

Socioeconomic Characteristics of
**Mississippi
Lifetime
Sportsmen**

Licensed in 1989–2013



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INTRODUCTION

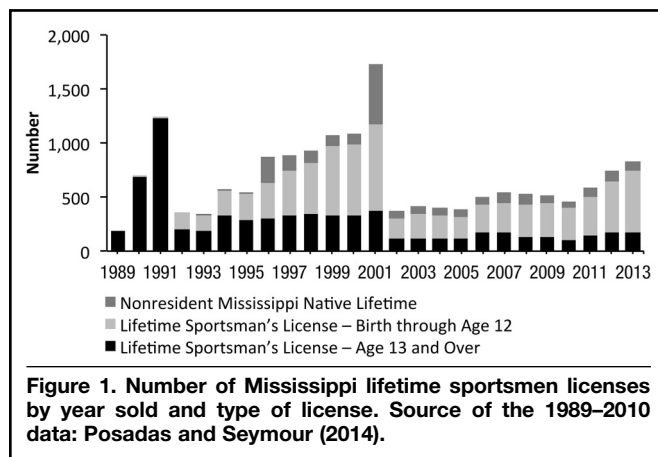
The purchase of Mississippi lifetime sportsman licenses (MLSL) allows holders to hunt and/or fish during a legal season and to take any game or fish, except waterfowl, without the purchase of additional license or permits unless required by law (MDWFP, 2012a). The MLSL allows fishermen to take fish, crabs, oysters, shrimp, and any other saltwater fish authorized to be taken under recreational permit. Due to the nature of the MLSL, the annual licensing process for saltwater recreational fishing does not cover these sportsmen. Therefore, Mississippi lifetime sportsmen who fish in state waters are not included in the database of the licensed state saltwater recreational fishermen.

A sportsmen survey conducted in 2012 by Posadas and Seymour (2014) showed that from 1989 to 2010, there were 14,706 MLSL holders listed in the official database provided by the Mississippi Department of Fisheries, Wildlife, and Parks (MDFWP). MDFWP sold an additional 2,154 licenses between January 2011 and July 2013. When the two databases were combined, the total number of licenses issued as of July 2013 reached 16,778 sportsmen. In order to eliminate double counting, this total number excludes 82 sportsmen who bought their licenses in 2011 and were included in both the 1989–2010 survey and the 2011–2013 survey.

The number of lifetime sportsmen licenses sold underwent three major long-term trends, starting with

189 licenses sold in 1989 to 1,232 licenses sold in 1991, consisting mostly of sportsmen 13 years and older (Figure 1). However, license sales significantly declined to 362 licenses in 1992 and peaked at 1,730 licenses in 2001, with increasing purchases by sportsmen 12 years old and younger. The third period started with 376 licenses sold in 2002 and peaked at 824 in 2013, with more sportsmen 12 years old and younger buying licenses.

The NOAA Fisheries (2014) interactive fisheries economic impacts tool estimates the expenditures and economic impacts of the saltwater recreational fishing sector in the U.S. More than 331,000 recreational



anglers went fishing in Mississippi waters in 2012—54% were from coastal areas, 18% were from noncoastal areas, and 27% were from out of state. Saltwater recreational fishing created an economic impact of about \$144 million in 2012. The economic sector provided jobs to 1,649 workers and provided more than \$54 million in personal income in 2012. The economic impacts cover marine recreational fishing expenditures on durable equipment, for-hire trips, private boat trips, and shore trips. These impacts were estimated from the fishing trips and durable expenditures survey of licensed Mississippi saltwater anglers. In order to enhance the estimation of the saltwater recreational fishing impacts, frequent updates of the marine saltwater recreational fishermen registry are needed by the state and federal regulatory agencies managing the marine resources. These updates consist of the sportsmen's contact information, saltwater recreational fishing participation, and socioeconomic characteristics.

The regulations governing saltwater recreational fishing in the state of Mississippi are best described by the following law-enforcement section of the MDWFP (2012b):

Each resident of the State of Mississippi ages sixteen to sixty-four, fishing in the fresh or marine waters of Mississippi, including lakes and reservoirs but NOT to include privately owned ponds and streams, shall be required to buy a fishing license. A saltwater license is required south of U.S. Highway 90 and a freshwater or saltwater license is valid between I-10 and U.S. Highway 90. Saltwater license is not valid north of I-10. Any person sixty-five or

older, or any person otherwise exempted from obtaining a fishing license, must have documentation with him/her at all times while fishing as described in Exemptions. [MS. Code 49-7-9]

An online and mailed survey was conducted to verify the contact information and determine the saltwater fishing preferences of Mississippi lifetime sportsmen who bought their licenses between January 2011 and July 2013. The specific objectives of this survey were (1) to determine the past saltwater-fishing preferences of these sportsmen and (2) to determine their future saltwater fishing preferences.

Results of this survey provide updated contact information and saltwater fishing preferences of the sportsmen. Information on fishing preferences is limited to whether they went saltwater fishing and where they went saltwater fishing in Mississippi waters. The saltwater-fishing preferences of the sportsmen are reported by state of residence, license name, and year license was purchased. In addition, this bulletin compares the socioeconomic characteristics of the sportsmen who responded to the survey and those who went saltwater fishing in Mississippi waters.

The socioeconomic and saltwater fishing information about the sportsmen can be added to the registry databases on the marine recreational fishing licenses issued by the state. The lifetime sportsmen's participation in this survey will allow the state's saltwater anglers to remain exempt from federal recreational fishing license requirements, as per memorandum of agreement between the NOAA Fisheries and the Mississippi Department of Marine Resources (Federal Register 2012).

METHODS

Data Collection

Between January 2011 and July 2013, a total of 2,154 licenses were listed in the MDWFP official database of Mississippi lifetime sportsmen. All of these sportsmen were contacted by mail and by email (for those who had email addresses) to seek their participation in the survey (Appendix A). Sportsmen had the option of completing the mailed survey or completing the online survey. Their past saltwater fishing preferences were determined by asking whether they went saltwater fishing in 2011, 2012, and 2013 (Appendix B, questions 1–3). Future saltwater fishing preferences were determined by asking them to indicate whether

they planned to go saltwater fishing in 2014 (Appendix B, question 4).

Results of the 2012 survey conducted by Posadas and Seymour (2014) were used to develop survey-participation models that predict and explain the participation of Mississippi lifetime sportsmen in mail and online surveys. The results of these models were used to maximize participation in the 2014 survey by Mississippi lifetime sportsmen (Posadas 2014). The sportsmen's participation in the survey is hypothesized to be a function of the sportsmen's own characteristics and survey tools used by the researcher. Participation is measured as a binary variable indicating either partici-

pation or nonparticipation in the survey. Sportsmen characteristics included year of license purchase, type of license, state of residence, and distance from the Harrison County (where the researcher is located). Survey tools included postcard mailings and returns, survey mailings and returns, and emails sent and bounced. Following is a detailed list of activities conducted to collect the data about the Mississippi lifetime sportsmen licensed in 2011–13:

- Prepared drafts of the letter of recruitment and questionnaire in July 2013. Updated mailing and email addresses of 2,154 lifetime sportsmen in July 2013.
- Estimated mileage and driving time from sportsman residence to all three coastal sites selected as reference points in August 2013. Applied for MSU Internal Review Board approval of survey instruments and protocols in August 2013.
- Received approval of project contract and project fund notification from MSU Sponsored Program Administration in September 2013. Completed survey instruments to be mailed to 2,154 new lifetime sportsmen in October 2013. Created online version of the survey using Survey Monkey in November 2013. Prepared first postcard to verify mailing addresses of 2,154 new lifetime sportsmen in December 2013.
- Prepared project website at <http://www.coastal.msstate.edu/lifetimesportsman.html> in January 2014. Prepared Excel database template for data entry in January 2014.
- Mailed first postcard to verify mailing addresses of 2,154 new lifetime sportsmen in February 2014. About 62 postcards, or 2.9 percent, of the total were returned due to faulty addresses. Cleaned up mailing addresses again using results of first postcard mailing to 2,154 new lifetime sportsmen in March 2014.
- Prepared and mailed first letter and survey to 2,154 new lifetime sportsmen in April 2014. About 140 envelopes, or 6.5 percent of the total, were returned due to faulty addresses. Started scanning and tabulating first mail survey results in May 2014. Almost 500 sportsmen participated in the first mail survey.
- Emailed 1,223 lifetime sportsmen with email addresses to inform them about the online survey in May and June 2014. About 129 emails, or 10.6 percent of sportsmen with email addresses, were returned by the recipients' servers.
- Prepared and mailed second letter and survey to lifetime sportsmen in July 2014. Started scanning

- second mail survey results in August 2014. Started tabulating second mail and first online survey results in September 2014. More than 250 sportsmen participated in the second mail and first online surveys.
- Started compiling database and preparing summary tables and charts in October 2014. Started preparing project report for submission to MDMR in October 2014.
- Prepared and mailed second postcard reminder and thank-you card to lifetime sportsmen in November 2014. Prepared and mailed third letter and survey to lifetime sportsmen in November 2014. None of the mails were returned.
- By January 2015, about 756 Mississippi lifetime sportsmen participated in the mailed and online survey, representing about 35.1 percent of the total. Started analyzing database using Stata and SPSS in March and April 2015. Prepared database for submission to MDMR and GSMFC in April 2015.
- Submitted final progress report to MDMR in May 2015. Submitted the updated Mississippi lifetime sportsmen database to MDMR in June 2015. Submitted final project report to MDMR in June 2015.

Data Analysis

The total population and the recreational saltwater fishing preferences of licensed Mississippi lifetime sportsmen were cross-tabulated with known characteristics provided in the database using SPSS (version 22 for Windows; SPSS, Chicago). Total population of sportsmen was measured by the number and percentages of those who bought different lifetime sportsman licenses. Fishing preferences were measured by the number and percentages of those who went saltwater fishing from 2011–13 and planned to go saltwater fishing in 2014.

Cross-tabulating the population of Mississippi lifetime sportsmen and recreational saltwater-fishing preferences with the state of residence provided a spatial distribution of where the sportsmen were located. Cross tabulating the population and saltwater-fishing preferences with license type exhibited the whole range of the lifetime licenses bought by the sportsmen. Cross tabulating the population and saltwater-fishing preferences with license year demonstrated the temporal distribution of when the lifetime sportsmen purchased licenses.

The survey determined some relevant socioeconomic characteristics of Mississippi lifetime sportsmen,

including birth year, employment status, annual personal income, race or ethnicity, and last grade or year of school completed (Appendix B). The descriptive characteristics of the lifetime sportsmen are measured in terms of frequency and percent distribution by specific socioeconomic characteristic included in the survey. These characteristics will be used to determine the significant factors influencing saltwater recreational fishing choices made by the lifetime sportsmen who participated in the survey.

Understanding the Mississippi lifetime sportsmen's preferences for recreational saltwater fishing enhances the estimation of the overall economic contribution of the economic sector to the economy of Mississippi and the Gulf of Mexico region. The Mississippi lifetime sportsman's decision of whether to go saltwater fishing is hypothesized to be a function of his expected level of satisfaction subject to his personal characteristics, as well as properties of the sportsman license bought.

SPATIAL AND TEMPORAL DISTRIBUTION OF SPORTSMEN

Distribution by State of Residence

By tabulating current residences, the spatial distribution of the total population of licensed Mississippi lifetime sportsmen by state of residence was developed. State of residence determines whether saltwater-fishing expenditures were in-state or out-of-state transactions. Among the lifetime sportsmen who bought their licenses between January 2011 and July 2011, 1,794 resided in Mississippi—83.3% of the total number licensed. This number is slightly higher than the 79.6% who bought their licenses from 1989 to 2010 (Figure 2). Overall, 80% of the sportsmen resided in Mississippi. Table 1 shows the spatial distribution of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 in all participating states.

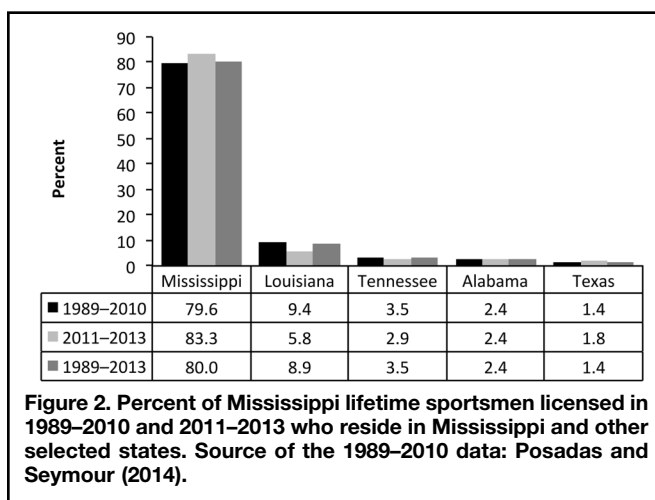


Figure 2. Percent of Mississippi lifetime sportsmen licensed in 1989–2010 and 2011–2013 who reside in Mississippi and other selected states. Source of the 1989–2010 data: Posadas and Seymour (2014).

Table 1. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 by state of residence.

State	No. licensed	Pct. licensed	State	No. licensed	Pct. licensed
Mississippi	1,794	83.29	Michigan	2	0.09
Louisiana	125	5.80	New York	2	0.09
Tennessee	64	2.97	South Carolina	2	0.09
Alabama	51	2.37	Virginia	2	0.09
Texas	38	1.76	Alaska	1	0.05
Arkansas	20	0.93	California	1	0.05
Florida	10	0.46	Indiana	1	0.05
Georgia	10	0.46	Maryland	1	0.05
Illinois	6	0.28	New Mexico	1	0.05
Colorado	5	0.23	North Dakota	1	0.05
Missouri	5	0.23	Ohio	1	0.05
North Carolina	4	0.19	Wyoming	1	0.05
Iowa	3	0.14	All states	2,154	100.00
Kentucky	3	0.14			

Distribution by County of Residence

By tabulating the population of Mississippi lifetime sportsmen by county of residence, the spatial distribution of the licensed lifetime sportsmen residing in the state was established. The location by county determines the source of in-state saltwater-fishing expenditures either from coastal or noncoastal counties. Madison, Hinds, Rankin, DeSoto, and Harrison Counties had the most lifetime sportsmen during the periods covered (Figure 3). Table 2 shows the spatial distribution of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 in all participating Mississippi counties. Approximately 7.8% of all the sportsmen residing in Mississippi are located in the three coastal counties, Hancock County (0.09%), Harrison County (4.1%), and Jackson County (2.8%).

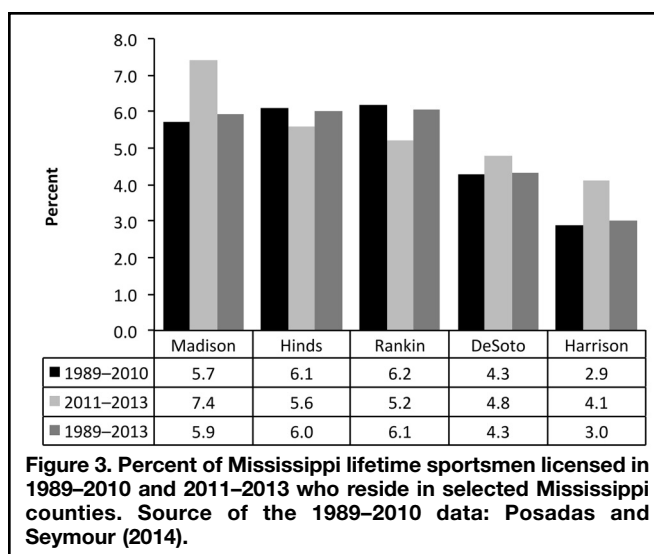


Figure 3. Percent of Mississippi lifetime sportsmen licensed in 1989-2010 and 2011-2013 who reside in selected Mississippi counties. Source of the 1989-2010 data: Posadas and Seymour (2014).

Table 2. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 by Mississippi county of residence.

County	No. licensed	Pct. licensed	County	No. licensed	Pct. licensed
Madison	132	7.4	Winston	14	0.8
Hinds	100	5.6	Monroe	14	0.8
Rankin	94	5.2	Marshall	14	0.8
Desoto	87	4.8	Lawrence	14	0.8
Harrison	74	4.1	Tate	13	0.7
Jackson	51	2.8	Neshoba	13	0.7
Forrest	48	2.7	Leake	13	0.7
Warren	47	2.6	Union	12	0.7
Washington	46	2.6	Scott	11	0.6
Lincoln	44	2.5	Jasper	11	0.6
Bolivar	39	2.2	Clay	11	0.6
Lee	38	2.1	Tishomingo	10	0.6
Lauderdale	36	2.0	Tallahatchie	10	0.6
Jones	36	2.0	Sharkey	10	0.6
Pearl River	34	1.9	Noxubee	9	0.5
Lafayette	32	1.8	Clarke	9	0.5
Panola	31	1.7	Choctaw	9	0.5
Copiah	31	1.7	Carroll	9	0.5
Alcorn	31	1.7	Jefferson Davis	8	0.4
Oktibbeha	27	1.5	Wilkinson	7	0.4
Lowndes	27	1.5	Wayne	7	0.4
Franklin	26	1.4	Simpson	7	0.4
Amite	25	1.4	Chickasaw	7	0.4
Adams	25	1.4	Yalobusha	6	0.3
Prentiss	23	1.3	Stone	6	0.3
Itawamba	23	1.3	Smith	6	0.3
Pontotoc	22	1.2	Tunica	5	0.3
Lamar	21	1.2	Kemper	5	0.3
Yazoo	19	1.1	Claiborne	5	0.3
Sunflower	19	1.1	Perry	4	0.2
Pike	19	1.1	Issaquena	4	0.2
Newton	19	1.1	Humphreys	4	0.2
Grenada	19	1.1	Holmes	4	0.2
George	19	1.1	Greene	4	0.2
Marion	18	1.0	Benton	4	0.2
Leflore	18	1.0	Walthall	3	0.2
Hancock	17	0.9	Quitman	3	0.2
Attala	17	0.9	Montgomery	3	0.2
Coahoma	16	0.9	Jefferson	3	0.2
Calhoun	16	0.9	Covington	2	0.1
Tippah	15	0.8	All Counties	1,794	100.0

Distribution by License Type

There are three basic types of Mississippi lifetime sportsman licenses (MDWFP 2012c). The R1 or lifetime sportsman license for ages 13 and over costs \$1,000. The R2 or lifetime sportsman license for ages 12 and under costs \$500. The N2 or nonresident Mississippi native lifetime sportsman license costs \$1,500. Table 3 shows the distribution of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 by license type. Figure 4 shows the percent of lifetime sportsmen licensed by license type during the two periods surveyed. Overall, 46.4% of the sportsmen bought the R2 license.

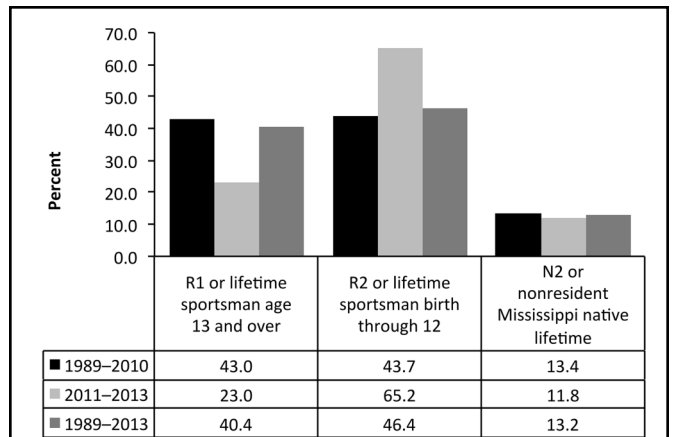


Figure 4. Percent of Mississippi lifetime sportsmen licensed in 1989-2010 and 2011-2013 by license type. Source of the 1989-2010 data: Posadas and Seymour (2014).

Table 3. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 by license type.

License type	No. licensed	Pct. licensed
R1 or lifetime sportsman age 13 and over	495	23.0
R2 or lifetime sportsman birth through 12	1,404	65.2
N2 or nonresident Mississippi native lifetime	255	11.8
All license types	2,154	100.0

Distribution by Age Group

Mississippi lifetime sportsmen who were licensed in 2011-2013 were relatively young—18 years and younger (Table 4). The distribution of sportsmen who bought their licenses during the two periods since 1989 are shown in Figure 5. Observe that sportsmen who were licensed in 1989-2010 were surveyed in 2012, while those surveyed in 2014 were licensed in 2011-2013. Overall, more than one-third of the sportsmen were 18 years old or younger.

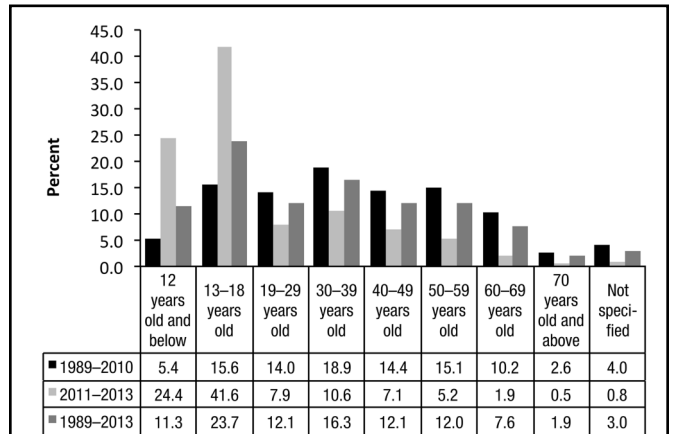


Figure 5. Percent of Mississippi lifetime sportsmen licensed in 1989-2010 and 2011-2013 by age group. Source of the 1989-2010 data: Posadas and Seymour (2014).

Table 4. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 by age group.

Age group	No. licensed	Pct. licensed
12 years old and below	526	24.4
13-18 years old	897	41.6
19-29 years old	170	7.9
30-39 years old	228	10.6
40-49 years old	152	7.1
50-59 years old	113	5.2
60-69 years old	41	1.9
70 years old and above	10	0.4
Not specified	17	0.8
All age groups	2,154	100.0

CHARACTERISTICS OF PARTICIPATING SPORTSMEN

There were 756 Mississippi lifetime sportsmen who participated in the 2014 mailed and online survey, which represents about 35.1% of the total number licensed between January 2011 and July 2013. These sportsmen provided information about their annual income, employment status, race or ethnicity, education, and year of birth. The 2014 survey, which covered 2011–2013, generated more returns as compared with the response rate of 32.3% in the 2012 survey, which covered 1989–2010. Apparently, the timely application of the results of the 2012 survey participation models in the conduct of the 2014 survey contributed to the higher participation rate.

Distribution by Employment Status

Table 5 shows the distribution by employment status of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey. Most participating sportsmen were students (52.4%) and

employed (25.1%). Posadas and Seymour (2014) reported that in the 1989–2010 survey of sportsmen, 47% were employed and 22.9% were students (Figure 6). Overall, 46.6% of the sportsmen were employed, while 25.7% were students.

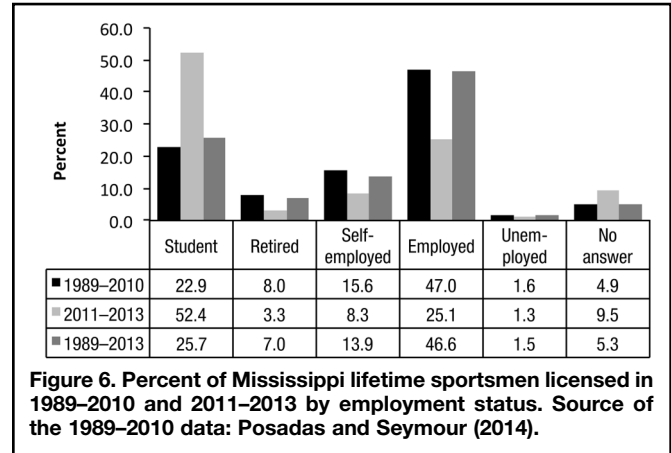


Figure 6. Percent of Mississippi lifetime sportsmen licensed in 1989–2010 and 2011–2013 by employment status. Source of the 1989–2010 data: Posadas and Seymour (2014).

Table 5. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey by employment status.

Employment status	No. participating	Pct. participating
Student	396	52.4
Retired	25	3.3
Self-employed	63	8.3
Employed	190	25.1
Unemployed	10	1.3
No Answer	72	9.5
All employment status	756	100.0

Distribution by Personal Income

Sportsmen were asked about their annual personal income from all sources before income taxes in 2013. Table 6 shows the distribution by personal income of sportsmen licensed from January 2011 to July 2013 who participated in the survey. The biggest group (43.7%) consisted of respondents who belonged to the “no income” category, followed by 16% who did not answer the question. Posadas and Seymour (2014) reported that during the 2012 survey, the largest group of sportsmen (29.2%) chose not to answer the question (Figure 7). Overall, one-third of the sportsmen reported no income or decided not to state their income.

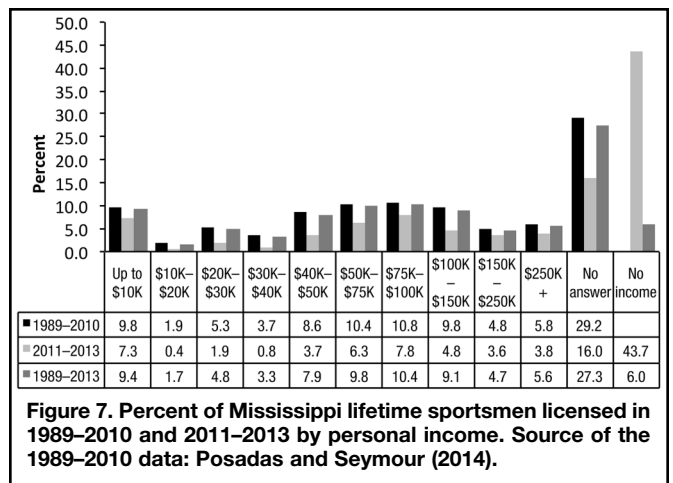


Figure 7. Percent of Mississippi lifetime sportsmen licensed in 1989-2010 and 2011-2013 by personal income. Source of the 1989-2010 data: Posadas and Seymour (2014).

Table 6. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey by personal income.

Personal income	No. participating	Pct. participating
Less than \$10,000	55	7.3
\$10,000 to \$20,000	3	0.4
\$20,000 to \$30,000	14	1.9
\$30,000 to \$40,000	6	0.8
\$40,000 to \$50,000	28	3.7
\$50,000 to \$75,000	48	6.4
\$75,000 to \$100,000	59	7.8
\$100,000 to \$150,000	36	4.8
\$150,000 to \$250,000	27	3.6
More than \$250,000	29	3.8
No answer	115	16.0
No income	330	43.7
All income groups	756	100.0

Distribution by Race

Participants also were asked about their race or ethnicity. Table 7 shows the distribution by race or ethnicity of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey. A majority of the 2011-2013 respondents (93.3%) belonged to the Caucasian race, which was a little less than the 94.8% reported during the 1989-2010 survey (Figure 8). Some sportsmen did not specify their racial origins: 4.1% of 2011-2013 respondents, compared to 3.5% of 1989-2010 respondents. Overall, 94.6% of respondents belonged to the Caucasian race.

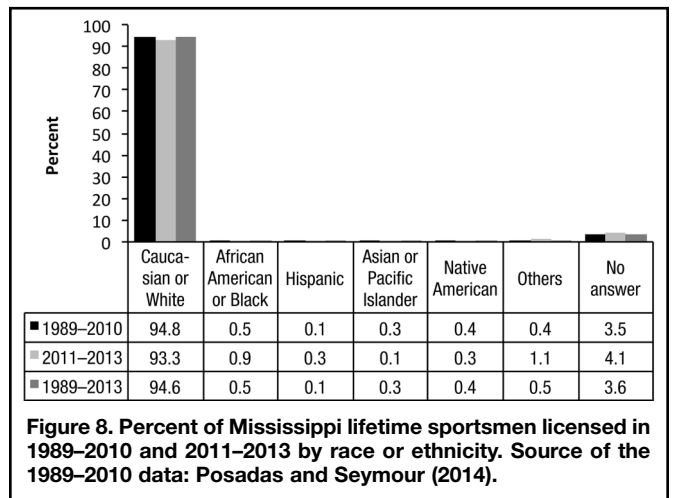


Figure 8. Percent of Mississippi lifetime sportsmen licensed in 1989-2010 and 2011-2013 by race or ethnicity. Source of the 1989-2010 data: Posadas and Seymour (2014).

Table 7. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey by race or ethnicity.

Race or ethnicity	No. participating	Pct. participating
Caucasian or White	705	93.3
Black or African American	7	0.9
Hispanic	2	0.3
Asian or Pacific Islander	1	0.1
Native American	2	0.3
Others	8	1.1
No answer	31	4.1
All racial groups	756	100.0

Distribution by Educational Attainment

Lifetime sportsmen were asked about their highest level of formal education. Table 8 shows the distribution by last grade or year in school completed by Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey. As indicated by the younger ages of the 2011–2013 sportsmen, more than half of the respondents had completed high school or less. Among the 1989–2010 sportsmen, Posadas and Seymour (2014) reported that the largest group (44.3%) completed a 4-year college degree or higher (Figure 9). Overall, 41.6% of all sportsmen had completed at least a 4-year college degree.

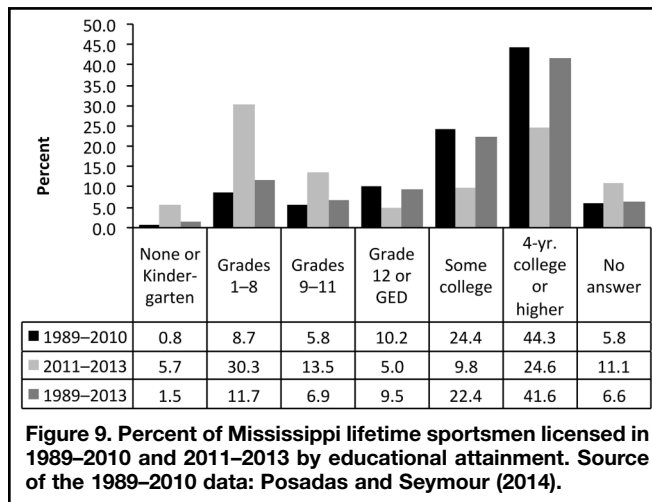


Table 8. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey by educational attainment.

Educational attainment	No. participating	Pct. participating
Never attended school or only attended kindergarten	43	5.7
Grades 1 through 8	229	30.3
Grades 9 through 11	102	13.5
Grade 12 or GED	38	5.0
Some college, associate degree, or technical school	74	9.8
Four-year college degree or higher	186	24.6
No answer	84	11.1
All educational levels	756	100.0

RECREATIONAL SALTWATER FISHING PREFERENCES

Sportsmen who responded to the 2014 survey were asked about their recreational saltwater fishing activities in 2011, 2012, 2013, and 2014. They were asked whether they went recreational saltwater fishing in Mississippi waters. The overall percentages of respondents who went fishing in 2012 and 2013 and planned to go fishing in 2014 tended to be higher than the percentage in 2011. In the 2012 survey conducted by Posadas and Seymour (2014), sportsmen licensed in 1989–2010 were asked about their recreational saltwater fishing preferences in 2009, 2010, 2011, and 2012. Fewer sportsmen went fishing in 2010 (20.8%) as compared with 2009 (22.6%). An increasing overall fishing activity was reported in 2011 (24.7%) and 2012 (27%) as compared with previous years. Figure 10 compares the recreational saltwater-fishing activities in Mississippi by sportsmen who responded to the two surveys conducted in 2012 and 2014. The 1989–2010 group showed relatively more fishing activity than the relatively younger sportsmen licensed in 2011–2013.

Considerable segments of sportsmen who responded to the 2012 and 2014 surveys were undecided about their plans for going recreational saltwater fishing in the future. In the 2014 survey, about 31.7% were undecided about fishing that year. About 42.2% of the respondents in the 2012 survey were not sure whether they would go fishing that year.

Preferences by State of Residence

Table 9 shows the recreational saltwater-fishing activities in Mississippi by sportsmen who responded to the 2014 survey by major state of residence. The percent of Mississippi respondents who went fishing in 2012 and 2013 and planned to go fishing in 2014 tended to be higher than in 2011. No clear trends, however, were observed among

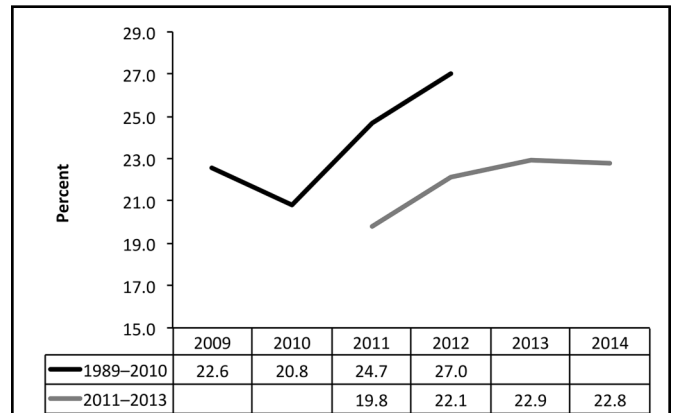


Figure 10. Percent of Mississippi lifetime sportsmen licensed in 1989–2010 and 2011–2013 who went saltwater recreational fishing in Mississippi in 2011 by fishing year. Source of the 1989–2010 data: Posadas and Seymour (2014).

sportsmen residing in other states due to the low number of responses.

Among the respondents in the 2012 survey (Posadas and Seymour 2014), significant differences by state of residence were observed in the percentages of sportsmen who went fishing from 2009 to 2012.

The various segments of sportsmen who were undecided about going recreational saltwater fishing in 2014 were compared by state of residence (Table 9). No significant differences in the percent of undecided sportsmen were observed among the states in the 2014 survey. The percentage of 2012 survey respondents who were indecisive about future saltwater fishing that year was significantly different among the states. The percentages by major states are as follows: Mississippi (41.4%), Louisiana (42.9%), Tennessee (47.8%), Alabama (44.9%), and Texas (56.6%).

Table 9. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing by state of residence.

State of residence	No. participating in survey	Pct. who went fishing in 2011 ^{ns}	Pct. who went fishing in 2012 ^{ns}	Pct. who went fishing in 2013 ^{ns}	Pct. who planned to fish in 2014 ^{ns}	Pct. undecided about fishing in 2014 ^{ns}
Mississippi	605	20.8	23.5	25.5	25.0	30.6
Louisiana	49	12.2	18.4	11.2	14.3	42.9
Tennessee	27	18.5	18.5	6.2	6.1	25.9
Alabama	26	34.6	26.9	5.9	30.8	26.9
Texas	14	7.1	7.1	0	0	35.7
All states	756	19.8	22.1	22.9	22.8	31.7

ns — Pearson Chi square not significant at 0.05.

Preferences by License Type

Recreational saltwater fishing activities of participating Mississippi lifetime sportsmen in 2011, 2012, 2013, and 2014 were compared by license type (Table 10). Significant differences were observed in fishing activities in Mississippi by sportsmen who bought different types of licenses. The R1 sportsmen tended to fish more than the R2 sportsmen, who also tended to fish more than the N2 sportsmen. When compared to the 2012 survey of sportsmen licensed in 1989–2010, the fishing preferences in 2011 and 2012

showed similar preferences by respondents in the 2012 survey of sportsmen licensed in 2011–2013 (Figures 11–12).

There were significant differences in the decision of whether to go saltwater fishing in the future among sportsmen who bought different license types. In the 2014 survey, more of the R1 sportsmen (37.9%) tended to be undecided than the N2 (34.8%) and the R2 (28.8%) sportsmen. In the 2012 survey, significantly more of the N2 sportsmen (43.5%) were undecided than the R1 (42.3%) and the R2 (41.3%) sportsmen.

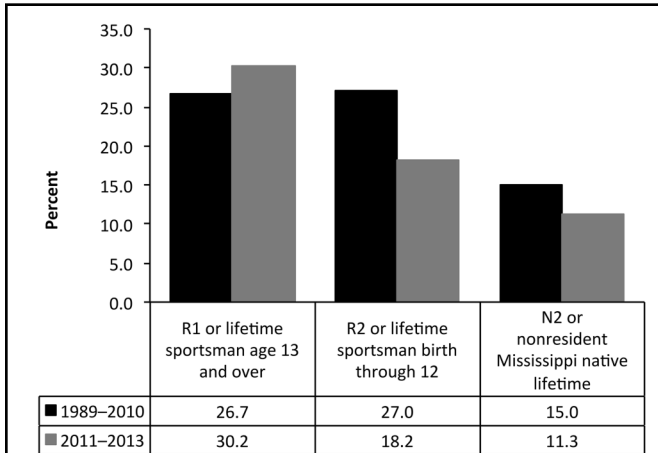


Figure 11. Percent of Mississippi lifetime sportsmen licensed in 1989–2010 and 2011–2013 who went saltwater recreational fishing in Mississippi in 2011 by license type. Source of the 1989–2010 data: Posadas and Seymour (2014).

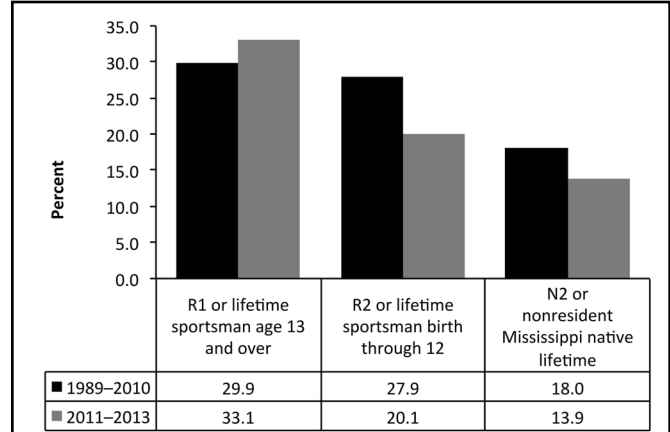


Figure 12. Percent of Mississippi lifetime sportsmen licensed in 1989–2010 and 2011–2013 who went saltwater recreational fishing in Mississippi in 2012 by license type. Source of the 1989–2010 data: Posadas and Seymour (2014).

Table 10. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing by license type.

License type	No. participating in survey	Pct. who went fishing in 2011 ***	Pct. who went fishing in 2012 ***	Pct. who went fishing in 2013 *	Pct. who planned to fish in 2014 ***	Pct. undecided about fishing in 2014 ***
R1 or lifetime sportsman age 13 and over	169	30.2	33.1	29.6	30.2	37.9
R2 or lifetime sportsman birth through 12	472	18.2	20.1	23.1	22.5	28.8
N2 or nonresident Mississippi native	115	11.3	13.9	12.2	13.0	34.8
All license types	756	19.8	22.1	22.9	22.8	31.7

***, * — Pearson Chi square significant at 0.001, 0.05.

Preferences by License Year

Recreational saltwater-fishing activities in Mississippi by participating lifetime sportsmen in 2011, 2012, 2013, and 2014 were compared by license year (Table 11). More sportsmen who bought their licenses in 2011 went saltwater fishing in Mississippi than those who bought their licenses in later years. In 2014, for example, 32.8% of sportsmen who bought their licenses in 2011 planned to go fishing in Mississippi as compared to 18.7% of those who bought their licenses in 2012 and 20.5% of those who bought their licenses in 2013. Among the 2012 respondents, the percentage of sportsmen who went recreational saltwater fishing from 2009 to 2012 tended to be lower among those who bought their licenses in the later years (Posadas and Seymour 2014).

Figure 13 shows the long-term trend by license year in the percentage of sportsmen who were undecided about recreational saltwater fishing in the future. During the 2012 survey, about 42% of the respondents who bought their licenses in 1989–2010 were undecided about fishing in 2012. Almost 40% of the 2014 respondents who bought licenses in 2011–2013 were undecided about fishing in 2014.

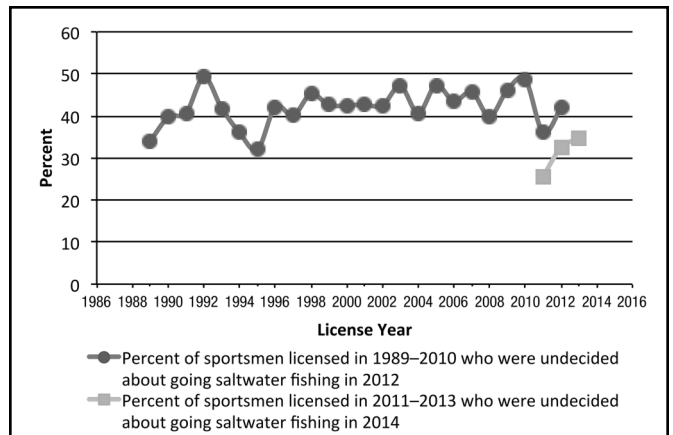


Figure 13. Percent of Mississippi lifetime sportsmen licensed in 1989–2010 and 2011–2013 who were undecided about whether to go saltwater recreational fishing in Mississippi in the future by license year. Source of the 1989–2010 data: Posadas and Seymour (2014).

Table 11. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing by license year.

License year	No. participating in survey	Pct. who went fishing in 2011 *	Pct. who went fishing in 2012 **	Pct. who went fishing in 2013 *	Pct. who planned to fish in 2014 **	Pct. undecided about fishing in 2014 **
2011	180	29.4	30.0	30.0	32.8	25.6
2012	268	16.0	17.9	20.9	18.7	32.5
2013	308	17.5	21.1	20.5	20.5	34.7
All license years	756	19.8	22.1	22.9	22.8	31.7

** , * — Pearson Chi square significant at 0.01, 0.05.

Preferences by Coastal County

Mississippi lifetime sportsmen who responded to the survey were asked in which Mississippi coastal counties they went recreational saltwater fishing (Table 12). Sportsmen who went saltwater fishing visited all three Mississippi coastal counties. Sportsmen licensed in 1989–2010 and 2011–2013 preferred Harrison County as a saltwater-fishing destination (Figure 14).

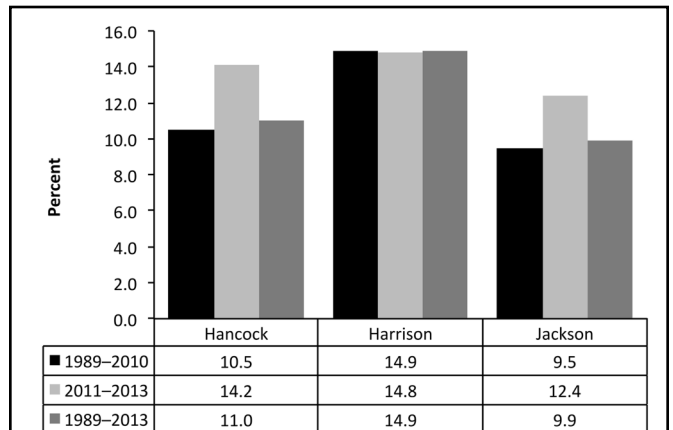


Figure 14. Percent of Mississippi lifetime sportsmen licensed in 1989–2010 and 2011–2013 who went saltwater recreational fishing in Mississippi by preferred coastal county. Source of the 1989–2010 data: Posadas and Seymour (2014).

Table 12. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing at most preferred coastal county.

Coastal county	No. participating	Pct. participating
Hancock County	107	14.2
Harrison County	112	14.8
Jackson County	94	12.4

CHARACTERISTICS OF SALTWATER FISHERMEN

Table 13. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing by age group.

Age group	No. participating in survey	Pct. who went fishing in 2011 *	Pct. who went fishing in 2012 **	Pct. who went fishing in 2013 ^{ns}	Pct. who planned to fish in 2014 ^{ns}	Pct. undecided about fishing in 2014 ^{ns}
15 and below	407	15.7	17.4	20.6	20.9	29.5
16–64	332	25.0	27.4	25.9	25.3	34.3
65 and older	16	18.8	31.3	18.8	18.8	37.5
All age groups	755	19.8	22.1	22.9	22.8	31.7

** , * — Pearson Chi square significant at 0.01, 0.05.
 ns — Pearson Chi square not significant at 0.05.

Participation by Age Group

Recreational saltwater-fishing activities of respondents were significantly different among age groups. The percent of Mississippi lifetime sportsmen who participated in the survey and went saltwater recreational fishing was significantly different among the different age groups in 2011 and 2012 (Table 13). Sportsmen who were 16–64 reported the highest saltwater-fishing participation. There were no significant differences in fishing activity among age groups in 2013 and 2014. Posadas and Seymour (2014) reported that the percent of lifetime sportsmen who participated in the 2012 survey and went saltwater fishing in 2009, 2010, 2011, and 2012 was significantly different among the age groups. Sportsmen surveyed in 2014 who were

unsure about their saltwater-fishing plans for 2014 made up 31.7% of all respondents. There were no significant differences among age groups about plans to go fishing in 2014.

Participation by Employment Status

The employment status of respondents exerted strong stimulus on their recreational saltwater-fishing activities. In the 2014 survey of sportsmen who were licensed in 2011–2013, the percentage of sportsmen who participated in the survey and went recreational saltwater fishing in Mississippi was significantly affected by employment status in 2012 and 2014. More sportsmen who were retired or employed tended to go saltwater fishing in Mississippi than the other groups of

Table 14. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing by employment status.

Employment status	No. participating in survey	Pct. who went fishing in 2011 ^{ns}	Pct. who went fishing in 2012 *	Pct. who went fishing in 2013 ^{ns}	Pct. who planned to fish in 2014 **	Pct. undecided about fishing in 2014 **
Student	396	17.7	19.7	22.2	22.7	31.3
Retired	25	28.0	36.0	28.0	32.0	48.0
Self-employed	63	20.6	19.0	15.9	12.7	44.4
Employed	190	25.3	29.5	27.9	27.9	30.5
Unemployed	10	0	0	0	0	40.0
No answer	72	16.7	16.1	20.8	18.1	19.4
All statuses	756	19.8	22.1	22.9	22.8	31.7

** , * — Pearson Chi square significant at 0.01, 0.05.
 ns — Pearson Chi square not significant at 0.05.

Table 15. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing by annual income from all sources before taxes.

Income	No. participating in survey	Pct. who went fishing in 2011 ^{ns}	Pct. who went fishing in 2012 [*]	Pct. who went fishing in 2013 ^{ns}	Pct. who planned to fish in 2014 ^{ns}	Pct. undecided about fishing in 2014 ^{ns}
Up to \$50,000	106	21.7	30.2	30.2	24.5	36.8
\$50,000 to \$100,000	107	26.2	29.0	28.0	27.1	30.8
More than \$100,000	92	19.6	17.4	14.1	17.4	38.0
No answer	121	19.8	26.7	20.7	20.7	34.7
No income	330	17.3	17.9	22.1	23.0	27.6
All income groups	756	19.8	22.1	22.9	22.8	31.7

* — Pearson Chi square significant at 0.05.
 ns — Pearson Chi square not significant at 0.05.

sportsmen (Table 14). Among the 1989–2010 sportsmen, the percentage of lifetime sportsmen who participated in the 2012 survey and went saltwater recreational fishing was not significantly different by employment status (Posadas and Seymour 2014). Significant segments of respondents by employment status were undecided about future fishing activity in 2014 (Table 14). Retired sportsmen (48%) led the group, followed by self-employed sportsmen (44.4%), and unemployed sportsmen (40%).

Participation by Personal Income

Personal income of respondents exerted some influence on their recreational saltwater-fishing activities. The percentage of sportsmen licensed in 2011–2013 who participated in the 2014 survey and went recreational saltwater fishing in Mississippi in 2012 was significantly influenced by annual personal income (Table 15). There were no significant differences in fishing activities by income groups in 2011, 2013, and 2014. Posadas and Seymour (2014) reported that the percent of lifetime sportsmen licensed in 1989–2010 who participated in the 2012 survey and went recreational saltwater fishing in 2009–2012 was significantly different by annual personal income. The percentages of sportsmen who were undecided about going fishing in 2014 were not significantly different among income groups.

Participation by Race

The racial or ethnic background of respondents did not have any significant influence on their recreational saltwater-fishing activities. The percentage of Mississippi lifetime sportsmen licensed in 1989–2010 who participated in the 2012 survey and went recreational saltwater fishing was not significantly different by racial background (Posadas and Seymour 2014). Similar results were observed in the 2014 survey of sportsmen licensed in 2011–2013 (Table 16). The racial or ethnic background of respondents also did not have any significant influence on their expected plans to go fishing in 2014.

Participation by Educational Attainment

The educational background of respondents played a very limited role in influencing their recreational saltwater-fishing decisions. The percentage of lifetime sportsmen licensed in 1989–2010 who participated in the 2012 survey and went recreational saltwater fishing was not significantly different by educational attainment (Posadas and Seymour 2014). Except in 2014, educational attainment had no significant effect on saltwater-fishing activities among lifetime sportsmen licensed in 2011–2013 (Table 17). The educational background of sportsmen significantly influenced their decisions about future fishing in 2014.

Table 16. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing by racial background.

Race	No. participating in survey	Pct. who went fishing in 2011 ^{ns}	Pct. who went fishing in 2012 ^{ns}	Pct. who went fishing in 2013 ^{ns}	Pct. who planned to fish in 2014 ^{ns}	Pct. undecided about fishing in 2014 ^{ns}
Caucasian or white	705	19.7	21.8	22.8	22.6	32.1
Others	51	21.6	25.5	23.5	25.5	27.5
All races	756	19.8	22.1	22.9	22.8	31.7

ns — Pearson Chi square not significant at 0.05.

Table 17. Number and percent of Mississippi lifetime sportsmen licensed from January 2011 to July 2013 who participated in the survey and went saltwater recreational fishing by educational attainment.

Education	No. participating in survey	Pct. who went fishing in 2011 ^{ns}	Pct. who went fishing in 2012 ^{ns}	Pct. who went fishing in 2013 ^{ns}	Pct. who planned to fish in 2014 [*]	Pct. undecided about fishing in 2014 [*]
None or kindergarten only	43	7.0	7.0	16.3	16.3	14.0
Grades 1–8	229	18.3	20.1	24.5	23.6	32.8
Grades 9–11	102	18.6	20.6	20.6	23.5	27.5
Grade 12 or GED	38	31.6	34.2	26.3	23.7	44.7
Some college, associate degree, or technical school	74	25.7	28.4	23.0	23.0	44.6
Four-year degree or higher	186	21.0	24.2	23.7	23.7	32.3
No answer	84	19.0	21.4	21.4	20.2	25.0
All levels	756	19.8	22.1	22.9	22.8	31.7

* — Pearson Chi square significant at 0.05.
ns — Pearson Chi square not significant at 0.05.

SUMMARY AND CONCLUSIONS

From 1989 to 2010, there were 14,706 holders of the Mississippi lifetime sportsman license listed in the official database provided by the Mississippi Department of Fisheries, Wildlife, and Parks (MDFWP). An additional 2,154 licenses were sold by MDFWP between January 2011 and July 2013. The total number of licenses issued as of July 2013 reached 16,778 after adjusting for double counting of sportsmen included in both databases. Online and mailed surveys were conducted in 2012 and 2014 to verify the contact information and determine the recreational saltwater-fishing preferences of Mississippi lifetime sportsmen who bought their licenses from 1989 to 2010 and from January 2011 to July 2013. The information on fishing preferences is limited to whether they went saltwater fishing and where they went fishing in Mississippi waters.

Overall, eight out of 10 lifetime sportsmen resided in Mississippi. The Mississippi counties of Madison, Hinds, Rankin, and Harrison had the most lifetime sportsmen in the state. Approximately 7.8% of Mississippi sportsmen were located in the three coastal counties, Hancock, Harrison, and Jackson. About 40.4% of all sportsmen bought the “lifetime sportsman age 13 and over” license. The “lifetime sportsman age birth through 12” was bought by 46.4% of all sportsmen. About 13.2% of the sportsman licenses were sold as “nonresident Mississippi native lifetime” licenses to residents of other states. Overall, more than a third of the sportsmen were 18 years old and younger. The sportsmen who were licensed from January 2011 to July 2013 were relatively young; about two-thirds were 18 and younger.

The sportsmen were contacted by mail and by email (for those who had email addresses) to seek their participation in the survey. They had the option of returning the mailed survey or completing the online survey. A total of 756 licensed lifetime sportsmen representing about 35.1% of the total number of lifetime sportsman licensed from January 2011 to July 2013 participated in the survey conducted from April to December 2014. A total of 4,744 licensed sportsmen representing about 32.3% of the total number of sportsmen licensed from 1989–2010 participated in the mail or online survey conducted from June 2011 to April 2012. The 2014 survey generated a higher response rate as compared to the 2012 survey. Apparently, the timely application of the results of the 2012 survey participation models in the conduct of the 2014 survey contributed to the higher participation rate.

About six out of 10 of the participating lifetime sportsmen reported having gainful employment, more than one-fifth were students, and the rest were retired or unemployed. More than half of the sportsmen registered in January 2011 to July 2013 were students. Less than three out of 10 participating sportsmen earned less than \$50,000 per year, while four out of 10 had income above \$50,000, and the rest did not provide income information. More than nine out of 10 sportsmen who completed the survey were white or Caucasian. Less than two-thirds of the participants completed some college or had associate, technical, or 4-year college degrees.

Overall increasing trends in recreational saltwater-fishing activities were observed among sportsmen who were licensed during the two periods. Sportsmen licensed from 1989–2010 who participated in the 2012 survey reported more overall fishing activities from 2009–2012, except in 2010 when the Deepwater Horizon oil spill caused closures of some of the Gulf waters. Sportsmen licensed from 2011–2013 who participated in the 2014 survey also reported higher overall fishing activities from 2011–2014. Cross tabulation results indicated that the recreational saltwater-fishing activities were significantly different among the

different states of residence, license types, years license were bought, age groups, employment statuses, annual personal incomes, and educational attainment. Recreational saltwater-fishing activities were not significantly different by racial background.

Considerable segments of the sportsmen were undecided about future fishing activities. The segments of Mississippi lifetime sportsmen who were unsure about going saltwater fishing in the future were significantly influenced by license type, license year, employment status, and educational attainment.

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APPENDIX A — RECRUITMENT LETTER

Survey of Mississippi Lifetime Sportsmen

April 16, 2014

Dear Mississippi Lifetime Sportsman:

The survey of Mississippi Lifetime Sportsmen is conducted by the Mississippi State University, Coastal Research and Extension Center with funding from the Gulf States Marine Fisheries Commission. The overall goal of this survey is to determine the saltwater fishing preferences of holders of the Mississippi Lifetime Sportsman License.

As a Mississippi Lifetime Sportsman, you are allowed to hunt and/or fish during a legal season and to take any game or fish, except waterfowl, without the purchase of additional license or permits unless required by law. The Mississippi Lifetime Sportsman License allows fishermen to take fish, crabs, oysters, shrimp, and any other saltwater fish authorized to be taken under recreational permit.

The results of this survey will provide primary information on the past and future saltwater fishing preferences of the holders of the Mississippi Lifetime Sportsman Licenses. **Your participation in this survey will allow the state's saltwater anglers to remain exempt from federal recreational fishing license requirements.**

We truly appreciate your participation in this survey.

Very respectfully yours,

Benedict Posadas, Ph.D.
Associate Extension Research Professor
Tel: 228-546-1024
Email: benp@ext.msstate.edu
Project website: <http://coastal.msstate.edu/lifetimesportsman.html>

APPENDIX B — SURVEY OF MISSISSIPPI LIFETIME SPORTSMEN

Respondent Code:

Introduction:

As a Mississippi Lifetime Sportsman License holder, you are allowed to hunt and/or fish during a legal season and to take any game or fish, except waterfowl, without the purchase of additional license or permits unless required by law. The Mississippi Lifetime Sportsman License allows fishermen to take fish, crabs, oysters, shrimp, and any other saltwater fish authorized to be taken under recreational permit.

Instructions:

If you want to complete this survey online, please go to:
<https://www.surveymonkey.com/s/Lifetimesportsman>.

If you want to complete this survey by mail, please complete this questionnaire and mail it to Mississippi State University, Coastal Research and Extension Center in the enclosed pre-paid envelope.

Required Questions:

Let me ask you about your preferences for recreational saltwater fishing in Mississippi waters south of Interstate 10. If you are below 18 years old, please ask your parent or guardian to complete the survey for you.

1. Did you go saltwater fishing in Mississippi in 2011? Please circle one.	1. Yes 2. No
2. Did you go saltwater fishing in Mississippi in 2012? Please circle one.	1. Yes 2. No
3. Did you go saltwater fishing in Mississippi in 2013? Please circle one.	1. Yes 2. No
4. Will you go saltwater fishing in Mississippi in 2014? Please circle one.	1. Yes 2. No 3. Undecided

If you answered YES to any of Questions 1 to 4, please proceed to Question 5. Otherwise, please proceed to Questions 6 to 10.

5. In which Mississippi coastal county did you go or prefer to go saltwater fishing? Please circle all the counties where you went or prefer to go saltwater fishing.	1. Harrison County 2. Hancock County 3. Jackson County 4. No answer
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Optional Questions:

Let me ask you about your annual income, employment status, race or ethnicity, education and year of birth. This information will allow us to correlate saltwater fishing preferences to sportsmen socio-economic characteristics. The following questions 6-10 are optional.

<p>6. In what year were you born? Please write the year of your birth.</p>	<p>Year: _____</p>
<p>7. How would you describe your current employment status? Please circle one that best describes your employment status.</p>	<p>1. Student 4. Employed 2. Retired 5. Unemployed 3. Self-employed 6. No answer</p>
<p>8. If applicable, which of the following categories best describes your personal income from all sources BEFORE taxes in the year 2013? Please circle one.</p>	<p>1. Less than \$10,000 2. \$10,000 to \$20,000 3. \$20,000 to \$30,000 4. \$30,000 to \$40,000 5. \$40,000 to \$50,000 6. \$50,000 to \$75,000 7. \$75,000 to \$100,000 8. \$100,000 to \$150,000 9. \$150,000 to \$250,000 10. More than \$250,000 11. No answer 12. No income</p>
<p>9. What is your race or ethnicity? Please circle one.</p>	<p>1. Caucasian or White 2. Black or African American 3. Hispanic 4. Asian or Pacific Islander 5. Native American 6. Other, please specify: _____ 7. No answer</p>
<p>10. What was the last grade or year in school that you completed? Please circle one.</p>	<p>1. Never attended school or only attended kindergarten 2. Grades 1 through 8 (Elementary) 3. Grades 9 through 11 (Some high school) 4. Grade 12 or GED (High school graduate) 5. Some college, Associate degree, or technical school 6. Four-year college degree or higher 7. No answer</p>



End of Survey

Thank you for your participation!

Please mail the completed survey to Mississippi State University, Coastal Research and Extension Center in the enclosed pre-paid envelope.



MS AGRICULTURAL AND
FORESTRY EXPERIMENT STATION

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George M. Hopper, Director

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