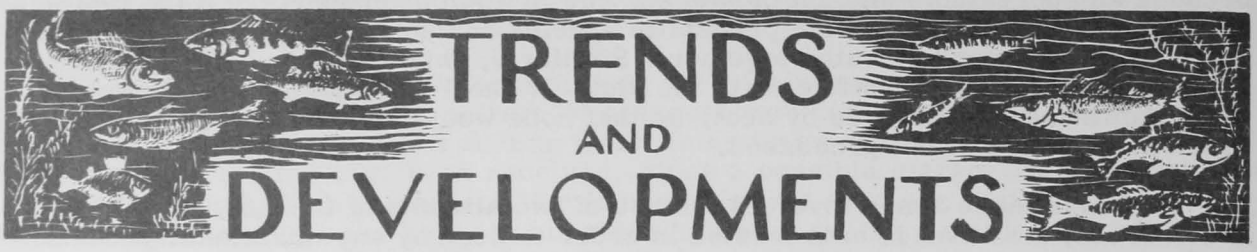


Additions to the U. S. Fleet of Fishing Vessels

A total of 23 vessels of 5 net tons and over received their first documents as fishing craft during December 1954--34 less than in December 1953. California led with 5 vessels, followed by South Carolina and Florida west coast with 3 vessels each.

Vessels Obtaining Their First Documents as Fishing Craft, December 1954 and Comparisons

Section	December		Total			
	1954	1953	1954	1953	1952	1951
	(Number)					
New England	1	1	23	20	30	36
Middle Atlantic	-	-	15	19	26	34
Chesapeake	2	7	93	83	65	36
South Atlantic	5	16	119	116	89	118
Gulf	7	28	313	264	161	173
Pacific	6	4	117	164	203	284
Great Lakes	1	-	6	7	13	25
Alaska	1	1	27	53	88	71
Hawaii	-	-	1	3	-	3
Puerto Rico	-	-	2	-	-	-
Unknown	-	-	1	-	-	-
Total	23	57	717	729	675	780

Note: Vessels assigned to the various sections on the basis of their home port.

Vessels Obtaining First Documents as Fishing Craft 1937-54

Year	Number	Year	Number
1954	717	1945	741
1953	729	1944	635
1952	675	1943	358
1951	780	1942	358
1950	812	1941	354
1949	1,002	1940	320
1948	1,184	1939	357
1947	1,300	1938*	376
1946	1,085	1937	335

* Partly estimated

During 1954 a total of 717 vessels were documented for the first time as fishing vessels, compared with 729 vessels during 1953. Of the total vessels documented in 1954, 465 were built in 1954, 85 in 1953, and the remainder (167) in years prior to 1953.

American Samoa

GOVERNOR BELIEVES TUNA INDUSTRY PROSPECTS BRIGHT: The Pago Pago, American Samoa, tuna industry, although still in the experimental stage, shows every prospect of future success, says Governor Lowe of American Samoa. It has definitely been proved that the fish are there in large quantities--for part of the year, anyway. And the Japanese have proved that they could be caught. However, they are still uncertain as to the year-round availability of fish.

The cannery at American Samoa has, so far, been unable to maintain capacity production because supplies of tuna have been irregular--often days went by before a fishing boat arrived with a full load. Additional freezer space is badly needed at the cannery, but this should be available before long. Already an ice plant and a little extra freezer space have been provided.

Lowe said there was no activity at the cannery for about two months in late 1954. When their contracts with the cannery expired in September 1954, Japanese fishermen returned home. New vessels were expected in Samoa about the end of November 1954. Several of these vessels were severely damaged or sunk in typhoons in waters off Japan, but these would be replaced.

About 1,000 metric tons of tuna were processed since the cannery began operations. In addition, 500 tons of frozen tuna were shipped to the United States in March 1954.

The cannery has not yet signed a long-term lease with the United States Government, Lowe said. Their present lease expires at the end of 1955, but it was expected that they would then renew it on a long-term basis. Under the present contract the company is obliged to instruct local Samoan fishermen in the long-line technique--the only method which has proved commercially successful in the South Pacific. But that program has yet to be implemented, reports the December 1954 Pacific Islands Monthly, a South Seas magazine.

* * * * *

HAROLD GATTY COMMENTS ON TUNA CANNERY OPERATIONS: Harold Gatty, who brought about the first organized tuna fishing industry in the South Pacific, made some interesting comments on recent developments in that industry, according to the November 1954 Pacific Islands Monthly, an Australian magazine of the South Sea Islands.

The United States firm operating the tuna cannery at Pago Pago, American Samoa, by using Japanese fishermen and a special technique, is getting huge quantities of tuna for the Pago Pago cannery. This is regarded by Mr. Gatty with satisfaction--it proves that his theories and calculations (that the South Pacific carries large quantities of edible fish) were correct.

"The tuna of the Pacific Ocean is going to be one of the most important factors in the feeding of the future world," he said, "and the most important and valuable kind of tuna is the albacore. Wherever in the world--especially in the Pacific--the water temperature is about 64°-66° F., the sea, from the surface right down to 200 fathoms or more, is thick with albacore tuna. You can get them over a very wide area--from New Zealand and the Chathams, through the Kermacdecs, for example, right up to the equator.

"The Japanese last August (1954) fishing... just east of the Solomons took 2,200 tons of albacore. Few people realize the enormous quantities of this excellent food that are available to any people, once they acquire the knowledge of how to catch it.

"The Japanese work on the basis that they will average from 4 to 5 fish per 100 baited hooks. They select their area; starting in the early morning they put out some 20 miles of lines, carrying thousands of hooks; and they begin to pick the lines up in the afternoon.

"The Americans have found some areas around Christmas Island where the average per 100 hooks is 12 fish--that is literally a harvest of the sea.

"The thing goes down to basic economics. The Japanese put about 35 men on each small vessel. Most of the heavy work is by hand--there are few mechanical aids in putting out and hauling in those miles of lines. There is very limited accommodation for the men--not enough bunks--and they have no fixed wage. They are paid on results. Their average pay, last season, was about US$9 per month. All fish canned in Pago Pago (an American Territory) is free of local tax and, being of American origin, the food enters the United States without tax penalty. The enterprise we tried to found in Fiji had none of those advantages."

He thought that if tuna fishing flourishes in the future it would be due to mechanization. Two American tuna-fishing boats, working out of Hawaii, had each a crew of only 6 men--the little vessels were mechanized to do the work done on other boats by 35 Japanese.

Gatty believes that the Japanese will be the first to exploit this great wealth of fish food. Before World War II there were 7 million Japanese fishermen--because of the crowded character of their small country, they simply had to go out and get what they could out of the sea.

California

CANNED TUNA PACK SETS RECORD IN 1954: An estimated pack of about 9,250,000 cases of canned tuna were processed in California canneries during 1954. This breaks all previous records for tuna receipts and case pack. As compared with the previous record year of 1953 when 8,278,700 standard cases (48 No. $\frac{1}{2}$ cans) were packed in California, the 1954 pack indicates an increase of 972,000 cases, or 12 percent.

Total fresh and frozen tuna receipts by California canners of approximately 206,000 tons also set a new record, and represented an increase of approximately 15,000 tons, or 8 percent, as compared with the previous record receipts established in 1950 when 191,500 tons of tuna were received in California for processing.

Imports of frozen tuna into California from foreign countries during 1954 accounted for about 45,000 tons of the total receipts as compared with 1950 imports of only 8,200 tons.

* * * * *

TUNA TAGGED OFF SOUTH AMERICA BY "MAYFLOWER" (Cruise C-4-54): A total of 1,035 skipjack tuna, 48 yellowfin tuna, and 1 big-eyed tuna was tagged and released on a 2-months' cruise off South America by the commercial tuna clipper Mayflower in cooperation with the California Department of Fish and Game. The vessel which sailed from San Diego, Calif., on October 23, 1954, and returned to that port December 29, 1954, cruised off the coasts of Peru, Ecuador, and near the Galapagos Islands.

All tags used were "type G." Owing to rough seas encountered on the trip, only two night light stations were occupied. Most of the collections of fish specimens were made from bait-net sets.

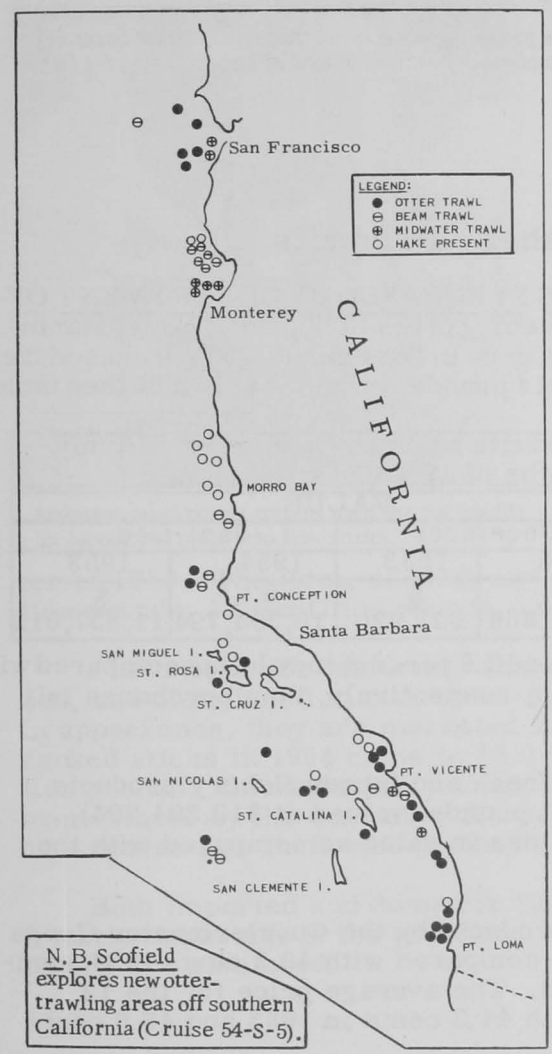
Mayflower tuna tagging Cruise C-4-54, Oct.23-Dec.29,1954.

Most of the trip was spent at Peru Bank. At the outset fishing was good but rough seas made tagging operations very difficult. The first week all tagging was done on top of the bait boxes. This was a slow process and was abandoned after the sea calmed down a bit. The tagging cradle was then hung from the starboard side of the bait box at about waist height. This proved to be a good plan as tagging could be done in all but the very worst weather. The first 122 fish were tagged with a hollow tip needle,

thereafter a solid tip was used. The degree of bleeding from the tag wound decreased with the change to the latter type needle.

* * * * *

NEW OTTER-TRAWLING AREAS EXPLORED OFF SOUTHERN CALIFORNIA BY "N. B. SCOFIELD" Cruise 54-S-5): None of the southern California areas scouted by the California Department of Fish and Game's research vessel N. B. Scofield on a 5-weeks' cruise ending November 14, 1954, were found suitable for commercial otter trawling. Inshore areas of proven productivity were intentionally avoided on this cruise which was made (1) to explore the area for concentrations of Pacific hake or bottomfish in commercial quantities; (2) to try out two sizes of midwater trawls. Although the coast of California from San Francisco south to the Mexican border was explored, particular emphasis was placed on the portion south of Point Conception and around the Channel Islands.



N. B. Scofield explores new otter-trawling areas off southern California (Cruise 54-S-5).

Two sizes of midwater trawls were tested and they appeared to be effective in murky water; however, there is some doubt as to their effectiveness on large or active fish.

A total of 68 drags were made of which 13 caught Pacific hake. In general, Pacific hake appeared scattered throughout the area scouted but not in commercial concentrations in any one area. Many areas that appeared workable on the charts and also gave good fathometer profiles were unfishable. Even smooth bottoms did not produce fish in commercial quantities.

Work was first started in shallow areas off Point Reyes to make sure the gear was operating properly. Then a drag was made in water over a mile deep 20 miles off the Farallon Islands to test some new equipment. The area off Pedro Point was fished with the small midwater trawl in the hope of collecting some small salmon which were known to be present. This net has a square mouth 25 feet on each side. Small herring were the only fish taken with this net. This gear appeared to be effective in murky water.

Continuing down the coast several drags were made off Point Montara and Ano Nuevo. The small midwater trawl was again tried off Monterey; the large midwater trawl also was used off Monterey. The mouth of this net is 35 feet square.

After working the area off Point Conception, the larger flats around the islands off the coast of southern California were scouted. The coast was worked from San Diego north to San Pedro. The large midwater trawl was tried near San Pedro but was not effective as the water was quite clear. In the area off the west end of Catalina Island and toward San Pedro several drags were made that brought up asphalt in considerable quantity. This material ranged from stony to almost fluid.

Cans--Shipments for Fishery Products, January-November 1954

Total shipments of metal cans for fish and sea food during January-November 1954 amounted to 102,533 short tons of steel (based on the amount of steel consumed in the manufacture of cans). Compared to 99,973 short tons in the same period a year ago. Larger packs of canned tuna and pilchards in 1954 accounted for the increased shipments for that year.

Note: Statistics cover all commercial and captive plants known to be producing metal cans. Reported in base boxes of steel consumed in the manufacture of cans, the data for fishery products are converted to tons of steel by using the factor: 23.0 base boxes of steel equal one short ton of steel.

Federal Purchases of Fishery Products

FRESH AND FROZEN FISHERY PRODUCTS PURCHASED BY DEPARTMENT OF DEFENSE, DECEMBER 1954: For the military feeding of the U. S. Army, Navy, Marine Corps, and Air Force, the Army Quartermaster Corps in December 1954 purchased fresh and frozen fishery products amounting to 2,006,014 pounds, valued at $814,866 (see table).

Purchases of Fresh and Frozen Fishery Products by Department of the Army
(December and the 12 months of 1954)

QUANTITY				VALUE			
December		Jan.-Dec.		December		Jan.-Dec.	
1954	1953	1954	1953	1954	1953	1954	1953
Lbs.	Lbs.	Lbs.	Lbs.	$	$	$	$
2,006,014	1,361,536	25,290,351	26,769,073	814,866	601,920	10,394,794	11,857,012

This was a decrease of 13.6 percent in quantity and 12.9 percent in value as compared with November, but greater by 47.3 and 35.4 percent, respectively, than purchases in December 1953.

Army Quartermaster Corps purchases of fresh and frozen fishery products during the 12 months of 1954 totaled 25,290,351 pounds (valued at $10,394,794), 5.5 percent lower in quantity and 12.3 percent less in value as compared with the 12 months in 1953.

Prices paid for fresh and frozen fishery products by the Quartermaster Corps in December averaged 40.6 cents per pound as compared with 40.3 cents in November and 44.2 cents per pound in December 1953. The average price for the 12 months of 1954 was 41.1 cents as compared with 44.3 cents in 1953 and 46.6 cents per pound in 1952.

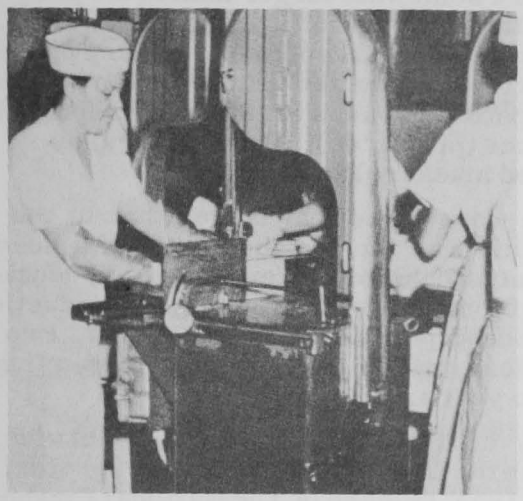
In addition to the purchases of fresh and frozen fishery products indicated, the Armed Forces generally make some local purchases which are not included in the figures given above. Therefore, actual purchases are somewhat higher than indicated, but it is not possible to obtain data on the local purchases made by military installations throughout the country.

Fish-Stick Output High in 1954

United States production of fish sticks, the popular new breaded food item, totaled 50.1 million pounds in 1954 as compared with 7.5 million pounds in 1953, the U. S. Fish and Wildlife Service revealed February 10 (see table).

Acclaimed as a revitalizer of the commercial fishing industry, fish sticks brought a gross income of nearly $40 million to retailers in 1954, with proportionate revenue to all segments of the industry concerned with the production, distribution, and marketing of this unique commodity.

Monthly production of fish sticks reached a high of 5.6 million pounds in October 1954. This compares with 1.4 million pounds in the same month of 1953 when volume output first began. Production for the last quarter of 1954 came to 15.4 million pounds as against 5.3 million pounds for the same quarter of 1953. The first, second, and third quarters of 1954 showed outputs of 10 million pounds, 12.2 million pounds, and 12.6 million pounds, respectively.



Stainless steel power cutters used for cutting fillet blocks and slabs into fish sticks.

U. S. Fish-Stick Production, 1954 and 1953

Month	1954			1953
	Cooked	Uncooked	Total	Total Cooked and Uncooked
	(Pounds)			
January	2,433,500	337,100	2,770,600	115,000
February	2,856,400	323,200	3,179,600	133,000
March	3,561,700	441,800	4,003,500	148,000
April	3,361,900	452,600	3,814,500	34,900
May	3,467,000	447,700	3,914,700	21,800
June	4,084,100	363,200	4,447,300	30,800
July	3,464,500	411,200	3,875,700	416,600
August	4,003,200	400,100	4,403,300	454,400
September	3,801,200	509,900	4,311,100	809,500
October	4,736,400	882,200	5,618,600	1,434,900
November	3,969,700	824,200	4,793,900	1,901,800
December	4,201,900	753,400	4,955,300	2,001,200
Total	43,941,500	6,146,600	50,088,100	7,501,900

Fish sticks are uniformly shaped pieces of fish dipped in batter, breaded, frozen, and distributed in consumer-sized packages. Similar to french-fried potatoes in appearance, they are marketed in cooked and uncooked form. Production of cooked sticks in 1954 came to 43.9 million pounds and uncooked sticks to 6.1 million pounds. Cooked sticks, which have been deep-fat fried before freezing, are oven-heated by the consumer for serving. Uncooked sticks are designed for those housewives and chefs who prefer to do the frying themselves.

Both imported and domestic fish go into the production of fish sticks. Cod (mostly imported) is the principal species, but haddock, ocean perch, and a few others are also used.

Fishery Products Marketing Prospects for 1955 and Review for 1954

PROSPECTS FOR 1955: Prospects for the first 4 to 5 months in 1955 are that United States civilian per-capita consumption of fishery products will be at least equal to the rate of a year earlier. Larger stocks of the canned and frozen products were available for distribution during the winter when commercial landings were seasonally light, and imports probably as large as in early 1954. Retail prices of fishery products in the next few months are expected to average a little lower than a year ago, reflecting in part the heavier supplies.

REVIEW FOR 1954: United States civilian consumption of fishery products per person in 1954 was about the same as a year earlier. Total supplies were somewhat larger than in 1953, especially after midyear when the heavier 1954 packs of some canned fish started moving to market in volume. Prices of fishery products in general averaged approximately the same as in 1953, judging from the Bureau of Labor Statistics wholesale price index.

Landings of edible fish and shellfish in 1954 were somewhat larger than in the preceding year, with part of the increase comprised of those fish which are processed and subsequently marketed in the canned or frozen forms. The total volume of fishery products frozen commercially in the United States and Alaska amounted to 303 million pounds, 10 percent greater than in 1953. Also, fairly large pack increases in 1954 were reported for canned tuna, Maine sardines, and Pacific sardines (pilchards). These increases much more than offset declines from 1953 for canned mackerel and anchovies.

Stocks of fishery products at the end of 1954 were somewhat larger than at the beginning of the year. For the canned products this was largely the result of a heavier total pack than in 1953. The 10-percent larger stocks of frozen fishery products on January 1, 1955, than a year earlier resulted from larger United States production and record imports of frozen cod, haddock, and ocean perch fillets and blocks. Frozen fillet blocks are the raw material for fish sticks, which have become increasingly popular in the domestic market in the past two years.

This analysis appeared in a report prepared by the Agricultural Marketing Service, U.S. Department of Agriculture, in cooperation with the U.S. Fish and Wildlife Service, and published in the former agency's February 10, 1955, release of The National Food Situation (NFS-71).

Florida

UNIVERSITY OF MIAMI OFFERS GRADUATE FISHERY COURSES: The Department of Marine Science of the University of Miami offers courses leading to a Master's degree with specialization in marine biology, oceanography, and fisheries. Rising interest in the various aspects of the science of the oceans has made it impossible to meet the demand for trained marine biologists, oceanographers, and fishery biologists.

Interested students with a Bachelor's degree in zoology, physics, chemistry, or related sciences should contact the Department of Marine Science, University of Miami, Coral Gables, Fla., for further information.

The research counterpart of the Department of Marine Science is the Marine Laboratory of the University of Miami. A wide variety of research projects, both in "pure" and "applied" science, are conducted under the supervision of the faculty members who give the academic courses. This combination of research and teaching is believed to benefit both. The research projects are supported by a wide variety of agencies and individuals--government, industry, and private. Students are frequently offered the opportunity to take part in research projects, increasing the value of their professional training. Part-time jobs and other financial assistance are available to qualified students.

Gear Research and Development

SOUND GEAR AND UNDERWATER TELEVISION TO BE TESTED ON SHRIMP BY "POMPANO": Field tests with experimental sound gear to determine the prac-

cability of detection and location of shrimp by means of passive listening devices will be made by the Service's gear research vessel Pompano on a two-months' cruise which began in January 1955. Underwater television equipment will be used in conjunction with the underwater sound gear in an attempt to learn more of the behavior of shrimp in their natural habitat. Attempts will also be made to observe and photograph shrimping gear in operation.

The Pompano departed Miami on January 12 on an extended gear-research cruise to the Key West area. The vessel will be berthed at the U. S. Naval Station in Key West and make a series of trips to adjacent shrimping grounds. Scheduled field operations will extend to March 1955, when the Pompano will return to Miami.

Maine

TIGHTER SARDINE INSPECTION LAWS PROPOSED: Legislation to drastically strengthen Maine's inspection and quality control of Maine sardines was filed by Senator J. H. Wyman in the State Senate on February 11, 1955.

The Senator, who is also a sardine-cannery operator, said that his bill incorporated the results of nine months of extensive research, financed and supervised by the Maine Sardine Tax Committee, and that it had been unanimously approved by the industry at a series of recent meetings, according to a February 11 release from the Maine Sardine Industry.

"This legislation is one of the broadest forward steps ever taken by a major industry in this State and should eventually provide a much better utilization of one of our great natural resources with resultant stabilization of employment and profit for all concerned," he stated.

The bill greatly increases the authority of Maine's Commissioner of Agriculture, through his inspection division, to set up and enforce standards of quality and grades for the $2\frac{1}{2}$ to 3 million cases of sardines packed annually in the State. It also provides for better State supervision of conditions in the plants, fish handling, and other factors involved in the packing operation, and would create a seven-man industry advisory committee to periodically consult with the Commissioner on administration of the law.

Another bill, simultaneously filed by the same Senator, would require that all sardine cans containing only four fish be plainly labeled accordingly, and he stated that this also had the full backing of the industry.

The Maine Agriculture Commissioner said that his Department was heartily in accord with "this progressive legislation" and would support it in every way possible. Sardine inspection, a responsibility of the Maine Agriculture Department, is financed by a three-cents-per-case assessment on all packers and involves an expenditure of approximately $90,000 a year.

The Senator said that research on the quality-control program was started by the Tax Committee in March 1954, through a subcommittee. The U. S. Fish and Wildlife Service was engaged to conduct the technical phases of the work and it assigned canning experts to the job on a full-time basis, with headquarters at Boothbay Harbor.

Commenting on the legislation, the Tax Committee Chairman said that such action would mean a more uniform and improved product which the industry needed in order to maintain a favorable position in today's highly competitive food market.

Maryland

YORK RIVER SHAD CATCH, 1954: A recent survey of the York River and its tributaries determined that about 176,000 shad (over 500,000 pounds) were caught during the spring of 1954. This valuable catch is from a water area of about 50 square miles, reports the Service's Fishery Marketing Specialist in the Chesapeake Bay area.

* * * * *

CHINCOTEAGUE BAY WINTER CRAB FISHERY: Chincoteague Bay has the only winter crab fishery in Maryland, and it operates from December 1 until March 15. The fishery is not a large one and normally consists of only about 35 boats. It is based primarily on the capture of mature female blue crabs which have assembled in schools for the winter and have become inactive on the bottom in the deeper parts of the Bay. The male crabs remain scattered and apparently stay up in the creeks and so are not frequently caught in the winter. The "crab dredge," the gear used in this industry, is pulled by power boat but hauled in by hand. During the first several winters of the newly-formed industry the crabbers made a fairly good income from this fishery, but during the last two years, because the price of crabs has remained low, many watermen have stopped crabbing. The catch is usually about 3-4 barrels of crabs per boat and if the price is low the overhead expenses take the profit out of the operation, reports the January 1955 Maryland Tidewater News of the Department of Research and Education.

An interesting sidelight of the Chincoteague Bay hard-shell clam fishery is that a sizable part of the catch is made through the operations of the crab dredge boats. Most boats are now trying to catch clams rather than crabs, although the dredging license is issued only for crabbing. This is quite legal since the law at present does not mention the capture of clams by dredge. The clams are worth more than the crabs to the watermen and they naturally work where clams are abundant, disregarding the availability or scarcity of crabs.

The winter crab industry during the past two years has been worth about $20,000 per winter, exclusive of the summer crab fishery which is more valuable. The price is low because of the competition with Virginia and North Carolina crabs which are trucked into the State during the winter months. During the last two winters the weather has been so warm that, according to watermen who have had a poor season, the crabs have continued to be active during the winter. Crabs are not easily caught by dredge when they are active.

The average size of the Chincoteague Bay crab is small, compared with crabs from other areas, which has resulted in a marketing problem. This tends to keep the price down except when crabs are unavailable from other areas. At times the percentage of adult female crabs under legal size runs as high as 60 percent of the total caught in certain parts of the Bay. This, of course, creates a culling problem and requires a great deal of extra work and time.

The frequent occurrence of the small crabs in the commercial catches, unfortunately, poses an enforcement problem to administrative agencies. The laws governing the capture of crabs in Chincoteague Bay are based on the average size of crabs from the Chesapeake Bay. In the latter area, adult female crabs rarely run over four percent illegal crabs; consequently, a waterman would not be expected to have illegal crabs in his possession in excess of five percent, a level which might be overlooked by even the most conscientious crabber. On the other hand, in Chincoteague Bay the illegal mature female crabs average 17 percent throughout the season, placing a laborious culling problem upon the individual watermen.

Studies have shown that the Chincoteague blue crab is probably a genetically-stunted race. The return of all small mature crabs, male or female, lends itself

to the danger of "down-breeding." This means that the average size of adult crabs will become even smaller in the future, if the pronounced selective catch of the larger legal-sized crabs is intensified and prolonged. This is a well-known and observable phenomenon in livestock breeding. It would be unthinkable to continue this practice if it were known that a race of smaller crabs could result in Chincoteague Bay. As yet there is no information that indicates such a trend, and to demonstrate the phenomenon would require many years of experimentation.

Missouri

COMMERCIAL FISHERIES, 1953: In 1953, 74 Missouri residents purchased wholesale fish dealer permits. In addition, 25 nonresidents purchased permits to buy and sell fish in Missouri, according to a recent report from the Missouri Conservation Commission.

According to their 1953 reports to the Conservation Commission, the resident dealers handled about 9.8 million pounds of marine and fresh-water fish, 80,296 pounds of shrimp, 29,449 pounds of frogs, 4,175 pounds of oysters, 2,874 pounds of scallops, and 98 pounds of lobsters. Other species handled included white bass, buffalofish, carp, bullhead, chubs, crappie, walleye, paddlefish, sunfish, trout, lake trout, drum, ocean catfish, flounder, haddock, halibut, Florida mullet, ocean perch, pollock, salmon, red snapper, sole, and whiting. Marine and game fishes were obtained from sources outside the State.

Whiting was popular among some Missouri fish customers. The resident dealers reported handling about 5.8 million pounds in 1953. The largest amounts were handled in St. Louis and Kansas City. Buffalofish and carp were also popular--about 1.2 million pounds of buffalofish and 0.8 million pounds of carp were handled by the dealers.

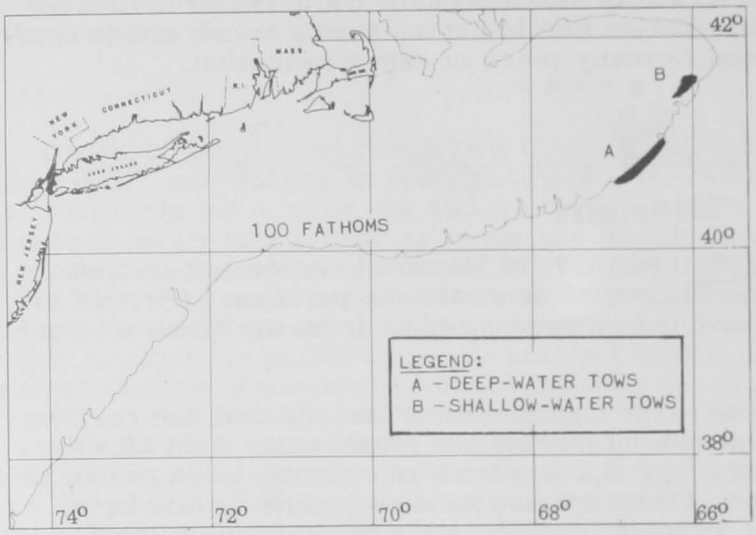
Apparently Missouri commercial fishermen provided only a small amount of the fish handled by the Missouri fish dealers. In 1953 only about 7 percent of the 2.6 million pounds of river fish handled were obtained from sources in the State. According to information derived from the monthly reports of commercial fishermen to the Commission, the total harvest of commercial fishes in Missouri amounted to about 384,322 pounds in 1953. About 198,685 pounds were taken from the Mississippi River and about 184,160 pounds from the Missouri River. Only about 1,477 pounds were reported from Missouri's waters of the St. Francis River. Carp led all other species in Missouri's commercial fish harvest. Buffalofish, flathead catfish, and drum followed in that order. Other species taken by Missouri commercial fishermen included blue catfish, paddlefish, garfish, channel catfish, quillback, sucker, sturgeon, dogfish, bullhead, and eel.

Missouri commercial fishermen are permitted to use seines, trammel nets, hoop nets, and lines in waters in which commercial fishing is allowed. These waters include the Mississippi River, the Missouri River, and that part of the St. Francis which forms the boundary between Missouri and Arkansas. About 48 percent of the 1953 harvest was taken in hoop nets. Trammel nets took about 39 percent of the harvest, seines about 7 percent, and lines about 6 percent.

--Herbert J. Fisher, Biologist,
Missouri Conservation Commission.

New England Exploratory Fishery Program

"DELAWARE" CATCHES MOSTLY HAKE IN DEEP-WATER TRAWLING ON GEORGES BANK (Cruise 2): A total of 17,000 pounds, mostly hake, was caught in six tows by the Service's exploratory fishing vessel Delaware in deep-water trawling on Georges Bank during a nine-day cruise completed at East Boston January 28. Total catch for the six deep-water tows included red hake 10,500 pounds, white hake 1,700 pounds, blue hake 300 pounds, lobsters 1,200 pounds, ocean perch 700 pounds, haddock 100 pounds, and dogfish 2,500 pounds. The most promising results were noted during tows 5 and 6 at location 40°35'-40°39' N. latitude, 66°49'-67°02' W. longitude, in depths from 170 to over 250 fathoms, which produced a catch of white hake (1,700 pounds), lobsters (1,300 pounds), ocean perch (700 pounds), and haddock (50 pounds).



Deep-water otter-trawl fishing on southeast Georges Bank by Delaware (Cruise 2). Dark area marks approximate location of trawling operations.

This was the second trip of a survey to determine the distribution and abundance of commercially-valuable species in the deep waters of the Georges Bank continental slope.

The Delaware fished with a standard No. 41 otter trawl and completed 21 tows in the area between 40° and 41° N. latitude and 65° and 67° W. longitude. Limitations of the trawl-winch equipment prevented extensive coverage of the deeper areas. During the initial part of the trip 6 tows were made at depths between 130 and over 250 fathoms located between 40°37'-41°07' N. latitude and 66°21'-67°00' W. longitude. (Area "A" on chart.)

Fishing operations carried out in depths from 45-70 fathoms (area "B" on chart) resulted in a total catch of 15,200 pounds. Dogfish comprised the major portion of the catch in 3 of the 15 tows completed in shoaler water. Best catches, in the shoal-water area, were made in depths from 56-70 fathoms at 41°32'-41°36' N. latitude, 65°57'-66°06' W. longitude, where 3 consecutive sets produced a total of 4,000 pounds of haddock and haddock scrod.

The trawl nets were not damaged by underwater obstructions throughout the trip. Eight lobsters were turned over to the State of Massachusetts for tagging and release.

The Delaware sailed February 4, 1955, on Cruise 3, which has as its objective: (1) to determine the present abundance of shrimp in the areas of the Gulf of Maine which supported a winter fishery in the years 1941-48, and which subsequently became unproductive; (2) to explore suitable bottoms between these areas. The standard No. 41 trawl net with a $2\frac{1}{2}$" cotton liner in the cod end will be used on this cruise.

Oregon

STEELHEAD TROUT TAGGED AT McNARY DAM: Some of the mystery of steelhead trout migration in upper Columbia River tributaries may be cleared up by a tagging operation conducted by the Oregon Fish Commission early in February 1955 at McNary Dam.

Through cooperation of the Army Corps of Engineers, Fish Commission biologists were able to tag 464 adult steelhead trout which apparently had taken up residence in the upper pools of the Washington shore fishway at McNary Dam. In all, 684 of the fish were removed from the fishway which had been partially drained for maintenance and repair work.

Tipoff that steelhead trout would probably be in the Washington fishway came in January when 1,571 "homesteading" fish were found in the Oregon shore ladder when it was dewatered for an annual check. Why some of the upriver-bound steelhead trout decided to hide out in fishladders is not definitely known, according to the Fish Commission biologist in charge of Columbia River investigations. He said steelhead trout have also been found in Bonneville Dam fishways during annual maintenance checks.

The Oregon biologist now hopes that recoveries of the McNary-tagged steelhead trout will be reported in order to clear up some of the questions concerning their migration above McNary which have puzzled fisheries workers. The opportunity to tag a large number of fish in a short period of time fits in well with an over-all study of Columbia River steelhead trout migration which the Fish Commission has undertaken, the Biologist stated.

Pacific Salmon Investigations

OIL POLLUTION STUDIED BY SERVICE'S SEATTLE BIOLOGICAL LABORATORY: The possibility of polluted waters at Lutak Inlet near Haines, Alaska, has prompted the Service's biological laboratory at Seattle, Wash., to begin a limited investigation to determine the toxicity of petroleum products to fish life. The source of the possible pollution is a group of jet-fuel and Diesel-fuel storage tanks at the Inlet. When these tanks are flushed out some of the petroleum products enter Inlet waters, giving rise to a need for definite knowledge on the effect of these products on salmon and other marine resources in the area.

Using silver salmon fingerlings as test fish, the laboratory has tested automobile gasoline, jet-aviation fuel, Diesel-truck oil, and sludge oil. Automobile gasoline and jet-aviation fuel have proved more lethal to the fingerlings than the other two products: surface films of automobile gasoline and jet-aviation fuel were lethal at 5,000 and 10,000 parts per million, respectively, and agitated solutions of the two products at 100 and 500 parts per million. Tests with surface films of Diesel oil and sludge oil proved lethal at 20,000 and 100,000 parts per million, respectively, and agitated solutions of Diesel oil at 5,000 parts per million. Fingerlings tested with agitated solutions of sludge oil were greatly distressed but not killed.

* * * * *

FERTILIZATION INCREASES SIZE OF DOWNSTREAM RED SALMON MIGRANTS AT BARE AND KARLUK LAKES: There is considerable evidence that experimental fertilization of Bare Lake on Kodiak Island with sodium nitrate and super phosphate

is increasing the size of the downstream red salmon migrants, reports the Service's Branch of Fishery Biology. Table 1 shows the number, age, composition, and mean

Table 1 - Downstream Migration of Red (Sockeye) Salmon at Bare Lake, 1950-54

Year	Migrants	Age Composition		Mean Length	Mean Weight
	No. of Fish	2-Year Old	3-Year Old	Mm.	Gms.
		% of Total			
1954	12,195	86	14	93.7	8.21
1953	5,058	32	68	90.2	6.54
1952	8,620	39	60	79.1	4.46
1951	4,503	23	76	81.8	4.81
1950	10,199	67	33	72.8	3.31

length and weight of the migrants for the past five years.

Table 2 indicates how fertilization is affecting survival of the young red salmon. Survival measurements in years in which the lake is not fertilized will be available later for comparison purposes.

Table 2 - Survival of Red (Sockeye) Salmon at Bare Lake, 1950-54

Brood Year	Egg Deposition 1/	Survival to Seaward of Migrant Stage	Fresh-water Survival
	No.	No.	%
1952	744,000	15,000 2/	2.0
1951	77,000	3,282	4.3
1950	670,000	6,806	1.0

1/ Based on number of females in the escapement, their mean size, and the egg retention after spawning.
2/ Partly estimated.

At Karluk Lake the fresh-water survival of red salmon is usually less than 1 percent; however, downstream migrants are larger than those at Bare Lake and their ocean survival will be better. It is estimated that the ocean survival of Karluk migrants is 3 to 4 times higher than migrants of Bare Lake. Consequently, it may be assumed that a fresh-water survival as at Bare Lake of over 2 percent, if put into effect at Karluk, would result in a higher rate of fish production there.

Processed Fishery Products Output Increased in 1954

The pack of canned fish and shellfish in the United States and Alaska in 1954 totaled about 860 million pounds as compared with 792 million pounds in 1953, Secretary of the Interior McKay revealed February 7. The 1954 pack was the third largest in history, exceeded only by the 1941 and 1950 outputs of 881 million and 965 million pounds, respectively, according to statistics compiled by the Fish and Wildlife Service.

The largest individual increase was in the Pacific sardine pack which came to 60 million pounds as against 3 million pounds in 1953. The 57-million-pound gain was due to a return of this species to southern California waters after a virtual absence in recent years.

Production of canned tuna set an all-time record of 209 million pounds in 1954 as compared with 189 million pounds in the previous year. The 20-million-pound increase was due to a larger domestic catch and heavier imports of frozen tuna from Japan and Peru.

The canned salmon pack in 1954 was 194 million pounds, a gain of about three percent over 1953. Bolstering the output were a 23-million pound pack of sockeye salmon in the Puget Sound area (the largest since 1913) and a 28-million-pound pack of chum salmon in southeastern Alaska (as compared to 20 million pounds in 1953).

Production of canned Maine sardines in 1954 came to about 61 million pounds--eight percent more than in the previous year. Canned oysters showed about the same pack as in 1953 when approximately 6.8 million pounds were produced. Reports from the Pacific Northwest revealed heavy canning of oyster stew in that section, with a 1954 pack of more than 4.8 million pounds as compared with 3.4 million pounds in 1953.

United States cold-storage plants froze 303 million pounds of fish and shellfish in 1954--27.6 million pounds over the previous year.

Domestic production of groundfish and ocean perch fillets in 1954 totaled 126 million pounds as compared with 112 million pounds in 1953. Production of fish sticks, manufactured chiefly from imported cod fillets, came to more than 50 million pounds as compared with 7.5 million pounds in 1953 when this commodity was first introduced.

Preliminary figures on fishery byproducts show that fish-meal and fish-oil production in 1954 was about the same as in 1953 when 239,000 tons of meal and 20.3 million gallons of oil were produced. As in 1953, menhaden accounted for more than 70 percent of the meal and 85 percent of the oil.

Railway Express to Cancel Minimum Charge Increase of Return Empty Insulated Containers

The Railway Express Agency agreed in late January to withdraw the increase (from $1.80 to $2.30) in the minimum charge per shipment on return empty insulated containers described in Item 923 of the Express Classification. The Agency had earlier announced the increase to be effective February 12, 1955, in Supplement 23 to the Express Classification, but promised to cancel this increase on the return empty insulated containers (Can-Pro and Shamrock) as soon as possible. The minimum charges on all other return empty containers was increased to $2.30 per shipment effective February 12, 1955.

Saltonstall-Kennedy Act Fisheries Projects

FISHERY BYPRODUCTS TO BE STUDIED BY FISH AND WILDLIFE SERVICE: The allocation of $273,000 for a research program aimed at improving markets for fish meals and fish oils was announced January 26 by Secretary of the Interior McKay. These markets now handle approximately one-fourth of the total domestic commercial fish production each year. The Fish and Wildlife Service will make the study under the Saltonstall-Kennedy Act, P. L. 466. The program calls for development of a quality index for fish meals; the devising of new industrial uses for fish oils; and biological studies of menhaden, chiefly used in meal and oil production.

An allocation of $65,000 for the fish-meal project has been made for the remainder of the fiscal year ending June 30, 1955. Fish meal is used as feed for poultry, swine, dairy animals, and domestic pets, and the quality index will be used to show the nutritive worth of the byproduct. The index will be used at processing plants and distribution points.

Fishing-industry scientists, feed manufacturers, agricultural colleges, and consultant laboratories will participate with the Service on the project, with most of the laboratory work being done by Service personnel. Testing by controlled feeding will be handled by universities and similar institutions on a contract basis. The project, which will supplement work being done by the Service under its annual appropriation for "investigation of resources," is expected to continue in fiscal years 1956 and 1957.

The program's fish-oil research, for which $170,000 has been earmarked for the balance of fiscal year 1955, is necessitated by a surplus of domestic fats and oils coupled with the fact that fish oils, though having special qualities, appear to be used interchangeably with other oils. Studies of potential uses peculiar to fish oils are expected to enable producers to seek new markets where competition is based on merit rather than price. The work of the Service will consist of outlining the studies, negotiating contracts, supervising contract work, evaluating results, and disseminating the findings to industry for commercial application. Major studies will be made by universities and other nonprofit institutions on a contract basis. The project supplements work being done by the Service under its annual appropriation for investigations of resources. It is expected to continue into fiscal years 1956 and 1957.

The biological-research phase of the program, for which $38,000 has been set aside for the remainder of fiscal year 1955, will feature life-history studies of menhaden. Most of the work will be done by the Service at Beaufort, N. C., where a fully-equipped laboratory is maintained. Intensive sampling will be done to develop information on age and growth rates. This information will be used to determine whether the menhaden range is inhabited by separate groups of this species or one large, freely-mixing population. Age analysis will furnish an insight into the success of yearly broods and reveal prospects for future abundance. As the project progresses, related studies on spawning areas, spawning periods, and nursery grounds will be made. The project is expected to continue in fiscal 1956.

* * * * *

SERVICE REACTIVATES RESEARCH VESSEL "ALBATROSS III:" The Service's biological research vessel Albatross III was returned to full operation in January 1955 with funds provided by the Saltonstall-Kennedy Act, P. L. 466 (83rd Congress). Based at Woods Hole, Mass., the vessel will be in year-round operation for at least three years.

On its initial trip (cruise 56) since its reactivation, the Albatross III sailed from Woods Hole on February 1 and conducted a groundfish survey on Georges Bank. The vessel returned to port February 13. Operations were limited by severe winter weather but they were successful so far as weather permitted.

Whiting were most abundant in the South Channel area from 40-120 fathoms. Cod and haddock were abundant in the northerly sections of the Bank. The best catch of haddock, about 800 pounds, was made in 21 fathoms on Eastern Edge of Georges Shoals. Cod were mostly of steak size. No scrod cod were caught. Small haddock, 1- to 2-year old fish, were not found in any quantity. Ocean perch were taken only on the Georges side of the South Channel in 100 fathoms. Haddock stomachs were collected for food studies at most stations. Maturity information was collected for haddock. Ovaries were preserved for fecundity studies. Blood was collected for serological analyses in racial studies.

One-half hour tows with a No. 36 trawl were made at 49 stations in 20-120 fathoms over various parts of the Bank. Bathythermograph casts were made at all stations. This is the first of a continuing series of quarterly surveys planned for the next three years.

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SERVICE REACTIVATES RESEARCH VESSEL "BLACK DOUGLAS:" The Fish and Wildlife Service's research vessel Black Douglas departed San Francisco on February 10 for San Diego, her new home port, to take part in the South Pacific fishery investigations. An allocation of funds under the terms of the Saltonstall-Kennedy Act, P. L. 466 (83rd Congress), allows the Service to operate the Black Douglas again. This vessel had been inactive for two years.

En route to San Diego the vessel dropped drift bottles at selected localities to obtain information on direction and speed of ocean currents off the California coast. This work is part of the California Cooperative Oceanic Fisheries Investigations, a joint study of the sardine, jack mackerel, anchovy, and other fishes being made by the U. S. Fish and Wildlife Service, Scripps Institution of Oceanography, California Department of Fish and Game, Hopkins Marine Station, and the California Academy of Sciences.

Skiffs used for Shrimp Fishing in Inside Waters of Gulf of Mexico

In the last two years a new type of skiff is being built in Gulf of Mexico shipyards for shrimp fishing in inside waters. These skiffs, used principally in the Lafitte-Barataria area of Louisiana, vary in size from 20 to 26 feet in length (mostly 22-24 feet), have a beam of from 6 to 8 or 9 feet, and a draft of 18 to 24 inches. A very few may have cabins or half cabins built on them. Most of these skiffs are powered by 85 or 115 hp. marine gasoline engines. While trawling the engines reportedly burn from 25 to 35 gallons of gasoline a day.

A side view of the new type of skiff used for shrimp fishing in the inside waters of the Gulf of Mexico. Note sorting platform in place near bow.

Designed principally for shrimp fishing in the inside waters of the Gulf of Mexico, these boats are considered quite efficient for this purpose. Generally they pull a 30- to 40-foot shrimp trawl. However, they are used for other than shrimp fishing also: crab fishing (running lines), hand-line fishing, as well as a speedy means of transportation to and from fishing and hunting camps located in the lowland marshland areas. Although the majority of these skiffs are owned by regular commercial fishermen, casual and sport fishermen have also invested in this type of craft.

When trawling gear is used by the skiffs, it is handled entirely by hand. The platform at the stern has enough space for playing out the trawl as well as hauling it aboard. After the net is pulled aboard, the cod end containing the catch remains in the water. The cod end with the catch is moved forward where a small frame extending over the side of the boat suffices to hold open the bag for brailing out the catch.

Stern view of shrimp skiff showing shrimp trawl spread for drying. Note overhang of platform used to shoot and haul in the net.

With some exceptions, the crew consists generally of one man. This was particularly true the spring and summer of 1954. In 1953 when shrimp prices were higher than in 1954, the skiffs were operated by two men or a man and a boy.

The cruising speed of the skiffs is from 18 to 22 miles per hour, with a maximum speed of 30 miles per hour. The cruising range depends upon the gasoline capacity of the craft which varies from 30 to 60 gallons. At cruising speed, approximately 4 gallons of gasoline per hour is used; trawling fuel consumption is 3 gallons and less per hour. At high or maximum speed, 5 gallons or more of fuel are consumed per hour. None of these skiffs operate out of a fishing port where the distance to the fishing grounds is much over 30 miles away.

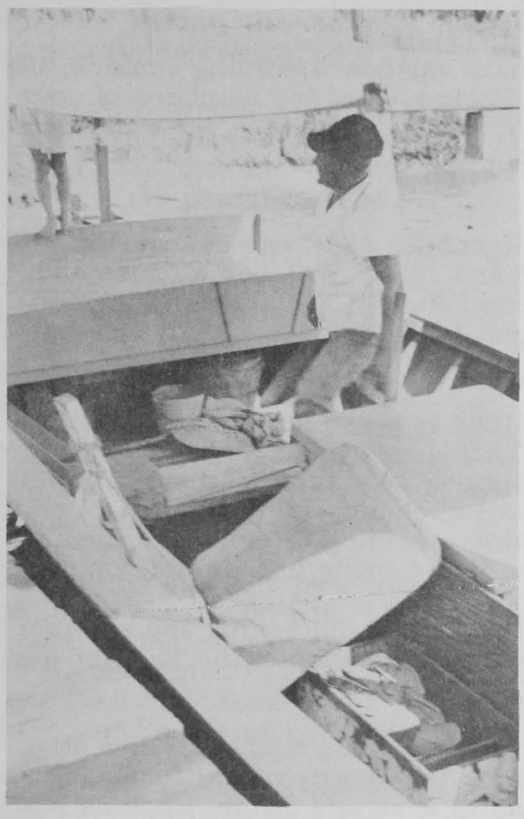
Another view of the shrimp skiff showing the small frame on the port side next to the seat. This frame is used on a number of boats. Inserted in the two holes are two small pieces of wood or planks (2-2½ feet long) extending out over the water to support the cod end with the catch and hold it open so that the catch may be brailed out with a small hand net.

Cypress is used in the hull construction of practically all of the shrimp skiffs.

The development of this type of craft has been a gradual process over a period of years--from the old flat-bottom type of boat toward the design of the larger shrimp trawlers but with the trend toward use of lighter wood in the construction.

During the last few years, the construction of the type of skiff described has been accelerated, and construction is continuing at a fairly rapid rate. Changes in design are gradually being incorporated in the new ones. All skiffs are now being built with a flare and "V" bottom toward the bow, and include a keel which is sufficient for protection of the bottom as well as reinforcement. The trend seems to be towards larger craft of this type. There are several in service with a length of 28 feet. One about 30 feet long was reported under construction in the summer of 1954, and there are reports of building even larger ones. The inclusion of a hold

for icing shrimp is under consideration. There is at least one skiff completely enclosed with deck and cabin. Actually if the size continues to increase, the term "skiff" as applied to these craft will not be applicable.



A view of the bow of a shrimp skiff showing the sorting platform in place.

Stern view of a shrimp skiff showing a portion of the otter boards and shrimp trawl hanging on "T" upright.

Despite lower shrimp prices in 1954, a few owners of the old type of inside trawler are changing over to the use of skiffs. Many shrimp fishermen operating solely in inland waters are of the opinion that these skiffs are superior to the older inside trawlers in all respects: (1) maneuverability, (2) speed, and (3) overall efficiency and economical operation, including manpower, maintenance, and repairs.

An estimate indicates that there are from 200 to 300 skiffs of this type operating out of the Lafitte-Barataria area.

--S. C. Denham, Fishery Marketing Specialist,
In Charge New Orleans Market News Service,
Branch of Commercial Fisheries,
U. S. Fish and Wildlife Service,
New Orleans, La.

South Pacific Fishery Investigations

SARDINES RETURN IN 1954/55: Approximately 65,000 tons of sardines have been taken in southern California waters in the 1954/55 season--over 20 times as many as in the 1953/54 season. Widespread and abundant sardine spawning off southern California in the spring of 1954 heralded this return; more than 30 times as many eggs were spawned in 1954 than in the same area in 1953.

The egg and larvae surveys provide a preliminary estimate of 115,000 billion eggs spawned off southern California in 1954. This indicates that approximately 2.3 billion (230,000 tons) sardines spawned in this area, according to the Fish and Wildlife Service's Southern Pacific Fishery Investigations.

The southern California area is one of two main sardine-spawning centers; the other center lies off central Lower California. Estimates of the numbers of eggs spawned in this southern center in 1954 are not complete; however, spawning was as great as, or greater than, in 1953, when approximately 8.8 billion sardines spawned.

The sardine reappearance off southern California in 1954 was associated with an earlier warming of these waters than in 1952 and 1953. Whether a cause and effect relationship exists is unknown, but the occurrence of such contrasting conditions in 1953 and 1954 affords opportunity to test many hypotheses advanced about sardine movements.

That sardines move north from Mexican waters to make major contributions to the California fishery has long been known. Therefore, the increased abundance of sardines in 1954 is not new but is the resumption of a pattern that had been interrupted for at least two years. Probably the most important single bit of information to be found in the 1954 observations is that sardine spawning off southern California does not depend on local fish but can result from fish moving in from the south.

The location and numbers of sardine eggs spawned in the spring and summer of 1955 will be observed from month to month in an effort to predict the location and numbers of fish during the fall and winter.

Other participants in the California Cooperative Oceanic Fisheries Investigations are Scripps Institution of Oceanography of the University of California, Bureau of Marine Fisheries of the California Department of Fish and Game, Hopkins Marine Station of Stanford University, and California Academy of Sciences. The Marine Research Committee is coordinating the research.

U. S. Commercial Fisheries Catch Increased in 1954

Commercial fishermen in the United States and Alaska caught about 4,700 million pounds of fish and shellfish during 1954. The 1953 catch of 4,450 million pounds was thus exceeded by 250 million pounds, or about six percent, according to statistics compiled by the U. S. Fish and Wildlife Service.

Food fish showed more spectacular gains in 1954 than the species used for fish meal and fish oils, in contrast to the reverse situation in 1953. Food-fish items with large increases were tuna, sardines, Maine herring, haddock, and ocean perch.

San Pedro, Calif., led the food-fish ports with a 1954 catch of about 381 million pounds. Gloucester, Mass., was second with 221 million pounds; followed by Boston, Mass., 151 million pounds; San Diego, Calif., 130 million pounds; and New Bedford, Mass., 72 million pounds.

From the standpoint of ex-vessel value, San Pedro again led all other food-fish ports with landings worth $37 million. San Diego's catch was valued at 21.0 million while the Massachusetts landings in Boston, New Bedford, and Gloucester were worth $11.3 million, $9.4 million, and $7.9 million, respectively.

The chief meal-and-oil species, menhaden, set a new record for the fourth consecutive year with total 1954 landings of 1,750 million pounds.

Although the catch of albacore tuna off Washington and Oregon was an almost complete failure, the national catch of all tuna species amounted to about 322 million pounds as compared with 305 million pounds in 1953.

Pacific sardines, which for many years yielded annual catches of more than one billion pounds but then virtually disappeared as a commercial item, staged a comeback in 1954 with landings of 132 million pounds as against less than 10 million pounds in the previous year.

Maine produced a 1954 catch of about 102 million pounds of herring--used chiefly in the canning of sardines--as compared with 120 million pounds in the previous year. Landings of haddock in Maine and Massachusetts of approximately 156 million pounds were 16 million pounds more than in 1953. Ocean perch landed in these two States amounted to about 179 pounds as against 154 million pounds in 1953.

The total shrimp catch for 1954 of about 235 million pounds was roughly the same as in 1953. In recent years the annual catch of this species has been valued at more than $50 million ex-vessel, making shrimp the most valuable item taken by domestic fishermen.

Salmon landings increased about 7 million pounds--landings totaled 320 million pounds as compared with 313 million pounds in 1953. The increase was due chiefly to outstanding catches of sockeye salmon from the Pacific Northwest's Fraser River and chum salmon in southeastern Alaska waters. The large catches of these species more than compensated for the normal absence of pink salmon from Puget Sound which occurs during even-numbered years.

Pacific Coast halibut landed by United States and Canadian fishermen amounted to about 70 million pounds--an all-time record--as compared with 60 million pounds in 1953. Steady increases during the last 30 years have resulted from conservation efforts by the Pacific Halibut Commission, established by the United States and Canada in 1924.

Decreases were recorded for anchovies and mackerels in California. Due mainly to lack of an export market, the anchovy catch dropped from 85 million pounds in 1953 to about 37 million pounds in 1954. A scarcity of Pacific and jack mackerel resulted in a decline in landings of these species from 63 million pounds in 1953 to about 35 million pounds in 1954.

U. S. Foreign Trade

EDIBLE FISHERY PRODUCTS, NOVEMBER 1954: United States imports of fresh, frozen, and processed edible fish and shellfish in November 1954 amounted to 62.6 million pounds (valued at $16.4 million), according to a Department of Commerce summary tabulation (see table). This was a decrease of 8 percent in quantity and 4 percent in value as compared with October imports of 67.7 million pounds (valued at $17.1 million). Compared with a year earlier, November imports were up 3 percent in quantity and 1 percent in value.

Exports of processed edible fish and shellfish (excluding fresh and frozen) in November 1954 totaled 5.8 million pounds (valued at $1.4 million)--a decrease of

15 percent in quantity and 39 percent in value as compared with October exports of 6.8 million pounds (valued at $2.3 million). November exports were up 125 per-

United States Foreign Trade in Edible Fishery Products, November 1954 with Comparisons

	Nov. 1954		Nov. 1953		Year 1953	
	Quantity	Value	Quantity	Value	Quantity	Value
	1,000 Lbs.	Million $	1,000 Lbs.	Million $	1,000 Lbs.	Million $
Imports:						
Fish & shellfish: fresh, frozen & processed 1/	62,614	16.4	60,899	16.3	724,656	193.2
Exports:						
Fish & shellfish: processed 1/ only (excluding fresh and frozen)	5,766	1.4	2,558	0.9	58,920	14.4

1/ Includes pastes, sauces, clam chowder and juice, and other specialties.

cent in quantity and 56 percent in value as compared with a year earlier.

* * * * *

IMPORTS OF GROUNDFISH FILLETS AT ALL-TIME HIGH IN 1954: United States imports of groundfish (cod, haddock, hake, pollock, cusk, and ocean perch) fillets in 1954 totaled 135.7 million pounds, 26 percent above the previous record year of 1952 when 108.0 million pounds were imported (see table). The 1954 imports were 48 percent greater than the 91.6 million pounds received in 1953. Use of imported fillet blocks and slabs (principally cod) for the manufacture of fish sticks accounted for the record increase of frozen groundfish fillets.

Canada again led as the largest foreign supplier of groundfish fillets in 1954, shipping 63 percent of the total; followed by Iceland who supplied 27 percent. All countries supplying these fillets shipped more to the United States in 1954 than in 1953.

The quota of groundfish (including ocean perch) fillets permitted to enter the United States in 1954 at the reduced rate of $1\frac{7}{8}$ cents

United States Imports of Groundfish (Including Ocean Perch) Fillets, 1950-54

Country	1954 1/	1953	1952	1951	1950
			(Pounds)		
Canada	85,997,560	59,672,557	56,695,714	57,695,407	51,067,779
Norway	4,660,118	3,956,095	8,666,999	3,912,309	2,080,376
Denmark	2,715,085	256,482	2,358,741	244,295	595,256
Iceland	37,039,659	25,410,418	35,733,748	24,162,173	12,529,576
United Kingdom	170,436	138,560	1,645,175	279,049	93,858
West Germany	3,589,171	1,532,100	1,433,954	406,670	91
France	511,059	232,270	-	-	-
Netherlands	388,575	270,761	1,325,250	263,719	11,475
Other Countries	595,813	147,956	144,550	133,550	239,756
Total	135,667,476	91,617,197	108,004,127	87,097,172	66,618,167

1/ Preliminary.

per pound was 33,950,386 pounds. Imports in excess of the quota entered at a duty of 2½ cents per pound. The reduced-rate quota in 1953 was 33,866,287 pounds. The 1955 quota is 35,432,624.

Utah

FISH-MEAL PLANT POSSIBILITY STUDIED: Researchers at the Utah Agricultural Experiment Station are exploring the possibilities of a fish-meal plant to make fish meal from carp, reports Feedstuffs (February 5, 1955).

It is estimated that Utah has 100,000 acres of warm water, and scientists say carp will produce more protein per acre than any other form of life. Also, they say, studies show carp meal prepared from local fish is equal to herring meal and better than menhaden and tuna meals.

Wholesale Prices, January 1955

Fresh fish and shellfish landings continued seasonally light in January 1955, the demand for most fishery products was good, and wholesale prices were higher than

Table 1 - Wolesale Average Prices and Indexes for Edible Fish and Shellfish, January 1955 and Comparisons

Group, Subgroup, and Item Specification	Point of Pricing	Unit	Avg. Prices1/ ($)		Indexes (1947-49=100)			
			Jan. 1955	Dec. 1954	Jan. 1955	Dec. 1954	Nov. 1954	Jan. 1954
ALL FISH & SHELLFISH (Fresh, Frozen, & Canned)					108.9	100.5	102.8	114.0
Fresh & Frozen Fishery Products:					117.7	102.9	106.8	125.6
Drawn, Dressed, or Whole Finfish:					129.7	107.4	115.6	131.3
Haddock, lge., offshore, drawn, fresh	Boston	lb.	.16	.10	159.3	97.3	114.8	170.1
Halibut, West., 20/80 lbs., drsd., fresh or froz.	New York	lb.	.28	.28	85.6	87.7	93.4	95.9
Salmon, king, lge. & med., drsd., fresh or froz.	New York	lb.	.56	.58	125.6	129.2	127.5	109.0
Whitefish, L. Superior, drawn, fresh	Chicago	lb.	.51	.44	125.2	109.1	154.9	150.0
Whitefish, L. Erie pound or gill net,rnd., fresh	New York	lb.	.71	.57	143.5	114.2	115.2	131.5
Lake trout, domestic, No. 1, drawn, fresh.	Chicago	lb.	.51	.63	103.5	129.1	128.1	124.0
Yellow pike, L. Michigan&Huron, rnd.,fresh	New York	lb.	.50	.39	117.3	90.3	82.1	117.2
Processed, Fresh (Fish & Shellfish):					107.8	101.3	99.5	123.4
Fillets, haddock, sml., skins on, 20-lb. tins	Boston	lb.	.45	.27	153.1	91.9	105.5	139.5
Shrimp, lge. (26-30 count), headless, fresh	New York	lb.	.53	.53	83.8	84.2	77.4	114.2
Oysters, shucked, standards	Norfolk	gal.	5.00	5.00	123.7	123.7	123.7	129.9
Processed, Frozen (Fish & Shellfish):					89.2	89.2	88.9	108.7
Fillets: Flounder (yellowtail), skinless, 1-lb. pkg.	Boston	lb.	.38	.38	98.2	98.2	98.2	108.7
Haddock, sml.,skins on, 1-lb. pkg.	Boston	lb.	.29	.29	90.2	90.2	91.0	102.0
Ocean perch, skins on, 1-lb. pkg.	Boston	lb.	.28	.28	111.8	111.8	109.8	110.7
Shrimp, lge. (26-30 count), 5-lb. pkg.	Chicago	lb.	.47	.47	72.5	72.5	72.5	110.3
Canned Fishery Products:					96.8	96.8	96.8	96.9
Salmon, pink, No. 1 tall (16 oz.), 48 cans/cs.	Seattle	case	19.70	19.70	104.4	104.4	104.4	93.9
Tuna, lt. meat, chunk, No. 1/2 tuna (6-1/2 oz.), 48 cans/cs.	Los Angeles	case	12.90	12.90	93.0	93.0	93.0	102.4
Sardines, Maine, keyless oil, No. 1/4 drawn (3-1/4 oz.), 100 cans/cs.	New York	case	6.70	6.70	71.3	71.3	71.3	87.3

1/Represent average prices for one day (Monday or Tuesday) during the week in which the 15th of the month occurs. These prices are published as indicators of movement and not necessarily absolute level. Daily Market News Service "Fishery Products Reports" should be referred to for actual prices.

in December 1954 but lower than a year earlier. The over-all edible fish and shellfish (fresh, frozen, and canned) wholesale index for January 1955 was 108.9 percent of the 1947-49 average (see table)--8.4 percent higher than in December 1954, but 4.4 percent lower than in January 1954, the Bureau of Labor Statistics of the Department of Labor reports.

Higher prices for large offshore haddock at Boston in January caused the drawn, dressed, or whole finfish subgroup index to rise 20.8 percent above the previous month. But January 1955 prices were 1.2 percent below a year earlier. Ex-vessel prices for haddock at Boston rose 63.7 percent from December to January. (In December haddock supplies were exceptionally large and prices were unseasonally low.) Prices for Western halibut and salmon at New York City dropped slightly from December to January, while there was a mixed trend for fresh-water fish prices at New York City and Chicago. When compared with a year earlier, lower prices prevailed for haddock, halibut, whitefish, and lake trout at Chicago, but prices for the other items were higher.

In the fresh processed fish and shellfish subgroup, January prices were up (6.4 percent) due to a large increase in haddock fillet prices and in spite of a slight drop in shrimp prices. Oyster prices remained stable. Compared to January 1954, haddock fillet prices were up, while prices for shrimp and oysters were down.

There were no changes from December to January in prices for frozen processed fish and shellfish. However, there were some marked decreases from January 1954 (the index for the subgroup was down 18.9 percent)--prices for shrimp and fillets of flounder and haddock dropped substantially and ocean perch fillet prices were down slightly.

Prices for canned fishery products were also steady from December to January and the index for the subgroup remained at 96.8 percent of the 1947-49 average. When compared with January 1954, there was a mixed trend in the individual items--prices of salmon were higher while those for tuna and sardines were lower.

NEW SWEDISH METHOD FOR PROCESSING CANS

It is reported that a method of processing cans, which uses hot air instead of steam or water, has been developed in Sweden. A machine for the continuous processing of 10,000 14-ounce cans per hour has been constructed. By this method it is stated that the cans are subjected to a shorter heating time and receive less rough treatment, and the over-all quality of the product is better. Some of the fruits and beans canned by this method are reported to have tasted quite "fresh." The machine is a precision instrument and the heating time can be controlled accurately. Only one operator is required as the machine is automatic.

--Goteborgs Handels-och Sjofarts-tidning, March 25, 1954.