

SEAFOOD PROCESSING: A FACTORY VISIT

By

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Seafood Processing

A Factory Visit



BOOK V
MARINE DISCOVERY SERIES

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SEAFOOD PROCESSING: A FACTORY VISIT

A visit to a seafood factory on the Mississippi Gulf Coast today is not complete without a look into the history of this fascinating business.

Today's mechanized, power-based factories bear little resemblance to the crude plants of years ago. But there is, nevertheless, a sense of continuity, of living history in the factories and in the people, many of whom have a long and proud family heritage of life in the seafood industry.

Such a heritage is quickly sensed as one talks with the workers and the supervisors in today's plants. They are quick to point out with great pride that their grandparents also worked there--or their great-grandparents. It is not an easy life; none of them would tell the visitor that it is. On the contrary, it is hard and demanding. It requires strength and endurance, calling on the best qualities of a worker who has always lived close to the sea and whose life is dependent on the sea's harvest.

Today seafood processing occupies a prime position in the economic life of the coast. This phenomenon has long been true, of course, but it is especially true today of this remarkable multi-million-dollar industry.

For as long as people have lived near the coastal waters, they have harvested the seafood which is regarded as among the world's best foods. From the earliest Indians who lived on the Mississippi Gulf Coast through the earliest settlers--most of them Europeans--to the present tourist who visits the coast from all over the world, seafood has remained one of the most attractive features of the area.

The Mississippi seafood industry exists because of the Gulf of Mexico--and the northern part of the area, known as the Mississippi Sound and its associated wetland areas. The Gulf of Mexico is one of the world's greatest fishing areas, and it has long been fished by Mississippi fishermen who depend on its resources for their livelihoods.

At first, fishermen used small crafts near shore. Later, in the early 1800s, sail-rigged luggers were built by early European fishermen on the coast; and shallow-draft catboats were used for seining shrimp. Huge seines were used with the early Biloxi schooners and required a number of men to handle them.

In 1867 the canning of seafood was begun by the Dunbar brothers in New Orleans. They had to overcome many problems before the canning was satisfactory; among the problems were lack of refrigeration, poor transportation, and difficulties with the cans themselves. With the invention of ice-making and then the opening of a railroad from Mobile to New Orleans after the Civil War, the seafood processing industry was well on its way on the Mississippi Gulf Coast.

One other important development in the history of the seafood industry was the invention of motor-operated boats. Another step forward was the introduction of trawls, a

kind of net which is like a huge funnel and which is dragged behind the boat. These trawls were used with the larger motorized boats, which had broad-beams and shallow-drafts.

The first seafood factory on the Mississippi Gulf Coast was that of Lopez, Elmer and Company, opened in 1881. Other factories soon developed, and by 1892, the canning of oysters and shrimp was the chief industry of the coast. Men, women, and children worked in the seafood factories, in the shrimp-packing sheds, and in the oyster-shucking business.

The need for labor increased as the industry grew, and workers from Baltimore, most of them of European descent and known as Bohemians, were imported into the area. Soon other European fishermen and seafood workers arrived from Greece, Italy, France, and Yugoslavia.

Many of the seafood plants closed during the summer months for boat repair. Despite some labor problems, the seafood industry continued to grow. In 1903, for instance, Lopez and Dukate and Company in Biloxi was thought to be the largest plant of its kind in the world, with the company handling up to 4,000 barrels of oysters a day, requiring the services of sixty boats and hundreds of workers.

Gradually over the years, because of competition from other areas and economic problems, coupled with poor management techniques for conserving resources, the seafood industry on the coast declined.

Today, however, it is again in a state of growth and continuing advancement. A tour of one seafood factory in Biloxi will serve to show what happens after the seafood is caught and is representative of the kind of effort required to see that the produce is marketed.



An experienced shrimp picker uses both hands to remove the heads of shrimp.

The visitor to Biloxi Shrimp, Inc. located near the eastern end of the Biloxi peninsula, directly across the water from Deer Island, is shown around the plant by manager Carroll Kovacevich and assistant manager Chuck Fest. They take him through every step in the process as the shrimp are prepared for market, and they answer numerous questions along the way. Both men are eager to share their knowledge and to explain what happens from the time the shrimp are trucked in until they are packed for shipment all over the country. Most of their shrimp come from Mississippi and Louisiana fishermen.

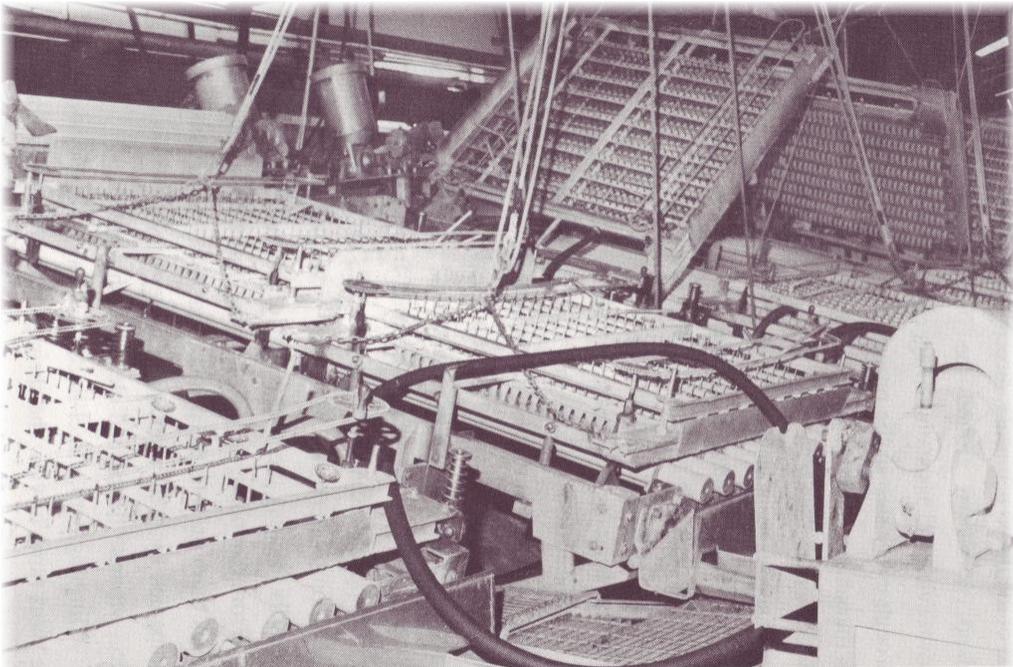
Other seafood factories may also take the shrimp directly from the boats as they dock beside the company piers.

On the July morning of this visit, the shrimp being received are brown shrimp. As the shrimp are unloaded, they are dumped into what is called a "conch-catcher", where a water pump pushes the shrimp into a wet tank, and other things, such as small fish or crabs, are prevented from going into it.

Dropped onto a conveyor belt, the shrimp move rapidly to the point where they drop into boxes for a weight check, primarily to check the total weight of the morning's shipment.

From that point, they are emptied into a food pump which moves them up into the peeling machines. Everything is accompanied by great amounts of water used to move the produce, separate debris and clean the shrimp.

Climbing onto a steel-lined walkway, one then moves up the short ramp to view the shrimp as they move by conveyor belt and drop onto the rubber rollers that do most of the peeling.



This machine is used to peel shrimp.

One of the workers, Ramona Stockstill, shares an interesting sidelight into the history of the peeling machines.

They were invented, she says, by a fisherman who, wearing rubber boots, was walking through a factory one day when he stepped on a shrimp. The shrimp shot from its hull and the man began to think about how they could be peeled as easily--not slowly and laboriously by hand, as had been done so long in the past. One result of his inventive thinking was experiments with his wife's wringer-type washing machine, with the familiar rubber rollers. And the final result was the use of rubber rollers in a peeling machine whose turning movement helps to remove heads, legs, and shells.

There are three peeling machines in the plant, all in motion as the shrimp slowly fall onto the rollers while the water keeps washing them.

The peeled shrimp then go into a washer shaped like a half-moon, with an inside of rubber and shells that move back and forth to separate the remaining loose hulls from the shrimp.



Shrimp are packaged according to their size.

From the washer, they move to another food pump that pumps them up to separators--two rollers, one moving clockwise and one counter-clockwise, which separate the remaining hulls. The hulls drop onto troughs below, while the peeled shrimp move into metal chutes, called graders. These graders size the shrimp by using a set of bars that can be raised or lowered. The larger shrimp are stopped by the first bar and are directed from the grading plates into containers below.

It is very important to keep checking the count--or number of shrimp per pound--and to size them accurately.

Once the shrimp are "sized", they are then dumped onto packing tables, where about twenty people, wearing long rubber or plastic gloves, check the shrimp for any

remaining foreign materials, weigh them in five-pound lots, and place them in plastic bags in which they also put ice water. Then they are placed in boxes and marked as to size.

From that point, the boxes of shrimp are placed on racks holding 1100 pounds of shrimp. Leaving the factory, they are rolled into a blast freezer, which reduces temperatures to a low as 40° below zero and freezes the shrimp rapidly.

After they are frozen, they are packed in fifty-pound master cartons and taken to a local freezing company for storage and future distribution to places as far away as Alaska, Canada, Boston, Washington, D.C., California, or Florida.

The company can handle between fifteen and eighteen barrels of shrimp an hour during peak season. It is not the largest seafood processing company on the coast, but it is in many ways a good representative of the modern and highly advanced seafood processor today.

Its staff members are very conscious of ecological concerns, such as the questions of prevention of pollution. For example, the shrimp hulls for many years in the seafood factories were merely dumped overboard.

State Bureau of Pollution Control personnel in recent years have required that this practice be ended, and the hulls are now handled like other garbage. One problem, however, was the large quantity of water which remained in the shell debris and ran from the garbage trucks onto the streets, causing an odor problem. Now, with the help of Bureau of



These cans of shrimp are ready to be put into pressure cookers.

Marine Resources scientists, large and powerful compacters have been developed and are used to remove excess water before hulls are picked up by garbage trucks. The Bureau is also helping the processors to develop this shrimp waste into a usable--and perhaps one day profitable--product.

In factories where shrimp are canned for large-scale distribution, much the same process may be followed, until the final grading and inspection, when workers hand-pack the shrimp into empty cans, which they get from an overhead track.

Required weights are measured carefully, and then hot fresh water and a salt tablet are added to the cans, which move on a conveyor to be capped and sealed.

Each can is coded for distribution, so that a check of the codes will reveal where the graded shrimp were canned and when they were processed.

The final factory process is the cooking of the shrimp. The cans are placed in steel baskets in pressure-cookers, where they remain for twelve minutes at 250° Fahrenheit.

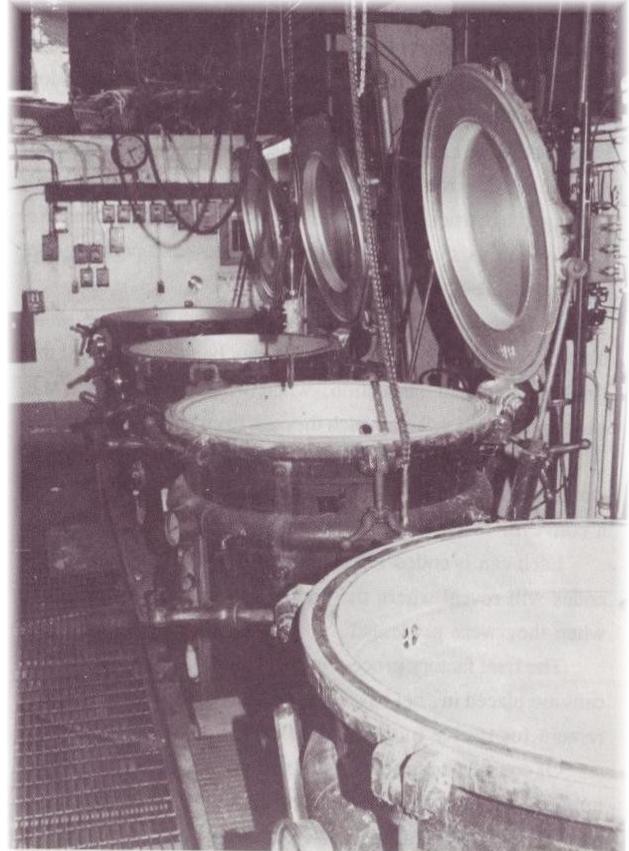
Of course, the processing of shrimp is only one of several important and productive types of seafood processing on the Mississippi Gulf Coast. A large percentage of the labor force on the coast is employed in the finfish and oyster processing occupations. The processing of cat food from industrial fish is a highly important part of this business, as are the catching and processing of oysters, crabs, and other seafood. There are over 1,500 licensed commercial shrimp boats on the coast, supplying more than eighty seafood processing plants and dealers.

Oysters and crabmeat are processed in large quantities--and are also coded for marketing. Oysters are usually sold in the shell, canned, frozen, or put into jars, which are kept refrigerated. They are not kept on the shelves long, however, as their "shelf-life" is not lengthy. Crab meat is usually canned, frozen, or refrigerated.

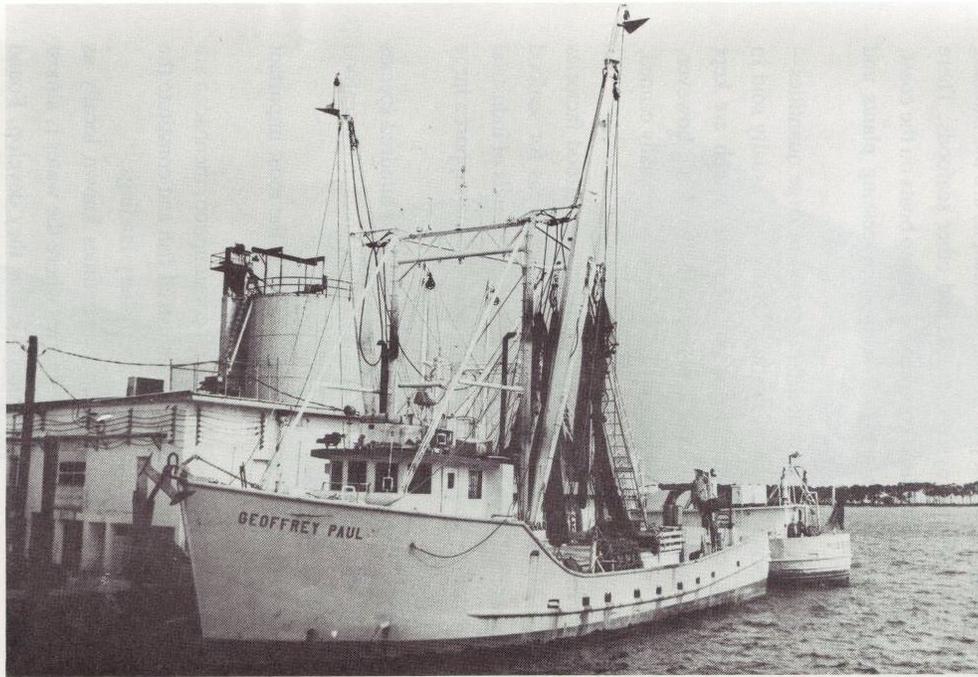
In the early 1950s the establishment of pet food factories on the Mississippi Gulf Coast opened new areas for seafood processors. Today hundreds of millions of pounds of industrial fish enter the seafood processing factories and support a large labor force.

The commercial fisheries catch over two-hundred species of fish, although only a few species are dominant in the seafood processing industry.

In pet food production, the croaker is the most important fish.



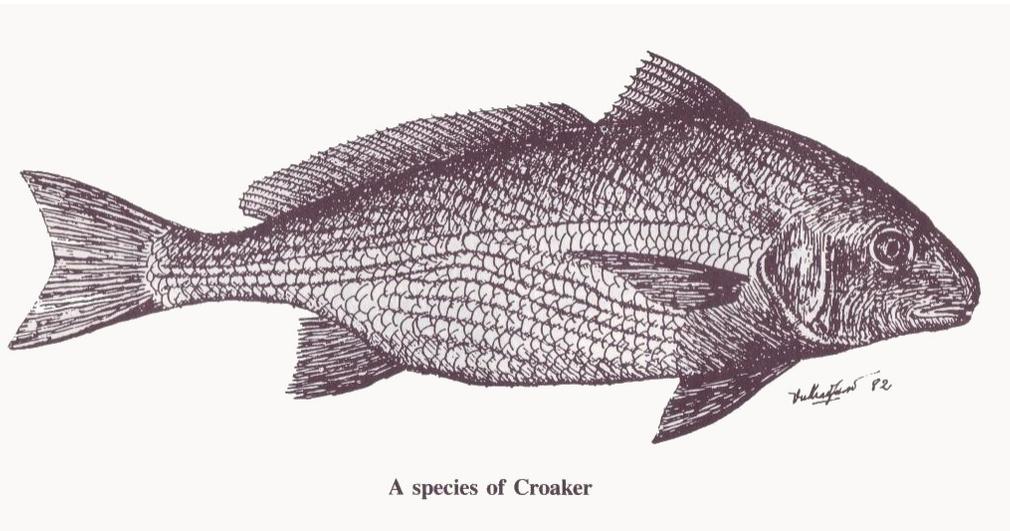
Retorts are steel pressure cookers which are controlled by computers to insure product quality. These cans of shrimp are put in the pressure cooker to process them.



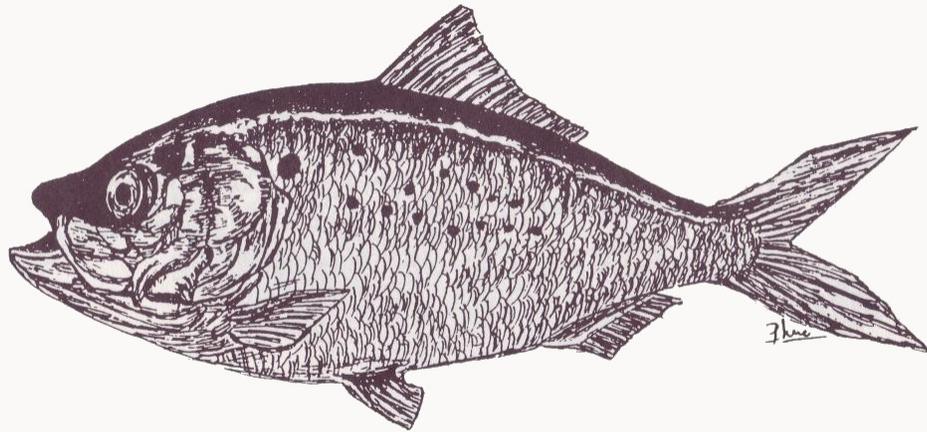
A fishing boat docked at one of the seafood factories.

Although not used for human consumption, menhaden are Mississippi's most important industrial fish and constitute the majority of the state's saltwater fishery landings.

Menhaden are small fish, sometimes known locally as "pogies". Often found in estuaries where the water is almost fresh, they move into the open Gulf as they develop. Found mostly within sixty miles of the coast, they congregate in large "schools".



A species of Croaker



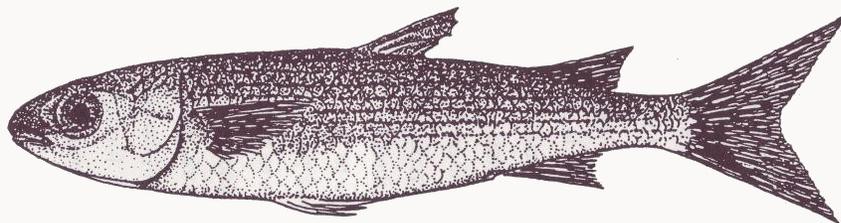
A species of Menhaden

The menhaden found in the Gulf of Mexico now make up over seventy percent of the commercial fish harvested on the Mississippi Gulf Coast. Since 1969, menhaden catches Gulf-wide have been over a billion pounds each year.

Local menhaden factories are located in Moss Point. Here, the menhaden are processed to remove all liquids, including oils, leaving the solids to be used as fish meal with a high protein content. The fish meal is a valuable food for poultry and cattle. It is also used in raising hogs and in aquaculture. The oil is used for plastics, paints, cosmetics, and other products.

It is natural that people on the Mississippi Gulf Coast would have found wide commercial uses for seafood. Living near the sea, they very early in their history became conscious of the vast resources available to them in the Gulf waters.

A visit to a seafood processing plant on the Mississippi Gulf Coast today brings to mind the invaluable contributions of this industry to the economy of the coast and the state of Mississippi. But even more, it makes one realize that with continued good management of the Gulf's rich resources and coastal wetlands--and with the foresight born of experience--the seafood business will be even more important to all Mississippi residents in the future.



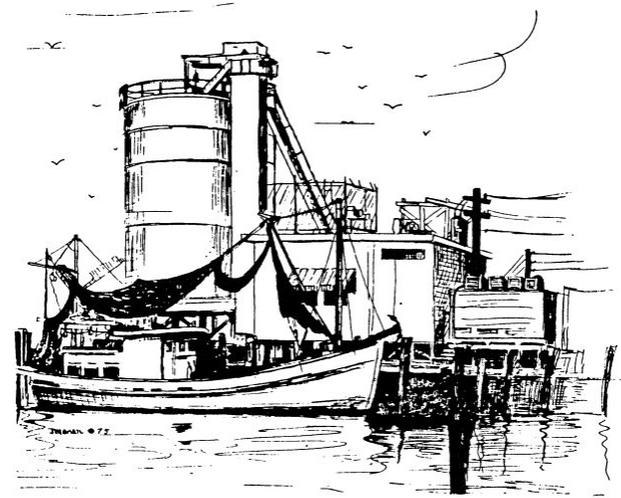
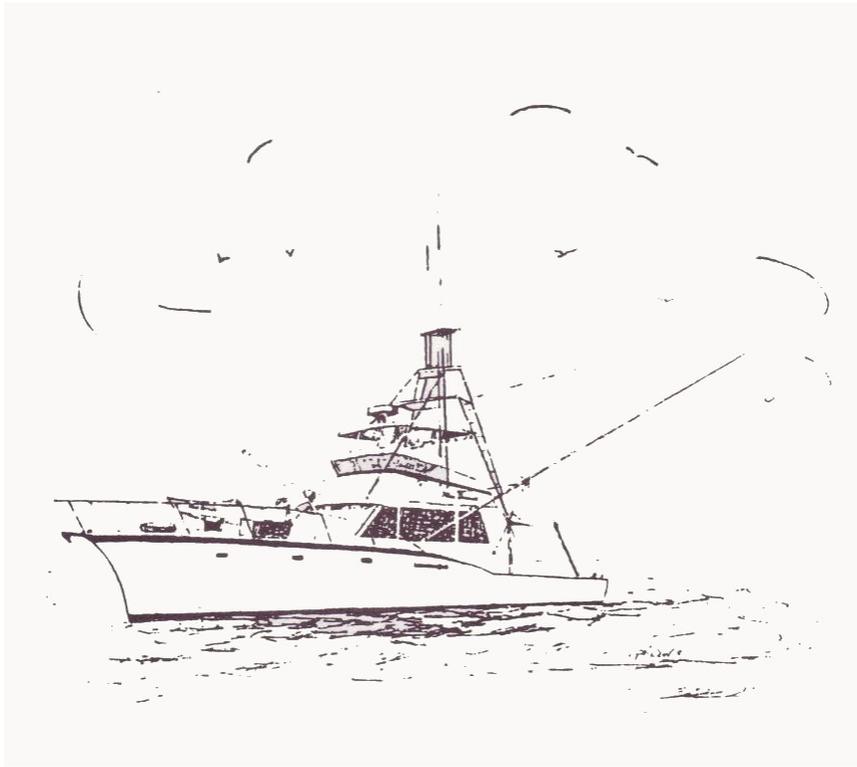
Mugil cephalus

J. H. W. 2-24-02

The Mullet, a fish sold in all seafood markets and known as "Biloxi Bacon".

A GLOSSARY FOR ELEMENTARY STUDENTS

coded	marked for identification and distribution
commercial	of business or trade
compacter	machine for reducing in size and bulk
continuity	occurring over a long period of time
conveyor	mover, belt that moves on rollers
current	movement of large water flow
cycle	occurring over a period of time
drainage	what is drained off, that flows off gradually
ecological	relation between organisms and their environment
environment	surroundings
estuarine	formed by an estuary, where inland waters meet the sea
heritage	family background, inheritance
lugger	small vessel lug-rigged on two or three masts
mechanized	motor-operated
pollution	the introduction of elements, compounds, or any matter into places where living organisms are harmed, causing slow growth, prevention or alteration of growth, or death
processing	to prepare for use
resemblance	similarity in appearance
resources	support items, natural means for supporting life
schools (of fish)	large groups of the same species of fish moving together
seine	fishing net that hangs vertically in the water
shallow-draft	depth to which a vessel is submerged, usually from 3 1/2 to 4 feet characteristic of vessels working in the Mississippi Sound
shuck	remove the outer covering
trawl	a strong fishing net for dragging along the sea bottom or through the water



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