



TRENDS AND DEVELOPMENTS

Additions to the Fleet of U. S. Fishing Vessels

A total of 85 vessels of 5 net tons and over received their first documents as fishing craft during April 1949—37 less than in April 1948, according to the Bureau of Customs of the Treasury Department. Alaska led with 24 vessels, followed by Washington with 15, and Texas with 8. During the first four months of 1949, a total of 260 vessels were documented, compared with 293 during the same period in 1948.

Vessels Obtaining Their First Documents as Fishing Craft, April 1949

Section	April		Four mos. ending with Apr.		Total 1948
	1949	1948	1949	1948	
	Number	Number	Number	Number	Number
New England	1	7	3	10	52
Middle Atlantic	7	8	21	13	40
Chesapeake Bay	2	3	17	11	59
South Atlantic and Gulf	23	47	108	123	541
Pacific Coast	22	34	52	91	347
Great Lakes	6	11	21	14	51
Alaska	24	12	36	28	81
Hawaii	-	-	2	3	12
Total	85	122	260	293	1,183

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



ECA Procurement Authorizations for Fishery Products

During June 1949, the Economic Cooperation Administration announced authorizations totaling \$300,000 for the purchase of fishery products for ECA countries, compared with \$12,704,000 during May. The amount authorized during June was the smallest since the beginning of the ECA program in April 1948.

During June, ECA cancelled an authorization for \$450,000 for the purchase of canned fish from the U. S. and Possessions for shipment to Ireland; and an authorization for \$100,000 for the purchase of canned fish from the U. S. and Possessions for shipment to Belgium-Luxembourg.

An authorization of \$97,000 for freight was added to a \$350,000 authorization for the purchase of canned fish from the U. S. and Possessions for shipment to Italy.

At the beginning of the ECA program in April 1948, it was estimated that the value of shipments of edible fishery products from the United States to the 16 participating ECA countries would total \$51,800,000 for the 15-month period (April 1, 1948-June 30, 1949). A total of \$8,646,800 was authorized through June 30, 1949,

for purchases of fishery products in the U. S. and Possessions. Of this amount, \$6,710,800 was for the purchase of canned fish, and the balance was for fish and whale oils and Vitamin A (for stock feed). Thus, the value of edible fishery products was only 13 percent of the estimated total.

ECA Procurement Authorizations for Fishery Products, June 1949

Product	Country of Origin	Procuring Agency ¹	Recipient Country	Amount Authorized
Fish, canned	U.S. & Possessions	Greece	Greece	\$ 300,000
Total ECA Procurement Authorizations for Fishery Products, April 1, 1948-June 30, 1949				
Fish, canned	U. S. & Possessions & Canada	United Kingdom, Ireland, Belgium-Luxembourg, Greece, & Italy	United Kingdom, Ireland, Belgium-Luxembourg, Greece, & Italy	13,957,800
Fish, salted	Newf. & Canada	Italy & Fr.W.Indies	Italy & Fr.W.Indies	5,179,000
Fish meal	Canada, Iceland, Norway, & Angola	Denmark, Austria, & U.S.Dept.Army	Denmark, Austria & Bizonia	3,957,361
Oil, herring	Iceland	U.S.Dept.Army	Bizone Germany	1,694,000
" , seal	Newfoundland	France	France	257,600
" , shark liver	Latin America except Argentina & Brazil	France	France	250,000
" , fish	U.S. & Possessions	U.S.Dept.Army & Bur.Fed.Supply	Bizone & Fr. Zone of Germany & Korea	487,000
" , technical fish	U.S.	U.S.Dept.Army	Bizone Germany	100,000
" , whale (includes sperm oil)	Netherlands, Belgium, Norway & U.S.	Austria, France, & U.S.Dept.Army	Austria, Bizone & Fr.Zone of Germany	7,160,150
Vit.A (Commercial grade, for stock feed)	U.S.	Netherlands	Netherlands	567,000
Grand Total Authorized				33,609,911

¹/Where the recipient country is shown as the procuring agency, the government of the participating country or its authorized agents or importers do the purchasing.

On June 14, the ECA announced that it was issuing "commodity determinations" to Marshall Plan countries to indicate the purchase program the agency intends to approve when additional funds are appropriated by Congress. The determinations tell the countries the amounts expected to be authorized for the purchase of certain commodities when funds become available, and permits the foreign governments to continue planning and procurement on a forward basis, but does not obligate ECA to finance purchases which are made. It also lets U. S. exporters know what they can get ready to offer.

Problems of markets, trade, prices and distribution are taking the place of those of production, allocation and rationing in European countries, according to a report on the recovery program issued by ECA on June 30.



Experimental Fishing in Alaskan Waters by the Service

The first experimental fishing of the present season in Alaska waters by the U. S. Fish and Wildlife Service started on June 24. The Service concluded a contract with the owners of the vessel Deep Sea to conduct experimental fishing in Bering Sea. A Service staff of four (2 fishery engineers, 1 technologist, and 1 biologist) accompanied the vessel and directed its exploratory activities. This work was carried out to continue the explorations begun last year by the vessel Washington.

The purpose of the operation is to locate new fishing areas which are sufficiently populated to sustain a commercial fishing operation. A major part of the work will be directed toward locating king crab and devising means of making profitable catches.

Fishing operations started in the St. Matthews Island area on June 24, thence northward to St. Lawrence Island, and continued to Nome, Norton Sound, and southward on the Alaska mainland side of Bering Sea. The vessel was operated in the regular commercial manner by its usual crew. The Service personnel obtained a great amount of valuable information concerning migrations and dispersal of fish, trawling conditions, and ocean temperatures.

Cod and flatfish of fine quality and size were located. While indications were encouraging, further work will be necessary to ascertain the extent of this resource.

King crab of the platypus species were located in the northern area but the quantity taken was small and the size considerably smaller than the king crab found in the southern area of the Bering Sea.



Federal Purchases of Fishery Products

DEPARTMENT OF THE ARMY, April 1949: During April 1949, the Army Quartermaster Corps purchased 1,386,475 pounds (valued at \$487,851) of fresh and frozen fishery products for the U. S. Army, Navy, Marine Corps, and Air Force for military feeding compared with 1,588,166 pounds (valued, \$510,200) for March 1949, and 1,327,665 pounds (valued, \$457,540) for April 1948. Purchases for the first four months in 1949 totaled 5,340,704 pounds (valued, \$1,820,823), compared with 5,253,060 pounds (valued, \$1,984,434) for the corresponding period the previous year.



Fisheries of Certain Pacific Islands

GUAM: Every encouragement is given to the Guamanians to develop their fishing resources, according to the 1949 Annual Report for Guam to the Food and Agriculture Organization. To date, Guamanians have not realized the commercial potentialities of the local waters. Their fishing is confined to subsistence requirements and is conducted almost entirely within the coral reefs which fringe the island.

Since the war a renewed interest has been shown in the fishing industry and licenses (20 issued during 1949) to operate fishweirs have shown a marked increase since the secession of military activities connected with immediate postwar rehabilitation and reclamation. Reconditioning of fishing boats damaged by the war has begun and it is felt that very shortly the fishing industry will be able to satisfy the demands of the local market.

During the first three months of 1948, 49,033 pounds of fish, 2,500 pounds of shellfish, and 2,700 pounds of turtles were produced.

Scientific experimentation has been carried on to give local aid and assistance to those Guamanians who are endeavoring to reestablish the fishing industry.

The U.S.S. Oregon, an exploratory fishing craft, arrived in Guam in 1948 to survey the entire reef and adjacent ocean area and to report live bait conditions, fish feeding grounds and other information, including suggestions as to improved methods of lagoon and deep-sea fishing.

U. S. TRUST TERRITORY OF THE PACIFIC ISLANDS: During the Japanese regime, an important commercial fishing industry was developed in the Territory but it was conducted entirely by non-indigenous personnel, according to the 1949 Annual Report for the Trust Territory of the Pacific Islands of FAO.

The production techniques are not known to the natives who have been content to use hand lines, spears and nets inside lagoons or close ashore. Fishing of this kind has yielded no more than a fraction of the local subsistence needs. With the encouragement and assistance of the Administration, commercial fishing has been organized at several points which has not only augmented the local food supply but returned in 1948 a small exportable surplus of dried fish (4.8 metric tons) and trepang. Recently the administration has financed the purchase of sampans, ranging in size from 3-1/2 to 19 tons, completely equipped for fishing. It is expected that this type of equipment will stimulate further interest.

Currently local catches are sold directly to consumers when the boat reaches the beach or are prepared for sun drying. Neither freezers nor canneries are now available but such installations are in prospect experimentally.

Reliable data are not available on either production or consumption. However, statistics on food imports in 1948 for the Territory, less the Northern Marianas District (i.e. for all except 12 percent of the indigenous population), include 29 metric tons of canned fish.

Insofar as foreign trade is concerned, it is planned to develop, in addition to other commodities, an exportable surplus of dried, canned, and frozen fishery products.

AMERICAN SAMOA: Local fishing consists of subsistence fishing on reef shelves with occasional deep water fishing for bonito and shark. A fish cannery has recently been built in this area and is expected to begin operation approximately June 1, 1949, according to the 1949 Annual Report for American Samoa to FAO. No information is available on production methods. It is expected that the fish (tuna and bonito) will be brought in by fishing boats operating out of Fiji. New jobs have been created in the fitting out of a fish cannery and additional jobs will be provided upon the opening of this operation.

No data are available on fish caught by individuals for home consumption. However, statistics on canned fish indicate a pack of 1,361 metric tons, imports of 75 tons, and the consumption of 90 tons during 1948. Prospective exports of 1,346 metric tons are visualized.



Fishery Biology Notes

ALBATROSS III - CRUISE NO. 23: The North Atlantic Fishery Investigations, of the Branch of Fishery Biology, Woods Hole, Massachusetts, reports that from June 23 to June 29 (Cruise No. 23) the research vessel, Albatross III, occupied stations on Georges and Browns Banks in 30 to 50 fathoms of water where small haddock are now abundant.

Studies were continued to determine how many of the haddock which escape through the savings cod end actually survive. The savings cod end used has 4 5/8-inch stretched mesh. A bag of fine mesh was placed outside of this to capture the haddock which passed through the mesh, and these were tagged as well as those which did not pass through. Survival of the two groups will be compared by recording the number of tags returned by fishermen and fish processors.

In addition, haddock were tagged on these Banks for the purpose of determining migrations.

SEA LAMPREY IN INDIANA STREAMS: The Service's Section of Inland Fisheries reports that the sea lamprey is continuing its spread in the Great Lakes. A considerable number has now invaded Indiana streams. A report was received last year of the invasion of a spawning individual in one of these streams; specimens were not taken until this spring. The first one was taken April 8 in Trail Creek near Michigan City. In May several specimens were taken from the Little Calumet River, which is connected with the Mississippi River drainage. The lampreys entered the Calumet River via Burns Ditch connecting this river with Lake Michigan. Reports indicate that a sizeable run entered the Little Calumet in late May.

SOUTH PACIFIC FISHERY INVESTIGATIONS OCCUPIES ADDITIONAL STATIONS: The Service's South Pacific Fishery Investigations, Stanford, California, reports that the research vessel Black Douglas left San Francisco on May 31 and in the next two weeks occupied 40 stations in the area between Cape Mendocino to the Columbia River and extending 400 miles offshore. The work included net hauls for zooplankton (including sardine eggs and larvae), phytoplankton collections, and observations on the temperature, salinity, etc., of the sea water.



Halibut Season on West Coast Closed

The closing of the halibut season in Areas 1A 3, and 4 at 12 midnight, July 12, 1949, was announced on June 17, 1949, by the International Fisheries Commission. This will terminate all halibut fishing on the Pacific Coast of Canada and the United States, including Alaska, except for incidental halibut catches. Permits for the retention and landing of halibut caught incidentally to fishing for other species with set lines in any area will become invalid at 12 midnight, November 15, 1949, when the closed season for all halibut fishing starts.

This year's closing date was only one day later than the 1948 date. The 1949 halibut season was 73 days long, compared with 72 days in 1948 and 109 days in 1947.

Areas 1B and 2 were closed at midnight June 3, 1949 (see Commercial Fisheries Review, June 1949, page 25).



Pacific Oceanic Fishery Investigations Continues Tuna Research

The Section of Biology and Oceanography of the Pacific Oceanic Fishery Investigations, stationed at Honolulu, continued during May to gather data to de-

termine the efficiency of vessel and gear operation and the length-weight frequencies of tuna and marlin species landed by local sampans. The species composition of fish landed during the month has shown a slight change, as indicated by the increased numbers of albacore and yellowfin tunas entering the catches. However, big-eyed tuna and marlins form the bulk of the species landed by the long-line vessels.

Morphometric measurements on the long-line catches landed at the local Honolulu markets were continued and arrangements were made with the tuna packing firm in this area for measurements to be taken at the canning plant during cutting operations.

The skipjack fishing improved immensely during May. Fishing vessels are now able to deliver regular loads and the commercial cannery in Honolulu is in operation. Three tons comprised the largest one-day catch. The vessels caught bait, fished and discharged the catch within a 24-hour period. While there is an admixture of yellowfin and big-eyed tuna, the bulk of the catch is skipjack. The very small fish that were landed earlier in the year have disappeared; fish landed during the month weighed from 15 to 25 pounds. In early May, the local tuna industry was crippled by a severe bait shortage.

Two fishery biologists during the month made a 4-day trip aboard the U. S. Coast Guard vessel Iroquois to French Frigate Shoals (about 350 miles west of the main Hawaiian Islands). Their purpose was to determine whether the area could serve as a source of live bait for tuna clippers operating throughout the mid-Pacific area, and they reached a favorable conclusion. However, frequent and extended observations would have to be carried on at various intervals over the entire area in order to arrive at definite conclusions. If it could be shown that bait fishes occur in numbers sufficient to provide an adequate supply of bait for intensive live-bait fishing operations, a live-bait fishery could easily be established and maintained on one of the islands. This practice has met with favorable success in Japan and in certain areas in the Philippine Islands.



Trust Territory Research Program Includes Sponges and Poisonous Fish

Among six United States scientists en route to Pacific areas, to continue a research program designed to supply basic scientific data required in the administration of islands of the United States Trust Territory of the Pacific, is a professor of zoology from the University of Hawaii, who will conduct a sponge survey of several island areas, according to a June 22 news release from the National Military Establishment. His study is being made to assist in the possible development of this resource for the economic benefit of the inhabitants of the Trust Territory. He will survey certain islands of the Marshalls and Caroline Islands.

Also, a member of the American Museum of Natural History, whose research in the Palaus will supply data to assist in the study of poisonous fish, will study the classification, distribution, ecology, natural history and embryology of plectognath fish. Operations will be based on Koror.

The new research program, (Scientific Investigations in Micronesia), is administered by the Pacific Science Board of the National Research Council, and largely supported by the Office of Naval Research.

Virginia Menhaden Industry Uses Plane to Spot Fish

An attempt to locate schools of menhaden by plane started on the last Monday in May, the legal opening date for purse netting in Virginia waters, according to a June 15 report from the Service's Marketing Specialist at Weems, Va. The plane spots the fish and notifies ships by radiotelephone. The pilot, who usually flies about 5 hours a day, is paid only for actual flying time, with no bonus provisions for locating the fish. It is estimated that he is able to discern schools 25 feet beneath the surface. Five out of the six Virginia menhaden firms are participating.

There is a plane locating menhaden in the North Carolina area and others are reported to be in use north of Virginia. Results to date are said to be encouraging, although it is too soon to give an adequate appraisal of the experiment.



U.S. Pack of Canned Alewives

The 1948 pack of canned alewives amounted to 123,134 standard cases, valued at \$639,356 to the canner—a decline of 12 percent in volume and 18 percent in value compared with the previous year. Although the pack was the smallest since 1943, it was much greater than for any year prior to 1943.

Table 1 - Pack of Canned Alewives, 1948 (Quantity and Value to the Cannery)

State	Standard Cases	Value
Maryland	76,340	\$410,447
Virginia	46,794	228,909
Total	123,134	\$639,356

Note: "Standard cases" represent the various-sized cases converted to the equivalent of 48 cans of 15 ounces each. Practically the entire pack was canned in 15-ounce cans.

The entire 1948 pack of canned alewives was canned in 7 plants in Maryland and 12 plants in Virginia. In the previous year these fish were also packed in Massachusetts, North Carolina, and Florida.

Table 2 - Pack of Canned Alewives, 1939 - 1948 (Quantity and Value to the Cannery)

Year	Standard Cases	Value
1948	123,134	\$ 639,356
1947	139,816	779,150
1946	193,980	1,180,197
1945	131,062	753,769
1944	135,995	793,254
1943	112,472	619,213
1942	77,232	399,555
1941	42,156	153,269
1940	24,486	72,070
1939	22,882	74,804

The average price per case at the cannery's level rose from a low of \$2.94 in 1940 to \$5.83 in 1944, dropped slightly to \$5.75 in 1945, and then rose in 1946 to a high of \$6.08 per standard case. In 1947 it dropped to \$5.57 and in 1948 dropped even lower to \$5.19 per standard case. The shortage of protein foods accounted for the unusually heavy pack and the high price in 1946.

U.S. Pack of Canned Groundfish Flakes, 1948

The 1948 pack of canned groundfish flakes amounted to 35,014 standard cases, valued at \$548,113 to the packers. This was an increase of 89 percent in volume and 80 percent in value compared with 1947. Although the pack was larger than in the previous year, it was only about 20 percent as large as either the 1945 or 1946 production which amounted to over 150,000 cases. Groundfish flakes were canned in 4 plants in Maine and 4 in Massachusetts.

State	Standard Cases	Value
Maine	8,616	\$137,423
Massachusetts	26,398	410,690
Total	35,014	\$548,113

Note: "Standard cases" represent the various-sized cases converted to the equivalent of 48 14-oz. cans to the case.

The average price per case at the cannery level rose from a low of \$8.70 in 1939 to \$14.94 per standard case in 1943. In 1944, the price dropped to \$11.18 and rose again in 1945 to \$14.84. In 1946, another decline took place to \$13.88 and in 1947 reached a peak of \$16.37. However, the price dropped again in 1948 to \$15.65 a standard case. The 1948 value of the Maine production averaged \$15.95 a standard case compared with \$15.56 for the Massachusetts production.

Year	Standard Cases	Value
1948	35,014	\$ 548,113
1947	18,560	303,831
1946	151,886	2,107,446
1945	157,135	2,332,176
1944	92,950	1,318,167
1943	33,318	497,815
1942	83,729	1,011,382
1941	34,661	371,699
1940	32,477	345,938
1939	30,406	264,613



Pack of California Sardines, 1948

The 1948 pack of California sardines (pilchards) amounted to 2,654,149 standard cases, valued at \$21,892,893 to the cannery. Compared with the previous year, this

Style of Pack	Std. Cases	Value
Natural, without sauce or oil ¹ ..	1,216,919	\$ 8,153,851
In tomato sauce ..	1,296,750	12,256,841
In mustard sauce ..	93,300	844,127
Other ²	47,180	638,074
Total	2,654,149	21,892,893

¹Includes the pack canned in Oregon.
²Includes special packs of sardines (pilchards) in soybean oil; in olive oil and tomato sauce; fillets, natural, in soybean oil, in olive oil, and in tomato sauce.
Note: "Standard cases" represent the various-sized cases converted to 48 No. 1 tall cans (15 ounces net).

Size of Can and Case	Actual Cases	Value
1-pound cans:		
15 oz. net, tall (48 cans)	1,137,424	\$ 7,120,710
15 oz. net, oval (48 cans)	967,130	8,170,637
½-pound cans:		
8 oz. net, tall (48 cans)	61,150	315,618
8 oz. net, oblong (48 cans)	698,946	4,353,342
8 oz. net (96 cans)	81,214	886,505
5 ounces net (100 cans)	127,200	1,046,081
Total	3,073,064	21,892,893

was an increase of 61 percent in volume and 32 percent in value. While the 1948 pack was the most valuable in the history of the fishery, the production was only slightly over half as great as the record 1941 pack (5,007,154 cases, valued at \$18,091,873). Sardines (pilchards) were canned in 51 plants in California and 3 plants in Oregon.

The average standard case price at the canners' level was \$8.25 in 1948, \$1.76 per case lower than in 1947. The lowest average case price during the past ten years was \$3.05 in 1940. From \$4.08 in 1945, the average case price increased sharply in 1946 to \$6.68, and rose in 1947 to \$10.01 per standard case, the highest price ever paid for California sardines. During 1948 the natural pack averaged \$6.70 per standard case; tomato-sauce pack, \$9.45; mustard-sauce pack, \$9.05; and other special packs, \$13.52.

Table 3 - Pack of Calif. Sardines (Pilchards) 1939-48 (Quantity & Value to the Canners)

Year	Cases	Value
1948	2,554,149	\$21,892,893
1947	1,652,592	16,538,375
1946	2,977,170	19,895,649
1945	3,765,981	15,346,472
1944	3,650,919	15,225,919
1943	3,354,697	14,352,359
1942	3,744,624	15,509,964
1941	5,007,154	18,091,873
1940	2,945,882	8,975,257
1939	3,108,082	9,553,663



Pack of Maine Sardines, 1948

The pack of Maine sardines in 1948 amounted to 3,060,842 standard cases, valued at \$26,921,926 to the packers. Compared with the previous year, this was an increase of 8 percent in volume, but a decline of 3 percent in value. The 1948 pack was the second largest and the second most valuable in the history of the industry. The record pack of canned Maine sardines (3,131,276 cases, valued at \$12,475,991) was canned in 1941. The most valuable pack was in 1947 when 2,834,690 cases were canned, valued at \$27,677,704.

Table 2 - Pack of Maine Sardines by Size of Can & Case, 1948 (Quantity & Value to the Canners)

Size of Can & Case	Actual Cases	Value
3 1/4 oz. net (100 cans)	2,885,909	\$25,915,254
10 oz. net (48 cans)	86,308	721,718
Other sizes converted to 3 1/4 oz. net (100 cans)	47,163	284,914
Total	3,019,680	26,921,926

Table 1 - Pack of Maine Sardines, 1948 (Quantity & Value to the Canners)

Style of Pack	Std. Cases	Value
In soybean or other vegetable oil (regular pack) ..	2,733,367	\$23,898,248
In soybean or other vegetable oil (fillets)	21,302	199,020
In mustard sauce	231,572	2,444,298
In tomato sauce	18,045	104,015
In soybean oil, smoked or kippered .	51,985	236,445
Other/	4,571	39,900
Total	3,060,842	26,921,926

1/Includes special packs of sardines (sea herring) in olive oil, spiced oil, peanut oil and soybean oil.

Note: "Standard cases" represent the various-sized cases converted to 100 3/4-oz cans (3 1/4 ounces net) to the case.

Table 3 - Pack of Maine Sardines, 1939-48 (Quantity & Value to the Canners)

Year	Std. Cases	Value
1948	3,060,842	\$26,921,926
1947	2,834,690	27,677,704
1946	3,018,597	15,548,531
1945	2,513,751	11,520,387
1944	3,035,825	14,223,706
1943	2,353,273	10,686,471
1942	2,720,126	11,691,981
1941	3,131,276	12,475,991
1940	1,117,748	3,736,394
1939	2,210,466	7,075,096

Rising steadily from a low of \$3.20 per standard case in 1939 to a high of \$9.76 per standard case in 1947, the canners' average price in 1948 dropped to \$8.80 per standard case or \$0.96 per case below the previous year.

Sardines (sea herring) were canned in 44 plants in Maine, 3 in Massachusetts, 1 in New Hampshire, and 1 in Maryland.

U.S. Pack of Atlantic Coast Sea Herring, 1948

The 1948 production of Atlantic Coast sea herring, packed in cans with net contents of over 10 ounces each, amounted to 280,388 standard cases, valued at \$2,437,188 to the canner. Compared with the 1947 production, this was an increase of 247 percent in volume and 285 percent in value. Canning of large sea herring on the Atlantic Coast is a comparatively new development. In 1941, a pack of only 16,125 standard cases was produced, and since that year the production has ranged from 68,497 cases in 1943 to last year's record pack of 280,388 cases.

Table 1 - Pack of Atlantic Coast Sea Herring, 1948
(Quantity & Value to the Cannery)

Style of Pack	Std. Cases	Value
Natural or in soybean or other vegetable oil ¹	88,960	\$ 649,092
In mustard sauce	48,528	485,429
In tomato sauce	142,900	1,302,667
Total	280,388	2,437,188

¹/Includes a small quantity kippered, jellied or pickled.

Note: "Standard cases" represent the various-sized cases converted to 48 No. 1 tall cans, each can containing 15 oz., net weight, of fish.

Table 2 - Pack of Atlantic Coast Sea Herring, 1948,
By Size of Can & Case
(Quantity & Value to the Cannery)

Size of Can & Case	Actual Cases	Value
15 oz. net (48 cans)	275,645	\$2,392,557
Other sizes converted to 15 oz. net (48 cans).	4,743	44,631
Total	280,388	2,437,188

Table 3 - Pack of Atlantic Coast Sea Herring, 1941-48
(Quantity & Value to the Cannery)

Year	Cases	Value
1948	280,388	\$2,437,188
1947	80,848	632,970
1946	116,270	727,059
1945	95,394	556,814
1944	102,023	596,097
1943	68,497	418,099
1942	69,074	470,470
1941	15,117	114,967

Sea herring were canned in 13 plants in Maine, 4 in Massachusetts, 1 in New Hampshire, 3 in Maryland, and 1 in New Jersey.

The canners' average price per standard case dropped from \$7.61 in 1941 to a low of \$5.84 in 1944 and 1945, and then rose steadily to \$8.69 in 1948. Atlantic Coast sea herring packed in natural, soybean, or other vegetable oil averaged \$7.30 per standard case; in mustard sauce, \$10.00; and in tomato sauce, \$9.12.



U.S. Pack of Pacific Coast Sea Herring, 1948

Pacific Coast canners packed 46,060 standard cases of sea herring during 1948, valued at \$386,806 to the canners. This was an increase of nearly 40,000 cases compared with the previous year.

Table 1 - Pack of Pacific Coast Sea Herring, 1948
(Quantity & Value to the Cannery)

Style of Pack	Std. Cases	Value
Natural ¹	12,092	\$ 98,772
In tomato sauce	33,968	288,034
Total	46,060	386,806

¹/Includes a small pack in soybean oil.

The entire 1948 pack was produced in the San Francisco and Monterey districts of California, where canning of these fish was begun in 1947 as a result of the failure of the pilchard fishery. In 1945 a small pack of sea herring was canned in Alaska. About 30

years ago large packs of sea herring were canned in Alaska, but this production was discontinued in 1920.

Sea herring were canned in 13 plants in California.

The average price per standard case increased steadily from a low of \$6.80 in 1945 to a high of \$8.40 in 1948. The price in 1948 was \$1.40 per case higher than in 1947.

Table 2 - Pack of Pacific Coast Sea Herring, 1948, By Size of Can (Quantity & Value to the Cannery)

Can & Case Size	Actual Cases	Value
15 oz. net (48 cans) ...	30,699	\$226,696
Other sizes converted to 15 oz. net (48 cans)	15,361	160,110
Total	46,060	386,806

Table 3 - Pack of Pacific Coast Sea Herring, 1945-48

Year	Cases	Value
1948	46,060	\$386,806
1947	6,861	48,008
1946	-	-
1945	2,308	15,694

Note: "Standard cases" represent the various-sized cases converted to 48 No. 1 tall cans, each can containing 15 ounces, net weight, of fish.



U.S. Pack of Canned Shad, 1948

The United States pack of canned shad in 1948 amounted to 14,773 standard cases, valued at \$136,851 to the cannery. This was a decline of 35 percent in

Table 1 - Pack of Canned Shad, 1948, (Quantity & Value to the Cannery)

State	Std. Cases	Value
Maryland ¹ /	1,371	\$ 14,172
Va., N. C., & Fla.	1,494	12,483
Oregon	8,923	84,480
Wash. & Calif. .	2,985	25,716
Total	14,773	136,851

¹/Principally fillets.

Table 2 - Pack of Canned Shad, 1948, By Size of Can (Quantity & Value to the Cannery)

Can & Case Size	Std. Cases	Value
15 oz. net (48 cans)	11,870	\$104,402
Other sizes converted to 15 oz. net (48 cans)	2,903	32,449
Total	14,773	136,851

volume and 31 percent in value compared with the previous year. Over 80 percent of the 1948 pack was canned on the Pacific Coast, principally in the Columbia River district of Oregon. During World War II, the production of canned shad on the Atlantic Coast increased, but since the War, the production has dropped off considerably.

The cannery's average price per standard case in 1948 was \$9.26 compared with \$8.77 in 1947. During the past ten years, the highest average price was \$13.11 in 1945 compared to the lowest of \$3.06 in 1940.

Table 3 - Pack of Canned Shad, 1939-48¹ (Quantity & Value to the Cannery)

Year	Pacific Coast		Atlantic Coast		Total	
	Std. Cases	Value	Std. Cases	Value	Std. Cases	Value
1948	11,908	110,196	2,865	26,655	14,773	136,851
1947	18,808	169,777	3,910	29,496	22,718	199,273
1946	2/	2/	2/ 24,403 ²	224,387	24,403	224,387
1945	4,983	110,210	17,345	182,554	22,328	292,764
1944	17,820	103,003	23,548	243,239	41,368	346,242
1943	14,171	78,762	3,860	48,618	18,031	127,380
1942	28,693	156,077	7,764	80,123	36,457	236,200
1941	3,637	16,221	926	14,226	4,563	30,447
1940	18,421	54,108	234	2,999	18,655	57,107
1939	13,437	42,182	-	-	13,437	42,182

¹/Does not include the production of smoked shad.
²/A small pack of shad on the Pacific Coast has been included with the Atlantic Coast production.

Note: "Standard cases" represent the various-sized cases converted to 48 No. 1 tall cans to the case, each can containing 15 ounces of fish.

The average price per standard case in 1948 for Atlantic Coast canned shad was \$9.30 compared with \$9.25 for the Pacific Coast pack, while in 1947 the Atlantic Coast average was \$7.54 compared with the Pacific Coast average of \$9.03.

In 1944, the canning of smoked shad was undertaken and 9,867 cases of 48 No. 1 tall cans, valued at \$207,365 were packed. In the following year the pack amounted to 4,357 cases, valued at \$93,264, and in 1946, it totaled 23,843 cases, valued at \$714,243. Since 1946, only a single firm has continued to process smoked shad and the pack has been negligible.



U.S. Production of Menhaden Products, 1948

Receipts of menhaden by manufacturers of menhaden products in 1948 amounted to 1,007,888,840 pounds (1,504,311,700 fish). This total was the largest record-

Table 1 - Receipts of Menhaden & Production of Menhaden Products, 1948
(Quantity & Value to the Manufacturer)

States	Menhaden utilized Pounds	PRODUCTS MANUFACTURED				Total Value
		Dry Scrap and Meal		O i l		
		Tons	Value	Gallons	Value	
New Jersey	162,046,000	17,119	\$ 1,810,903	1,694,939	\$ 1,807,915	\$ 3,618,818
N. Y. & Del.	224,843,290	1/22,224	1/2,265,161	2,518,835	2,970,399	5,235,560
Virginia	152,744,590	16,086	1,853,922	812,764	1,131,540	2,985,462
North Carolina	198,270,420	20,939	2,546,596	1,304,732	1,355,009	3,901,605
Florida	80,276,720	1/8,410	1/988,374	274,859	301,684	1,290,058
Mississippi	68,636,140	6,780	797,413	779,810	883,028	1,680,441
S. C., La., & Tex.	121,071,680	12,500	1,298,545	1,378,000	1,682,604	2,981,149
Total	2/1,007,888,840	104,058	11,560,914	8,763,939	10,132,179	21,693,093

1/A small production of acidulated scrap has been included with dry scrap and meal production.
2/1,504,311,700 fish.

ed in the history of the fishery, and the first time it exceeded one billion pounds. The production of menhaden dry scrap and meal (104,058 tons, valued at \$11,560,914) exceeded the previous record established in 1947. In 1948, the oil content of the fish was lower and the yield of oil (8,763,939 gallons, valued at \$10,132,179) was less than in 1946. Menhaden dry scrap, meal and a portion of the oil are used in animal feeds; however, the major portion of the oil is used

Table 2 - Menhaden Utilized and Production of Menhaden Products, 1939-48
(Quantity & Value to the Manufacturer)

Year	Menhaden utilized Pounds	PRODUCTS MANUFACTURED						Total Value
		Dry Scrap and Meal		Acidulated Scrap		O i l		
		Tons	Value	Tons	Value	Gallons	Value	
1948	1,007,888,840	1/104,058	1/11,560,914	1/	1/	8,763,939	\$10,132,179	\$21,693,093
1947	948,155,592	98,602	10,883,852	632	26,863	8,473,371	11,425,497	22,336,212
1946	916,013,079	94,622	8,605,118	2,022	78,475	9,758,648	9,033,032	17,716,625
1945	759,073,820	77,451	5,483,377	1,577	62,200	8,335,094	5,656,550	11,202,127
1944	685,980,170	69,170	4,913,224	2,922	111,104	6,067,111	3,725,498	8,749,826
1943	615,554,460	66,357	4,766,672	1,555	58,821	5,734,668	3,892,142	8,717,635
1942	482,643,880	50,504	3,362,279	2,594	80,520	5,128,760	3,200,129	6,642,928
1941	775,086,820	75,316	4,008,355	11,029	242,792	6,034,050	2,829,441	7,080,588
1940	634,589,000	56,249	2,423,229	15,520	271,533	5,774,671	1,304,720	3,999,482
1939	514,135,800	52,950	2,224,920	15,853	265,850	6,005,414	1,624,024	4,114,794

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

in the production of soap, paint, linoleum and in many other manufacturing industrial processes.

Menhaden products were manufactured in 3 plants in New Jersey, 6 in Virginia, 8 in North Carolina, 5 in Florida, 3 in Mississippi, 2 in Delaware, and in 1 plant each in New York, South Carolina, Louisiana and Texas.

The price of dry scrap and meal at the manufacturer's level climbed steadily from a low of \$42.02 in 1939 to a high of \$111.10 per ton in 1948 the price was only \$0.72 per ton higher than in 1947, while in the latter year it was \$19.44 per ton higher than in 1946.

Oil Prices at the manufacturer's level also increased steadily from a low of \$0.27 to a high of \$1.348 per gallon in 1947. The price in 1948 was \$0.192 per gallon lower than in 1947, due to a sharp decline the latter part of the year.



U.S. Production of Oyster and Marine-Clam Shell Products, 1948

The production of oyster and marine-clam shell products in 1948 totaled 345,075 tons, valued at \$2,474,492 to the manufacturer. This represents a decrease of 31 percent in quantity and 24 percent in value, compared with 1947.

Production of Oyster & Marine-Clam Shell Products, 1948

State	Crushed Shell for Poultry Feed		Unburned Shell Lime		Total	
	Tons	Value	Tons	Value	Tons	Value
New Jersey	5,344	\$ 77,546	1,319	\$ 6,424	6,663	\$ 83,970
Pennsylvania and Maryland	26,766	263,141	17,308	73,518	44,074	336,659
Va., Fla., La., and Tex.	242,874	1,592,047	1/25,472	224,064	268,346	1,816,111
Wash., Ore., and Calif.	21,586	207,971	4,406	29,781	25,992	237,752
Total	296,570	2,140,705	48,505	333,787	345,075	2,474,492

1/Includes a small quantity of burned lime produced in Virginia.

Oyster shell products were prepared in 5 plants in New Jersey, 4 plants in Pennsylvania, 3 plants each in Virginia and Washington, 2 plants each in Maryland Texas, and California, and 1 plant each in Florida, Louisiana and Oregon. Marine-clam shell products were produced in 1 plant in Washington.



Wholesale and Retail Prices

As of May 17, 1949, the wholesale index for all foods once more started to drop and was 0.5 percent lower than on April 12, 1949, and 7.9 percent below May 18, 1948, according to the Bureau of Labor Statistics of the Department of Labor.

During May this year, wholesale prices for canned salmon remained steady and were exactly the same as in April. No doubt, this is due to the fact that offerings of last year's pack were light and no new stocks were yet available.

The retail price index for all foods declined 0.2 percent from mid-April to mid-May as lower prices were reported for nearly all groups including fish and shellfish. The food index on May 15 was 202.4 percent of the 1935-39 average, 4 percent lower than a year ago but 39 percent above the level of June 1946. Chiefly responsible for the decline during the month were decreases of over 1 per-

Wholesale and Retail Prices				
Item	Unit	Percentage change from--		
		May 17, 1949	Apr. 12, 1949	May 18, 1948
<u>Wholesale: (1926 = 100)</u>				
All commodities	Index No.	156.0	-1.0	-4.8
Foods	do	163.4	-0.5	-7.9
<u>Fish:</u>				
<u>Canned salmon, Seattle:</u>				
Pink, No. 1, Tall	\$ per doz. cans	5.664	0	+9.5
Red, No. 1, Tall	do	6.402	0	0
<u>Cod, cured, large shore Gloucester, Mass.</u>				
	\$ per 100 lbs.	15.500	0	+6.9
<u>Retail: (1935-39 = 100)</u>				
All foods	Index No.	202.4	-0.2	-4.0
<u>Fish:</u>				
Fresh, frozen and canned	do	315.4	-1.8	+3.4
Fresh and frozen	do	254.5	-2.6	-2.6
<u>Canned salmon:</u>				
Pink	¢ per lb. can	60.1	-0.5	+14.7

cent for the dairy products and meat, poultry and fish groups with fresh, frozen and canned fish declining 1.8 percent from mid-April to mid-May. The fresh and frozen fish index on May 15 this year was 2.6 percent lower than mid-April 1949 and mid-May 1948, while canned pink salmon prices dropped 0.5 percent below mid-April 1949, but were still 14.7 percent higher than on May 15, 1948.

RECORDING COLOR CHANGES IN FROZEN PINK SALMON

In studying the progress of deterioration in frozen pink salmon, it was found that there was a considerable change in color of the cut surface of the steaks. During storage studies with frozen fish, Stansby and Harrison (1942) found that the normal pink to red color of the surface of pink salmon (*Oncorhynchus gorbuscha*) fillets would fade, turn yellowish, and otherwise assume discolored tints of various degrees of intensity until the fillets were no longer marketable. Inasmuch as these alterations in color indicate a corresponding deterioration of the flavor and odor of the flesh, it may be a highly important index to both the processor and the consumer.

As a part of an investigation (authors, 1946) on the keeping qualities of frozen packaged pink salmon steaks, a study was made of the effect of treatment of steaks with brine and brine-sodium nitrate mixture on changes in surface color. These two kinds of steaks and an untreated control were observed at intervals during a 9-month storage period. The method employed for recording and evaluating the color of the flesh was that previously described by the authors (1942) in which color photographs are taken, the transparencies placed in a spectrophotometer, and the spectral distribution curves are obtained.