

Motorized Boating in the United States: A Demographic and Economic Analysis

Addendum to the 2022 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

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This report complements the 2022 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. The conclusions are the author's and do not represent official positions of the U.S. Fish and Wildlife Service.

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Introduction



In 2021, 47.3 million Americans 6 years old and older used a motorboat recreationally. This represents 16 percent of the U.S. population in that age group. Boating clearly is a popular outdoor pursuit. This does not include those who participate in nonmotorized boating using kayaks, canoes, rowboats, etc. Prior to 2022, the *National Survey of Fishing*, *Hunting*, and Wildlife-Associated Recreation (Survey), which has been conducted roughly every five years since 1955, could not be used to analyze the full population of motorized boaters. A questionnaire change to the Survey enables a detailed analysis of

the demographics and other outdoor pursuits of this population. Importantly, the examination of boaters that follows is not limited to the population of boat owners, registrants, or buyers as has been the case with other studies of boaters. This examination considers all who participated in motorized boating, whether they went on their own boat, their neighbor's, or a charter. Also importantly, this report does not focus solely on boating alone. The broad scope of the Survey enables an examination of other outdoor pursuits of boaters, like fishing, hunting, and wildlife-watching.



Data and Definitions



All reported data contained herein are from the 2022 Survey and most are from the screen phase of the Survey. Like prior versions, the 2022 Survey had a two-phase construction. The first is the *screen* phase, which is used to locate individuals who will likely participate in hunting, fishing, or wildlife watching in the relevant survey year. In the screen, a representative national sample of households was contacted, and a household respondent was asked to report the 2021 activity of everyone in the household. The second is the *detail* phase in which those selected from the screen phase are given detailed interviews about their activities in 2022. Unlike prior versions of the Survey, the question relevant to motorized boating is administered in the screen phase. In prior years, these boating questions were given in the detail phase, thus collecting only information from hunters and anglers. The practical effect of this change is that we obtained information for the entire U.S. population 6 years and older, not just those who were likely to participate in fishing or hunting.

There is some interesting boating-related information from the *detail* phase and this report will examine those data as well. In particular, the *detail* phase collects expenditure data of boaters on moorage, insurance, fuel, etc. This expenditure information is

not collected from the entire population of boaters; rather it is collected among boaters who also go fishing, hunting, or wildlife watching. Nevertheless, this information is useful to understand how much people spend on boating for outdoor pursuits.

Because of the use of both *screen* and *detail* phases of the Survey, some information herein pertains to 2021 and some pertains to 2022. The participation estimates are from the *screen* phase, which pertains to 2021. The expenditure data are from the detail phase and pertains to 2022.

A "boater" in this report is short for "motorized boater," and the respondent answered yes to the following question. "Did you do any recreational boating in a motorized boat in 2021?" Additionally, motorized boating is referred to as "boating."

Please note that this report focuses solely on boaters using motorized vessels. Some boaters fish, hunt, and watch wildlife from non-motorized vessels such as canoes and kayaks. The U.S. Coast Guard's Recreational Boating Safety Program periodically surveys the public and includes paddlecraft and other non-motorized vessels. For information about its surveys, visit www.uscgboating.org

Demographic Highlights Of Boaters 16 Years Old And Older

The participation rates of boaters reveal the most active cohorts were White, rural, male, and in two age groups, ages 46-54 and 55-64. The cohort with above median household income had a higher participation rate in boating. Residents of the East North Central and West North Central Census Divisions had the highest participation rates of the Census Divisions.

Participation rates reveal that boating and household income have a positive correlation. The participation rate goes up with income levels. The highest participation rate, 27 percent, is among households with \$200,000 or more annual income. This participation rate is nearly three times as high as that of incomes under \$50,000. This strong correlation suggests that income is an important factor in boating participation.

Eighty-two percent of boaters are White, and they have the highest participation rate at 19 percent. African Americans have the lowest participation rate at seven percent, less than half that of Whites. Asian Americans comprise the lowest share of all boaters at 3 percent, but their participation rate is closest to that of Whites at 16 percent. Other races including Pacific

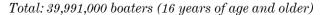
Islanders and Native Hawaiians fall in the middle for participation rates.

The boating participation rate for rural areas is considerably higher than that of urban areas, 21 percent compared to 14 percent. Nevertheless, much like fishing and hunting participation, because so much more of the U.S. population resides in urban areas, urban residents comprise 73 percent of all boaters despite the lower participation rate.

More boaters, 8.4 million, lived in the South Atlantic Census Division than in any other Census Division, although its participation rate falls in the middle of those of all Census Divisions. The highest participation rates are in the West North and East North Central Divisions at 20 percent. The lowest participation rate is that of the Mountain Division.

Males account for the majority of boating participants at 58 percent, and at 19 percent they have a higher participation rate than females. Females comprise 41 percent of boaters and their participation rate is lower at 13 percent.

Figure 1. Distribution of Boaters by Census Division: 2021



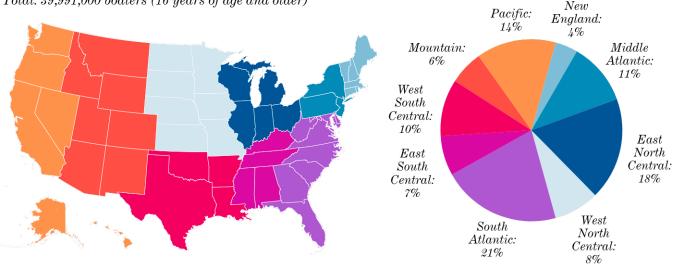


Table 1. Selected Characteristics of Boaters: 2021

Population 16 years of age and older.

	Population	Percent	Number of boaters	Percent	$Participation\ rate$
Total	254,724,000	100	39,991,000	100	16
Urban	203,601,000	80	29,135,000	73	14
Rural	51,123,000	20	10,856,000	27	21
Census Divisions					
New England	11,841,000	5	1,573,000	4	13
Middle Atlantic	32,376,000	13	4,500,000	11	14
East North Central	36,209,000	14	7,374,000	18	20
West North Central	16,379,000	6	3,289,000	8	20
South Atlantic	51,790,000	20	8,407,000	21	16
East South Central	14,812,000	6	2,752,000	7	19
West South Central	30,839,000	12	4,106,000	10	13
Mountain	19,405,000	8	2,270,000	6	12
Pacific	41,073,000	16	5,720,000	14	14
Age					
16-24	34,961,000	14	5,189,000	13	15
25-34	43,373,000	17	6,807,000	17	16
35-44	42,214,000	17	7,138,000	18	17
45-54	39,288,000	15	6,556,000	16	17
55-64	41,306,000	16	7,054,000	18	17
65+	53,582,000	21	7,246,000	18	14
Sex					
Male	123,073,000	48	23,372,000	58	19
Female	129,980,000	51	16,323,000	41	13
Other gender	1,672,000	1	242,000	1	14
Household Income					
0-49,999	91,595,000	36	9,083,000	23	10
50,000 - 99,999	76,698,000	30	11,783,000	29	15
100,000 - 149,999	37,708,000	15	7,698,000	19	20
150,000 - 199,999	17,773,000	7	4,318,000	11	24
200,000+	18,966,000	7	5,191,000	13	27
Race					
White	172,710,000	68	32,734,000	82	19
African American	33,985,000	13	2,362,000	6	7
Asian American	8,515,000	3	1,325,000	3	16
Other, including Pacific Islander and Native American and multiple races	52,901,000	21	5,427,000	14	10
Ethnicity					
Hispanic	44,032,000	17	4,549,000	11	10
Non-Hispanic	209,720,000	82	35,315,000	88	17

 $Notes:\ Population\ column\ from\ the\ screen.$

 $Boating\ 16+\ and\ boating\ 6-15\ totals\ do\ not\ add\ to\ total\ boating\ because\ of\ respondents\ who\ did\ not\ report\ their\ age\ and\ were\ therefore\ not\ included\ in\ the\ boating\ subcategories.$

Those boaters whose age was not reported are not included.

 $Boaters\ who\ did\ not\ report\ their\ income\ are\ not\ included\ in\ this\ demographic\ cohort.$

Urban is defined as all territory, population, and housing units located within boundaries that encompass densely settled territory, consisting of core census block groups or blocks that have a population density of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile.



Figure 2. Urban/Rural Distribution of Boaters: 2021

16 years of age and older

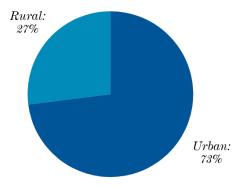


Figure 3. Age Distribution of Boaters: 2021

 $16\ years\ of\ age\ and\ older$

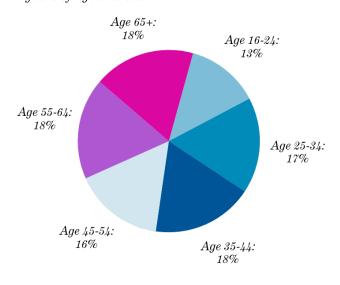


Figure 4. Gender Distribution of Boaters: 2021

16 years of age and older

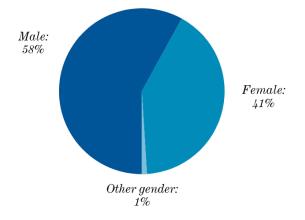
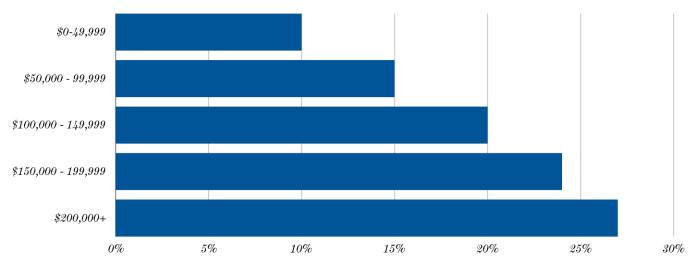




Figure 5. Household Income Distribution of Boaters: 2021

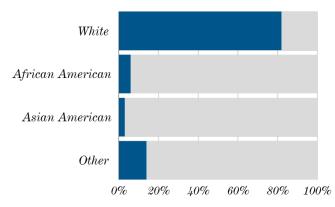
 $16\ years\ of\ age\ and\ older$



Note: The missing 5% is "not reported."

Figure 6: Race Distribution of Boaters: 2021

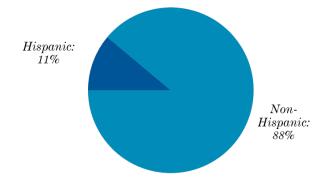
16 years of age and older



Note: Other includes Pacific Islander, Native American and multiple races.

Figure 7: Ethnicity Distribution of Boaters: 2021

16 years of age and older



Demographic Highlights of Boaters Ages 6-15

There were 7.3 million boaters 6-15 years old in 2021. Youth living in rural household and income cohorts of \$150,000-199,999 and \$200,000 or more comprised the highest rate of boating participation. The lowest boating participation rates were observed among African Americans, individuals of other races (including Pacific Islanders and Native Hawaiians), Hispanics, and those with household incomes less than \$49,999. Not surprisingly this is the same pattern for the older boaters. While the distributional percentages and participation rates do differ from the 16 and older population, the demographic profile of boaters among those under 16 is nearly identical.

Like the 16-year-old and older population, the participation rates reveal that boating and household income have a positive correlation. The highest participation rate, 31 percent, is among households with \$200,000 and more household income. This participation rate is nearly three times as high as that of households with incomes under \$50,000.

The participation rate of youth boaters in rural

areas is considerably higher than that of urban areas, but like with older boaters, more boaters reside in urban areas. The participation rate among rural residents is 25 percent compared to 16 percent among urban residents. Twenty-seven percent of youth boaters lived in rural areas, and 73 percent lived in urban areas.

There is some difference between youth and older boaters by Census Division. More youth boaters, 1.4 million, lived in the East North Central Division than in any other Division. Youth residing in the East North Central Division also have the highest participation rate at 23 percent. Total participation in the South Atlantic is not far behind at 1.3 million.

Youth participants are also more often male than female; males have a higher participation rate. Forty-two percent of youth boaters were female, compared to 57 percent that were male. The participation rate difference for males (20 percent) and females (15 percent) is comparable to the difference for the older population as well.

Figure 8. Divisional Distribution of Boaters Age 6-15: 2021

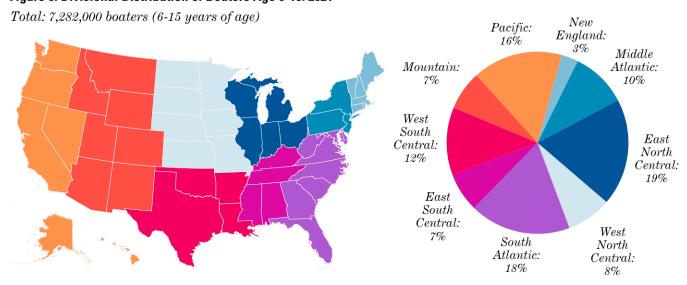


Table 2. Selected Characteristics of Boaters Ages 6-15: 2021

Population 6–15 years of age.

	Population	Percent	$Number\ of\ boaters$	Percent	$Participation\ rate$
Total	41,634,000	100	7,282,000	100	17
Urban	33,752,000	81	5,338,000	73	16
Rural	7,882,000	19	1,944,000	27	25
Census Divisions					
New England	1,666,000	4	238,000	3	14
Middle Atlantic	4,909,000	12	753,000	10	15
East North Central	5,904,000	14	1,364,000	19	23
West North Central	2,812,000	7	614,000	8	22
South Atlantic	8,040,000	19	1,298,000	18	16
East South Central	2,438,000	6	480,000	7	20
West South Central	5,746,000	14	877,000	12	15
Mountain	3,349,000	8	495,000	7	15
Pacific	6,770,000	16	1,163,000	16	17
Sex					
Male	20,958,000	50	4,130,000	57	20
Female	20,072,000	48	3,050,000	42	15
Other gender	554,000	1	86,000	1	16
Household Income					
0-49,999	14,955,000	36	1,660,000	23	11
50,000 - 99,999	12,262,000	29	1,914,000	26	16
100,000 - 149,999	6,630,000	16	1,409,000	19	21
150,000 - 199,999	3,017,000	7	916,000	13	30
200,000+	3,692,000	9	1,154,000	16	31
Race					
White	25,911,000	62	5,712,000	78	22
African American	7,615,000	18	618,000	8	8
Asian American	1,955,000	5	336,000	5	17
Other, including Pacific Islander and Native American and multiple races	11,219,000	27	1,456,000	20	13
Ethnicity					
Hispanic	10,710,000	26	1,220,000	17	11
Non-Hispanic	30,743,000	74	6,025,000	83	20

Notes: Population column from the screen.

Boating 16+ and boating 6-15 totals do not add up to total because of don't knows/refused.

Those boaters whose age was not reported are not included.

Boaters who did not report their income are not included in this demographic cohort.

Urban is defined as all territory, population, and housing units located within boundaries that encompass densely settled territory, consisting of core census block groups or blocks that have a population density of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile.

Figure 9. Urban/Rural Distribution of Boaters Age 6-15: 2021

Rural: 27%

Urban: 73%

Figure 10. Gender Distribution of Boaters Age 6-15: 2021

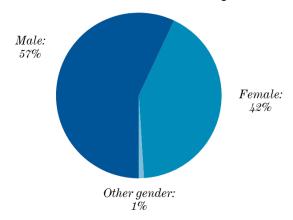
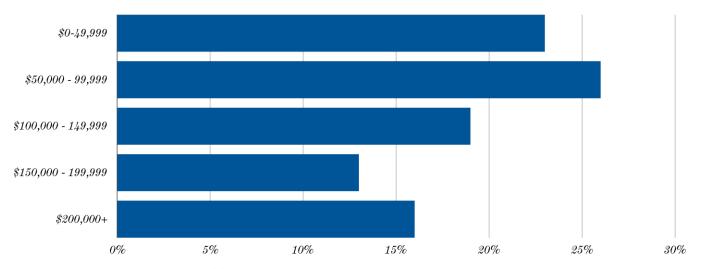
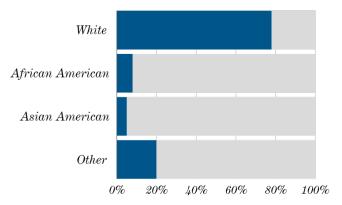


Figure 11. Household Income Distribution of Boaters Age 6-15: 2021



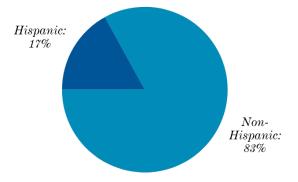
Note: The missing 3% is "not reported."

Figure 12: Race Distribution of Boaters Age 6-15: 2021



Note: Other includes Pacific Islander, Native American and multiple races.

Figure 13: Ethnicity Distribution of Boaters Age 6-15: 2021





The Number and Participation Rate of Boaters and Their Hunting, Angling, and Wildlife Watching Activities

The other outdoor activities that boaters engage in provide some good insights, which could be useful from a planning perspective for boating-related infrastructure or marketing opportunities to reach various outdoor enthusiasts. These other outdoor pursuits were not necessarily concurrent with their boating experiences.

Perhaps surprisingly, the largest single other activity that boaters participate in is not fishing; it is wildlife watching. Nearly 27 million boaters (67 percent) were also wildlife watchers. Seventeen million boaters 16 and over (43 percent) enjoyed fishing in the United States in 2021. Nearly 14 million (34 percent) also participated in target shooting. Six million (15 percent) also hunted. Six million (15 percent) enjoyed archery target shooting. To repeat, these boating, wildlife watching, fishing, target shooting, hunting, and archery activities could and often did occur on different days. The 'Any of the above' lines in Table 3 indicate that 81 percent of boaters engage in at least one of the other activities contained in the Survey, which means that 19 percent of boaters do not.

Seventeen percent of Americans 6-15 years old, 7.3 million youngsters in total, boated in 2021. A substantial number of these young boaters also enjoyed other pursuits outdoors. Youth boaters were less prone to participate in wildlife watching compared to older boaters, with participation rates of 37 percent and 67 percent, respectively. The highest additional pursuit of youth boaters was fishing at 50 percent or 3.7 million. Two million also went target shooting, 1.6 million enjoyed archery, and 0.9 million hunted.

From Table 3 one can discern that fishing and hunting were popular pursuits among boaters in 2021. The Survey also enables an examination of the number of people who may no longer go fishing or hunting, but they have at some point. Sixty-nine percent of all boaters six and over have gone fishing at some point in their lives. Hence, 31 percent of boaters have never tried fishing. Additionally, among boaters, 33 percent have gone hunting at some point, while 67 percent have never tried it.



Table 3: Additional Outdoor Pursuits by Boaters: 2021

	Number	Percent
Boaters 16 Years Old and Older		
Total	39,991,000	100
Fishing	17,142,000	43
Target shooting	13,677,000	34
Hunting	6,126,000	15
Archery	5,949,000	15
Wildlife watching	26,665,000	67
Any of the above	32,360,000	81
Boaters 6-15 Years Old		
Total	7,282,000	100
Fishing	3,659,000	50
Target shooting	2,025,000	28
Hunting	881,000	12
Archery	1,626,000	22
Wildlife watching	2,681,769	37
Any of the above	4,600,226	63

Figure 14. Percent of Boaters Age 16 and Older by Type of Activity

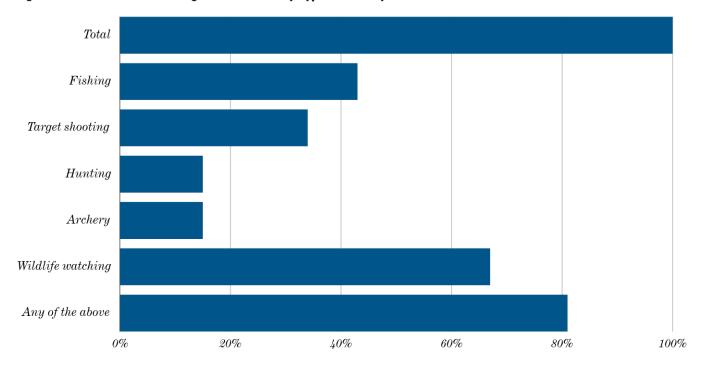
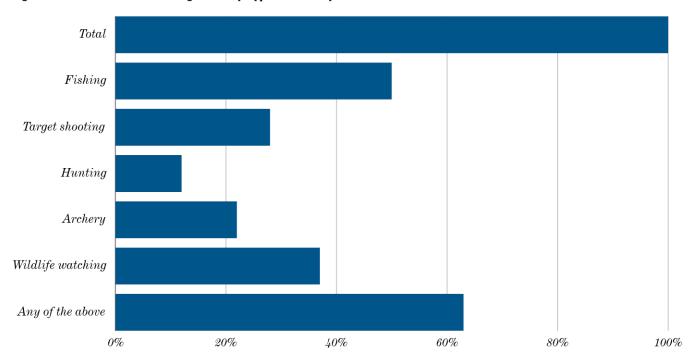


Figure 15. Percent of Boaters Age 6-15 by Type of Activity



Boating Expenditures for Fishing, Hunting, and Wildlife Watching

The 2022 Survey does not have information on the boating-related purchases of all boaters. It does have information on the boating purchases of anglers, hunters, and wildlife watchers. These boaters spent a large amount of money to fish, hunt, and watch wildlife from a boat in 2022. They spent \$25.7 billion on boats and related items, such as motors, trailers, fuel, launch fees, mooring, and storage, purchased

primarily for fishing, hunting, and wildlife watching. Anglers fishing from a boat spent an average of \$697 per person. Hunters using a boat to hunt spent an average of \$663 per person. Wildlife watchers using a boat to pursue their endeavors spent an average of \$1,265 per person. Boats provide increased access to areas far beyond the reach of shorelines accessed on foot.



Table 4. Boating-Related Expenditures for Fishing, Hunting, and Wildlife Watching: 2022

	Trip-related	Spenders	Average per spender	$Motorized \ boats$	Spenders	Average per spender	Boat hitches, etc.	Spenders	Average per spender	Total	Spenders	Average per spender
Fishing	3,879,151,000	13,842,000	280	5,082,695,000	2,203,000	2,307	1,338,413,000	2,480,000	540	10,300,259,000	14,777,000	697
Hunting	881,625,000	2,640,000	334	851,889,000	875,000	974	337,998,000	1,001,000	338	2,071,512,000	3,122,000	664
Wildlife watching	1,438,276,000	5,079,000	283	9,768,618,000	3,794,000	2,575	2,131,458,000	4,782,000	446	13,338,352,000	10,546,000	1,265

Note: Trip-related and boat accessories not necessarily for motorboats. Boat accessories, such as trailer or hitch or motor.

Figure 16. Mean Boating-Related Expenditures by Anglers, Hunters, and Wildlife Watchers

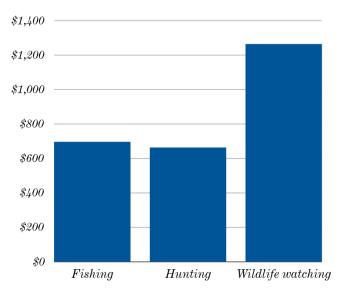
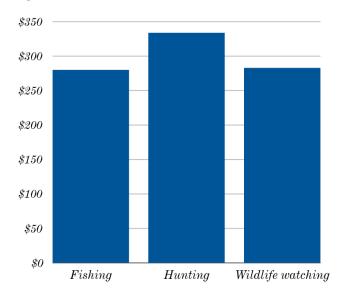


Figure 17. Mean Boating Trip-Related Expenditures by Anglers, Hunters, and Wildlife Watchers



Note: Trip-related and boat accessories not necessarily for motorboats (such as a trailer or hitch or motor).

Figure 18. Mean Boat Expenditures by **Anglers, Hunters, and Wildlife Watchers**

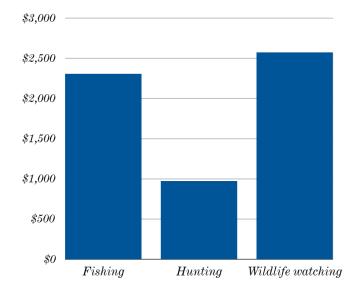
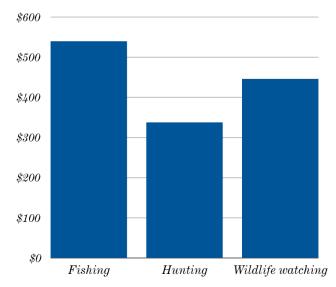


Figure 19. Mean Boat Accessory Expenditures by Anglers, Hunters, and Wildlife Watchers



Note: Trip-related and boat accessories not necessarily for motorboats (such as a trailer or hitch or motor).

Boating Households

The Survey allows us to estimate the number of residents that go boating from boating households. A boating household is a household where at least one member goes boating, whether they own the boat or not. We can therefore calculate the percentage of boaters from boating households by demographic characteristics. Comparing the percentages in Table 5 with those in Tables 1 and 2 gives some insight into how having one boating person in the household increases the likelihood of boating participation. Sixteen percent

of all Americans go boating, but 68 percent of those from boating households participate. We would expect that residents of boating households tend to go together, such that having a resident who goes boating increases the likelihood that others in the household will also go. This is true, but there is a notable difference by demographic characteristics. Seventysix percent of males who live in a boating household go boating. Comparatively 59 percent of females from boating households go boating.



Table 5. Selected Characteristics of Boating Households: 2021

Population 6 Years Old and Older.

	$U.S.\ Population$	Number of boating household residents	Number of boaters from boating households	Proportion of boating household residents who boat
Population Density				
Urban	241,674,000	53,166,000	35,032,000	66%
Rural	59,976,000	17,595,000	13,031,000	74%
Sex				
Male	145,606,000	36,763,000	27,795,000	76%
Female	151,249,000	32,921,000	19,517,000	59%
Other gender	2,320,000	567,000	331,000	58%
Household Income				
0-49,999	108,498,000	18,177,000	10,920,000	60%
50,000 - 99,999	90,139,000	21,002,000	13,869,000	66%
100,000 - 149,999	44,785,000	12,664,000	9,214,000	73%
150,000 - 199,999	21,062,000	7,452,000	5,291,000	71%
200,000+	22,851,000	8,211,000	6,434,000	78%
Employment Status				
Working — as a paid employee	125,995,000	30,407,000	21,513,000	71%
Working — self-employed	20,281,000	5,720,000	4,417,000	77%
Not working — on temporary layoff from a job	2,285,000	484,000	314,000	65%
Not working — looking for work	11,379,000	2,027,000	1,186,000	59%
Not working — retired	50,256,000	10,582,000	7,425,000	70%
$Not\ workingdisabled$	13,877,000	2,324,000	1,326,000	57%
Not working — other	23,465,000	5,167,000	2,801,000	54%
Age				
6 to 15	41,634,000	11,274,000	7,282,000	65%
16 to 17	8,416,000	2,144,000	1,374,000	64%
18 to 24	26,546,000	6,739,000	3,815,000	57%
25 to 34	43,373,000	9,940,000	6,807,000	68%
35 to 44	42,214,000	9,700,000	7,138,000	74%
45 to 54	39,288,000	9,398,000	6,556,000	70%
55 to 64	41,306,000	9,801,000	7,054,000	72%
65 and over	53,582,000	10,691,000	7,246,000	68%
Race				
White	201,481,000	54,292,000	39,014,000	72%
African American	42,350,000	6,314,000	3,047,000	48%
Asian American	10,589,000	2,538,000	1,677,000	66%
Other, including Pacific Islander and Native American and multiple races	65,411,000	11,935,000	7,017,000	59%

Conclusion



Boating makes a significant impact in the American economy and positively affects the lives and lifestyles of the population. These benefits positively affect manufacturers, importers, distributors, retailers, as well as the consumers—the people at the tiller, steering themselves into their next adventure.

Hunters, anglers, and wildlife watchers employ boats to pursue their endeavors. Boats effectively extend their reach into the wilds, beyond shorelines accessed on foot near parking lots, marinas, and piers. Boating extends the reach of a crappie angler, and waterfowlers get to coves and set up blinds otherwise not so easily accessed. Casual birders and those who may be a little more serious expand their reach to new habitats and new, life-enriching experiences. Boaters purchase firearms, boxes of goose loads, crankbaits, fishing rods, and motorboat gas—and all items that fuel conservation via federal excise taxes. Boaters also water ski, race, or pleasure-cruise. They have a

unique connection with the great outdoors. Boating and associated activities positively affect the lives of people throughout the country and throughout the economy.

These data presented here are of use to state boating agencies, the U.S. Coast Guard, state fish and wildlife agencies, tourism and visitors bureaus, planners, researchers, and trade and industry associations. These data provide some insight into the boating population in a unique manner. Features of the Survey enable an analysis of boaters regardless of whether they own or purchase boats or boating-related products, and they enable an analysis of other activities that boaters pursue.

To learn more about the source data, visit www.fws.gov/program/national-survey-fishing-hunting-and-wildlife-associated-recreation-fhwar

