GULF-OF-MAINE BLUEFIN TUNA EXPLORATION--1953

By J. J. Murray*

SUMMARY

The third successive season of exploratory fishing for Gulf-of-Maine bluefin tuna was conducted from July 15 to October 15, 1953. As in the previous year's work, long-line gear was used as the principal fishing method, with surface trolling lines, floating gill nets, and trammel nets as secondary gear. The long-line catch of tuna was much smaller than in the preceding years--only 38 tuna weighing 2,000 pounds (round weight) as compared to 12,000 pounds in 1952, and 190,000 pounds caught by purse seine in the 1951 exploration. One reason for the small catch was that the start of the project was delayed until July 15 and a large early run of tuna was completely missed. Also, the catch of sharks was much greater, being 13 times the catch of tuna. Gill-net and trammel-net fishing produced no tuna. Nine tuna were caught on the surface trolling lines. Though catches were small, bluefin tuna were taken over a wide area in the Gulf of Maine and adjacent waters as in the previous years.

Fig. 1 - Schooner Marjorie Parker, used in the Gulf-of-Maine bluefin tuna exploration.

An encouraging development noted in the 1951-53 seasons was the catching of sizable quantities of tuna by the New England otter-trawl fleet, incidental to trawling operations. The crews of many of these vessels found that tuna schools, attracted to the vessels by small fish which escaped or were discarded from the trawls, would at times bite readily on improvised hand lines baited with herring, mackerel, or squid. Catch records show that 140,000 pounds of tuna caught by this method were landed at Boston and Gloucester in September and October 1951. Reported production from hand-line catches in 1953 amounted to 146,000 pounds. This development indicates that a hook-and-line fishery, somewhat similar to the method used by Pacific tuna clippers, might be successfully applied to the New England tuna fishery.

BACKGROUND

This paper reports the results of the 1953 Gulf-of-Maine exploratory fishing for bluefin tuna (Thunnus thynnus) by the Exploratory Fishing and Gear Development Section of the Branch of Commercial Fisheries, U. S. Fish and Wildlife Service. Similar explorations were conducted in 1951 and 1952. The objectives: to obtain knowledge concerning the abundance, migration habits, range, areas of concentration, and availability of the species to various types of fishing gear for possible application in the development of a Gulf-of-Maine commercial tuna fishery.

During the summer and early fall of 1951 the first phase of the program was carried out with the chartered purse seiner Western Explorer, and 190,000 pounds of bluefin were seined (Murray 1952). The second year's exploration was made with the chartered schooner Marjorie Parker from June 1 to October 31, 1952, using long lines as the primary gear. A total catch of 12,000 pounds of tuna was taken with the long lines, but sharks proved to be a serious nuisance (Murray 1953).

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The schooner Marjorie Parker was again used from July 15 to October 15 in the 1953 exploration. The plan of operation in 1953 generally followed the pattern of the previous year, with the exception of two minor differences. The survey range was extended to permit scouting and fishing operations of some areas lying farther offshore, not previously explored during the 1951 and 1952 surveys. Previous observations and reports from fishing vessels indicated the possibility of finding bluefin tuna concentrations in the deeper waters south and southeast of Georges Bank near the inshore curve of the Gulf Stream. Secondly, certain modifications were made to the majority of Japanese-type long lines used during 1952. To increase the fishing potential of the long lines, additional branch lines and hooks were added to 20 baskets of gear, making a total of 23 hooks per basket as compared with 7 hooks on the regular Japanese-type units. For control purposes, 14 of the original long-line units were left unchanged.

AREA OF EXPLORATION

Operations were conducted off the New England coast approximately between latitudes 40°00' N. and 44°00' N. (fig. 2). The southern part of this area corres-

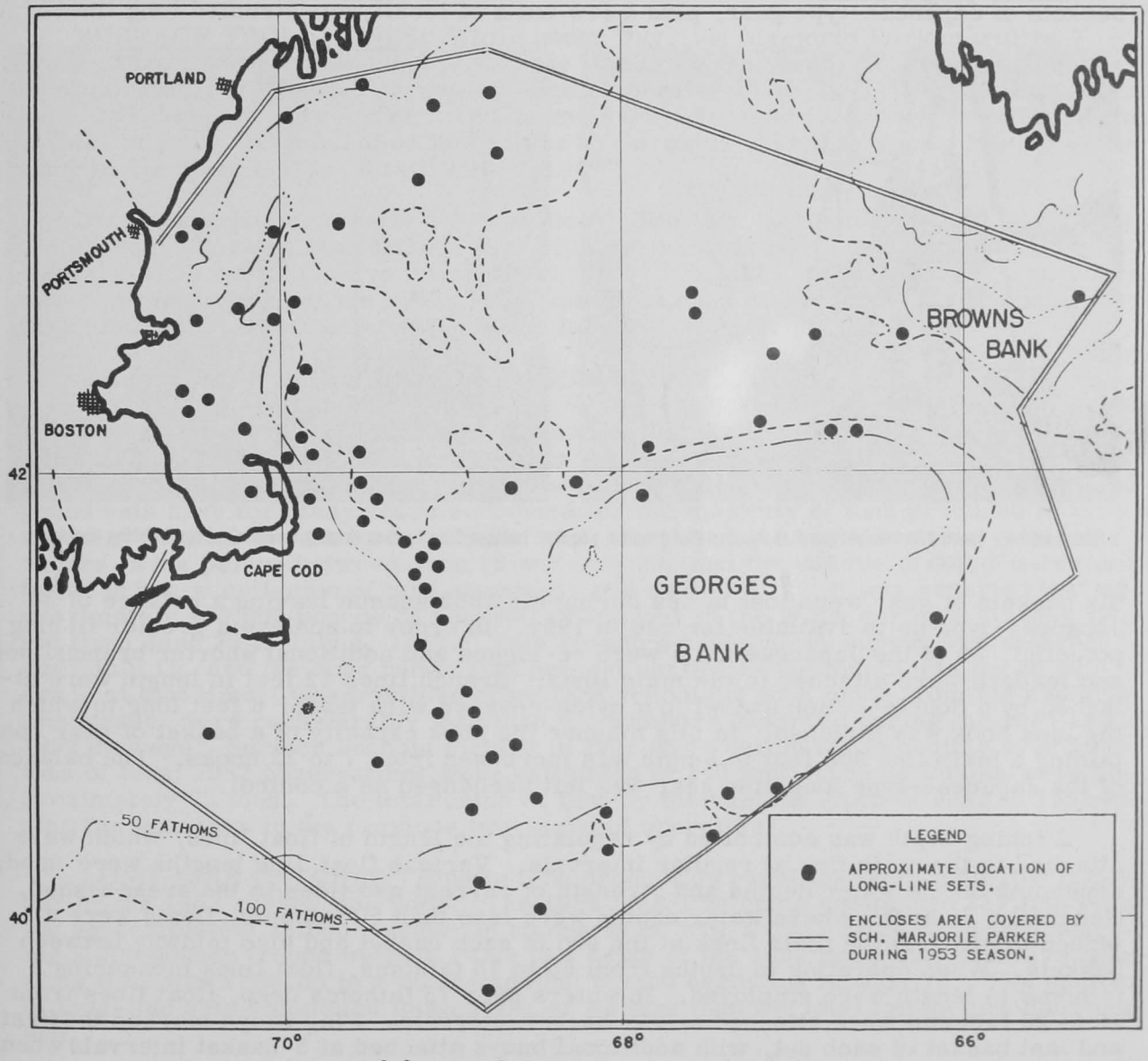


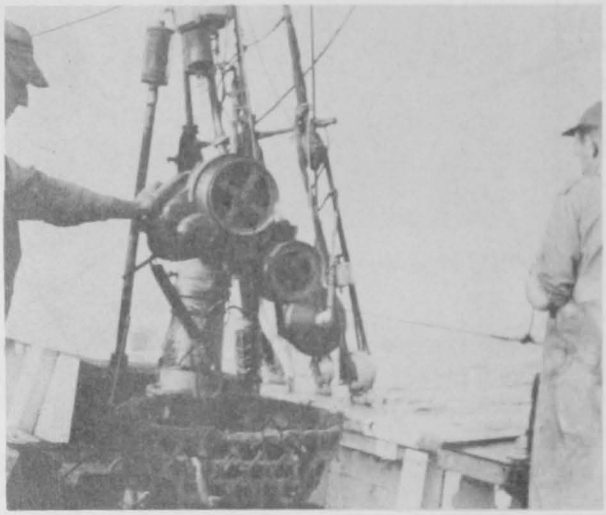
Fig. 2 - Gulf of Maine and adjacent waters explored in 1953.

ponds roughly to the waters lying south of the southwest part of Georges Bank contiguous to the Gulf Stream. In an easterly direction, one cruise was made to the vicinity of Browns Bank south of Nova Scotia. Five cruises were completed in these waters between July 15 and October 15.

EQUIPMENT AND OPERATIONAL PROCEDURES

VESSEL: The 78-foot schooner Marjorie Parker, chartered for the 1952 exploration, was again used during the 1953 season. Basically the vessel was unchanged from the previous year although addition of new equipment improved over-all operating efficiency during the 1953 season. Installation of additional fuel-oil storage tanks increased the cruising range from 1,200 to 1,600 nautical miles. The effective communication range was increased by the installation of a more powerful radiotelephone set. Provision of airtight compartments for frozen-bait storage insured a good-quality bait supply. As in the previous year, a crew of seven men was employed.

LONG-LINE GEAR: Basic long-line gear, operated in 1952, consisted of 40 baskets of Japanese-type gear, plus a few units of locally-constructed long lines.



Figs. 3 and 4 - Both Japanese-type line hauler (left) and a regular halibut line hauler (right) were used for hauling the long line.

Six baskets of gear were lost at sea during the 1952 season leaving a balance of 34 Japanese-type units available for use in 1953. In order to achieve a greater fishing potential, 20 of the Japanese units were re-rigged and additional shorter branch lines and leaders were attached to the main lines. Branch lines 12 feet in length were attached by a double-action swivel to a nylon-covered wire leader 6 feet long to which the tuna hook was attached. In this manner the hook capacity of a basket of gear containing a main line 900 feet in length was increased from 7 to 23 hooks. The balance of the Japanese-type long-line gear was left unchanged as a control.

Fishing depth was controlled by regulating the length of float lines, which were attached to the main line at regular intervals. Various float line lengths were used, depending on the water depths and strength of current and tides in the areas fished. Generally, in areas where water depths were less than 50 fathoms, floats were attached directly to the main lines at the end of each basket and also midway between baskets. When operating in depths from 50 to 75 fathoms, float lines measuring 5 fathoms in length were employed. In waters over 75 fathoms deep, float lines from 10 to 20 fathoms were attached at one-basket intervals. Flag buoys marked the first and last basket of each set, with additional buoys attached at 5-basket intervals when

the total number of baskets set exceeded 20. Setting and hauling of the gear followed the same general pattern employed in 1952 and described in the report for that year.

The baits used were frozen squid, frozen and fresh sea herring, frozen menhaden, frozen mackerel, and fresh whiting. The most suitable bait was the frozen squid, which remained well on the hooks and kept firm in storage for lengthy periods. In the majority of sets the squid was used for bait.

GILL NETS AND TRAMMEL NETS: The surface drift gill nets and trammel nets operated without success in 1952 were again fished this season with negative results. Some difficulty was experienced in the 1952 operations by the small cedar floats entangling in the top rows of the meshes. Removal of most of the cedar floats on each net and attachment of 16-inch rubber-inflated floats along the float lines at 25-foot intervals overcame this difficulty and improved handling of the nets. The number of nets in each set was limited to 3 or 6 of each type per "string." The nets were usually fished at night, with only one daytime set made in the vicinity of Boon Island, Maine, near a surface school of tuna.

SURFACE TROLL LINES: While under way, the Marjorie Parker trolled 7 lines, 3 from each outrigger pole and one line from the stern. The trolling equipment used during the 1952 survey was again operated in 1953. Lines, trolling shocks, and other components were renewed as required. Outside lines measured 22 fathoms, middle lines 20 fathoms, and inside lines 15 fathoms. The stern line, fishing in the wake of the vessel, was 10 fathoms long.

Standard bone and plastic jigs with double trolling hooks were fished throughout the season. Various lead-headed jigs with combination red, white, and yellow feathers were all tried at various times. When available, fresh herring or mackerel were lashed to some of the hooks. The small catches allowed no comparison as to the relative effectiveness of the various lures.

FISHING AND SCOUTING RESULTS

Bluefin tuna production in New England is primarily concentrated in the Massachusetts Bay and Cape Cod Bay areas during the comparatively short time that this species is found along the New England shores. Catches by Cape Cod Bay traps and pound nets have for many years accounted for the majority of tuna produced in this region. Peak of abundance for bluefin tuna, observed in coastal waters, generally occurs in the period between June 15 and July 30, and the volume of fixed-net catches is the primary criterion of tuna abundance and availability. It was reported that approximately 450,000 pounds of tuna were captured in the traps during a six-day period from June 29 to July 4, 1953. This season's exploratory survey was delayed until July 15, and the huge run of fish present earlier in the month was not in evidence at that time. Observations of surface schools of tuna made from the exploratory vessel were considerably less than the numbers observed during the 1951 and 1952 surveys. Surface schools sighted in 1951 were estimated to contain over 500 tons of tuna; 1952 observations were estimated at 200 tons; 1953 estimates were approximately 75 tons. The total catch of tuna by the various types of gear in 1953 was also far less than in the previous two years of operation.

LONG-LINE CATCHES: Bluefin tuna production resulting from long-line fishing during the 1953 survey was poor. The 1952 long-line catch comprised 311 fish weighing approximately 12,000 pounds, in comparison with a 1953 catch of 38 fish weighing 2,000 pounds (round weight). Due to a delay of the 1953 program, effective operating time was reduced to a three-months' period beginning on July 15. The number of long-line sets completed totaled 74, or 44 less than the total for the previous season.

Other factors contributing to the low tuna catch were the failure to locate tuna concentrations in the more distant offshore waters, and the abundance of sharks that hindered operations and in many instances forced cessation of long-line fishing.

The Marjorie Parker left Boston on July 17. The initial long-line set of the season was made late that afternoon in the vicinity of a tuna school sighted about 20 miles southeast of Boston Lightship, but it failed to catch tuna. On July 21 the vessel arrived in the area south of Georges Bank near the inshore edge of the Gulf Stream. Surface water temperatures varied from 60° to 62° F. in Massachusetts Bay and South Channel waters, but increased to from 64° to 74° F. upon reaching the vicinity of the Gulf Stream. Fishing was carried on for 4 days in an area extending from 67°10' W. to 68°40' W. longitude. A series of long-line sets carried out between the 100- and 500-fathom curves met with negative results. Observations of surface-schooling tuna were negative despite regular daytime masthead watches maintained throughout the trip.

Fig. 5 - Hauling the long line. Bluefin tuna catch on deck in foreground.

The possibility that favorable environmental conditions existing in the vicinity of the Gulf Stream would result in productive tuna fishing was not confirmed by results obtained from the survey work undertaken in this offshore region. In early August long-line fishing was conducted in the waters east of Georges Bank between 66°00' W. and 67°00' W. longitude and 41°00' N. and 42°00' N. latitude. Two bluefin tuna were caught here, but no surface indications of tuna schools were noted. Later during the same month, one bluefin was captured in the same general area. Cruises made in September to fishing banks located off the Nova Scotia coast failed to find good fishing areas, although a few tuna were caught on long lines and trolling jigs.

As evidenced in 1952, sharks were abundant in the catch throughout the 1953 season and seriously affected the operation of the long-line gear. In an effort to overcome this problem, varied lengths of drop lines were attached to the long lines, permitting hook-fishing depths at levels presumably lower than surface zones generally inhabited by the sharks. Theoretically, this would place the baits out of reach

Table 1 - Monthly Summary of Gulf-of-Maine Exploratory Long-Line Fishing, 1953

Item and Unit	July	Aug.	Sept.	Oct.	Season Total
Sets - number	16	29	20	9	74
Average number of hours per set	2	2.3	2.2	2	2.1
Hooks - total number fished	1686	4189	2609	1113	9597
Hooks - percentage fished per month	17	44	27	12	100
Hook-hours fished - total	3372	9635	5740	2226	20973
Tuna caught - number	2	18	17	1	38
Sharks caught - number	61	169	158	105	493

of the surface-swimming sharks and eliminate or reduce interference. However, the baited hooks remained close to the surface during the setting and hauling of the gear, well within range of the shark population and no appreciable decrease in shark catches was achieved by this method. Undoubtedly, long-line tuna catches can be increased if some method can be found to overcome the shark problem. Shark catches totaled 493 individuals (13 times the tuna catch) with an estimated round weight of 90,000 pounds. Average catch per long-line set was 6.6 sharks.

Table 2 - Record of Exploratory Long-Line Sets by the Marjorie Parker, July-October 1953

Set No.	Date	Location		No. of Hooks	Bait[1/]	Length of Float Lines	Time of Set	Length of Set (Hours)	Surface Water Temperature (°F.)	Catch	
		N. Lat.	W. Long.							Tuna (No.	Shark of Fish)
	July										
1	17	42°14'	70°22'	56	S	3'	1330	2	64°	0	0
2	18	41°53'	69°49'	70	S	3'	0915	2	62°	0	3
3	21	40°51'	70°30'	185	S	3'	1230	3	64°	0	3
4	22	40°21'	68°10'	70	S	90'	1015	2.25	72°	0	0
5	22	40°22'	67°33'	300	S	60'	1730	1.75	74°	0	7
6	23	40°26'	67°16'	70	S	90'	0915	2	71°	0	3
7	23	40°34'	67°07'	70	S	30'	1530	2	71°	0	7
8	24	40°26'	68°13'	81	S	3'	0600	2	67°	0	2
9	24	40°41'	68°45'	230	S	3'	1345	2.25	65°	0	4
10	25	41°39'	69°14'	70	S	30'	0900	2	63°	0	0
11	26	41°42'	69°37'	102	S	30'	0830	2	62°	2	5
12	26	42°09'	69 59'	102	S	3'	1430	2	62°	0	6
13	27	42°40'	70°24'	70	S	3'	0810	2	61°	0	3
14	30	43°35'	69°29'	70	S, M	3'	1500	2	61°	0	9
15	31	43°35'	68°45'	70	S, M	3'	0800	2	56°	0	3
16	31	43°23'	68°38'	70	S, M	3'	1235	2	59°	0	6
	Aug.										
17	1	42°34'	67°03'	70	S, M	90'	0930	2	59°	0	1
18	1	42°09'	66°35'	70	S, M	3'	1800	2	62°	0	10
19	2	41°23'	66°08'	185	S, M	3'	0810	2	61°	1	2
20	2	41°16'	66°05'	70	S, M	10'	1350	2.25	66°	1	3
21	3	42°10'	66°49'	230	S, M	5'	0945	3	61°	0	5
22	3	42°12'	67°11'	70	S, M	60'	1545	2	62°	1	5
23	4	42°06'	67°48'	198	S, M	3'	0610	2.25	62°	1	6
24	4	41°57'	68°16'	70	M	30'	1240	2.25	64°	0	4
25	11	43°05'	70°31'	152	S, H	3'	1830	1.5	62°	0	0
26	12	43°06'	70°30'	150	S	3'	0600	2.5	62°	0	3
27	13	41°56'	70°09'	56	S, H	3'	1300	2	69°	0	1
28	14	42°21'	70°38'	115	S	3'	0900	2	64°	0	0
29	18	41°40'	69°08'	428	S, Mk1	3'	0515	3	64°	6	10
30	18	41°37'	69°12'	428	S, Mk1	3'	1130	3.5	64°	2	5
31	19	41°32'	69°03'	412	S, H	3'	0530	2	62°	0	15
32	19	41°18'	69°13'	380	S, Mkl, H	3'	1200	1.5	63°	0	5
33	20	40°32'	68°58'	265	S, Mkl, H	3'	0325	2.5	62°	2	6
34	20	40°11'	68°50'	70	Mkl, H	3'	1210	2	64°	0	5
35	20	40°02'	68°34'	70	S, H	90'	1700	3	66°	1	7
36	21	39°29'	68°45'	70	S, H	120'	0630	3	66°	0	0
37	21	40°44'	68°42'	70	S, H	3'	1600	1.5	62°	1	12
38	22	42°10'	69°53'	70	S, H	3'	0700	1.5	63°	0	0
39	22	42°11'	70°10'	70	S, H	3'	1800	1.75	65°	0	14
40	23	42°35'	70°01'	70	F, W	3'	0740	2	66°	0	11
41	23	42°42'	70°11'	70	S, H, W	3'	1140	1	64°	0	0
42	23	42°43'	69°58'	70	S, W	5'	1450	2	63°	0	4
43	23	42°46'	69°21'	70	S, W	3'	2200	7	63°	1	20
44	24	43°06'	70°03'	70	S	3'	1130	2	61°	0	5
45	25	43°34'	69°59'	70	H, W	3	1630	1.5	60°	1	10
	Sept.										
46	5	42°26'	69°54'	185	S, M, H	3'	0610	2.5	65°	1	8
47	8	41°44'	69°32'	300	S, M, H	3'	1700	2	65°	1	5
48	10	40°48'	69°18'	70	S	3'	0630	2	60°	1	3
49	11	40°32'	68°43'	70	S	3'	0850	2.25	66°	3	4
50	11	40°48'	68°54'	70	S	3'	1410	2	60°	5	3
51	11	40°50'	69°00'	70	S	3'	1735	2	60°	1	3
52	12	40°50'	68°58'	300	S, H	3'	0600	2	60°	1	0
53	12	40°51'	68°58'	300	S, H	3'	1215	2	61°	1	10
54	12	40°58'	69°06'	70	S	5'	1710	2.5	61°	0	10
55	15	42°08'	69°41'	116	S, H	3'	1045	2.25	60°	0	11
56	15	41°53'	69°27'	107	S, H	3'	1700	2	60°	0	18
57	23	42°55'	67°28'	70	S, M, H	3'	0600	2.5	57°	0	7
58	23	42°45'	67°28'	70	S, M, H	3'	1230	1.75	59°	1	10
59	24	42°40'	66°55'	185	S, H	3'	0830	2	60°	1	10
60	24	42°36'	66°27'	116	S, H	3'	1500	2	61°	0	20
61	25	42°46'	65°22'	185	S, H	3'	0830	1.5	58°	0	2
62	26	41°56'	67°57'	70	S, H	3'	0715	2.25	60°	0	1
63	29	41°43'	69°16'	70	S, H	3'	0710	3	61°	1	8
64	30	43°06'	69°42'	185	S, F	3'	0900	2	59°	0	20
65	30	43°13'	69°19'	185	S, F	3'	1430	3	59°	0	5
	Oct.										
66	1	43°32'	69°04'	116	S, F	3'	0740	2	58°	0	15
67	9	41°50'	69°18'	116	S, H, F	10'	0945	2	59°	1	17
68	9	41°59'	68°45'	185	S, F	3'	1430	2	59°	0	18
69	10	41°38'	69°04'	185	M, H, W	3'	0700	2	58°	0	17
70	10	41°39'	69°06'	185	M, H, W	3'	1000	2	60°	0	15
71	10	41°36'	69°01'	116	S, H, F	5'	1510	2	60°	0	6
72	11	42°06'	69°38'	70	S, F	3'	0910	2	58°	0	5
73	11	42°23'	69°53'	70	S, F	3'	1600	2	58°	0	9
74	12	42°18'	70°25'	70	S, H, Mkl, F	3'	0930	2	56°	0	3

1/"S" - Squid, "M" - Menhaden, "Mkl" - Mackerel, "H" - Herring, "W" - Whiting, "F" - Feathers.

A record of long-line sets completed during the 1953 survey is presented in table 2.

GILL-NET AND TRAMMEL-NET FISHING: The nets were fished at night a total of 71.5 hours in 1952 and 51 hours in 1953, with 6 hours of fishing time in daylight. While quantities of herring, mackerel, and whiting were caught in the smaller inner webbing of the trammel nets, and blue sharks and dogfish were captured in the gill nets, no tuna were taken during the tests. Results of 23 individual sets indicate that this method of fishing shows little promise for bluefin tuna in New England waters. Gill-net and trammel-net fishing data are presented in table 3.

Table 3 - Record of Gill-Net and Trammel-Net Fishing by the Marjorie Parker, August-October 1953

Date	Location		Number of Nets Set		Length of Set (Hours)	Surface Water Temperature (°F.)	Wind Direction and Force	Catch
	N. Lat.	W. Long.	Gill	Trammel				
Aug. 4	41°41'	68°16'	3	3	10½	64	SW. 3	herring, mackerel
" 22	42°20'	70°00'	2	6	8	63	W. 3	herring, whiting
" 24	43°04'	70°25'	3	3	9	60	SW. 3	herring, mackerel, whiting
" 25	43°16'	70°10'	-	6	3	62	SW. 3	blank set
Sept. 8	42°15'	70°21'	3	3	12	64	NW. 4	herring, blue shark
" 11	40°48'	68°54'	3	3	10	60	W. 3	blank set
Oct. 9	42°01'	68°48'	-	6	11	58	W. 4	herring, mackerel, whiting, 2 blue sharks

Note: August 25 set was made in daytime; all others were made at night.

SURFACE TROLL FISHING: Surface lines were trolled as a secondary fishing method and as a possible means of locating productive long-line fishing areas. Results of long-line fishing, undertaken in areas immediately following troll catches, were poor, however. On numerous occasions long-line sets in the immediate vicinity of troll strikes failed to produce tuna. The most striking example occurred on September 9 in the South Channel region when 8 tuna struck on the troll lines within a one-hour period. Immediately following cessation of the troll-line strikes, 20 baskets of long-line gear were set as nearly as possible to the site of the troll catches. After two hours the gear was retrieved with a catch of only 1 tuna and 5 blue sharks.

Table 4 - Record of Troll-Line Strikes and Catches by the Marjorie Parker, 1953

Date	Area	No. Lines Fished	Trolling Hours	No. Strikes	No. Tuna Landed	Total Weight of Tuna
July 23	Southwest Part of Georges Bank ..	7	10	2	1	35
" 24	Southeast of Georges Bank	7	10	2	1	20
" 25	South Channel	7	6	2	2	80
Aug. 21	50 mi. South of Nantucket Lightship	6	7	2	1	45
" 23	15 mi. E. x S. of Cape Ann Light	7	11	2	1	50
Sept. 9	South Channel	7	8	8	3	130

The Marjorie Parker trolled a total of 199 hours, catching 9 bluefin tuna weighing a total of 360 pounds. This catch represents exactly one-half of all tuna strikes on the troll lines, as 9 fish were lost while attempting to retrieve them. A record of troll catches is presented in table 4.

HAND-LINE FISHING FOR BLUEFIN TUNA BY THE OTTER-TRAWL FLEET

A significant development was observed in the New England tuna fishery during the 1951-53 seasons when incidental hand-line fishing by the crews of otter trawlers on offshore grounds resulted in a number of good catches of bluefin tuna. The fishermen found that some tuna schools, attracted to the vessels by the small fish which escaped or were discarded from the trawls, would bite readily on improvised hand

lines baited with herring, mackerel, or squid. The tuna schools could be held near the vessel by chumming with scrap fish in many instances.

Small fares of tuna were landed in Gloucester by otter trawlers from the South Channel grounds in August 1951. Catch records show that during September and October of that year 12 catches of tuna totaling 140,000 pounds (dressed and headed fish) were taken on hand lines and landed at the ports of Gloucester and Boston. The largest catch reported was 40,000 pounds, landed in Gloucester by a medium trawler in September 1951. The captain of a medium trawler reported that the catch of 375 tuna, averaging 60 pounds round weight, landed at the Boston Fish Pier in August 1953, was taken in a 4-hour period by a crew of 7 men. Tuna production reported from this source during the 1953 season amounted to 146,000 pounds.

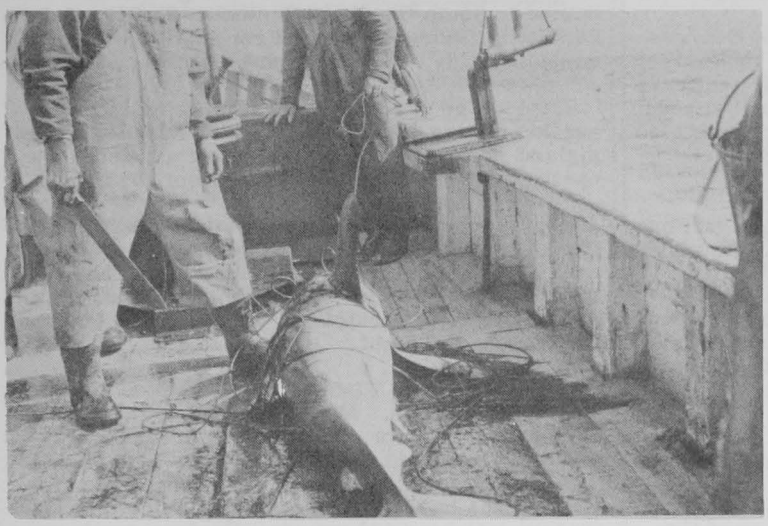


Fig. 6 - One swordfish was taken by long line. The catch of sharks was 13 times greater than the tuna catch.

Reports indicate that the most productive fishing was on grounds located in a southeasterly direction from Cape Cod Light. Good catches were reported by trawlers fishing on "Tobins," a popular trawling ground approximately 20 miles square lying about 40 miles south by east of Cape Cod. After it was discovered that sizable catches of tuna could be taken in this manner, specially constructed hand lines for tuna fishing were carried on many of the vessels of the trawl fleet during the tuna season. These were made of 48-pound halibut line or 3-strand manila, 12-thread, $\frac{3}{8}$-inch diameter. Wire leaders of $\frac{1}{16}$-inch or $\frac{5}{64}$-inch preformed stainless steel, from 3 to 6 feet in length, were attached to the lines with heavy-duty brass swivels. Extra-heavy hooks, usually No. 10 size, were used. Tuna were caught in this manner near the surface and to depths of several fathoms.

The hand-line catch figures given above are in all likelihood less than the actual landings, since the tuna fishing was strictly secondary to trawling and many of the smaller catches were not publicized. This development indicates that a hook-and-line fishery somewhat similar to the methods used by Pacific tuna clippers might be successfully applied to New England tuna.

LOG OF FISHING TRIPS (CONDENSED)

TRIP 1, JULY 15-27:

July 15: Left Portland, Maine; proceeded to Boston for bait and additional supplies.

July 17: Departed Boston for Georges Bank. First tuna school sighted 17 miles ESE. of Boston Lightship. Long-line set and trolling unproductive.

July 20-24: Operated south of Georges Bank along inshore edge of Gulf Stream. Long-line fishing and scouting for surfacing tuna schools met with negative results. One bluefin tuna caught on troll lines. Surface water temperatures from 70° to 74° F. recorded in area.

July 25-26: Fished in South Channel and Chatham, Cape Cod areas. First tuna catch on long lines--2 tuna weighing 70 pounds--made off Chatham. Troll fishing negative. Strong southwest winds forced cessation of fishing on the 26th. Proceeded north toward Maine coast.

July 27: Long-line set at daybreak on Jeffreys Ledge and trolling from Isle of Shoals to Portland Lightship failed to catch tuna. Heavy blue-shark catch on long lines. Docked Portland, Maine.

Trip Summary: Completed 12 long-line sets with a yield of two bluefin tuna. Surface trolling results negative. Operations near Gulf Stream unsuccessful in locating fish.

TRIP 2, JULY 30-AUGUST 6:

July 30-August 1: Left Portland; proceeded northeasterly along Maine coast. Long-line fishing conducted at inshore stations and easterly to Cashes Ledge and Georges Bank. Weather poor and rough seas hampered scouting activities.

August 2-5: Worked southeast part of Georges Bank in vicinity of Corsair Canyon; two tuna taken on long lines in deep waters near 500-fathom curve line. Small school of tuna sighted on northern edge of Georges Bank. Fishing results poor; many blue sharks on gear. Strong northwest winds forced cessation of fishing for 24 hours.

August 6: Trolled from Cape Ann Light to Portland Lightship without obtaining strikes. No surface schools of tuna observed.

Trip Summary: Eleven long-line sets yielded two bluefin tuna. Trolling and gill-net and trammel-net fishing met with negative results. Tuna school estimated at five tons sighted on Georges Bank.

TRIP 3, AUGUST 11-25:

August 11-14: Proceeded from Portland to Boon Island, Maine, where many small bunches of tuna were seen. Fish estimated to be in 100- to 150-pound weight class and feeding on small bait fish; abundant in vicinity. Long-line and troll fishing unsuccessful. Proceeded to Cape Cod Bay on August 13. Fished near Race Point, Cape Cod, until northeast storm forced vessel to seek shelter in Boston.

August 18-21: Fishing conducted in South Channel and south of Georges Bank. Best results of season in South Channel area when 2 long-line sets yielded 8 tuna. Blue sharks abundant and greatly hindered operations. Troll fishing poor; one tuna caught on August 21 in vicinity of Gulf Stream.

August 22-23: Docked Provincetown to replenish bait supply. Worked area between Cape Cod and Cape Ann with no success. Moved offshore to Fippennies Ledge where set of 10 baskets of long lines produced 1 tuna. Sharks abundant and catches steadily increasing. Troll fishing unsuccessful.

August 24-25: Moved inshore to Jeffreys Ledge and Boon Island areas. Trammel-net fishing near Boon Island carried out near schooling tuna, failed to net fish. Troll and long-line operations ineffective. Docked Portland August 25.

Trip Summary: Fishing results poor with a total catch of 600 pounds of bluefin tuna. Surface troll lines caught four tuna. Only one school of tuna observed during trip and set of 20 baskets of long lines made nearby was unsuccessful. Trammel-net fishing conducted both during day and night met with negative results.

TRIP 4, SEPTEMBER 4-17:

September 5: Long-line and troll fishing near Wildcat Knoll, ESE. of Cape Ann and site of excellent long-line catches in 1952, proved unsuccessful. Weather bad; proceeded to Boston for shelter.

September 8-9: Gill-net and trammel-net fishing in Massachusetts Bay yielded small quantities of herring and mackerel. Moved to South Channel grounds; 8 strikes on troll lines within 1 hour; 3 fish landed. Long-line set in vicinity with negative results--only 1 tuna, 20 blue sharks.

September 10-12: Series of long-line sets conducted in South Channel, Nantucket Shoals, and Southwest Georges Bank. Five sets totaling 50 baskets yielded 10 bluefin tuna weighing 420 pounds.

September 13: Southwest Georges Bank near scallop fishing fleet. Many small schools of tuna sighted in area. Trolls ineffective and long-line operation produced 2 tuna and 1 swordfish.

September 15: Worked in waters northeast of Cape Cod Light. Excellent troll fishing in this area reported by small-boat fleet during late August and early September. Fishing operations unproductive of tuna catches. Moved to the northeast during the night.

September 16: Fished Tillies Bank and Jeffreys Ledge in forenoon. Moved inshore to Boon Island area at noon. Poor results in all areas fished.

Trip Summary: Completed 14 long-line sets totaling 184 baskets of gear with a catch of 10 bluefin tuna weighing 420 pounds. Surface trolls operated a total of 45 hours with 8 strikes and 3 tuna landed. Concentration of bluefin tuna observed on southwest part of Georges Bank near scallop fishing grounds.

TRIP 5, SEPTEMBER 22-OCTOBER 12:

September 22: Departed Portland for Browns Bank.

September 23-25: Operated on Browns Bank and in areas east of bank. Five long-line sets of 62 baskets returned a catch of 2 tuna. Abundance of sharks and strong tides encountered here impeded fishing operations. Small school of tuna sighted at noon on Sept. 24--troll and long-line fishing in vicinity of shcool produced no tuna catches.

September 26-28: Strong southerly and westerly winds prevented fishing during this period. Proceeded in westerly direction towards Georges Bank and South Channel.

September 29: Resumed fishing in South Channel. Many small schools of bluefin tuna sighted here--tuna feeding on small herring and other unidentified species. Attempts to chum tuna alongside boat proved unsuccessful. Trolled for six hours with no strikes noted.

September 30-October 1: Moved in northeasterly direction to inshore Gulf-of-Maine fishing banks. Fished Platts Bank and Matinicus Island grounds with poor results. Surface water temperatures considerably lower in this area, ranging from 57° to 59° F. Arrived Portland on October 2.

October 3-8: Northeast storm delayed departure until Oct. 8.

October 9: Completed three long-line sets in waters between Cape Cod Light and Pollock Rip Lightship. One bluefin tuna captured on long-lines--troll fishing ineffective. Overnight set of

trammel nets produced sharks, herring, mackerel, and whiting.

October 10: Weather fine in morning; sea smooth. Sighted tuna schools estimated to comprise 100 fish in the 30- to 45-pound class. Three sets of long lines with an aggregate of 42 baskets of gear yielded a total of 38 blue sharks. Chummed tuna school alongside boat but fish refused to bite on squid-baited hooks. Strong westerly winds and heavy seas forced cessation of operations in late afternoon.

October 11: Long-line fishing off Cape Cod yielded high catch of sharks. Docked Provincetown at night for shelter.

October 12: Left Provincetown shortly after midnight. Set six trammel nets in Cape Cod Bay at 0300 o'clock. Hauled nets at daybreak. Nets badly snarled by tidal action. Approximately 100 pounds of dogfish and whiting in nets. Moved north after retrieving nets and set 10 baskets of long lines in Massachusetts Bay. Hauled gear after soaking three hours--3 blue sharks, no tuna. Trolled to Boston Lightship and docked at Boston.

Trip Summary: During the early stages of the trip, operations were conducted off the southeastern coast of Nova Scotia, on Browns Bank, and in the "Gully" between Browns and Georges Banks. No schooling tuna were found in the areas covered and 7 bluefin tuna were captured on long lines and surface troll gear. Strong tides and adverse weather conditions impeded fishing operations. Schools of tuna were observed in the South Channel on October 10 but long-line and troll fishing failed to capture tuna. Worst weather of the season was experienced during this period.

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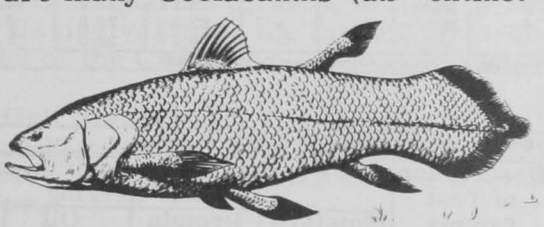
COELACANTHS APLENTY

An Italian zoological expedition which has been investigating the waters around the Comoro Islands in the Indian Ocean believes there are many Coelacanths (an "extinct" prehistoric fish) in that area. The Coelacanth, a fish believed to be extinct for over 60 million years, reappeared very much alive for the second time in modern history off the African coast in December 1952.



A Coelacanth, a fish believed to be extinct for over 60 million years, was caught off Southwest Africa in December 1952.

An underwater picture taken by the leader of this most recent expedition was flown to Rome and was described by experts as a good photograph of a living Coelacanth about two feet long and probably immature.

The expedition was due to return to East Africa in December 1953 with a color photograph of the third Coelacanth caught in modern times. Further investigations by the expedition were held up owing to the French administration's ban on Coelacanth fishing by foreign expeditions until 1954.

--The Fishing News, January 1, 1954.