Addendum to 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

Recreational Shellfishing in the United States

U.S. Department of Commerce
and the
U.S. Department of the Interior

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Introduction

This report is an addendum to the "1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation" (USFWS, 1988).[1] It reports summaries of data gathered in 1985 on recreational shellfishing, but not reported in either of the previously issued national or state reports.

The report is a joint effort between the U.S. Department of the Interior, Fish and Wildlife Service (USFWS) and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). The Division of Policy and Directives Management of the USFWS produced all the estimates in this addendum. Their knowledge of the 1985 Survey database structure and sample weighting ensured comparability of the recreational shellfishing estimates with other fishing and hunting activities.

As with previous surveys, this information is intended for federal, state, and local agencies, as well as others interested in forecasting the demand for fish and wildlife-associated recreation, evaluating impacts on local and state economies, identifying trends in participation and expenditures, and assessing health risks of consuming animals caught through recreational activities.

Background and Method. The 1985 Survey was designed to gather information about participation in fishing, hunting, and other forms of wildlife-associated recreation. It has been conducted every five years since 1955 and is one of the oldest, most comprehensive recreation surveys. Its purpose is to gather information on the numbers of fishermen and hunters in the Nation, as well as how often they participate and how much they spend on these activities. The 1985 National Survey was the first to gather state-level information about those who observe, photograph, or feed wildlife, and for the first time disaggregates recreational shellfishing from saltwater fishing activities. A comparison between the 1985 Survey and previous surveys can be found in Appendix C of "The 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation" (USFWS, 1988). Additional data on the survey's background and method can also be found in the 1985 National Survey.

NOAA's Involvement. This report was initiated by the Strategic Assessment Branch of NOAA's Office of Oceanography and Marine Assessment. Two activities within the Strategic Assessment Branch, the Resource Economics Program and preparation of the National Shellfish Register, are conducting assessments for which information on recreational shellfishing is necessary. For the past five years, the Resource Economics Program has been conducting inventories and valuing recreational uses of coastal resources. Recreational shellfishing information from the 1985 Survey complements information being compiled on other uses of coastal resources for outdoor recreation.

To Prepare the 1990 National Shellfish Register, NOAA is conducting a field survey of classified shellfish-growing waters in 24 coastal states. Assessment of the survey data will quantify the changes in acreage classifications since 1985, the reasons for the changes, and the sources of pollution affecting waters classified as "harvest-limited". In February 1991, the assessment results are scheduled to be published as the 1990 National Shellfish Register of Classified Estuarine Waters. Field surveys indicate that many states believe a significant amount of human illness may be the result of recreational harvest and consumption of contaminated shellfish. However, limited information is available to quantify the magnitude of recreational shellfish activities or harvesting. The addendum provides the first nationwide effort to quantify recreational

[1] U.S. Department of the Interior, Fish and Wildlife Service, 1988. "1985 National Survey of Fishing, Hunting, and Wildlife Associated Recreation," November 1988: Washington D.C.

shellfishing activities and will provide states with important information for future risk assessments.

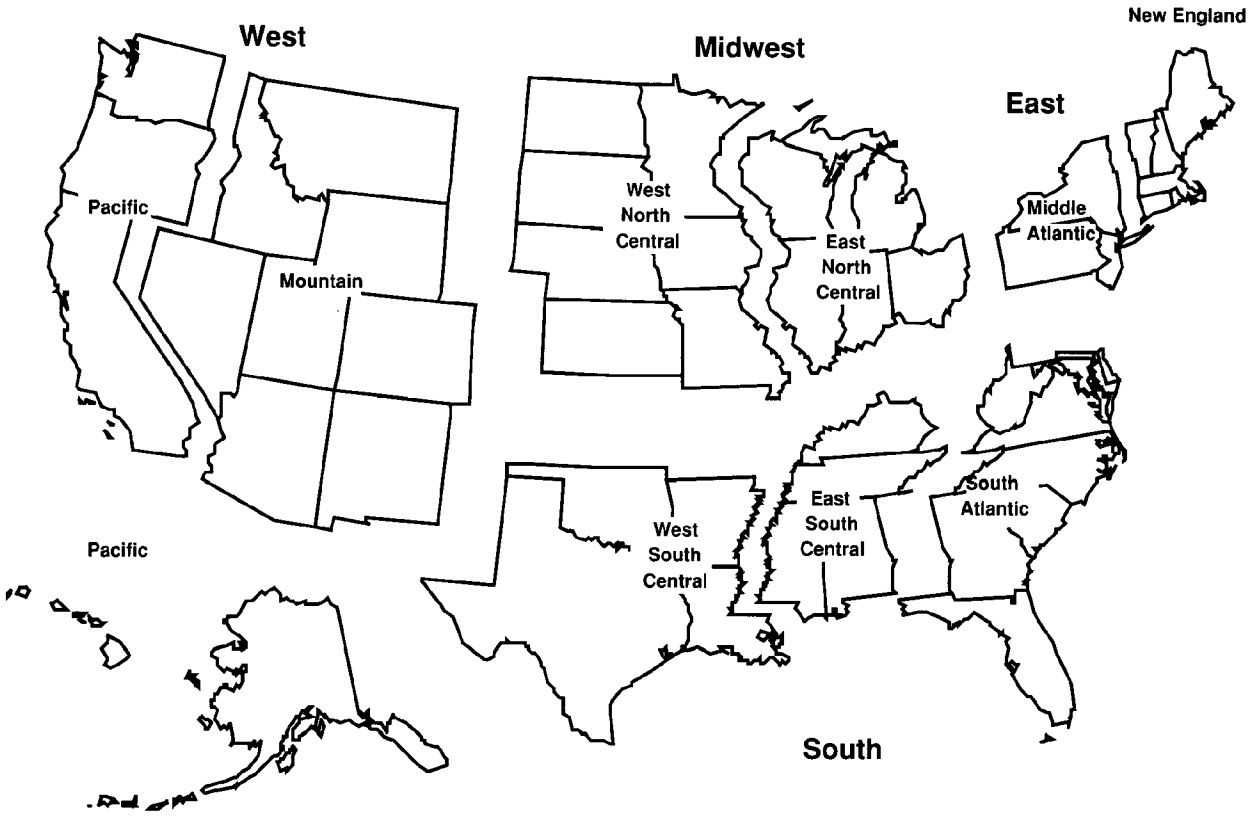
Limitations of the Data. Because recreational shellfishing was first disaggregated from total saltwater fishing in 1985, trends cannot be assessed on this activity. However, the USFWS will continue including shellfishing in their five-year surveys. The next survey will be conducted in 1991.

The USFWS's definition of shellfishing in the 1985 National Survey includes all shellfish, both molluscan (e.g., oysters, clams, mussels, and scallops) and non-molluscan (e.g., crabs, lobsters, and shrimp). However, the quantity and disposition of catch are not available. Thus, the data will not support species-specific health-risk assessments or an assessment of the relative economic importance of recreational and commercial harvesting. Despite these limitations, the USFWS data does provide researchers with the ability to assess the Nation's demand for recreational shellfishing in terms of the number of people and quantity of shellfishing days.

Organization of the Report. Like the 1985 National Survey, this addendum is organized into two major sections: Highlights and Tables. The Highlights section emphasizes statistically significant differences found in the more detailed tables at the back of the report. Those interested in more detail on a particular topic can refer to the appropriate tables. State-level estimates of the number of shellfishermen or shellfishing days by residence or location of activity can also be found in these tables. Demographic and expenditure information is not reported at the state level. Sufficient sample sizes were not available to produce statistically reliable state-level estimates for these topic areas.

Highlights

Census Regions and Divisions



Shellfishermen and Days by State and Region of Residence

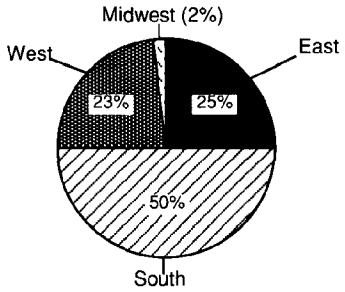
In 1985, an estimated four million people, age 16 or older, participated in recreational shellfishing in the U.S. and undertook over 28 million days of shellfishing. The top five states, in terms of the number of residents that participated in recreational shellfishing, were Florida, California, Texas, Maryland and Washington. Based on the number of days residents undertook recreational shellfishing, the ranking of the top five states change to Maryland, Florida, California, Texas and Virginia. Virginia, which ranked fifth in terms of the number of days its residents undertook recreational shellfishing, ranked ninth in terms of the number of its residents that participated in the activity. Washington, which ranked fifth in terms of the number of its residents that participated in recreational shellfishing, ranked sixth in terms of the number of days its residents undertook the activity.

About half of all recreational fishermen resides in the South and accounts for about 59 percent of all recreational shellfishing days. On average, the South Atlantic census division undertook the most recreational shellfishing days per year (10.0), while the Mountain census division undertook, on average, the fewest days (3.8). Overall, the Midwest region undertook the lowest average number of shellfishing days. The results from the Mountain census division and Midwest region are consistent with most economic research on recreation which has found a negative relationship between the amount of a particular activity undertaken and the required distance travelled to undertake the activity.

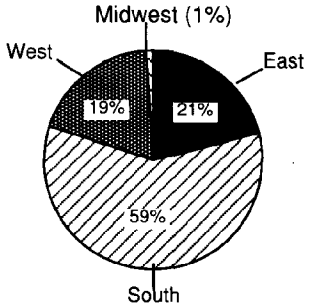
Number of Shellfishermen and Days (Top Five States)

	Shellfishermen		Days of Shellfishing	
State	Number	Rank	Number (000's)	Rank
Florida	468,466	1	3,653	2
California	416,471	2	2,312	3
Texas	378,771	3	2,159	4
Maryland	277,189	4	5,122	1
Washington	270,293	5	1,697	6
Virginia	178,713	9	1,791	5

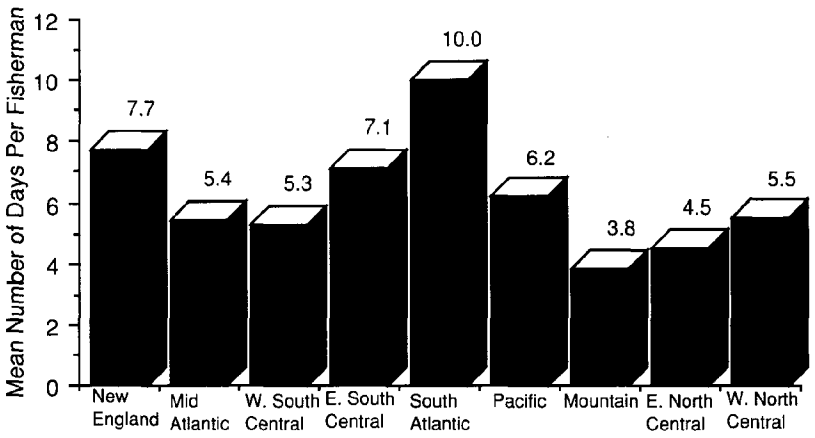
Shellfishermen by Region



Days by Region



Mean Number of Days per Fisherman by Census Division



Participation Rates by Census Division and Region

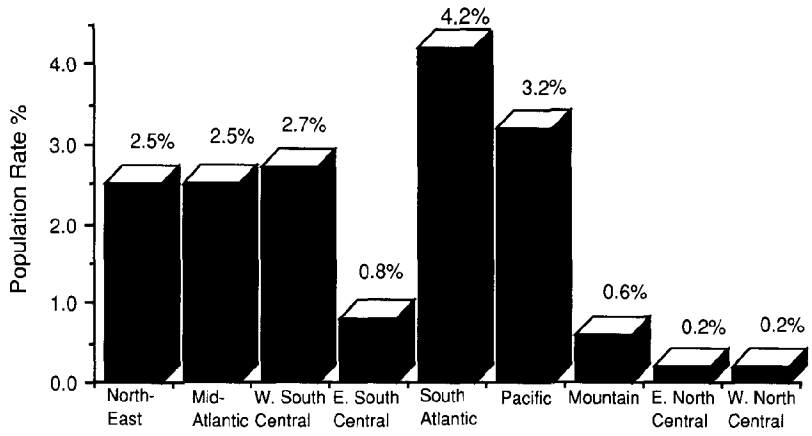
Overall, two percent of the U.S. population, age 16 or older, participated in recreational shellfishing. The South had the highest participation rate among the four census regions (3.1 percent). The East and West regions were the same (2.5 percent), while the Midwest has only 0.2 percent that participated in recreational shellfishing. The low participation rate for the Midwest is explained by the fact that it is the only census region that does not contain a coastal state.

Census divisions provide additional insight into location and participation. Participation rates vary among the census divisions in the South (W. South Central, E. South Central, and South Atlantic) and in the West (Pacific and Mountain). In the South, the E. South Central census division has the lowest participation rate (0.8 percent). It also has the smallest amount of coastal shoreline among the divisions in the South. In the West, the Mountain census division, which has no coastline, has a very low participation rate (0.6 percent). Proximity to the coast is an important factor in explaining participation in recreational shellfishing.

Number and Percent of Shellfishermen and Percent of Population that Shellfishes by Region of Residence

Region	Number of Shellfishermen	Percent of Shellfishermen	Percent of Population that Shellfishes
East	973,090	21	2.5
South	1,929,966	59	3.1
West	905,986	19	2.5
Midwest	87,184	1	0.2
Total	3,896,226	100	2.0

Participation Rates of Shellfishermen by Census Division

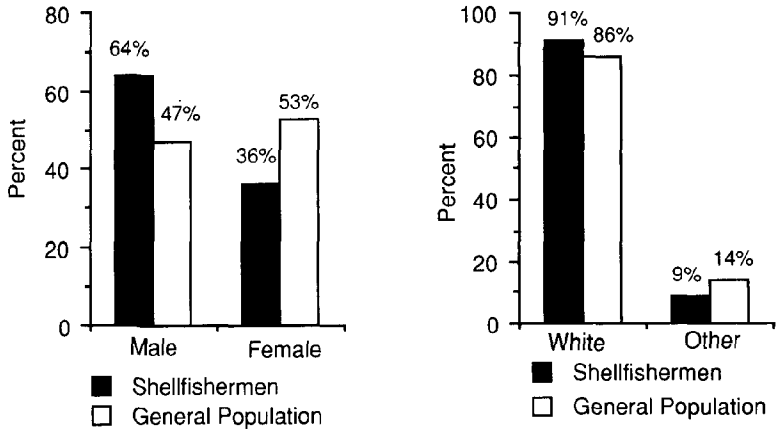


Socio-demographic Factors and Participation

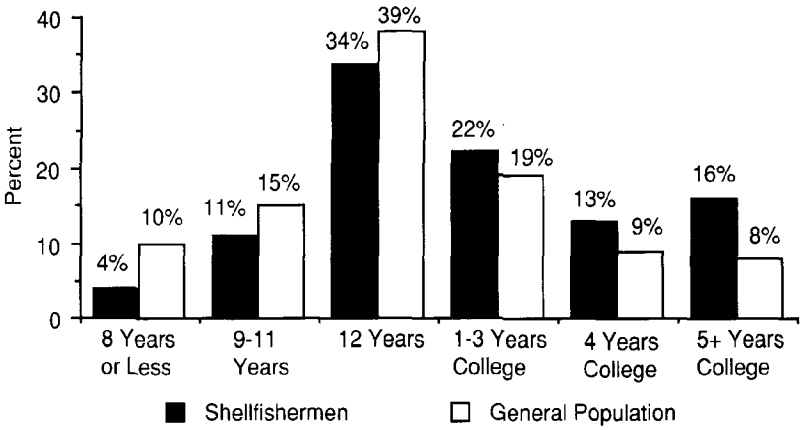
The previous section showed that participation in recreational shellfishing varied by geographic area with proximity to the coast being an important determinant. But are there other factors that might be important in explaining participation? Table 5 gives a socio-demographic profile of shellfishermen compared to the general population. Comparison with the general population indicates that sex, race, education, household income, and age may all be significant factors in explaining participation in recreational shellfishing. Only 47 percent of the general population is male, while 64 percent of recreational shellfishermen are male. Whereas 86 percent of the general population is white, 91 percent of recreational shellfishermen are white. Thirty-six percent of the general population had one or more years of college education compared to 51 percent for recreational shellfishermen. And, only 48 percent of the general population lived in households with incomes of $25,000 or more compared to 62 percent for shellfishermen.

With respect to age, the only significant differences were in age groups 25-44 years and those greater than 65 years of age. A higher percentage of shellfishermen is in age groups of 25-44 years than the general population, while a much lower percentage of the population, age 65 and older, participates in recreational shellfishing.

Sex & Race *Compared to the general population, shellfishermen are comprised of a higher proportion of males and whites.*

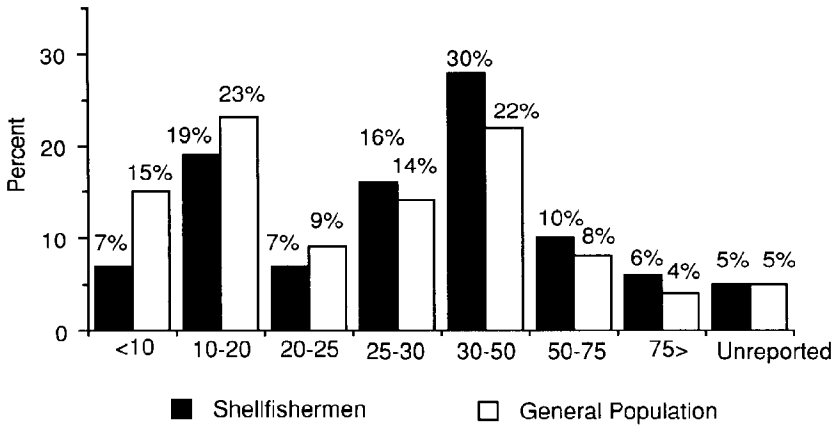


Education *Shellfishermen are more educated than the general population.*



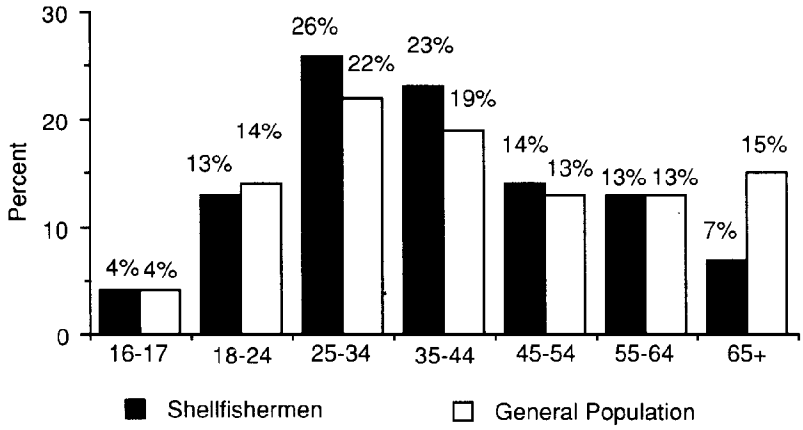
Household Income
($ 000's)

Shellfishermen have higher household incomes than the general population.



Age

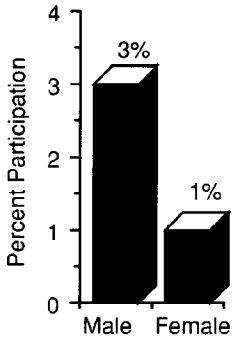
A higher percentage of shellfishermen are between the ages of 25-44 than the general population, while a lower percentage are over 65.



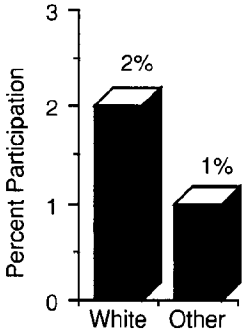
Socio-demographic Factors and Participation Rates

The differences for sex, race, education level, household income and age can also be expressed as differences in participation rates. Overall, two percent of the general population participates in recreational shellfishing. Three percent of all males participates in recreational shellfishing versus only one percent for females. For race, two percent of all whites participate in recreational shellfishing compared to only one percent for nonwhites. As education level and household income increase, participation rates also increase. Participation rates with respect to age generally follow a parabolic relationship. This type of relationship between age and participation rates has been found in many analyses of active outdoor recreational pursuits, where participation is relatively low for the younger population, peaks in the middle-age population, and then starts declining for the older population. Participation rates for 16-24 year olds are equal to the average for all age groups at two percent. Participation rates peak at three percent for those age 25-44 and then decline back to the overall average of two percent for those age 45-64. Participation rates then decline to only one percent for those age 65 and older.

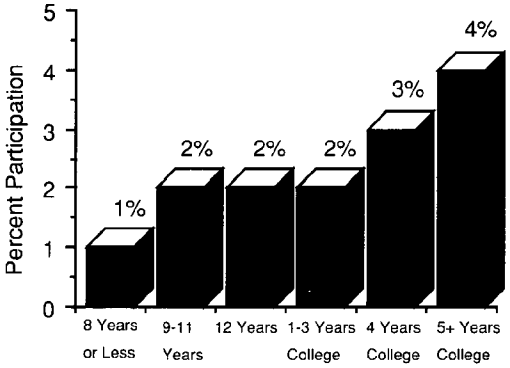
Sex *Males have a higher participation rate than females.*



Race *Whites have a higher participation rate than non-whites.*

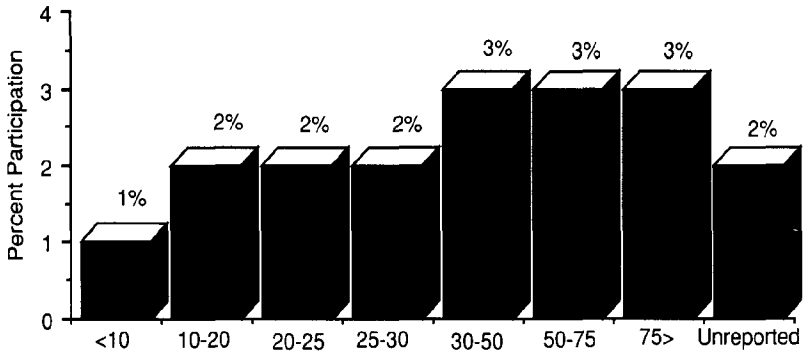


Education *As the level of education increases, the participation rate also increases.*



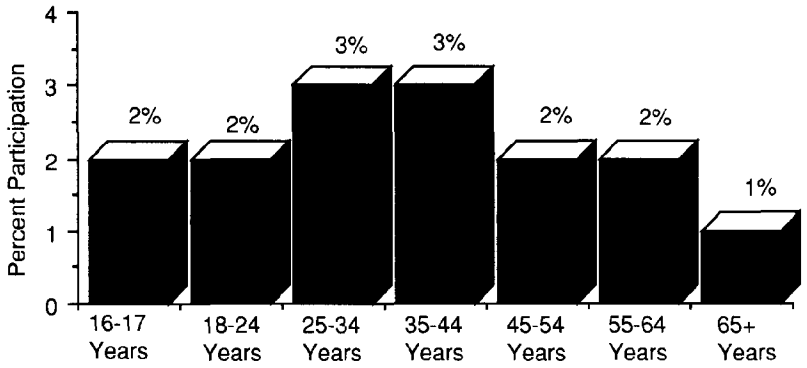
Household Income ($ 000's)

As the household income increases, the participation rate also increases.



Age

People 25-44 years old have a higher participation rate, while people 65 years or older have a lower participation rate.



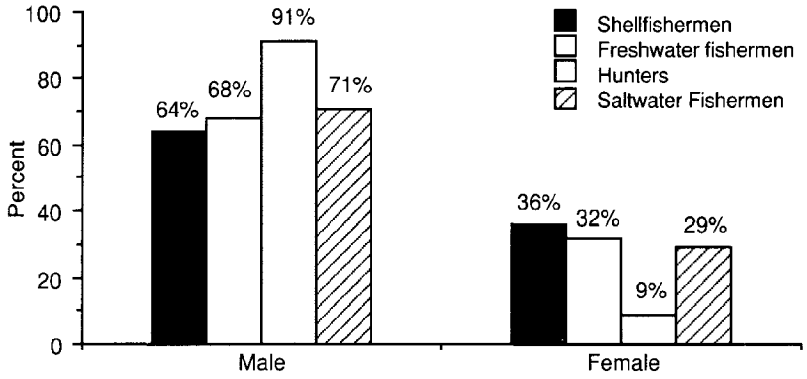
Comparison with Other Sportsmen

Shellfishing is the least popular fishing and hunting activity surveyed. Only two percent of the population participates in recreational shellfishing compared to eight percent for all saltwater fishing, 22 percent for freshwater fishing, and nine percent for hunting.

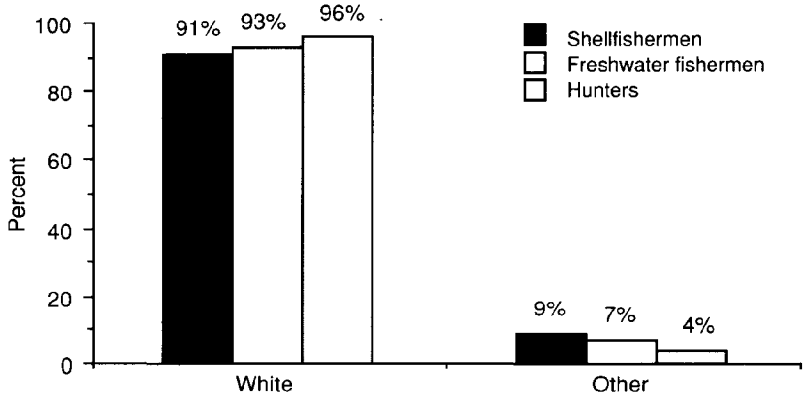
Shellfishermen are different from the general population in terms of residency, sex, race, education, household income, and age. But are they different from other sportsmen?

The only difference between shellfishermen and saltwater fishermen in general is that females comprise a higher percent of shellfishermen. Compared to freshwater fishermen and hunters, shellfishermen consist of a higher percent of nonwhites and females, are more educated, have higher household incomes, and are slightly older.

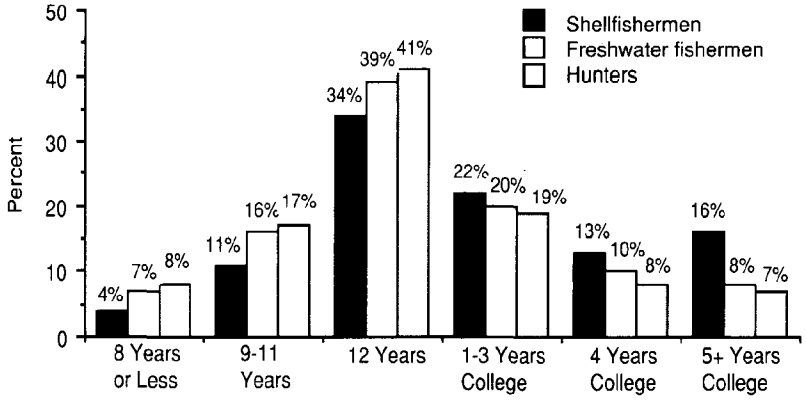
Sex *Compared with other sportsmen, a higher proportion of shellfishermen is female.*



Race *Compared to freshwater fishermen and hunters, a higher proportion of shellfishermen is nonwhite.*

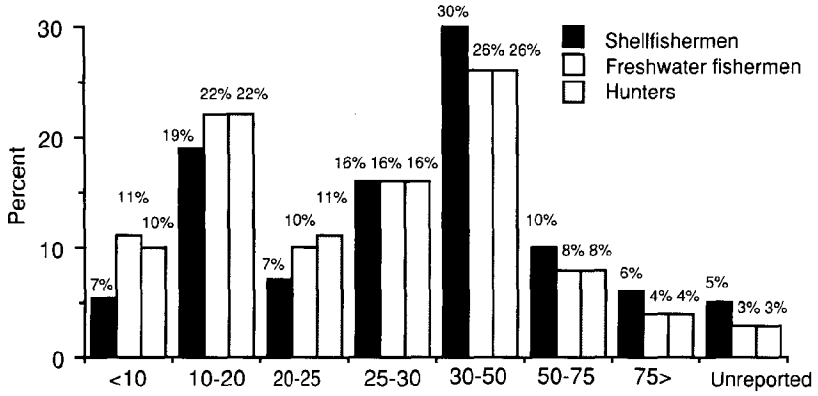


Education *Shellfishermen are more educated than freshwater fishermen and hunters.*

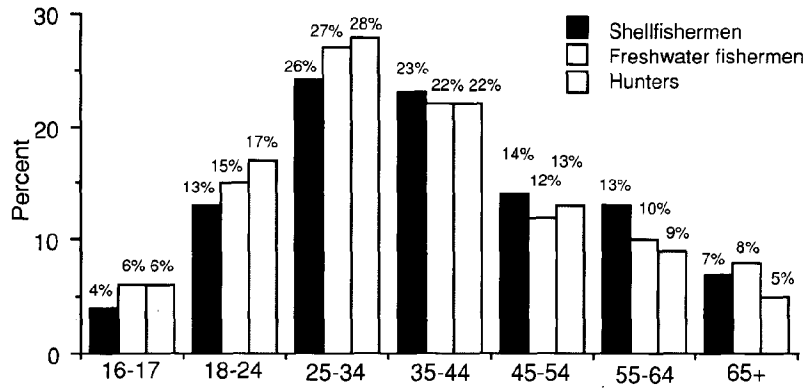


Household Income
($ 000's)

Shellfishermen have higher household incomes than freshwater fishermen and hunters.



Age *Shellfishermen are slightly older than freshwater fishermen and hunters.*



Shellfishermen and Days by State and Region of Activity

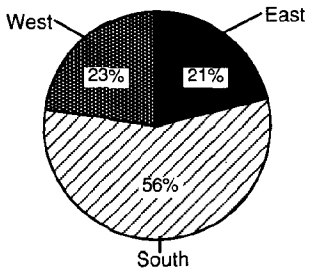
In 1985, an estimated four million people participated in recreational shellfishing in the 23 coastal states of the U.S. and undertook over 28 million days of shellfishing (see Table 3). The number of shellfishermen reported in Table 3 contains double-counting, and thus differs from Table 1 because a person can undertake shellfishing in more than one state. Days of shellfishing, however, are not double-counted and the totals reported in Table 1 are equivalent to those reported in Table 3.

More people fish for shellfish in Florida than in any other state in the U.S. However, in terms of the number of shellfishing days, Florida is ranked second behind Maryland. The average shellfishermen in Maryland fished for shellfish about 14 days compared to about six days in Florida. The average U.S. shellfisherman fished for shellfish about seven days. By census division, the average number of days per shellfishermen ranged from 5.2 days in the West South Central division to 8.2 days in the South Atlantic division.

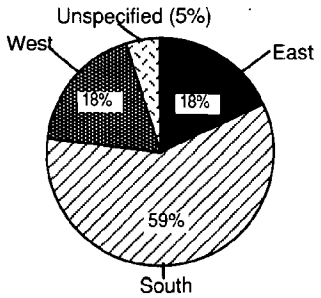
Number of Shellfishermen and Days (Top Five States)

	Shellfishermen		Days of Shellfishing	
State	Number	Rank	Number (000's)	Rank
Florida	604,639	1	3,811	2
California	416,288	2	2,179	3
Texas	402,817	3	2,102	4
Maryland	361,157	4	5,084	1
New Jersey	351,321	5	1,631	6

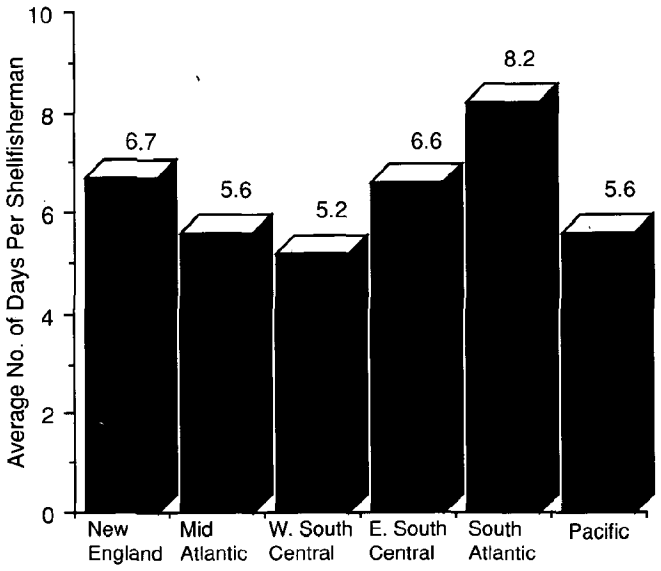
Shellfishermen by Region



Days by Region



Average Number of Days per Shellfisherman by Region



Expenditures

Expenditures reported here are estimates made by shellfishermen for all their saltwater fishing activity. Expenditures specifically for shellfishing were not separately identified in this survey.

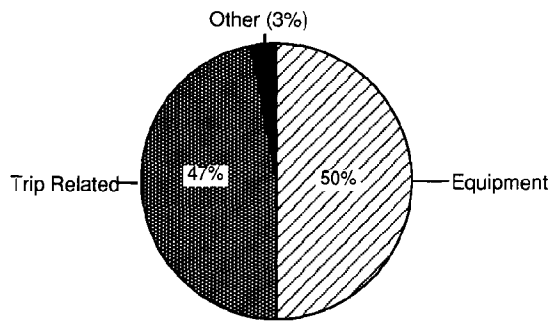
In 1985, shellfishermen accounted for over $2.3 billion in expenditures for saltwater fishing, which is about 32 percent of all saltwater fishing expenditures (see Table 7). All shellfishermen also participated in saltwater finfishing. Therefore, expenditures made by shellfishermen for saltwater fishing would greatly overstate the economic impacts of recreational shellfishing. If the ratio of shellfishing days to finfishing days is used to approximate the percent of saltwater fishing expenditures made for shellfishing, then in 1985, shellfishing expenditures were about $1.7 billion.

Equipment expenditures accounted for half of all expenditures. Auxiliary and special equipment (e.g. tents and backpacking gear) were $0.96 billion or 41 percent of total expenditures, while fishing equipment expenditures were about $0.21 billion or nine percent of total expenditures. Trip-related costs accounted for 47 percent of all expenditures. Food and lodging expenditures made up the largest component of trip-related costs at $0.46 billion which was about 20 percent of total expenditures. Other trip costs such as guide fees or equipment rental totaled $0.42 billion or about 18 percent of total expenditures, while transportation costs totaled about $0.23 billion or 10 percent of total expenditures. Other expenditures, such as magazine membership dues or contributions, ownership or lease fees for land primarily used for fishing, and license stamps, tags, and permits, accounted for over $63 million or about three percent of total expenditures.

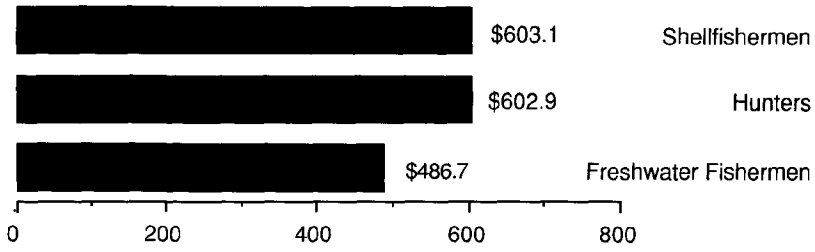
Expenditures by Shellfishermen (Thousands)

Total shellfishing expenditures	$2,349,705
Trip-related	1,113,555
Food and lodging	464,003
Transportation	228,239
Other trip costs	421,313
Equipment	1,172,410
Fishing equipment	212,342
Auxiliary/special equipment	960,068
Other expenditures	63,740

Expenditures by Shellfishermen



Average Annual Expenditure Per Shellfisherman Compared to Hunters and Freshwater Fishermen



In 1985, on average shellfishermen spent about $603 for all their saltwater fishing activities. This amount is almost equal to the average expenditure made by hunters but is almost 24 percent higher than for freshwater fishermen.

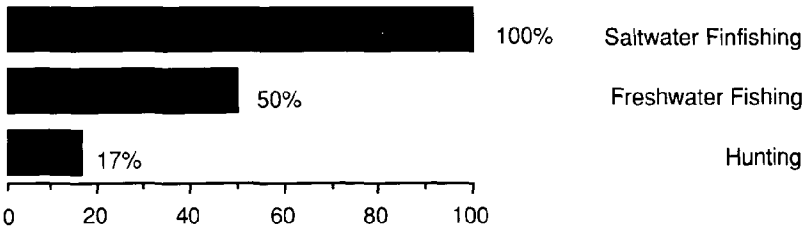
Participation and Days in Other Activities

Shellfishermen, on average, are very active sportsmen. According to the survey all shellfishermen also fish for saltwater finfish, about 50 percent fish for freshwater fish, and about 17 percent hunt (see Table 6). These participation rates are significant when compared to those of the general population. Only eight percent of the general population fishes for saltwater finfish, only 22 percent fish for freshwater fish, and only nine percent hunt (USFWS, 1988).[2] The average shellfisherman undertakes about 7.3 days of shellfishing per year. But the average shellfisherman also undertakes 9.6 days of saltwater finfishing, 10.2 days of freshwater fishing, and 3.6 days of hunting for a total of 23.4 days in all other fishing and hunting activities.

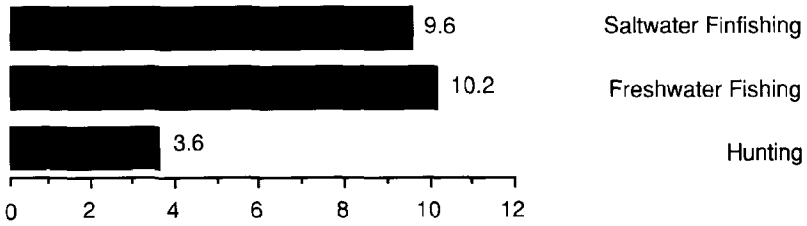
A basic issue in assessing the demand for shellfishing is substitution, i.e., are other fishing and hunting activities good substitutes for recreational shellfishing. This issue is important because changes in the relative price or quality of other fishing and hunting activities may affect the demand for shellfishing. Also, the negative impacts from policy changes that increase the relative cost of recreational shellfishing or reduce the quality of recreational shellfishing may be mitigated to some extent if other fishing and hunting activities are substituted.

Basic descriptive statistics of other activities undertaken sometimes provide researchers with clues as to what activities could be substituted when estimating the demand for recreational shellfishing. Because shellfishermen are very active in other fishing and hunting activities, a good working hypothesis is that these other activities are good substitutes for recreational shellfishing.

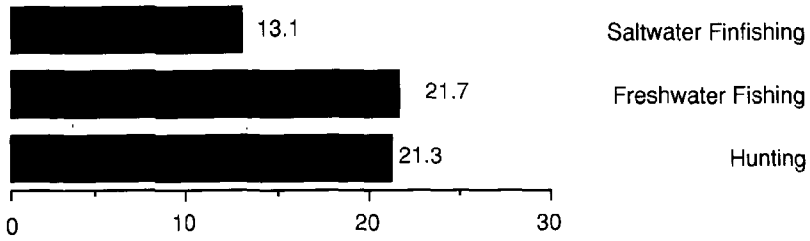
Participation *In other activities by shellfishermen*



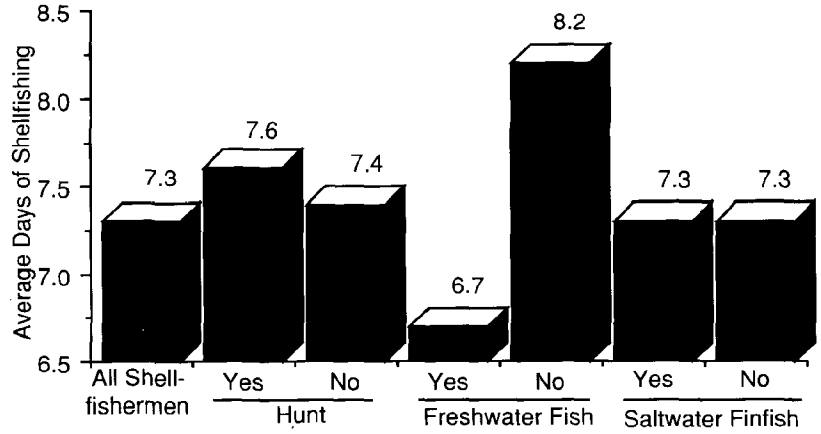
Average Days *All Shellfishermen*



Average Days *Shellfishermen who also do other activities*



Average Days Shellfishing *Shellfishermen, who also freshwater fish, spend a lower average number of days shellfishing than those who do not.*



The USFWS (1988) reports that the average saltwater fisherman participates in saltwater fishing 11 days annually, the average freshwater fisherman participates in freshwater fishing 20 days, and the average hunter hunts 20 days. Shellfishermen, on average, participate in saltwater fishing 20.4 days (7.3 days of shellfishing plus 13.1 days of finfishing). Also, shellfishermen who participate in freshwater fishing average 21.7 days per year, while shellfishermen who hunt average 21.3 days per year. Thus, shellfishermen, on average, are more active saltwater fishermen than saltwater fishermen who exclusively participate in finfishing. Although no significant difference exists between freshwater fishermen in general and freshwater fishermen who also participate in shellfishing, or between hunters and hunters who also participate in shellfishing, the evidence indicates these other activities may be important substitutes.

Some additional insight into substitution can be obtained by looking at the number of shellfishing days undertaken by those who do or do not participate in saltwater finfishing, freshwater fishing, or hunting. The only significant difference is between shellfishermen who do and do not participate in freshwater fishing. Shellfishermen who do not participate in freshwater fishing undertake, on average, more days of shellfishing than those who participate in freshwater fishing.

This fact, along with the fact that shellfishermen have a relatively high participation rate in freshwater fishing, suggests that it may be a good substitute for recreational shellfishing.

Although these simple descriptive statistics cannot be used to reach any firm conclusion about substitution, enough evidence is available to warrant the testing of whether other fishing and hunting activities are statistically significant factors in the demand for recreational shellfishing.

[2] U.S. Department of the Interior, Fish and Wildlife Service, 1988. "1985 National Survey of Fishing, Hunting, and Wildlife Associated Recreation," November 1988: Washington D.C.

Tables

Table 1. Number of Shellfishermen Age 16+ and Number of Shellfishing Days by State of Residence, 1985

State	Shellfishermen by State of Residence		Shellfishing Days by State of Residence	
	Number	Rank	Number	Rank
U.S.	3,896,226	---	28,247,727	---
Alabama	37,367	20	186,975	21
Alaska	24,194	23	135,022	25
Arizona	6,564	36	8,771	45
Arkansas	3,098	45	5,368	46
California	416,471	2	2,311,764	3
Colorado	19,355	25	75,180	27
Connecticut	74,657	16	246,970	20
Delaware	39,310	19	261,278	19
D.C.	13,240	28	79,443	26
Florida	468,466	1	3,653,264	2
Georgia	106,271	12	494,517	15
Hawaii	42,292	18	643,622	12
Idaho	7,285	34	24,641	36
Illinois	17,487	26	54,194	30
Indiana	7,058	35	45,682	31
Iowa	2,556	46	16,386	39
Kansas	6,120	37	33,637	35
Kentucky	5,583	40	20,602	37
Louisiana	134,781	10	553,354	14
Maine	17,068	27	185,428	22
Maryland	277,189	4	5,121,516	1
Massachusetts	91,081	15	913,882	11
Michigan	3,827	43	9,118	43
Minnesota	1,216	47	5,118	47
Mississippi	24,505	22	277,231	18
Missouri	9,215	31	44,614	32
Montana	5,698	39	14,810	41
Nebraska	8,630	32	4,903	48
Nevada	6,013	38	39,822	34
New Hampshire	11,477	30	71,723	28
New Jersey	243,811	7	1,304,633	8
New Mexico	5,378	41	12,998	42
New York	249,009	6	1,696,517	7
North Carolina	92,882	14	642,935	13
North Dakota	569	50	8,618	44
Ohio	29,646	21	157,522	24
Oklahoma	7,967	33	65,995	29
Oregon	96,589	13	463,438	16
Pennsylvania	232,462	8	924,659	10
Rhode Island	50,262	17	461,468	17
South Carolina	125,483	11	1,080,037	9
South Dakota	0	51	0	51
Tennessee	22,925	24	162,252	23
Texas	378,771	3	2,159,294	4
Utah	993	48	2,987	49
Vermont	3,263	44	15,653	40
Virginia	178,713	9	1,790,531	5
Washington	270,293	5	1,696,891	6
West Virginia	12,415	29	41,663	33
Wisconsin	860	49	862	50
Wyoming	4,861	42	19,939	38

Source: 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, U.S. Department of the Interior, Fish and Wildlife Service.

Table 2. Number of Shellfishermen Age 16+ and Number of Shellfishing Days by Census Region and Division of Residence, 1985

Census Region/Division	Shellfishermen	Shellfishing Days	Mean Number of Days Per Fisherman
EAST			
New England	247,808	1,895	7.7
Mid-Atlantic	725,282	3,926	5.4
Total	973,090	5,821	6.0
SOUTH			
W. South Central	524,617	2,748	5.3
E. South Central	91,380	647	7.1
South Atlantic	1,313,969	13,165	10.0
Total	1,929,966	16,596	8.6
WEST			
Pacific	849,839	5,251	6.2
Mountain	56,147	199	3.8
Total	905,986	5,450	6.0
MIDWEST			
E. North Central	58,878	267	4.5
W. North Central	28,306	113	5.5
Total	87,184	380	4.8
TOTAL U.S.	3,896,226	28,248	7.3

Source: 1985 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, U.S. Department of the Interior, Fish and Wildlife Service.

Table 3. Number of Shellfishermen Age 16+ and Number of Shellfishing Days by State of Activity, 1985

State	Shellfishermen by State of Activity		Shellfishing Days by State of Activity	
	Number*	Rank	Number (000)	Rank
U.S.	4,019,277	---	28,248	---
Alabama	24,490	22	222	19
Alaska	30,326	21	150	22
California	416,288	2	2,179	3
Connecticut	67,351	16	212	20
Delaware	141,518	10	1,033	10
Florida	604,639	1	3,811	2
Georgia	55,191	17	301	17
Hawaii	46,745	18	579	15
Louisiana	135,241	11	688	13
Maine	30,869	20	193	21
Maryland	361,157	4	5,084	1
Massachusetts	126,644	13	1,079	9
Mississippi	43,308	19	224	18
New Hampshire	11,383	23	66	23
New Jersey	351,321	5	1,631	6
New York	184,443	8	1,388	7
North Carolina	129,973	12	1,009	11
Oregon	101,164	14	461	16
Rhode Island	86,543	15	609	14
South Carolina	197,049	7	1,277	8
Texas	402,817	3	2,102	4
Virginia	150,981	9	868	12
Washington	319,836	6	1,748	5

* The total number of shellfishermen is greater than that presented in Tables 1 and 2 because a person can participate in shellfishing in more than one state.

Source: 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, U.S. Department of the Interior, Fish and Wildlife Service.

Table 4. Number of Shellfishermen Age 16+ and Number of Shellfishing Days by Census Region and Division of Activity, 1985

Census Region/Division	Shellfishermen*	Shellfishing Days (000)
EAST		
New England	322,790	2,159
Mid-Atlantic	535,764	3,019
Total	858,554	5,178
SOUTH		
W. South Central	538,058	2,790
E. South Central	67,798	446
South Atlantic	1,640,508	13,383
Total	2,246,364	16,619
WEST		
Pacific	914,359	5,117
Mountain	0	0
Total	914,359	5,117
MIDWEST		
E. North Central	0	0
W. North Central	0	0
Total	0	0
Division/Region Unspecified	0	1,334
TOTAL U.S.	4,019,277	28,248

* The total number of shellfishermen is greater than that presented in Tables 1 and 2 because a person can participate in shellfishing in more than one state.

Source: 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, U.S. Department of the Interior, Fish and Wildlife Service.

Table 5. A Comparison of Socio-demographic Characteristics of Shellfishermen Age 16+ with the General Population Age 16+ and Participants in Other Outdoor Recreation Activities

	Total U.S. Population 16+ (000's)		Shellfishermen (000's)			Saltwater Fishermen (000's)			Freshwater Fishermen (000's)			Hunters (000's)		
Characteristics	Number	%	Number	% Part.[a]	%[b]	Number	% Part.[a]	%[b]	Number	% Part.[a]	%[b]	Number	% Part.[a]	%[b]
Total	181,095	100	3,896.2	2	100	13,709	8	100	39,823	22	100	16,684	9	100
Race														
White	156,214	86	3,535.7	2	91	12,424	8	91	36,930	24	93	16,014	10	96
Other	24,881	14	360.5	1	9	1,284	5	9	2,893	12	7	670	3	4
Sex														
Male	85,781	47	2,496.9	3	64	9,743	11	71	27,014	31	68	15,195	18	91
Female	95,314	53	1,399.3	1	36	3,966	4	29	12,809	13	32	1,489	2	9
Education														
8 Years or Less	18,108	10	173.1	1	4	695	4	5	2,896	16	7	1,245	7	8
9-11 Years	26,675	15	412.6	2	11	1,646	6	12	6,454	24	16	2,870	11	17
12 Years	69,751	39	1,344.5	2	34	4,844	7	35	15,500	22	39	6,806	10	41
1-3 Years College	34,272	19	849.2	2	22	2,957	9	22	8,012	23	20	3,233	9	19
4 Years College	16,976	9	495.4	3	13	1,759	10	13	3,764	22	10	1,378	8	8
5+ Years College	15,313	8	621.4	4	16	1,808	12	13	3,197	21	8	1,152	8	7
Household Income														
Under $10,000	27,670	15	260.9	1	7	863	3	6	4,332	16	11	1,605	6	10
$10,000 - $19,999	40,769	23	743.1	2	19	2,442	6	18	8,932	22	22	3,735	9	22
$20,000 - $24,999	16,350	9	285.8	2	7	1,190	7	9	3,931	24	10	1,746	11	11
$25,000 - $29,999	25,517	14	622.0	2	16	2,068	8	15	6,345	25	16	2,662	10	16
$30,000 - $49,999	40,255	22	1,158.0	3	30	4,188	10	30	10,311	26	26	4,353	11	26
$50,000 - $74,999	13,750	8	392.9	3	10	1,452	11	11	3,073	22	8	1,335	10	8
$75,000 or more	7,520	4	230.7	3	6	882	12	6	1,529	20	4	688	9	4
Unreported	9,264	5	202.8	2	5	624	7	5	1,370	15	3	560	6	3
Age														
16 - 17 Years	7,659	4	141.2	2	4	519	7	4	2,156	28	6	1,056	14	6
18 - 24 Years	25,509	14	504.9	2	13	1,713	7	12	6,106	24	15	2,896	11	17
25 - 34 Years	39,471	22	1,023.4	3	26	3,769	10	28	10,818	27	27	4,588	12	28
35 - 44 Years	33,787	19	885.8	3	23	3,241	10	24	8,715	26	22	3,597	11	22
45 - 54 Years	23,885	13	549.0	2	14	1,851	8	13	4,861	20	12	2,152	9	13
55 - 64 Years	22,754	13	506.9	2	13	1,594	7	12	3,991	18	10	1,498	7	9
65+ Years	28,030	15	285.0	1	7	1,022	4	7	3,176	11	8	897	3	5

a. Percent of people in category that participated in the activity as a percent of the general population.

b. Percent of total participants in category.

Source: 1985 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation; U.S. Department of the Interior, Fish and Wildlife Service.

Table 6. Shellfishermen Age 16+: Participation in Other Activities, 1985

Activity	Number of Shellfishermen	Percent	Days of Shellfishing		Days in Other Activities	
			Average	Total (000's)	Average	Total (000's)
Total	3,896,226	100.0	7.3	28,248	23.4	91,164
Hunt						
Yes	674,046	17.3	7.6	5,000	21.3	14,218
No	3,222,180	82.7	7.4	23,248	N/A	N/A
Freshwater Fish						
Yes	1,940,321	49.8	6.7	12,712	21.7	39,972
No	1,955,906	50.2	8.2	15,536	N/A	N/A
Saltwater Finfish						
Yes	3,895,404	100	7.3	28,242	13.1	37,262
No	822	0	7.3	6	N/A	N/A

Source: 1985 National Survey of Fishing, Hunting and Wildlife-Associated Recreation , U.S. Department of the Interior, Fish and Wildlife Service.

Table 7. Expenditures by Shellfishermen for Saltwater Fishing, 1985

Expenditure Catagory	Shellfishermen[a] (millions $)	%	Hunters (millions $)	%	Freshwater Fishermen (millions $)	%	Saltwater Fishermen (millions $)	%	Shellfishermen's Expenditures as a Percent of Total Saltwater Fishing Expenditures[b]
Food and Lodging	464	20	1,884	18	4,209	21	1,457	20	32
Transportation	228	10	1,613	15	2,930	15	799	11	29
Other Trip Costs	421	18	218	2	2,342	12	1,544	21	27
Activity Specific Equipment	212	9	2,750	26	1,907	10	562	8	38
Auxiliary/Special Equipment	960	41	2,183	21	6,864	35	2,711	37	35
Other Expenditures	64	2	1,411	18	1,131	7	170	3	37
Total	2,349	100	10,059	100	19,383	100	7,243	100	32

a. Includes spending for saltwater fishing by saltwater fishermen that participated in shellfishing. Separate estimates for only shellfishing activity are not available.
b. Spending by shellfishermen for saltwater fishing divided by total spending for saltwater fishing.

Source: 1985 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, U.S. Department of the Interior, Fish and Wildlife Service.

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