



TRENDS AND DEVELOPMENTS

Additions to the U. S. Fleet of Fishing Vessels

First documents as fishing craft were issued to 60 vessels of 5 net tons and over during June 1955, according to the U. S. Bureau of Customs. This was a decrease of 27 vessels (31 percent) as compared with the 87 fishing craft newly-documented during the corresponding month of last year.

In the Gulf section only 13 vessels were documented as compared with 38 reported for June 1954, a decrease of 66 percent. The South Atlantic section had 22 additions, the Pacific section 21, the Chesapeake Bay section 9, Alaska 8, the Great Lakes and New England sections each 3, and the Middle Atlantic section 1.

| Section | June | | Jan. - June | | Total 1954 |
|----------------------|----------|------|-------------|------|------------|
| | 1955 | 1954 | 1955 | 1954 | |
| | (Number) | | | | |
| New England . . . | 3 | 8 | 10 | 18 | 20 |
| Middle Atlantic . . | 1 | 2 | 9 | 10 | 19 |
| Chesapeake | 9 | 7 | 24 | 54 | 83 |
| South Atlantic . . . | 2 | 21 | 30 | 63 | 116 |
| Gulf | 13 | 38 | 48 | 224 | 264 |
| Pacific | 21 | 10 | 60 | 63 | 164 |
| Great Lakes | 3 | - | 5 | 3 | 7 |
| Alaska | 8 | - | 23 | 16 | 53 |
| Hawaii | - | - | 2 | 1 | 3 |
| Unknown | - | 1 | - | 1 | - |
| Total | 60 | 87 | 211 | 453 | 729 |

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

During the first 6 months of 1955 a total of 211 vessels were documented for the first time as fishing craft, compared with 453 for the same period of last year--a decrease of 53 percent.



American Samoa

TUNA CANNERY CAPACITY TO BE INCREASED: The tuna cannery at Pago Pago, American Samoa, operated by a United States west coast tuna packer, is to be modernized and its processing capacity increased, the May 1955 Pacific Islands Monthly reports.

Principal technical difficulty is the limited reserve fish-holding capacity of the factory--about 200 tons. This means that tuna sometimes have to be wasted if large hauls are brought in by the Japanese boats. The cannery cannot keep pace with the fishing, and all holding room is fully taxed.

Early in April the cannery had 15,000 cases of canned fish on hand awaiting shipment.

During the peak operation the cannery employs 250 Samoans.

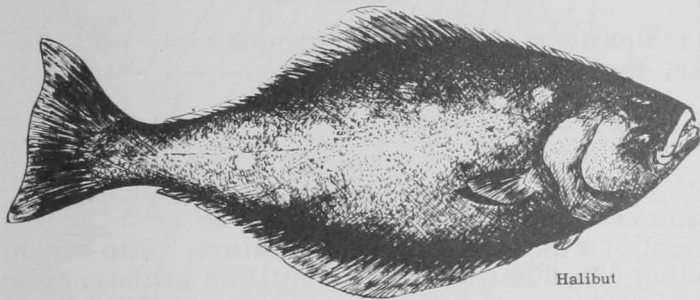
The Japanese fishing vessel Sassyu-Maru arrived in Pago Pago on April 21 to join the fishing fleet there supplying the American Samoa cannery with tuna for canning. The vessel left Shimizu, Japan, on March 10 and fished enough in Samoan waters to bring in 48 tons as its initial trip to the cannery.



California

"FISH OF THE MONTH" PROMOTION PROGRAM IN SOUTHERN CALIFORNIA:

To increase consumption of fishery products in Southern California, the Southern California Fisheries Association has instituted a "Fish of the Month" advertising program, which will feature a variety in plentiful supply during each month of the year. The Association has joined the U. S. Department of Agriculture and the U. S. Fish & Wildlife Service in promoting the greater use of the more plentiful varieties.



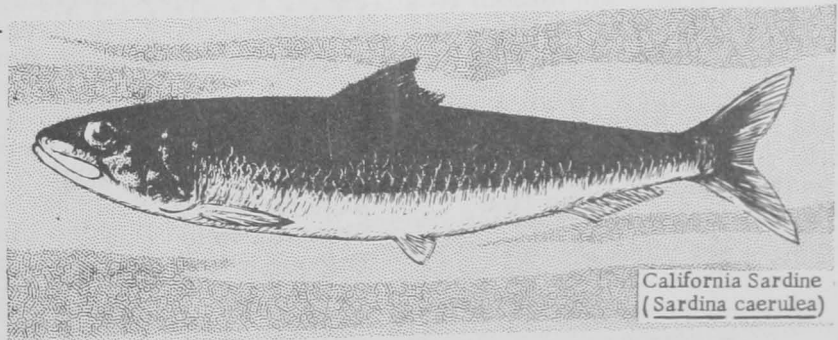
Halibut

Halibut is the first "Fish of the Month" selected for July. Also featured in releases featuring halibut as the "Fish of the Month" are rockfish fillets, true cod fillets, and sole fillets. Newspaper food editors in Southern California will be provided with information regarding the various species, and recipes for fresh and frozen fish and shellfish. Radio and TV food shows will be contacted for their support in the promotion of greater fish consumption. Trade associations and related industry representatives are also being contacted.

Whenever possible, the U. S. Fish and Wildlife Service will coordinate its activities with the Southern California Fisheries Association, lending Government promotional support to the promotion of fish where it coincides with Southern California marketing conditions.

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SARDINE STOCKS ESTIMATED LIGHT: There are fewer adult sardines off the Pacific Coast of North America today than were caught by commercial fishermen in the 1936/37 season, the Marine Research Committee has estimated. California Department of Fish and Game officials attending the Committee's recent meeting reported that an estimate was made of about 600,000 tons of adult fish offshore July 22, as compared to a catch of 791,000 tons during the 1936/37 season.



California Sardine
(*Sardina caerulea*)

The Committee also reported that the 1954 year-class appears to have been the poorest one in six years, considering the coast as a whole. Taking the area north of Ensenada, Baja California, the class was just fair.

Forecasting the 1955/56 season, which began August 1 in the northern area, the Committee estimated that about 300,000 tons of adult fish will be available for the commercial catch, of which about 150,000 tons could be caught. This figure is about the same as last season, although strikes and market conditions held the 1954/55 catch to about 67,000 tons.

It was unanimously agreed by the Committee that the sardines off Southern California last season were fish which had formerly spawned in Mexican waters. A larger percentage of the total spawn was off southern California in 1954 than during the previous year.

Although reasons for the northern movement are only speculation, it was reported that water temperatures were warmer and salinity less in 1954 than for the previous five years.

No concentrations of sardines or indications of eggs or spawn have as yet been found north of Pt. Conception this year, the Committee reported.

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SALMON CATCH, 1954: The salmon catch of California's commercial fishery totaled a record 892,000 fish in the 1954 season, according to the June 1955 Outdoor California, a California Department of Fish and Game publication. The ocean troll fishery set an all-time high, landing 835,000 fish, or 8.5 million pounds, compared to the previous record in 1947 when just over 8.0 million pounds were taken. About 57,000 king salmon were taken by the river gill-net fishery in the Sacramento-San Joaquin Delta.

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ALBACORE TUNA SCARCE IN EASTERN NORTH PACIFIC IN MAY REPORTS "N. B. SCOFIELD" (Cruise 55-S-3): Only three albacore tuna were caught in the eastern north Pacific by the California Department of Fish and Game's research vessel N. B. Scofield on a one-month cruise completed June 4. The results of the cruise are shown in the insert.

| | |
|------------------------------------------------|------------------|
| Total baskets fished | 640 |
| Total hooks fished | 6,967 |
| Average fishing depth--middle hook: | |
| 5-fathom float line | 57 fath. |
| 15-fathom float line | 70 fath. |
| Total trolling time on station | 70 hours 40 min. |
| Total trolling time between stations | 50 hours 20 min. |

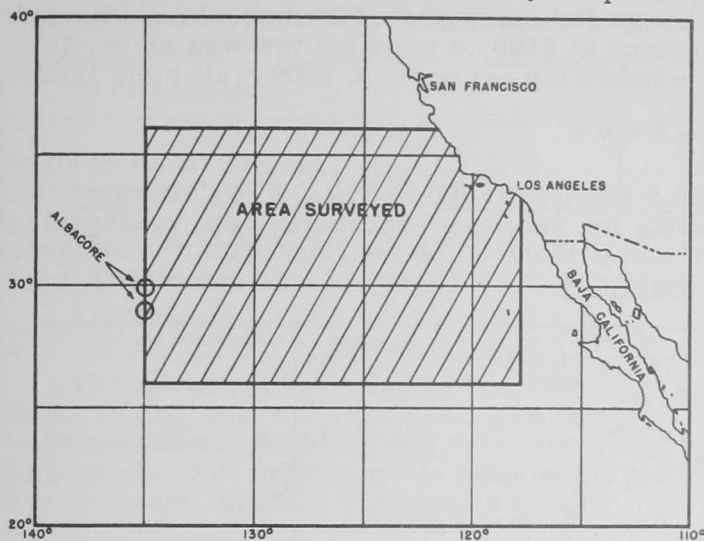
Catch:

| <u>Gear</u> | <u>Species</u> | <u>No. of Fish</u> |
|-------------|------------------------|--------------------|
| Troll | Dolphin (2 lures lost) | 1 |
| Long line | Albacore tuna | 3 |
| | Skipjack tuna | 3 |
| | Big-eyed tuna | 20 |
| | Lancetfish | 26 |
| | Dolphin | 14 |
| | Opah | 4 |
| | Mackerel scad | 1 |
| | Blue shark | 47 |
| | Bonito shark | 10 |

The 2 albacore tuna were taken on long lines along longitude 135° W. at 2 adjoining stations. The surface water temperature in this area ranged from 18.0° C.

to 18.7°C . (64.4°F . - 65.7°F .). Bathythermograph casts indicate that these temperatures extended down to depths of 90 and 130 meters. The same water temperature conditions were found to the south, while north and east of the area temperatures were colder by one to several degrees.

The capture of three albacore tuna in a relatively small area of the ocean is, in itself, not very indicative. However, coupled with the fact that albacore first appear



Long-line fishing for albacore, M/V N. B. Scofield (55-S-3).

in the vicinity of Erben Bank, when the weather and sea were the roughest. Throughout the day in this area groups of 8 to 10 birds followed the vessel, while other groups were visible as far as the eye could see. A few bosun birds were seen in the early morning on some of the more distant offshore stations.

Porpoise and seals were seen on three occasions. Twice relatively close to shore and once on the station most distant from land.

Bathythermograph casts were made at each end of a long-line set while on a night-light station and approximately every three hours while under way. Due to very high seas, water entered the BT winch housing, making it inoperative for almost a week. In addition to the routine meteorological observations at each BT cast, surface water samples were taken for salinity determinations ashore. Sea surface temperatures ranged from 14.1°C . to 19.3°C . (57.4°F to 66.7°F).

At each fishing station 3 depths were fished. The surface was sampled by trolling artificial lures of various types. Two subsurface depths were fished by rigging 20 baskets of long line with 5-fathom float lines and 20 baskets with 15-fathom float lines. Fresh frozen sardines--3 and 4 to the pound--were used as bait. Chemical sounding tubes were used to determine the fishing depth of each section of long line. To test the accuracy of the tubes, a special cast was made wherein the tubes were fastened to the hydrographic cable and lowered to known depths. The results indicate that the tubes are accurate to 2 fathoms. At the usual fishing depths this is an accuracy of 3.5 percent and 2.8 percent.

Unfavorable weather conditions severely hampered operations, causing two major changes in the original cruise plan and limiting the number of fishing stations to 16 and night-light stations to 11.

Two additional stations were occupied, (1) a daylight plankton tow, and (2) a hook-and-line night-light station while at anchor southeast end of Guadalupe Island, Mexico.

(late June) off the North American mainland at the above latitudes may suggest that their migration route is along these same latitudes, at least during the late spring and early summer months. It appears that the albacore were at some depth because they were caught by gear fishing well below the surface and none were caught or seen at surface.

No surface schools of fish or bird flocks were seen during the cruise. A few storm petrels and shearwaters were seen occasionally. In general their numbers were far less than during previous cruises. Blackfooted albatross were seen almost daily. The greatest concentration occurring in the

The following is a typical day's operation when running station lines: Forty baskets of long-line fishing gear was set at daybreak, approximate setting time $1\frac{1}{2}$ hours. While this gear was soaking 6 lines were trolled in the immediate vicinity--average trolling time 5 hours. A standard 200-meter oblique plankton tow, near the center buoy, was also made while the gear soaked. Retrieving of the long-line started at 1230 and on completion--usually $2\frac{1}{2}$ -3 hours--the course was set for the next station 120 miles away. While en route to the next station, during daylight hours 6 lines were trolled and a watch kept for signs of surface schools of fish and bird flocks. At night, usually commencing at 2100, a plankton tow was made, followed by 1 hour of fishing with a fine meshed dip net under a 1500-watt night light.

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SARDINE AND ANCHOVY SCHOOLS SCOUTED BY "YELLOWFIN" (Cruise 55-Y-4): A total of 408 miles of scouting for sardines, anchovies, and mackerel in California and Baja California waters was performed by the California Department of Fish and Game's research vessel Yellowfin on an 18-day cruise completed June 8. The cruise was designed to:

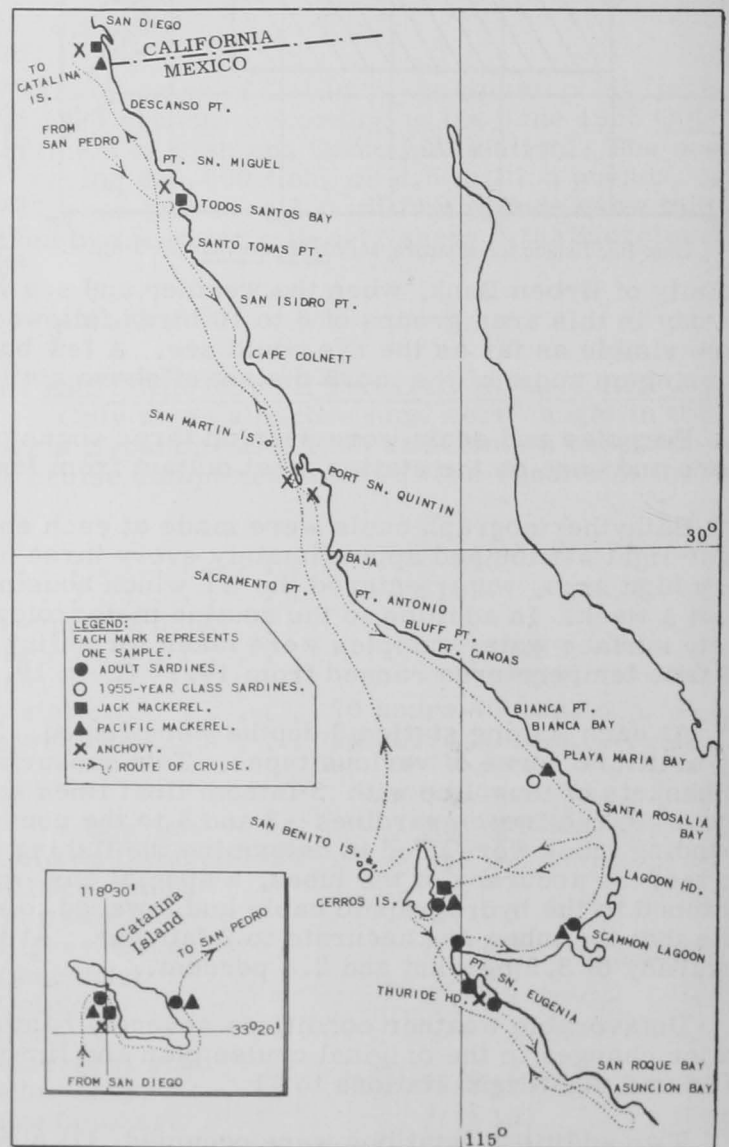
(1) assess the relative abundance and distribution of sardines, anchovies, and mackerel in California and Baja California waters; (2) tag and release yellowtail wherever available; (3) obtain young sardines in the Sebastian Viscaino Bay area for growth analysis study; (4) scout the area north of San Quintin Bay in conjunction with the survey flight of the Department's Beechcraft airplane.

A total of 169 fish schools were observed either visually or with the aid of the "Sea Scanar." Of the schools sighted, 87 were identified as anchovy, 34 sardine, 23 Pacific mackerel, 20 squid, and 5 saury (see table).

A total of 54 light stations were occupied and hauls with the blanket net yielded 8 samples of sardines, 6 Pacific mackerel, 5 jack mackerel, and 6 northern anchovies.

Forty-two yellowtail were caught by hook and line, tagged, and released at the San Benito Islands.

In Baja California sardines were sampled from Playa Maria Bay to Turtle Bay, at Cedros Island, and at the San Benito Islands. At the latter location a large series of postlarval and juvenile sardines (32-78 mm.) were at-



M/V Yellowfin Cruise 55-Y-4, June 21-July 8, 1955.

tracted to the night light and captured with both a dip net and the blanket net. Anchovies and jack mackerel were sampled from San Diego south to Turtle Bay and Pacific mackerel from San Diego to Scammon's Lagoon.

The scouting work conducted in conjunction with the airplane corroborated our observations that the heaviest concentration of fish in the Baja California region scouted was between Cape Colnett and San Quintin Bay. Blanket net sampling proved these fish to be both juvenile and adult northern anchovies.

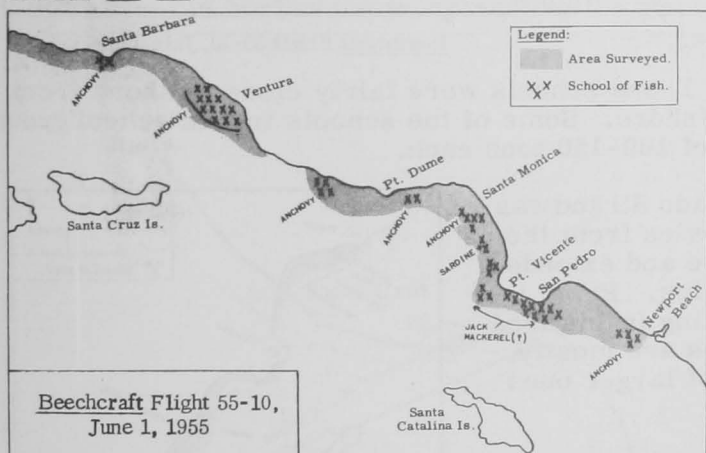
| Area Scouted | Scouting (Miles) | Schools Observed | Identification ^{1/} |
|----------------------------------------|------------------|------------------|------------------------------|
| | No. | No. | |
| Santa Catalina Island | 21 | 17 | 2PM, 15SA |
| San Diego-Pt. Baja | 136 | 83 | 71A, 12SQ |
| Pt. Baja-Pt. Eugenia | 151 | 61 | 16A, 21PM |
| Pt. Eugenia-San Hipolito Bay | 100 | 8 | 19SA, 5SQ |
| Total | 408 | 169 | - |

^{1/} PM = Pacific mackerel, SA = sardines, A = Northern anchovies, SQ = squid, and SY = sauries.

Though not in the original itinerary, one night's work was devoted to Santa Catalina Island where the airplane spotters reported numerous schools of fish thought to be sardines. Scouting and sampling in the area indicated that the fish were predominantly adult sardines. In addition, Pacific mackerel, jack mackerel, and anchovies were taken at this location.

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SARDINE AND ANCHOVY SCHOOLS SURVEYED BY AIR (Airplane Spotting Flight 55-10): An aerial survey of the area from Pt. Conception to Cape San Quintin,



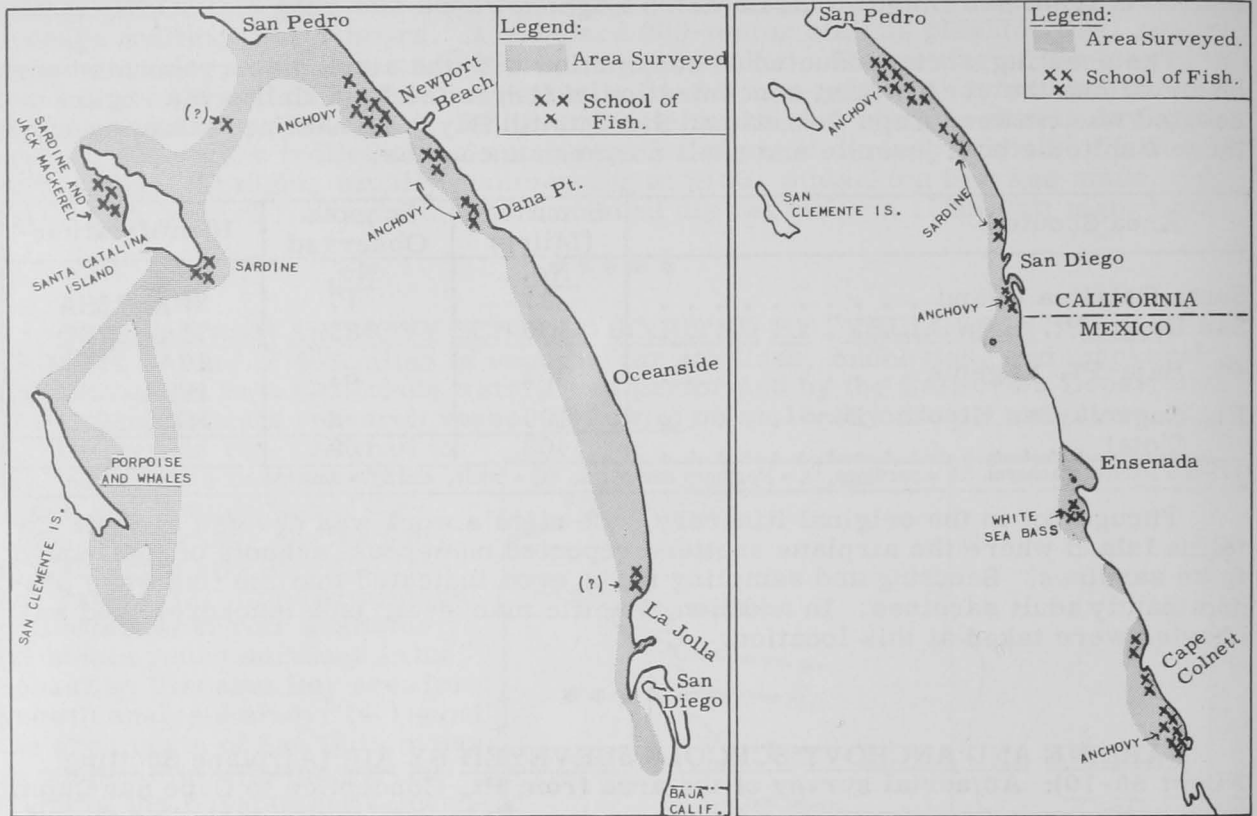
Baja California, including the off-shore islands was made by a California Department of Fish and Game plane for approximately five hours daily from June 1-5. The purpose was to determine the distribution and approximate abundance of schooling pelagic fishes, with emphasis on the Pacific sardine and northern anchovy.

Most of the schools were difficult to identify exactly as to species from the air and it was necessary to check the schools sighted by means of sampling of catches

made by commercial and bait fishermen and by directing the research vessel Yellowfin to areas of fish concentration beyond the range of the commercial fleet. Sampling of many of these schools revealed the reason for poor identification--many of the schools were composed of more than one species. Visibility from the air was good during the first three days south of Pt. Conception but only small local areas could be scouted on June 4 and 5 due to fog over the entire coast. The following is a summary of the results of the survey by species.

Anchovy: Four large school groups of anchovies were found in the area surveyed. The school group off Ventura consisted of mixed one-year-old and older anchovies and were fairly well scattered out in individual schools from 1/2 to 2 1/2 miles off-shore. About 40-50 schools were sighted in this area with a few more or less single schools scattered out below the main group off Pt. Mugu and in Santa Monica Bay.

The school group between San Pedro and Newport Beach consisted of about 100-150 schools of larger adult anchovies that were being fished by the commercial



Beechcraft Flight 55-10, June 2, 1955.

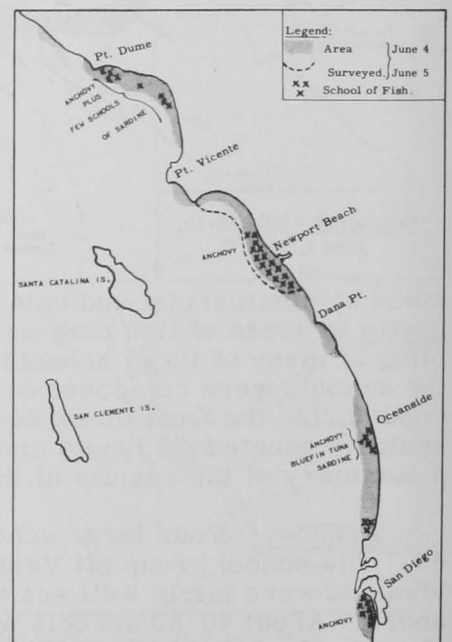
Beechcraft Flight 55-10, June 3, 1955.

fleet during the time of this flight. These schools were fairly close to shore from the breaker line to about 2 miles offshore. Some of the schools in this school group were estimated to contain upwards of 100-150 tons each.

The school group off the Coronado Strand was actually a continuous mass of anchovies from the breaker line to about 1/2 mile offshore and extended along the beach for about 2 1/2 to 3 miles. From interviews of the bait fishermen working in this area it was disclosed that these anchovies are mostly very small fish with a few schools of larger ones mixed in.

The school group found near San Ramon Bay between Cape Colnett and Cape San Quintin was comparable in size and in relation to area near the beach as the fish found off the Coronado Strand. Sampling on the Yellowfin revealed that the fish in-shore in the greatest concentrations were small fish, whereas the fish more offshore in individual schools were larger adult fish. Schools were found as far offshore as 2 1/2 miles in this area but the main mass was within 1/2 mile of the beach.

Sardine: One school group of adult sardines was found on the west side of Santa Catalina Island. These schools were difficult to identify as



Beechcraft Flight 55-10, June 4 and 5, 1955

to species, and the Yellowfin was called on to sample these schools to make certain of identification. It was found by the biologists aboard that these large schools (upwards of 200 tons per school) were predominately sardine with a few jack mackerel mixed in. About 25 schools were observed from the plane in this area.

In general the 1954 year-class sardines were fewer in number during this period along the coast than during February and March when commercial aerial spotters located concentrations locally near Ventura and in Santa Monica Bay. Several small schools of these yearling sardines were spotted near and in the areas of anchovy concentration in the Santa Monica and Seal Beach areas. Interviews with bait fishermen disclosed that there are a few small schools of small sardines present in these areas but not as many as a few months ago.

Mackerel: The large school group of fish presumed to be jack and Pacific mackerel was present on June 1 from Pt. Vicente to San Pedro. This school group was not found on the preceding days of scouting, which is typical of the behavior of jack mackerel, which are known to "run" for a few days in an area then disappear.

Other Species: Four schools of white sea bass were spotted near San Jose Point, Baja California, and observations were made of purse-seine boats working in cooperation with aerial spotters while catching bluefin tuna between Pt. Loma and Newport Beach.

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AERIAL SCOUTING OF SARDINE AND ANCHOVY SCHOOLS CONTINUED (Airplane Spotting Flight 55-11): Aerial flights over the inshore area from Pigeon Pt. in central California to Newport Beach in southern California were resumed July 18-23 by the California Department of Fish and Game. The flights were made to determine the northward movement of the Pacific sardine and the distribution and abundance of the northern anchovy.

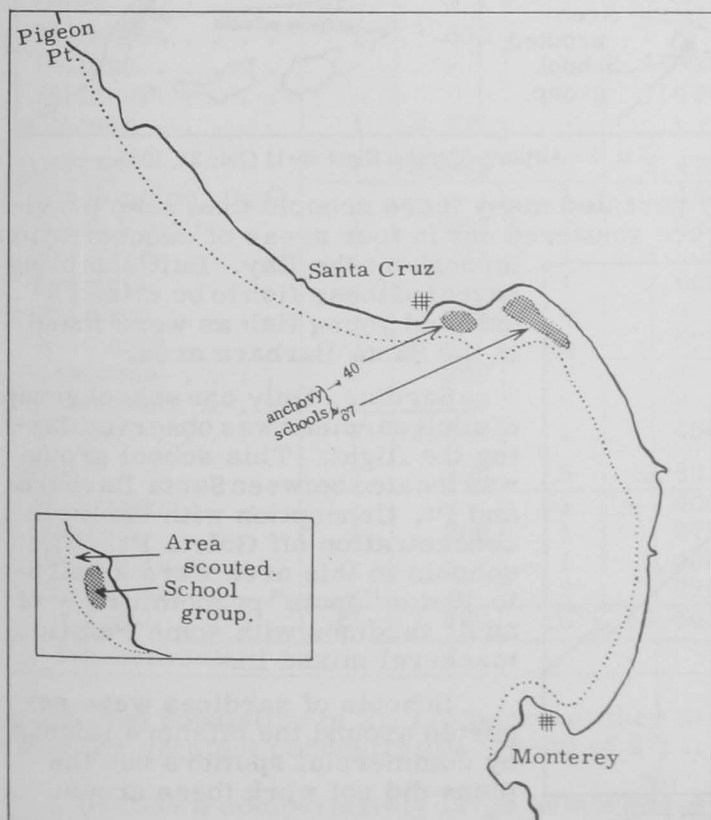


Fig. 1 - Airplane (Cessna) flight 55-11 (July 18-19, 1955).

Efficient coverage of the entire coastline was hampered by local fog conditions and on each day it was not possible to cover the entire area desired. By the end of the five-day period all the area except to the north of Pigeon Pt., a small area around Pt. Sal, a small area around Pt. Mugu, and the area to the south of Newport was covered.

The inshore waters were of brown and green types (predominately phytoplankton) from Pigeon Pt. south to about Santa Barbara. South of Santa Barbara patches of "milky" and "blue" water were interspersed with the phytoplankton waters. These milky and blue waters are predominately of zooplankton.

Identification of schools observed were determined by the observer and were later checked by interviewing commercial spotters and

fishermen fishing in the areas covered during the same period. The research vessel Yellowfin was also working in the area, and sampling at night aided identification of school groups. The following is a summary of the results of the survey by species.

Anchovy: Three school groups of anchovies were observed in the area surveyed. The school group in Monterey Bay was concentrated in the northern end of the bay between Santa Cruz and Sunset Beach State Park. Approximately 110 schools were observed close to the beach and kelp beds. These schools were very thin in depth and most probably not more than about 10-20 tons of fish per school on an average.

The school group of anchovies between Santa Barbara and Carpinteria consisted of at least 119 anchovy schools each ranging from 20-50 tons each. This school group extended for about 4 miles in length and was about $\frac{1}{4}$ -mile wide forming a band of fish parallel to the shore about 2 miles from the beach. Commercial fishermen reported these fish to be mixed adult and young anchovies.

The school group observed on July 22 in Santa Monica Bay did not appear to be of much magnitude when the area was covered in mid-morning when 40-45 schools were observed. A second flight over the area in the afternoon of the same day revealed many more schools than seen previously. Approximately 210 schools were scattered out in four areas of concentration throughout the Bay. Bait sampling revealed these fish to be mixed adult and young fish as were found in the Santa Barbara area.

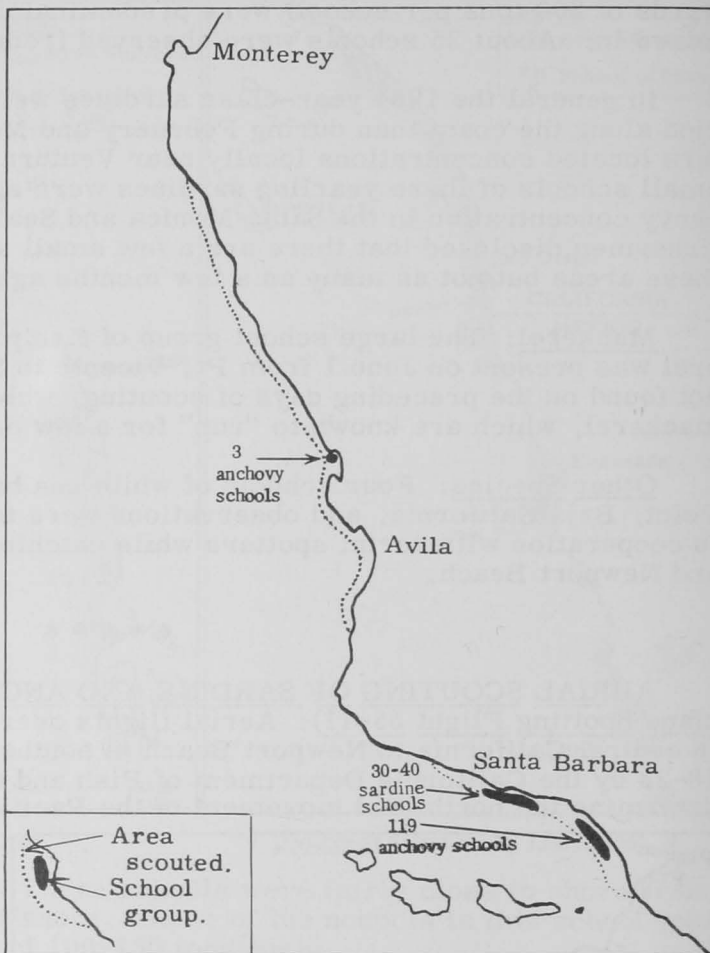


Fig. 2 - Airplane (Cessna) flight 55-11 (July 21, 1955).

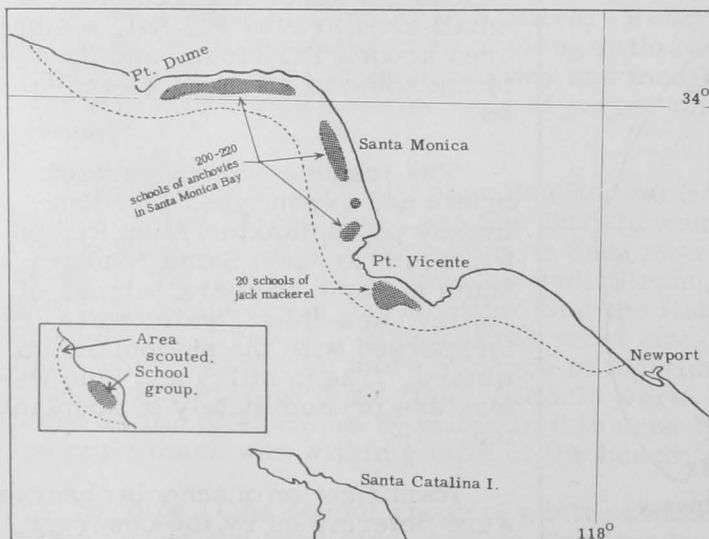


Fig. 3 - Airplane (Cessna) flight 55-11 (July 22, 1955).

Jack Mackerel: One school group of jack mackerel was observed off Pt. Vicente on July 22. This school group had apparently recently moved into the area and was

throughout the Bay. Bait sampling revealed these fish to be mixed adult and young fish as were found in the Santa Barbara area.

Sardine: Only one school group of adult sardines was observed during the flight. This school group was located between Santa Barbara and Pt. Conception with the main concentration off Goleta Pt. The schools in this area were small 5- to 10-ton "spots" predominately of adult sardines with some Pacific mackerel mixed in.

Schools of sardines were reported around the offshore islands by commercial spotters but the plane did not work these areas.

quickly located by the commercial fleet. Fifteen purse-seine boats and three aerial spotters were working these fish.

No flight was made on July 20, and no fish were spotted in the area from Pt. Sal to San Simeon on July 23.

Canned Tuna Consumption in Federal Penal and Correctional Institutions, 1954

Canned tuna consumption in 27 Federal penal and correctional institutions is depicted in table 1 and figures 1 and 2. These institutions had in 1954 an average

Table 1 - Canned Tuna Consumption in 27 Federal Penal and
Correctional Institutions, 1954

| Area and State | Non-Users | | Users | | | | | |
|------------------------|--------------|--------------------|--------------|--------------------|--------------------|------------------------|--------------|---------------------|
| | No. of Inst. | Avg. Pop. of Inst. | No. of Inst. | Avg. Pop. of Inst. | Annual Consumption | Per Capita Consumption | Can Size | Unit Cost Per Pound |
| | | | | | Pounds | Pounds | | ¢ |
| NORTHEAST | 1/ | 500 | 2 | 1,500 | 1/ | 1/ | - | - |
| Connecticut . . . | 1 | 500 | - | - | - | - | - | - |
| New York | - | - | 1 | 200 | 250 | 1.25 | 1 lb. | 52 |
| Pennsylvania . . . | - | - | 1 | 1,300 | Not Reported | | Not Reported | |
| NORTH CENTRAL | 2 | 3,325 | 3 | 3,675 | 4,444 | 1.21 | - | - |
| Ohio | - | - | 1 | 1,250 | 2,400 | 1.92 | 1 lb. | 65 |
| Michigan | 1 | 650 | - | - | - | - | - | - |
| Indiana | - | - | 1 | 1,325 | 884 | 0.67 | 1 lb. | 56 |
| Missouri | - | - | 1 | 1,100 | 1,160 | 1.05 | 4 lbs. | 57 |
| Kansas | 1 | 2,675 | - | - | - | - | - | - |
| SOUTH | 7 | 3,505 | 6 | 5,475 | 3,625 | 0.66 | - | - |
| Washington, D. C. | - | - | 1 | 460 | 231 | 0.50 | - | - |
| West Virginia . . | 1 | 250 | 1 | 640 | 714 | 1.12 | 7 oz. | 64 |
| Virginia | 1 | 75 | 1 | 800 | 360 | 0.45 | Not Reported | |
| Georgia | - | - | 1 | 2,600 | 432 | 0.17 | Not Reported | |
| Florida | 1 | 600 | - | - | - | - | - | - |
| Kentucky | 1 | - | - | 525 | 1,600 | 3.05 | 1 lb. | 56 |
| Alabama | 1 | 240 | - | - | - | - | - | - |
| Oklahoma | 1 | 1,100 | - | - | - | - | - | - |
| Texas | 2 | 1,240 | 1 | 450 | 288 | 0.64 | Not Reported | |
| WEST | 1 | 300 | 5 | 2,895 | 1/ | 1/ | - | - |
| Colorado | - | - | 1 | 400 | Not Reported | | 7 oz. | 64 |
| Arizona | 1 | 300 | 1 | 275 | Not Reported | | Not Reported | |
| Washington | - | - | 1 | 1,400 | 700 | 0.50 | 13 oz. | 74 |
| California | - | - | 2 | 820 | 1,148 | 1.40 | 13 oz. | 36 |
| Total | 11 | 7,630 | 16 | 13,545 | 1/ | 1/ | - | - |

1/ Data not available.

combined population of 21,175 persons; they are located throughout the United States with the greatest concentration (13 out of 27) in the South.

In 1954 a comparatively large number (11) of all 27 institutions surveyed did not use canned tuna, according to data furnished by the Federal Bureau of Prisons.

Institutions in north central United States used more pounds of canned tuna and have a higher per capita consumption than did institutions in the South.

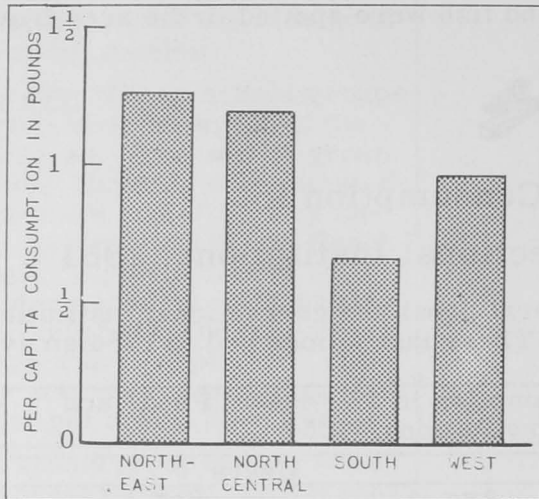


Fig. 1 - Per capita consumption of canned tuna in 12 Federal penal and correctional institutions, 1954.

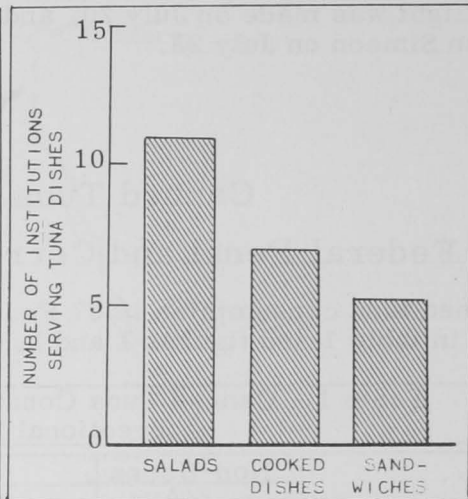


Fig. 2 - Types of tuna dishes served in 12 Federal penal and correctional institutions, 1954.

The average annual per capita consumption of canned tuna for the 12 institutions reporting tuna consumption was 1.06 pounds.

Eleven out of twelve institutions purchased canned tuna in cans of one pound or less.



Cans--Shipments for Fishery Products, January-May 1955



Total shipments of metal cans for fish and sea food during January-May 1955 amounted to 34,027 short tons of steel (based on the amount of steel consumed in the manufacture of cans), compared to 29,842 short tons in the same period a year earlier.

Note: Statistics cover all commercial and captive plants known to be producing metal cans. Reported 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.



Federal Purchases of Fishery Products

FRESH AND FROZEN FISHERY PRODUCTS PURCHASED BY DEPARTMENT OF DEFENSE, JUNE 1955: For the military feeding of the U. S. Army, Navy, Marine Corps, and Air Force, the Army Quartermaster Corps in June 1955 purchased fresh and frozen fishery products amounting to 2.3 million pounds, valued at \$1.0 million (see table). This was an increase of 7.0 percent in quantity and 7.2 percent in value as compared with May purchases, but lower by 22.8 percent and 17.1 percent, respectively, than June 1954 purchases.

| QUANTITY | | | | VALUE | | | |
|------------------------|------|-----------|------|-------------------------|------|-----------|------|
| June | | Jan.-June | | June | | Jan.-June | |
| 1955 | 1954 | 1955 | 1954 | 1955 | 1954 | 1955 | 1954 |
| .(Millions of Pounds). | | | | .(Millions of Dollars). | | | |
| 2.3 | 3.0 | 13.1 | 12.0 | 1.0 | 1.2 | 5.6 | 5.1 |

Purchases of fresh and frozen fish and shellfish by the Army Quartermaster Corps during the first six months in 1955 totaled 13.1 million pounds (valued at \$5.6 million) as compared with purchases of 12.0 million pounds (valued at \$5.1 million) for the similar period a year earlier.

The Department of the Army in June 1955 paid an average price of 43.2 cents per pound for fresh and frozen fishery products purchased as compared with 43.1 cents in May and 40.2 cents in June 1954.

In addition to the purchases of fresh and frozen fishery products indicated above, the Armed Forces generally make local purchases which are not included in the above figures. Therefore, actual purchases are somewhat higher than indicated, but it is not possible to obtain data on the local purchases made by military establishments throughout the country.



Florida

FISHERY LANDINGS AND MARKETING, 1954: General Trends: The 1954 total landings of Florida's commercial fisheries amounted to over 170 million pounds, valued at \$24.5 million--a decrease of about 36 million pounds and \$7 million in value as compared with 1953 (table 1). Decreases occurred principally in the menhaden

Table 1 - Landings of Fishery Products at Florida Ports, 1953-54

| Species | 1954 | 1953 |
|------------------------------|----------------|--------------|
| | (Million Lbs.) | |
| Fish: | | |
| Bluefish | 1.9 | 2.1 |
| Catfish, fresh-water . . | 2.1 | 2.1 |
| Groupers | 5.4 | 4.8 |
| King mackerel | 2.0 | 2.5 |
| King whiting | 1.0 | - |
| Menhaden | 41.9 | 69.5 |
| Mullet, black | 27.8 | 27.3 |
| " silver | 1.1 | 1.4 |
| Sea trout, spotted . . . | 3.4 | 3.7 |
| Snapper, red | 6.1 | 5.5 |
| Spanish mackerel . . . | 4.9 | 6.5 |
| Miscellaneous | 9.4 | 10.5 |
| Total Fish | 107.0 | 135.9 |
| Shellfish, etc.: | | |
| Crabs, hard, blue . . . | 9.8 | 9.6 |
| Lobsters, spiny | 1.9 | 2.0 |
| Shrimp | 50.9 | 58.5 |
| Miscellaneous | 1.1 | .9 |
| Total Shellfish . . . | 63.7 | 71.0 |
| Grand Total | 170.1 | 206.9 |

and shrimp catches. Menhaden landings decreased approximately 28 million pounds and shrimp catches were down about 8 million pounds.

Shrimp: Of the 50.8 million pounds (heads-on) of shrimp landed in Florida during 1954, 5.1 million pounds were caught on the east coast, 18.3 million pounds on the Tortugas Grounds, 24.9 million pounds on the Campeche Banks, and 2.6 million pounds on the upper west coast of Florida. Compared with 1953, production was about the same on three grounds, while the Campeche catch accounted for most of the 8 million-pound decline. Despite this sizable decrease, the shrimp fishery is still Florida's first ranking fishery in value, and in 1954 exceeded menhaden in volume.

Shrimp fishing operations have not changed substantially from 1953 to 1954. The vessels still migrate to areas of high production. This migration occurs from the Carolinas in midsummer and moves down to Georgia and the Florida east

coast in the fall where production is at its peak in October and November. Most of these boats then move to Key West and Fort Myers, where they fish the Dry Tortugas banks. There are about 300 vessels in this migration. There are many "resident" shrimp vessels that operate principally on Campeche and to a lesser degree in the fisheries near Dry Tortugas and Sanibel Island.

Generally the price structure for shrimp in 1954 remained fairly stable as compared to previous years. The 21-25 count heads-off pink shrimp ranged from about

50 to 68 cents a pound ex-vessel. There were very few price wars among Florida shrimp dealers this year. This harmonious condition helped to maintain a stable market.

Production of shrimp varied seasonally in each area. During May and June production was at its lowest in all areas. Then and during the following few months boat owners had difficulty making their monthly boat payments. One loan company in Miami refinanced 22 of 40 shrimp boats for which loans were outstanding. Conditions improved considerably as production increased in the fall and winter.

Finfish: Production of food finfish in 1954 was approximately the same as in 1953. The principal decrease (28 million pounds) was in the menhaden catch. The menhaden plant in Apalachicola did not operate because of the absence of fish.

Table 2 - Ex-vessel Prices for Florida's Ten Leading Species, 1953-54

| Species | 1954 | 1953 |
|-----------------------------|-------|-------|
| | ¢/lb. | ¢/lb. |
| Black, mullet | 8 | 9 |
| Blue crabs | 5 | 4 |
| Groupers | 11 | 10 |
| King mackerel | 13 | 17 |
| Menhaden | 1.1 | 1 |
| Red snapper | 27 | 27 |
| Shrimp, heads-off | 28 | 36 |
| Spanish mackerel | 12 | 11 |
| Spiny lobsters | 22 | 20 |
| Spotted sea trout | 24 | 24 |

The industry claimed that because of poor marketing conditions maximum production was not obtained. This appeared to be true in most areas and for most species. Many industry members pointed out that the marketing difficulties encountered for Florida fishery products were due to the (1) heavy influx of northern fillets on southern markets; (2) competitive prices of beef, pork, and poultry; and (3) out-moded fresh-fish marketing methods.

Except for shrimp, ex-vessel prices for Florida's 10 leading species did not change substantially in 1954 as indicated in table 2.

--Billy F. Greer, Fishery Marketing Specialist,
Branch of Commercial Fisheries,
U. S. Fish and Wildlife Service,
Coral Gables, Fla.



Gulf Exploratory Fishery Program

RED SHRIMP EXPLORATIONS CONTINUED BY "OREGON" (Cruise 32): Deep-water trawling explorations for red shrimp in the Florida Straits-Bahama Channel area were conducted by the Service's exploratory fishing vessel Oregon on a 23-day cruise. The vessel returned to Pascagoula on July 28, 1955.

A series of 16 shrimp-trawl drags were made along the 200-fathom curve south of the Dry Tortugas. It was in this area that the Oregon discovered promising concentrations of red shrimp in April 1954. The best catches made during this cruise ran from 190 to 210 pounds per 3- to 4-hour drag using a 74-foot balloon trawl. In April 1954 the catches yielded approximately 180 pounds per 2-hour drag using smaller trawls. Five of the sixteen drags resulted in serious damage to the trawling gear. Two complete rigs, including a pair of 8-foot doors and a pair of 12-foot doors, were lost. Since echo tracings showed good trawling bottom, it was believed likely that the nets struck obstacles, such as sunken ships, that had not been picked up on the depth recorder.

A series of 8 shrimp-trawl drags were made southeast of Cay Sal Bank between the north coast of Cuba and the Bahama bank. Although an extensive area of good trawling bottom was found in depths of 200 to 260 fathoms, catches failed to yield any red shrimp. Bottom temperatures in this area were found to run from 60° to 65° F., which is from 10 to 15 degrees warmer than comparable depths in the Gulf of Mexico where red shrimp concentrations have been found. The only loss of gear in this area was a 16-foot beam trawl. The trawling wire parted at the winch, and the beam trawl and 700 fathoms of trawling wire were lost.

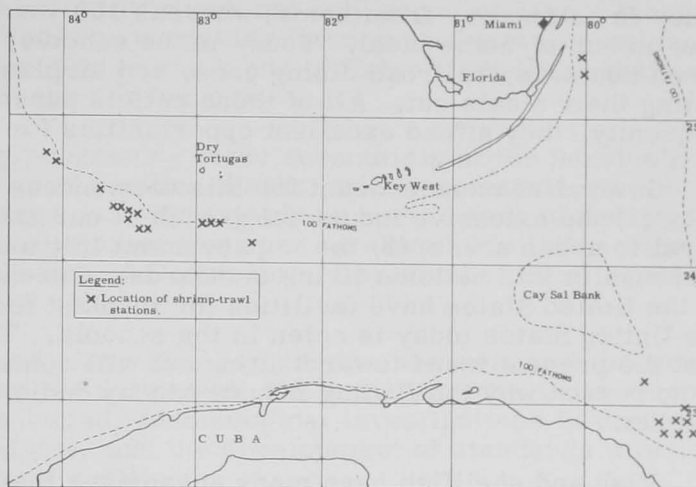
A series of dredge stations were made in the Straits of Florida between Sombrero Key and Miami to determine if suitable bottom conditions existed to permit exploratory drags using shrimp trawls. At one station in 240 fathoms off Key Largo two large red shrimp were caught in the dredge. Subsequently, two exploratory drags using 40-foot shrimp trawls were tried in this area. Neither of these drags was successful in reaching the bottom and due to the extreme difficulties encountered in handling the vessel in the Gulf Stream current, this work was discontinued.

The period of July 20-24 was spent along the western edge of the Bahama bank making underwater observations of shrimp trawls in action. Although good trawling bottom was located, strong winds and turbid water prevented the taking of motion pictures.

A port call was made in Havana on July 12, and an official observer of the Cuban Navy accompanied the Oregon while the vessel was working off the north coast of Cuba.

The Oregon was scheduled to depart Pascagoula on August 9 to carry out three weeks of commercial-scale long-line fishing in the northeastern and north central Gulf of Mexico. It was planned to make from 15 to 18 100-basket (1000 hooks) sets throughout this area to obtain a more accurate estimate of possible commercial production of deep-swimming yellowfin tuna in the Gulf of Mexico.

In cooperation with the marlin research program of the Woods Hole Oceanographic Institute, all marlin landed in good condition will be tagged and released on this cruise.



Cruise No. 32--M/V Oregon.



Hudson River Shad Catch, 1954

The total catch of shad in the Hudson River (Weehawken, N. J., to Albany, N. Y.) in 1954 amounted to 1,249,300 pounds, valued at \$164,800, reports the Service's Fishery Marketing Specialist stationed in New York. The 1953 catch totaled 938,700 pounds, valued at \$155,500. The 1954 average price was lower than a year earlier. In 1954 the New Jersey side of the Hudson River accounted for 664,700 pounds and the New York area catch was 584,600 pounds. In 1953 the New Jersey catch totaled 473,700 pounds and the New York catch 465,000 pounds.



Institutional Feeding Potential for Fishery Products

The phenomenal growth in institutional feeding has created an increasingly fertile field for the marketing of fishery products. It is estimated that 1 in every 4 meals today is eaten away from home; whereas 100 years ago only 1 meal in every 200 was an out-of-home meal. Today in the schools, restaurants, cafeterias, hotels, lunch counters, railroad dining cars, and airplanes more and more Americans are eating their meals out. All of these outlets purchase food in large quantities. Consequently, they afford excellent opportunities for fish and shellfish sales.

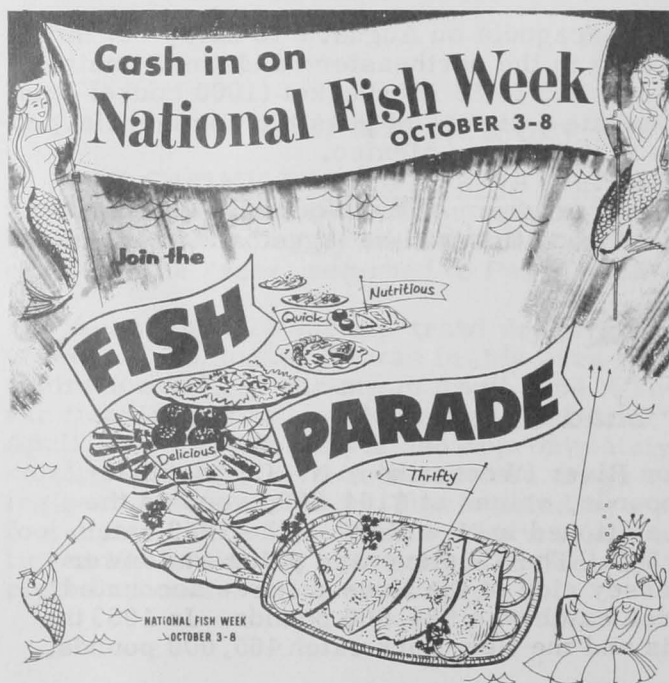
Several reasons account for this tremendous increase in the institutional market: (1) the extensive industrial growth of our nation; (2) the shift of population from rural to urban areas; (3) the improvement in transportation facilities, and (4) the increase in this nation's living standards. One-half of the large industrial plants in the United States have facilities for in-plant feeding. One meal in every eight in the United States today is eaten in the schools. There is every reason to believe that the present trend toward eating out will continue. With this fact in mind, there is no reason why the fishing industry today could not have a greater share of this market.

Fish and shellfish have many advantages that make them particularly appropriate for the institutional market. The variety, versatility, convenience, high nutritional qualities, and reasonable price range qualify them well for this market. Consumer surveys have shown that many persons prefer to eat fish or shellfish in restaurants or other institutional eating places because of the qualities listed above. This institutional outlet, as a result, represents not only a volume market, but it affords an excellent opportunity to develop a consumer desire for fishery products that will extend to the home market.



Interior Department Supports National Fish Week

Full support to the commercial fishing industry's plans for the industry-designated National Fish Week, October 3-8, and the Shrimp 'n Rice Fiesta, September 29-October 8, was pledged on September 15 by Secretary of the Interior McKay.



In addition, the Secretary said that the Fish and Wildlife Service will coordinate its fishery educational and market development activities with those of the industry during these fall consumer-education campaigns.

Fishery products, according to the Fish and Wildlife Service, will be in good supply during these October campaigns as a result of the heavy fishing activities that annually occur during the summer months. The development of so many new types of processed fishery products, such as fish sticks and breaded shrimp, will enable consumers to be more selective in their choice of fish and shellfish whether eaten at home or in restaurants.

In keeping with the Department's policy of working in partnership with industry, Secretary McKay stated that home economists and fishery marketing specialists of the Fish and Wildlife Service will conduct fish cookery demonstrations for school lunchroom supervisory personnel in Wisconsin, Florida, Texas, and Massachusetts during the next few months. These demonstrations not only acquaint school lunchroom personnel with improved methods for preparing fishery products for children but provide them with current information on the kinds of fish and shellfish that are best adapted to school lunchroom menus and budgets.

As a further aid to the industry programs, home economists at the Service's test kitchens in College Park, Md., and Seattle, Wash., will concentrate on developing new recipes suitable for large quantity as well as home users of fishery products. Results to date of such test kitchen work are now available in a series of publications sold by the Superintendent of Documents, Government Printing Office, Washington, D. C.

Other activities of benefit to the fishing industry are the new research programs being conducted by the Service under the Saltonstall-Kennedy Act, now in its second year of operation. These activities include technological investigations in the freezing and preservation of fishery products, and the development of standards which will assure the consumer of consistent quality.

Also, through Service exploration of new fishing grounds and the development of new fishing methods, fishing fleets will be enabled to operate more efficiently and thus pass these economies on to the consumer. In order that the industry can provide the type of product that best meets the customers' desires, the Service is conducting consumer surveys to determine the purchasing requirements of the consumer.

Investigations of a biological nature are also under way designed to preserve the fishery resource and make it even more productive in the future.

National Fish Week, October 3-8, is the industry designated period for a coordinated national promotion campaign to create a yearly fall selling season for all types of fishery products in the United States. The slogan "Join The Fish Parade" will be a familiar slogan on individual firm letterheads and advertising, as well as being featured by many of the national and regional fishery associations. The industry plans to have advertisements in several of the national trade publications, and through its public relation facilities to use newspaper, radio, and television publicity to acquaint the consumer with the nutritional qualities of fishery products, the variety of items that are available, the ease with which they can be prepared, and the moderate prices at which they are available.



Shrimp creole is one of the many recipes tested by the Fish and Wildlife Service's home economists.

The Shrimp 'N Rice Fiesta, September 29 to October 8, is a tie-in promotion program of the Shrimp Association of the Americas with the domestic rice industry. The combined merchandising, publicity, and advertising forces of the shrimp and rice industries will be behind this program. This campaign will be tied in with National Fish Week.

The U. S. Fish and Wildlife Service is working with the fishery industry in both of these campaigns and the U. S. Department of Agriculture will assist through its food promotional outlets. Recipes, fact sheets, and other materials are being distributed to radio, television, and newspaper food editors, institutional food users, food trade groups and associations, and other commercial outlets. The Service's school-lunch fish-cookery program will also be stepped up as the fall school season reopens.

With competing protein food stocks at extremely high levels, the competition facing the fishing industry for the consumers' food dollar is intense. Through these programs the industry is taking an aggressive approach toward maintaining its position in the national diet.



Maine

SARDINE INDUSTRY RESEARCH FACILITY ESTABLISHED AT UNIVERSITY OF MAINE: An agreement between the Maine Sardine Tax Committee and the University of Maine for a cooperative sardine industry technological research program was announced August 12. The Committee's executive secretary, Richard E. Reed, said that work on several projects was already under way and that it was expected the agreement would result in the establishment of a permanent sardine research facility at the University.

A well-equipped research laboratory, partially financed by the Committee, will be set up in a portion of a new wing which is now being added to Holmes Hall, location of the Maine Agricultural Experiment Station. Facilities of the Food Processing Department are being utilized while an experimental quality-control operation is housed in a temporary wooden building.

The industry's research director, Dr. Berton S. Clark, with several assistants, is handling the sardine work with specific projects assigned on a contract basis to the Food Processing Department, under the supervision of Dr. Matthew E. Highlands.

The purpose of the program was to provide the industry with an aggressive program of research and development for fish handling, processing, quality control, and packaging to help it compete successfully in the nation's fast changing and expanding food market. Industry and University officials were in full accord on all phases of the program and that this was resulting in very close cooperation.

"Sardine fishing and packing is a big business in Maine and our Committee is very gratified to have President Hauck and his associates at the University take such a practical interest in the problems and development of our industry" the Committee's Executive Secretary stated.

Director Clark's top assistants are Ralph Berglund, a former West Coast salmon canning expert and Otis Anthony of Hampden.

The research will continue on a year-round basis.

MAINE SARDINE COUNCIL: As a result of law changes by the last Maine Legislature, the Maine Sardine Tax Committee became the Maine Sardine Council on August 21, 1955. With the change of name also comes added responsibility for the group in administering the sardine tax of several hundred thousand dollars a year, the Maine Sardine Industry announced recently.

Previously the program was under the joint direction of the Committee and the Maine Development Commission. In the future the Council will have full direction with the new Department of Industry and Commerce (successor to the Development Commission) assisting only in an advisory capacity. Another provision changed the quorum requirement for the 7-man Council meetings from 5 to 4 members. Present members of the Tax Committee will serve the remainder of their original terms under the new setup.

Tax funds go to finance an industry development program which includes advertising, merchandising, technological and consumer research, as well as other activities.

* * * * *

MAINE SARDINE ADVISORY BOARD APPOINTED BY MAINE AGRICULTURE COMMISSIONER: A seven-man committee to confer with his office in an advisory capacity on matters pertaining to the sardine industry was appointed by Maine's Agriculture Commissioner on August 20.

Named to the group, which was created by the last Maine Legislature, were active packers, Moses Pike and Lester Wass of Eastport, Milroy Warren of Lubec, John Tarbox of Gouldsboro, George Seybolt of Watertown, Mass., Samuel Zwecker of Port Clyde, and Calvin Stinson, Jr. of Birch Harbor.

Maine's Agriculture Commissioner is responsible for the administration and enforcement of all laws pertaining to the inspection of sardine plants and processing operations. This activity is financed by a 3-cent-a-case tax paid by the packers.

Sweeping changes in the laws, made last winter, became effective on August 20. They greatly increase the Agriculture Commissioner's authority to promulgate and enforce regulations designed to improve quality and the packing processes.

A provision also makes it mandatory that all cans containing four fish be identified accordingly by prominent lettering on the covers.

The Agriculture Commissioner stated that he planned to call the Committee together shortly to review quality-control activities that have been in operation during the past few months and to discuss application of the new laws.

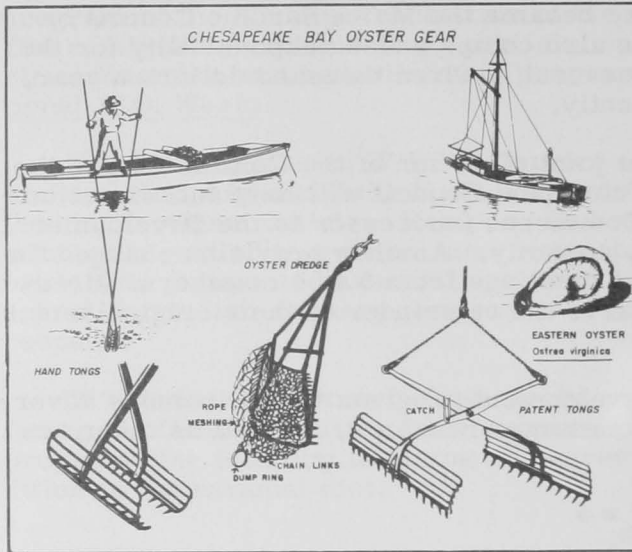


Maryland

1954/55 OYSTER PRODUCTION HIGHEST IN 15 YEARS: Maryland's oyster production in the season recently ended was 3.1 million bushels--the highest in 15 years, the Department of Tidewater Fisheries reported recently.

The Department is hopeful that its oyster propagation program will continue to expand the industry to 5 million bushels or more a year.

The catch for this year was more than half a million bushels over last year's, which was a relatively poor season after the 1952/53 production of 2.6 million bushels.



The Department has been increasing its shell-planting program each year, having planted 2.1 million bushels in 1954. This year the goal is 2.25 million.

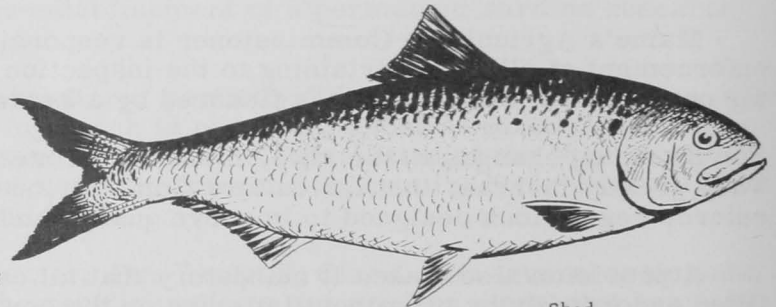
Planting began in the middle of April and already well over 1 million bushels have been put overboard in strategic locations. Shelling crews were hustling to plant the rest of the quota by July 25-- the date set by scientists as the optimum time for oyster spat to catch on the shells.

The Tidewater Fisheries Department will take up many of its seed oysters in the fall and replant them, but the shell planting is considered of greatest importance because it is less expensive and requires only one operation.



Massachusetts

NEW CONNECTICUT RIVER SHAD FISHWAY: Sea-run Atlantic shad have been unable to reach their ancestral spawning grounds in the middle Connecticut River for 107 years due to the presence of a large power dam at Holyoke, Mass. Various "Rube Goldberg" devices have been tried in past years to surmount this obstacle. The Holyoke Water Power Company has been especially active and is to be commended for its persistent efforts to help solve this important fishery problem in the face of more or less constant abuse.



Shad
(*Alosa sapidissima*)

The success that has been achieved at last is the more significant since the fish passage device at Holyoke--a fish trap and elevator system--is the only fishway which has accommodated large numbers of shad on the Atlantic Coast. The venture, undertaken in cooperation with the U. S. Fish and Wildlife Service, is considered highly successful. The Service reports that 4,902 shad were passed over Holyoke Dam in a little over a month during the past spawning run.



North Atlantic Fisheries Exploration and Gear Research

FIRST BLUEFIN TUNA CAUGHT IN NORTH ATLANTIC WITH POLE-FISHING GEAR: Approximately 2,500 pounds of bluefin tuna were caught August 16 about 20 miles south of Martha's Vineyard, Mass., by the chartered commercial vessel Stormy Weather II. Records indicate that this is the first tuna catch made in the North Atlantic using live-bait and pole-fishing methods.

The Stormy Weather II, chartered by the Service's Exploratory Fishing and Gear Development Section, departed East Boston on August 5 for fishing operations in offshore New England waters through September 30.

The fish caught averaged from 20 to 25 pounds each, and were taken on tuna poling gear, rigged with feathered barbless hooks. Live butterfish carried aboard in a specially-constructed tank were used to chum the fish alongside the vessel and within range of the fishing poles.

Two tuna schools were sighted in the vicinity. One school was estimated to contain 75 tons of fish, the other 2 to 3 tons. The catch was made from the larger school. The Stormy Weather II planned to continue fishing in the same general area for about 3 or 4 more days.

Objective of these operations by the Stormy Weather II is to determine if bluefin tuna (Thunnus thynnus) can be taken in commercial quantity by the live-bait fishing method in New England waters. This method is well developed on the Pacific Coast, and most of the tuna processed by the large industry there are captured by it.

The Stormy Weather II is 83 feet in length, and has been equipped with a live-bait tank, tuna racks, and other equipment necessary for pole fishing. The vessel and its crew are operating under a charter, and a Fish and Wildlife Service representative is aboard the vessel observing its operations.

It is planned to procure live bait from fish traps located along the shore as near as possible to areas where schools of bluefin tuna are located.

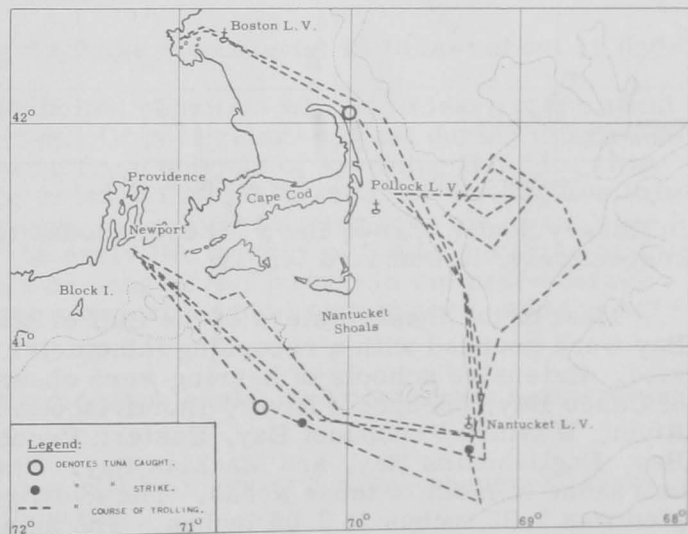
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LIVE-BAIT POLE FISHING FOR TUNA BY "DELAWARE" HAMPERED BY ROUGH SEAS (Cruise 8): On a 10-day cruise in the Gulf of Maine and southern New

England waters unsuccessful attempts were made by the Service's exploratory fishing vessel Delaware to bring bluefin tuna within range of pole-fishing gear by live-bait chumming. The trip was completed at East Boston August 10. These attempts were made in the area where two tuna (totaling 35 pounds) were captured on jigs. During the cruise there were no indications of surface tuna schools although the rough seas that prevailed during most of the trip made observations of this type extremely difficult.

The Delaware was forced to return to port earlier than planned due to hurricane warnings. This cruise was designed to determine the availability of bluefin tuna and to test live-bait and pole-fishing methods in the tuna fishery.

Live bait, consisting of butterfish and alewives, was obtained from Rhode Island fish traps on August 3 and 9. The bait was brailed directly from the traps into a live-bait tank aboard the Delaware where a continuous circulatory sea-water



Cruise 8 of the Service's exploratory fishing vessel Delaware, August 1-10, 1955.

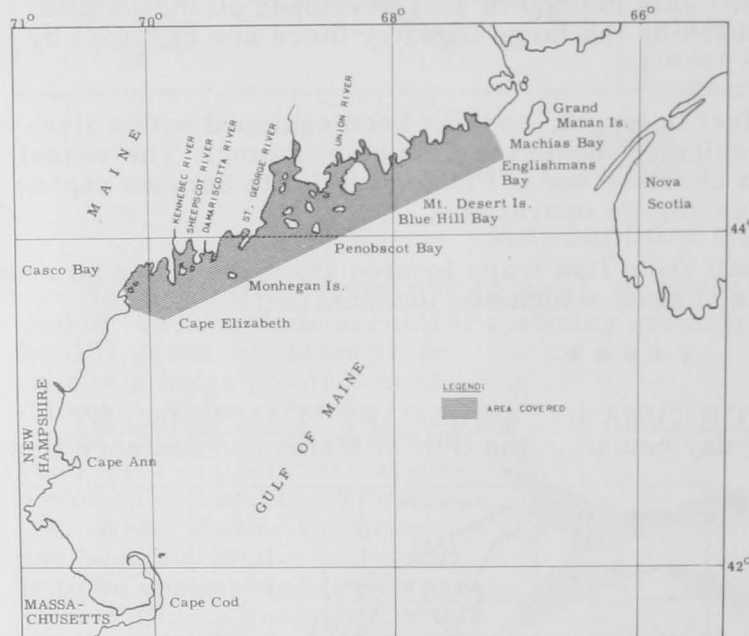
pumping system was employed to assist in keeping the fish alive. Bait survival was poor with very few fish remaining alive after three days in the tank.

After procuring bait the vessel proceeded offshore and scouted the South Channel and Nantucket Shoals area for signs of surface tuna schools. While traversing the grounds, three jig lines were trolled from the stern of the vessel at speeds from 7 to 8 knots. Four strikes were noted and two tuna, weighing a total of 35 pounds, were captured on the jigs.



North Atlantic Herring Research

LARGE SCHOOLS OF HERRING OBSERVED OFF MAINE IN JUNE-JULY BY "THEODORE N. GILL" (Cruise 3): Large schools of herring were observed off-



Theodore N. Gill Cruise 3, June 27-July 9, 1955.

shore from approximately 2 miles off Petit Manan Island to approximately 2 miles off Stelle Harbor Island, Maine, by the Service's research vessel Theodore N. Gill on a 12-day cruise completed at Boothbay Harbor on July 9. A sample of these fish taken with a seine at a point 4 miles southwest off Great Wass Island, Pleasant Bay, averaged 2.36 inches standard length.

This was the third cruise of the Theodore N. Gill in the program of exploratory fishing and biological investigation on the Maine herring fishery. The cruise was interrupted on July 2 for the Fourth-of-July weekend.

Large solid concentrations of herring were located and sampled one mile east of Isle au Haut and

in Hussey Sound, Casco Bay. These catches measured 3.04 inches and 2.31 inches, respectively, in standard length.

Most of the inside waters of the Gulf of Maine from Cape Elizabeth to Machias Bay were sounded with a recording fathometer and a scanning-type echo-ranging device. Extensive schools of herring were observed with these devices in some areas of Casco Bay, Sheepscot River, Damariscotta River, Muscongus Bay, St. George River, Western Penobscot Bay, Eastern Penobscot Bay, Blue Hill Bay, Union River Bay, Englishmans Bay, and Machias Bay. The fish were sampled with a lampara bait seine in most of these areas. The average standard length of the herring sampled was 2.22 inches to 3.04 inches. The smallest herring observed was 1.85 inches, and the largest was 3.82 inches in length. The lampara seine samples only the surface water and, therefore, is possibly rather selective as to size classes. Larger herring may be deeper in the water.

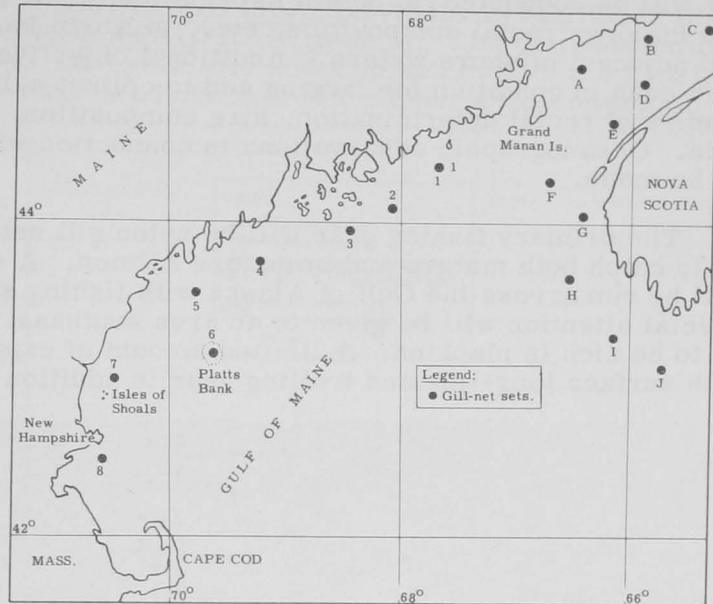
Each time herring were sounded the surface water temperature recorded on the thermograph was observed to drop several degrees below average.

Radio broadcasts on 2638 kc. were made each day of the operations to report results of the work to commercial fishermen in the area.

* * * * *

HERRING REPORTED SCARCE OFF MAINE COAST IN JULY-AUGUST BY "THEODORE N. GILL" (Cruise 4) AND "HARENGUS:" A general lack of herring in the waters of the Gulf of Maine was noted by the Service's research vessel Theodore N. Gill and the Fisheries Research Board of Canada's vessel Harengus on a cooperative cruise during the last week of July and the first week of August. These cruises were designed to gain information on the life history and seasonal occurrence of the Atlantic herring (Maine sardine).

A series of gill-net sets, using nets of graduated mesh size, was made at the positions indicated in figure. Sets made by the Harengus are indicated by letters "A" through "J" and sets made by the Theodore N. Gill are indicated by the numbers "1" through "8."



Gill-net sets by the Service's research vessel Theodore N. Gill during Cruise 4 (July 25-August 8, 1955).

Only four individual herring were caught in the eight sets made by the Theodore N. Gill, 3 on Station 2, and 1 on Station 8. Small numbers of bluebacks and alewives were caught in most sets. Reports from the Harengus are that no herring were caught on any of the 10 stations fished.

The gear used has been demonstrated in previous years to make good catches of herring where schools of these fish exist.

The Theodore N. Gill was to begin Cruise 5 on August 15 to last about 11 days.

As with preceding cruises, the principal objective will be to learn more about the habits and distribution of the herring. Of particular interest during this cruise will be the capture of samples of herring from schools of spawning fish, for it is from such fish that it may be possible to learn how many races of herring are to be found in the Gulf of Maine. Furthermore, the main spawning grounds of the species have to be located in order that the early life history of the herring can be followed in detail. The grounds on which herring have spawned in the past--between Grand Manan and Portland--will be searched with echo-ranging gear, and the herring will be caught by gill nets.

The usual plankton tows, bathythermograph casts, and continuous temperature recordings will be made.

Radio broadcasts on 2638 kilocycles will be made at 3 p.m. whenever large concentrations of herring have been located.

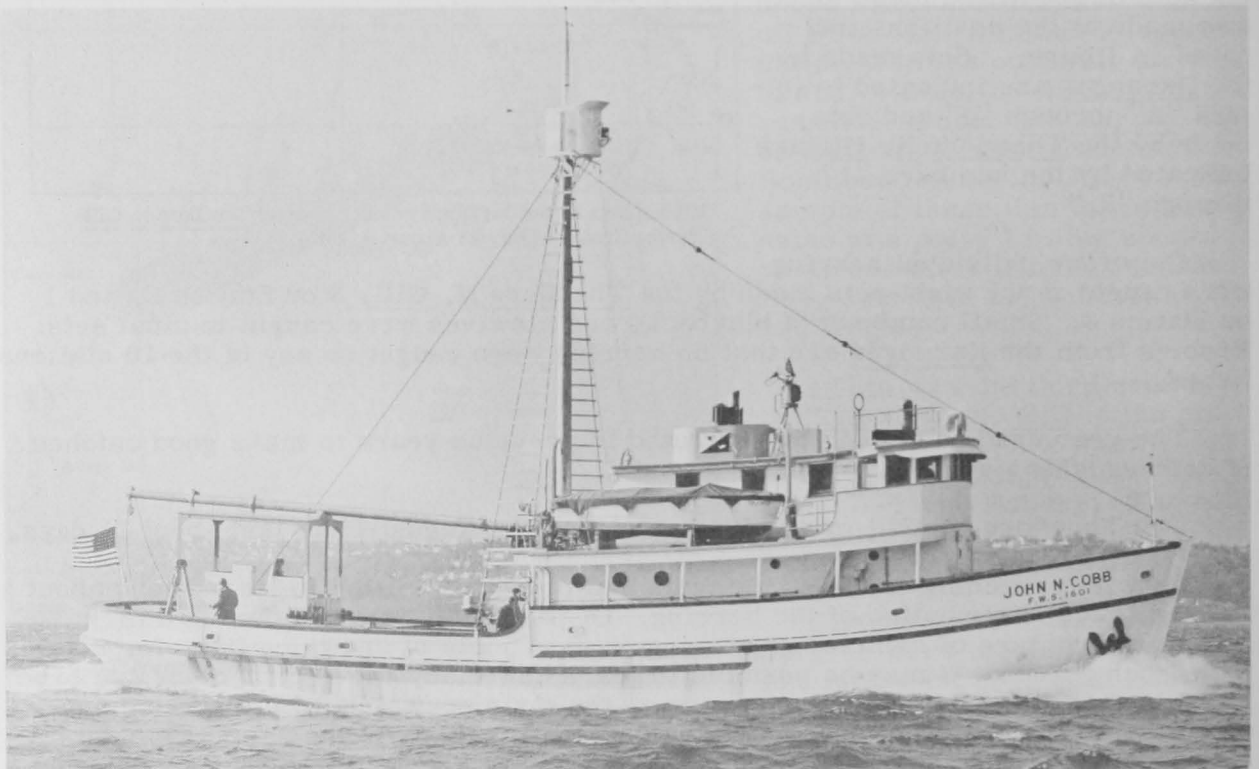


North Pacific Exploratory Fishery Program

"JOHN N. COBB" SAILS TO INVESTIGATE SALMON OFF ALASKA (Cruise 23): The Service's exploratory fishing vessel John N. Cobb sailed from Seattle, Wash., on June 23, 1955, on a 3-months' cruise to offshore waters of the North Pacific and

Gulf of Alaska. At a series of predesignated stations extending from off Northern Vancouver Island to off Unalaska Island, Alaska, experimental and exploratory fishing will be conducted to obtain information on the high-seas distribution, abundance, life history, racial composition, etc., of North Pacific salmon in the Gulf of Alaska and adjacent offshore waters. Additional objectives will be to catch salmon on the high seas in condition for tagging and to collect salmon from various localities for studies of racial determination, size composition, age analysis, and other related data. Oceanographic observations in connection with these fishing activities will also be made.

The primary fishing gear will be nylon gill nets of various mesh sizes designed to catch both mature and immature salmon. A series of east-west transects will be run across the Gulf of Alaska with fishing stations at 60-mile intervals. Special attention will be given to an area southeast of Kodiak Island which is reported to be rich in plankton. A limited amount of experimental fishing will be done with surface long-line and trolling gear in addition to the gill nets.



Scientific personnel from the Service's Branch of Fishery Biology and from the Department of Oceanography, University of Washington, will participate in the research. All salmon caught in suitable condition will be tagged and released. Morphometric measurements, stomach analyses, blood samples, and other biological data will be obtained. Oceanographic observations, including water samples, temperatures, etc., will be taken at each fishing station and at other regular intervals.

This cruise is part of the research program approved by the International North Pacific Fisheries Commission. Liaison will be maintained when possible between the John N. Cobb and other research vessels operating in nearby waters. Information obtained will be coordinated with that of other agencies carrying out research on North Pacific salmon.



Pacific Oceanic Fishery Investigations

SEASONAL ABUNDANCE OF TUNA IN LINE ISLANDS AREA INVESTIGATED BY COMMERCIAL CLIPPER "COMMONWEALTH" (Cruise 3): The distribution and abundance of deep-swimming and surface yellowfin and skipjack tuna in the Line Islands area was investigated by the chartered commercial clipper Commonwealth. The vessel returned to Honolulu on June 17 after a 43-day cruise scouting, trolling, and long lining for tuna.

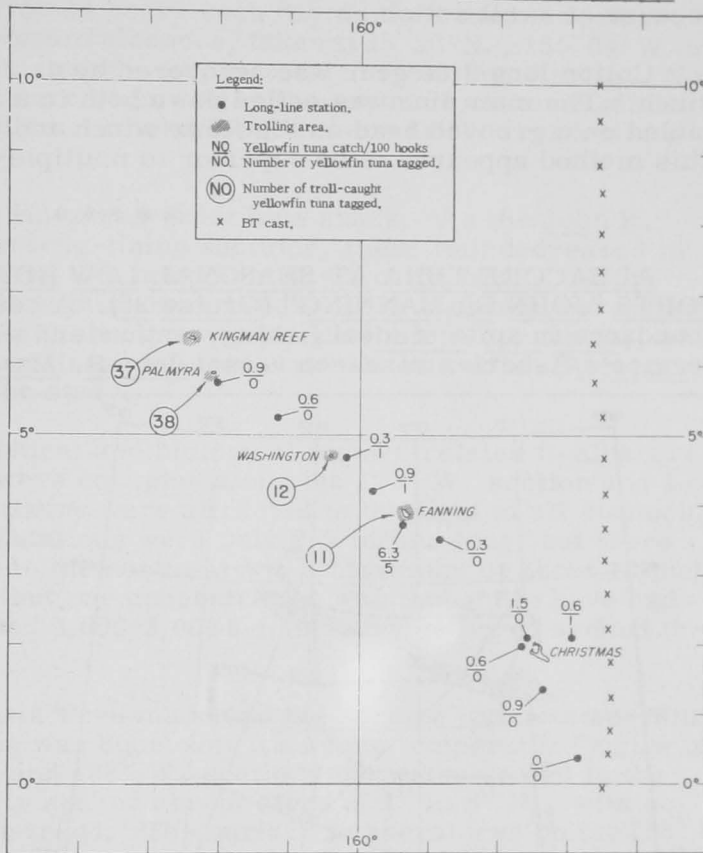
Since its departure from Honolulu on May 7, the 112-ton vessel fished long lines and trolled for yellowfin tuna around Kingman Reef, Christmas, Fanning, Washington, and Palmyra islands of the Line Islands group, which straddle the equator about 2,000 miles south of Hawaii. This area has been established as a promising yellowfin tuna fishing ground by intensive exploratory and experimental fishing by Honolulu-based Service research vessels during the past several years. The purpose of the most recent cruise was to fill in the details of the picture of seasonal and annual changes in the abundance of tuna in Line Islands waters and to tag tuna for migration studies.

The Commonwealth set from 20 to 30 baskets of 11-hook long lines (a total of 220 to 330 hooks) at 11 locations around the Islands, and spent an additional 13 days in trolling. The best long-lining was found about 5 miles south of Fanning Island, where 21 yellowfin were taken, or 6.3 per 100 hooks fished, a good catch rate for this type of fishing. At the other locations the abundance of tuna was considerably lower, averaging 0.6 fish per 100 hooks. In addition to yellowfin, 6 big-eyed tuna, 3 marlin, and 2 skipjack tuna were taken on the long lines.

Trolling with 6 lines for 13 days produced a catch of 100 yellowfin. The best fishing was found at Palmyra, where 20 fish were taken in one day, and at Kingman Reef, where a day's trolling yielded 24 yellowfin. Besides the tuna catch, 135 wahoo (ono) were taken on the trolling lines. These fish were measured, weighed, and examined for indications of spawning activity.

Of the yellowfin tuna catch, 106 fish were tagged and released. Length measurements of these tuna were recorded, and any recaptures, either in the Line Islands or elsewhere, will provide important evidence of the growth rate of this species as well as of its migrations.

STEEL AND COTTON LONG-LINE GEAR TESTED BY HAWAIIAN VESSEL "MAKUA" (Cruise 5): A one-day cruise was made by the Territory of Hawaii's research vessel Makua on June 6 to test new methods of setting and recovering steel and cotton long-line gear off Honolulu.



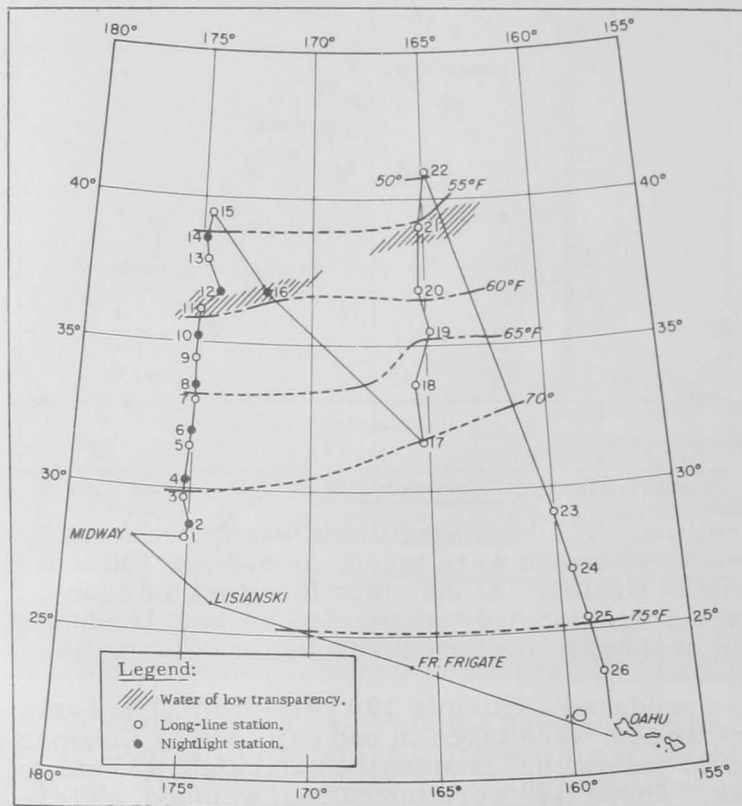
Commercial clipper Commonwealth Cruise 3, May 7-June 17, 1955.

In an effort to eliminate the time consumed joining and unjoining units of main line when fishing conventional long-line gear, 10 baskets each of steel and cotton long-line gear were joined to form 2 sets of continuous main line. Each of these was stowed in a 6-foot circular tub for setting. Setting of both types of gear was done at full speed--about 8.5 knots. Both cotton and steel main line ran out freely without kinking, however, the wire gear payed out unevenly and its velocity varied because of swell action.

Cotton long-line gear was recovered by using a grooved drum on the Rowe winch. The main line was coiled down both in a tub and in baskets. Steel gear was hauled on a grooved head on the Rowe winch and was stored on a single 6-foot drum. This method appeared to be superior to multiple-drum storage used previously.

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ALBACORE TUNA AT SEASONAL LOW NORTHWEST OF HAWAII IN MAY RE-PORTS "JOHN R. MANNING" (Cruise 25): A seasonal low ebb in albacore tuna abundance in spite of ideal fishing weather and sea conditions was reported by the Service's fisheries research vessel John R. Manning. The vessel returned to its



John R. Manning Cruise 25, May 2-June 7, 1955.

40° N. latitude. Neither long-lining nor intensive trolling revealed any commercial concentrations of albacore tuna on this section, and a long trolling run to the southeast followed by another series of long-line stations along 165° W. longitude produced similarly negative results. Indications are that the albacore which earlier cruises have shown to be present in this area during the winter may migrate elsewhere en masse in the summer, perhaps to the United States and Japanese coasts, where there are active albacore fisheries at this season.

The eight long-line stations were fished between 28° N. and 40° N. latitude on the meridian of 175° W., and 6 stations on 165° W. between 31° N. and 41° N. These

Pearl Harbor base on June 7 after slightly more than a month of extensive fishery exploration in waters northwest of Hawaii. The cruise was one of a series being made at various seasons to test the commercial fishing potential of the area as a fishing ground for albacore tuna, the most sought-after and valuable species of tuna. This cruise was carried out simultaneously with operations of another Honolulu-based Service research vessel, the Hugh M. Smith, in waters northeast of the Islands, and with a coordinated cruise of the N. B. Scofield of the California Division of Fish and Game off the West Coast of the United States.

The John R. Manning sailed from Pearl Harbor on May 2, stopped at French Frigate Shoals, Lisianski, and Midway islands for a study of the potential tuna live-bait present in the lagoons, then fished a series of eight long-line stations north on the 175th west meridian to the vicinity of

sets (40 baskets of 13-hook gear or 520 hooks each) took no albacore or other tuna. Four additional sets (20 baskets of 13-hook gear) were made at stations between 29° N., 160° W., and Honolulu. The tuna catch of these stations comprised 7 large big-eyed tuna, of which 2 were tagged and released.

Six jig lines with various lures were trolled at 6-6½ knots for 5½-6 hours each day on the long-lining sections and for 14 hours each day on the runs between sections, for a total of 210 hours. One 7-pound albacore, taken at 35°38' N., 165°04' W. at a surface water temperature of 64° F., was the only tuna catch from this fishing. No indications of surface tuna schools were seen. Near the southern extreme of the survey area small dolphin, 55 to 65 cm. in total length, were fairly abundant and 19 were taken by trolling.

The principal catch of the long lines was great blue shark. As the John R. Manning worked northward along its long-lining sections, these fish decreased in average size but increased in numbers to a maximum day's catch of 54. At the northernmost stations on both sections this shark became less abundant and apparently began to be replaced by mackerel shark or porbeagle (Lamna cornubica), which were mostly of small size. The long lines also took some 41 lancetfish (Alepisaurus sp.), of which 30 were preserved for study.

In order to observe oceanographical and biological factors related to albacore occurrence, 8 night-light stations were occupied along the 175° W. section and 1 on the trolling run between sections. Saury were attracted to the light at all stations. Those collected at the southernmost stations were only 2-3 inches long, but there was a progressive increase in size to the northward to a maximum of about 10 inches. Abundance was generally low, but one concentration was thought to have had baiting potentialities for an estimated 2,000-3,000 6-inch saury gathered around the light at 35° N. in 61° F. water.

Frequent bathythermograph casts were made and the surface water temperature was recorded continuously. Fishing was done over a surface temperature range of 50° to 76° F. On both the 175° W. and 165° W. sections the water cooled to the northward in a number of irregularly spaced abrupt steps of 1° to 3° F., with occasional temporary reversals of the trend. The surface temperatures on the 165° W. section were generally higher than at the same latitudes on 175° W. but they fell off very steeply toward the northern end of the section between 39° N. and 41° N. (almost 7° F. in approximately 100 miles).

Secchi disk observations showed blue-green water of low transparency lay in a narrow band at around 36° N. on 175° W. and 39° N. on 165° W., with surface water temperatures of 56° to 60° F. This murky water was abundantly populated by salps and appeared to be the zone of greatest saury abundance.

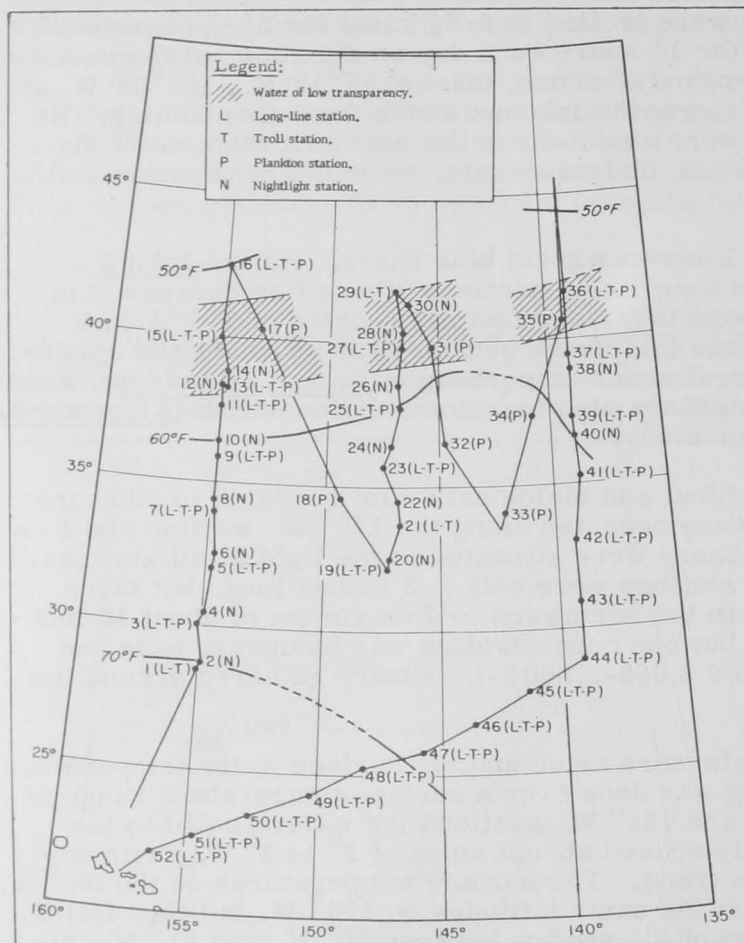
In order to assay the live-bait resources of the islands visited, surveys of the live-bait stocks were made in the lagoons of French Frigate Shoal, Lisianski Island, and Midway Island. Estimated quantities of bait fish seen at these islands were 70, 75, and 325 buckets, respectively. The bait was predominantly "iao," with smaller quantities of "piha" and "aholehole." Observations of monk seals and nesting sea birds at these islands were also recorded.

Regular fish-school and bird watches were kept when under way. Small numbers of whales, porpoise, fur seals, and sunfish were seen, and from 5 to 20 Laysan and black-footed albatross accompanied the John R. Manning at all times; other sea birds being seen only infrequently.

Calm to moderate seas, and fine weather, except for a few days of fog, prevailed throughout the cruise.

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"HUGH M. SMITH" REPORTS ALBACORE TUNA SCARCE IN MAY NORTH AND NORTHEAST OF HAWAII (Cruise 29): Only one albacore tuna was caught in an area north and northeast of Hawaii during a 43-day 6,000-mile cruise by the Service's research vessel Hugh M. Smith completed June 14. This was similar to



Hugh M. Smith Cruise 29, May 2-June 14, 1955.

to 100 pounds each were tagged and released after capture on the long lines. The area of capture was outside the scope of the local sampan flag-line fishery, but it was hoped that some of the marked fish may turn up in the Hawaiian commercial catch and thus provide important information on albacore tuna migrations.

The Hugh M. Smith fished 30 long-line stations using at each station 40 baskets of 13-hook gear, 20 baskets with 5-fathom float lines, and 20 with 15-fathom float lines, alternated in groups of 10 baskets.

No albacore tuna were taken on the long lines. The total catch for the 30 long-line stations was: 71 big-eyed tuna, 1 skipjack tuna, 1 yellowfin tuna, 1 striped marlin, 2 short-nosed spearfish, 160 Alepisaurus sp., 216 great blue shark, 8 mako shark, 5 mackerel shark, 23 dolphin, 3 moonfish, 1 wahoo, and 1 leatherback turtle.

Trolling at optimum speed (6-7 knots) with 4 to 6 lines was carried out on long-line stations while patrolling the long-line gear, during daylight hours while running to the succeeding long-line station, and on the trolling sections. The catch from 1,597 line-hours of trolling was 1 albacore (total length 50 cm.) and 5 dolphin. The albacore was taken at 28°56' N. latitude, 139°07' W. longitude.

the experience of another Service research vessel (John R. Manning) in the area northwest of Hawaii during a simultaneous cruise. The California research vessel N. B. Scofield also cooperated in this series of cruises and fished in waters off the West Coast of the United States. The primary mission of the Hugh M. Smith was to discover whether albacore tuna are present in important quantities in the waters north and northeast of the Hawaiian Islands in the early summer, and how the pattern of their distribution compares with that revealed by several similar cruises made last winter.

The Hugh M. Smith fished with tuna long-line gear at 30 locations extending as far as 45° N. latitude and intensive trolling was carried on between long-line stations. The vessel caught only one albacore in this area which contained much larger numbers last fall and winter.

A good concentration of big-eyed tuna was found about 700 miles northeast of Hawaii on the return voyage. Fifteen of these tuna ranging in weight from 80

Big-eyed tuna were taken on the long-line gear on the southern stations of 2 of the 3 longitudes fished (155° W. and 139° W.) and on the series of stations fished diagonally from 139° W. to Honolulu. Of a total of 71 big-eyed tuna caught, 62 were taken on the diagonal fishing section and 54 of these were caught on 3 successive days at 26°43' N., 143°42' W.; 25°52' N., 145°50' W.; and 25°14' N., 148°10' W. The high catches in this area probably resulted from the presence of schooling big-eyed tuna, as one school was observed following the vessel on the second of these three stations. These fish were apparently attracted to the vessel by the discarded long-line baits and the discarded viscera of landed fish. An examination of the stomach of a big-eyed tuna (124 pounds) caught at the surface with a hand line revealed 35 herring (long-line bait). Examination of stomachs of a few long line-caught big-eyed tuna also revealed long-line baits and tuna viscera.

The recording thermograph was run continuously throughout the cruise and showed a gradual decrease in temperature northward on all sections. There were no drastic temperature discontinuities noted. A study of the subsurface temperatures showed a very shallow thermocline, which was indistinct on many occasions. Salinity samples were taken at each station and at BT casts between stations.

Most of the 34 plankton hauls yielded very small collections. Only those hauls taken north of 37° N. latitude resulted in heavy catches. The biggest haul (filling 3 half-gallon jars) was made at 37°40' N., 154°49' W., and consisted mostly of salps.

Fifteen 1-hour night-light stations were made on the 3 north-south long-line fishing sections. A careful observation of the saury showed that generally juvenile fish (1 to 3 inches) were found in the more southern latitudes while the larger saury (8 to 10 inches) were located farther north. Not more than 25-50 saury were seen at any one time.

One unidentified school of fish was observed breaking water at 37°40' N., 154°49' W. Other observations showed numerous flocks of birds between 37°-40° N., and sightings of fur seals were not uncommon in the northern section of the area covered.

Other biological work conducted on the cruise included: (1) a total of 19 tunas (1 albacore, 17 big-eyed, 1 yellowfin) were tagged with plastic vinylite tags and released; (2) stomachs were preserved from 41 big-eyed and 1 skipjack tuna and gonads from 16 female big-eyed were also saved; (3) morphometric measurements were taken from 45 big-eyed, 1 skipjack, 1 short-nosed spearfish, 1 mako shark, and 2 mackerel sharks; (4) eleven *Alepisaurus* sp. were saved; (5) secchi-disc lowerings were made at each long-line fishing station and the results showed clear water (12-14 fathoms) up to 38° N., then a region of turbid water (6-7 fathoms), which on 155° W. was followed again by clear water at 42° N. latitude.

Good weather was prevalent throughout most of the cruise, with only one long-line fishing station (most northern station on 139° W. longitude) omitted because of adverse weather. Weather reports were sent daily through the Coast Guard at 1200 GCT.

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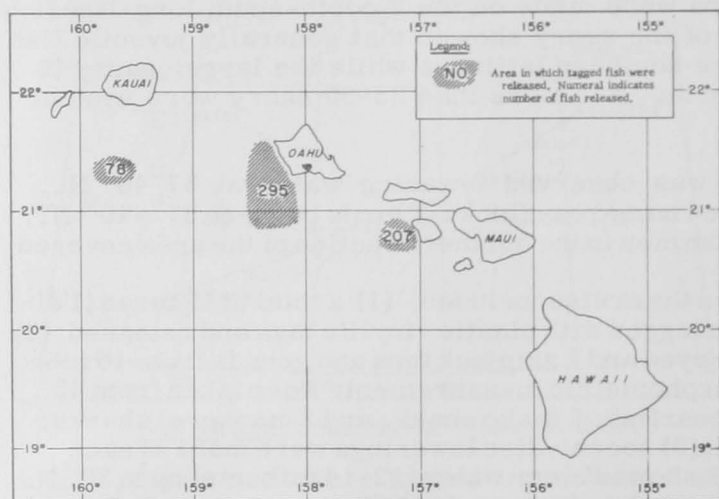
FIRST TAGGED TUNA RECOVERIES IN HAWAIIAN WATERS: The efforts of fishery researchers and commercial fishermen to trace the migrations of Hawaii's skipjack tuna (aku) schools have begun to bear fruit with the recapture of two tagged tuna near Lanai on July 12, according to the Director of the Service's Pacific Oceanic Fishery Investigations. The fish, caught by the sampan *Olympic*, had been marked and released by the Service's research vessel *Charles H. Gilbert* in the same area on June 1 and 8 of this year. At the time of tagging the two skipjack tuna were in different schools, both composed of fish weighing about 7 pounds. During the period from May 30 to June 8 a total of 207 aku were tagged in the Lanai area.

Although these recaptures do not provide any evidence of spectacular migrations, but indicate rather that the schools of small skipjack are comparatively stationary at this season, they do give encouraging indications that the fish can survive the handling necessary for tagging and the encumbrance of a vinyl plastic tube threaded under the skin of their backs behind the dorsal fin. This type of tag, developed and widely used by the State of California, has made some astounding records on other species of tuna, as for example in the case of an albacore tuna marked in September 1954 off the California coast and recaptured in Japanese waters in April 1955. Local fishery scientists hope that this record may eventually be rivaled by fish tagged in Hawaiian waters.

There is now a total of 1,799 tuna of various species swimming about the Pacific, trailing plastic tubing inscribed with a Honolulu return address. They include 80 albacore, 73 big-eyed, 621 yellowfin, 1 kawakawa (little tunny), and 1,024 skipjack. The program is continuing, with 121 more aku tagged in 2 days aboard the Charles H. Gilbert recently, and with additional tagging on July 7 aboard the commercial fishing sampan Venus. Fishermen have been informed by means of posters and press releases to be on the lookout for tagged fish.

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MORE SKIPJACK TUNA TAGGED BY "CHARLES H. GILBERT" NORTHWEST OF HAWAII (Cruise 21): A total of 580 skipjack tuna was tagged with the California



Charles H. Gilbert Cruise 21, May 18-June 9, 1955.

type G tag northwest of Hawaii by the Service's research vessel Charles H. Gilbert during a one-month cruise ending June 10. Of these 563 were of the 4½- to 10-pound size, while 17 were of the 25- to 30-pound size. Of the smaller fish, 78 were released southwest of Kauai, 27 southwest of Pearl Harbor, 251 off the Waianae coast, and 207 off the west coast of Lanai. The 17 larger fish were released southwest of Oahu.

Experiments were made with electricity as a possible means of reducing injuries to fish during the tagging. Electronarcosis was tried on skipjack tuna from 4 different schools. Alternating current of 10, 15, and 20 volts was used on one school of 5- to 8-pound skipjack. Direct current of 6, 13, 19, and 26 volts was used on 2 schools of 5- to 8-pound skipjack and direct current of 13, 19, and 26 volts was used on 1 school of 18- to 24-pound skipjack. In general the results were very erratic and of such a nature as to discourage the use of electricity as a means of quieting skipjack for tagging.

To obtain skipjack for use in honeycombing experiments, 80 5- to 9-pound skipjack, and 90 25- to 30-pound skipjack were obtained.

Surface temperatures were obtained through continuous use of the thermograph. Subsurface temperatures were obtained by use of the BT wherever fish were caught and at other irregular intervals.

Various lures were used on four trolling lines. A total of 6 fish were caught-- 4 dolphin and 2 yellowfin tuna.

Two small yellowfin tuna caught May 13 were delivered to Coconut Island on May 14. These fish were not tagged.

Whenever possible broadcasts were made to the local fleet on a twice-daily scheduled broadcast, although on a few occasions they were unintentionally omitted. Response from the fleet indicates that these broadcasts were useful to commercial fishermen.

Bait mortality was a major factor contributing to the number of days required for baiting. Often 90 percent of the nehu (anchovy) placed in the tanks died before being used. This was especially true during the first half of the cruise. Bait obtained from Pearl Harbor seemed much less hardy than that obtained in the relatively open waters of Maalaea Bay. In attempting to trace the cause of the mortality, a number of oxygen determinations were made of the water in the tanks. Preliminary evaluation of these tests does not indicate that lack of oxygen was the cause of death.



Saltonstall-Kennedy Act Fisheries Projects

ADVISORY COMMITTEE ENDORSES VIGOROUS FISHERY RESEARCH: The vigorous program of fishery research and market development which the U. S. Fish and Wildlife Service is undertaking in the current fiscal year has received the strong endorsement of the American Fisheries Advisory Committee, Secretary of the Interior Douglas McKay said September 2.

Plans for some 100 projects being financed under the Saltonstall-Kennedy program to promote trade in domestically-produced fishery products were outlined to the Advisory Committee at its meetings in Boston on August 25 and 26, Director John L. Farley of the Fish and Wildlife Service informed Secretary McKay.

The Committee of experts from the commercial fishing industry was particularly pleased with the departmental policy of contracting with educational institutions and private research organizations, Director Farley reported.

Of the \$3,000,000 allocated in the first year of the Saltonstall-Kennedy program which ended last June 30, Director Farley said, the Fish and Wildlife Service contracted for \$1,311,000, or about 44 percent of the work, under the program. It is expected that a similar proportion of the program work for the current year will be done outside the Government under auspices of the Fish and Wildlife Service.

Director Farley, who substituted for Assistant Secretary Orme Lewis as chairman of the Advisory Committee at the Boston meetings, said the committee reviewed programs totaling some \$2,730,000 for which funds already have been allocated out of the current year's \$3 million Saltonstall-Kennedy Appropriation. Plans for expenditure of the remaining \$270,000 also were discussed, he said.

A report on accomplishments during the first year of the program was presented by Director Farley, A. W. Anderson, Chief, Branch of Commercial Fisheries, and Dr. L. A. Walford, Chief, Branch of Fishery Biology.

The broad policy recommendations adopted by the Committee at its first meeting in Washington were reaffirmed and continuance of the Service's present program was urged.

The Advisory Committee discussed a proposal suggesting that part of the Saltonstall-Kennedy funds be apportioned among the States but advised against this type of

apportionment. Instead, the Committee recommended that funds continue to be made available to research organizations on a contract basis for specific types of research and educational and marketing activities as provided for by the Act. At its April meeting, the Committee had recommended against committing funds for major construction projects, a policy which was adopted and has since been followed by the Department.

While in Boston, the members of the Committee were taken on a complete tour of a modern plant processing fish sticks and precooked fish fillets.

Future meetings of the Committee, according to Director Farley, will be scheduled with two ideas in mind: (1) to provide an opportunity for the Committee to study important recent developments in various fish-producing centers of the United States; and (2) to learn at first-hand of problems confronting segments of the domestic fishing industry. The Committee's next meeting will be held at Long Beach, Calif., in the spring of 1956.

The 15 members of the Committee who attended the Boston meeting were: Harold R. Bassett, Salisbury, Md., Lawrence Calvert, Seattle, Wash., James S. Carlson, Boston, Mass., E. M. Concannon, Chicago, Ill., Mark L. Edmunds, Garibaldi, Oreg., David H. Hart, Cape May, N. J., Donald P. Loker, Terminal Island, Calif., Arthur H. Mendonca, San Francisco, Calif., J. Richards Nelson, Madison, Conn., Moses B. Pike, Eastport, Maine, H. F. Sahlman, Fernandina Beach, Fla., Thomas F. Sandoz, Astoria, Oreg., Arthur Sivertson, Duluth, Minn., Lawrence W. Strasburger, New Orleans, La., and George R. Wallace, Morehead City, N. C.

Three members, Leon S. Kenney, St. Petersburg, Fla., Earl B. Webster, Brownsville, Tex., and Alphonse J. Wegmann, Pass Christian Isles, Miss., were unable to attend.

Some of the major projects already undertaken with funds made available by the Saltonstall-Kennedy Act are: (1) development of voluntary Federal grades and standards for fishery projects; (2) development of a chemical test as a measure of the nutritive value of fish meal; (3) development of new uses for fish oils; (4) exploration of deep-water fishing grounds in the North Atlantic; (5) research on fluctuation of the California sardine; and (6) study of causes and control of toxic red tide off the Florida coast.

Under the Saltonstall-Kennedy Act, the Secretary of the Interior is authorized to appoint a group of experts from the domestic fishing industry to advise him on industry problems embraced by the legislation. The Advisory Committee consists of 19 representatives of the industry, appointed to serve until June 30, 1957.

Some accomplishments credited to the Saltonstall-Kennedy program during its first year include:

Two joint industry-Government sales promotion campaigns were conducted to move into trade channels excessive stocks of haddock and canned tuna. Both were highly successful.

Through exploratory fishing operations, significant catches of shrimp were made in deep water in the North Atlantic south of Nova Scotia by the Service's vessel Delaware, within range of the larger New England trawlers. Large ocean perch also have been taken in deep water.

The first of the voluntary standards of grade and condition for fishery products has been developed and drafted. This set of standards--for fish sticks--is being reviewed by the industry and a final draft will be prepared as soon as all comments have been received.

In the field of biological research, a light float plane used in red tide research has not only demonstrated a saving of time and money but it has given increased coverage of the long Florida coastline. Use of this plane permits early detection of a red-tide outbreak so that application of control measures can be applied immediately.

The operation of a research vessel at sea has given increased scope to data collection over the Pacific sardine spawning areas which has made possible a prediction of bigger catches in this year's fall and winter fishery.



School-Lunch Program

PRECOOKED FISHERY PRODUCTS WELL ACCEPTED IN SCHOOL LUNCH-ROOMS: To the school-lunch manager looking for a fish dish that is easy to prepare and that pupils will like, precooked fish sticks and fillets can be the answer. Delivered to the school kitchen packaged and frozen, easy to prepare and accurately portioned, the two ounces of protein required for the Type-A lunch is conveniently met and without waste.

Precooked fishery products were introduced to the school-lunch program about two years ago and have steadily increased in popularity since then. School-lunch managers in Massachusetts and North Carolina schools, for instance, say that precooked fish sticks have found enthusiastic school-lunch acceptance by students who have consistently refused to eat fish prepared by other methods. But, equally as important, is the fact that when the children return to their homes and indicate their desire for fish sticks, the household market is also increased, for finding foods that attract children is a problem for every parent.



Fish sticks and other precooked fishery products are being used regularly by school lunchrooms.

Fish sticks and other precooked fishery products are now available throughout the country and are being used regularly by school lunchrooms in the feeding of thousands of school children in the United States.

State school-lunch programs are required to serve two ounces of cooked protein in each Type-A school lunch. Precooked fish sticks, which are served as two one-ounce sticks to each Type-A school lunch, meet this requirement.

The school-lunch program operates in every state in the union and is responsible for the feeding of over 9 million students daily throughout the school year. Each year the program reaches more children and every year the schools serve better meals. More than two out of every three meals served now meet the Type-A requirement, reports the January 1955 issue of Practical Home Economics.



Service's Program to be Maintained at High Level for 1956

With close to \$55 million available in appropriated and special funds, programs of the U. S. Fish and Wildlife Service in the next 12 months will continue at the same high level as in the past fiscal year, Secretary of the Interior Douglas McKay announced July 31.

"The Department's work in helping protect and expand the priceless fish and wildlife resources of our country is more important than ever with the number of hunters and fishermen increasing by leaps and bounds each year," Secretary McKay said. "We intend to carry it forward with the utmost vigor."

Funds appropriated directly by the Congress for use in fiscal 1956 amount to \$12,675,500. This is an increase of \$1,222,500 over the 1955 amount.

Appropriated funds, however, constitute only about one-fourth of the total available to the Service. About three-fourths of the Service's appropriations come from special funds such as the revenue from duck stamps, taxes on fishing tackle, and arms and ammunition, and other sources.

In addition to the \$3 million which the Service will have for an expanded fishery program during the second year of the Saltonstall-Kennedy Act, a direct appropriation of \$1,108,000 will be available for research and marketing programs to aid the commercial fishing industry.

About \$353,000 will be expended during fiscal year 1956 in the exploration of new fishing grounds to determine the character, extent, and availability of the deep water resources.

Exploration of the North Pacific for offshore salmon populations and exploratory surveys in the Gulf of Mexico for additional information on the tuna and shrimp resources will highlight the 1956 program. During 1955 Service exploration in the Gulf of Mexico turned up a remarkable discovery of a subsurface population of tuna.

Fishery technological research is intended to promote the most efficient utilization of marine products and is designed primarily to assist industry in improving methods of handling, processing, and marketing these products. With funds of \$282,000, main emphasis in 1956 will be placed on quality control through development of voluntary standards of grade and condition for fishery products. Standards are already being developed for fish sticks and frozen haddock fillets. The fishing industry has recently displayed considerable interest in the development of adequate standards and grades. Most of this work will be centered at the Service's Boston, Mass., and College Park, Md., fishery laboratories. The effects of freezing and cold storage on fish in order to improve the products which reaches the consumer is the subject of extensive research.

The increasing importance of international trade in fishery products and the larger imports of these products into the United States from foreign countries is resulting in considerable attention being given to the collection and analysis of import and export data for the guidance of the fishing industry. Other economic studies of domestic marketing situations will be made to aid the industry and Government in maintaining the orderly output of fishery products. For fishery economic studies, \$43,000 will be available in 1956.

Statistical coverage of the fishing industry as a basic part of the program will provide management and research personnel with valuable data on employment, production trends, stocks in cold storage, and other needed production and marketing facts. Funds for this work amount to \$150,000.

The Service's seven Market News offices, located at important fish-producing and consuming areas in the United States, will continue the issuance of daily reports on supply, demand, market, and prices. Funds for this purpose amount to \$280,000.

The Service received direct appropriations of \$2,489,000 in 1956 for fishery biological research. This amount is divided among the following activities; coastal and offshore fishery research, \$1,655,000; commercial fishery research, \$213,600; inland fishery research, \$590,400; and \$30,000 for designing fish protective devices.

In addition to the direct appropriations, many of these activities will benefit from Saltonstall-Kennedy and other funds.

The direct appropriation includes \$350,000 for research on the Great Lakes fisheries, with particular emphasis on the development of economical methods for controlling sea lampreys and the operation and maintenance of experimental and interim sea lamprey control devices in streams tributary to Lakes Michigan and Superior. The funds so provided will keep up the United States' share of research and control until an International Commission for the Great Lakes can be established as provided in the Treaty signed September 10, 1954, and ratified by the President, with the consent of the Senate, on June 1, 1955.

The administration of the various fish and game laws in the United States and Alaska which the Service is charged with enforcing will have \$3,589,100 in 1956 from all sources. This includes the administration of the Alaska fisheries and the Alaska game laws, enforcement activities under the Migratory Bird Treaty and Lacey Acts, enforcement of the Black Bass, Bald Eagle, Sockeye Salmon, and Northern Pacific Halibut Acts, administration of the Whaling Treaty Act and the Northwest Fisheries Convention Act. In connection with enforcement of the haddock provisions under the Northwest Fisheries Convention Act, Congress provided an extra \$8,500 to the Service for the employment of an experienced fishery law enforcement officer who will be headquartered at Gloucester, Mass.

Funds available for the Service's Federal Aid in Wildlife and Fish Restoration programs under the Pittman-Robertson and Dingell-Johnson Acts are expected to be somewhat in excess of last year's, with around \$11 million anticipated for wildlife and about \$5 million for sport fish work. These funds are of vital importance in the restoration and better management of the fish and wildlife resources in the 48 States.

Implementation of recommendations made by a Survey Team designed to increase efficiency and produce greater results with available funds will be continued in fiscal year 1956 with an increased appropriation of \$35,000.

The Team's recommendations, approved by the Secretary on July 2, 1954, emphasized the need to decentralize authority from Washington to regional offices so as to promote closer cooperation with the States. These new funds will provide assistance to regional directors so they may assume additional delegations of authority.

The Service will use \$210,000 in 1956 to continue construction of two new hatcheries at Millen, Ga., and North Attleboro, Mass., and to erect new buildings at the Pittsford, Vt., Welaka, Fla., and Springville, Utah, stations.

A substantial increase in the output of hatchery-reared fish for stocking inland lakes and streams is expected to result from additional funds amounting to \$305,000 which were appropriated to the Service in fiscal year 1956 for its fish propagation and distribution work.

At the present time the Service operates 89 fish-cultural stations in 42 States. In calendar year 1954, these hatcheries produced and distributed 208,000,000 fish, weighing 1,393,000 pounds.

For 1956, funds to provide for the maintenance of hatcheries, equipment, and fish screens were increased by \$155,000. This will permit a more adequate program of maintenance at hatchery installations and the necessary replacement of equipment.

An additional \$150,000, to step up fish production, was added to the operating allotments of 28 hatcheries for which Congress provided funds for improvement and expansion of facilities in the past five years. These hatcheries are located in areas where the demand for fish for stocking purposes has greatly exceeded the present production of these units. The increase of \$150,000 will permit the expanded facilities at these units to be utilized to 92 percent of capacity. Also the Service will resume in 1956 its important mussel propagation program which was temporarily discontinued.

In Alaska, where the commercial fisheries provide the chief source of wealth and employment, and a major source of tax revenue, the Service's salmon conservation program in 1956 will continue at the same level as in the past two years. Better coordination of field activities and improvement of law enforcement and management programs can be expected as a result of the recent reorganization of the field staff.

"For fur-seal work on the Pribilof Islands expenditures during 1956 will total about \$1,231,000. During this period, contractors will complete construction of houses, school, and hospital buildings, warehouses, and other facilities for the native Aleut population of the Islands at a total cost for the program of \$1,500,000."

Congressional funds of \$337,000 provide an increase of \$74,000 for studies in connection with water resource developments to determine means for lessening any adverse effect on the fish and wildlife resources. Moreover, the funds provided are subject to less limitation on use than in previous years, since they provide for the financing of a "hard-core" staff for river basins investigations for the first time.

One of a number of major studies during 1956 will be in connection with the extensive Central and Southern Florida project of the Corps of Engineers, authorized by the Congress in 1954. A project of this magnitude can be expected to have widespread effects on fish and wildlife resources, including coastal fisheries. Units of the project will be studied and constructed by the Corps over a number of years. The size and importance of this project led the Fish and Wildlife Service to establish a new field office at Vero Beach, Fla., in 1955 to conduct necessary studies. In 1956 this office will be expanded and the studies will be accelerated.



Service Expanding Motion-Picture Program

One of the most effective methods of publicizing fisheries and fishery products is through the use of motion pictures. Many commercial fishing firms have found that a motion picture serves as a good follow-up to their sales and promotional activities.

The U. S. Fish and Wildlife Service is expanding its educational fishery motion-picture program, and at the present time four pictures are in various stages of production. These will be in addition to the 10 that already have been produced and placed in circulation. The new production schedule includes:

1. Fishing With an Outboard, being produced cooperatively with Johnson and Evinrude Divisions of Outboard, Marine and Manufacturing Company.
2. Shrimp Tips from New Orleans, being produced cooperatively with the Peelers Company of New Orleans, La., manufacturers of shrimp peeling and deveining equipment.
3. Film on standards of fish sticks and other breaded fishery products-- title not yet selected.
4. General interest film on the Nutritive Value of Fish.

In order to meet the heavy demands for these pictures from business, educational, and civic groups, the Service is now distributing its films through more than 100 film libraries. Before the end of the year it is anticipated that this number will be increased to 150.

Members of the fishing industry interested in borrowing prints of the pictures can do so by addressing their requests to the Branch of Commercial Fisheries, Fish and Wildlife Service, U. S. Department of the Interior, Washington 25, D. C.

Many of the films have also been cleared for television showing. More detailed information is available in Fishery Leaflet 255, which is also available from the Service.



Shooting a scene for the 16 mm. motion picture Fishing with an Outboard being produced cooperatively by the U. S. Fish and Wildlife Service and Johnson and Evinrude Divisions of Outboard, Marine and Manufacturing Company.



South Carolina

FISHERIES BIOLOGICAL RESEARCH PROGRESS, APRIL-JUNE 1955: Oyster Research: Continuing the taxonomic study on the boring sponge and their affect on oysters by the State of South Carolina's Bears Bluff Laboratories, a collecting trip was made aboard the 40-foot research vessel from Bears Bluff northward to the Santee River, to collect samples of sponged oysters. The trip extended from April 12 through April 15. Specimens were collected in as many environments as possible. Oysters in the South Santee River have become infested with a large population of oyster drills--Urosalpinx. Presumably this increase in infestation is due to the high salinity now prevalent in the Santee River, according to Progress Report No. 24 from the Bears Bluff Laboratories.

Shrimp Investigation: During April, May, and June a survey of the waters beyond the commercial fishing grounds was carried out aboard the 65-foot research vessel recently secured from the Department of the Army. A total of 131 experimental drags were made with 20- and 30-foot otter trawls (see maps). Few shrimp

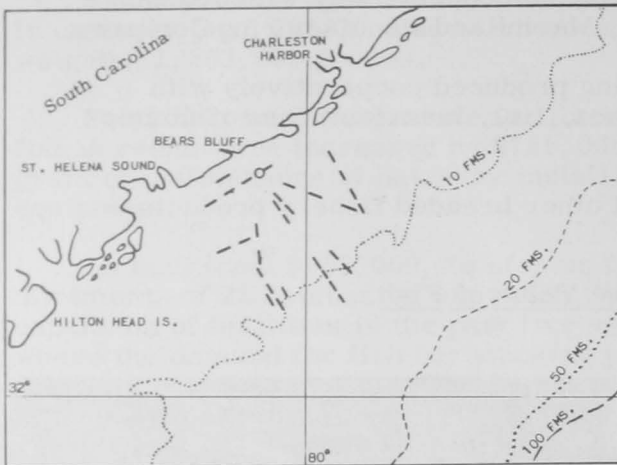


Fig. 1 - April 1955 explorations (38 drags) beyond the commercial fishing grounds off South Carolina by that State's research vessel. Each dash indicates an area investigated.

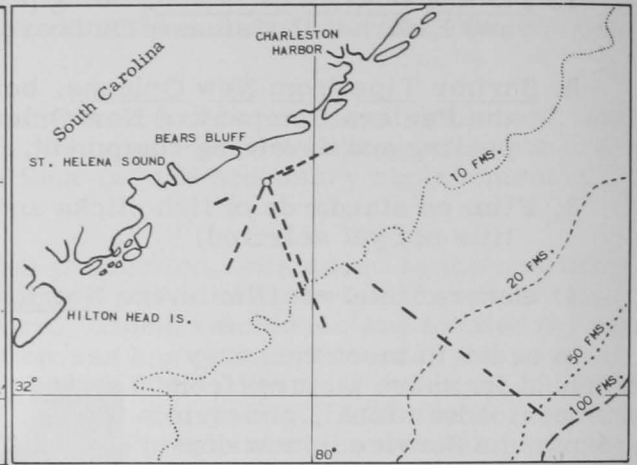


Fig. 2 - May 1955 explorations (50 drags) beyond the commercial fish grounds off South Carolina by that State's research vessel. Each dash indicates an area investigated.

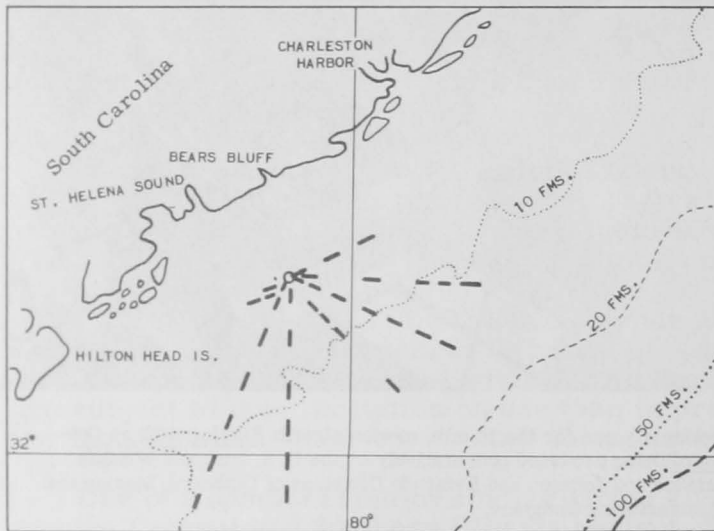


Fig. 3 - June 1955 explorations (43 drags) beyond the commercial fishing grounds off South Carolina by that State's research vessel. Each dash indicates an area investigated.

were found beyond the normal shrimping grounds. Many specimens of unusual and seldom locally-seen marine life were taken, particularly in the vicinity of the 10-fathom curve on sponge beds. In addition to experimental trawling some hook-and-line fishing was tried. Sea bass or black fish were abundant at 10 fathoms. Red snapper, vermilion snapper, and scup or porgy (*Sparidae* sp.) were readily caught at 25-30 fathoms.

Figures 1, 2, and 3 show the work thus far accomplished. Each dash indicates an area investigated. Catches are analyzed, and position, water temperatures, and depths are recorded.

In continuing the study of the shrimping industry in South Carolina, the 40-foot research boat was used sparingly during this quarter until the first part of June when a piston disintegrated in the main engine while the boat was operating in the mouth of St. Helena Sound.



Swift Resigns from Fish and Wildlife Service Post

The resignation of Ernest F. Swift as Assistant Director of the U. S. Fish and Wildlife Service was announced August 25 by Acting Secretary of the Interior Clarence A. Davis.

Swift has accepted an offer to become Executive Director of the National Wildlife Federation, effective October 1. Federation headquarters are located in Washington, D. C.

Swift was appointed Assistant Director of the Fish and Wildlife Service on March 17, 1954, and has been concerned primarily with wildlife activities and field operations of the Service.

Prior to joining the Service, Swift had been associated with the Wisconsin Conservation Department since June 1926, serving as Director of the Department from November 1947 until he accepted the Federal appointment.



U. S. Commercial Fisheries Estimated Expenditures, 1954

Expenditures of the United States commercial fisheries in 1954 were estimated at \$626 million, according to data compiled by the Service's Branch of Commercial Fisheries (table 1). This is the amount spent by the fisheries over and above the expenditures for raw materials, purchases, compensation of fishermen, direct and indirect labor, losses for depreciation, and taxes.

The processors and canners of fishery products expended the largest share of these expenditures--\$208 million. Retailers, vessel owners, and wholesalers followed in that order.

The vessels owners spent an estimated \$141 million in 1954 (table 2). The largest expenditures by this group was for boat supplies and repairs. Food for the crew and fuel were also major items for vessel owners.

The processors and canners of fishery products in the United States during 1954 had expenditures estimated at \$208 million (table 3). Cost of containers (cans, cases,

Table 1 - Estimated Expenditures, of the United States Commercial Fisheries, 1954^{1/}

| Type of Business | Value \$ Million |
|----------------------------------|---------------------|
| Vessel owners | 141 |
| Processors and canners | 208 |
| Wholesalers | 125 |
| Retailers | 152 |
| Total | 626 |

^{1/} Does not include expenditures for raw material, purchases, compensation of fishermen, direct and indirect labor, losses for depreciation, and taxes.

Table 2 - Fishermen Vessel Owners' Estimated Expenditures for Specified Items, 1954^{1/}

| Item | Total Income | Value |
|-------------------------------------|--------------|------------|
| | % | \$ Million |
| Total income | 100 | 345 |
| Estimated expenditures: | | |
| Boat supplies and repairs | 11.8 | 40 |
| Fishing gear and nets | 3.7 | 13 |
| Ice | 4.0 | 14 |
| Fuel | 7.2 | 25 |
| Food for crew | 7.5 | 26 |
| Insurance | 4.4 | 15 |
| Other | 2.4 | 8 |
| Total | 41.0 | 141 |

^{1/} Does not include depreciation, direct and indirect labor, compensation to fishermen and taxes.

Table 3 - Fishery Products Processors and Canners' Estimated Expenditures for Specified Items, 1954^{1/}

| Item | Total Income | Value |
|----------------------------------------------------|--------------|------------|
| | % | \$ Million |
| Total income | 100 | 580 |
| Estimated expenditures: | | |
| Transportation to cannery | 1.2 | 7 |
| Condiments | 5.1 | 30 |
| Insurance | 1.2 | 7 |
| Cans, cases, and labels | 17.7 | 103 |
| Repairs | 1.9 | 11 |
| Warehousing and freight | 2.4 | 14 |
| Sales, brokerage | 3.1 | 18 |
| Heat, light, and power | 0.6 | 3 |
| Advertising | 1.6 | 9 |
| Bank interest and miscellaneous expenses | 1.0 | 6 |
| Total | 35.8 | 208 |

^{1/} Does not include depreciation, direct and indirect labor, raw material, and taxes.

and labels) was by far the major item for this group, comprising almost one-half the total expenditures. Condiments and sales and brokerage costs were the next most costly items for the fishery products processors and canners in 1954.

costs were the next most costly items for the fishery products processors and canners in 1954.

Fishery products wholesalers in the United States spent \$125 million in 1954 (table 4), divided among many items. The largest of these was the expenditures for delivery of fishery products.

| Item | Total Income | Value |
|----------------------------------------------------------|--------------|------------|
| | % | \$ Million |
| Total income | 100 | 820 |
| Estimated expenditures: | | |
| Rent | 1.6 | 13 |
| Packaging supplies | 2.0 | 16 |
| Delivery expenditures | 3.5 | 29 |
| Refrigeration costs | 1.0 | 8 |
| Telephone and telegraph | 0.6 | 5 |
| Repairs | 0.3 | 2 |
| Heat, light, and power | 1.8 | 15 |
| Advertising | 0.5 | 4 |
| Insurance on buildings | 0.5 | 4 |
| Insurance on merchandise | 0.7 | 6 |
| Ice and water | 0.5 | 4 |
| Salesmen brokerage | 1.5 | 12 |
| Collection of debts and miscellaneous expenses | 0.8 | 7 |
| Total | 15.3 | 125 |

^{1/} Does not include purchases, wages and salaries, depreciation, and taxes.

| Item | Total Income | Value |
|-----------------------------------------|--------------|------------|
| | % | \$ Million |
| Total income | 100 | 1,070 |
| Estimated expenditures: | | |
| Rent | 3.6 | 39 |
| Ice and storage (warehousing) | 1.4 | 15 |
| Wrapping supplies | 2.4 | 26 |
| Delivery | 1.8 | 19 |
| Repairs | 0.9 | 10 |
| Gas and electricity | 0.5 | 6 |
| Telephone and telegraph | 0.4 | 4 |
| Insurance | 0.7 | 7 |
| Advertising | 1.4 | 15 |
| Laundry | 0.7 | 7 |
| Miscellaneous | 0.4 | 4 |
| Total | 14.2 | 152 |

^{1/} Includes fish retailers and fish departments in combination and chain stores. Does not include purchases, depreciation, wages and salaries, and taxes.

Retailers of fishery products (including departments in combination and chain stores) spent \$152 million in 1954 (table 5). Rent was the largest expenditure, followed by wrapping supplies, delivery, advertising, ice, and storage in that order.



U. S. Foreign Trade

FISH-STICK DUTIES EFFECTIVE JULY 24: The new duty rates affecting imports of fish sticks as provided for in Public Law 689, 83d Congress (68 Stat. (pt. 1) 896) became effective on July 24 when the President notified the Secretary of Treasury to that effect on July 22. These duties were negotiated with Canada at recent meetings of the General Agreement on Tariffs and Trade. The fish-stick duties, as published in the July 28 Federal Register, read as follows:

"SEC. 2 (a) Paragraph 720 of title I of the Tariff Act of 1930 (U.S.C., 1952 edition, title 19, sec. 1001, par. 720), is amended by adding at the end thereof the following subparagraph:

"(d) Fish sticks and similar products of any size or shape, fillets, or other portions of fish, if breaded, coated with batter, or similarly prepared, but not packed in oil or in oil and other substances, whether in bulk or in containers of any size or kind, and whether or not described or provided for elsewhere in this Act, if uncooked, 20 per centum ad valorem; cooked in any degree, 30 per centum ad valorem."

The proclamation signed by the President on July 22, 1955, gives effect to the results of the recent negotiations for the accession of Japan to the General Agreement on Tariffs and Trade. Under the Protocol for the Accession of Japan, which was signed for the United States on June 8, 1955, Japan became a contracting party, and the concession negotiated between the United States and Japan became effective on September 10, 1955. By August 11, 1955, two-thirds of the contracting parties to the General Agreement had cast the required favorable votes for the accession

of Japan under the terms of the protocol. The proclamation provides that the date of entry into force of the concessions negotiated by the United States shall be notified by the President to the Secretary of the Treasury and published in the Federal Register. An analysis of the results of these negotiations was issued by the Department of State on June 9, 1955.^{1/}

The letter from the President to the Secretary of the Treasury, carrying out the Protocol of terms of accession by Japan to the GATT and other purposes, appeared in the July 28 Federal Register as follows:

LETTER OF JULY 22, 1955

[CARRYING OUT THE PROTOCOL OF TERMS OF ACCESSION BY JAPAN TO THE GENERAL AGREEMENT ON TARIFFS AND TRADE AND FOR OTHER PURPOSES]

THE WHITE HOUSE,
Washington, July 22, 1955.

MEMORANDUM FOR THE SECRETARY OF THE TREASURY

Reference is made to my proclamation of July 22, 1955¹ carrying out the Protocol of Terms of Accession by Japan to the General Agreement on Tariffs and Trade and for other purposes.

Pursuant to the procedure described in Part II of that proclamation, I hereby notify you that the two agreements referred to in the thirteenth recital of the ²See Proclamation 3105, *supra*.

proclamation will enter into force on July 24, 1955.

I also notify you that the amendment to the Tariff Act of 1930 made by section 2 of Public Law 689, approved August 28, 1954, with respect to duties applicable to certain prepared fish shall enter into force on July 24, 1955.

DWIGHT D. EISENHOWER

As a result of the provisions of the exclusive trade agreement between the United States and Cuba, concluded on October 30, 1947, certain reductions in rates negotiated in connection with the accession of Japan will result in the elimination of the preferential tariff treatment now enjoyed by like Cuban products. Fresh or frozen frog legs are included in the list of Cuban products which change in duty with the entry into force of the Protocol for the accession of Japan. The previous Cuban preferential rate was 8 percent ad valorem, and the new rate applicable both to other GATT countries and Cuba is 5 percent ad valorem.

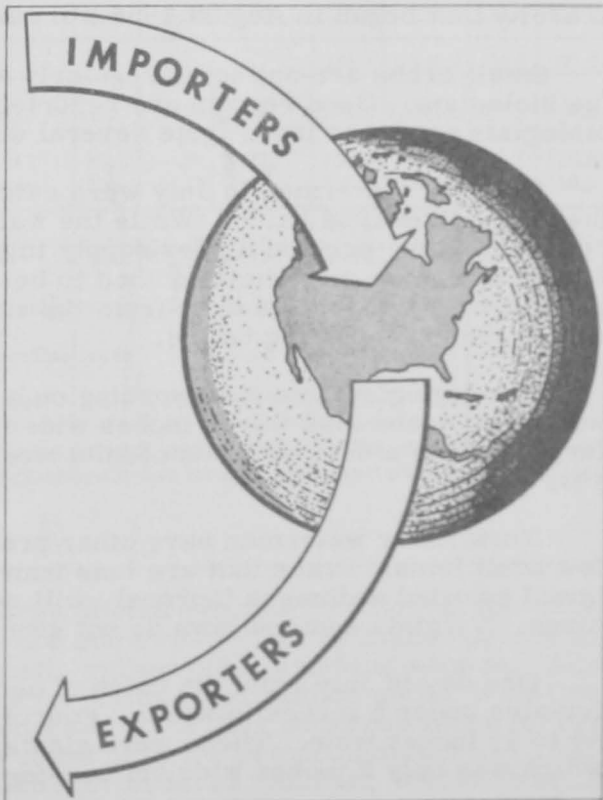
^{1/}See Commercial Fisheries Review, August 1955, pp. 62-63.

* * * * *

EDIBLE FISHERY PRODUCTS, MAY 1955: United States imports of fresh, frozen, and processed edible fish and shellfish in May 1955 totaled 57.1 million pounds

| United States Foreign Trade In Edible Fishery Products, May 1955 With Comparisons | | | | | | |
|-----------------------------------------------------------------------------------|----------|-------|----------|-------|-----------|-------|
| Item | May 1955 | | May 1954 | | Year 1954 | |
| | Qty. | Value | Qty. | Value | Qty. | Value |
| ... (In Millions of Lbs. & \$) ... | | | | | | |
| Imports: | | | | | | |
| Fish & shellfish; fresh, frozen, & processed ^{1/} | 57.1 | 17.1 | 69.9 | 18.3 | 801.7 | 202.8 |
| Exports: | | | | | | |
| Fish & shellfish; processed ^{1/} only (excluding fresh and frozen) | 7.9 | 1.4 | 3.1 | 0.7 | 50.8 | 13.2 |

^{1/} Includes pastes, sauces, clam chowder and juice, and other specialties.
Source: United States Foreign Trade (Trade by Commodity), Summary Report FT 930, May 1955, U. S. Department of Commerce.



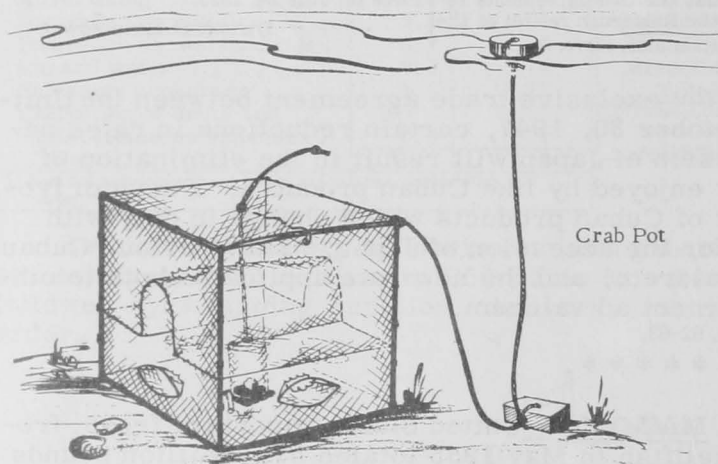
(valued at \$17.1 million), according to a Department of Commerce summary tabulation (see table). This was only a very slight decrease in quantity but a 16 percent-drop in value as compared with April imports of 57.2 million pounds. Compared with a year earlier, May imports were down 18 percent in quantity and 7 percent in value.

Exports of processed edible fish and shellfish (excluding fresh and frozen) in May 1955 amounted to 7.9 million pounds (valued at \$1.4 million). This was a decrease of 12 percent in quantity and 46 percent in value as compared with April exports of 9.0 million pounds (valued at \$2.6 million). May 1955 exports were up 155 percent in quantity and 100 percent in value as compared with a year earlier.



Virginia

INCREASED CRAB CATCH PREDICTED: The Virginia crab industry, watermen and dealers alike, are looking for an abrupt increase in the blue-crab catch this August, reports a July 13 release from the Virginia Fisheries Laboratory. Because of the scarcity of crabs which began about a year ago, crabbers are anxiously watching for signs of the new brood of crabs that will be the mainstay of their catch for next year.



They are anxiously watching for signs of the new brood of crabs that will be the mainstay of their catch for next year. The hatch of 1954 appears to have been good, judging from the large numbers of little crabs in the creeks this summer. Many of these will reach full size in August.

Crab research biologists at the Virginia Fisheries Laboratory at Gloucester Point are venturing to predict the future success of crabbing by measuring the abundance of small crabs. Predictions have been made since 1953. The bumper crop of 1953/54 and the

scarcity that began in August 1954 were successfully predicted.

Small crabs are collected regularly at five selected areas in the York River by the biologists. Good results are reported with a small experimental scrape. The biologists expect to investigate several other Bay areas eventually.

Crab pot fishermen in July were catching fair numbers of 3- and 4-inch crabs, the first of the 1954 hatch. While the watermen were glad to see so many small crabs, for they portend a good supply this fall and winter, the crabs were under the 5-inch minimum size limit and had to be culled from the catch. It is impossible to remove every undersize crab from the catch and some are steamed and find their way to the crab-picking tables.

The biologists are also working on a modification of the Virginia crab pot that will allow crabs less than 5 inches wide to escape but still retain those 5 inches and larger. Such a device, if successful would save hundreds of thousands of crabs each year.

York River watermen have other problems too, for they have been catching a few adult female crabs that are less than 5 inches wide. These adult females, with broad rounded abdomens (aprons), will never shed again and have reached their full sizes. Virginia seafood laws do not specify what should be done with these.

One day in July from the catch of about four watermen, the biologists found 17 females under 5 inches in width. Four were less than $4\frac{1}{4}$ inches, and five were from $4\frac{1}{2}$ to $4\frac{3}{4}$ inches wide. These were giants compared with one that was caught in 1945 which was only 2 inches wide but bearing eggs.

On the seaside of the Eastern shore, especially in Chincoteague Bay, many of the adult crabs are less than 5 inches wide. The Virginia Fisheries Laboratory hopes to determine whether the present size regulations should apply to these runts.



Wholesale Prices, July 1955

Wholesale price trends in the various fisheries were mixed from June to July. A slight change occurred in the July 1955 edible fish and shellfish (fresh, frozen, and canned) index (103.5 percent of the 1947-49 average)--only 0.2 percent lower than in June and exactly the same as the index for July 1954.

Table 1 - Wholesale Average Prices and Indexes for Edible Fish and Shellfish, July 1955 with Comparisons

| Group, Subgroup, and Item Specification | Point of Pricing | Unit | Avg. Prices ^{1/} (\$) | | Indexes (1947-49 = 100) | | | |
|-------------------------------------------------------------------------------|------------------|------|--------------------------------|-----------|-------------------------|-----------|----------|-----------|
| | | | July 1955 | June 1955 | July 1955 | June 1955 | May 1955 | July 1954 |
| ALL FISH & SHELLFISH (Fresh, Frozen, & Canned) | | | | | 103.5 | 103.7 | 98.1 | 103.5 |
| Fresh & Frozen Fishery Products: | | | | | 106.3 | 107.4 | 97.9 | 109.8 |
| Drawn, Dressed, or Whole Finfish: | | | | | 99.9 | 101.3 | 85.6 | 119.3 |
| Haddock, lge., offshore, drawn, fresh | Boston | lb. | .06 | .09 | 57.4 | 87.5 | 57.6 | 119.0 |
| Halibut, West., 20/80 lbs., drsd., fresh or froz. | New York | lb. | .29 | .24 | 90.8 | 74.3 | 68.1 | 106.0 |
| Salmon, king, lge. & med., drsd., fresh or froz. | New York | lb. | .58 | .58 | 130.3 | 129.2 | 111.8 | 128.4 |
| Whitefish, L. Superior, drawn, fresh | Chicago | lb. | .33 | .49 | 81.8 | 120.2 | 141.3 | 105.4 |
| Whitefish, L. Erie pound or gill net, rnd., fresh | New York | lb. | .65 | .68 | 131.4 | 136.5 | 146.6 | 119.3 |
| Lake trout, domestic, No. 1, drawn, fresh . . . | Chicago | lb. | .46 | .53 | 93.2 | 107.6 | 96.3 | 104.5 |
| Yellow pike, L. Michigan & Huron, rnd., fresh . | New York | lb. | .69 | .44 | 161.8 | 103.8 | 93.8 | 143.0 |
| Processed, Fresh (Fish & Shellfish): | | | | | 108.0 | 111.6 | 108.5 | 98.7 |
| Fillets, haddock, sml., skins on, 20-lb. tins . . | Boston | lb. | .23 | .32 | 78.3 | 107.2 | 85.1 | 74.8 |
| Shrimp, lge. (26-30 count), headless, fresh . . . | New York | lb. | .67 | .71 | 105.9 | 111.4 | 108.6 | 93.3 |
| Oysters, shucked, standards | Norfolk | gal. | 4.75 | 4.63 | 117.5 | 114.4 | 114.4 | 111.3 |
| Processed, Frozen (Fish & Shellfish): | | | | | 106.7 | 103.2 | 95.6 | 97.6 |
| Fillets: Flounder (yellowtail), skinless, 1-lb. pkg. | Boston | lb. | .39 | .39 | 102.1 | 2/102.1 | 99.5 | 100.8 |
| Haddock, sml., skins on, 1-lb. pkg. | Boston | lb. | .27 | .26 | 83.2 | 81.6 | 80.0 | 100.4 |
| Ocean perch, skins on, 1-lb. pkg. | Boston | lb. | .27 | .27 | 106.7 | 106.7 | 106.7 | 116.8 |
| Shrimp, lge. (26-30 count), 5-lb. pkg. | Chicago | lb. | .71 | .67 | 108.8 | 103.4 | 91.0 | 84.1 |
| Canned Fishery Products: | | | | | 99.2 | 98.3 | 98.3 | 94.2 |
| Salmon, pink, No. 1 tall (16 oz.), 48 can/cs. . . | Seattle | case | 20.70 | 20.70 | 109.6 | 109.6 | 109.6 | 99.1 |
| Tuna, lt. meat, chunk, No. 1/2 tuna (6-1/2 oz.), 48 cans cs. | Los Angeles | case | 12.80 | 12.50 | 92.3 | 90.1 | 90.1 | 94.1 |
| Sardines, Calif., tom. pack, No. 1 oval (15 oz.), 48 cans/cs. | Los Angeles | case | 7.55 | 7.55 | 88.1 | 88.1 | 88.1 | 3/ |
| Sardines, Maine, keyless oil, No. 1/4 drawn (3-1/4 oz.), 100 cans/cs. | New York | case | 6.70 | 6.70 | 71.3 | 71.3 | 71.3 | 69.2 |

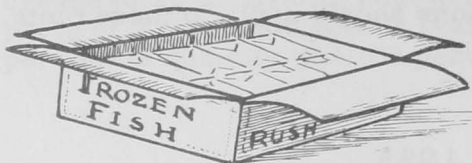
^{1/}Represent average prices for one day (Monday or Tuesday) during the week in which the 15th of the month occurs. These prices are published as indicators of movement and not necessarily absolute level. Daily Market News Service "Fishery Products Reports" should be referred to for actual prices.

^{2/}Revised.

^{3/}Not available.

From June to July lower prices for large offshore haddock at Boston (down 34.4 percent) and most fresh-water varieties were somewhat offset by higher prices at New York for Western halibut (up 22 percent), yellow pike, and king salmon. Adverse weather conditions restricted fishing for halibut and salmon on the West Coast and supplies of these fish were light to moderate. The July subgroup index for drawn dressed, or whole finfish was 1.4 percent lower than the previous month and 16.3 percent below July 1954. Prices in July 1955 for haddock, halibut, whitefish at Chicago, and lake trout were all substantially lower than a year earlier.

Fresh shrimp and haddock fillet prices were lower in July than a month earlier and more than offset a slight rise in oyster prices. The index for the fresh processed fish and shellfish subgroup dropped 3.2 percent from June to July. When compared with a year earlier, the subgroup index was up 9.4 percent with all items priced higher.



Frozen shrimp and haddock fillet prices rose from June to July, while prices for frozen fillets of flounder and ocean perch did not change. The July 1955 index for frozen processed fish and shellfish was 3.4 percent higher than June and 9.3 percent higher than a year earlier. When compared with a year earlier, July 1955 prices for flounder fillets and shrimp were higher, while for fillets of haddock and ocean perch they were lower.

Higher canned tuna prices were responsible for the rise of 0.9 percent in the subgroup index for all canned fish from June to July. Canned fish prices in July 1955 were also higher (up 5.3 percent) than the same month a year earlier with salmon and Maine sardine priced higher and tuna priced lower.



TIME FOR SHOPPING

Time for Shopping, the third in a series of film studies on American food industries by a national manufacturer of frozen food packages, records the buying habits of nearly 1,000 customers shopping at frozen food cases in supermarkets in five major cities.



Every effort was made to answer the questions felt to be of the greatest interest to the frozen-food packaging industry. Who does the shopping--men or women? How much do shoppers handle the packages, study, or read them? Compare them? How many actual purchases were made? How do fish and shrimp sales compare with competing frozen foods? The results should be of interest to packers and sellers of frozen fish:

| <p><u>Who Does the Shopping:</u> 69.3% women 14.2% men 16.5% couples</p> | <p><u>Handling the Packages:</u> The average women handled 2.23 packages. The average man handled 2.37 packages. Couples purchased an average of 3.02 packages.</p> | | | | | | | | | | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------|--|-----------------|------------------|--------------------------|----------|----------|----------------|------|------|-------------------|------|------|-------------------------------|-------------|-------------|
| <p><u>Who Purchased Fish and Shrimp:</u> 54.9% women 25.5% men 19.6% couples 70.6% were over age 30 29.4% were under age 30</p> | <p><u>Who Were the Buyers:</u> Women purchased an average of 1.70 packages. Men purchased an average of 1.69 packages. Couples purchased an average of 2.08 packages.</p> | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2"><u>How Much was Purchased:</u></th> </tr> <tr> <th><u>Packages</u></th> <th><u>Varieties</u></th> </tr> </thead> <tbody> <tr> <td>Prepared foods</td> <td>No. 1.85</td> <td>No. 1.15</td> </tr> <tr> <td>Fish</td> <td>1.46</td> <td>1.04</td> </tr> <tr> <td>Poultry</td> <td>1.38</td> <td>1.13</td> </tr> <tr> <td><u>Total Frozen Foods . .</u></td> <td><u>1.76</u></td> <td><u>1.22</u></td> </tr> </tbody> </table> | | | <u>How Much was Purchased:</u> | | <u>Packages</u> | <u>Varieties</u> | Prepared foods | No. 1.85 | No. 1.15 | Fish | 1.46 | 1.04 | Poultry | 1.38 | 1.13 | <u>Total Frozen Foods . .</u> | <u>1.76</u> | <u>1.22</u> |
| | <u>How Much was Purchased:</u> | | | | | | | | | | | | | | | | | |
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| Fish | 1.46 | 1.04 | | | | | | | | | | | | | | | | |
| Poultry | 1.38 | 1.13 | | | | | | | | | | | | | | | | |
| <u>Total Frozen Foods . .</u> | <u>1.76</u> | <u>1.22</u> | | | | | | | | | | | | | | | | |