086390 | -1,253 | 797 |
| Idaho | 0.016458 | -19,925 | 3,682 | 0.026210 | -102,915 | 3,831 |
| Illinois | 0.023997 | -118,822 | 16,341 | 0.027055 | -235,002 | 10,288 |
| Indiana | 0.008054 | -37,770 | 7,805 | 0.044360 | -113,025 | 5,115 |
| Iowa | 0.016916 | -4,999 | 3,458 | 0.005885 | -88,869 | 4,861 |
| Kansas | 0.033115 | -5,365 | 2,597 | 0.094000 | -144,269 | 3,670 |
| Kentucky | 0.033294 | -35,489 | 6,480 | 0.031030 | -211,390 | 9,091 |
| Louisiana | 0.012738 | -6,921 | 10,247 | 0.077410 | -178,559 | 8,417 |
| Maine | 0.051020 | -11,191 | 2,468 | 0.118050 | -62,158 | 3,145 |
| Maryland | 0.043650 | -36,620 | 5,657 | 0.068670 | -9,067 | 2,690 |
| Massachusetts | 0.022765 | -70,099 | 6,656 | 0.011280 | -40,800 | 5,986 |
| Michigan | 0.017766 | -94,006 | 17,933 | 0.021460 | -386,383 | 27,458 |
| Minnesota | 0.016251 | -2,890 | 10,828 | 0.045130 | -194,991 | 11,809 |
| Mississippi | 0.016620 | -34,650 | 7,371 | -0.001980 | -78,252 | 7,986 |
| Missouri | 0.031920 | -38,417 | 8,626 | 0.023030 | -171,746 | 14,407 |
| Montana | 0.012655 | -4,035 | 1,384 | 0.009135 | 1,629 | 2,229 |
| Nebraska | 0.019808 | -3,439 | 1,803 | 0.015060 | 21,116 | 2,870 |
| Nevada | 0.006082 | -11,623 | 2,767 | 0.073300 | -57,009 | 1,223 |
| New Hampshire | 0.060070 | -13,210 | 1,758 | 0.020440 | -20,168 | 1,638 |
| New Jersey | 0.019375 | -108,500 | 10,322 | 0.089840 | -152,277 | 5,197 |
| New Mexico | 0.029329 | -4,702 | 1,937 | 0.055030 | -40,824 | 1,474 |
| New York | 0.013940 | -128,454 | 20,807 | 0.028680 | -107,377 | 14,284 |
| North Carolina | 0.038160 | -174,985 | 18,106 | 0.046780 | 1,355 | 8,152 |
| North Dakota | 0.021979 | -777 | 752 | 0.024171 | -23,882 | 1,149 |
| Ohio | 0.018212 | -76,116 | 14,481 | 0.011040 | -360,018 | 17,181 |
| Oklahoma | 0.043300 | -88,548 | 10,547 | 0.098030 | -41,671 | 6,498 |
| Oregon | 0.008560 | -61,773 | 11,911 | 0.054460 | -223,614 | 6,661 |
| Pennsylvania | 0.009523 | -138,047 | 20,372 | 0.053860 | -155,572 | 10,311 |
| Rhode Island | 0.048180 | -10,693 | 1,055 | 0.126010 | -18,309 | 422 |
| South Carolina | 0.032550 | -49,811 | 6,362 | 0.019070 | 185,472 | 6,243 |
| South Dakota | 0.008600 | -27,856 | 3,357 | 0.014299 | 574 | 1,458 |
| Tennessee | 0.022255 | -24,179 | 6,024 | 0.047520 | -469,509 | 13,865 |
| Texas | 0.032800 | -300,879 | 38,595 | 0.019380 | -347,416 | 29,092 |
| Utah | 0.009578 | -16,645 | 3,479 | 0.112610 | -242,080 | 3,839 |
| Vermont | 0.007530 | -20,073 | 2,991 | 0.012590 | 39,217 | 1,230 |
| Virginia | 0.007276 | -173,725 | 16,133 | 0.089620 | -203,860 | 6,212 |
| Washington | 0.033116 | -38,664 | 8,578 | 0.105180 | -41,288 | 6,989 |
| West Virginia | 0.018591 | -28,940 | 4,606 | 0.012360 | -42,917 | 4,494 |
| Wisconsin | 0.011515 | -92,109 | 11,387 | 0.013420 | -129,738 | 10,352 |
| Wyoming | 0.022142 | -1,139 | 914 | 0.070790 | -32,872 | 1,042 |

Table D-7. a, b, and c Parameters for Calculating Approximate Standard Errors for Days or Trips for the Detailed Sportsmen Sample

| State | Sportsmen and anglers 16+ | | | Hunters 16+ | | |
|----------------------------|---------------------------|-----------------|---------------|-----------------|----------------|---------------|
| | a | b | c | a | b | c |
| United States | -0.000487 | -324,198 | 68,529 | 0.000284 | -64,721 | 20,674 |
| Alabama | -0.011070 | -11,692 | 13,572 | 0.056950 | -1,149 | 4,361 |
| Alaska | 0.033200 | -490 | 902 | 0.011283 | -2,292 | 1,633 |
| Arizona | 0.056570 | 4,289 | 1,496 | 0.092450 | -2,138 | 2,510 |
| Arkansas | 0.013786 | 2,864 | 3,940 | 0.104810 | -7,656 | 5,216 |
| California | 0.029946 | -4,196 | 10,727 | 0.126460 | -18,167 | 11,833 |
| Colorado | 0.005428 | -2,711 | 5,203 | 0.073060 | -15,717 | 7,066 |
| Connecticut | 0.003347 | -2,052 | 3,505 | 0.043562 | -1,460 | 1,594 |
| Delaware | 0.007255 | -490 | 812 | 0.107830 | -1,125 | 758 |
| Florida | 0.013367 | -24,334 | 31,352 | 0.050630 | -11,393 | 12,144 |
| Georgia | -0.002390 | -20,940 | 25,606 | 0.009602 | -4,615 | 8,856 |
| Hawaii | 0.030060 | -1,400 | 1,521 | 0.031530 | -464 | 1,088 |
| Idaho | -0.004433 | -18,648 | 8,978 | 0.012581 | -5,338 | 3,657 |
| Illinois | 0.001066 | -31,929 | 21,399 | 0.010252 | -13,269 | 10,598 |
| Indiana | -0.005908 | -10,895 | 13,612 | 0.043800 | -5,762 | 4,346 |
| Iowa | -0.006627 | -4,499 | 6,572 | -0.005814 | -6,150 | 5,151 |
| Kansas | 0.072300 | -1,103 | 2,570 | 0.075350 | -3,708 | 3,786 |
| Kentucky | -0.000490 | -4,426 | 6,283 | 0.005267 | -9,012 | 6,791 |
| Louisiana | 0.027440 | -12,750 | 15,168 | -0.008006 | -11,412 | 9,108 |
| Maine | 0.009860 | -5,593 | 3,254 | 0.055710 | -5,057 | 2,588 |
| Maryland | 0.050010 | -3,282 | 5,469 | 0.022913 | -2,192 | 3,737 |
| Massachusetts | 0.026976 | -1,916 | 3,299 | 0.026656 | -1,886 | 3,137 |
| Michigan | 0.013471 | -64,347 | 26,902 | 0.024363 | -8,048 | 15,439 |
| Minnesota | 0.067180 | -14,162 | 13,867 | 0.003570 | -3,330 | 10,044 |
| Mississippi | 0.002499 | -3,774 | 5,306 | -0.006274 | -3,468 | 4,651 |
| Missouri | -0.013391 | -20,814 | 23,469 | 0.032758 | -3,368 | 7,531 |
| Montana | 0.007369 | -729 | 1,403 | 0.002089 | -3,220 | 2,255 |
| Nebraska | -0.001529 | -2,946 | 3,633 | 0.052340 | -617 | 1,483 |
| Nevada | 0.008313 | -1,068 | 1,857 | 0.032699 | -1,208 | 1,338 |
| New Hampshire | 0.021018 | -749 | 1,202 | 0.011513 | -764 | 1,264 |
| New Jersey | 0.006822 | -20,863 | 12,441 | 0.040160 | -7,095 | 4,902 |
| New Mexico | 0.058190 | -319 | 1,665 | -0.006373 | 507 | 1,618 |
| New York | 0.006621 | -75,595 | 25,019 | 0.005049 | -13,667 | 10,969 |
| North Carolina | 0.026990 | -7,929 | 13,144 | 0.026400 | -5,933 | 10,903 |
| North Dakota | 0.000737 | -1,235 | 1,770 | 0.030689 | -488 | 875 |
| Ohio | -0.008811 | -17,533 | 22,138 | 0.006268 | -4,917 | 9,261 |
| Oklahoma | -0.004210 | -22,761 | 23,462 | 0.022440 | -12,402 | 10,113 |
| Oregon | -0.003514 | -13,057 | 12,352 | 0.047340 | -8,303 | 5,034 |
| Pennsylvania | -0.004771 | -29,038 | 20,722 | 0.005890 | -13,456 | 11,579 |
| Rhode Island | 0.035533 | -488 | 716 | 0.055023 | 16 | 418 |
| South Carolina | 0.016055 | -1,772 | 3,332 | 0.012010 | -7,443 | 5,606 |
| South Dakota | -0.012421 | -2,325 | 3,881 | 0.006947 | 264 | 1,520 |
| Tennessee | -0.010925 | -15,873 | 20,791 | 0.043900 | -14,556 | 7,158 |
| Texas | 0.064330 | -20,030 | 28,511 | 0.093890 | -7,271 | 15,821 |
| Utah | -0.010885 | -7,389 | 6,213 | 0.061040 | -6,144 | 3,385 |
| Vermont | -0.011266 | -3,627 | 2,815 | -0.002376 | -458 | 1,235 |
| Virginia | 0.035180 | 125,224 | -9,283 | 0.072310 | 388 | 6,109 |
| Washington | 0.036450 | 61,568 | 6,373 | 0.053870 | -15,132 | 10,384 |
| West Virginia | 0.014927 | -1,405 | 2,899 | 0.033992 | -1,412 | 3,115 |
| Wisconsin | -0.002327 | -13,236 | 11,393 | 0.044300 | -29,411 | 12,437 |
| Wyoming | 0.002976 | -753 | 1,220 | 0.003873 | -1,048 | 1,592 |

Table D-8. a and b Parameters for Calculating Approximate Standard Errors of Levels of Wildlife-Watching Participants for the Detailed Wildlife-Watching Participants Sample

| State | Nonresidential users | | All wildlife-watching participants ¹ | |
|----------------------------|----------------------|---------------|---|---------------|
| | a | b | a | b |
| United States | -0.000276 | 25,931 | -0.000305 | 28,168 |
| Alabama..... | -0.001433 | 3,758 | -0.002465 | 4,921 |
| Alaska..... | -0.014534 | 4,139 | -0.015101 | 4,282 |
| Arizona..... | -0.005141 | 8,512 | -0.004974 | 8,299 |
| Arkansas..... | -0.003210 | 4,887 | -0.004132 | 5,615 |
| California..... | -0.006775 | 59,801 | -0.008521 | 72,793 |
| Colorado..... | -0.005938 | 10,978 | -0.013074 | 21,640 |
| Connecticut..... | -0.005230 | 5,813 | -0.007233 | 7,680 |
| Delaware..... | -0.009246 | 2,459 | -0.008584 | 2,306 |
| Florida..... | -0.003500 | 20,728 | -0.006692 | 32,623 |
| Georgia..... | -0.001243 | 6,315 | -0.001948 | 7,705 |
| Hawaii..... | -0.000145 | 693 | -0.000308 | 726 |
| Idaho..... | -0.007455 | 4,802 | -0.008880 | 5,492 |
| Illinois..... | -0.005391 | 22,958 | -0.007053 | 28,807 |
| Indiana..... | -0.003253 | 8,771 | -0.005209 | 12,532 |
| Iowa..... | -0.007071 | 9,220 | -0.006115 | 8,203 |
| Kansas..... | -0.001433 | 3,300 | -0.003303 | 4,700 |
| Kentucky..... | -0.004163 | 6,866 | -0.003590 | 6,210 |
| Louisiana..... | -0.002342 | 6,532 | -0.003035 | 7,261 |
| Maine..... | -0.007341 | 4,524 | -0.007111 | 4,410 |
| Maryland..... | -0.004920 | 9,619 | -0.005532 | 10,555 |
| Massachusetts..... | -0.017685 | 32,902 | -0.012769 | 24,195 |
| Michigan..... | -0.005775 | 24,896 | -0.007232 | 29,654 |
| Minnesota..... | -0.007326 | 16,496 | -0.005645 | 13,799 |
| Mississippi..... | -0.000510 | 2,528 | -0.001380 | 3,060 |
| Missouri..... | -0.003803 | 10,811 | -0.005533 | 14,250 |
| Montana..... | -0.006528 | 3,155 | -0.009016 | 4,087 |
| Nebraska..... | -0.004063 | 3,104 | -0.005025 | 3,601 |
| Nevada..... | -0.005595 | 2,961 | -0.006091 | 3,157 |
| New Hampshire..... | -0.007437 | 3,782 | -0.010707 | 5,245 |
| New Jersey..... | -0.005500 | 13,386 | -0.008007 | 18,395 |
| New Mexico..... | -0.004430 | 3,118 | -0.005759 | 3,762 |
| New York..... | -0.003815 | 20,825 | -0.007202 | 34,790 |
| North Carolina..... | -0.001502 | 7,617 | -0.002002 | 8,721 |
| North Dakota..... | -0.001385 | 781 | -0.002006 | 888 |
| Ohio..... | -0.005364 | 22,355 | -0.007372 | 29,104 |
| Oklahoma..... | -0.003454 | 7,195 | -0.001870 | 5,394 |
| Oregon..... | -0.007073 | 10,056 | -0.011343 | 14,985 |
| Pennsylvania..... | -0.011110 | 45,226 | -0.014233 | 56,614 |
| Rhode Island..... | -0.007440 | 2,262 | -0.009585 | 2,836 |
| South Carolina..... | -0.001651 | 3,399 | -0.001422 | 3,176 |
| South Dakota..... | -0.005296 | 1,781 | -0.004510 | 1,605 |
| Tennessee..... | -0.003042 | 8,360 | -0.004086 | 10,197 |
| Texas..... | -0.004424 | 32,407 | -0.004044 | 30,685 |
| Utah..... | -0.005642 | 4,613 | -0.006619 | 5,198 |
| Vermont..... | -0.009714 | 2,822 | -0.010510 | 3,020 |
| Virginia..... | -0.006274 | 17,138 | -0.006328 | 17,260 |
| Washington..... | -0.006308 | 16,668 | -0.007175 | 18,535 |
| West Virginia..... | -0.000729 | 1,840 | -0.001846 | 2,470 |
| Wisconsin..... | -0.007849 | 19,480 | -0.008227 | 20,218 |
| Wyoming..... | -0.009622 | 2,285 | -0.007294 | 1,851 |

¹Use these parameters for: total wildlife-watching participants and residential users.

Table D-9. a, b, and c Parameters for Calculating Approximate Standard Errors for Expenditures and Days or Trips for Wildlife-Watching Participants

| State | Expenditures | | | Days or trips | | |
|----------------------------|-----------------|---------------|---------------|-----------------|----------------|---------------|
| | a | b | c | a | b | c |
| United States | 0.002397 | 54,854 | 59,894 | 0.004371 | -26,991 | 38,946 |
| Alabama | 0.036681 | -18,572 | 3,935 | 0.011362 | -3,080 | 6,929 |
| Alaska | 0.033200 | -489 | 902 | 0.033200 | -490 | 902 |
| Arizona | 0.085600 | -24,154 | 3,865 | 0.232510 | -7,261 | 4,855 |
| Arkansas | 0.039340 | -17,237 | 7,682 | 0.126590 | -6,938 | 4,442 |
| California | 0.035321 | 1,067,697 | 50,145 | 0.052960 | -492,479 | 107,684 |
| Colorado | 0.048110 | -591,648 | 39,405 | 0.017830 | -20,910 | 22,425 |
| Connecticut | 0.032120 | -21,061 | 5,992 | 0.042120 | -5,381 | 6,004 |
| Delaware | 0.027760 | -22,636 | 2,973 | 0.003640 | -10,483 | 5,591 |
| Florida | 0.031830 | -262,997 | 42,131 | 0.017280 | -64,794 | 47,008 |
| Georgia | 0.013884 | -70,051 | 15,019 | 0.031240 | -23,045 | 14,502 |
| Hawaii | 0.064090 | -15,686 | 1,341 | 0.038060 | -2,779 | 1,738 |
| Idaho | 0.074700 | -41,520 | 4,112 | 0.052940 | -2,501 | 4,439 |
| Illinois | 0.032820 | -136,223 | 32,872 | 0.027820 | 58,516 | 15,204 |
| Indiana | 0.006691 | -40,890 | 16,403 | 0.122280 | 615 | 4,192 |
| Iowa | 0.042340 | 2,565 | 9,634 | 0.019080 | -25,174 | 20,514 |
| Kansas | 0.049730 | 28,458 | 2,682 | 0.046990 | -3,368 | 5,621 |
| Kentucky | 0.057270 | -82,495 | 7,466 | 0.190170 | -34,160 | 7,178 |
| Louisiana | 0.015699 | -56,977 | 11,140 | 0.057300 | -3,617 | 5,930 |
| Maine | 0.014378 | 32,335 | 3,270 | 0.051680 | 15,634 | 175 |
| Maryland | 0.030510 | -305,840 | 24,949 | 0.024640 | -17,150 | 12,820 |
| Massachusetts | 0.037380 | -61,675 | 20,522 | -0.005400 | -76,328 | 43,555 |
| Michigan | 0.061770 | -196,154 | 22,084 | 0.029460 | -37,292 | 38,827 |
| Minnesota | 0.037860 | -560,903 | 26,760 | 0.112360 | -726 | 8,805 |
| Mississippi | 0.097820 | -25,306 | 3,928 | 0.147200 | -4,425 | 3,214 |
| Missouri | 0.051350 | -307,535 | 14,174 | 0.138350 | -83,740 | 29,824 |
| Montana | 0.060400 | -10,180 | 3,130 | 0.025541 | -6,368 | 4,142 |
| Nebraska | 0.022050 | -40,731 | 6,287 | 0.038910 | 7,544 | 6,580 |
| Nevada | 0.068910 | -18,553 | 2,740 | 0.059320 | -4,583 | 3,379 |
| New Hampshire | 0.073310 | -15,254 | 5,644 | 0.020010 | -11,117 | 12,021 |
| New Jersey | 0.149260 | -108,166 | 14,765 | 0.127580 | -3,798 | 11,031 |
| New Mexico | 0.071300 | -19,200 | 3,055 | 0.219380 | 659 | 3,498 |
| New York | 0.067090 | 264,223 | 15,441 | 0.033550 | -33,800 | 37,645 |
| North Carolina | 0.023769 | -75,748 | 15,550 | 0.049300 | -20,978 | 13,008 |
| North Dakota | 0.032330 | -1,750 | 1,453 | 0.020354 | -1,274 | 1,794 |
| Ohio | 0.032960 | -396,988 | 40,707 | 0.041190 | 22,105 | 16,194 |
| Oklahoma | 0.069700 | -20,480 | 5,997 | 0.204660 | -13,045 | 9,633 |
| Oregon | 0.059410 | -49,805 | 9,458 | 0.020200 | -30,808 | 18,514 |
| Pennsylvania | 0.082590 | 295,032 | 21,758 | 0.039050 | -55,252 | 59,257 |
| Rhode Island | 0.110000 | -26,416 | 2,010 | 0.166510 | -285 | 1,206 |
| South Carolina | 0.040330 | -19,536 | 4,583 | 0.029840 | -26,641 | 9,633 |
| South Dakota | 0.030560 | 16,289 | 974 | 0.144230 | -15,927 | 2,616 |
| Tennessee | 0.106240 | -192,365 | 13,204 | 0.045640 | -19,985 | 16,505 |
| Texas | 0.130150 | -261,303 | 31,449 | 0.207090 | 5,535 | 15,119 |
| Utah | 0.051580 | -4,059 | 5,598 | -0.003608 | -2,355 | 7,127 |
| Vermont | 0.096280 | -1,490 | 1,518 | 0.035450 | 10,053 | 2,920 |
| Virginia | 0.063470 | 4,565 | 14,349 | 0.054850 | -13,451 | 16,263 |
| Washington | 0.100400 | 15,783 | 22,301 | -0.004180 | -17,728 | 27,976 |
| West Virginia | 0.031242 | -12,231 | 3,829 | 0.037480 | -9,680 | 4,534 |
| Wisconsin | 0.197550 | 360,528 | -1,524 | 0.159790 | -15,203 | 11,080 |
| Wyoming | 0.056740 | -26,047 | 2,288 | 0.020139 | -13,601 | 3,552 |