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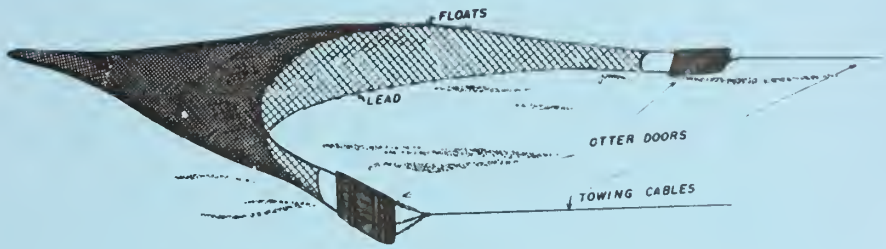
THE COMMERCIAL FISHING INDUSTRY OF GEORGIA AN ECONOMIC EVALUATION



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THE COMMERCIAL FISHING INDUSTRY OF GEORGIA - AN ECONOMIC EVALUATION [1]

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1. This study was conducted in cooperation with the U.S. Department of the Interior, Bureau of Commercial Fisheries under P.L. 88-309 (Project Number 2-46-R).

Major problems in the fishing segment of the industry are the year to year fluctuations of catch and value and the highly seasonal nature of the harvesting of most species. In addition the fishery suffers from a lack of diversification, the major efforts being directed toward shrimp which are harvested seasonally. With these types of problems it has been extremely difficult for the fishing segment to make adjustments in capital investment, labor, and management - the three important variables to an economic enterprise.

The seafood processing segment has shown a steady increase in the value of products manufactured. Total value of all products processed increased from $15.7 million in 1957 to over $24 million in 1965. Processed shrimp make up the largest proportion of the value of processed seafood averaging well over 70 per cent of the total.

Interest on obtaining foods from the sea is increasing. A question on the horizon is whether Georgia is in a position, with its already developed commercial fishery industry, to share in the increasing pressure to obtain food from the sea. Research efforts are underway which hopefully will be used to fulfill the potential of the industry.

THE FISHERY INDUSTRY IN GEORGIA

This is the first of a series of reports concerning an economic evaluation of the commercial fishing industry in Georgia. An overall picture of the industry and the interacting forces involved are considered.

QUANTITY AND VALUE OF THE CATCH

For the six-year period 1960-65 the value of the Georgia catch averaged $3.4 million. Based on the quantity caught, this catch averaged 21.4 million pounds in the six-year period and was based on the value of fish and shellfish caught for human food.

The value of the Georgia catch has shown some growth over time with the value of the 1965 and 1966 catches being $4.1 million and $3.9 million respectively, the second and

third highest on record and topped only by the 1962 catch valued at $4.6 million.

VALUE OF DOCKSIDE PRODUCTS, INCOME, EMPLOYMENT AND INVESTMENT IN FISHING

The importance of the commercial fishery industry in Georgia can be determined to some degree by measuring its contribution to the state and area of location in income, employment, and investment.

Value and Income

The value of the Georgia catch of fish and shellfish, which is a reflection of the quantity caught and price received, has shown an erratic movement over the 1950-65 period (Figure 1). The value averaged higher in the 1960's than in the 1950's, however, no noticeable trend is evident.

Since fishermen, especially those who do not own their boat, receive a percentage of the value of the catch. The boat owners income, consisting of wages, profits, interest, and rent may not vary directly with the value of catch due to changes in costs. However, income to owners would be expected to coincide, to some degree, with the total value of the catch. In contrast to the variable income of fishermen and boat owners, total personal income for all other occupations in Georgia has shown a steady increase in the 1950-65 period (Figure 1).

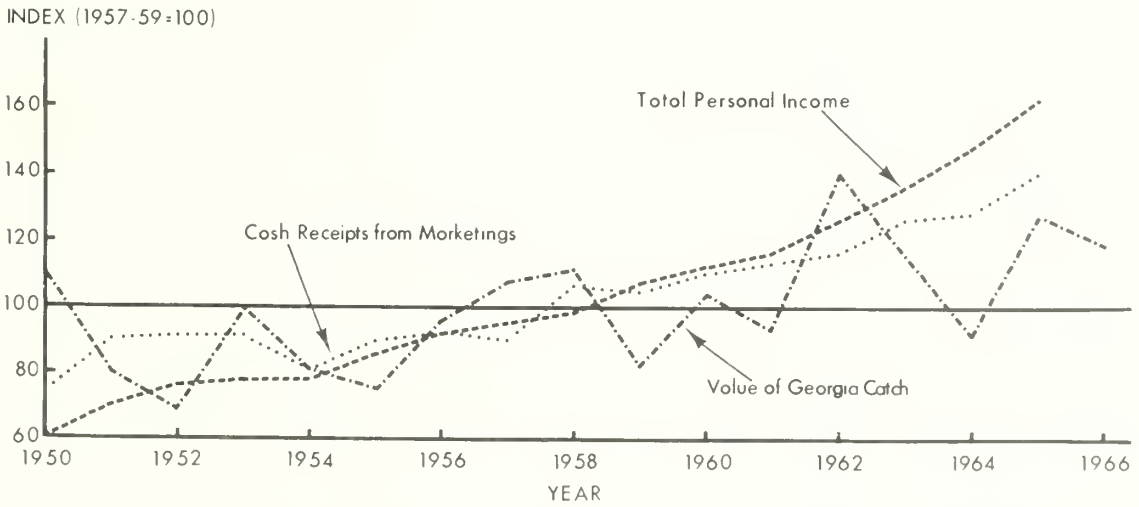


Figure 1. Indexes of Value of Catch of Fish and Shellfish, Cash Receipts from Farm Marketings and Government Payments, and Total Personal Income, Georgia, 1950-1965.

The uncertainty of income expectations from commercial fishing, with its highly variable movement pattern, probably has considerable influence on the number of fishermen involved in fishing and investment in new boats and equipment.

In the six counties in which commercial fishing is centered its value compares quite favorably with other industries, for instance, income for agriculture in the six counties of Chatham, Bryan, Liberty, McIntosh, Glynn, and Camden was estimated to be $4 million in 1954, $5 million in 1959, and $3.7 million in 1964. 4/ The value of the fish catch was $2.6 million in 1954, $2.7 million in 1959, and $3.0 million in 1964. The value of the catch in Liberty, McIntosh, Glynn, and Camden counties was $2.1 million in 1964 and $2.9 million in 1965 compared to an estimated income of $1.4 million from agriculture in 1964.

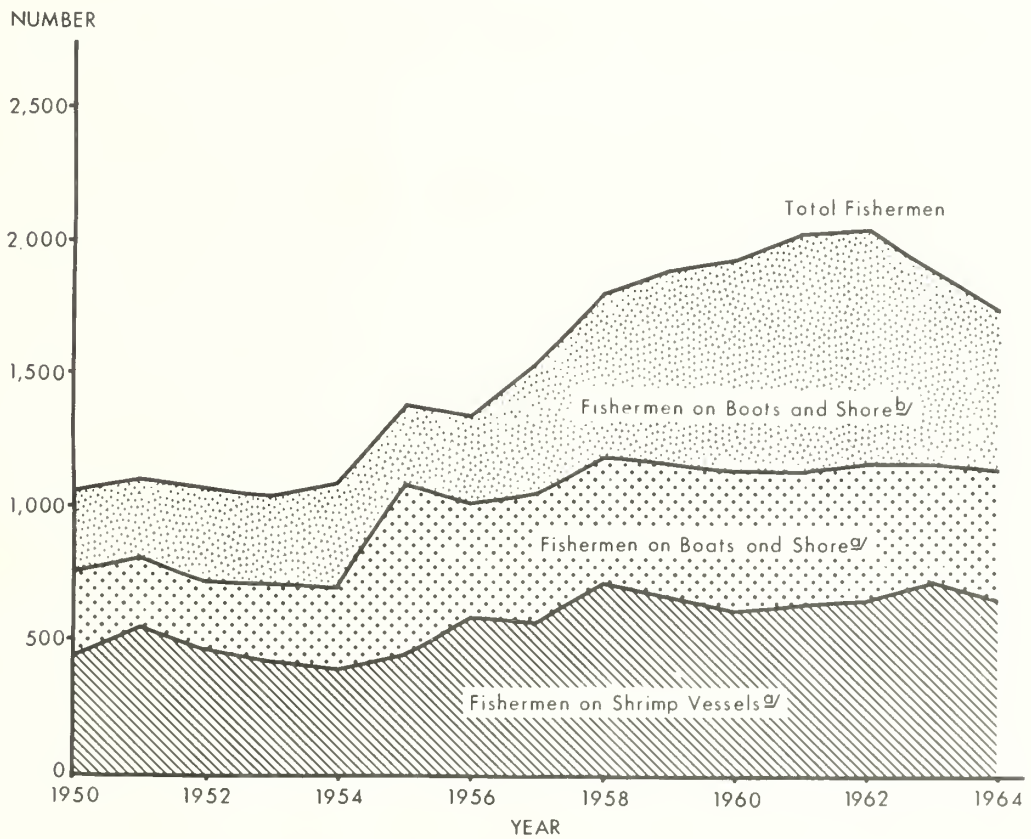
Actual income from commercial fishing is difficult to derive. However, an estimate was made based on information obtained from fishermen and boat owners. For 1965-66, it was estimated that fishermen received about 35 per cent of the value of the total catch of all species for their efforts. After subtracting major cost items it was estimated that vessel owners, mainly shrimp vessels, received about 23 per cent of the total value of the catch as income for management, profit, interest, and rent. Therefore, it was estimated that about 58 per cent of the total value of the catch was income to labor, capital and management.

Based on the estimate of the percentage of the catch value retained as income, comparisons were made of the income contribution to the areas where commercial fishing operations are important. The Central Area, which includes Liberty and McIntosh counties, averaged about $900,000 income from fishing. In the more industrialized Southern Area consisting of Glynn and Camden counties, the estimated income from commercial fishing averaged $750,000. Commercial fishing, in the highly industrialized and urbanized Northern Area including Chatham County, contributed an estimated average income of $650,000.

4/ Data obtained from Census of Agriculture, Georgia, 1954, 1959, and Preliminary 1964.

Employment

Another measure of the importance of an industry to an area is the number employed in the industry. In the fishing segment of the commercial fishery industry, the number of persons engaged in and earning income from fishing has shown a considerable increase from about 1,050 in the early 1950's to an average of about 1,900 in the 1960's (Figure 2). Regular fishermen, those earning more than one-half of their income from fishing, increased in numbers from an average of 768 in the early 1950's to an average of 1,150 in the 1960's. Casual or part-time fishermen have shown the largest increase in numbers in the 1960's with more than double the number employed in the early 1950's (317 to 770). By way of contrast the annual average estimate of the labor force employed in agriculture for 1962-65 in the six coastal counties was 735. In most of the counties fishing offers employment to a considerably greater number of people than agriculture.



a/ Earn more than one-half of their income from fishing.
b/ Earn less than one-half of their income from fishing.

Figure 2. Number Engaged in Fishing, Georgia, 1950-1964.

Investment

The investment in boats and equipment indicates the size and importance of the fishing segment. However, such a determination is difficult to make at a point in time, since some vessels and boats were purchased as used equipment while others were purchased new. Estimates of investment were derived by two methods. One estimate was the average purchase price paid by the present owners, and the other estimate was the average cost to replace the vessels, boats, and equipment.

The average cost of vessels and equipment based on the original purchase price (new or used) was determined from the sample of 50 vessels. The number of vessels owned in Georgia and licensed to fish in Georgia waters as of September 1, 1966 was obtained from records of the Georgia Game and Fish Commission. The average cost of the vessels in each size group in the sample was used to estimate the total investment in the 260 vessels for Georgia.

The estimated total investment in shrimp vessels and equipment was $3,578,000 (Table 1).

Table 1. Estimated Investment in Shrimp Vessels based on Purchase Price and Replacement Cost, Georgia, 1966.

	Dollars	Number	Thousand Dollars		
Length in Feet	Average Purchase Price 50 Vessels	Vessels in Fleet	Estimated Total Investment	Estimated Replacement Cost a/	Estimated Replacement Cost b/
under 40	6,330	89	563	1,602	-
40-49	12,270	95	1,166	2,137	-
50-59	23,260	62	1,442	3,348	3,348
60 and over	29,084	14	407	868	6,388
Total	-	260	3,578	7,955	9,736

a/ $500 per foot estimated cost for vessels under 50 feet and $1,000 per foot estimated cost for vessels 50 feet and over. Based on average length of vessels in each classification.

b/ Assuming the 184 vessels under 50 feet would be replaced with 92 vessels with average length of 60 feet.

This amount is considered a conservative estimate. Vessel owners estimated that replacement costs of fully equipped vessels, based on new vessel costs, would be $1,000 per foot of length on vessels more than 50 feet in length and about $500 per foot on smaller vessels. Based on estimated replacement costs and average length of vessels in each class, the total estimated replacement cost of the 260 vessels was almost $8 million. Assuming the 184 vessels under 50 feet were replaced with 92 vessels averaging 60 feet in length, the total replacement cost was estimated to be $9.7 million.

Many smaller boats are used for the oyster, blue crabs and finfish catch. The average cost of a boat, small motor, and pots or traps for catching crabs was estimated at $500. A boat and motor for gathering oysters was estimated to cost $250. For catching shad, the estimated cost of boat, motor and nets was $1,000.

There was an average of 150 boats used for catching crabs by pots and traps in 1962-64, about 30 used for oysters and 280 used for shad. The total estimated investment was approximately $360 thousand.

During the 1962-64 period an additional 300 boats smaller than 5 tons were used for catching crabs and shrimp with otter trawls. Based on the returns from a mail questionnaire to a sample of owners of these smaller boats, a large percentage of the boats were not used for full time commercial fishing. However, commercial fishing licenses were required in order to catch more than the quantity allowed sport fishermen.

These boats are equipped with 50 to 90 horsepower motors and gear for catching shrimp and crabs by trawling. The estimated costs of such boats fully equipped, based on the mail questionnaire, was about $1,200. Estimated total investment was in excess of $350 thousand.

The total investment in vessels, boats, and equipment for all types of commercial fishing, based on replacement costs, approaches $10 million. Based on original cost of vessels, boats, and equipment the total investment approaches $5 million.

The sales value averaged $0.68 per dollar of investment based on the annual catch averaging $3.4 million and a total investment of $5 million. In an earlier section, it was

estimated that owners received about 23 per cent of the value of catch as return to management, interest, and rent. Therefore, based on an investment of $5 million, owners received an estimated return of 15 per cent of their investment to cover management, interest, and rent.

WHOLESALING AND PROCESSING OF FISHERY PRODUCTS

The processing of fishery products is an important segment of the fishery industry in Georgia. In order to gain a perspective of the fishery processing industry in Georgia, it will be compared with other regions of the U.S. Similar products are processed in the other South Atlantic and Gulf states. Therefore, these regions were used as the basis for comparison.

The value of manufactured fishery products in Georgia increased more than 50 per cent in the 1960-65 period from the averageof 1956-59. This was similar to the growth that occurred in the total Gulf and South Atlantic states combined.

Georgia has ranked very favorably with the other South Atlantic states in the value of manufactured fishery products which ranged from 40 to 50 per cent of the South Atlantic state's total. As a per cent of the total value of manufactured fishery products in the Gulf and South Atlantic regions, Georgia has maintained about 10 per cent of the total value.

In 1966, there were 42 wholesale dealers of fresh fishery products. More than three-fourths of the wholesale dealers also owned vessels and boats for catching fish and shellfish. Furthermore, three dealers also processed fishery products, meaning that their operations were vertically integrated from catching through processing.

Almost all of the fish and shellfish caught by commercial fishermen in Georgia are sold through wholesale dealers of fresh fishery products. These wholesalers serve an important function in that they are the primary buyers of the catch. They maintain dock facilities for unloading vessels and boats. At the dock, shrimp are headed and/or packed in ice, live crabs are placed in barrels for hauling to processors, oysters are placed in containers for shipping to processors or to be sold in the shell, and finfish, depending on the species, are

packed in ice for shipment or dressed for sale at the dock.

There were 15 seafood processing facilities in Georgia in 1966. About one-half processed shrimp as the major product, four processed crabs, and the remainder processed oysters in season. Processing facilities offer a ready market for the catch in Georgia. In Georgia the local catch furnishes only a small proportion of the total fresh shrimp processed, most of the crabs processed, and almost all the oysters processed. Finfish are processed in Georgia, but most of Georgia's catch of finfish is sold fresh.

Value and Income Through Wholesaler

The value of fresh fishery products handled by wholesalers is the value of the catch plus the costs of the service performed, including labor, operating costs, and profits. As with the previous analysis of income to fishermen, only a rough estimate can be made of income generated through the wholesaling function because of the numerous products handled and the complexity of methods of charges. In addition, many wholesalers, who also own fishing equipment, do not maintain records on the separate operations.

Generally, the charge applied for heading and packing shrimp averaged $8.00 per 100 pound box. The crew receives 3 to 4 cents per pound and 4 cents per pound is charged for packing and icing. The wholesaler received an estimated average of 2.5 cents per pound of shrimp, heads-off, after paying for labor, ice, and boxes. This sum is the estimated gross income necessary to pay operating costs other than labor, salaries, and interest. Based on an average annual catch of 4 million pounds of shrimp, about 5 cents per pound (4 cents per pound for heading plus 1 cent per pound for packing) or $200,000 accrues to labor for heading and packing and about $100,000 to wholesalers gross income.

Income to wholesalers for other species handled is even more difficult to estimate. For example, oysters may be sold in the shell directly to consumers at the dock site or shucked and sold as meats either in bulk or canned. Another case in point is the handling of crabs. Most wholesalers do not handle crabs, since a large percentage of the crabs are purchased directly from fishermen by the processor.

Except for shad, most finfish caught in Georgia are sold

dockside, in the round or dressed, directly to the retailer or consumer. In a sense, the wholesaler of fresh products is performing a wholesaler function. However, very little information is available on the cost and returns to this function. Income to fresh wholesalers of shad is estimated at about $25 thousand for a 350 thousand pound catch.

Value and Income Through Processor

The value of fishery products processed in Georgia increased from $16.3 million in 1956 to $24.8 million in 1965. Processed shrimp products increased over $5 million in value in the 1956-65 period. Processed fish products increased over $1.5 million. The value of crab products have remained stable at about $1.2 million.

Information received from a sample of processing firms showed that about 30 per cent of the value of the processed products of crabs and oysters was paid to hand labor which is required for picking crabmeat and shucking oysters. It was estimated that about 15 per cent of the value of shrimp and fish products was paid to labor. Based on these estimates, about $375 thousand in income to labor was generated from the crab and oyster processing and about $3.4 million from the shrimp processing for a total of about $3.8 million. The processing industry, therefore, creates a sizeable income. This is especially true in the Glynn county area.

Employment

Employment by primary wholesalers is entirely dependent on the volume and seasonality of the catches; therefore, it is quite variable from year to year and within a given year. Even during the seasons of the catch of a given species, especially shrimp, persons may be employed for only a few hours each day and not every day of the week. Employment for processing is not as seasonal as that of wholesalers, but has seasonality connected with it.

The average number of persons engaged in wholesaling and manufacturing increased in the period 1956-65. The average number of 1405 employed in 1956 grew to 2210 in 1965. In the survey of both wholesalers and processors, about 85 per cent of those employed were female employees.

Investment

Data on investment in facilities were obtained from wholesalers and processors. The average estimated investment on an original cost basis was $14,890 and on a replacement value was $23,780. The range in investment was from under $5,000 to about $50,000. Based on the average investment of the 17 wholesalers and original price, the total investment of the 42 wholesalers is in excess of $625,000. Based on the replacement value as the criteria for estimating investment, the value of investment is near $1 million.

Data were obtained from interviews of managers of processing facilities pertaining to their estimate of replacement costs. Total investment in wholesaling and processing facilities based on replacement costs would be near $4.75 million.

OTHER RELATED BUSINESSES

The fishery industry in Georgia also supports, to some degree, other types of related businesses. Most of the operations would be classified as service businesses and may not serve the fishery industry on a full time basis.

Many of those who own several vessels maintain a repair shop and in many cases have facilities for dry docking vessels for repairs. Each of these operations have two or three men employed on a full time basis.

The businesses servicing the fishing segment are more or less specialized. There are those whose main business is hull repair, which requires dry docking, painting, etc. This group services the fishing segment full time. Engine sales and repairs are handled by businesses specialized in this work. There are at least six of these in the Savannah-Brunswick area. The fishing segment supplies only part of their total business.

A few businesses are specialized in repairing of fishing gear other than electronic equipment. There are also those businesses that sell fuel oil, ice, groceries, and hardware items. This fishing segment provides an important sales outlet for some of these businesses. For instance, the cost of fuel oil per boat was $2,214 in 1965-66 for the 50 vessels in the

sample. Based on the average cost by size groups of vessels, it was estimated that the fuel oil, oil and lubricants business was in excess of $450 thousand per year in 1965-66.

Transportation is also an important part of the fishery industry. The freshly caught products, because of high perishability, must be transported rather quickly to processors or to fresh market, wholesale, and retail outlets. Then, in addition, there is a constant flow of fresh fishery products coming to processors from other states and countries as well as the flow of processed fishery products to sales outlets over the Eastern United States.

CONCLUSIONS

Based on the results of the analysis of the Georgia fishery industry in general, the following conclusions were considered important:

1. The value of the Georgia catch, exclusive of bait and industrial fish, averaged $3.4 million for the years 1960-65, increasing from the $3.1 million average of 1955-59.

2. Employment in the fishing segment of the industry has increased from about 1,150 in the early 1950's to about 1,900 in the 1960's.

3. The investment in vessels, boats, and equipment used in Georgia's commercial fishery approached $5 million. Owners received an estimated 15 per cent of this value as the average return from the catch.

4. Replacement costs of all vessels, boats and equipment used in the commercial fishery was estimated at nearly $10 million.

5. About $325 thousand accrues annually to wholesalers of shrimp and finfish.

6. Income from processors increased from $16.3 million in 1956 to $24.8 million in 1965.

7. Employment from wholesalers and processors increased from 1,405 in 1956 to 2,210 in 1965.

8. Investment in facilities from the 42 wholesalers totaled over $625,000. Replacement value of wholesaling and processing facilities would approach $4.75 million.

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