

The American eastern tropical Atlantic tuna fleet records its second highest total catch.

Participation by Panamanian and U.S. Seiners in 1972 Tuna Fishery of the Eastern Tropical Atlantic

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ABSTRACT

American participation in the 1972 eastern tropical Atlantic tuna fishery is reviewed. For the American fleet (Panamanian and U.S. seiners) the 1972 season was successful in terms of total catch of 24,200 metric tons of tuna, second highest recorded (highest was the 1969 catch of 24,300 metric tons) since significant numbers of American vessels first participated in the fishery in 1967. Catches, catch rates, fishing areas, and sizes of yellowfin and skipjack tunas caught by the American fleet in 1972 are discussed.

INTRODUCTION

From April through November 1972, 33 American purse seiners¹ fished off west Africa between lat. 30°N and lat. 20°S and east of long. 25°W (the eastern tropical Atlantic). A total of 12,000 metric tons of yellowfin tuna (*Thunnus albacares*) and 12,200 metric tons of skipjack tuna (*Katsuwonus pelamis*) were caught in 3,700 vessel-days of fishing. The total American catch (yellowfin and skipjack) from the eastern tropical Atlantic was 18 percent and fishing effort was 128 percent greater than in 1971. The number of boats, total fishing effort, and length of the season were the highest recorded for the fleet

since 1967 when significant numbers of American vessels first participated in the eastern tropical Atlantic tuna fishery (Sakagawa and Lenarz, 1972). A review of the American participation in the 1972 fishery is presented in this report.

TOTAL ATLANTIC CATCH OF YELLOWFIN AND SKIPJACK TUNAS

Preliminary catch statistics, which include principally all significant catches except that of the Taiwanese longline fleet, indicate that the total Atlantic catch (all fleets) of yellowfin tuna in 1972 will exceed the 1971 catch and probably also exceed the all-time high of 92,400 metric tons, which was recorded in 1969 (Figure 1). The increase in the 1972 yellowfin catch occurred primarily in the surface fishery with the American contribution showing improvement from a downward trend which began in

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1970 (Sakagawa and Lenarz, 1972).

The total Atlantic catch (all fleets) of skipjack tuna, on the other hand, decreased 18 percent in 1972 from an all-time high of 86,500 metric tons in 1971 (Figure 1). In the American total catch, skipjack and yellowfin tuna contributed about equally, based on weight. This was markedly different from the 79 percent skipjack—21 percent yellowfin composition of the 1971 American catch (Sakagawa and Lenarz, 1972).

MONTHLY CATCHES AND CATCH RATES IN THE EASTERN TROPICAL ATLANTIC

The year 1972 was the first in which the American purse seine fleet entered the eastern tropical Atlantic fishery as early as April. This early entry was largely due to the record early closing (5 March 1972) of the eastern tropical Pacific yellowfin tuna fishery (IATTC, 1973). Most of the 33 American vessels participating in the Atlantic fishery had been in the

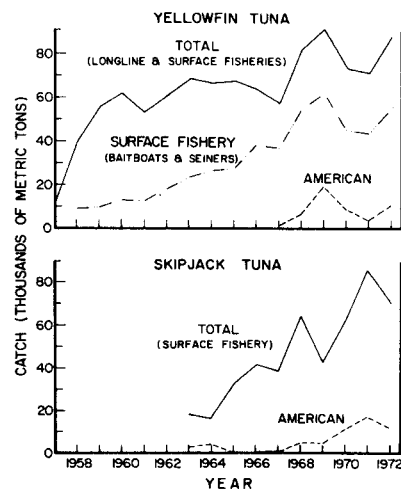


Figure 1.—Total catch of yellowfin and skipjack tunas in the Atlantic Ocean—all fisheries. 1972 figures are preliminary and incomplete.

¹American purse seiners refer to vessels flying the flags of Canada, Panama, or the United States. In 1972 no Canadian seiners participated in the eastern tropical Atlantic tuna fishery. The 1972 American fleet consisted of 32 Class 6 vessels (greater than 363 metric tons capacity) and one Class 3 vessel (92-181 metric tons capacity).

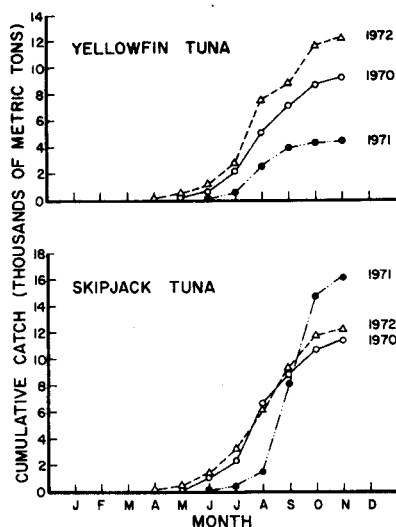


Figure 2.—Cumulative catch of yellowfin and skipjack tunas by the American fleet in the eastern tropical Atlantic, 1970-72.

Pacific yellowfin fishery just before and when it closed. The amount of effort expended by the American

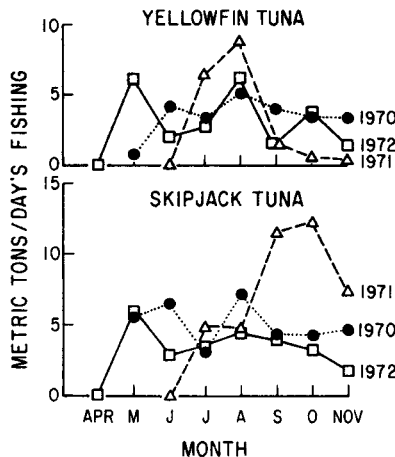


Figure 3.—Monthly catch rates of American seiners in the eastern tropical Atlantic tuna fishery, 1970-72.

fleet in April, however, was too small to be indicative of average fishing conditions for that month; therefore, the catch and catch rate for April are not discussed in this report.

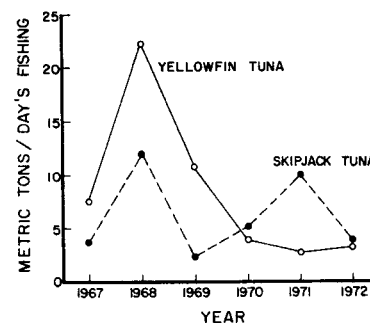


Figure 4.—Annual catch rates of American seiners in the eastern tropical Atlantic tuna fishery, 1967-72.

Although the American fleet entered the fishery earlier in 1972 than in previous years, the pattern of monthly catches of yellowfin tuna followed fairly closely the pattern of 1970, but at a slightly higher level (Figure 2). About 41 percent of the 1972 catch of yellowfin tuna was made in August and 74 percent in the 3

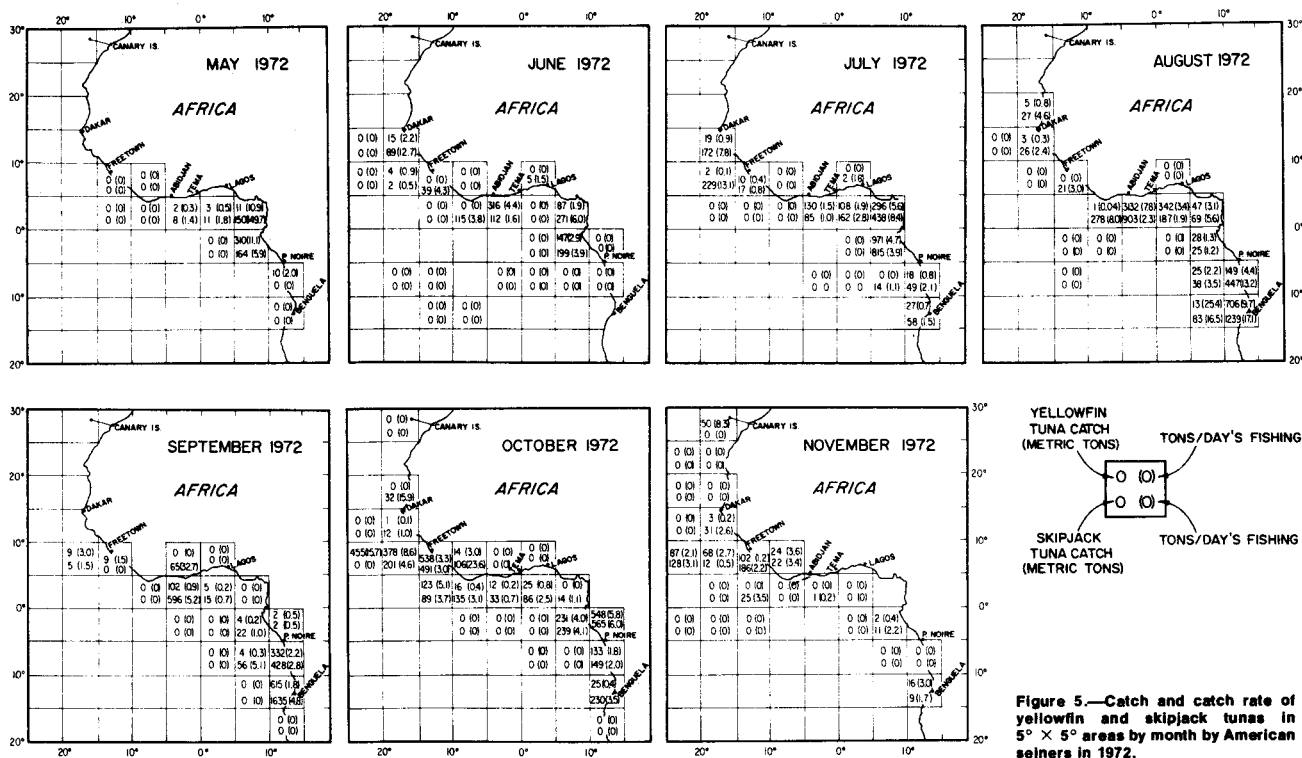


Figure 5.—Catch and catch rate of yellowfin and skipjack tunas in 5° x 5° areas by month by American seiners in 1972.

months, August-October. Fishing for yellowfin tuna was good in May and August (6.1 metric tons/day's fishing) and poor in September and November (1.5 metric tons/day's fishing Figure 3). For the season as a whole the catch rate was 3.3 metric tons of yellowfin tuna/day's fishing, slightly higher than the 1971 rate (Figure 4).

The pattern of skipjack catches was nearly identical to that of 1970 (Figure 2). About 70 percent of the total 1972 skipjack catch was made in August-October. Fishing for skipjack was good in May (6.1 metric tons/day's fishing) and poor in November (1.8 metric ton/day's fishing, Figure 3). For the season as a whole the catch rate was 3.7 metric tons of skipjack tuna/day's fishing, well below the 1971 rate of 10.0 metric tons/day's fishing (Figure 4).

"BEST" FISHING AREAS IN THE EASTERN TROPICAL ATLANTIC

In May-July 1972 the "best" areas of fishing, in terms of high catch rates (considering only $5^{\circ} \times 5^{\circ}$ areas in which five or more fishing days were expended in a month), for the American purse seine fleet were generally in the northern part of the Gulf of Guinea for yellowfin tuna and off Portuguese Guinea for skipjack tuna (Figure 5). In August, high catch rates were also obtained in the northern part of the Gulf of Guinea, but the "best" fishing area was off Benguela, Angola (lat. 10°S and long. 10°E), where 9.7 metric tons of yellowfin tuna/day's fishing and 17.1 metric tons of skipjack tuna/day's fishing

Table 1.—Areas of "best" fishing for American seiners, 1972.

Month	Yellowfin tuna	Skipjack tuna
Apr.	(Insufficient data)	(Insufficient data)
May	Congo	Congo
June	Ghana-Ivory Coast	Portuguese Guinea
July	Gabon	Portuguese Guinea-Sierra Leone
Aug.	Angola	Angola
Sept.	Angola	Ghana-Ivory Coast
Oct.	Liberia-Sierra Leone	Angola; Liberia-Sierra Leone
Nov.	Canary Islands; Liberia-Sierra Leone	Liberia-Sierra Leone

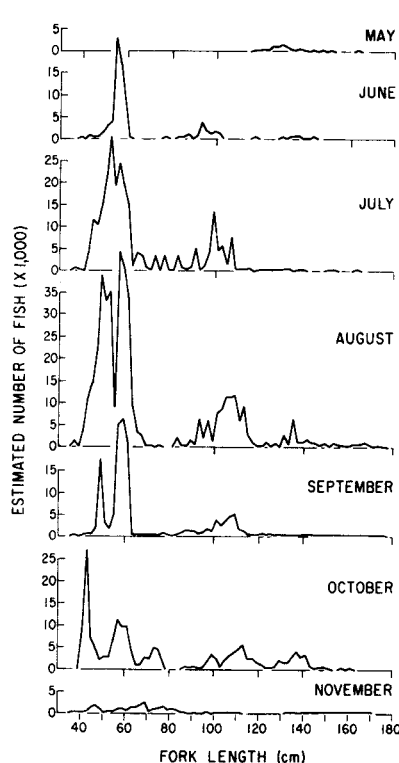


Figure 6.—Length-frequency distributions of yellowfin tuna caught by American seiners in the eastern tropical Atlantic, 1972.

were caught (Figure 3). In September, the fleet had overall poor fishing, but the "best" skipjack fishing was off Angola (lat. 10°S and long. 10°E), Ghana and the Ivory Coast (lat. 0° and long. 0°), and "best" yellowfin fishing, off Angola. A northward shift in "best" fishing grounds occurred in October and November, with the "best" fishing off Sierra Leone and Liberia (lat. 5°N and long. 15°W) and as far north as the Canary Islands (lat. 25°N and long. 15°W). In October, there was also reasonably good fishing, especially for yellowfin tuna, off Congo and Gabon (lat. 0°S and long. 5°E). A summary of the "best" fishing areas for the American fleet by month for 1972 is given in Table 1.

In 1972 some fishing effort was expended at considerable distances offshore (>570 km) but no tunas were caught (Figure 5). The amount of effort, however, was small (about 1

percent of total), so the results may not be indicative of the areas' potential as a source of tuna for the surface fishery. More exploration is needed to determine whether the total yield of especially yellowfin tuna might be substantially increased if the surface fishery expanded its operations farther offshore, as occurred in the eastern Pacific yellowfin tuna fishery (Joseph, 1970).

SIZE COMPOSITION OF CATCH

Three age groups of yellowfin tuna were principally caught by the American purse seine fleet in 1972. About 70 percent of the catch in numbers was 1-year-old fish (35-70 cm), 24 percent, 2-year-old fish (71-125 cm) and 4 percent, 3-year-old fish (126-150 cm). July through November were the best months for catching 1-year-old and 2-year-old yellowfin tuna, and May, August, and October were best for

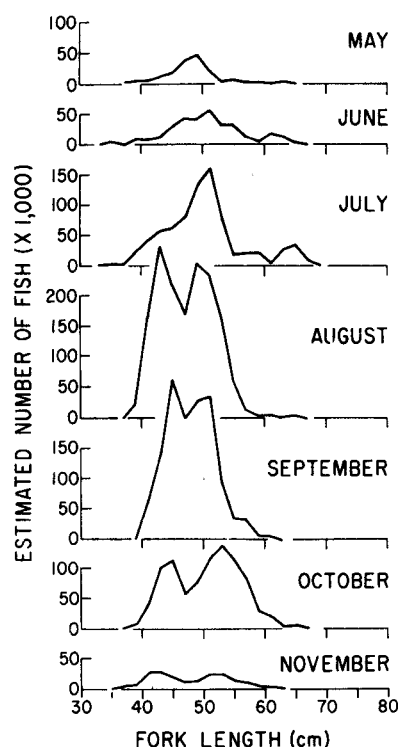


Figure 7.—Length-frequency distributions of skipjack tuna caught by American seiners in the eastern tropical Atlantic, 1972.

catching 3-year-old fish (Figure 6). The average length of yellowfin tuna in the total American catch was 70 cm.

Considerably more skipjack tuna in numbers than yellowfin tuna were caught in 1972 (5.3 million skipjack versus 1.1 million yellowfin). Exploitation was principally on the young-of-the-year (in the size range of 32-55 cm), but some 1-year-old skipjack (about 65 cm long) were also caught (Figure 7). The average length of skipjack tuna in the American catch was 49 cm.

SIGNIFICANCE OF RESULTS

In 1972, the International Commission for the Conservation of Atlantic Tuna (ICCAT) adopted a minimum size limit of 3.2 kg (55 cm) for yellowfin tuna with a provision that incidental catches of yellowfin tuna below this minimum size should not exceed 15 percent of the total yellowfin catch by number. This regulation was slated to begin in 1973, and, therefore, did not affect the 1972 fishery. If such a regulation had been enforced in 1972, as much as 8 percent, or about 1,000 metric tons, of yellowfin caught by the American

fleet in that year could not have been landed.

Although fishing effort of the American fleet increased 106 percent in 1972 over that of 1969, the year of the largest American catch of yellowfin tuna (Figure 1), the yellowfin catch decreased 39 percent. The catch rate of yellowfin tuna also decreased from 11 metric tons/day's fishing to 3 metric tons/day's fishing (Figure 4), and the average length of yellowfin in the catch decreased from 122 to 70 cm. Probable causes for this are: variable recruitment strength, e.g., 2-year-olds were the dominant age group in 1969 and 1-year-olds in 1972; shift in spatial-temporal distribution of fishing effort, e.g., since 1970 the fleet has concentrated its effort off Angola during a major part, September and October, of the season; change in availability and/or abundance of skipjack tuna, e.g., 4,400 metric tons or 18 percent of the total 1969 catch and 12,100 metric tons or 50 percent of the total 1972 catch was skipjack tuna; fishermen avoiding the capture of large fish in 1972 because of their high mercury content; or the actual abundance of

yellowfin tuna decreased in 1972 within the geographic boundaries where the surface fishery operates.

ACKNOWLEDGMENTS

My sincere thanks to my colleagues W. W. Fox, Jr. and W. H. Lenarz of the Southwest Fisheries Center (SWFC) for their comments on the manuscript and on tuna fisheries in general. To D. Kramer of the SWFC, my appreciation for reading the manuscript and offering pertinent comments. The Inter-American Tropical Tuna Commission provided catch and effort statistics for the American fleet. The cooperation of the captains and owners of American tuna vessels is greatly appreciated and acknowledged.

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MFR Paper 1040. From Marine Fisheries Review, Vol. 36, No. 3, March 1974. Copies of this paper, in limited numbers are available from D83, Technical Information Division, Environmental Science Information Center, NOAA, Washington, DC 20235.