

TRENDS AND DEVELOPMENTS

Additions to the Fleet of U. S. Fishing Vessels

First documents as fishing craft were received by 87 vessels of 5 net tons and over during July 1950--40 less than in July 1949, the Treasury Department's Bureau of the Customs reports. California led with 26 vessels, followed by Washington with 12, and Texas, Florida, and Alaska with 8 vessels each.

A total of 529 vessels were documented, during the first seven months of 1950 compared with 622 during the same period in 1949.

Vessels Obtaining Their First Documents as Fishing Craft, July 1950

Section	July		Seven mos. ending with July		Total 1949
	1950	1949	1950	1949	
	Number	Number	Number	Number	Number
New England	2	6	20	20	35
Middle Atlantic	3	4	30	34	44
Chesapeake Bay	9	9	50	44	87
South Atlantic and Gulf .	25	31	183	205	369
Pacific Coast	38	70	170	216	327
Great Lakes	-	2	6	29	38
Alaska	8	5	68	71	96
Hawaii	2	-	2	3	5
Unknown	-	-	-	-	1
Total	87	127	529	622	1,002

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



Atlantic Coast Marine Fisheries Pollution Study ✓

The Atlantic States Marine Fisheries Commission is conducting a study and investigation on the extent and effect of pollution on the marine fisheries of its member States. Specifically, the program has for its objective an over-all study of the problem and determination of the extent and effect of pollution, of industrial and domestic origin, upon the economy of the fishing industry of the Atlantic Coast States.

Under provisions of Public Law 845 (Eighty-First Congress, First Session), the Commission received a grant-in-aid from the U. S. Public Health Service making it

✓ THIS IS AN ABSTRACT OF A REPORT ("REPORT ON PROGRESS OF THE POLLUTION STUDY PROJECT")
PRESENTED BY THE SANITATION COMMITTEE OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION
AT THE MEETING OF THE COMMISSION HELD JUNE 8, 1950, AT OLD POINT COMFORT, VA.

possible to carry out this work and the program was started in December of last year.

Administrative operations connected with this study are conducted by the Commission, while technical direction of the survey is under the supervision of the U. S. Fish and Wildlife Service, acting in its official capacity as the primary research agency for the Commission.

For practical purposes, the study was arbitrarily divided into two closely related phases, with the third and final phase presenting the over-all findings compiled from information gathered during the preliminary surveys. A brief description of these steps is as follows:-

1. RECORD OF PREVIOUS POLLUTION ACTIVITIES AND CURRENT STATUS OF PROBLEM: A review in each state of all previous activities relating to pollution and the fisheries, including a report containing presentation of the facts evolving from the study. This will reveal what remedies have been proposed to abate or prevent pollution, to what extent they have been adopted, and the resulting effect upon the fisheries. In short, an inventory and analysis of the current pollution situation relative to marine fisheries.

2. ECONOMIC STUDY OF THE FACTORS INVOLVED: Field surveys will be made to determine the extent of the fisheries involved, and to obtain realistic estimates on the annual monetary loss directly attributable to pollution. Fishermen, fish processors, state and municipal officials will be interviewed to obtain pertinent data relative to the problem. The anticipated results accruing from this part of the study would bring to the attention of the proper officials the value of the fisheries affected and assure proper recognition of the industry in the event of subsequent formulation of pollution-abatement programs.

3. ASSEMBLY OF FINDINGS: The objective will be to assemble all findings resulting from work undertaken in the first two phases of the study. This will include a historical summary and report on the current status of all fisheries pollution activities; evaluation of the efficacy and urgency of current sectional programs with recommendations and suggestions to the proper authorities that action be taken for corrective measures, where such are indicated to be necessary.

SUMMARY OF ACTIVITIES: Work during the first five months this year has been directed towards completion of the initial study phase, covering the collection of pertinent material from federal, state, and interstate agencies and summarization of these data into reports on individual states. Starting in Massachusetts in January, field work has been conducted in twelve of the member states, with Pennsylvania, New York, and New Jersey still to be covered.

Preliminary reports have been compiled for Maine, New Hampshire, Massachusetts, Rhode Island and North Carolina, while data from Virginia, Florida, and Maryland is available for completion of subsequent reports.

California Canning Industry Requested Not To Use Subtilin in Food Preservation

The California canning industry has been requested by that State's Bureau of Food and Drug Inspections, Department of Public Health, not to use subtilin for preserving low acid food products until more information has been developed on this method.

The Bureau of Agricultural and Industrial Chemistry, United States Department of Agriculture, has done considerable work on subtilin at its Western Regional Research Laboratory in Albany, California, and on December 29, 1949, released a report suggesting the use of subtilin supplemented by mild heat for preserving foods. Since this release, their work has been given wide publicity and a number of food processors have expressed great interest in the subtilin-mild heat method for preserving food.

Following the December 29th release, the National Cannery Association laboratories undertook a study of the effect of subtilin supplemented by mild heat on food spoilage organisms--including Cl. botulinum. Test packs of a variety of vegetable products to which subtilin had been added in the amounts used in the tests at the Western Regional Laboratories were inoculated with suitable spoilage organisms, and heated for the recommended time. The results showed marked variations in the initial sensitivity of different spoilage organisms to varying concentrations of subtilin, but after incubation the majority of the organisms had grown and spoiled the food.

At the Cannery Board meeting on June 21, 1950, Dr. K. R. Meyer called attention to the serious health hazard involved in the use of this method for the preservation of low acid foods. The Board directed the Department to advise California canners that, based upon the experimental findings to date, no early application of this method of preservation could be expected--particularly for products packed under California State Cannery Inspection.

The investigations are being continued to determine under what conditions, if any, subtilin might be made destructive against food spoilage organisms, including Cl. botulinum.



Federal Aid Branch to Handle Fishery and Wildlife Restoration Programs

Administration of the Dingell-Johnson program, which provides Federal aid for State sport fisheries beginning July 1, 1951, will be handled by the Branch of Federal Aid of the Fish and Wildlife Service, according to an announcement made on September 12 by the Secretary of the Interior.

The new work will be merged with the administrative activities now performed by the Service under the Pittman-Robertson Federal aid to wildlife program which has been in operation since 1938.

"By placing the responsibility of handling both these cooperative programs in a single Federal Aid organization, augmented by fishery specialists qualified

to appraise the various projects submitted by the States, we believe that the two lines of endeavor can be administered with the greatest economy and efficiency," Albert M. Day, Service director, said.

Plans are being worked out for a series of meetings between Service officials and groups of officials responsible for fishery work in the States for the purpose of discussing the new law and the types of activities which will be approvable under the language of the law. This same procedure was followed prior to inauguration of work under the Pittman-Robertson Act.

Growing out of these discussions, rules and regulations required by the law for adoption by the Secretary of the Interior will be drafted and a fishery policy manual prepared for issuance to the cooperating States. The Service expects to have all of this accomplished by early next spring.

The Dingell-Johnson Federal Aid to Fisheries Act (Public Law 681, 81st Congress) was approved by the President on August 9, 1950. Funds to carry out the purposes of the act, however, will not be available until an appropriation is made by the Congress for the fiscal year beginning July 1, 1951.^{1/}
 1/SEE COMMERCIAL FISHERIES REVIEW, SEPTEMBER 1950, P. 26.



Federal Purchases of Fishery Products

DEPARTMENT OF THE ARMY, JULY 1950: A total of 1,326,003 pounds (valued at \$527,611) of fresh and frozen fishery products were purchased by the Army Quartermaster Corps during July this year for the U. S. Army, Navy, Marine Corps, and Air Force for military feeding (see Table). Purchases during July, as compared with the previous month, were down 13.5 percent in quantity and 16.1 percent in value; and compared with July 1949, this July's purchases were 9 percent lower in quantity, but 9 percent higher in value.

Purchases of Fresh and Frozen Fishery Products by Department of the Army (July and the First Seven Months, 1949 and 1950)							
Q U A N T I T Y				V A L U E			
July		January-July		July		January-July	
1950	1949	1950	1949	1950	1949	1950	1949
lbs.	lbs.	lbs.	lbs.	\$	\$	\$	\$
1,326,003	1,457,729	7,692,427	9,338,053	527,611	485,767	3,219,055	3,130,441

Purchases for the first seven months this year were still below the corresponding period a year earlier--the quantity purchased was 17.6 percent lower, but the value was 2.8 percent higher.



Great Lakes Fishery Investigations

PROGRESS IN THE GREAT LAKES SEA LAMPREY INVESTIGATIONS AS OF JULY 1950: Field operations during the second quarter this year saw the end of this year's sea lamprey spawning runs in the Great Lakes streams and the removal of all but one of the weirs and traps operated within and without the first Experimental Control Zone, according to the Chief of the Service's Great Lakes Fishery Investigations. These devices took a total of 31,518 spawning-run sea lampreys in Michigan streams. Seven weirs and traps operated in Wisconsin, on a cooperative basis with the Wisconsin Conservation Department, captured 16,391 sea lampreys. One weir and trap operated during a portion of the season in Indiana took 896 sea lampreys.

Of 2,853 migrant sea lampreys tagged from a blockaded run in the Cheboygan River, 291 (10.2 percent) have been recovered to date at distances as great as 150 miles from the point of tagging. Data on weir operations and the tagging experiment are currently being tabulated and analyzed.

Field surveys to locate and catalog actual and potential sea lamprey spawning streams were conducted throughout the second quarter this year in the Lake Superior basin and will probably be continued until well into the fall. Reports from the survey parties and from other sources indicate that the lamprey is more firmly established in Lake Superior than heretofore suspected. Plans are progressing for installation of an electric fish screen and a checking weir and trap in the Chocolay River, a tributary of Lake Superior, near Marquette, Michigan, known to have a sizable spawning run.

Fishing operations were begun in July in the inshore waters of Lake Huron between Hammond Bay and Cheboygan, Michigan, for the purpose of obtaining from established sampling areas data on the abundance and degree of scarring of fish attacked by the sea lamprey. All lamprey-scarred fish taken are brought into the laboratory for studies, currently under way, on the feeding habits of the sea lamprey.

Reconstruction and improvement of control devices and installations have been carried on with the object of refining these structures for more efficient and economical operation.

Spot checks made of 19 south-shore tributaries of Lake Superior between Munising, Michigan, and Cornucopia, Wisconsin, revealed evidence of sea lamprey spawning in three of them (all between Munising and Marquette).



Gulf Exploratory Fishery Program

"OREGON" LOCATES GROOVED SHRIMP (Cruise No. 3): A series of shrimp-trawl drags were made by the Service's Gulf exploratory fishery vessel Oregon on its third cruise from July 5 to August 31.

The Oregon operated during this period in waters south of the Alabama-Mississippi coasts in depths from 10 to 232 fathoms. Most of this area lies east of the delta of the Mississippi.

Observations on Grooved Shrimp: Exploratory drags were made with 40-foot and 55-foot shrimp trawls. A single cable and a bridle were used with weighted trawl

doors. After locating shrimp, drags were made with a 100-foot shrimp trawl (12-foot trawl doors set with two cables were used). The style of rig used was similar to that employed extensively by larger shrimp boats in the northwest Gulf area.

Relatively higher concentrations of grooved shrimp were found at night with the 40-foot trawl between 10 and 20 fathoms and between 35 and 50 fathoms, and no grooved shrimp were taken in deeper water in this series of drags. The grooved shrimp taken in the 10-to 20-fathom range were mixed Peneus aztecus and Peneus duorarum, and the smaller ones were mostly P. aztecus. In the 35-to 50-fathom range, the grooved shrimp taken were all Peneus aztecus running from 7 to 14 count, heads on.

A series of five night drags in 36 to 45 fathoms with the 100-foot shrimp trawl produced shrimp at a rate of 128 pounds per hour. These drags were made at widely spaced intervals between longitude 88° W. and longitude 88° 50' W., and indicate that the shrimp in the area were widely scattered in these depths. In one drag, the weight of shrimp exceeded the weight of scrap, but a ratio of approximately one pound of shrimp to three pounds of scrap was usual in the 35-to 50-fathom depth range.

Of 52 drags made in this series, trawls were damaged six times and one trawl was lost. Rocks or coral were encountered in 48 fathoms.

Observations on other Shrimp: As expected the white shrimp were only taken in small quantity, since the shallower water drags were made at night. None were taken in more than 20 fathoms. Try-drags in 195 and 232 fathoms produced 8½ and 12 pounds of a bright red species of shrimp large enough to be of possible commercial interest.

Hurricanes in the Gulf of Mexico in August restricted the exploratory fishing operations of the vessel. Although the Oregon did not receive any damage from the storms, much time was lost in returning to port for hurricane preparations.

"OREGON" EXPLORES FOR SHRIMP IN DEEP WATER (Cruise No. 4): On this cruise the Oregon planned to work in waters from 25 to 200 fathoms off the Mississippi-Louisiana coasts between 88°30' W. longitude and 90°30' W. longitude in depths from 25 to 250 fathoms. The greater amount of time will be spent in fishing west of the Mississippi River.

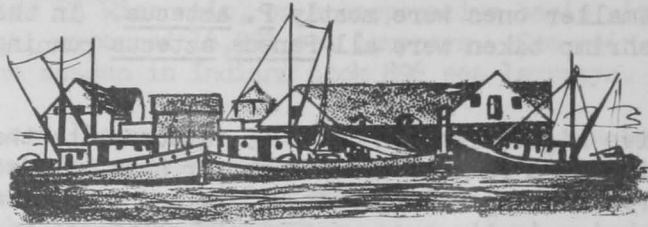
The vessel left on September 11 and is expected to return to Pascagoula on October 2.

Investigations will be carried out on grooved shrimp in depths greater than 25 fathoms in order to determine whether the stocks of large grooved shrimp (Peneus aztecus), found in depths from 36 to 50 fathoms east of the Mississippi River, are also present west of the Mississippi and to determine the extent and concentration of such stocks. Work also will be continued on related problems concerning the fishing of grooved shrimp in deeper waters.

A preliminary report from the vessel indicated that during the early part of September hurricanes in the general area of operations caused interruptions to the fishing effort, but also resulted in interesting observations regarding the migration of shrimp under storm conditions. It was found that populations of large brown shrimp, Peneus aztecus, found in 38 to 50 fathoms south of the coast of Mississippi

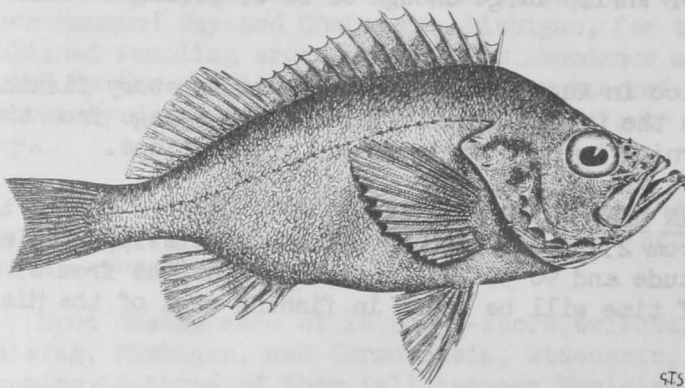
in late August, moved into water 7 to 10 fathoms shallower following the hurricane that approached that Coast on August 30.

In order to verify the indications previously obtained by exploratory drags that stocks of shrimp in deeper water may be large, the Oregon fished continuously one night in 32-34 fathoms in a position centered at 28°56.5' N. latitude, and 89° 36.5' W. longitude. This fishing effort resulted in a catch of 2,700 pounds of 12- to 14-count heads-on shrimp.



Limit of Expansion for East Coast Rosefish Fishery Reached

Rosefish (Sebastes marinus), an East Coast spiny-rayed fish which is filleted and marketed as "ocean perch," now exceeds the once-dominant haddock in the amount landed. From a small beginning in the mid-30's, the catch has exceeded 327 million pounds for the past two years.



ROSEFISH (SEBASTES MARINUS)

from the original Gulf of Maine operation to include the more distant Nova Scotian grounds. As the reserve of older fish has been removed from the local grounds, the fleet has been forced farther afield until now the apparent limit of expansion has been reached.

Being a very slow-growing fish, the rosefish requires something like 10 years to attain sexual maturity. Because of this, the rate of replacement is slow, and sustained heavy catches, after the accumulated stock of older fish has been removed, seems unlikely. A decline in production of this valuable resource seems inevitable.

This species is one which is widely distributed over the northern Atlantic and is taken in large quantities by the European fishery as well as by our own, the Section of Marine Fisheries of the Service's Branch of Fishery Biology reports. The European fish average much larger in size than do those on the Atlantic Coast of America.

The catch has been maintained by expanding the fishing area for this species



North Atlantic Fishery Investigations

"ALBATROSS III" COMPLETES FISH POPULATION CENSUS ON SOUTHERN NEW ENGLAND BANKS (Cruise No. 38): Completion of a census of fish populations on the southern New England banks was the purpose of Cruise No. 38 (August 21-30) of the Albatross III, research vessel of the Service's North Atlantic Fishery Investigations.

During this cruise, 79 half-hour tows were made at 58 stations from Cape Ann to Block Island. A concentration of large rosefish (redfish) was found 35 to 50 miles east of the Highlands. The catch of large and scrod haddock was very poor. Baby haddock (young-of-the-year) were taken in large numbers southeast of Nantucket Lightship in 60-75 fathoms, south of No Mans Land in 35 fathoms, and south of Block Island in 35-45 fathoms.

The taking of these small fish may indicate a good year class. In 1948, baby haddock were taken as far west as Ambrose Lightship and at the present time this 1948 year class is very abundant, e.g., the recent large landings of scrod at the Boston Fish Pier.

Data on the size, numbers, and weight of all species of fish, bottom temperatures, and bottom samples were also obtained at each station.

SCROD HADDOCK TAGGED BY THE "ALBATROSS III" (Cruise No. 39): Over 1,800 scrod haddock were tagged aboard the Albatross III on the Northern Edge and Southeast Part of Georges Bank during Cruise No. 39 (September 6-13). Exceptionally good



TAGGING HADDOCK ABOARD THE ALBATROSS III, RESEARCH VESSEL OF THE SERVICE'S NORTH ATLANTIC FISHERY INVESTIGATIONS.

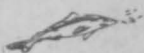
fishing produced lively fish which made possible this record tagging operation. The biologists are confident that these fish have survived the tagging operations and will be recaptured in the future in large enough numbers to determine much about their migration routes.

Fishermen and fish handlers are urged to be on the lookout for these tagged haddock which bear red tags, 1/2 inch in diameter, on their left-hand gill covers. The Service will pay \$1.00 for the return of each tag and would appreciate information as to where and when each fish was caught.

One of the difficulties encountered in getting these haddock back to the bottom alive was numerous sharks that appeared after each tow and ate the tagged fish as they were released. Of three sharks taken on a hand line, one was found to have 40 scrod haddock in its stomach. Following this discovery, various methods were used to discourage the sharks, and in one 30-hour tagging period, 68 sharks were shot, of which 58 are believed to have been killed.

As usual en route to the haddock grounds, surface lines were trolled for pelagic fish and on this cruise a large concentration of bluefin tuna were encountered. About 58 fish were hooked while steaming along the Southwest Part of Georges and 25 that averaged approximately 11 pounds apiece were landed. This is the first record of concentrations of tuna in this area to the knowledge of the personnel of the vessel.

The Albatross III headed for port when hurricane warnings were received, but was able to get no closer than 60 miles off Race Point. The vessel successfully rode out the hurricane with gale and hurricane winds up to over 100 m.p.h. on September 11 and 12, and then continued on to Woods Hole.



North Pacific Exploratory Fishery Program

ALBACORE TUNA EXPLORATIONS CONTINUED DURING SEPTEMBER BY "JOHN N. COBB:" Albacore tuna explorations were continued during September by the John N. Cobb, one of the Service's exploratory fishing vessels. The vessel operated during the month from Cape St. Elias in the Gulf of Alaska to Cape Blanco in southern Oregon.

Only scattered tuna were caught in Alaskan waters. These were found 50 to 70 miles offshore in the Forester Island to Cape Bartolome area, and were taken in a surface-water temperature of 55° F. The amount of warm water in the Alaskan area was found to be very limited and decidedly affected by meteorological conditions. Following storms in the area of operations, surface temperatures were found to be several degrees lower.

During most of the month, albacore were still being taken, often in good quantities, by the trollers fishing off the Queen Charlotte Islands in northern British Columbia, but these fish did not penetrate in any quantity the barrier of colder water to the northward in the Alaskan area.

In working to the southward as far as Cape Blanco, favorable water temperatures as high as 62° F. were the rule, but latest reports stated that tuna seemed generally absent from the area. Indications of feed or birds were also extremely scarce. On the southward phase of the operations, the vessel did not find tuna in any quantity south of Cape St. James in the Queen Charlottes.

Several days were spent fishing long-line gear on the new seamount^{1/} located 280 miles west of Willapa Bay on the Washington Coast. The location of the seamount is 46°44' N. latitude, 130°47' W. longitude. Good catches of red rockfish (Sebastes ruberrimus) were again made at 70 fathoms. No concentration of halibut was found, although three good-sized prime halibut were taken. Gear set at 100-110 fathoms came up clear, indicating fairly good bottom. Possibilities for trawling the grounds remain very questionable.

^{1/}SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, P. 18.



Pacific Oceanic Fishery Investigations

"HENRY O'MALLEY" SCOUTS FOR BAIT AND FISHES FOR TUNA (Cruise No. IV): The Henry O'Malley on its Cruise No. IV (July 1-August 30) scouted for bait in the waters of French Frigate Shoals and Midway Island; worked Canton Island lagoon for bait; made a preliminary bait reconnaissance at Hull Island; and conducted tuna fishing around Canton, Birnie, and Enderbury islands (in the Phoenix Group), and near Kingman Reef (Line Islands) on the return trip. Operational difficulties forced the Henry O'Malley, a research vessel of the Service's Pacific Oceanic Fishery Investigations, to Honolulu two weeks ahead of schedule.

The islands at French Frigate Shoals were scouted for bait on July 4 and 5 with no success. Large numbers of larval fish were seen which were identified as immature piha (round herring).

Baiting operations were conducted at Midway Island over a period of five days, approximately 422 buckets of bait fish were caught. They consisted of piha (Spratelloides delicatulus), iao (Pranesus insularum), aholehole (Kuhlia sandvichensis), weke or goatfish (Pseudopeneus pleurostigma), and mullet (Mugil sp.). This bait was caught during the day with 40- and 80- fathom seines in both shallow and deep water.

All the piha died or were lost through the screens (some fish were very small) en route to Canton Island. Other species lived well in the bait tanks and suffered only a small mortality.

At Canton Island baiting activities were conducted in Canton lagoon for a period of one week, during which time a total of approximately 125 buckets of bait were caught in shallow water with a 40-fathom seine. This bait consisted of mullet, weke or goatfish (Mulloidichthys auriflamma), iao (Atherina ovalaua), and a snapper (Lutianus vaiigiensis). Bait was rather scarce here, and the distance for transferring it to the vessel was from 1-2½ miles in a coral-studded lagoon. Baiting activities could be conducted with a force 4 easterly wind blowing but anything stronger than this curtailed all operations.

A preliminary bait reconnaissance was made of the lagoon at Hull Island. Only small scattered schools of mullet were observed.

Bait Fishing: In the Phoenix Islands, the weather was generally unfavorable for fishing activities, with usually an easterly wind of greater than Beaufort force 4 prevailing, and swells from 10-15 feet high outside the lee of the islands.

Near Canton Island, a total of 31 small, scattered, fast-moving schools of

skipjack and yellowfin, located by feeding birds, were approached and chummed, but only nine skipjack, of approximately 25 pounds each, were caught with pole and line in this area, due to the inability of drawing fish into racks by chumming. Five small schools of tuna were observed at Birnie Island and six small schools were seen at Enderbury Island. These were subsurface schools brought up by trolling jigs. During the one day at Birnie Island, approximately 2,100 pounds of two-pole yellowfin tuna were caught from one school, and on the following day at Enderbury Island, a catch was made of approximately 1,600 pounds of one-pole yellowfin tuna from one school. The weather during these two days of fishing was good. There were no indications of any large amount of tuna around any of these islands, and of the schools worked it was found difficult or impossible, in most cases, to chum the fish in close to the stern of the vessel. Also, large number of sharks in the area tended to disperse the schools when chummed.

The vessel left Canton Island for Honolulu via Palmyra and Kingman Reef on August 20, and only one morning was spent scouting for tuna at each place. Several small schools of both yellowfin and skipjack were observed around Kingman Reef, and one of these schools yielded approximately 260 pounds of one-pole yellowfin tuna and 350 pounds of rainbow runners, before all of the remaining bait was expended. Numerous sharks came close to the stern of the vessel causing the tuna to disperse and submerge.

Other Activities: Surface trolling was conducted during each day of travel from sunrise until sunset; fish were observed and caught mainly near the island areas, but some were seen up 400 miles offshore.

A good series of morphometric measurements of yellowfin tuna was collected in the Phoenix Group for comparison with other areas as part of the study of racial differentiation of this species. Stomach contents and ovaries of a considerable number were also preserved for use in food-habits and spawning studies.

Series of subsurface temperature observations were taken across the equatorial counter-equatorial current system both en route to and returning from the Phoenix Group. These will enable the oceanographers to determine the positions of the current boundaries at this season as part of the study of the variation of this major current system, and its relationship to productivity of the sea.

"HUGH M. SMITH" STUDIES ABUNDANCE OF TUNA SPAWN AND NEW DEVICE (Cruise No. VI): The primary mission of the early part of Cruise VI (August 18-September 5) of the Hugh M. Smith was to sample the waters in the vicinity of the Hawaiian Islands for tuna larvae and eggs in order to determine the areas and depths of greatest abundance of tuna spawn. The vessel, one of three research vessels operated by the Service's Pacific Oceanic Fishery Investigations, in addition took measurements of the forces and angles involved in towing a system of three plankton nets on a 1/4 inch cable to furnish data for computing levels at which the nets were fished.

The latter portion of the vessel's cruise was for the purpose of determining the operational characteristics of bronze high-speed depressors for use with subsurface collecting equipment, and testing their practicability for high-speed deep trolling for tuna. The device used is shaped to exert a downward pull when towed through the water, acting like a kite in reverse. Although it weighs only 30 pounds in air and less in water, it exerted a 400-pound downward pull at a speed of $8\frac{1}{2}$ knots. The depressors proved stable and capable of being towed at depths up to 25 fathoms and at a speed of 8 to 9 knots. From September 1 to September 5 the vessel did some deep trolling with a single lure attached to a depressor at speeds of

between $5\frac{1}{2}$ and 7 knots and a depth of 100 feet in the vicinity of Waianae, Oahu, and Penguin Bank, Molokai. No fish were taken by this means.

A continuous watch was kept for schools and signs of tuna while running during the day. The greatest number of schools (skipjack) were seen in the waters lying to the north of the Island of Kauai. Night-light fishing with a 200-watt submarine incandescent light and dip nets was conducted when sea and other conditions permitted for the purpose of collecting juvenile tunas and tuna-food organisms.



Service to Make Massachusetts Seafoods Film

The colorful commercial fishery fleets of Massachusetts will figure in a new educational motion picture which the Fish and Wildlife Service is planning to produce next summer, according to an announcement made early in September.

The film, to be financed by the State of Massachusetts and the Massachusetts seafood industry, will be produced and distributed under the direction of the Service's Branch of Commercial Fisheries. It will deal with major phases of commercial fishing in Massachusetts. Tentatively titled "Seafoods from Massachusetts," the 16-mm. sound and color film is planned to run about 25 minutes.

The Gloucester fishing fleet landing ocean perch, the haddock and whiting operations of the trawler fleet from Boston Fish Pier, the scallop draggers of New Bedford, the Provincetown draggers, and the lobstermen and shellfish fishermen along the Massachusetts coast offer many opportunities of portraying the State's fisheries.

To plan the film's production, a motion picture advisory group, with members representing the fishing industry of New Bedford, Boston, and Gloucester, and the Service, has been established by the Massachusetts Fisheries Committee appointed by Governor Dever.

The Fish and Wildlife Service will supervise the filming of the picture, and distribute prints of the movie through its distribution centers and through private film libraries.



"Shipbuilders of Essex" Awarded First Prize at Venice Film Exhibition

Among the U. S. Government films awarded first prizes at the Eleventh International Exhibition of Cinematographic Art at Venice, Italy, August 8 to September 10, 1950, was Shipbuilders of Essex, in the technical films class (one of several classes), according to a State Department press release. This film shows skilled craftsmen of Essex, Massachusetts, constructing a wooden fishing trawler, and was produced for the Department of State's Information Service.

Among the 20 United States films selected for showing at this Exhibition was also the Fish and Wildlife Service film Food for Thought.



Social Security Act Amendments of 1950 Affect Fishing Industries

The "Social Security Act Amendments of 1950" (Public Law 734—81st Congress), approved by the President on August 28 this year, will affect the fishery industries. Some relatively minor administrative features are already operative, but most of the more important ones affecting the fishery industries will go into effect January 1, 1951.

The law brings self-employed persons in the fishery industries under the Federal Old-Age and Survivors Insurance System. A tax of $2\frac{1}{4}$ percent will be imposed on self-employment income for the first three years. Self-employment income is defined by the law as "net earnings from self-employment derived by an individual (other than a nonresident alien individual) during any taxable year beginning after December 31, 1950; except that such term shall not include:

"1. That part of the net earnings from self-employment which is in excess of:

- (A) \$3,600, minus
- (B) the amount of the wages paid to such individual during the taxable year; or

"2. The net earnings from self-employment, if such net earnings for the taxable year are less than \$400."

It is estimated by the Fish and Wildlife Service's Branch of Commercial Fisheries that about 36,000 self-employed fishermen will be covered by the law. These individuals will contribute to the Social Security System about \$2,000,000 during the first year.

In addition to self-employed fishermen, proprietors of fisheries processing, wholesaling, retailing, and allied businesses operated as individual concerns or partnerships will be subject to this tax.

According to information available at present, the collection of the social security tax on self-employment income will be administered and collected in conjunction with the Internal Revenue Bureau's income tax collection system.

The maximum amount of wages of employees on which the tax for Old-Age and Survivors Insurance is calculated is raised by this new law from \$3,000 to \$3,600 per annum. The effect of this will be to raise present contributions both by the employer and employee by 20 percent for all employees earning \$3,600 or more per year, but these increased contributions will provide a higher base on which annuity payments will be computed and paid when benefits become due.

Fishermen employed on vessels under 10 net tons (except vessels in the halibut or salmon fisheries) have been excluded from the Old-Age and Survivors Insurance System and the tax under the Social Security Act and continue to be so exempt under the new law. However, self-employed fishermen owning these vessels are now covered, and these individuals are required to pay the tax on self-employment income.



Wholesale and Retail Prices

WHOLESALE PRICES, AUGUST 1950: From July to August this year wholesale prices of nearly all fishery products increased substantially. The edible fish and shellfish (fresh, frozen, and canned) wholesale index for August was 105.6 percent of the 1947 average--8.3 percent higher than the previous month and 6.7 percent above August 1949 (see table 1), according to the Bureau of Labor Statistics of the Department of Labor. Sharp advances in all food prices, which started in July, continued during August, and edible fishery products followed the same trend.

Table 1 - Wholesale Average Prices and Indexes of Fish and Shellfish, August 1950 with Comparative Data

GROUP, SUBGROUP, AND ITEM SPECIFICATION	POINT OF PRICING	UNIT	AVERAGE PRICES (\$)			INDEXES (1947 = 100)		
			Aug. 1950	July 1950	Aug. 1949	Aug. 1950	July 1950	Aug. 1949
ALL FISH AND SHELLFISH (Fresh, Frozen, and Canned)								
Fresh and Frozen Fishery Products:						105.6	97.5	99.01
Drawn, Dressed, or Whole Finfish:						113.7	109.1	98.81
Haddock, large, offshore, drawn, fresh	Boston	lb.	.11	.11	.08	112.0	110.1	82.6
Halibut, Western, 20/80 lbs., dressed, fresh or frozen	New York City	"	.38	.37	.32	110.0	107.6	94.5
Salmon, king, lge. & med., dressed, fresh or frozen	" " "	"	.49	.45	.48	119.4	111.3	118.5
Lake trout, domestic, mostly No. 1, drawn (dressed), fresh	Chicago	"	.47	.45	.50	103.5	98.4	109.8
Whitefish, mostly Lake Superior, drawn (dressed), fresh	"	"	.39	.33	.43	112.0	95.4	125.4
Whitefish, mostly Lake Erie pound net, round, fresh	New York City	"	.49	.50	.49	110.8	111.9	110.1
Yellow pike, mostly Michigan (Lakes Michigan & Huron), round, fresh	" " "	"	.56	.47	.49	130.2	110.3	114.3
Processed, Fresh (Fish and Shellfish):						94.2	91.0	87.0
Fillets, haddock, small, skins on, 20-lb. tins								
	Boston	lb.	.25	.27	.25	90.9	97.6	88.9
Shrimp, lge. (26-30 count), headless, fresh or frozen								
	New York City	"	.64	.62	.58	92.9	89.2	82.9
Oysters, shucked, standards								
	Norfolk area	gal.	3.95	3.75	3.80	97.2	92.3	93.5
Processed, Frozen (Fish and Shellfish):						102.9	100.8	93.9
Fillets: Flounder (yellowtail), skinless, 10-lb. boxes								
	Boston	lb.	.35	.34	.30	111.4	109.7	96.8
Haddock, small, 10-lb. cello-pack								
	"	"	.26	.25	.20	115.7	113.3	90.0
Rosefish, 10-lb. cello-pack								
	Gloucester	"	.22	.19	.18	112.2	95.0	92.0
Shrimp, lge. (26-30 count), 5- to 10-lb. boxes								
	Chicago	"	.64	.67	.66	92.0	97.2	95.5
Canned Fishery Products:						106.3	91.6	106.7
Salmon, pink, No. 1 tall (16 oz.), 48 cans per case								
	Seattle	case	20.88	16.25	19.21	136.1	106.0	125.2
Tuna, light meat, solid pack, No. 2 tuna (7 oz.), 48 cans per case								
	Los Angeles	"	14.94	14.45	15.65	97.2	94.0	101.8
Sardines (pilchards), California, tomato pack, No. 1 oval (15 oz.), 48 cans per case								
	" "	"	6.13	5.80	7.30	68.5	64.9	81.6
Sardines, Maine, keyless oil, No. 1 drawn (3 1/2 oz.), 100 cans per case								
	New York City	"	6.13	6.00	7.85	60.1	58.8	77.0

1/Revised

Because of the Korean conflict and the resulting increased demand for canned fishery products, and the small salmon pack reported through the end of August this year, canned fish markets were even stronger during August than in July. The biggest increases during August occurred in the canned fishery products subgroup. The August index for canned fish was 106.3 percent of the 1947 average--16.0 percent higher than July, but 0.4 percent below August 1949. Prices for all canned fish in this subgroup rose, with canned pink salmon selling in August at prices that were 28.4 percent higher than in July and 8.7 percent higher than in August a year ago. In spite of the fact that the Maine sardine pack at the end of August was more than 50 percent higher than the previous year at the same time, wholesale prices of canned Maine sardines also showed an increase during August.

Prices of items under the drawn, dressed, or whole finfish subgroup continued to rise (August prices were 4.2 percent higher than for the previous month). Compared to the previous month, yellow pike prices at New York City during August were considerably higher, while prices of all other items in this subgroup increased moderately in most cases, except for whitefish prices at New York City which declined slightly. In August, prices for this subgroup were still 15.1 percent higher than in August 1949. The Canadian railroad strike in August curtailed the supply of fresh-water fish available in United States markets and no doubt accounted for the increased prices in almost all of the fresh-water items in this subgroup.

Fresh processed fish and shellfish prices were 3.5 percent higher during August as compared with July and 8.3 percent higher than in August 1949. Among the individual items in this subgroup, only haddock fillets sold at lower prices during August.

August prices for the items in the frozen processed fish and shellfish subgroup were 2.1 percent higher than in July and 9.6 percent higher than in August a year earlier. Except for shrimp, all of the products included in this subgroup wholesaled at higher prices during August. More liberal supplies of frozen shrimp resulted in a drop in the wholesale prices of 5.6 percent from July to August, and prices during August this year were 3.7 percent below the corresponding month the previous year.

RETAIL PRICES, AUGUST 1950: Retail food prices declined 0.5 percent on the average between July 15 and August 15, 1950--the first drop in the food index since February 1950. The retail food price index on August 15 was 209.0 percent of the 1935-39 average, 3.2 percent higher than a year earlier, and 2.2 percent above mid-June 1950 (table 2), just before the Korean conflict started.

Fish and shellfish retail prices, however, continued to increase, following the general trend established at wholesale for these commodities, but the increase in retail prices was not as great. For all fish and shellfish (fresh, frozen, and canned), the August 15 retail index was 302.5 percent of the 1935-39 average--2.0 percent higher than on July 15, but still 2.1 percent lower than on August 15, 1949.

Table 2 - Retail Price Indexes for Foods and Fishery Products, August 15, 1950, with Comparative Data

Item	Base	Indexes		
		Aug. 15, 1950	July 15, 1950	Aug. 15, 1949
All foods	1935-39 = 100	209.0	210.0	202.6
All fish and shellfish (fresh, frozen, & canned) ..	do	302.5	296.6	308.9
Fresh and frozen fish	1938-39 = 100	279.4	275.8	254.4
Canned salmon: pink	do	337.5	325.5	434.1

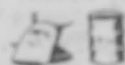
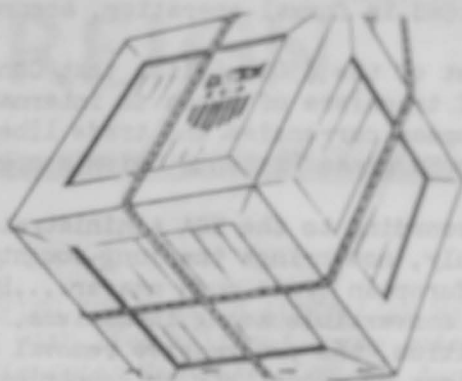
Prices of fresh and frozen fishery products at retail rose 1.3 percent from mid-July to mid-August this year, and on August 15 were 9.8 percent higher than on the same date a year earlier.

The biggest increase in retail prices of fishery products was for canned pink salmon. Retail prices for this item rose 3.7 percent from mid-July to mid-August this year, but on August 15 were still 22.3 percent below mid-August 1949. However, the small salmon pack this year (the smallest since 1921) will no doubt result in more substantial increases in the retail prices of all canned salmon. In fact, the increased demand for canned fishery products in general will probably result in price increases for almost all of these commodities.

ECA Procurement Authorizations for Fishery Products

No procurement and reimbursement authorizations for fishery products (edible and inedible) were announced by the Economic Cooperation Administration during September 1950. In addition, no cancellations or decreases affecting previous authorizations for fishery products were reported.

Total ECA procurement authorizations for fishery products from April 1, 1948, through September 30, 1950, amounted to \$28,016,000 (\$16,267,000 for edible fishery products, \$10,209,000 for fish and whale oils, and \$1,540,000 for fishmeal).



European Recovery Program Notes

AMERICAN RESEARCH AND TECHNOLOGY PLACED AT SERVICE OF WESTERN EUROPE: Establishment of an industrial "Mail Answer Service" to place American research and technology at the service of Western European manufacturers was announced by the Economic Cooperation Administration on September 30. The aim of the service is to answer technical problems—already solved by American industry—which are constantly arising to plague European plant managers and engineers. It is one part of an over-all program, the objective of which is to enable Western Europe to increase output at a lower unit cost, permitting lower prices, as well as equitable wages and profits.



The "Mail Answer Service" will be operated by the Office of Technical Services of the U. S. Department of Commerce, whose facilities

will be opened to plant managers, union technicians, and others having production problems in the participating countries. Therefore, the Office of Technical Services will be able to give the same assistance to European industry that it has given, and is giving, American industry by supplying solutions to many of the problems which hinder production.

The new service will have some benefits for the U. S. businessmen too, according to the Director of ECA's Technical Assistance Division. Plans are now under way to make European production information available to American industry. The Organization for European Economic Cooperation, which requested approval of the service under ECA's technical assistance program, has recommended to the participating countries that they open an inter-European network of information centers which will provide services in Europe similar to those of the Office of Technical Services.

The Office of Technical Services is prepared to answer questions in 35 major categories of industry, including food preserving.

EUROPEAN PAYMENTS UNION IN OPERATION:^{1/} With the Paris signing of the agreement by the 18 Marshall Plan countries on September 19, the European Payments Union was placed in formal operation, according to the Economic Cooperation Administration.

Out of the \$500 million that Congress has appropriated to ECA for use in the form of transfers of funds to international institutions to promote transferability of European currencies and trade liberalization, ECA has made available \$350 million for the European Payments Union's operations.

According to the ECA Administrator, "the agreement, which is retroactive to last July, now brings the long-sought goal of currency convertibility and increased intra-European trade much nearer....By making the various European currencies in effect convertible among themselves, the Union will promote freer trade in Europe. In addition, the progressive removal of trade barriers, such as, quantitative restrictions on goods between countries in the Union, will increase the efficiency of manufacturing and trading and will benefit the consumer."

^{1/}SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, P. 14.



THE EFFECT OF A SEAFOOD DIET ON THE RED CELL COUNT, HEMOGLOBIN VALUE, AND HEMATOCRIT OF HUMAN BLOOD

Seafood products are of major importance for their nutritional value. It is reasonable to suppose that marine animals living in a medium containing all the mineral elements needed by the human body would be a highly nutritious class of food. Since the minerals may be supplied to us in a usable form, by marine animals, we can get iron and copper to prevent nutritional anemia, iodine to prevent goiter, as well as phosphorous, copper and magnesium which are needed to regulate other body functions.

Oysters, shrimp, and crab meat, in addition to being rich sources of iron, copper and iodine contain one-half as much calcium, three times as much magnesium, and much more phosphorus than an equal quantity of milk. The oyster is comparable to liver and to milk, in its rich sources of nutrients. One pound of oysters provides about 12 percent of the energy needed by a man for one day; also, 50 percent of the protein, 26 percent of the calcium, 40 percent of the phosphorus, over 184 percent of the iron, and about 110 percent of the iodine, as well as vitamin A, thiamine, riboflavin and ascorbic acid.

Fish, as well as shellfish, are good sources of protein, phosphorus, iron, and iodine. The protein content of fish is comparable to beef and liver, and is higher than that of milk.

--Fishery Leaflet 334