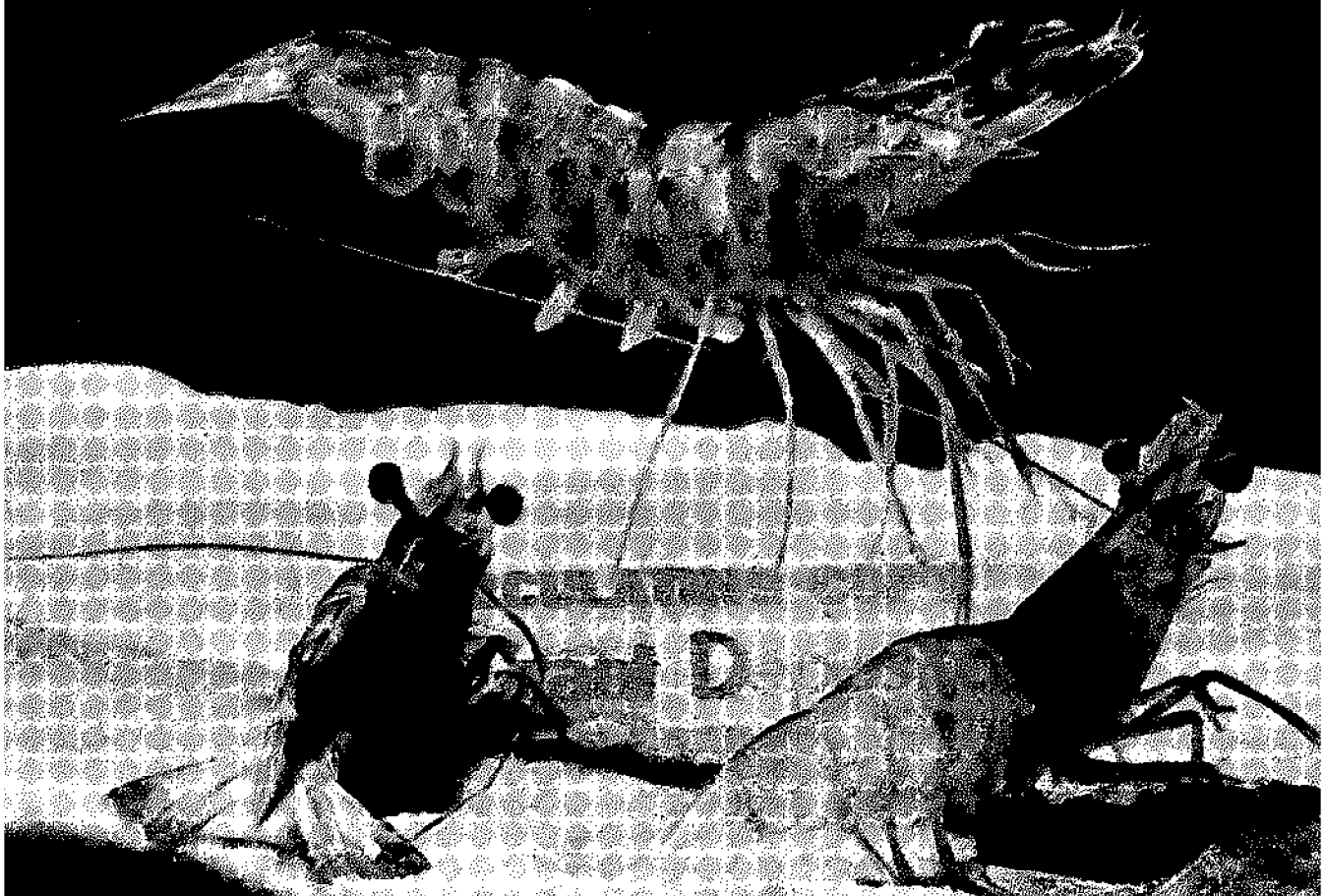


Sea Grant

Information Bulletin

University of Miami Sea Grant Institutional Program

Opportunities
in the
Shrimp Fishing Industry
of the
Southeastern United States
by
G. Miller Knopf



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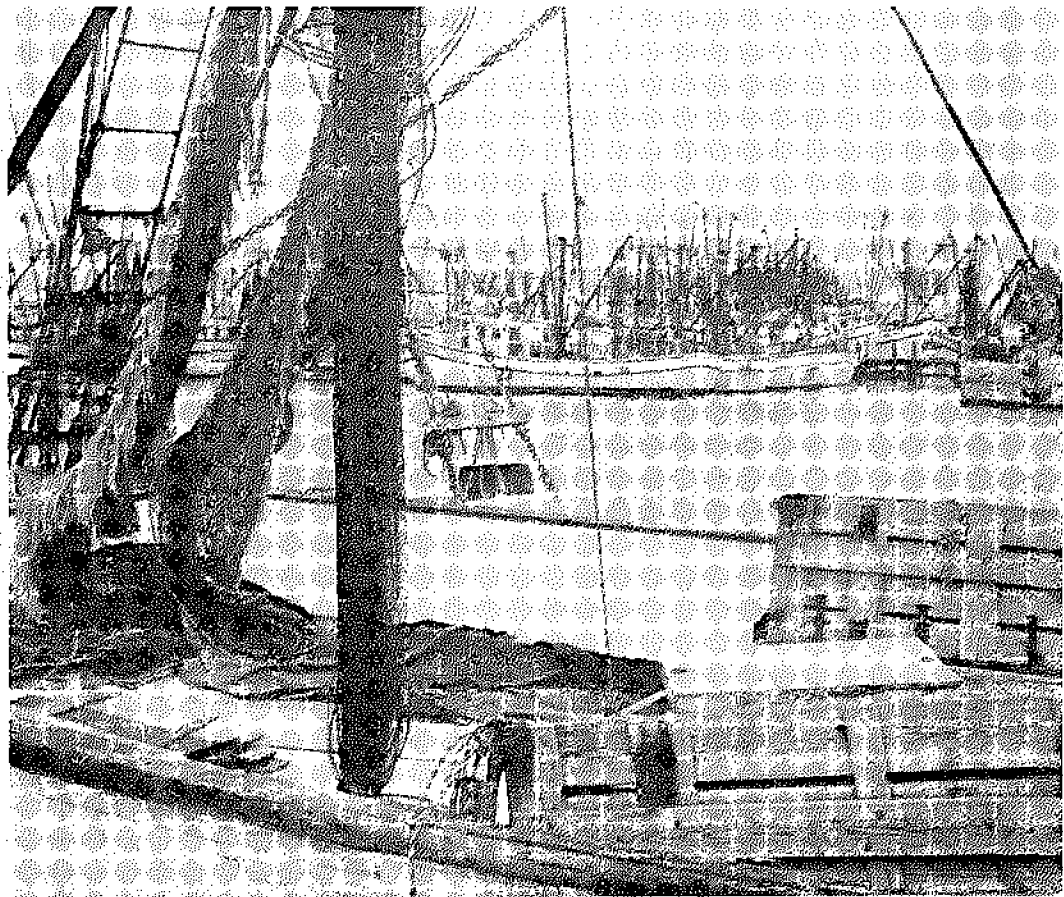
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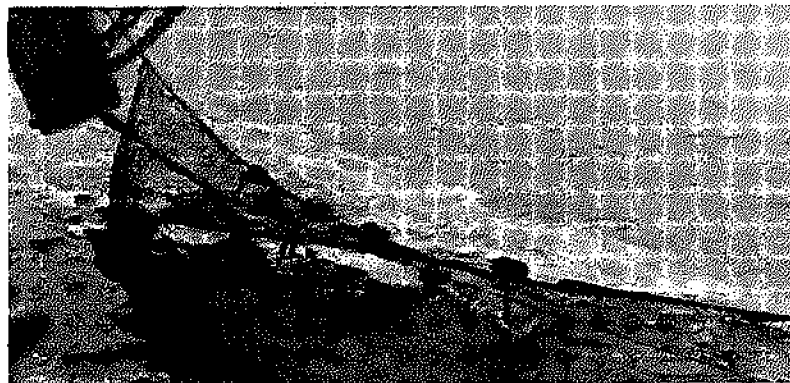
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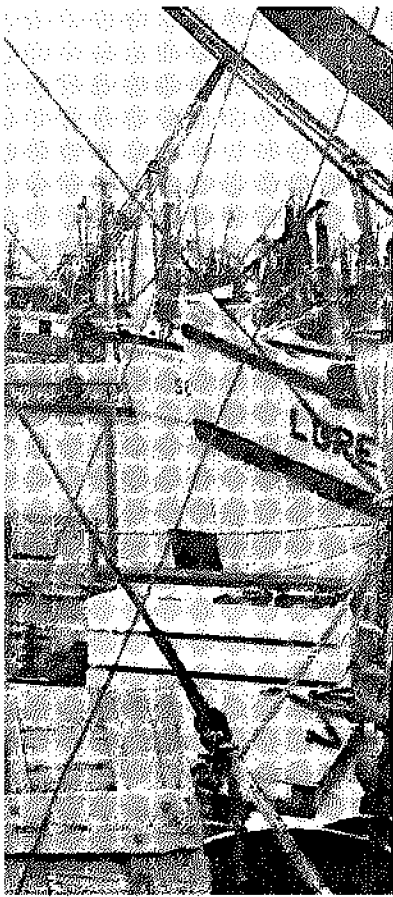
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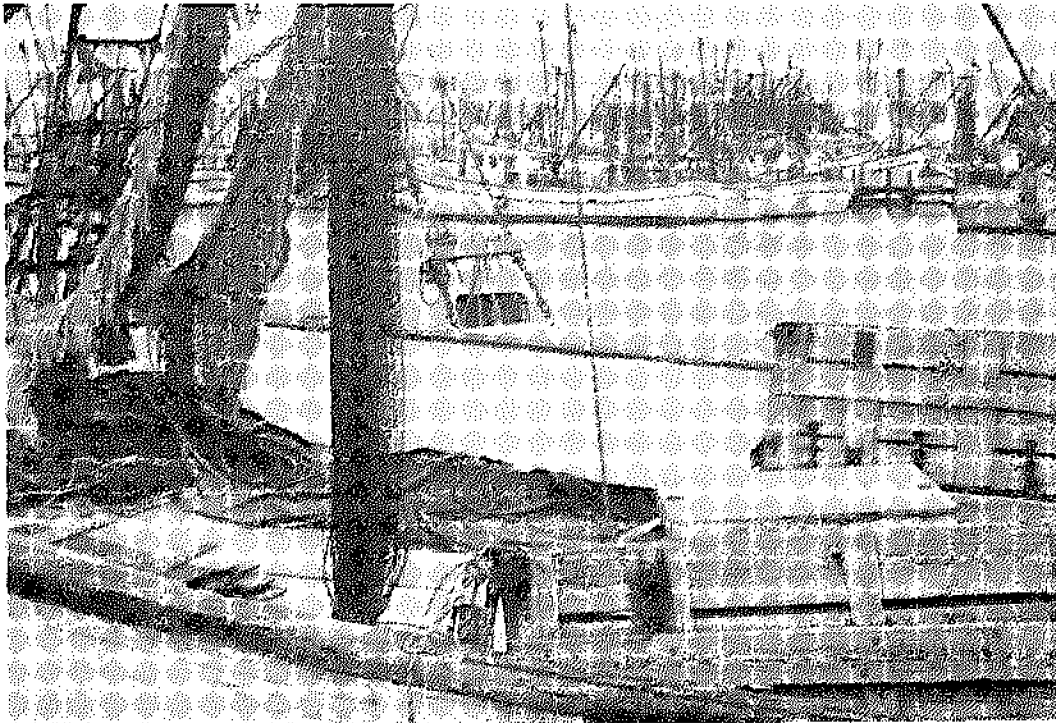
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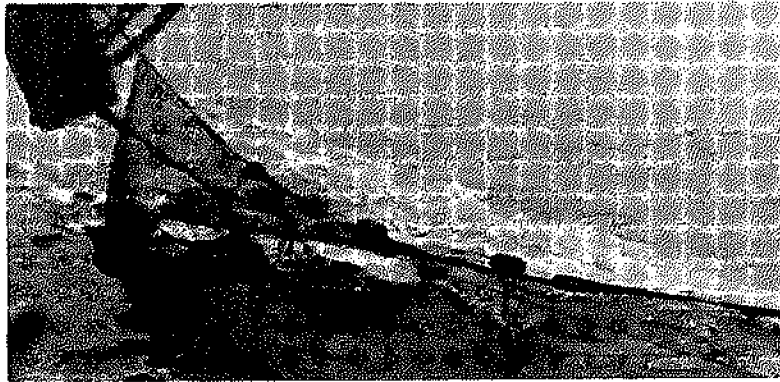


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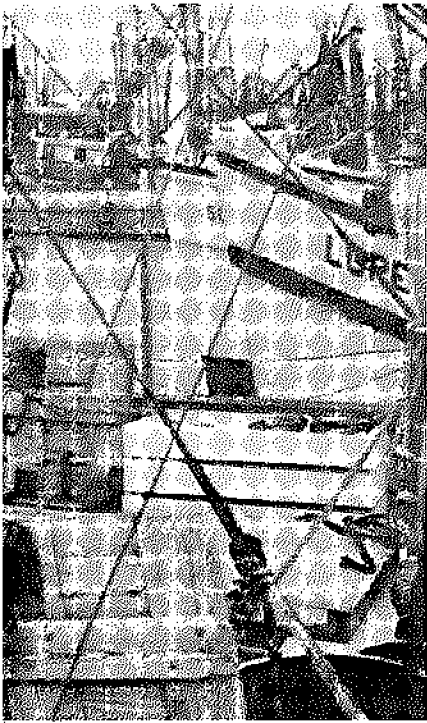
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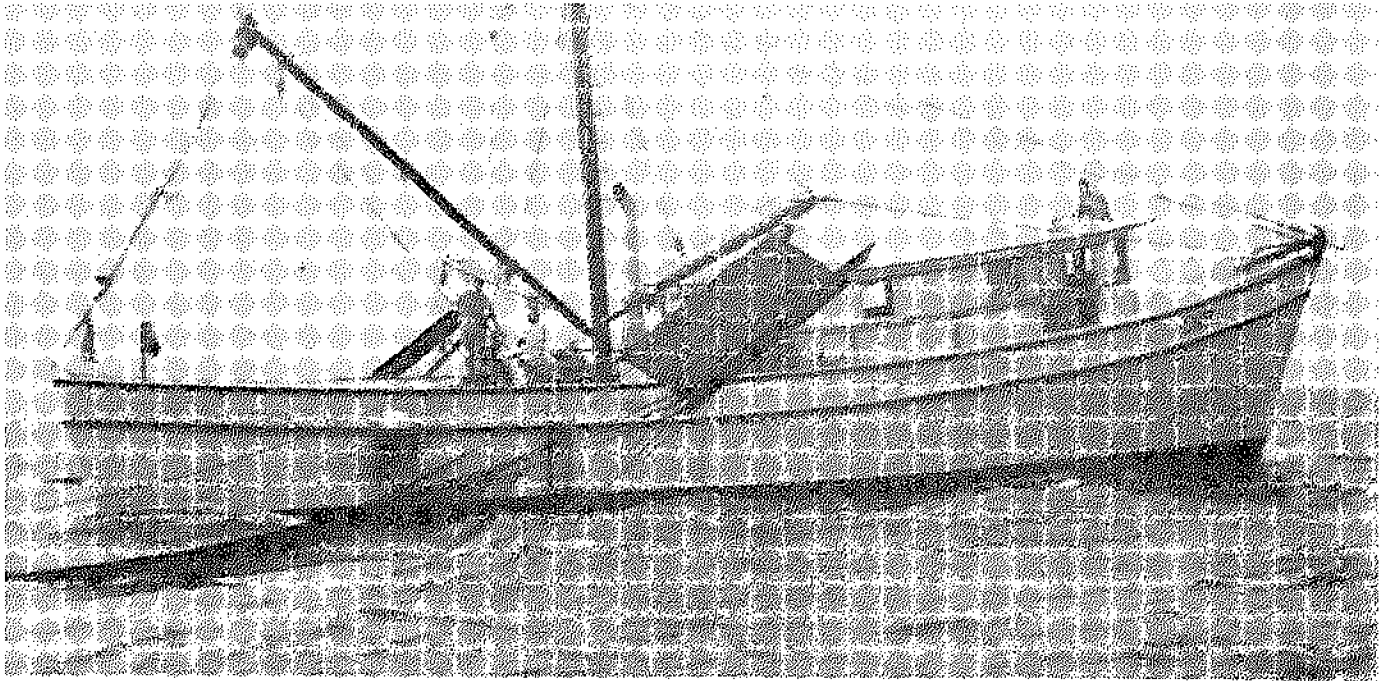
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Setting the trawl is a difficult task. This modern "double rig" trawler tows two trawls from outriggers. A drag may last up to four hours depending on the concentration of shrimp.

Credit: Bureau of Commercial Fisheries

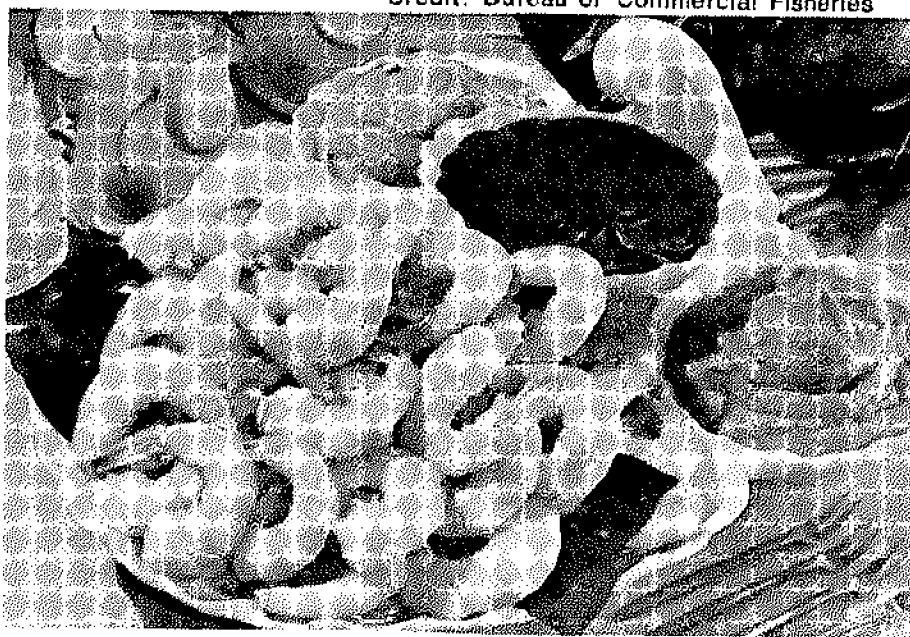
**UNIVERSITY OF MIAMI SEA GRANT
INSTITUTIONAL PROGRAM**

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Fresh shrimp has become a favorite of the America consumer.
Credit: Bureau of Commercial Fisheries





← Having been released from the "codend," the catch must now be sorted.

Credit: Florida News Bureau

INTRODUCTION

This bulletin is designed to inform potential new participants in the shrimp industry of the southeastern United States of the opportunities, problems, and investment requirements of the industry. It is also designed to advise present participants of new trends in boat construction and gear and to summarize what is known about the general status of shrimp stocks. There are several sources of financing for purchase, construction, and remodeling of vessels, and these may not be known to some potential users. The bulletin also seeks to inform the general public about this dynamic and important ocean industry.

Shrimp is the most valuable seafood resource in the United States. In 1967 the domestic shrimp fishery became the only \$100 million fishery in the country and accounted for almost 25% of the value of all domestic seafood resources. It created more wealth than the next two most valuable species (salmon and tuna) combined.

United States' production of shrimp has been growing steadily and rapidly in the last 20 years. In 1950 U.S. landings totaled 113.9 million pounds; in 1960 they had increased to 148.5 million, and in 1967 reached a record high of 189.5 million pounds. While production continues to rise at a consistently high rate, consumer demand has gone up even faster. This is reflected by the fact that per capita consumption has more than doubled since 1950. As a result, even though the U.S. produces more shrimp than any other country in the world, since 1961 this country has imported much more shrimp than it produces to keep up with the rising demand. In 1950 the United States imported shrimp from 17 countries. Now imports come from 67 countries and account for almost 25% of the value of all edible seafood imports. Mexico remains the main exporting country, but imports from Asian countries, particularly India, are growing (Figure 1).

Because demand for shrimp consistently exceeds supply, profits to the industry have been good. This condition has inspired a large increase in shrimp trawler construction. In 1968 over half of all fishing vessels constructed in this country were shrimp trawlers — an addition of 350 trawlers to the fishing fleet. The impressive production record of the industry has also attracted the attention of boat owners and investors who want to enter the industry now that its stability has been demonstrated.

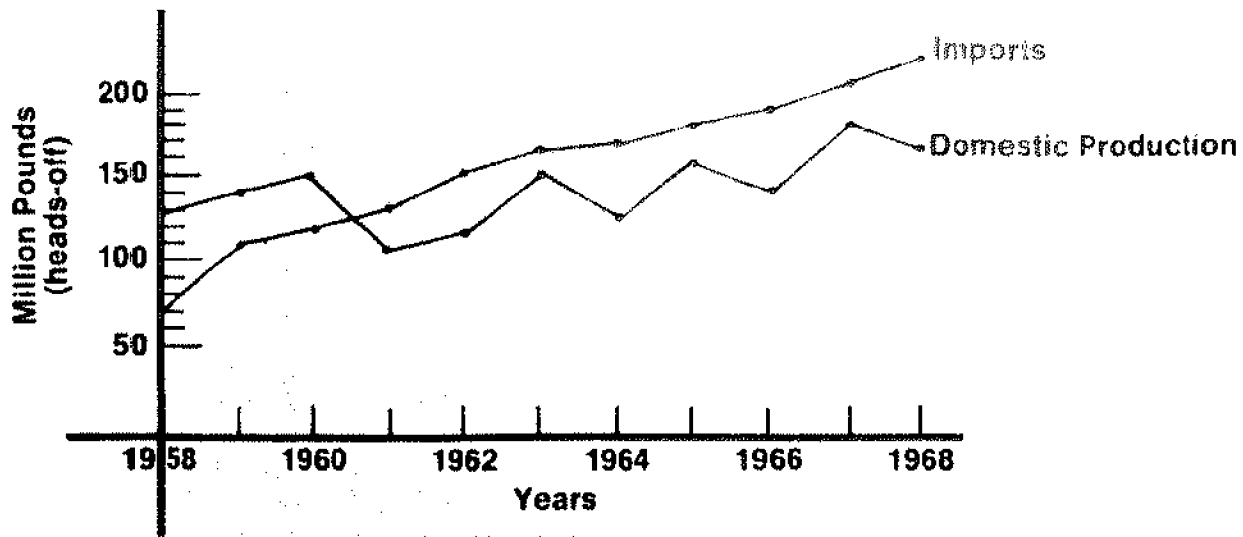


Fig. 1 Domestic Production Compared to Imports

FISHING GROUNDS

The Gulf and South Atlantic coastal areas from North Carolina to Texas account for well over 80% of the U.S. shrimp production, although there are growing shrimp landings in New England and in the northern Pacific areas (Figure 2). These latter areas produce smaller varieties of shrimp. A 1961 slump in the shrimp production in the Gulf, with a simultaneous decline in lobster production in the northeast, gave the New England shrimp industry a tremendous boost. This fishery is a relatively new one, and although its prospects have been good with a steady market for these shrimp in Europe, it is still not certain that it can continue on a stable basis. Alaskan fisheries have grown in importance in the last few years and now account for over 83% of west coast production.

Because shrimp boats can be built more cheaply in foreign countries with easier financing arrangements, and because they can be operated from foreign ports at lower cost (due in part to a lower wage scale), there has been a diversion of U.S. capital to foreign-based operations. These are located primarily in Honduras, Nicaragua, Surinam, West Africa, the Guyanas, Barbados and Trinidad. There are over 300 boats in these areas yielding \$20,000,000 worth of shrimp each year. American capital and the promise of American markets has also encouraged new shrimp production in Mexico, Venezuela, Colombia, India, Pakistan, Liberia, and other countries. These now export most of their production to the United States.

THE RESOURCE

There are four major species of shrimp caught in United States waters: white, brown, pink and Royal Red shrimp.

Shrimp Species

WHITE SHRIMP (*Penaeus setiferus*)

Until about 1948 white shrimp accounted for almost 90% of the total catch of shrimp in the Gulf of Mexico. The discovery of extensive resources of brown and pink shrimp in the late 1940's and the early 1950's altered this picture considerably. Now white shrimp account for only about a quarter of the Gulf Coast production.

White shrimp are found in inland, brackish waters with adjacent shallow offshore areas beginning around Beaufort, Morehead City, and Southport, North Carolina. Another area extends from Georgetown, South Carolina, south to Cape Kennedy, Florida. The major area stretches along the entire continental shelf of the Gulf of Mexico from Apalachicola, Florida, west to Freeport, Texas, and south to Carmen, Mexico, with heaviest concentrations in the soft mud and sand bottoms off the coast of Louisiana.

Fishing for white shrimp is done primarily in the daylight hours, in water usually no deeper than 90 feet, and rarely deeper than 210-240 feet. For this reason, white shrimp fishing in the past has been a local, inshore operation using small, sometimes poorly equipped boats. Like other species, white shrimp are not available in great quantities throughout the year, but vary in their availability according to season. The best catches of white shrimp are made in the winter months from October to January.

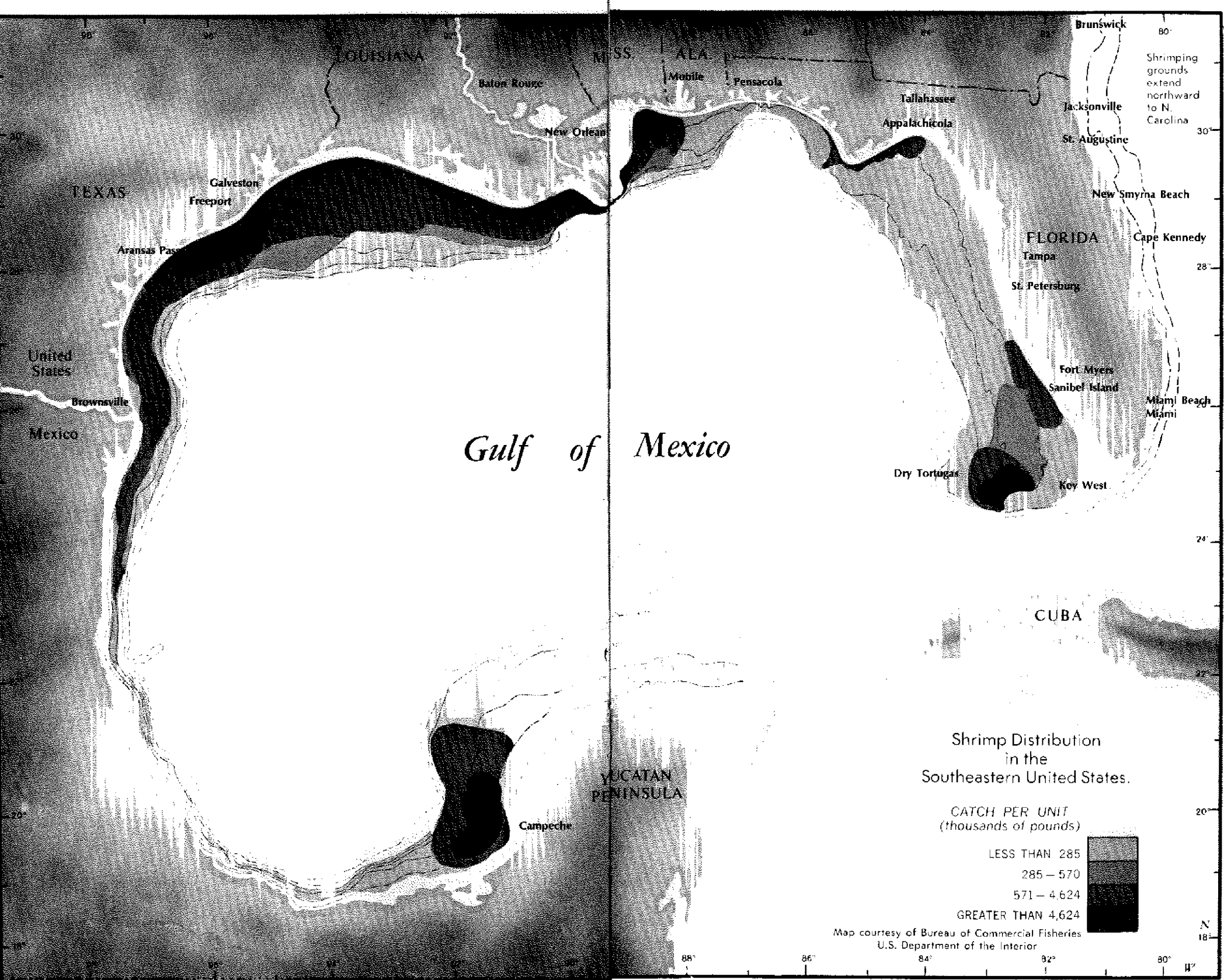
BROWN SHRIMP (*Penaeus aztecus*)

When the first commercially important catches of brown shrimp were made off the coast of Texas in 1947, shrimp dealers had some difficulty marketing them because of their unfamiliar darker color. Since then brown shrimp have grown in importance and now account for over 65% of the Gulf Coast production.

Brown shrimp is the principal species found along the continental shelf from Alabama to the Rio Grande River, with particularly heavy concentrations off the Texas coast. They congregate in water between 66-120 feet deep, but good catches have been reported in water as deep as 300 feet. For water this deep, larger vessels with high-powered engines are required. Brown shrimp are caught mostly at night. Their peak of catch is in the summer months from June to October.

PINK SHRIMP (*Penaeus duorarum*)

Pink shrimp have usually been located where there is a wide shelf, protected waters, and a soft bottom. Although they are usually found in waters between 36-108 feet, the Campeche area off the coast of Mexico extends out as far as 150 feet. They may become increasingly important since the Mexican government has recently limited U.S. fishermen to an area no less than 12 miles off the Mexican coast.



LOUISIANA

Baton Rouge

New Orleans

Mobile

Pensacola

Tallahassee

Appalachicola

Brunswick

Jacksonville

St. Augustine

New Smyrna Beach

FLORIDA

Tampa

St. Petersburg

Fort Myers

Sanibel Island

Cape Kennedy

Miami Beach

Miami

Dry Tortugas

Key West

CUBA

YUCATAN PENINSULA

Campeche

TEXAS

Galveston

Freeport

Aransas Pass

United States

Brownsville

Mexico

Gulf of Mexico

Shrimping grounds extend northward to N. Carolina

30°

28°

24°

22°

20°

N

18°

88°

86°

84°

82°

80°

W

Because pink shrimp burrow in the bottom during the day, the best catches are made at night. Although pink shrimp can be caught year round, they exhibit some seasonal fluctuations and yield peak catches between October and April.

These shrimp are nearly continuously distributed around the Gulf coast, but the Campeche, Dry Tortugas and Sanibel Island regions are the most commercially productive areas. The Tortugas area alone yields an average of 20,000,000 pounds a year worth \$6 million to fishermen. The western coast of Florida north of Sanibel Island has been explored, but production was limited because of ragged bottom conditions which create hazardous trawling. From Apalachicola to Pensacola on the northwestern coast of Florida, commercial shrimpers have been more successful.

The fishermen who work the Campeche area west of the Yucatan peninsula usually land their catches at Brownsville, Texas, or in Florida, at Tampa or Ft. Myers. Because of the long distances, these fishermen must have sturdy, powerful boats able to sustain trips as long as sixty days. Although mechanical refrigeration could be used to store the shrimp on these long trips, the standard practice is to ice the shrimp until another boat returns to port. The returning boat may carry back catches from several boats on the fishing grounds.

ROYAL RED SHRIMP (*Hymenopenaeus robustus*)

In the deep waters off the continental shelf, the research vessel "Oregon" of the U.S. Bureau of Commercial Fisheries discovered shrimp which were given the name "Royal Red" because of their large size and brilliant color. They occur in water between

The shrimp grounds in the Dry Tortugas were discovered in 1950. Since then they have grown in importance and now support 450-500 boats in the winter months of peak catch.

Credit: Florida News Bureau





This exploratory vessel is surveying possible new Royal Red shrimping grounds. This drag alone yielded 650 pounds of Royal Reds.
Credit: Fish and Wildlife Service

900-2250 feet, often 50 miles or more away from shore so that fishing for them presents special problems. Large boats with winches capable of handling heavier and longer trawling cables are required. Hydraulic winch systems in which winch and engine can operate independently have been designed for such deep water trawling. In addition, boats operating in these areas require up-to-date navigational equipment, radio telephones, and depth recorders to be able to keep trawls on the sea bottom. At these depths, there is at times a very soft, muddy bottom requiring special trawl doors and mud ropes to assure fishing success. This resource remains largely untouched due to the high initial costs involved in buying and outfitting an adequately equipped vessel. Very few commercial vessels are currently involved in Royal Red production. These few boats fish for only one to two months, usually during periods of low production of other commercial species. Catch rates vary widely, and no clear picture of their potential commercial productivity has emerged.

The best domestic areas for Royal Red fishing have been found to be in a 180 square mile area between St. Augustine and Ft. Pierce off the east coast of Florida, a 77 square mile area south to southwest of the Dry Tortugas, and a large 740 square mile area from Mobile, Alabama, west to the Mississippi Delta.

SEASONAL AVAILABILITY

Shrimp vary considerably in availability, depending on species and seasons. Successful shrimping operators are those who make it a point to be wherever the shrimp are. For example, a single boat may take 70-80% of its annual catch between June and December on the north Gulf coast. Then, when winter weather conditions in this region make efficient fishing impossible, this boat may go as far south as the Dry Tortugas or the Campeche grounds. Another pattern is followed by the South Atlantic boats, which fish off the coasts of North Carolina and Georgia during the summer months, moving south to the northeast coast of Florida during the fall and early winter. These boats may come to the Tortugas during the winter and sometimes continue on to the north Gulf coastal regions in April and May.

BIOLOGICAL LIFE CYCLE

Shrimp fishermen and state conservation agencies which control shrimp seasons have sometimes been deadlocked in dispute over the opening date for the shrimping season. Fishermen who want seasons opened more quickly often assume that a longer season automatically means a larger and more profitable catch. This is not always the case since there are many factors involved in a good shrimping season besides its length. In order to understand state regulations concerning shrimp fishing, it is important to be familiar with some basic biological facts about the commercial shrimps in the South Atlantic and Gulf areas.

Biologists have determined that the life cycles of the three principal commercial species are similar, even though different stages of development may occur during different seasons of the year. Adult shrimp spawn offshore in waters ranging from 30-120 feet for white shrimp, 90-150 feet for pink, and 90-240 for brown shrimp. Ordinarily spawning areas are coincident with offshore fishing areas. As eggs are laid, they are fertilized by spermatazoa from a spermatophore which was earlier attached to the underside of the female's body during mating. A female shrimp may deposit from half a million to one million eggs which gradually sink. Hatching occurs within 24 hours. About 10-11 larval stages follow which develop in two to three weeks to postlarvae which resemble the adults. Although the exact mechanism is not known, it appears that even in the larval stages, these tiny shrimp are moving (or are being moved by currents) towards the protective estuarine nursery grounds. Upon becoming postlarvae they are active swimmers and ultimately make their way to the inland areas where they pass postlarval and juvenile stages. It is in the shallower warmer waters of the nursery grounds that the greatest growth occurs. Inshore fishing takes place on these young adults in some areas both for bait and for food. The shrimp are from four to six months old when they begin to move out of the estuaries. As the shrimp grow they continue their movement away from land so that the

- D — larva (protozoeeal-magnified)
- E — larva (mysis-magnified)
- F — postlarva entering bay (magnified)
- G — juvenile in bay nursery grounds
- H — adult migrating to sea

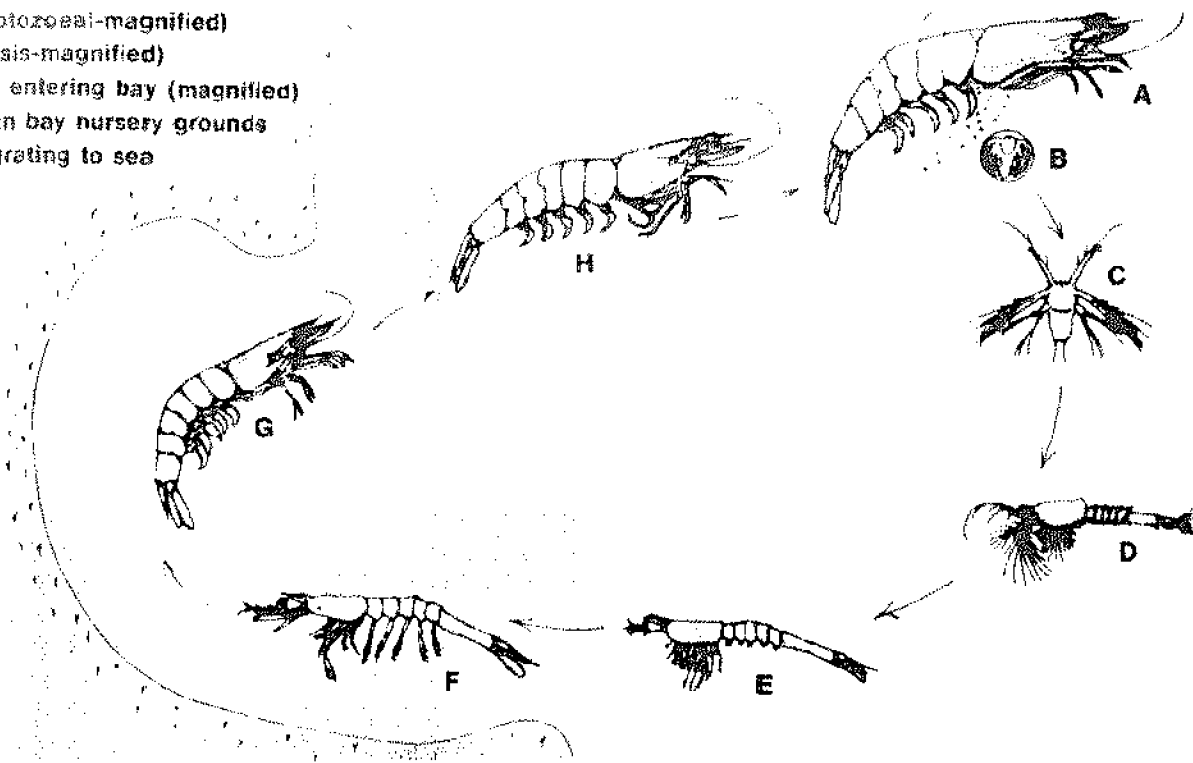


Fig. 3 LIFE CYCLE OF SHRIMP

Credit: Marine Research Laboratory Florida Department of Natural Resources

larger adult shrimp are eventually found in deeper offshore waters (Figure 3).

Temperature variations influence the growth rate of shrimp. Growth is rapid during the warmer months, but slows down or even stops in the nursery grounds and the offshore waters during the winter months. With the return of warmer weather, growth resumes. Seasonal migrations of shrimp are also affected by temperature and salinity changes. For example, white shrimp move either shoreward or southward to take advantage of warmer waters in winter.

Figure 4 shows seasonal variations on this basic biological theme. The chart is not completely accurate for all areas in all years, but varies locally and annually.

REGULATIONS

The regulations on shrimp fishing are generally of three kinds: closure of specific fishing areas, limitations on season, and restrictions on the sizes that can be caught during a season. Each state has the authority to set its own rules, and these vary considerably.

Restrictions on specific areas are primarily aimed at protecting juvenile and young adult shrimp in nursery grounds and inshore areas. For this reason, inside waters in Florida are off-limits to all but live bait shrimping operations, since these areas constitute the primary growing regions for commercial shrimp caught in the

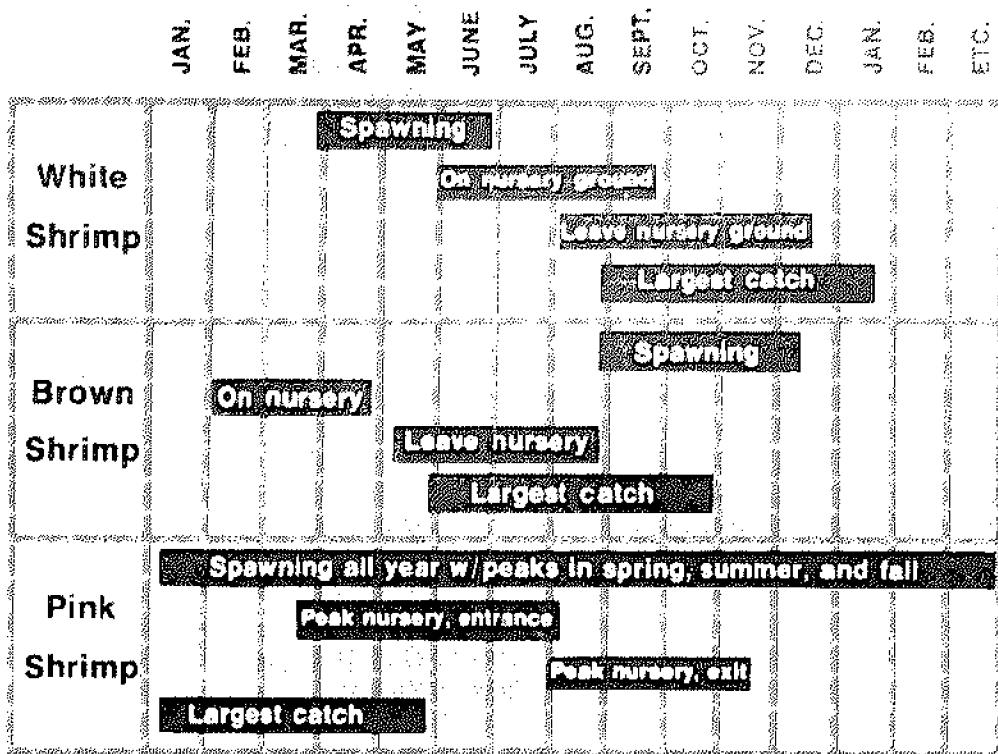


Fig. 4 Species Variations on the Biological Life Cycle

state. In Texas and Louisiana, brown shrimp are similarly protected.

Setting the opening dates for inshore and offshore shrimping is a difficult and important decision. The Bureau of Commercial Fisheries as well as state boards of conservation and private institutions keep statistics and conduct research on the size of post-larval populations, growth rates, mortality rates, effect of the environment on shrimp, and shrimp movements, to assist regulatory officials in determining the best time to begin harvesting. Setting the opening date for the inshore fishing season is based on knowledge of nursery population size, growth rates, and predicted market value for various sizes of shrimp. The officials responsible must estimate the smallest size at which shrimp can be legally caught inshore in order to have the highest economic return for the whole fishing season. Often it will be decided that the returns on the larger and more lucrative offshore shrimp will justify continued restrictions on inshore areas where the juvenile shrimp are maturing.

Setting the opening date for the offshore season is also a matter of growth rate and potential market value. In this case the regulatory administrator must decide if the expected increase in growth rate will offset the natural mortality rate of adult shrimp enough to justify the temporary extension of offshore restrictions. Decisions are increasingly being based on scientific information, and are aimed towards establishing conditions which will yield the most profitable catch for the years to come.

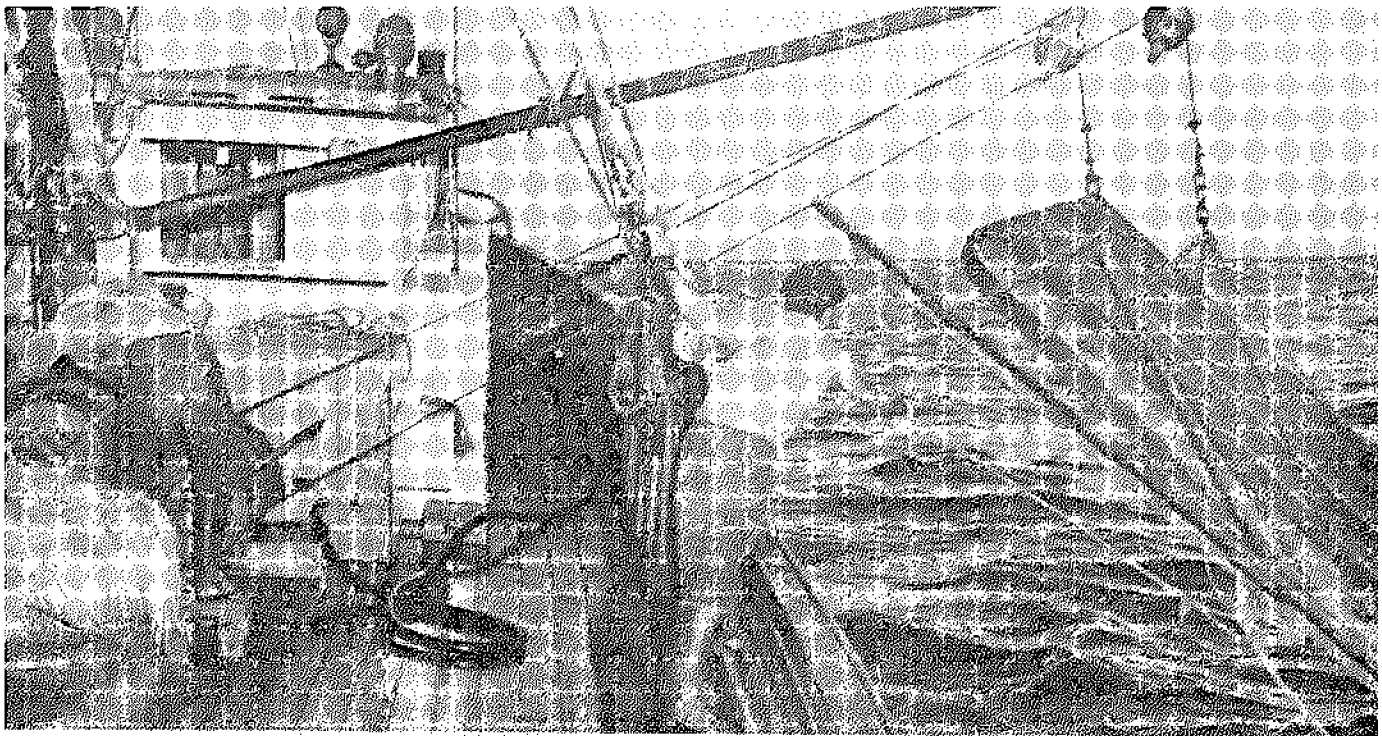
SHRIMP TRAWLER CONSTRUCTION AND OPERATION

Shrimp trawler design has come a long way from the "luggers" of the early days. The early boats were about 25 feet long, had a shallow draft, an engine in the stern, and a fish hold forward. The early shrimpers fished off the side with a cast net or a haul seine which was replaced in the early years of this century by an otter trawl towed with rope lines. The otter trawl is a conical bag tapered from the mouth to the tail. The wings of the net are fastened to wooden otter doors which are set at an angle so that the force of the water against them will keep the net open. Although the otter doors vary in size, most are about eight feet long and 40 inches wide. Steel runners facilitate their movement along the bottom. The end of the trawl (or "codend") is tied with a special knot which can be untied easily to empty the catch onto the deck where it is sorted.

The great leap forward provided in the 1940's by the use of the diesel engine led the way to larger boats and new innovations in gear. This resulted in the Florida-type trawler now widely used all over the world. Powered by diesel engine, this is a 50-65 foot wood boat with a steel cable and drum hoist winch operating off the main engine. It drags a trawl 75-120 feet wide. Since the 1950's more and more boats have converted to a "double-rig" trawling arrangement in which two smaller trawls are towed from outriggers, with a small trynet between. To prevent line fouling, the starboard trawl is generally about 150 feet behind the port trawl with trynet between. Recent innovations in double-rig trawling have been the introduction of stabilizer planes on the outriggers (now almost standard equipment) and the use of larger main trawl winches, allowing for faster setting and hauling and capable of handling heavier cable for deep water trawling.

The trend towards larger boats with more sophisticated equipment continues. Although the average length of the trawlers now operating in the Gulf is about 60 feet, many are now 75-80 feet long, with engines of 300 horsepower and more being common. Expanded offshore operation has required the use of these more substantial boats which can undertake longer trips and are able to fish even in bad weather conditions.

Although many shrimp trawlers continue to be made of wood, steel is being used with increasing frequency. Since the first such trawlers appeared in the 1940's, there has been a marked trend towards steel boat construction. Today 50% of the trawlers built are of steel, and the percentage rises each year. Several factors account for this trend. Plans and materials for steel vessels are more readily available, and the actual construction does not require the highly skilled hand labor that is involved in wood boat construction. Although steel trawlers cost on the average 25% more than wooden boats, their operating life expectancy is double that of wooden vessels. In addition to these advantages, long-range costs are generally lower on a steel boat, not only because of the



Two or three men make up the crew on a standard shrimp trawler. Here two men on a "double rig" trawler haul the starboard otter trawl. The large wooden structures hanging from the outrigger are the otter "doors" which assure that the trawl remains open under water.

Credit: Florida News Bureau

more economical long life, but also because repair and maintenance costs are lower than on a comparably operated wood boat. The extra strength and endurance of a steel boat means that its owner pays only about one half of what a wood boat owner pays for hazard insurance.

Recently shipyards have been experimenting with new materials for shrimp trawlers including aluminum, fiberglass reinforced plastic, and ferro-concrete.

Because they are lighter, aluminum boats are faster and have a greater cargo capacity. Although aluminum construction costs almost 12% more than steel, it is argued that this increase in cost is offset by the economies gained in extra cargo and in lower repair and maintenance costs. Others maintain that the increase in speed and loads may be offset by a loss in towing ability, and that initial costs may be significantly higher than the stated 12% increase over steel boats. The relative advantages will not be clear until there has been greater experience in the use of aluminum trawlers.

Fiberglass reinforced plastic (FRP) boats are still uncommon, but they probably will play a larger role in the future. Like aluminum boats, they have the advantage of being lightweight, allowing for a higher cargo capacity. Durability is their biggest advantage since fiberglass is not susceptible to corrosion, dry rot, or biological attack, and is completely fireproof when treated with a special self-extinguishing resin. Repairs are easier to make and require less

skilled labor than those on metal and wooden boats.

The major problem with FRP trawler construction currently is its cost. Only a few companies have the facilities or lay-up techniques available to build these trawlers. When these techniques are perfected, however, it is estimated that FRP boats could run at a cost 20% lower than steel.

INNOVATIONS

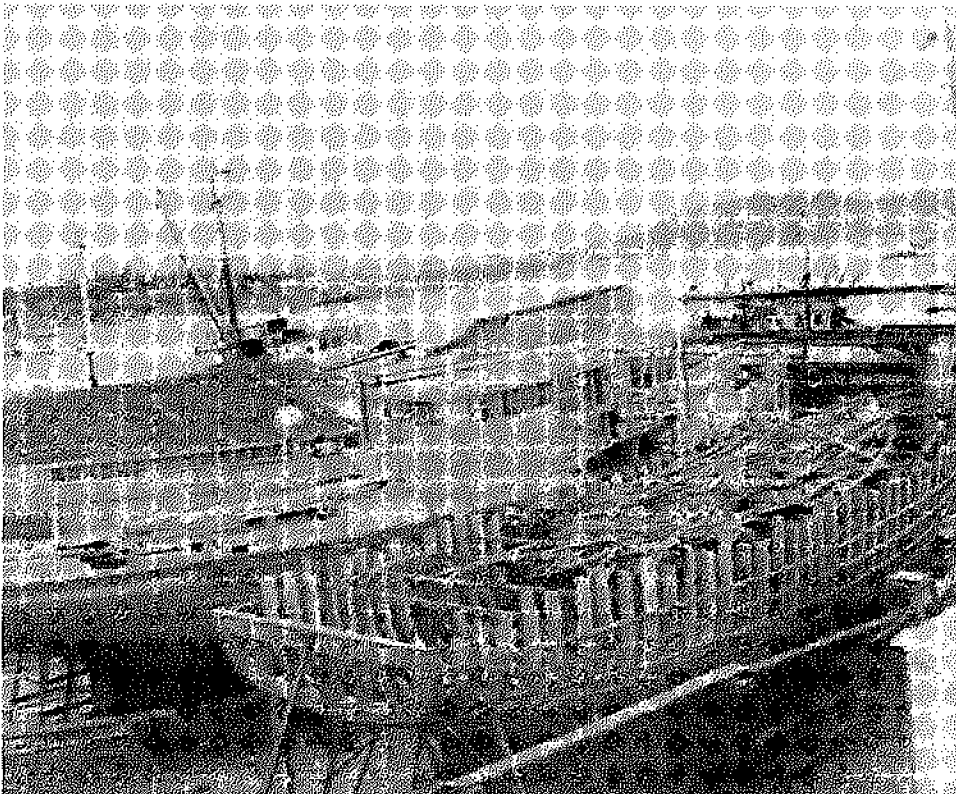
In what is often a tedious and lengthy process, catches are now sorted, headed and iced by hand. To make these operations easier and to improve the quality of the shrimp, mechanized on-deck sorting and packaging equipment is being tested. Mechanical refrigeration is already in use in some boats, but the great majority of fishermen continue to ice their shrimp.

Multipurpose vessels are also being considered. As yet the costs of converting a shrimp trawler for other kinds of activity are prohibitive. However, large aluminum multipurpose vessels which can convert easily and inexpensively for midwater industrial fishing, oil survey work, snapper fishing, or for a pocket-size factory ship operation have been tested.

Experiments have been done with an electric trawl which shocks the shrimp to jump out of their burrows. The electric trawl is not widely used, and may prove to be economically practical only in special cases.

This partially completed wooden shrimp trawler is one of the rapidly growing number of new shrimp trawlers being added to the commercial fleet each year.

Credit: H. L. Peace Publications



THE INVESTMENT

The high initial cost of shrimp trawlers is one of the major problems facing anyone considering shrimp fishing. In 1965 a new 73 foot wooden Florida-type trawler cost \$64,000. In 1969 a new trawler costs about \$80,000. This price includes such standard equipment as a main deck winch, a ship-to-shore radio, a citizens band radio, one depth recorder, compass, automatic pilot, ice hold, and a 32-volt generator. Additional equipment could include radar, loran, an extra depth recorder, a radio direction finder, single or dual unit mechanical refrigeration, a hydraulic winch, 110-volt electric generator, and single band system for long range communication. Including all of this extra equipment could run costs up \$35,000-\$50,000 higher than the standard price. These costs are estimations which vary widely depending on the boat builder, his suppliers, financing arrangements, and other factors.

Because the cost of trawlers is high, it deters fishermen who are concerned more about initial cost than they are about the potential increase in production and the long-range economy of an efficient operation. Although large boats with newly developed extras do require a substantial initial investment, these boats, if properly managed, are invariably the highest producers.

ECONOMIC RETURN

Actual dollar return from shrimps depends on the number of days fished, general industry-wide levels of production, local fishing conditions, annual consumer demand, ex-vessel price per pound of shrimp, and proper boat management. Figure 5 shows the average percentage breakdown of costs and return for new



After the catch has been sorted, the shrimp must be headed and then iced or refrigerated. Done by hand while at sea, this process is often a long and tedious one.

Credit: Bureau of Commercial Fisheries

trawlers with full Gulf and South Atlantic capability. This is an average percentage, and it varies considerably with the kinds of boat, the type of operation, and its financing arrangements. It is noteworthy, however, that the percentages representing operating expenses remain relatively fixed over the years. As soon as these fixed costs are met (break-even point), actual dollar income rises quickly. The boats sampled were high producers during a prosperous year so the figures may be higher than normal. These boats achieved an annual gross income of about \$70,000. If about 24% of this is net income (See Figure 5), the owner could clear as much as \$16,800 on one boat. If he owns and captains his own boat, or if he owns several boats, his income would be significantly higher.

FINANCING SHRIMP FISHING

Although the costs are high and the risks significant, financing arrangements are available for shrimp fishermen. Sources of capital are banks, commercial credit companies, and government agencies.

Banks

Amount of loans, interest rates, and amortization depend on individual bank policy, the borrower's credit, and how familiar the bank is with the borrower and his operation. In comparison with other kinds of loans (for house repairs, small business ventures, etc.), loans for boat construction or repairs are difficult to obtain. However, banks in the past have served as a major source of capital for new boat construction.

Commercial Credit Companies

Financing is available through commercial credit companies. In general, however, their loans are granted on short maturities and are repayable at compound interest rates which are usually significantly higher than other kinds of financing.

Government Programs

- The Fisheries Loan Fund of the Federal Government was established in 1956 to strengthen the domestic fishing industry. This fund extends loans for financing and refinancing of fishing operations, for maintenance and repair of fishing gear and vessels, and for the purchase of new or used fishing gear and vessels. It will not, however, finance shore operations or new business ventures by people not currently involved in the fishery. Because it is not the intention of the Government to compete with existing loan agencies, the applicant must be able to prove that he is unable to obtain reasonable financing from any other source. Part of the application procedure is the scheduling of an open meeting to determine whether or not the purchase of a new or used vessel will cause economic hardship to any other efficiently operated boat in the fishery.

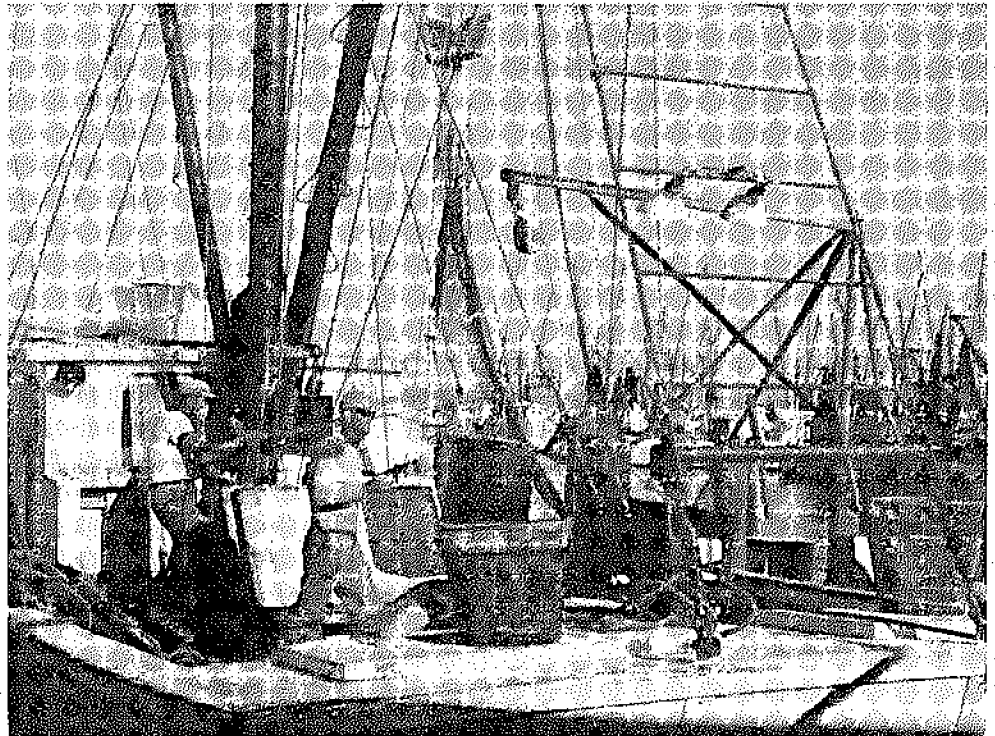
Loans up to 80% of the cost of the boat are available if the

Credit: Bureau of Commercial Fisheries

A trip of three days may yield as much as 20,000 pounds of shrimp. Upon arriving at the dock, all of this shrimp must be transferred from the vessel's ice hold to onshore processing facilities. Fishermen can expect to make from \$.55 to \$1.40 per pound depending on the size and species of the shrimp and the season. Onshore the shrimp must be weighed and iced again before they go to the processing plant where they are frozen raw or peeled and deveined for breading, canning, or freezing.



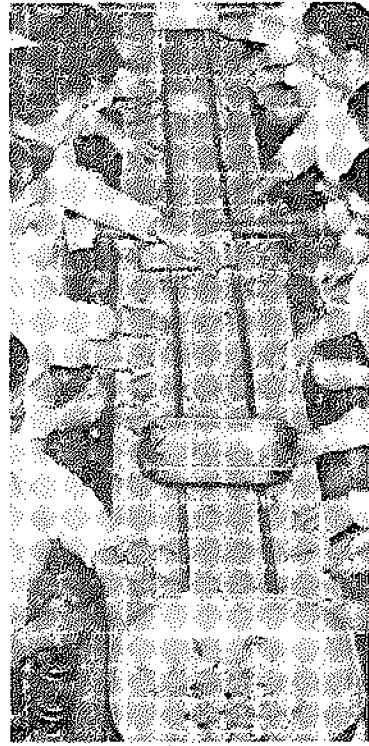
Credit: Florida News Bureau



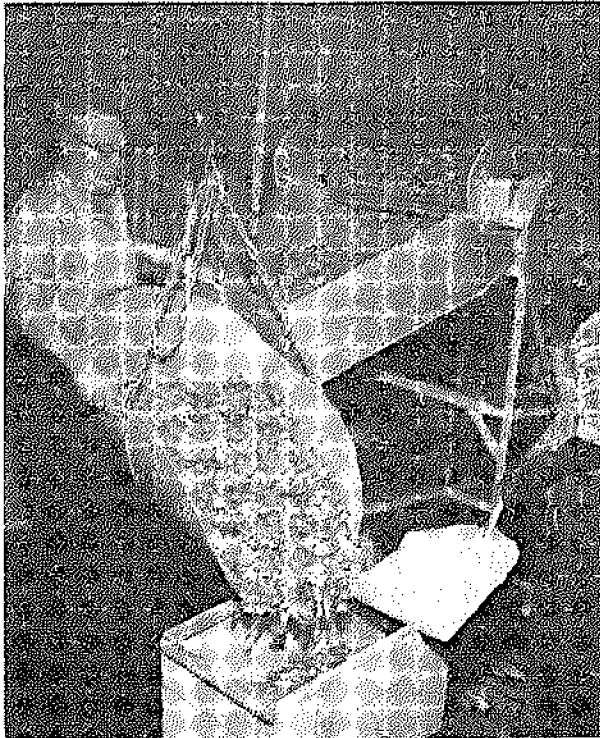
Credit: Florida News Bureau



Credit: Robert Connel,
Atlanta Journal Constitution



Credit: Bureau of Commercial Fisheries



Credit: Florida News Bureau



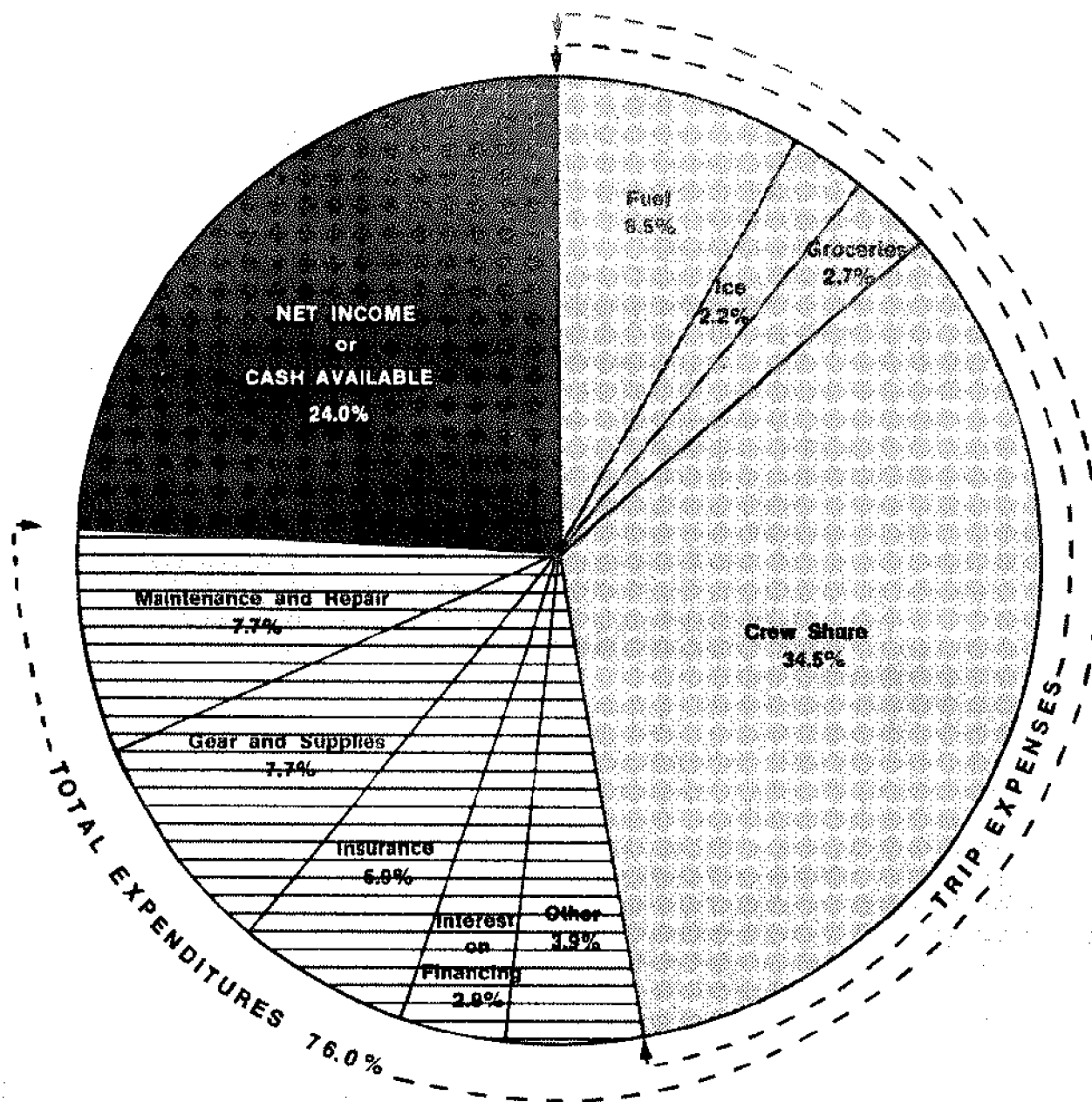


Fig. 5 Percentage Breakdown of Cost and Return

These figures were obtained from a sample of newly constructed vessels of all kinds which are fully capable of operating anywhere in the Gulf of Mexico.

applicant can meet certain basic credit requirements. These loans are repayable at 7½% interest for a period not longer than 10 years.

- The Federal Fishing Vessel Mortgage and Loan Insurance Program will insure construction loans or preferred ship mortgages given for construction, reconstruction, or reconditioning of fishing vessels provided that the loan or mortgage is not from a government agency. Credit requirements of the mortgagor or borrower are similar to those of most commercial banks. In addition, the mortgage or loan to be insured must meet certain requirements

in order to be approved by the Secretary of the Interior. The loan or mortgage cannot exceed 75% of the construction, reconstruction, or reconditioning cost, and must be repayable at an interest rate approved by the Secretary. The actual work on the vessel must be done by a builder submitting the lowest responsible bid unless otherwise stipulated by the Secretary.

Premium rates for the mortgage insurance are 1% for mortgages covering over 50% of vessel cost and 0.75% otherwise. Premium rates for loan insurance are 0.5% per year on the average amount of the loan outstanding.

Further information and applications for loans or for mortgage and loan insurance can be obtained by writing:

The Branch of Loans and Grants
The Bureau of Commercial Fisheries
U.S. Department of the Interior
Washington, D.C. 20240

- The Fishing Vessel Construction Differential Subsidy Program was established to correct the inequities in the cost of new vessel construction which may result from the prohibition of purchasing lower cost foreign-built vessels imposed on domestic fishermen. Under this program, the Secretary of the Interior is authorized to pay up to 50% of the cost of a new vessel provided that certain requirements concerning the fishing vessel, the owner of the vessel, and the fishery itself are met.

No shrimp trawlers have been subsidized through this program, and no applications for subsidies have been accepted since July 1, 1969. However, new legislation is pending which would reopen and liberalize the application procedure which at present, it has been argued, is too expensive and too involved to be an effective tool in offsetting competing foreign prices.

LABOR SUPPLY

Perhaps the major problem faced by the shrimp fishery is the limited and unskilled labor supply. Modern vessels with sophisticated equipment are worthless if they are mismanaged or if, by lack of skill, the mechanical equipment is abused or not used. Whether a boat is successful is largely determined by the quality of the captain and crew. If the captain has management ability, a working knowledge of a given area, and knows how to utilize his boat's equipment, he can show a profit. Experience is the key. But the industry is failing to attract young men, skilled or unskilled, to its already depleted labor ranks. Seasonal employment, uncertainty regarding annual income, long days at sea with often unpleasant accommodations generate little career incentive to young men. As a result, the industry experiences a rapid turnover of labor and a serious shortage of experienced personnel.

A few training schools have been established to provide classroom, workshop, and on-the-job training for crewmen, mates, and captains.

Funds from the U.S. Department of Labor have enabled the Fitzgerald Laboratories to establish Fisheries Training Programs in Freeport, Texas, and Tampa, Florida. In these programs eight weeks of onshore training is followed by 44 weeks of on-the-job training as an apprentice on boats of the shrimp fleet.

A new training school opened in October, 1969, in Aransas Pass, Texas. In this carefully coordinated program the Texas Employment Commission recruited trainees; the Aransas Shrimp Association provided jobs; the U.S. Department of Labor's Manpower Commission funded the project; and International Resources, Inc., provided a teaching and counseling staff. This joint venture plans initially to train 100 mates, and hopes to expand its program in the future.

A small program is now underway at the Texas State Technological College in Harlingen, Texas. The state funded program trains men, primarily migratory laborers, for a period of six weeks. The Brownsville Shrimp Association cooperates with the program by using the trainees on their boats for a week of on-the-job training. After the captain makes his report, the trainee returns to the school for another week.

The Texas Shrimp Association is currently seeking funds to begin another program to retrain rural agricultural labor.

Finding young recruits for the industry is a major problem. In the future new labor resources may be found through the Veterans Employment Service, state vocational education programs, and the Department of Labor's State Employment Security Programs.

THE OPPORTUNITY

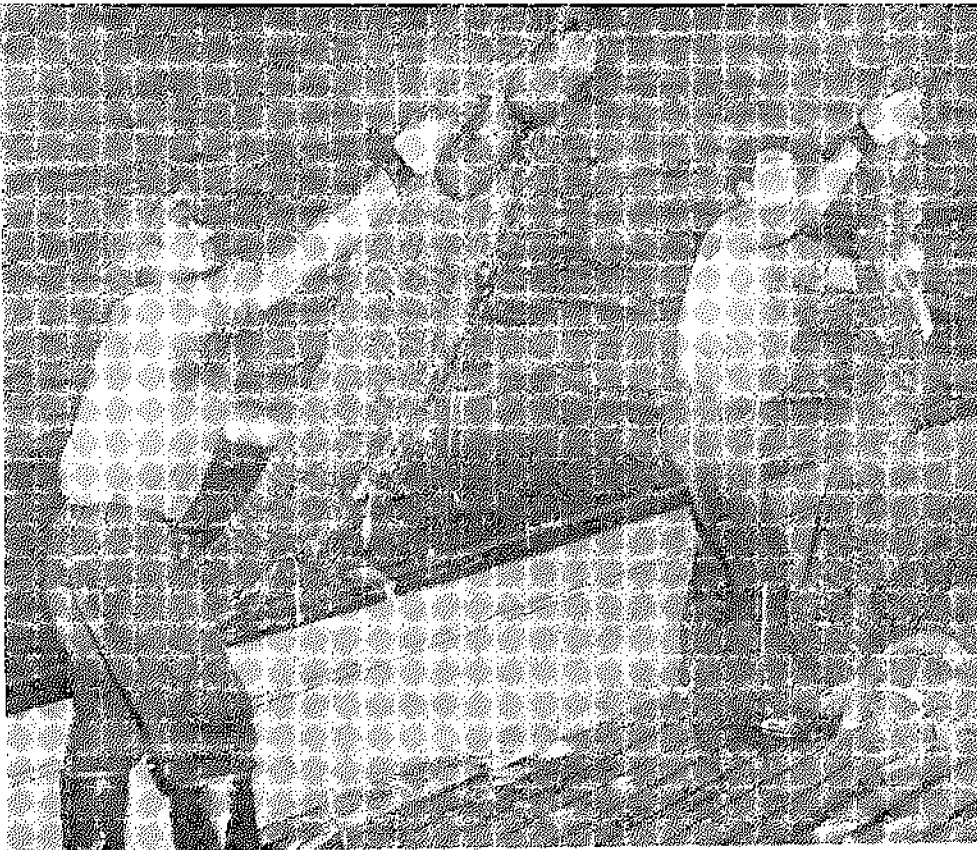
Anyone seriously considering entering the shrimp fishery of the southeastern United States will find answers to the following questions useful:

I. *What are the major problems faced by the shrimp industry?*

The major problem plaguing the industry is the labor shortage. Available sources of funds for crew training should be tapped, and an effort must be made to attract young, new personnel to the fishery.

Expanded biological research is required to insure maximum catches. In particular, more precise data are needed on growth rates, larval populations, diseases, and mortality rates of shrimp populations. Only with such information can sensible legislation be passed to protect and advance the industry.

Recent research done at the University of Miami's Rosenstiel School of Marine and Atmospheric Sciences has emphasized the vital role that estuarine areas play in shrimp production. If shrimp stocks are to be maintained at their present level throughout the southeastern shrimping region, estuarine nursery areas must be protected.



After a night of shrimping, the net must be hauled and cleaned of all remaining fish before it is dried and stacked. Credit: Florida News Bureau

II. Will imports affect the domestic operation sufficiently to discourage new entrants?

The United States demand for shrimp is very strong and is expanding. For this reason, imports have affected sales only locally and temporarily. Any domestic shrimp that can be caught will have a strong market in the foreseeable future.

III. Is this a good time to enter the shrimp fishing industry?

If the newcomer has commercial fishing experience (or can hire competent skippers), and if he has substantial financial backing, this is a good time to enter the shrimp fishing industry. But this is a skilled trade and should not be engaged in by novices or undercapitalized operators. Few if any underfished shrimp stocks exist near U.S. ports, and a newcomer will be competing with aggressive, experienced rivals. Only properly equipped and efficiently managed boats can make good profits on existing resources. There are some foreign shrimp resources still to be tapped, but this adds a new level of difficulty and expense. However, if a prospective participant has experience and financing, the shrimp fishing industry can offer him an economically sound and exciting career option.

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