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A REVIEW OF DEVELOPMENTS AND NEWS OF THE FISHERY INDUSTRIES
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NORTH PACIFIC ALBACORE TUNA EXPLORATION--1951

By Edward A. Schaefers*

INTRODUCTION

In search of information on albacore tuna (*Thunnus germon*), an extensive area in the northeastern Pacific Ocean has been explored each year since 1949 by the Exploratory Fishing and Gear Development Section of the Branch of Commercial Fisheries, U. S. Fish and Wildlife Service. The objectives of the explorations have varied somewhat from year to year, but in general, knowledge has been sought concerning the migration habits, range, and areas of concentration of this commercially-important fish. In addition, experimental fishing gear of possible application to the fishery has been tested.

The first exploration was carried out with the Service's fishing vessel Oregon during the late summer and early fall of 1949 (Powell and Hildebrand 1950).

The second was made with the Service's vessel John N. Cobb, and was an extended operation lasting from June 12 to September 28, 1950 (Powell, Alverson, and Livingstone 1952). The third exploration (from June 11 to August 10) was made in 1951 when the John N. Cobb was again used to study albacore tuna. The 1951 exploration was not extended through the entire albacore season because of previous plans to use the John N. Cobb in deep-water dragging operations starting in late August (Alverson 1951). This report deals only with the actual period of exploration.

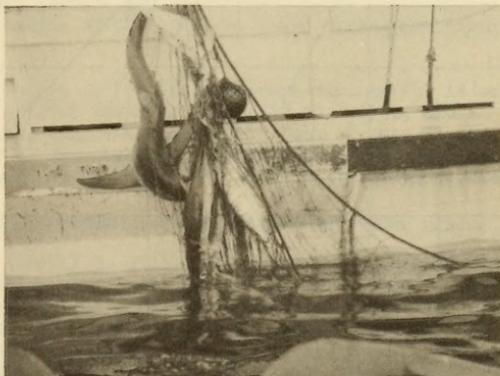


FIG. 1 - ALBACORE AND BLUE SHARK ENMESHED IN GILL NET BEING HAULED ABOARD THE JOHN N. COBB.

At the present time, definite knowledge concerning the migrations and distribution of albacore in the northeastern Pacific Ocean does not exist. The 1949 and 1950 exploratory work indicated that considerable variation may be expected in the geographical location of available concentrations of albacore from one year to another. This was substantiated by the results in 1951.

Albacore have been taken commercially in the North Pacific off the coasts of Oregon and Washington since 1937. An all-time high of 34 million pounds was landed at Oregon and Washington ports in 1944, but the catch has declined to less than 15 million pounds annually since 1945 (Powell and Hildebrand 1950). The 1951 landings

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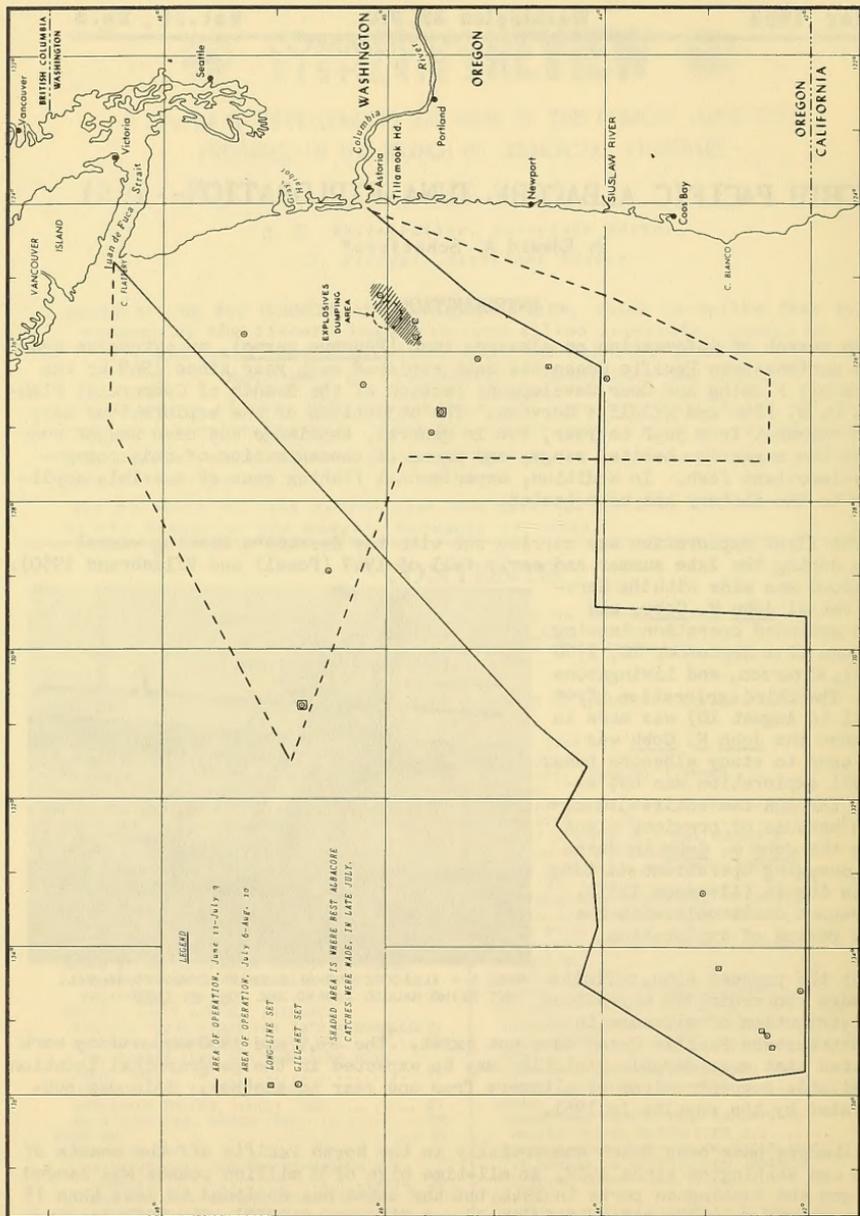


FIG. 2 - AREA OF OPERATION BY THE JOHN N. COBB DURING THE 1951 ALBACORE EXPLORATION.

of albacore in these two states were very low, amounting to approximately 3,500,000 pounds as compared with 1950 landings of approximately 10,500,000 pounds.^{1/}

OBJECTIVES AND PLAN OF 1951 EXPLORATION

In order to compare fishing results with those of 1950, the 1951 exploration commenced at approximately the same date in June, and early-season fishing operations were carried on in the same region off southern Oregon as in the previous year.

This paper reports the results of the 1951 exploration and briefly compares the 1950 and 1951 fishing results obtained by the John N. Cobb off the coasts of Oregon and Washington.

The 1951 exploration was carried on in the offshore waters of Oregon and Washington from June 11 to August 10. Aside from the main purpose of attempting to intercept the albacore in the early stages of their migration off Oregon and to gather comparative fishing information, there were several secondary objectives. These were to fish experimentally with gill nets and floating stainless-steel long-line gear in order to ascertain the feasibility of using such gear for capturing albacore commercially, and to make daily broadcasts to the commercial fleet regarding offshore weather conditions, surface water temperatures, and concentrations of albacore. Another secondary objective was to tag albacore, both as a possible means of tracing their migration and to test a newly-developed experimental streamer-type tag (Alverson and Chenoweth 1951).

During the cruise, certain oceanographic and biological observations also were recorded, including salinities, surface and subsurface water temperatures, and lengths, weights, and feeding habits of the albacore taken during the fishing operations.

For purposes of clarity this report on the 1951 albacore exploration is arbitrarily divided into two parts; a first phase from June 12 to July 3, and a second phase covering the period from July 6 to August 9. Most of June 11 and August 10 were spent in the Strait of Juan De Fuca, as the vessel proceeded to and from Seattle. July 4 and 5 were spent in Astoria, Oregon, obtaining supplies.

RESULTS OF FIRST PHASE OF 1951 EXPLORATION AND COMPARISON WITH 1950

RESULTS OF FIRST PHASE (JUNE 12-JULY 3, 1951): The John N. Cobb left Seattle on June 11. Actual trolling operations commenced on June 12 as the vessel headed for an area approximately 370 miles west of Cape Blanco, Oregon, where some of the early catches of albacore were made in June 1950. Surface water temperatures varied from 52° to 55° F. until the vessel was approximately 310 miles west of the Siuslaw River, Oregon, when a gradual warming of the water was noted. Water of 57° F. was encountered on June 14 approximately 370 miles west of Cape Blanco, Oregon. Fishing was then carried on until July 1 in an area extending from the Oregon-California boundary north to the Siuslaw River and as far as 500 miles offshore. Surface jigs were trolled almost continuously during daylight hours; and three nighttime gill-net sets and three daytime floating long-line sets were made during this first phase of the 1951 exploration (see figure 2). No albacore were captured in this area, although on June 29 while trolling approximately 450 miles west of the Siuslaw River, one albacore was brought to the stern of the vessel on trolling gear before the fish broke loose.

^{1/} PRELIMINARY STATISTICS SUPPLIED BY THE MARKET NEWS SERVICE, U. S. FISH AND WILDLIFE SERVICE. POUNDAGES DO NOT INCLUDE IMPORTED ALBACORE.

On July 1 trolling was continued on an eastward course from a position approximately 240 miles west of the Siuslaw River. Surface water temperatures of 60° F. were encountered 95 miles off the Siuslaw River, but no albacore were taken on this inshore portion of the trip. On July 3 water temperatures as high as 59.5° F. were recorded 40 miles west of Tillamook Bay, Oregon.

From June 14 to July 1, north to northwesterly winds were constantly present, sometimes reaching gale force, and often causing curtailment of gill-net and long-line operations.

COMPARISON OF FIRST PHASE OF 1951 EXPLORATION WITH 1950: Although surface water temperatures in the area fished were as warm in the early phase of the 1951 exploration as they were in this same general area during the 1950 exploration at the corresponding time of the year, only one albacore was hooked and no others were observed during this period in 1951, while 33 fish were boated and 11 more were lost from June 18 to June 30 the previous year.

Several times in 1950 the wind shifted from a northerly to a southerly direction, whereas during the period from June 14 to July 1 in the 1951 exploration the wind blew continuously from a northerly to a northwesterly direction. The weather encountered during the early part of the 1950 exploration was not as extreme or as continuously bad as was the weather encountered in 1951.

The fact that scattered albacore were taken in the early phase of the 1950 exploration and that signs of schooling were noted between July 7 and 14, contrasted with the negative results of the early 1951 exploration and correspondingly poor fishing during July and August, may indicate that results of early scouting might be used as a method of predicting the approximate time of availability of albacore off the coasts of Oregon and Washington. However, no definite conclusions can be drawn from the work of only two seasons, especially with just one vessel. Future operations will continue to explore the feasibility of predicting the availability of albacore by early season offshore scouting.

RESULTS OF SECOND PHASE OF 1951 EXPLORATION AND COMPARISON WITH 1950

RESULTS OF SECOND PHASE (JULY 6-AUGUST 2, 1951): From July 6 to August 9 the John N. Cobb prospected for albacore in an area from Cape Blanco to Cape Flattery at distances of from 46 to 275 miles offshore. No albacore were captured until July 14, when three were taken in a gill-net set 98 miles west of the Siuslaw River. Immediate trolling in the same area produced no albacore.

On July 17 several small schools of jumping albacore were observed in an area approximately 135 miles west of Tillamook Head, Oregon, but no albacore were caught

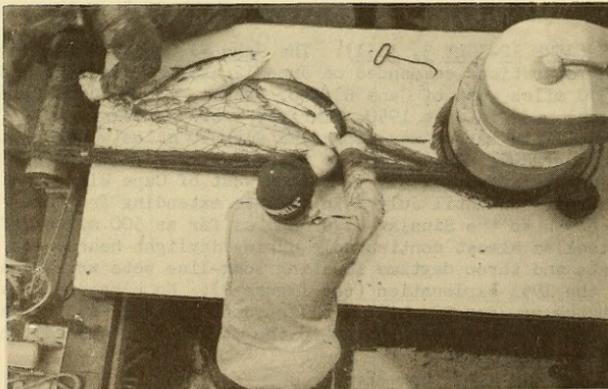


FIG. 3 - REMOVING ALBACORE FROM THE GILL NET. ROLLER AT RIGHT TAKES OFF FROM THE MAIN WINCH.

by trolling. A gill-net set at night produced only five blue shark. On July 18, in this same area, a single albacore was caught by trolling. Albacore were not caught again until July 25, when 10 were taken by trolling off Tillamook Head in the vicinity of the explosives dumping area (see figure 2). A gill-net set in this same area, from 8:00 p.m. July 25 to 5:00 a.m. July 26, netted 16 albacore; and during the day 37 were taken by trolling. On July 27 and 28 the John N. Cobb continued to catch albacore in this same area, but the number taken was not commercially significant. On July 29 the vessel trolled north to a position approximately 60 miles off Destruction Island. No albacore were taken on this northward run, which was made at normal trolling speed. The vessel on July 30, upon returning to the vicinity of the explosives dump, found albacore to be still in the area. Catches by several hundred boats of the commercial fleet ranged from poor to fair. A scarcity of fish caused most of the fleet to head for shore by August 1. The John N. Cobb personnel on August 3 again observed several schools of albacore in this same general area off Tillamook Head, but extensive trolling caught only two albacore, both of which were taken in the forenoon. A gill-net set on August 4 yielded 9 albacore. The vessel then trolled to the seamount area, approximately 270 miles west of Willapa Bay, Washington. Floating long-line and gill-net sets near the seamount caught many blue sharks but no albacore. Trolling gear on August 9 caught three albacore 47 miles west of Cape Johnson, Washington.

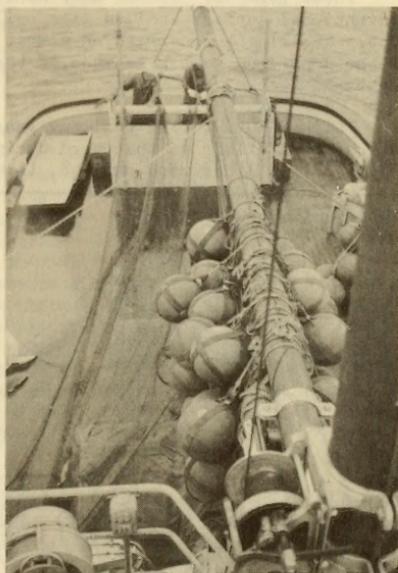


FIG. 4 - STOWING THE GILL NET IN THE BIN AT THE STERN OF THE JOHN N. COBB. INFLATED RUBBER FLOATS IN FOREGROUND WERE USED ON BOTH GILL NETS AND LONG LINES.

COMPARISON OF SECOND PHASE OF 1951 EXPLORATION WITH 1950: In comparing the second phase of the 1951 albacore exploration (July 6 to August 9) with the previous year's exploration for the same period, results were found to be quite different. As has already been indicated, the only concentration of albacore found during the entire 1951 exploration was in a rather restricted region in the vicinity of the explosives dumping area off Tillamook Head during the last days of July. On the other hand, in 1950 the John N. Cobb found signs of schooling between July 7 and 14, and a series of fishing efforts indicated that albacore were widely scattered off the entire Oregon and the southern Washington coasts. By July 16 of that year, good catches were being made 60 miles southwest of the Columbia River by the commercial fleet; and fishing was excellent during the remaining days of July, with good concentrations of albacore being found off Grays Harbor on July 19 and off Cape Flattery during the last few days of July.

GEAR USED

Three types of fishing gear were used during the 1951 albacore exploration: conventional surface-trolled jigs, gill nets, and floating stainless-steel long line. Trolling was carried on almost continuously during daylight hours. Most of the long-line sets were made in the daytime; all gill-net sets were made at night.

TROLLING GEAR: The trolling gear used during the 1951 exploration had the same specifications as that used during 1950 (Powell, Alverson and Livingstone 1952). Eight lines were trolled, three from each pole and two from the stern.

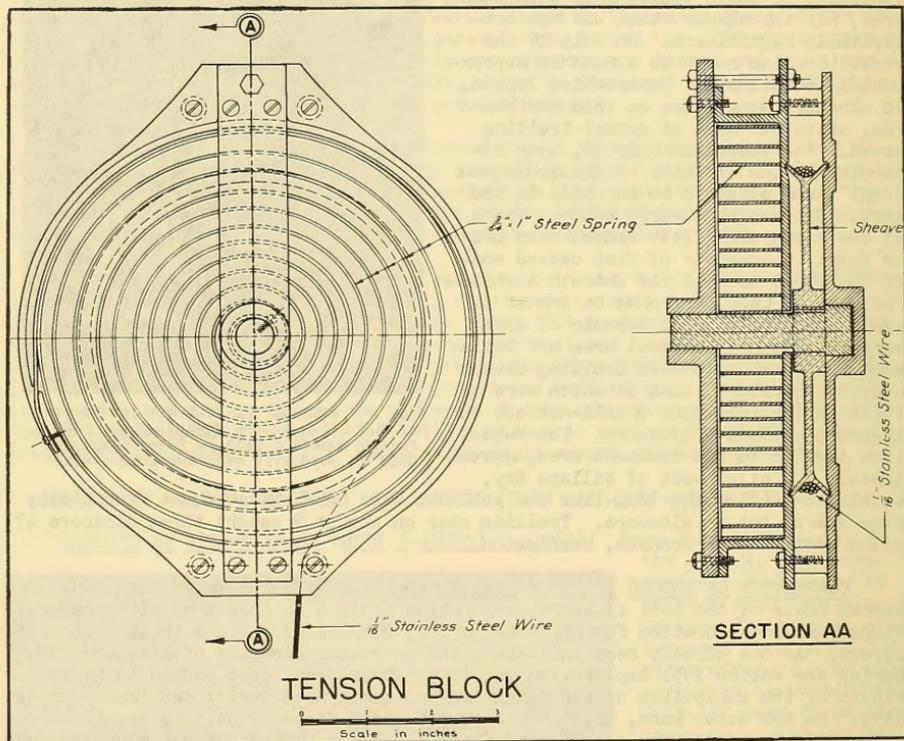


FIG. 5 - DETAIL DRAWING OF THE TENSION BLOCK.

Best results were obtained by trolling at a speed of approximately six knots. On several occasions albacore were taken from small schools previously observed breaking water, but most of the albacore captured were not observed prior to their striking the lures. Various types of lures were used, including white or gray bone jigs, amber-head or green-head plastic jigs with red and white feathers, one and one-half ounce metal-headed Japanese red-pearl-eyed jigs with red and white feathers, rubber squids, and catalyn-head jigs with colored plastic skirts. When small schools of albacore were encountered, all lines and lures took fish, but single fish bit the lures on the outside longer lines more often than they did those on the shorter inside lines.

Tension Block Device: The experience of commercial fishermen indicates that many striking albacore are lost before boating, notwithstanding the use of rubber and metal springs on the trolling lines. In an attempt to eliminate or reduce these losses, a self-paying and retrieving spring device, termed a tension block, has been experimentally developed by the staff (see figures 5 and 6).

The tension block is essentially a bronze block 6.7 inches in diameter with a sheave thickness of $\frac{1}{2}$ -inch. The device operates in much the same manner as a self-retracting steel tape. In the tension block the tape is replaced by a preformed, stainless-steel wire, $\frac{1}{16}$ -inch in diameter and 20 feet in length. The wire is attached to and wound around the sheave. Pulling the wire out from the block brings tension on the wire, as the axle of the sheave protrudes through one side of the block and is attached to a clock-type spring housed on that side. (The clock-type spring is $\frac{3}{64}$ inch thick, 1 inch wide, and 20 feet long.) The running end of the wire is attached to one end of a rubber bumper 11 inches in length, and the trolling line is attached to the other end of the bumper.

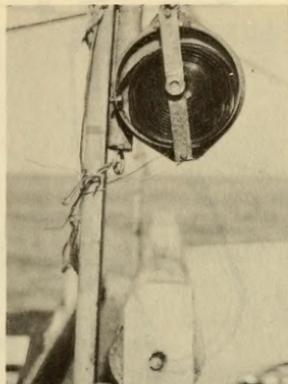


FIG. 6 - THE TENSION BLOCK WITH STRAIN APPLIED TO THE TROLLING LINE (ONE SIDE PLATE REMOVED TO SHOW SPRING).

The purpose of the tension block is to reduce the initial impact of the fish when striking, to give the fish slack when necessary, and to take up slack in the line when not needed. Only four strikes were noted while the tension block was in use, and all of the fish were boated. So far only one tension block has been used. The device is still in the experimental stage. After alterations have been made in the design, it is planned to fish tension blocks from the trolling poles during future operations instead of from the short, upright oak support used in 1951 (see figure 6).

GILL NETS: The gill nets used during the 1951 exploration were in 50-fathom shackles of either linen or nylon webbing, with mesh sizes of $7\frac{1}{2}$, $8\frac{1}{2}$, and $9\frac{1}{2}$ inches, stretched measure.

Results of successful gill-netting operations during the 1950 exploration, using nets 100-meshes deep, indicated that nets 50-meshes deep would probably be as effective; that is, most of the albacore were caught in the top 50 meshes of the net. A part of the 1951 program was to test whether 50-mesh nets would actually fish as effectively as the 100-mesh nets. In testing this, the usual procedure was as follows:

SIX SHACKLES WERE TIED TOGETHER AND FISHED IN A STRING. THREE OF THE SHACKLES WERE 50 MESHES DEEP, AND THREE WERE 100 MESHES DEEP. THE THREE 50-MESH SHACKLES WERE MADE UP OF ONE NYLON $7\frac{1}{2}$ INCHES, ONE LINEN $8\frac{1}{2}$ INCHES, AND ONE LINEN $9\frac{1}{2}$ INCHES. THE THREE 100-MESH SHACKLES WERE MADE UP OF ONE LINEN $7\frac{1}{2}$ INCHES, ONE LINEN $8\frac{1}{2}$ INCHES, AND ONE NYLON $9\frac{1}{2}$ INCHES. (ALL MESH SIZES REFER TO STRETCHED MEASURE.)

LONG LINE: The floating long-line gear consisted of a 3x7 (3 strands of 7 wires each) preformed stainless-steel main line $\frac{5}{64}$ -inch in diameter and 1,000 fathoms in length. To accommodate the gangions (leaders or branch lines), bronze marking beads were threaded on the wire main line at intervals of 3 fathoms. Two marking beads, from 4 to 6 inches apart, were used as line stops for each gangion to hold it at its proper place on the main line. The gangions were made of 3x7 preformed stainless steel, $\frac{3}{64}$ -inch in diameter and 6 feet in length with a loop

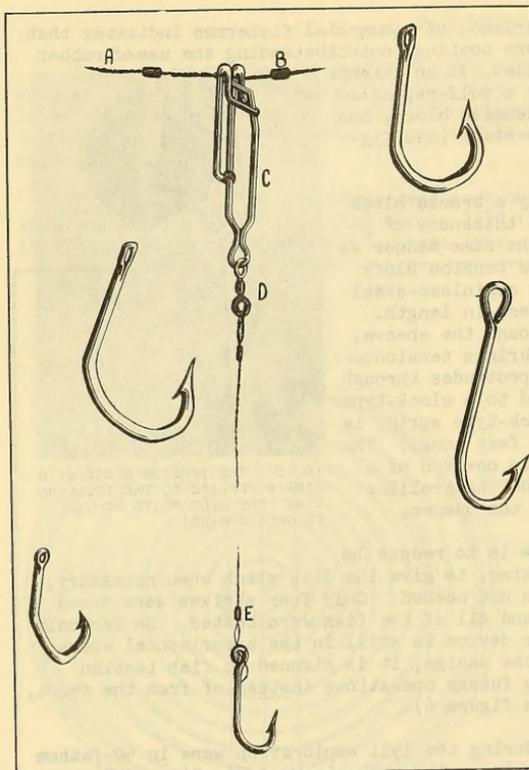


FIG. 7 - DETAIL SKETCH OF GANGION MAKE-UP AND VARIOUS TYPES OF LONG-LINE HOOKS USED. (NOT DRAWN TO SCALE)

- A. MAIN LINE.
 B. BRONZE MARKING BEAD USED FOR LINE STOP.
 C. SNAP-ON CONNECTOR. D. SWIVEL.
 E. BRONZE MARKING BEAD USED FOR MAKING LOOP.

36 fathoms. The drop lines on the floats were one fathom in length, and as the floats drifted together an estimated 50 percent at times, the gear fished at a depth range from 2 to 16 fathoms. When hauling the gear, the reel was attached to the power take-off of the winch. As the main line was reeled in, the gangions were unsnapped after coming over a shark gill-net roller on the vessel's starboard side.

RESULTS OF GEAR TESTS

Results of fishing with various types of gear during the 1951 exploration were poor. Of the few albacore taken, 119 were caught by trolling gear and 28 were caught by gill nets. No albacore were

in each end, one for the hook and the other for the snap-on connector. Various types of linen and nylon gangions were also used but were unsatisfactory because of the large number of hooks lost (up to 70 percent per set), due evidently to sharks. Hooks used included those of the Japanese long-line type, and various kinds of number 7/0 and larger hooks (see figure 7).

The main line was wound on a 19.5-inch diameter galvanized reel having a core 10.7 inches in diameter and 3.5 inches in width. In preparing to set the long line, a large bolt was passed through the opening in the core to serve as an axle for the reel. During setting operations, the reel was located near the hatch and was braked by hand. From the reel, the main line passed over a halibut chute on the stern and into the water. Men stationed on each side of the main line, just forward of the chute, snapped on gangions baited with either herring or squid as the line stops passed by. Buoyed bamboo poles with red flags were attached at the ends of the main line as markers. Inflated, 16-inch rubber floats were spaced along the main line at intervals of approximately

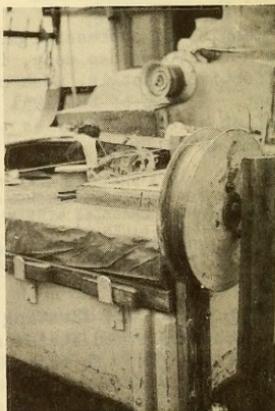


FIG. 8 - STAINLESS-STEEL LONG-LINE ON REEL DURING SETTING.

caught with the long line. Most of the albacore taken were caught off Tillamook Head in the vicinity of the explosives dumping area (see figure 2).

Albacore were caught in only 3 of the 13 gill-net sets made by the John N. Cobb during 1951. The 50-mesh nets took only 3 albacore, as compared with 25 in the 100-mesh nets. However, the test of the effectiveness of the 50-mesh nets was inconclusive because the total number of albacore taken was small in comparison with the sizable catches in 1950, and the results could have been due entirely to chance. There was no appreciable difference in the fishing ability of the nylon and linen nets. Although the gill nets did not produce albacore in commercial quantities during the 1951 exploration, they were helpful in indicating the presence of albacore when none could be observed or taken by trolling.

Blue shark (Prionace glauca) were taken in all gill-net sets. Other fish taken in the gill nets included mackerel shark (Lamna ditropis), soupfin shark (Galeorhinus zyopterus), jack mackerel (Trachurus symmetricus), and pomfret (Brama rai). One ocean sunfish (Mola mola) was also taken in the gill nets.

Six long-line sets were made. No albacore were caught, but blue shark were taken in numbers from 23 to 121 per set. Several mackerel shark and the anterior portion (the posterior portion was evidently eaten by shark) of a single handsaw fish (Alepisaurus aesculapius) were also

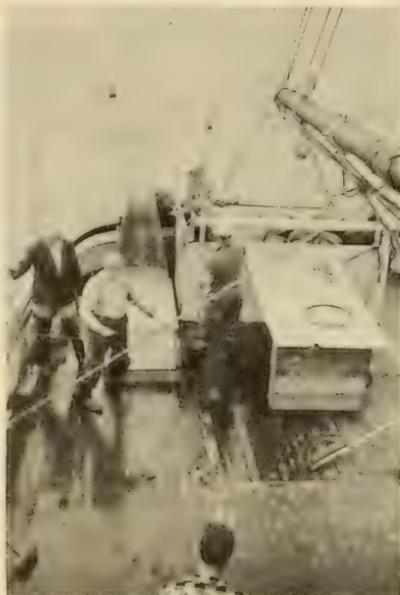


FIG. 9 - SNAPPING THE GANGIONS ON THE STAINLESS STEEL LONG LINE AS IT PAYS OUT OVER THE CHUTE AT STERN. TABLE AT RIGHT WAS USED FOR BAITING.



FIG. 10 - STAINLESS STEEL MAIN LINE WINDING ON REEL DURING HAULING OPERATIONS.
A. MAIN LINE. B. REEL.

caught. Results of long-lining operations during the 1951 exploration were not encouraging. The stainless-steel long-line gear as used did not appear to be commercially adaptable to capturing albacore off the coasts of Oregon and Washington. This is based on the fact that no albacore were taken (although the poor season probably did not provide a conclusive test), and on the evidence that the large number of blue shark present in these waters would probably take the bait before the albacore could. It is also believed that if any albacore were hooked, the blue shark would seriously damage many of them. Another factor is that this gear requires considerable labor in its utilization. Also, it is risky to set it in areas where fishing vessels are engaged in trolling because of the danger of fouling the gear.

MISCELLANEOUS OBSERVATIONS

SIZE OF ALBACORE: The lengths and the weights of all the albacore captured were recorded except those that were tagged or were too badly mutilated by sharks (while in the gill nets). The fish ranged from 22.75 inches to 34 inches in length, with an average length of 26.88 inches; and from 8.75 to 30 pounds in weight, with an average weight of 14.37 pounds. All but 5 of the fish that were measured and weighed came from the area off Tillamook Head.



FIG. 11 - HAULING STAINLESS-STEEL LONG LINE ABOARD THE JOHN N. COBB.

FOOD OF ALBACORE: The stomach contents of the albacore during the 1951 exploration indicated that juvenile rockfish from 1 to 2-3/4 inches in length made up the bulk of the diet. All except 5 of the albacore

examined were caught in the vicinity of the explosives dumping area off Tillamook Head. The stomachs of three albacore taken in the gill nets off the Siuslaw River on July 14 were empty, and 2 troll-caught fish taken off Cape Johnson on August 9 contained small rockfish and 1 small squid. Small rockfish (the majority of which were believed to be Sebastes alutus) were the only identifiable items of food found in albacore stomachs from July 25 to August 4, except for 11 small squid taken from 9 albacore caught in the gill net on August 4. During the 1951 exploration,



FIG. 12 - ALBACORE TAKEN IN A GILL-NET SET. NOTE ONE MUTILATED BY SHARK.

Table 1 - Gill-Net Catch Data, 1951

Date	Position of set	No. hrs. net soaked	No. albacore	Surface temperature	Wind direction and force	Incidental catch
6/15 - 6/16	43°25' N. 135°12' W.	8½	0	58.0° F.	N-4	2 jack mackerel, 1 blue shark.
6/23 - 6/24	42°05' N. 134°35' W.	9	0	59.5° F.	NW-5	2 mackerel shark, 5 blue shark.
6/26 - 6/27	43°02' N. 133°16' W.	9½	0	57.5° F.	NW-4	1 jack mackerel, 11 blue shark, 3 pomfret.
7/13 - 7/14	43°59' N. 126°22' W.	8	3	58.0° F.	SE-0-4	10 jack mackerel, 14 blue shark.
7/14 - 7/15	45°10' N. 126°06' W.	9	0	60.0° F.	SE-4	2 jack mackerel, 6 blue shark.
7/16 - 7/17	45°30' N. 126°46' W.	8½	0	61.0° F.	S-4	2 jack mackerel, 4 blue shark.
7/17 - 7/18	45°36' N. 127°05' W.	8½	0	62.0° F.	SW-0-4	5 blue shark.
7/25 - 7/26	45°45' N. 125°48' W.	9	16	61.5° F.	NW-3	56 blue shark, 1 pomfret.
7/29 - 7/30	47°17' N. 125°45' W.	9½	0	60.0° F.	NW-2-4	1 blue shark, 2 soupfin shark, 2 mackerel shark.
8/3 - 8/4	46°04' N. 125°15' W.	9½	9	62.0° F.	NE-2	1 mackerel shark, 28 blue shark.
8/4 - 8/5	46°13' N. 126°26' W.	9½	0	61.5° F.	NW-5-4	5 jack mackerel, 17 blue shark.
8/5 - 8/6	46°31' N. 128°56' W.	9½	0	62.0° F.	NW-3-4	4 blue shark, 1 ocean sunfish.
8/6 - 8/7	46°45' N. 130°45' W.	9½	0	62.5° F.	SE-2-NW-4	33 blue shark, 2 mackerel shark.

1/WIND FORCE IS ACCORDING TO BEAUFORT SCALE.
2/GLASS BALLS REMOVED AND 10 FATHOMS OF LINE ATTACHED TO RUBBER FLOATS.

no albacore stomach examined contained more than 10 small rockfish and 20 partially-digested fish, presumably rockfish; whereas 167 small rockfish were taken from the stomach of a single albacore during the 1950 exploration.

WATER TEMPERATURES: Surface water temperatures were recorded at hourly intervals, and subsurface temperatures were taken several times daily by means of a bathythermograph. In the area of best fishing off Tillamook Head, surface water temperatures ranged from 58° to 62° F.

TAGGING OF ALBACORE ABOARD THE VESSEL: Experimental tagging, using a new flexible plastic streamer-type tag, 8 mm. wide, 34 mm. long, and less than 1 mm. thick (Alverson and Chenoweth 1951), was planned; however, because of the scarcity of fish, only 42 albacore were tagged and released. To date none of these tags has been returned.

SUMMARY

Although albacore tuna have been taken commercially off the coasts of Oregon and Wash-

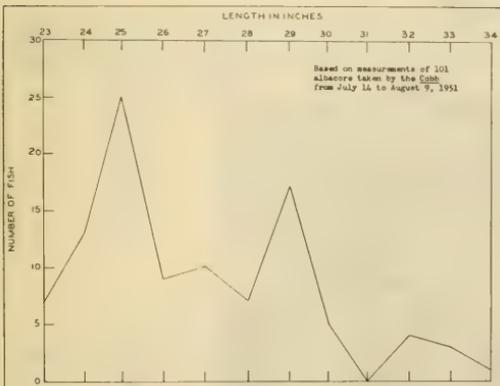


FIG. 14 - LENGTH-FREQUENCY CURVE OF ALBACORE.



FIG. 13 - LARGE NUMBERS OF BLUE SHARK WERE TAKEN BY GILL NETS AND LONG LINE.

ington since 1937, very little is known concerning the habits of the fish, and the catch fluctuates greatly from year to year. The 1951 landings of albacore in these two states amounted to only one-third (approximately 3.5 million pounds) of the landings in 1950 (approximately 10.5 million pounds), and results of early-season offshore scouting were likewise poor in 1951 as compared with the encouraging catches made in June 1950. The John N. Cobb failed to catch any albacore during the first phase of the 1951 exploration off the Oregon coast, and a good run of

Table 2 - Long-Line Catch Data, 1951

Date	Position	No. hooks	Bait	Time soaked	No. albacore	Incidental catch
6/15	42°27' N. 135°09' W.	300	Herring, 100 whole, 200 cut	4 hrs. 10 min.	0	26 blue shark, head of 1 handsaw fish.
6/27	42°53' N. 134°17' W.	290	Herring, 96 whole, 194 cut	4 hours	0	26 blue shark.
6/28	42°22' N. 135°21' W.	290	Herring, 80 whole, 210 cut	3 hrs. 50 min.	0	23 blue shark.
7/15-7/16	44°31' N. 126°12' W.	292	Herring, 52 whole, 200 cut; 40 squid	11 hrs. 45 min.	0	102 blue shark, 1 mackerel shark.
7/26-7/27	45°45' N. 125°35' W.	290	Herring, 60 whole, 200 cut; 30 squid	10 hrs. 45 min.	0	121 blue shark, 1 mackerel shark.
8/7	46°45' N. 130°45' W.	220	Herring, 100 whole, 50 cut; 70 squid	4 hrs. 55 min.	0	102 blue shark, 1 mackerel shark.

tuna failed to materialize off Oregon and Washington by August 10, when the exploratory vessel terminated the season's albacore exploration. Favorable water temperatures (over 57° F.) were found in most of the areas explored after the first of July; but trolling and gill-net results were generally poor, and the stainless-steel long line failed to catch albacore. There is a possibility that early-season scouting off the southern Oregon coast may aid in forecasting the time and degree of availability of albacore to the commercial fishery of Oregon and Washington, but more work needs to be done before any specific conclusions can be drawn.

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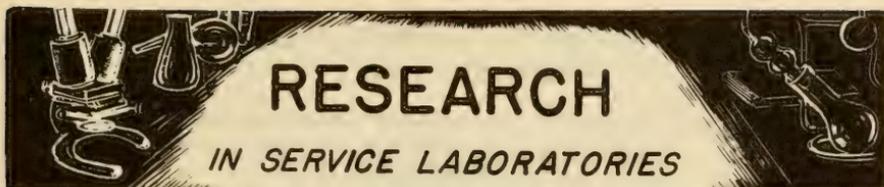


BAKED WHITEFISH



3- OR 4-POUND WHITEFISH, DRESSED
 $\frac{1}{2}$ TEASPOONS SALT
 4 TABLESPOONS BUTTER OR OTHER FAT, MELTED
 3 SLICES BACON (OPTIONAL)

Clean, wash and dry fish. Rub inside and out with salt. Place fish in a greased baking pan. Brush with melted fat and lay slices of bacon over the top. Bake in a moderate oven 350° F. for 40 to 60 minutes or until fish flakes easily when tested with a fork. If fish seems dry while baking, baste occasionally with drippings or melted fat. Serve immediately on a hot platter, plain or with a sauce. Serve 6.



April 1952

COMPOSITION: Cold-Storage Life and Composition of Fresh-water Fish: Data on the composition of additional samples of whitefish and Lake Michigan smelt are shown in the following tables.

Table 1 - Composition of Edible Portion of Whitefish (*Coregonus clupeaformis*)

Sample Number	Length of Fish Centimeters	Weight of Fish Grams	Fillet Yield From Whole Fish Percent	Proximate Composition of Edible Portion			
				Moisture Percent	Fat Percent	Protein Percent	Ash Percent
13	48	1250	54	71.5	9.9	18.4	1.09
14	46	1065	52	70.1	11.4	19.3	1.21
15	48	1505	38	72.5	6.1	18.9	1.12
16	47	1110	54	72.9	6.1	19.1	1.22

Table 2 - Composition of Edible Portion of Lake Michigan Smelt (*Osmerus mordax*)

Sample Number	Proximate Composition of Edible Portion				Sample Number	Proximate Composition of Edible Portion			
	Moisture Percent	Fat Percent	Protein Percent	Ash Percent		Moisture Percent	Fat Percent	Protein Percent	Ash Percent
1	79.9	3.34	18.1	0.96	9	78.7	2.92	17.8	1.09
2	80.1	2.58	17.7	1.04	10	77.3	2.77	18.6	1.20
3	79.7	3.40	17.5	1.04	11	77.2	2.94	18.9	1.20
4	79.6	2.00	17.9	1.04	12	79.6	2.40	18.8	1.05
5	79.8	1.62	18.3	1.03	13	78.8	2.15	19.5	1.10
6	80.3	1.52	18.3	1.04	14	79.2	2.03	19.6	1.04
7	79.8	2.38	17.8	1.04	15	81.7	2.01	19.7	0.98
8	78.8	2.30	18.1	1.04	16	78.3	2.59	20.0	1.01

* * * * *

BIBLIOGRAPHY: The Seattle Fishery Technological Laboratory has prepared a complete subject and author index of all its publications covering the period from 1935 to 1951. A limited supply of this index is available for distribution to the fishing industry, research organizations, and libraries. Requests for the index should be sent directly to the Fishery Technological Laboratory, 2725 Montlake Boulevard, Seattle 2, Washington.

(Seattle)



TECHNICAL NOTE NO. 20--FEDERAL SPECIFICATIONS FOR FISHERY PRODUCTS

Recent revisions of obsolete Federal specifications for fishery products have brought forth many questions from members of the fishery industries regarding the preparation, publication, and use of these specifications. The purpose of this report is to answer all the various questions in this regard.

What is a fish specification? A Federal fish specification is a definite, accurate, and complete statement of the technical requirements for a particular fishery product and the procedures to be followed in determining compliance with these requirements.

Why are specifications issued? Specifications are prepared as needed to meet the requirements of two or more Federal agencies for the purchase of fishery food items. They are in general use throughout the Government agencies.

Who is responsible for preparing and issuing Federal Fish Specifications? Federal fish specifications are prepared and published under the direction of the Federal Specifications Board through its various technical committees. Sections 1 through 6 of the specifications are drafted by the Provisions Technical Committee; Section 7 (Armed Forces Requirements) is drafted by the Quartermaster Food and Container Institute for the Armed Forces.

The Provisions Technical Committee is composed of representatives of each of the various departments of the Federal Government. The Department of the Interior is represented on this Committee by the Chief (as member) and the Assistant Chief (as alternate member) of the Technological Section, Branch of Commercial Fisheries. The member also serves as Chairman of the Fishery Products Subcommittee. As such he is responsible for directing the activities regarding the preparation of the specifications for fishery products.

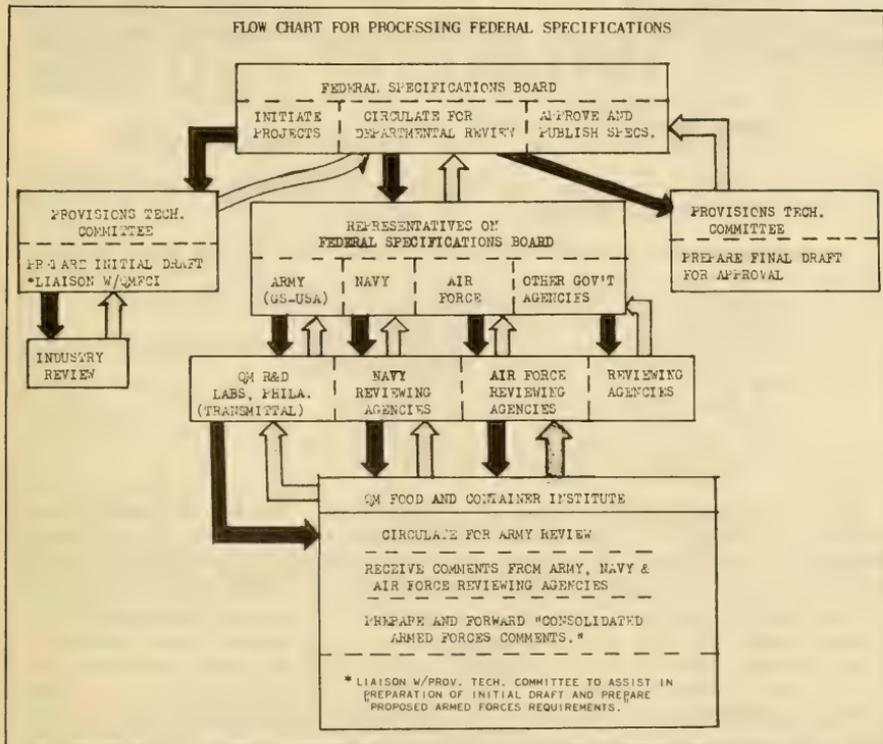
What is an "Interim Specification?" An interim specification is prepared for temporary use and may be used by Federal agencies in making procurements until the regular coordinated specification is promulgated.

Who uses the fishery specifications? The specifications are prepared and issued for use by the Federal Government. Other government agencies, such as State, County, and City, often adopt and use the Federal specifications. Also, private concerns, such as hotels, restaurants, steamship and railroad lines, and other institutions, find Federal specifications of considerable aid in the purchase of edible fishery products in accordance with their requirements.

What is the procedure for processing a fish specification? The following are basic steps in the procedure for processing specifications:

1. A request for a specification is made by the Federal agencies.
2. Initiation of the project by the Federal Specifications Board.
3. Preparation of the initial draft of the Federal specification.
4. Preparation of the Interim Specification.
5. Circulation of the draft for review.
6. Reconciliation of comments.
7. Preparation of the final draft.
8. Approval, printing, and distribution of the final specification.

What part does the industry play in the preparation of Federal Fish Specifications? Whenever possible, depending on Federal requirements, the fish specifications should represent the commercial items currently available on the market.



As explained earlier, the specification merely defines the requirements for a particular item. All fish specifications are sent to industry for review and comments. These comments are studied by the Provisions Technical Committee members and all practical and logical changes are incorporated into the specification. The basic requirements of the various Federal agencies are, however, maintained.

It is interesting to note at this point that submission for industry review of the recent specifications for clams and fish brought forth only a very few practical changes. Most of the comments were of a general nature and some did not apply to the specifications in question. Specific and clear comments and criticisms from the industry, particularly through the various trade organizations, regarding the Federal specifications, are definitely appreciated and will be thoroughly considered in the preparation or revision of any fish specification. These comments should be submitted direct, or through a trade organization, to the Technological Section, Branch of Commercial Fisheries, U. S. Fish and Wildlife Service, Washington, D. C.

Can Federal Specifications be changed? Specifications which may contain possible errors, which do not reflect the latest technological advancements, or which do not meet the requirements of the Federal agencies may be revised or amended. Both procedures follow the basic steps in procedure for processing specifications.

What is the status of present fish specifications? Three have been revised and published within the last two years. These are:

Oysters, Raw, Shucked (Fresh and Frozen) PP-09566 (July 27, 1950)
 Salmon, Canned; PP-S-31b (August 8, 1951)
 Fish; Fresh (Chilled) and Frozen: PP-F-381c (February 1, 1952)

The specification for Clams, Raw Shucked; Fresh (Chilled) and Frozen, PP-C-401a, is currently being published.

The following specifications are also in effect but, in most cases are outdated:

Fish; salted or smoked, PP-F-401 (March 31, 1931)
 Sardines (domestic): Canned, PP-S-51b (October 20, 1938)
 Tuna Fish: Canned, PP-T-771 (March 31, 1931)
 Crab Meat: Canned, PP-C-651 (March 31, 1931)
 Crab Meat; fresh, PP-C-656 (March 31, 1931)
 Oysters; Canned, PP-O-951 (March 3, 1931)
 Fish; Flaked, Canned, PP-F-371 (March 31, 1931)
 Shrimp; Canned, PP-S-331 (March 31, 1931)

Is a fish specification a grade or standard? No. The definition of a specification indicates that it merely defines the requirements for an item and the procedures to be followed in determining compliance with these requirements. The specification is for use by Federal agencies in the procurement of the particular items. The grade is usually considered as the position of an item in any scale based on certain inherent and physical properties of a product ("quality"). A standard covers one grade or a composite of two or more grades for one product and may contain other inherent or related factors (such as class, condition, etc.) which affect the economic value or relative desirability of the product. A standard may be considered as a yardstick with which the quality of a product is measured. Members of industry will, however, note the considerable detail in recent revisions of Federal specifications for fishery products. This is necessary due, in part, to the lack of standards for these items.

A good example of the problems involved in the preparation of a specification for which there is no standard presented itself in the preparation of the specification for Clams, Raw, Shucked; Fresh (Chilled) and Frozen. In setting up the size designations for the various classes of clams, it was found that not only did the size designations vary for each locality but they varied widely from plant to plant within each locality.

Summary. A Federal Fish Specification is a definite, accurate, and complete statement of the technical requirements of the particular item and the procedure to be followed in determining compliance with the requirements. It is prepared and published by the Federal Specifications Board at the request of and for the use of Federal agencies. It is ordinarily designed to cover existing commercial products, depending upon the specific requirement of the agencies. It is published only after complete review by the various Government agencies and the fishery industries.

NOTE: MUCH OF THE MATERIAL FOR THIS TECHNICAL NOTE, INCLUDING THE FLOW CHART FOR PROCESSING FEDERAL SPECIFICATIONS, WAS OBTAINED FROM A REPORT OF THE QUARTERMASTER CORPS FOOD AND CONTAINER INSTITUTE FOR THE ARMED FORCES ON THE SUBSISTENCE SPECIFICATION PROGRAM.



TRENDS AND DEVELOPMENTS

Additions to the Fleet of U. S. Fishing Vessels

A total of 60 vessels of 5 net tons and over received their first documents as fishing craft during March 1952--8 more than in March 1951. Alaska and Washington led with 10 vessels each, followed by Louisiana with 6 vessels, according to the Bureau of Customs of the Treasury Department.

Vessels Obtaining Their First Documents as Fishing Craft, March 1952					
Section	March		Three months ending with March		Total
	1952	1951	1952	1951	1951
	Number	Number	Number	Number	Number
New England	1	2	4	5	36
Middle Atlantic	2	6	9	13	34
Chesapeake	8	2	17	4	36
South Atlantic	7	6	26	22	118
Gulf	11	20	26	47	173
Pacific Coast	18	12	34	38	284
Great Lakes	3	-	4	1	25
Alaska	10	3	24	11	71
Hawaii	-	1	-	1	3
Total	60	52	144	142	780



Federal Purchases of Fishery Products

FRESH AND FROZEN FISH PURCHASES BY DEPARTMENT OF THE ARMY, MARCH 1952: A total of 2,376,662 pounds (valued at \$1,103,526) of fresh and frozen fishery products were purchased during March 1951 for the military feeding of the U. S. Army, Navy, Marine Corps, and Air Force by the Army Quartermaster Corps. This was an increase of 9.4 percent in quantity and 6.0 percent in value as compared with the previous month and an increase of 15.2 percent in quantity and 34.4 percent in value as compared with March 1951 (see table).

Purchases of Fresh and Frozen Fishery Products by Department of the Army (March and the First Three Months, 1951-52)							
Q U A N T I T Y				V A L U E			
March		January-March		March		January-March	
1952	1951	1952	1951	1952	1951	1952	1951
lbs.	lbs.	lbs.	lbs.	\$	\$	\$	\$
2,376,662	2,062,200	6,867,389	5,917,810	1,103,526	821,164	3,229,644	2,488,471

Purchases for the first three months this year were greater by 16.0 percent in quantity and 29.8 percent in value than for the corresponding period in 1951.

The average price per pound of 47.0 cents paid for fresh and frozen fishery products in the first three months of 1952 was considerably higher than the 42.1 cents paid in January-March 1951.



Fish Cannery in Samoa Offered American Fish Packers

The Government of American Samoa is seeking to interest American fishpackers in purchasing or leasing the canning facilities which were recently acquired from a large American firm on the Pacific Coast, the Secretary of the Interior announced early in April. The territorial government purchased the canning equipment in order to prevent the sale and removal of the equipment to a foreign concern and to retain for the territory the wage-income potential from the operation of a cannery. In view of the depressed economic situation in Samoa, it is essential that all potential sources of income be developed for this American territory.

The territorial government is making every possible effort to interest an American cannery in either purchasing or leasing the cannery for local operation. There is no expectation that the production of the fish cannery in Samoa would reach such proportions as to affect the American mainland fishing industry.

Since American Samoa is a possession of the United States, its products may enter the United States without duty payment. United States tariffs do not apply in American Samoa and it is considered sound not to have them apply because of Samoa's distance from the mainland of the United States, its depressed economic situation, and its dependence upon Australia and New Zealand for many of its imports.

American canning concerns and others interested in the possibility of purchasing or leasing the canning equipment for operation in Samoa should communicate directly with the Governor of American Samoa, Pago Pago, Tutuila, American Samoa.



Maine Sardine Pack (Including Sea Herring), 1951

Maine sardines (including sea herring) packed in 1951 amounted to 1,676,764 standard cases, valued at \$14,635,352 to the packers (table 1). Compared with the previous year, this was a decrease of 56 percent in quantity and 31 percent in value. The 1951 pack was the smallest since 1941 when the amount canned totaled 1,117,748 cases (valued at \$3,736,394). Prior to 1949 the packs of fish canned as sardines and as sea herring were shown separately. However, in 1949 the packs

Table 1 - Pack of Maine Sardines (Including Sea Herring) by Style of Pack; and By Size of Can and Case, 1951
(Quantity in Standard and Actual Cases, and Value to the Packers)

Style of Pack	Total		Avg. Price Per Std. Case	Can and Case Sizes	Total		Avg. Price Per Std. Case
	Quantity	Value			Quantity	Value	
	Std. Cases	\$	\$		Actual Cases	\$	\$
Natural	61,811	184,562	2.99	3½ oz. net (100 cans)..	1,555,029	14,141,807	9.09
In soybean or other vegetable oil	1,358,146	12,338,953	9.09	10 oz. net (48 cans)..	36,105	283,299	7.85
In mustard sauce ...	204,907	1,682,039	8.21	15 oz. net (48 cans)..	30,307	202,364	6.68
In olive oil	19,813	207,251	10.46	Other sizes (converted to 3½ oz. net)			
Kipperd	16,911	106,709	6.31	(100 cans)	1,270	7,882	6.21
Other	15,176	115,838	7.63				
Total	1,676,764	14,635,352	8.73	Total	1,622,711	14,635,352	-

¹ REPRESENT CASES OF VARIOUS SIZES CONVERTED TO 100 3/4-OZ. CANS (3 1/2 OZ. NET) TO THE CASE.

² INCLUDES SPECIAL PACKS OF SARDINES (INCLUDING SEA HERRING) IN COTTONSEED OIL; PEANUT OIL; TOMATO SAUCE; AND BONELESS FILLETS IN SOYBEAN OR OTHER VEGETABLE OIL.

were combined. The comparative data in table 2 likewise represent the combined packs of the past ten years.

Sardines (including sea herring) in 1951 were canned in 45 plants in Maine and 3 in Massachusetts as compared with 1950 when 47 plants operated in Maine and 3 in Massachusetts.

Because of the small pack, the 1951 average price per standard case was the second highest on record--\$8.73 per case. The highest was in 1947 when a pack of 3,013,910 standard cases sold at an average of \$9.39 per standard case. Sardines in soybean or other vegetable oil (the bulk of the pack was put up in this style) in 1951 aver-



SEA HERRING

Table 2 - Pack of Maine Sardines (Including Sea Herring^{1/}), 1942-51
(Quantity in Standard Cases^{2/} and Value to the Cannery)

Year	Quantity	Total Value	Avg. Price Per Std. ^{2/} Case	Year	Quantity	Total Value	Avg. Price Per Std. ^{2/} Case
	Std. Cases ^{2/}	\$	\$		Std. Cases ^{2/}	\$	\$
1951	1,676,764	14,635,352	8.73	1946	3,276,338	20,275,590	6.19
1950	3,844,164	21,209,033	5.52	1945	2,725,216	12,077,201	4.43
1949	3,074,523	21,051,675	6.85	1944	3,261,984	14,819,803	4.54
1948	3,682,392	29,359,114	7.97	1943	2,505,114	11,104,570	4.43
1947	3,013,910	28,310,674	9.39	1942	2,873,246	12,162,451	4.23

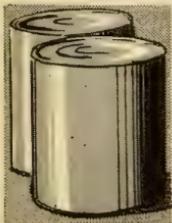
^{1/}THE PACK OF HERRING PREVIOUSLY REPORTED AS CANNED SEA HERRING HAS BEEN CONVERTED TO THE EQUIVALENT OF 100 ^{1/4}-OIL CANS (3 ^{1/2} OZ. NET.) TO THE CASE AND INCLUDED WITH THE PACK OF SARDINES. ^{2/}CASES OF VARIOUS SIZES CONVERTED TO 100 ^{1/4}-OIL CANS (3 ^{1/2} OZ. NET.) TO THE CASE.

aged \$9.09 per standard case, compared with \$5.43 in 1950, and \$6.95 in 1949. Sardines in mustard sauce, the second in importance, averaged \$8.21 per standard case, compared with \$5.33 in 1950 and \$7.08 in 1949. Demand for the 1951 pack has been steady and good.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, JANUARY 1952, P. 26.



Metal Cans--Shipments for Fishery Products, February 1952



Total shipments of metal cans for fishery products for February this year amounted to 4,932 short tons of steel (based on the amount of steel consumed in the manufacture of cans), which was considerably below 5,333 short tons of steel during the corresponding period in 1951. A decline in West Coast tuna canning and sardine canning were largely responsible for this drop in use of metal cans for packing of fishery products. This is based on a report issued by the Bureau of the Census on April 22.

NOTE: DATA CONVERTED TO SHORT TONS OF STEEL ARE ON THE BASIS OF 23.0 BASE BOXES OF STEEL PER SHORT TON OF STEEL.



North Atlantic Fishery Investigations

HADDOCK CATCH ON GEORGES BANK TO DECREASE IN 1952: The 1952 catch of haddock on Georges Bank will be 89.0 million pounds if the fishing effort is the same this year as last, it was announced by the Fish and Wildlife Service on April 29. This is a reduction of 2.3 million pounds or 2.5 percent of last year's catch of 91.3 million pounds.

The Fish and Wildlife Service has been studying the haddock populations on Georges Bank for many years and has now accumulated enough information on the life history of the fish to make predictions of catch possible.

The first prediction was made in April 1951 for the catch of that year, and proved to be 98.4 percent accurate. The 1952 prediction is made on the assumption that the haddock fleet will be fishing the same number of days as last year. If fishing is less intense, landings will be correspondingly less.

The degree to which Georges Bank is fished depends in part on the abundance of fish on the nearby Nova Scotian Banks. During the early months of 1952 large catches have been taken from these banks by the larger trawlers sailing out of Boston. If the great abundance of fish on Nova Scotian Banks continues, Georges Bank will be fished less this year than last.

The catch of haddock from Georges Bank has fluctuated from 223 million pounds in 1929 to 50 million pounds in 1934. Since 1934 it has fluctuated between 78 and 122 million pounds.

Service biologists at the Woods Hole, Mass., Laboratory are studying the causes of these fluctuations. Some of the variations in catch are due to economic conditions, but the greatest fluctuations are brought about by changes in the abundance of fish due to natural causes. The reasons for these natural fluctuations are still not clearly understood.

The ages of the fish that support the Georges Bank fishery range from one to nine years. The number of fish in each age group varies tremendously. In some years there are very successful broods; in others there are virtual failures. The causes of these variations in brood strengths are being studied.

The 1948 brood was unusually large and has been the main support of the Georges Bank fishery for two years. It will continue to contribute a large share of the haddock this year, but in smaller numbers in succeeding years. The future of the Georges Bank haddock depends upon the strengths of the oncoming broods of fish.

About 130 million pounds of haddock are landed at New England ports annually. In 1950 the value of the catch was \$12,000,000. About 70 percent of the haddock landed normally come from Georges Bank.

The catch of haddock surpasses that of the famous cod by over 50 million pounds annually.

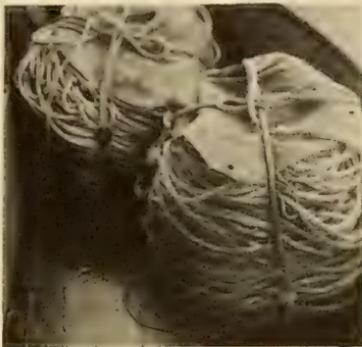


Pacific Coast Halibut Fishery

FISHING REGULATIONS FOR 1952 ANNOUNCED: The Pacific Coast halibut fishing season this year opened at 12:01 a.m. May 14. For quite a few years now the opening date has been May 1. It is estimated that the season this year will prob-



A TYPICAL PACIFIC COAST HALIBUT SCHOONER.



HALIBUT LONG-LINE GEAR READY FOR USE ABOARD A PACIFIC COAST HALIBUT SCHOONER.

ably be not much longer than last year, and maybe shorter if the weather is good. However, market conditions for halibut this year are considerably better than they were in May last year.

The 1952 regulations for the Pacific halibut fishery were approved by the President of the United States and the Governor General of Canada and became

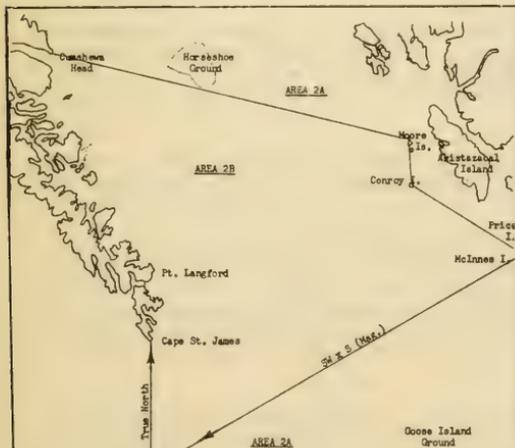


FIGURE 1 - AREA 2B. SHALL INCLUDE ALL CONVENTION WATERS IN THE SOUTHERN PART OF VICARIE STRAITS OFF THE COAST OF BRITISH COLUMBIA WITHIN THE FOLLOWING BOUNDARY: FROM THE EASTERN EXTREMITY OF CUSHMAN HEAD ON MOHSEBY ISLAND, APPROXIMATELY LATITUDE $50^{\circ}02'00''$ N., LONGITUDE $131^{\circ}58'20''$ W., TO THE NORTHERN EXTREMITY OF THE SECOND LARGEST ISLAND OF THE MOORE ISLANDS GROUP, APPROXIMATELY LATITUDE $50^{\circ}02'52''$ N., LONGITUDE $132^{\circ}02'52''$ W., THENCE TO THE NORTHERN EXTREMITY OF COMOY ISLAND, APPROXIMATELY LATITUDE $50^{\circ}07'00''$ N., LONGITUDE $132^{\circ}04'15''$ W., THENCE TO MOHSEBY ISLAND LIGHT ON MOHSEBY ISLAND, APPROXIMATELY LATITUDE $50^{\circ}15'45''$ N., LONGITUDE $132^{\circ}04'32''$ W., THENCE SOUTHWEST OF SOUTH APPROXIMATELY 0.8 MILES TO A POINT APPROXIMATELY LATITUDE $51^{\circ}08'20''$ N., LONGITUDE $131^{\circ}00'50''$ W., THENCE TRUE NORTH THROUGH CAPE ST. JAMES LIGHT TO A POINT ON THE SOUTHERN END OF RUMWIT ISLAND, APPROXIMATELY LATITUDE $51^{\circ}08'42''$ N., LONGITUDE $131^{\circ}00'54''$ W., THENCE ALONG THE EASTERN SHORE OF RUMWIT ISLAND TO MOORE HEAD, APPROXIMATELY LATITUDE $50^{\circ}02'00''$ N., LONGITUDE $131^{\circ}00'00''$ W., THENCE TO POINT LANGFORD, APPROXIMATELY LATITUDE $50^{\circ}00'48''$ N., LONGITUDE $131^{\circ}00'30''$ W., ON MOHSEBY ISLAND, THENCE ALONG THE EASTERN SHORE OF MOHSEBY ISLAND TO THE POINT OF ORIGIN ON CUSHMAN HEAD.

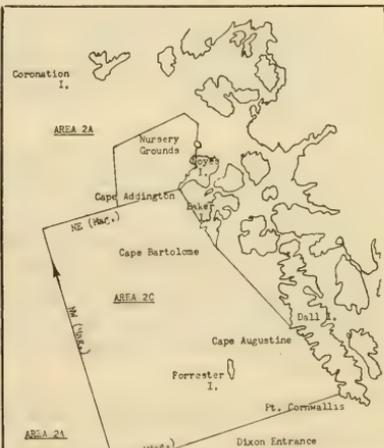


FIGURE 2 - AREA 2C. INCLUDES ALL CONVENTION WATERS OFF THE COAST OF SOUTHEASTERN ALASKA WITHIN THE FOLLOWING BOUNDARY: FROM THE SOUTHERN EXTREMITY OF CAPE ADDINGTON, MOORE ISLAND, LATITUDE $50^{\circ}07'15''$ N., LONGITUDE $133^{\circ}08'12''$ W., TO THE SOUTHERN EXTREMITY OF GRANITE POINT, APPROXIMATELY LATITUDE $50^{\circ}18'57''$ N., LONGITUDE $133^{\circ}04'20''$ W., ON BAKER ISLAND, THENCE ALONG THE SOUTHERN SHORE OF BAKER ISLAND TO CAPE BARTOLOME, APPROXIMATELY LATITUDE $50^{\circ}41'13''$ N., LONGITUDE $133^{\circ}03'42''$ W., THENCE TO CAPE ADDINGTON, APPROXIMATELY LATITUDE $50^{\circ}07'15''$ N., LONGITUDE $133^{\circ}08'12''$ W., ON DALL ISLAND, THENCE ALONG THE SHORE OF DALL ISLAND TO POINT CORNWALLIS, APPROXIMATELY LATITUDE $50^{\circ}42'03''$ N., LONGITUDE $133^{\circ}02'30''$ W., THENCE SOUTHWEST FIFTY MILES TO A POINT APPROXIMATELY LATITUDE $50^{\circ}27'20''$ N., LONGITUDE $132^{\circ}14'11''$ W., THENCE NORTHEAST FIFTY-THREE MILES TO A POINT APPROXIMATELY LATITUDE $50^{\circ}07'43''$ N., LONGITUDE $133^{\circ}02'00''$ W., THENCE NORTHEAST TO THE POINT OF ORIGIN ON CAPE ADDINGTON.

effective on April 22, 1952, according to an announcement by the International Fisheries Commission. These regulations apply to the catching and landing of halibut on the coasts of the United States, Canada, and Alaska.

In regulating the halibut fishery, the Commission has depended principally upon the division of the coast into areas, the setting of annual catch limits for the more important areas, and the closure of each such area when its annual catch limit is reached.

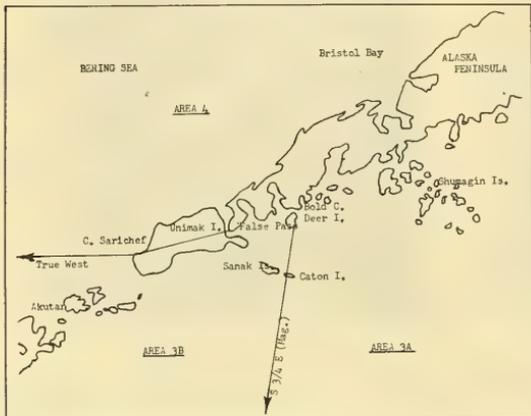


FIGURE 3 - AREA 3B, AS DESCRIBED IN THE PACIFIC HALIBUT REGULATIONS FOR 1952, INCLUDES ALL CONVENTION WATERS OFF THE COAST OF ALASKA THAT ARE BETWEEN A STRAIGHT LINE RUNNING APPROXIMATELY S. 3/4 E. FROM THE ALASKA PENINSULA, NEAR SOLD CAPE, THROUGH THE HIGHEST POINT ON DEER ISLAND AND THROUGH THE HIGHEST POINT ON CATON ISLAND AND A LINE RUNNING FROM THE LIGHT ON CAPE RABUGH AT THE HEAD OF INATAN BAY TO CAPE SARICHEF LIGHT AT THE WEST END OF UNIMAK ISLAND, THENCE TRUE WEST. THE EXACT LOCATIONS OF THE ABOVE MENTIONED POINTS ARE GIVEN IN THE REGULATIONS.

The Commission has also adopted a number of secondary measures. All areas are closed to halibut fishing in the winter to eliminate fishing on the spawning grounds in the event the catch limits are not taken and the areas not yet closed thereby. Two nursery grounds are closed to all halibut fishing, and the landing of halibut below a certain size is prohibited to prevent the destruction of small fish which are very important to the future supply. Certain types of gear which are considered destructive of small halibut are barred from the fishery.

To avoid the wastage of halibut that are unintentionally caught by set-line boats during fishing for other species in areas (not nursery grounds) closed to halibut fishing, set-line boats are allowed to obtain "permits" to retain for sale a proportion of incidentally-caught halibut for a limited time before the closed winter season.

To increase the use of halibut on some recently underfished banks, two sections of Area 2 were in 1951 given the status of separate areas, and opened for a short period after the regular fishing season. This is continued in 1952.

For administrative and enforcement purposes, the Commission requires that halibut boats be licensed and makes the validity of those licenses dependent upon compliance with its regulations. It requires the captains of halibut boats to keep accurate log records of their fishing operations and to make statistical returns regarding the amount and origin of their catches. Halibut dealers must also keep accurate records of their purchases of halibut and make them available to the Commission.

The 1952 regulations are similar to those of 1951 except in the following respects.

The most westerly portion of Area 3, Sanak Islands and westward, is designated as a separate area, namely Area 3B. The remaining portion of old Area 3 is designated as Area 3A. Area 3B and Area 4 which includes the Bering Sea are closed to halibut fishing during the regular fishing season and are opened for 17 days beginning on August 2, at

the season when these grounds formerly produced their best catches.

All halibut vessels fishing Areas 3B and 4 must previously have their licenses validated by an officer stationed at False Pass. This validation may not be secured earlier than July 31,

i.e. 48 hours before the opening of the area on August 2.

All halibut vessels, after fishing in Areas 3B and 4 and prior to unloading any halibut caught in those areas must have their license first endorsed by the officer at False Pass.

Buyers may not unload any halibut from vessels fishing halibut in Areas 3B and 4 unless said vessels are in possession of a properly validated and endorsed license, or unless permission to unload has been obtained from an authorized enforcement officer of either government.

Since Area 4 is opened for a stated 17-day period, the previous 500,000-pound catch limit is removed.

To explore and provide a limited exploitation of the halibut found in the Area 4 part of Bering Sea, crab-fishing trawlers using large-mesh gear (12 inches or over) are permitted in 1952 to retain for sale a proportion of incidentally-caught halibut after the expiration of the 17-day halibut fishing season and until 12:01 a.m. November 14.

A few minor changes are also made to provide for conditions arising from the division of old Area 3 and the issuance of permits to vessels fishing crab with bottom trawls in the Bering Sea.

Regulatory Areas: The regulatory areas are approximately as follows:

Area 1A - South of Cape Blanco, Oregon.

Area 1B - Between Cape Blanco and Willapa Harbor, Washington.

Area 2A - Between Willapa Harbor and Cape Spencer, Alaska, excluding Areas 2B and 2C.

Area 2B - Off the east coast of Moresby Island in southern Hecate Strait (see figure 1).

Area 2C - Off the west coast of Dall and other Islands between Cape Addington and Dixon Entrance (see figure 2).

Area 3A - Between Cape Spencer and a line running South 3/4 East (Mag.) from Bold Cape through Caton Island of the Sanak Islands group.

Area 3B - Between the Bold Cape-Caton Island line and a line running true west from Cape Sarichef on Unimak Island (see figure 3).

Area 4 - Bering Sea north of the Cape Sarichef line.

Catch Limits and Length of Season: The fishing season begins in Areas 1A, 1B, 2A, and 3A on May 14; in Areas 2B and 2C on July 26; and in Areas 3B and 4 on August 2.

Catch limits are placed on Areas 2A and 3A only. These are 25,500,000 pounds, and 28,000,000 pounds, respectively. All weights are to be computed as with heads off and entrails removed.

Areas 2A and 3A are closed to halibut fishing on dates announced by the Commission during the season. These dates are those by which the Commission estimates that the respective catch limits will be caught. Area 1A closes with Area 2A or Area 3A, whichever is later; Area 1B closes with Area 2A. Areas 2B and 2C are closed at 12:01 a.m. August 5. Areas 3B and 4 are closed at 12:01 a.m. August 19.

The fishing season in all areas automatically closes at 12:01 a.m. December 1, if not already closed by catch limit or date. This closure continues until the season is opened in the following year.

Minimum Size Limit: The possession of halibut of less than 26 inches in length from the tip of the lower jaw to the middle of the tail, or of halibut of less than 5 pounds in weight with heads off and entrails removed is prohibited at all times. This applies to both fishermen and dealers.

Closed Nursery Grounds: Two nursery grounds, one located off Timbered Islet in southeastern Alaska and the other off Masset at the north end of the Queen Charlotte Islands and including Masset Inlet, are closed to halibut fishing at all times.

Boats may fish for species other than halibut in these nursery areas but may not have any halibut in their possession, regardless of where it was caught, while they are fishing in these areas.

Nets and Dory Gear Prohibited: It is illegal for a vessel to retain halibut taken with a net of any kind or to possess any halibut while carrying on fishing with a net other than a bait net which is used only to capture bait for the vessel's own use, except that crab trawlers in Area 4 using trawls whose cod end mesh measures 12 inches or more may obtain permits to retain incidentally-caught halibut that are caught between August 19 and November 14. The possession of halibut by other trawlers is thus prohibited, except as indicated in Sections 12 and 5 (b) of the regulations.

The use of a hand gurdy by any dory or small boat which operates from a vessel licensed for halibut fishing by the Commission is prohibited.

Retention of Tagged Halibut: Any fishing vessel regardless of the type of gear used and irrespective of whether an area is open or closed to halibut fishing, may retain and bring to port halibut that are tagged with an International Fisheries Commission tag, provided that such halibut have the tag attached and are brought to the attention of an enforcement officer of either Governments or a representative of the International Fisheries Commission.

Licensing of Vessels: All set-line vessels of five net tons or over engaging in the halibut fishery are required to have a halibut fishing license. A vessel of less than five net tons is only required to have a license if it secures a "permit" to retain halibut taken incidentally while fishing for other species in an area closed to halibut fishing.

Vessels, such as strollers, which fish with hook and line but do not use set-lines need not be licensed regardless of size. These boats may retain and sell such halibut as they may catch in areas open to halibut fishing.

Vessels other than set-line boats are not eligible for permits and may not have any halibut in their possession while fishing in any area closed to halibut fishing, except as provided for trawlers fishing crab in Bering Sea with trawls whose cod end meshes measure 12 inches or more between knots.

Conditions Limiting Validity of Licenses: The halibut license of a vessel must be validated by a Customs or fishery officer before departure from port for each halibut fishing operation for which statistical returns are required.

The license of any vessel fishing for halibut in Area 1A after the closure of Areas 1B and 2A must be validated at a port or place within Area 1A prior to each trip.

The license of any vessel fishing for halibut in Area 3B and/or Area 4 must be validated at False Pass prior to such fishing and must be endorsed at False Pass after such fishing and prior to unloading the fare.

The license may not be validated unless statistical returns have been made for all previous halibut fishing operations.

The license must be carried on board at all times while the vessel is at sea whether halibut fishing or permit fishing and is subject to inspection by authorized enforcement officers at any time.

No license is valid for halibut fishing in more than one area during any one trip except in the case of Areas 3B and 4 or can be validated for halibut fishing in another area while the vessel has any halibut on board. The area for which a license is valid is shown on the license.

No vessel is permitted to possess any halibut in any area other than that for which the license is validated except while it is in actual transit through the other area or within a port of sale and except as indicated in the following paragraph.

No vessel with a license validated for fishing in Area 3A and with baited gear on board may possess halibut outside Area 3A except within 25 miles of Cape Spencer Light, and no boat with a license validated for fishing in Area 2B or 2C and with baited gear on board may possess halibut outside Area 2B or 2C, respectively, except within 20 miles of its boundary. The exceptions allow vessels to seek shelter in Area 2A harbors when fishing in the exposed adjacent parts of Areas 3A, 2B and 2C.

No license may be validated for departure for halibut fishing prior to the following dates.

12:01 a.m. of May 9, for Area 3A validations secured outside Area 3A;

12:01 a.m. of May 12, for Area 3A validations secured inside Area 3A;

12:01 a.m. of May 12, for Area 1A, 1B or 2A validations;

12:01 a.m. of July 24, for Area 2B and 2C validations;

12:01 a.m. of July 31, for Area 3B and/or Area 4 validations.

Permits to Retain Incidentally Caught Halibut:

Any set-line boat which fishes for other species in any area (not a nursery ground) which is closed to halibut fishing may have its halibut license endorsed as a "permit" to retain for sale one pound of halibut for each seven pounds of salable fish, actually utilized, exclusive of salmon or tuna. All weights are to be computed as with heads off and entrails removed.

Permits may be secured for more than one closed halibut area per trip.

Set-line vessels with "permits" may have halibut in their possession in excess of the amount which they are allowed to sell, provided that such excess does not exceed 30 percent of the amount they can legally sell and provided that such excess is surrendered to an enforcement officer. The permit of any set-line vessel becomes invalid if the vessel has in its possession more halibut than the permit allows.

For example, a set-line vessel having a net weighed-out amount of 1,000 pounds of heads-off salable fish of other species, not including salmon or tuna, can sell 2,000 pounds of halibut. It can possess up to 600 pounds of additional halibut (30 percent of 2,000) which must be forfeited. If it possesses more than this 30 percent excess, it is violating the regulations.

All permits for set-line boats become invalid for the retention or possession of halibut at 12:01 a.m. November 16. This means that such permit boats must actually unload their halibut by the above date.

Crab trawlers with permits for Area 4 may retain for sale incidentally-caught halibut not to exceed one pound of halibut for each five pounds drained weight, or the equivalent, of picked crab meat.

Crab trawlers retaining incidentally-caught halibut in Area 4 cannot retain any halibut caught after 12:01 a.m. November 14 but are permitted to possess previously-caught halibut until 12:01 a.m. December 14. This is to permit such vessels to complete their crab-fishing operations and to return to their home ports for unloading of their fares.

Crab trawlers retaining halibut under permit in Area 4 must provide documentary evidence of date of departure from the area subsequent to such fishing. This evidence may be secured at some place within Area 4 or at Akutan.

Permits cannot be secured for any area until after the close of the halibut fishing season in that area.

Any halibut on board a vessel at the time the vessel secures a permit is to be treated as though actually caught under that permit.

Halibut retained under permit may not be filleted, fletched, steaked, or butchered beyond the removal of the head and entrails while on board the catching vessel.

Halibut taken under permit is not to be unloaded until all halibut on board have been reported by the captain and dealer to a Customs or fish-

ery officer. The unloading is to be done under such supervision as the officer deems advisable.

A permit terminates at the time of first landing after its issuance and a new permit must be secured before any subsequent fishing trip for which a permit is required.

The above provisions make it necessary for boats fishing under permit to sell or land their fares at ports where Customs or other authorized enforcement officers are available.

Statistical Returns by Vessels: Statistical returns, as to the amount of each species, port of landing, and regulatory area in which the fish were caught, must be made to an authorized Customs or fishery officer by the operator of every licensed vessel. This must be done within 96 hours after landing halibut, except when the landing is made at a port where there is no authorized officer. In this event, a return must be made within 96 hours of the first subsequent entry into a port where an officer is located.

Operators of licensed vessels must keep an accurate log record of all fishing operations for the benefit of the Commission.

Dealers Records: All dealers must keep detailed records of their purchases of halibut and other species landed with the halibut. They must furnish these records to the Commission and to enforcement officers on request.

A dealer receiving fish from any vessel fishing under a permit must within 48 hours make statistical return to an authorized enforcement officer.

A dealer buying fish from any vessel fishing in Area 3B and/or Area 4 may not unload any halibut from said vessel unless the vessel's license has been validated at False Pass subsequent to such fishing or unless permission to unload such halibut has been received from an enforcement officer of either Government.

The possession by dealers of halibut taken by a vessel without a license or a permit when such license or permit is required, is prohibited.

CATCH AND SEASONS, 1950-51: The United States and Canadian Pacific halibut catch in 1951 totaled 56,347,524 pounds, compared with 57,018,010 pounds in 1950 (see table). The season for the principal fishing areas (1A, 1B, 2A, and 3A) in

United States and Canadian Landings of Pacific Halibut, 1950-51						
Port	12 Months 1951			12 Months 1950		
	U.S. Vessels Pounds	Canadian Vessels Pounds	Total Pounds	U.S. Vessels Pounds	Canadian Vessels Pounds	Total Pounds
Alaska:						
Juneau	2,392,000	55,000	2,447,000	3,797,408	32,285	3,829,693
Ketchikan (includes Craig & Taku)	5,376,000	-	5,376,000	6,994,510	12,840	6,997,350
Pellion City	2,264,000	267,000	2,531,000	3,369,040	-	3,369,040
Petersburg (includes Tyee)	2,808,000	-	2,808,000	3,141,332	-	3,141,332
Sitka	2,064,000	42,000	2,106,000	3,087,991	15,257	3,102,848
Central Alaska (Ports west Cape Spencer)	3,729,000	218,000	3,947,000	4,365,048	-	4,365,048
Other Alaska Ports (Wrangell, etc.)	496,000	-	496,000	562,892	9,075	571,967
Total Alaska	19,129,000	582,000	19,711,000	25,296,821	69,457	25,366,278
British Columbia:						
Prince Rupert (includes Nams, Buta- dale, Klenku, and others)	4,383,000	15,399,000	19,782,000	3,683,686	15,762,822	19,446,508
Vancouver (includes Vancouver Is- land, New Westminster, etc.)	8,000	5,488,000	5,493,000	-	2,941,364	2,941,364
Total British Columbia	4,391,000	20,884,000	25,275,000	3,683,686	18,704,186	22,387,872
Washington:						
Seattle	9,640,524	-	9,640,524	7,383,577	-	7,383,577
Other Washington Ports	1,439,000	-	1,439,000	1,290,229	-	1,290,229
Total Washington	11,079,524	-	11,079,524	8,673,806	-	8,673,806
Oregon	282,000	-	282,000	590,054	-	590,054
Total	34,881,524	21,466,000	56,347,524	38,244,367	18,773,643	57,018,010

NOTE: INCLUDES INCIDENTALY-CAUGHT HALIBUT.

1951 was the shortest on record. The 1951 over-all season for the areas mentioned was 56 days long as compared with 66 days in 1950, 73 days in 1949, 72 days in 1948, and 109 days in 1947.

The regular halibut season in 1951 opened on May 1 for all areas except 2B and 2C. Areas 2A and 1B closed at midnight May 28, 1951, and Areas 3, 1A, and 4 closed at midnight June 25, 1951. Two new areas established in 1951 (Areas 2B and 2C) opened for 10 days of fishing on July 26.

In 1950 the season also opened on May 1. Areas 2 and 1B closed at midnight June 1 and Areas 3, 1A, and 4 closed at midnight July 5, 1950. For 1950 there was no additional short season as in 1951.



U.S. Canned Tuna and Tuna-Like Fish Pack, 1951

The United States canned tuna and tuna-like fish pack in 1951 amounted to 8,236,725 standard cases, valued at \$99,046,206 to the packer. This was a decline of 9 percent in quantity and 12 percent in value as compared with the pre-

Species	CALIFORNIA			WASHINGTON AND OREGON			ATLANTIC COAST		
	Quantity Std. Cases/	Total Value \$	Avg. Price Per Std. Case/	Quantity Std. Cases/	Total Value \$	Avg. Price Per Std. Case/	Quantity Std. Cases/	Total Value \$	Avg. Price Per Std. Case/
Tuna:									
Albacore	1,171,482	14,462,416	12.35	392,271	5,496,169	14.01	-	-	-
Yellowfin	3,818,034	45,207,651	11.84	3/252,961	3/3,157,774	12.68	-	-	-
Bluefin	2/71,922	2/797,817	11.09	-	-	-	-	-	-
Skipjack	2,126,800	25,236,212	11.87	3/	3/	-	-	-	-
Tonno	160,626	2,180,231	13.57	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	-	3/137,178	3/1,561,939	11.39
Total tuna	7,346,964	87,896,329	11.96	645,232	8,653,963	13.41	137,178	1,561,939	11.39
Tuna-Like Fish:									
Bonito	14,469	134,364	9.29	-	-	-	-	-	-
Yellowtail	90,982	809,612	8.90	-	-	-	-	-	-
Total tuna-like fish	105,451	943,977	8.95	-	-	-	-	-	-
1951 Grand Total ..	7,454,315	89,800,304	11.92	645,232	8,653,963	13.41	137,178	1,561,939	11.39
1950 Grand Total ..	7,971,897	98,464,753	12.34	957,585	13,459,922	14.06	87,059	966,919	11.11
1949 Grand Total ..	6,566,268	87,703,519	13.36	647,716	9,202,517	14.21	76,334	804,289	10.54

1/CASES OF VARIOUS SIZES CONVERTED TO THE EQUIVALENT OF 48 NO. 2 TUNA CANS TO THE CASE, EACH CAN 7 OUNCES NET WEIGHT OF SOLID MEAT OR 6 OUNCES NET WEIGHT OF FLAKES, CHUNKS, OR GRATED.

2/SMALL PRODUCTION OF BIG-EYED TUNA INCLUDED WITH BLUEFIN PRODUCTION.

3/SMALL PRODUCTION OF SKIPJACK TUNA INCLUDED WITH YELLOWFIN PRODUCTION.

4/INCLUDES ALBACORE, BLUEFIN, LITTLE, AND YELLOWFIN TUNA.

NOTE: DIETETIC TUNA PACK INCLUDED IN ABOVE FIGURES.

vious year's pack (see table 2). Although the bulk of the pack was produced from tuna caught by domestic vessels, a small percentage was produced from imported frozen tuna mainly from Japan, Peru, and Chile.

California accounted for 7,454,315 cases (or 90 percent of the total), followed by Oregon with 542,401 cases, Washington 102,831 cases, and the States of

Species	1951 Total			1950 Total			1949 Total		
	Quantity Std. Cases/	Total Value \$	Avg. Price Per Std. Case/	Quantity Std. Cases/	Total Value \$	Avg. Price Per Std. Case/	Quantity Std. Cases/	Total Value \$	Avg. Price Per Std. Case/
Tuna:									
Albacore	1,563,753	19,958,605	12.76	2,052,842	28,877,954	14.06	1,466,849	21,750,314	14.83
Yellowfin	3/4,070,995	3/48,365,425	11.88	4/245,346	5/225,806	12.07	3,902,763	51,412,937	13.17
Bluefin	2/71,922	2/797,817	11.09	3/51,390	3/564,160	10.99	76,877	999,642	13.00
Skipjack	2/2,126,800	2/25,236,212	11.87	3/2,252,351	3/27,032,359	11.95	4/1,438,889	4/18,492,872	12.85
Tonno	160,626	2,180,231	13.57	3/84,610	3/469,125	14.18	168,642	2,879,943	15.30
Miscellaneous	3/137,178	3/1,561,939	11.39	3/67,059	3/966,919	11.11	3/76,334	3/804,289	10.54
Total tuna	8,131,274	98,102,329	12.06	8,944,598	119,136,363	12.54	7,130,455	96,039,797	13.47
Tuna-Like Fish:									
Bonito	14,469	134,364	9.29	12,351	122,411	9.45	33,734	365,444	10.83
Yellowtail	90,982	809,612	8.90	58,936	571,320	9.68	124,133	1,305,084	10.35
Total tuna-like fish	105,451	943,977	8.95	71,943	693,731	9.64	159,867	1,670,528	10.45
Grand Total	8,236,725	99,046,206	12.02	9,016,541	119,830,094	12.51	7,290,320	97,710,325	13.40

1/CASES OF VARIOUS SIZES CONVERTED TO THE EQUIVALENT OF 48 NO. 2 TUNA CANS TO THE CASE, EACH CAN 7 OUNCES NET WEIGHT OF SOLID MEAT OR 6 OUNCES NET WEIGHT OF FLAKES, CHUNKS, OR GRATED.

2/SMALL PRODUCTION OF SKIPJACK TUNA INCLUDED WITH BLUEFIN PRODUCTION.

3/SMALL PRODUCTION OF BLUEFIN TUNA INCLUDED WITH SKIPJACK PRODUCTION.

4/INCLUDES A SMALL PRODUCTION OF LITTLE TUNA.

5/INCLUDES ALBACORE, BLUEFIN, LITTLE, AND YELLOWFIN TUNA.

Maine, Massachusetts, Maryland, and South Carolina with the remainder of 137,178 cases (see table 1).

From the standpoint of quantity, the 1951 pack was the second highest on record. The record pack was canned in 1950 when 9,016,541 cases were produced (table 3). On the basis of value to the packer, the 1951 pack was the third highest on record--\$99,046,206. The value of the 1950 pack was the highest on record--\$112,830,094, followed by the 1948 pack (7,037,758 cases)--\$112,612,296.

Since 1948 when the pack was sold at an average price of \$16.00 per standard case, the price has steadily declined. In 1949 the average price was \$13.40, in 1950 \$12.51, and in 1951 it dropped again to \$12.02--the lowest average price since 1945 when it reached a low of \$10.46 per standard case. A high inventory at the

beginning of 1951 and a substantial increase in imports of canned tuna and tuna-like fish towards the end of 1950 resulted in a supply which exceeded demand.

Table 3 - Pack of Canned Tuna and Tuna-Like Fish Pack, 1940-51
(Quantity in Standard Cases and Value to the Cannery)

Year	Quantity	Total Value	Avg. Price Per Std. Case	Year	Quantity	Total Value	Avg. Price Per Std. Case
	Std. Cases	\$	\$		Std. Cases	\$	\$
1951 ..	8,236,725	99,046,206	12.02	1945 ..	4,531,565	47,407,451	10.46
1950 ..	9,016,541	112,830,094	12.51	1944 ..	3,560,020	40,836,117	11.80
1949 ..	7,290,320	97,710,325	13.40	1943 ..	2,696,073	31,430,189	11.66
1948 ..	7,037,758	112,612,296	16.00	1942 ..	2,484,749	30,742,493	12.37
1947 ..	5,894,495	90,609,175	15.37	1941 ..	2,931,581	19,397,887	6.62
1946 ..	4,784,484	59,135,823	12.36	1940 ..	4,188,460	23,727,560	5.66

1/CASES OF VARIOUS SIZES CONVERTED TO THE EQUIVALENT OF 48 NO. 1 TUNA CANS TO THE CASE, EACH CAN 7 OUNCES NET WEIGHT OF SOLID-PACKED MEAT OR 6 OUNCES NET WEIGHT OF FLAKES, CHUNKS, OR GRATED.

When the packers found that during the summer of 1951 the stocks were not moving as readily as they should be during the high consumption season of the year, prices were cut substantially. The adverse market situation for canned tuna resulted in the curtailment of tuna fishing towards the end of that year. However, the inventory at the end of 1951 was still too high. Although early in 1952 the market for canned tuna improved slightly, it was still not in a healthy state.



Wholesale and Retail Prices

WHOLESALE PRICES, MARCH 1952: Although the wholesale price index for edible fishery products again started to climb during March this year, there were a number of items included in the index that showed substantial price declines. The usual seasonal climb in production in New England during the month accounted for the lower prices reported for fresh and frozen fishery products originating from that area. The edible fish and shellfish (fresh, frozen, and canned) revised wholesale price index for March 1952 was 109.5 percent of the 1947-49 average--0.5 percent lower than during the same month a year earlier, but 1.2 percent higher than the previous month (see table 1).

In March, most salt-water species of fresh dressed or whole fin fish sold substantially below February, while prices for fresh-water varieties were considerably higher since both United States and Canadian Great Lakes production was reported at a low level. Drawn, dressed, or whole fin-fish prices in March 1952 were 1.0 percent below the previous month, but 1.1 percent higher than in March last year. Fresh large offshore haddock prices, which had dropped considerably from January to February this year, continued their downward trend. During the month, prices for this variety were 9.7 percent less than in February and 2.4 percent less than in March 1951. Frozen Western halibut prices at New York City, which already had been rising steadily for several months, rose 1.5 percent more in March, but they were still 2.3 percent below the same month in 1951. On the other hand, all fresh-water species were reported selling at prices considerably higher than during March 1951.

Processed fresh fish and shellfish prices in March were 2.5 percent above February and 9.4 percent above March 1951. This was mainly due to an increase in the price of fresh shrimp at New York City--7.7 percent higher than in February and 22.6 percent higher than in March 1951. On the other hand, fresh haddock fillet prices dropped 8.1 percent from February to March this year and were 3.3 percent below the same period last year.

Lower prices for all frozen fillets accounted for the drop in the processed frozen fish and shellfish index of 1.2 percent from February to March; however,

this index was still 3.3 percent higher than in March 1951. Although March frozen fillet prices were substantially below the previous month, prices for haddock fillets were still 25.7 percent higher and flounder fillets 4.7 percent higher than in March 1951, while ocean perch fillets were 18.9 percent lower. The frozen shrimp market continued strong and March prices rose 8.7 percent above February levels and were 12.1 percent above March a year ago.

The index for canned fishery products in March this year was 7.2 percent below the same month a year earlier, but 3.0 percent above February. Prices went up 9.6 percent for tuna and 7.0 percent for California sardines from February to March, and the former were 5.0 percent

Table 1 - Revised Wholesale Price Indexes for Edible Fish and Shellfish, March 1952, with Comparative Data

GROUP, SUBGROUP, AND ITEM SPECIFICATION	POINT OF PRICING	INDEXES (1947-49 = 100)			
		Mar. 1952	Feb. 1952	Jan. 1952	Mar. 1951
ALL FISH AND SHELLFISH (Fresh, Frozen, and Canned)		109.5	108.2	114.5	110.1
Fresh and Frozen Fishery Products:		114.4	114.3	125.1	110.2
Drawn, Dressed, or Whole Fin Fish:		117.2	118.4	136.4	115.9
Haddock, large, offshore, drawn, fresh	Boston	108.3	120.0	174.7	111.0
Halibut, Western, 20/80 lbs., dressed, fresh or frozen	New York City	108.4	106.8	102.2	110.9
Salmon, king, lge. & med., dressed, fresh or frozen	" " "	118.6	120.9	120.9	117.6
Whitefish mostly Lake Superior, drawn (dressed), fresh	Chicago	161.1	156.2	156.2	147.5
Whitefish, mostly Lake Erie pound net, round, fresh	New York City	156.7	106.2	88.0	135.0
Lake trout, domestic, mostly No. 1, drawn (dressed), fresh	Chicago	133.2	133.2	129.1	122.5
Yellow pike, mostly Michigan (Lakes Michigan & Huron), round, fresh	New York City	155.9	99.7	99.7	125.7
Processed, Fresh (Fish and Shellfish):		111.5	108.8	111.9	101.9
Fillets, haddock, small, skins on, 20-lb. tins	Boston	115.7	125.9	154.9	119.6
Shrimp, lge. (26-30 count), headless, fresh or frozen	New York City	110.7	102.8	81.4	90.3
Oysters, shucked, standards	Norfolk area	111.3	111.3	136.1	110.5
Processed, Frozen (Fish and Shellfish):		109.6	110.9	110.5	106.1
Fillets: Flounder (yellowtail), skin- less, 10-lb. pkg.	Boston	136.7	143.7	143.7	130.6
Haddock, small, 10-lb. cello- pack	"	113.4	122.7	122.7	90.2
Ocean perch (rosefish), 10-lb. cello-pack	Gloucester	113.2	120.4	125.2	139.6
Shrimp, lge. (26-30 count), 5-lb. pkg.	Chicago	96.4	88.7	84.8	86.0
Canned Fishery Products:		102.2	99.2	98.9	110.1
Salmon, pink, No. 1 tall (16 oz.), 48 cans per case	Seattle	109.6	109.6	109.6	130.4
Tuna, light meat, solid pack, No. 2 tuna (7 oz.), 48 cans per case	Los Angeles	89.0	81.2	81.2	93.7
Sardines (pilchards), California, tomato pack, No. 1 oval (15 oz.), 48 cans per case	" "	109.4	102.2	102.2	78.8
Sardines, Maine, keyless oil, No. 1 drawn (3 1/2 oz.), 100 cans per case	New York City	105.9	105.9	102.7	68.5

lower and the latter 38.8 percent higher than in March 1951. Pink salmon and Maine sardine prices this March remained steady at February levels, but pink salmon sold 16.0 percent below and Maine sardines sold 54.6 percent above March a year ago.

RETAIL PRICES, MARCH 1952: There was no change in the prices paid for all foods by urban families of moderate incomes between mid-February and mid-March this year, according to the Bureau of Labor Statistics, U. S. Department of Labor. However, the retail price index for all foods this March 15 was 0.6 percent above a year earlier.

Following the usual seasonal trend, retail prices for fresh, frozen, and canned fin-fish products dropped 1.1 percent from mid-February to mid-March and were 1.0 percent below the same period a year earlier.

Item	Base	I N D E X E S		
		Mar. 15, 1952	Feb. 15, 1952	Mar. 15, 1951
All foods	1935-39 = 100	227.6	227.5	226.2
All fin fish (fresh, frozen, and canned)	do	347.6	351.3	351.2
Fresh and frozen fin fish	1938-39 = 100	296.7	300.1	287.6
Canned salmon: pink	do	460.9	467.1	502.4

Fresh and frozen fin-fish prices dropped 1.0 percent from February 15 to March 15, but they were still 3.2 percent above mid-March 1951. Canned fin-fish prices declined 1.3 percent from mid-February to mid-March and were 8.3 percent below the corresponding period the previous year.

Product	Unit	United States	
		Average	Range of Prices
Frozen Fin Fish Fillets:			
Ocean perch ^{1/}	lb.	45.9	29-69
Haddock ^{2/}	lb.	51.8	35-79
Canned Fin Fish:			
Salmon, pink ^{3/}	16-oz. can	57.0	42-78
^{1/} PRICED IN 46 CITIES OUT OF 56.			
^{2/} PRICED IN 47 CITIES OUT OF 56.			
^{3/} PRICED IN 56 CITIES.			

Retail prices on March 15 for frozen ocean perch fillets averaged 45.9 cents per pound in 46 cities, while frozen haddock fillets averaged 51.8 cents per pound in 47 cities. The previous year frozen ocean perch fillets retailed at 46.7 cents and frozen haddock fillets at 50.4 cents per pound. Canned pink salmon this March sold at 57.0 cents per 16-oz. can as compared with 62.2 cents per can in mid-March 1951.





International

INTERNATIONAL SEAWEED SYMPOSIUM ANNOUNCED: An International Seaweed Symposium, sponsored by the Institute of Seaweed Research, Inveresk, Midlothian, Scotland, is to be held in Edinburgh from July 14-17, 1952. The Organizing Committee has the cooperation of corresponding delegates in the following countries: Australia, Canada, Chile, France, Germany, New Zealand, Norway, South Africa, Spain, Sweden, and the United States.

Sessions will be held in the Department of Zoology, Edinburgh University, and will deal with the following major topics: phycology; algal chemistry; harvesting technology; utilization in industry, medicine and agriculture; and world seaweed resources--survey and conservation.

FOOD AND AGRICULTURE ORGANIZATION

LATIN AMERICAN FISHERIES COUNCIL DRAFT AGREEMENT SENT TO INTERESTED MEMBER GOVERNMENTS: A draft agreement for establishment of a Latin American Fisheries Council has been mailed to 16 interested member governments of the Food and Agriculture Organization, according to an April 22 news release from the Food and Agriculture Organization in Rome. The FAO Acting Director-General recommended favorable consideration of the draft agreement to the Governments of Brazil, Colombia, Costa Rica, Cuba, Chile, El Salvador, France, Mexico, The Netherlands, Nicaragua, Panama, Peru, the United Kingdom, the United States, Uruguay, and Venezuela.

Some months ago, these governments unanimously agreed that it would be desirable to form a council for the development and proper utilization of the living aquatic resources of the Latin American region, and that these ends should be attained through international cooperation. Now, with the mailing out of the draft copies of agreement, such a Council will come into being as soon as five notifications of acceptance have reached FAO headquarters in Rome.

The functions of the Council will be as follows:

1. TO FORMULATE THE OCEANOGRAPHICAL, LIMNOLOGICAL, BIOLOGICAL, AND TECHNICAL ASPECTS OF THE PROBLEMS OF DEVELOPMENT AND PROPER UTILIZATION OF LIVING AQUATIC RESOURCES;
2. TO ENCOURAGE AND COORDINATE RESEARCH AND THE PRACTICAL APPLICATION OF IMPROVED METHODS EMPLOYED IN FISHERIES RESEARCH AND IN OTHER FIELDS OF FISHERIES;
3. TO ASSEMBLE, PUBLISH, AND DISSEMINATE OCEANOGRAPHICAL, LIMNOLOGICAL, BIOLOGICAL, AND TECHNICAL INFORMATION RELATING TO LIVING AQUATIC RESOURCES;
4. TO RECOMMEND TO MEMBER GOVERNMENTS SUCH NATIONAL OR COOPERATIVE RESEARCH AND DEVELOPMENT PROJECTS AS MAY APPEAR NECESSARY OR DESIRABLE TO FILL GAPS IN SUCH KNOWLEDGE;
5. TO UNDERTAKE, WHERE APPROPRIATE, COOPERATIVE RESEARCH AND DEVELOPMENT PROJECTS DIRECTED TO THIS END;

6. TO ELABORATE PLANS FOR THE TRAINING OF PERSONNEL ENGAGED IN FISHERIES RESEARCH, IN THE FISHING INDUSTRY OR FISHERIES ADMINISTRATION, AND TO PROMOTE THE ESTABLISHMENT OF FISHERIES EXTENSION SERVICES THROUGHOUT THE THE REGION;
7. TO PROPOSE, AND WHERE NECESSARY TO ADOPT, MEASURES TO BRING ABOUT THE STANDARDIZATION OF SCIENTIFIC EQUIPMENT, TECHNIQUES, AND NOMENCLATURES;
8. TO REPORT UPON SUCH QUESTIONS RELATING TO OCEANOGRAPHICAL, LIMNOLOGICAL, BIOLOGICAL, AND TECHNICAL PROBLEMS CONCERNING FISHERIES AS MAY BE RECOMMENDED TO IT BY MEMBER GOVERNMENTS OR BY THE ORGANIZATION AND, WHEN IT IS THOUGHT DESIRABLE, BY OTHER INTERNATIONAL, NATIONAL, OR PRIVATE ORGANIZATIONS WITH RELATED INTERESTS;
9. TO REPORT AFTER EACH MEETING UPON ITS ACTIVITIES AND ON MATTERS FALLING WITHIN ITS COMPETENCE AS MAY SEEM TO IT DESIRABLE.

The agreement directs governments adhering to the Council to cooperate closely with other international and/or national bodies in matters of mutual interest, and particularly those concerned directly with Latin America.



Brazil

EXPANDS FISHERY INDUSTRIES: A broad program to expand and modernize Brazil's fishery industries has been inaugurated, according to an April 4 American consular dispatch from Rio de Janeiro.

Financial assistance has been extended to fishermen for improvement of equipment. Refrigeration plants and warehouses are to be built in the Federal District. A large warehouse is being constructed in Santos for the storage of fishery products. In Rio Grande do Sul, work has been done in a program for supplying frozen fish regularly to the Federal District.

Steps have been also taken for the creation of a large national fishing fleet. Six modern vessels were purchased in Europe for use along the southern coast of Brazil.



British West Indies

FISH-OIL INDUSTRY PLANNED: A pilot plant to be constructed in St. Vincent will extract oil from the blackfish--a species of small whale, according to the April 5 issue of Foreign Trade. Cost of the development will be partly met by a grant from the Colonial Development Company. Plans are to increase the present blackfish catch of about 60 tons (yielding 2,650 gallons of oil) to more than 100 tons (yielding 4,000 gallons). The potential value of the meat, either canned or dried, production of bone meal, and reduction of waste and flesh to meal are also being studied. Eventually this may become a permanent industry.



Canada

ATLANTIC COAST FILLET PRODUCTION GREATER IN 1951: An expansion of fresh and frozen fillet production on the Canadian Atlantic Coast (including Newfoundland) has taken place the past few years (table 1), reports the Canadian Department of Fisheries. This development was accomplished by a diversion from the salted-cod production and also by a heavier catch of rosefish (ocean perch), plaice, and other flatfish which are marketed in filleted form. The growth in the catch of these fish contributed significantly to the increase in fillet production in the past two years.

The output of rosefish (ocean perch) filets has increased from year to year in Newfoundland. It was 1.6 million pounds in 1947 and reached 9.5 million pounds in 1951. In Nova Scotia this production also increased by one million pounds for the same period.

In the past three years, the catch of Canadian plaice has grown significantly. It was 3.8 million pounds in 1949, 9.9 million pounds in 1950, and 20.8 million pounds in the past year. Offshore fishing units operating from Nova Scotia ports are mainly responsible for this increase. Plaice landings at Halifax in 1951 were above those of 1950 by 258 percent. The growth of the fillet industry, in the last five years, from cod and allied species, rosefish, and flatfish is illustrated in table.

The increase in the production of fresh and frozen filets has been made possible by a steady modernization of plant facilities for the filleting, freezing,

Type	1951	1950	1949	1948	1947
	(million pounds)				
Maritimes & Quebec:					
Cod & allied species ..	46.7	44.7	36.1	46.3	30.6
Rosefish (ocean perch).	1.4	1.1	1.2	0.8	0.4
Flatfish	8.7	2.7	2.0	1.4	1.1
TOTAL	56.8	48.5	39.3	48.5	32.1
Newfoundland:					
Cod & haddock	20.5	25.6	19.2	23.4	13.0
Rosefish (ocean perch).	9.5	6.6	4.5	2.1	1.6
Flatfish	3.8	2.7	1.7	0.6	0.1
TOTAL	33.8	34.9	25.4	26.1	14.7
GRAND TOTAL	90.6	83.4	64.7	74.6	46.8

and storage of fishery products. Fresh-fish processing, freezing and cold-storage plants presently under construction or proposed in Nova Scotia and Newfoundland will further augment production capacity.

Some additional facilities and new plants have come into operation in New Brunswick and Nova Scotia. There has been a notable development in northeastern New Brunswick

at Caraquet where filleting and freezing facilities--served by a growing fleet of small dragners--have been modernized; an increase in fresh fillet production has taken place in the Shippegan area; and a new filleting and freezing plant has come into operation at Dingwall, Cape Breton Island. In Prince Edward Island a filleting plant has been in operation for over a year at Souris.

A more substantial increase in plant capacity and in production of frozen filets can be expected as a result of the developments currently under way at Louisburg and Petit de Grat, Cape Breton Island, where three large filleting and two freezing and cold-storage plants are under construction.

While the number of frozen fillet-processing plants in Newfoundland has remained fairly constant in recent years, there has been some expansion by way of additions and modernization in existing plant facilities at St. John's and at

Bonavista. Productive capacity will be increased significantly when four proposed new filleting and freezing plants are in operation. A new plant has been constructed at Fermeuse on the east coast of the Avalon Peninsula, and plans are under way for similar plants proposed for Placentia, Placentia Bay; Grand Bank, Fortune Bay; and Gaultois, Hermitage Bay.

The Canadian housewife has been more and more receptive to fresh and frozen fillets in late years and sales to the United States have also grown.

In 1951 exports of fillets originating from the Atlantic Coast were 69 million pounds, valued at C\$15 million, against 54 million pounds and C\$11 million during the preceding year.

Sales of all fresh and frozen products to the United States were valued at C\$53.3 million in 1951, compared with C\$49.7 million in 1950. All of this increase is attributable to the increased Atlantic Coast production of fillets and, in fact, mainly to the increased production of fillets in the Maritime Provinces. In Newfoundland the output of fillets was slightly less than in 1950, due to the failure of the haddock fishery.

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GREAT BRITAIN WILL NOT PURCHASE CANADIAN CANNED SALMON IN 1952: Great Britain this year will not purchase any canned salmon from Canada, according to an announcement by the British Ministry of Food at Ottawa. About C\$6 million worth of canned salmon were purchased from Canada by Great Britain in 1950, and C\$6.7 in 1951. These sales were vital to the British Columbia fishing industry, being the only significant purchases by the sterling market and the largest foreign contracts for the product.

The announcement by the British Ministry of Food that Britain's current cut back on dollar imports will include canned salmon is reported to be a heavy blow to the British Columbia salmon-canning industry. Proposals have been put forward whereby Canada would help Britain finance food purchases, but so far no such policy has been officially adopted.

An indication of the importance of the canned salmon industry to Canada is shown by the fact that the marketed value of British Columbia canned salmon was last reported at C\$63 million--over 70 percent of the value of all fisheries production in British Columbia.

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NOVA SCOTIA HALIBUT CATCH DROPPED IN 1951: The halibut catch in Nova Scotia dropped from 11.2 million pounds in 1950 to 7.6 million pounds in 1951. Inventories of frozen halibut were high at the outset of the fishing season and the price was less attractive than a year ago, reports the Canadian Department of Fisheries. In fact, over-all results for 1951 indicate that compared with the previous year the price to fishermen was down by 6 percent and the export price of the fresh product was down by 10 percent.

Sales of Atlantic halibut to the United States at \$1.4 million were about 50 percent less than in 1950.

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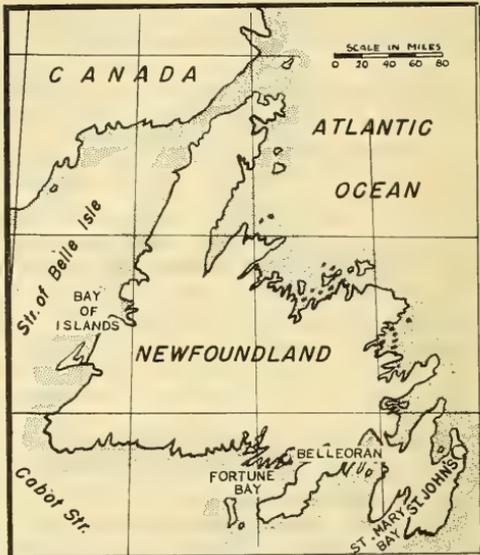
NEWFOUNDLAND INTERESTED IN SWEDISH FISHING VESSELS AND METHODS: Representatives from Newfoundland's fishing industry visited Sweden recently to study Swedish fishing vessels and fishing methods, a February 28 American consular dispatch from Goteborg reports.

The visit is part of an investigation being made by Newfoundland to improve its high-seas fishing methods. Norwegian vessels and fishing methods have been tried, but it appears that the Newfoundland experts are more in favor of the Swedish type of high-seas fishing vessels and the methods used by Swedish fishermen.

Interest shown by the Newfoundland representatives is so great that there is now under discussion a proposal to dispatch a modern Swedish high-seas fishing vessel, with complete Swedish crew, to Newfoundland, to demonstrate Swedish fishing methods on the large cod banks. Newfoundland will pay half the costs of such an expedition.

An order for Swedish fishing vessels from Newfoundland is now very welcome, as the smaller yards will soon have completed the Russian contract for fishing vessels.

Should the negotiations with Newfoundland be successful, the smaller West Coast yards will be fully occupied for several years, as the Newfoundland order is expected to comprise vessels and equipment to a value of about ten million U. S. dollars.



Costa Rica

INTERESTED IN DEVELOPING FISHING INDUSTRY: Costa Rica has no fishing industry as such. The very small amount of fish required for the local market is caught by a few small boats off Puntarenas and Limon, states an April 8 American consular report from San Jose.

National interest in the fishing industry is centered on development of Puntarenas as a base for foreign-owned tuna boats, rehabilitation of the bait supply in local waters for tuna fishermen, development of the small tuna-packing plant there, and possible development of shrimp fishing in local waters.

The total 1951 tuna pack in Costa Rica's one plant amounted to 7,110 cases (about 178 metric tons, net weight). Exports of canned tuna in 1951, according to preliminary statistics, amounted to just over 9 tons gross weight (about 360 cases), valued at US\$11,677, and shipped chiefly to Venezuela, compared to 64 tons (about 2,560 cases), valued at US\$88,000, shipped chiefly to Venezuela and the Canal Zone in 1950.

Shipments of fresh-frozen tuna in 1951 (all to the United States) amounted to about 1,364 tons as compared to 4,486 tons in 1950. These shipments are re-exports of tuna frozen and trans-shipped at Puntarenas. The volume decrease reflects the decrease during the year in American tuna-fishing activities.



Ecuador

SHRIMP FISHERY TO BE DEVELOPED: In order to engage in shrimp fishing near the mouth of the Guayas River, an Ecuadoran company has been formed with private capital from the United States. A contract-concession was signed between the Ecuadoran Government and this firm on February 8, 1952.

The firm plans to supply the local demand for shrimp and to reduce the price of this item for the consumer, and will then freeze any excess supply for shipment to the United States. The firm has calculated that the minimum investment required will be approximately US\$5,000,000.



Iceland

TRAWLER SEAMEN'S LABOR DISPUTE SETTLEMENT: Crews manning 35 out of Iceland's operational fleet of 42 trawlers struck for higher pay and better working conditions from February 21 to March 7, 1952. The settlement which ended the dispute was considered to be a victory for the trawler seamen, since their most important demands were met fully or more than halfway, states a March 27 American consular dispatch from Reykjavik, Iceland. The major issues in the dispute, and the provisions of the settlement on each issue, are as follows:

1. Twelve-hour work day. Seamen were granted 12 hours off-duty daily when the trawlers are engaged in fishing for fresh fish for delivery iced to foreign markets. The seamen had gained the 12-hour day for other fishing operations as the result of a previous dispute in 1950, but had continued on a 16-hour work day when fishing for fish to be delivered fresh. Therefore, a 12-hour day applies to all fishing operations now.

2. Cost-of-living payment on minimum guaranteed wages. Cost-of-living compensation was granted in accordance with the current official "wage index," such as is received by other workers in Iceland. This brought an immediate increase of about 20 percent in guaranteed wages.

3. Bonus on salted-fish production. The bonus paid to each member of the crew for each metric ton of salted fish produced on board the trawlers was increased from I.kr.4.75 to 6.00 (29 to 37 U.S. cents). This is somewhat less than demanded by the seamen, but nevertheless represents a substantial raise.

4. Special bonus on salted-fish production outside Icelandic fishing grounds. A special 15 percent bonus on the new bonus of I.kr.6.00 (37 U.S.

cents) per ton will be paid to each man when the trawlers fish in distant waters. The special bonus was previously 10 percent of the salted-fish bonus of I.kr.4.75 (29 U.S. cents). However, as a concession to the trawler operators, the special bonus will no longer be paid if the fish is landed near the distant grounds instead of being landed in Iceland.

5. Bonus for quick-frozen fish and fish meal. Establishment of bonuses for quick-frozen fish and fish meal produced on board the trawlers was demanded. The new agreement provides for a bonus of I. kr.0.30 (2 U.S. cents) per man for each case (50-56 lbs.) of quick-frozen cod, and comparable bonuses for other types of quick-frozen fish. The bonus for fish meal will be I.kr.11.25 (69 U.S. cents) per man per metric ton when "iced-fishing" or fishing for ocean perch for reduction plants, and I.kr.5.00 (31 U.S. cents) per ton when "salted-fishing."

6. Bonus for cargo carried. A new bonus will be paid to each man when the trawlers carry cargo on their return trips from foreign markets to Iceland. The bonus will be a share of the freight tariff received, amounting to 17 percent of the tariff after "iced-fishing" and 19 percent after "salted-fishing."

The agreement between seamen and operators also provides that the total catch bonus now allotted to a crew from sale of fresh fish on ice in foreign markets will be divided into 33 shares, instead of 31 as previously. There will thus be a slight reduction in the share for each man. The increase in shares is necessary because the trawlers are expected to require two additional seamen because of reduction in working hours. In addition, the special catch bonus for fish on ice will henceforth be paid only when the sales value of the catch exceeds £9,000 (U.S. \$25,000) rather than £8,000 (U.S. \$22,250) as previously.

Of the 35 trawlers involved in the strike, only 6 were actually laid up before the strike ended. The other trawlers were to be laid up as they returned to an Icelandic port but had not yet returned from abroad by the time the strike ended. It had been feared that a protracted trawler strike would have a very grave effect on Iceland's economy, since the trawlers constitute a major part of the nation's capital equipment. However, in view of the duration of the strike, the country's total fish catch was not appreciably affected.

There are indications that changes may take place in the near future in the disposition and marketing of the Icelandic trawler catch. These changes, however, would result from other considerations than those directly involved in the recent strike. In view of growing unemployment, Icelandic business and labor circles have been calling for greater landings by Icelandic trawlers in domestic ports for processing by local plants. In past years, a large part of the trawler catch has been delivered fresh on ice in the United Kingdom and, to a much smaller degree, in West Germany. Many people feel that it would be desirable to divert as much of the catch as possible to local quick-freezing, salting, and reduction plants, in order to afford greater employment to local labor and to make it possible to market the fish in the most highly processed state feasible under current market conditions. It has been pointed out, for example, that the average annual production of local freezing plants is only a small fraction of their total capacity. It is possible that Icelandic trawlers will be used to deliver new species and greater quantities of fish to the freezing plants, but local producers will insist on precautions to preserve the high reputation which Icelandic frozen fish now enjoys. In the past, fish landed by trawlers for quick-freezing in domestic plants has been limited largely to ocean perch and cod.



Iran

CASPIAN FISHERIES CONCESSION TO RUSSIA EXPIRES THIS YEAR: Several news reports have appeared recently in various foreign publications regarding the Caspian Fisheries Concession granted to the U.S.S.R. by the Government of Iran. This agreement is scheduled to expire the latter part of this year. An influential Iranian weekly (Tehran-Mossavar) recently had an article on the renewal of this concession. According to the article Mosadeq originally opposed concession in Majlis and now believes time is opportune to "systematically overthrow foreign imperialist influence." The paper accuses Russians of fabricating data and never furnishing a true statement of sales proceeds. However, reports indicate that there is no indication that the Russians intend to leave when the concession expires and Soviet sources maintain Iran has no right to deprive the U.S.S.R. of the fisheries when the agreement is terminated. Iranian Government sources refute this and state that the U.S.S.R. cannot prevent Iran from exercising sovereign rights.

Sturgeon and caviar are the main products of this Caspian fisheries concession. However, it seems that should the concession not be renewed, U.S.S.R. may still be considered as the principal buyer provided sales are at international rates of exchange, which is not the case now under the present concession agreement.

Japan

CANNED AND FROZEN TUNA EXPORTS TO UNITED STATES RESTRICTED: A quota restriction on exports of canned and frozen tuna to the United States has been put into effect by the Japanese Government, states an April 14 dispatch from the U.S. Political Advisor in Tokyo. The quota year runs from April 1, 1952, through March 31, 1953.

The quota plan follows:

Canned Tuna:

Annual quota for April 1, 1952, to March 31, 1953--1,000,000 cases to be allocated as follows:

- a. 80 percent of this quantity to packers on the basis of each packer's average of exports for the past three years.
- b. 10 percent to be allocated equally to all packers.
- c. 10 percent to be allocated to packers when they have completed shipment of quantities allocated in accordance with a and b.

Frozen Tuna:

Annual quota for April 1, 1952, to March 31, 1953--12,000 metric tons to be allocated as follows:

- a. 50 percent of this total to be allocated to exporters on the basis of each exporter's average over the past three years.
- b. 50 percent to be allocated to exporters with priority to:

Plan 1:

- (a) Exporters who have completed contracts but who have not shipped goods but who have tuna to their account in storage and ready for delivery.
- (b) Exporters who have contracts but who have no fish to their own account in storage but who have contracts with cold-storage warehouses to supply fish.

Plan 2:

- (a) Allocation to exporters whose terms of contract may not require fish to be in storage.
- (b) Where only letter of credit has been established and no specific agreements of contract for delivery.

Fifty percent of the 12,000 tons of frozen tuna will be allocated on an annual basis. The remaining 50 percent will be allocated on a quarterly basis. The Government has not fixed the quota amounts by quarters but is expected to do so in the near future.

Shipments which have been made during the month of April 1952 will be credited against the allocations for the year.

Allocation will be authorized by export permits in accordance with the export permit system stipulated in the existing Export Trade Control Ordinance.

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OCEAN FISHERY COMMISSION ESTABLISHED TO ASSIST IN RESTRICTING JAPANESE FISHING OPERATIONS: A Commission composed of representatives of government and industry, whose duty it will be to assist the Government in carrying out temporary restrictions on Japanese fishing operations, has been set up through action of the Ministry of Agriculture and Forestry. The Japanese Fisheries Agency informed the United States Mission in Tokyo of this action on March 27.

The Commission has been formed to aid in carrying out the provisions of Prime Minister Yoshida's letter of February 7, 1951, to United States Ambassador Dulles, regarding temporary restrictions on Japanese fishing operations. The Commission will act as advisers to the Government in applying restrictions to the fisheries for salmon, halibut, herring, sardines, and tuna, in the waters of the Eastern Pacific Ocean and Bering Sea. In addition, the Commission will assist in an advisory capacity in negotiations of fisheries treaties or agreements between the Japanese Government and other countries.



Mexico

MAZATLAN SHRIMP FISHERIES ACTIVITIES DECREASE: Mazatlan freezing plant activities decreased considerably during March this year as a result of the closing of the fishing season for that month, states an April 7 American consular report from that area. Shrimp boats have returned from Salina Cruz after having had fair success in their shrimp fishing out of the latter port. Some shrimp was exported directly to the United States from Salina Cruz. One plant transported the equivalent of five cars of shrimp to Mazatlan by plane for processing.

The Banco Comercial del Pacifico, S. A., is making arrangements with headquarters in Mexico City to make new loans to independent boat owners, who have been fortunate in not losing their boats to their creditors. Fishing in northwestern waters was resumed on April 7, and freezing-plant owners and fishermen are again optimistic regarding shrimp-fishing prospects.



Norway

LOFOTEN COD FISHERIES YIELD BELOW AVERAGE: Notwithstanding record high participation and modern gear, the annual cod fisheries in the Lofoten waters of North Norway yielded below average results, according to the Norwegian Information Service in an April 24 news release. By the time the season closed (just before Easter) fishermen had landed a total of 78,589 metric tons of cod, as against 108,000 tons last year. Main reasons for the disappointing catch were rough weather and the fact that the cod this year stayed deeper in the water than usual.

Purse-seiners accounted for 37,800 tons, or nearly half of the total catch, though they were on the fishing grounds only about a month. Jiggers had a very good season, but long-liners did poorly. Many of the fishing boats are towards the latter part of April headed for Finnmark province, where fishing was scheduled to start.

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CANNED FISH EXPORT DRIVE ON U. S. MARKET PLANNED: There is increasing concern among Norwegian canned-fish producers and exporters over British and Australian import restrictions, states an American Embassy dispatch from Oslo dated April 25. The most positive attack on the slump in Norwegian canned fish exports appears to be in the form of an intensified export drive on the United States market. Plans for the drive are in process and it will be officially opened in the United States on May 17 (Norway's National Day).

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WHALE OIL PRICES: The Norwegian whaling companies have sold 6,000 tons of whale oil to Denmark at 2,400 Norwegian kroner a ton, and 9,000 tons to Sweden at 1,740 Swedish kroner a ton, according to The South African Shipping News and Fishing Industry Review of February 1952.

The price in both cases corresponds to £120 (US\$333.60) a long ton. Last year the British Ministry of Food paid £100 (US\$280) a ton for British and Norwegian whale oil, and in 1949 £80 (US\$224) per ton. This winter the Ministry has paid £110 (US\$305.80) a ton for the British Antarctic expedition's whale oil, but no sales agreement has yet been concluded with Norwegian expeditions.

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WHALE MEAT WIDELY ACCEPTED IN UNITED STATES: Introduced in the United States only last year, Norwegian whale meat has already met with wide acceptance by some of the Nation's finest restaurants, states the Norwegian Information Service in an April 24 news release.

Surveys indicate that there is a potential market for about 10 million pounds of whale meat in the United States. So far the main problem has been supply rather than demand. However, one of the main exporters hopes to increase his exports to the U. S. to about 5 million pounds in 1952.

The whale meat exported to the United States is deep-frozen and distributed in handy cartons. A good whale steak, enough for three persons, retails at 85 to 90 cents. It compares favorably with beef tenderloin.



Peru

PERUVIAN WHALING INTERESTS RECEIVE GOVERNMENT AID: A governmental credit of 1,000,000 soles (about US\$65,400^{1/2}) is to be extended to Peruvian whaling interests over a period of four years, reports the April 5 issue of The Fishing News, a British fishery periodical. The Peruvian public has come to accept whale meat, and the credit is considered, therefore, to come within the framework of the national plan for increasing food production.

The entire amount has been allocated to the only Peruvian company at present engaged in whaling activities.

NOTE: CONVERTED ON BASIS OF FREE RATE OF EXCHANGE: 15.28 SOLES EQUAL US\$1.00.



Tanganyika

FISHERIES WORTH DEVELOPING: The fishing possibilities of Tanganyika's inland and coastal fisheries are worth developing according to a statement issued by Dr. C. F. Hickling, Fisheries Adviser to the Secretary of State for the colonies, reports the American Consulate at Dar es Salaam. The statement was made after a tour of the Territory's fisheries.

Fishing prospects for the coast of Tanganyika were reasonably good but they needed fostering, continues the statement. It was pointed out that the necessary advice and example was being given by the Government. As an example of the Government's cooperation, it was pointed out that a sea fishing vessel had started a trial fishing program which would extend along the entire Tanganyika coast. The Department of Agriculture was planning to start a similar experiment on Lake Tanganyika in a few months time. These vessels will explore the possibilities and make biological research into the habits, migration, and distribution of the sea fish, leading to an estimate of the possible production of fish from the sea.

An aspect of the Department of Agriculture's work which was beginning to pass the experimental stage was the fish farm, and it was expected that there would be further developments in this line in the next year or so in several localities.

The possibility of several large estates producing fish for their workers on their own fish farm is seen by the Fisheries Advisor. He stressed, however, that a fish farm had its limitations and usually cannot compete where there was an abundant natural supply of fish. In addition, there had to be an adequate supply of food for fish farms.

A discussion of fish farming with a representative of one of the leading commercial firms at Dar es Salaam, which was interested in promoting this type of business, brought out the fact that a very large demand for fish exists among employers of large groups of people. It was also learned that the initial investment was relatively low, the turn-over large, and the profit quite high.

Fish stocked are the native Tilapia, which though they have many advantages also have some disadvantages in that they tend to breed prematurely in the ponds and seldom grow to a large size. It was learned that the fish pounds can be fished at three- or four-month intervals.



Union of South Africa

WHALING FLEET OUTPRODUCES OTHER FLEETS: For the second season (1951-52) running, the South African whaling fleet has captured the "blue riband" of the Antarctic whaling season with a total production of more than 30,000 metric tons of whale and sperm oil, valued at more than £3 million (US\$8,310,000). Only one South African firm engages in Antarctic whaling. The entire output has been bought by the British Ministry of Food. This same company's fleet held the record last season (1950-51) with an output of 27,000 tons of whale and sperm oil, valued at £27 million (US\$7,479,000).

This year's production was completed in a short season--64 days as compared with 78 days last year--and competition among the expeditions of the seven whale-hunting countries was probably the strongest ever. A total of 19 factoryships engaged in Antarctic whaling: 1 South African, 3 British, 10 Norwegian, 2 Japanese, 1 Russian, 1 Dutch, and 1 Panamanian. With these there were 280 catchers and 9,000 men, according to a report from Johannesburg published in the April 19 issue of Canadian Foreign Trade.



United Kingdom

NEW "FISH FINDERS" TO BE USED BY BRITISH TRAWLERS: A new type fish-indicating sounder (a German developed "fish lens") will shortly be used by British fishing trawlers, states the March 8 issue of Fish Trades Gazette, a British periodical. An international marine communication company has announced that they have acquired sole rights for the new device in the United Kingdom and Commonwealth countries.

The new type of "fish finder" employs a cathode-ray tube, similar to those used in radar and television, and records the presence of fish in the form of a light on the face of the tube. Once the presence of fish beneath a vessel has been established, the "fish lens" can be focused on a horizontal stratum of water 45 feet in depth, ignoring the empty water above and below the fish. The instrument has a maximum indicating depth of 1,800 feet.

"With a little experience in interpreting the scan, the size of an impending haul can be estimated, as well as the direction of the center of the shoal, where fish are usually the thickest," says the company.

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KIPPER EXPORT PROJECT LOSES MONEY IN FIRST YEAR: The plan to export quick-frozen Scottish kippers to the United States cost the British taxpayer £32,000 (US\$88,960) in the first year, according to The South African Shipping News and Fishing Industry Review of February 1952. This is the amount of loans granted by the Herring Marketing Fund to British Kipper Exporters Ltd., to meet losses on the first year's work. Accounts of the Herring Marketing Fund express the view that despite this loss valuable experience has been gained in investigating the market.

More than £297,000 (US\$825,660) of the £1,820,178 (US\$5,060,095) granted to the Marketing Fund went to provide working capital for the extension of the Herring Board's meal and oil schemes.

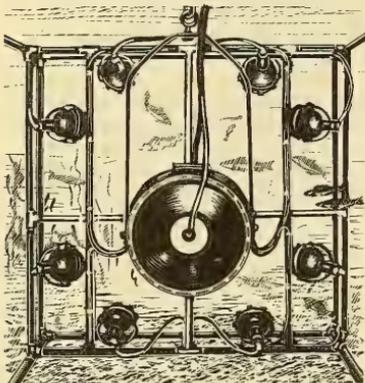
The total figure included amounts spent on new freezing experiments, kipping, and canning.

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SUBMARINE CAMERA DEVELOPED: The development of a new submarine camera which will be useful in locating good commercial fishing grounds was announced in the February 16 issue of the London Manchester Guardian.

The problem of finding out what constitutes a good commercial fishing ground has been simplified, in shallow water, by the invention of a new type of submarine camera by a member of the Plymouth Marine Biology staff, Dr. H. G. Vevers.

The camera takes a series of photographs of meter-square areas of the sea floor from which it is possible to discover the tracts and burrows and sometimes the actual invertebrate creatures themselves which live on the sea bed.



ALTHOUGH DIFFERENT FROM THE ONE DESCRIBED IN THIS ARTICLE, THE SKETCH SHOWS A TYPE OF UNDERWATER CAMERA DEVELOPED BY AN OUTSTANDING EUROPEAN COMPANY. THIS IS A REAR VIEW OF THE DEVICE, WHICH IS REMOTELY CONTROLLED. CAMERA IS ENCLOSED BY A SPECIAL PRESSURE CASE. THE LIGHTING GANTRY IS ADJUSTABLE. FOR DOWNWARD VERTICAL SHOTS, THE GANTRY AND CAMERA CASE CAN BE SWUNG THROUGH 90° ON THE TRUNNION.

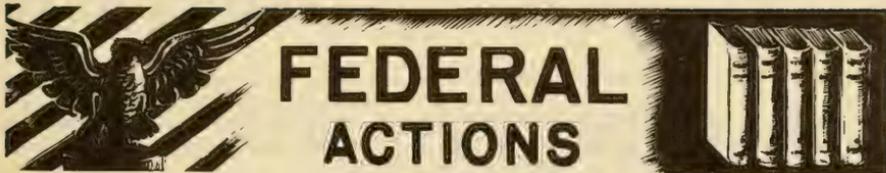
Now that the interrelation between fish and their invertebrate food is better understood, detailed sea-floor surveys are becoming increasingly important. It is possible to drag the creatures up with a dredge or otter trawl, but the method is of no great assistance in population counts. The trawls work unevenly. For the same reason, the Petersen grab and the Holmscoop sampler are relatively ineffective for quantitative work.

The robot camera is mounted, lens downward, near the top of a long metal pole. Three quarters of the way down the pole is a ring bearing six 500-watt photoflood lamps which supply the necessary light. The apparatus is lowered over the side of a ship and the lamps are switched on when the camera is between three and five meters (10-16 feet) from the bottom.

The moment the foot of the pole hits the sea bed a switch is driven upwards and the camera takes the first picture on a roll of 35mm. high-speed film. When this happens a buzzer rings in the control box on the ship and the crew haul the apparatus a few feet off the bottom and drop it again for the next picture as the ship drifts down wind. The result is a strip similar in principle to the sampling methods used by botanists in the survey of land vegetation.

The apparatus has been used at depths of from fifty to eighty meters (164-262 feet) in inshore waters and offshore trawling grounds.





Economic Stabilization Agency

OFFICE OF PRICE STABILIZATION

PRICE PROCEDURAL REGULATION REVISED: The second revision of Price Procedural Regulation 1 was issued by the Office of Price Stabilization on April 29.

The regulation sets forth the procedural requirements for the issuance, amendment, and interpretation of ceiling price regulations, as well as the filing of reports, protests and applications for adjustment.

OFS said the regulation was revised to bring it up-to-date and to clarify certain procedures. The revision reflects, for example, the decentralization of authority to field offices to handle applications for adjustment but allows formal review of their decisions.

The revision also clarifies the privilege of submitting rebuttal evidence in protest proceedings.

Another new provision prescribes in detail the persons authorized to sign reports required under price regulations.

For details see: Price Procedural Regulation 1, Revision 2, dated Apr. 28, 1952.

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SUSPENSION OF FATS AND OILS CEILING PRICES PROBABLY INDICATES A TREND FOR FISH OILS: Ceiling prices of crude soybean oil, crude cottonseed oil, and crude corn oil were revised downward by Amendment 13 to CPR 6 issued on April 25 by the Office of Price Stabilization. This amendment also establishes dollars-and-cents ceiling prices for processors' sales of lard, formerly covered by the GCPR; and provides for a suspension of all provisions of CPR 6 and other regulations insofar as they apply to commodities for which new ceiling prices are fixed by this amendment, and also for suspension of the provisions of CPR 6 applying to tallows and greases, animal fat waste materials, and vegetable oil soapstocks. The effective date of this amendment is April 28.

Although the new ceilings for the named oils are below those in effect before issuance of this amendment, they still are 60 to 75 percent above current market quotations for those commodities. In event control is reimposed, these new, lower ceilings will be in effect instead of the higher ceilings originally specified in CPR 6.

These suspensions are of interest to the fishing and allied industries since it is to be expected that OPS will in the near future take action to bring fish oil price ceilings (now 16 cents per pound) in line with the lower market prices that have prevailed for the past year, and to treat them along the same lines that soybean oil, cottonseed oil, and crude corn oil have been treated by this amendment.

For details see: Amdt. 13 (Crude Soybean Oil, Crude Cottonseed Oil, Crude Corn Oil, Lard; Suspension of Price Control), issued April 25, 1952, to CFR 6 (Fats and Oils).

* * * * *

STANDARDS FOR SUSPENSION OF PRICE CONTROLS: Adoption of preliminary standards for suspension of price controls in certain soft market areas were announced by the Office of Price Stabilization Director on April 22.

Price control has been suspended on 16 commodities now selling materially below ceiling. The standards announced--which will be further tested, broadened and modified--were applied against these 16 commodities. The possibility of suspension in several other important fields is already under study.

Statements submitted by ESA and OPS to the Senate Committee on Banking and Currency emphasized that these are standards for suspension rather than decontrol, pointing out that it would be premature to dismantle the structure of price control in any important areas at this time. Nevertheless they said the stabilization agency has a positive obligation to lighten the burden of reports and record-keeping wherever possible.

Chairman Burnet Maybank and the Senate Banking and Currency Committee (which is currently considering extension of the Defense Production Act) have suggested that suspension of controls be undertaken where this could be safely done without adversely affecting the defense program or the nation's economic structure and where the commodities are well below ceilings.

The commodities on which price controls were suspended effective Monday, April 28, are:

Cattlehides	Lard	Crude Soybean Oil	Wool Top
Kips	Animal Waste Materials	Crude Corn Oil	Wool Noils
Calfskins	Vegetable Oil Soapstock	Burlap	Wool Waste
Tallow	Crude Cottonseed Oil	Wool	Alpaca

No widespread suspension action is under consideration at this time. Pointing out that three-fifths of the total wholesale trade is being carried on at peak prices and scarcely more than one-fifth at prices significantly below the post-Korean peak, the OPS Director said: "Especially in those commodities which are sought after by both manufacturers and Government procurement agencies--basic goods like steel and other metals, fuels, lumber, chemicals, paper, machinery, trucks, and buses--there are practically no soft spots."

It has been made clear that OPS has no intention of "decontrolling" any commodities at this time.

The Price Director said that instead of decontrolling important commodities where markets are "soft," OPS will suspend regulations or lighten reporting or record-keeping requirements, "using standards under which we can objectively determine that such action is appropriate."

Although producers of the commodities suspended on April 22 are freed from further record-keeping at this time, they are required to retain those records they maintained heretofore in compliance with the suspended regulations. In addition to its suspension studies, the OPS committee is also developing standards and procedures for the relaxation or elimination of record-keeping and reporting requirements where sus-

pension is not considered appropriate. One member of the committee staff is now spending full time in a review of existing reporting and record-keeping requirements.

The Price Director declared that as a matter of fundamental policy, OPS will not suspend controls where such action would result in levels of prices or margins higher than permitted under existing regulations. And he stated that "we will see to it that suspension is always terminated before previous ceiling levels are reached."

Under the preliminary standards developed by the Agency, suspension action or other relaxation will not be approved unless these conditions exist:

1. Prices in an area are materially below ceilings. ("Area" refers to a range of related items and will be determined by the structure of the market and OPS regulations.)

2. There is no prospect that reimposition of controls will be necessary in the foreseeable future. This determination must be based upon a full economic analysis of market conditions and will take into account such things as current supply and demand, production capacity, inventories and volatility of prices.

Each suspension order includes a specific recontrol point which is below current ceilings but well above the current market price of each commodity. When prices of any commodity suspended from control reach this recontrol point, ceilings will be reimposed.

In addition to providing for automatic reimposition of controls under certain conditions, each suspension order announced to date also makes clear that the Price Director may reimpose controls at any time he thinks such action is necessary to carry out the aims of the stabilization program, as might be the case in the event of new international developments or for any other emergency reason. A price-watching system for each suspended commodity is established to follow the movement of prices and their relationship to ceilings.

For details see: News release OFS-0-840, dated Apr. 22, 1952.

NOTE: FULL TEXTS OF PRICE ORDERS MAY BE OBTAINED FROM THE OFFICE OF PRICE STABILIZATION, WASHINGTON 25, D. C., OR FROM THE REGIONAL OPS OFFICE IN YOUR AREA.



Department of the Interior

FISH AND WILDLIFE SERVICE

ALASKA COMMERCIAL FISHERIES REGULATIONS AMENDED: On the basis of facts obtained by field representatives of the U. S. Fish and Wildlife Service and briefs submitted by members of the fishing industries, certain changes in Alaska commercial fisheries regulations have been determined to be necessary to permit maximum utilization of the resources consistent with sound conservation principles. The amendment to the regulations appeared in the Federal Register of May 13, and becomes effective June 13.

The changes include the following:

Traps are to be inoperative within 24 hours after the close of the last season open to traps.

Personal fishing with gill net, seine, or trap shall be subject to commercial fishing regulations 48 hours before the opening and 48 hours after the close of a commercial season for such gear, with the exception that personal-use fishing will be permitted at all times on the Yukon River and any place 25 miles away from waters legally open to commercial fishing.

Bristol Bay area weekly closed period from June 25-July 31 is extended from 36 hours to a total of 84 hours.

In the Alaska Peninsula area, throughout the season in the Port Moller district and prior to July 5 in all other waters of the area, the 36-hour closed period is extended to a total of 60 hours, including a mid-week closure. On and after July 5 in all waters of the area, except the Port Moller district, the weekly closed period of 60 hours applies all to the weekend.

Fishing for Dungeness crabs in the Prince William Sound area is prohibited north of 60°22' N. latitude and east of 146°40' W. longitude from June 1-August 31. In the waters of Orca Inlet north of a line drawn at right angles across the Inlet from the Cordova Ocean dock such fishing is prohibited from June 1-October 31.

In the Copper River area, fishing for Dungeness crabs is prohibited north of 60°22' N. latitude from June 1-August 31.

In Southeastern Alaska the general early season from June 23 to July 5 has been eliminated.

A number of other minor changes are also included in the amendment.



Department of State

NORTH PACIFIC FISHERIES CONVENTION SIGNED: The International Convention for the High Seas Fisheries of the North Pacific Ocean was signed May 9, 1952, at Tokyo by representatives of the United States, Canada, and Japan. Ambassador Robert D. Murphy signed on behalf of the United States, a May 9 Department of State new release reports. The Convention will be submitted to the Senate with a view to receiving the advice and consent of that body to ratification. It will enter into force on the day upon which the contracting parties exchange ratifications.

The Convention, which was negotiated at the Tripartite Fisheries Conference held at Tokyo in late 1951, marks a further step in the conservation of international fisheries in the North Pacific Ocean. Japan now becomes a joint partner with the United States and Canada in cooperative measures to preserve and perpetuate the fish stocks of the North Pacific.

The Convention introduces a new principle in international conservation practice on the high seas. Under it special treatment is accorded to fisheries already fully utilized and fully conserved. Each signatory agrees to abstain from exploitation of specified fish stocks which are already exploited to the maximum by one or both of the other parties provided the latter are carrying out programs for the conservation of the stocks and agree to continue to carry out such programs.

The Convention establishes the International North Pacific Fisheries Commission composed of representatives of the three countries, each with equal vote. The Commission is empowered to investigate any fish stock of the North Pacific Ocean exploit-

ed by two or more of the parties and, when necessary, to recommend joint conservation action to the governments concerned. Excepted from such study and recommendation, however, are fisheries already covered by agreements between the parties, such as the Pacific halibut and sockeye salmon fisheries.

In the special case of fully utilized and conserved fisheries, the Commission may recommend that the country or countries not exploiting the stock refrain from such exploitation. The convention provides, however, that no such abstention should be requested of any parties in waters in which there has been a history of joint conservation activity by such parties, and intermingling of their fleets, and an intermingling of the stocks of fish exploited by their fleets. Accordingly, the convention stipulates that neither the United States nor Canada shall be asked to abstain from any stock in waters off the Pacific Coast of either country from the Gulf of Alaska southward.

To qualify under the abstention proviso, a fishery stock must be fully exploited and be under continuous study and regulation for conservation purposes. The convention recognizes three stocks, salmon, halibut, and herring, off the coasts of North America as meeting these conditions. Accordingly, by the terms of the convention, Japan agrees to abstain from fishing salmon, halibut, and herring in specified waters off the coasts of North America; and Canada agrees to abstain from fishing salmon in the Bering Sea east of 175 degrees west longitude.

Also signed May 9 was a protocol to the Convention, providing for further study and final determination of the lines bounding the salmon areas. These lines are tentatively set by the Convention.

Except for certain minor changes, the texts of the Convention and Protocol published by the Department of State with the announcement of the signing of these documents are the same as shown in the Commercial Fisheries Review of February 1952, pp. 66-8. Below are shown only those parts which differ from the wording shown in the issue of the Review indicated.

The changes in the text of the Convention were:

ARTICLE IV. 1. PROVIDED, HOWEVER, THAT NO RECOMMENDATION SHALL BE MADE FOR ABSTENTION BY A CONTRACTING PARTY CONCERNED WITH REGARD TO: ...
(3) WATERS IN WHICH THERE IS HISTORIC INTERMINGLING OF FISHING OPERATIONS OF THE PARTIES CONCERNED, INTERMINGLING OF THE STOCKS OF FISH EXPLOITED BY THESE OPERATIONS, AND A LONG ESTABLISHED HISTORY OF JOINT CONSERVATION AND REGULATION AMONG THE PARTIES CONCERNED SO THAT THERE IS CONSEQUENT IMPRACTICABILITY OF SEGREGATING THE OPERATIONS AND ADMINISTERING CONTROL...

ARTICLE VII. 1. THE ANNEX TO THIS CONVENTION SHALL BE CONSIDERED AMENDED FROM THE DATE UPON WHICH THE COMMISSION RECEIVES NOTIFICATION FROM ALL THE CONTRACTING PARTIES OF ACCEPTANCE OF A RECOMMENDATION TO AMEND THE ANNEX MADE BY THE COMMISSION IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE III, SECTION 1 OR OF THE PROTOCOL TO THIS CONVENTION...

ARTICLE X. 1 (B) WHEN ANY SUCH PERSON OR FISHING VESSEL IS ACTUALLY ENGAGED IN OPERATIONS IN VIOLATION OF THE PROVISIONS OF THIS CONVENTION... PROVIDED, HOWEVER, THAT WHEN THE CONTRACTING PARTY WHICH RECEIVES SUCH NOTIFICATION CANNOT IMMEDIATELY ACCEPT DELIVERY AND MAKES REQUEST, THE CONTRACTING PARTY WHICH GIVES SUCH NOTIFICATION MAY KEEP SUCH PERSON OR VESSEL UNDER SURVEILLANCE WITHIN ITS OWN TERRITORY, UNDER THE CONDITIONS AGREED UPON BY BOTH OF THE CONTRACTING PARTIES...

The following was added to the end of Article XI:

DONE IN TRIPPLICATE, IN THE ENGLISH AND JAPANESE LANGUAGES,
BOTH EQUALLY AUTHENTIC, AT TOKYO THIS TENTH DAY OF MAY ONE THOUSAND
NINE HUNDRED FIFTY-TWO.

The changes in the Annex were:

2. WITH REGARD TO THE STOCKS OF FISH IN THE RESPECTIVE WATERS NAMED BELOW, CANADA AND JAPAN AGREE TO ABSTAIN FROM FISHING, AND THE UNITED STATES OF AMERICA AGREES TO CONTINUE TO CARRY OUT NECESSARY CONSERVATION MEASURES, IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE V, SECTION 2 OF THIS CONVENTION:...

The changes in the Protocol were:

THE GOVERNMENTS OF THE UNITED STATES OF AMERICA, CANADA, AND JAPAN, THROUGH THEIR RESPECTIVE PLENIPOTENTIARIES, AGREE UPON THE FOLLOWING STIPULATION IN REGARD TO THE INTERNATIONAL CONVENTION FOR THE HIGH SEAS FISHERIES OF THE NORTH PACIFIC OCEAN, SIGNED AT TOKYO ON THIS TENTH DAY OF MAY, NINETEEN HUNDRED FIFTY-TWO...

THE COMMISSION TO BE ESTABLISHED UNDER THE CONVENTION SHALL AS EXPEDITIOUSLY AS PRACTICABLE, INVESTIGATE THE WATERS OF THE CONVENTION AREA TO DETERMINE IF THERE ARE AREAS IN WHICH SALMON ORIGINATING IN THE RIVERS OF CANADA AND OF THE UNITED STATES OF AMERICA INTERMINGLE WITH SALMON ORIGINATING IN THE RIVERS OF ASIA. IF SUCH AREAS ARE FOUND THE COMMISSION SHALL CONDUCT SUITABLE STUDIES TO DETERMINE A LINE OR LINES WHICH BEST DIVIDE SALMON OF ASIATIC ORIGIN AND SALMON OF CANADIAN AND UNITED STATES OF AMERICA ORIGIN, FROM WHICH CERTAIN CONTRACTING PARTIES HAVE AGREED TO ABSTAIN IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE V...

The following was added to the end of the Protocol:

DONE IN TRIPPLICATE AT TOKYO THIS TENTH DAY OF MAY, ONE THOUSAND NINE HUNDRED FIFTY-TWO.



Eighty-Second Congress (Second Session)

APRIL 1952

Listed below are public bills and resolutions introduced and referred to committees, or passed by the Eighty-Second Congress (Second Session) and signed by the President. However, the more pertinent reports, hearings, or chamber actions on some of the bills shown in this section from month to month are also listed.

BILLS AND RESOLUTIONS INTRODUCED:

Government Purchases of Canned California Squid and Anchovies: H. R. 7658 (Bramblett) - A bill to authorize the Director for Mutual Security to purchase canned California squid and anchovies for distribution in the general areas of China and Greece; to the Committee on Appropriations.

H. R. 7659 (Bramblett) - A bill to authorize the Secretary of the Army to purchase canned California squid and anchovies for distribution in Korea; to the Committee on Appropriations.

Income Tax Relief for Commercial Fishermen: H. R. 7522 (Sikes) - A bill to amend section 112 of the Internal Revenue Code to provide the same rules for determining gain in the case of the sale or exchange of boats used in commercial fishing as are provided in the case of the sale or exchange of residences; to the Committee on Ways and Means.

COMMITTEE MEETINGS:

Sea Lampreys: House Committee on Merchant Marine and Fisheries: Subcommittee on Fisheries and Wildlife approved for reporting to the full commit-

tee H. R. 6500, with respect to authorizing further appropriations for the conduct of investigations and studies thereunder (sea-lamprey work).

CONGRESSIONAL REPORTS:

Committee reports on bills reported in this section of interest to the fishery and allied industries (available only from the committee submitting the report):

Interior Department Appropriation Bill, 1953, House Report No. 1628, (March 21, 1952, 82d Congress, 2d Session), 36 p., printed, to accompany H. R. 7176, a bill making appropriations for the Department of the Interior for fiscal year 1953. Appropriations for the Fish and Wildlife Service are included in this bill. This report submitted by the Committee on Appropriations gives the recommendations of the Committee for the various agencies of the Department.

Federal Wildlife Conservation Activities, 1951, Senate Report No. 1457 (April 16, 1952, 82d Congress, 2d Session), 298 p., illus., printed. Report of the Committee on Government Operations on the wildlife-conservation activities of the

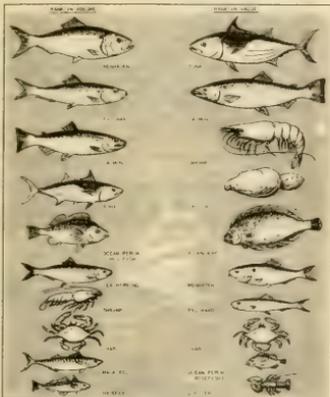
Federal Government during 1951. As well as the conservation of other wildlife resources, the conservation of commercial and recreational fisheries is reported upon in this report by the various agencies concerned. The Department of Interior's report presents the activities of the Branches of Commercial Fisheries, Fishery Biology, Alaska Fisheries, Game Fish and Hatcheries, and the Offices of River Basin Studies and Foreign Activities; and the

activities of the National Park Service regarding fish resources. The report of the Department of Agriculture gives the activities of the Soil Conservation Service regarding food and recreation from ponds. The report of the Department of the Army gives fish and wildlife data on reservoir and other projects conducted by the Office of Engineers. Included also are various letters and statement from various fish and wildlife conservation agencies.



THE RELATIVE PRODUCTIVITY AND VALUE OF THE FISHERIES OF THE UNITED STATES AND ALASKA

The commercial fisheries of the United States and Alaska rank second in the world in volume. The fisheries of the world annually yield approximately 55 billion pounds, and of this, the United States and Alaska contribute over 5.6 billion pounds¹ or 10 percent.



The period following World War II was one of great activity for the fishing fleets of the United States and Alaska. During this period the fishing industry made its transition to a peacetime basis. Production and marketing was controlled by supply, demand, and competition rather than price ceilings; shortages of supplies, labor, and transportation; lack of vessels; and other war-created difficulties.

United States and Alaska Catch of Primary Products, 1929-1949

Year	Pounds	Value	Average price per pound
1929	1,077,379,000	1	...
1930	1,790,580,000	8,798,840,000	4.90
1931	2,667,817,000	774,260,000	2.90
1932	2,510,550,000	974,000,000	3.88
1933	2,671,659,000	111	...
1934	3,048,610,000	111	...
1935	4,008,700,000	111	...
1936	4,760,180,000	111	...
1937	4,132,629,000	100,847,000	2.42
1938	4,771,100,000	97,617,000	2.02
1939	4,007,100,000	96,517,000	2.41
1940	4,000,430,000	101,607,000	2.54
1941	4,000,000,000	176,110,000	4.40
1942	3,819,000,000	170,130,000	4.46
1943	4,000,000,000	200,000,000	5.00
1944	4,000,000,000	97,000,000	2.42
1945	4,000,000,000	113,000,000	2.82
1946	4,000,000,000	107,000,000	2.67
1947	4,000,000,000	107,000,000	2.67
1948	4,000,000,000	107,000,000	2.67
1949	4,000,000,000	110,000,000	2.75

The table shows the United States and Alaska fisheries production, total value to the fishermen, and average prices from 1929-49. Although the total production has not varied greatly during the past ten years, the total value of the fisheries production at the fishermen's level has increased slightly over 250 percent. (The data presented include recorded production for the areas in which surveys were made and estimates for other regions.)

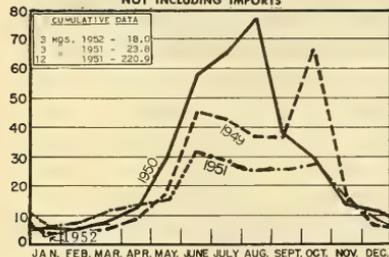
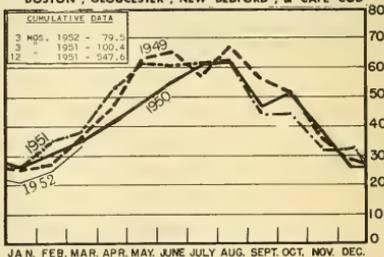
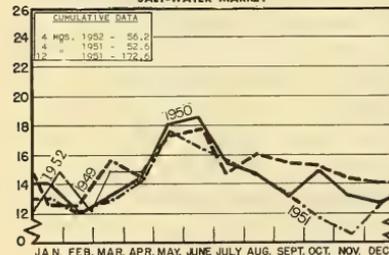
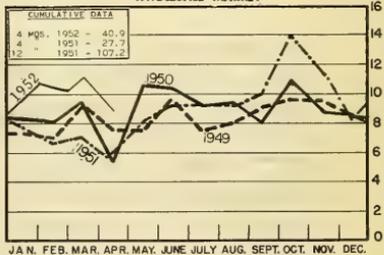
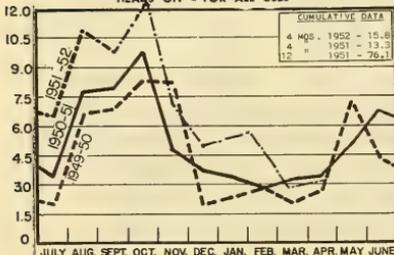
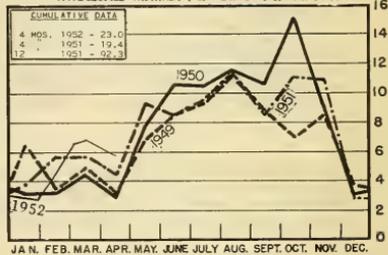
Ten species (or groups of species classified as one fishery) accounted for 74.6 percent of the total catch and 58.6 percent of the total value. The 10 species leading in value, however, accounted for 68.6 percent of the total value and 69.2 percent of the total volume. Menhaden, which led all other fish in respect to volume, were sixth in value, while pilchards were second in volume and seventh in value. Tuna ranked fourth in volume but first in value. Salmon followed tuna, being second in value and third in volume.

Of the total of 198 items listed in the catch records for 1949, 58 of the items accounted for 98 percent of the total production, while 61 items accounted for 99 percent of the total value.

¹WEIGHTS OF UNIVALVES AND BIVALVES INCLUDED IN THIS TOTAL ARE BASED ON IN-THE-SHELL WEIGHTS.

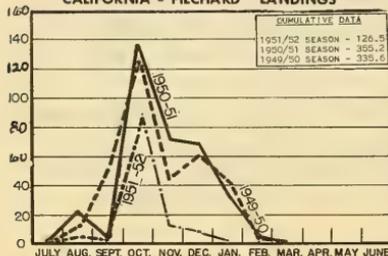
LANDINGS AND RECEIPTS

In Millions of Pounds

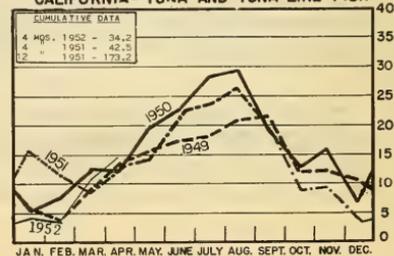
MAINE - LANDINGS
NOT INCLUDING IMPORTSMASSACHUSETTS - LANDINGS
BOSTON, GLOUCESTER, NEW BEDFORD, & CAPE CODNEW YORK CITY - RECEIPTS OF FRESH & FROZEN FISH
SALT-WATER MARKETCHICAGO - RECEIPTS OF FRESH & FROZEN FISH
WHOLESALE MARKETGULF - SHRIMP LANDINGS
HEADS OFF - FOR ALL USESSEATTLE - RECEIPTS OF FRESH & FROZEN FISH
WHOLESALE MARKET, LANDINGS, & IMPORTS

In Thousands of Tons

CALIFORNIA - PILCHARD LANDINGS



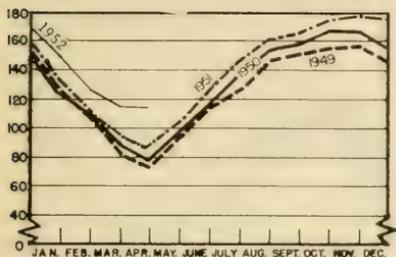
CALIFORNIA - TUNA AND TUNA-LIKE FISH



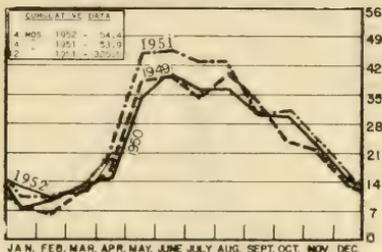
COLD STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS

In Millions of Pounds

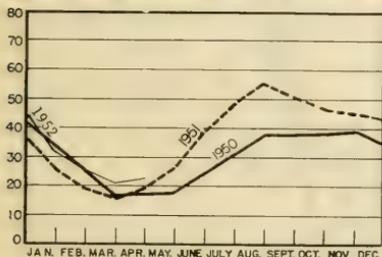
U.S. & ALASKA - HOLDINGS OF FROZEN FISH



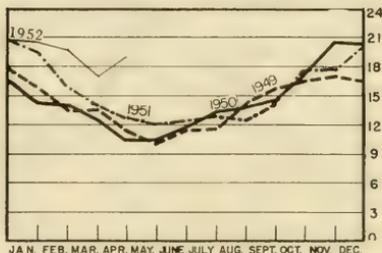
U.S. & ALASKA - FREEZINGS



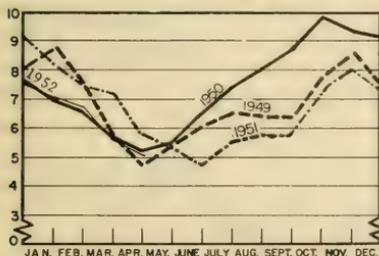
NEW ENGLAND - HOLDINGS OF FROZEN FISH



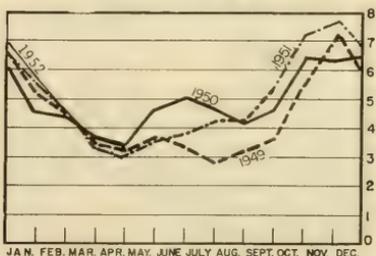
NEW YORK CITY - HOLDINGS OF FROZEN FISH



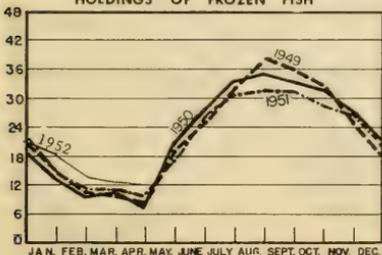
CHICAGO - HOLDINGS OF FROZEN FISH



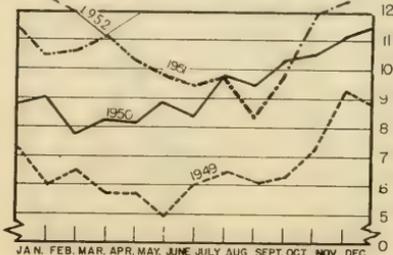
GULF - HOLDINGS OF FROZEN FISH



WASHINGTON, OREGON, AND ALASKA - HOLDINGS OF FROZEN FISH



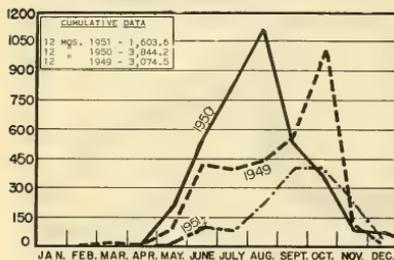
CALIFORNIA - HOLDINGS OF FROZEN FISH



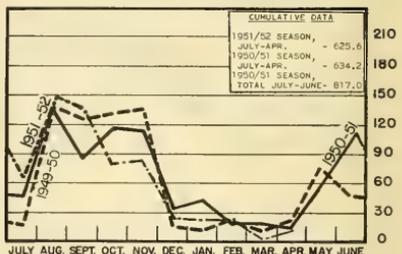
CANNED FISHERY PRODUCTS

In Thousands of Standard Cases

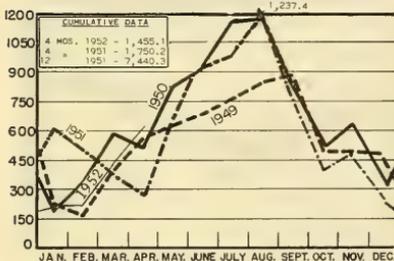
MAINE - SARDINES, ESTIMATED PACK



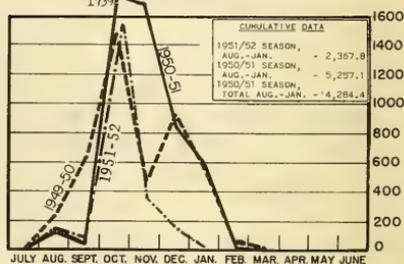
UNITED STATES - SHRIMP



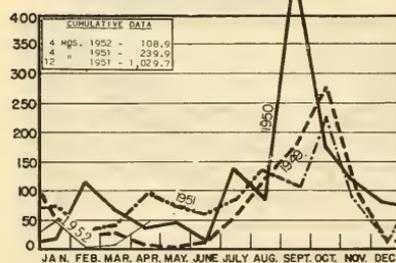
CALIFORNIA - TUNA AND TUNA-LIKE FISH



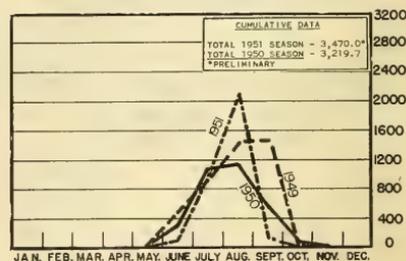
CALIFORNIA - PILCHARDS



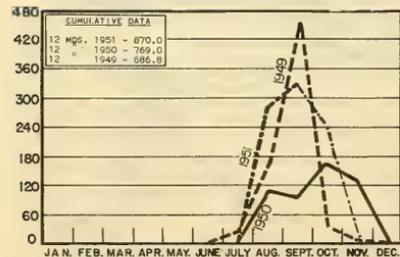
CALIFORNIA - MACKEREL



ALASKA - SALMON



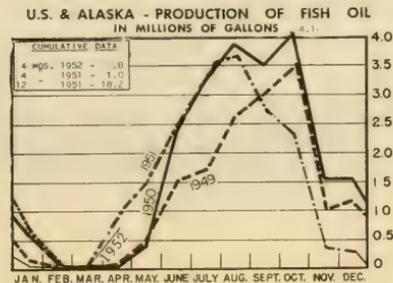
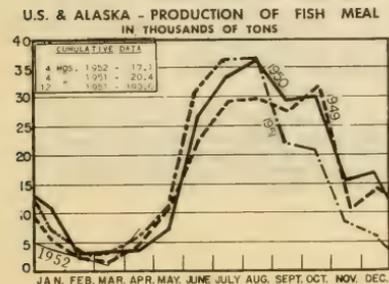
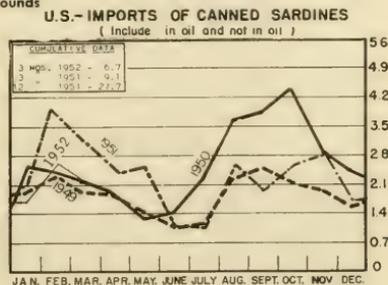
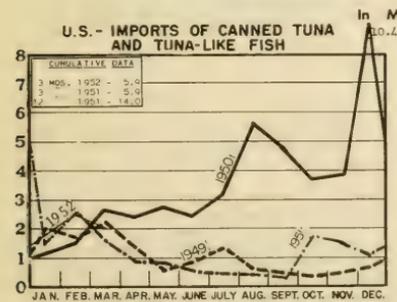
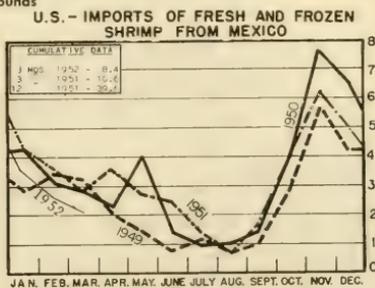
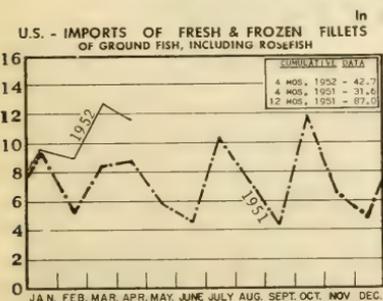
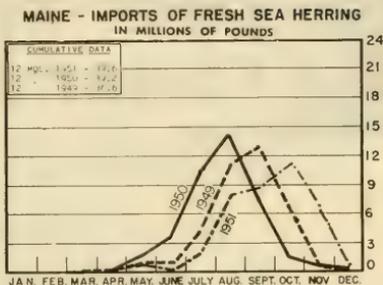
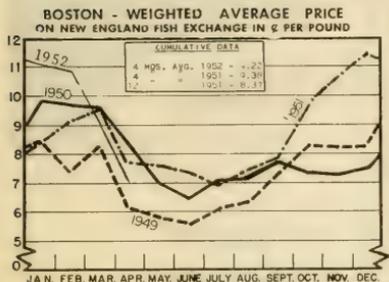
WASHINGTON - PUGET SOUND SALMON

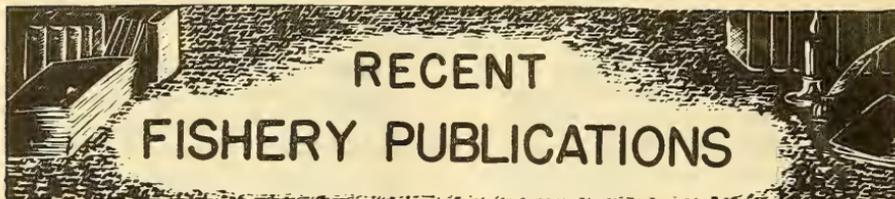


STANDARD CASES

Variety	No. Cans	Can Designation	Net. Wgt.
SARDINES	100	1/4 drawn	3 1/4 oz.
SHRIMP	48	—	7 oz.
TUNA	48	No. 1/2 tuna	7 oz.
PILCHARDS	48	No. 1 oval	15 oz.
MACKEREL	48	No. 300	15 oz.
SALMON	48	1-pound tall	16 oz.

PRICES, IMPORTS and BY-PRODUCTS





Recent publications of interest to the commercial fishing industry are listed below.

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS.

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.
 FL - FISHERY LEAFLETS
 SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

Number	Title	Number	Title
CFS-723	- Massachusetts Landings, November 1951, 14 p.	SI-103	- Firms Canning Tuna and Tuna-Like Fishes, 1951 (revised), 2 p.
CFS-727	- Alabama Landings, December 1951, 4 p.	Sep. 311	- The John N. Cobb's Shellfish Explorations in Certain Southeastern Alaskan waters, Spring 1951.
CFS-728	- Florida Landings, December 1951, 4 p.	Sep. 312	- Technical Note No. 19--The Alaska Sheefish: Description and Proximate Composition.
CFS-734	- Fish Meal and Oil, January 1952, 2 p.		
CFS-735	- Packaged Fish, Annual Summary 1951, 4 p.		
CFS-738	- Frozen Fish Report, March 1952 Final, 8 p.		
CFS-746	- Frozen Fish Report, April 1952 Final, 8 p.		
FL-336L	- Quarterly Outlook for Marketing Fishery Products, April-June 1952, 29 p.		
FL-393	- Preliminary Review of the Fisheries of the United States (revised), 16 p.		

THE FOLLOWING SERVICE PUBLICATION IS AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED IN THE REVIEW.

Production of Fishery Products in Virginia, Maryland, and North Carolina, 1951 (As Reported to Hampton Fishery Market News Office), by Chas. D. Stewart, 27 p., processed. (Available free from the Market News Service, U. S. Fish and Wildlife Service, P. O. Box 447, Hampton, Va.) In addition to a review and analysis of the trends in the production of fishery products in certain areas of Virginia, Maryland, and North Carolina for 1951, this publication contains statistics

by months and species on the production of fish and shellfish in selected areas in these States. The areas included are Morehead City, North Carolina; Hampton Roads, York River, Lower Northern Neck, and Eastern Shore, Virginia; and Ocean City, Cambridge, and Crisfield, Maryland. Comparative data for 1950 by areas and species are also included as well as a table showing the shrimp landings in certain North Carolina localities by areas and months.

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

Estimation of Size of Animal Populations by Marking Experiments, by Milner B. Schaefer, Fishery Bulletin 69 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 52), 16 p., illus.,

printed, 15 cents, 1951. Discusses the estimation of animal populations by marking experiments, which is an important technique in research on the dynamics of animal populations, particularly fishes.

Laws and Regulations for Protection of the Commercial Fisheries of Alaska, 1952, Regulatory Announcement 35, 62 p., printed, March 1952, 20 cents. This publication is divided into two sections. One section contains laws for the protection of the commercial fisheries of Alaska and related information, including the authority for regulation, rules regarding oyster culture, Bristol Bay residence requirements, regulation of salmon escapement, fishing-gear restrictions, exceptions to weekly closed seasons, etc. The second section contains all the regulations for the protection of the commercial fisheries of Alaska amended to date and which became effective March 15, 1952. These 1952 regulations

supersede the regulations published in Regulatory Announcement 31, effective April 7, 1951.

A Unique Bacterium Pathogenic for Warm-Blooded and Cold-Blooded Animals, by Philip J. Griffin and Stanislas F. Snieszko, Fishery Bulletin 68 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 52), 7 p., printed, 10 cents, 1951. The isolation and description of a unique bacterium pathogenic for warm-blooded and cold-blooded animals are discussed in this report. This is believed to be the first description of organisms conforming largely to the description of Paracolobactrum aerogenoides and pathogenic for fish.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE AGENCIES ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE AGENCIES OR PUBLISHERS MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

"The British Columbia Trawl Fishery," by K. S. Ketchen, article, Trade News, March 1952, vol. 4, no. 9, pp. 3-8, illus., processed. Department of Fisheries, Ottawa, Canada. This article describes the expansion of the British Columbia trawl fishery, species of bottom fish caught, and its relation to other fisheries. It also gives information on catch statistics, market sampling, tagging studies, gear studies, and management of the inshore fishery.

"Ecology, Water Conservation, and the Shellfisheries," by David H. Wallace, article, The Scientific Monthly, vol. LXXIII, no. 6, pp. 349-53, printed, single copies of issue 75 cents. American Association for the Advancement of Science, Washington 5, D. C. This article discusses briefly the relationship of certain shellfish to their environment, and the role of the ecologist in their management. The shellfish covered are the blue crab, shrimp, and eastern oyster.

"The Economic Problem of the Newfoundland Fisheries," by H. B. Mayo, article, The Canadian Journal of Economics and Political Science, vol. 17, no. 4 (November 1951), 482-93, printed, \$1.00 per copy. Canadian Political Science Association, Toronto, Ontario. This is an analytical discussion of the problems and prospects of Newfoundland's fisheries, as well as a presentation of the essential features of the country's fishing industry presented as background. The fresh and frozen fish trade are discussed, as well as the prospects of the salt cod industry. The author concludes that the "fisheries will continue to need government assistance in a number of forms, both direct and indirect."

Handbook of Emergency Defense Activities, April-Sept. 1952, 125 p., printed, 30 cents. General Services Administration, Washington, D. C. (For sale by Superintendent of Documents, Washington 25, D. C.). This is the fourth edition of the Handbook. It lists names, addresses, and telephone numbers of Federal agencies concerned with national defense, including the newly-established Small Defense Plants Administration and the Mutual Security Agency. The Defense Fisheries Administration is also listed.

The Hawaii Marine Laboratory, by Robert W. Hiatt, Contribution No. 8, 7 p., illus., printed. (Reprinted from Pacific Science, vol. V, no. 4, October 1951). Hawaii Marine Laboratory, Honolulu, Hawaii. The Hawaii Marine Laboratory is an integral part of the University of Hawaii and consolidates under one name the long-established Marine Biological Laboratory at Waikiki Beach, the biological laboratories devoted to marine sciences on the main campus of the University, and the newly-constructed branch at Coconut Island. The Laboratory operates for both teaching and research, with the Waikiki branch and the classrooms and laboratories on the main campus of the University devoted primarily to instruction, and the Coconut Island branch devoted exclusively to research. This report is a description of the Coconut Island Branch of the Hawaii Marine Laboratory and its facilities for marine research.

Marine Oils, with Particular Reference to Those of Canada, Bulletin 89, 405 p., illus. (100 tables and 44 figures), C\$3.00 paper bound and C\$4.00 cloth bound (remittance in Canadian funds and payable to Receiver General of Canada). Publications Office, Fisheries Research Board of Canada, West Block, Ottawa, Canada. This is a revision of a former publication on the chemistry and technology of Canadian marine oils. The contents include the general chemistry of marine oils and fats; nature of component fatty acids and composition of marine oils; vitamins and other non-fat components of marine oils; metabolism of fats; chemical reactions and physical properties of fats and oils; deteriorative changes, production, refining and processing commercial utilization, properties, and specifications of marine oils; and significance of analytical values. The bulletin is a complete revision by the late Dr. B. E. Bailey of Fisheries Research Board of Canada Bulletin 59 ("The Chemistry and Technology of Marine Oils With Particular Reference to Those of Canada") now out of print.

The Marketing of Virginia Seafood, 77 p., illus., processed. Prepared for Committee on Fisheries and Committee on Markets for Marketing by Charles L. Quittmeyer. The advisory Council on the Vir-

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE AGENCIES ISSUING THEM.

ginia Economy, March 1950 (Revised February 1952). A study which gives a general picture of Virginia's fisheries products, some of the problems involved, some suggested marketing opportunities, and fields for further study. Discusses markets, supply, distribution, costs and prices, and sales promotion. According to the author, profitable merchandising and promotion of Virginia's fisheries products in the future will probably depend more and more on how closely the distribution of the Virginia product can be adapted to modern retail methods of intensive distribution of reasonably-priced foods. Mass distribution of food products is facilitated by packaging, standardization, and the use of brands, with the accruing advantages of ease of handling, storing, and promoting. If Virginia's fisheries products are to meet these requirements, continues the author, they must be further processed by curing, canning, wrapping, bottling, quick freezing, and packaging. Since palatability is the most important characteristic of most fisheries products, quick freezing and freezing to preserve flavor and freshness are the keys to consumer demand for Virginia's fisheries products.

"Markets for Fish in Belgian Congo and Angola," by W. Gibson-Smith, article, Foreign Trade, vol. 11, no. 273 (March 22, 1952), pp. 344-7, illus., printed, single copy 10 cents. Foreign Trade Service, Department of Trade and Commerce, Ottawa, Canada. This article discusses briefly the Belgian Congo and Angola markets for fish, shipment and storage, delivery conditions, and imports by these countries. Statistical data include imports of dried and smoked fish and canned herring. The author states that the "natives are the principal buyers of imported dried and canned fish in the Belgian Congo, and in Angola the Europeans are the fish-eaters."

"The Northern Anchovy (Engraulis mordax mordax) in the California Fishery," by Frances N. Clark and Julius B. Phillips, article, California Fish and Game, April 1952, vol. 38, no. 2, pp. 189-207, illus., printed. Department of Fish and Game, San Francisco, Calif. This article describes the northern anchovy fishery in Central and Southern California, size of anchovies in the catch, weight-length relationship, age and growth, and size at maturity.

A Preliminary Report on PARATHUNNUS SIBI in Hawaiian Waters and a Key to the Tunas and Tuna-like Fishes of Hawaii, by Vernon E. Brock, Research Paper No. 8, 7 p., illus., printed. (Reprinted from Pacific Science, vol. 3, no. 3, July 1949). Division of Fish and Game, Board of Agriculture and Forestry, Honolulu, Hawaii. This is a report on the big-eyed tuna (Parathunnus sibi) in Hawaiian waters. The data given in this report fall into three categories: (1) field identification of the species principally by external characters; (2) morphometric data, which may be useful in later racial studies as the species is an important one in Japanese as well as Hawaiian landings; and (3) some ecological information based largely on the characteristics of the fishery for the species in Hawaii. Some incidental information on the commercial

importance of this species and on the method of taking it is also presented. Statistical data on landings of yellowfin and big-eyed tuna in the Territory of Hawaii are given for 1947-48. A key to the tunas and tuna-like fishes of Hawaii is also included.

A Program for Japanese Coastal Fisheries, by William C. Herrington, Preliminary Study No. 48, 75 p., illus., processed. Natural Resources Section, Supreme Commander for the Allied Powers, Tokyo, Japan, May 1951. (Reports may be purchased only in photostat or microfilm from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. However, it was also issued as Fishery Leaflet 395 available from the U. S. Fish and Wildlife Service, Washington 25, D. C.) This report deals with the economic crisis facing Japan's coastal fisheries and a program for meeting the crisis. In addition, the following special articles are included: "Overfishing in the Coastal Fisheries and Proposals for its Control," by Harry W. Yoe; "Research and Conservation Program," by Willis H. Rich; "Some Methods of Fishery Management and their Usefulness in a Management Program," by William C. Herrington; "Enforcement of Regulations," by Richard S. Croker; "Technological Developments which will Increase Fishermen's Profits," by Claude M. Adams; "Improvement of Management and Services of Japanese Fisheries Cooperatives," by Freeman F. Smith; "Japanese Fisheries Financing and Cooperative Management," by Howard H. Gordon; "Japanese Fisheries Extension Service Program," by Freeman F. Smith; and "Financing the Japanese Fishing Industry," by William C. Herrington. A list of Natural Resources Section Preliminary Studies is also included.

"A Statistical Study of Variability in Catch Obtained by Short Repeated Trawls Taken Over an Inshore Ground," by H. Barnes and T. B. Bagenal, article, Journal of the Marine Biological Association of the United Kingdom, 1951, vol. XXIX, no. 3, pp. 649-660, illus., printed, 22s 6d. net (US\$3.15) Cambridge University Press, London, England. This is an analysis of the variability of a series of replicate hauls taken over a prescribed ground with the same gear and as far as possible under controlled conditions. For analysis the species were divided into "round" ground fish and "flat" fish together with Nephrops; for both groups the coefficient of variation varied from 40 to 85 percent. It was found that the standard deviation is roughly proportional to the mean, and that the variance is greater than the mean and increases with the mean. This suggests aggregation of the population. Except for haddock and dogfish, the "round" fish constituted a constant population. Changes were found in the other groups and their origin is discussed.

Trade Practice Rules For The Public Refrigerated Storage Industry (Fromulgated April 4, 1952), 6 p., printed. Federal Trade Commission, Washington 25, D. C. Contains the revised Trade Practice Rules for the Public Refrigerated Storage Industry, formerly known as the Commercial Cold Storage Industry. (Also see p. 52 of Commercial Fisheries Review, April 1952.)

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CORRECTION

The following footnotes were inadvertently not printed at the end of Table 1 which appeared on page 18 of the April 1952 issue of Commercial Fisheries Review:

SYMBOLS FOR TYPES OF BOTTOM:

GY.M. - GRAY MUD	SH. - SHELLS
M. - MUD	RK. - ROCK
S. - SAND	RKY. - ROCKY

*INSIGNIFICANT QUANTITIES IN CATCH.
**MAGNETIC COURSE AT START OF DRAG.



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Photograph Credits: Page by page, the following list gives the source or photographer for each photograph in this issue. Photographs on pages not mentioned were obtained from the Service's file and the photographers are unknown.

Cover page, pp. 1, 4, 5, 7, 8, 9, 10, and 11--staff of Exploratory Fishing and Gear Development Section, Branch of Commercial Fisheries, Seattle, Washington; p. 21--R. Paul Elliott.



NORTH PACIFIC ALBACORE TUNA EXPLORATION--1950

Fishery Leaflet 402, North Pacific Albacore Tuna Exploration--1950, presents the results of work by the Service's exploratory fishing vessel John N. Cobb on certain phases of albacore tuna fishing and gear-testing experiments in offshore waters of Oregon, Washington, British Columbia, and Alaska. The work was carried on for 3½ months (from June 12 to September 28, 1950) and was a continuation of a project begun in mid-summer 1949 to study the range of albacore and to investigate the possibilities of establishing a commercial fishery for tuna off the Alaska coast.

Discussed in the report are the background, objectives, and plan of the exploration; occurrence of albacore and fishing results, including migration pattern, catches by trolling, gill-netting, and long-lining; and a description of the gear and exploratory fishing methods employed.

The main objectives of the 1950 exploration by the John N. Cobb were to obtain information on the inshore migration pattern of the albacore; to test the various types of gear on albacore; to further investigate the possibilities of establishing a tuna fishery off Alaska; to record environmental conditions affecting the availability of albacore; and to assist the commercial fleet through radio broadcasts of fishing results.



A CATCH OF ALBACORE IS REMOVED FROM THE GILL NETS ABOARD THE JOHN N. COBB. POMFRET WERE ALSO FAIRLY ABUNDANT IN THIS CATCH.

Surface-trolled jigs were used as the main gear for locating albacore, and gill nets and long lines were fished experimentally. Both linen and nylon gill nets were used, and both were equally effective in catching albacore. Best fishing was usually found in warm (58° to 60° F.) blue water, with occasional catches being made in blue-green or green water. Although albacore were taken in waters from 54° to 62° F., only 3.5 percent of the total catch occurred in waters below 57° F. Good fishing frequently was experienced in fingers of warm, blue water extending into the coastal green zone or along the edge of the blue and green waters. Gill-net catches indicated that the albacore usually stay within the upper region of the warm surface layer.

Although over 400 albacore were tagged during the exploration in an effort to gain knowledge of their migration pattern, no returns have been received.

Copies of Fishery Leaflet 402 may be obtained free upon request from the Division of Information, U. S. Fish and Wildlife Service, Washington 25, D. C.

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