TEXAS MARINE RESOURCES

THE FISHERIES VIEW

TEXAS A&M UNIVERSITY SEA GRANT PROGRAM

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FOREWORD

This report is another in the series of brief papers published by the Sea Grant Program of Texas A&M University on the status of marine resources in Texas. Unlike the previous reports in this series, however, this report is not based upon discussions from a Sea Grant workshop. We did not have the opportunity to sponsor a workshop for the fishing industry and so we asked a few key individuals representing the fishing industry to assist in the preparation of a report which describes briefly the economic importance of the industry and some of the issues facing Texas fishing interests.

Dr. Bryant Cobb, III, of the Department of Animal Science, College of Agriculture, Texas A&M University, has met with processors and producers along the Texas coast to gather the information presented here. He has also worked closely with the Bureau of Commercial Fisheries and the Texas Parks and Wildlife laboratories.

It is intended that this report may stimulate interest in the Texas fishing industry. Comments on the material presented here are welcome.

JOHN C. CALHOUN, JR.
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August 1970

THE TEXAS FISHING INDUSTRY

Few Texans realize that their state accounts for a major portion of the United States fishery output. Texas produces shrimp, fish, crabs, and oysters, with shrimp constituting the major portion of the catch. Other marine resources may lose their identity prior to use by the consumer, but the finished edible product carries the Texas label into every state in the union and foreign markets as well.

As increasing pressure is put on our land resources, the sea will undoubtedly become an increasingly important part of the food producing industry in the United States. Shrimp and fish are high in nutritive value, particularly protein, and can readily substitute for high protein content animal foods. In addition shrimp, oysters, and fish add an important aesthetic quality to the American diet.

The Texas shrimping industry can be roughly divided into two sections: the producers, or fishermen, and the processors. The producers catch the shrimp and in some instances freeze it. The processors peel, de-vein, and bread the shrimp. The Texas fishing industry does not catch enough shrimp to supply the processing plants, consequently, the processing plants must import large quantities of shrimp.

The fisherman's life is not an easy life. It takes a special breed of men to face the perils of the sea. To be a shrimper means that a man must often face rough seas in a small vessel, must be willing to work long hours in a hot, steaming sea, and must be willing to be separated from his family for long periods of time. When catches decline on the Texas Coast, many of the fishermen travel to shrimping grounds off the Yucatan Peninsula where sudden storms occur.

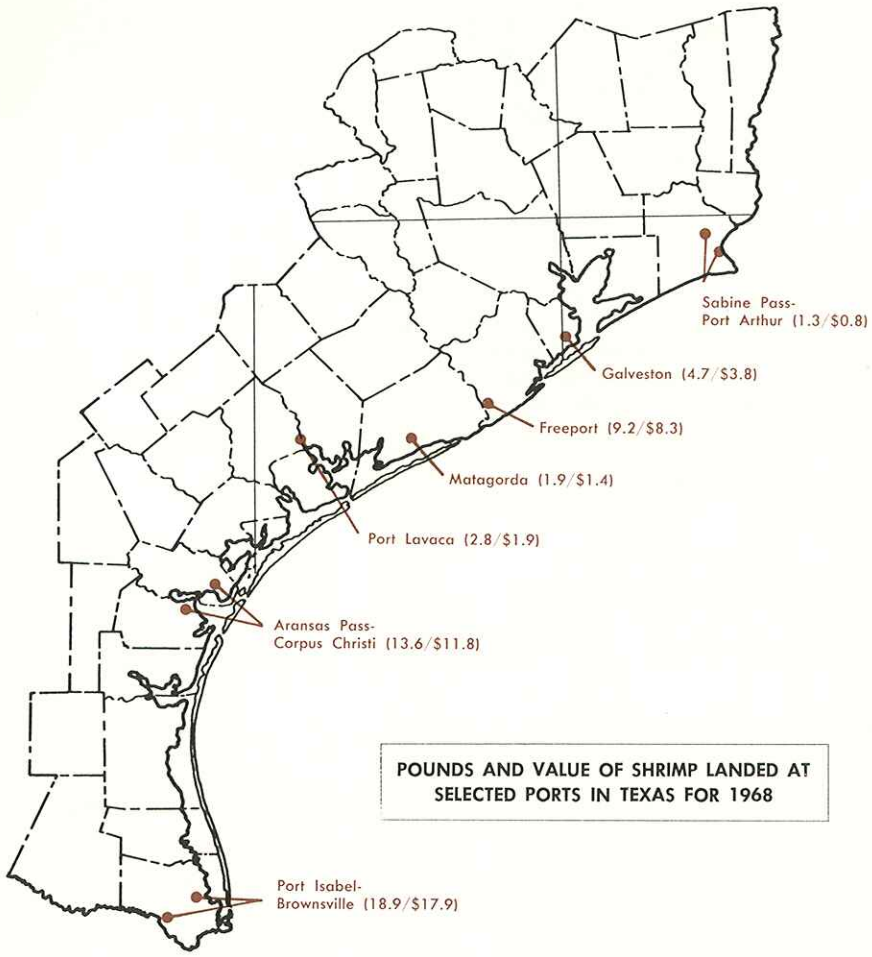
Three species of shrimp, white, brown, and pink, make up the Texas catch with the brown constituting the major portion of the catch. The shrimp are spawned at sea and migrate to the bays, going through several larval stages during the journey. After several months and considerable growth, the shrimp migrate back out to sea. Because of the small size of the shrimp, the bays are closed to all but bait shrimping at certain times of the year.

Although constituting a smaller part of the fishery products from Texas, fish are an important part of the marine product. The exact amount of fish production from coastal waters is not known. In Table 1 are presented the value of the Texas catch of finfish and shellfish in 1968. These figures do not include the 65,000,000 pounds of fish estimated by the Texas Parks and Wildlife Department to be taken by sportsman. The commercial fish production on the Texas Coast could be increased several times above the present level without serious effect upon the stock.

TABLE 1. POUNDS AND VALUE OF TEXAS CATCH OF FINFISH AND SHELLFISH 1968

SPECIES	1968 POUNDS	1968 VALUE
FINFISH		
Buffalofish	——	$——
Cabio (Ling)	23,900	2,886
Catfish & Bullheads	——	——
Croaker	138,600	5,823
Drum:		
Black	677,400	87,054
Red (Redfish)	924,900	215,469
Flounders (Unclassified)	336,200	75,438
Garfish	——	——
Groupers	93,000	9,646
Jewfish	——	——
King Whiting (Kingfish)	119,900	6,116
Menhaden	51,073,400	674,242
Mullet	27,500	1,437
Pompano	4,000	1,811
Sea Catfish (Gafftopsail)	73,800	5,679
Sea Trout:		
Spotted	1,871,300	419,150
White	20,000	2,043
Sheepshead (Salt-Water)	193,000	16,312
Snapper, Red	1,127,500	366,843
Spanish Mackerel	3,000	331
Warsaw	7,400	866
Unclassified:		
For Food	194,800	10,519
For Bait, Reduction & Animal Food	79,000	3,287
TOTAL FINFISH	56,988,600	$ 1,904,952
SHELLFISH		
Crabs, Blue	4,083,600	329,253
Oysters	3,302,000	1,444,614
Shrimp (Heads-on)		
Brown & Pink	63,951,200	35,713,553
White	19,206,600	10,130,009
Other	177,700	26,023
Squid	11,200	1,223
TOTAL SHELLFISH	90,732,300	$47,644,675
GRAND TOTAL	147,720,900	$49,549,627

Source: *Texas Landings*, 1968, Bureau of Commercial Fisheries, U. S. Department of the Interior, Washington, D. C. and Texas Parks and Wildlife Department, Austin, Texas.



POUNDS AND VALUE OF SHRIMP LANDED AT SELECTED PORTS IN TEXAS FOR 1968

TABLE 2. DIRECT EMPLOYMENT AND SALES IMPACT OF THE FISHERIES INDUSTRIES IN TEXAS 1969

AREA	FISHERIES INDUSTRY	DIRECT EMPLOYMENT	DIRECT SALES
COASTAL BELT*			
	Fisheries Catch Operations**	5,233	$ 50,009,000
	Processing Firms	5,064	66,200,000
	Distribution: Wholesale & Retail	1,271	62,436,600
REST OF TEXAS			
	Processing Firms	400	15,000,000
	Distribution: Wholesale & Retail	559	25,335,353
	FISHERIES TOTAL	12,527	$218,980,953

*Includes 42 counties, as shown on the accompanying map.

**Includes finfish, shellfish, shell dredging and live bait shrimp sales.

Source: Bureau of Commercial Fisheries, Department of the Interior, Galveston, Texas, and Industrial Economics Research Division, Texas A&M University, College Station, Texas.

ECONOMIC IMPORTANCE OF THE FISHING INDUSTRY

The economic impact of the fishing industry in Texas has been recently reviewed by John Miloy and E. Anthony Copp in their report entitled *Economic Impact Analysis of Texas Marine Resources and Industries* (Industrial Economics Research Division, Texas A&M University, TAMU-SG-70-217, June, 1970). The information included in this section is derived chiefly from the findings of that report. Tables 2 and 3 give an excellent assessment of the economic importance of the industry to the state. Texas fisheries industries accounted for a peak employment of 12,527 persons in 1969, and direct sales of $218,980,953. When allied industries such as insurance firms, and supply firms are included, the fishing industry probably accounts for a peak employment of more than 15,000 persons.

Shrimp was the most valuable fishery in the country in 1969 and accounted for 24 percent of the total United States ex-vessel value for all species. More than 317 million pounds of shrimp (heads-on) were valued at $123 million. Most of the shrimp were produced in the Gulf of Mexico and landed in Louisiana and Texas, the primary shrimp producing state in the nation.

With shrimp landings of 44.5 million pounds in 1969, Texas landings comprise 34 percent of the total landings in the states bordering the Gulf of Mexico. Brown shrimp account for the greater portion of the shrimp catch on an annual basis and the greatest concentrations of brown shrimp are found off the Texas coast.

Shrimping constitutes an industry where entry can occur with a medium-sized investment but where skill of the boat captain and sustained efforts by the entire crew are sensitive criteria in the success of the operation. The total fishing effort off Texas includes both Texas and non-Texas based fleets that follow the seasonal pattern and mobility of the shrimp. Statistics indicate that 833 shrimp vessels from the other four Gulf states operated off the Texas coast in 1967 and 1,669 Texas shrimp vessels were operational.

The 1,669 vessels comprising the Texas shrimp fleet have a fixed asset value in excess of $133 million, and annual construction of new shrimp vessels in the Gulf states steadily adds to the fleet. Shrimp vessel construction in the Gulf for the past three years has totaled 1,120 vessels of which 441 have been constructed in Texas.

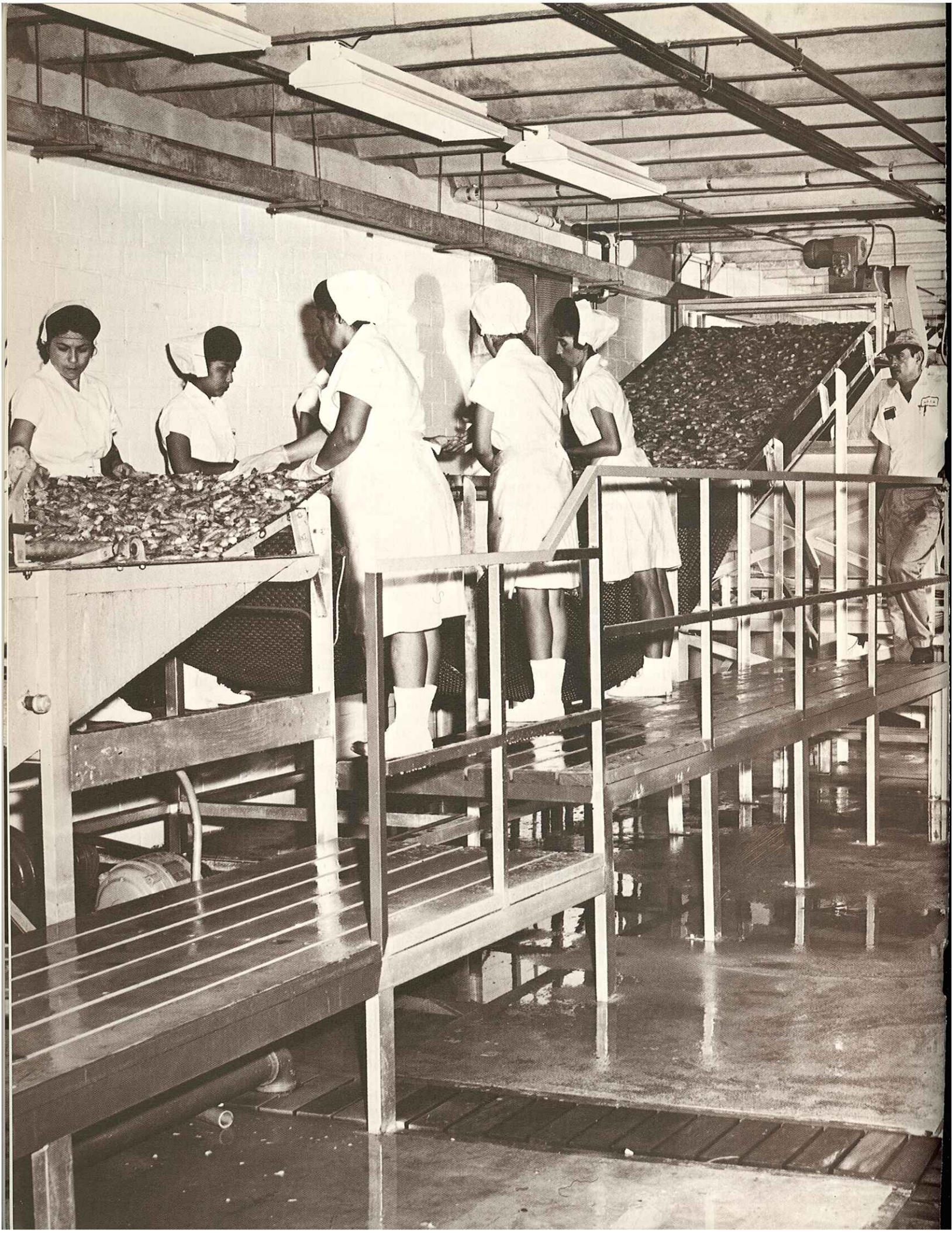
Although dwarfed by some of the other industries in Texas, the seafood industry is an important part of the coastal economy, generating many millions of dollars in income every year and employing approximately 15,000 people—a work force large enough to sustain a city the size of Lufkin, Texas.

TABLE 3. VOLUME AND VALUE OF SHRIMP LANDED IN TEXAS FOR 1968*

COUNTY	LOCATION	POUNDS	VALUE
Brazoria	Freeport	9,171,700	$ 8,295,814
Galveston	Galveston	3,190,400	2,640,225
Galveston-Harris	Baytown Kemah Port Bolivar San Leon Seabrook	1,562,000	1,136,805
Jefferson	Port Arthur Sabine Pass	1,305,500	791,844
Matagorda	Matagorda Palacios	1,867,100	1,447,023
Aransas & Nueces	Aransas Pass Corpus Christi Fulton Beach Rockport	13,611,500	$11,742,920
Calhoun	Port Lavaca Port O'Connor Seadrift	2,749,600	1,876,053
Cameron	Brownsville	8,598,000	8,002,902
	Port Isabel	10,268,100	9,935,999
TOTAL		52,323,900	$45,869,585

*Heads-Off Shrimp

Source: *Texas Landings*, 1968, Bureau of Commercial Fisheries, Department of Interior, Washington, D. C.



PROBLEMS OF THE FISHING INDUSTRY

On June 2, 1970, representatives of the various shrimp associations (producers) met at Corpus Christi. On June 16, 1970, representatives of the shrimp processors met at Corpus Christi also. At these two meetings problems and areas of research of the Texas fishing industry were identified. These were as follows:

Fleet Gear.

Several problems and areas where research is needed exist in this field. Because of the high initial cost of fishing boats ($80,000 - $125,000) and the diminishing returns (the amount of shrimp per unit of effort is decreasing), it was agreed that:

- There should be limited entry of boats into the industry (new boats should be allowed only on the retirement of older boats),
- Some program of state or federal subsidy should be instituted in order to make replacement of outdated boats economical.

Additional areas of research are (1) improved nets and fishing gear,

(2) better equipment for the preservation of shrimp while at sea,

(3) new concepts of harvesting.

Study Of Legal Problems: Conflicts Between Commercial Fisheries And Sportsmen, Enforcement Of Laws.

Most commercial fishermen are conservation-minded. Their livelihood depends upon the continued availability of the species. Therefore, they are concerned that the state conservation laws are often politically motivated and do little to preserve species of fish and shrimp. Some of these laws are due to the conflict between the fishermen and sportsmen. Few sportsmen look at the situation from the standpoint that only a limited number of Americans would have access to seafoods if the commercial fishermen did not exist. Although the Parks and Wildlife Department is endeavoring to enforce the present conservation laws, their efforts are often nullified by judges who refuse to convict violators. In order to rectify the legal situation, the fishing industry is of the opinion that:

- Conservation regulation should be placed in the hands of a panel of trained biologists from the Parks and Wildlife Department who could devote time to conservation problems that the Legislature does not have, and who would have the flexibility to act in a short period of time.
- Enforcement agencies and judges should be made aware of the value of impartial enforcement of conservation laws.
- Uniform conservation laws with neighboring states need to be passed.

Research And Development Of Utilization Of Waste Fish.

Every year the Texas shrimping industry catches and returns to the water an estimated 500,000,000 pounds of fish. Many of these fish are small and practically worthless under present conditions. Among the fish returned to the water are quantities of species which generate a good price on the market, if a market can be found. Methods such as smoking and curing need to be explored in order to increase the value of some species of waste fish. The development of fish protein concentrate, fish meal, and possibly fish sausages may present ways to utilize some of these fish. In addition, new methods of harvest need to be explored in order to utilize the vast amounts of fish not being presently exploited in any manner. Special equipment for the preservation of fish while aboard ship needs to be developed because present methods of mechanical refrigeration are too costly.

Initiation Of Advisory Fishing Specialist Activities.

With the increasing sophistication of fishing vessels and gear, and with the advent of inspection by federal health authorities (several bills concerning fisheries inspection are presently pending before Congress), it has become increasingly important to establish advisory activities to the fishing industry in order to furnish a constant supply of technical information and advice. Such activities have been established for a number of years in some of the states with a much smaller fishing industry than Texas. A small beginning in this direction has been made by Texas A&M University, but the program needs to be enlarged and expanded. Loss of quality by chemical and microbiological deterioration is one of the major problems of the seafood processing industry. In addition, there is a great need for information regarding sanitation, proper plant processing procedures and quality control. This problem could be attacked by an advisory program with personnel trained in food processing and sanitation.

Reduction Of Environmental Degradation.

The production of shrimp is dependent upon a continual supply of fresh water to the bays and an intact salt water marsh system. Therefore, both pollution and changes in the estuarine environment such as dredging and filling can adversely affect the production of shrimp. In addition, the publicity given to pollutants such as mercury can adversely affect the sale of shrimp processed in Texas, regardless of their origin.

Research And Development Of Mariculture.

The fishing industry is interested in promoting mariculture for the following reasons:

- Shrimp mariculture would supply large amounts of bait shrimp, thereby allowing the passage of better conservation laws.
- It would provide a more certain supply of domestic shrimp.
- Hopefully, the development of shrimp hatcheries might ultimately lead to large-scale stocking of shrimp in the Gulf.

Development Of Manpower For Boats And Processing Plants.

Because of the lack of trained manpower, the fishing industry is often forced to trust its equipment to individuals of dubious merit. This has frequently resulted in inefficiency and in shrimp being stolen. The U. S. Department of Labor has instituted training programs for shrimp boat crewmen at Freeport, Aransas Pass, and Port Isabel. In addition, junior colleges located in the coastal region are becoming interested in fisheries personnel training programs. Texas A&M University is starting an education program to train processing plant personnel in the rudiments of good handling practices. Trained mechanics and other technicians are also needed.

A Mechanism To Counter Unfounded Adverse Publicity.

With the current public awareness of pollution problems, even a hint of insecticides, metals, or other pollutants, in a food product can have a devastating effect upon the sale of that product. Such front-page publicity as was recently given one oyster (taken from a reef located between Galveston and Corpus Christi) with a "slightly higher than acceptable" mercury content can cost the seafood industry millions in sales and needs to be countered by a responsible agency such as the Cooperative Extension Service or State Health Department. An efficient advisory service can also serve to alert the seafood industry to potential health problems so that rectification of the problems can be made prior to the advent of any adverse publicity.

ACKNOWLEDGMENT

Texas has one of the largest fishing industries of any state in the union. Yet this fact is known and recognized by few Texans. With the people of the world turning increasingly to the sea for high-quality protein foods, a strong, viable fishing industry may well be the key to a well-fed America.

In order to prepare an accurate report on the fishing industry, it was necessary to have maximum cooperation of the industry. I would especially like to thank Mr. John A. Mehos, Vice President of Liberty Corporations, Galveston, Texas, and Mr. Lionel T. Hodgson, Vice President and Manager of National Shrimp Processors, Inc., Brownsville, Texas, for their help in presenting the problems of the industry and for editing this report.

No report on the fishing industry would be complete without acknowledging the contributions of the Bureau of Commercial Fisheries, United States Department of the Interior, and the Texas Parks and Wildlife Department. These two governmental agencies have programs of research designed to help the fishing industry and have helped provide for a more rational use of marine fishery resources on the Texas Coast.

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