

**COMMERCIAL FISHING IN THE MOBILE DELTA,
ALABAMA DURING THE PERIOD OF
JULY 1, 1963 TO JUNE 30, 1964**

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ABSTRACT

A total of 205 licensed commercial fishermen fished in 31,549 acres of water of the Mobile Delta in Alabama north of U. S. Highway 90 during the period July 1, 1963 to June 30, 1964. Forty-one (20 percent) of these fishermen were selected at random and interviewed. Information concerning catch, capital investment, gross income, net income, and operating expenses was obtained. It was assumed that this sample was representative of the 205 licensed freshwater commercial fishermen who fished the sample area and the data were calculated on this basis. Records of sales from retail and wholesale fish markets in the area were also used.

Approximately 923 people in the delta were either partially or totally supported by commercial fishing. Commercial fishermen used approximately 7 percent of their catch to feed their families and gave away less than 0.5 percent of their catch. Only 28 percent of the catch was sold through retail and wholesale fish markets while 64 percent was sold directly to the consumer.

Legal commercial fishing gear consisted of trammel nets, gill nets, hoop nets, baited lines, snag lines, and slat boxes.

The average full-time commercial fisherman caught 5,205 pounds of fish which brought him a net income of \$752.59 for his labor and investment. Part-time fishermen reported an average catch of 2,249 pounds of fish resulting in an average net income of \$78.63 each. The total catch during the 1-year period was 605,839 pounds of fish (19.2 pounds per acre) valued at \$173,700 to the fishermen.

INTRODUCTION

An economic evaluation of the commercial freshwater fishing industry of the Mobile Delta in Alabama was conducted during the period of July 1, 1963 to June 30, 1964. The study was a cooperative project of the Alabama Department of Conservation and the Alabama Water Improvement Commission.

For this report the area referred to as the Mobile Delta was the water area in Alabama between the Mobile Causeway and Highway 84 Bridge near Jackson, Alabama on the Tombigbee River and Choctaw Bluff, Alabama on the Alabama River. The numerous bays, lakes, creeks, rivers, and bayous that comprise the Mobile Delta were in a land area approximately 60 miles by 10 miles. The southernmost 8 miles of this area was a treeless marsh habitat while the remainder of the delta waters was bordered by dense hardwood forests.

There were approximately 31,549 acres of water in the Mobile Delta which consisted of approximately 17,362 acres of major rivers, 11,831 acres of bays, bayous and natural lakes, and 2,356 acres of major and

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minor creeks. The average depth of the rivers was approximately 19 feet while the average depths of the bays and inland lakes ranged from 2 to 11 feet.

The waters of the lower delta were subjected to the influx of saltwater and salinity ranged from 0 to 0.1 ppt (parts per thousand) in the spring and from three to five ppt in the late summer and fall. Saltwater intrusion has been recorded upstream to mile 21 on the Mobile River.

The average daily tidal fluctuation was approximately 1.6 feet. The tides influenced water depths over nearly the entire delta area. In fact, at mile 41 on the Mobile River during low water stages there was only 0.4 of a foot less fluctuation than at mile 0.0.

METHODS

The number and names of licensed freshwater commercial fishermen residing in counties within and adjacent to the Mobile Delta as well as licensed non-resident commercial fishermen purchasing licenses in these counties during 1963-64 were obtained from records of license sales of the Alabama Department of Conservation.

Fishermen who resided in these counties but did not fish in the sample area were eliminated by personal interviews and letters to the fishermen and personal interviews with boat dock and fish market operators.

Retail and wholesale fish dealers were contacted to determine the pounds of fish purchased from commercial fishermen who fished within the sample area. Approximately 20 percent of the commercial fishermen that fished in the sample area were randomly selected and interviewed to obtain information concerning the amount of their income derived from commercial fishing, number of years fished, cost of equipment, type gear used, number and pounds of fish harvested and other pertinent information.

It was assumed that the information obtained from these licensed freshwater commercial fishermen interviewed was representative of all those who fished the sample area. Therefore, all calculations used in this report were based on this sample.

RESULTS AND DISCUSSION

It was determined that there were 202 resident and 3 non-resident licensed freshwater commercial fishermen operating in the Mobile Delta during the sample period. The number of resident commercial fishermen by county was as follows:

<i>County</i>	<i>Number</i>
Baldwin	41
Escambia	6
Mobile	119
Monroe	10
Clarke	11
Washington	15
Total	<u>202</u>

Based on interviews with 41 of the licensed freshwater commercial fishermen, 36.8 percent of the 205 fishermen derived over one-half of their income from commercial fishing and 23.7 percent derived all their income from this source. There were 156 part-time fishermen who derived a part of their income from other sources (Table 1).

The average commercial fishermen in the Mobile Delta had fished commercially for 13.4 years, of which 12.6 years had been in Alabama. Ten percent or 21 fishermen had fished an average of 7.6 years in other states. The fishermen interviewed had fished commercially for periods of time ranging from 1 month to 50 years (Table 2), and 36.6 percent had fished 20 years or longer.

An average of 3.5 persons was dependent for support on each fisherman in the Mobile Delta. Therefore, approximately 923 people in the delta were either totally or partially supported by commercial fishing. There was an annual average of 207.7 pounds of fish consumed by each

Table 1. Supplementary sources of income of part-time commercial fishermen in the Mobile Delta during the period of July 1, 1963 to June 30, 1964

Source of income	Part-time commercial fishermen	
	Number	Percentage
Industry	39	26
Fishing camp	22	15
Building construction	11	7
Mechanic	11	7
Store-service station	11	7
Farming	11	7
Social security	11	7
Forestry	5	3
Relief	5	3
Sawmill	5	3
Law enforcement	5	3
Fur trapping	5	3
Federal government	5	3
Rentals	5	3
Day labor	5	3
Total	156	100

Table 2. Years of fishing experience of commercial fishermen who fished in the Mobile Delta during the period of July 1, 1963 to June 30, 1964

Number of years fished	Number of fishermen	Percentage of fishermen
Less than 1 year	30	14.6
1 to 10	75	36.6
10 to 20	25	12.2
20 to 30	25	12.2
30 to 40	35	17.1
40 to 50	10	4.9
50	5	2.4
Total	205	100.0

fisherman's family. This was an average of 59.3 pounds of fish consumed per individual annually. Therefore, a total of about 42,579 pounds or 7 percent of the total catch was consumed by commercial fishermen and their dependents. The fishermen gave away approximately 2,772 pounds of fish during the sample period. This amounted to slightly less than 0.5 percent of the total catch.

A breakdown of the amount of commercial fishing gear, its cost, effective life, and the annual cost of maintenance of each type gear is presented in Table 3. Hoop nets had an effective life of 39 months, snag lines lasted 22 months, while other types of gear lasted 15 months or less. Many commercial fishermen attributed this short period of service to gear being stolen or lost. This was especially true of slat boxes.

Full-time fishermen preferred to use a combination of nets and boxes over other combinations or single type gear, while part-time fishermen preferred a combination of nets and lines (Table 4). In general, slat boxes and baited lines were preferred for catching catfishes (Ictaluridae) during the entire year while gill nets were used to catch freshwater drum (*Aplodinotus grunniens*) and smallmouth buffalo (*Ictiobus bubalus*) during their spawning runs. Seventy-six percent of the full-time fishermen used slat boxes and 61 percent used some baited lines (Table 5).

During the sample period, commercial fishermen in the Mobile Delta had a total capital investment of \$267,846 of which \$55,460 was invested in fishing gear and \$212,386 was invested in motor vehicles, outboard motors, boats, freezers and ice chests (Table 6). The average

Table 3. The amount of gear used by commercial fishermen in the Mobile Delta during the period of July 1, 1963 to June 30, 1964 and its annual cost and period of utilization

Type of gear	Amount of gear	Total annual cost of replacement and maintenance of gear	Annual capital outlay per unit of gear	Effective life of gear (months)	Average length of fishing season (months)
Trammel nets	13,104 feet	\$ 2,184	\$16.67 ¹	10	7.5
Gill nets	109,535 feet	18,993	17.34 ¹	15	6.9
Hoop nets	800 nets	15,138	18.92 ²	39	5.0
Slat boxes	655 boxes	13,445	20.53 ²	15	8.4
Baited lines	41,438 hooks	4,915	11.86 ³	14	6.6
Snag lines	22,450 hooks	785	3.50 ³	22	7.0
Total	--	\$55,460	--	--	--

¹ Cost per 100 feet

² Cost per net or box

³ Cost per 100 hooks

Table 4. Number of commercial fishermen and type of gear used in the Mobile Delta during the period of July 1, 1963 to June 30, 1964

Type of gear	Part-time fishermen		Full-time fishermen		Total fishermen	
	Number	Percentage	Number	Percentage	Number	Percentage
Nets only	32	21	0	0	32	15
Lines only	22	14	12	25	34	17
Slat boxes only	5	3	0	0	5	2
Nets and lines	48	28	6	12	49	24
Nets and boxes	22	14	19	38	41	20
Lines and boxes	10	6	0	0	10	5
Nets, lines and boxes	22	14	12	25	34	17
Total	156	100	49	100	205	100

Table 5. Number of commercial fishermen using each of the various types of commercial fishing gear in the Mobile Delta during the period July 1, 1963 to June 30, 1964

Type of gear	Part-time fishermen		Full-time fishermen		Total fishermen	
	Number	Percentage	Number	Percentage	Number	Percentage
Trammel nets	27	17	0	0	27	13
Gill nets	86	55	18	37	104	51
Hoop nets	43	28	18	37	61	30
Baited lines	91	68	30	61	121	59
Snag lines	11	7	12	24	23	11
Slat boxes	54	35	37	76	91	44

Table 6. Capital investment of commercial fishermen in the Mobile Delta during the period of July 1, 1963 to June 30, 1964.

Equipment	Part-time fishermen		Full-time fishermen		Total fishermen	
	Total	Average	Total	Average	Total	Average
Trammel nets	\$ 2,184	\$ 14.00	\$ 0	\$ 0	\$ 2,184	\$ 10.65
Gill nets	15,414	98.81	3,579	73.04	18,993	92.65
Hoop nets	7,765	49.65	7,373	150.46	15,138	73.84
Baited lines	2,941	18.85	1,974	40.28	4,915	23.98
Snag lines	480	3.08	305	6.22	785	3.83
Slat boxes	7,940	50.90	5,505	112.34	13,445	65.59
Motor vehicles	58,293	373.67	35,893	732.50	94,186	459.44
Boats	17,420	111.67	8,384	171.11	25,804	125.87
Outboard motors	48,933	313.67	23,438	478.33	72,371	353.03
Freezers	8,653	55.47	10,399	212.22	19,052	92.94
Ice chests	728	4.67	245	5.00	973	4.75
Total	\$170,751	\$1,094.44	\$97,095	\$1,981.50	\$267,846	\$1,306.57

part-time commercial fishermen had \$1,094.44 in capital investments for fishing as compared to \$1,981.50 for full-time commercial fishermen.

The estimated total pounds, number and value of each type of fish caught from the Mobile Delta during the sample period of July 1, 1963 to June 30, 1964, are presented in Table 7. Catfishes made up 56 per-

Table 7. Total number, pounds and values of fish taken by commercial fishermen in the Mobile Delta during the period of July 1, 1963 to June 30, 1964 as estimated from personal interviews with commercial fishermen.

Fish	Part-time fishermen		Full-time fishermen		Total fishermen	
	Number	Pounds	Value	Number	Pounds	Value
Catfishes	45,421	195,312	\$68,359	52,954	227,703	\$79,596
Buffalo	15,571	82,524	12,378	1,710	9,065	1,360
Freshwater drum	15,660	40,716	6,107	5,051	13,132	1,970
Paddlefish	886	3,900	390	1,169	5,145	515
Sturgeon	67	468	117	0	0	0
Mullet	36,816	27,612	2,761	0	0	0
Carp	62	312	47	0	0	0
Total	114,483	350,844	\$90,159	60,884	255,045	\$83,541
				175,367	605,889	\$173,700

cent of the total catch by number and 70 percent by weight and were the most valuable and most sought after commercial fish in the delta. Catfishes accounted for slightly more than 85 percent of the income derived from commercial fishing. The interviews showed that no sturgeon (*Acipenseridae*), mullet (*Mugilidae*) or carp (*Cyprinus carpio*) were caught by full-time commercial fishermen in the delta during this study. However, approximately 36,816 mullet weighing 27,612 pounds were caught by part-time fishermen. By far the greatest majority of mullet fishing as well as a considerable amount of paddlefish (*Polyodon spathula*) and sturgeon fishing is done in Mobile Bay south of the Mobile Causeway and thus was not included in this sample. The total catch as estimated from personal interviews with commercial fishermen was 605,889 pounds of fish. This amounted to a harvest of 19.2 pounds of commercial fish per acre for the 31,549 acres of water in the Mobile Delta during the one-year period covered in this study. A thorough check of known retail and wholesale fish markets provided an estimate of 171,329 pounds of freshwater fish sold in the markets during the sample period. In addition, 42,759 pounds were eaten by the commercial fishermen's families and 2,772 pounds were given away by commercial fishermen. The remaining 389,209 pounds or 64 percent of the total catch was sold directly to the consumer.

It was estimated that the average full-time fisherman caught 5,205 pounds and the average part-time fisherman caught 2,249 pounds of fish during the year (Table 8). Approximately 89 percent of the catch of the full-time fishermen was catfishes while only 56 percent of the part-time fishermen's catch was catfishes.

The commercial freshwater fishing industry of the Mobile Delta was valued at \$173,700 to fishermen from the sale of commercial fish harvested during the period of July 1, 1963 to June 30, 1964. Commercial fishing during this period provided an average net income of \$78.63 to the part-time fisherman and \$752.59 per full-time fisherman (Table 9).

Table 8. Average catch by commercial fishermen in the Mobile Delta during the period of July 1, 1963 to June 30, 1964 and the percentage by weight of each type of fish caught.

Fish	Part-time fishermen		Full-time fishermen	
	Average catch (pounds)	Percentage of catch	Average catch (pounds)	Percentage of catch
Catfishes	1,252	56	4,647	89
Smallmouth buffalo	529	24	185	4
Paddlefish	25	1	105	2
Freshwater drum	261	11	268	5
Sturgeon	3	0	0	0
Mullet	177	8	0	0
Carp	2	0	0	0
Total	2,249	100	5,205	100

Table 9. Income and operating expenses of commercial fishermen in the Mobile Delta during the period of July 1, 1963 to June 30, 1964.

	Part-time fishermen		Full-time fishermen		Total fishermen	
	Total	Average	Total	Average	Total	Average
Gross income	\$90,159	\$577.94	\$83,541	\$1,704.92	\$173,700	\$847.32
Operating expenses:						
Bait	7,753	49.70	12,250	250.00	20,003	97.58
Other	70,139	449.61	34,414	702.33	104,553	510.01
Total	\$77,892	\$499.31	\$46,664	\$ 952.33	\$124,556	\$607.59
Net income	\$12,267	\$ 78.63	\$36,877	\$ 752.59	\$ 49,144	\$239.73