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Marquesas Islands fishing and environment info

Enclosed is a capsule summary of the fishing information covering the Marquesas Islands area published by this Laboratory. The summary was prepared by Howard Yoshida.

The section on oceanographic conditions will be forwarded within the next several days.

Enclosures

RSShomura:cay

*attached*

## Marquesas Islands Fishing Info

In 1956, the Honolulu Laboratory of the National Marine Fisheries Service (NMFS), which was then known as the Pacific Oceanic Fishery Investigations (POFI) of the Fish and Wildlife Service, began an evaluation of the tuna resources of the south central Pacific Ocean centered around the Marquesas Islands. The investigations were structured to obtain answers on the availability of both the surface and deep-swimming tunas, their distribution, and their relationship to the environment.

Initially, the survey cruises were carried out during two periods, the southern hemisphere winter and the southern hemisphere summer, which afforded the greatest contrast in environmental conditions and possibly in the abundance of tuna. The early cruises did indeed show striking differences in the abundance of tuna schools between the two periods. Later cruises were designed to determine the length of the season of greatest abundance of tuna schools around the Marquesas Islands. Also, some effort was expended to expand the survey into the Tuamotu archipelago. The final survey cruises included an expedition made by a chartered West Coast bait boat, the Cape Falcon, out of San Diego, to test the feasibility of fishing commercially in the Marquesas area. The basic data collected on all the cruises were published in the Special Scientific Report series of the Fish and Wildlife Service (Table 1).

An analysis of the results of the first five survey cruises appeared in Wilson and Austin (1957). Wilson and Austin (1959) examined the results of the cruises conducted between October 1957 and June 1958. An analysis of the results of all the survey cruises to the Marquesas Islands, including the cruise made by the Cape Falcon under charter to NMFS, was prepared for presentation to the Government-Industry Tuna Conference held at La Jolla, California, in January 1962 (Austin, T. S. Report on the tuna surveys in the Marquesas Islands. Mimeographed. In the files of NMFS, Honolulu, Hawaii). An assessment of the tuna resources of the Marquesas Islands area was also done by Rothschild and Uchida (1968). In addition, summaries of sightings of bird flocks and tuna schools in the Pacific Ocean, including the Marquesas Islands area have been prepared (Waldron, 1964; Naughton, MS).

These early fishing surveys were conducted by research vessels using the pole-and-line and live bait method of fishing. The paper by Rothschild and Uchida (1968) provides an excellent summary of conditions in the Marquesas Islands area in terms of pole-and-line fishing. Generally, skipjack tuna schools were more numerous than yellowfin tuna schools. The behavior of the skipjack tuna schools were erratic and wild. The schools were fast-traveling. The density of schools was higher during the southern hemisphere summer (January-March). During the periods January 18-25 and February 27-March 5, 174 schools were sighted in 15 days of scouting, which averaged out to a sighting rate of 11.6 schools per vessel per day. This sighting rate was more than twice that experienced in Hawaiian waters. However, the percentage of schools successfully fished appeared to be low compared to that in Hawaii.

The skipjack tuna caught by pole-and-line in the Marquesas ranged from 39 cm (1.1 kilograms or 2.5 pounds) to 83 cm (14.4 kilograms or 31.7 pounds). Most of the fish were between 45 and 55 cm (1.8 and 3.6 kilograms or 4 and 8 pounds).

In 1972, an eastern Pacific purse seiner, M/V Kerri M., with partial support from NMFS, conducted an exploratory 3-week fishing trip to the Marquesas. Briefly, most of the tuna schools sighted by the Kerri M. were composed of skipjack tuna. The estimated school size ranged from a few tons to something in excess of 100 tons. The skipjack tuna caught by the Kerri M. ranged from 8 to 12 pounds and the yellowfin tuna from 8 to 15 pounds. Nine successful sets (i.e., sets in which more than one ton of fish were caught) were made in a total of 37 attempted. A total of 87 tons (85 tons of skipjack tuna and 2 tons of yellowfin tuna) of tuna was caught. Two sets produced 20 and 35 tons, respectively, and the other seven sets produced six tons or less. The Kerri M.'s experience with the behavior of the fish schools was similar to that experienced earlier by our research vessels. The schools were erratic and unpredictable in their movements.

There have been reports of other purse seiners fishing in Marquesas waters but the results of these ventures have not been available to our Laboratory.

Literature Cited

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Rothschild, B. J., and R. N. Uchida

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Waldron, K. D.

1964. Fish schools and bird flocks in the central Pacific Ocean, 1950-1961. U.S. Fish Wildl. Serv., Spec. Sci. Rept.-Fish. No. 464.

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Table 1.--Survey cruises conducted in the Marquesas Islands area by the National Marine Fisheries Service.

<u>Cruise</u>	<u>Date</u>	<u>Activity</u>	<u>Reported in</u>
<u>Hugh M. Smith 35</u>	August 1 - October 5, 1956	Oceanography	SSR-F 217
<u>Charles H. Gilbert 30</u>	August 6 - September 26, 1956	Longline and live bait fishing	"
<u>Hugh M. Smith 38</u>	January 11 - March 26, 1957	Oceanography	SSR-F 238
<u>Charles H. Gilbert 32</u>	January 11 - March 22, 1957	Live bait fishing	"
<u>John R. Manning 34</u>	January 4 - March 12, 1957	Longline fishing	"
<u>Charles H. Gilbert 35</u>	October 2 - December 14, 1957	Live bait fishing	SSR-F 283
<u>Hugh M. Smith 43</u>	January 3 - February 25, 1957	Live bait fishing	"
<u>Charles H. Gilbert 38</u>	February 7 - May 2, 1957	Live bait and longline fishing	"
<u>Hugh M. Smith 45</u>	March 28 - June 23, 1958	Live bait fishing	"
<u>Charles H. Gilbert 43</u>	January 7 - March 26, 1959	Live bait fishing	SSR-F 348
<u>Cape Falcon</u>	February 15 - March 15, 1959	Live bait fishing	"

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