

AN OUTLOOK OF THE PHILIPPINE TUNA FISHERIES¹

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The commanding position of the tunas in the world's fisheries attracts an increasing attention to the exploration of tropical waters. Lying within this belt of warm waters, the Philippine seas naturally constitute an integral unit of the great tuna fisheries of the Asiatic quadrant of the Pacific, which in the past had produced 78 per cent of the Pacific tonnage. Realizing this potentiality of Philippine waters for tuna exploitation ventures, the Philippine Bureau of Fisheries plans to launch a large scale investigation of the areas that bear promise of excellent yields in the light of our present knowledge of the oceanography of Philippine waters. Such areas as southeastern Mindanao, where the Pacific Equatorial Current begins, and northeastern Luzon which is known to be within the path of tuna migration will be intensively investigated. For this purpose, the 187-ton *M/S Fisheries* of the Philippine Bureau of Fisheries will be used.

Aside from the tuna exploration work carried out by the Japanese in scattered areas in the Philippines, there has been no systematic survey undertaken within our territorial waters for exploiting the tunas, more particularly the yellowfin, which abounds in our high seas. The Philippine Fishery Program of the United States Fish and Wildlife Service made several attempts using the well-known Japanese longline. Although the results obtained were not altogether encouraging, undoubtedly on account of the paucity of factual oceanographic data, the exploratory work has led to an appreciation of the importance of collecting oceanographic information and correlating it with the tuna catch. This scheme of making hydrographic observations hand-in-hand with tuna fishing operations has been widely practiced by the Japanese, who have developed the tuna long-lining technique to a high degree of efficiency.

¹ Contribution of the Philippine Delegation to the Third Meeting of the I.P.F.C. at Madras, February 1-16, 1951.

Confident of the success of this type of subsurface fishing for tunas, the Pacific Fishing Development Company of the Philippines recently acquired two tuna boats of about 50 tons capacity each. Equipped with the long-line and manned by experienced Taiwanese fishermen, the *M/V Nelly* and the *M/V Dinia* have fished several areas, principally the Sulu and Celebes Seas. Although their catch records do not show figures close to the reported Japanese catch ratio of 7.0 for Sulu Sea and 9.5 for Celebes Sea, the results show promise of economic possibility. A break-down of the catch of the *M/V Nelly* in two of its trips is found in the accompanying tables.

TABLE 1.—Summary of catch: First trip.

Date	Fishing grounds (sea)	Number of fishing hours	Number and weight of catch			Total number daily catch
			Tuna	Shark	Swordfish	
1950 August						
14	Sulu Sea Central Part	18.5	24		2	26
15	do	18.5	1,500 kg.		150 kg.	1,650 kg.
16	Sulu Sea Southern Part	18.0	24	7	6	37
17	do	18.8	1,470 kg.	200 kg.	1,010 kg.	2,683 kg.
19	Sulu Sea Eastern Part	17.8	17	12		29
20	do	18.8	1,800 kg.	1,955 kg.		3,755 kg.
21	Sulu Sea Northeastern Part	17.5	6	7	2	15
22	do	17.8	420 kg.	850 kg.	270 kg.	1,540 kg.
		17.0	9		3	12
		17.0	450 kg.		30 kg.	480 kg.
		17.8	18	2	2	22
		17.8	900 kg.	200 kg.	650 kg.	1,750 kg.
		17.0	12	2	1	15
		17.0	600 kg.	120 kg.	40 kg.	760 kg.
		143.9 hours or 6 days	13	3	4	20
			780 kg.	150 kg.	200 kg.	1,130 kg.
			123	33	20	176
			7,920 kg.	3,475 kg.	2,550 kg.	13,945 kg.

Total (in tons), 13,945 (long).

TABLE 2.—Summary of catch: * Second trip

Date	Tuna	Swordfish	Sail fish	Sharks	Barracuda
9-22-50	10	2	0	4	
9-24-50	6	3	0	5	
9-25-50	8	0	1	1	
9-27-50	3	1	0	1	
9-28-50	1	2	1	1	
9-30-50	7	4	3	4	
10-1-50	6	1	5	3	
10-6-50	3	3	0	2	2

* The smallest tuna weighed 45 kilos, while the sailfish averaged 100 kilos each.

The data reveal much interesting information basic to the understanding of the causes underlying the success or failure of tuna fishing in those areas. The yellowfin tuna dominated the catch. Even at subsurface levels, there was evidence of predation by sharks which are normally surface-feeders. In

August and September when the warm waters from the lower latitudes must have reached their northernmost displacement, tunas were still found in the two fishing grounds.

The above information demonstrates the value of a knowledge of certain oceanographic factors in tuna-long-line operations. Of these factors, temperature, current drift and set, transparency and bottom topography are the most important in the light of the Japanese observations gathered in the tropical regions of the Pacific. Based on the Japanese investigations, the best catches were made in waters the temperature of which from the surface to a depth of 100 meters was over 20° C., transparency between 25 to 35 meters and current drift between 0.5 and 1.5 knots.