

Recruitment and Retention of Hunters and Anglers: 2000-2015

2016 National Survey Addendum

Report 2016-1



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Richard Aiken
Richard_Aiken@fws.gov

This report is intended to complement the National Report for the 2016 National Survey of Fishing, Hunting and Wildlife-Associated Recreation. The conclusions in this report are the author's and do not represent official positions of the U.S. Fish and Wildlife Service. The author thanks Sylvia Cabrera and Rob Southwick for reviewing earlier drafts of the report.



Introduction

The number of anglers in 2016 was a significant increase over the number in 2006, according to the 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. The number of hunters in 2016 was a significant decrease from the number in 2006. Light can be shed on these participation trends by looking at the changes in the number of new recruits and changes in the number of participants who have continued to participate in the sport.

This report first looks at the long-term trend in participation, going back to the first National Survey in 1955. Both the number of participants 16 years and older and the participation rates of these participants are presented. This puts current participation in perspective. Recruitment and retention are then examined in total, for the male and female cohorts, and by age.

This analysis builds on a previous report written by Jerry Leonard and the author after the 2011 Survey, “Fishing and Hunting Recruitment and Retention in the U.S. from 1990 to 2010: Addendum to the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation” Report 2011-5. The 2011 report has more detail and is well worth reading in conjunction with this report.



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Number of Hunting, Fishing, and Wildlife-Watching Participants: 1955-2016

The number of hunters and anglers has increased since the first Survey in 1955. Angling has more than doubled. In 2016 the number of adult hunters was 16% higher than in 1955. See Figure 1. Recently, however, from 2001 to 2016, hunting participation went down. The number of hunters 55 years old and older did increase in number over that time period, but the increase was less than the drop in the number of 16–44 year olds. Fishing participation went up from 2001 to 2016.

Wildlife watching was not part of the Survey until the 1980's, and comparable estimates begin in 1991. Over that time period, about a third of adult Americans closely observed, photographed, or fed wildlife, and that activity was at its highest in 2016.

Analysis of wildlife-watching participation and expenditure trends will be presented in a later report. The focus of the remainder of this report will be on hunting and fishing.

Figure 1. Number of Anglers, Hunters, and Wildlife Watchers: 1955–2016
(Population 16 Years of Age and Older)

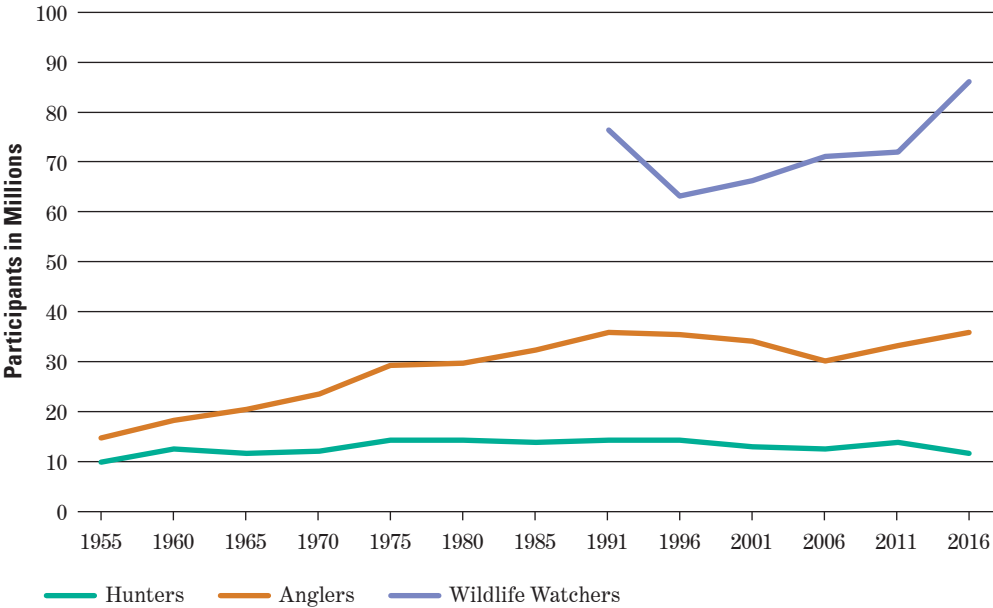


Table 1. Number of Anglers, Hunters, and Wildlife Watchers: 1955-2016
(Population 16 Years of Age and Older. Number in Millions)

	1955	1960	1965	1970	1975	1980	1985	1991	1996	2001	2006	2011	2016
Hunters	9.8	12.2	11.3	12	14.3	14	13.7	14.1	14	13	12.5	13.7	11.5
Anglers	14.8	18.0	20.1	23.5	29.3	29.7	32.2	35.6	35.2	34.1	30	33.1	35.8
Wildlife Watchers	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	76.1	62.9	66.1	71.1	71.8	86

Population and Participation index

It is interesting to look at the rate of change of the general population and hunting and fishing participation since 1955. Estimates are presented using an index where the number of the total population or participants for the base year, 1955, is set equal to 100 and the percentage change for each following survey year is added or subtracted. This efficiently shows relative change. Fishing participation has increased at a higher rate than population growth; the rate of growth in hunting participation dropped below population growth starting in 1985. See Figure 2.

Figure 2. Indexed Change in the Number of Anglers, Hunters, and Total Population: 1955-2016
(Population 16 Years of Age and Older)

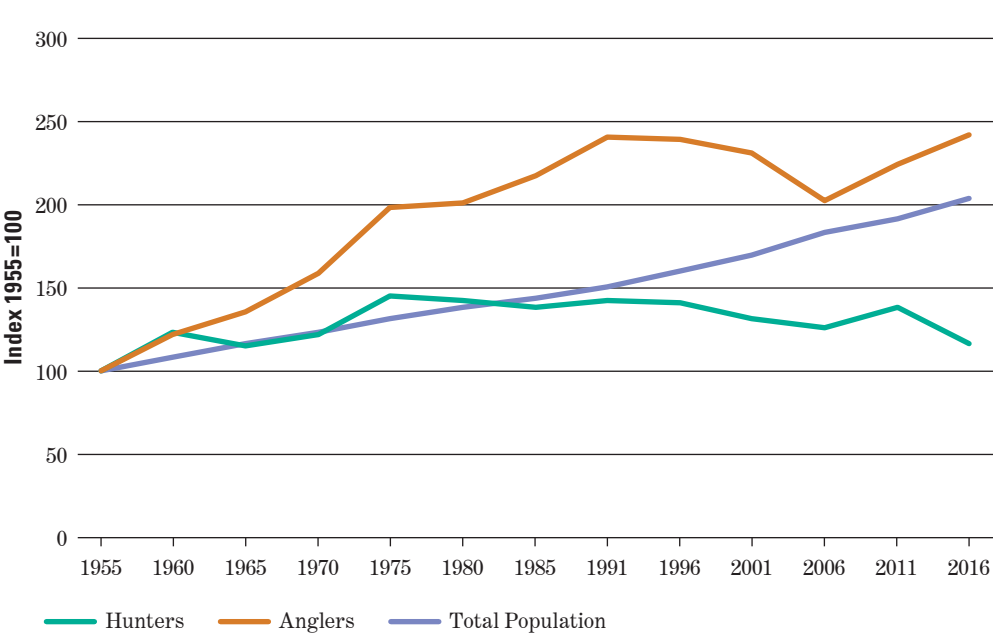


Table 2. Indexed Change in the Number of Anglers, Hunters, and Total Population: 1955-2016
(Population 16 Years of Age and Older.)

	1955	1960	1965	1970	1975	1980	1985	1991	1996	2001	2006	2011	2016
Total Population	100	109	117	124	131	138	144	151	160	169	183	191	203
Hunters	100	124	115	122	145	142	139	142	141	132	126	138	116
Anglers	100	122	136	159	198	201	218	241	239	231	203	224	242

Fishing Participation Rates

An important measure of the popularity of an activity is the percentage of total available people who do it. This is called the participation rate. The percentage of the total U.S. population who fished in 2016 is higher than it was in 1955. So the number of participants is more than keeping up with the increase in the pool of possible participants.

Figure 3. Fishing Participation Rates: 1955–2016
(Population 16 Years of Age and Older)

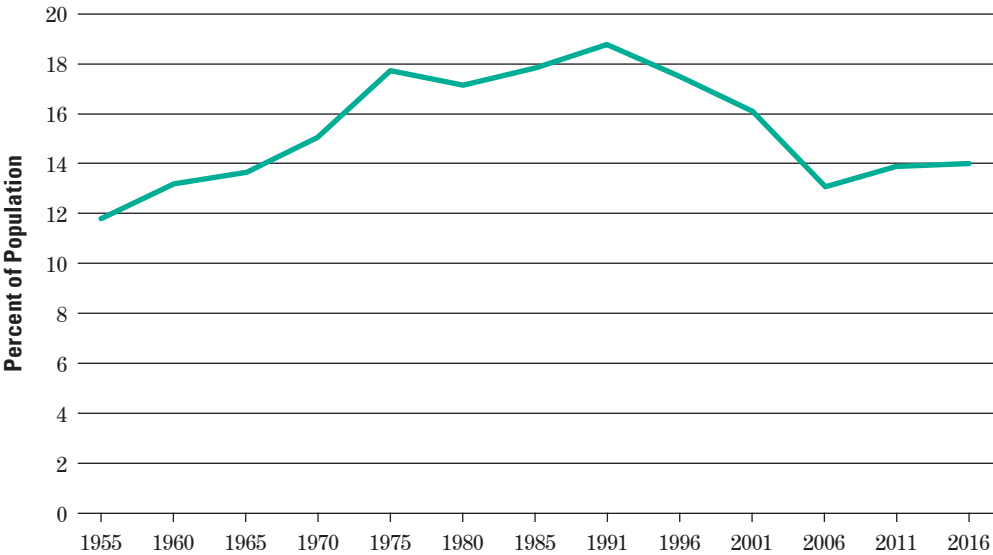


Table 3. Fishing Participation Rates: 1955-2016
(Population 16 Years of Age and Older)

1955	1960	1965	1970	1975	1980	1985	1991	1996	2001	2006	2011	2016
11.8	13.2	13.7	15.1	17.8	17.1	17.8	18.7	17.5	16.0	13.1	13.8	14.0

Hunting Participation Rates

The percentage of the adult U.S. population who hunted in 2016 was 4.5%. That is the lowest rate in the 1955–2016 study period. The highest it has been was 8.9%, in 1960.

Figure 4. Hunting Participation Rates: 1955–2016
(Population 16 Years of Age and Older)

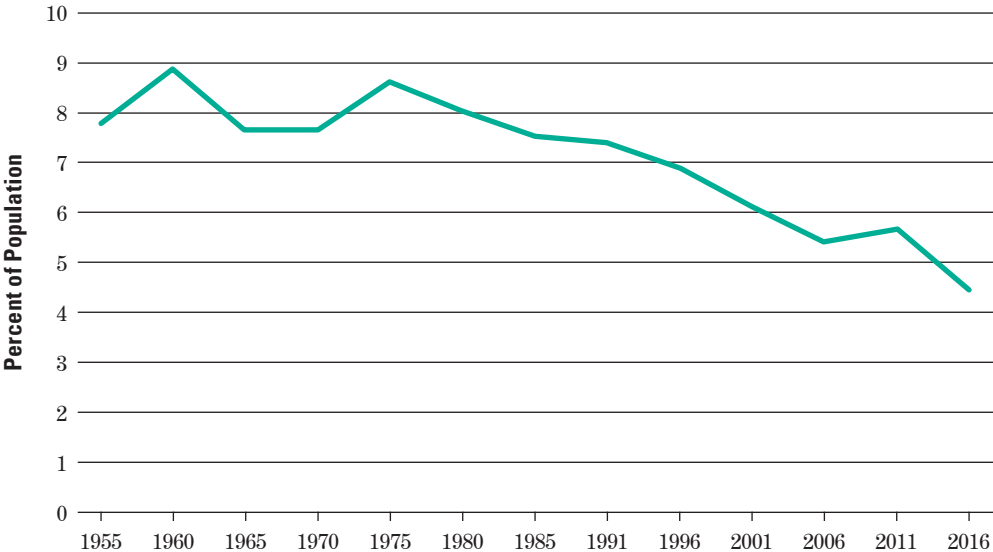


Table 4. Hunting Participation Rates: 1955-2016
(Population 16 Years of Age and Older)

1955	1960	1965	1970	1975	1980	1985	1991	1996	2001	2006	2011	2016
8	9	8	8	9	8	8	7	7	6	5	6	4

Recruitment

Recruitment is defined here as the percent of participants who fished or hunted for the first time ever in the study year. The focus of the following analysis will be on the years since 2000. The data are from the 2001, 2006, 2011, and 2016 Surveys. Specifically the data are from a screening survey of the general population, from which the wildlife-related recreationists were selected for later, more detailed interviews.

The screening survey database contains information about first-time hunting or fishing experiences for the year immediately preceding the survey year. Individuals who hunted or fished in 2015 (for the 2016 National Survey) were asked a follow-up question about whether it was their first year of participation. Using the responses to this question, one can obtain the distribution of first-time anglers and hunters by age, or any other demographic category. Age and gender were chosen for this analysis.

First Time Anglers

Recruitment is here presented as the percent of total participants who were first-time participants. The percent of anglers who were first timers dropped slightly from 2000 to 2015. Children have undergone the biggest drop in first-time participation. Adult women first-time participation was slightly down. Adult men first-time participation had the smallest drop in percent change from 2000–2015.

As for age groups, the recruitment of children and 16–24 year old first timers declined in the 2000’s. First-time participation by 25–64 year olds as a group was level. The recruitment of 55–64 year olds was the only age cohort with an increase.

Figure 5. Fishing Recruitment Rates by Gender: 2000, 2005, 2010, and 2015
(Population 6 Years of Age and Older)

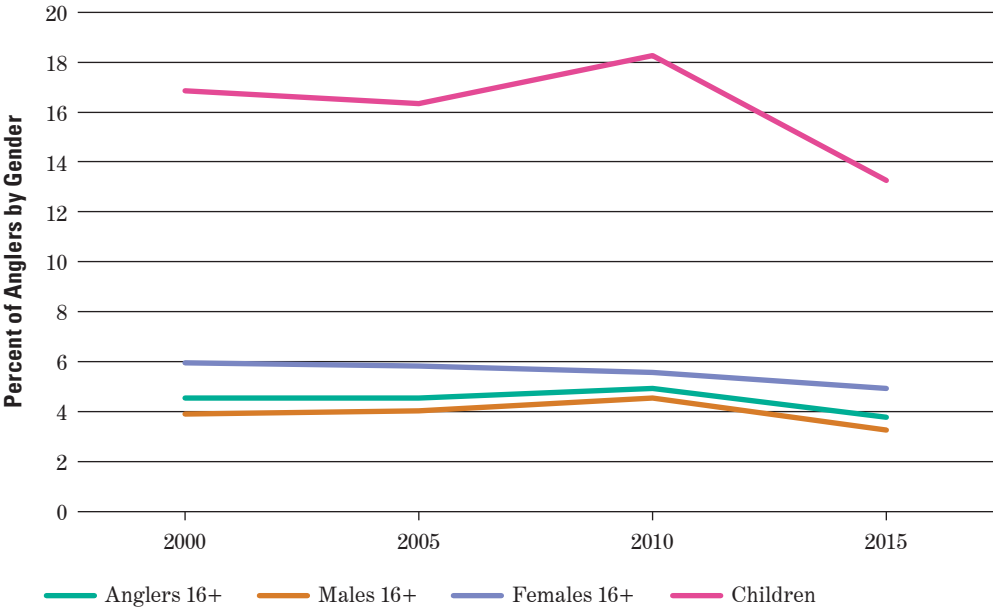


Table 5. Fishing Recruitment Rates by Gender: 2000, 2005, 2010, and 2015
(Population 6 Years of Age and Older)

	2000	2005	2010	2015	Percent Change 2000–2015
Anglers 16+	5	5	5	4	–17
Males 16+	4	4	5	3	–15
Females 16+	6	6	6	5	–18
Children	17	16	18	13	–22

Note: Recruitment rates for fishing are calculated as the percent who have participated in fishing in the Survey year who were first time participants. The percent change in the recruitment rate is the measure of relative change that makes the difference a percent of the rate in 2000.

It should be noted that these findings held for the *number* of first-time participants as well as the percent of anglers. The number of overall participants increased, so a change in the percent of participants does not mathematically necessarily mean there was a similar change in the number of participants. In this case, however, it does.

This means the growth in the overall number of anglers was not due to a steady recruitment of participants.

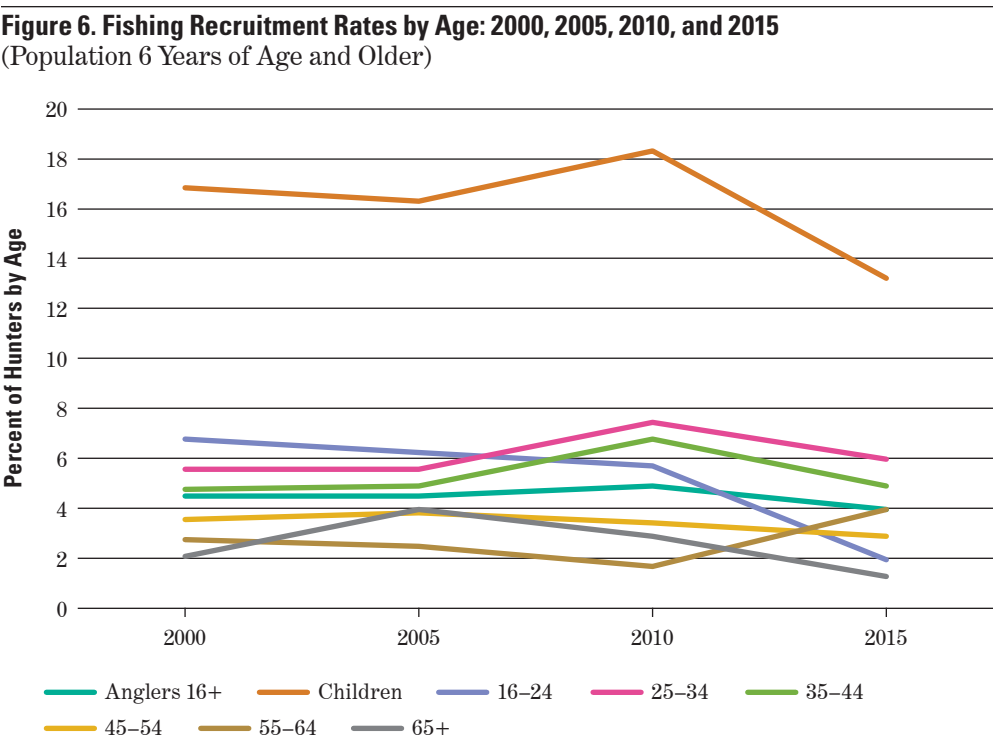


Table 6. Fishing Recruitment Rates by Age: 2000, 2005, 2010, and 2015
(Population 6 Years of Age and Older)

	2000	2005	2010	2015	Percent Change 2000–2015
Anglers 16+	5	5	5	4	–12
Children	17	16	18	13	–22
16–24	7	6	6	2	–70
25–34	6	6	7	6	5
35–44	5	5	7	5	4
45–54	4	4	3	3	–15
55–64	3	2	2	4	43
65+	2	4	3	1	–41

Note: Recruitment rates for fishing are calculated as the percent who have participated in fishing in the Survey year who were first time participants. The percent change in the recruitment rate is the measure of relative change that makes the difference a percent of the rate in 2000.

First Time Hunters

First-time hunting participation has fallen since 2000, both for adults as a group and even more so for the 6–15 year old cohort. However, women first-time hunting is up. See Figure 7. Figure 8 has the trend in age group hunting recruitment. The number of 16–24 year old first-time hunters significantly declined. First-time hunting for 25–64 year olds stayed level. Children first timers went down significantly. This partly explains the decrease in the overall number of hunters.

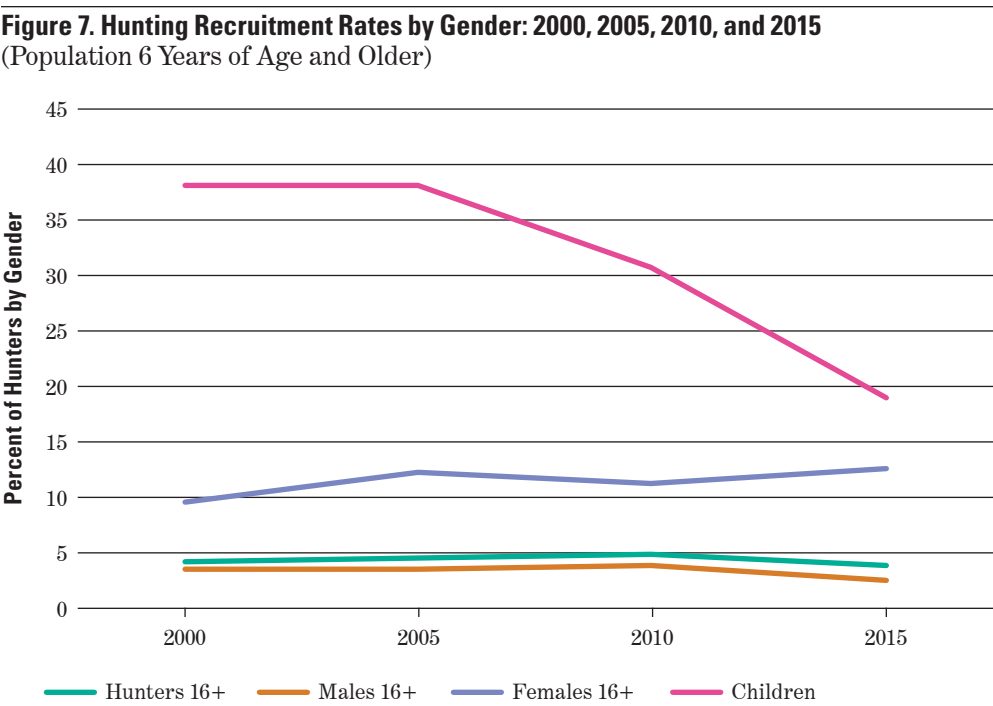


Table 7. Hunting Recruitment Rates by Gender: 2000, 2005, 2010, and 2015
(Population 6 Years of Age and Older)

	2000	2005	2010	2015	Percent Change 2000–2015
Hunters 16+	4	5	5	4	–8
Males 16+	4	4	4	3	–31
Females 16+	10	12	11	13	32
Children	38	38	31	19	–51

Note: Recruitment rates for hunting are calculated as the percent who have participated in hunting in the Survey year who were first time participants. The percent change in the recruitment rate is the measure of relative change that makes the difference a percent of the rate in 2000.

Figure 8. Hunting Recruitment Rates by Age: 2000, 2005, 2010, and 2015
(Population 6 Years of Age and Older)

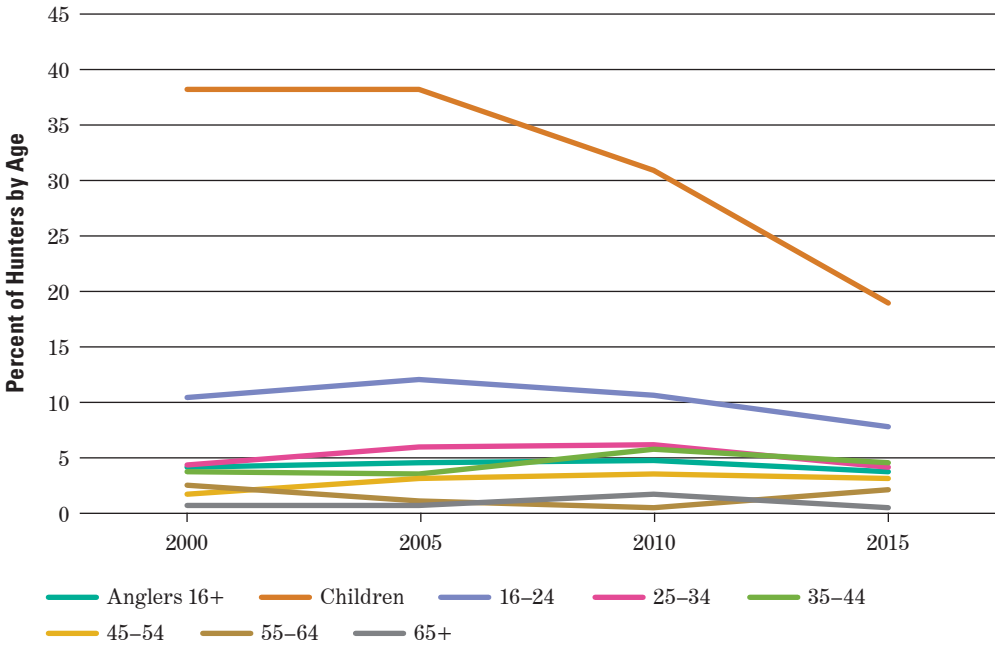


Table 8. Hunting Recruitment Rates by Age: 2000, 2005, 2010, and 2015
(Population 6 Years of Age and Older)

	2000	2005	2010	2015	Percent Change 2000–2015
Hunters 16+	4	5	5	4	–11
Children	38	38	31	19	–51
16–24	11	12	11	8	–25
25–34	4	6	6	4	–5
35–44	4	4	6	5	20
45–54	2	3	4	3	74
55–64	3	1	1	2	–13
65+	1	1	2	0	–34

Note: Recruitment rates for hunting are calculated as the percent who have participated in hunting in the Survey year who were first time participants. The percent change in the recruitment rate is the measure of relative change that makes the difference a percent of the rate in 2000.

Retention

Having analyzed information available from the National Survey concerning recruitment, it is now time to shift gears and see what information it contains about retention of individuals in fishing and hunting. Individuals in this analysis are no longer considered active anglers or hunters if they did not participate in the activity for three years prior to the survey years 2001, 2006, 2011, or 2016. Thus, individuals who participated in one or more of the three years prior to these survey years are considered active anglers or hunters. For example, for the 2016 Survey, an individual is considered a dropout from fishing if she had fished at some point in her life but did not participate in 2013, 2014, or 2015. In this section “remained active” refers to participation in fishing or hunting in one of the three years prior to a survey. The “retention rate” is the percent of individuals who have participated in fishing or hunting at some point and have remained active in the respective activity.

Fishing Retention by Gender

While the 2000 and 2015 retention rates were nearly the same for both men and women, this was not true for the intervening years. Fishing retention declined for both men and women from 2000 to 2010, but climbed back to the 2000 level in 2015.

Figure 9. Fishing Retention Rates by Gender: 2000, 2005, 2010, and 2015
(Population 16 Years of Age and Older)

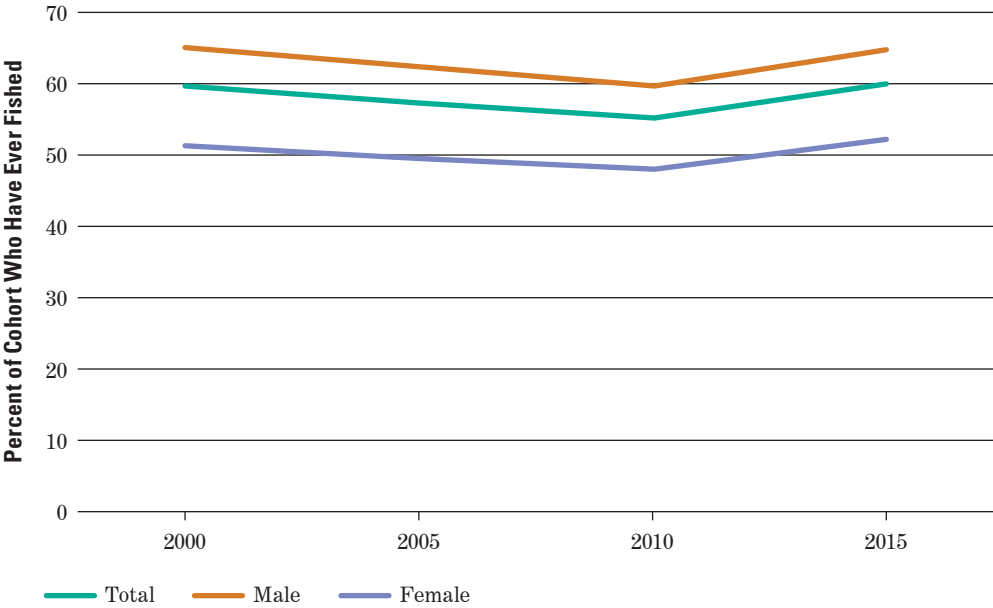


Table 9. Fishing Retention Rates by Gender: 2000, 2005, 2010, and 2015
(Population 16 Years of Age and Older)

	2000	2005	2010	2015	Percent Change 2000–2015
Total	59.5%	57.1%	54.9%	59.8%	0.5%
Male	65%	62%	59%	65%	–0.3%
Female	51%	49%	48%	52%	1.8%

Note: Retention rates for fishing are calculated as the percent who have ever participated in fishing who were active in at least one of the three years prior to the 2001, 2006, 2011, or 2016 Surveys. The percent change in the retention rate is the measure of relative change that makes the difference a percent of the rate in 2000.

Hunting Retention by Gender

Since 2000 hunting retention has been level overall. However the gender trends are going in opposite directions. The retention of male hunters is slightly down and that of female hunters is up significantly.

Figure 10. Hunting Retention Rates by Gender: 2000, 2005, 2010, and 2015
(Population 16 Years of Age and Older)

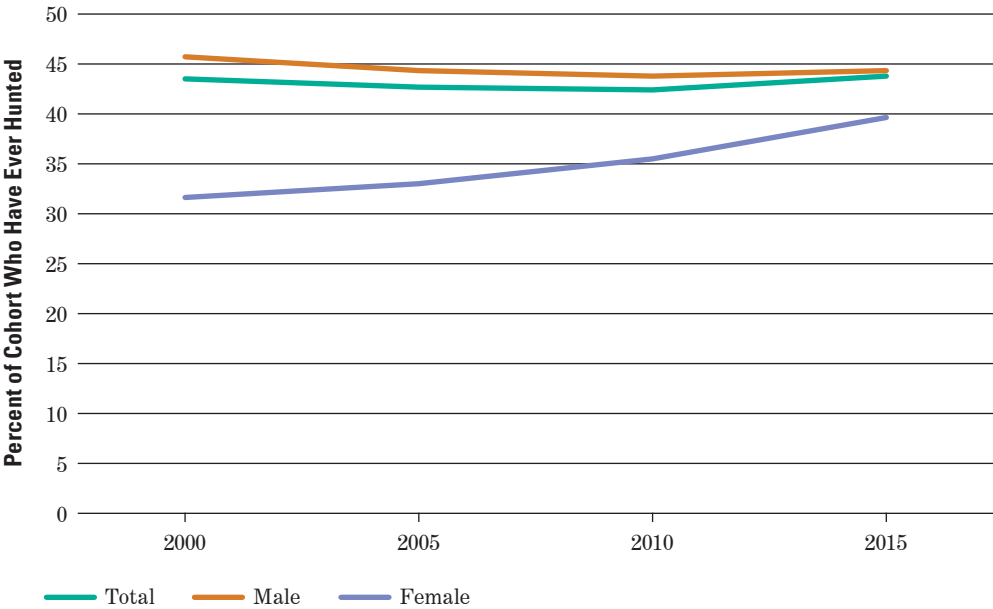


Table 10. Hunting Retention Rates by Gender: 2000, 2005, 2010, and 2015
(Population 16 Years of Age and Older)

	2000	2005	2010	2015	Percent Change 2000–2015
Total	43.4%	42.5%	42.3%	43.6%	0.4%
Male	46%	44%	44%	44%	–3.0%
Female	32%	33%	36%	40%	25.3%

Note: Retention rates for hunting are calculated as the percent who have ever participated in hunting who were active in at least one of the three years prior to the 2001, 2006, 2011, or 2016 Surveys. The percent change in the retention rate is the measure of relative change that makes the difference a percent of the rate in 2000.

Summary of Survey Method

The data collection method for the 2001–2016 National Surveys has been consistent. It was designed to provide national-level estimates of the number of participants in recreational hunting and fishing and in wildlife watching activities such as observing, feeding, and photographing. Information was collected on the number of participants, where and how often they participated, the type of wildlife encountered, and the amounts of money spent.

The Surveys were conducted in two stages: a screening of households to identify households with likely participants and a series of follow-up interviews of selected persons to collect detailed data. Telephone and in-person interviewing modes were conducted. The Census Bureau did the sampling and data collecting. The U.S. Fish and Wildlife Service was responsible for the report writing and data analysis. See a Survey National Report for more details on the survey method (<https://www.census.gov/programs-surveys/fhwar/library/publications.html>).



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Imputation of 2016 Estimates

Due to changes in the 2016 Survey screening questionnaire, some questions were not asked similarly to previous Surveys. In previous Surveys everyone was asked about previous activity, such as their last year of hunting and whether or not the previous year was his/her first year of hunting. Respondents who had participated in 2016 at the time of the screening interview were not asked previous activity questions, so it was necessary to impute their responses. Twelve percent of people who had ever hunted reported hunting in 2016 prior to the screening interview and 20% of people who had ever fished reported fishing in 2016 prior to the screening interview, so their recruitment and retention responses had to be imputed. The imputations were based on the responses of similar respondents in the three previous Surveys. For example, the proportion of screened respondents who had hunted or fished by the time of the screen and had participated in the previous year was very similar in the three previous Surveys (for hunting, 91% in 2011, 92% in 2006, and 92% in 2001. For fishing, 85% in 2011, 89% in 2006, and 90% in 2001), so that average of those proportions was applied to the 2016 Survey respondents. A similar method was used to impute first timers. Four percent of 2011 anglers at the time of the screening interview fished for the first time in 2010, 4% of 2006 anglers first-time fished in 2005, and 3% of 2001 anglers first-time fished in 2000. Four percent of 2011 hunters at the time of the screening interview hunted for the first time in 2010, 3% of 2006 hunters first-time hunted in 2005, and 3% of 2001 hunters first-time hunted in 2000.



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Summary

Since the beginning of the Survey in 1955, the number of anglers has more than doubled and the number of hunters has slightly increased. This is evidence for the long term stability of these outdoor recreation activities. However, given that the U.S. population nearly doubled from 1955 to 2016, the trend in the proportions of the U.S. population who hunt or fish gives a different picture of the ongoing popularity of these activities. The hunting participation rate has fallen from nearly 9% in 1960 to 4.5% in 2016. The fishing participation rate has risen and fallen, from 12% in 1955, to 18% in 1991, and recently 14% in 2016.

The Survey also measures the participation of wildlife watchers. The comparable estimates go back to 1991, when 77 million people closely observed, photographed, or fed wildlife. The latest estimate, 83 million in 2016, is the highest number of participants in the Survey's history. There is no recruitment or retention information for wildlife watching in the National Survey.

Recruitment and retention information for hunting and fishing is available from this data source going back to the 1991 Survey, but this report focused on the trends since the turn of the century, to keep the information more relevant to today's conditions.

Recruitment of new hunters and anglers in 2016, especially 6–15 year olds, was not at the same level as in years past. Retaining previous participants, however, was at a higher level, and explains the increase in angling. Hunting did not have the same dynamic, with the number of retained hunters not high enough to keep overall hunting participation at the same level as in 2001.

From 2000 to 2015 women had higher recruitment rates than men for hunting and fishing. Their retention rates for hunting increased, while men's decreased. For fishing, women's 2000 and 2015 retention rates slightly increased, while men's rates stayed the same.



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The recruitment measure is the number of first time participants divided by the number of total participants for a given year. Using this criterion, the recruitment of children 6–15 years old decreased for both hunting and fishing from 2000 to 2015. The age cohort that slightly increased first time fishing was the 25–34 year olds. The age cohort that slightly increased first time hunting was the 35–54 year olds.

Of the two measures of retention and recruitment, retention is maintaining its level of influence on overall participation, but recruitment is falling. This is the case for the aggregate participation categories, but there some demographic groups that are performing above the mean, e.g., women (fishing and hunting recruitment and retention) and 35–44 year olds (hunting recruitment).

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