



# TRENDS AND DEVELOPMENTS

## Additions to the U. S. Fleet of Fishing Vessels

A total of 36 vessels of 5 net tons and over were issued first documents as fishing craft during November 1954--16 less than in November 1953. Virginia and California led with 6 vessels each, followed by Louisiana and Florida west coast with 5 vessels each, according to the U. S. Bureau of Customs.

Vessels Obtaining First Documents as Fishing Craft, November 1954 and Comparisons					
Section	November		January-November		Total 1953
	1954	1953	1954	1953	
	Number	Number	Number	Number	
New England . . . . .	-	1	22	19	20
Middle Atlantic . . . . .	1	2	15	19	19
Chesapeake . . . . .	7	3	91	76	83
South Atlantic . . . . .	4	11	114	100	116
Gulf . . . . .	13	24	306	236	264
Pacific . . . . .	7	7	111	160	164
Great Lakes . . . . .	-	1	5	7	7
Alaska . . . . .	2	3	26	52	53
Hawaii . . . . .	-	-	1	3	3
Puerto Rico . . . . .	2	-	2	-	-
Unknown . . . . .	-	-	1	-	-
Total . . . . .	36	52	694	672	729

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

A total of 694 vessels received first documents as fishing craft during the first 11 months of 1954, compared with 672 during the same period in 1953. Over 60 per cent of the vessels documented during January-November 1954 were in the South Atlantic and Gulf States where shrimp trawlers are the predominant type of craft operating.



## California

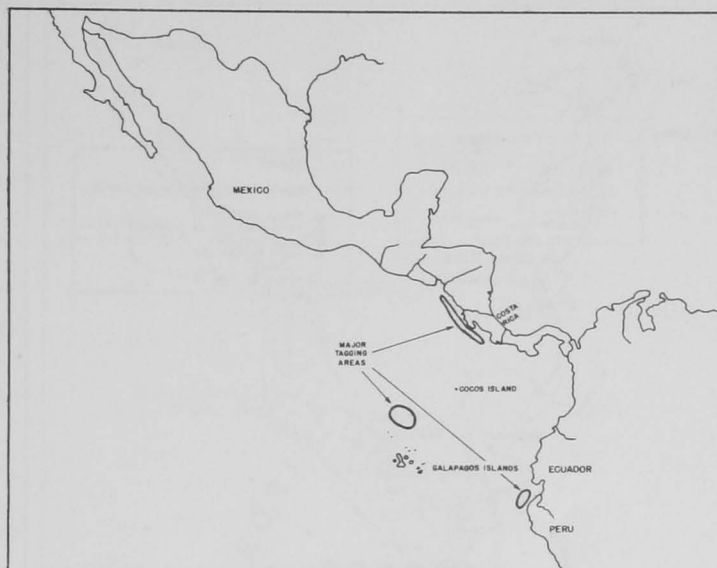
TUNA TAGGED IN SOUTH PACIFIC ON COMMERCIAL CLIPPER "SOUTHERN PACIFIC" (Cruise C-3-54): A total of 1,014 yellowfin, skipjack, and big-eyed tuna

Tuna Tagged by California Biologists on Commercial Tuna Clipper Southern Pacific, by Species, September 2 to November 11, 1954				
Area	Yellowfin	Skipjack	Big-eyed	Totals
	(Number of Fish)			
Galapagos Islands . . . . .	15	9	33	57
Central America (Nicaragua & Costa Rica) . . . . .	163	386		549
Peru (Gulf of Guayaquil) . . . . .	80	328		408
Totals . . . . .	258	723	33	1,014

were tagged by California Department of Fish and Game biologists on the commercial tuna clipper Southern Pacific off Central and South America (see table). The vessel sailed from San Diego on September 2, 1954, and returned to that port on November 11, 1954, covering the area of the Gulf of Guayaquil, Peru, Galapagos Islands, Costa Rica, and Nicaragua. All fish were tagged with type "G" plastic tubing tags.

During the cruise nine light stations were made while drifting at night. Very few of these stations yielded collections of any quantity. These collections are to be identified at a later date. When possible, samples of skipjack from Galapagos Islands, Central America, and Peru were measured for length.

It was discovered that a wet gunny sack placed over the forward part of skipjack and yellowfin aided materially in quieting the fish as they were being tagged in the cradle. The technique proved invaluable when used with skipjack, as 9 out of 10 fish would cease all movement the moment the sack was placed over the head.



Southern Pacific tuna tagging cruise (C-3-54), Sept. 2-Nov. 11, 1954.

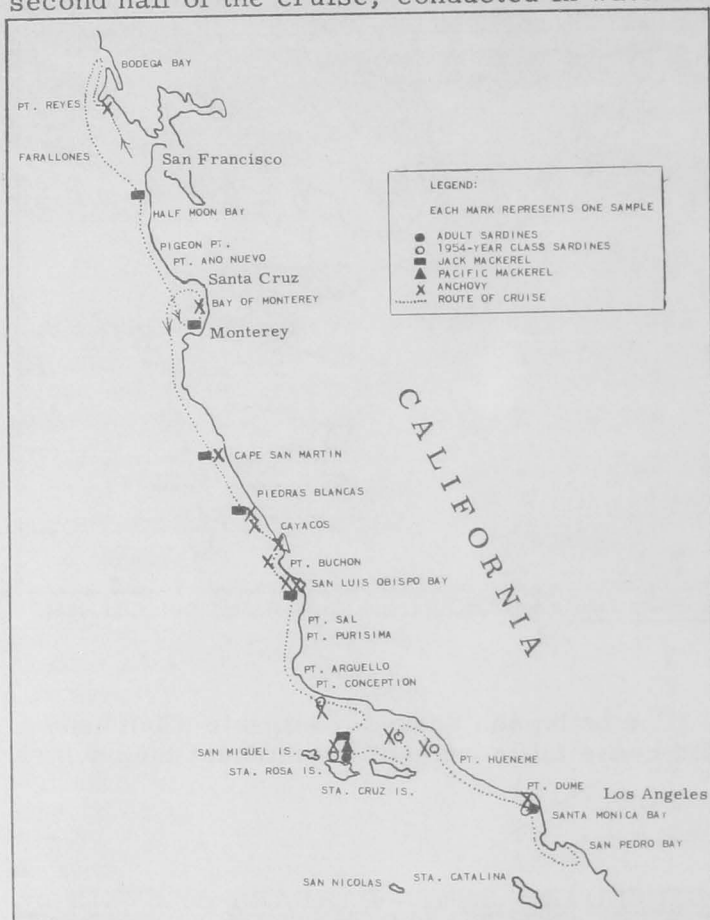
\* \* \* \* \*

ANCHOVY CONCENTRATION SPOTTED OFF SANTA BARBARA BY "YELLOWFIN" (Cruise 54-Y-11): A very heavy concentration of fish was encountered by the California Department of Fish and Game research vessel Yellowfin in the Santa Barbara Channel between the eastern tip of Santa Cruz Island and Ventura, on a 23-day cruise completed at Los Angeles on December 5. Two light stations made in the school revealed that the fish which were attracted to the light were composed of approximately 90 percent northern anchovies and 10 percent 1954 year-class sardines. On the basis of "fathometer" tracings and observations on the "Sea Scanar," it was estimated that the vessel traveled over fish for a distance of 13.3 nautical miles. The "fathometer" tracings show that the fish in this school extended from the surface down to an average depth of nearly 100 feet.

This was the last of four 1954 survey cruises designed to assess the relative abundance of Pacific sardines, jack mackerel, Pacific mackerel, and northern anchovies from Magdalena Bay, Baja California, north off Central California. That portion of the Southern California coast from Goleta Point south to Huntington Beach had been surveyed on the previous cruise (54-Y-10), but it was felt that additional sampling in this area would be advantageous.

The Santa Barbara Channel area contained by far the heaviest anchovy concentration encountered on the cruise, but anchovies were sampled from Drakes Bay South to Santa Monica Bay. Jack mackerel were taken from Monterey Bay south to Santa Rosa Island and consisted entirely of fish less than one year old. The single Pacific mackerel sample, taken at Santa Rosa Island, was likewise composed solely of fish spawned in 1954.

The Yellowfin traveled a total of 535 miles while scouting for fish. During the second half of the cruise, conducted in waters south of Point Conception, rough



M/V Yellowfin Cruise 54-Y-11, November 12-December 6, 1954.

Santa Cruz Island and Port Hueneme. Adult sardines were sampled at Santa Rosa Island and in Santa Monica Bay.

Surface temperatures throughout the cruise ranged from 11.4-16.3° C. (52.5-61.3° F.). The following table indicates the ranges in temperature and depth in which the primary species were taken.

Species	Temperature Range		Depth Fathoms
	Degrees Centigrade	Degrees Farenheit	
Anchovies . . . . .	11.4-16.1	52.5-61.0	5-122
Juvenile sardines . . . . .	11.4-16.1	52.5-61.0	5-210
Adult sardines . . . . .	12.0-16.1	53.6-61.0	5- 12
Jack mackerel . . . . .	11.4-13.8	52.5-56.8	5-122
Pacific mackerel . . . . .	11.4	52.5	12

\* \* \* \* \*

NO SARDINE SCHOOLS OBSERVED IN AERIAL-SPOTTING SURVEY (Airplane Spotting Flight 54-4): Only two schools of fish (possibly anchovies) seen near Bolinas Bay were the only schools located during an airplane-spotting-flight survey by the California Department of Fish and Game plane Beechcraft on November 15-16, 1954, off the California coast. During November 15 the inshore area from San

weather hampered operations considerably. On the entire cruise 50 schools were observed (not including the enormous school of anchovies and young sardines in the Santa Barbara Channel). It was estimated that 6 of these contained sardines, 11 anchovies, 12 squid, 4 sauries, 3 Pacific herring, and 14 were unidentified. Some of these unidentified schools were probably composed of anchovies and young sardines. Surface temperatures, reversing thermometer casts, and bathythermograph casts were taken on all light stations where possible, regardless of whether or not fish were observed or taken in the blanket net.

A total of 63 light stations were occupied and hauls with the blanket net yielded 6 samples of sardines, 14 of northern anchovies, 6 of jack mackerel, and 1 of Pacific mackerel. Of the 6 sardines samples taken, 4 consisted entirely of fish born in 1954 and less than 127 mm. standard length. These were taken along the coastal area extending from Gaviota south to Santa Monica Bay, as well as at Santa Rosa Island and in the channel between

Francisco main channel north to Bodega Head was surveyed, and on November 16 the inshore area from Monterey to Gualala was covered. Aerial observation conditions were good and the total actual search time was 6½ hours.

The survey was made to determine the coastal distribution and approximate abundance of pelagic species, with emphasis on the Pacific sardine.

Birds were observed off Point Reyes and Monterey in fair quantity, but were not working schools on either day. A large concentration of jellyfish was seen northwest of Bodega Head, covering an estimated five square miles. Dense concentrations of what were believed to be squid were observed immediately north of the Monterey breakwater.

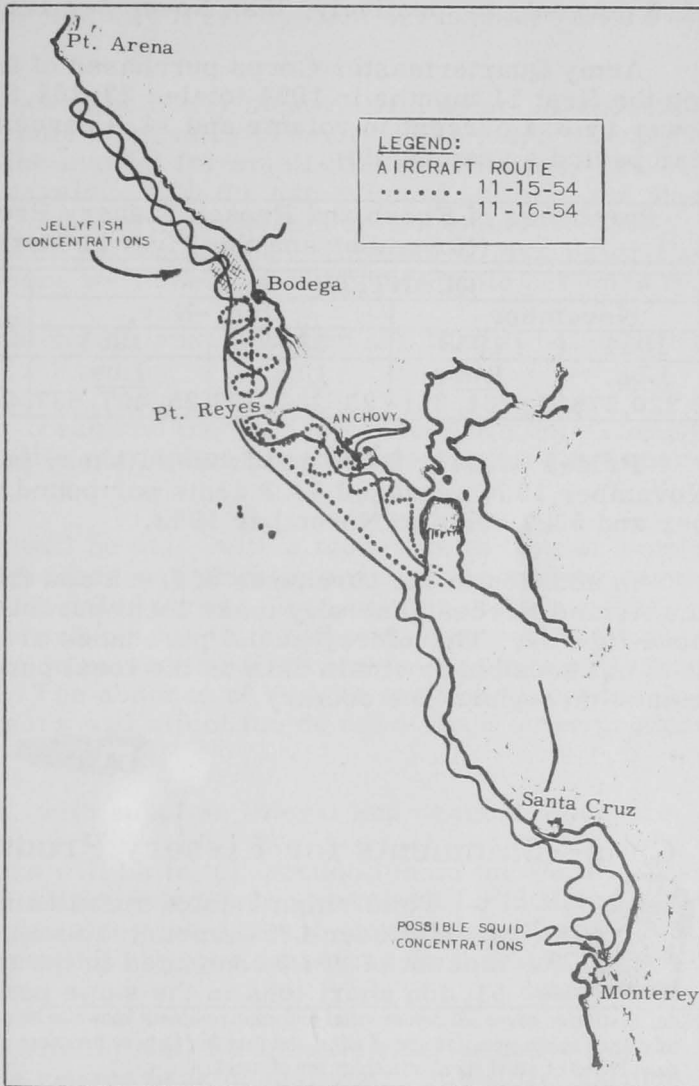
\*\*\*\*\*

**"FISH WEEK" IN SOUTHERN CALIFORNIA, MARCH 14-19:** The launching of the First Annual "Fish Week" was announced by the Executive Director, Southern California Fisheries Association, at Los Angeles on January 10, 1955. The event will be celebrated March 14-19 this year, and will have the support of the fishing industry throughout Southern California.

Plans are now being made to publicize Annual Fish Week in all available educational channels by a Los Angeles Public Relations Counsel handling publicity and advertising for the affair.

It is anticipated by the industry that sea food and fish of most varieties will be in abundance this spring, and at favorable prices to attract the consumer.

Industry leaders will appear on radio and television to bring the story of Annual Fish Week to the public. A home economist of the Public Relations Counsel is preparing special fish recipes for the housewives of Southern California.



Airplane Spotting Survey Flight 54-4 (Beechcraft 4758N), Nov. 15-16, 1954.

### Federal Purchases of Fishery Products

**FRESH AND FROZEN FISHERY PRODUCTS PURCHASED BY DEPARTMENT OF DEFENSE, NOVEMBER 1954:** Fresh and frozen fishery products purchases for the military feeding of the U. S. Army, Navy, Marine Corps, and Air Force by the Army Quartermaster Corps in November 1954 amounted to 2,320,575 pounds, val-

ued at \$935,093 (see table). This was an increase of 17.2 percent in quantity and 8.6 percent in value as compared with October purchases, and higher by 31.5 and 11.3 percent, respectively, than November 1953 purchases.

Army Quartermaster Corps purchases of fresh and frozen fish and shellfish during the first 11 months in 1954 totaled 23,284,337 pounds (valued at \$9,579,928), lower by 8.4 percent in volume and 14.9 percent in value as compared with the similar period a year earlier.

Purchases of Fresh and Frozen Fishery Products by Department of Defense (November and the First 11 Months of 1954 and 1953)							
QUANTITY				VALUE			
November		Jan. -Nov.		November		Jan. -Nov.	
1954	1953	1954	1953	1954	1953	1954	1953
Lbs.	Lbs.	Lbs.	Lbs.	\$	\$	\$	\$
2,320,575	1,764,351	23,284,337	25,407,537	935,093	839,868	9,579,928	11,255,092

Prices paid for fresh and frozen fishery products by Department of the Army in November 1954 averaged 40.3 cents per pound as compared with 43.5 cents in October and 53.7 cents in November 1953.

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



### Cans--Shipments for Fishery Products, January-October 1954



Total shipments of metal cans for fish and sea food during January-October 1954 amounted to 92,468 short tons of steel (based on the amount of steel consumed in the manufacture of cans), compared to 91,365 short tons in the same period a year ago.

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.



### Fishery Products Marketing Prospects, January-March 1955

Markets for edible fishery products are expected to be generally steady during the first quarter of 1955, with a firmer tone anticipated toward the end of the quarter, according to the Quarterly Outlook for Marketing Fishery Products, January-March 1955, a report issued January 10 by the U. S. Fish and Wildlife Service.

As a rule, production of fishery products is lower in the first quarter of the year because of inclement weather.

In analyzing the general fishery situation for the current quarter, the report states that three relatively new products--fish sticks, frozen shrimp soup, and frozen oyster stew--are creating greater demand for groundfish, small shrimp, and oysters, respectively. Production of fish sticks reached about 50 million pounds in 1954 as compared to 7½ million pounds for 1953 and negligible quantities in the previous year.

"If consumers exhibit the same demand for frozen shrimp soup as they have for fish sticks, the demand for small and tiny shrimp will increase manyfold. Frozen oyster stew may affect the market for not only fresh oysters but canned oysters as well."

The market for groundfish fillets will be fairly steady, with some slowness for small haddock fillets. A joint Government-industry promotion campaign which got under way was expected to improve the market for small haddock fillets by reducing current inventories to more normal levels. With the exception of pollock, the supply of groundfish fillets is liberal. Cold-storage holdings on December 1, 1954, were 67 percent higher than in the same period of 1953. Imports of groundfish fillets for the first 10 months of 1954 were well ahead of the comparable period in 1953.

A weak market is forecast for halibut because supplies are liberal but demand is moderate.

A firm market is anticipated for fresh and frozen and canned salmon. The supply of salmon is moderate and with little production expected during the first quarter, the demand will be active.

The market for canned sardines will be dull, with a moderate to liberal supply. The Maine sardine pack for the 1954 season was slightly under three million cases. Steady prices for this product are anticipated for the first quarter of 1955. The market for Pacific sardines will be unsettled due to the liberal supply of domestic-packed sardines and competition from imported sardines not-in-oil, primarily from Japan and the Union of South Africa. The absence of Pacific sardines from the domestic canned fish market for two years will affect the demand since other products have been substituted.

Canned tuna faces a dull market, with supplies liberal and demand moderate.

Both oysters and Dungeness crabs will be in full production on the Pacific Coast in the first quarter, but crabs on the Atlantic and Gulf coasts will be in light supply. Oyster production will decline in March along the Atlantic Coast but will show a firm market, with light supply and good demand. Oyster canneries on the Gulf Coast will be in full operation during the quarter.

The market for fresh and frozen shrimp will be unsettled due to heavy supply. Cold-storage holdings of shrimp hit a record peak of just under 33 million pounds on December 1, 1954. Imports for the first 10 months of 1954 were 6 percent ahead of the previous year's comparable period. Low prices are anticipated until stocks have been reduced.

For most varieties of fresh-water fish, the domestic supply will be light during January and February, with the market supplied principally by Canada. Supplies of whitefish and yellow pike will be light to moderate, and light for lake trout. Lake herring and sauger pike will be in liberal supply. With a generally lighter production during the first quarter, prices will remain steady for most species.

The fish-oil market will be firm with supply moderate and demand good. Total production of fish oil for the first 10 months of 1954 exceeded 18 million gallons, most of which was menhaden oil. Prices for menhaden oil have remained steady due to a better than average export market. Exports of fish oils in 1954 were 52 percent ahead of 1953.

The market for fish meal will be steady. Supplies are moderate and the demand will be good. The production of fish meal was average and the use of fish meal for poultry feed should be high, resulting in a healthy market.

Quarterly Outlook for Marketing Fishery Products, January-March 1955, Fishery Leaflet 336w, may be obtained free from the Division of Information U. S. Fish and Wildlife Service, Washington 25, D. C.



## Great Lakes Fishery Investigations

FEWER CHUBS FOUND IN SHALLOW LAKE MICHIGAN WATER DURING FALL ("Cisco" Cruises X and XI): Chubs were not nearly so abundant in the shallow water (25 fathoms and less) of southern Lake Michigan during November and December 1954 as they were during the summer. This was the report of the Service's research vessel Cisco on two fishery and limnological survey cruises--November 12-20 and December 13-15, 1954.

On the earlier cruise the hydrographic transect between Grand Haven and Milwaukee was covered once each direction. Three hydrographic stations were occupied on each crossing and bathythermograph casts were made at 5-mile intervals. Experimental gill nets were set at 25 and 50 fathoms off Grand Haven. Experimental trawling was conducted off Grand Haven between 3½ and 40 fathoms. An 8-hour intensive limnological and midwater trawling study was made off Grand Haven.

Twenty-eight burbot were taken in the gill nets set at 25 fathoms this cruise where an average of about one burbot per lift has been taken previously.

During the night of the intensive limnological study a large number of Pontoporeia was found at the surface. Mysis was most abundant in the 10- to 30-meter depth range, and few came to the surface. Small Coregonids and smelt were taken with trawls at the 6-fathom level (over a 40-fathom bottom) and a few larger Coregonids and a Cottus sp. were taken 13-16 fathoms down.

The epilimnion of Lake Michigan is continuing to cool steadily. Surface temperatures across the lake ranged between 52.3° and 55.4° F. at the end of Cruise IX (October 31). By November 12, they had fallen to between 48.6° and 52.7° F., and by November 16, they had dropped to 47.1-51.1° F. The lower limit of nearly homothermous water, which averaged 122 feet in depth on October 31, had descended to 126 feet by November 12, and to 132 feet by November 16. The upper limit of the thermocline is poorly defined. This zone of thermal change is thick (average thickness 55 and 58 feet during transects this cruise) and irregular in depth and form as the epilimnion has reached a temperature where there is less resistance to mixing with the near 40°-F. water of the hypolimnion.

All work on Cruise XI was done off Grand Haven. Operations included trawling at 12, 25, and 39 fathoms; gill netting at 25 and 50 fathoms; and hydrographic study at one station. Bathythermograph casts were made at the hydrographic station and at fishing locations.

A large catch of chubs, (Leucichthys artedii, L. zenithicus and L. alpanae) was made in gill nets at 25 fathoms. Nearly all fish were either in spawning condition or were freshly spawned out. Four burbot were taken in gill nets set at 25 fathoms indicating the continuance of an above-average abundance at this depth established during Cruise X. Bloaters (L. hoyi) were more abundant at a depth of 50 fathoms. There appears to be very few chubs (Leucichthys sp.) at 13 fathoms at this time, but yellow perch are abundant. During the summer and early fall the chub was very abundant at this depth.

The water of southern Lake Michigan is not yet homothermous from top to bottom in deeper areas. At 50 fathoms there was approximately a 5°-F. difference

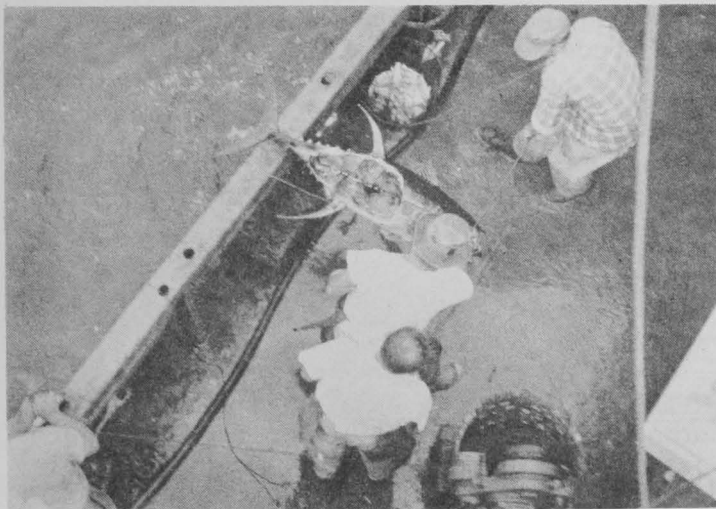
between the surface and bottom temperature ( $44^{\circ}$  F. at the surface and  $39^{\circ}$  F. at the bottom).



## Gulf Exploratory Fishery Program

**YELLOWFIN TUNA CAUGHT IN DECEMBER BY "OREGON" (Cruise 27A):** A total of 25 yellowfin tuna were caught in the central Gulf of Mexico during December

by the Service's exploratory fishing vessel Oregon, thus extending the season during which the vessel has taken yellowfin to 8 months. The yellowfin tuna were taken on 3 sets from 75-175 miles southeast of the Mississippi Delta on a 5-day cruise completed at Pascagoula, Mississippi, on December 17.



Boating a long-line caught yellowfin tuna aboard the Service's exploratory fishing vessel Oregon operating in the Gulf of Mexico. Note damage done by sharks.

Three long-line sets (average set consisting of 39 baskets of 10-hook gear) were made at positions 75, 175, and 80 miles southeast of the Mississippi Delta. These sets caught 9, 1, and 15 yellowfin tuna, respectively--a total weight of 2,780 pounds. In addition, 9 yellowfin were lost due to gear failures. Two wire leaders and 7 nylon gangions parted while trying to bring these fish to gaff.

At the southermost set, where one shark-bitten tuna was caught, a larger number of white-tipped sharks (Pterolamiops longimanus) were observed around the vessel. Three sharks were caught on hand lines and one on the long line. At the other two stations no sharks were seen or caught and none of the tuna were damaged.

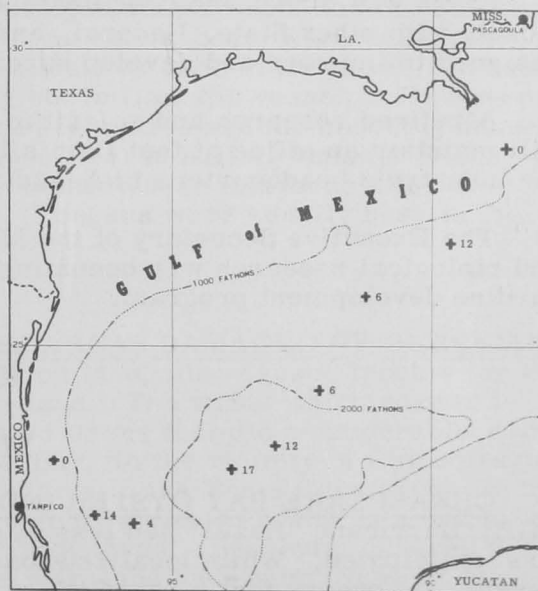
The yellowfin ranged in size from 82-164 pounds, and averaged 116 pounds each. Examination showed gonads of both sexes to be dormant at the time.

Two small schools of mixed blackfin tuna and white skipjack tuna were observed during the trip.

\* \* \* \* \*

### "OREGON" CATCHES 72 YELLOWFIN TUNA IN WESTERN GULF OF MEXICO

(Cruise 28): A total of 72 yellowfin tuna (8,640 pounds) was landed by the Service's exploratory fishing vessel Oregon at Pascagoula, Miss., on February 1 after a 21-day cruise in the western Gulf of Mexico. This made the ninth consecutive month that



Approximate location of long-line stations fished by Oregon on Cruise 28. The number at each location indicates the number of yellowfin tuna caught.



yellowfin tuna were caught in the Gulf. Very little trouble was encountered with sharks during the cruise--only four tuna were shark bitten. Nine long-line stations were made on a line between the Mississippi Delta and Tampico, Mexico. Fishing activities, in general, were greatly hampered by bad weather and eight scheduled stations could not be fished.

Yellowfin tuna were caught at all stations beyond the 1,000-fathom curve. One set close to the Mississippi Delta and one set off the Mexican coast in shallower water failed to produce yellowfin. The largest catch (17 yellowfin) was made in the vicinity of the Sigsbee Deep.

Originally it was planned to make several 100-basket (1,000-hook) sets on this cruise but due to bad weather the largest set made was 74 baskets. Also, strong currents encountered in the southwest Gulf required the use of the entire supply of swivels to keep existing gear fishing and little new gear could be rigged. Sets varied from 50 to 74 baskets with an average of 600 hooks per set.

On the return leg of the trip two trial drags were made in 200 to 500 fathoms with an experimental beam trawl. This trawl will be tested further on the next cruise.



## Maine

SARDINE INDUSTRY APPOINTS RESEARCH DIRECTOR: The appointment of Dr. Berton S. Clark of Oak Park, Illinois, as Director of Research for the Maine Sardine Industry, was announced in a January 5 bulletin from that association. The well-known scientist will be employed by the Maine Sardine Tax Committee which had been negotiating for his services for several months.

The Committee, in cooperation with the Maine Development Commission, supervises an industry development program, financed by a 25-cents-per-case State tax imposed on all sardine canners.

Clark will direct and coordinate all industry research activities as well as work closely with other State, Federal, and private organizations on scientific projects designed to improve and develop sardine fishing and processing operations.

A retired research and scientific director of the American Can Company, Clark will maintain an office at that firm's laboratories in Maywood, Illinois, as well as at the industry's headquarters in Augusta.

The Executive Secretary of the Maine Sardine Industry stated that technological and biological research was becoming an increasingly important part of the Maine sardine development program.



## Maryland

CHEASPEAKE BAY OYSTER INDUSTRY RECOVERS FROM HURRICANE DAMAGE: Hurricane "Hazel" had less effect on oysters in Chesapeake Bay than was first anticipated. While localized losses of oysters on certain bottoms have been severe, it appears that most of the major oyster bars have been only slightly damaged, if at all. A joint survey of bars in the open Bay and larger tributaries has been made by Federal and state scientists in cooperation with the Maryland Department of Tidewater Fisheries.

Few of the natural rocks examined showed any losses from the hurricane. Along the inner margins of certain exposed rocks where oysters had become established on bottom containing sand and on a few plantings made in shallow water, losses as high as 50 percent or more were apparent. There was also indication that oysters in exposed shallow water had been rolled about by heavy seas and, in a few cases, had been washed up on beaches. Such oysters, though still alive, are likely to show further mortality from the effects of being filled with sand or lodged in unfavorable positions. On the whole, however, the long established major oyster rocks have escaped major damage, and production from them continues, reports the November 1954 Maryland Tidewater News of the Maryland Department of Research and Education.



Typical hurricane destruction on Chesapeake Bay waterfront, October 15, 1954.



Hurricane damage to Chesapeake Bay shucking house, October 15, 1954.

Rapid and efficient work was done in refloating damaged boats and in repairing shore installations that were wrecked by the storm. Many boats were driven far inland over marshes and had to be hauled long distances back to the water. In some instances special canals and channels were dug out to float the vessels. By November practically all of the oyster fleet was back in operation and the shucking houses were operating at near capacity. The picturesque fleet of sailing vessels which dredge oysters from the public bars of the Bay turned out in full force after the opening of the dredging season on November 1. Tongers were equally busy in the many tributaries of the Bay.

\* \* \* \* \*

**CHINCOTEAGUE BAY OYSTER AND CLAM AREAS DAMAGED BY HURRICANE:** Hurricane "Hazel," which did extensive damage on land, also caused trouble for the watermen of the Chincoteague Bay area of Maryland. The winds which rose to 93 m.p.h. in that area on October 15, 1954, created waves that did considerable damage to the oyster beds. In the lower part of the Bay, in the vicinity of Chincoteague, many thousands of oysters were buried, particularly in the Toms Cove area. In the lower Maryland section some were lost or carried by waves as much as a half mile from where they were planted and many beds disappeared, apparently covered during the storm, according to the December 1954 Maryland Tidewater News of the Maryland Department of Research and Education.

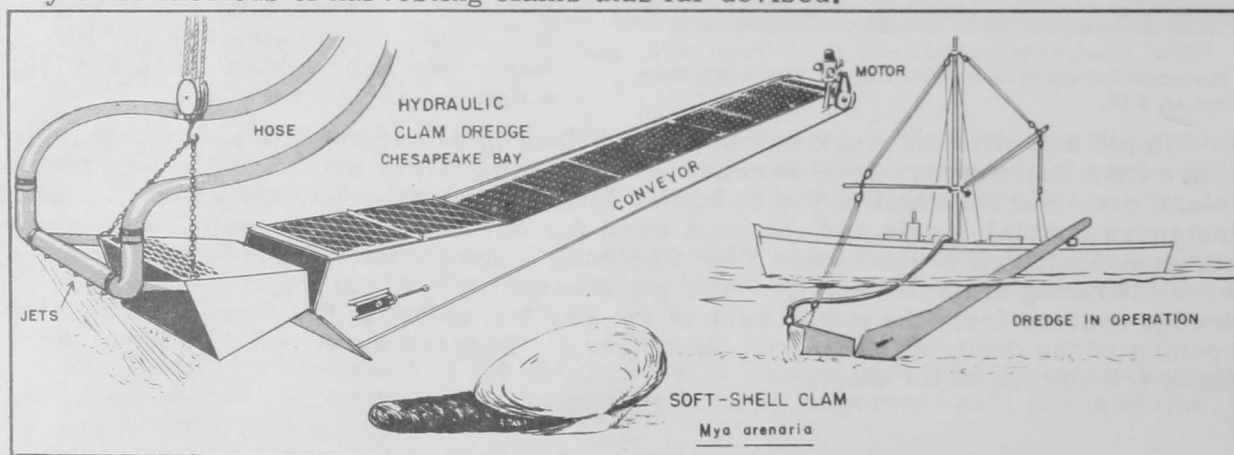
Some of the State-planted shells were also lost in this area, but the damage to them was light. Farther up the Bay from Girdletree to Public Landing the loss was greater as the wind had a longer sweep with no islands to break the force of the waves. In this area thousands of bushels of oysters were lost. Also, many were swept off the planted beds and carried some distance or scattered by the heavy seas. Many watermen report that they have not even found some of their planted beds; these were apparently covered with mud and sand. Those most damaged were near the Assateague Island side of the Bay where sand was picked up by the waves from the flats there and deposited in the middle of the Bay. Near Ocean City the damage was less as the Bay is narrower there and consequently the wave action was less. Minor losses occurred to oysters planted in this area. Some of the State-planted shells were covered by sand, but not over 20 percent of those in the area were completely lost.

Hard-shell clams did not suffer severe damage as far as can be observed. They are, of course, under the bottom and, unless covered very deeply, can survive. Some of the clambers report that the clams in some areas are deeper than usual. Although they were partly buried, they are still alive.

There was very little damage to boats in the area, boat owners having received ample warning. Most people put their boats up in the small creeks or in good harbors.

\* \* \* \* \*

**SOFT-SHELL CLAM DREDGE ALLOWS SUSTAINED PRODUCTION:** During 1954 a number of conservation officials experienced in clam research and management, including representatives of the U. S. Fish and Wildlife Service, the Dominion of Canada, and the states of Maine and Massachusetts, observed the operation of the hydraulic dredge used in catching soft-shell clams in Maryland. All agree that it is an effective gear and a considerable improvement conservation-wise over any other methods of harvesting clams thus far devised.



In the New England-Canadian clamming area where hand-digging methods are employed, many clams of market size are broken and the high mortality rate of undersized clams represents a serious loss. An experienced and careful hydraulic dredge operator breaks not more than about five percent of the catch, and most of the clams that are missed by the dredge are able to rebury themselves in the bottom. Until the clams are completely "dug in" they are vulnerable to predators such as crabs and eels, and some loss undoubtedly occurs. However, if these clams were allowed to remain undisturbed in the bottom, in almost all areas natural mortality would claim 100 percent of the population, with no direct benefit to man.

The fear that Maryland's clam industry might be a "mining operation" based on long-accumulated stocks of clams, and therefore of short duration, appears to be

unfounded. Data obtained thus far indicate that Maryland clams grow very rapidly, reaching a length of 2 inches or more during their second year of life, and about 3 inches in the third year. Subsequent growth appears to be slow, and it is likely that relatively few clams survive more than 3 years. This is in sharp contrast to growth rates and longevity in more northern waters, where clams may require as long as 5 to 6 years to reach marketable size (2 inches). The apparently short life span of Maryland clams indicates that no great accumulation of stocks could occur.

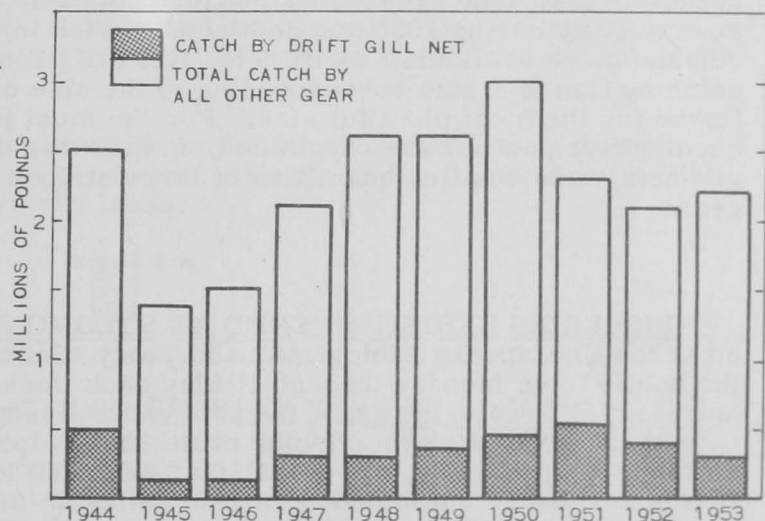
The high growth rate, combined with adequate reproductive potential and moderate mortality rate, should result in rapid replacement of harvested stocks. There are indications that the growth rate of undersized clams is accelerated by removal of the larger clams. Observations indicate that, with the present method of catching and the enforcement of adequate conservation regulations, a given bed can be profitably harvested at least once a year.

In summary, all the evidence to date indicates that Maryland's clams are a replaceable resource, reports the December 1954 Maryland Tidewater News of the Department of Research and Education. It is difficult to estimate the potential magnitude of the industry, but its present value, approximately a half-million dollars gross income to dredge operators and dealers, is derived almost exclusively from operations in counties representing only about one-fifth of the total area of bottoms beneath tidewater.

\* \* \* \* \*

**EFFECTS OF DRIFT GILL-NETTING ON STRIPED BASS STUDIED:** Every year, with the onset of cold weather, Chesapeake Bay fishermen in many Maryland tidewater communities start overhauling their old drift gill nets and hanging new ones in preparation for the annual search for the schools of striped bass or "rock" that winter in the deeper areas of the Bay prior to their spring migration to the spawning grounds. Drift gill-netting is a highly seasonal operation, and is usually most profitable during January and February when boats range from the Chesapeake Bay Bridge to Point Lookout, following the schools as they feed on the small fish, worms, and shrimp-like animals sharing their winter habitat.

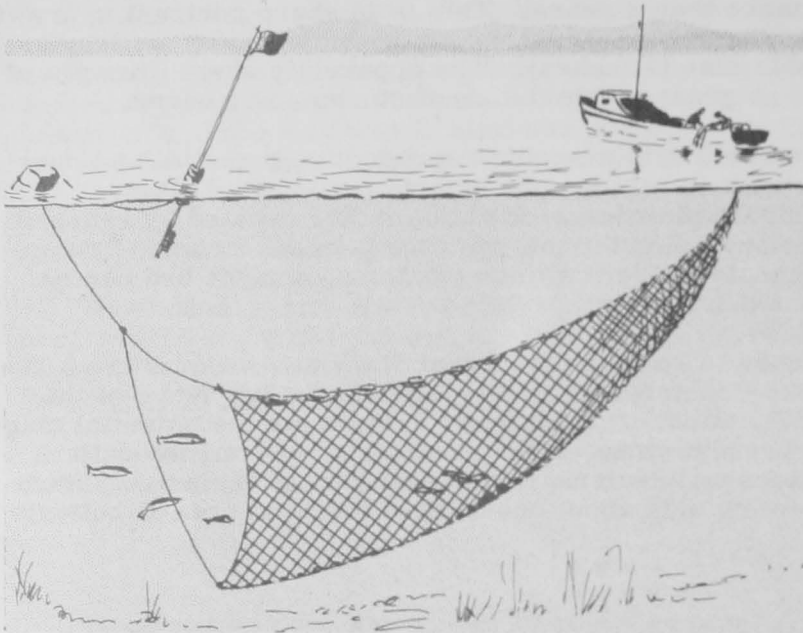
At the request of interested conservationists, sportsmen, and commercial fishermen, the Maryland Department of Research and Education has initiated a study of the drift gill-net fishery for striped bass in Maryland. The problem is designed to determine the effect of drift nets on the populations of striped bass in the Bay; how many fish are caught, when and where they are caught, and whether the catch per yard of net has changed during the past 10 years with the introduction of nylon netting. The study includes a critical analysis of all available catch statistics and field observations. Its success will be in no small measure due to the generous and helpful cooperation of commercial drift-net fishermen, according to the November 1954 Maryland Tide-Water News, a Department of Research and Education publication.



Drift gill-net catch of striped bass in Chesapeake Bay and tributaries, Maryland, winter months, 1944-53.

The study is not complete, but preliminary results show the drift-net fishery to be relatively stable. During the period 1944-53 the annual catches of striped bass

by drift nets ranged from 162,000 to 523,000 pounds annually, with an average yearly production of 356,000 pounds, surprisingly close to the 1929 drift-net catch of 361,000 pounds. This average constituted approximately 15 percent of the total catch of striped bass by all types of commercial fishing gears used in Maryland waters.



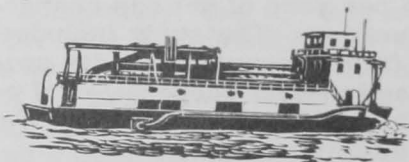
Chesapeake Bay striped bass drift gill net.

A temporary increase in the amount of drift nets occurred during 1950 and 1951, accompanied by an increase in catch, followed in 1952 and 1953 by a decrease in both netting and catch. The best index to production is obtained from calculations of the catch per yard of netting. The catch per yard of drift net has remained rela-

tively stable since 1947. During 1950 when striped bass were particularly abundant, large catches were taken in all commercial gears, and the total catch for all types of nets in Maryland exceeded 3,000,000 pounds. The drift-net catch per yard of net rose slightly during 1950 and continued to rise in 1951; obviously, fish were numerous and more available. Drift nets, like all gill nets, are selective in operation, catching fish of a size corresponding to the size of the mesh used, and generally are fished for the most plentiful size. For the most part small striped bass (rarely exceeding five pounds) are caught and, in general, drift nets, like stake and anchor gill nets, take smaller quantities of large striped bass than the other commercial gears.

\*\*\*\*\*

**FISHERIES EXHIBIT OPENED AT SOLOMONS:** An exhibit hall, recently opened at the Chesapeake Biological Laboratory, Solomons, Maryland, is now open to the public from Monday through Friday each week, according to the December 1954 Maryland Tidewater News, a Department of Research and Education publication. Life histories of the oyster, blue crab, and striped bass are shown through the use of mounted specimens, along with methods used to harvest these resources. A section is devoted to the methods used in taking an inventory of Maryland's various inland resources which are exemplified by game species, forests, and fresh-water fish. A special collection, for example, shows the life history and destructive nature of the shipworm. Fossils from the famous Calvert Cliffs fill an interesting case to illustrate animals that lived during a period of the earth's early development.



## Michigan

"FISH WEEK," MARCH 13-19: The fishing industry of Michigan expects to put on "Michigan Fish Week" from March 13-19, 1955. The industry was assured by the Governor of Michigan and the Mayor of Detroit that proclamations would be issued establishing Fish Week and that every cooperation would be given the industry.



## National Canned Salmon Week

A nation-wide canned salmon publicity campaign--National Canned Salmon Week--was featured with the Lenten season starting February 23 and extending through March 1, 1955. The Lenten season is traditionally recognized as "fish" season.

Trade publications, daily and weekly newspapers, radio, television, and other effective media were used to publicize and popularize canned salmon as a commodity. Some firms joined in with their own brand advertising. Cooperating were railroads, steamship lines, banks, and allied industries, such as can companies, lithographers, box manufacturers, oil companies, supply houses, and insurance companies. Nation-wide grocery chains, supermarkets, retail distributors, as well as wholesale grocers, cooperated by featuring canned salmon in their advertising and displays. Railroad dining cars, restaurants, hotels, cafeterias, and fountain and food service counters stressed canned salmon on their menus.

Publicity emphasized the economical nutritious food value of canned salmon as a concentrated, cooked, vitamin-rich protein food, "ready to eat right out of the can," or served in salads or hot dishes. Canned salmon is available in one-quarter, one-half, and one-pound tins for small families, for the after-school sandwich, for hors d'oeuvres, or for a TV snack. Salmon is also canned in the convenient and economical four-pound tins for restaurant and institutional trade, and school-lunch programs.

Canned salmon is produced from Eureka in California to the Yukon River in Alaska. The value of canned salmon produced in Alaska is far in excess of all the gold ever taken out of the Territory of Alaska.

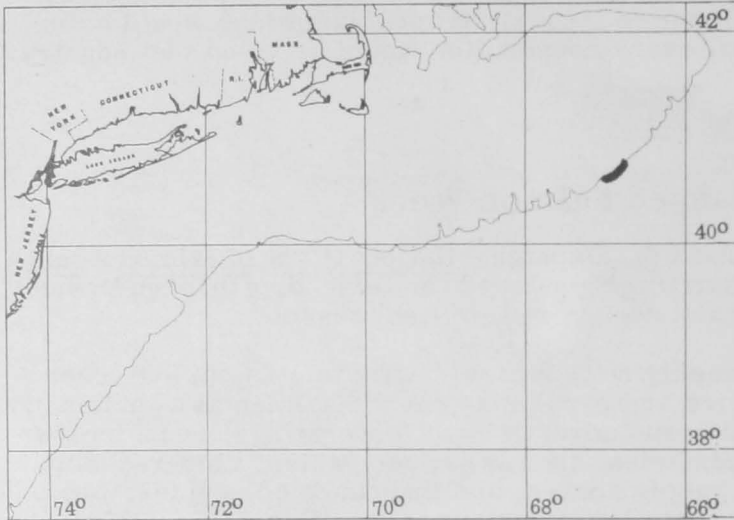


## New England Exploratory Fishing Program

DEEP-WATER TRAWLING TESTS ON GEORGES BANK BY "DELAWARE" (Cruise 1): A nine-day exploratory fishing trip in the deep waters of the continental slope on the southeast sector of Georges Bank was completed by the Service's exploratory fishing vessel Delaware at East Boston on January 13, 1955. This was the initial trip of a program designed to determine the extent of productive trawling grounds on the perimeter of Georges Bank, and trawling was conducted in depths of 150-230 fathoms.

Catches averaged 900 pounds per tow of one hour, with white hake, ocean perch, and gray sole accounting for the majority of the commercial species caught. Lobsters from 2 to 20 pounds were taken on most of the tows. A total of 24 egg-bearing lobsters was kept alive in circulating water tanks and delivered to the Massachusetts Division of Marine Fisheries for experimental tagging and release in coastal waters.

The most promising indication of haddock availability was noted on tow number 12, made at  $40^{\circ}41'$  N. latitude and  $66^{\circ}45'$  W. longitude in depths of 160 fathoms, where 5,000 pounds of red hake and 100 pounds of large haddock were caught.



Deep-water otter-trawl fishing on southeast Georges Bank by Delaware (Cruise 1), January 6-11, 1955. Dark area marks approximate location of trawling operations.

Small quantities of ocean perch were taken in 6 of the 12 tows. These were of a large size, with an average length of 15 inches and an average weight of 2 pounds each.

Fishing operations were carried out with a No. 41 standard otter trawl net, rigged with 10-fathom ground cables and a belly section of rollers. The area worked extended from  $66^{\circ}45'$  W. to  $67^{\circ}05'$  W. longitude and from  $40^{\circ}32'$  N. to  $40^{\circ}46'$  N. latitude. Tows were made in depths ranging from 150 fathoms to 230 fathoms, the maximum operating limit of the depth sounder. All tows were of 1-hour duration with length of towing wire in a

ratio of 3 to 1. High winds and rough seas prevented fishing for 3 days and a total of 12 tows was completed in daylight-to-dark operations.

The Delaware was scheduled to depart East Boston on January 20 on Cruise 2, returning on or about January 28, 1955. On this cruise deep-water otter-trawl fishing at selected stations on the continental slope of southeast Georges Bank will be made to determine whether haddock, cod, ocean perch, or other bottom species are present in commercial quantities at this time of year.

Work will be conducted in depths from 150-230 fathoms in the area lying between the 100- and 500-fathom curves and bounded by  $40^{\circ}35'$  to  $40^{\circ}57'$  N. latitude, and  $66^{\circ}30'$  to  $67^{\circ}00'$  W. longitude.

\*\*\*\*\*

SHRIMP EXPLORATIONS IN GULF OF MAINE CONTINUED BY "DELAWARE" (Cruise 33): Small numbers of shrimp were caught in 13 of 22 drags made by the Service's exploratory fishing vessel Delaware in northeastern Gulf of Maine waters on an 8-day cruise completed at East Boston on December 15. The most promising indications of shrimp availability were found in the area between Cape Porpoise and the northeastern tip of Jeffreys Ledge, where tows in depths from 70-85 fathoms yielded 260 shrimp, plus a total catch of 1,700 pounds of ocean perch, gray sole, whiting, pollock, and hake. The shrimp averaged from 30-40 count per pound heads-on, and all specimens were in the egg-bearing stage. A tow made 12 miles north by west of Jeffreys Ledge Buoy in depths of 82-90 fathoms yielded 1,500 pounds of large ocean perch, and 500 pounds of mixed species, including pollock, hake, and whiting.

The primary purpose of this exploration was to ascertain if commercial quantities of shrimp were present in the area. Fishing operations were carried out with a standard No. 41 otter trawl, lined with 2-inch stretched-mesh cotton webbing in the belly and cod-end sections of the trawl. The 22 drags covered 6 potential shrimp fishing grounds located between Cape Ann, Mass.; and Monhegan Island, Me.

Other areas explored--east of Jeffreys Ledge Buoy, southwest of Monhegan Island, and southeast of Portland Lightship--resulted in negligible catches of shrimp and fish.



## New York

NEW YORK CITY POSTPONES CRAB MEAT REGULATIONS ONE MONTH: In view of the active efforts of the states of Georgia and Maryland to enact sanitation laws, a 30-day grace period was granted on the effective date of the new crab-meat section of the New York City Sanitary Code, according to the Director of the Bureau of Food and Drugs, Department of Health for the City of New York. He stated the new crab meat section would become effective February 1, 1955. Meanwhile, the State of Georgia had qualified and was ready to meet the requirements of New York City. The Commissioner of the Georgia Department of Agriculture issued new rules and regulations for crab-meat plants in Georgia, effective January 1, 1955, and has taken steps to issue the necessary certificates.

The Chief of the Division of Food Control of the Department of Health, State of Maryland, has also been active and, with the help of crab packers in Maryland, it appears now that the Maryland Legislature will enact the necessary laws before the end of January. The Maryland Legislature began its sessions early in January.



## Pacific Oceanic Fishery Investigations

LONG-LINE GEAR TESTED BY "COMMONWEALTH" ON COMMERCIAL TUNA CRUISE TO LINE ISLANDS (Cruise 2): Both steel and cotton long-line gear were used by the Pacific Coast vessel Commonwealth on a 15-day commercial fishing cruise near the Line Islands in November 1954. After only four days of fishing the crew had found the cotton line to be superior and used it for the remainder of the trip. Fishing was improved over the earlier trip of the Commonwealth to this area although the total catch was only about five tons of yellowfin tuna. The fish were small in size, each averaged about 80 pounds in weight.

The vessel was prevented from fishing longer because of an emergency call from a sailing vessel in distress, and the Commonwealth lost about two weeks' fishing time in order to tow the vessel to Fanning Island.

A great deal of difficulty was experienced with sharks which added to the inadequate amount of gear and the small size of the fish caught combined to account for the small catch.

\* \* \* \* \*

STEEL LONG-LINE TUNA GEAR TESTED BY HAWAIIAN VESSEL "MAKUA" (Cruise 3): Sea trials of "D" ring steel long-line gear were made and a shock absorber for steel-gear main line was tested on a three-day cruise by the Territory of Hawaii's research vessel Makua off Waianae. On this cruise, completed at Honolulu December 8, 1954, the vessel also watched for surface schools of fish in the vicinity of the long-line fishing region.

Twenty-four baskets of 11-hook 3-fathom dropper "D" ring gear were fished on 2 stations off Waianae. No serious difficulties were experienced in setting or recovering gear, but timing was slow due to the inexperience of the crew. The fish



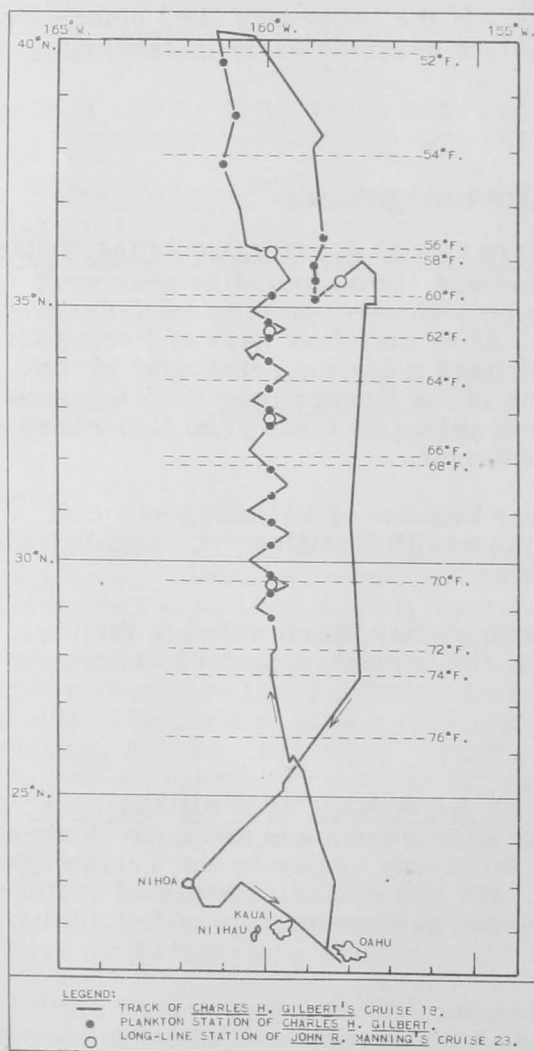
catch consisted of 7 dolphin (mahimahi), 1 big-eyed tuna, and 1 shark. Close examination of the gear showed no signs of failure or fatigue. However, one dolphin taken on an end basket tangled 30 fathoms of main line so badly that 5 fathoms of wire had to be cut out and replaced.

Nylon droppers were tried on one basket of gear-- $\frac{3}{16}$ -inch nylon showed considerable elasticity. One fish was taken on a nylon dropper without injury to dropper or leader. However, nylon droppers were very difficult to coil neatly and proved hard to disentangle during the setting operation.

Fish watches were maintained whenever possible but very heavy rains limited the range of observation. No surface signs of fish were sighted on the cruise.

\* \* \* \* \*

WATER CONDITIONS DETERMINE LOCATION OF ALBACORE TUNA IN MID-PACIFIC ("John R. Manning" Cruise 23, Part I and "Charles H. Gilbert" Cruise 18): Scientists with the Service's Pacific Oceanic Fisheries Investigations believe they can tell where albacore are located in mid-ocean from a study of the waters, and this was borne out by the results of a cooperative survey by the Service's research vessels John R. Manning and Charles H. Gilbert.



The two vessels explored waters north of Hawaii as far as 1,000 miles from the Island, and caught 21 albacore between 34° and 37° N. latitude along and east of 160° W. longitude. The vessels returned to Honolulu on December 21, 1954, from the three-week cruise.

Ocean conditions favoring the presence of albacore were found between 29° and 40° N. latitude, where plankton was more abundant than in the waters closer to Hawaii. Unfortunately, winds up to 40 knots and seas as high as 25 feet permitted only limited experimental long-line fishing on the John R. Manning, but even then, albacore tuna were caught on 3 of the 5 days. The two locations fished south of 33° N. yielded only 6 big-eyed tuna, but north of that latitude 21 large albacore tuna were taken, ranging from 50-85 pounds, at the three stations fished. In addition to the albacore and big-eyed tuna, 1 striped marlin, 31 great blue sharks, 1 thresher shark, and 29 lancet fish were caught.

The purpose of the survey was to determine the distribution and abundance of this commercially-valuable white-meat tuna species, and to describe the temperature and other characteristics of waters in which albacore were found. The John R. Manning fished with long lines and trolling gear, and operated a midwater trawl, a device used to estimate the abundance of the animals tuna eat. The Charles H. Gilbert trolled extensively, measured the amounts of nutrient chemicals in the sea water, and collected plankton, the minute animals that support the organisms on which the tuna

feed. Both vessels made frequent measurements of water temperatures down to a depth of 900 feet. In addition, a scientist from the University of Hawaii, accompanied the Charles H. Gilbert in order to measure the basic productivity of the microscopic plants that ultimately support all life in the sea. He did this by using a new technique which involves measuring the amounts of radioactive carbon taken out of the water by the plant plankton.

On a similar survey in September of 1954 considerable small albacore (15 pounds each) were taken at the surface by trolling, but on this later cruise intensive trolling from Hawaii to  $41^{\circ}$  N. caught no albacore. This drop in the apparent abundance of the smaller surface-dwelling fish perhaps reflects the onset of winter conditions in the North Pacific, for water temperatures were considerably lower than they were on the September cruise.

The John R. Manning fished 5 stations, 4 on  $160^{\circ}$  W. and 1 on  $158^{\circ}30'$  W. longitude. Sixty baskets of 13-hook gear were set at each station with the exception of the first, where only 55 baskets were set. Five- and 15-fathom float-line gear were alternated in each set by 5-basket groups. The main line on the 5 fathom gear was stretched during setting and the 15-fathom main line was set slack in order to fish in the widest possible range of depths. Bait used was sardine and herring, alternated every 10 baskets.

No great concentration of albacore was detected on any of the stations fished. However, 7 albacore were taken at each of the 3 stations north of  $34^{\circ}$  N. latitude. The albacore taken were generally large, ranging between 37 and 79 pounds with an average weight of 62 pounds. The fish were smaller on the northernmost stations.

According to the readings obtained from chemical sounding tubes, the deepest hooks of the 5-fathom gear fished at an average depth of 360 feet while the 15-fathom gear fished at 446 feet.

Trolling by the John R. Manning along the long-line set for 2 hours at each station resulted in no catch. Five surface lines were trolled at three stations, and one hour each of surface and deep trolling was done at two stations. Deep trolling was at a speed of 3 knots and surface trolling at 7 knots. In order to troll below the surface, the main line of  $\frac{5}{32}$ -inch wire was weighted with either a 50-lb. semi-depressor or a "kite-type" depressor. Four 10-fathom trolling lines were spaced 15 fathoms apart on the main wire. The depth of the lowermost line reached 300 feet, comparable to the fishing depth of the long-line hooks. Although no fish were taken trolling, 7 albacore were taken by long line at each of the two stations on which deep trolling was tried.

The John R. Manning recorded surface temperatures continuously and made BT casts at regular intervals. The subsurface temperature record obtained with the BT showed a uniformly deep thermocline along  $160^{\circ}$  W., the thermocline depth ranging between 200 and 420 feet. The recording thermograph, operated continuously during the cruise, usually showed a gradual decline in surface temperature but abrupt drops were noted at  $33^{\circ}$  and  $36^{\circ}$  N. At  $36^{\circ}$  N., there was a sudden drop from  $60^{\circ}$  F. to  $57^{\circ}$  F. within a matter of hours. A fishing station was occupied within this zone of abrupt change.

In addition, the John R. Manning occupied 3 mid-water trawl stations between the hours of 2000 and 2130, using the modified 6-foot Isaacs-Kidd trawl. The catch in each instance was very low in volume.

Stomachs were preserved from 7 albacore and 1 big-eyed tuna and the ovaries from 1 albacore. Field examination of the stomachs of 13 lancetfish revealed that most were either empty or contained only a few salps and polychaetes. A total of 13 albacore were tagged and released. Bad weather and sea conditions hampered execution of much of the planned work.

The Charles H. Gilbert made a reconnaissance survey of the hydrography and productivity of the "albacore zone" simultaneous with the long-line survey by the John R. Manning along  $160^{\circ}$  W. longitude and to the east of  $160^{\circ}$  W.

Seven lines were trolled by the Charles H. Gilbert during all daylight hours. The catch was only 3 dolphin taken at the southern end of the section, although one fish that may have been an albacore was lost at  $36^{\circ}$  N. in  $58^{\circ}$  F. water. This is in marked contrast to results obtained in September 1954 when surface albacore appeared plentiful in this region.

No surface schools or working bird flocks were noted except when traversing waters near the Hawaiian Islands, well south of "albacore water."

A dog-leg survey pattern covering a band of water between  $159^{\circ}30'$  and  $160^{\circ}30'$  W. was initiated at  $28^{\circ}40'$  N. This was discontinued at  $36^{\circ}$  N. because of bad weather. From  $36^{\circ}$  to  $41^{\circ}$  N. two parallel survey lines were completed that included the area originally designated for survey.

The Charles H. Gilbert found that surface temperatures were about  $76^{\circ}$  F. at  $26^{\circ}$  N., fell to  $70^{\circ}$  F. at about  $29^{\circ}$  N. and to  $51^{\circ}$  F. at  $41^{\circ}$  N. The rate of decline of the surface temperature varied; the most precipitous change being at  $32^{\circ}$  N. where it fell from  $68^{\circ}$  to  $63^{\circ}$  in about 30 miles. Generally, the decline was less rapid and characterized by a pattern of rises and falls of  $\frac{1}{2}^{\circ}$  to  $1^{\circ}$  that suggested imperfectly mixed water, perhaps taking the form of pools of warm water in cold, and cold in warm, though this was not true of zones of rapid change. These minor irregularities probably result from unequal cooling and varying wind stresses. (In this area winds may vary from 10 to 30 knots between localities 30 or 40 miles apart.)

A sharp thermocline was found between  $26^{\circ}$  and  $36^{\circ}$  N. (where the surface temperature was about  $54^{\circ}$  F.), though the isotherms comprising it were progressively cooler. Zooplankton hauls made during the survey suggested a larger standing crop north of about  $33^{\circ}$ , but the large and varying numbers of salps in the hauls made field evaluation difficult. Along with the appearance of large numbers of salps the water became somewhat greener and somewhat less transparent to the north.

The original plan for the Charles H. Gilbert anticipated making special studies to the east of  $160^{\circ}$  W. along with long-lining by the John R. Manning, but high seas and 30- to 40-knot winds prevented more than a slight eastward extension from  $160^{\circ}$  W.



## Personnel Changes in Service's Fishery Statistics Programs

**NEW HEAD IN NEW ENGLAND:** Dwight L. Hoy, who has conducted fishery statistics surveys of the South Atlantic and Gulf States in recent years, has been transferred to the U. S. Fish and Wildlife Service's Branch of Commercial Fisheries, Gloucester, Mass., office to head the fishery statistics activities in the New England States handled by that office. He replaces C. H. Lyles, who has been transferred to New Orleans, La., to take charge of the Service's expanded fishery statistics activities in the Gulf area. The Gloucester office's address is Room 205, Post Office Building.

\*\*\*\*\*

**NEW AGENT IN NEW JERSEY:** Eugene A. LoVerde has been placed in charge of the U. S. Fish and Wildlife Service's Fishery Statistics office at Toms River, N. J. He replaces Russell Soulen who was recently transferred to the Service's

central office in Washington, D. C. Activities carried on from the Toms River office by the Service's Branch of Commercial Fisheries include the collection of monthly fish and shellfish catch data for inclusion in the monthly bulletin New Jersey Landings, and annual fisheries operating unit and catch statistics for that State which appear in various Service publications. The office's address is Post Office Box 143, Toms River, N. J.



## Saltonstall-Kennedy Act Fishery Projects

**FISHERIES ADVISORY COMMITTEE APPOINTED:** The appointment of 19 representatives of all segments of the United States fisheries industries to the Fisheries Advisory Committee was announced by Secretary of the Interior McKay February 3. The Advisory Committee is authorized by the Saltonstall-Kennedy Act, P. L. 466 (83rd Congress), which was enacted to promote the free flow of domestic fishery products in commerce.

Those appointed are:

Moses Pike, Treasurer, Holmes Packing Co., Eastport, Maine.	Earl Buist Webster, fisherman and vessel owner, Twin City Fishermen's Cooperative Association, Port Isabel, Texas.
James S. Carlson, Treasurer, Baker, Boies and Watson, Boston, Mass.	Emmett Concannon, Vice President and General Manager, W. M. Walker, Inc., Chicago, Ill.
J. Richards Nelson, oyster and clam grower and dealer, Madison, Conn.	Arthur Sivertson, Sivertson Brothers Fisheries, Duluth, Minn.
David Hart, independent fisherman and vessel owner, Cape May, N. J..	Donald P. Loker, Vice President, Star-Kist Foods, Inc., Terminal Island, Calif.
Harold R. Bassett, Treasurer, C. A. Lockerman, Inc., Crisfield, Md.	Arthur H. Mendonca, President, F. E. Booth, Inc., San Francisco, Calif.
George R. Wallace, President, Wallace Fisheries Co., Morehead City, N. C.	Thomas F. Sandoz, President, Columbia River Packers Association, Astoria, Oregon.
Harry F. Sahlman, Sahlman Seafoods, Fernandino Beach, Fla.	Mark L. Edmunds, independent fisherman, Garibaldi, Oregon.
Leon S. Kenny, Owner, Pinellas Seafood Co., St. Petersburg, Fla.	Lawrence C. Calvert, President, San Juan Fishing and Packing Co., Seattle, Washington.
Alphonse J. Wegmann, President, Mexican Gulf Fisheries, Inc., Coden, Ala.	Jack Mendenhall, Manager, Ketchikan Cold Storage Co., Ketchikan, Alaska.
Lawrence W. Strassburger, Strassburger Inspection Service, New Orleans, La.	

Under a provision of Public Law 466 the Secretary of the Interior was authorized to appoint a group of experts from the domestic fisheries and fishery products industry to advise him on industry problems embraced by the new legislation.

The Saltonstall-Kennedy Act makes available to the Secretary of the Interior each fiscal year an amount equal to 30 percent of the gross receipts from customs duties collected on imported fishery products to conduct fishery research and to develop and increase markets for fishery products of domestic origin.

The law provides that expenditures from this special fund not exceed \$3,000,000 in any fiscal year, and that the balance in the fund at the end of each year shall not exceed \$5,000,000. In prior years only \$175,000 a year was allocated from customs duties for domestic fishery industry research and development by the Department of the Interior.

Secretary McKay said the research programs authorized by the new law have long been urgently needed to conserve and develop one of the Nation's most important natural food resources.

"The authorization for the appointment of this Industry Advisory Committee," McKay said, "further implements the Administration's partnership policy of working closely with the people most vitally affected toward the solution of common problems."

The Fish and Wildlife Service which administers Public Law 466 has allocated \$2,204,500 to urgent projects thus far this year.

\* \* \* \* \*

FISHERY PRODUCTS STANDARDS CONTRACT LET: A contract to develop quality, condition, and grade standards for domestic fishery products has been signed by the U. S. Fish and Wildlife Service and the National Fisheries Institute, Secretary of the Interior McKay announced January 10. The contract provides for the expenditure of not more than \$30,000, the work to be completed within one year.

Under the contract the Institute will conduct a research project to determine current marketing practices of packers and distributors of fresh and frozen fish and shellfish products. The Institute will then designate the products and areas requiring immediate attention; establish liaison between the fishing industry and the Fish and Wildlife Service; and form advisory groups composed of industry representatives.

Given a satisfactory set of voluntary standards, a system of inspections and certifications would be made available to interested members of the fishing industry and its affiliated interests. The Fish and Wildlife Service believes that this would result in uniformly higher quality products and more orderly markets.

This project is being financed by funds provided by the Saltonstall-Kennedy Act, P. L. 466 (83rd Congress).

\* \* \* \* \*

SERVICE EXPANDS FISHERY STATISTICS PROGRAM: The fishery statistics activities of the U. S. Fish and Wildlife Service's Branch of Commercial Fisheries were expanded recently through allocation of funds under the Saltonstall-Kennedy Act, P. L. 466 (83rd Congress).

Gulf of Mexico Shrimp Statistics: The collection of detailed shrimp statistics in the Gulf of Mexico has been expanded. C. H. Lyles, who has had wide experience in the collection of fishery data in the Gulf States has been transferred to New Orleans to take charge of the expanded program. He is located in the Custom House, 423 Canal Street, New Orleans, La. During the past two years Lyles has been stationed at Gloucester, Mass., where he was in charge of the activities of the Statistical Section in the New England States.

Tampa, Fla.: A statistical office for the collection of fishery data was opened recently at Tampa, Fla. Activities of the Tampa office will include obtaining detailed data on landings of shrimp in the Tampa area, as well as the collection of general operating unit and catch statistics for that area. Until permanent quarters are obtained in Tampa, the address is Post Office Box 505, Largo, Fla. Herbert Munger, who has had wide experience in Federal fishery work and in the fishing industry, is in charge of that office.

Great Lakes Office at Ann Arbor, Mich.: A fishery statistics office was recently opened at Ann Arbor, Mich., to handle the collection of statistics on the commercial fisheries of the Great Lakes and the Mississippi River States. A suboffice will be opened later in La Crosse, Wis., and a Fishery Marketing Specialist will also operate out of the New Orleans office to cover the Lower Mississippi States. Alfred A. Swanson, who was formerly stationed at Beaufort, N. C., was recently trans-

ferred to Ann Arbor to take charge of the new office, which is located at 1220 East Washington Street, Ann Arbor, Mich.

Astoria, Ore.: A Statistics and Market News Service suboffice has been opened at Astoria, Ore., for the collection of daily landings of fish and shellfish and ex-vessel prices for the Astoria area. Eino Edward Poysky was recently appointed to the Fishery Marketing Specialist position set up for that area. Landings and ex-vessel prices for the Astoria area will be published daily in the "Fishery Products Report" issued by the Seattle Market News Service office.

Poysky will also assist in the collection of monthly and annual fishery statistical data for the entire State of Oregon.

The Astoria suboffice, located at 212 Fisher Building, 176 11th Street, will be operated by Poysky under the supervision of Charles M. Reardon, Fishery Marketing Specialist in charge of the Seattle Market News office.



## South Carolina

BIOLOGICAL RESEARCH AT BEARS BLUFF LABORATORIES, OCTOBER-DECEMBER 1954: Oyster Studies: Setting intensity of oysters studied in the vicinity of Bears Bluff, South Carolina, indicates that in 1954 oyster setting began a few days later than previous years, and that the intensity of the set was slightly lower. Oysters continued to set with recordable intensity (4 spat per shell face) until the middle of October, a recent report from the Bears Bluff Laboratories points out.

Growth and mortality studies on individual oysters carried on during October-December 1954 indicate that for small oysters (under 2 inches in length) the period of maximum growth occurred during the first part of the quarter from October 6 to November 9, while the minimum growth occurred from November 10 to December 13. This is not unexpected since water temperatures during October-November averaged 70° F. while during November-December the average water temperature was 60° F. This initial study, which is being continued, simply indicates that South Carolina oysters apparently fit the general pattern as outlined by investigators in other Southern states, who have found that the optimum temperature for oysters is between 60° and 70° F.

New Shrimp Discovered: It is of scientific interest, even if of no commercial value, that a shrimp new to South Carolina has been found recently. On October 18 three specimens of a relatively small shrimp (about 2 inches) were taken in an experimental trawl. The shrimp were found on mud bottom in 16-18 feet of water off Kiawah Island. Two of the specimens were lost before the research boat returned to the Laboratories, but the single remaining specimen was identified as Hippoly-smata (Exhippolysmata) oplophoroides (Holthuis). The shrimp is too unusual to have a common name. It was originally described in 1948 from specimens taken at Surinam, South America. Specimens have also been taken off the Cape Fear River, N. C., and off the coasts of Georgia, Texas, and Brazil.

New Research Vessel: On November 8, 1954, the South Carolina Wildlife Resources Commission secured from the Department of the Army, a 65-foot T-boat for the use of the Bears Bluff Laboratories. This vessel will be used to continue the study of shrimp and trawling operations in offshore waters. Present plans also include some exploratory fishing.

In the 1930's the Pelican of the U. S. Bureau of Fisheries (now Fish and Wildlife Service) made some 100-odd experimental trawls off the South Carolina coast.

For the past two years the Theodore M. Gill, operating out of Brunswick, Ga., under the U. S. Fish and Wildlife Service, has on 9 occasions visited 20 stations off the South Carolina coast to plot currents and make biochemical analyses of water samples. There have also been other scientific investigations made off the coast by various branches of the Federal Government. However, since the area from the edge of the continental shelf to the shoreline and from the North Carolina boundary to the Georgia boundary contains some 9,000 square miles, obviously considerable exploratory and research work can be done in this area before any of the activities overlap. Most of it is a vast unknown so far as fisheries resources are concerned. Just how much of it Bears Bluff Laboratories can undertake remains to be seen, but the new vessel gives an opportunity for some exploratory work in this region.

Many fishermen believe that there are unknown populations of shrimp existing off the coast. Many believe that there are areas off the coast not now fished, which would yield large catches of finfish. It is known that various species of tuna, a commercially-desirable snapper, mackerel, bluefish, and other game and commercial fishes at times occur abundantly off the South Carolina coast.

Actually, practically no work has been done with the T-boat since its arrival. Most of the time has been spent in converting it to research use and installing necessary gear such as a "fathometer," Loran, and various other hoists.



## U. S. Foreign Trade

### IMPORTS OF GROUND FISH FILLETS CONTINUED HEAVY IN NOVEMBER

1954: Imports of cod, haddock, hake, pollock, cusk, and ocean perch fillets during November 1954 totaled 11.7 million pounds, compared with 7.3 million pounds in November 1953. A total of 6.9 million pounds came from Canada; 3.8 million pounds from Iceland; and the balance from Norway, West Germany, Greenland, Miquelon and St. Pierre Islands, the Netherlands, Denmark, and Scotland.

During the first 11 months of 1954, groundfish fillet imports totaled 129.4 million pounds--51 percent more than in the same period of 1953. The previous record year was 1952 when 108 million pounds were brought into the country. Considerable quantities of the imports in 1954 are known to be in the form of blocks and slabs which can only be used in the manufacture of fish sticks or portions and, therefore, are not available for sale as fillets.

\* \* \* \* \*

SELECTED FISHERY PRODUCTS, OCTOBER 1954: Imports: Fresh and frozen tuna imported during October 1954 totaled 7.7 million pounds, almost equal to that of the same month in 1953. Total imports for the first 10 months of 1954 amounted to 111 million pounds. This represents an increase of 22 percent over the same period of 1953.

Canned tuna imports (2.5 million pounds) in October 1954 were about the same as in October 1953. Imports for the first 10 months of 1954 reached 27 million pounds, about 9 percent less than in that period of 1953. Canned bonito imports during the first 10 months showed a gain of about 30 percent--total during the period, 13.9 million pounds.

Canned salmon imports during October 1954 were down as compared with a year earlier; however, the total for the year through October was still 9 percent above the similar period a year earlier.

Canned sardines in oil were imported in October 1954 in about the same quantity as in October 1953. The total for the first 10 months of 1954 was 10 percent less than in the comparable period of 1953. Canned sardines not in oil showed a substantial drop during October 1954, and the total for January-October was about 37 percent below that of 1953. Imports of sardines in the first 10 months of 1954 totaled 29.3 million pounds as compared with 38 million pounds in the same period a year earlier.

Fresh and frozen salmon imports of 9.4 million pounds during October 1954 were substantially greater than the 5.4 million pounds imported in the same month of 1953. Imports for the first 10 months of 1954 amounted to 24.4 million pounds, an increase of 16 percent over a year earlier.

Shrimp (mostly frozen but including canned, fresh, and dried) imports in October 1954 showed little change from a year earlier. Imports for the year through October reached 32.6 million pounds, a gain of 7 percent over the same period in 1953.

Fresh and frozen lobster imports of 33.6 million pounds during the first 10 months of 1954 were about 4 percent below a year earlier. Canned lobster imports of almost 3 million pounds for the same period were 6 percent below those of 1953.

Canned crab meat imported during October 1954 amounted to only 174,000 pounds, compared with 827,000 pounds in the same month of 1953. The total for the first 10 months of 1954 (2.4 million pounds) was 31 percent below that for the 1953 period.

Groundfish fillets (including blocks and slabs) imported during October 1954 totaled almost 15 million pounds as compared with 10 million pounds for the same month in 1953. Imports for the first 10 months of 1954 amounted to 118 million pounds, an increase of 54 percent over the similar period of the previous year. Other fillets were imported in about the same total quantity for both comparative periods.

Fish meal imported during October 1954 totaled 5,038 tons or about half of the quantity received in October 1953. The total for 1954 through October (128,888 tons) was 16 percent above the comparable period of 1953.

Exports: October 1954 canned salmon exports of 2.4 million pounds brought the total for the first ten months of 1954 to over 6 million pounds. In the first 10 months of 1953 only 2 million pounds were exported.

Exports of canned sardines in October 1954 were slightly above a year earlier, and for the first 10 months of 1954 totaled 9 million pounds. This compares with 8.4 million pounds for the same period of 1953.

Canned mackerel exports in the first 10 months of 1954 declined 79 percent.

Fish oils exported during October 1954 were less than half those of October a year ago, however, the total for the first 10 months of 1954 reached 127 million pounds, 52 percent greater than for the similar 1953 period.

Note: See "Chart 7 - U.S. Fishery Products Imports," p. 86 of this issue.





## Washington

COMMERCIAL FISHERIES PRODUCTION, 1954: Commercial fisheries in the State of Washington in 1954 have returned an estimated wholesale market value of \$34.3 million, the Washington Department of Fisheries pointed out in a December 13, 1954, release. This compares with \$36.5 million for 1953.

The 1954 figures are preliminary estimates only since some fishing was still under way and stocks of canned fish were still on hand, subject to price adjustments at the time of sale. Totals for the estimates are based upon average seasonal market prices.

The total estimated value to the fishermen of the salmon, bottomfish, halibut, and oysters amounted to \$21.2 million as against \$18.4 million in 1953.

Unit value of fisheries products at the ex-vessel level was higher in 1954 than the previous year. In 1953 the Washington fishing industry harvest of 126.4 million pounds was valued at \$18.4 million ex-vessel, while in 1954 a lighter total catch of 118,502,800 pounds brought \$21.2 million ex-vessel.

A breakdown of the various food fish catches shows the fabulous sockeye salmon run the top producer of 1954, with 33 million pounds valued at \$9.9 million ex-vessel, and a wholesale value tentatively listed as \$17.4 million. Chinook salmon ran second with 8.1 million pounds, worth \$2.0 million to the fishermen and \$3.1 million at wholesale.

The entire salmon harvest amounted to 54.5 million pounds, valued at \$14.1 million ex-vessel and \$23.6 million wholesale.

Bottomfish, including black cod, flounder, lingcod, perch, rockfish, sole, and true cod, accounted for 37.6 million pounds for an ex-vessel value of \$2.2 million and a wholesale value of \$3.3 million. Halibut totaled 17.3 million pounds, with an ex-vessel value of \$3.3 million and wholesale value of \$5.0 million. Oysters produced totaled 9.2 million pounds, with an ex-vessel value of \$1.6 million and a wholesale value of \$2.4 million.



## Wholesale Prices, December 1954

Unseasonal liberal landings of finfish, particularly scrod haddock in the New England area, were responsible for the unusual drop in wholesale prices of most fishery products from November to December 1954. The over-all edible fish and shellfish (fresh, frozen, and canned) wholesale index for December 1954 was 100.5 percent of the 1947-49 average (see table)--2.2 percent lower than in November 1954 and 8.1 percent below December 1953, the Bureau of Labor Statistics of the Department of Labor reports.



The scrod haddock catch in New England in December 1954 was unseasonably liberal and demand was light. The ex-vessel price for large offshore haddock at Boston during that month was 15.2 percent less than in November 1954 and 34.3 percent below December 1953. Heavy inventories accounted for lower western halibut prices at New York City in December 1954--6.1 percent below the previous month and a year earlier. Salmon prices at New York City during the month were up slightly from the previous month. The trend for fresh-water fish prices from November to December 1954 was mixed. The December 1954 index for the drawn,

dressed, or whole finfish subgroup was 7.1 percent lower than in November and 13.8 percent less than in December 1953.

Because shrimp production was light and demand good, fresh shrimp prices rose 8.8 percent in December 1954, offsetting lower haddock fillet prices (down 13.0 percent). Shucked oyster prices remained unchanged. The index for fresh processed fish and shellfish increased 1.8 percent from November to December 1954, but was 16.9 percent lower than a year earlier.

Table 1 - Wholesale Average Prices and Indexes for Edible Fish and Shellfish, December 1954 and Comparisons

Group, Subgroup, and Item Specification	Point of Pricing	Unit	Avg. Prices <sup>1/</sup> (\$)		Indexes (1947-49=100)			
			Dec. 1954	Nov. 1954	Dec. 1954	Nov. 1954	Oct. 1954	Dec. 1953
ALL FISH & SHELLFISH (Fresh, Frozen, & Canned)					100.5	102.8	101.8	109.4
Fresh & Frozen Fishery Products:					102.9	106.8	104.9	119.4
Drawn, Dressed, or Whole Finfish:					107.4	115.6	113.6	120.8
Haddock, lge., offshore, drawn, fresh	Boston	lb.	.10	.11	97.3	114.8	94.7	148.2
Halibut, West., 20/80 lbs., drsd., fresh or froz.	New York	lb.	.28	.30	87.7	93.4	98.0	93.4
Salmon, king, lge. & med., drsd., fresh or froz.	New York	lb.	.58	.57	129.2	127.5	140.5	111.2
Whitefish, L. Superior, drawn, fresh	Chicago	lb.	.44	.63	109.1	154.9	130.1	90.5
Whitefish, L. Erie pound or gill net, rnd., fresh	New York	lb.	.57	.57	114.2	115.2	126.4	126.4
Lake trout, domestic, No. 1, drawn, fresh	Chicago	lb.	.63	.63	129.1	128.1	117.8	125.0
Yellow pike, L. Michigan & Huron, rnd., fresh	New York	lb.	.39	.35	90.3	82.1	117.2	93.8
Processed, Fresh (Fish & Shellfish):					101.3	99.5	96.6	121.9
Fillets, haddock, sml., skins on, 20-lb. tins	Boston	lb.	.27	.31	91.9	105.5	71.4	136.1
Shrimp, lge. (26-30 count), headless, fresh	New York	lb.	.53	.49	84.2	77.4	79.0	114.4
Oysters, shucked, standards	Norfolk	gal.	5.00	5.00	123.7	123.7	123.7	126.8
Processed, Frozen (Fish & Shellfish):					89.2	88.9	89.7	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	91.0	84.7	100.4
Ocean perch, skins on, 1-lb. pkg.	Boston	lb.	.28	.27	111.8	109.8	111.8	110.7
Shrimp, lge. (26-30 count), 5-lb. pkg.	Chicago	lb.	.47	.47	72.5	72.5	76.4	111.1
Canned Fishery Products:					96.8	96.8	97.3	94.5
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	95.5
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	74.0	87.3

<sup>1/</sup>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.

Frozen ocean perch fillet prices in December 1954 were up slightly, offsetting a small drop in haddock fillet prices. Frozen shrimp and flounder fillet prices in December 1954 were the same as in November. The frozen processed fish and shellfish subgroup index rose 0.3 percent from November to December 1954, but was 17.9 percent below December 1953. All items in the subgroup in December 1954 were priced substantially lower than a year earlier, except ocean perch fillet prices which were slightly higher.

There was no change in the prices of the canned fish items included in the index from November to December 1954 and the canned fishery products subgroup index remained at 96.8 percent. When compared with a year earlier, the December 1954 index for this subgroup was up 2.4 percent due to higher canned salmon prices; but canned tuna and Maine sardine prices were down.