

1960

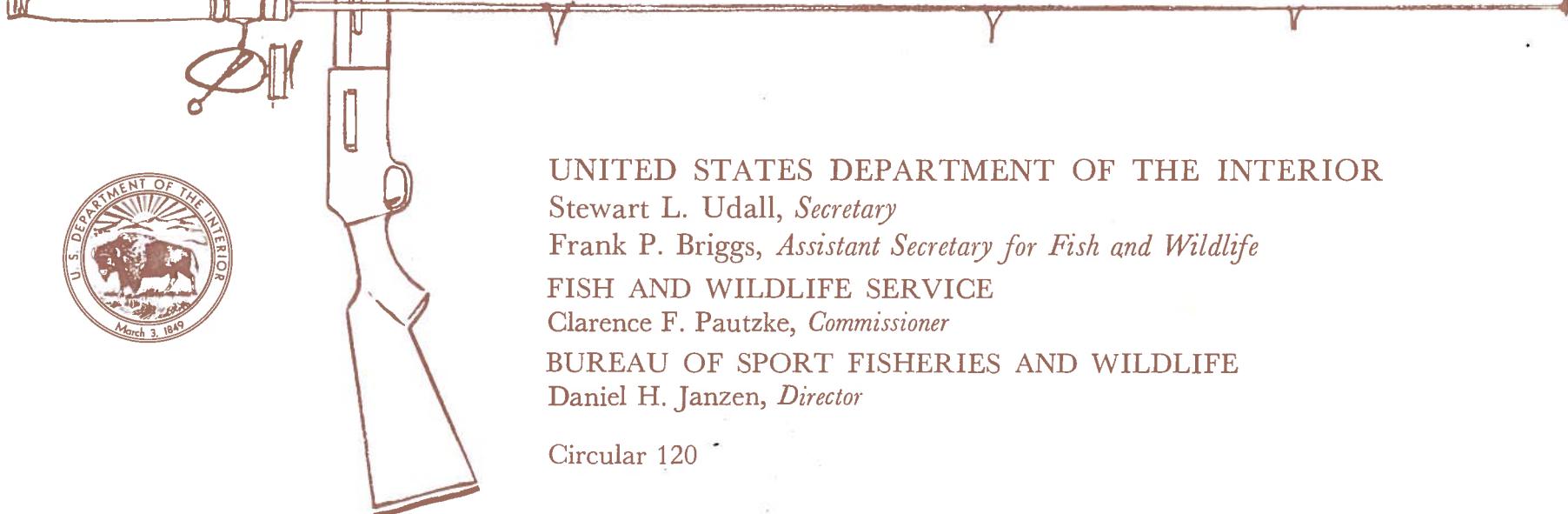
National Survey of
Fishing and Hunting

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1960

National Survey of Fishing and Hunting

*The second nationwide economic survey of
sport fishing and hunting in the United States*



UNITED STATES DEPARTMENT OF THE INTERIOR

Stewart L. Udall, *Secretary*

Frank P. Briggs, *Assistant Secretary for Fish and Wildlife*

FISH AND WILDLIFE SERVICE

Clarence F. Pautzke, *Commissioner*

BUREAU OF SPORT FISHERIES AND WILDLIFE

Daniel H. Janzen, *Director*

Circular 120

FOREWORD

Fishing and hunting are among the Nation's most popular outdoor sports. The second National Survey of Fishing and Hunting in the United States, covering the calendar year 1960, shows that these traditional American activities are even more significant now to our national economy and way of life than they were in 1955, the year covered by the first survey. The 1960 survey reveals millions of participants who spend billions of dollars, hundreds of millions of days and travel billions of miles to enjoy sport fishing and hunting. Millions of American families take advantage of these outdoor recreational sports. Fishing and hunting are enjoyed by every member of the family—female as well as male; the very young and elderly as well as those in the prime of life.

Our people have turned in ever-increasing numbers to the healthful out-of-doors. As industrial technology, automation, and other advances have increased wages and shortened the workweek, the time and money available for recreation have contributed to this change. With this additional free

time, a large proportion of our citizens go outdoors and test their sporting skills against the denizens of the deep, the streams and the woods.

It should be noted that the cost of this report and the survey on which it is based was borne entirely from funds derived from excise taxes on sporting arms and ammunition and on certain types of fishing tackle. These funds, except for administrative costs, are allocated to the States for fish and wildlife restoration work. The funds expended for this survey would have been so allocated had they not been used for the survey, made at the request of the States. Consequently, the expenditure of funds on this survey has had no effect whatever on the Federal budget.

The knowledge gained from the 1960 survey is invaluable in administering and planning for the fish and wildlife resources of our Nation. Such knowledge is essential to State and Federal agencies which must manage fish and wildlife populations so as to meet the requirements of our ever-growing human population for sport fishing and hunting.



*Director,
Bureau of Sport Fisheries and Wildlife
United States Department of the Interior*

WASHINGTON, D.C.
September 1961

SURVEY HIGHLIGHTS

Fifty million of the 130 million people in this Nation over 12 years old went fishing, hunting, or both, in 1960. This is nearly 2 out of every 5 persons in this age group. Approximately 45 million fished during the year, including many who also hunted. The total who hunted is roughly 20 million, the majority of whom are fishermen as well.

A detailed study of participation in these sports, including types of fishing and hunting, expenditures, mileage traveled and the like, was made of the more active sport fishermen and hunters, who for the most part, were licensed or, if unlicensed, either took part in these sports on several occasions or reported at least a modest expenditure for these activities. This study—the National Survey of Fishing and Hunting—revealed an estimated 30 million sport fishermen or hunters in 1960, some 23 percent of the population 12 years old and over. These more substantial participants reported around 650 million recreation days of fishing and hunting and an expenditure of close to 4 billion dollars on these pastimes. As compared with a similar survey conducted in 1955, the number of these sportsmen had increased

by over 5 million and their expenditures by 1 billion dollars.

The remainder of this report is confined to the results of the detailed study with appropriate comparisons with the 1955 results. A further explanation of the difference between the total number of participants and the substantial participants, with whom this detailed report is concerned, is given in the appendix to this report (see page 70). The two estimates were obtained from different surveys conducted by the U.S. Bureau of the Census. Part of the difference can be attributed to sampling variability and different survey procedures. In the main, however, the difference represents the exclusion from the National Survey of Fishing and Hunting of incidental participants: those who were unlicensed and who fished or hunted on only one or two occasions and reported virtually no expenditure. Available data indicate that the sport fishermen and hunters included in the National Survey account for approximately 95 percent of all recreation-days of effort and 99 percent of all expenditures for these activities.

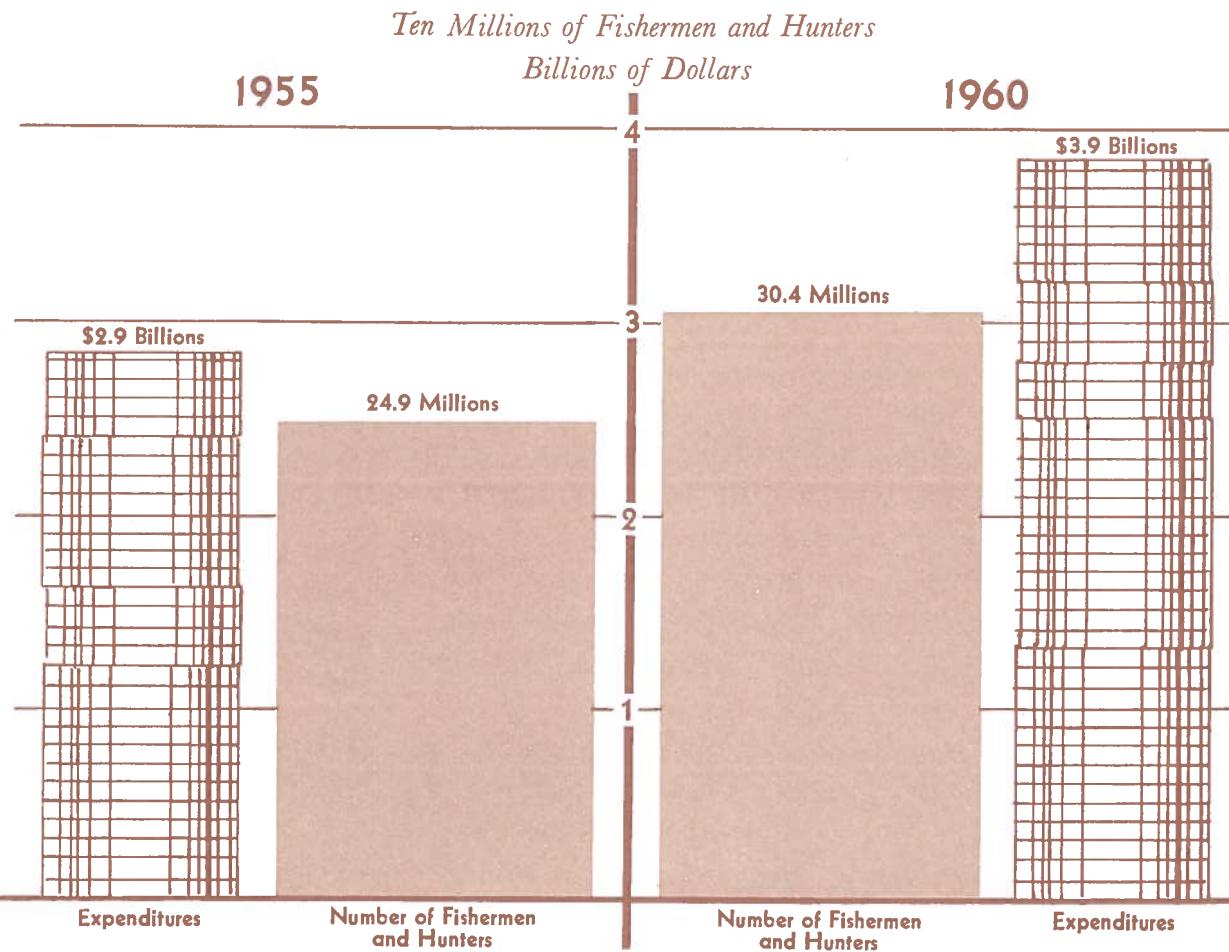
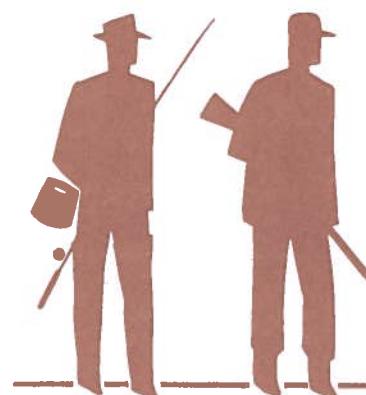
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Sport Fishermen and Hunters and Their Expenditures



UP!

National statistics on sport fishing and hunting show the same trends as other national data. UP! Personal expenditures on all recreation rose by almost 60 percent in the fifties. Thirty million people spent almost \$4 billion for the fun of fishing and hunting, during 1960, as compared with 25 million who spent \$3 billion in 1955.

As a Nation, we play a little more each year. Our work week has grown shorter and shorter during the first half of this century. Perhaps you remember when we worked 60 or more hours a week at the turn of the century. If you are too young to remember, your father, or at least your grandfather, remembers those long-hour work-weeks. Now all of us have more time to ourselves—it is no longer rare for us to find a person going on a vacation for a month, especially a person with seniority on the job. Another and newer development in our Nation is that as many as 25 million Americans are “making a living” from retirement income or other sources.

Besides having a greater amount of time for play, we also have an increasing amount of money to spend on pastime activities. Family expenditures account for about two-thirds of all goods and services purchased during a year. As a Nation of consumers we have achieved a level of living above that of subsistence. The family budget calls for less and less spending on “hard” goods. Big items like houses and automobiles, demanded after World War II, have been bought and demand for those items has declined from postwar peaks. Not only have our families shown a trend to shift their buying patterns, but they have more discretionary income—the amount of money left over after necessities have been bought and over which the family can exercise option on other purchases.

Discretionary income accounts for about one-third of our total personal income and will probably increase more in the future. About three-fifths of our families have some discretionary income and many family treasuries are bulging. Personal buying

of necessities like food, clothing, and shelter, has risen moderately during the past few years. This means that discretionary incomes have increased more rapidly and that the families of our Nation are choosing the more esthetic values of life with each advance they make up the rungs of the income ladder. They are interested in these real values and will pay for them. Families are now thinking twice before buying goods and services which they neither need nor desire.



Money spent on vacations has doubled in the postwar period. During the same time, money spent on alcoholic beverages, for example, has increased only by 7 percent. These dollar ballots have not gone unnoticed by the businessman who is devoting a greater amount of effort to satisfying family needs in the recreation field. The manufacturers of sport fishing tackle and of sporting arms and ammunition have taken advantage of new materials and automation to make their wares less expensive and more popular than ever. The new equipment is light enough for children and easy enough for women and the elderly to handle.

Fishing and hunting are popular sport pastimes with the family—Mom, Dad, Sis, and Jr., all take part. Along with the “exploding” growth of our population, sport fishing and hunting are significant ingredients in the growth of expenditures on recreational activities in our country.



In 1955

		<i>Mean</i>	<i>Median</i>
Spent	{ Money	\$1,914,292,000	\$91.98
	Recreation-days	397,447,000	19.1
			9.5
Trips taken		341,333,000	16.4
Miles by automobile		17,910,434,000	860.5
			319.0



		<i>Mean</i>	<i>Median</i>
Spent	{ Money	\$936,687,000	\$79.49
	Recreation-days	169,423,000	14.4
			8.5
Trips taken		154,370,000	13.1
Miles by automobile		6,072,296,000	515.3
			206.0



In 1960		Mean	Median
Spent {	Money	\$2,690,872,000	\$106.26
	Recreation-days	465,769,000	18.4
Trips taken		412,343,000	16.3
Miles by automobile		18,834,947,000	743.8
Spent {	Money	\$1,161,242,000	\$79.34
	Recreation-days	192,539,000	13.2
Trips taken		178,284,000	12.2
Miles by automobile		7,612,615,000	520.1

BASIS AND BACKGROUND

Our Federal and State governments, as well as the various conservation organizations, have become increasingly concerned with the dwindling natural resources of our country. The factors which have made us a rich and advanced industrial Nation have also threatened our invaluable fish and wildlife resources, even to the point of extinction in many areas. Urbanization and industrialization, for instance, have led to water-pollution, which has killed fish and wildlife and resulted in great losses of their natural habitat. Intensive planning for and management of our fish and wildlife resources will be required to assure opportunities for fishing and hunting for the more than three-fold increase in the number of fishermen and hunters expected by the close of this century. Conservation agencies have struggled to maintain and to improve these natural resources. Maintenance and improvement of these resources cost money, and the spending of money for these purposes requires justification. One measure of the importance of fish and wildlife resources is personal expenditures on sport fishing and hunting and the significance of their contribution to our national economy.

As a Nation we have spent all too little to protect our valuable fish and wildlife resources. One of the primary sources of financing such protection comes from taxes and fees paid by sport fishermen and hunters for their part in these sport activities. These include excise taxes on sport fishing tackle and sporting arms and ammunition and state license fees. In fiscal year 1960, excise taxes amounted to \$21 million and state license fees amounted to \$115 million. Excise taxes provide the source of funds for the Federal Aid in Fish and Wildlife Restoration programs. Under these programs, the funds are made available to the State fish and game departments for fish and wildlife management purposes. This survey is one of the coordinated programs between our Federal and State governments and is financed directly from these Federal Aid funds.

Conservation agencies need comprehensive information provided by this survey for carrying out their individual restoration, management, and other fish and wildlife programs. The International Association of Game, Fish and Conservation Commissioners, which includes the fish and game commissioners and directors of the 50 States and

the Canadian Provinces, requested this survey as well as the similar survey in 1955. This Association recommended that the U.S. Fish and Wildlife Service carry out this survey similar to the one in 1955. After approval by the Bureau of the Budget, the Bureau of the Census, the principal data-collection agency of the Federal Government, conducted this second National survey of fishermen and hunters.

WHAT THE SURVEY MEASURED

The National Survey of Fishing and Hunting measures the amount of money and time spent and the number of trips made by American fishermen and hunters to participate in these sports. It shows the number of these sportsmen by households and by their chief social and economic characteristics—geographic area, population density, age, sex, occupation, and income. In addition, it shows: (1) the number of fresh-water fishermen fishing in man-made ponds and reservoirs, in natural lakes and ponds, and in rivers and streams; (2) the number of salt-water fishermen fishing in the surf, in bays and sounds, in tidal rivers and streams, and in the adjoining sea; (3) the num-

ber of hunters who hunt for big game, small game, waterfowl, and mourning doves; (4) the number of ducks bagged, and (5) expenditures on boats and motors and boat launching, automobile expenditures, expenditures on other types of transportation, other trip expenditures, and daily entrance fees.

Exact comparability was not maintained with 1955 data in all detail due to the addition of a great deal of new information, the desirability of showing certain expenditures separately, and other changes since 1955. The most obvious change since 1955 is the addition of two new States, Alaska and Hawaii. In some cases, the classifications used in 1955 were changed for statistical comparability with other data. This is no impairment. Details of these differences are shown, or described, at the back of this booklet, in Appendix C. The net result of these and other changes is that (1) expenditures on food show a greater increase than would have occurred if the 1955 procedures had been used, and (2) expenditures for "Bait, Guide Fees and Other Trip Expenses" are lower than they would have been under the 1955 procedures.

In 1955, \$2,851 million
spent on fishing and
hunting

In 1960, \$4 Billion spent on Fishing and Hunting

Auxiliary
equipment
32%



Privilege fees
and other expenses
24%



Fishing and hunting
equipment
17%



Transportation
expenses
14%

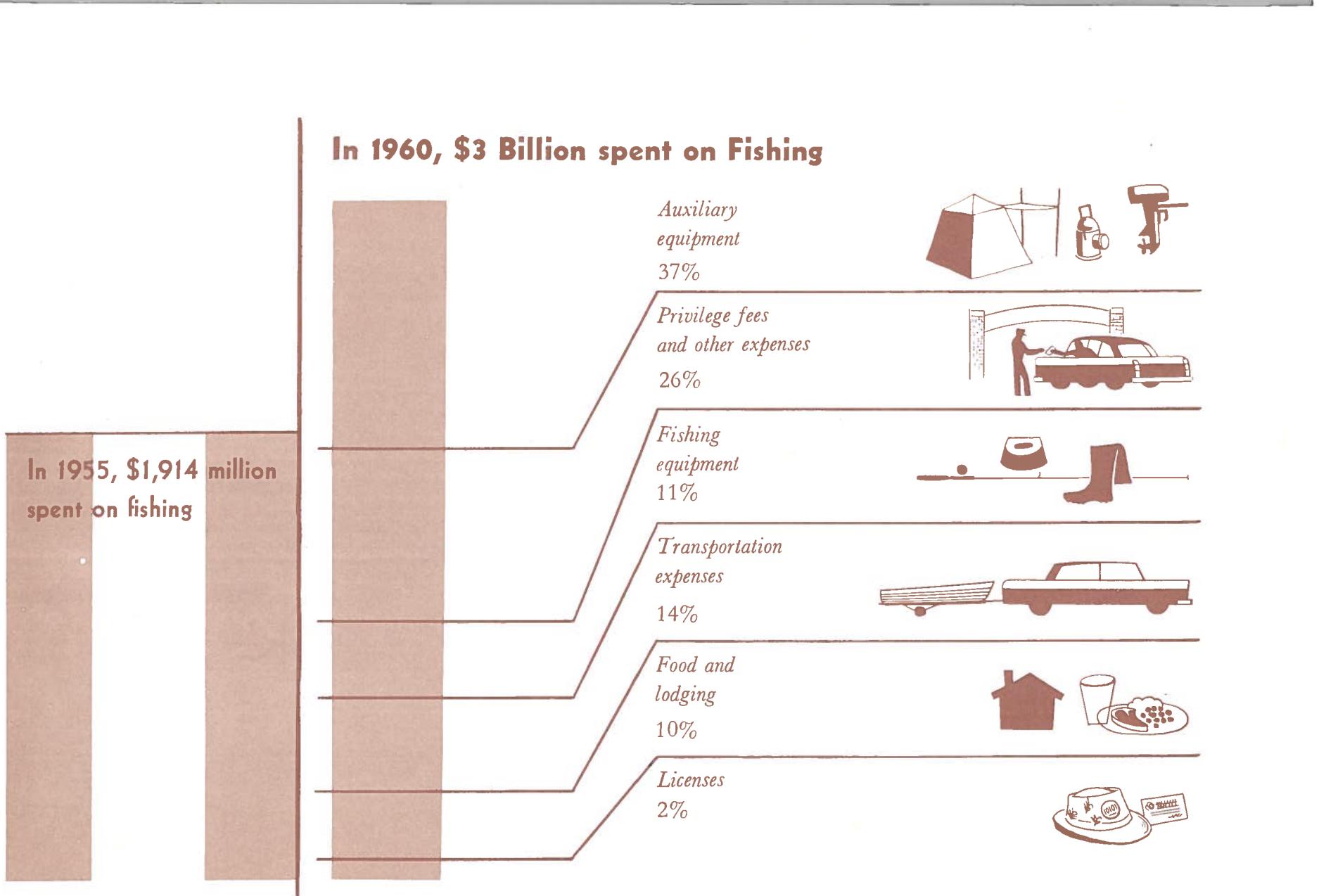


Food and
lodging
10%

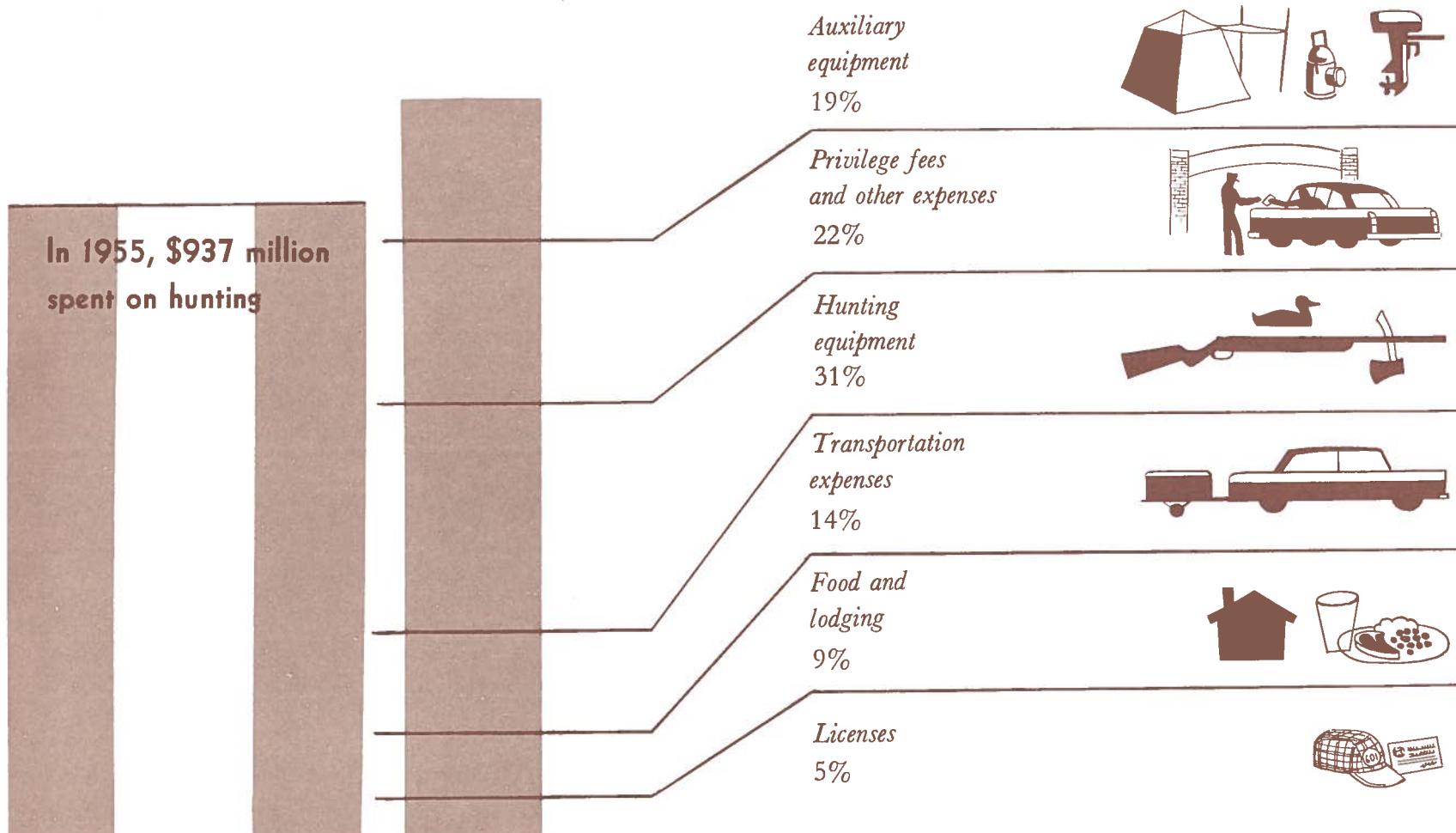


Licenses
3%

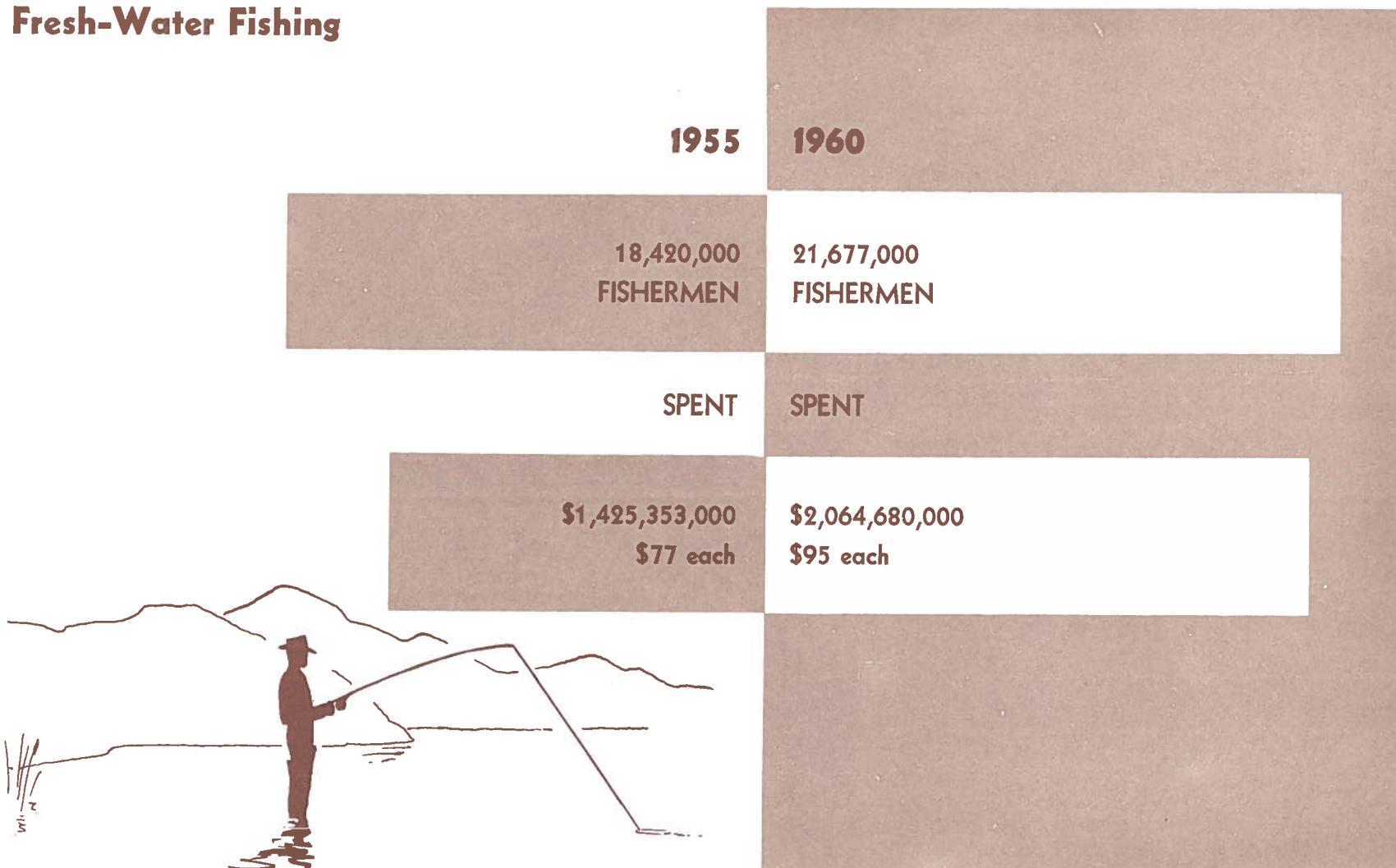




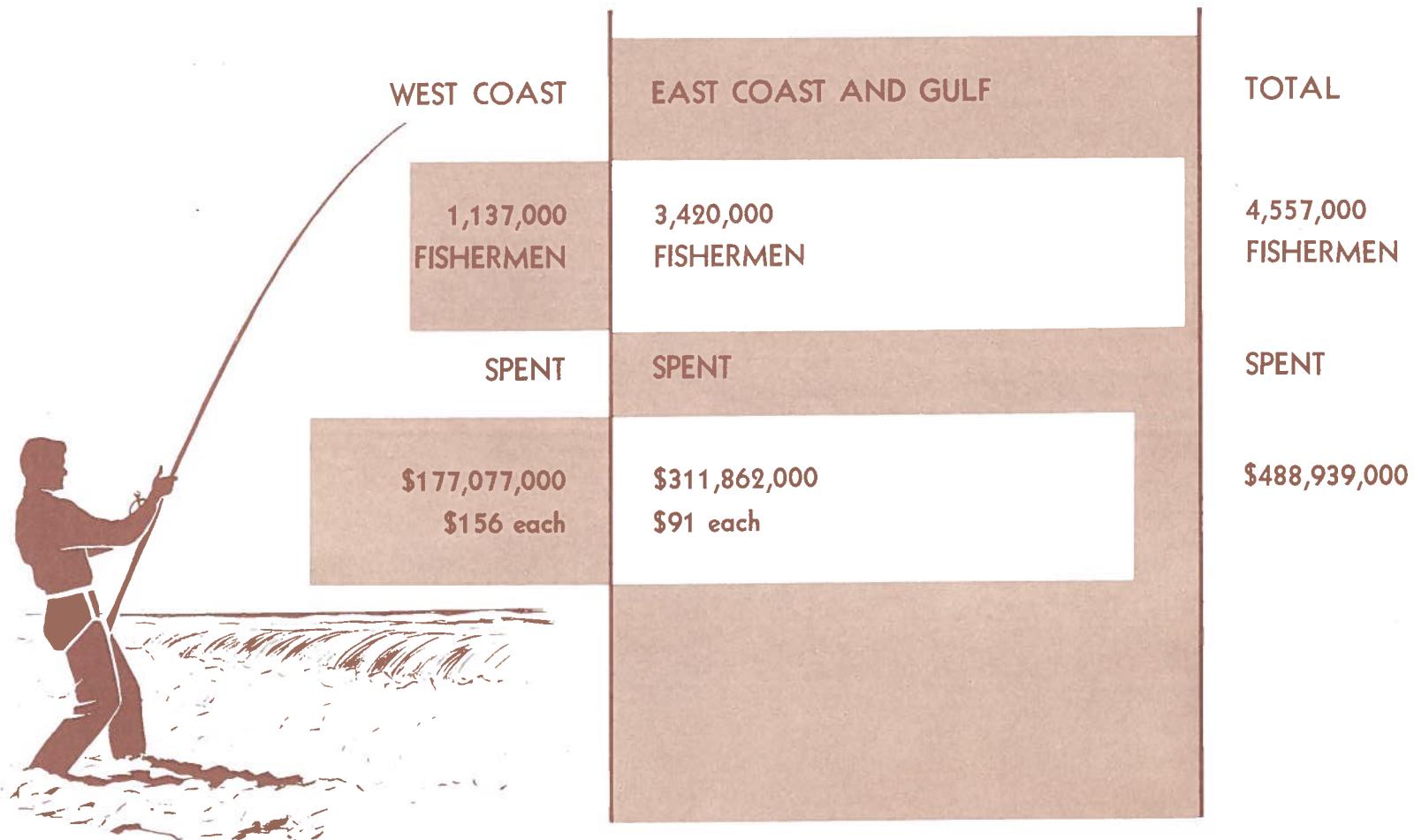
In 1960, \$1 Billion spent on Hunting



Fresh-Water Fishing



Salt-Water Fishing, 1955



Salt-Water Fishing, 1960

ATLANTIC COAST	GULF COAST	PACIFIC COAST	TOTAL
3,383,000 FISHERMEN	1,437,000 FISHERMEN	1,472,000 FISHERMEN	6,292,000 FISHERMEN
SPENT	SPENT	SPENT	SPENT
\$346,373,000 \$102 each	\$144,857,000 \$101 each	\$134,961,000 \$92 each	\$626,191,000
			

Waterfowl Hunting



1955

1,986,000
WATERFOWL HUNTERS

1960

1,955,000
WATERFOWL HUNTERS

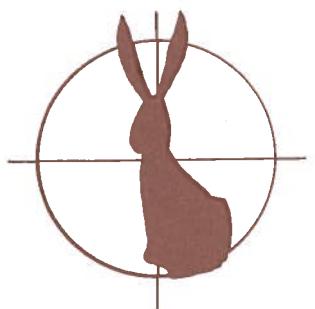
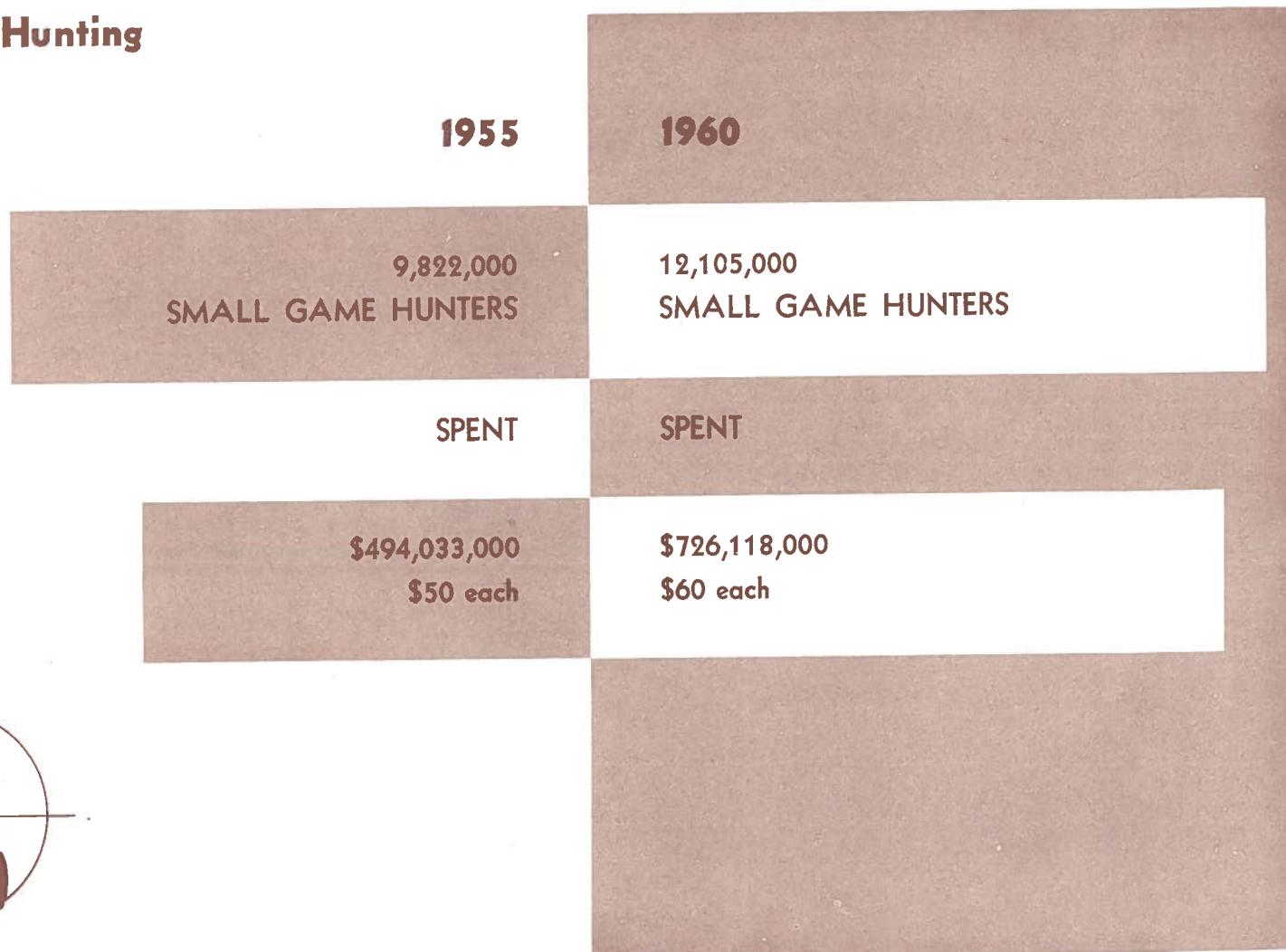
SPENT

\$118,745,000
\$60 each

SPENT

\$89,436,000
\$46 each

Small Game Hunting

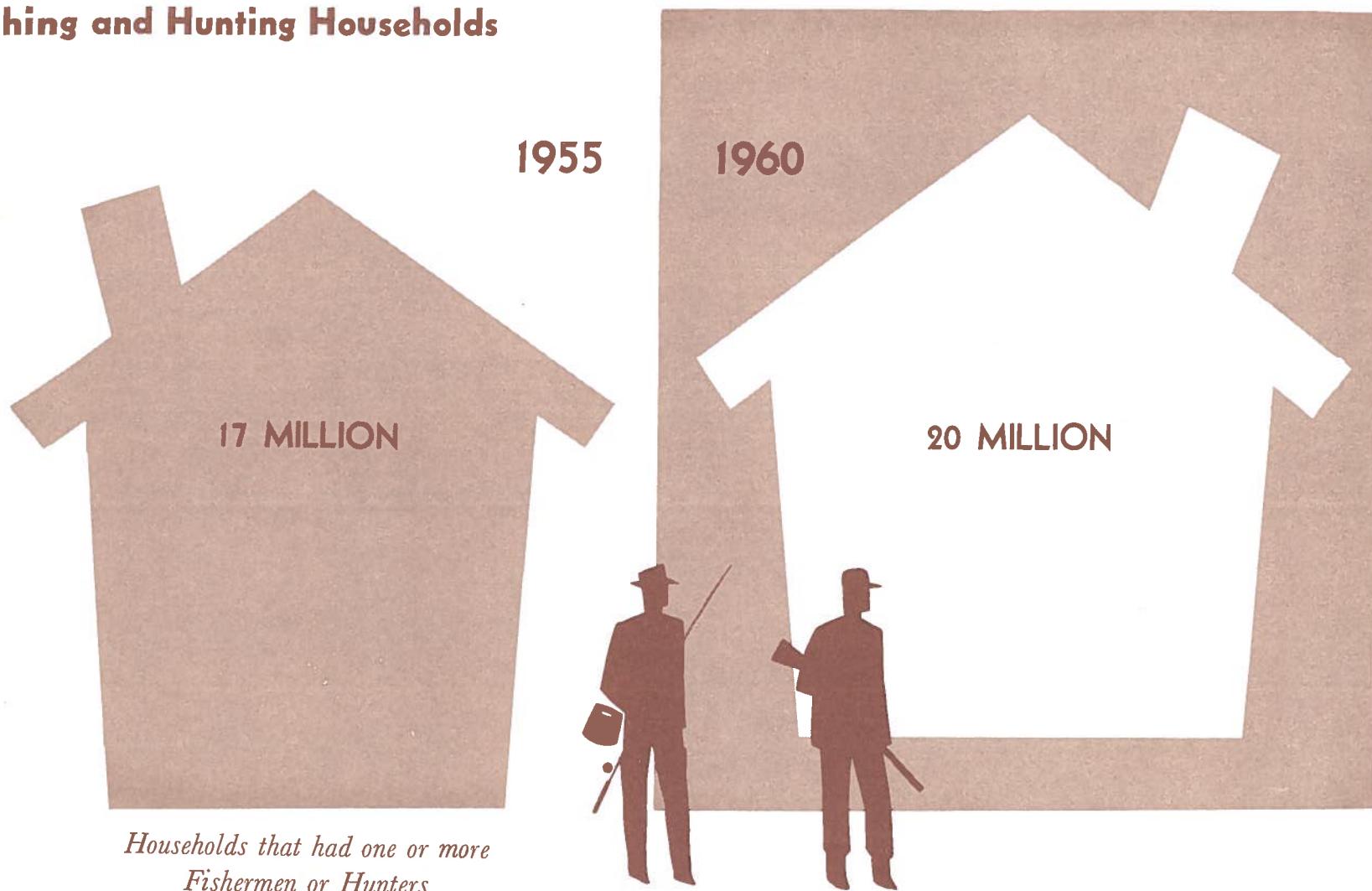


Big Game Hunting

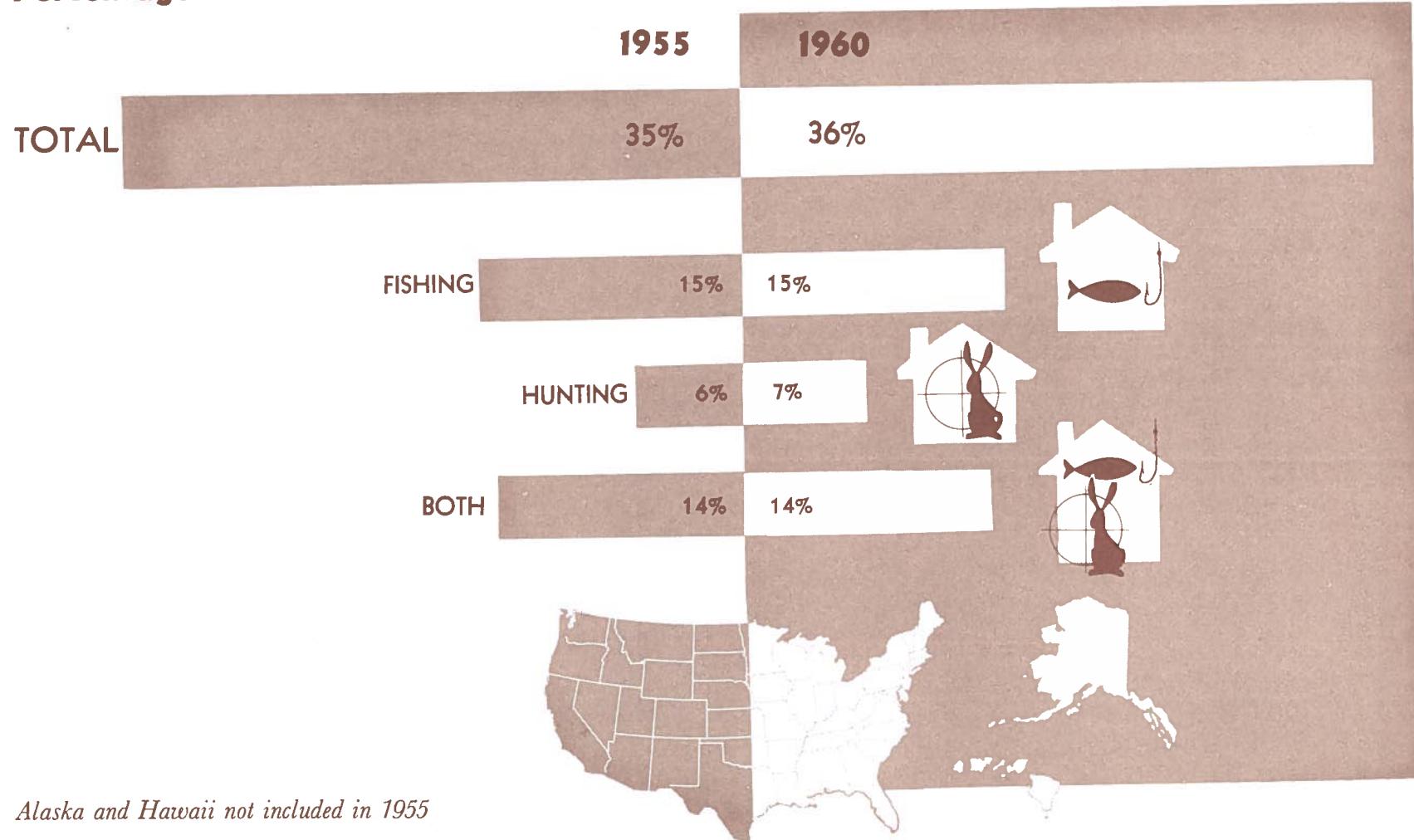
1955	1960
4,414,000 BIG GAME HUNTERS	6,277,000 BIG GAME HUNTERS
SPENT	SPENT
\$323,909,000 \$73 each	\$345,694,000 \$55 each



Fishing and Hunting Households



Percentage of Households with Fishermen or Hunters



In 1955

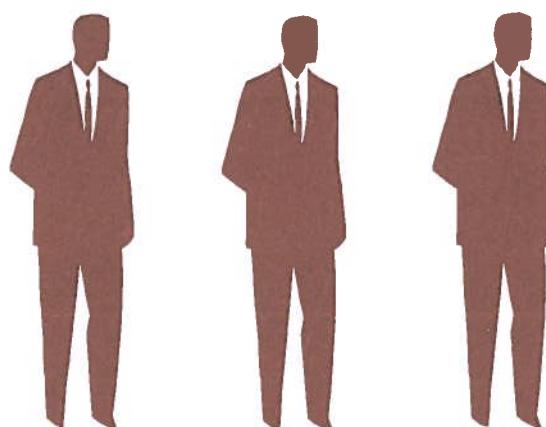
In 1960

12,938,000 MEN FISHED

14,750,000 MEN FISHED



One in every four

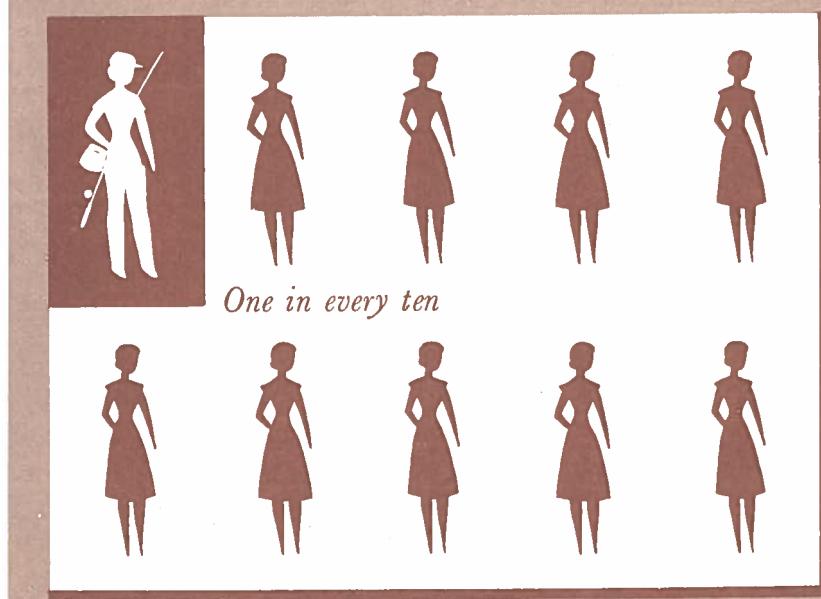


In 1955

4,689,000 WOMEN FISHED

In 1960

5,683,000 WOMEN FISHED

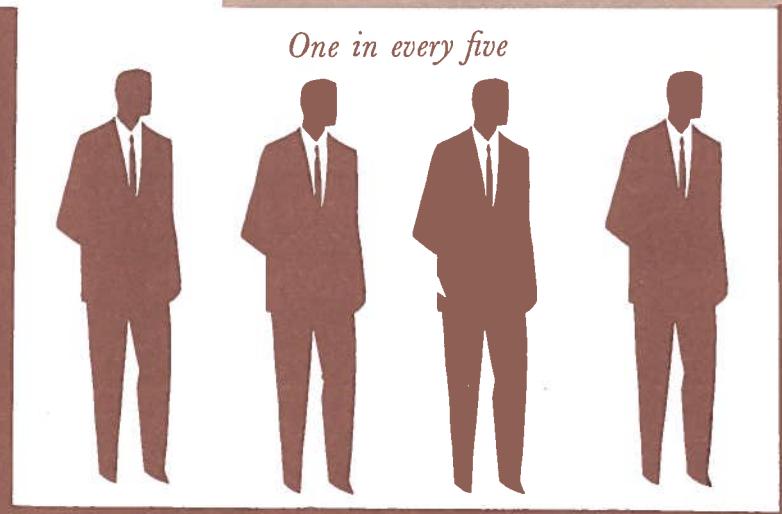


In 1955

9,675,000 MEN HUNTED

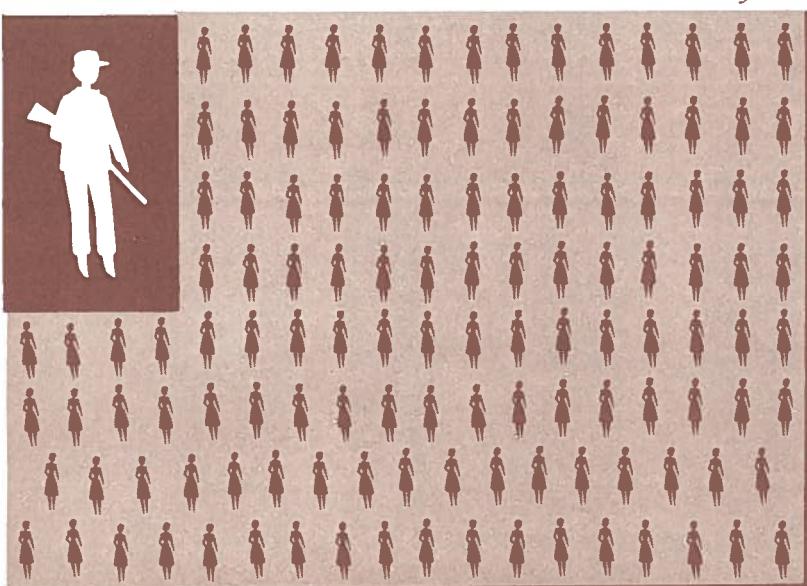
In 1960

11,169,000 MEN HUNTED



In 1955

418,000 WOMEN
HUNTED



One in every 128

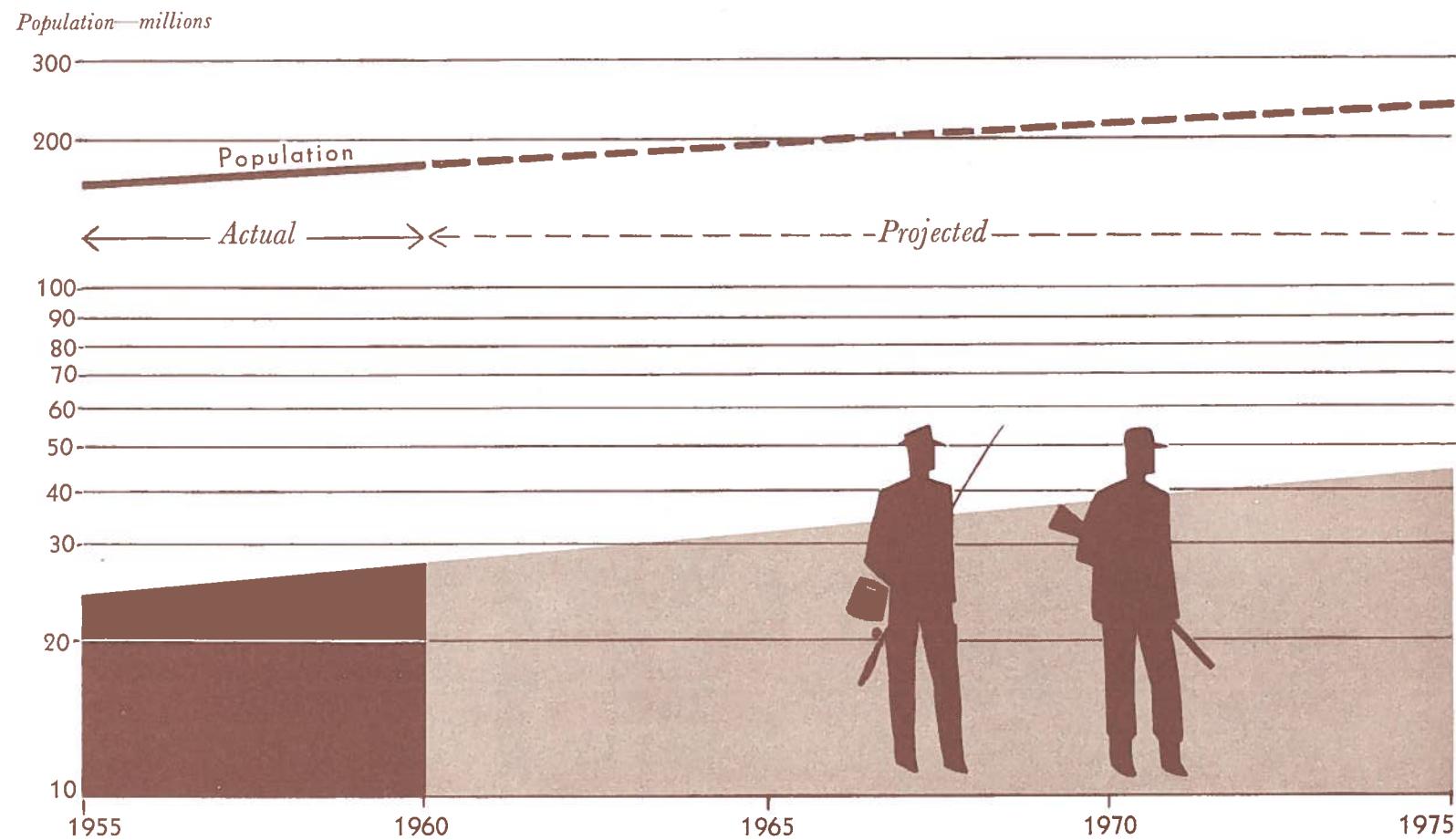
In 1960

860,000 WOMEN HUNTED

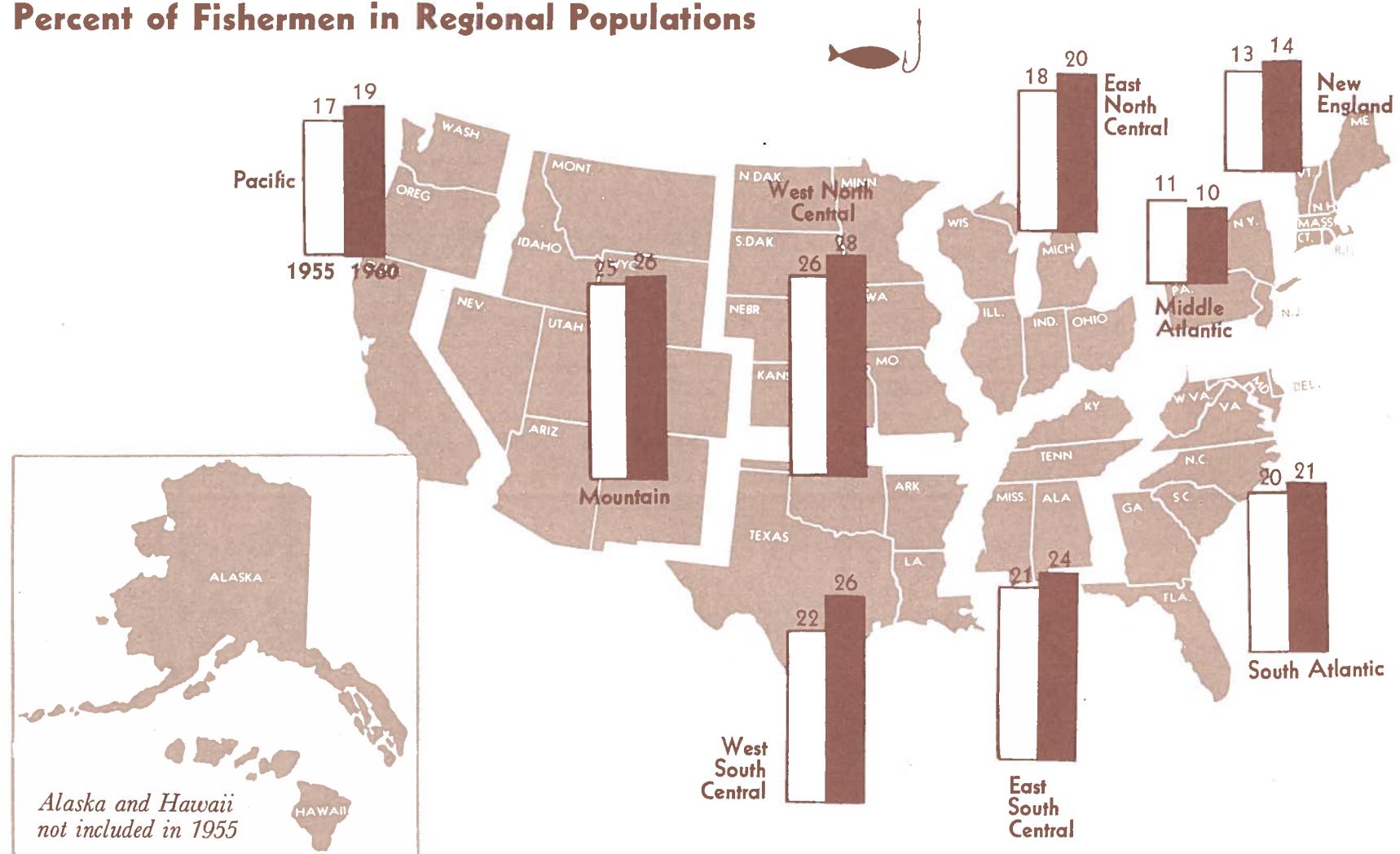


One in every 69

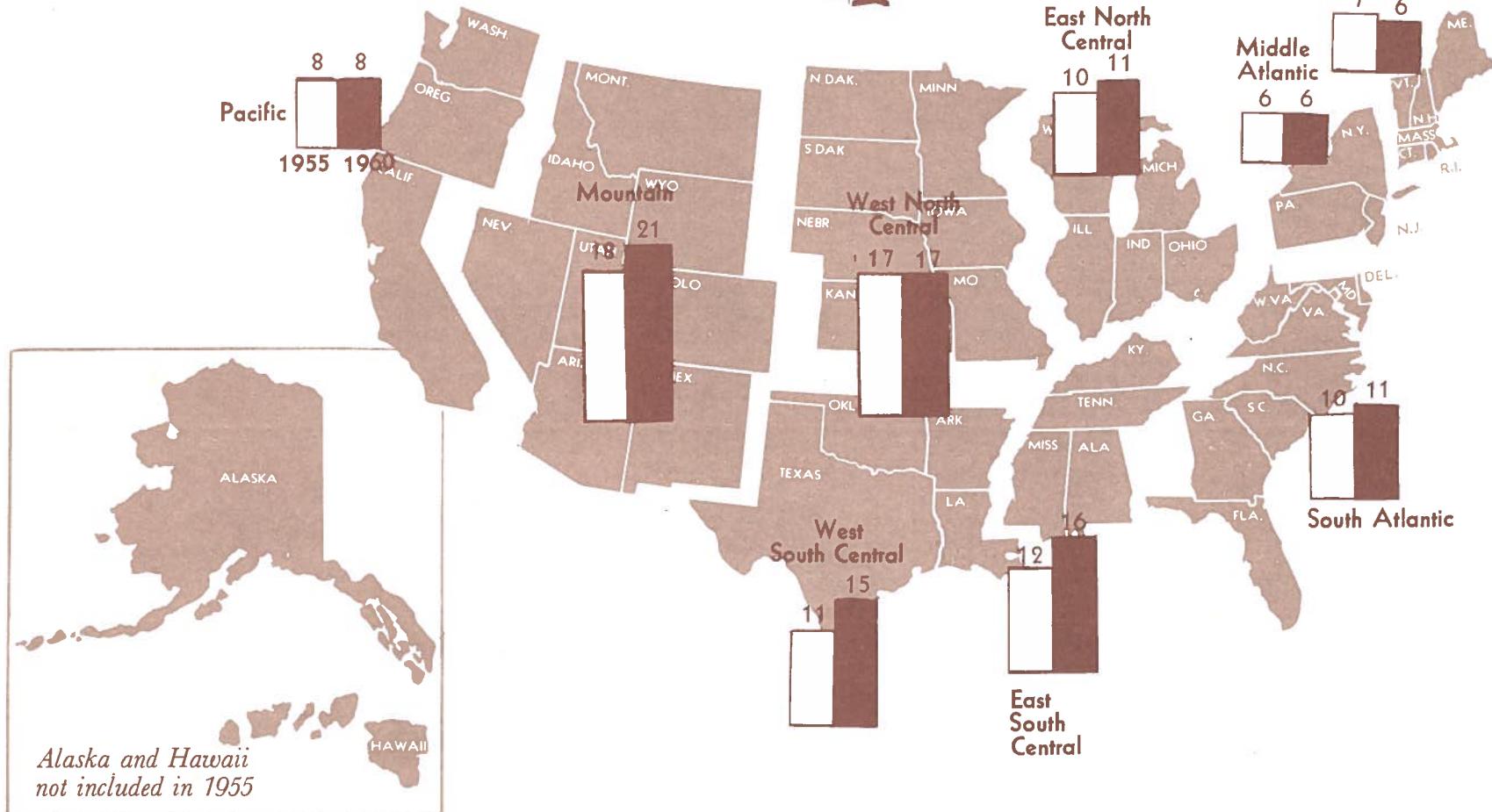
Trend in Growth of Population and in the Number of Fishermen and Hunters, 1955–1975



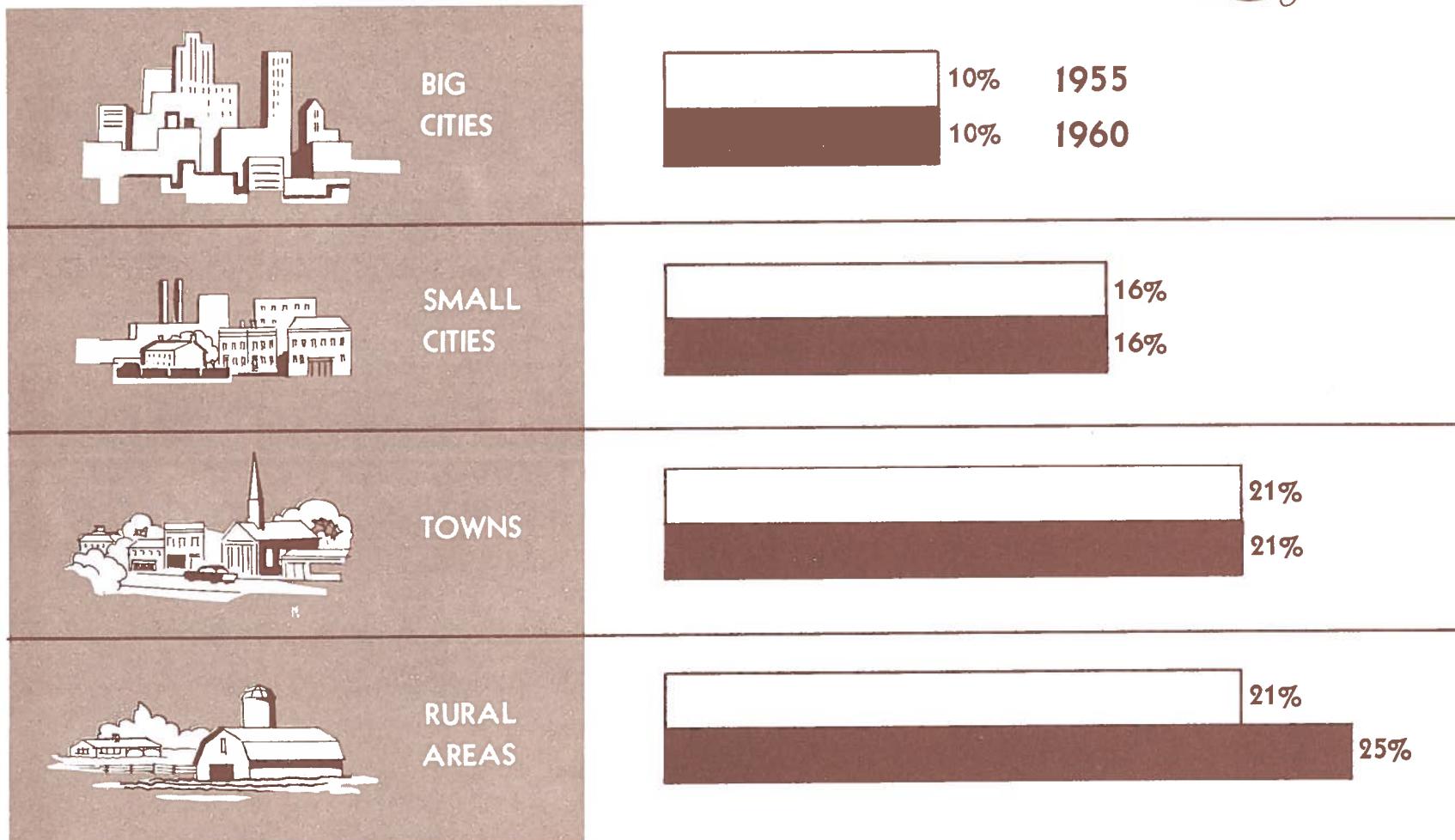
Percent of Fishermen in Regional Populations



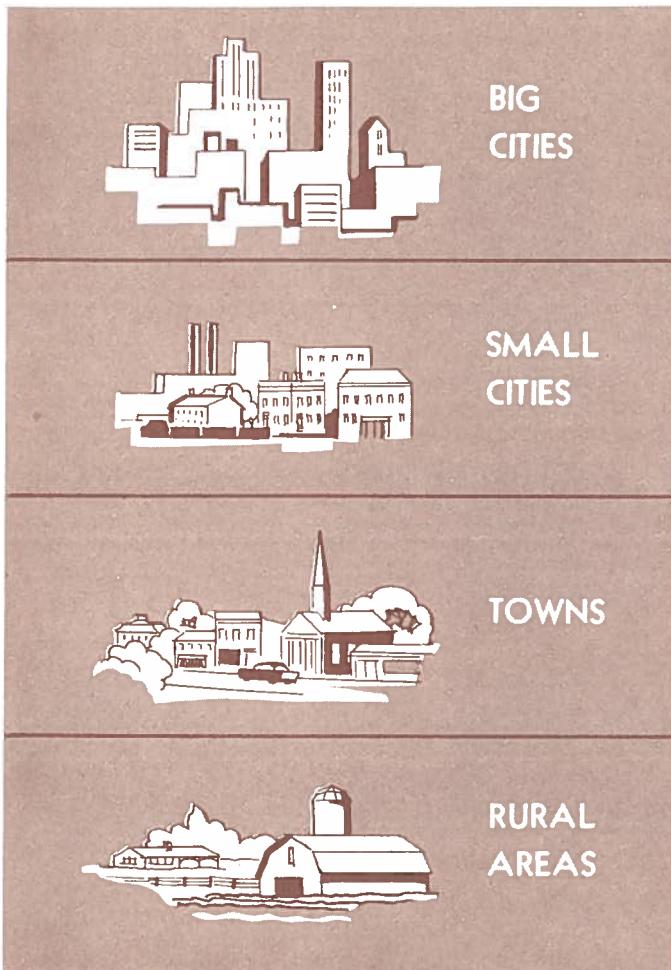
Percent of Hunters in Regional Populations



Percent of Sport Fishermen in Cities, Towns, and Rural Areas



Percent of Hunters in Cities, Towns, and Rural Areas



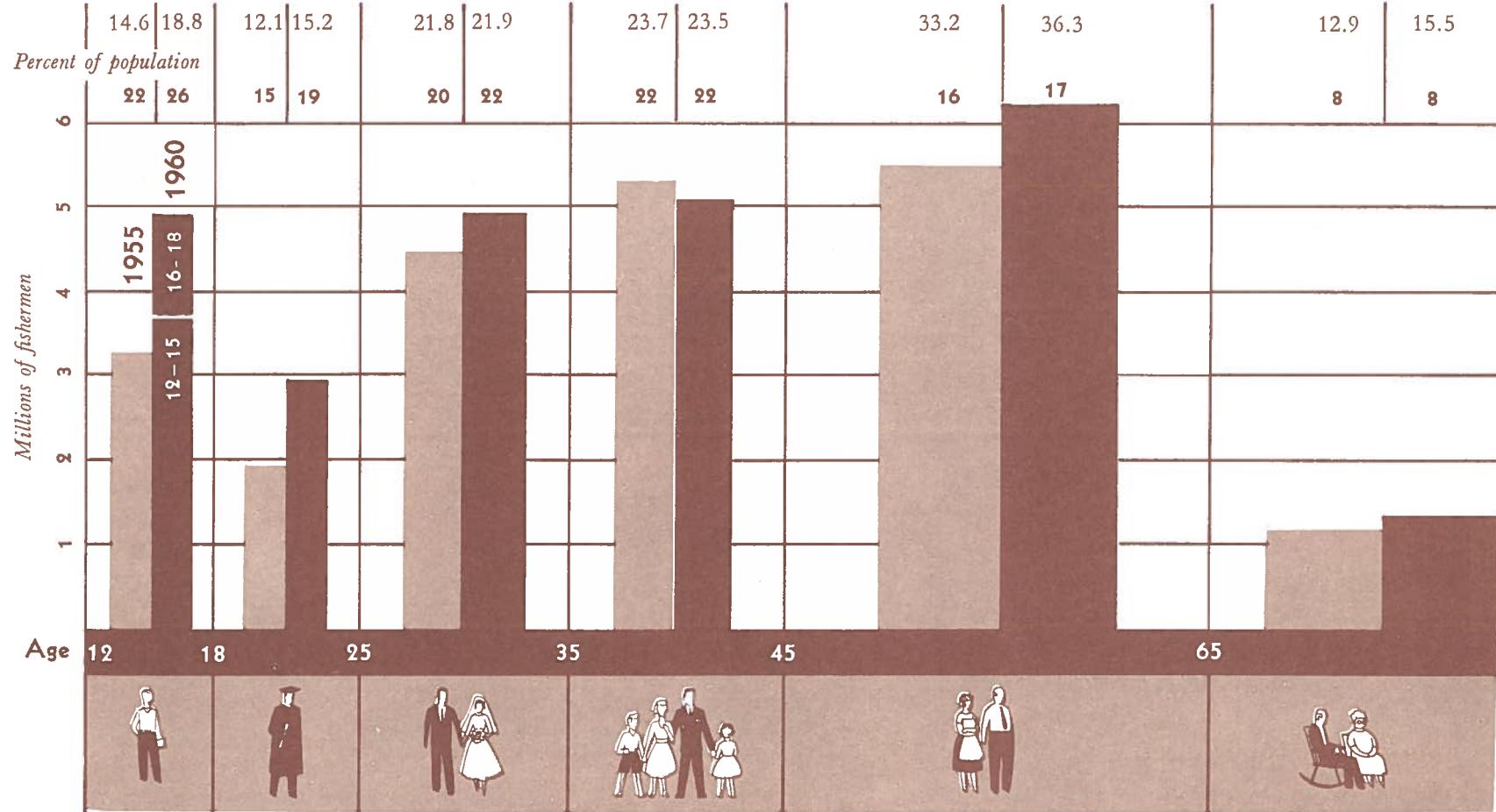
1955

1960

Sport Fishermen By Age Groups, 1955 and 1960



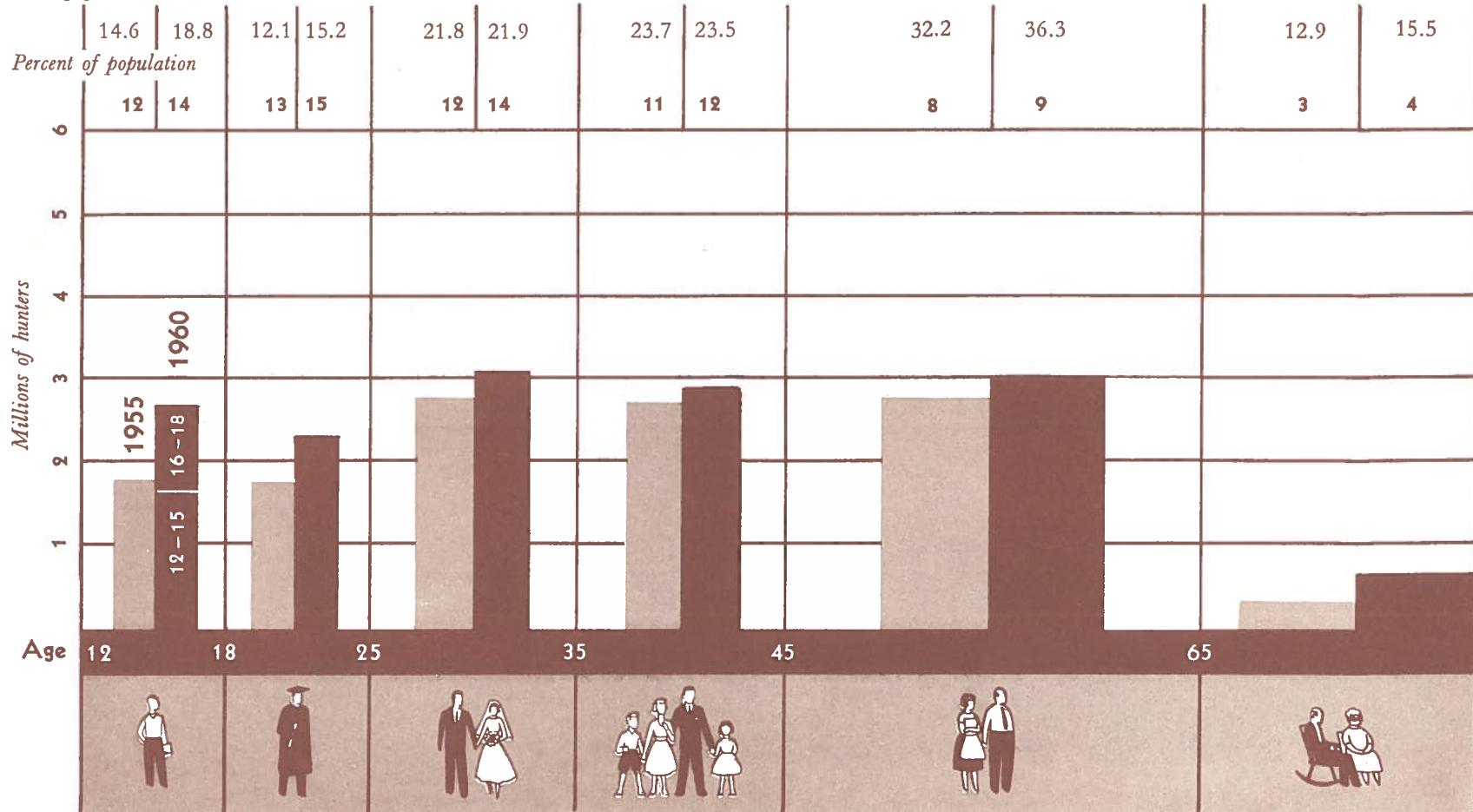
Total population in millions



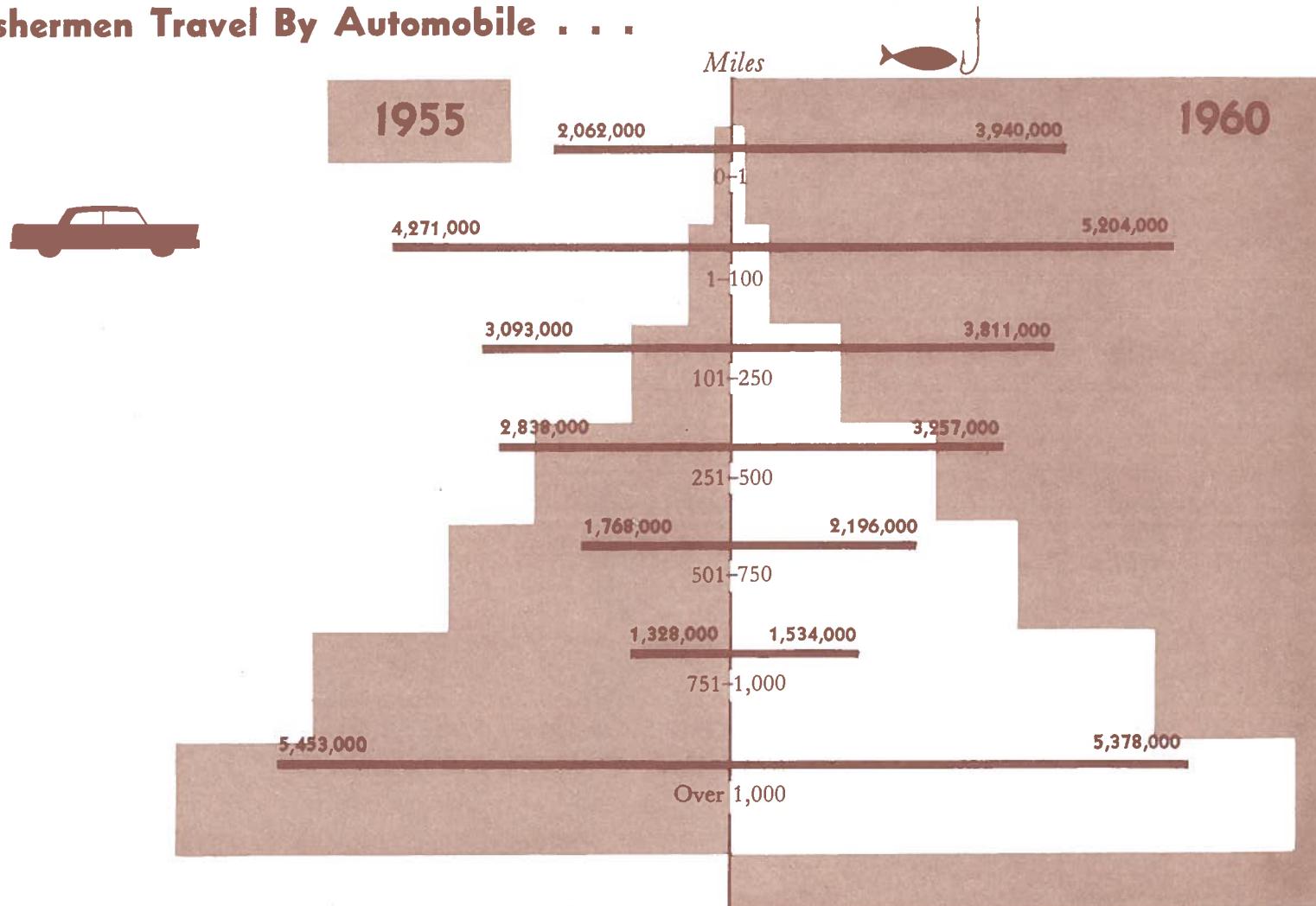
Hunters By Age Groups, 1955 and 1960



Total population in millions



Sport Fishermen Travel By Automobile . . .



Hunter Travel By Automobile . . .



1955

1960

Miles

1,656,000 2,136,000

2,853,000 3,194,000

2,105,000 2,625,000

1,712,000 2,314,000

251-500

946,000 1,401,000

501-750

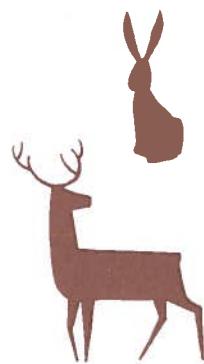
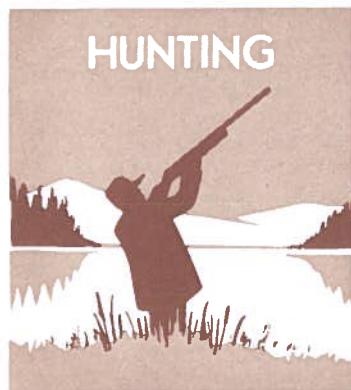
685,000 771,000

751-1,000

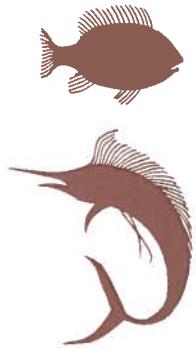
1,827,000 2,198,000

Over 1,000

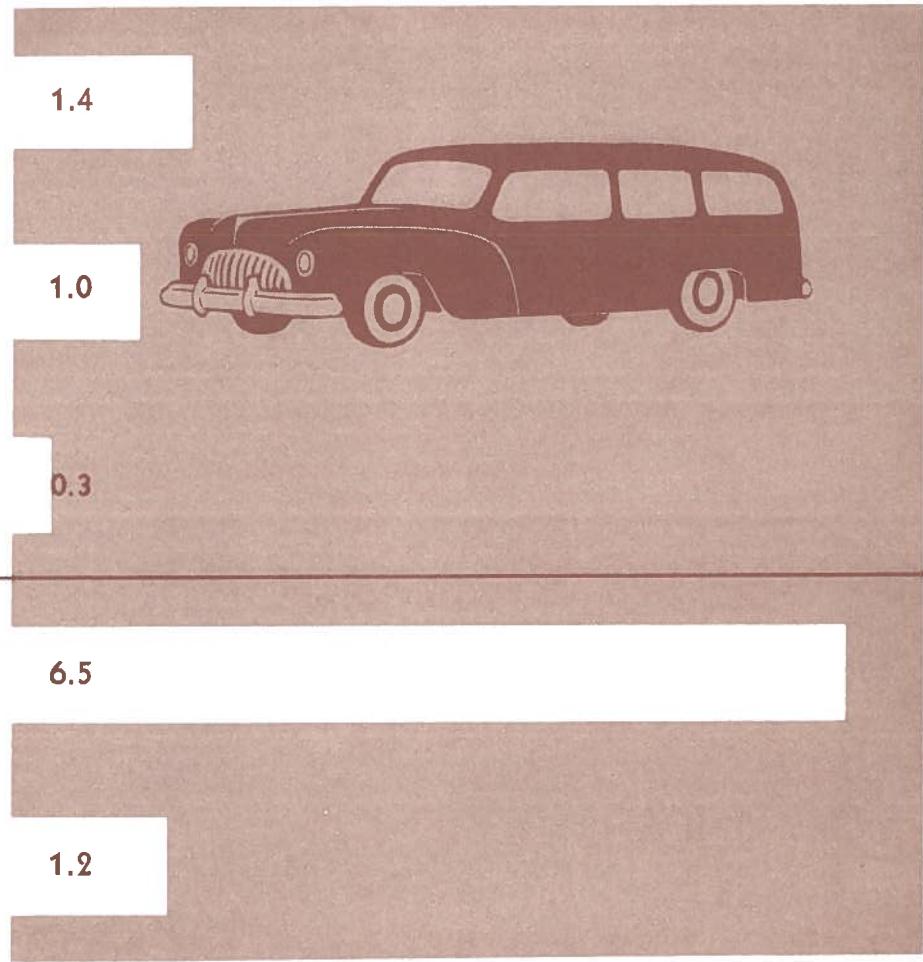
10.4 Billion Miles By Automobile in 1955



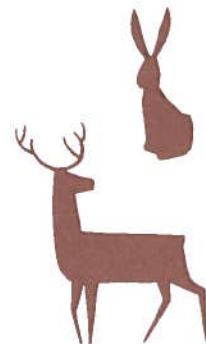
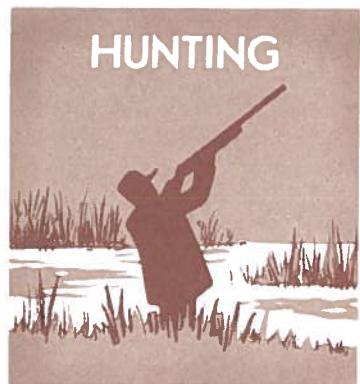
BIG GAME



SALT WATER



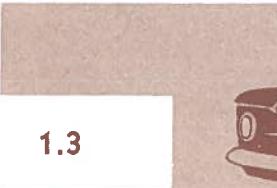
13.2 Billion Miles By Automobile in 1960



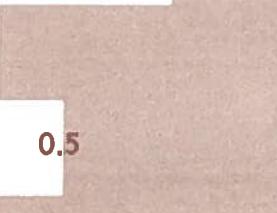
SMALL
GAME



BIG
GAME



WATER-
FOWL



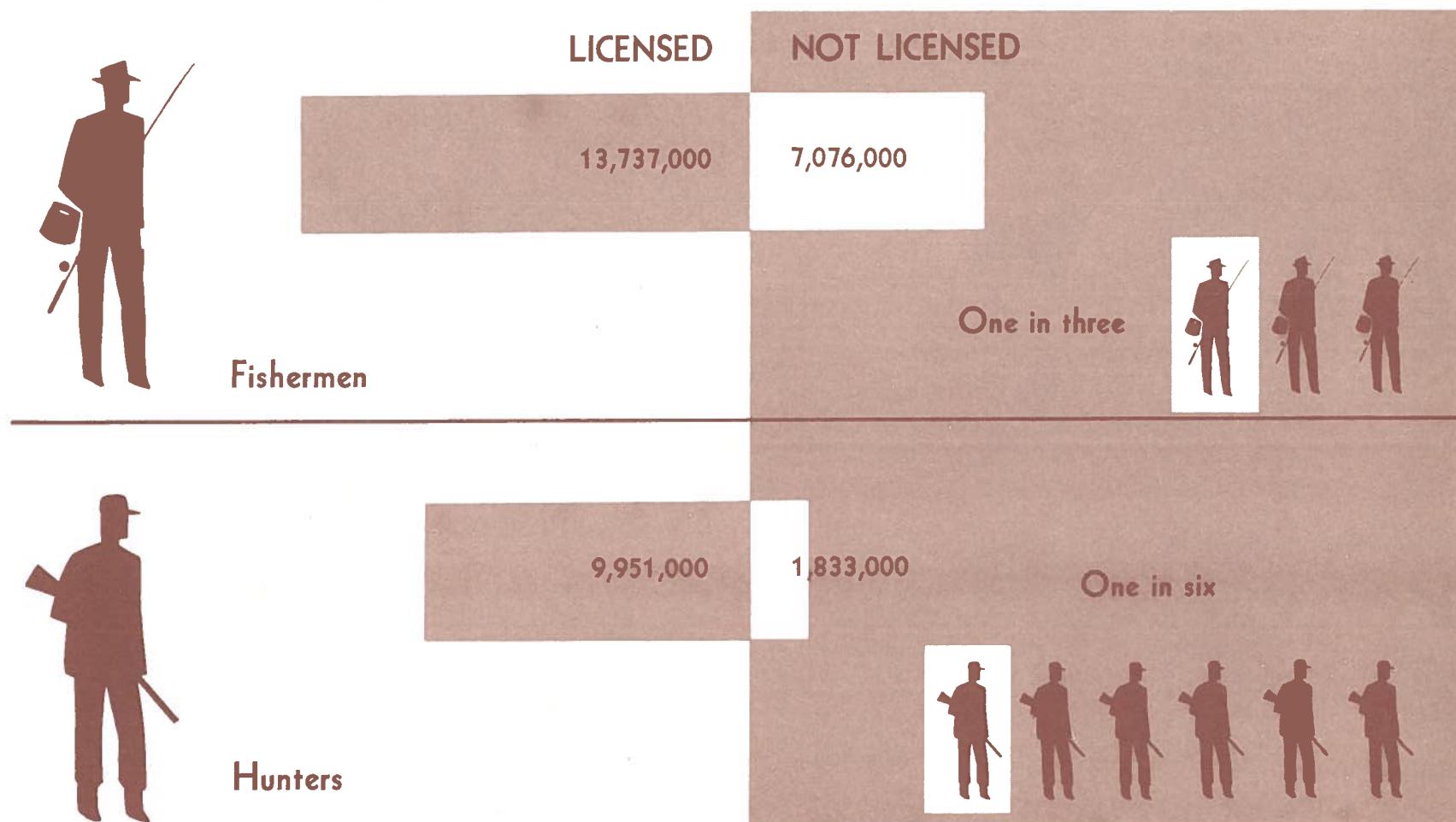
FRESH
WATER



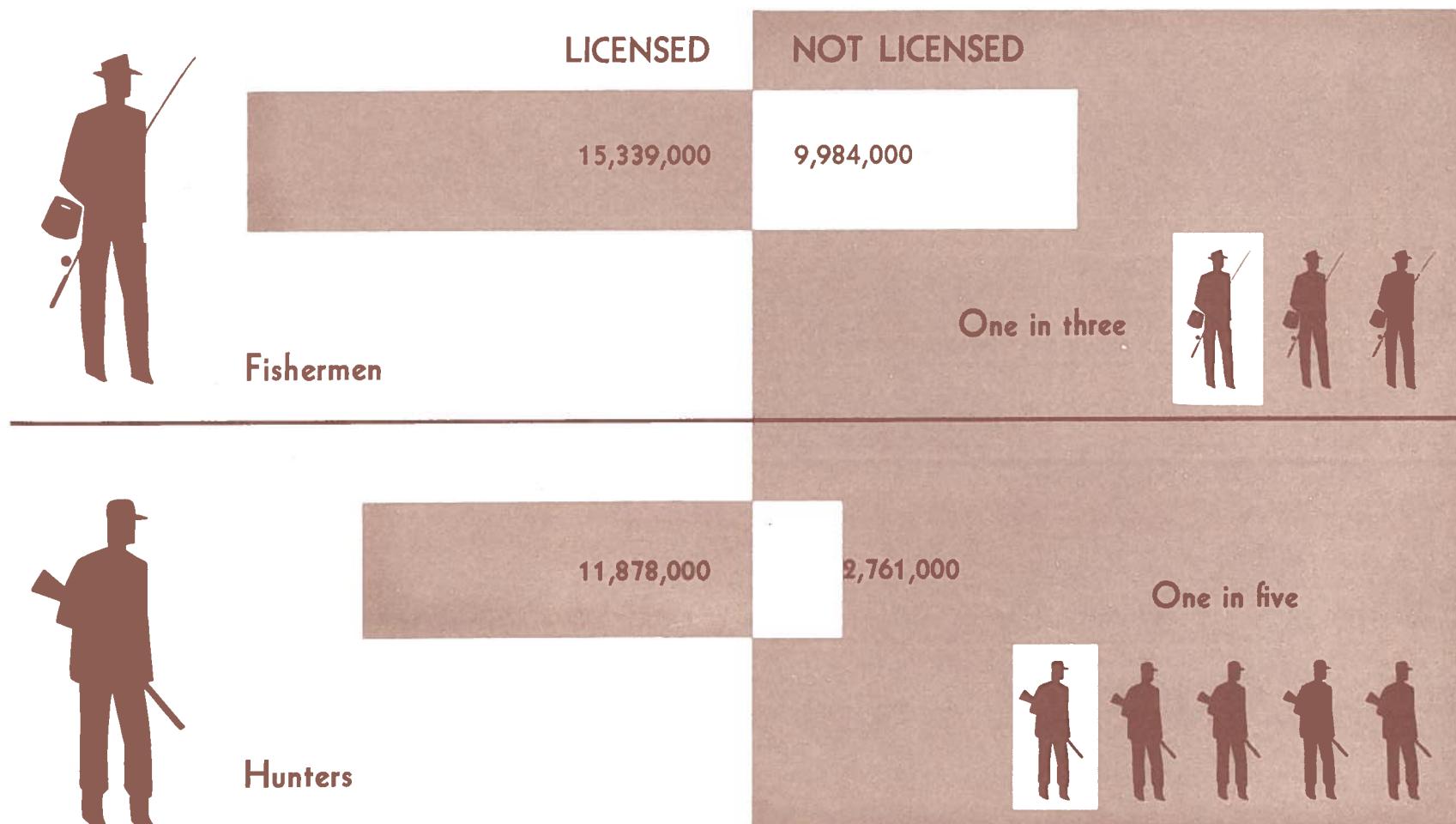
SALT
WATER



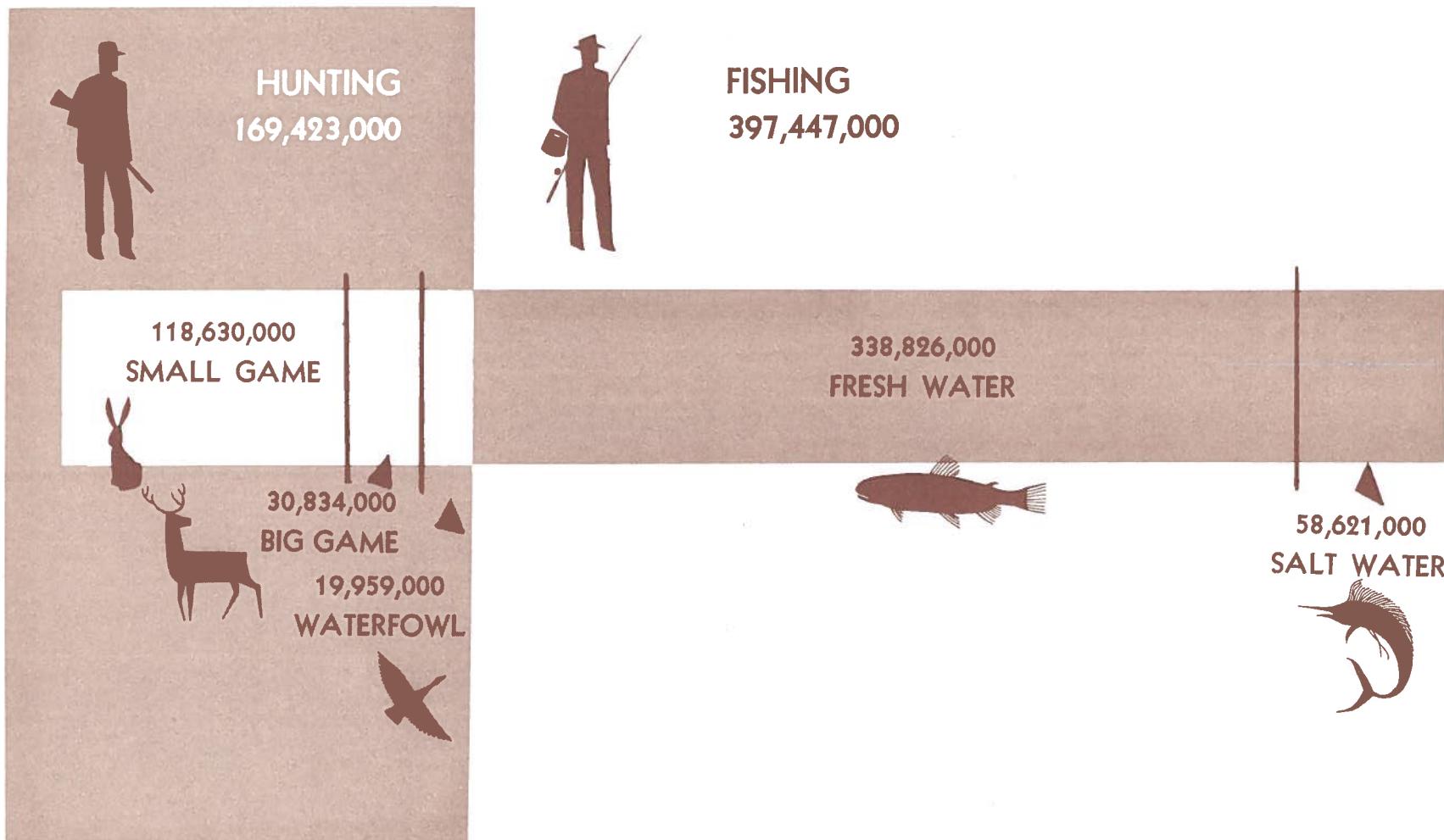
Fishing and Hunting Licenses, 1955



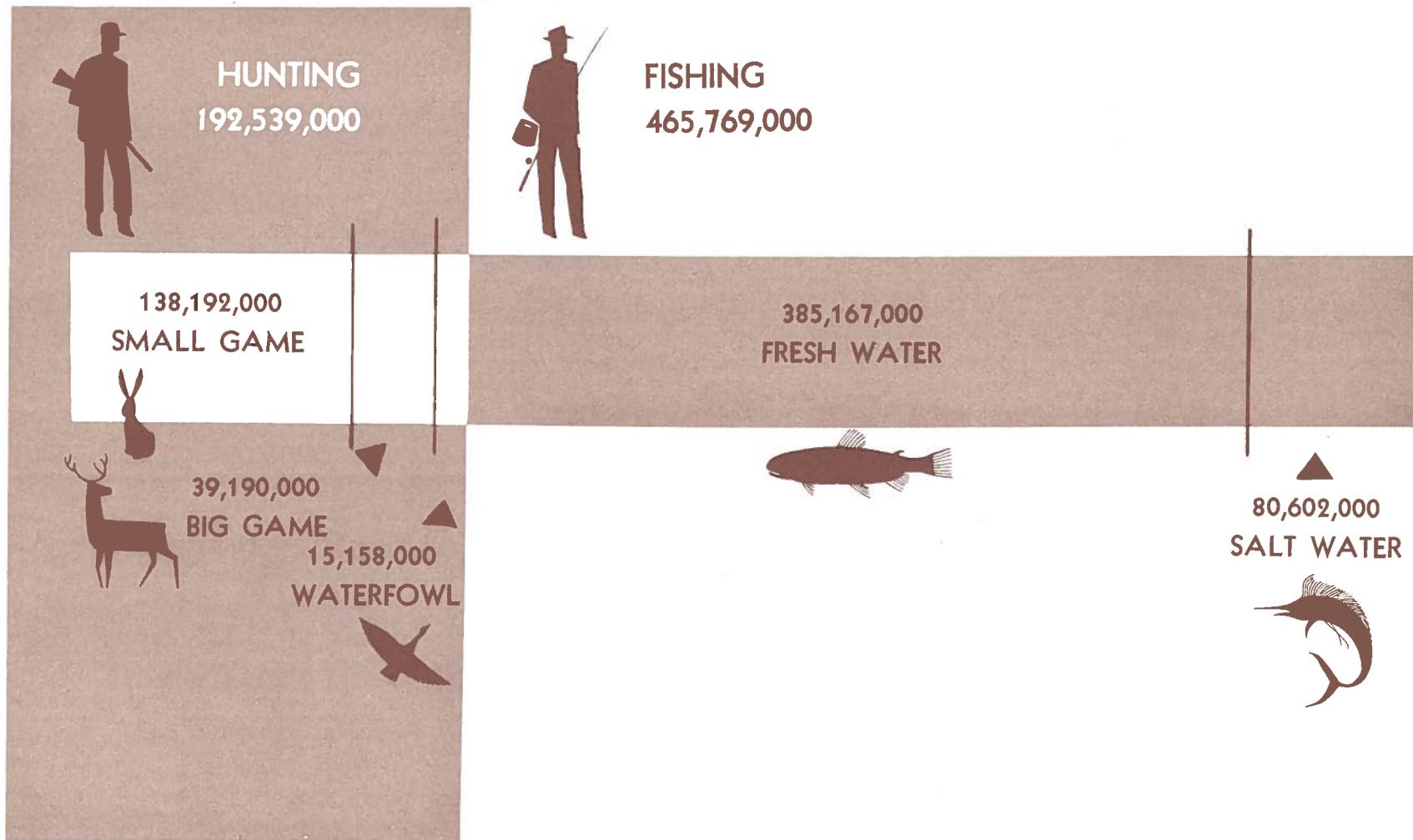
Fishing and Hunting Licenses, 1960



567 Million Days of Recreation in 1955

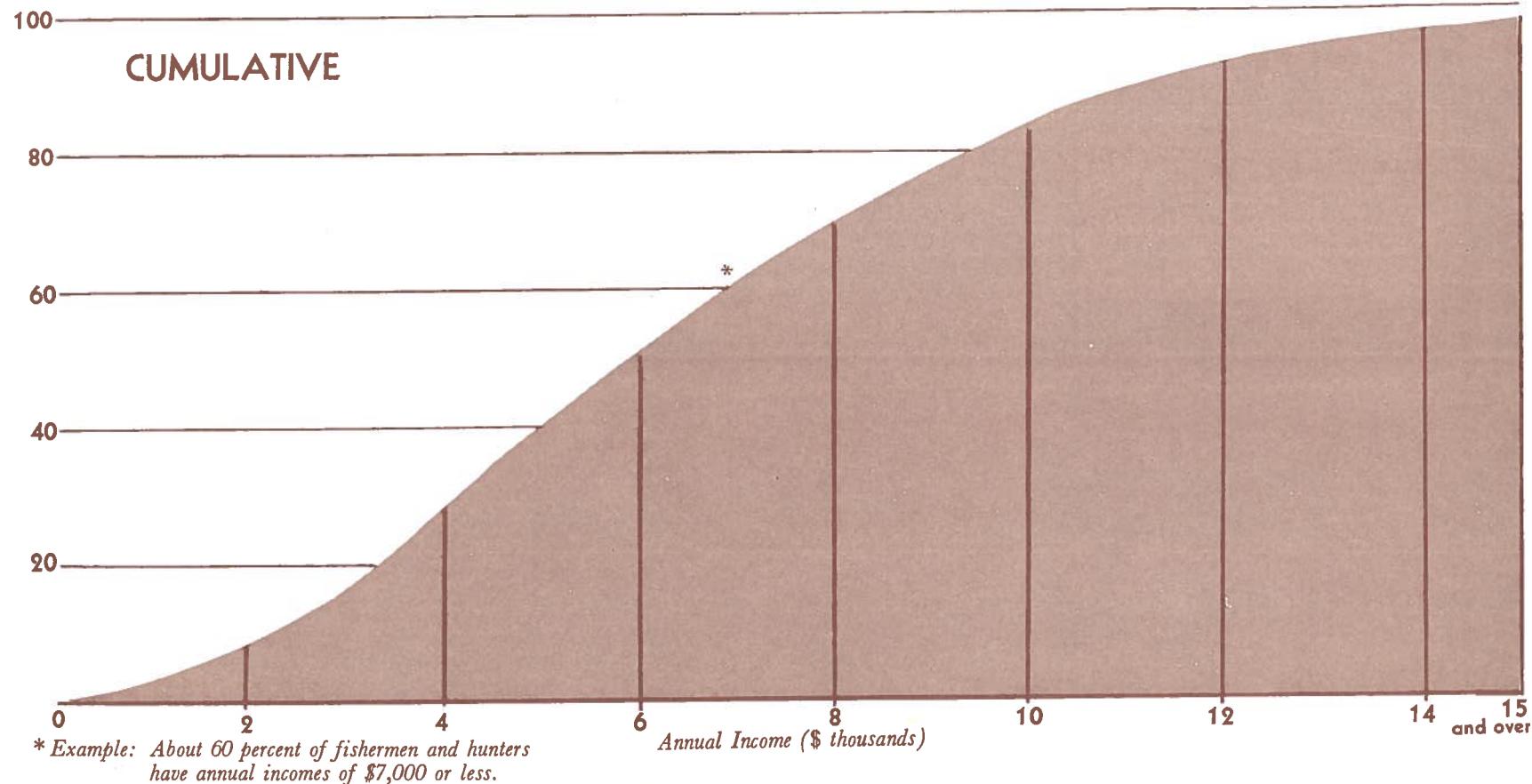


658 Million Days of Recreation in 1960



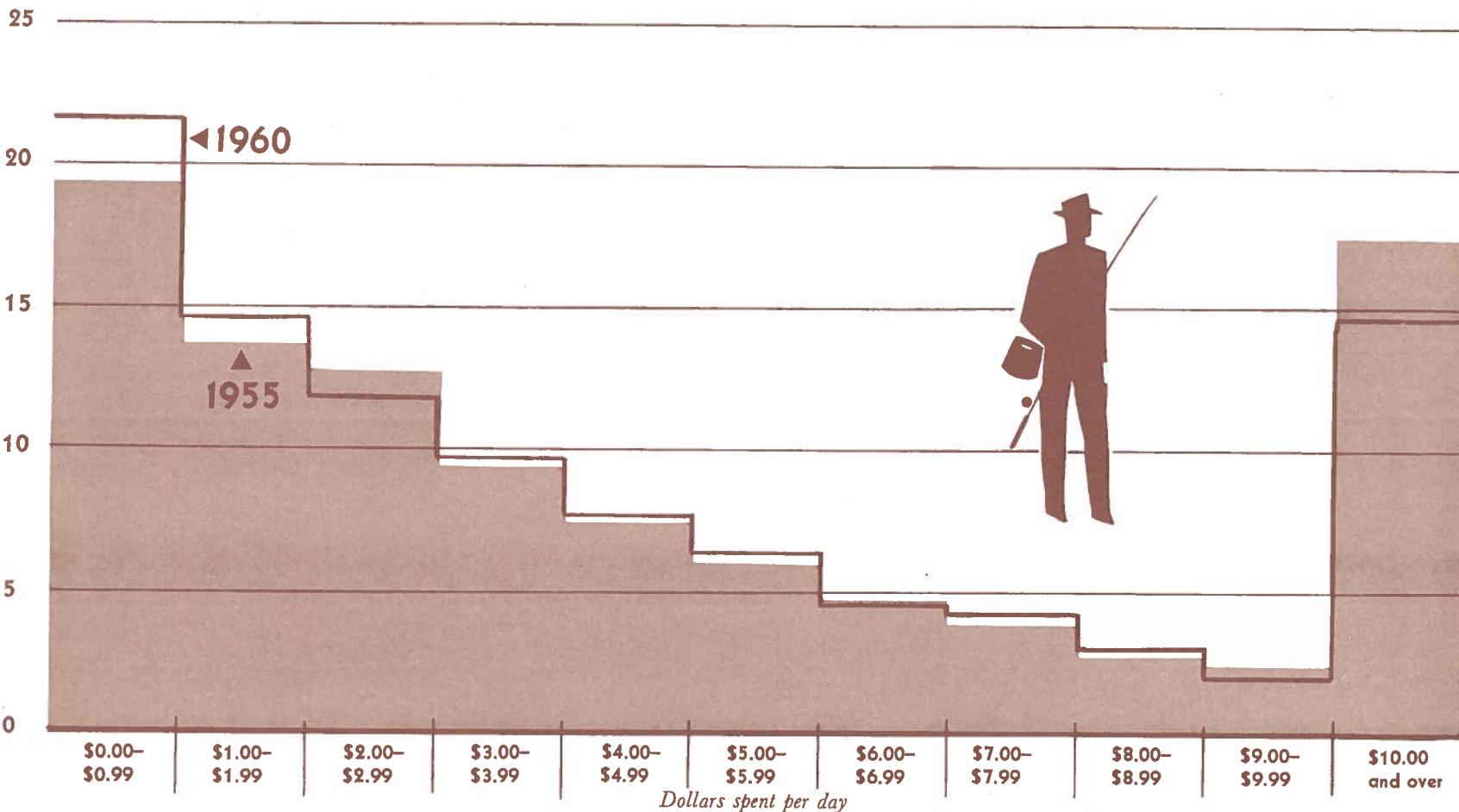
Sport Fishermen and Hunters By Income, United States 1960

Percent total number of fishermen and hunters



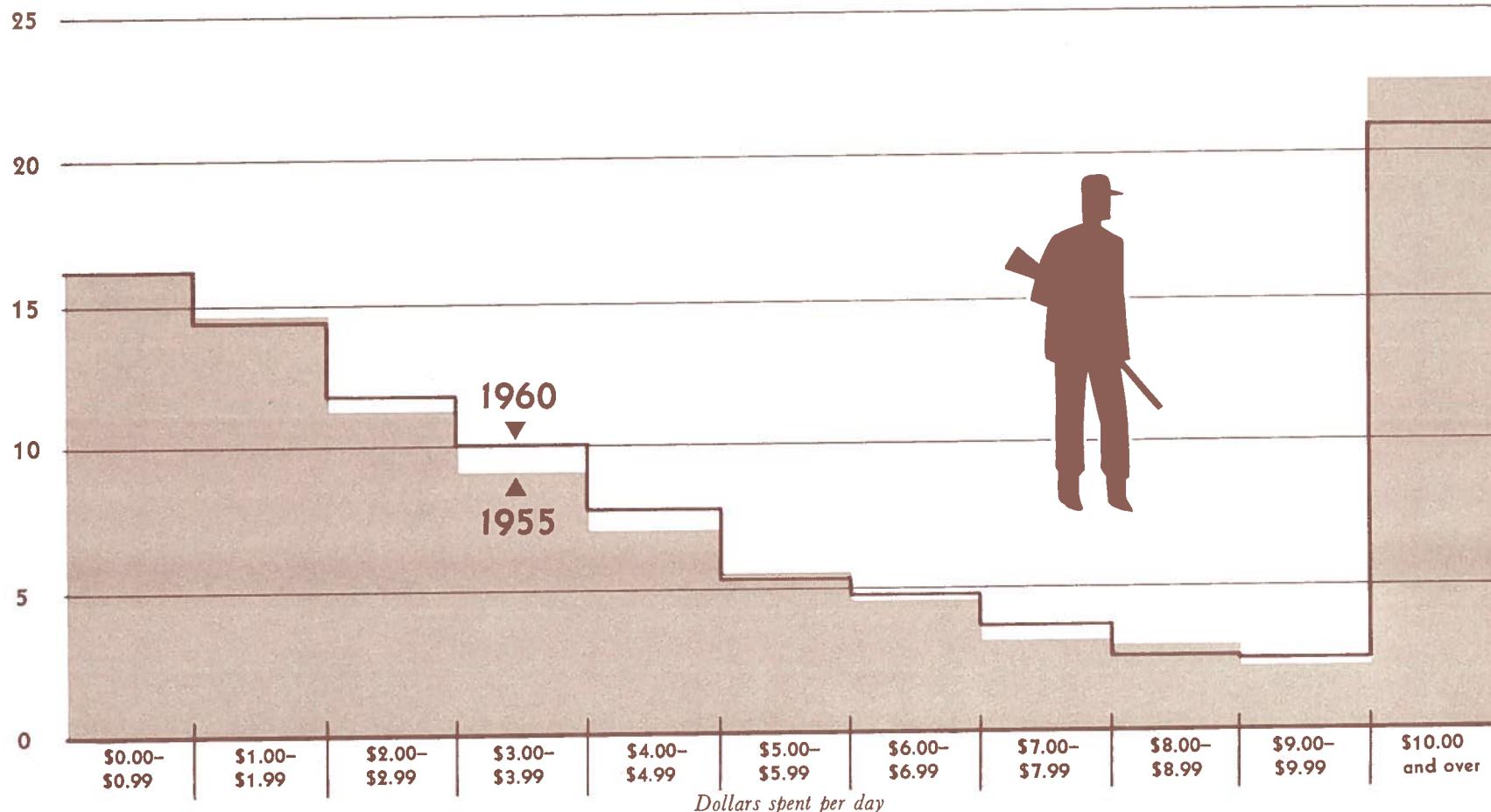
Average Daily Expenditures By Sport Fishermen, 1955 and 1960

Percent of sport fishermen



Average Daily Expenditures By Hunters, 1955 and 1960

Percent of hunters



APPENDIX A—STATISTICAL TABLES

Detailed data shown in the following tables do not always add to the totals. Differences are due to the independent rounding of each of the estimates.

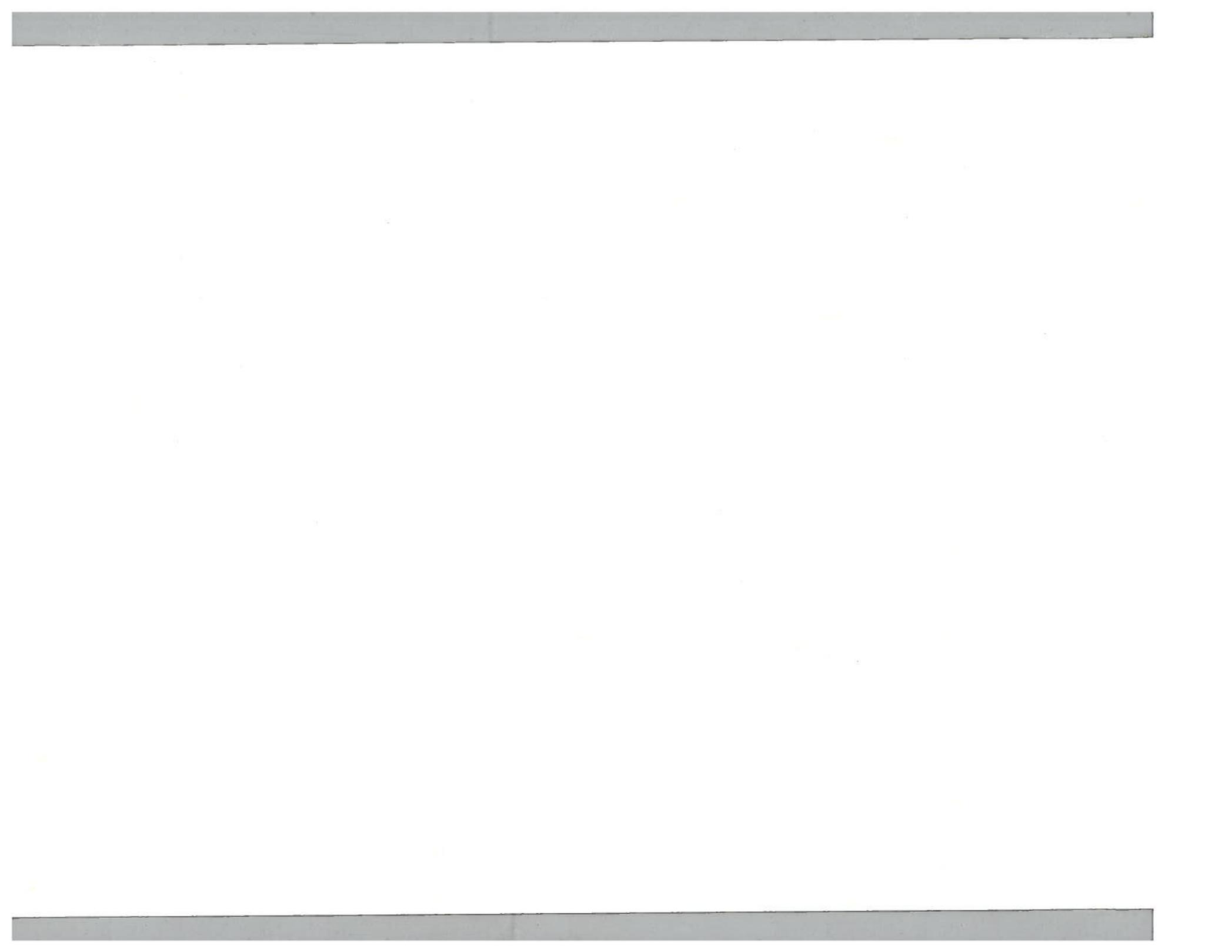


Table 1.—Expenditures of Persons Who Fished and/or Hunted in 1960

The total number of sport fishermen and/or hunters (12 and over) in the United States was 30,435,000.

Expenditure item	Number of spenders	Percent of all fishermen and/or hunters	Total spent	Average spent per fisherman and/or hunter
United States total.....	<i>Thousands</i> 29,411	96.6	<i>Thousands</i> \$3,852,116	\$126.57
Food and lodging:				
Food.....	17,431	57.3	286,983	9.43
Lodging.....	3,545	11.6	89,516	2.94
Transportation:				
Automobile.....	26,158	85.9	529,749	17.41
Bus, rail, air, and water.....	280	0.9	14,759	.48
Auxiliary equipment:				
Boats and boat motors.....	2,586	8.5	881,051	28.95
General.....	7,986	26.2	331,964	10.91
Fishing and hunting equipment.....	21,243	69.8	663,789	21.81
Licenses, tags, and permits:				
Licenses, tags, and permits.....	20,417	67.1	110,844	3.64
Duck stamps.....	* 1,526	5.0	4,575	.15
Privilege fees and other:				
Annual lease and privilege fees....	991	3.3	23,435	.77
Daily entrance and privilege fees....	3,108	10.2	49,670	1.63
Bait, guide fees, and other trip expenses.....	17,655	58.0	609,685	20.03
Other.....	9,129	30.0	256,097	8.41

*Purchases of duck stamps by hunters who did not hunt waterfowl in 1960 are included in the category "licenses, tags, and permits."

Table 2.—Expenditures of Persons Who Fished in 1960

The total number of sport fishermen (12 and over) in the United States was 25,323,000.

Expenditure item	Number of spenders	Percent of all fishermen	Total spent	Average spent per fisherman
United States total.....	<i>Thousands</i> 24,287	95.9	<i>Thousands</i> \$2,690,872	\$106.26
Food and lodging:				
Food.....	14,067	55.6	208,731	8.24
Lodging.....	2,782	11.0	62,129	2.45
Transportation:				
Automobile.....	21,378	84.4	369,762	14.60
Bus, rail, air, and water.....	228	0.9	6,380	.25
Auxiliary equipment:				
Boats and boat motors.....	2,460	9.7	759,627	30.00
General.....	5,020	19.8	236,333	9.33
Fishing equipment.....	15,720	62.1	308,326	12.18
Licenses, tags, and permits.....	14,402	56.9	52,743	2.08
Privilege fees and other:				
Annual lease and privilege fees....	615	2.4	12,934	.51
Daily entrance and privilege fees..	2,558	10.1	34,543	1.36
Bait, guide fees, and other trip expenses.....	17,211	68.0	572,596	22.61
Boat launching fees.....	1,097	4.3	16,279	.64
Other.....	3,911	15.4	50,489	1.99

**Table 3.—Expenditures of Fresh-Water Fishermen
in 1960**

The total number of fresh-water fishermen (12 and over) in the United States was 21,677,000.

Expenditure item	Number of spenders	Percent of all fresh- water fisher- men	Total spent	Aver- age spent per fisher- man
United States total.....	<i>Thousands</i> 20,756	95.8	<i>Thousands</i> \$2,064,680	\$95.25
Food and lodging:				
Food.....	11,560	53.3	152,025	7.01
Lodging.....	2,288	10.6	49,378	2.28
Transportation:				
Automobile.....	18,350	84.7	301,470	13.91
Bus, rail, air, and water.....	107	.5	1,345	.06
Auxiliary equipment:				
Boats and boat motors.....	1,942	9.0	584,550	26.97
General.....	4,201	19.4	216,635	9.99
Fishing equipment.....	13,380	61.7	234,380	10.81
Licenses, tags, and permits.....	13,404	61.8	49,170	2.27
Privilege fees and other:				
Annual lease and privilege fees.....	555	2.6	8,341	.39
Daily entrance and privilege fees ..	2,247	10.4	31,166	1.44
Bait, guide fees, and other trip ex- penses.....	13,518	62.4	390,470	18.01
Boat launching fees.....	784	3.6	9,723	.45
Other.....	3,227	14.9	36,033	1.66

**Table 4.—Expenditures of Salt-Water Fishermen
in 1960**

The total number of salt-water fishermen (12 and over) in the United States was 6,292,000.

Expenditure item	Number of spenders	Percent of all salt- water fisher- men	Total spent	Aver- age spent per fisher- man
United States total.....	<i>Thousands</i> 6,007	95.5	<i>Thousands</i> \$626,191	\$99.52
Food and lodging:				
Food.....	3,657	58.1	56,705	9.01
Lodging.....	588	9.3	12,749	2.03
Transportation:				
Automobile.....	4,971	79.0	68,293	10.85
Bus, rail, air, and water.....	122	1.9	5,037	.80
Auxiliary equipment:				
Boats and boat motors.....	521	8.3	175,077	27.83
General.....	863	13.7	19,701	3.13
Fishing equipment.....	2,894	46.0	73,945	11.75
Licenses, tags, and permits.....	1,235	19.6	3,575	.57
Privilege fees and other:				
Annual lease and privilege fees...	58	.9	4,595	.73
Daily entrance and privilege fees..	352	5.6	3,379	.54
Bait, guide fees, and other trip ex- penses.....	5,426	86.2	182,127	28.95
Boat launching fees.....	312	5.0	6,555	1.04
Other.....	694	11.0	14,457	2.30

Table 5.—Expenditures of Atlantic Coast Salt-Water Fishermen in 1960

The total number of salt-water fishermen (12 and over) on the Atlantic coast was 3,383,000.

Expenditure item	Number of spenders	Percent of all Atlantic salt-water fishermen	Total spent	Average spent per fisherman
United States total.....	<i>Thousands</i> 3,177	93.9	<i>Thousands</i> \$346,375	\$102.39
Food and lodging:				
Food.....	1,843	54.5	32,301	9.55
Lodging.....	216	6.4	6,325	1.87
Transportation:				
Automobile.....	2,516	74.4	36,526	10.80
Bus, rail, air, and water.....	77	2.3	1,884	.56
Auxiliary equipment:				
Boats and boat motors.....	269	8.0	113,880	33.66
General.....	440	13.0	8,465	2.50
Fishing equipment.....	1,455	43.0	35,465	10.48
Licenses, tags, and permits.....	125	3.7	417	.12
Privilege fees and other:				
Annual lease and privilege fees....	34	1.0	2,782	.82
Daily entrance and privilege fees..	248	7.3	2,287	.68
Bait, guide fees, and other trip expenses.....	2,888	85.4	96,577	28.55
Boat launching fees.....	100	3.0	4,592	1.36
Other.....	380	11.2	4,873	1.44

Table 6.—Expenditures of Gulf Coast Salt-Water Fishermen in 1960

The total number of salt-water fishermen (12 and over) on the Gulf Coast was 1,437,000.

Expenditure item	Number of spenders	Percent of all Gulf Coast salt-water fishermen	Total spent	Average spent per fisherman
United States total.....	<i>Thousands</i> 1,389	96.7	<i>Thousands</i> \$144,857	\$100.81
Food and lodging:				
Food.....	837	58.2	12,078	8.41
Lodging.....	250	17.4	4,249	2.96
Transportation:				
Automobile.....	1,154	80.3	18,464	12.85
Bus, rail, air, and water.....	30	2.1	3,079	2.14
Auxiliary equipment:				
Boats and boat motors.....	128	8.9	31,037	21.60
General.....	206	14.3	5,279	3.67
Fishing equipment.....	649	45.2	18,879	13.14
Licenses, tags, and permits.....	431	30.0	899	.63
Privilege fees and other:				
Annual lease and privilege fees....	14	1.0	1,800	1.25
Daily entrance and privilege fees..	46	3.2	761	.53
Bait, guide fees, and other trip expenses.....	1,250	87.0	41,267	28.72
Boat launching fees.....	115	8.0	1,092	.76
Other.....	145	10.1	5,975	4.16

Table 7.—Expenditures of Pacific Coast Salt-Water Fishermen in 1960

The total number of salt-water fishermen (12 and over) on the Pacific coast was 1,473,000.

Expenditure item	Number of spenders	Percent of all Pacific coast salt-water fishermen	Total spent	Average spent per fisherman
United States total.....	Thousands 1,442	97.9	Thousands \$134,961	\$91.62
Food and lodging:				
Food.....	977	66.3	12,327	8.37
Lodging.....	120	8.1	2,175	1.48
Transportation:				
Automobile.....	1,300	88.3	13,303	9.03
Bus, rail, air, and water.....	14	1.0	75	.05
Auxiliary equipment:				
Boats and boat motors.....	125	8.5	30,160	20.48
General.....	218	14.8	5,956	4.04
Fishing equipment.....	792	53.8	19,602	13.31
Licenses, tags, and permits.....	680	46.2	2,259	1.53
Privilege fees and other:				
Annual lease and privilege fees....	10	.7	14	.01
Daily entrance and privilege fees.....	57	3.9	329	.22
Bait, guide fees, and other trip expenses.....	1,287	87.4	44,282	30.06
Boat launching fees.....	97	6.6	870	.59
Other	171	11.6	3,610	2.45

Table 8.—Expenditures of Persons Who Hunted in 1960

The total number of hunters (12 and over) in the United States was 14,637,000.

Expenditure item	Number of spenders	Percent of all hunters	Total spent	Average spent per hunter
United States total.....	Thousands 14,294	97.7	Thousands \$1,161,242	\$79.34
Food and lodging:				
Food.....	6,461	44.1	78,252	5.35
Lodging.....	918	6.3	27,391	1.87
Transportation:				
Automobile.....	12,501	85.4	159,987	10.93
Bus, rail, air, and water.....	54	.4	8,379	.57
Auxiliary equipment:				
Boats and boat motors.....	159	1.1	121,423	8.30
General.....	3,875	26.5	95,631	6.53
Hunting equipment.....	11,450	78.2	355,464	24.29
Licenses, tags, and permits:				
Licenses, tags, and permits.....	10,606	72.5	58,098	3.97
Duck stamps.....	1,526	10.4	4,575	.31
Privilege fees and other:				
Annual lease and privilege fees....	387	2.6	10,500	.72
Daily entrance and privilege fees I ¹ .	191	1.3	7,067	.48
Daily entrance and privilege fees II ²	382	2.6	8,058	.55
Bait, guide fees, and other trip expenses.....	986	6.7	37,091	2.53
Dogs.....	2,298	15.7	158,908	10.86
Other	2,044	14.0	30,418	2.08

¹ Daily fees for hunting on commercially operated preserves.

² Daily fees for hunting on wild lands.

Table 9.—Expenditures of Big-Game Hunters in 1960

The total number of big-game hunters (12 and over) in the United States was 6,277,000.

Expenditure item	Number of spenders	Percent of all big-game hunters	Total spent	Average spent per hunter
United States total.....	<i>Thousands</i> 6,156	98.1	<i>Thousands</i> \$345,694	\$55.07
Food and lodging:				
Food.....	3,254	51.8	29,403	4.68
Lodging.....	645	10.3	15,900	2.53
Transportation:				
Automobile.....	5,811	92.6	54,488	8.68
Bus, rail, air, and water.....	12	.2	51	.01
Auxiliary equipment:				
Boats and boat motors.....	40	.6	21,560	3.43
General.....	1,714	27.3	50,625	8.07
Hunting equipment.....	3,490	55.6	93,260	14.86
Licenses, tags, and permits.....	4,315	68.7	29,775	4.74
Privilege fees and other:				
Annual lease and privilege fees....	220	3.5	3,173	.51
Daily entrance and privilege fees I ¹	45	.7	621	.10
Daily entrance and privilege fees II ²	161	2.6	3,274	.52
Bait, guide fees, and other trip expenses.....	465	7.4	25,682	4.09
Dogs.....	115	1.8	8,376	1.33
Other.....	610	9.7	9,507	1.51

¹ Daily fees for hunting on commercially operated preserves.

² Daily fees for hunting on wild lands.

Table 10.—Expenditures of Small-Game Hunters in 1960

The total number of small-game hunters (12 and over) in the United States was 12,105,000.

Expenditure item	Number of spenders	Percent of all small-game hunters	Total spent	Average spent per hunter
United States total.....	<i>Thousands</i> 11,710	96.7	<i>Thousands</i> \$726,118	\$59.98
Food and lodging:				
Food.....	4,101	33.9	43,434	3.59
Lodging.....	339	2.8	9,535	.79
Transportation:				
Automobile.....	9,761	80.6	86,733	7.17
Bus, rail, air, and water.....	29	.2	7,338	.61
Auxiliary equipment:				
Boats and boat motors.....	65	.5	95,235	7.87
General.....	2,117	17.5	38,638	3.19
Hunting equipment.....	9,102	75.2	238,629	19.71
Licenses, tags, and permits.....	7,085	58.5	26,126	2.16
Privilege fees and other:				
Annual lease and privilege fees....	85	.7	5,492	.45
Daily entrance and privilege fees I ¹	103	.9	4,921	.41
Daily entrance and privilege fees II ²	139	1.1	1,716	.14
Bait, guide fees, and other trip expenses.....	389	3.2	7,259	.60
Dogs.....	2,135	17.6	145,002	11.98
Other.....	1,266	10.5	16,063	1.33

¹ Daily fees for hunting on commercially operated preserves.

² Daily fees for hunting on wild lands.

Table 11.—Expenditures of Waterfowl Hunters in 1960

The total number of waterfowl hunters (12 and over) in the United States was 1,955,000.

Expenditure item	Number of spenders	Percent of all waterfowl hunters	Total spent	Average spent per hunter
United States total	Thousands 1,900	97.2	Thousands \$89,431	\$45.74
Food and lodging:				
Food	763	39.0	5,416	2.77
Lodging	27	1.4	1,953	1.00
Transportation:				
Automobile	1,777	90.9	18,765	9.60
Bus, rail, air, and water	18	.9	990	.51
Auxiliary equipment:				
Boats and boat motors	54	2.8	4,629	2.37
General	271	13.9	6,369	3.26
Hunting equipment	859	43.9	23,573	12.06
Licenses, tags, and permits:				
Licenses, tags, and permits	571	29.2	2,199	1.12
Duck stamps	1,526	78.1	4,575	2.34
Privilege fees and other:				
Annual lease and privilege fees . . .	89	4.6	1,836	.94
Daily entrance and privilege fees I ¹	48	2.5	1,526	.78
Daily entrance and privilege fees II ²	98	5.0	3,070	1.57
Bait, guide fees, and other trip expenses	250	12.8	4,151	2.12
Dogs	54	2.8	5,532	2.83
Other	193	9.9	4,848	2.48

¹ Daily fees for hunting on commercially operated preserves.

² Daily fees for hunting on wild lands.

Table 12.—Average Recreation-Day Expenditures by Sport Fishermen and Hunters in 1955¹

Recreation-day expenditures	Fishermen		Hunters	
	Number	Percent	Number	Percent
United States total	Thousands 20,813	100.0	Thousands 11,784	100.0
\$0.00	533	2.6	167	1.4
\$0.01-\$0.49	1,806	8.7	721	6.1
\$0.50-\$0.99	1,671	8.0	1,037	8.8
\$1.00-\$1.49	1,515	7.3	917	7.8
\$1.50-\$1.99	1,297	6.2	823	7.0
\$2.00-\$2.49	1,444	6.9	755	6.4
\$2.50-\$2.99	1,197	5.8	580	4.9
\$3.00-\$3.99	1,913	9.2	1,072	9.1
\$4.00-\$4.99	1,534	7.4	844	7.2
\$5.00-\$5.99	1,276	6.1	643	5.5
\$6.00-\$6.99	1,026	4.9	552	4.7
\$7.00-\$7.99	789	3.8	376	3.2
\$8.00-\$8.99	612	2.9	359	3.0
\$9.00-\$9.99	556	2.7	270	2.3
\$10.00-\$14.99	1,713	8.2	995	8.4
\$15.00-\$24.99	1,126	5.4	758	6.4
\$25.00-\$99.99	678	3.3	821	7.0
\$100.00 and over	127	.6	94	.8

¹ These data, obtained in the 1955 survey of fishing and hunting, were not published in the 1955 report. They are included here for purposes of comparison with data obtained for the 1960 survey.

**Table 13.—Average Recreation-Day Expenditures
by Sport Fishermen and Hunters in 1960**

Recreation-day expenditures	Fishermen			Hunters		
	Persons		Recrea-tion-days	Persons		Recrea-tion-days
	Number	Percent		Number	Percent	
United States total.	25, 323	100. 0	465, 769	14, 637	100. 0	192, 539
\$0.00.....	1, 830	7. 2	10, 306	490	3. 3	1, 542
\$0.01-\$0.49.....	1, 738	6. 9	51, 063	739	5. 0	19, 603
\$0.50-\$0.99.....	1, 913	7. 6	47, 684	1, 159	7. 9	23, 130
\$1.00-\$1.49.....	2, 151	8. 5	42, 158	1, 212	8. 3	16, 832
\$1.50-\$1.99.....	1, 485	5. 9	35, 717	912	6. 2	14, 147
\$2.00-\$2.49.....	1, 795	7. 1	34, 671	1, 062	7. 3	13, 736
\$2.50-\$2.99.....	1, 190	4. 7	25, 009	644	4. 4	9, 575
\$3.00-\$3.99.....	2, 484	9. 8	47, 715	1, 468	10. 0	19, 498
\$4.00-\$4.99.....	1, 904	7. 5	39, 183	1, 141	7. 8	15, 814
\$5.00-\$5.99.....	1, 576	6. 2	29, 148	773	5. 3	8, 607
\$6.00-\$6.99.....	1, 211	4. 8	19, 773	696	4. 8	7, 844
\$7.00-\$7.99.....	1, 053	4. 2	15, 955	547	3. 7	6, 661
\$8.00-\$8.99.....	766	3. 0	10, 042	386	2. 6	4, 557
\$9.00-\$9.99.....	501	2. 0	8, 591	368	2. 5	4, 400
\$10.00-\$14.99.....	1, 650	6. 5	22, 203	1, 133	7. 7	11, 623
\$15.00-\$24.99.....	1, 131	4. 5	14, 968	967	6. 6	8, 394
\$25.00-\$99.99.....	716	2. 8	9, 394	847	5. 8	5, 969
\$100.00 and over.....	225	0. 9	2, 191	94	0. 6	608

United States Regional Map

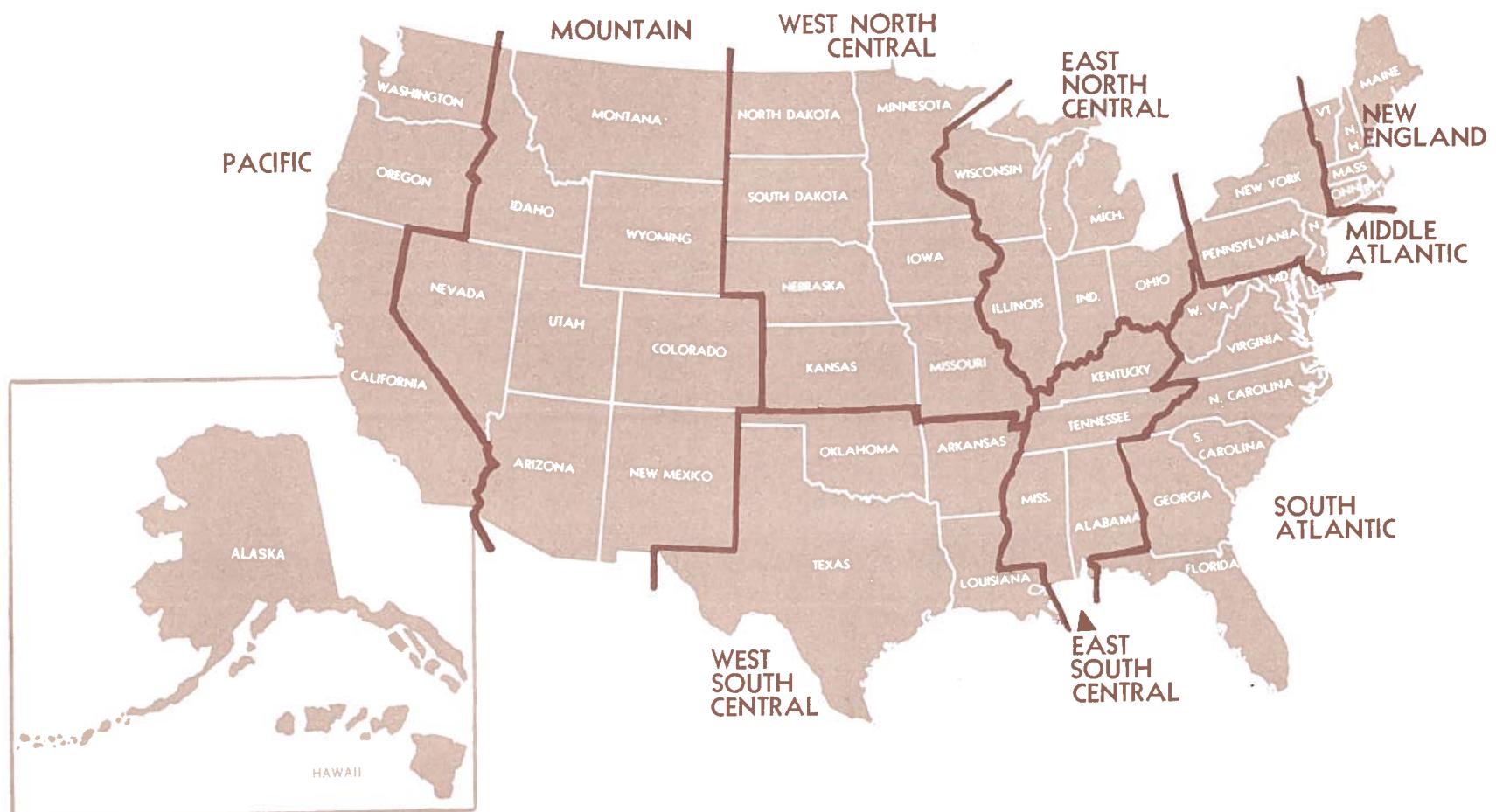


Table 14.—Number of Households With Persons 12 Years Old and Older Who Fished and Hunted in 1960

Grouping	Total number of households in United States		Total households with fishermen and/or hunters		Households with fishermen and hunters		Households with fishermen only		Total households with fishermen		Households with hunters only		Total households with hunters	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States total.....	<i>Thousands</i> 53,774	100.0	<i>Thousands</i> 19,621	36.5	<i>Thousands</i> 7,801	14.5	<i>Thousands</i> 8,290	15.4	<i>Thousands</i> 16,091	29.9	<i>Thousands</i> 3,530	6.6	<i>Thousands</i> 11,331	21.1
Census geographic divisions:														
New England.....	3,416	100.0	924	27.0	295	8.6	510	14.9	805	23.6	119	3.5	414	12.1
Middle Atlantic.....	10,878	100.0	2,484	22.8	771	7.1	1,054	9.7	1,825	16.8	659	6.1	1,430	13.1
East North Central.....	10,852	100.0	3,990	36.8	1,628	15.0	1,623	15.0	3,251	30.0	740	6.8	2,368	21.8
West North Central.....	4,136	100.0	2,065	49.9	920	22.2	809	19.6	1,729	41.8	337	8.1	1,257	30.4
South Atlantic.....	7,064	100.0	2,807	39.7	1,105	15.6	1,234	17.5	2,339	33.1	468	6.6	1,573	22.3
East South Central.....	3,722	100.0	1,740	46.7	842	22.6	561	15.1	1,403	37.7	337	9.0	1,179	31.7
West South Central.....	4,788	100.0	2,258	47.2	987	20.6	871	18.2	1,858	38.8	400	8.4	1,387	29.0
Mountain.....	2,260	100.0	1,020	45.1	566	25.0	283	12.5	849	37.5	170	7.5	736	32.6
Pacific.....	6,654	100.0	2,333	35.1	687	10.3	1,346	20.2	2,033	30.6	299	4.5	986	14.8
Population-density:														
Big cities.....	9,390	100.0	1,612	17.2	366	3.9	1,091	11.6	1,457	15.5	155	1.7	521	5.5
Small cities and suburbs.....	14,772	100.0	4,195	28.4	1,277	8.6	2,396	16.2	3,673	24.9	521	3.5	1,798	12.2
Towns.....	9,044	100.0	3,542	39.2	1,526	16.9	1,403	15.5	2,929	32.4	613	6.8	2,139	23.7
Rural areas.....	20,564	100.0	10,273	50.0	4,632	22.5	3,399	16.5	8,031	39.1	2,241	10.9	6,873	33.4

NOTE: These estimates of the number of households are derived from the sample survey. These estimates vary from the number of households derived in the 1960 Census of the Population because of sampling variability.

Table 15.—Number of Persons 12 Years Old and Older Who Fished and Hunted in 1960

Grouping	Total number of persons 12 and over in United States		Total persons who fished and/or hunted		Persons who fished and hunted		Persons who fished only		Total persons who fished		Persons who hunted only		Total persons who hunted	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
	<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>	
United States total.....	131, 226	100.0	30, 435	23.2	9, 525	7.3	15, 798	12.0	25, 323	19.3	5, 112	3.9	14, 637	11.2
Census geographic divisions:														
New England.....	8, 349	100.0	1, 368	16.4	354	4.2	851	10.2	1, 205	14.4	163	2.0	517	6.2
Middle Atlantic.....	26, 493	100.0	3, 432	13.0	860	3.2	1, 709	6.5	2, 569	9.7	863	3.3	1, 723	6.5
East North Central.....	26, 833	100.0	6, 316	23.5	1, 986	7.4	3, 331	12.4	5, 317	19.8	999	3.7	2, 985	11.1
West North Central.....	10, 149	100.0	3, 383	33.3	1, 181	11.6	1, 674	16.5	2, 855	28.1	528	5.2	1, 709	16.8
South Atlantic.....	17, 798	100.0	4, 423	24.9	1, 317	7.4	2, 378	13.4	3, 695	20.8	728	4.1	2, 045	11.5
East South Central.....	9, 277	100.0	2, 778	29.9	939	10.1	1, 268	13.7	2, 207	23.8	571	6.2	1, 510	16.3
West South Central.....	11, 837	100.0	3, 666	31.0	1, 217	10.3	1, 916	16.2	3, 133	26.5	533	4.5	1, 750	14.8
Mountain.....	5, 222	100.0	1, 646	31.5	846	16.2	526	10.1	1, 372	26.3	274	5.2	1, 120	21.4
Pacific.....	15, 268	100.0	3, 422	22.4	828	5.4	2, 143	14.0	2, 971	19.5	451	3.0	1, 279	8.4
Population-density:														
Big cities.....	22, 059	100.0	2, 365	10.7	432	2.0	1, 730	7.8	2, 162	9.8	203	0.9	635	2.9
Small cities and suburbs.....	35, 358	100.0	6, 376	18.0	1, 474	4.2	4, 182	11.8	5, 656	16.0	720	2.0	2, 194	6.2
Towns.....	21, 147	100.0	5, 334	25.2	1, 861	8.8	2, 667	12.6	4, 528	21.4	806	3.8	2, 667	12.6
Rural areas.....	52, 662	100.0	16, 359	31.1	5, 758	10.9	7, 218	13.7	12, 976	24.6	3, 383	6.4	9, 141	17.4
Sex:														
Men.....	62, 732	100.0	23, 171	36.9	8, 820	14.1	9, 559	15.2	18, 379	29.3	4, 792	7.6	13, 612	21.7
Women.....	68, 494	100.0	7, 264	10.6	705	1.0	6, 239	9.1	6, 944	10.1	320	0.5	1, 025	1.5
Age groups:														
12-15 years.....	13, 210	100.0	4, 118	31.2	1, 212	9.2	2, 505	19.0	3, 717	28.1	401	3.0	1, 613	12.2
16-17 years.....	5, 548	100.0	1, 577	28.4	592	10.7	581	10.5	1, 173	21.1	404	7.3	996	18.0
18-24 years.....	15, 216	100.0	3, 838	25.2	1, 443	9.5	1, 509	9.9	2, 952	19.4	886	5.8	2, 329	15.3
25-34 years.....	21, 929	100.0	5, 876	26.8	1, 991	9.1	2, 825	12.9	4, 816	22.0	1, 060	4.8	3, 051	13.9
35-44 years.....	23, 523	100.0	6, 097	25.9	1, 868	7.9	3, 207	13.6	5, 075	21.6	1, 022	4.3	2, 890	12.3
45-64 years.....	36, 287	100.0	7, 378	20.3	2, 062	5.7	4, 221	11.6	6, 283	17.3	1, 095	3.0	3, 157	8.7
65 years and over.....	15, 513	100.0	1, 549	10.0	359	2.3	948	6.1	1, 307	8.4	242	1.6	601	3.9

NOTE: These estimates of the number of the population are derived from the sample survey. These estimates vary from the number of the population derived in the 1960 Census of the Population because of sampling variability.

Table 16.—Number of Persons Who Fished in Fresh Water and in Salt Water in 1960

Grouping	Total number of persons 12 and over in United States		Total persons who fished		Fished in fresh water		Fished in salt water	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States total.....	<i>Thousands</i> 131, 226	100.0	<i>Thousands</i> 25, 323	19.3	<i>Thousands</i> 21, 677	16.5	<i>Thousands</i> 6, 292	4.8
Sex:								
Men.....	62, 732	100.0	18, 379	29.3	15, 820	25.2	4, 721	7.5
Women.....	68, 494	100.0	6, 944	10.1	5, 857	8.6	1, 571	2.3
Age:								
12-15 years.....	13, 210	100.0	3, 717	28.1	3, 390	25.7	706	5.3
16-17 years.....	5, 548	100.0	1, 173	21.1	1, 062	19.1	226	4.1
18-24 years.....	15, 216	100.0	2, 952	19.4	2, 475	16.3	851	5.6
25-34 years.....	21, 929	100.0	4, 816	22.0	4, 018	18.3	1, 364	6.2
35-44 years.....	23, 523	100.0	5, 075	21.6	4, 342	18.5	1, 260	5.4
45-64 years.....	36, 287	100.0	6, 283	17.3	5, 246	14.5	1, 623	4.5
65 years and over.....	15, 513	100.0	1, 307	8.4	1, 143	7.4	263	1.7

NOTE: These estimates of the number of the population are derived from the sample survey. These estimates vary from the number of the population derived in the 1960 Census of the Population because of sampling variability.

Table 17.—Number of Persons Who Hunted Big Game, Small Game, and Waterfowl in 1960

Grouping	Total number of persons 12 and over in United States		Total persons who hunted		Hunted big game		Hunted small game		Hunted waterfowl	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States total.....	<i>Thousands</i> 131, 226	100. 0	<i>Thousands</i> 14, 637	11. 2	<i>Thousands</i> 6, 277	4. 8	<i>Thousands</i> 12, 105	9. 2	<i>Thousands</i> 1, 955	1. 5
Sex:										
Men.....	62, 732	100. 0	13, 612	21. 7	5, 809	9. 3	11, 396	18. 2	1, 837	2. 9
Women.....	68, 494	100. 0	1, 025	1. 5	468	. 7	709	1. 0	118	. 2
Age:										
12-15 years.....	13, 210	100. 0	1, 613	12. 2	472	3. 6	1, 482	11. 2	185	1. 4
16-17 years.....	5, 548	100. 0	996	18. 0	359	6. 5	919	16. 6	161	2. 9
18-24 years.....	15, 216	100. 0	2, 329	15. 3	907	6. 0	2, 018	13. 3	328	2. 2
25-34 years.....	21, 929	100. 0	3, 051	13. 9	1, 474	6. 7	2, 458	11. 2	393	1. 8
35-44 years.....	23, 523	100. 0	2, 890	12. 3	1, 315	5. 6	2, 272	9. 7	394	1. 7
45-64 years.....	36, 287	100. 0	3, 157	8. 7	1, 464	4. 0	2, 519	6. 9	434	1. 2
65 years and over.....	15, 513	100. 0	601	3. 9	286	1. 8	437	2. 8	59	. 4

NOTE: These estimates of the number of the population are derived from the sample survey. These estimates vary from the number of the population derived in the 1960 Census of the Population because of sampling variability.

Table 18.—Fresh-Water Fishermen by Type of Waters Fished in Most Often and Geographic Division in 1960

Census geographic division of residence	Total fresh-water fishermen	Types of fresh-water			Census geographic division of residence	Total fresh-water fishermen	Types of fresh-water				
		Man-made		Natural lakes and streams			Man-made		Rivers and streams		
		Reservoirs	Ponds				Reservoirs	Ponds			
United States total:											
Number (thousands)....	21,677	4,788	2,518	6,874	7,493	South Atlantic:	2,789	536	526		
Percent.....	100.0	22.1	11.6	31.7	34.6	Number (thousands)....	100.0	19.2	18.9		
New England:						Percent.....	100.0	35.8	43.7		
Number (thousands)....	906	62	11	537	294	East South Central:	2,079	744	171		
Percent.....	100.0	6.9	1.2	59.3	32.5	Number (thousands)....	100.0	26.1	621		
Middle Atlantic:						Percent.....	100.0	8.2	29.9		
Number (thousands)....	1,484	171	106	521	686	West South Central:	2,730	1,059	479		
Percent.....	100.0	11.5	7.1	35.1	46.2	Number (thousands)....	100.0	38.8	674		
East North Central:						Percent.....	100.0	18.9	24.7		
Number (thousands)....	5,250	784	356	2,695	1,416	Mountain:	1,359	409	206		
Percent.....	100.0	14.9	6.8	51.3	27.0	Number (thousands)....	100.0	30.1	698		
West North Central:						Percent.....	100.0	3.4	51.4		
Number (thousands)....	2,842	509	367	1,232	734	Pacific:	2,237	514	507		
Percent.....	100.0	17.9	12.9	43.3	25.8	Number (thousands)....	100.0	23.0	1,152		
						Percent.....	100.0	2.9	51.5		

Table 19.—Salt-Water Fishermen by Major Coast and Type of Fishing in 1960

Type of fishing	Total number salt-water fishermen in United States		Atlantic coast		Gulf coast		Pacific coast	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States total.....	<i>Thousands</i> 6,292	100.0	<i>Thousands</i> 3,383	100.0	<i>Thousands</i> 1,437	100.0	<i>Thousands</i> 1,473	100.0
Surf fishing.....	1,652	26.3	821	24.3	442	30.8	389	26.4
Bay and sound fishing.....	3,507	55.7	1,947	57.6	847	58.9	713	48.4
Tidal river and stream fishing.....	1,567	24.9	959	28.3	357	24.8	251	17.0
Ocean fishing.....	3,484	55.4	1,813	53.6	745	51.8	926	62.9

Table 20.—Number of Persons Who Took Specified Numbers of Fishing or Hunting Trips in 1960

Number of trips	Persons who fished and/or hunted		Persons who fished		Persons who hunted	
	Number	Percent	Number	Percent	Number	Percent
	<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>	
United States total	30,435	100.0	25,323	100.0	14,637	100.0
Once	3,841	12.6	3,734	14.7	2,079	14.2
Twice	2,502	8.2	2,391	9.4	1,296	8.9
3 times	2,148	7.1	2,119	8.4	1,191	8.1
4 or 5 times	3,122	10.3	2,965	11.7	2,021	13.8
6 to 10 times	5,247	17.2	4,418	17.4	2,900	19.8
11 to 15 times	3,227	10.6	2,731	10.8	1,688	11.5
16 to 25 times	3,624	11.9	2,627	10.4	1,665	11.4
26 to 50 times	3,900	12.8	2,623	10.4	1,361	9.3
51 to 100 times	1,910	6.3	1,031	4.1	353	2.4
101 to 199 times	725	2.4	564	2.2	65	.4
200 times and over	188	.6	117	.5	18	.1

Table 21.—Number of Persons Who Traveled Specified Distances on Fishing or Hunting Trips in 1960

Distance traveled	Persons who fished		Persons who hunted	
	Number	Percent	Number	Percent
United States total	<i>Thousands</i> 25,323	100.0	<i>Thousands</i> 14,637	100.0
Less than 1 mile	1,961	7.7	350	2.4
1-99 miles	6,826	27.0	4,586	31.3
100-249 miles	3,988	15.8	2,779	19.0
250-499 miles	3,322	13.1	2,430	16.6
500-749 miles	2,188	8.6	1,418	9.7
750-999 miles	1,551	6.1	783	5.3
1,000-1,499 miles	1,692	6.7	948	6.5
1,500-1,999 miles	1,074	4.2	557	3.8
2,000-2,999 miles	1,171	4.6	374	2.6
3,000-4,999 miles	1,056	4.2	302	2.1
5,000 miles and over	492	1.9	111	.8

Table 22.—Persons Who Took Fishing or Hunting Trips Lasting More Than 1 Day in 1960

Grouping	Total number of persons 12 and over in United States		Fished on trips lasting more than 1 day		Hunted on trips lasting more than 1 day	
	Number	Percent	Number	Percent	Number	Percent
			Thousands	Thousands	Thousands	
United States total.....	131,226	100.0	8,052	6.1	3,305	2.5
Census geographic divisions:						
New England.....	8,349	100.0	313	3.7	84	1.0
Middle Atlantic.....	26,493	100.0	496	1.9	273	1.0
East North Central.....	26,833	100.0	1,877	7.0	796	3.0
West North Central.....	10,149	100.0	1,169	11.5	381	3.8
South Atlantic.....	17,798	100.0	696	3.9	257	1.4
East South Central.....	9,277	100.0	488	5.3	125	1.3
West South Central.....	11,837	100.0	1,002	8.5	333	2.8
Mountain.....	5,222	100.0	799	15.3	414	7.9
Pacific.....	15,268	100.0	1,210	7.9	641	4.2
Population-density:						
Big cities.....	22,059	100.0	799	3.6	273	1.2
Small cities and suburbs.....	35,358	100.0	2,346	6.6	731	2.1
Towns.....	21,147	100.0	1,343	6.4	607	2.9
Rural areas.....	52,662	100.0	3,564	6.8	1,692	3.2
Sex:						
Men.....	62,732	100.0	5,922	9.4	3,028	4.8
Women.....	68,494	100.0	2,130	3.1	277	.4
Age:						
12-15 years.....	13,210	100.0	1,058	8.0	209	1.6
16-17 years.....	5,548	100.0	304	5.5	155	2.8
18-24 years.....	15,216	100.0	770	5.1	433	2.8
25-34 years.....	21,929	100.0	1,631	7.4	789	3.6
35-44 years.....	23,523	100.0	1,728	7.3	761	3.2
45-64 years.....	36,287	100.0	2,250	6.2	832	2.3
65 years and over.....	15,513	100.0	311	2.0	126	.8

NOTE: These estimates of the number of the population are derived from the sample survey. These estimates vary from the number of the population derived in the 1960 Census of the Population because of sampling variability.

Table 23.—State Fishing and Hunting License Holders in 1960

Type fishing and hunting	Total number 12 years old and older in United States		Licensed		Unlicensed	
	Number	Percent	Number	Percent	Number	Percent
	<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>	
Total fishermen.....	25,323	100.0	15,339	60.6	9,984	39.4
Fished in fresh water....	21,677	100.0	14,476	66.8	7,200	33.2
Fished in salt water....	6,292	100.0	2,732	43.4	3,561	56.6
Total hunters.....	14,637	100.0	11,878	81.1	2,761	18.9
Hunted big game.....	6,277	100.0	5,826	92.8	454	7.2
Hunted small game....	12,105	100.0	9,545	78.9	2,561	21.2
Hunted waterfowl.....	1,955	100.0	1,772	90.6	181	9.3

Table 24.—Mourning Dove Hunters in 1960 by Geographic Region of Residence of Hunter

Census geographic region	Number	Percent of all small-game hunters
United States total.....	<i>Thousands</i> 1,357	11.2
Northeast.....	30	1.6
North Central.....	100	2.4
South.....	929	19.7
West.....	298	20.8

**Table 25.—Number of Persons 14 Years Old and Over in the Labor Force Who Fished and Hunted During 1960
by Major Occupation Group**

Major occupation group	Total persons in the labor force in United States		Total persons who fished and/or hunted		Persons who fished and hunted		Persons who fished only		Total persons who fished		Persons who hunted only		Total persons who hunted	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
	<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>		<i>Thousands</i>	
United States total.....	70,043	100.0	20,419	29.2	7,254	10.4	9,086	13.0	16,340	23.3	4,079	5.8	11,333	16.2
Professional, technical, and kindred workers.....	7,682	100.0	2,180	28.4	682	8.9	1,294	16.8	1,976	25.7	204	2.7	886	11.5
Farmers and farm managers.....	2,824	100.0	1,358	48.1	586	20.8	311	11.0	897	31.8	461	16.3	1,047	37.1
Managers, officials, and proprietors, except farm.....	7,300	100.0	2,513	34.4	885	12.1	1,200	16.4	2,085	28.6	428	5.9	1,313	18.0
Clerical and kindred workers.....	9,978	100.0	1,825	18.3	455	4.6	1,164	11.7	1,619	16.2	206	2.1	661	6.6
Sales workers.....	4,912	100.0	1,221	24.9	390	7.9	613	12.5	1,003	20.4	218	4.4	608	12.4
Craftsmen, foremen, and kindred workers.....	9,097	100.0	3,740	41.1	1,583	17.4	1,494	16.4	3,077	33.8	663	7.3	2,246	24.7
Operatives and kindred workers.....	12,702	100.0	3,991	31.4	1,511	11.9	1,523	12.0	3,034	23.9	957	7.5	2,468	19.4
Private household workers.....	2,646	100.0	291	11.0	32	1.2	240	9.1	272	10.3	19	.7	51	1.9
Service workers, except private household.....	6,768	100.0	1,124	16.6	286	4.2	631	9.3	917	13.5	207	3.1	493	7.3
Farm laborers and foremen.....	1,980	100.0	762	38.5	297	15.0	191	9.6	488	24.6	274	13.8	571	28.8
Laborers, except farm and mine....	4,154	100.0	1,414	34.0	547	13.2	425	10.2	972	23.4	442	10.6	989	23.8

Table 26.—Percentage of Sport Fishermen and Hunters With Family Incomes Below Specified Levels in 1960

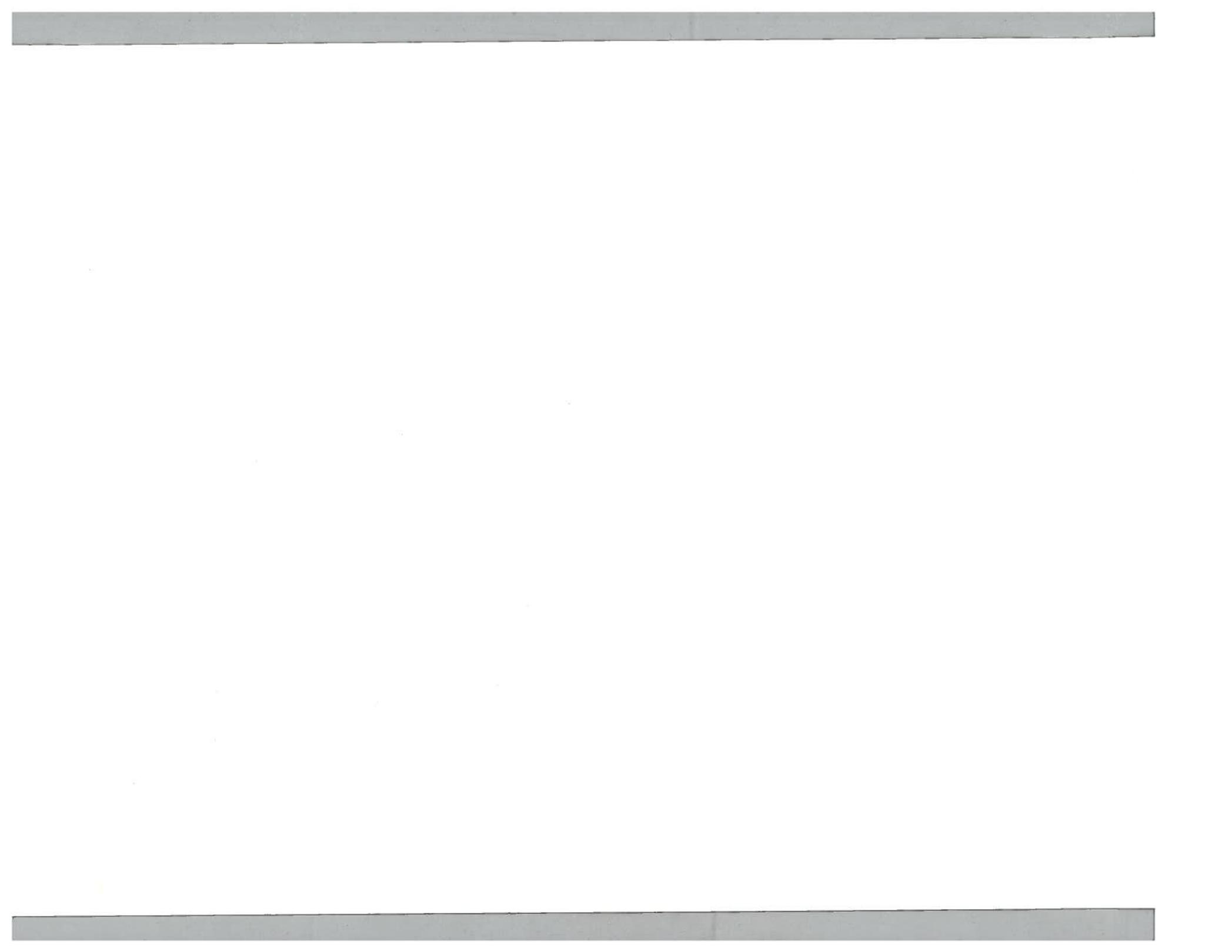
Family income level	Distribution of number of fishermen and hunters
	Percent
Family income under—	
\$3,000.....	17.2
\$4,000.....	28.1
\$5,000.....	39.7
\$6,000.....	54.0
\$7,500.....	71.0
\$10,000.....	85.9
\$15,000.....	95.9
\$15,000 and over.....	100.0

Table 28.—Mileage Traveled by Automobile in 1960

	Car-miles	Passenger-miles
	<i>Thousands</i>	<i>Thousands</i>
Total fishing and hunting.....	13,243,730	26,447,562
Fishing:		
Fresh-water.....	7,536,748	15,430,001
Salt-water.....	1,707,329	3,404,945
Total.....	9,244,077	18,834,947
Hunting:		
Big game.....	1,362,197	2,998,178
Small game.....	2,168,317	3,962,020
Waterfowl.....	469,139	652,417
Total.....	3,999,653	7,612,615

Table 27.—Number of Fishermen and Hunters Who Fished or Hunted Both in the United States and Outside the United States

Places visited outside the United States	Total number of fishermen and/or hunters	Total number of fishermen	Total number of hunters
	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>
United States total.....	30,435	25,322	14,637
United States and—			
Canada.....	455	438	41
Mexico.....	163	160	36
Other countries.....	47	34	13



APPENDIX B—DEFINITIONS

Sport Fishing

Sport fishing is the act of catching, or attempting to catch, fish with a hook and line, rod and reel, spear-fishing equipment, or bow and arrow.

Sport Hunting

Sport hunting is the act of taking, or attempting to take, game with a firearm or bow and arrow.

Sport Fishing and Hunting Outside the United States

Resident United States sportsmen who fished and hunted in the United States in 1960 are included in this survey. Those whose only fishing or hunting activity took place outside the United States are not included.

Expenditures on Sport Fishing and Hunting

Expenditures on sport fishing and hunting made in the United States during 1960 are shown in the illustrations on pages 1 and 8–16 and in the tables on pages 43–48. Individual fishermen and hunters identified from a sample of households were asked detailed questions about their expenditures on these sports in personal interviews. Some spent nothing, others spent relatively large amounts of money. No one reported on the expenditures of some other sportsmen except for some under 16 years of age. The illustrations and tables show National figures

in total and by different kinds of fishing and hunting and by type of goods and services bought. These sportsmen's expenditures include purchases by individuals and the value of gifts received during 1960. Sportsmen were asked to designate, for each purchase, the activity for which they used this purchase the most. The entire expenditure for these items was shown under the designated activity despite the fact that the items may have been used for more than one activity. Total expenditures on goods and services made chiefly for fishing and hunting are the sum of expenditures on: (1) food and lodging; (2) transportation; (3) auxiliary equipment; (4) fishing and hunting equipment; (5) licenses, tags, and permits; and (6) privilege fees and other.

(1) *Food and lodging.*—Outlays on food and lodging are the sum of expenditures on these items made by sportsmen on fishing and hunting trips. Outlays on food are the sum of meals plus the cost of snacks and refreshments while fishing and hunting. However, \$7.77 a week per person was deducted from outlays for restaurant meals to account for that portion of these meal costs representing the average cost of meals eaten at home. The cost of groceries brought from home, or purchased on a fishing or hunting trip for preparation by the sportsman, plus all kinds of alcoholic beverages, was excluded from outlays on food.

Outlays on lodging while fishing and hunting were obtained directly from the schedule as reported by the sportsman as his share of these costs.

(2) *Transportation.*—Outlays on transportation are the sum of expenditures on automobile transportation and for all other

types of transportation when primarily for a fishing and hunting trip.

Expenditures on automobile transportation were computed at 4 cents a mile and these were divided among the number of sportsmen making a trip together. Expenditures on all other types of transportation, or a share thereof when not of a public type, when made as part of a fishing and hunting trip, were included in expenditures on transportation.

(3) *Auxiliary equipment.*—Expenditures on auxiliary equipment are the sum of purchases and the cost of maintenance of (a) boats and boat motors and (b) general equipment used primarily for hunting and fishing. General equipment expenditures are the sum of purchases and cost of maintenance of tents, sleeping gear, cooking and eating utensils, special clothing, lanterns, binoculars, trailers, cabins, and other equipment used primarily for fishing and hunting.

(4) *Fishing and hunting equipment.*—Expenditures of sport fishermen on fishing equipment are the sum of purchases and cost of maintenance of rods, poles, reels, lines, harnesses, nets, seines, minnow buckets, scales, ice-fishing gear, spear-fishing gear, and all other equipment used specifically for fishing.

Expenditures of sport hunters on hunting equipment are the sum of purchases and the cost of maintenance of guns and rifles, shells and cartridges, bows and arrows, gunsights, targets, decoys and calls, and all other equipment used specifically for hunting.

(5) *Licenses, tags, and permits.*—Expenditures on fishing and hunting licenses, tags, stamps and permits are the sum of fees paid for these items to Federal and State governments for the privilege of sport fishing and hunting. Total sales in 1960 of Migratory Bird Hunting Stamps, required of all 16 years of age and over who hunt waterfowl, amounted to 1,621,431 compared

with the 1,526,000 shown in the survey on page 43. Some of this difference is due to the sale of duck stamps to persons who did no waterfowl hunting during 1960.

(6) *Privilege fees and other.*—Expenditures on privilege fees and other expenses primarily for fishing and hunting are the sum of (a) daily entrance and other privilege fees; (b) annual lease and privilege fees; (c) bait, guide fees, and other trip expenses; (d) boat launchings; (e) expenditures on hunting dogs, and (f) other expenses.

(a) **ANNUAL LEASE AND PRIVILEGE FEES.**—Expenditures on annual lease and privilege fees include the purchase of the privilege to fish or to hunt on private lands on a seasonal or annual basis.

(b) **ENTRANCE AND OTHER PRIVILEGE FEES.**—Expenditures on entrance and other privilege fees include the purchase of the privilege to fish or to hunt on private lands on a daily or trip basis. These expenditures include the fees paid by sport hunters to hunt on shooting preserves.

(c) **BAIT, GUIDE FEES, AND OTHER TRIP EXPENSES.**—Expenditures on bait, guide fees, and other trip expenses for fishing and hunting are the sum of these items plus such other items as rentals, charter fees, pack-trip fees, gasoline for the boat, and ice.

(d) **BOAT LAUNCHINGS.**—Expenditures on boat launchings are the sum of costs for use of launching facilities primarily for fishing.

(e) **EXPENDITURES ON HUNTING DOGS.**—Expenditures on hunting dogs are the sum of purchase and upkeep of dogs used primarily for hunting.

(f) **OTHER EXPENSES.**—Other expenses are the sum of the costs of fishing and hunting magazines, general club dues, admittance

fees for fishing and hunting on public lands, and costs not classified in other categories.

Coastal Area Fished

The number of salt-water fishermen and their expenditures are divided among the coastal areas of the United States—the Atlantic, the Gulf, and the Pacific. These data are shown in the illustrations on pages 12 and 13 and in the tables on pages 44–46. The Atlantic Coast includes the coastal area from Canada south through Dade County, Florida; the Gulf Coast, from Dade County, Florida to Mexico; and the Pacific Coast, from Canada to Mexico. Salt-water fishermen who fished beyond the territorial limits of the United States and returned to a port in the United States are included in these statistics. Those who fished only from ports outside the United States are not included.

Fresh-Water and Salt-Water Sport Fishermen and Big-Game, Small-Game, and Waterfowl Sport Hunters

The number of sport fishermen and hunters in the United States in 1960 is shown in the illustrations on pages 19–22 and in the tables on pages 52–54. The tables also show these sportsmen by sex and by age divisions.

Sport fishermen are classified as fresh-water anglers or salt-water anglers. Fresh-water sport fishing is defined as fishing on inland streams, lakes, ponds, reservoirs, and coastal streams above tide limits. Salt-water sport fishing is defined as fishing in the ocean, coastal bays and estuaries, surf, and coastal streams below tide limits. Many anglers fish in both fresh water and salt water. Consequently, the sum of the number of fresh-water anglers and salt-water anglers exceeds the number of total anglers reported.

Sport hunters are classified as big-game hunters, small-game hunters, and waterfowl hunters. Big-game hunting includes hunting for antelope, bear, deer, elk, javelina (peccary), moose, mountain goat, mountain sheep, wild boar, and wild turkey. Small-game hunting includes hunting for fox, opossum, rabbit, raccoon, squirrel, dove, grouse, partridge, pheasant, pigeon, prairie chicken, quail, rail, snipe, and woodcock. Waterfowl hunting includes hunting for coot, duck, gallinule (marsh hen), and geese. Many hunters hunt more than one kind of game. Consequently, the sum of the number of the three types of hunters exceeds the total number of hunters reported.

Population

The number of sport fishermen and hunters was projected from a sample of households. The relationship of the number of these sportsmen to the population is shown in the illustrations on pages 19–25 and in the tables on pages 52–54. The number of households with sport fishermen or hunters is shown in the illustration on page 17 and in the tables on page 51. These data also include the geographic and population density distribution, age, and sex of the sport fishermen and hunters.

Persons 12 years old and older who fished and/or hunted in 1960 are included in this survey. The sum of the “Total who fished” and “Total who hunted” exceeds the total number of fishermen and hunters because both of these classifications include a number of sportsmen who both fished and hunted.

The illustrations on pages 28 and 29 and the table on page 52 show the sport fishing and hunting population by age and by sex. The separate tabulations shown for the significant age divisions are as follows:

- 12–15 years. Young teen-agers
- 16–17 years. Older teen-agers

- 18-24 years. The getting started age—young adults, pre-marriage and early marriage, college students, and job starters
- 25-34 years. Young married people beginning families
- 35-44 years. Parenthood and setting up economic status
- 45-64 years. Middle age and peak of economic status
- 65 years and over. Retirement and old age.

Households

Standard Bureau of the Census definitions were used to classify this subject (see Statistical Abstract of the United States).

The standard divisions used for dividing the United States into geographic sections are shown on the map on page 50.

Trend of Population and Sport Fishermen and Hunters

The trends of the population and of the number of sport fishermen and hunters, 1955 through 1975, are shown in the illustration on page 23. Total United States population trend data were furnished by the Bureau of the Census.

The trend in number of sport fishermen and hunters was constructed from statistics obtained from a simple correlation of (1) the number of fishermen and hunters and (2) per capita disposable personal income after taxes—both series for the period 1947-1960.

These projections measure the future only by the present trends of the population, numbers of sportsmen, and personal income.

Sport Fishing and Hunting Trips

Transportation for sport fishing and hunting trips includes all types—from walking to air travel. The automobile accounted

for the major portion of the trips and distance traveled. Illustrations showing summary data on trips and automobile passenger mileage are on pages 4 and 5, and total automobile travel on pages 31-33. Additional data on trips are shown on pages 57 and 58.

Distance traveled is the total number of miles traveled using all types of transportation on trips taken primarily for sport fishing and hunting.

Car miles are the miles traveled by automobile primarily for sport fishing and hunting. Passenger miles are the number of miles traveled by sport fishermen and hunters in automobiles on trips taken primarily for fishing and hunting. For example, if three fishermen traveled 100 miles on a fishing trip, the car miles would be 100 and the passenger miles would be 300.

Recreation Day

A recreation day is a day, any part of which was spent fishing or hunting.

Sport Fishing and Hunting Licenses

Most sportsmen who fish or hunt are required to buy licenses and to pay specific fees to the State or Federal governments. Since 1955 the number exempted from paying for such purchases has been reduced considerably. Sportsmen who are exempted in some States from paying some kind of fee include: (1) those under a specified age; (2) those over a specified age; (3) the disabled; (4) active servicemen; (5) property owners; and, (6) aborigines and indigents. Licenses are required for fishing in salt water in only two States. The reduction in the number of sportsmen exempted from paying for a license or fee is clearly shown in the case of those under 16 years of age.

who desire to fish. In 1955 persons under 16 years old could fish without a license in over half the States. In 1960, persons under 16 years old could fish without licenses in only 9 States. Most States have now canceled the privileges of free fishing formerly given to veterans and active servicemen.

The relationship between the number of sportsmen licensed and unlicensed in the 1955 and 1960 surveys shows an increase for fishing licenses but a slight decrease for hunting licenses. These relationships are shown in the following tabulation.

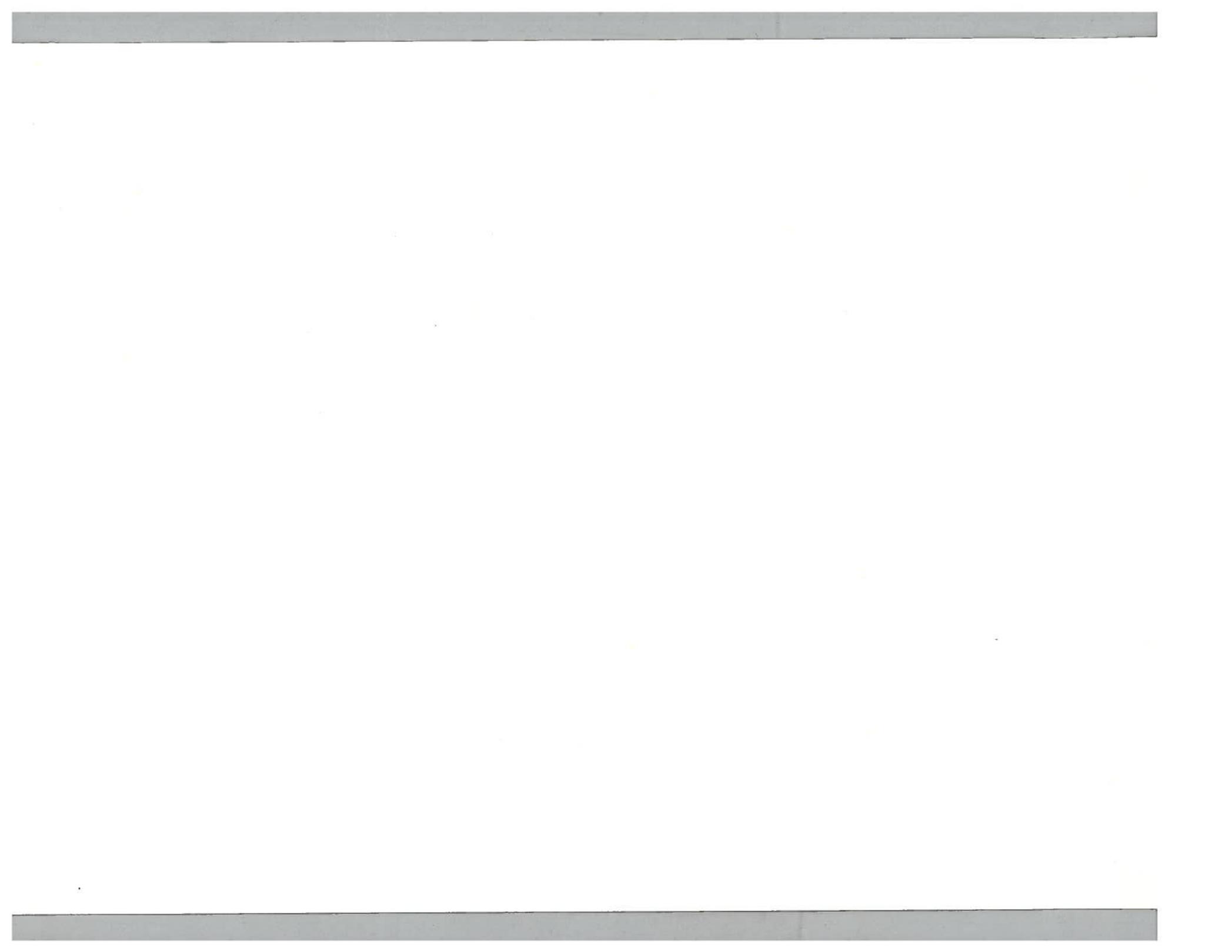
Sportsmen by License Status and by Activity

	Fishing		Hunting	
	1955	1960	1955	1960
Total sportsmen	20,813,000	25,323,000	11,784,000	14,637,000
Number licensed	13,737,000	15,339,000	9,951,000	11,878,000
Percent licensed	60.6	66.0	84.4	81.2

Membership in Fishing and Hunting Clubs

Persons interviewed were asked about membership in fishing or hunting clubs of any kind. The totals for the United States in 1955 and 1960 are as follows:

	1955	1960
Number	1,371,000	1,527,000
Percent of all fishermen and/or hunters	5.5	5.0
Percent of all persons 12 years old and over	1.2	1.2



APPENDIX C—AREAS OF NONCOMPARABILITY BETWEEN THE 1955 AND 1960 NATIONAL SURVEYS OF FISHING AND HUNTING

The 1960 National Survey of Fishing and Hunting differs from the 1955 National Survey on the following points of coverage and classification of expenditures. In general, the two surveys may be compared except for the items noted below. The effect of these items should be considered in assessing trends.

(1) The difference in coverage results from the addition of Alaska and Hawaii in the 1960 survey. The effect of this is not of major significance.

(2) The classification of expenditures differs in the following respects:

(a) Expenditures on "Boats and boat motors" are shown separately in 1960 under "Auxiliary equipment." These expenditures were classified under "Equipment, Other" in 1955.

(b) Expenditures on "Entrance and other privilege fees" are

shown separately in 1960 under "Privilege fees and other." These expenditures were classified under "Trip expenditures, Other" in 1955.

(c) Expenditures on "snacks and refreshments" are included with "Food" expenditures in 1960. These expenditures were classified under "Trip expenditures, Other" in 1955.

(d) Expenditures on equipment, magazines, club dues, licenses, and other similar items were classified by the one sport activity for which the expenditures were chiefly made in 1960. In 1955, these expenditures were evenly divided among all the activities in which the sportsman took part.

(e) Expenditures on "Other" in 1960 were reduced as compared with 1955 by transferring expenditures on certain items to a more appropriate category.

APPENDIX D—TECHNIQUE OF THE SURVEY AND DIFFERENCES BETWEEN TOTAL PARTICIPANTS AND SUBSTANTIAL PARTICIPANTS

One of the purposes of the second National Survey of Fishing and Hunting was to bring up to date the results of the earlier survey, which was conducted for 1955. Information desired included estimates of the number of participants in 1960, the extent of their participation, and their expenditures for fishing and hunting.

The results relate to persons 12 years of age and older in the December 1960 civilian noninstitutional population of the United States. In addition to the persons covered by the survey, there may be a number of others who usually participate in these activities but did not do so during 1960. Some of these persons may have purchased licenses or equipment during 1960 for use in fishing or hunting. However, such expenditures were not covered since only those who actually fished or hunted during the year were interviewed.

The survey was conducted for the Bureau of Sport Fisheries and Wildlife by the Bureau of the Census, U.S. Department of Commerce.

The Sample

In order to provide as accurate a cross section of the population as possible, it was decided to relate the sample for the National Survey of Fishing and Hunting to another nation-wide survey conducted monthly by the Bureau of the

Census. As a result, the sample used was a subsample of persons previously selected for the Bureau's Current Population Survey. The sampling plan for the Current Population Survey is described in *Current Population Reports*, Series P-23, No. 5, May 1958, issued by the Bureau of the Census. This sample is used each month by the Bureau of the Census to collect the official government statistics on total employment and unemployment. It is an area probability sample distributed over 333 primary sampling units (PSU's), each being a county or group of counties, in total comprising 641 counties and independent cities in the 50 States and the District of Columbia.

Within each of the 333 sample PSU's, the sample consists of small land areas called segments, each containing approximately six housing units. In determining sample size within each sample PSU, a ratio rather than a fixed quota is employed. The sample is thus self-weighting; that is, each person has the same probability of being selected for the survey. This technique also is self-adjusting for changes in the size and distribution of the population.

Interviewing

Approximately 18,000 households containing about 45,000 persons 12 years of age and older were included in the sample for the National Survey of Fishing and Hunting. Information

was obtained in each household from a responsible adult as to whether any person in that household had fished or hunted during 1960.

A sample of those identified as fishermen or hunters at the first stage was selected for personal interview at a later visit. These visits, made in January and February, 1961, yielded interviews with about 6,500 fishermen and 3,800 hunters, or about 93 percent of those selected for the detailed interviewing. The remainder had moved, were not at home after repeated calls, or were otherwise not available.

The personnel used for the various phases of the survey were the experienced personnel employed on the Current Population Survey and other regular programs of the Bureau of the Census. Both field supervisors and interviewers received detailed personal training on the content of the survey. Interviewers also were provided complete manuals of instruction, both for training purposes and for assistance while interviewing. In order to assist the sportsmen in providing the desired detail, calendars, lists of equipment items, and booklets of license types were utilized. As each group of households was completed, the results were checked carefully, both for completeness and consistency. The same high degree of quality control was maintained in processing the results and preparing the data.

Differences Between Total Participants and Substantial Participants

As stated in the introductory section of this report, two sets of estimates have been prepared of fishing and hunting activity—one relating to the total number of participants regardless of amount of activity (some 50 million persons)—and the other, to which this report is primarily devoted, constituting some 30 million persons who represent the more active sportsmen and are

substantial participants. The statistics for substantial participants were derived from the National Survey of Fishing and Hunting, described above.

The estimates of the total number of participants were obtained from the National Recreation Survey—a series of surveys on outdoor recreation activities conducted by the Bureau of the Census for the Outdoor Recreation Resources Review Commission, supplemented by some special follow-up studies sponsored by the Bureau of Sport Fisheries and Wildlife. In these follow-up surveys, relatively small samples of persons were interviewed intensively to identify all recreational occasions (vacations, trips, outings, etc.) in different quarters of the year and then to report on all types of activities (including fishing and hunting) in which they engaged on each occasion.

The National Recreation Survey showed a larger number of the population participating in sport fishing and hunting than the National Survey of Fishing and Hunting. Neither survey was designed to duplicate the other except for the total number of people participating in sport fishing and hunting and some other limited information about these totals. The National Recreation Survey was designed to measure all types of recreational activities while the purpose of the National Survey of Fishing and Hunting was to measure the detailed activities of sport fishing and hunting. Intensive probing of the respondents in the National Recreation Survey is one reason why the two surveys did not show the same number of persons participating in sport fishing and hunting. Further analysis showed that the difference between these surveys was due to the coverage of a number of persons in the National Recreation Survey who were incidental participants—primarily unlicensed persons who fished or hunted once or twice and who spent little or nothing to do so. The less intensive probing technique used in the 1960 National Survey of Fishing and Hunting resulted in identification

of the more active and substantial sport fishermen and hunters, as did its predecessor in 1955.

The estimates developed from the National Recreation Survey represent the total number who fished or hunted in 1960, whether incidental or substantial participants, but provide only limited information about the details of fishing and hunting activities such as cost of bait, tackle, travel, and the like. From the standpoint of the main objective of this report—the presentation of detailed information on type and scope of fishing and hunting—the statistics for more substantial participants, developed from the National Survey of Fishing and Hunting, are the more comprehensive. These substantial participants, while constituting about 60 percent of all participants, account for close to 95 percent of recreation days of fishing and hunting and around 99 percent of the expenditures for these activities. Furthermore, valid comparisons with the 1955 results can be made only for the more substantial participants as measured by the National Survey of Fishing and Hunting.

Overall participation in fishing as measured by the National Recreation Survey and the special follow-up studies was estimated at 35 percent of the population 12 years old and over, whereas substantial participants as measured in the National Survey of Fishing and Hunting represented 19 percent of that population group. After deduction of incidental participants—defined, for this purpose, as unlicensed persons with only one or two days of fishing and either no expenditures or expenditures of less than \$5—the gap between these estimates narrows to 4 or 5 percentage points, a large part of which could have resulted from sampling variability. In the case of hunting, the overall participation rate from the National Recreation Survey and the rate for substantial participants in hunting from the National Survey of Fishing and Hunting were 16 percent and 11 percent, respectively. The exclusion of incidental participants eliminates entirely the gap between these two figures.

APPENDIX E—STATISTICAL RELIABILITY ANALYSIS

Statistical Reliability of Major Findings of the 1960 Survey

Item	Estimated totals	Standard error of the totals		Limits between which the figure from a complete enumeration would fall, with a 19 out of 20 probability
		Actual	Percent	
A. EXPENDITURES OF FISHERMEN AND HUNTERS:				
Fishermen and/or hunters	\$3,852,116	\$212,600	5.52	\$3,427-\$4,277
Fishermen	2,690,872	156,000	5.80	2,379-3,003
Hunters	1,161,242	80,500	6.93	1,000-1,322
Salt-water fishermen	626,191	52,000	8.30	522-730
Fresh-water fishermen	2,064,680	126,000	6.10	1,813-2,317
Big-game hunters	345,694	35,800	10.36	274-417
Small-game hunters	726,118	57,700	7.95	611-842
Waterfowl hunters	89,431	16,700	18.67	56-123
B. NUMBER OF FISHERMEN AND HUNTERS:				
Fishermen and/or hunters	30,435	606	1.99	29.2-31.6
Fishermen	25,323	530	2.09	24.3-26.4
Hunters	14,637	369	2.52	13.9-15.4
Salt-water fishermen	6,292	226	3.58	5.8-6.7
Fresh-water fishermen	21,677	474	2.19	20.7-22.6
Big-game hunters	6,277	226	3.59	5.8-6.7
Small-game hunters	12,105	332	2.74	11.4-12.8
Waterfowl hunters	1,955	118	6.04	1.7-2.2
C. NUMBER OF RECREATION-DAYS:				
Fishermen and/or hunters	658,308	21,600	3.28	615.1-701.5
Fishermen	465,769	17,700	3.80	430.4-501.2
Hunters	192,539	11,000	5.71	170.5-214.5
Salt-water fishermen	80,602	7,000	8.68	66.6-94.6
Fresh-water fishermen	385,167	15,950	4.14	353.3-417.1
Big-game hunters	39,190	4,900	12.50	29.4-49.0
Small-game hunters	138,192	9,200	6.66	194.4-157.6
Waterfowl hunters	15,158	2,800	18.47	9.6-20.6

Standard Error of Estimated Number of Persons

[Range 68 chances out of 100]

Size of estimate	Standard error
<i>Thousands</i>	<i>Thousands</i>
500	55
1,000	80
2,000	120
3,000	150
4,000	175
5,000	200
10,000	300
15,000	375
20,000	450
30,000	600

The standard error is primarily a measure of sampling variability; that is, the variations that might occur by chance because only a sample of the population is surveyed. The chances are about 2 out of 3 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 19 out of 20 that the difference would be less than twice the standard error, and about 99 out of 100 that it would be less than $2\frac{1}{2}$ times as large.





