

TRENDS AND DEVELOPMENTS

Additions to the Fleet of U. S. Fishing Vessels

A total of 83 vessels of 5 net tons and over received their first documents as fishing craft during April 1954--21 more than in April 1953. Texas led with 17 vessels, followed by Florida west coast with 14 vessels, and Louisiana with 11 vessels.

During the first 4 months of this year, 272 vessels received their first documents as fishing craft, compared with 187 during the same period in 1953. The gain in documentation during the first four months of 1954 occurred almost entirely in the Gulf States where 153 vessels were added to the fleet as compared with 65 in the same period in 1953. Most of the vessels documented in the Gulf States are shrimp trawlers.

Section	April		Four months ending with April		Total 1953
	1954	1953	1954	1953	
	Number	Number	Number	Number	
New England	5	1	8	3	20
Middle Atlantic	2	2	2	6	19
Chesapeake	5	6	28	23	83
South Atlantic	9	10	32	29	116
Gulf	45	15	153	65	264
Pacific	15	19	37	40	164
Great Lakes	-	3	3	5	7
Alaska.....	1	6	8	16	53
Hawaii	1	-	1	-	3
Total	83	62	272	187	729

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



Alaska

SALMON RESTORATION PROGRAM LAUNCHED: Clarence L. Olson, General Manager of the Pribiloff Islands fur-seal operations has been detailed to launch the Alaska Salmon Restoration Program of the Fish and Wildlife Service, the Secretary of the Interior announced in May.

The program is directed toward reversing the downward trend of the salmon catch and to revitalize the salmon industry, which is the most important in the territory.

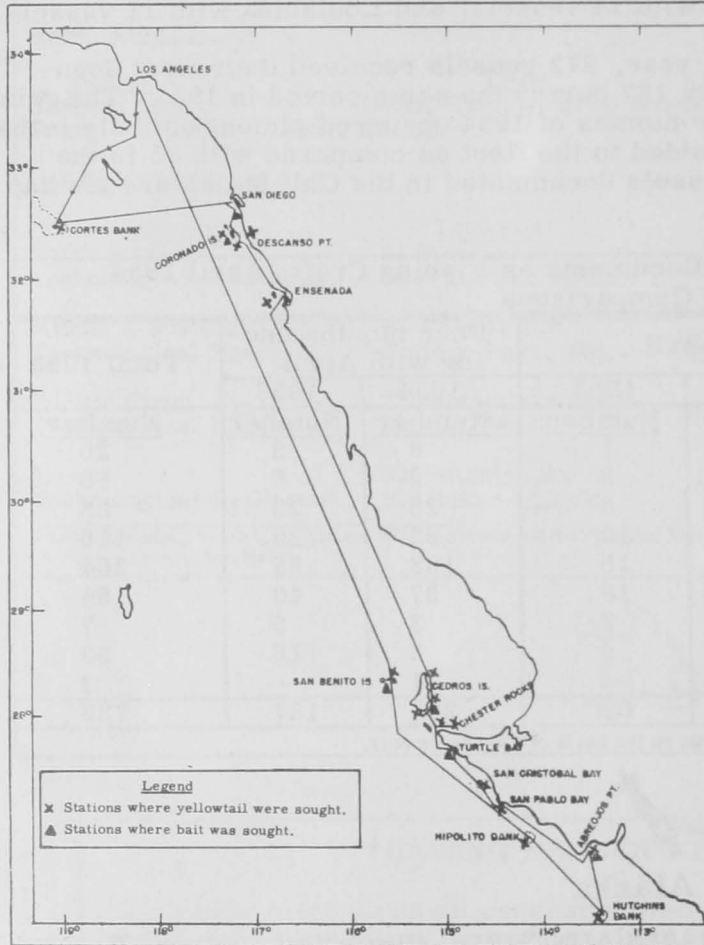
Conservation measures include complete closure of certain important areas where depletion has reduced runs so there is no surplus beyond spawning needs. In other areas where depletion is less pronounced, trap fishing has been cut 50 percent and seining zones have been closed to increase escapement to give salmon a chance to reach spawning grounds. Fishing intensity has been curbed where there is evidence of declines.

Governor B. Frank Heintzleman has reported to Secretary McKay that salmon cannery operators and fishermen are whole-heartedly supporting the program. Olson will be the immediate representative of Director John L. Farley of the Service on the program and will work with the Service's regional staff in the territory.



California

MORE YELLOWTAIL TAGGED BY "YELLOWFIN" (Cruise 54-Y-5): A total of 116 yellowtail was tagged and released off the north end of Pecks Channel, San



Cruise 54-Y-5 of the M/V Yellowfin, Apr. 27-May 12, 1954.

Benito Islands, by the California Department of Fish and Game's research vessel Yellowfin on a 15-day cruise completed at Los Angeles on May 12. The fish were single tagged using jaw tags and vinylite tubing tags alternately in groups of ten--60 jaw tags and 56 tubing tags were used. Scale samples were kept from 67 of the tagged fish.

Yellowtail fishing was tried at 16 places as shown on the accompanying chart. No yellowtail were taken nor were there signs of fish being present along the whole coast until the vessel reached the San Benito Islands on the return trip. Commercial fishermen were also finding the fishing very slow. The water was extremely murky and at most places objects could not be seen more than a few feet below the surface.

Night light stations were made at seven localities, as shown on the chart, in efforts to keep a maximum supply of good bait. We were successful at Ensenada Harbor only, where 42 scoops of small anchovies were taken in the blanket net. At other stations only a few smelt or nothing at all were attracted to the 1500-watt light.



Cans--Shipments for Fishery Products, January-April 1954



Total shipments of metal cans for fish and sea food during January-April 1954 amounted to 20,476 short tons of steel (based on the amount of steel consumed in the manufacture of cans), compared to 22,520 short tons for the same period last year.

Note: Statistics cover all commercial and captive plants known to be producing metal cans. Reports in base boxes of steel consumed in the manufacture of cans, the data for fishery products are converted to tons of steel by using the factor: 23,0 base boxes of steel equal one short ton of steel.

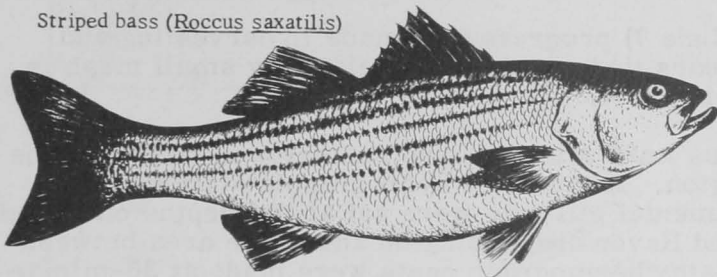
Cooperative Federal-State Striped Bass Research

Seven Atlantic Coast states have joined in a cooperative Federal-State striped bass research program to obtain information needed for the development of improved management of striped bass with the aid of Dingell-Johnson Federal Aid funds. The states--Massachusetts, Connecticut, New York, New Jersey, Maryland, South Carolina, and Florida--and the U. S. Fish and Wildlife Service have under way, or will set up soon, programs budgeted at approximately \$190,000 over the next three years, announces the New York Division of Fish and Game.

The securing of necessary equipment such as tags, nets, etc., is already in progress. Field work on the project started April 1.

The cooperative striped bass project is one of the most detailed and extensive investigations of a marine species of interest to the sport fishermen ever undertaken on the Atlantic Coast. The information obtained will greatly increase the knowledge of the striped bass and provide a sounder basis than now exists for establishing better management policies.

Striped bass (*Morone saxatilis*)



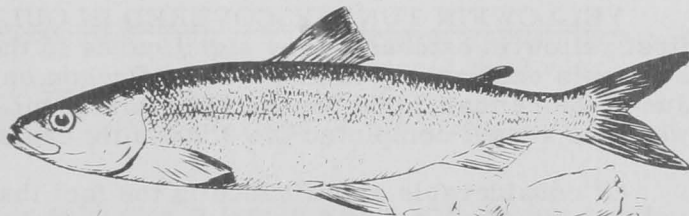
No fishery problem has more embroiled the Conservation agencies, sport fishermen, and commercial fishermen of the Middle and North

Atlantic States in recent years than the management of the striped bass. The controversy has been fostered by the scarcity of information on the habits, movements, and biology of this important migratory species.



Great Lakes Fishery Investigations

TRAWL FISHING FOR CHUBS TESTED IN LAKE MICHIGAN BY "CISCO" (Cruises I and II): Trawling operations in southern Lake Michigan were carried out by the Service's research vessel Cisco to determine the composition and distribution of chub populations and to test various trawl designs for use in chub fishing on a commercial scale. The cruises were part of a fishery and limnological survey of southern Lake Michigan.



Chub

Collections made during the first cruise (May 6-18) reveal that the bloater (Leucichthys hoyi) dominates the chub population at all depths and is particularly abundant at depths of less than 30 fathoms. Trawling was found to be a successful method of sampling chubs. Results of fishing trawls of various designs indicate that the ability of a trawl to catch chubs in quantity depends upon the right combination of mesh sizes in the wings, body, and cod end. The outcome of initial trials were encouraging, and it appears that a trawl can be designed that can harvest chubs in quantity.

Hydrographic transects were made from Holland to Racine, and from Milwaukee to Grand Haven, the latter transect run twice during the cruise. Experimental gill

nets were set at 25 and 50 fathoms off both Grand Haven and Racine. A set at each depth and location consisted of 600 feet of nylon net (2 1/2- to 3-inch mesh) and 1,275 feet of linen net (2 3/8-, 2 1/2-, 2 5/8-, 2 3/4-, and 3-inch mesh). The linen nets are made according to the same specifications as those used by the research vessel Fulmar in the early 1930's and are being set in the same locations. Experimental trawling was carried on with trawls of various designs in the areas between Grand Haven and Holland, and between Racine and Milwaukee. Deep-water trawling was done between Grand Haven and Racine.

Limnological studies revealed that the open water of southern Lake Michigan is nearly homothermous near 4° C. from surface to bottom. A current moving north along the east shore 1/3 to 1/2 mile wide is sharply defined in both temperature and turbidity from open-lake water. A similar current (probably flowing south) on the west shore is indistinctly separated from open-lake water. Water near each shore is up to 5° C. warmer than that of the open lake and shows varying degrees of thermal stratification.

On the second cruise (May 25-June 7) progress was made in harvesting and sampling chubs with trawls. It appears that a cod end of relatively small mesh is necessary to capture even the larger chubs.

Two transects were made across Lake Michigan and another was run along the east shore from Whitehall to Ludington. A total of 9 hydrographic stations were visited along the transects. Experimental gill nets were set at two depths off Grand Haven. Trawling was done off Grand Haven and Ludington and in the area between Milwaukee and Port Washington. Bathythermograph casts were made at 30-minute intervals along the transects and at all stations. In addition, a 12-hour intensive limnological and trawling study was made off Grand Haven.

Toward the end of the cruise the water of southern Lake Michigan began warming and stratifying rapidly, especially near the east shore. The intensive limnological study produced data on the vertical movements of Pontoporeia (Mysis relicta) and chub (Leucichthys) fry, and other organisms. The intensive work also included the collection of valuable physical and chemical data on the water of various depths.



Gulf Exploratory Fishery Program

YELLOWFIN TUNA DISCOVERED IN GULF BY "OREGON" (Cruise 23): The first yellowfin catches of any significance in the Gulf of Mexico were made by the Service's exploratory fishing vessel Oregon on a six-week cruise during May and June. More than 3,000 pounds of yellowfin tuna were unloaded at Pascagoula, Miss., when the vessel completed the 2,500-mile cruise in mid-June.

Of considerable significance is the fact that the tuna averaged 118 pounds each, an above-average weight for this species. Yellowfin tuna, moreover, were found over a wide expanse of the western Gulf, thus indicating a broad distribution at this season of the year.

The mature tuna taken during the cruise were in spawning condition, and many specimens of small yellowfin were collected. Fishery biologists aboard the Oregon concluded that the species may be found regularly in western Gulf waters.

The large yellowfin tuna (73 to 168 pounds each) were taken on 14 out of 20 sets made with a modification of Japanese-type long-line gear. Each set of 26 nine-hook baskets was made in the early hours of the morning at a predetermined place without regard for the presence or absence of surface signs of tuna. Furthermore, each set was made with hooks fishing at graduated depths from 5 to 45 fathoms. Of 37 yellow-

fin caught, 10 were damaged by sharks, and 2 were lost because of poor hoisting gear. It was found that shark damage could be greatly reduced by avoiding disposal

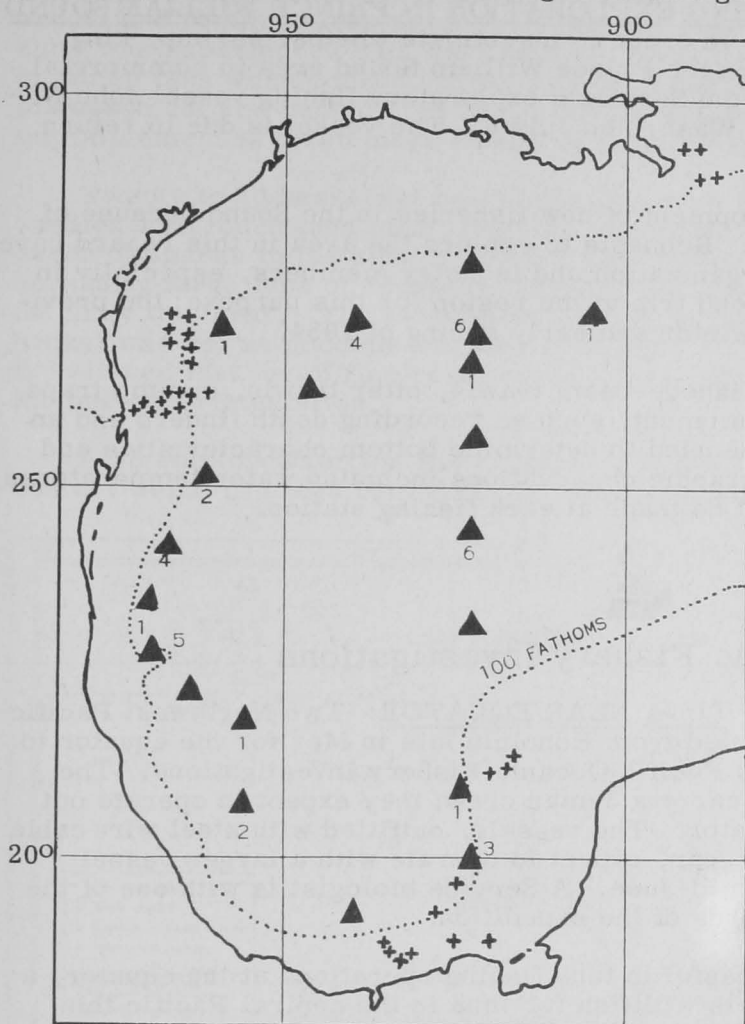
of used bait while fishing and by chumming-up and shooting the more persistent sharks. In addition to the yellowfin, 1 blackfin tuna, 1 wahoo, 1 three-foot broadbill swordfish, several marlins of more than one species, 6 sailfish, 2 sharks, and several alepisaurids were caught on the long lines. Due to breakage of the leaders or gangions, 39 hooks were lost.

Arrangements were made to have some of the tuna test-canned at Government laboratories and commercial canneries for quality evaluation.

The tuna catches made during the cruise were intended only to indicate distribution. No attempt to estimate the number of tuna in any one location was made. Plans have been formulated, however, for a cruise to the better fishing areas for a determination of the quantities in which Gulf yellowfin may be caught.

In addition, during the cruise shrimp drags were made on the northwest part of the Campeche Bank and in the 200- to 250-fathom depth range in the southern part of the Gulf of Campeche. The catches were poor.

The Oregon worked together with the Texas A & M research



▲ Approximate position of long-line sets (figure indicates number of yellowfin tuna caught at station).

⊕ Approximate position of shrimp-trawl drags.

Cruise 23 of the M/V Oregon, May-June 1954, in the Western Gulf of Mexico.

vessel A. A. Jakkula between Brownsville and Aransas Pass, Texas, from June 3 to June 6. The A. A. Jakkula made oceanographic studies of conditions while the Oregon made shrimp-trawl drags.

The Oregon departed Pascagoula July 10 on Cruise 24 which will be devoted to long-line fishing for tuna. The area to be explored will be the deep-water section of the northeast Gulf of Mexico--the area with depths of 500 fathoms or more north of Latitude 26° and east of Longitude 90°.

Among the objectives will be finding the best times of day or night for tuna long-line fishing in the Gulf and finding whether better fishing results can be obtained with use of electronic fish-locating instruments. Since less travel time will be necessary than on the preceding cruise, more gear will be used. It is planned to set a total of 70 baskets (630 hooks, or about 12 miles of line) daily. The cruise was due to be completed on July 27.



North Pacific Exploratory Fishery Program

SUMMER COMMERCIAL FISHING EXPLORATION IN PRINCE WILLIAM SOUND BY "JOHN N. COBB" (Cruise 20): In order to investigate whether shrimp, king crab, and bottom fish are present in the Prince William Sound area in commercial quantities during July and August, the Service's exploratory fishing vessel John N. Cobb was due to sail from Seattle, Wash., on July 6. The vessel is due to return to Seattle on or about September 3.

There is a real need for development of new fisheries in the Sound because of recent failures of the salmon runs. Requests to explore the area in this regard have been received from fishermen's organization and industry members, especially in the Cordova area. This is the second trip to the region for this purpose; the previous trip was made during the late winter and early spring of 1954.

Various types of gear will be fished--beam trawls, otter trawls, shrimp traps, and king-crab pots. Electronic equipment, such as recording depth finders and an underwater scanning device, will be used to determine bottom characteristics and to assist in locating fish. Oceanographic observations including water temperatures, salinities, and bottom samples will be made at each fishing station.



Pacific Oceanic Fishery Investigations

HALIBUT VESSELS FISH FOR TUNA NEAR EQUATOR: Two Northwest Pacific halibut long-line fishing vessels sailed from Honolulu late in May for the equator to fish for tuna, reports the Service's Pacific Oceanic Fishery Investigations. The vessels are of 15-ton capacity and carry a 3-man crew; they expect to operate out of Palmyra as far south as the equator. The vessels, outfitted with steel wire cable for the main line of their long-line gear, expect to operate with a larger vessel scheduled to arrive at Palmyra in mid-June. A Service biologist is with one of the vessels and will keep detailed records of the expedition.

Should this expedition be successful in tuna fishing operations at the equator, a fleet of about 30 to 40 halibut vessels will fish for tuna in the central Pacific this fall.

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GOOD TUNA FISHING REPORTED AND NEW LONG-LINE GEAR TESTED IN LINE ISLANDS AREA BY "JOHN R. MANNING" (Cruise 20): Tuna fishing in the Line Islands area was found to be good on a 6-week exploratory cruise by the Service's research vessel John R. Manning. The vessel unloaded 10½ tons of frozen yellowfin tuna (40 to 150 pounds each) at Honolulu on June 23. The fishing was best in the vicinity of Fanning Island, where catches as high as 14 tuna per 100 hooks fished were recorded. Tuna fishing was also good around Jarvis Island, an area that was being explored as tuna long-lining grounds for the first time.

Long-line fishing at 27 stations with 48 to 60 baskets of gear set each day produced a total of 426 yellowfin (of which 80 were shark-eaten), 17 big-eyed tuna, 8 skipjack tuna, 7 albacore tuna, 13 marlin, and 414 sharks. On 6 stations the standard cotton gear caught more than 6 tuna per 100 hooks. The best day's catch, near Fanning Island, yielded 14 tuna per 100 hooks on the standard gear.

The cruise provided an opportunity for the first intensive field tests of a new type of tuna long line which has a stainless steel main line in place of the usual cotton line. This steel line is wound continuously on a powered reel, instead of being

hauled aboard in sections by hand, as is the case with the long lines used by commercial fishing vessels at present. The new gear was much easier and faster to handle and required less manpower than the conventional cotton lines. Some difficulty was experienced with the new steel long-line gear, in that many branch lines on which tuna were hooked, broke and released the fish. Further work will be done to search out and remedy the cause of this weakness before this promising new fishing implement is given more intensive trials in the field.

Twenty to 30 baskets of steel long line were fished each day. This gear was handled with much less effort than the standard cotton line, and even with the abundance of sharks in the area developed very few bad kinks or tangles. There was an unusually large loss of droppers from the steel line, however, which reduced the catch by this gear. The average catch rate for the steel gear (2.3 tuna per 100 hooks) was not as good as obtained on the cotton gear (3.2 tuna per 100 hooks). It is believed that the difficulty is relatively minor and can easily be overcome by further experimentation.

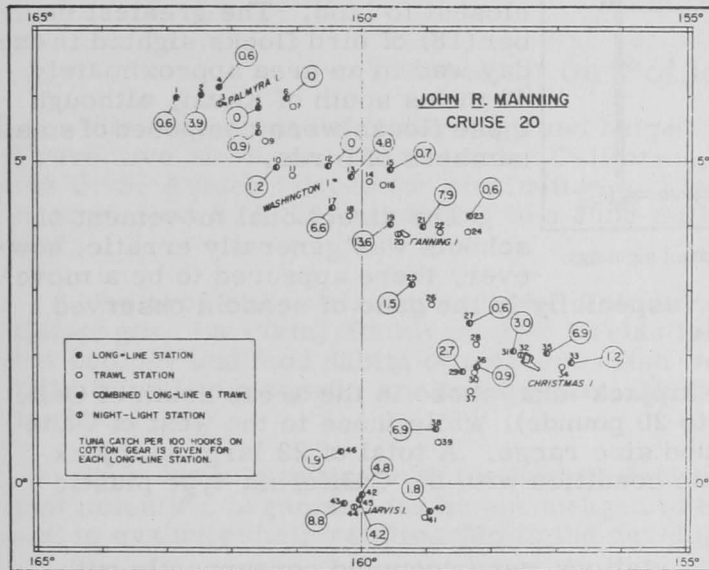
Also employed for the first time was a new type of midwater trawl, an ingenious net which is towed behind the ship at the depth where the large yellowfin tuna are believed to feed, that is, at 300 to 400 feet below the surface of the ocean. The object is to capture samples of the small fish, squid, and shrimp upon which the tuna feed, and the new 6-foot trawl successfully collected large numbers of interesting deep-sea organisms at the 19 locations where it was used.

Two biologists spent two days at Christmas Island, where POFI maintains weather instruments and a recording sea-temperature thermometer. The Gilbertese natives who tend these instruments were given fresh supplies of charts and spare parts; the instruments themselves were checked, and the data recorded since the vessel's last visit were brought back to Honolulu.

Other minor missions of the cruise were the recovery of the Bishop Museum's wood samples left in the ocean at Christmas Island to study the effects of boring organisms there; the collection of hermit crabs from several of the Line Islands for the University of Hawaii; and the collection of snappers and other species of fish suspected of being poisonous at Palmyra, Washington, Fanning, and Christmas islands for a California doctor of medicine who is making a study of the poisonous fish problem throughout the Pacific.

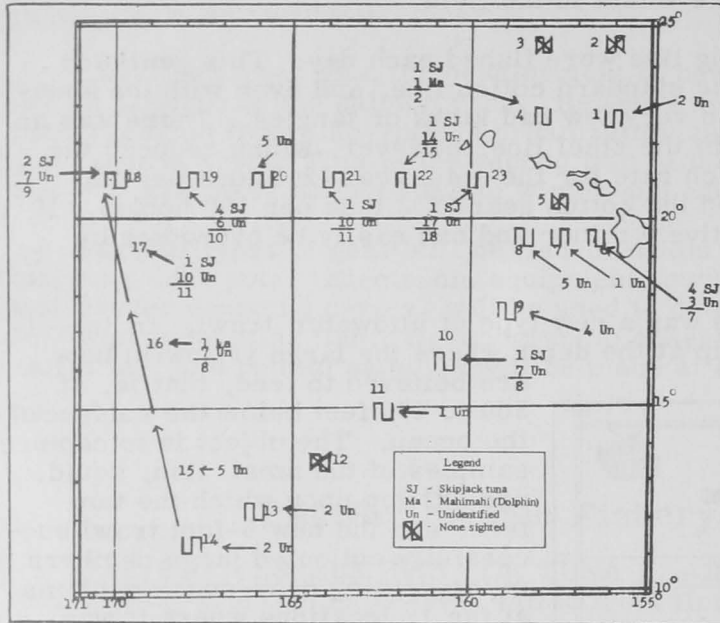
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TUNA SCHOOLS PLENTIFUL IN HAWAIIAN AREA REPORTS "HUGH M. SMITH" (Cruise 26): Skipjack tuna (aku) were found approaching their seasonal peak of abundance in Hawaiian waters by the Service's research vessel Hugh M. Smith on a month-long series of tuna-scouting cruises completed at Honolulu on June 19. The vessel covered a radius of 800 miles around the Islands. Bird flocks, the indicators of tuna schools to commercial fishermen and scientific observers alike, were most numerous about 40 miles south of Kauai, and thus within the range of the Oahu fishing



fleet, but the flocks in that area were small. The biggest flocks, estimated to have contained 400 to 500 birds, were seen far to the south in the vicinity of Johnston Island.

During 23 scouting days, 126 bird flocks and fish schools were sighted; 16 of these were identified as skipjack tuna, 2 as dolphin (mahimahi), and 108 were unidentified. Only one school of skipjack tuna was unattended by birds. In scouting the southern sector, bird flocks were encountered at all but 2 of 19 stations and as far as 840 miles southwest and 720 miles west of Oahu (the farthest stations during this cruise). No flocks were seen in the lee of Lanai nor at a station approximately 550 miles southwest of Oahu. Only 4 bird flocks were observed during 4 scouting days in the region north of Oahu and all were seen at the 2 stations closest to land. The greatest number (18) of bird flocks sighted in one day was in an area approximately 40 miles south of Kauai, although these flocks were composed of small numbers of birds.



Cruise 26 of the Hugh M. Smith; bird flock and fish school sightings.

movement of schools into the local fishery, especially in the case of schools observed within 250 miles of land.

Among the schools identified as skipjack tuna, those in the areas south of Oahu were composed of large skipjack (18 to 20 pounds), while those to the west of Oahu were mostly small, in the 3- to 5-pound size range. A total of 22 large skipjack tuna were tagged and released in viable condition with the California-type plastic tube tags.

Twenty-one standard hydrographic stations were occupied concurrently with scouting in the areas south, southwest, and west of Oahu. Chemical nutrients were observed and a zooplankton haul was taken at each station. The GEK, measuring surface currents, was also operated in the lee of the islands, and BT lowerings were made at frequent intervals throughout the cruise. The correlation between these oceanographic conditions and the scouting survey within the same time and space may explain the variations in the numbers of bird flocks and fish schools.

The Captain of the Hugh M. Smith reported, as an item of interest to local flag-line fishermen, the sighting of a long set of Japanese tuna long lines at a position 840 miles southwest of Oahu and 350 miles south of Johnston Island. Judging from what is known about Japanese fishing in that area, it is believed that this gear was set primarily for the capture of big-eyed tuna.

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TWO-VESSEL EXPEDITION CATCHES 107 TONS OF TUNA IN CENTRAL PACIFIC AREA ("North American" and "Alrita," 2nd Concurrent Cruises): The two commercial vessels--North American and Alrita--landed a total of 107 tons of tuna from a second set of long-line fishing cruises in the central Pacific area. A Fish and Wildlife research biologist accompanied the vessels as an observer.

The vessels departed Kewalo Basin March 13 and began fishing on March 18. They continued fishing until April 7 at which time about 10 tons of yellowfin tuna were transferred from the North American to the Alrita. The latter departed on that day for Honolulu with a full load of tuna and arrived on April 15. The North American continued to fish until April 28 and then departed for San Diego, California, arriving there May 15.

The North American landed 72 tons of tuna from her second trip; 1,728 yellowfin, 8 big-eyed, 64 skipjack, 8 albacore; in addition 41 black marlin, 511 sharks, and 19 other miscellaneous fishes were caught. The Alrita landed 35 tons of tuna, consisting of 689 yellowfin, 22 skipjack, 7 big-eyed, and 9 albacore; 216 sharks and 16 black marlin were also landed.

Forty stations were fished during this set of cruises by the North American and 20 stations by the Alrita. The first few days fishing were close to Palmyra Island and the second through the fourth were fished en route to Christmas Island. The remaining stations were fished near Christmas Island. The catch of yellowfin tuna varied considerably from station to station as was noted in their previous cruise.



Research on Poisonous Fish

The department of ichthyology and herpetology of the School of Tropical and Preventive Medicine, Loma Linda, California, has entered into a new contract with the U. S. Armed Forces for continuing work on poisonous fish. The contract amounts to more than \$49,000, according to a June Bulletin from the Pacific Science Association.

The project has already included field investigations and collections at Cocos, Galapagos, La Plata, Palmyra, Las Perlas Islands, and Panama Bay. Studies of the ecology and food habits of poisonous fish were continued. During 1954 two major field trips are planned: one to Guaymas, Mexico, and the other to the Marshall Islands.

This work is in line with the Eighth Pacific Science Congress resolution asking that scientific organizations be encouraged to engage in research on poisonous fishes and to evaluate their relationship to the development of marine food resources.



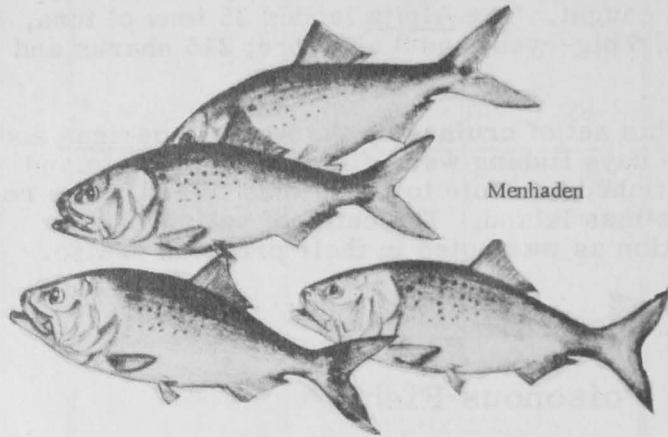
South Carolina

MENHADEN INDUSTRY NEEDS DEVELOPMENT: South Carolina derives some of its wealth-from-the-sea from menhaden. The menhaden fishery exceeds in magnitude all other single fisheries of the Western Hemisphere. Unlike its neighbors North Carolina and Florida, South Carolina contents itself with taking only a small share of this oceanic wealth. Just how many pounds of menhaden are taken in South Carolina waters is unknown. Official landings in the State run around one million pounds (value to the fishermen of \$10,000) annually, but fish caught in South Carolina and landed in other states possibly exceed this figure several times.

That South Carolina does not pursue this fishery with more energy perhaps lies in a peculiar quirk of nature. The menhaden fishery, now over a century old, came into its own as a fish-oil industry. Peculiarly enough, menhaden to the north and to the south are heavy oil producers, but those taken off South Carolina and Georgia produce only small amounts of oil. No one seems to have a satisfactory answer why

this is so. However, this lack of oil undoubtedly discouraged the start of a South Carolina fishery, according to South Carolina Wildlife (Spring 1954) of the South Carolina Wildlife Resources Department.

An ichthyologist would say that there are five different kinds of menhaden in North America. However, over 75 percent of the entire commercial catch is made up of one species--Brevoortia tyrannus. This is the species which commonly occurs in South Carolina waters. Most fish in South Carolina show a yellowish or greenish coloration around the fins and tail. Most South Carolina fish are up to eight inches long.



Briefly, menhaden are caught in purse seines which are operated from vessels ranging in size from 100 to 150 feet. These nets may be from 1,000 to 1,500 feet long and 50 to 90 feet in depth. One vessel can carry from 50 to 60 tons of fish.

In South Carolina the major portion of purse seining is done in Long Bay, that great indentation in the Carolina coast from Cape Fear, N. C., southward to Cape Romain in South Carolina. Fish caught in these waters usually are landed at Beaufort or Morehead City, N. C. Menhaden taken at sea from Charleston southward to about Port Royal Sound are brought in the North Edisto River Inlet and landed at a small factory located in Charleston County on the Dawhoo River.

Even as early as 1870, many people became alarmed at the enormous poundage of fish taken by the menhaden fishing fleet, and many people predicted that within a very short time the entire industry would disappear because of overfishing. From the vantage point of 75 years of fairly successful fishing, the menhaden industry now looks on these dire predictions as unfounded in fact. Although the catch records of menhaden have fluctuated up and down in this 75-year period, the over-all picture shows an increase in the actual number of fish taken. Although fishing intensity has increased, there is nothing to indicate that the supply of available fish is decreasing.

Just as alarm was expressed over the depletion of menhaden by overfishing, sportsmen and commercial fishermen have from time to time expressed the opinion that the operations of the menhaden fisheries were harmful to other fisheries, both sports and commercial. A series of scientific investigations beginning back in 1896, carried on both by Federal and State governments in the coastwise waters from Maine to Texas, have repeatedly shown that menhaden fishing is not harmful to the spawning grounds of commercial and sports fish and that the menhaden fishermen do not destroy large numbers of commercial and sports fish and shrimp. A recent investigation in Texas, extending over a period of four months during which 5,326,000 menhaden were taken, showed that the food fish and non-food fish (including conchs and jellyfish) taken amounted to about two-tenths of one percent of the menhaden caught.

It seems evident, therefore, that the commercial menhaden fisheries are not violating any of the principles of conservation except that the supply of menhaden in South Carolina is probably not being utilized to its maximum extent. As long as the market price of fish meal remains as high as it is now, it would seem logical that despite the scarcity of oil in southern menhaden, the fishery can be practiced economically and with a margin of profit. While little is known about the life history, the abundance, and the occurrence of this fish in South Carolina waters, there is

some evidence available which indicates that the menhaden is present in South Carolina waters the year around. Investigation might well prove that just as in North Carolina, menhaden are in sufficient abundance to support commercial fishing at least ten months out of the year. While South Carolina already derives some wealth from this marine resource, it seems possible that with proper investment, sufficient returns could be realized to expand considerably this fishery in the State.



U. S. Canned Packs of Selected Fishery Products, 1953

FISH ROE AND CAVIAR, 1953: The United States pack of canned fish roe and caviar in 1953 amounted to 65,742 standard cases (48 one-pound cans), valued at

Table 1 - U. S. Pack of Canned Fish Roe and Caviar, 1953^{1/}

Product	Plants Packing	Quantity	Value to Canners	Avg. Canners' Price	States of Production and Number of Plants
	No.	Std. Cases ^{2/}	\$	\$/Std. Case ^{2/}	
Roe:					
Alewife	26	35,072	427,781	12.20	Md. 5, Va. 13, N.C. 8
Shad	7	2,330	181,393	77.85	Md. 1, Ore. 4, Calif. 2
Deep Sea	2	{ 7,880	{ 80,065	{ 10.16	Mass. 2, Conn. 1, N.Y. 1
Cisco	1				
Herring	1				
Caviar:					
Salmon	3	{ 4,614	{ 547,053	{ 118.56	N. Y. 3
Sturgeon	2				
Whitefish	3	1,613	90,322	56.00	N. Y. 2, Wisc. 1
Total Edible Roe and Caviar		51,509	1,326,614	25.75	
Salmon eggs for bait	9	14,233	486,230	34.16	Wash. 9
Grand Total	3/ 48	65,742	1,812,844	27.58	

^{1/}Preliminary.
^{2/}Cases of various sizes converted to the equivalent of 48 cans, each can with a net weight of 16 ounces.
^{3/}Exclusive of duplication.

\$1,812,844 to the packer (table 1). Alewife roe accounted for 53 percent of the quantity packed and 24 percent of the value of the pack. When compared with the previous year, the 1953 pack was greater by 3 percent in quantity and 8 percent in value (table 2).

Table 2 - U. S. Pack of Canned Fish Roe and Caviar, 1943-53

Year	Quantity	Value to Canners	Avg. Canners' Price	Year	Quantity	Value to Canners	Avg. Canners' Price
	Std. Cases ^{1/}	\$	\$/Std. Case ^{1/}		Std. Cases ^{1/}	\$	\$/Std. Case ^{1/}
1953 ^{2/}	65,742	1,812,844	27.58	1947	52,432	1,641,228	31.30
1952	64,080	1,681,010	26.23	1946	58,192	1,905,638	32.75
1951	76,095	1,926,140	25.31	1945	36,795	948,042	25.77
1950	70,382	1,886,959	26.81	1944	55,677	824,197	14.80
1949	86,459	1,969,998	22.79	1943	59,884	1,044,582	17.44
1948	50,629	1,473,320	29.10				

^{1/}Cases of various sizes converted to the equivalent of 48 cans, each can with a net weight of 16 ounces.
^{2/}Preliminary.

The total average price for all canned fish roe and caviar in 1953 was \$27.58 per standard case as compared to \$25.31 in 1952 and \$17.44 ten years earlier. The average prices for the individual items in 1953 varied considerably.



U. S. Production of Selected Byproducts, 1953

FRESH-WATER MUSSEL-SHELL PRODUCTS: The U. S. production of fresh-water mussel-shell buttons in 1953 amounted to 4,891,009 gross, valued at \$5,220,917

State	Buttons			Lime and Poultry Grit			Total Value to Mfr.
	Quantity	Value to Mfr.	Avg. Price Per Gross	Quantity	Value to Mfr.	Avg. Price Per Ton	
Iowa, Pa., and Mo.	Gross 4,891,009	\$ 5,220,917	\$ 1.07	Short Tons 2/1,994	\$ 26,393	\$ 13.24	\$ 5,247,310

^{1/}Preliminary.
^{2/}Produced in Iowa.

to the manufacturers (table 1). In addition, 1,994 short tons of lime, poultry grit, and polished shell, all valued at \$26,393, were produced by mussel-shell manufacturers. Compared with the previous year, the button production decreased 4 percent but the value to the manufacturer increased 18 percent.

Mussel-shell products were manufactured in 11 plants in Iowa and 1 plant each in Pennsylvania and Missouri.

Mussel shells purchased during the year amounted to 10,143 short tons, valued at \$462,679 to the fishermen. Shells were taken in nine states in the Mississippi River and Great Lakes regions. Tennessee was the leading producing state, contrib-

Year	Buttons			Other Products ^{2/} Value to Mfr.	Total Value to Mfr.
	Quantity	Value to Mfr.	Avg. Price Per Gross		
	Gross	\$	\$	\$	\$
1953 ^{1/}	4,891,009	5,220,917	1.07	26,393	5,247,310
1952	5,078,402	4,430,114	87	8,431	4,438,545
1951	4,534,759	3,805,352	84	40,309	3,845,661
1950	4,940,190	4,074,775	82	51,758	4,126,533
1949	4,720,239	3,696,452	78	71,251	3,767,703
1948	6,810,135	5,396,511	79	50,610	5,447,121
1947	8,254,000	8,166,000	99	4/	8,166,000
1946	9,669,580	6,527,758	68	101,820	6,629,578
1945	^{3/} 9,027,685	^{3/} 4,844,647	54	-	^{3/} 4,844,647
1944	8,024,609	4,306,353	54	122,550	4,428,903
1943	8,077,523	3,679,305	46	102,723	3,782,028

^{1/}Preliminary.
^{2/}Crushed shell lime, poultry grit, and cut shells.
^{3/}Estimated.
^{4/}Data not available.

uting 45 percent of the total quantity; Kentucky was next with 20 percent; followed by Alabama, 13 percent; Arkansas, 10 percent; Iowa, 4 percent; Indiana, 3 percent; Mississippi and Illinois, 2 percent each; and Wisconsin, 1 percent.



U. S. Foreign Trade

EDIBLE FISHERY PRODUCTS, APRIL 1954: United States imports of fresh, frozen and processed edible fish and shellfish in April 1954 amounted to 76.7 million pounds (valued at \$19.7 million), according to the April United States Foreign Trade, a Department of Commerce publication (see table). This was an increase of 19 percent in quantity and 27 percent in value as compared with March imports of 64.3 million pounds (valued at \$15.5 million). Compared with a year earlier, April imports were up 32 percent in quantity and 30 percent in value.

Exports of processed edible fish and shellfish (excluding fresh and frozen) in April 1954 totaled 3.2 million pounds (valued at \$0.7 million)--a drop of 22 percent

UNITED STATES FOREIGN TRADE IN EDIBLE FISHERY PRODUCTS, APRIL 1954 WITH COMPARISONS						
Item	April 1954		April 1953		Year 1953	
	Quantity	Value	Quantity	Value	Quantity	Value
	1,000 Lbs.	Million \$	1,000 Lbs.	Million \$	1,000 Lbs.	Million \$
IMPORTS: Fish & shellfish: Fresh, frozen & processed <u>1/</u>	76,748	19.7	57,971	15.1	724,656	193.2
EXPORTS: Fish & shellfish: Processed <u>1/</u> only (excluding fresh and frozen)	3,232	0.7	5,664	1.1	58,920	14.4

1/ Includes pastes, sauces, clam chowder and juice, and other specialties.
Source: United States Foreign Trade (Trade by Commodity), Summary Report FT 930, April 1954, U. S. Department of Commerce.

in quantity and 50 percent in value as compared with March exports of 4.1 million pounds (valued at \$0.7 million). April exports were also down considerably from a year ago--43 percent in volume and 36 percent in value.

* * * * *

IMPORTS AND EXPORTS OF CERTAIN FISHERY PRODUCTS INCREASE IN 1954: Imports of tuna and tunalike fish during January-April 1954 showed considerable gains over the same period of a year ago, according to preliminary information compiled by the U. S. Fish and Wildlife Service from data collected by the Bureau of the Census. Fresh and frozen tuna imports increased 31 percent; tuna canned in brine, 55 percent; and bonito canned in oil, 41 percent. Tuna canned in oil, however, showed a decline of 73 percent but the quantity was relatively small as compared with the items showing increases.



Imports of groundfish and ocean perch fillets were 33 percent greater than those of the January-April period of 1953. Other fillets declined 7 percent.

Shrimp imports increased 17 percent in the first four-months' period of 1954. Fresh and frozen lobster imports were down 16 percent.

Canned sardines, not in oil, imported during January-April 1954 were about five times the quantity imported in the similar period of 1953.

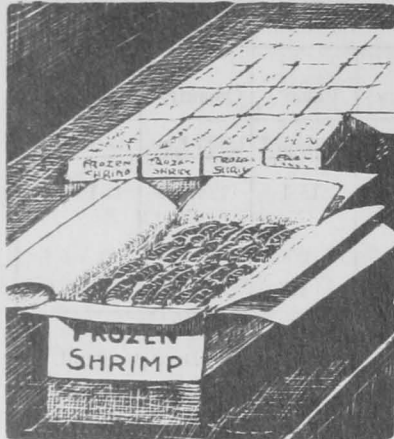
Imports of fish meal were 20 percent greater than during the four-months' period of a year ago.

Exports of fish oils during January-April 1954 increased 83 percent above those of the comparable period of 1953. Canned sardines and mackerel exports declined considerably.



Wholesale Prices, June 1954

Fresh fish landings were liberal in June, the demand for most fishery products was light, and wholesale prices for all fishery products were lower. The June 1954 over-all edible fish and shellfish (fresh, frozen, and canned) wholesale index was 97.4 percent of the 1947-49 average (see table)--6.1 percent less than the May index and 3.5 percent lower than a year earlier.



Substantially larger groundfish landings in New England during June and a light to moderate demand accounted for the 41.4-percent drop in the ex-vessel price for offshore drawn large haddock at Boston. The market for fresh-water fish at New York and Chicago was weaker in June and prices were lower. Demand for western halibut and salmon at New York was very good and prices for these items were higher. The drawn, dressed, or whole finfish subgroup index for June was down 8.5 percent from May, but slightly higher (0.6 percent) than June 1953.

Fresh haddock fillet prices at Boston were down 30.2 percent from May to June; the fresh shrimp market continued to weaken and prices at New York were down 4.8 percent. These commodities caused the June fresh processed fish and shellfish in-

Table 1 - Wholesale Average Prices and Indexes for Edible Fish and Shellfish, June 1954 and Comparisons

Group, Subgroup, and Item Specification	Point of Pricing	Unit	Avg. Prices ^{1/} (\$)		Indexes (1947-49=100)			
			June 1954	May 1954	June 1954	May 1954	Apr. 1954	June 1953
ALL FISH & SHELLFISH (Fresh, Frozen, & Canned)					97.4	103.7	105.7	100.9
<u>Fresh & Frozen Fishery Products:</u>					98.7	107.0	109.8	103.2
<u>Drawn, Dressed, or Whole Finfish:</u>					98.0	107.1	111.8	97.4
Haddock, lge., offshore, drawn, fresh	Boston	lb.	.06	.10	59.8	102.1	76.6	87.1
Halibut, West., 20/80 lbs., drsd., fresh or froz.	New York	lb.	.33	.32	100.6	97.5	94.9	95.9
Salmon, king, lge. & med., drsd., fresh or froz.	New York	lb.	.63	.54	140.5	120.8	120.2	108.4
Whitefish, L. Superior, drawn, fresh	Chicago	lb.	.43	.46	105.4	114.0	241.7	88.0
Whitefish, L. Erie pound or gill net, rnd., fresh	New York	lb.	.45	.61	91.0	123.3	313.5	104.1
Lake trout, domestic, No. 1, drawn, fresh . .	Chicago	lb.	.49	.39	99.4	79.9	166.0	106.5
Yellow pike, L. Michigan, rnd., fresh	New York	lb.	.38	.36	88.5	84.4	129.0	105.5
<u>Processed, Fresh (Fish & Shellfish):</u>					100.7	107.8	111.1	111.9
Fillets, haddock, sml., skins on, 20-lb. tins .	Boston	lb.	.22	.32	74.8	107.2	95.3	91.9
Shrimp, lge. (26-30 count), headless, fresh . .	New York	lb.	.60	.63	94.8	99.6	109.1	117.0
Oysters, shucked, standards	Norfolk	gal.	4.63	4.75	114.4	117.5	117.5	111.3
<u>Processed, Frozen (Fish & Shellfish):</u>					97.6	104.5	99.4	106.5
Fillets: Flounder (yellowtail), skinless, 1-lb. pkg.	Boston	lb.	.39	.37	100.8	96.9	98.2	108.7
Haddock, sml., skins on, 1-lb. pkg.	Boston	lb.	.32	.34	100.4	105.1	102.0	79.0
Ocean perch, skins on, 1-lb. pkg.	Boston	lb.	.29	.29	116.8	117.8	117.8	103.5
Shrimp, lge. (26-30 count), 5-lb. pkg.	Chicago	lb.	.55	.65	84.1	99.5	88.0	119.6
<u>Canned Fishery Products:</u>					95.4	98.8	99.6	97.5
Salmon, pink, No. 1 tall (16 oz.), 48 cans/cs. . .	Seattle	case	18.70	18.70	99.1	99.1	99.1	104.4
Tuna, lt. meat, chunk, No. 1/2 tuna (6-1/2 oz.), 48 cans/cs.	Los Angeles	case	13.25	14.20	95.5	102.4	102.4	92.4
Sardines, Maine, keyless oil, No. 1/4 drawn (3-1/4 oz.), 100 cans/cs.	New York	case	6.95	7.70	74.0	81.9	87.3	71.3

^{1/}Represent average prices for one day (Monday or Tuesday) during the week in which the 15th of the month occurs. These prices are published as indicators of movement and not necessarily absolute level. Daily Market News Service "Fishery Products Reports" should be referred to for actual prices.

dex to drop 6.6 percent. The June index for the fresh processed subgroup was 10.0 percent lower than a year ago due also to lower haddock fillet and shrimp prices.

Frozen shrimp prices were affected by a weak market and dropped 15.5 percent from May to June. Frozen fillet prices were also lower. As a result, the index for frozen processed fish and shellfish was down 0.6 percent from May to June. Compared with a year ago, the prices for shrimp and haddock fillets were down, while the prices for fillets of flounder and ocean perch were higher.

A drop in the canned tuna and Maine sardine prices in June was responsible for the 3.4-percent drop in the canned fishery products index. Compared with a year ago, lower canned salmon prices were offset somewhat by higher canned tuna and sardine prices and the index for canned fishery products this June was only down 2.2 percent.



WHO BUYS FROZEN FISH FILLETS?

Two out of every five urban families were buyers of frozen fish fillets in 1952, according to a recent survey made for the U. S. Department of Agriculture. This survey was made to obtain a basis for judging the potential market for some of the major frozen foods.

Fish fillets were included in the 12 frozen items listed in the survey. Canned fish were not among the 6 canned products.

Broken down by types of food storage facilities the survey shows that frozen fish fillets were purchased in 1952 by:

- 37 percent of families owning home freezers throughout 1952;
- 50 percent of families who purchased a home freezer in 1952;
- 46 percent of families having refrigerators with frozen food compartment;
- 43 percent of families with ordinary refrigerators;
- 26 percent of families without a refrigerator or home freezer.

There were 6,933 persons or consumers in the 2,040 families covered in the survey. The number of one-pound packages of fish fillets purchased were 1.6 per capita and 5.4 per family. Geographically, the percentage of families buying fish fillets were: Northeast States, 46 percent; North Central States, 47 percent; Southern States, 36 percent; and Pacific, Mountain, and Southwest States (combined), 35 percent.

The report contains many other details based on family income and regional differences as related to ownership of home refrigeration facilities. Copies of the report, Purchases of Frozen and Canned Foods by Urban Families as Related to Home Refrigeration Facilities, Marketing Research Report No. 60, can be obtained without charge from the United States Department of Agriculture, Agricultural Marketing Service, Washington 25, D. C.