



TRENDS AND DEVELOPMENTS

Additions to the Fleet of U. S. Fishing Vessels

A total of 91 vessels of 5 net tons and over received their first documents as fishing craft during June 1950--3 less than in June 1949, according to the Treasury Department's Bureau of Customs. California led with 19 vessels, followed by Washington with 14, and Texas with 9.

During the first six months of 1950, a total of 442 vessels were documented, compared with 495 during the same period in 1949.

Vessels Obtaining Their First Documents as Fishing Craft, June 1950

Section	June		Six mos. ending with June		Total 1949
	1950	1949	1950	1949	
	Number	Number	Number	Number	Number
New England	3	3	18	14	35
Middle Atlantic	3	5	27	30	44
Chesapeake Bay	10	8	41	35	87
South Atlantic and Gulf ..	32	32	158	174	369
Pacific Coast	35	38	132	146	327
Great Lakes	2	2	6	27	38
Alaska	6	6	60	66	96
Hawaii	-	-	-	3	5
Unknown	-	-	-	-	1
Total	91	94	442	495	1,002

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



Alaska Fishery Investigations

ALASKA FISHERIES UNDER RESEARCH FOLLOWING PREDICTED LEVELS OF PRODUCTION:

Fishery production in areas, or of species, now subject to research in Alaska is closely following predicted levels, the staff of the Service's Alaska Fishery Investigations reports.

The red salmon spring run at Karluk was close to the projected curve of catch and escapement with 288,403 fish for the former and 386,488 for the latter as of July 29. Control projection was planned to secure a minimum escapement of 375,000 red salmon. Runs to four major areas of Bristol Bay were extremely close to predicted levels, except Nushagak, where the run was somewhat lighter than average expectancy. Total production of Bristol Bay was almost identical with prediction.

Herring production was close to predicted levels with 152,216 barrels in the Kodiak quota area, 164,913 barrels in Prince William Sound, and 70,906 barrels in Southeastern.

Federal Purchases of Fishery Products

DEPARTMENT OF THE ARMY, June 1950: For the U. S. Army, Navy, Marine Corps, and Air Force for military feeding, fresh and frozen fishery products totaling 1,533,551 pounds (valued at \$629,046) were purchased during June this year (see Table). June purchases were up 21 percent in quantity and 43 percent in value as compared with May; and were up 17 percent in quantity and 46 percent in value as compared with June 1949.

Purchases of Fresh and Frozen Fishery Products by Department of the Army (June and the First Six Months, 1950 and 1949)							
Q U A N T I T Y				V A L U E			
June		January-June		June		January-June	
1950	1949	1950	1949	1950	1949	1950	1949
lbs.	lbs.	lbs.	lbs.	\$	\$	\$	\$
1,533,551	1,305,391	6,366,424	7,880,324	629,046	430,175	2,691,444	2,644,674

Total purchases for the first six months this year were 19 percent lower in quantity, but 2 percent higher in value than for the corresponding period in 1949.



Fishery Biology Notes

ARTIFICIAL CULTURE OF OYSTERS: A moderate amount of success in the artificial culture of oysters is reported by the Service's Gulf Oyster Investigations, Pensacola, Florida. A half-dozen cultures are in progress.

Of the three cultures started earlier this summer, 250 oysters have been raised from one crossing and 50 oysters from another. Believed to be among the first that anyone has had to use for experimental work, these oysters have been derived from crossing known pairs of stock. Some of the oysters are approaching two inches in diameter. They will be valuable for investigations on relative effects of heredity versus environment in producing commercially acceptable oysters.

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TRANSFERRING OYSTERS TO AREAS OF HIGHER SALINITY: Evidence that transplanting of oysters to areas of higher salinity does not necessarily have an adverse effect is being accumulated by the Service's Gulf Oyster Investigations at Pensacola, Florida. Transfer of oysters from areas having a salinity of 20 to 29 has consistently resulted in a stimulation of shell growth and an increase in percent solids. Mortalities in all cases were less than 2 percent for the 4-month period following transplantation.

Recently, large and small oysters exposed to salinities of 0 to 4 for a 4-month period in Mississippi Sound were suspended in the Gulf at a salinity level of 29 to 33.3. In the succeeding 3-week period, the oysters showed an average length increase of 3 mm. and a mortality of 0.9 percent. Perhaps the importance of high salinity shock in the Gulf area has been overemphasized.

Observations at the Pensacola Laboratory for the past 14 months on a sample of oysters of identical age (within 12 hours) of presumably different parentage

show total length of individuals may vary up to 300 percent at any given time. Continuous care given these oysters has resulted in their assuming extraordinary uniformity in shape and shell character of a highly desirable nature. Groups of spat obtained from larvae fertilized and raised in the laboratory from individual pairs of parents show similar ranges in total length. Possibly because of the small amount of handling they have received, they exhibit great diversity in shape and shell character.

It is hoped that continuation of this work will add to the information on relative importance of heredity and environment in producing commercially desirable oysters.

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EXPERIMENTAL SETS OF HARD CLAMS (QUAHAUGS) OBTAINED: Experimental sets of hard clams (Venus mercenaria) have been obtained in outdoor experimental tanks at the Service's Biological Laboratory at Milford, Conn. This is the first successful attempt of this sort. Since much has been learned in the last two or three years about methods of propagation of this clam and since reliable methods have been developed for its cultivation, the Laboratory staff hopes within a short time to be able to pass this information on to practical clam growers who can begin to grow clam sets.

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NORTH ATLANTIC SALMON STOCKING PROGRAM: Stocking of sea-run salmon in New England from July 1, 1949, to June 30, 1950, was somewhat greater than for the previous year, according to the Service's Atlantic Salmon Investigations at Orono, Maine.

Eight rivers have been stocked with 100,000 feeding fry, 198,000 fingerlings, and 88,000 yearlings--a total of 386,000 Atlantic salmon. Also, 4 rivers were stocked with 107,000 feeding fry and 8,000 yearlings--115,000 silver salmon (Oncorhynchus kisutch). To check on survival, the biologists marked by fin clipping 184,000 of the 501,000 stocked sea-run salmon.

The work to date points to the inescapable conclusion that restoration of Atlantic salmon hinges primarily on providing adequate passage past obstructions. There is not now a single large river up which salmon can migrate freely to the best spawning and nursery areas.

In June this year, two crews started surveys to determine environmental conditions on present and potential salmon streams. During the first summer, the surveys will be confined chiefly to physical conditions, such as stream flow, temperature, gradient, bottom types, location and description of all obstructions or other hazards to migration, and location and type of pollution. On subsequent surveys, the crews will collect data on fish populations and food organisms.

The University of Maine is collecting bottom fauna on Little Falls Stream to determine the relation of food organisms to salmon survival. Simultaneously, the Service's Atlantic Salmon Investigations is holding different numbers of salmon in identical enclosures to determine both their survival and the effect of numbers of fish on food organisms.

The Maine Department of Sea and Shore Fisheries is holding silver salmon in salt water at Boothbay Harbor to determine the feasibility of rearing silver salmon to the adult stage to provide spawning stock.

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SHAD TAGGING EXPERIMENTS: Shad-tagging experiments this year, especially on the Hudson River, are yielding some rather interesting information on shad migration, the Service's Middle and South Atlantic Fishery Investigations reports. Of some 1,300 tags released, a number have been returned from the Hudson River proper; significant number have been recovered off the New Jersey coast and Long Island, and most recently from the Maine coast. Some idea is being obtained of the rate of travel of shad between their spawning streams and summer feeding grounds.



Gulf Exploratory Fishery Program

SHRIMP AREA LOCATED OFF ALABAMA AND MISSISSIPPI COAST: Promising catches of brown grooved shrimp (*Peneus aztecus*) were reported on August 5 by the Service's Gulf exploratory fishing vessel Oregon. Moderate quantities of large shrimp were caught by several 30-minute drags with a 40-foot shrimp trawl, in 41 to 48 fathoms approximately 60 miles off the islands of Alabama and Mississippi (between 88° West and 88°05' West longitude). Size of the shrimp was 7 to 8 count (number of heads-on shrimp per pound).

No shrimp were caught outside the 50-fathom curve. Inside the 40-fathom depth, the grooved shrimp catches were of mixed sizes with *Peneus aztecus* making up about 70 percent and *P. duorarum* (brown-spotted or pink grooved shrimp) about 30 percent of the catch.

The Oregon plans to explore this area further using a full-size commercial shrimp trawl.



National Fisheries Trends and Outlook--July-September 1950

General business conditions during July, August, and September this year were expected to be good, and edible fishery products were expected to be in a favorable market position as compared with a year ago.

PRODUCTION: Fisheries production during the summer months, when maximum production is achieved in the fisheries, may be no better than in 1949. The commercial catch of fish and shellfish thus far this year has not been significantly different than in the same months of 1949, nor is much change anticipated for the rest of the year, according to a report issued in July by the Bureau of Agricultural Economics, Department of Agriculture, and prepared in cooperation with the Fish and Wildlife Service.

FROZEN FISH: Commercial freezings of fishery products in the United States and Alaska during the first half of 1950 were 2 percent smaller than a year earlier. This decline occurred mainly in New England and is due to many factors, among the most important of which are the fewer number of larger fishing vessels in operation; the decline in the quantity of popular species of fish available in the fishing areas adjacent to the coasts, and the decline in the landings of whiting in New England.

Total stocks of frozen fishery products in the United States and Alaska on July 1 were 2.5 percent larger than a year earlier. With production at a seasonal

high level in the summer and first part of autumn, stocks of these products will be increased so that sufficient supplies will be available for distribution during the months of low production in late 1950 and early 1951.

CANNED FISHERY PRODUCTS: For current domestic needs, canned fishery products appear adequate. Producers' stocks of these commodities on June 30 were lower than a year earlier, according to information from trade sources. Production in 1950 is currently expected to be very large, exceeded only by the record 1941 pack of 885 million pounds of canned fish and the near record output in 1949. For most of the popular species of canned fish, the 1950 pack may not be larger than last year, but the canned tuna pack may set a new record.

IMPORTS OF FISHERY PRODUCTS: In the first four months of 1950, imports of edible fishery products totaled 158.5 million pounds--more than 15 percent greater than a year earlier. Increases were reported for each of the three major groups of fishery products--fresh and frozen, canned, and cured. Imports of fishery products the latter part of this year are expected to continue larger than in 1949.

EXPORTS OF FISHERY PRODUCTS: During January-April 1950, exports of edible fishery products, on the other hand, totaled 22 million pounds and were about one-fourth smaller than in the same months last year, with the decline principally in canned fishery products. Fishery products exports during the latter part of this year will be lower than during the same period in 1949.

CONSUMPTION AND DISTRIBUTION: U. S. civilian per capita consumption of fishery products during the last half of 1950 is expected to be about the same as in the comparable period last year. During the first six months of 1950, U. S. civilian consumption of fresh and processed fishery products per person was approximately the same as a year earlier.

The movement of fresh and frozen fish into domestic channels during this period was lower while that of canned fish was somewhat larger than for the same months of 1949.

PRICES: Retail prices of fresh and frozen fishery products during the last half of 1950 probably will average about the same and may even exceed slightly those of the first half of this year; canned fish are also likely to average somewhat higher.



North Atlantic Fishery Investigations

"ALBATROSS III" RETURNS FROM A FISH CENSUS OF CERTAIN NEW ENGLAND BANKS (Cruise No. 37-A): After completing a census of the fish populations on Georges Bank, Browns Bank, and the Inner Grounds of the Gulf of Maine, the Albatross III, research vessel of the Service's North Atlantic Fishery Investigations, returned to Woods Hole on August 10. The vessel had left on July 31 to complete the census started on its previous cruise, which had been cut short because of engine trouble.^{1/}

During this cruise, 59 stations (79 one-half hour tows) were completed. Large numbers of baby haddock, were taken on the southeast part of Georges Bank and

^{1/} SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, P. 17.



PUTTING OVERBOARD THE FORWARD ROLLERS OF THE OTTER TRAWL NET ABOARD THE ALBATROSS III, RESEARCH VESSEL OF THE SERVICE'S NORTH ATLANTIC FISHERY INVESTIGATIONS.

Rewards of \$1.00 are being paid for every tagged sea scallop returned to the Fish and Wildlife Service.

A line trawl was fished unsuccessfully during the cruise in an attempt to determine the nocturnal distribution of rosefish.



Pacific Oceanic Fishery Investigations

"HUGH M. SMITH" OBSERVES OCEAN CURRENTS AND FISH FOOD (Cruise No. V):

Making observations upon the mid-summer ocean currents and fish-food content of the waters between the Hawaiian Islands and 5° S. latitude were the primary objectives of a seven-week cruise which the Hugh M. Smith completed on August 6. This vessel of the Service's Pacific Oceanic Fishery Investigations operated westward as far as Midway Island and south of the Equator to the Phoenix Islands.

Oceanographical Observations: The primary mission of the cruise, to complete two hydrographic sections across the equatorial, counter-equatorial current system, was successfully accomplished. At each of 51 stations temperatures were taken and water samples collected for determination of salinity, dissolved oxygen, and inorganic phosphates. At the majority of these stations the maximum sample depth was 1,500 meters; in a few chosen localities deeper casts were made to 3,000, and in some cases 4,000 meters.

Two bathythermograph casts were taken at each station; in addition, casts were made at 10-mile intervals between stations and at either 20- or 30-mile intervals while running other than along the hydrographic sections. A total of 502 bathythermograms were made in all.

Fippennies Ledge. Scrod haddock (yearlings, and two-year old fish) were most abundant southeast of the Leg, on the northern edge of Georges Bank, and on the western edge of Browns Bank. Small catches (1-3 bushels) of large haddock were caught outside 100 fathoms on the Northern Edge. Rosefish were caught in commercial quantities 10 miles west and 50 miles east-north-east of Cashes Ledge in 70-75 and 115-120 fathoms, respectively. Data on the size, numbers, and weight of all species of fish, bottom temperatures, and bottom samples were obtained at each station.

Sea scallops (198 in number) were tagged and released in 46 fathoms of water 125 miles 080° True from Nantucket Lightship. This raises the total number of tagged sea scallops to almost 400.

tagged sea scallop returned to the

From the oceanographical data gathered on this cruise will be computed the positions and speeds of the major ocean currents of the equatorial system and the areas of upwelling. These data will be compared with a similar series of observations made last January and February to determine what may be the characteristic winter and summer conditions of this complex current system.

Plankton Hauls and Night-Light Fishing: At each of the 51 hydrographic stations an oblique (surface to 200 meters to surface) plankton haul was made for the purpose of obtaining (1) samples of any tuna eggs and larvae present and (2) estimates of the abundance of zooplankton (fish food) to correlate with the results of the physical and chemical oceanography.

Night-light fishing was conducted while hove-to on stations when weather and other conditions permitted. By this means were captured specimens of fish and invertebrates valuable for the reference collection for use in identifying tuna stomach contents, as well as juveniles of a number of pelagic fish including, it is believed, some of the tunas.

Results of Long-Line Fishing at Canton Island: Seven days of long-line fishing in waters adjacent to Canton Island yielded 77 tuna (73 yellowfin, 50 to 190 pounds each; 4 albacore, 30 to 40 pounds each) and 6 marlin (4 white and 2 black, estimated at 250 to 400 pounds each). Thirty baskets of gear of generally similar design to that used commercially in the Hawaiian Islands were set each day. The catch represents an average yield of 7.5 fish per hundred hooks per day, which may be considered good fishing. This is not truly indicative of what a commercial vessel might have achieved as our fishing was performed in such manner as to learn something of the vertical and horizontal distribution of the fish rather than to catch the greatest possible number of fish. In general, significantly more fish were found on the leeward side of the Island than on the windward side and more within 5 to 10 miles of the Island than from 15 to 20 miles distant.

Frozen herring and fresh mullet taken from the Canton Island Lagoon were used as bait. The majority of the catch was taken on mullet, one or more species of which are readily available in most of the shore and lagoon waters of the Central Pacific Islands.

Bait Fish Surveys: Small quantities of the bait fish "iao" (Pranesus insularum) and "piha" (Spratelloides delicatulus) were seen at almost all the localities visited throughout the Leeward Islands, but nowhere in sufficient quantities to warrant making a set with the seine.

Mullet of two species were found in abundance in the Canton Island Lagoon and about 500 pounds were easily obtained for use in long-lining.

Observations of Tuna Schools at Sea: A continuous watch was kept for schools of tuna and associated flocks of birds when running during daylight hours. The location of fish schools, behavior, their identification when possible, and the time seen were entered in the log. A volume of such observations may provide supplementary data in determining areas of greater and lesser fish abundance. On this cruise considerably more fish activity was observed in water adjacent to islands than in the open ocean.

Two or three surface lures were trolled almost continuously during daylight hours and the catches lagged. Although few fish were taken by this method, the fish were, for the greater part, taken close to land areas.

Biological Data From Tuna Specimens: All tuna taken on the long line, except those damaged by sharks, were weighed, their total length obtained, and stomachs removed for later study on food habits. The gonads of females were preserved for study of degree of sexual maturity and, from a considerable number, vertebral sections were removed for studies of age and growth. Detailed morphometric measurements were made on a few representative fish. The same material, except for weights, was obtained from the fish caught by trolling.

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"HUGH M. SMITH" TO CAPTURE TUNA EGGS AND FRY (Cruise No. VI): The capture of tuna eggs and fry (needed in the study of the life history and habits of the tunas) is the purpose of a 3-week survey in the general area of the Hawaiian Islands by the Hugh M. Smith. The vessel sailed from Honolulu on August 18. Nets of fine mesh capable of catching the eggs, which are only 1/25 of an inch in diameter, will be used. The nets will be fished from the surface of the sea to depths of 1,000 feet. Although a number of small tunas ranging from 1/6-inch to 1/3-inch were caught in the Hawaiian area during May 1950, additional material is required for the identification of the younger stages of these fish, as the fry are quite different in appearance from the adults and a connected series of all sizes is needed. Information concerning the depth at which the young occur is also needed to facilitate search for tuna spawning grounds in other portions of the ocean.

As a secondary project, a kite-like device is to be tested as a means of lowering scientific gear and trolling lures to the subsurface levels while the ship is underway at speeds in excess of 5 miles per hour. Ordinary weights cannot be used for this purpose because the drag of the water at speeds greater than 4 miles per hour causes them to rise.



Service Film Selected for Showing at Venice Film Festival^{1/}

Among the 20 United States Government films selected for showing at the International Exhibition of Cinematographic Art at Venice, Italy, August 8 to September 10, 1950, is the Fish and Wildlife Service film Food for Thought,^{1/} the Department of State reported on August 9.

The purpose of the Festival is to give public recognition to those films which demonstrate outstanding progress in this medium of artistic expression and cultural advancement. The United States Government has participated in previous festivals in 1948 and 1949 by the showing of films and a duly designated representative.

Twenty-eight countries are expected to participate in the Festival at Venice this year.

The United States Government selections were made by the Interdepartmental Review Committee on Visual and Audio Materials, composed of representatives of all of the motion-picture producing agencies of this Government.

^{1/} SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, P. 22.



Personnel Changes in the Branch of Commercial Fisheries

With the establishment of a new position (Refrigeration Specialist) in the Branch of Commercial Fisheries, a shifting of present personnel has taken place, the U. S. Fish and Wildlife Service announced on August 25. The new position has been established in order to develop freezing processes that will meet the specialized needs of commercial fishermen.



J. M. LEMON

J. M. Lemon, who has been Chief of the Branch's Technological Section since 1943, has been appointed to fill the Refrigeration Specialist position. His transfer to the Service's College Park Fishery Technological Laboratory on the University of Maryland campus became effective September 18. His initial assignments include studies of methods of freezing fish at sea and the preparation of a new manual on freezing processes. He has had wide experience in refrigeration and freezing of fish since joining the former Bureau of Fisheries in 1928.



H. E. CROWTHER

H. E. Crowther, who for the past year has been Chief of the Branch's Exploratory Fish and Gear Development Section, has been appointed Chief of the Technological Section. He has had a broad education in fishery technology and research. He obtained his Master of Science degree at the University of Maryland, and began fishery research work at the College Park Fishery Technological Laboratory under an industrial fellowship, and later did fishery research for private industry.



Service Increases Use of Fish in North Carolina School-Lunch Program ✓

One method used by the U. S. Fish and Wildlife Service to increase the use of fishery products in the school-lunch program is a series of demonstrations for school lunchroom managers and officials in various states. Part of the school-lunch fisheries program in North Carolina was the presentation during 1949 of 10 workshop demonstrations for certain schools. These workshop demonstrations were presented in cooperation with the State School-Lunch Program operated by the State Department of Public Instruction and the U. S. Department of Agriculture's Production and Marketing Administration.

These workshops, which generally last for three days, are part of the State's lunchroom personnel training program. The Service took part in those held in Ply-

✓ THE EDUCATIONAL AND MARKET DEVELOPMENT SECTION OF THE SERVICE'S BRANCH OF COMMERCIAL FISHERIES DURING THE PAST YEAR AND A HALF HAS BEEN ENGAGED IN DEVELOPING MARKETS FOR FISHERY PRODUCTS THROUGH THE SCHOOL-LUNCH PROGRAM BY ENCOURAGING THE USE OF THESE PRODUCTS IN SCHOOL-LUNCH MENUS. SCHOOLS, AS VOLUME USERS OF FOOD IN THEIR LUNCH PROGRAMS, REPRESENT A LARGE POTENTIAL MARKET FOR FISHERY PRODUCTS. IN ADDITION, EDUCATING CHILDREN TO EAT FISH AND SHELLFISH WILL MAKE THEM BETTER POTENTIAL ADULT CONSUMERS IN THE FUTURE. MOST SCHOOL-LUNCHROOMS ARE NOT ACCUSTOMED TO USING FISH AND SHELLFISH BECAUSE SCHOOL LUNCHROOM MANAGERS AND OFFICIALS CLAIM THAT FISHERY PRODUCTS ARE TOO DIFFICULT TO PREPARE, CREATE STRONG COOKING ODORS, ARE TOO EXPENSIVE, ARE NOT EATEN BY MOST CHILDREN, OR THAT THESE PRODUCTS ARE NOT READILY AVAILABLE IN THEIR PARTICULAR AREA.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, JULY 1950, P.17; APRIL 1950, PP. 49-51.

mouth, Elizabeth City, Clinton, Sanford, Hickory, Yadkinville, Asheville, Durham, and Greensboro. A total of 545 persons attended, representing 205 schools having an enrollment of 113,400 children of which approximately 55,300 are served daily.



HOME ECONOMIST TESTING A SCHOOL-LUNCH RECIPE IN THE SERVICE'S TEST KITCHEN AT THE COLLEGE PARK (MD.) FISHERY TECHNOLOGICAL LABORATORY.

All of the demonstrations presented were of the institutional type--recipes suitable for quantity cooking were shown. After giving some of the reasons for using fish (emphasizing their nutritive value), and hints on purchasing and market forms, six fish dishes were prepared by the Service's home economist. Canned fish was used for three and fish fillets for the other three. The canned fish recipes were a fish loaf, a fish salad, and creamed fish; the filleted fish recipes were oven-fried fish, baked fish in an oil sauce, and baked fish in a Spanish sauce. The demonstrations were presented in the school lunchrooms, using only the equipment on hand. At the end of each demonstration, which took only $\frac{1}{2}$ hours, the people present were invited to taste the prepared dishes.

To determine what increase, if any, had resulted from these demonstrations, a survey was made to ascertain the use of fishery products in North Carolina schools both before and after the demonstrations. The menus of 162 of the schools which had representatives at the workshop demonstrations were studied. The fishery products used by these schools were determined for February 1949 (before the demonstration) and February 1950 (after the demonstration). Information regarding the schools'

use of fish and shellfish was obtained from their menus, which are kept on file in the superintendents' offices for a period of three years. For a control, 30 schools not represented at the fish-cookery demonstration were selected at random in various sections of the State. These schools were checked for their use of fishery products in February 1949 and February 1950, in the same manner as these represented.

First, the number of times which the schools used fish in the check months, and the average frequency of fish used per month per school was determined. Second, the number of pounds of fish which each school had used in the check months was calculated. The average number of lunches served in each school in February was multiplied by the standard 2-ounce lunch portion and then multiplied by the number of times that fish was served. Since fish shrinks in cooking, it takes 3 ounces of fresh fish prepared for cooking to give the 2-ounce portion required in the schools. This fact was taken into consideration in calculating the number of pounds of fish purchased by the schools.

The survey showed that schools represented at the demonstrations had increased their use of fish while schools not represented showed a decrease in their use of fish, as follows:

Item	Times Fish Was Used Per Month Per School		Percentage Change Increase (+) or Decrease (-)	Average Amount of Fish Used Per Month Per School		Percentage Change Increase (+) or Decrease (-)
	Feb. 1949	Feb. 1950		Feb. 1949	Feb. 1950	
	<u>Avg. No.</u>	<u>Avg. No.</u>	<u>Percent</u>	<u>lbs.</u>	<u>lbs.</u>	<u>Percent</u>
Schools represented	1.25	1.49	+19.2	59.5	70.2	+17.9
Schools not represented	1.37	1.03	-24.5	41.1	32.3	-21.5

The value of the workshop demonstrations can be better shown in dollars and cents. Projected over the 1949-50 school year, the increase which these schools showed over their past fish consumption represented approximately 20,000 pounds of fish and at 35 cents per pound--\$7,000.

Had the schools represented at the demonstrations in 1949 decreased the quantity of fish used on the same ratio as the non-represented schools, the former would have used approximately 47,000 pounds of fish less during the 1949-50 school year. The schools pay an average of about 35 cents per pound for the fish. Thus, all the schools represented at the 10 demonstrations in 1949 bought approximately \$16,450 more fish in the 1949-50 school year than they would have purchased if they had followed the trend of the non-represented schools. The value of the fish-cookery demonstrations in increasing the use of fish in the North Carolina school-lunch program is thus evident.

It was noted that of the various kinds of fish used, canned salmon and frozen rosefish (ocean perch) fillets are outstanding favorites in the schools.

To see how much the schools were using the recipes demonstrated, a check was made on the type of fish preparation being used in the schools before and after the demonstrations. It was found that the use of the oven methods of preparing fish had quadrupled in the schools represented at the demonstrations. No school mentioned pan-fried fish after seeing a demonstration. In fact, the increase in the serving of oven-prepared fish appeared to be one of the largest single factors in the increased use of fish. Since oven-preparation of fish is stressed in the demonstrations, the change in the method of preparation can be attributed to the demonstrations.

A report on the results of a more intensive program of 19 demonstrations held throughout North Carolina in 1950 is planned. However, sufficient time has not elapsed to make a comparison of the use of fish before and after these demonstrations.

--Robert P. Seifert, Fishery Marketing Specialist,
Educational and Market Development Section,
Branch of Commercial Fisheries,
U. S. Fish and Wildlife Service.



Service to Administer Dingell Bill Provisions

Federal aid for State fishery restoration projects, authorized by H. R. 6533 (signed by President Truman on August 9--P.L. 681) will be administered by the U. S. Fish and Wildlife Service on a nation-wide basis beginning on July 1, 1951, when the first excise tax funds become available, the Secretary of the Interior announced in August. Plans for the establishment of an adequate administrative set-up in the Service are now under consideration.

The "Dingell Bill," vetoed by the President last year, was reintroduced into the present session of Congress after it had been rewritten to remove the items to which the Chief Executive objected.

In language, this bill is patterned after the highly successful Federal Aid to Wildlife Restoration Act of 1937, known as the Pittman-Robertson Act. Funds to finance the Federal share of this cooperative fishery work will come from the 10-percent excise tax on fishing rods, reels, creels, and artificial lures, baits, and flies. This income will be appropriated annually by the Congress and then allotted to the States.

To insure equality of distribution, each State's share will be based upon the number of its angling license holders as compared to the total in all the States, and upon the percentage relation of the area of each State (including coastal and Great Lakes waters) to the area of all the States.

In order to give a few of the small States sufficient working capital to finance substantial undertakings, the law further provides that "no State can receive less than one percent nor more than five percent of the total apportioned to all of them." Provision is also made for the annual apportionment of as much as \$75,000 to Alaska, \$25,000 to Hawaii, and \$10,000 each to Puerto Rico and the Virgin Islands.

The new law provides, as in the case of the Pittman-Robertson Act, that the States through their fish and game departments shall select suitable fishery restoration projects. Work on such projects will be done by State-employed personnel. The State will be entitled to reimbursement for 75 percent of the cost of the work performed, and all lands acquired, structures erected, and equipment purchased will become the property of the States. After July 1, 1953, as much as 25 percent of the annual apportionments may be expended for the maintenance of the completed projects.

"Federal responsibilities in handling the program," declared the Director of the Service, "are confined to determining whether projects selected by the States are

approvable under the law; whether the costs to be incurred are reasonable; and whether the work has been satisfactorily performed before reimbursement claims from the States can be endorsed for payment."



Service Closes Fishery Market News Office at Hampton

Because of higher operating costs and curtailment of funds, the Fish and Wildlife Service has found it necessary to close the Fishery Market News Service office at Hampton, Va., the Director of the Service announced on September 1. No daily, monthly, or annual Fishery Products Reports will be issued from Hampton after September 29.

The Hampton Market News Service Office, under the administration of the Service's Branch of Commercial Fisheries, was collecting and publishing daily fisheries production data for the Chesapeake Bay area and a portion of North Carolina. Collection of these data will be discontinued for the following areas: Virginia--lower Northern Neck, York River, and Eastern Shore; Maryland--Crisfield, Cambridge, and Ocean City; and North Carolina--Atlantic, Beaufort, Morehead City, Southport, Englehard, and Pamlico County. However, the collection of daily fisheries production information from the Hampton Roads area will be continued on a limited basis and published in the daily Fishery Products Report issued by the New York Market News Service office.

Originally opened in December 1945, the curtailment of operating funds for the Market News Service Section made it necessary to close the Hampton office on June 30, 1947. It was reopened in August 1948 and Charles D. Stewart, Fishery Marketing Specialist, was put in charge.

Except for information from the areas where the collection of daily production data has been discontinued, all other information on fisheries production, prices, and news items of interest to the fishing industry which appeared in the Hampton reports will also be found in the daily Fishery Products Reports issued by the New York Market News Service office located at 155 John Street, New York City.



South Pacific Fishery Investigations

SOME FINDINGS BY THE PACIFIC SARDINE RESEARCH PROGRAM: Sardine spawning in the Pacific during the 1949 season was more restrictive and later in the year than during some previous seasons, according to the data gathered on the monthly surveys of the three vessels working on the cooperative Pacific sardine research program being conducted by the Service's South Pacific Fishery Investigations in cooperation with the Scripps Institution of Oceanography, the California Division of Fish and Game, and the California Academy of Sciences. The surveys were made in the area between Pt. San Eugenio, Lower California, and the Columbia River, and extending 400 miles offshore. Two areas of major importance were around and south of Cedros Island and off southern California.

Spawning is related to temperature or some associated factor and was found only in waters between 13.3° C. and 16.2° C. (temperature at 15 meters). Spawning



THE BLACK DOUGLAS, THE RESEARCH VESSEL OF THE SERVICE'S SOUTH PACIFIC FISHERY INVESTIGATIONS WORKING ON THE CO-OPERATIVE PACIFIC SARDINE RESEARCH PROGRAM.

began early in the South, and extended north with progression of favorable temperatures. A small amount of spawning occurred off Oregon in August and September last year.

During 1950, the survey pattern was modified to provide more intensive coverage of spawning areas and to shift this coverage north as the season progresses. Observations were also extended south of Pt. San Eugenio. Results indicate a similarity in location of spawning to the previous season.

Identification, enumeration, and life-history studies of other species taken in plankton hauls have been continued. Samples of catch indicate about 80 percent of the catch was made up of the 1946-47-classes (which contributed about 87 percent of the catch in the 1948-49 season). The 1948-class is either very small or was unavailable. The 1943-, 1944-, and 1945-classes were markedly over-available. This may indicate entry into the fishery of fish of these year-classes that were spawned off lower California.

The Investigations has completed calculations of fish lengths at successive ages for all fish sampled for age since the 1938-39 season, and is now calculating characteristics of scale-length vs. fish-length regressions for each year-class. A part of these data will be used in examining relationship between year-class strength and amount of growth during the first year of life.

The location of a major spawning area off central lower California suggests the possibility of a subpopulation in that region and raises the question of its contribution to the fishery. Additional work on this is planned.

Using year-class catch curves, the Investigations is continuing work to determine the mechanism of availability and to develop a measure thereof. One present defect is that measures developed include not only changes in availability, but also changes in rates of natural mortality.

One such index is positively correlated, over eight seasons, with the average surface temperature, August through February, for 500 miles off San Francisco. This relationship may be the result of temperature-connected differences in tendency to school, or it may be differences in density (frequency per unit area) of schools along the coast as influenced by the varying distance offshore of warmer waters.

U.S. Pack of Canned Crab Meat, 1949

The 1949 pack of canned crab meat totaled 161,829 standard cases, valued at \$3,490,885--a decline of 27 percent in quantity and 28 percent in value as compared with the previous year (table 1). Although the total pack was considerably less

Table 1 - Pack of Canned Crab Meat by Area and By Style of Pack and Size of Can and Case, 1949
(Quantity in Standard and Actual Cases, and Value to the Cannery)

Area	Species of Crab Processed	Quantity		Total Value	Avg. Price Per Std. Case	Size of Can and Case	Quantity		Total Value	Avg. Price Per Actual Case
		Std. Cases	Actual Cases				Actual Cases	Actual Cases		
East Coast:										
Maine, Maryland and Georgia ...	Rock and blue	3,586		76,773	21.41	6½ ounces net (48 cans)	109,322		2,435,575	22.28
North and South Carolina, Alabama and Mississippi										
Louisiana	Blue	32,532		649,106	19.95	6½ ounces net (24 cans)	90,336		904,822	10.02
Total		46,975		945,120	20.08	13 ounces net (24 cans)	3,186		72,365	22.71
West Coast:										
Washington	Dungeness	65,004		1,434,938	22.07	16 ounces net (24 cans)	1,490		34,038	22.84
Oregon and California										
Alaska	"	13,198		276,150	21.08	Other sizes converted to 6½ ounces net (48 cans)	2,320		44,085	19.00
Total		114,854		2,547,765	22.18	Total	206,654		3,490,885	-
Grand Total		161,829		3,490,885	21.57					

1/Represent cases of various sizes converted to the equivalent of 48 cans to the case, each can containing 6½ ounces of crab meat.

than in 1948, it was the third largest in history. A reduction in the amount of crab meat canned in each of the Pacific Coast States and Alaska was responsible for the lower pack in 1949. The production in Washington fell off the most, declining from 104,362 cases in 1948 to 65,004 cases in 1949.

Crabs were canned in 2 plants in Mississippi; 5 in Louisiana; 18 in Washington; 10 each in Oregon and Alaska; and 1 plant each in Maine, Maryland, North Carolina, South Carolina, Georgia, Alabama, and California.

The 1949 Pacific Coast pack (consisting of meat from Dungeness crabs) was valued at an average of \$22.18 per standard case, compared with \$22.75 the previous year, the record high of \$27.67 in 1946, and \$7.05 in 1940. The 1949 East Coast and Gulf pack (consisting largely of meat from blue crabs) was valued at an average of \$20.08 per standard case, compared with \$17.43 the previous year, the record high of \$21.11 in 1946, and \$9.70 in 1940 (see table 2).

Table 2 - Pack of Canned Crab Meat, 1940-49 (Quantity in Standard Cases and Value to the Cannery)

Year	Atlantic Coast and Gulf States			Pacific Coast States and Alaska			T o t a l		
	Quantity	Total Value	Avg. Price Per Std. Case	Quantity	Total Value	Avg. Price Per Std. Case	Quantity	Value	Avg. Price Per Std. Case
1949	46,975	945,120	20.08	114,854	2,547,765	22.18	161,829	3,490,885	21.57
1948	33,382	581,872	17.43	187,420	4,264,622	22.75	220,802	4,846,494	21.95
1947	33,696	667,487	19.81	106,120	2,037,904	19.20	139,816	2,705,391	19.35
1946	120,150	2,536,405	21.11	78,928	2,183,714	27.67	199,078	4,720,119	23.71
1945	29,788	484,869	16.28	25,726	398,898	15.51	55,514	883,767	15.92
1944	36,386	560,735	15.41	50,556	800,723	15.84	86,942	1,361,458	15.66
1943	26,716	412,310	15.43	48,592	782,173	16.10	75,308	1,194,483	15.86
1942	29,656	397,772	13.41	84,892	1,357,293	15.99	114,548	1,755,065	15.32
1941	22,494	235,745	10.48	37,704	311,872	8.27	60,198	547,617	9.10
1940	13,486	130,869	9.70	25,254	178,021	7.05	38,740	308,890	7.97

1/Cases of various sizes converted to the equivalent of 48 6½-oz. cans to the case.

Of the 26,076 standard cases of crab meat packed in Alaska in 1948, 17,622 cases consisted of meat from king crabs. However, no meat from king crabs was canned in Alaska during 1949.



U.S. Pack of Canned Clams and Clam Products, 1949

The 1949 United States pack of canned clams and clam products amounted to 1,186,060 standard cases, valued at \$8,779,018 to the canners (table 1). This was an increase of 6,286 cases and \$449,379 in value as compared with the production a year earlier.

Species and State	Number of Plants	Whole and Minced			Chowder, Juice, Broth, and Nectar			Total	
		Quantity	Avg. Price	Total	Quantity	Avg. Price	Total	Quantity	Value
		Std. Cases ¹	Per Std. Case ¹	Value	Std. Cases ¹	Per Std. Case ¹	Value	Std. Cases ¹	Value
Soft Clams: ¹									
Maine	12	155,129	9.47	1,469,711	169,389	5.87	993,469	324,518	2,463,180
Razor Clams:									
Washington	4	3,847	19.66	75,619	-	-	-	3,847	75,619
Oregon	1								
Alaska	13	37,810	17.70	669,329	-	-	-	37,810	669,329
Total Razor Clams	18	41,657	17.88	744,948	-	-	-	41,657	744,948
Hard Clams: ²									
Rhode Island	1								
New Jersey	1								
Pennsylvania	1				699,719	6.46	4,520,981	699,719	4,520,981
Maryland	2								
New York	5	74,027	9.25	684,798	14,775	3.06	45,190	88,802	729,988
Washington	4								
California	1	26,943	11.17	300,883	4,088	3.85	15,753	31,031	316,636
Alaska	3	221	13.51	2,985	112	2.68	300	333	3,285
Total Hard Clams	18	101,191	9.77	988,666	718,694	6.36	4,582,224	819,885	5,570,890
Grand Total	46 ³	297,977	10.75	3,203,325	888,083	6.28	5,575,693	1,186,060	8,779,018

¹Cases of various sizes converted to the equivalent of 48 No. 1 cans, each can of whole and minced clams containing 5 ounces of meat, drained weight; and each can of chowder, juice, broth, and nectar, 10 ounces of gross contents.
²Includes the pack of surf clams in New York, pismo clams in California, and cockles in Alaska.
³Exclusive of duplication.

Production of canned whole clams totaled 66,754 standard cases (valued at \$827,496); minced clams, 231,223 standard cases (valued at \$2,375,829); clam chowder, 863,166 standard cases (valued at \$5,498,974); and canned clam juice, broth, and nectar, 24,917 standard cases (valued at \$76,719). Compared with 1948, the 1949 manufacture of whole and minced clams was 72 percent greater; chowder production declined 12 percent; and the pack of juice, broth, and nectar was 8 percent higher.

Year	Whole and Minced			Chowder, Juice, Broth, and Nectar	Total	
	Soft Clams ²	Hard Clams	Razor Clams		Quantity	Value
	Std. Cases ¹	Std. Cases ¹	Std. Cases ¹		Std. Cases ¹	\$
1949	155,129	101,191	41,657	888,083	1,186,060	8,779,018
1948	107,177	29,085	36,932	1,006,580	1,179,774	8,329,639
1947	33,968	24,863	47,407	1,151,424	1,257,662	8,642,235
1946	167,987	108,638	79,394	1,171,770	1,527,789	11,145,047
1945	64,425	238,475	63,703	533,429	900,032	7,391,098
1944	72,434	71,771	40,450	363,041	547,696	3,820,612
1943	47,746	28,344	40,340	348,364	464,794	2,802,420
1942	72,499	30,515	40,104	639,484	782,602	3,791,058
1941	97,460	32,303	40,192	757,388	927,343	3,711,029
1940	124,697	38,851	74,565	689,515	927,628	3,778,363

¹Cases of various sizes converted to the equivalent of 48 No. 1 cans, each can of whole and minced clams containing 5 ounces of meat, drained weight; and each can of chowder, juice, broth, and nectar, 10 ounces of gross contents.
²Production of canned surf clams in Maine has been included with pack of soft clams.

The over-all average price of whole and minced clams dropped from \$11.72 per standard case in 1948 to \$10.75 per case in 1949. This decline in price during 1949 was mainly due to lower prices paid for minced and whole soft clams, which dropped from \$10.25 per standard case in 1948 to \$9.47 per case in 1949. Average

prices per case for whole and minced hard and razor clams were slightly higher in 1949 than in 1948.

Although over-all average prices of clam chowder, juice, broth, and nectar during 1949 were only 2 cents higher per standard case than in 1948, there were declines in the prices of these products manufactured from hard clams, but an increase in those manufactured from soft clams.



U. S. Pack of Canned Fish Roe and Caviar, 1949

The domestic pack of canned fish roe and caviar in 1949 was the largest and most valuable in history--86,459 standard cases (48 one-pound cans), valued at \$1,969,998 to the packers (table 1). The quantity packed was 71 percent greater than in the previous year, while the value was 34 percent higher.

Product	Number of Plants	Quantity	Price Per	Total	Number of Plants in Each State
		Std. Cases ^{1/}	Std. Case ^{1/}	Value	
Roe:					
Alewife	30	44,106	17.00	749,993	Maryland 7, Virginia 14, North Carolina 9
Deep sea	3	19,896	10.44	207,780	Massachusetts 3
Shad	11	4,434	61.64	273,323	Maryland 1, N. Carolina 1, Wash. 2, Oregon 5, Calif. 2
Herring	1	2,311	15.55	35,930	Conn. 1, Mass. 1, Md. 1, N. C. 1
Mackerel	2				
Menhaden	1				
Caviar:					
Salmon	2	4,993	85.57	427,228	New York 3, Wisconsin 1
Sturgeon	1				
Whitefish	3				
Total edible roe and caviar	48 ^{2/}	75,740	22.37	1,694,254	
Salmon eggs (for bait)	5	10,719	25.72	275,744	Washington 5
Grand total	53 ^{2/}	86,459	22.79	1,969,998	

^{1/}Cases of various sizes converted to the equivalent of 48 cans, each containing 16 ounces.
^{2/}Exclusive of duplication.

Alewife roe accounted for over half of the total pack and 38 percent of the total value. The average price per standard case for alewife roe dropped from \$17.72 in 1948 to \$17.00 in 1949.

State	Number of Plants	Quantity	Total Value
		Std. Cases ^{1/}	\$
Massachusetts	4	21,066	223,577
Connecticut	1		
New York	3	3,973	371,967
Maryland	7	10,673	172,707
Virginia	14	28,759	506,040
North Carolina	9	7,696	176,400
Wisconsin	1	10,847	283,544
Washington	7		
Oregon	5	3,445	235,763
California	2		
Total	53	86,459	1,969,998

^{1/}Cases of various sizes converted to the equivalent of 48 cans, each containing 16 ounces.

Year	Quantity	Avg. Price	Total
	Std. Cases ^{1/}	Per Std. Case ^{1/}	Value
1949	86,459	22.79	1,969,998
1948	50,629	29.10	1,473,320
1947	52,432	31.30	1,641,228
1946	58,192	32.75	1,905,638
1945	36,795	25.77	948,042
1944	55,677	14.80	824,197
1943	59,884	17.44	1,044,582
1942	53,190	17.13	910,890
1941	76,740	10.63	815,514
1940	61,852	14.42	891,814

^{1/}Cases of various sizes converted to the equivalent of 48 cans, each containing 16 ounces.

The over-all average per standard case for all canned fish roe and caviar in 1949 was only \$22.79, compared with \$29.10 in 1948, \$31.30 in 1947, and \$32.75 in 1946 (the highest on record). See table 3.

Virginia accounted for one-third of the quantity packed, and over one-fourth of the value of the 1949 pack (table 2).



U. S. Pack of Canned Animal Food from Fishery Products, 1949

Canned animal food from fishery products packed in 1949 amounted to 1,931,757 standard cases, valued at \$8,663,442 to the canners--an increase of 46 percent in quantity and 24 percent in value as compared with the previous year. The 1949 pack was the largest and most valuable in history.

Table 1 - Pack of Canned Animal Food From Fishery Products by States in Std. Cases^{1/} & by Size of Can & Case in Actual Cases, 1949
(Quantity and Value to the Cannery)

State	Quantity Std. Cases ^{1/}	Total Value	Avg. Price Per Std. Case ^{1/}	Size of Can and Case	Quantity Actual Cases	Total Value	Avg. Price Per Case
Maine and New York	537,188	2,673,800	4.98	8 ounces net (48 cans)	1,824,580	4,760,483	2.61
Massachusetts	464,931	1,660,883	3.57	16 ounces net (48 cans)	1,000,662	3,816,495	3.81
Virginia, Maryland, and Washington	33,074	106,009	3.21	Other sizes converted to 16 ounces net (48 cans)	18,805	86,464	4.60
California	896,489	4,222,300	4.71				
Alaska	75	450	6.00				
Total	1,931,757	8,663,442	4.48	Total	2,844,047	8,663,442	-

^{1/}Cases of various sizes converted to the equivalent of 48 cans, each can containing 16 ounces.

Over 46 percent of the production was canned in California, while the major portion of the remainder was packed in Maine and Massachusetts. Animal food from fishery products was canned in 6 plants in Massachusetts; 4 in California; 2 in Maine; and 1 plant each in New York, Maryland, Virginia, Washington, and Alaska.

Table 2 - Pack of Canned Animal Food From Fishery Products, 1940-49
(Quantity in Std. Cases^{1/} and Value to the Cannery)

Year	Quantity Std. Cases ^{1/}	Total Value	Avg. Price Per Std. Case ^{1/}
1949	1,931,757	8,663,442	4.48
1948	1,323,808	6,971,003	5.27
1947	909,964	3,949,419	4.34
1943	1,771	5,319	3.00
1942	104,954	374,718	3.57
1941	1,009,515	2,624,487	2.60
1940	721,732	1,861,638	2.58

^{1/}Cases of various sizes converted to 48 16-oz. cans.

Note: No production in 1944, 1945, and 1946.

There was a decline in the average price per standard case from \$5.27 in 1948 to \$4.48 in 1949. Prices of canned animal food from fishery products had increased steadily from \$2.58 in 1940 to a high of \$5.27 per case in 1948. Due to the shortage of cans during the war years, the pack in 1942 dropped 90 percent; in 1943 it was only negligible (1,771 cases); and in 1944, 1945, and 1946 there was no pack of canned animal food from fishery products.



U.S. Production of Marine-Animal Scrap and Meal, 1949

Marine-animal scrap and meal production in the United States and Alaska during 1949 amounted to 237,180 short tons, valued at \$35,652,142 to the producers (table 2). This was an increase of 37,661 tons in quantity and \$12,565,408 in value as compared with the previous year. The quantity of the 1949 production of marine-animal scrap

and meal was exceeded only by the record 1936 yield of 243,778 tons while the value was the highest on record.

Table 1 - Production of Marine Animal Scrap and Meal, 1949 (Quantity and Value to Producers)

Product	Atlantic and Gulf Coasts			Pacific Coast (Including Alaska)			Total		
	Quantity Short Tons	Total Value \$	Avg. Price Per Ton \$	Quantity Short Tons	Total Value \$	Avg. Price Per Ton \$	Quantity Short Tons	Value \$	Avg. Price Per Ton \$
Meal and Dried Scrap:									
Crab:									
Blue	6,906	431,106	62.42	-	-	-	6,906	431,106	62.42
Dungeness	-	-	-	907	47,668	52.56	907	47,668	52.56
Fur seal	-	-	-	347	55,627	160.31	347	55,627	160.31
Groundfish ("white fish" inc. rosefish)	31,425	5,221,652	166.16	-	-	-	31,425	5,221,652	166.16
Herring	3,049	463,737	152.09	2,249	509,708	226.64	5,298	973,445	183.74
Menhaden	2/113,393	2/17,813,339	157.09	-	-	-	113,393	17,813,339	157.09
Pilchard	-	-	-	39,278	6,219,717	158.35	39,278	6,219,717	158.35
Salmon	-	-	-	1,760	245,847	139.69	1,760	245,847	139.69
Shrimp	1,283	115,292	89.86	-	-	-	1,283	115,292	89.86
Tuna and mackerel .	-	-	-	19,139	3,073,742	160.60	19,139	3,073,742	160.60
Whale	-	-	-	117	16,088	137.50	117	16,088	137.50
Miscellaneous	3/12,522	3/795,964	63.57	4/4,805	4/642,655	133.75	17,327	1,438,619	83.04
Total	168,578	24,841,090	147.36	68,602	10,811,052	157.59	237,180	35,652,142	150.32

- 1/Includes a small production of miscellaneous meal in Minnesota.
- 2/A small production of acidulated scrap has been included with dry scrap and meal.
- 3/Includes the production of cod-liver press cake, fish pomace, horseshoe crab, and miscellaneous scrap and meal.
- 4/Includes the production of anchovy, shark, squid, and miscellaneous scrap and meal.

Manufacture of menhaden scrap and meal, which exceeded 100,000 tons for the second consecutive year, accounted for 48 percent of the quantity and 50 percent of the value of the 1949 production. Although the 1949 production of pilchard meal in California was 20,202 tons greater than in the previous year, it still amounted to only 32 percent of the record 1936 production of 121,739 tons.

Table 2 - Production of Marine-Animal Scrap and Meal, 1940-49 (Quantity and Value to Producers)

Year	Dry Meal and Scrap			Acid Scrap			Total		
	Quantity Short Tons	Total Value \$	Avg. Price Per Ton \$	Quantity Short Tons	Total Value \$	Avg. Price Per Ton \$	Quantity Short Tons	Value \$	Avg. Price Per Ton \$
1949	1/237,180	1/35,652,142	150.32	1/	1/	1/	237,180	35,652,142	150.32
1948	1/199,519	1/23,086,734	115.71	1/	1/	1/	199,519	23,086,734	115.71
1947	185,808	22,353,488	120.30	632	26,863	42.50	186,440	22,380,351	120.04
1946	197,599	20,360,943	103.04	2,022	78,475	38.81	199,621	20,439,418	102.39
1945	199,118	14,343,138	72.03	1,557	62,200	39.95	200,675	14,405,338	71.78
1944	210,225	15,131,918	71.98	2,922	111,104	38.02	213,147	15,243,022	71.51
1943	188,848	13,570,331	71.86	1,555	58,821	37.83	190,403	13,629,152	71.58
1942	168,486	11,545,239	68.52	2,594	80,520	31.04	171,080	11,625,759	67.96
1941	225,815	12,852,781	56.92	11,029	242,792	22.01	236,844	13,095,573	55.29
1940	177,724	7,562,288	42.55	15,520	271,533	17.50	193,244	7,833,821	40.54

- 1/A small production of acidulated menhaden scrap has been included with dry scrap and meal.

The over-all average price per ton of all types of marine-animal scrap and meal in 1949 reached a high of \$150.32, compared with \$115.71 in 1948, \$120.04 in 1947, and \$40.54 in 1940 (table 2).



U.S. Production of Oyster and Marine-Clam Shell Products, 1949

Production of chicken grit and agricultural lime from oyster and marine clam shells in 1949 totaled 362,028 short tons, valued at \$2,662,252--an increase of 5 percent in quantity and 8 percent in value, compared with 1948.

Crushed shell products were prepared in 4 plants in New Jersey; 3 plants each in Pennsylvania, Maryland, Virginia, and Washington; 2 plants each in Texas and California; and 1 plant each in Florida, Louisiana, and Oregon.

State	Crushed Shells for Poultry Feed			Unburned Shell Lime			Total	
	Quantity Short Tons	Total Value \$	Avg. Price Per Ton \$	Quantity Short Tons	Total Value \$	Avg. Price Per Ton \$	Quantity Short Tons	Value \$
New Jersey	3,701	55,177	14.91	1,011	4,685	4.63	4,712	59,862
Pennsylvania and Maryland	28,151	285,405	10.14	14,578	54,101	3.71	42,729	339,506
Virginia, Florida, Louisiana, and Texas	266,940	1,786,220	6.69	² /19,681	186,193	9.46	286,621	1,972,413
Washington, Oregon, and California	24,870	266,992	10.74	3,096	23,479	7.58	27,966	290,471
Total	323,662	2,393,794	7.40	38,366	268,458	7.00	362,028	2,662,252

¹/Marine clam-shell grit was prepared in only 1 plant in Washington.
²/Includes a quantity of burned lime prepared in Virginia.

Average prices per ton for chicken grit from marine shells in 1949 were the highest in history. There was a steady increase in the price of chicken grit from \$3.71 per ton in 1940 to \$7.40 per ton in 1949.

Year	Crushed Shells for Poultry Feed			Burned and Unburned Shell Lime			Total	
	Quantity Short Tons	Total Value \$	Avg. Price Per Ton \$	Quantity Short Tons	Total Value \$	Avg. Price Per Ton \$	Quantity Short Tons	Value \$
1949	323,662	2,393,794	7.40	38,366	268,458	7.00	362,028	2,662,252
1948	296,570	2,140,705	7.22	48,505	333,787	6.88	345,075	2,474,492
1947	438,629	2,860,175	6.52	62,764	402,983	6.42	501,393	3,263,158
1946	329,717	1,913,584	5.80	60,716	357,269	5.88	390,433	2,270,853
1945	369,064	2,001,318	5.42	138,032	572,399	4.15	507,096	2,573,717
1944	458,080	2,684,306	5.86	124,135	450,390	3.63	582,215	3,134,696
1943	398,852	2,299,053	5.76	110,433	521,933	4.73	509,285	2,820,986
1942	345,032	2,028,170	5.88	121,005	554,091	4.58	466,037	2,582,261
1941	310,834	1,493,720	4.81	127,573	491,533	3.85	438,407	1,985,253
1940	274,721	1,019,380	3.71	120,367	460,467	3.83	395,088	1,479,847

Prices paid for agricultural lime from marine shells in 1949 (\$7.00 per ton) were also the highest paid during the past ten years. Agricultural lime prices increased from \$3.83 in 1940 to \$4.73 in 1943, but dropped to \$3.63 in 1944, and then increased steadily to the record-high price paid in 1949. However, production of agricultural lime has shown a steady decline since 1945 and the 1949 production was the lowest for the past ten years.



U. S. Production of Marine Pearl-Shell Buttons, 1949

Production of marine pearl-shell buttons in 1949 amounted to 4,089,712 gross, valued at \$6,782,281 to the manufacturers--a decrease of 18 percent in volume and 21 percent in value, compared with 1948.

Table 1 - U. S. Production of Marine Pearl-Shell Buttons By States, 1949¹/
(Quantity and Value to Manufacturers)

State	Quantity	Total Value	Avg. Price Per Gross
	Gross	\$	\$
Connecticut	1,118,060	1,786,712	1.60
New York	559,339	1,272,226	2.27
New Jersey	1,290,305	1,898,461	1.47
Pennsylvania and Maryland	972,076	1,723,263	1.77
Iowa	149,932	101,619	.68
Total	4,089,712	6,782,281	1.66

¹/Produced principally from imported shells.

Manufacturers received an average of \$1.66 per gross for their 1949 production, compared with an average of \$1.73 in 1948 and 61 cents in 1940.

Marine pearl-shell buttons were manufactured in 12 plants in New Jersey, 4 in New York, 3 each in Connecticut and Iowa, 2 in Pennsylvania, and 1 in Maryland.



Table 2 - U. S. Production of Marine Pearl-Shell Buttons, 1940-49
(Quantity and Value to Manufacturers)

Year	Quantity	Total Value	Avg. Price Per Gross
	Gross	\$	\$
1949	4,089,712	6,782,281	1.66
1948	4,974,073	8,587,011	1.73
1947	5,087,000	7,902,000	1.55
1946	3,461,559	5,635,904	1.63
1945	2,398,020	3,286,245	1.37
1944	2,035,320	2,601,626	1.28
1943	2,949,978	3,792,059	1.29
1942	5,364,718	4,532,695	.84
1941	7,424,769	5,337,351	.72
1940	6,830,628	4,140,984	.61

Wholesale and Retail Prices

WHOLESALE PRICES, JULY 1950: Sharp advances in all wholesale food prices were noted during July as compared with the previous month, and edible fishery products followed the same trend. The edible fish and shellfish (fresh, frozen, and canned) wholesale index for July was 97.5 percent of the 1947 average--2.6 percent higher than the previous month and 0.7 percent above July 1949 (see table 1), according to the Bureau of Labor Statistics of the Department of Labor.

From June to July the frozen processed fish and shellfish subgroup index was the only one that dropped. July prices of frozen haddock fillets and shrimp were slightly lower than in June, except for rosefish (ocean perch) fillets, which were only a little higher and flounder fillets, which held steady at June prices. When compared with the previous month, the July price index of frozen processed fishery products dropped 0.6 percent, but it was still 11.1 percent higher than the same month a year earlier.

In general, prices of drawn, dressed, or whole finfish continued to increase (July prices were 2.9 percent higher than for June). From June to July prices of fresh drawn haddock, fresh halibut, yellow pike, and lake trout were higher, while fresh salmon, and whitefish at Chicago and New York City dropped substantially. Prices for this subgroup this July were 15.2 percent higher than in July 1949.

Fresh processed fish and shellfish prices during July were 1.0 percent higher as compared with June and 1.7 percent higher than in July 1949.

GROUP, SUBGROUP, AND ITEM SPECIFICATION	POINT OF PRICING	UNIT	AVERAGE PRICES (\$)			INDEXES (1947 = 100)		
			July 1950	June 1950	July 1949	July 1950	June 1950	July 1949
ALL FISH AND SHELLFISH (Fresh, Frozen, and Canned)						97.5	95.0	96.8
Fresh and Frozen Fishery Products:						101.4	99.7	92.3
Drawn, Dressed, or Whole Finfish:						109.1	106.0	94.7
Haddock, large, offshore, drawn, fresh	Boston	lb.	.11	.10	.08	110.1	103.8	83.8
Halibut, Western, 20/80 lbs., dressed, fresh or frozen	New York City	"	.37	.36	.31	107.6	104.9	91.2
Salmon, king, lge. & med., dressed, fresh or frozen	" " "	"	.45	.47	.44	111.3	114.9	105.3
Lake trout, domestic, mostly No. 1, drawn (dressed), fresh	Chicago	"	.45	.39	.50	98.4	86.2	107.5
Whitefish, mostly Lake Superior, drawn (dressed), fresh	"	"	.33	.39	.32	95.4	112.7	92.5
Whitefish, mostly Lake Erie pound net, round, fresh	New York City	"	.90	.55	.44	111.9	123.5	99.7
Yellow pike, mostly Michigan (Lakes Michigan & Huron), round, fresh	" " "	"	.47	.32	.48	110.3	74.1	112.1
Processed, Fresh (Fish and Shellfish):						91.0	90.1	89.3
Filletts, haddock, small, skins on, 20-lb. tins	Boston	lb.	.27	.27	.25	97.6	96.6	91.2
Shrimp, lge. (26-30 count), headless, fresh or frozen	New York City	"	.62	.62	.63	89.2	88.7	91.2
Oysters, shucked, standards	Norfolk area	gal.	3.75	3.69	3.50	92.3	90.8	86.2
Processed, Frozen (Fish and Shellfish):						100.8	101.4	90.7
Filletts: Flounder (yellowtail), skinless, 10-lb. boxes	Boston	lb.	.34	.34	.24	109.7	109.7	75.9
Haddock, small, 10-lb. cello-pack	"	"	.25	.25	.19	113.3	114.8	86.5
Rosefish, 10-lb. cello-pack	Gloucester	"	.19	.19	.18	95.0	94.0	90.6
Shrimp, lge. (26-30 count), 5- to 10-lb. bxs	Chicago	"	.67	.68	.66	97.2	98.4	95.5
Canned Fishery Products:						91.6	87.9	105.6
Salmon, pink, No. 1 tall (16 oz.), 48 cans per case	Seattle	case	16.25	15.08	18.22	106.0	98.3	118.8
Tuna, light meat, solid pack, No. 1 (7 oz.), 48 cans per case	Los Angeles	"	14.45	14.25 ^{1/2}	15.73	94.0	92.7	102.5
Sardines (pilchards), California, tomato pack, No. 1 oval (15 oz.), 48 cans per case	"	"	5.80	5.50	7.50	64.9	61.5	83.9
Sardines, Maine, keyless oil, No. 1 drawn (3 1/2 oz.), 100 cans per case	New York City	"	6.00	6.20	7.38	58.8	60.8	72.3

^{1/}Corrected price.

Canned fish markets were generally stronger during July, probably influenced to a certain extent by the Korean conflict. The July index for canned fish was 91.6 percent of the 1947 average--4.2 percent higher than June, but still 11.6 percent below July 1949. Prices for canned Maine sardines continued to drop, while prices of all other canned fishery products included in this subgroup were higher in July than in June.

RETAIL PRICES, JULY 1950: Retail food prices rose substantially for the third consecutive month and on July 15 the index was 210.0 percent of the 1935-39 average--higher than in any month since October 1948 (see table 2). This was 4.1 percent above a year ago, only 3.1 percent below the record high of July 1948, and over 44 percent higher than in June 1946.

Item	Base	Indexes		
		July 15, 1950	June 15, 1950	July 15, 1949
All foods	1935-39 = 100	210.0	204.6	201.7
All fish and shellfish (fresh, frozen, and canned)	do	296.6	295.3	307.7
Fresh and frozen fish	1938-39 = 100	275.8	274.1	251.1
Canned salmon: pink	do	325.5	325.3	439.0

The July 15 retail index for all fish and shellfish (fresh, frozen, and canned), was 296.6 percent of the 1935-39 average--0.4 percent higher than in mid-June, but still 3.6 percent lower than on July 15, 1949. Most of the increase was in the prices paid for fresh and frozen fish.

Fresh and frozen fishery products in mid-July retailed at prices that were 0.6 percent higher than in mid-June and 9.8 percent higher than on July 15, 1949.

Only very slight increases were noted in the retail prices of canned pink salmon for July, but these prices were still 25.9 percent lower than in mid-July a year ago.



European Recovery Program Notes

GUARANTIES OF INVESTMENT BY AMERICAN BUSINESS FIRMS: As a result of expanded provisions of the new Marshall Plan law, the Economic Cooperation Administration predicted increased interest in guaranties of investment by American business firms. The new Economic Cooperation Act of 1950 provided greater scope and broadened government protection to private American investment. Businessmen who invest in or license such intangibles as patents, processes, and techniques to foreign producers in Marshall Plan countries will be able to obtain guaranties of convertibility into dollars of the foreign currency proceeds received from such investment or licenses. Of significance also to investors is the provision which authorizes guaranty against risk of loss through expropriation or confiscation by the participating country. As heretofore, the guaranty provisions do not give coverage against business risks or against exchange fluctuations.



MARSHALL PLAN COUNTRIES ADVANCED TOWARD RECOVERY GOALS IN FIRST QUARTER:

In its eighth quarterly report to Congress, ECA reported that participating countries advanced toward recovery goals on a broad economic front during the first quarter of this year. These Marshall Plan countries continued their progress toward achieving a balance in their international accounts; restoring confidence in their currencies; reducing their import surplus from the United States; rebuilding their critically depleted foreign exchange reserves; and easing trade and payments barriers through cooperative efforts. The devaluation of currencies and the rise of United States business activity has enabled these countries to increase their gold and dollar reserves which had been at critically low levels.

AID TO KOREA: Purchase approvals for the purchase of commodities under the Far Eastern Aid Programs earmarked for the Republic of Korea prior to the Communist invasion have been canceled to permit financing of additional goods vitally needed in maintaining the civilian economy of free Korea, ECA announced on August 21. Probably included in this cancellation was \$1,424,000, which was to be used for the purchase of commodities for the construction of fishing vessels for the rehabilitation of Korean fisheries; and another authorization for technical assistance (including fisheries).^{1/}

^{1/} SEE COMMERCIAL FISHERIES REVIEW, JUNE 1950, P. 15.



ECA Procurement Authorizations for Fishery Products -- August 1950

Among the procurement and reimbursement authorizations announced by the Economic Cooperation Administration during August 1950 was \$446,000 for the purchase

Product	Country of Origin	Recipient Country ^{1/}	Amount Authorized
Canned fish ^{2/}	U. S. & Possessions	Belgium-Luxembourg	\$200,000
Canned fish ^{3/}	" "	Greece	230,000
Whale and fish oils ..	" "	France	16,000
Total			446,000

^{1/}The recipient country is the procuring agency, and the Government of the participating country or its authorized agents or importers do the purchasing.

^{2/}Except canned shrimp, crab meat, or lobster meat.

^{3/}Except canned shrimp, crab meat, lobster meat, or salmon.

Commodity	Country of Origin	Recipient Country	Amount Authorized(\$)	
FISH (EDIBLE):				
Canned fish	U. S. & Possessions	Belgium-Luxembourg	1,233,000	
		Greece	302,000	
		Greece-MDAP	120,000	
		Ireland	711,000	
		Italy	277,000	
		Trieste	9,000	
		United Kingdom	4,127,000	
		Canada (inc. Newf.)	" "	6,636,000
Total canned fish			13,415,000	
Salted fish	U. S. & Possessions Canada (inc. Newf.)	Belgium	9,000	
		Fr. West Indies	150,000	
		Greece	5,000	
		Italy	2,688,000	
Total salted fish			2,852,000	
Total edible fish			16,267,000	
BYPRODUCTS:				
Fish and whale oils ...	U. S. & Possessions	Federal Republic of Germany	774,000	
		" (GARIOA)	648,000	
		France	39,000	
		Netherlands	678,000	
		Norway	Austria	1,216,000
			Fed. Rep. of Ger.	2,960,000
		Belgium	" " " "	2,201,000
		Iceland	" " " "	1,693,000
		Total fish and whale oils		
Fish meal	Canada (inc. Newf.) Iceland Norway and Port.	Denmark	394,000	
		Austria	183,000	
		Fed. Rep. of Ger.	963,000	
Total fish meal			1,540,000	
Total byproducts			11,749,000	
GRAND TOTAL (edible fish and byproducts)			28,016,000	

^{1/}Includes latest available revisions. Does not include ECA authorizations under the Far Eastern Aid Program and under which \$219,000 was authorized for the purchase of fish and whale oils by Korea from the United States and Possessions.

of canned fish, and fish and whale oils from the United States and Possessions by France, Belgium-Luxembourg, and Greece (see table 1). No cancellations or decreases affecting previous authorizations for fishery products under the program were reported for the month.

ECA procurement authorizations for fishery products from April 1, 1948 through August 31, 1950, totaled \$28,016,000 (see table 2). Of this total, \$16,267,000 was for edible fishery products, \$10,209,000 for fish and whale oils, and \$1,540,000 for fish meal. Purchases of fishery products made or to be made in the United States and Possessions with these ECA funds amounted to \$8,927,000 or 31 percent of the total (\$6,779,000 was for canned fish, \$9,000 for salted fish, and \$2,139,000 for fish and whale oils).



North Pacific Exploratory Fishery Program

SECOND PHASE OF THIS YEAR'S ALBACORE TUNA EXPLORATIONS BEGUN BY "JOHN N. COBB:"

In August the Service's exploratory fishing vessel, John N. Cobb, started the second phase of this year's albacore tuna explorations in the North Pacific area, and will operate north of the Strait of Juan de Fuca, principally in Alaskan waters. During the first month of the second phase of the explorations, the John N. Cobb fished in the area from Cape Flattery northward to Cape St. Elias and ranged as far as 500 miles offshore. Although fair catches of albacore tuna were made by the vessel off the Charlotte Islands, British Columbia, only a few tuna were taken in Alaskan waters, apparently because of the very cold water in that area.

The John N. Cobb has continued to have success with gill nets in known tuna areas. Over 164 albacore tuna, weighing up to 34 pounds each, were captured in one gill-net set.

In order to obtain information on the direction and speed of movement of the albacore encountered by the exploratory fishing vessel, the Service's fishery engineers aboard the vessel tagged approximately 400 tuna using the procedure developed by them. The tagged tuna seemed to be in excellent condition when released.

In the first phase of the explorations, the vessel operated mainly in the waters south of the Strait of Juan de Fuca and was successful in locating large concentrations of tuna 485 miles off the Oregon Coast. The vessel followed the migrating tuna as they moved toward the Washington and Oregon Coasts within range of the commercial fleet. Both the John N. Cobb and the commercial fishing fleet made large catches of tuna during June and July.

