

paid by fishermen in the main production areas, a study on the development of foreign trade, including tariff quotas, restrictions and other trade barriers imposed on the fishing industry in this country and foreign countries, a study on the development of cooperative associations, trade associations and unions in the fishing industries of the United States.

In addition, smaller research studies are undertaken as need and opportunities arise. For example, a study on consumer preferences for breaded shrimp and fish sticks recently was completed. This study was proven helpful to the industry to determine package sizes and price ranges for such package sizes. Some other contracts which were let by the Branch of Commercial Fisheries indirectly affect the Gulf and Caribbean area. One of these contracts is a study of the economic feasibility of freezing fish on the high seas. Despite the fact that this study is done in New England, the results will be useful for the Gulf and Caribbean area. Another contract, namely, the study of fishing craft hull and P. & I. insurance, was let with Boston University for the purpose of obtaining lower insurance rates and reducing damages. This contract was directly influenced by the Gulf and Caribbean area, especially Tampa and Brownsville where in recent years insurance rates rose to unusual heights.

We hope that the economic research program, as outlined above and as it will be improved in accordance with the needs of the industry, will help the industry and will lay the basis for future economic progress of the fisheries of the United States. The employees of the Fish and Wildlife Service do their research with their minds and hearts on a better economic future for the fishing industry.

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## **The Economic Factors Of The Shrimp Industry Of The Gulf Coast Area**

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THE BUREAU OF BUSINESS AND ECONOMIC RESEARCH of the University of Miami has been asked by the United States Fish and Wildlife Service to undertake an economic study of the shrimp industry at the primary level of production and distribution. While our investigation is approaching its final stages, it is not yet concluded and the following remarks about the economic problems of the industry must be taken as tentative.

Shrimp fishing is an old industry, yet there are probably few economic areas in which so little is known about the economic structure, problems and trends of an industry as shrimp fishing. The reason for this lack of factual data is to be sought in the substantial changes which the industry has recently undergone. Some of these changes parallel shifts that have occurred in fisheries all over the country. Some shifts are explained by local conditions and circumstances, but as a whole the most important of the trends in shrimp fishing are specific to this branch of fishing endeavor and nationwide rather than local. The rapid pace of technological development has a great deal to

do with these changes: the size of boats has grown, fishing trips have become longer, the equipment more refined. On the other hand the methods of preparing the fish for the market, of transporting it to the market, of storing it, and of distributing it have been improved and grown both more simple and more complex. The environment has undergone changes due to the rapid industrialization of the coastline, the expansion of sport fishing, and the changing standards of life and economic conditions of labor.

These technical and social shifts are alone powerful enough to shake the economic basis of the shrimp fisheries. The costs of production have risen and larger investments have created larger risks. The technical advances in processing, transportation, and distribution have altered the relation of the fisherman to his direct and indirect customers. The need for social cooperation and integration has been intensified.

Larger, however, have been the effects that have come from the biological and the cultural changes that affected fishing. Old shrimp beds have yielded less, new fish beds have been opened for exploration. The product itself has changed its aspects; once considered a luxury product, it has become an article of popular consumption. These changes, in turn, have effected shifts in the geographical location of fisheries, wholesale houses, and processors. They have deeply influenced the relationship of labor and management and have broadened the capital structure of the industry. But they have also provoked financial problems for the smaller operators, revolutionary changes in the price structure, and caused both extraordinary profits and extreme losses to a large number of operators in the industry.

Most of the changes are too new and trends too unstable for a full economic appraisal. However, a few trends seem to stand out so prominently that it may be possible at the present time to indicate their direction and evaluate their impact.

One such trend is the accentuation of demand for the product. We seem to be confronted with a long-range growth in the consumers' preference for shrimp. This trend has already propelled shrimp into the number one fishery product, dollar-wise. Unless all signs fail, long-range demand for the product would tend to exceed long-range supply and would perpetuate some of the problems that supply shortages have created with respect to the price structure. We may anticipate that this trend will spell price instability rather than stability in the long-range trend. Undoubtedly, there are favorable factors: The increased popularity of the frozen product, the improvement in the methods of handling and storing shrimp alleviate some of the problems of price instability; improvements in the methods of marketing, advertising, and using the product will stabilize the market at the consumer end and with restaurant users. On the other hand the problems of supply and its seasonal and geographic stabilization are far from a satisfactory solution. The economic problem of opening new sources of supply, of improving the catch on existing beds without destroying their biological and economic base will be present for many years to come.

If the supply problem spells instability of consumer markets for the future, it also prognosticates further geographical shifts of the industry. In the past the habitat of the industry has followed the habitat of the shrimp. We have observed shifts from the middle Atlantic to the South Atlantic, from the South Atlantic to the Gulf, etc., all the way down to the Mexican Coast. Fishermen have been uprooted from their old established locations; shrimp fleets have

become mobile; wholesale houses have sought new centers of distribution and even the processing industry has re-located—it is nearer the new centers of the industry. The chances are that this movement is by no means completed. The importance of some of the old market centers such as the Fulton Fish Market and the French Market in New Orleans are giving way to new price-registering places further inland and also nearer to the centers of production. The rise of the Mexican shrimp fisheries and the discovery of new shrimp beds in Central America suggest that international ramifications of the industry are likely to intensify.

Likewise, the internal structure of the industry which has been shaken loose from its traditional setup is likely to continue to manifest the symptoms of an industry in transition for many years to come. New forms of fishing have called for new forms of fishing organization. Gradually fisheries become both larger in scale of operation and larger in their capital structure. The ties between processors, wholesalers, and boat owners have become both more complicated and more integrated. The movement to larger concentration has been accompanied by the counter action of larger specialization. The fresh product, the frozen product, and the canned product tend to seek their own specialized ways of production and channels of distribution. At the consumer end the product is meeting with new competition of such products as fish sticks and other frozen foods.

Last, but not least, the fisherman himself finds that he is pulled out of his old way of living into new modes of bread-winning activity. The unions have become an important factor in some shrimp fishing areas. The higher development of fishing technology, the lengthening of fishing trips and the shifts in fishing bases have added new risks for the fisherman and have caused more exacting demands on his skills and capabilities. While financial rewards to the fisherman have tended to increase, the economic insecurity has not been substantially lessened. Boat owners likewise have been benefited by the rise of financial returns, but are faced with new problems in stabilizing their operations by better methods of management, new forms of marketing and sounder financial methods. Wholesalers have been exposed to the pressures of rapidly changing markets, fast depreciation and obsolescence of assets and financial risks in seasonal and cyclical market fluctuations.

As we look at the picture of shrimp fisheries as a whole, we see that the past years have vastly increased the total potential of the industry, offering the lures of a steadily growing consumer demand and rising production, but also threatening the industry with the tremendous impact of revolutionary changes in technology, production, marketing, and finances, and it is presenting to the industry a challenge of vigilance and financial preparedness.

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## **The Post-War Demand For Fishery Products With Special Reference to Shrimp and Oysters**

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DURING THE PAST 25 YEARS the fisheries of the United States have shown little evidence of growth other than that required to supply a relatively stable per