



TRENDS AND DEVELOPMENTS

Additions to the Fleet of U. S. Fishing Vessels

Fifty-two vessels of 5 net tons and over received their first documents as fishing craft during March 1951--6 less than in March 1950. Texas led with 11 vessels, followed by Louisiana with 7 and California with 6 vessels, the Bureau of Customs reports.

During the first three months of 1951, a total of 142 vessels were documented as fishing vessels, the same number as in the first quarter of 1950.

Vessels Obtaining Their First Documents as Fishing Craft, March 1951					
Section	March		3 mos ending with Mar.		Total 1950
	1951	1950	1951	1950	
	Number	Number	Number	Number	Number
New England	2	2	5	7	36
Middle Atlantic	6	3	13	5	45
Chesapeake Bay	2	4	4	14	81
South Atlantic	6	12	22	30	153
Gulf	20	17	47	33	167
Pacific Coast	12	15	38	39	231
Great Lakes	-	1	1	3	12
Alaska	3	4	11	11	83
Hawaii	1	-	1	-	4
Total	52	58	142	142	812

NOTE: VESSELS HAVE BEEN ASSIGNED TO THE VARIOUS SECTIONS ON THE BASIS OF THEIR HOME PORT.



Alewife Taken From Lake Michigan

A fish identified as an alewife was recently taken from Lake Michigan off Whitehall, according to an April news release from Michigan's Department of Conservation.

This specimen, which resembles the true herring, is the second one ever recorded by the Department as being taken in Lake Michigan. The alewife, native to north Atlantic coastal waters and in recent years common in Lake Erie, was unknown above Niagara Falls prior to the opening of the Welland canal.

The specimen was over nine inches long. Most of these fish average three to four inches and in Lake Ontario rarely exceed five to six inches. Often used as bait, the marine alewife is marketed as fresh, pickled, and smoked fish.



Alaska Fishery Investigations

HERRING RESOURCES OF ALASKA: Although wage and price agreements are still in the negotiation stage in the Alaska herring fishery, operations in all districts this season seem fairly certain. Preparations have been completed for sampling of the catch.

Calculation of hours of fishing time was completed for all herring seiners' log books returned from the trial run of 1950. The average catch for each district in tons per hour of fishing time follows: Kodiak, 3.6 tons; Prince William Sound, 3.55 tons; and Southeastern, 0.9 tons.

The 1950 age composition for the Kodiak fishery was obtained on completion of the check reading of scales. The dominant year class in the catch was that of 1947 with 52 percent, followed by 1944 with 13 percent. The samples demonstrated that catches made south of Cape Uyak in Shelikof Straits contain many more older individuals than do those made to the north of that point. In 1950 the average age of fish taken on the Bumble Bay grounds was 6 years as compared to an average of 4 years for catches made at Raspberry Cape. Cape Kuliuk, which lies between these two localities, had an average age of $4\frac{1}{2}$ years. A similar situation prevailing in the age composition of the past several years suggests a difference in origin in the populations inhabiting the northern and southern areas of Shelikof Strait, and the possibility of some intermingling of these populations at Cape Kuliuk in the fall months.



Federal Purchases of Fishery Products

FRESH AND FROZEN FISH PURCHASES BY DEPARTMENT OF THE ARMY, APRIL 1951: The Army Quartermaster Corps purchased during April 1951 a total of 2,729,426 pounds of fresh and frozen fishery products for the military feeding of the U. S. Army, Navy, Marine Corps, and Air Force (see table). Compared with the previous month, April purchases increased 13.2 percent in quantity and 37.4 percent in value. Compared with April 1950, this year's purchases for the same month were greater by 174.7 percent in quantity and 159.5 percent in value.

Table 1 - Purchases of Fresh and Frozen Fishery Products by Department of the Army (April and the First 4 Months, 1951 and 1950)

Q U A N T I T Y				V A L U E			
April		January-April		April		January-April	
1951	1950	1951	1950	1951	1950	1951	1950
lbs.	lbs.	lbs.	lbs.	\$	\$	\$	\$
2,729,426	993,562	8,647,236	3,562,406	1,128,474	434,940	3,616,945	1,622,400

A comparison of the first four months' purchases for 1951 and 1950 shows that there was an increase of 142.7 percent in quantity and 122.9 percent in value for 1951. The Quartermaster Corps purchases of fish during this four-month period were 5 million pounds greater than for the same period of the previous year.



Fishery Biology Notes

CLAM GROWTH IN GULF OF MEXICO TO BE OBSERVED: The U. S. Fish and Wildlife Service's Shellfish Laboratory at Milford, Conn., air-expressed in April several thousand young hard clams or quahogs (*Venus mercenaria*) in special containers to the Service's Gulf Oyster Investigations at Pensacola, Fla. These clams were grown in winter at the Milford laboratory from fertilized eggs released by specially conditioned parents. Since the setting, the young clams have been kept under continuous observation.

The Gulf Oyster Investigations will observe their growth and behavior under conditions existing in some localities of the Gulf of Mexico. Eventually it may become possible to establish there a fishable clam population.



Freezing-Fish-At Sea Technological Studies

VESSEL "DELAWARE" MAKES SHAKEDOWN CRUISE (Cruise No. 1): The converted trawler Delaware, the Branch of Commercial Fisheries' experimental vessel for freezing-fish-at-sea technological studies in the New England area, left on its shakedown cruise on June 18 and was expected to return about June 26. Operations were to be conducted on New England fishing banks.

The main purpose of the cruise will be to test the performance of the refrigeration machinery. Fish which are taken will be used to test the brine-freezer tank and to develop suitable handling methods for storage of frozen fish. Fishing operations on this cruise will be conducted for only a limited time each day. As each drag is brought aboard, fish will be sorted into sizes and species. Each of the lots so segregated will be divided in half; one half will be gutted and iced for storage in the forward fish hold in the normal New England trawler manner; the second half of each lot will be frozen in the brine-freezer tank and then stored in the refrigerated storage space. The purpose of splitting of the catch is to allow the filleting of portions of each lot at the shore pilot plant for studies on the quality and yield of fish fillets produced by each of the two methods of storage.



Great Lakes Fishery Investigations

LAKE TROUT STOCKS IN LAKE SUPERIOR AT A LOW LEVEL: The stocks of lake trout in Lake Superior are in poor condition to withstand threatened inroads of sea lampreys which have been taken from all parts of this lake and are known to have established spawning runs as far west as Keweenaw Peninsula, the Service's fishery research biologists of the Great Lakes Fishery investigations report.

The combined United States and Canadian production of lake trout averaged 4,325,000 pounds during 1885-1892; 6,236,000 pounds from 1893-1907; and 4,403,000 pounds from 1908-1949. The short-term fluctuations of production during the more recent years give evidence of periodicity in the output of trout in the entire lake. These periodic fluctuations tended to be similar in Michigan and Ontario waters of Lake Superior and suggests that the fishermen exploit a common stock or stocks subject to similar fluctuations.

The indices of abundance or availability as computed from records of the catch of lake trout per unit of fishing effort showed periodic fluctuations similar to those of production. In Michigan waters, the abundance of lake trout, expressed as a percentage of the 1929-1943 mean, stood at 108 in 1929, dropped to 100 in 1931, rose to a 21-year high of 137 in 1934, decreased to 80 in 1940, increased again to 107 in 1944 and then fell to the 21-year low of 65 in 1949.

The distinctly cyclic fluctuations that characterized statistics on production and abundance were much less apparent in the 1929-1949 data on fishing intensity. Over the 6-year period, 1944-1949, fishing intensity expressed as a percentage of the 1929-1943 mean averaged 142; for the most recent 4 years, 1946-1949, the average intensity index was 151.

The failure of production to serve as an indicator of changes in abundance can be attributed to the negative correlation that existed between abundance and fishing intensity. The relationship suggests that fishermen have increased their fishing pressure in order to maintain their production during the recent years of declining abundance. Production in 1949 stood at 106 percent of the 1929-1943 mean, but this level of yield was made possible only by fishing intensity that was 162 percent of average; the abundance index in 1949 was only 65.

Lake trout stocks of the State of Michigan waters of Lake Superior are approaching a dangerously low level considering probable effects of a growing population of sea lampreys and intensified efforts of fishermen to keep production up.

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TESTS OF EXPERIMENTAL ELECTRICAL SEA-LAMPREY BARRIERS SUCCESSFUL: Early tests of experimental electrical barriers intended to bar sea lampreys from spawning grounds in streams tributary to the Great Lakes indicate this device will prove both effective and economical, according to the Service's Great Lakes Fishery Investigations.

The Service, assisted by the Cook Electrical Research laboratories of Chicago, Illinois, has blocked successfully the spawning run of the sea lamprey in the Ocqueoc River with as little as $2\frac{1}{2}$ kilowatts of power. The Ocqueoc River, about 90 feet wide, is located near Rogers City, Michigan. Further experimentation is being conducted during the sea lamprey spawning season to refine the procedures and to determine the most suitable structure for practical use in control of this parasite which has all but eliminated the multi-million dollar lake trout fishery in Lakes Huron and Michigan.

Research on sea-lamprey control measures are directed from the Hammond Bay fishery laboratory near the Ocqueoc River.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, P. 15.



Gulf Exploratory Fishery Program

LARGE BROWN-GROOVED SHRIMP LOCATED BY "OREGON" (Cruise No. 8): Unfavorable weather hampered shrimp trawling by the Oregon, the Service's Gulf exploratory fishing vessel, during the first part of Cruise No. 8 in late March and early April, and this cruise was interrupted several times.

During the first part of the cruise (from March 20 to April 8), the Oregon worked west of Pascagoula, chiefly near the continental shelf between the 90th and 92nd meridians. The vessel visited Rockport, Texas, on March 23. During the second part of the cruise (from April 22 through May 8), the Oregon worked off Pensacola, Florida, and visited that port May 23.

Small numbers of very large brown-grooved shrimp were found in the vicinity of latitude 30°00' N. longitude 86°50' W. southeast of Pensacola, in 52 to 68 fathoms, but catches did not exceed 25 pounds per hour. Some of the shrimp were larger than five ounces and special efforts were made to locate heavier concentrations in shallower water. However, drags in this area in less than 52 fathoms produced no shrimp at all. All drags made during Cruise 8 included a relatively high proportion of scrap. Drags with a hundred-foot flat trawl produced over $\frac{1}{2}$ ton of scrap fish per hour in 18 and in 42 fathoms off Pensacola and the proportion of scrap elsewhere appeared to be abnormally high.

Surface-feeding schools of little tuna or similar fish were seen on April 26 southeast of Pascagoula in water depth of about 30 fathoms. This was the first observation of surface schools of large fish by the Oregon this spring. At about the same date increased numbers of the white-spotted porpoises were noted and the first flying fish were seen. The surface temperatures were still moderate during the first week in May in the northeast Gulf and the highest recorded by the Oregon for the present cruise was 75° F.

Trials of various designs of shrimp trawls were continued. Promising results were obtained with a trawl having the bottom body almost entirely cut away. It is necessary to carry out repeated trials, of course, before gear designs can be properly evaluated.



Gulf Fishery Investigations

"MV ALASKA" BEGINS BIOLOGICAL AND OCEANOGRAPHIC STUDIES IN THE GULF OF MEXICO (Cruise No. 1): The vessel Alaska cruised over the central and lower Gulf of Mexico--Mississippi Delta to Yucatan, Yucatan Strait, and Florida Strait, and returned to Galveston, Texas. This cruise was started on April 19 and was completed on May 10. The Alaska is operated by the Gulf Fishery Investigations under the Service's Branch of Fishery Biology. These Investigations deal with the biological and oceanographic phases of the Gulf of Mexico's problems as a key to the productive potential of that body of water. (On the other hand, the Gulf Exploratory Fishery Program under the Service's Branch of Commercial Fisheries with the vessel Oregon will concentrate on the exploration of the Gulf's fishery resources and their commercial possibilities.)

This was the first of a series of cruises by the Gulf Fishery Investigations vessel Alaska to cover the same area in each season of the year to study currents, discover spawning areas of various fishes, and resolve the distribution pattern of fish larvae and juveniles. A comparative biochemical study will be made of the various regions of the Gulf bearing on the problem of total biological potential, and what part of this potential can be recovered for human consumption. Vessel personnel occupied 39 stations and made hydrographic casts at each station. At alternating stations plankton tows were made with a half-meter net; few fish larvae and juvenile fishes occurred in the sparse plankton.

Trolling on the Campeche Banks yielded several "little tuna." Two freshly spawned-out females were in the group. The staff preserved the stomach content of one fish; the remaining stomachs were empty. A shark and a few other fishes (full identification not yet made) were captured; all had empty stomachs.

Besides the Service's scientific personnel, two representatives of the Department of Oceanography of Texas A. & M. College, which is cooperating on physical oceanography, were aboard the Alaska.

Cruise 2 of the Alaska, which will cover a second section of the Gulf, was scheduled for June 4.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, PP. 15-6.



Maryland Conference on Striped-Bass Size and Reproduction

How wise is the law restricting the size limit of striped bass, or "rockfish" in Chesapeake Bay waters? From a biological standpoint, an effort was made to obtain an objective answer to this question from May 29 to 31 at a conference composed of Dr. Howard W. Jackson, zoologist at the Virginia Polytechnic Institute in Blacksburg; and Dr. R. V. Truitt, director, and Romeo Mansueti, biologist, of the Maryland Department of Research and Education, at Solomons, according to a June release from that Department.

During the last few years Dr. Jackson has cooperated with the Chesapeake Biological Laboratory on a project to discover the viability and degree of effectiveness of striped bass as spawners at different sizes and ages. The Laboratory has actively collected eggs from striped bass in all stages of growth and forwarded them to Dr. Jackson for analysis. Laboratory personnel have received cooperation from Maryland fishermen who have allowed roe to be collected from their fish for study.

By studying the eggs - that is, weighing, counting, and observing them—and correlating this data with the age and weight of roe or "cow" striped bass, some clue as to the fish's sustaining ability to produce its own kind may be gathered for the better management of the fishery. An important part of this study is to discover whether young or old "cows" can produce the more vigorous strains of young for future stocks of fish. This will be determined by observing the state of the ovaries in various stages of development, the embryonic development, and rate of growth of fish from different age groups of striped bass. The problem ultimately resolves itself to the potentiality of the germ plasm in young and old.

Commercial fishermen and biologists alike have asked themselves:

1. Do roe striped bass under 15 pounds produce as many eggs and spawn with as much vigor as those over the limit?
2. Are old striped bass weighing up to 50 pounds able to contribute to the productivity of Chesapeake Bay as efficiently as young spawners? Or are they a detriment to the population by eating more food and spawning less?
3. Are the **best** potential spawners, which occur in larger numbers, a part of the group made up of fish under 15 pounds?

4. Should the brood stock of young fish between three and 15 pounds be protected?
5. Do large old "cow" striped bass spawn every other year? If so, when and how often?

Biologists have found that in general, male or "bull" striped bass are sexually mature at the age of three, the female or "cow" often are not mature and ready to spawn until they are in their fourth year. A female fish produces an amazing number of potential baby bass at one spawning of which but a small percentage reaches maturity. Statistics are available as follows:

- 3 year-old female, at 3 pounds, produces 14,000 eggs;
- 4 year-old female, at 4½ pounds, produces 265,000 eggs;
- 9 year-old female, at 15 pounds, produces 1,300,000 eggs;
- 12(?) year-old female, at 50 pounds, produces 3,300,000 eggs.

It has been estimated that a 75-pound female will produce 10,000,000 eggs.

Such information on the productivity of various-aged striped bass does not exist to a sufficient degree to provide a reason for a serious reconsideration of the 15-pound limit. No striped bass less than 11 inches in length or weighing more than 15 pounds can be taken (except at Hog Back Shoals in the Susquehanna River), but recently the State Legislature tried to increase the maximum size limit from 15 to 25 pounds. Virginia fishermen are allowed to catch striped bass up to 25 pounds. Massachusetts allows its fishermen to keep "rockfish" over the 15-pound limit.

Striped bass have not been increasing appreciably over the years, except for the occasional appearance of dominant year-classes—groups of bass that were produced in such huge amounts in certain years that they caused a marked increase in the number caught for short periods. What is the biological basis for such "bumper" crops is not known. Studies have shown, however, that this surplus of fish was short-lived, and the trend of declining population resumed its former character. How this is related to the fecundity of striped bass is a major, long-range problem.

The conference was concerned with a discussion of the data and its interpretation. Plans were made to consider the probability of organizing the results obtained during the study period. The study will culminate in a publication to be issued by the Laboratory.



Middle and South Atlantic Fishery Investigations

SHAD INVESTIGATIONS IN THE HUDSON AND CONNECTICUT RIVERS: Data from tagging shad at the mouth of the Hudson River disclosed that 456,072 fish entered the river in 1950, according to an April report from the Service's Middle and South Atlantic Fishery Investigations. Of these, 306,154 were caught; about 150,000 escaped. Tagging on spawning grounds showed that of the numbers reaching there, 154,000 escaped the fishery; this figure closely agrees with the total calculated from tagging at the mouth of the river.

There seems to be some correlation of ship traffic in the Hudson with the shad catch there. Final results must await establishment of a catch per-unit-of-effort

index for past years, since some years of good catches seem the result of increased effort rather than an abundance of shad.

Two members of the laboratory staff have devised a method for reading total age of shad from scales. This method involves the use of transverse grooves to determine the first three or four years of age—the most difficult period to read. Using the criteria set up, two biologists who have made independent readings have reached very good agreement. Final proof of the method will result from anticipated returns of shad which will be marked as juveniles in the Connecticut River this year.

Scale readings from shad caught in the lower reaches of the Hudson River show the largest percentage of shad of both sexes return to spawn at 4 years of age, with a large percentage of females returning first at 5 years of age. The biggest percentage of shad in the sample were spawning for the first time; as represented by scale samples, chiefly 4-, 5-, and 6-year-olds composed the catch, with the 5-year-olds predominating.



New England Tuna Explorations

"WESTERN EXPLORER" BEGINS FOUR-MONTH BLUEFIN TUNA EXPLORATORY CRUISE: A four-month bluefin tuna exploratory cruise in New England waters was initiated when the U. S. Fish and Wildlife Service exploratory fishing vessel Western Explorer sailed from Boston, Mass., on June 23.

The Explorer will search for untapped resources of bluefin tuna in waters principally off the shores of Maine and Massachusetts. Primary objectives of the cruise are to locate commercial concentrations of bluefin tuna, determine their pattern of abundance, direction of migration, and potential quantities for commercial use. The development of an entirely new fishery in the New England area will hinge on the results obtained from this cruise.

The 85-foot Pacific Coast-type vessel carries an 11-man crew. It is fully equipped with a 28,000-pound purse seine, which is 2,100 feet in length. The seine will be used to take schools of 75- to 150-pound bluefin tuna—the best size for canning.

The fishing industry, especially the Maine sardine canners, is watching the bluefin project with unusually keen interest. As the New England sardine season usually ends in the fall, tuna canning the remainder of the year would tend to even employment levels in this industry. The bluefin could be put into freezers until the winter lag arrives, then canned with present canning equipment. Only minor changes and adaptations will be necessary.



New Marine Research Institute Organized

A new marine research institute has been formed in the Woods Hole, Mass., area, already famous for its marine laboratories. The new institute, the Marine and Fisheries Engineering Research Institute, was incorporated as a non-profit organization and

was founded to fill a gap between the marine research performed by scientific organizations and the practical engineering aspects required by the fishing industry and other industries with marine problems. The formation and organization of the Institute became possible through the initial financial support of the Friendship Fund, Incorporated, of New York City, according to an April 6 news release from the Institute.

Columbus O'D. Iselin, senior oceanographer and former director of the Woods Hole Oceanographic Institution, was named president of the new organization, while Francis Minot, Maritime Consultant of Cotuit, Mass., became vice-president and director.

The Marine and Fisheries Engineering Research Institute will "promote the advancement of the fishing industry; oceanography and other marine sciences and industries; and the exploitation of the food and other resources of the oceans and other bodies of water." This will be done through research, and the development and testing of tools and techniques, including but not limited to vessels, propulsion systems, equipment, fishing gear, fishing and marine-planting methods, and marine life.



New Tagging Method for Small Crabs

What is the rate of growth of the blue crab under natural conditions? Where and how far do young crabs travel? These are just a few of the questions that might be answered by the new method of tagging immature crabs to be tested by biologists from the Maryland Department of Research and Education and the Virginia Fisheries Laboratory, according to a June news release. They tagged 164 crabs in the vicinity of Smith Island during May 9 through 11.

The cooperative field crew from the Chesapeake tidewater states obtained crabs by scraping the bottom of the shoals at Ewell. Those crabs ready to shed their old skin were tagged at the suture where the old shell opens. At this point the tag cannot be sloughed off with the old skin. Also, the new tagging procedure will not prevent the crab from shedding in a natural manner. Heretofore, according to the biologist at the Chesapeake Biological Laboratory, only large mature crabs had been tagged from which inadequate results were obtained.

Although the new method developed at the Virginia Fishery Laboratory requires more time for the actual tagging operation, the probable successful results will far outweigh this minor disadvantage.

The Chesapeake Biological Laboratory would like to obtain the measurement of the width, from spine to spine, of each tagged crab obtained by crabbers, in addition to the information requested on the tag. Detailed notes on size, sex, and number were taken from each crab that was tagged. A reward of \$1 is being paid by the U. S. Fish and Wildlife Service for each tag returned.



North Pacific Exploratory Fishery Program

"JOHN N. COBB" TO CONTINUE EXPLORATIONS FOR ALBACORE: In order to continue the exploratory fishing for albacore tuna carried on in the 1949 and 1950 seasons, the John N. Cobb left Seattle June 11. This exploratory fishing vessel of the Service's Branch of Commercial Fisheries will attempt to intercept the tuna while they are still in the offshore waters of the states of Washington and Oregon, and to trace the speed and direction of their movements.

Extensive experimental fishing with gill nets and flag-line gear is planned.

The John N. Cobb will fish with usual commercial gear, such as surface-trolled jigs. In addition, both nylon and linen gill nets, modified from those used last season, will be fished. Flag-line gear constructed of wire will also be fished experimentally. Oceanographic and other scientific information related to the problem also will be collected.

A daily broadcast of findings will be made from the vessel to the fishing fleet.



Pacific Oceanic Fishery Investigations

TUNA OCCURENCE AND PURSE SEINING INVESTIGATED BY "JOHN R. MANNING" (Cruise No. VI): Investigations on the occurrence of tunas in certain areas in the Central Pacific Ocean and to determine the feasibility of using a standard West Coast tuna purse seine to catch them were conducted by the John R. Manning on its Cruise No. VI. This vessel of the Service's Pacific Oceanic Fishery Investigations, which left on this cruise March 30, confined its activities to waters adjacent to the Line Islands, including Kingman Reef, Palmyra, Washington, Fanning, and Christmas Islands.

The purposes of the cruise included:

- (1) To conduct experimental purse-seine fishing operations in the waters around the Line Islands and to develop effective techniques for sampling surface fish in those areas.
- (2) To ascertain the abundance of tunas in those areas.
- (3) To collect biological material, such as ovaries, stomachs, gill arches, weights, and morphometric data.
- (4) To make hydrographic observations by means of the bathythermograph and recording thermometer.
- (5) To determine characteristics of linen seine webbing under conditions of purse-seine operation.

Nine purse seine sets were made during the cruise. These sets were as follows-- one under a bird flock, one around porpoise, three around tunas, and four experimental sets. All of these sets were waterhauls except one that caught four porpoise and three sharks. Prevailing conditions of weather and seas limited the operation of the purse seine close to shore and within the lee of the islands. Two surface troll lines were used throughout the cruise to catch fish on artificial lures. The great-

est number of fish observed and caught was in the area of Christmas Island. Thirty-two flocks of birds and seven schools of fish were observed during this cruise.

The catch (by trolling) of tuna was entirely yellowfin and totaled in excess of one ton. An estimated ton of wahoo was also caught, in addition to less than a dozen rainbow runners, barracuda, and ulua.

The vessel returned to Honolulu on May 17; and its next cruise is scheduled for June 1 in the waters adjacent to the Hawaiian Islands.



"The Story of Menhaden" to be Displayed at Two International Film Festivals

The new educational film, The Story of Menhaden, recently completed by the Fish and Wildlife Service, has been selected by the Department of State for competitive display at two international film festivals to be held this summer, the Department of the Interior announced on May 18.

One festival is the world's outstanding exhibition of motion picture art at the 12th International Exhibition of Cinematographic Art--to be held in Venice, Italy, from August 8 to 18; the other is the 5th International Edinburgh Film Festival at Edinburgh Scotland, from August 19 to September 9.

The Interior film was one of those chosen by the Department of State's Motion Picture Review Committee from approximately 100 of the best films submitted by the Federal Government agencies. Filmed cooperatively with the menhaden industry, who financed the year-long effort, it was planned and supervised by the Service's Branch of Commercial Fisheries.

The 16-mm. sound and color motion picture depicts the method of fishing for menhaden, plant processing, and the ultimate uses of menhaden meal, oil, and solubles in the feeding of hogs and poultry; in preparing fortified vitamin oils; in paints, varnishes, insect sprays, printing inks, and soap; and the use of the oil as a lubricant of machinery, in aluminum casting, and in leather tanning.

In 1949 another Fish and Wildlife Service educational film, It's the Maine Sardine, won first prize in the public relations series at the 10th International Exhibition of Cinematographic Art in Venice.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, FEBRUARY 1951, P. 108; OCTOBER 1950, P. 35; SEPTEMBER 1950, P. 22; DECEMBER 1949, P. 31.



Upper Mississippi River Fisheries Hurt by Weather Conditions

Extensive spring floods coupled with a severe winter have worked an undue hardship on the upper Mississippi River Fisheries this winter and spring, according to a May 31 report from the Service's Fishery Marketing Specialist stationed in that area. During the period of the flood, many fishermen lost gear either in the water or on the drying racks along the shore. The fishermen were unable to take advantage of the carp and buffalofish spawning runs because nets could not be put into the water due to storms, unseasonably cold days, and the swift current of the flooded

river. A few of the nets that had been set often were badly damaged by floating debris. Many fishermen were idle as long as four weeks.

Fish markets located near the Mississippi River suffered losses varying from complete destruction of buildings and equipment to only a loss of business due to the flooded river.

Currently, there are practically no gill nets or buffalofish nets being used for fishing in this area. Popular set lines and slat traps are being used to take hackleback sturgeon and catfish, which were in the middle of their spring run in May. Wisconsin law permits the taking of ten sturgeon per commercial fishing license.



Pack of Maine Sardines (Including Sea Herring), 1950

Maine sardines (including sea herring) packed in 1950 amounted to 3,844,164 standard cases, valued at \$21,209,033 to the packers (table 1). Compared with the previous year, this was an increase of 25 percent in quantity, but less than 1 percent in value.

Prior to 1949 the packs of fish canned as sardines and as sea herring were shown separately. However, in 1949 the packs were combined. The comparative data in table 2 likewise represent the combined packs of the past ten years.

Table 1 - Pack of Maine Sardines (Including Sea Herring) by Style of Pack; and by Size of Can and Case, 1950
(Quantity in Standard and Actual Cases, and Value to the Cannery)

Style of Pack	Quantity	Total Value	Avg. Price Per Std. Case	Can and Case Sizes	Quantity	Total Value	Avg. Price Per Std. Case
	Std. Cases ^{1/}				Actual Cases		
Natural	36,408	85,860	2.36	3 1/4 oz. net (100 cans)	3,721,403	20,850,436	5.60
In soybean or other vegetable oil	3,354,642	18,201,996	5.43	9 oz. net (48 cans)	19,137	96,351	5.03
In mustard sauce	293,016	1,560,641	5.33	15 oz. net (48 cans)	37,356	213,916	5.73
In tomato sauce	49,397	193,465	3.92	Other sizes converted to 3 1/4 oz. net (100 cans)	14,567	48,330	3.32
In olive oil	15,681	152,606	9.73				
Other ^{2/}	95,020	1,014,465	10.67				
Total	3,844,164	21,209,033	5.52	Total	3,792,463	21,209,033	-

^{1/}REPRESENT CASES OF VARIOUS SIZES CONVERTED TO 100 1/4-OIL CANS (3 1/4 OZ. NET) TO THE CASE.
^{2/}INCLUDES SPECIAL PACKS OF SARDINES (INCLUDING SEA HERRING) IN COTTONSEED OIL; PEANUT OIL; SMOKED IN OIL; AND SPICED IN SOYBEAN OIL.

Sardines (including sea herring) in 1950 were canned in 47 plants in Maine and 3 in Massachusetts.

Table 2 - Pack of Maine Sardines (Including Sea Herring^{1/}) 1941-50
(Quantity in Standard Cases^{2/} 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 ^{2/}	\$	\$		Std. Cases ^{2/}	\$	\$
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
1946	3,276,338	20,275,590	6.19	1941	3,164,787	12,590,958	3.98

^{1/}THE PACK OF HERRING PREVIOUSLY REPORTED AS CANNED SEA HERRING HAS BEEN CONVERTED TO THE EQUIVALENT OF 100 1/4-OIL CANS (3 1/4 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 1/4 OZ. NET) TO THE CASE.

The average price per standard case at the canners' level dropped from \$6.85 in 1949 to \$5.52 in 1950. The 1950 price is the lowest since 1946. Sardines in soybean or other vegetable oil in 1950 (the bulk of the pack was put up in this style) averaged \$5.43 per standard case, compared with \$6.95 in 1949. The next important style pack was sardines in mustard sauce which averaged \$5.33 per standard case in 1950, compared with \$7.08 in 1949.



U. S. Production of Marine Pearl-Shell Buttons, 1950

Production of marine pearl-shell buttons in 1950 amounted to 5,803,641 gross, valued at \$9,239,018 to the manufacturers (table 1). This was an increase of 42 percent in volume and 36 percent in value, compared with 1949.

Manufacturers received an average of \$1.59 per gross for their 1950 production, compared with an average of \$1.66 in 1949 and 61 cents in 1940 (table 2).

Table 1 - U. S. Production of Marine Pearl Shell Buttons by States, 1950 (Quantity and Value to the Manufacturers)

State	Quantity Gross	Total Value \$	Avg. Price Per Gross \$
Connecticut	1,266,444	1,909,112	1.51
New York	1,178,469	1,638,560	1.39
New Jersey	1,732,267	2,486,713	1.44
Pennsylvania and Maryland.	1,566,192	3,128,810	2.00
Iowa	60,269	75,823	1.26
Total	5,803,641	9,239,018	1.59

1/PRODUCED PRINCIPALLY FROM IMPORTED SHELLS.

Table 2 - U. S. Production of Marine Pearl-Shell Buttons, 1940-50 (Quantity & Value to the Manufacturers)

Year	Quantity Gross	Total Value \$	Avg. Price Per Gross \$
1950	5,803,641	9,239,018	1.59
1949	4,089,712	6,782,281	1.66
1948	4,974,073	8,587,011	1.73
1947	5,087,000	7,902,000	1.55
1946	3,461,559	5,635,904	1.63
1945	2,398,020	3,286,245	1.37
1944	2,035,320	2,601,626	1.28
1943	2,949,978	3,792,059	1.29
1942	5,364,718	4,532,695	.84
1941	7,424,769	5,337,351	.72
1940	6,830,628	4,140,984	.61

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



Wholesale and Retail Prices

WHOLESALE PRICES, APRIL 1951: A seasonal increase in production was reported from all fishing centers during April and wholesale prices of fishery products were substantially below those that prevailed the previous month. The wholesale index for edible fish and shellfish (fresh, frozen, and canned) for April was 107.8 percent of the 1947 average (see table)—3.8 percent below the previous month, but 12.5 percent above April 1950, the Bureau of Labor Statistics of the Department of Labor reports. Demand was generally good during the month, except that frozen halibut continued to move slowly.

Table 1 - Wholesale Average Prices and Indexes of Fish and Shellfish, April 1951, with Comparative Data

GROUP, SUBGROUP, AND ITEM SPECIFICATION	POINT OF PRICING	UNIT	AVERAGE PRICES (\$)			INDEXES (1947 = 100)		
			Apr. 1951	Mar. 1951	Apr. 1950	Apr. 1951	Mar. 1951	Apr. 1950
ALL FISH AND SHELLFISH (Fresh, Frozen, and Canned)						107.8	112.1	95.5
Fresh and Frozen Fishery Products:						100.9	108.3	100.5
Drawn, Dressed, or Whole Finfish:						105.1	118.2	106.0
Haddock, large, offshore, drawn, fresh	Boston	lb.	.08	.11	.09	87.2	114.1	95.0
Halibut, Western, 20/80 lbs., dressed, fresh or frozen	New York City	"	.31	.35	.35	91.6	103.2	103.2
Salmon, king, lge. & med., dressed, fresh or frozen	" " "	"	.52	.53	.46	128.2	128.9	112.2
Whitefish, mostly Lake Superior, drawn (dressed), fresh	Chicago	"	.59	.60	.58	170.2	172.0	166.5
Whitefish, mostly Lake Erie pound net, round, fresh	New York City	"	.83	.67	.63	188.1	150.9	141.5
Lake trout, domestic, mostly No. 1, drawn (dressed), fresh	Chicago	"	.59	.60	.69	130.2	131.2	151.9
Yellow pike, mostly Michigan (Lakes Michigan & Huron), round, fresh	New York City	"	.42	.54	.38	98.3	125.5	88.4
Processed, Fresh (Fish and Shellfish):						94.7	95.7	91.9
Filletts, haddock, small, skins on, 20-lb. tins	Boston	lb.	.29	.35	.30	103.5	126.2	106.4
Shrimp, lge. (26-30 count), headless, fresh or frozen	New York City	"	.57	.57	.64	82.5	82.4	92.9
Oysters, shucked, standards	Norfolk area	gal.	4.59	4.47	3.50	113.1	110.0	86.2
Processed, Frozen (Fish and Shellfish):						101.9	105.1	102.5
Filletts: Flounder (yellowtail), skinless, 10-lb. bxs.	Boston	lb.	.38	.37	.40	122.7	120.2	127.5
Haddock, small, 10-lb. cello-pack	"	"	.24	.24	.26	108.8	109.7	116.2
Ocean perch (rosefish), 10-lb. cello-pack	Gloucester	"	.26	.29	.20	127.5	145.0	101.0
Shrimp, lge. (26-30 count), 5-lb. bxs.	Chicago	"	.57	.56	.64	82.5	80.6	92.0
Canned Fishery Products:						118.1	118.0	88.0
Salmon, pink, No. 1 tall (16 oz.), 48 cans per case	Seattle	case	24.62	24.62	14.53	160.5	160.5	94.7
Tuna, light meat, solid pack, No. 2 tuna (7 oz.), 48 cans per case	Los Angeles	"	15.00	15.00	14.25	97.6	97.6	92.7
Sardines (pilchards), California, tomato pack, No. 1 oval (15 oz.), 48 cans per case	" "	"	6.75	6.75	5.50	75.5	75.5	61.5
Sardines, Maine, keyless oil, No. 4 drawn (3 1/2 oz.), 100 cans per case	New York City	"	6.53	6.44	7.38	64.0	63.1	72.3

Heavy landings of haddock at New England ports, and good fishing in the Great Lakes resulted in lower prices for most drawn, dressed, or whole finfish during April. This subgroup index during the month was 11.1 percent below March and 0.8 percent below April 1950. From March to April prices dropped for fresh large offshore haddock by 23.6 percent, for yellow pike at New York City by 21.7 percent, and for frozen Western halibut by 11.2 percent; but these were partially offset by an increase of 24.7 percent in the prices of Lake Erie whitefish at New York City due mainly to the Hebraic holidays which occurred in April.

The fresh processed fishery products subgroup index this April declined 1.0 percent as compared to March, but it was still 3.0 percent higher than in April 1950. Prices quoted for fresh haddock filletts during the month were 18.0 percent below March and 2.7 percent lower than in April a year earlier. Fresh headless shrimp prices rose slightly in April, but were still 11.2 percent below the same month in 1950.

With ample cold storage stocks and the seasonal increase in production, the April index for processed frozen fish and shellfish dropped 3.0 percent below March and was 0.6 percent lower than in April 1950. Higher prices were quoted in April as compared to March for frozen flounder filletts (holdings of which are below a year earlier) and shrimp (in spite of large cold storage holdings); but a substantial drop in ocean perch fillet prices occurred. Compared with the corresponding month a year earlier, April prices for frozen haddock filletts, frozen shrimp, and frozen flounder filletts were substantially lower, while frozen ocean perch (rosefish) filletts prices were 26.2 percent higher.

Prices of canned fishery products in April leveled off. The month's index for this subgroup was 0.1 percent higher than in March and 34.2 percent above April 1950. Prices of all canned products under this subgroup during April continued to hold steady at February levels except for Maine canned sardines which increased 1.4 percent from March to April. Compared with the corresponding month a year earlier, April 1951 prices were higher for canned pink salmon by 69.5 percent, for canned California sardines by 22.8 percent, and for canned California tuna by 5.3 percent; but prices for canned Maine sardines were 11.5 percent lower.

RETAIL PRICES, APRIL 1951: Moderate-income urban families from mid-March to mid-April paid slightly higher prices for fresh, frozen, and canned fish, according to the Bureau of Labor Statistics, U. S. Department of Labor. This was due mainly to the continued sharp increase in canned salmon retail prices since the usual seasonal increase in the production of fresh and frozen fishery products brought prices for the latter products down (see table 2). The adjusted retail price index for all foods in mid-April was 225.7 percent of the 1935-39 average—0.2 percent below the previous month, but 14.4 percent above April 15, 1950.

Item	Base	I N D E X E S		
		Apr. 15, 1951	Mar. 15, 1951	Apr. 15, 1950
All foods	1935-39 = 100	225.7	226.2	197.3
All fish and shellfish (fresh, frozen, & canned) ..	do	351.7	351.2	297.5
Fresh and frozen fish.....	1938-39 = 100	286.4	287.6	269.4
Canned salmon: pink	do	508.1	502.4	347.4

Fresh, frozen, and canned fish and shellfish retail prices in mid-April were 18.2 percent higher than the corresponding month a year earlier, but compared with the previous month this year increased only 0.1 percent. On the other hand, from mid-March to mid-April the retail index for fresh and frozen fishery products dropped 0.4 percent, and it was only 6.3 percent higher than in mid-April 1950.

Higher prices were quoted for canned pink salmon in mid-April than in mid-March. Continuing its upward trend of the past nine months, the canned pink salmon index on April 15 this year jumped to 508.1 percent of the 1938-39 average—46.3 percent above the corresponding period in 1950 and 11.3 percent higher than on March 15, 1951.



Economic Cooperation Administration Program Notes

PORTUGUESE COD-FISHING FLEET TO GET MODERN HOSPITAL-TENDER WITH U.S. AID: Portuguese fishermen operating on the Atlantic fishing banks off Newfoundland and Greenland will be able to get modern hospital-tender service with the help of up to \$700,000 in Marshall Plan dollars, the Economic Cooperation Administration announced on June 7.

The ECA dollars will be used to finance the cost of certain items of ship machinery and medical and surgical equipment needed in the construction of a new hospital-tender, which is to be built for the fishing fleet in a Portuguese shipyard. Among the items to be purchased with ECA dollars are radio equipment, diathermy equipment,

radar equipment, two engines of about 1,250 horsepower, pumps, air compressors, a refrigerating plant, and a shaft line.

The catch of the Portuguese fleet is essential to the economy of that country, since it produces about 75 percent of the salt-fish requirements of Portugal. Primarily a cod fleet, it operates in North Atlantic waters for seven to eight months each year, from spring to fall. The crews number about 3,500 men. In 1950 the fleet consisted of 45 schooners and 18 trawlers, with a fish cargo capacity of about 44,400 tons of salted cod.

Since the fleet operates in waters far from home, a service vessel for medical purposes, as well as for supplies, is essential. The present ship servicing the fleet is the Gil Eanes, a converted German vessel obtained as reparations after World War I, which is now considered unseaworthy.

In requesting Marshall Plan aid to obtain a new hospital-tender, the Portuguese Government reported that a storm this past winter off the Azores proved that keeping the Gil Eanes at sea would mean running the risk of a fatal accident. Now nearly 50 years old, the Gil Eanes has been of invaluable service to the Portuguese fishing fleet. In 1949, for example, it serviced the fleet for 228 days, during which time it made 239 calls to fleet vessels; supplied 371 tons of water, 562 drums of gas oil, and 32 tons of salt; took care of 155 hospital patients; gave 8,075 injections to fishermen; and administered 1,237 treatments.

In addition to delivering mail, the hospital-tender also broadcasts Sunday mass service to the men of the fishing fleet.

The new ship will have accommodations for 74 patients, including 12 contagious patients in two separate sick bays. It will also have refrigerated holds for storage of supplies, a bakery, and a laundry.

The hospital-tender will be the property of an association of the cod-fishing shipowners which is controlled and assisted by the Portuguese Government. Procurement of U. S. supplies for the new tender is being handled through the Portuguese Government.

The total cost of the new hospital-tender is estimated at about \$1,300,000, with the \$700,000 in ECA dollars providing a little less than 55 percent of the total financing.

ECA REQUESTED TO FINANCE PAPER FOR PACKING FISH: The Government of Iceland has requested ECA to finance the import of paper for packing fish (including manila board, cellophane wrappers, waxed cartons, and Kraft paper), according to a June 4 news release from ECA. The total dollar value is \$60,000.

ECA TO INSURE FOREIGN INVESTMENTS AGAINST LOSS: American businessmen will be able to insure foreign investments against loss from expropriation or confiscation under a new type of Marshall Plan guaranty announced on April 23 by the Economic Cooperation Administration. It is designed to encourage American investment abroad.

Acting at the direction of Congress which provided for the new type guaranty in amendments to the ECA Act (Public Law 535), ECA worked out policies for the guaranties in cooperation with a committee of prominent American business and financial experts.

Although the new guaranty is broad enough to cover losses resulting from a taking of property by totalitarian governments which may come to power in any Marshall Plan country by revolution or military conquest, it does not cover war damage or business risks.

EUROPE MAKING PROGRESS ON FOOD PACKAGING: Progress being made toward better quality and packaging of food products will help Western Europe feed itself more adequately as well as earn foreign currency to maintain trade, according to a California canning executive-consultant to the Economic Cooperation Administration and as reported in a May 24 news release from that agency. These improvements would also make it easier to feed allied forces in Europe if there should be any interference with shipping.

Reporting on a three-month trip covering most Marshall Plan countries, the consultant attributed recent progress in food processing and handling to three factors: (1) The forward-looking attitude of certain food industries in various European countries (2) the influence of American forces in Europe during and following the war, and (3) technical help furnished by ECA through its missions and technical assistance projects.

Progress in quick-freezing, canning, and other processing methods, is helping the Marshall Plan countries extend the market and season for food supplies. It also is cutting food losses, and resulting in food with more vitamins. As a result the Western European countries will be better able to feed their growing population as well as improve living standards.

From conferences with many branches of food and related industries, the consultant reported numerous examples of enterprise by European concerns to put up better quality products.

The Marshall Plan countries generally, the food consultant reported, are taking an increasing interest in food standardization. Sweden is expecting a new food and drug law; Turkey is making good headway toward standardization, with similar progress noted in other countries.

In Norway and Sweden outstanding examples of steps to maintain quality of export goods were found. Both countries have excellent laboratories to inspect products to see that minimum quality standards are met as a requisite for export licenses.



ECA Procurement Authorizations for Fishery Products

There were no procurement and reimbursement authorizations for fishery products and byproducts (edible and inedible) announced by the Economic Cooperation Administration during May this year. However, during the month a reduction of \$162,000 was announced for authorizations to Greece to be used for the purchase of canned fish from the United States and Possessions.

Procurement authorizations released by ECA for fishery products and byproducts for the period April 1, 1948, through May 31, 1951, totaled \$29,901,000 (\$17,212,000 for edible fishery products; \$11,149,000 for fish and whale oils; and \$1,540,000 for fish meal). The edible fishery products total consisted of \$14,360,000 for canned fish and \$2,852,000 for salted fish.