

SOUTH PACIFIC COMMISSION

STATUS OF TUNA FISHERIES IN THE SPC AREA DURING 1990, WITH ANNUAL CATCHES SINCE 1952

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PREFACE

At the third meeting of the Standing Committee on Tuna and Billfish (SCTB) held in Noumea, New Caledonia, from 6 to 8 June 1990, the members of the committee called for the Tuna and Billfish Assessment Programme (TBAP) to compile fishery status reports, in order to facilitate the review by the SCTB of the TBAP work programme and to place the work of the TBAP in perspective.

The first annual status reports were subsequently compiled and presented as a working paper to the fourth meeting of the SCTB, held in Port Vila, Vanuatu, from 17 to 19 June 1991. The present document represents a revised version of the working paper, incorporating new information made available during the meeting.

The reports are arranged by gear type and fishing nation. The industrial fishing methods employed in the SPC region, and discussed herein, include driftnet, longline, pole-and-line, purse seine and troll. Artisanal and subsistence tuna fisheries, though important in some SPC member countries, are not considered. Following a brief account of the development of each fleet, trends in catch and effort are discussed, with emphasis on events during 1990 for those fleets for which such information is available.

In the tables of historical catch and effort statistics, consideration is given to the four main commercial species caught in the SPC region: albacore (*Thunnus alalunga*), bigeye (*Thunnus obesus*), skipjack (*Katsuwonus pelamis*) and yellowfin (*Thunnus albacares*). Catches of other species are not discussed explicitly, and discards are ignored.

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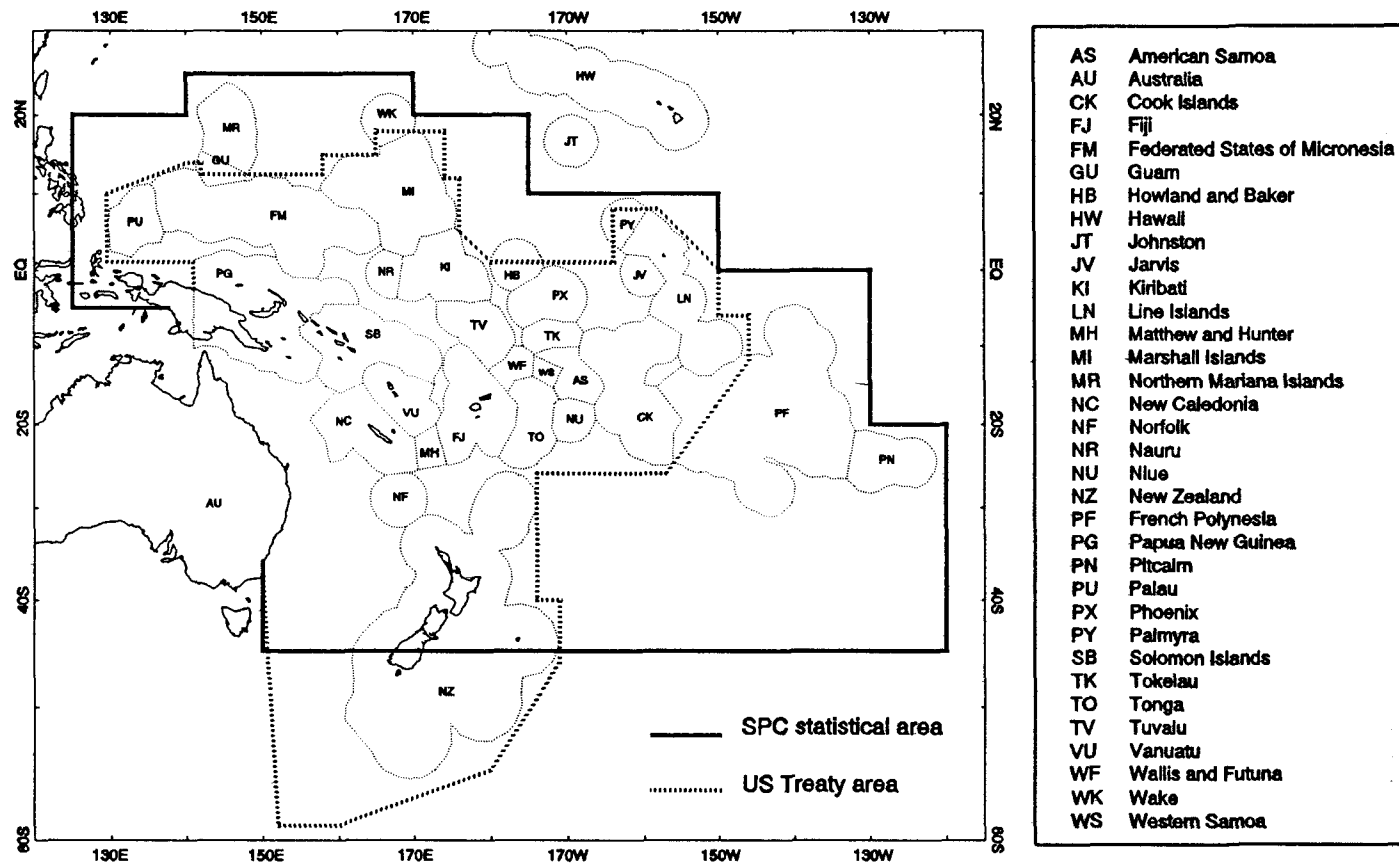


Figure 1. SPC statistical area

INTRODUCTION

Commercial tuna fisheries in the SPC statistical area (Figure 1) commenced with the arrival of the Japanese in the early part of the century (Matsuda and Ouchi 1984). Development of Japanese offshore fisheries started in the Meiji Era (1868—1912); prior to World War I, traditional tuna fisheries had gradually expanded from coastal to offshore areas and to distant waters. With government assistance, Japanese fishermen had, by 1922, explored skipjack fishing grounds around Saipan, Truk and Pohnpei. During the 1920s and 1930s, the Japanese steadily increased their presence in the SPC region, with supply bases and processing plants to service longline and pole-and-line fleets on several of the islands under the control of the Japanese trusteeship which was established following World War I.

In 1942, Japanese fishing vessels in the region came under government control. Japanese longliners did not return to the SPC region until 1952, when the last of the restrictions on the movements of Japanese fishing vessels that had been imposed following World War II as part of the post-war occupation policy was removed. In the late 1950s, the Taiwanese entered the longline fishery with the purchase of used Japanese vessels. The Koreans did the same during the mid-1960s. In the early 1970s, the Japanese distant-water pole-and-line fishery, which had operated in the SPC region from 1922 until World War II, expanded rapidly, both in numbers of vessels and in geographic area fished.

The Japanese first conducted purse-seine test-fishing around 1960; following a year-round feasibility study carried out in 1974, the fleet increased, reaching 17 vessels by 1980. In 1990, 41 vessels, including single and group seiners, were active in the SPC area. By the mid-1980s, the distant-water purse seine fishery in the SPC region also included vessels from Australia, Korea, Indonesia, the Philippines, Taiwan and the United States. In late 1990, the purse seine fleet numbered approximately 190 vessels.

In addition to longline, pole-and-line and purse seine vessels, trollers and driftnet vessels fish for tuna in the SPC statistical area. New Zealand trollers have fished for albacore in the Tasman Sea since 1973. American trollers and New Zealand trollers have fished for albacore in the Sub-Tropical Convergence Zone since 1985. Driftnet fishing in the SPC statistical area began when the Japanese targeted albacore during the 1982/83 season. Taiwanese driftnet vessels entered the albacore fishery during the 1987/88 season.

While the early development of tuna fisheries in the region depended almost entirely on distant-water fleets, domestic operations, often joint-venture companies with Japan, subsequently became important. Domestic pole-and-line vessels fished in Papua New Guinea during 1971-1981 and 1984-1985. In Fiji, a pole-and-line fleet was established in 1976. While chartered Taiwanese longliners had operated in Fijian waters since 1975, domestic longliners began fishing in Fiji in 1987. The Kiribati pole-and-line fleet was established in 1979. New Caledonian pole-and-line vessels operated from 1981 to 1983. The New Caledonian longline fleet has grown consistently since vessels first fished in 1983. Single vessel operations have existed in Tonga (a longliner) and Tuvalu (a pole-and-line vessel) since 1982. The largest domestic fishery is in Solomon Islands, where up to 35 pole-and-line vessels, including chartered Okinawan vessels, have operated since 1971 and purse seiners since 1984.

Small-scale commercial tuna fisheries, supplying local markets, exist in most Pacific Island countries. Subsistence catches are known to be significant in some areas, though catch statistics for subsistence fisheries are generally lacking.

Estimates of annual catches by countries or territories fishing for tuna in the SPC statistical area using driftnet, longline, pole-and-line, purse seine and troll are presented below. Whenever possible, statistics provided by governments of the fishing nations were included. However, many of the statistics are from other sources. When no sources were available, an attempt was made to estimate catches from the information at hand. Extensive use was made of data held in the Regional Tuna Fisheries Database, which contains daily catch and effort data collected by SPC member countries from both domestic fleets and foreign fleets operating in their exclusive economic zones (EEZs). Caution should be used in interpreting the statistics presented herein; in particular, most estimates for 1990 should be considered preliminary. Maps depicting the distribution of fishing effort were produced from data held in the Regional Tuna Fisheries Database; however, coverage of foreign fleets is generally poor, particularly in high seas areas.

DRIFTNET

Japan

The fleet of Japanese driftnet vessels has operated in the South Pacific, targeting on albacore, since the 1982/83 season (Table 1). The number of vessels active increased to 65 during the 1988/89 season, then declined to 20 vessels during the 1989/90 season following the decision by the Fisheries Agency of Japan to restrict fishing effort.

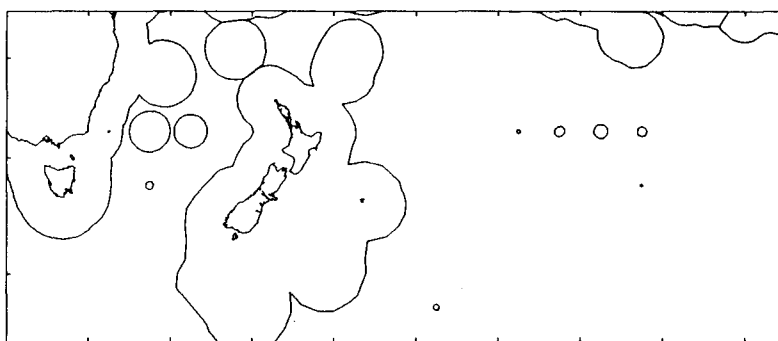


Figure 2. Japan driftnet effort during the 1989/90 season

Catches of albacore peaked during the 1988/89 season at 13,263 mt; the catch during the 1989/90 season was 5,567 mt. During the 1988/89 season, catch rates increased in the Tasman Sea and the Sub-Tropical Convergence Zone, while they decreased in the area off the coast of New Zealand.

Under the recent decision by the Fisheries Agency of Japan, no vessels operated during the 1990/91 season.

Korea

Only one driftnet vessel from Korea has fished in the South Pacific (Table 2). The vessel fished for albacore during the 1988/89 season, and caught 172 mt.

Taiwan

Taiwanese driftnet vessels commenced fishing for albacore in the South Pacific during the 1987/88 season (Table 3). Fishing effort peaked during the 1988/89 season, resulting in a catch of albacore of 8,520 mt. During the 1989/90 season, fishing effort declined considerably; 11 vessels caught 2,710 mt of albacore.

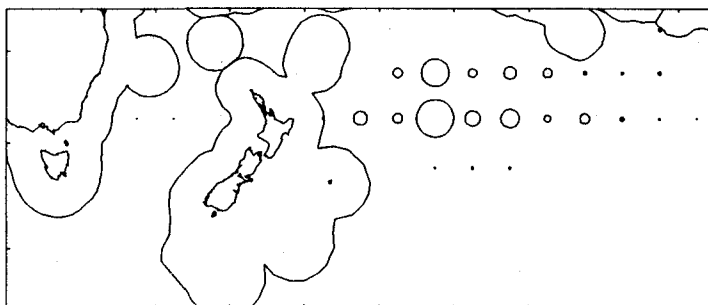


Figure 3. Taiwan driftnet effort during the 1988/89 season

LONGLINE

Australia

Sporadic experimental longline fishing for tunas by small domestic vessels occurred off south-eastern Australia during the 1960s and 1970s. The fishery expanded rapidly during the 1980s following the successful export of yellowfin and bigeye to the fresh-chilled sashimi markets of Japan (Anon 1990a).

The Australian longline fleet is currently comprised of three types of vessels: domestic vessels, wholly Australian-owned ex-Japanese vessels, and Australian/Japanese joint-venture vessels. In March 1990, 176 domestic vessels were endorsed to fish in the east-coast longline fishery. These vessels fall into four broad categories (Anon 1990b):

- planing-type longliners are the typical longline vessel in New South Wales; though longlining for tuna is the principal activity, they are often involved in poling, droplining or trapping;
- multi-purpose vessels participate in a number of fisheries throughout the year, catching tuna when they are present in local waters;
- trawlers only catch tuna when they are plentiful and the trawl fishery is quiet;

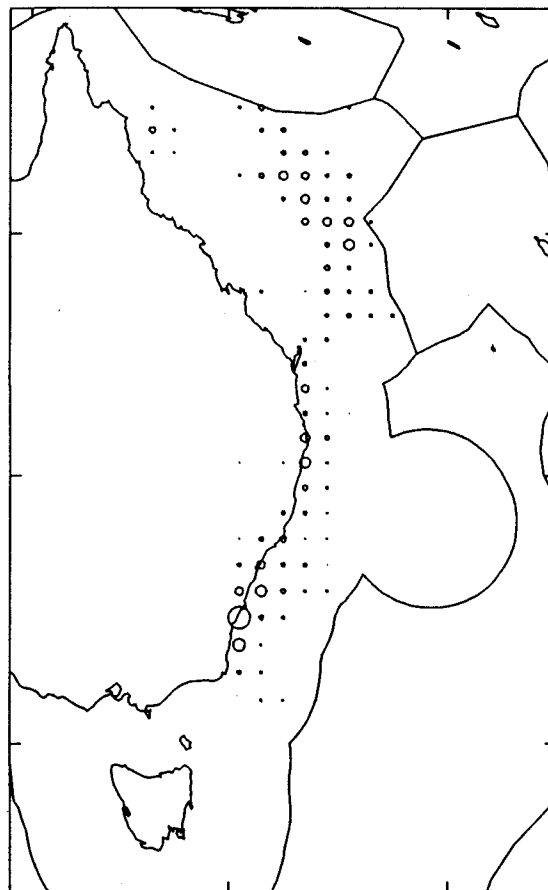


Figure 4. Australia longline effort, 1990

- deep sea boats work further offshore, droplining for demersal species when not longlining for yellowfin, bigeye and southern bluefin (*Thunnus maccoyii*).

Longlining by domestic vessels is centred on coastal waters of New South Wales and southern Queensland, generally within 60 nautical miles of the coast. Vessels normally return to port each day, although two- or three-day trips have recently become common. In contrast with the ex-Japanese and joint-venture vessels, which shoot between 1800 and 3000 hooks per set, the domestic vessels use only about 200 to 500 hooks. High-quality catches of yellowfin, bigeye and striped marlin (*Tetrapturus audax*) are flown to the fresh-chilled sashimi markets of Japan, while other species, such as broadbill swordfish (*Xiphius gladius*) and albacore, are sold on the domestic market (Bureau of Rural Resources 1989).

The hooking rate for the domestic vessels is usually greater than for the ex-Japanese vessels, 4.73 fish per 100 hooks in 1990 for the domestic vessels (Table 4), due in part to the greater selectivity by the domestic vessels in the areas and days fished.

There are currently five ex-Japanese longliners in the Australian fleet, however, only two vessels are covered by 1990 data held at SPC.

Statistics for the domestic vessels are presented in Table 4. Catch rates for the domestic vessels appear to have increased consistently, from 3.62 fish per 100 hooks in 1987 to 4.59 fish per 100 hooks in 1990. Domestic vessels caught at least 608 mt in 1990.

Fiji

In 1989 and 1990, major investments were made in Fiji for the purpose of catching yellowfin and bigeye by longline for export. About 11 longliners were actively fishing in 1990, with perhaps twice that number of investment proposals yet to be implemented. Exports of fresh longline-caught tuna were expected to be around 600—1,000 mt in 1990, despite a reportedly poor fishing season. The domestic longline fishery was declared a limited entry fishery in 1989, due to the lack of infrastructure facilities and to fears that the vessels, many of which are multipurpose demersal/pelagic longliners, may stress the deepwater snapper resource (Anon 1990c). Chartered Taiwanese vessels have operated in Fijian waters since 1975; these vessels are covered in the discussion of Taiwanese longliners below.

Japan

In the period after World War I, when Japanese fishermen expanded their fishing grounds into the SPC region, initially skipjack pole-and-line fishing was the dominant form of fishing. However, by 1926 almost all Japanese tuna longliners were converted to power-driven vessels, which resulted in an expansion of longline fishing grounds. In 1932/33, the Japanese government conducted the first mothership operation for tuna longline fishing in the area from the Nicobar Islands to Timor, proving the economic feasibility of the operation. By 1939, there were 72 Japan-based tuna longliners fishing in the SPC area, taking yellowfin, bigeye and swordfish. After World War II, Japanese longlining expanded rapidly, once the restrictions to vessel movements were lifted in 1952. By 1960 there were Japanese longliners based in Pago Pago, American Samoa, and Espiritu Santo, Vanuatu (then the New Hebrides), while mothership operations extended as far as south as

New Zealand. The expansion of the longline fleet continued until about 1970. In 1980 the industry decided to reduce the number of distant-water tuna vessels by 20 per cent, in response to changing economic conditions, including increased fuel costs, rising crew costs, extended duration of fishing trips due to declining catch rates, restrictions imposed by extended jurisdiction and stagnating market conditions for fisheries products in Japan (Fujinami 1987). The number of distant-water longliners licensed in Japan fell from 997 in 1970 to 762 in 1984. While the number of vessels operating in the SPC area in 1990 is not known precisely, there are 406 vessels covered in the Regional Tuna Fisheries Database.

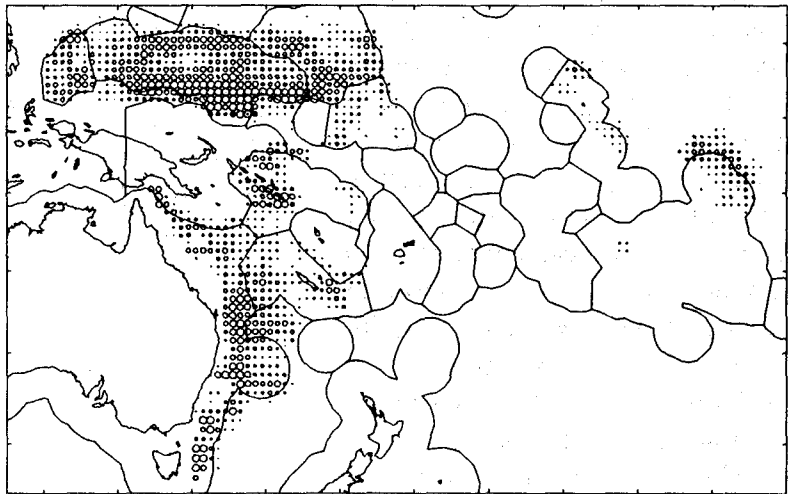


Figure 5. Japan longline effort, 1990

The Japanese longline fleet currently operating in the SPC statistical area consists of two groups of vessels. The number of distant-water vessels (150—500 gross tonnes) based in Japan declined throughout the 1980s, continuing the trend which began in the 1970s, as less efficient vessels were retired in response to rising costs of fishing. Since 1987, the Guam-based vessels (all under 100 gross tonnes, many around 20 gross tonnes), which fish mainly in the waters of the Federated States of Micronesia, have grown in number. Distant-water longliners caught an estimated 60,431 mt in the SPC area in 1990 (Table 5); Guam-based vessels transshipped 9,101 mt in 1990, an increase over previous years (Table 6).

Between 15°N and 10°S, where the fishery in SPC member countries consists mostly of the smaller Guam-based longliners, usually targeting on yellowfin and bigeye, the data held in the Regional Tuna Fisheries Database indicate that yellowfin catch rates have declined on an annual basis from 1988 to 1990, while bigeye catch rates have increased. The catch rate for yellowfin declined to 0.89 fish per 100 hooks during 1990 from 1.04 fish per 100 hooks during 1989, while the catch rate for bigeye increased to 0.85 fish per 100 hooks from 0.62 fish per 100 hooks.

South of 10°S, the long-distance vessels covered by data held at SPC fish off the east coast of Australia, with a small number of vessels fishing in the waters of Solomon Islands. Catch rates for yellowfin for long-distance vessels fishing south of 10°S (within the SPC statistical area) increased during 1990, while catch rates for albacore declined.

Korea

Korean longliners began fishing in the Pacific Ocean in 1958. During the 1960s, used Japanese vessels were purchased and began supplying American canneries from foreign ports (Uyemae 1975). During the late 1960s and early 1970s, the species composition of the catch

changed, as vessels switched from targeting on albacore, for sale to canneries, to targeting on yellowfin and then bigeye, using deep longlining, for sale on the sashimi markets of Japan. While Korean longliners continue to supply albacore to American canneries (Ito and Yamasaki 1988), the proportion of albacore has declined. In 1986, for example, albacore represented only 20 per cent of the catch in the SPC statistical area, while bigeye and yellowfin accounted for 38 per cent and 34 per cent respectively (Table 7).

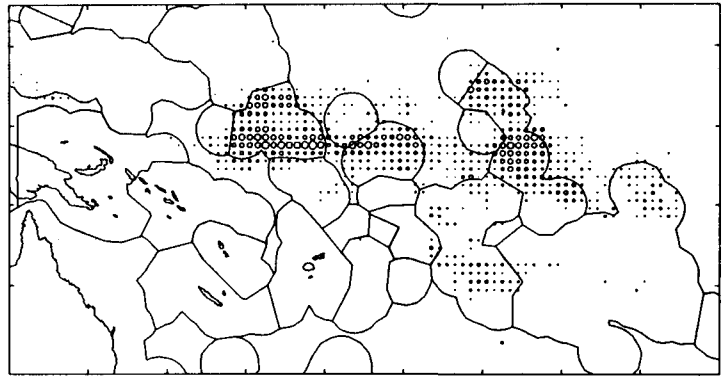


Figure 6. Korea longline effort, 1989

Estimates of the number of vessels active in the SPC statistical area are not available. However, it would appear from the number of vessels covered by data held in the Regional Tuna Fisheries Database that they have declined only slightly. It has been reported by the National Fisheries Research and Development Agency that 124 vessels were active in the Pacific Ocean during 1988 (Kim, personal communication, 1989), of which 37 vessels unloaded 11,000 mt at Pago Pago, American Samoa (Namkoong, personal communication, 1989). During 1990, Korea reached an agreement with Kiribati allowing 113 Korean longliners to fish in the Kiribati EEZ (Forum Fisheries Agency 1990b).

Between 15°N and 10°S, where longliners in the SPC area generally target yellowfin and bigeye, Korean longliners covered by data held at SPC usually operate in the waters of Kiribati (including Phoenix Island and the Line Islands), Tuvalu, the Cook Islands and French Polynesia. The data available indicate that the average catch rate for all species combined at low latitudes during 1990 was 1.43 fish per 100 hooks, compared to 1.04 fish per 100 hooks during 1989. Catch rates for yellowfin, bigeye and albacore all increased during 1990.

South of 10°S, where more albacore than yellowfin or bigeye are taken by longliners, Korean vessels covered by data held at SPC usually operate in the waters of the Cook Islands and French Polynesia. The limited data available indicate that the catch rate for albacore declined from 0.88 fish per 100 hooks during 1989 to 0.66 fish per 100 hooks during 1990.

It has been reported elsewhere that fishing by Korean longliners targetting southern albacore was poor during the 1990/91 season and that this, combined with low prices for albacore, is forcing the fleet to redeploy to target bigeye and yellowfin (Forum Fisheries Agency 1990b).

New Caledonia

The fleet of longliners based in Noumea, New Caledonia, has grown from one vessel in 1983 to six vessels in 1990 (Table 8). The fleet fishes almost exclusively in the waters of New Caledonia, targeting on albacore for the local market and on yellowfin and bigeye for the Japanese sashimi markets.

The total catch by the New Caledonian fleet during 1989 was 1,148 mt, compared to approximately 1,300 mt in 1988.

The data held in the Regional Tuna Fisheries Database indicate that the catch rate for all species combined declined from 3.0 fish per 100 hooks during 1989 to 2.8 fish per 100 hooks during 1990. The catch rate for albacore declined from 2.0 fish per 100 hooks in 1989 to 1.9 fish per 100 hooks during 1990, continuing a trend evident since 1988.

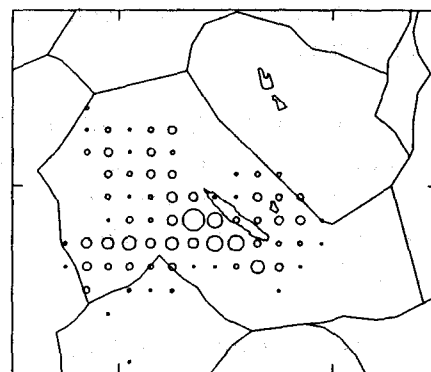


Figure 7. New Caledonia longline effort, 1990

Solomon Islands

Beginning in 1973, tuna longline trials were carried out in Solomon Islands waters (Anon 1985). The trials were conducted by two 250 gross tonne vessels over six trial periods, which concluded in 1977. The success of the trials led to the introduction of two further vessels under charter to Solomon Taiyo Ltd (STL); these operations concluded in 1981. Shortly afterwards, National Fishing Development Ltd (NFD) began operating two longliners donated to the Solomon Islands under Japanese aid. The NFD longliners were 144 gross tonnes with a fish hold capacity of 65 tonnes. The NFD operations ceased in 1985.

The species composition during 1981—1985 averaged 69 per cent bigeye, 12 per cent yellowfin and 3 per cent albacore (Table 9). The greatest annual catch was obtained in 1980, when a total of 818 mt was caught.

While domestic vessels have not fished since 1985, Japanese longliners have fished successfully in Solomon Islands waters, under access agreements, since 1978 (Anon 1989a).

Taiwan

The Taiwanese longliners fishing in the SPC statistical area fall into two groups. The vessels based in Guam, Palau and Taiwan, mostly 20—80 gross tonnes, target on yellowfin and bigeye. Vessels based in Guam and Palau have fished in the waters of the Federated States of Micronesia and Palau, and neighbouring international waters, while vessels based in Taiwan have fished in those areas and also in waters to the west of Taiwan, towards the South China Sea. Most of the catch by Guam- and Palau-based vessels is transshipped to the

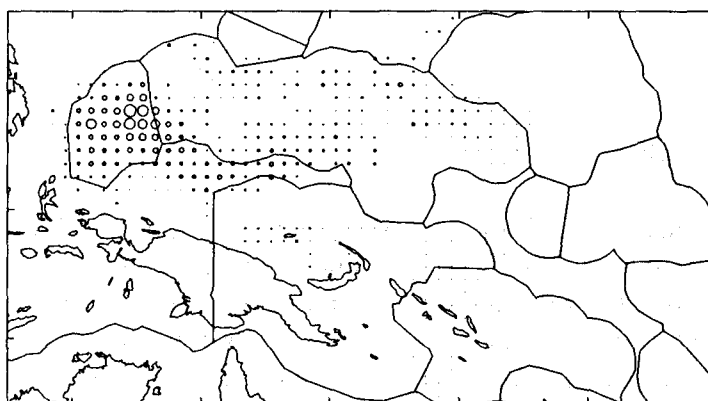


Figure 8. Taiwan longline effort, 1990, by Guam- and Palau-based vessels

sashimi markets in Japan. During 1990, Guam- and Palau-based vessels caught an estimated 7,204 mt (Table 10).

The distant-water vessels, mostly 150—250 gross tonnes, fish from base ports in American Samoa, Fiji and Taiwan, and target on albacore. Until 1986, some vessels fished from Espiritu Santo, Vanuatu (Forum Fisheries Agency 1989). Their catches are sold primarily to canneries in Pago Pago and Levuka. Taiwanese distant-water vessels caught an estimated 12,378 mt in 1990 (Table 11).

Few data covering the distant-water longliners are held in the Regional Tuna Fisheries Database, therefore Figure 8 does not depict the distribution of fishing effort of these vessels, but only the Guam- and Palau-based vessels.

Catch rates for the distant-water vessels declined consistently during the 1960s and 1970s, from 5.43 fish per 100 hooks in 1967 to 3.61 fish per 100 hooks in 1979. During the early 1980s, catch rates were variable, ranging from 1.95 to 4.57 fish per 100 hooks. Since 1986, albacore catch rates have declined consistently, from 4.35 fish per 100 hooks to 1.79 fish per 100 hooks in 1989.

Tonga

Tonga's single longline vessel was built of GRP construction in Japan in 1981. Since fishing began, in 1982, catches have averaged 306 mt annually, with a peak in 1985 of 370 mt (Table 12). Albacore, the target species, are regularly sold to the Pacific Fishing Company cannery in Levuka, Fiji, and to canneries in American Samoa.

From data available in the Regional Tuna Fisheries Database, the catch rate during 1990 was 2.81 fish per 100 hooks, down from 3.03 fish per 100 hooks during 1989. The catch rate for albacore during 1990 was 2.04 fish per 100 hooks, compared to 2.06 fish per 100 hooks during 1989.

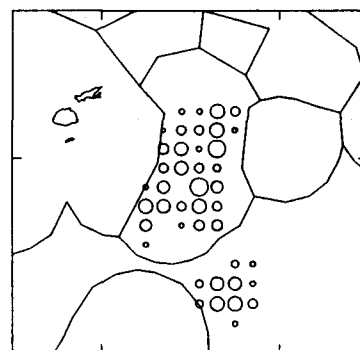


Figure 9. Tonga longline effort, 1989

POLE-AND-LINE

Australia

Pole-and-line fishing occurs off the south coast of New South Wales on a seasonal basis, from December to March. According to the data available in the Regional Tuna Fisheries Database, provided by the Australian Fisheries Service (which may under-represent pole-and-line catch and effort in recent years), in the late 1970s and early 1980s about 20 vessels caught skipjack and, to a lesser extent, yellowfin, while pole-and-line fishing for southern bluefin (Table 13). From 1982 to 1985, the number of vessels poling declined considerably as the southern bluefin fishery off New South Wales collapsed and the target species changed to skipjack and yellowfin.

In recent years, the fishery has expanded, with catches reaching 3,420 mt (including a small amount caught by purse seine) during the 1989/90 season. Deliveries of skipjack from 17 pole-and-

line vessels and 5 purse seiners at the Heinz Greenseas cannery in Eden, New South Wales, during the 1990/91 season reached about 6,000 mt.

Fiji

The Fijian pole-and-line fishery commenced in 1976, with fishing operations managed by the national fishing company, Ika Corporation, and the catch sold to the Pacific Fishing Company (PAFCO) cannery in Levuka, which Government has controlled since 1986 (but which was originally 70 per cent Japanese-owned). The fleet has consisted of vessels owned by Ika Corporation, chartered Japanese vessels, and other private vessels. The number of vessels active in Fijian waters has fluctuated, rising to 14 vessels in 1982, then declining to 6 vessels in 1986, then rising again to 8 vessels in 1988 (Table 14).

The fishery is seasonal, usually from November to August; the catch is usually comprised of about 90 per cent skipjack and 10 per cent yellowfin.

The activities of the fleet have usually been restricted to Fijian waters; however, during the poor fishing season of 1980, two chartered Japanese vessels fished in the waters of Tuvalu (Anon 1980). In response to the poor 1989/90 season, some restructuring of the fleet has occurred; several pole-and-line vessels may convert to longlining (Anon 1990c) and one vessel fished in the waters of Solomon Islands during November and December 1990.

Annual catches peaked in 1989 at 5,883 mt; the catch rate during 1989 was 4.2 mt per day, compared to the 1976—1989 average of 3.0 mt per day. The 1990 catch declined to 4,029 mt; from data available in the Regional Tuna Fisheries Database, the 1990 catch rate declined to 3.1 mt per day.

Japan

Japanese pole-and-line fishing started in the Western Central Pacific in 1922, with bases on several islands included in the Japanese trusteeship established at the end of World War I (Matsuda and Ouchi 1984). Skipjack fishing was accelerated during the 1920s by the construction of *katsuobushi* processing plants on Saipan, Truk, Pohnpei and Palau. The highest pre-war catch of skipjack was recorded as 28,688 mt in 1937. In 1940, there were 128 licensed pole-and-line vessels. With oil, water, live-bait and food supply bases in the region, distant-water tuna fisheries became year-round operations. The size of vessels increased, and fishing grounds expanded to almost all areas under the Japanese trusteeship, and waters around Papua New Guinea, Solomon Islands and major fishing grounds in South-East Asia.

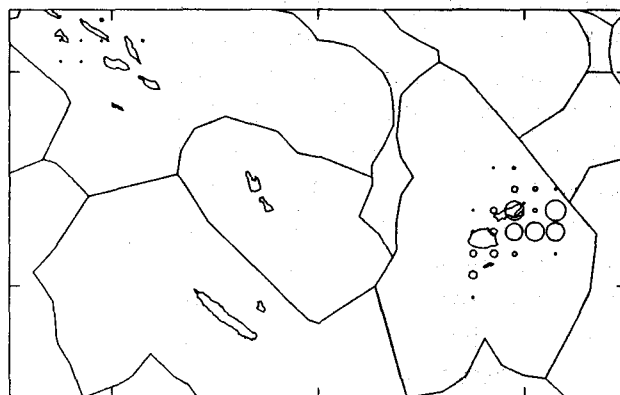


Figure 10. Fiji pole-and-line effort, 1989

With Japan's involvement in World War II, the fisheries were put under government control. As a result, 60 per cent of all vessels and all overseas bases were lost. After the war, the areas accessible to Japanese fishing vessels were controlled. The boundaries, McArthur's Lines, were not removed until 1952. In 1953, the Japanese Government passed a special law for licensing to promote distant-water tuna fisheries. However, southward expansion of the pole-and-line fishery was long limited to the area north of the Equator; expansion to the South Pacific came only after 1970.

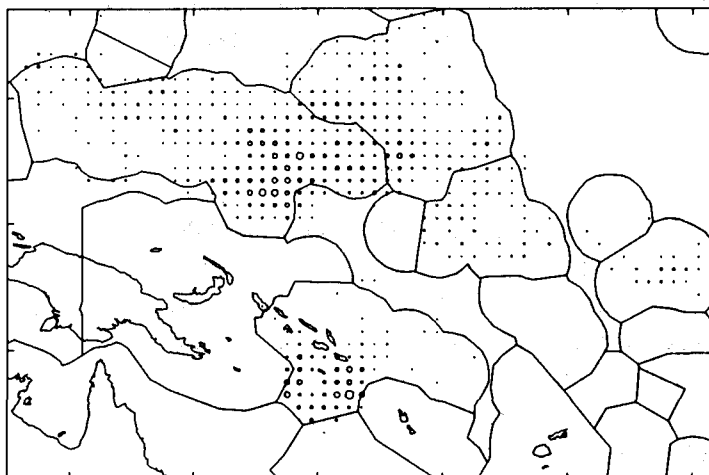


Figure 11. Japan pole-and-line effort, 1990

During the 1970s, catches in the SPC statistical area grew rapidly, from 65,711 mt in 1972 to 144,212 mt in 1974 (Table 15). The fishery peaked at 160,047 mt in 1977. Thereafter, the fishery contracted in response to rising costs of fishing and reduced access to fishing grounds resulting from the implementation of EEZs by SPC member countries. The number of vessels covered by data held in the Regional Tuna Fisheries Database, which is an indicator of the vessels active in the SPC statistical area, declined from 317 vessels in 1980 to 61 vessels in 1990. In 1989, while there were 108 distant-water pole-and-line vessels licensed in Japan, only 59 vessels are covered by logsheet data held at SPC; since non-reporting of catch and effort data is not considered to be a problem for Japanese vessels, it would appear that not all Japanese distant-water pole-and-line vessels fish in the waters of SPC member countries.

Since the early 1980s, as fishing effort in the SPC statistical area decreased, catch rates appear to have increased, suggesting that less-efficient vessels left the fishery. Catch rates remained relatively high until late 1989, when poor fishing resulted in reduced fishing effort in the SPC region and forced many of those vessels that remained to explore new areas. During January–April 1990, Japanese pole-and-line vessels conducted trials near the EEZ of New Zealand.

The catch rate for all species combined during 1990 was 7.0 mt per day, down considerably from 10.7 mt per day during 1989. Catch rates for skipjack dropped below 3.0 mt per day during January and February 1990, then increased during March 1990. Catch rates during the fourth quarter of 1990 have been higher than during the fourth quarter of 1989, but far below catch rates during the fourth quarter of 1988.

Kiribati

Involvement in commercial tuna fishing in Kiribati commenced in late 1970. Surveys under the auspices of the Japan International Cooperation Agency (JICA) and the Food and Agriculture Organization of the United Nations (FAO) indicated good prospects for viable fishing operations. The government took delivery of a 35 metre Japanese pole-and-line vessel in 1979 (Anon 1979).

A government-owned fishing company, Te Mautari Ltd, was established in 1981, with two Japanese-style pole-and-line vessels. The fleet grew to five vessels in 1988, when two vessels constructed in Fiji were added. Since 1987, several of the vessels have fished in the waters of Fiji on a seasonal basis, usually from November to April. In late 1990, four of the five vessels fished in the waters of Solomon Islands.

Catches have been variable in recent years: 434 mt in 1987, 1,536 mt in 1988, 2,273 mt in 1989 and 569 mt in 1990 (Table 16). Following poor fishing and mechanical problems in 1990, the fleet was forced to discontinue fishing at the beginning of 1991.

New Caledonia

Early surveys of the skipjack and baitfish resources of New Caledonia were made by the Japan Marine Fishery Resource Research Center (JAMARC); this work identified seasonal variation in the abundance of baitfish and skipjack, with both sufficiently abundant in summer to support a pole-and-line fishery for skipjack. Later survey work in 1980 by a pole-and-line vessel owned privately suggested that skipjack might be sufficiently abundant in winter to support commercial operations. Additional surveys were undertaken by the *Office de la Recherche Scientifique et Technique d'Outre-Mer* (ORSTOM); they provided evidence of the winter presence of yellowfin to complement the occurrence of skipjack in summer.

The pole-and-line fleet was established in 1981 with one vessel; it expanded to three vessels in 1982. While catch rates were comparable with those achieved by Fijian vessels today (Table 17), the fishery closed in 1983 due to economic conditions prevalent at the time (Hallier 1984).

Palau

The Van Camp Sea Food Company established cold storage facilities at Koror in 1964 for the transshipment of tuna landed by Okinawan pole-and-line vessels owned by Van Camp. The fleet operated until 1982. According to data held in the Regional Tuna Fisheries Database, the maximum number of vessels was reached in 1981, when 36 vessels were active (Table 18). Catches grew from 1,178 mt in 1964 to 8,442 mt in 1970; thereafter catches were variable.

Papua New Guinea

Following the promising results obtained by six Japanese research cruises from 1968 to 1970, and the recommendations of a United Nations Development Programme (UNDP) team which visited the area in 1969, joint-venture fishing operations were encouraged in Papua New Guinea. Fishing commenced first out of Manus and Madang for a short period, then out of Kavieng, New Ireland, in 1970 (Tuna Programme 1983). The fishery grew from one joint-venture company and 2,431 mt caught in 1970 to four companies and 41,780 mt caught in 1974 (Table 19). Okinawan-style (59 gross tonnes) pole-and-line vessels were predominant in the fishery, catching 90 per cent skipjack and operating in groups serviced by a mothership with freezer and storage facilities. Catches were unloaded, usually on a daily basis, to the mothership for freezing and subsequent transshipment to freighters. Apart from a small proportion of the catch which was processed locally and exported

as *katsuobushi*, the catch was exported as frozen whole fish. The fishery ceased operations in 1981, then recommenced in October 1984 and continued until late 1985.

Solomon Islands

After a successful survey conducted in 1971 by Taiyo-Gyogyo, a joint-venture agreement with the Solomon Islands government was signed into effect in November 1972 (Meltzoff and LiPuma 1983), creating Solomon-Taiyo Ltd, with 75 per cent Japanese ownership (Matsuda and Ouchi 1984). In March 1973 fishing operations by STL began, with eight chartered Okinawan pole-and-line vessels, and, in August of that year, a shore facility at Tulagi opened, with a 600 mt cold store, ice plant and brine freezer. By the end of the year, a cannery was operative, as well as an *arabushi* smoked fish processing plant. In January 1976, a second shore base opened at Noro, with larger and more modern facilities.

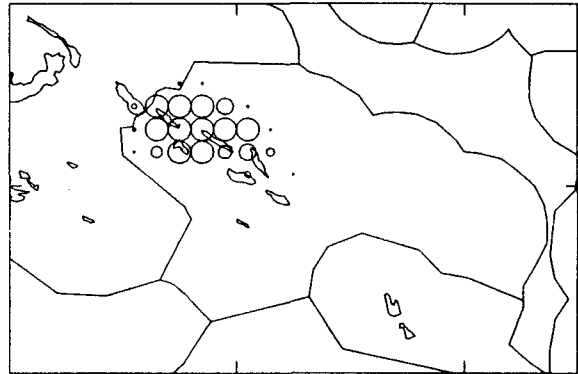


Figure 12. Solomon Islands pole-and-line effort, 1990

Funded in part by the Asian Development Bank and by Solomon Taiyo Ltd, the National Fisheries Development Corporation (NFD) began fishing operations in 1979 with two pole-and-line vessels donated by Japan, with the catch sold to STL. Five years later, in 1984, the NFD fleet included nine vessels, of which two were chartered vessels and seven company-owned. NFD was sold in 1990 to British Columbia Packers Ltd and is now operated in association with a BC Packers subsidiary, Mar Fishing Company, which is based in the Philippines.

Catches usually consist of about 95 per cent skipjack, 2 to 3 per cent yellowfin, with the remainder rainbow runner (*Elegatis bipinnulatus*), dolphinfish (*Coryphaena hippurus*) and island bonito (*Euthynnus affinis*). Catches during the 1970s were variable (Table 20), ranging from 4,711 mt at the start of the fishery in 1971 to 23,801 mt in 1979. In the 1980s, when both STL and NFD were active, catches averaged 26,865 mt per year.

The total catch in 1990 was 21,536 mt, the lowest annual catch since 17,322 mt were taken in 1982. The low catch was due to reduced fishing effort and to a below-average CPUE; the average catch rate during 1990 was 3.4 mt per day, compared to the average CPUE during 1971–1989 of 4.0 mt per day.

Tuvalu

In 1981, the National Fishing Corporation of Tuvalu (NAFICOT) was proclaimed as a statutory body (Schupp 1984). A 173 gross tonne pole-and-line vessel, *Te Tautai*, was received through bilateral aid from the Japanese Government. The crew has included a Tuvaluan master, responsible for daily management and operations, and, as part of a training and advisory programme, a Japanese master, masterfisherman and chief engineer. From the start of operations, April 1982, the

Te Tautai operated in Fijian waters, with management during the time spent in Fiji established under an agreement with Ika Corporation. While in Fiji, most of the catch was sold to the Pacific Fishing Company (PAFCO) cannery in Levuka; the remainder was sold for local consumption in Fiji and Tuvalu. The *Te Tautai* fished in Solomon Islands during most of 1987 and 1988; the annual catch peaked at 1,090 mt in Solomon Islands waters in 1988 (Table 21). Since December 1989, the *Te Tautai* has been under charter to the South Pacific Commission for the Regional Tuna Tagging Project.

PURSE SEINE

Australia

Data in the Regional Tuna Fisheries Database covering the activities of Australian purse seiners off the east coast of Australia, in the SPC statistical area, go back to 1975 (Table 22), though it is known that purse seiners caught skipjack tuna prior to then. In most cases, skipjack catches have been incidental catches while targeting on southern bluefin. In early 1991 there were 10 vessels endorsed to operate in the east coast tuna purse seine fishery, with 8 permitted to fish within 50 nautical miles of the coast and 2 permitted to fish outside 50 nautical miles (Australian Fisheries Service 1991). During the 1990/91 skipjack season, 6 of these vessels fished.

Since at least 1988, Australian purse seiners have fished outside the Australian Fishing Zone (AFZ), in the waters of the Federated States of Micronesia, Papua New Guinea and Solomon Islands (Table 23). Two vessels fished in Solomon Islands in 1988, with disappointing results (Anon 1989a). During 1990, 9 vessels operated in Papua New Guinea, of which 5 also fished in the waters of the Federated States of Micronesia during late 1990.

Indonesia

Since at least 1987, three French-built purse seiners (632—765 gross tonnes) operated by a French—Indonesian joint-venture company (Anon 1988) have operated in the waters of SPC member countries on a part-time basis, also fishing in Indonesian waters and on the high seas.

In 1988, their total annual catch was just over 13,000 mt (Table 24); 3,859 mt, or 30 per cent, were reported on daily catch and effort logsheets to have been caught in the waters of SPC member countries. In 1989, the vessels were absent from the SPC area from July to November, returning in December 1989 and staying until March 1990.

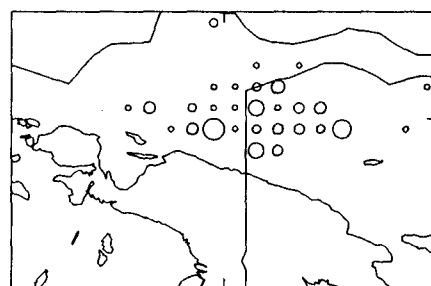


Figure 13. Indonesia purse seine effort, 1989

Japan

The purse seine method was first adopted by Japanese vessels in 1948, targeting skipjack and yellowfin in coastal waters; by 1952 some 13 companies operated 16 seiners (Habib 1984). Purse

seine trials in the SPC area began around 1960 (Matsuda and Ouchi 1984). After successful operations in 1964, three 300 gross tonne purse seiners began fishing. Between 1964 and 1974, up to six seiners fished around Micronesia and Papua New Guinea during the northern winter months each year. Catches during this period were small, 3,392 mt in 1974 (Table 25), due to unfamiliarity with purse seine fishing conditions in the SPC area (Watanabe 1983). The Japan Marine

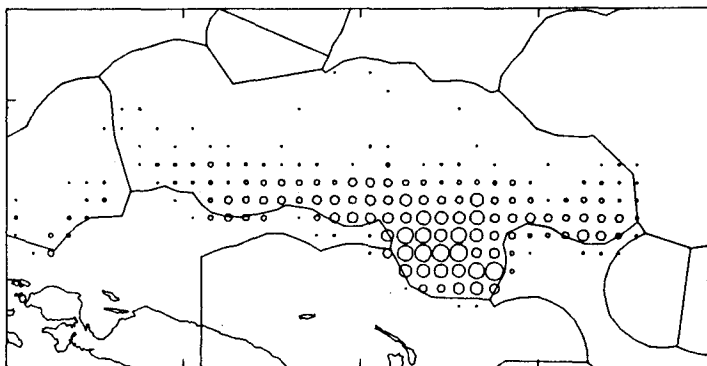


Figure 14. Japan purse seine effort, 1990

Resource Research Center (JAMARC) was established in 1971; from 1974 to 1976, JAMARC conducted an economic feasibility study of a year-round purse seine fishery for tuna around the Federated States of Micronesia, Palau and Papua New Guinea. By 1980, the fleet had grown to 11 commercial single seiners, 3 survey vessels and 4 group seiners.

To ensure that disruption to pole-and-line and longline fisheries and markets was minimised, in 1981 the Fisheries Agency of Japan required that local and distant-water pole-and-line vessels be retired in order to qualify for purse seine licences; for example, the Federation of Japan Tuna Fisheries Cooperative Associations (Nikkatsuren) was required to retire 25 distant-water pole-and-line licences in order to qualify for 5 purse seine licences (Habib 1984). Since 1985, the numbers of single seiners licensed by the Fisheries Agency of Japan to fish in the SPC area has been limited to 31 vessels; two or three other vessels with special licences for exploratory fishing have fished occasionally in the SPC area (Anon 1989b). At the outset of the fishery, almost all Japanese purse seiners were of the same type, 499 gross tonnes with a carrying capacity of 550 tonnes; in recent years several 550 tonne capacity purse seiners have been replaced with vessels of 750 tonne capacity.

Japanese group seiners operate with one catcher vessel, usually 116 gross tonnes, one or two carrier vessels of about 325 gross tonnes, and an anchor vessel of 45 gross tonnes. The fishery is seasonal, with vessels usually operating in the region from February to May. Group seiners first operated in the region in 1980, in the waters of the Federated States of Micronesia. The numbers of group seiners licensed by the Fisheries Agency of Japan to fish in the SPC area has been limited to seven.

The catch by Japanese seiners in 1979 was 35,546 mt. During the 1980s, the catch increased considerably, to just under 100,000 mt in 1982 and to 162,894 mt in 1988. The catch rate averaged 19.7 mt per day during 1979—1990; the catch rate in 1990 was above average, at 24.5 mt per day.

Korea

The Korean purse seine fleet is comprised almost entirely of American-built vessels that were purchased from American owners (Anon 1989b). During the initial stages of the fleet expansion, vessels were bought from American canning companies during a period of recession in the tuna industry; payments for the vessels were arranged in installments based on the catches. According

to an industry report, the Korean purse seine fleet consisted of 16 active vessels in 1987, of which 12 were ex-United States vessels, two were ex-French, and two were new American fleet vessels that had never operated under the American flag (Doulman 1987). In recent years, the Koreans have purchased new vessels constructed in the United States. The fleet grew gradually from 1980 through 1986. Thereafter the number of vessels increased to 23 in 1988, to 28 in 1989, and to 38 vessels by late 1990 (Anon 1989b, Forum Fisheries Committee 1991). During 1990, four American vessels licensed to fish in the SPC area under the Multilateral Treaty on Fisheries were sold to a Korean company (Forum Fisheries Agency 1990b).

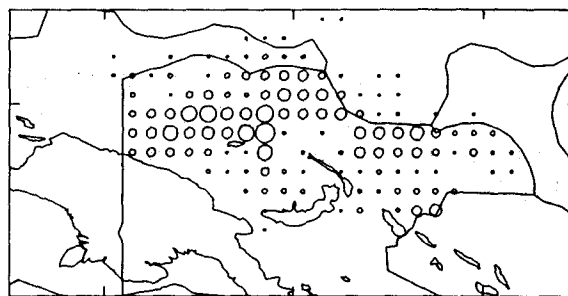


Figure 15. Korean purse seine effort, 1990

While Korean purse seiners have been active in the SPC area since at least 1980, monitoring of catch and effort by Korean purse seiners has been hampered due to lack of data. The coverage of the activities of Korean purse seiners in the SPC area by data held in the Regional Tuna Fisheries Database has been estimated to be only about 25 per cent. The poor coverage is attributed to activities in high seas areas, which are not required to be reported under access agreements with SPC member countries, and to non-reporting of activities within the EEZs of member countries. Under-reporting of catches on the logsheets that are received may also be taking place.

During 1988, data were received at SPC covering 19 vessels, whereas at the end of 1988, the fleet comprised 23 vessels. During 1989, five more vessels were added to the fleet, while only 22 vessels are covered by data held at SPC. The fleet expanded to 38 vessels in 1990; however, so far only 13 vessels are covered by data held at SPC.

Catches increased gradually from 1980, reaching about 37,062 mt in 1986 (Table 26). Since 1987, the catch increased considerably, to 78,524 mt in 1988, then to about 128,000 mt in 1989. The total catch in 1990 may reach 152,000 mt.

Marshall Islands

The first purse seiner owned by the Marshall Islands government (in a joint venture with an American captain) began fishing in December 1989. A second joint-venture vessel was purchased in 1990. The Marshall Islands vessels are licensed to fish under the Multilateral Treaty on Fisheries with the United States; catch statistics for the Marshall Islands seiners are included in Table 34 for American purse seiners.

Mexico

Two Mexican purse seiners fished under an agreement with the Federated States of Micronesia in 1984. The vessels fished for 167 days and caught 3,191 mt, for an average catch rate of 19.1 mt per day (Table 27).

New Zealand

The purse seine fishery for skipjack in New Zealand takes place during the southern summer months. From statistics provided by the Ministry of Agriculture and Fisheries, the New Zealand purse seine fleet, excluding chartered American vessels, caught 4,750 mt during the 1989/90 season (Table 28).

Philippines

Two companies in the Philippines operate purse seiners in the waters of SPC member countries. An estimated 13 vessels fished in Papua New Guinea during 1990, including two Philippine-flagged vessels which operated in a Papua New Guinea joint venture (with Korean and Singapore interests) based in Madang, Papua New Guinea. One vessel operated in the waters of the Federated States of Micronesia during 1990.

The activity of purse seiners from the Philippines in the SPC statistical area has in the recent past been sporadic, with the vessels moving between the Philippines and Papua New Guinea. During 1990, however, about half of the fleet fished continuously in the waters of Papua New Guinea. The Philippine vessels in Papua New Guinea fishery make extensive use of payaos (anchored rafts) to attract the fish.

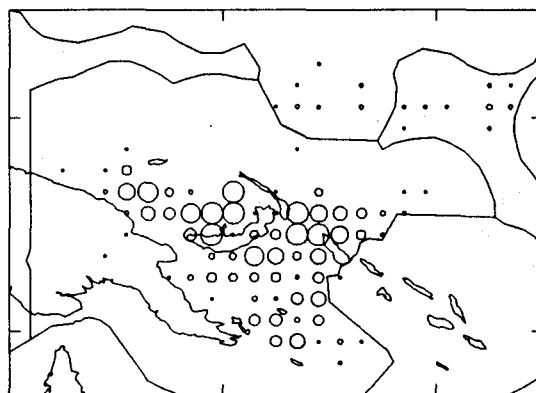


Figure 16. Philippines purse seine effort, 1990

The total catch, both inside and outside the SPC area, declined from about 33,070 mt in 1989 to about 26,906 mt during 1990 (Table 29). The catch rate dropped to 8.3 mt per day in 1990 from 11.1 mt per day in 1989; the average catch rate during 1985—1990 was 8.8 mt per day.

Solomon Islands

A Japanese fishing company first approached the Solomon Islands Government about establishing a purse seine fishery in Solomon Islands in 1978 (Anon 1985). In 1980, trials were conducted by a Japanese group seine operation, including a purse seiner of 112 gross tonnes, two refrigerated carrier vessels, each with a fish hold capacity of 125 mt, and a support vessel of 38 gross tonnes. Deployment of fish aggregating devices (FADs) was an integral part of the trials; 45 FADs were placed during the first survey period. Following the trials, in 1984, Solomon Taiyo Ltd (STL) was established and purchased the purse seiner and associated vessels. A 995 gross tonne Taiwanese purse seiner has been chartered by STL since 1987. During 1990, STL acquired a second group seiner.

Two single seiners of 500 gross tonnes, built by National Fisheries Development Ltd (NFD), began fishing in 1988. Two Australian purse seiners were chartered by NFD in 1988; the results, however, were disappointing, with only 52 mt caught. In January 1990, one of the two NFD seiners was transferred to STL; the vessel stopped fishing in August 1990 because of the need for

repairs. NFD was sold in 1990 to BC Packers Ltd and is now operated in association with its Philippines-based subsidiary, Mar Fishing Company. In December 1990, Filipinos joined the crew of the remaining NFD seiner.

The group seiner increased its catches consistently during 1980—1987, from 962 mt in 1980 to 7,333 mt in 1987 (Table 30); the total catch taken by the two group seiners in operation during 1990 was 6,830 mt. The catch rate, while high, has declined in recent years, from 42.6 mt per day in 1988 to 25.7 mt per day in 1990.

The single seiners have been less successful, with annual catches of only 4,074 mt in 1988, 3,760 mt in 1989 and 2,958 mt in 1990 (Table 31). While the catch rates for the single seiners have been not been especially poor, 16.4 mt per day in 1990, the number of days fished has been low.

Soviet Union

Over a 12 month period in 1985 and 1986, 7 vessels from the Soviet Union fished under an access agreement with Kiribati. The vessels caught only 5,539 mt, with an average catch rate of 4.4 mt per day (Table 32).

Vessels from the Soviet Union have also fished under an access agreement with Vanuatu, which commenced in 1987 and lasted for 12 months. No daily catch and effort data covering the agreement period were provided to Vanuatu (Forum Fisheries Agency 1989).

The Soviet fleet is known to have fished in the high seas area between Papua New Guinea and the Federated States of Micronesia during September and October 1990 from two tags that were released by the SPC Regional Tuna Tagging Programme (RTTP) and recovered during fishing operations by Soviet crew members.

Taiwan

Taiwanese purse seiners are similar to Japanese purse seiners in their structure and fishing gear employed (Anon 1989b). The fleet grew from 3 vessels in 1980 to 25 vessels in 1989; in 1990, there were 32 vessels fishing in the SPC area (Table 33). The fleet is expected to increase to 37 vessels during 1991.

While coverage of the number of days fished by Taiwanese purse seiners by data held at SPC has been relatively good, it would appear that the catches recorded on logsheets provided to SPC member countries are under-reported. Catch rates for

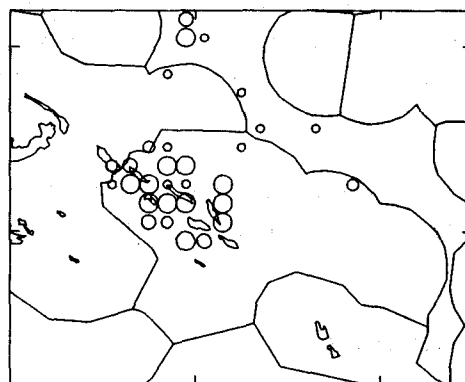


Figure 17. Solomon Islands purse seine effort, 1990

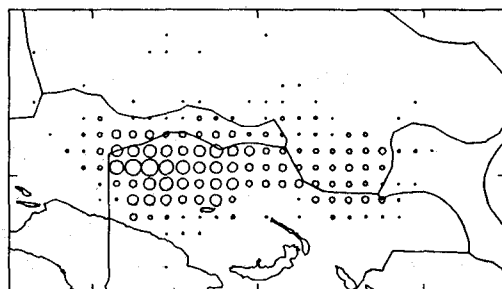


Figure 18. Taiwan purse seine effort, 1990

American and Japanese single purse seiners during 1990 were 25.7 and 24.5 mt per day respectively. According to the data provided to SPC member countries, the catch rate during 1990 for Taiwanese purse seiners, which are of roughly the same size class as the Japanese vessels, was only 3.8 mt per day.

If it is assumed that the Taiwanese vessels each catch about 4,000 mt annually, the total catch in 1990 should be about 128,000 mt.

United States

While American tuna clippers explored areas of the Central Pacific beginning in 1932, when a San Diego-based tuna clipper fished in the SPC area around Christmas Ridge, the earliest test-fishing in the region by an American purse seiner was that conducted in 1950 and 1951 by the Pacific Ocean Fishery Investigation (POFI) initiative in the Phoenix, Line and Hawaiian islands (Felando 1987). In 1970, purse seine trials were conducted in the waters of Palau, at the invitation of the Van Camp Sea Food Company. Seven seiners participated in exploratory fishing around Palau and in the Philippines, though the trials were not successful.

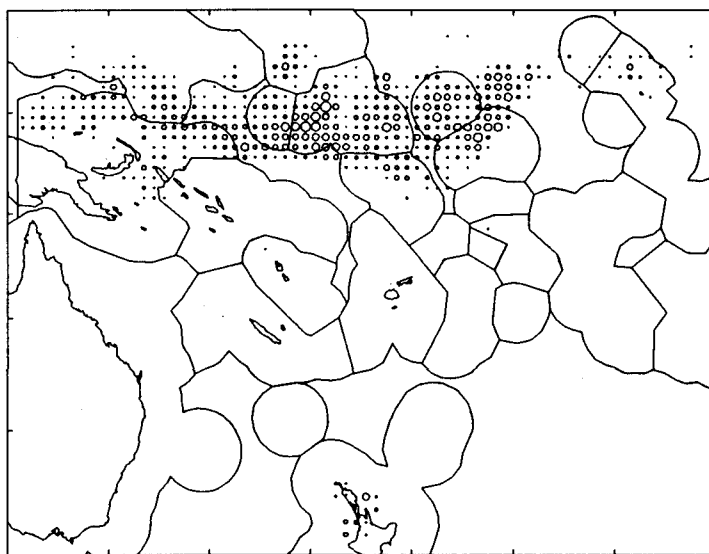


Figure 19. United States purse seine effort, 1990

Exploratory fishing was conducted around the Marquesas Islands, beginning in 1971. The survey vessel found good quantities of surface tuna, but the schools were difficult to catch; the shallow nets were better suited to fishing conditions in the Eastern Pacific. Between 1974 and 1983, the Pacific Tuna Development Foundation (PTDF; later the Pacific Fisheries Development Foundation), a nonprofit corporation formed in 1974 by government and industry, sponsored 11 exploratory charters. In 1974, a PTDF-chartered vessel spent approximately two months in the vicinity of the Marquesas Islands testing a new purse seine design (Living Marine Resources 1975). Test-fishing was also conducted in New Zealand waters by an American seiner in 1974—1975; the New Zealand trials later resulted in regular visits by American seiners to New Zealand for the January—March skipjack season.

The American purse seine fleet was firmly established in the SPC area by the time of the agreement concluded between the American Tunaboat Association and three SPC member countries, Palau, the Federated States of Micronesia and the Marshall Islands; the agreement allowed American seiners to fish in the EEZs of the three countries from July 1980 until June 1982. Since the implementation of the U.S. Multilateral Treaty on Fisheries between the United States and Pacific Island nations in June 1988, the American purse seine fleet has been permitted to fish in the EEZs of the 16 Pacific island countries party to the treaty.

Catches increased from 8,620 mt in 1979 to 81,770 in 1982 (Table 34). After an exodus of vessels from the Eastern Pacific to the Western Pacific, in response to poor fishing largely due to an El Niño event, in 1983, 39 vessels fished in the SPC area and caught an estimated 153,700 mt. The next year, 1984, 52 vessels caught 169,460 mt. Thereafter, catches declined as some of the vessels returned to the Eastern Pacific. From 1985 to 1989, the annual catch averaged about 130,000 mt.

In response to the announcement on 12 April 1990 that the three largest American tuna canning companies had decided not purchase tuna caught in association with dolphins, it was expected that several purse seiners that had previously operated in the Eastern Pacific would move to the Western Pacific. At the time of the announcement, there were 29 vessels active in the SPC area. While the number of vessels applying for licences under the Multilateral Treaty reached the maximum allowed, 50 vessels, after the 'dolphin-safe' announcement, the number of vessels actually active peaked during October at only 36. Of the 43 individual vessels active during the course of the year, several vessels were sold.

During 1990, American purse seiners caught 164,230 mt in the SPC area, including 106,035 mt (65 per cent) of skipjack and 57,706 mt (35 per cent) of yellowfin, compared to the 1989 total catch of 139,865 mt. In the past, the usual fishing grounds have been in the northern waters of Papua New Guinea and the southern waters of the Federated States of Micronesia. The fishery in 1990 was exceptional in that good catches of large yellowfin were taken far to the east, around Howland and Baker Islands, the Phoenix Islands, and the Line Islands.

TROLL

New Zealand

New Zealand trollers have fished for albacore since at least the 1973/74 season (Table 35). The number of vessels has been variable in recent years, dropping from about 100 vessels during the 1986/87 season to about 25 vessels during the 1987/88 season; during the 1989/90 season, about 125 vessels were active. In past years, the fishing grounds were located off the west coast of New Zealand and in the Tasman Sea; in recent years, a number of New Zealand vessels have fished in international waters off the east of New Zealand. The albacore catch during 1973/74—1989/90 averaged 1,734 mt. The 1989/90 catch, 3,341 mt, was above average.

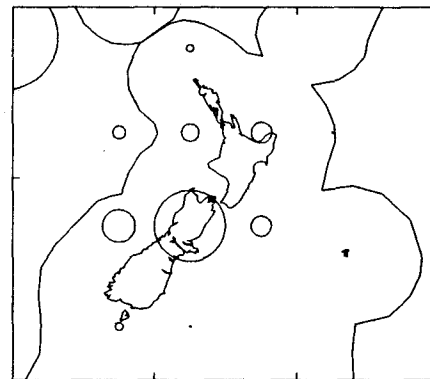


Figure 20. New Zealand troll effort during the 1989/90 season

United States

Surveys were conducted by the National Marine Fisheries Service (NMFS) in 1986 with a view to establishing the potential for an albacore fishery in southern waters. American jigboats have fished northern albacore for over 75 years (Laurs and Nishimoto 1989). Further survey work was conducted in 1987, with 7 jigboats; the vessels caught 748 mt, with an average catch rate of 2.5 mt per day (Table 36).

In response to the successful results from the surveys, 43 vessels participated in the 1987/88 season, catching 3,527 mt. Most fishing took place from mid-January to the end of March in the area between 35°S and 40°S. During the 1989/90 season, 49 vessels caught 4,637 mt.

Catch rates declined from 2.0 mt per day during the 1986/87 season to 1.6 mt per day during the 1988/89 season. Catch rates increased to 1.7 mt per day during the 1989/90 season.

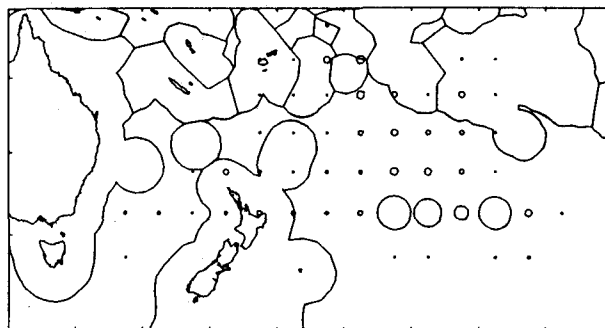


Figure 21. United States troll effort during the 1989/90 season

SOUTH-EAST ASIA

Indonesia

Domestic tuna fisheries in the eastern waters of Indonesia use several gear types (Naamin and Bahar 1990). State enterprise companies for skipjack pole-and-line fishing are located in Sorong, Ambon and Bitung, while joint ventures, private companies and the artisanal fisheries are based in Biak, Sorong, Ambon, Ternate and other areas. The joint-venture pole-and-line vessels based in Biak are 300 gross tonnes; the state enterprise vessels are mostly 30 gross tonnes; the private company and artisanal vessels range in size from 3 to 30 gross tonnes. A total of 616 pole-and-line vessels ranging from 3 to 30 gross tonnes fished in 1989.

Since 1985, the longline fishery has developed rapidly, increasing to 136 vessels in 1989. While the regular longline fleets consists of vessels ranging from 50 to 100 gross tonnes, a fleet of smaller vessels, from 1 to 30 gross tonnes, has been introduced. Hand-line vessels, ranging from 1 to 3 gross tonnes, numbered 463 in 1989.

A French-Indonesian joint-venture company based in Biak operates three purse seiners, in addition to four pole-and-line vessels. The purse seiners have been licensed to fish in the waters of SPC member countries (Table 24). About 290 artisanal purse seiners operate off East Java. About 200 gillnet vessels, ranging from 3 to 6 gross tonnes, fished in 1989.

Annual catches of tuna and tuna-like species have increased consistently in Indonesia. The total catch of skipjack in 1989 was 101,115 mt, an 18 per cent increase over 1988; the total catch of yellowfin was 57,995 mt in 1989, a 55 per cent increase over 1988 (Table 37).

Philippines

Fishing vessels in the Philippines are categorised on the basis of their size; those below three gross tonnes are considered *municipal* vessels, while those over three gross tonnes are considered *commercial* vessels. Municipal vessels are licensed by the municipalities; commercial vessels obtain licences from the Bureau of Fisheries and Aquatic Resources (BFAR). From 1984 to 1989, the commercial sector contributed slightly over 50 per cent of all tuna landings.

The major municipal gear catching tuna is handline, followed by vessels using by small ringnets and gillnets (Barut and Arce 1990). The most important commercial gear types are purse seine and ringnets, operated in conjunction with fish aggregation devices (FADs). While the total number of municipal vessels is unknown, about 8,000 handliners recently fished for sashimi-grade tuna from General Santos City.

The number of commercial vessels has been variable. The number of purse seiners peaked at 516 in 1982, then declined to 286 in 1988. Ringnet vessels increased consistently, from 143 vessels in 1978 to 524 vessels in 1988; the number of vessels dropped slightly in 1989.

Ringnet, bagnet, handline and longline vessels are almost all less than 100 gross tonnes. The composition of the purse seine fleet has changed over the years. In 1980, there were 409 vessels, of which 20 per cent were over 100 gross tonnes, while in 1988, 46 per cent of the 286 vessels were over 100 gross tonnes.

Skipjack catches in the Philippines have increased considerably, though not consistently, from 45,084 mt in 1979 to 64,654 mt in 1989 (Table 38). Yellowfin catches have followed a similar pattern, increasing from 49,224 mt in 1979 to 62,146 mt in 1989.

DISCUSSION

The quality of the estimates of annual catches presented in Tables 1—38 varies considerably (Table 39). The estimates for fleets of SPC member countries tend to be good, while those for distant-water fleets tend to be poor. For recent years, the lack of reliable estimates of annual catches for a number of the distant-water purse seine fleets (Indonesia, Japan, Korea, Philippines, Taiwan) has been especially problematic. Nevertheless, a rough indication of the status of the fishery during 1990 and of the trends in catch can be derived (Tables 40—46).

The driftnet fishery was marked by a dramatic decline in the number of vessels active during the 1989/1990 season. The albacore catch by driftnet vessels dropped from 24,946 mt in 1989 to 8,277 mt in 1990. At the Third South Pacific Albacore Research Workshop, held in October 1990, it was suggested that the stock of albacore in the South Pacific was responding to the reduced trend in exploitation (SPC 1990). In particular, it was noted that the catch rate for troll vessels targeting southern albacore rose during the 1989/90 season, after declining since the 1986/87 season.

With few data forthcoming from the distant-water longline fishing nations in recent years, and the lack of complete or even representative data for the longline fleets of Japan, Korea and Taiwan in the Regional Tuna Fisheries Database, an assessment of the status of the longline fishery is problematic. As far as fleet changes are concerned, the most noticeable trend has been the increase in the number of smaller, locally-based Taiwanese and Japanese vessels fishing in the region since about 1987. The preliminary estimate of the total catch by all longliners in 1990 is 104,398 mt.

Between 15°N and 10°S, where longliners operating in the SPC area usually target yellowfin and bigeye, yellowfin catch rates for Japanese longliners have declined on an annual basis from 1988 to 1990, while catch rates for bigeye have increased.

Data published by the National Taiwan University for distant-water longliners, which target primarily on albacore, show that albacore CPUE in the SPC area had declined from a relatively

high level in 1986 to a low level in 1989. Albacore CPUE was 1.79 fish per 100 hooks in 1989, compared to the average CPUE during 1980—1988 of 3.03 fish per 100 hooks.

The pole-and-line fishery experienced poor catches during 1990, which resulted in reduced effort by the Japanese fleet in the SPC area. Compared to 1988 and 1989, when the catch rate for Japanese pole-and-line vessels reached 11.7 mt per day and 10.7 mt per day respectively, the catch rate during the first quarter of 1990 was only 5.6 mt per day. As a result, the number of Japanese vessels fishing in the waters of SPC member countries declined more than usual as the season progressed, from 45 in March 1990, to 20 in April, to only 5 in May. The catch rate for the Solomon Islands pole-and-line fleet was 3.4 mt per day, down from the 1971—1990 average of 4.0 mt per day. Due to poor catches and the decrease in fishing effort, the preliminary estimate of the total 1990 catch, for all fleets combined, is 106,652 mt, down considerably from the estimated 1989 catch of 153,725 mt.

The purse seine fishery during 1990 was marked by a considerable increase in fishing effort, in spite of efforts made by the Parties to the Nauru Agreement (the PNA group: Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea and Solomon Islands) to reduce the number of vessels (Forum Fisheries Agency 1991).¹ The Korean fleet increased by 10 vessels, from 28 in 1989 to 38 in 1990, while the Taiwanese fleet increased by 7 vessels, from 25 in 1989 to 32 in 1990. The fleet of seiners from the Philippines which was active in the SPC area during 1990 numbered 15 vessels. In contrast, the number of vessels active in the American fleet, which had been expected to increase to 50 vessels following the 'dolphin-safe' announcement of April 1990, remained relatively stable; the number of vessels sold during 1990 appears to be roughly equal to the number of vessels which transferred from the Eastern Pacific. The number of Japanese single seiners remained relatively constant at 32 vessels.

The purse seine fleets of Korea and Taiwan were adversely affected by the implementation of the Minimum Terms and Conditions (MTCs) which were agreed to by the PNA group in October 1990. In both cases, negotiations with the Federated States of Micronesia broke off due to the MTCs, which include the provision of high seas catch and effort data and a ban on transshipment at sea (Forum Fisheries Agency 1991).

Due to the increase in fishing effort, and to high catch rates, the preliminary estimate of the catch by purse seiners during 1990 is 670,017 mt, including 496,738 mt of skipjack and 173,279 mt of yellowfin². The estimate of the purse seine catch for 1990 represents an increase of 93,813 over the 1989 estimate of 576,204 mt.

Catch rates for the Japanese fleet averaged 24.5 mt per day during 1990, the highest average catch rate for that fleet during 1979—1990; the catch rate for skipjack was 19.9 mt per day, well above the 1979—1990 average of 14.9 mt per day, while the catch rate for yellowfin was 4.4 mt per day, slightly below the 1979—1990 average of 4.7 mt per day.

¹ At the ninth annual meeting of the Parties to the Nauru Agreement, held in April 1990, the parties agreed to limit the number of vessels operating in their EEZs to 146 single seiners and 8 group seiners, with provision for an additional 18 single seiners and 3 group seiners under special conditions (Forum Fisheries Agency 1990a).

² Catches of bigeye and albacore are not recorded separately for purse seiners in Tables 24—37. Catches of yellowfin may include about 10 per cent bigeye.

The total catch of albacore by American trollers during the 1989/90 season increased to 5,102 mt, from 3,810 mt during the 1988/89 season, in part due to the increase in the catch rate, but also to a slight increase in the number of vessels active, 49 in 1989/90 compared to 46 in 1988/89. While the American troll catch increased, the New Zealand catch declined, to 3,341 mt in 1989/90 from 5,202 mt in 1988/89. The overall troll catch thus declined, from 9,012 in 1988/89 to 8,443 mt in 1989/90.

The preliminary estimate of the annual catch in 1990 of the four principal species (albacore, bigeye, skipjack and yellowfin) in the SPC area is 897,787 mt. The catch during 1990 represents a 4.3 per cent increase over the catch during 1989 of 860,961 mt. The catch in the SPC area together with the catch in the waters of Indonesia and the Philippines reached approximately 1,183,697 mt in 1990. Historical trends in the catch by species and in the catch by gear type are shown in Figures 22 and 23 respectively. Trends in the catch by fishing nation are presented in Tables 47 and 48.

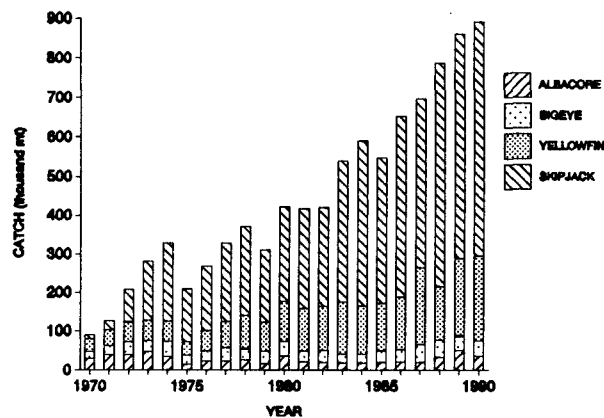


Figure 22. Annual catches by species in the SPC statistical area

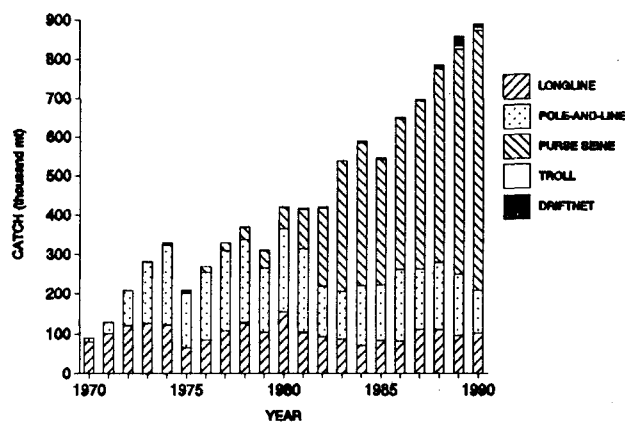


Figure 23. Annual catches by gear type in the SPC statistical area

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Table 1. Catches of albacore by driftnet vessels of Japan

YEAR	VESSELS ACTIVE	DAYS FISHED	ALB	CPUE		
				TASMAN SEA	OFF NEW ZEALAND	EAST AREA
1982
1983
1984
1985
1986
1987
1988
1989
1990

SEASON	VESSELS ACTIVE	DAYS FISHED	ALB	CPUE		
				TASMAN SEA	OFF NEW ZEALAND	EAST AREA
1982/83	..	...	32	...	...	...
1983/84	17	...	1,581	256	277	136
1984/85	15	...	1,928	585	351	...
1985/86	12	...	1,936	461	437	...
1986/87	11	...	919	517	168	...
1987/88	21	...	4,271	906	...	...
1988/89	65	3,247	13,263	602	373	895
1989/90	20	1,211	5,567	646	87	1,128

Units: CPUE, number of fish per day

SOURCES

All statistics were reported at the Third South Pacific Albacore Research Workshop (SPAR 3) by the National Research Institute of Far Seas Fisheries (SPC 1990; Watanabe 1990), except the number of days fished for 1988/89 and 1989/90 which were determined from data provided to SPC by the National Research Institute of Far Seas Fisheries (Watanabe, personal communication, October 1990).

Table 2. Catches of albacore by driftnet vessels of Korea

YEAR	VESSELS ACTIVE	DAYS FISHED	—ALBACORE—	
			MT	CPUE
1988
1989

SEASON	VESSELS ACTIVE	DAYS FISHED	—ALBACORE—	
			MT	CPUE
1988/89	1	...	172	...

Units: CPUE, metric tonnes per day

SOURCES

The number of vessels and the catch of albacore in 1988/89 were provided by the National Fisheries Administration of Korea (Kim, personal communication, June 1989); the estimate is for the catch in the 'South Pacific'.

Table 3. Catches of albacore by driftnet vessels of Taiwan

YEAR	VESSELS ACTIVE	DAYS FISHED	—ALBACORE— MT CPUE	
1987
1988
1989
1990

SEASON	VESSELS ACTIVE	DAYS FISHED	—ALBACORE— MT CPUE	
1987/88	7	...	1,000	...
1988/89	65	11,511	8,520	0.7
1989/90	11	...	2,710	...

Units: CPUE, metric tonnes per day

SOURCES

1. The catch of albacore in 1987/88 and the number of vessels active in 1987/88—1989/90 were estimated by the Tuna and Billfish Assessment Programme and reported to SPAR 3 (SPC 1990).
2. Statistics for 1988/89 are from catch and effort data provided by the Tuna Research Center, National Taiwan University, to the SCTB Database and the SPAR Database (Hsu, personal communication, January 1991).
3. The catch of albacore in 1989/90 was provided by National Taiwan University (Hsu, personal communication, May 1991).

Table 4. Catch statistics for domestic longliners of Australia, excluding ex-Japanese vessels

YEAR	VESSELS ACTIVE	HOOKS	ALBACORE			BIGEYE			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1985	1	...	...	...	..	...	...	..	...	...	...	...	...	...
1986	12	15	—	—	—	—	—	—	7	1.17	100	—	7	1.17
1987	61	385	29	0.82	9	18	0.05	6	229	2.30	72	40	316	3.62
1988	60	375	23	0.66	7	9	0.03	3	244	2.68	76	44	320	3.78
1989	91	666	61	1.04	10	7	0.02	1	491	2.64	81	44	603	3.96
1990	92	660	39	0.67	6	9	0.02	1	505	3.62	83	55	608	4.73

Units: HOOKS, thousands; CPUE, numbers of fish per 100 hooks

SOURCES

Statistics for all years except 1990 were determined from data held in the Regional Tuna Fisheries Database, which were provided by the Australian Fisheries Service. Though not known precisely, coverage during 1986—1987 is considered to be low, while coverage during 1989—1990 is considered high.

Data for 1990 were provided by the Bureau of Rural Resources; these statistics were determined from data held by the Australian Fisheries Service, but not yet made available to SPC.

In accordance with the standard policy on confidentiality of data at the Australian Fisheries Service, statistics for Australian longliners have not been included for years during which the number of vessels covered by the data is less than five.

The catches of albacore in 1987—1989 were reported by the Bureau of Rural Resources to SPAR 3 (SPC 1990) as 200 mt, 200 mt and 590 mt respectively. The discrepancy between these estimates and the estimates from the logbook data reported in the table above is thought to be due in part to under-reporting of albacore on the logbooks and in part to the inclusion of catches of albacore by other fisheries in the SPAR 3 estimates.

Table 5. Catch statistics for longliners of Japan, excluding Guam-based vessels

YEAR	VESSELS ACTIVE	HOOKS	ALBACORE			BIGEYE			YELLOWFIN			OTHER MT	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%		MT	CPUE
1952	210	...	..	...	...	..	...	...	..	...	...	...
1953	1,091	...	..	...	...	..	...	...	..	...	...	...
1954	10,200	...	..	...	...	..	...	...	..	...	...	...
1955	8,420	...	..	...	...	..	...	...	..	...	...	...
1956	6,220	...	..	...	...	..	...	...	..	...	...	...
1957	9,764	...	..	...	...	..	...	...	..	...	...	...
1958	21,558	...	..	...	...	..	...	...	..	...	...	...
1959	19,344	...	..	...	...	..	...	...	..	...	...	...
1960	23,756	...	..	...	...	..	...	...	..	...	...	...
1961	25,628	...	..	...	...	..	...	...	..	...	...	...
1962	...	161,070	34,526	1.55	22	29,818	0.58	19	53,327	1.26	34	37,586	155,256	3.89
1963	...	152,144	21,980	1.04	17	27,739	0.57	21	49,715	1.24	38	32,931	132,366	3.33
1964	...	114,674	15,276	0.96	15	20,276	0.55	20	41,270	1.37	41	24,100	100,921	3.35
1965	...	135,561	16,404	0.87	15	22,607	0.52	21	41,563	1.16	38	27,761	108,335	3.01
1966	...	130,384	19,157	1.06	19	18,268	0.44	18	46,966	1.37	47	16,268	100,658	3.11
1967	...	107,380	14,418	0.97	22	14,983	0.43	22	24,209	0.86	36	13,333	66,943	2.51
1968	...	100,691	7,783	0.56	13	13,969	0.43	23	28,051	1.06	45	11,939	61,741	2.29
1969	...	101,981	5,485	0.39	9	17,518	0.54	28	29,340	1.09	46	10,967	63,309	2.23
1970	...	101,177	6,307	0.45	10	13,841	0.43	22	28,256	1.06	44	15,440	63,843	2.23
1971	...	112,483	4,891	0.31	8	16,230	0.45	27	26,439	0.89	44	13,000	60,561	1.86
1972	...	123,027	3,721	0.22	6	22,335	0.57	34	27,091	0.84	41	12,846	65,992	1.82
1973	...	102,922	3,079	0.22	5	15,415	0.47	26	28,809	1.06	49	12,007	59,309	1.97
1974	...	138,433	3,484	0.18	5	21,348	0.48	32	28,868	0.79	43	12,791	66,491	1.63
1975	...	113,267	2,174	0.14	4	19,336	0.53	35	25,127	0.84	46	8,149	54,785	1.65
1976	...	127,441	2,626	0.15	4	22,034	0.54	35	29,165	0.87	46	10,003	63,828	1.71
1977	...	111,865	1,510	0.10	2	24,595	0.69	34	40,425	1.37	55	6,818	73,348	2.28
1978	...	119,408	1,773	0.11	2	20,439	0.53	23	58,240	1.85	65	9,834	90,286	2.67
1979	...	146,477	2,288	0.11	3	26,846	0.57	31	46,932	1.22	53	11,877	87,943	2.07
1980	...	173,364	3,154	0.13	3	27,251	0.49	26	60,583	1.33	57	15,748	106,737	2.14
1981	4,856	...	6	19,165	...	24	49,003	...	61	6,954	79,978	...
1982	4,900	...	7	22,122	...	31	38,162	...	53	7,240	72,424	...
1983	4,928	...	7	20,186	...	29	40,193	...	58	3,552	68,859	...
1984	3,607	...	7	16,767	...	31	28,433	...	52	5,712	54,519	...
1985	3,746	...	6	21,641	...	35	30,766	...	50	5,895	62,048	...
1986	4,466	...	8	23,917	...	42	24,872	...	43	4,196	57,451	...
1987	4,085	...	6	27,332	...	39	34,111	...	49	4,029	69,557	...
1988	6,894	...	9	31,300	...	41	28,741	...	39	8,900	75,835	...
1989	5,100	...	8	22,927	...	36	29,318	...	46	6,608	63,953	...
1990	5,100	...	8	22,927	...	38	29,318	...	49	6,608	63,953	...

Units: HOOKS, thousands; CPUE, numbers of fish per 100 hooks

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. Catches of albacore in 1952—1961 and 1981—1989 were reported by the National Research Institute of Far Seas Fisheries to SPAR 3 (SPC 1990); these estimates are for the Pacific Ocean, south of the Equator.
2. Catches of yellowfin for 1981—1986 were taken from Suzuki (1988); these estimates are for FAO Area 71.
3. Catches of bigeye for 1981—1987 and 1989 were taken from FAO Yearbooks (FAO 1974—1990) for FAO Area 71; it is assumed that the catch of bigeye by Japan in Area 71 was taken entirely by longline.

Table 5 (continued)

4. The catch of bigeye and other species for 1988 was provided by the National Research Institute of Far Seas Fisheries (Tsuji, personal communication, August 1990). The estimates are for an area bordered by 25°N, 25°S, 130°E and 180°. The catch of other species includes billfish and sharks.
5. The number of hooks and CPUE for albacore, bigeye and yellowfin, for 1962—1980, were determined from data published by five-degree square by the Fisheries Agency of Japan (1962—1980), for an area approximating the SPC statistical area. The catch estimates published by the Fisheries Agency of Japan are given in numbers of fish; these were converted to the catch in kilogrammes using average weights (kg) determined from logsheet data in the Regional Tuna Fisheries Database for 1980:

SPECIES	WEIGHT
YELLOWFIN	26.32
ALBACORE	13.83
BIGEYE	32.08
SKIPJACK	6.19
BLUEFIN	37.00
STRIPED MARLIN	78.68
BLUE MARLIN	44.00
BLACK MARLIN	89.96
SWORDFISH	54.59
SAILFISH	22.42
SHARK	23.03
OTHER	36.07

6. Estimates of the catch of yellowfin for 1987—1989 were determined by subtracting the purse catch of yellowfin in the SPC statistical area from the catches of yellowfin reported in FAO Yearbooks (Fishery Information, Data and Statistics Service, personal communication, May 1991) for Area 71.
7. Estimates for 1989 have been used as preliminary estimates for 1990.

Table 6. Catch statistics for longliners of Japan, based in Guam

YEAR	VESSELS ACTIVE	HOOKS	ALBACORE			BIGEYE			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1987	...	...	...	0.01	..	1,615	0.51	54	1,277	0.46	43	108	3,000	1.02
1988	...	...	...	0.00	..	2,153	0.40	54	1,703	1.01	43	144	4,000	1.47
1989	...	10,491	29	0.01	1	2,255	0.65	51	1,977	0.79	45	179	4,440	1.48
1990	114	...	2	0.00	0	5,456	0.74	60	3,294	0.66	36	349	9,101	1.43

Units: HOOKS, thousands; CPUE, numbers of fish per 100 hooks

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. The number of vessels active and catch estimates for 1990 were determined from transshipment statistics provided by the Department of Commerce, Guam.
2. Catch statistics for 1987—1988 were estimated from the total annual amount of tuna transshipped in Guam, for all fleets combined, estimated by the Port Authority of Guam and provided by the Department of Commerce, assuming that 60 per cent of the total was transshipped by Japanese longliners and applying the species composition for 1989 (Harris, personal communication, June 1991).

Table 7. Catch statistics for longliners of Korea

YEAR	VESSELS ACTIVE	HOOKS	ALBACORE			BIGEYE			YELLOWFIN			OTHER MT	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%		MT	CPUE
1958
1959
1960
1961
1962
1963
1964
1965	6,405	...	..	700	...	..	2,000	...	..	...	9,105	...
1966	10,817	...	..	2,900	...	..	3,000	...	..	...	16,717	...
1967	13,717	...	..	3,200	...	..	1,900	...	..	...	18,817	...
1968	10,138	...	..	600	...	..	5,300	...	..	...	16,038	...
1969	9,963	...	..	2,500	...	..	3,500	...	..	...	15,963	...
1970	11,599	...	..	2,500	...	..	2,000	...	..	...	16,099	...
1971	14,482	...	..	4,700	...	..	5,300	...	..	...	24,482	...
1972	14,439	...	..	7,800	...	..	11,800	...	..	...	34,039	...
1973	17,452	...	..	8,900	...	..	12,000	...	..	...	38,352	...
1974	12,194	...	..	14,444	...	..	15,104	...	..	...	41,742	...
1975	...	4,809	185	0.19	7	1,803	0.70	63	725	0.39	26	128	2,840	1.35
1976	...	15,522	2,010	0.70	20	3,998	0.56	40	3,600	0.63	36	459	10,068	1.96
1977	...	39,218	3,914	0.70	18	8,001	0.62	37	9,230	0.85	42	597	21,741	2.20
1978	...	31,884	6,902	1.43	26	7,159	0.65	27	10,497	1.07	40	1,592	26,149	3.29
1979	...	28,923	2,991	0.71	17	4,980	0.51	29	7,722	0.97	45	1,587	17,281	2.33
1980	...	56,501	5,997	0.61	20	7,737	0.38	26	15,109	0.87	50	1,111	29,954	1.90
1981	3,988	...	20	7,820	...	39	6,595	...	33	1,638	20,041	...
1982	3,988	...	20	7,820	...	39	6,595	...	33	1,638	20,041	...
1983	...	26,609	4,619	1.17	33	3,610	0.46	26	4,953	0.78	36	701	13,882	2.49
1984	...	38,542	3,485	0.68	22	5,792	0.47	36	5,405	0.59	34	1,419	16,101	1.84
1985	...	48,438	4,969	0.80	23	8,217	0.52	37	7,074	0.60	32	1,688	21,948	2.00
1986	...	33,331	4,270	0.96	21	7,911	0.54	38	6,962	0.68	34	1,448	20,591	2.28
1987	...	47,270	2,595	0.35	9	13,570	0.71	49	8,581	0.60	31	2,935	27,681	1.78
1988	3,988	...	20	7,820	...	39	6,595	...	33	1,638	20,041	...
1989	3,988	...	20	7,820	...	39	6,595	...	33	1,638	20,041	...
1990	3,988	...	20	7,820	...	39	6,595	...	33	1,638	20,041	...

Units: HOOKS, thousands; CPUE, numbers of fish per 100 hooks

SOURCES

1. Statistics for 1975—1980 and 1983—1987 were determined from data published by the National Fisheries Research and Development Agency of Korea (NFRDA 1980, 1981, 1985, 1988, 1990), for an area approximating the SPC statistical area.
2. Catches of bigeye and yellowfin for 1965—1974 were taken from FAO Yearbooks for FAO Areas 71 and 81. Catches of albacore for 1965—1974 were taken from SPC (1989).
3. The average catches during 1983—1987 were used as estimates of catches during 1981—1982 and 1988—1990.

Table 8. Catch statistics for longliners of New Caledonia

YEAR	VESSELS ACTIVE	HOOKS	—ALBACORE—			—BIGEYE—			—YELLOWFIN—			—OTHER— MT	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%		MT	CPUE
1983	1	89	12	0.7	22	1	0.0	2	7	0.3	14	34	54	2.0
1984	2	300	112	1.9	57	9	0.1	5	25	0.3	13	49	195	2.6
1985	3	536	131	1.2	33	15	0.1	4	119	0.8	30	135	400	2.5
1986	2	646	179	1.4	33	17	0.1	3	151	0.6	28	202	549	2.7
1987	3	1,408	563	1.8	42	33	0.1	2	448	1.0	33	307	1,351	3.4
1988	4	1,020	584	3.0	45	18	0.0	1	436	1.3	34	259	1,297	4.5
1989	4	1,336	566	2.0	49	24	0.0	2	248	0.5	22	310	1,148	3.0
1990	4	1,606	525	1.9	49	22	0.0	2	220	0.5	22	310	978	2.8

Units: HOOKS, thousands; CPUE, numbers of fish per 100 hooks

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. Statistics for 1987—1989 were provided by the Service de la marine marchande, Noumea.
2. Catches for 1990 are from the Regional Tuna Fisheries Database; these statistics should be considered preliminary.

Table 9. Catch statistics for longliners of Solomon Islands

YEAR	VESSELS ACTIVE	HOOKS	ALBACORE			BIGEYE			YELLOWFIN			OTHER MT	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%		MT	CPUE
1973	2	...	4	...	3	16	...	12	91	...	69	21	132	...
1974	0	—	—	—	—	—	—	—	—	—	—	—	—	—
1975	0	—	—	—	—	—	—	—	—	—	—	—	—	—
1976	2	...	6	...	3	25	...	12	146	...	69	35	212	...
1977	2	...	9	...	3	34	...	12	198	...	69	46	287	...
1978	2	...	9	...	3	36	...	12	207	...	69	48	300	...
1979	2	...	21	...	3	86	...	12	493	...	69	115	715	...
1980	2	...	25	...	..	98	...	12	564	...	69	131	818	...
1981	2	176	2	0.0	1	25	0.2	12	146	1.6	70	36	209	2.0
1982	2	595	8	0.1	2	24	0.1	6	306	1.7	76	65	403	2.3
1983	2	635	19	0.2	3	34	0.2	6	443	2.6	80	55	552	3.1
1984	2	756	19	0.2	5	57	0.2	16	213	1.0	58	76	366	1.7
1985	2	393	12	0.2	5	46	0.3	19	151	1.6	62	33	242	2.3

Units: HOOKS, thousands; CPUE, numbers of fish per 100 hooks

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. The total catch for 1973—1980 were taken from Anon (1985); the catches by species were determined by applying the average species composition for 1981—1985, determined from data held in the Regional Tuna Fisheries Database for Solomon Islands longliners for 1981—1985.
2. The total catch for 1981—1982 was taken from Anon (1985); the catches by species were determined by applying the species composition determined from data held in the Regional Tuna Fisheries Database for Solomon Islands longliners for 1981—1982.

Table 10. Catch statistics for Taiwanese longliners less than 100 gross tonnes transshipping in Guam and Palau

YEAR	VESSELS ACTIVE	HOOKS	ALBACORE			BIGEYE			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1987	3,270	...	45	3,676	...	51	258	7,204	...
1988	3,270	...	45	3,676	...	51	258	7,204	...
1989	3,270	...	45	3,676	...	51	258	7,204	...
1990	3,270	...	45	3,676	...	51	258	7,204	...

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. Catches for 1990 were estimated from transshipment statistics provided by the Guam department of Commerce; 219 Taiwanese longliners transshipped 1,635 mt of bigeye, 1,838 mt of yellowfin and 129 mt of other species from Guam during 1990; the estimates in the table above were determined by assuming the same amount was also transshipped from Palau during 1990.
2. Catch estimates for 1990 were used as estimates for 1987—1989, due to lack of data for previous years.

Table 11. Catch statistics for Taiwanese longliners greater than 100 grt

YEAR	VESSELS ACTIVE	HOOKS	ALBACORE			BIGEYE			YELLOWFIN			OTHER MT	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%		MT	CPUE
1964
1965
1966
1967	...	18,274	14,423	4.41	75	1,893	0.38	10	2,059	0.52	11	799	19,174	5.43
1968	...	21,635	14,986	3.94	64	2,093	0.29	9	5,050	0.91	22	1,134	23,263	5.35
1969	...	15,477	9,787	3.68	59	1,058	0.21	6	4,758	1.25	29	938	16,541	5.50
1970	...	17,455	12,260	4.08	71	744	0.22	4	2,997	0.65	17	1,331	17,332	5.22
1971	...	35,428	19,669	3.47	61	2,088	0.21	7	8,938	1.25	28	1,311	32,006	5.02
1972	...	39,480	21,182	3.31	59	2,990	0.27	8	9,758	0.97	27	1,697	35,627	4.64
1973	...	51,603	26,917	3.16	66	3,748	0.21	9	8,594	0.68	21	1,703	40,961	4.12
1974	...	51,710	18,388	2.45	67	2,596	0.20	10	5,115	0.46	19	1,155	27,253	3.17
1975	...	37,756	12,803	2.22	71	1,331	0.14	7	3,085	0.37	17	916	18,136	2.78
1976	...	38,996	18,078	2.84	76	1,270	0.14	5	3,399	0.33	14	1,034	23,781	3.48
1977	...	34,985	17,738	3.47	79	1,046	0.10	5	2,804	0.32	13	735	22,323	3.96
1978	...	30,741	16,176	3.79	60	967	0.11	4	3,629	0.47	13	6,312	27,084	4.77
1979	...	28,223	11,484	2.71	60	1,094	0.15	6	3,025	0.50	16	3,396	19,000	3.61
1980	...	62,178	25,838	2.89	72	2,503	0.13	7	5,128	0.37	14	2,398	35,867	3.48
1981	...	33,249	10,592	2.35	75	899	0.09	6	1,586	0.20	11	1,012	14,089	2.77
1982	...	22,589	9,007	2.79	82	416	0.06	4	764	0.13	7	799	10,985	3.15
1983	...	16,258	7,412	3.27	87	231	0.05	3	518	0.13	6	370	8,530	3.56
1984	...	19,515	6,525	2.31	84	327	0.06	4	575	0.12	7	367	7,795	2.54
1985	...	13,500	5,534	2.89	84	213	0.06	3	607	0.21	9	198	6,552	3.19
1986	...	14,743	8,316	4.35	91	172	0.04	2	513	0.15	6	179	9,180	4.57
1987	...	19,652	9,633	3.41	90	185	0.03	2	641	0.13	6	224	10,683	3.59
1988	...	28,491	12,308	3.01	87	184	0.02	1	1,260	0.20	9	370	14,122	3.27
1989	...	30,234	7,400	1.79	84	338	0.03	4	750	0.11	8	345	8,833	1.95
1990	9,680	...	..	512	...	..	1,249	...	..	937	12,378	...

Units: HOOKS, thousands; CPUE, numbers of fish per 100 hooks

SOURCES

1. Statistics for 1967—1985 were determined from data aggregated by time-area strata published by the National Taiwan University (Tuna Research Center 1974—1986) for an area approximating the SPC statistical area.
2. Statistics for 1986—1989 were determined from unpublished data aggregated by time-area strata provided to SPC by National Taiwan University (Hsu, personal communication, January 1991) for an area approximating the SPC statistical area.
3. Catches for 1990 were provided by the National Taiwan University (Hsu, personal communication, April 1991); these estimates represent landings in American Samoa and Fiji during 1990. The catch of other species for 1990 includes landings of 319 mt of blue marlin, 132 mt of skipjack, 100 mt of swordfish, 100 mt of sharks and 78 mt of striped marlin.

Table 12. Catch statistics for longliners of Tonga

YEAR	VESSELS ACTIVE	HOOKS	ALBACORE			BIGEYE			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1982	1	...	106	1.2	42	18	0.1	7	81	0.6	32	47	252	2.5
1983	1	...	143	2.6	60	17	0.2	7	48	0.6	20	30	238	4.0
1984	1	...	135	4.0	44	28	0.5	9	55	1.2	18	89	307	8.0
1985	1	...	174	1.9	47	15	0.1	4	44	0.3	12	137	370	3.3
1986	1	...	206	3.8	68	12	0.1	4	33	0.3	11	52	303	4.9
1987	1	...	252	3.4	71	14	0.1	4	32	0.2	9	57	355	4.3
1988	1	...	242	3.1	76	6	0.1	2	26	0.2	8	45	319	3.9
1989	1	...	195	2.1	65	12	0.1	4	27	0.3	9	66	300	3.0
1990	1	...	153	2.1	67	10	0.1	2	28	0.3	12	39	230	2.8

Units: CPUE, numbers of fish per 100 hooks

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. Total annual catches were provided by the Ministry of Fisheries, Nuku'alofa. Catches by species were estimated by applying the species composition for data held in the Regional Tuna Fisheries Database to the totals provided by the Ministry of Fisheries.

Table 13. Catch statistics for pole-and-line vessels of Australia

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1976	9	65	46	0.7	35	1	0.0	1	84	131	2.0
1977	20	134	31	0.2	3	—	—	—	1,165	1,197	8.9
1978	14	205	146	0.7	14	16	0.1	2	870	1,032	5.0
1979	10	66	—	—	—	—	—	—	268	268	4.1
1980	9	62	—	—	—	—	—	—	446	446	7.2
1981	17	192	108	0.6	11	—	—	—	867	975	5.1
1982	20	254	196	0.8	24	5	—	1	626	827	3.3
1983	13	151	109	0.7	44	—	—	—	141	251	1.7
1984	8	57	78	1.4	81	5	0.1	6	13	96	1.7
1985	..	..	...	...	...	...	...	...	...	...	...
1986	..	..	149	...	100	...	...	...	...	149	...
1987	..	..	153	...	100	...	...	...	...	153	...
1988	..	..	921	...	100	...	...	...	...	921	...
1989	..	..	1,257	...	98	32	...	2	...	1,289	...
1990	17	..	3,350	...	98	70	...	2	...	3,420	...

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, which were provided by the Australian Fisheries Service, except where noted. Catches of southern bluefin comprise 99 per cent of the catches listed as 'OTHER'. The coverage rate, though not known precisely, is probably low.

Catches for 1986—1990 were provided by the Bureau of Rural Resources; these statistics represent deliveries to the Heinz Greenseas cannery in Eden, New South Wales. Estimates for 1989 and 1990 include some catch taken by purse seiners. The fishing season is usually from December to March; catches for December have been allocated to the following year.

In accordance with the standard policy on confidentiality of data at the Australian Fisheries Service, statistics for Australian pole-and-line vessels have not been included for years during which the number of vessels covered by the data is less than five.

Table 14. Catch statistics for pole-and-line vessels of Fiji

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER MT	TOTAL	
			MT	CPUE	%	MT	CPUE	%		MT	CPUE
1976	..	...	658	2.4	89	84	0.3	11	—	742	2.7
1977	..	...	1,560	2.6	91	151	0.2	9	—	1,711	2.8
1978	..	...	2,115	2.6	84	409	0.7	16	—	2,524	3.3
1979	8	...	3,091	...	88	403	...	12	1	3,495	...
1980	11	...	2,263	1.9	91	233	0.2	9	4	2,500	2.0
1981	12	...	5,222	1.7	90	599	0.2	10	—	5,821	1.9
1982	14	...	3,844	2.2	82	814	0.3	17	7	4,665	2.5
1983	..	...	3,621	2.4	87	562	0.3	13	2	4,185	2.7
1984	..	...	3,992	3.3	87	580	0.4	13	—	4,572	3.7
1985	7	...	3,219	2.8	82	724	0.4	18	4	3,947	3.2
1986	6	...	2,288	2.1	73	823	0.6	26	4	3,115	2.8
1987	8	...	3,474	3.4	89	411	0.3	11	1	3,886	3.7
1988	8	...	3,761	3.0	88	527	0.3	12	—	4,288	3.3
1989	8	...	5,369	3.8	91	507	0.4	7	7	5,883	4.2
1990	10	...	3,507	2.8	87	516	0.3	13	6	4,029	3.1

Units: CPUE, metric tonnes per day

SOURCES

1. Estimates of catches for 1976—1990, and the number of vessels in 1990, were provided by the Fisheries Division, Fiji (Sharma, personal communication, May 1990, June 1991; Adams personal communication, June 1991). The catch estimates represent landings received at the Pacific Fishing Company Ltd cannery in Levuka. Catches by Kiribati and Tuvalu vessels which operated in Fijian waters under charter are not included.
2. CPUE for all years were determined from data held in the Regional Tuna Fisheries Database.
3. The numbers of vessels active were taken from Annual Reports of the Fisheries Division, Fiji.

Table 15. Catch statistics for pole-and-line vessels of Japan

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1972	...	13,330	63,167	4.7	96	1,158	0.1	2	1,386	65,711	4.9
1973	...	19,085	117,070	6.1	98	1,536	0.1	1	714	119,319	6.3
1974	...	23,849	141,636	5.9	98	1,293	0.1	1	1,283	144,212	6.0
1975	...	24,076	103,707	4.3	97	1,920	0.1	2	1,426	107,052	4.4
1976	...	20,283	111,694	5.5	97	2,410	0.1	2	1,198	115,302	5.7
1977	...	32,459	153,579	4.7	96	4,816	0.1	3	1,652	160,047	4.9
1978	...	21,495	131,322	6.1	98	1,534	0.1	1	778	133,635	6.2
1979	...	21,106	99,280	4.7	98	1,441	0.1	1	940	101,661	4.8
1980	317	...	140,884	5.6	96	6,143	0.0	4	...	147,027	5.7
1981	279	...	138,989	6.0	98	2,706	0.0	2	...	141,695	6.1
1982	117	...	97,871	4.9	98	1,531	0.1	2	...	99,402	5.1
1983	103	...	82,904	8.7	99	1,030	0.1	1	...	83,934	8.9
1984	94	...	108,354	6.9	99	1,275	0.1	1	...	109,629	7.0
1985	84	...	98,425	5.2	97	3,229	0.2	3	...	101,654	5.4
1986	83	...	136,124	9.7	99	1,827	0.1	1	...	137,951	9.8
1987	77	...	121,530	7.7	99	1,500	0.2	1	...	123,030	7.9
1988	63	...	129,197	11.7	99	1,500	0.1	1	...	130,697	11.7
1989	59	...	117,050	10.6	99	1,500	0.0	1	...	118,550	10.7
1990	61	...	76,193	6.9	99	1,000	0.1	1	...	77,193	7.0

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. All statistics for 1972—1979 were determined from data published by the Fisheries Agency of Japan (Fisheries Agency of Japan 1972—1979), for the SPC statistical area.
2. Catches of yellowfin for 1980—1986 are from Suzuki (1988); these statistics are for FAO Area 71.
3. Catches of skipjack for 1980—1988 were determined by subtracting the catches of skipjack in the SPC statistical area by purse seiners (Table 22) from the catch of skipjack reported in the FAO Yearbooks (FAO 1982—1989) for Areas 71 and 77.
4. Preliminary estimates of the catches of skipjack for 1989 and 1990 were determined by adjusting the catch estimates for 1988 (for FAO Areas 71 and 77) by the ratio of skipjack CPUE in 1989 and 1990 to the skipjack CPUE in 1988.
5. The catch of yellowfin in 1987—1990 is a best guess.

Table 16. Catch statistics for pole-and-line vessels of Kiribati

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1979	1	...	...	...	..	...	...	..	..	...	...
1980	..	...	...	...	..	...	...	..	..	...	...
1981	2	...	...	...	..	...	...	..	..	780	...
1982	..	...	...	...	..	...	...	..	..	...	...
1983	..	...	1,481	...	..	253	...	..	..	1,734	...
1984	..	...	1,664	...	..	588	...	..	..	2,252	...
1985	..	...	246	...	..	580	...	..	..	826	...
1986	4	...	117	0.7	49	123	0.7	51	—	240	1.3
1987	4	...	278	0.4	64	143	0.2	33	13	434	0.5
1988	6	...	1,137	1.5	74	384	0.5	25	15	1,536	2.1
1989	5	...	1,682	...	74	568	...	25	23	2,273	...
1990	5	...	421	...	74	142	...	25	6	569	...

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. Anon (1979) reported that the Kiribati government took delivery of a 35-metre skipjack pole-and-line vessel, *Nei Manganibuka*, in 1979. However, no catch statistics are given.
2. Data for 1981 are from Anon (1982).
3. Total catches for 1987—1990 were provided by the Fisheries Division, Tarawa. The total catches for 1987—1990 were broken down to catches by species using the species composition determined from data held in the Regional Tuna Fisheries Database. Statistics for 1986—1987 represent the catches in the waters of Fiji only.
4. Catches for 1983—1985 were taken from statistics provided by the Fisheries Division, Tarawa (Mees, personal communication, November 1985).

Table 17. Catch statistics for pole-and-line vessels of New Caledonia

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1981	1	40	226	5.6	99	3	0.1	1	-	228	5.7
1982	3	216	827	3.8	83	41	0.2	4	130	998	4.6
1983	3	113	414	3.7	84	25	0.2	5	53	492	4.4

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database.

Table 18. Catch statistics for Okinawan pole-and-line vessels based in Palau

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1964	6	412	1,025	2.49	87	141	0.34	12	12	1,178	2.86
1965	31	1,399	2,497	1.78	91	173	0.12	6	72	2,742	1.96
1966	15	1,362	2,615	1.92	89	71	0.05	2	250	2,936	2.16
1967	20	1,399	3,354	2.40	95	52	0.04	1	123	3,529	2.52
1968	11	1,512	5,039	3.33	99	17	0.01	—	43	5,099	3.37
1969	9	1,193	4,629	3.88	88	133	0.11	3	497	5,258	4.41
1970	10	1,599	8,081	5.05	96	1	0.00	—	360	8,442	5.28
1971	20	1,639	2,133	1.30	92	10	0.01	—	175	2,318	1.41
1972	11	1,053	1,463	1.39	76	56	0.05	3	394	1,914	1.82
1973	12	1,160	2,309	1.99	84	41	0.04	1	399	2,749	2.37
1974	24	1,692	6,647	3.93	96	161	0.09	2	122	6,930	4.10
1975	21	1,790	5,971	3.34	90	298	0.17	4	346	6,614	3.70
1976	33	1,614	4,911	3.04	92	412	0.26	8	25	5,347	3.31
1977	23	1,119	3,592	3.21	89	420	0.37	10	32	4,043	3.61
1978	26	2,233	9,391	4.21	97	303	0.14	3	31	9,725	4.36
1979	21	1,752	5,687	3.25	100	1	0.00	—	4	5,692	3.25
1980	31	1,219	5,580	4.58	85	996	0.82	15	20	6,596	5.41
1981	36	1,651	6,931	4.20	73	2,480	1.50	26	22	9,433	5.71
1982	20	858	3,438	4.01	78	615	0.72	14	327	4,381	5.11

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database.

Table 19. Catch statistics for pole-and-line vessels of Papua New Guinea

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1970	5	511	2,354	4.6	97	74	0.1	3	2	2,431	4.8
1971	29	4,060	16,862	4.2	99	112	0.0	1	28	17,003	4.2
1972	45	4,950	11,785	2.4	88	1,345	0.3	10	202	13,332	2.7
1973	43	7,863	27,300	3.5	96	916	0.1	3	280	28,496	3.6
1974	47	9,408	40,214	4.3	96	1,416	0.2	3	150	41,780	4.4
1975	48	6,435	15,625	2.4	90	1,744	0.3	10	29	17,398	2.7
1976	40	7,901	24,358	3.1	74	8,563	1.1	26	93	33,015	4.2
1977	51	9,736	20,106	2.1	82	4,009	0.4	16	296	24,411	2.5
1978	48	9,941	45,760	4.6	94	3,099	0.3	6	61	48,920	4.9
1979	45	8,184	23,976	2.9	89	2,881	0.4	11	88	26,945	3.3
1980	50	9,484	30,976	3.3	91	3,018	0.3	9	102	34,096	3.6
1981	44	7,861	27,207	3.5	87	4,205	0.5	13	—	31,412	4.0
1982	0	—	—	—	—	—	—	—	—	—	—
1983	0	—	—	—	—	—	—	—	—	—	—
1984	..	683	2,470	3.6	90	274	0.4	10	...	2,744	4.0
1985	..	...	8,370	...	90	930	...	10	...	9,300	...

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. The total catch for 1984—1985 and the number of days fished for 1984 were taken from Anon (1989c).

Table 20. Catch statistics for pole-and-line vessels of Solomon Islands

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER— MT	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%		MT	CPUE
1971	..	813	4,570	5.6	97	141	0.2	3	...	4,711	5.8
1972	..	3,356	7,668	2.3	97	237	0.1	3	...	7,905	2.4
1973	11	1,944	6,318	3.2	97	195	0.1	3	...	6,513	3.4
1974	11	2,182	10,022	4.6	97	310	0.1	3	...	10,332	4.7
1975	12	2,419	6,954	2.8	97	215	0.1	3	...	7,169	3.0
1976	14	3,495	15,326	4.4	97	474	0.1	3	...	15,800	4.5
1977	20	4,741	11,752	2.5	97	363	0.1	3	...	12,116	2.6
1978	20	4,656	16,931	3.6	97	524	0.1	3	...	17,455	3.7
1979	23	5,085	23,087	4.5	97	714	0.1	3	...	23,801	4.7
1980	22	4,993	21,278	4.3	97	658	0.1	3	...	21,936	4.4
1981	23	5,259	21,907	4.2	97	265	0.1	1	450	22,622	4.3
1982	25	4,858	16,565	3.4	96	237	0.0	1	520	17,322	3.6
1983	27	6,185	27,992	4.5	96	660	0.1	2	615	29,267	4.7
1984	30	6,397	29,984	4.7	98	397	0.1	1	218	30,599	4.8
1985	33	6,906	24,592	3.6	97	183	0.0	1	459	25,234	3.7
1986	35	7,663	38,287	5.0	99	358	0.0	1	178	38,823	5.1
1987	35	6,945	20,571	3.0	86	3,038	0.4	13	316	23,925	3.4
1988	35	7,516	30,382	4.0	92	2,290	0.3	7	379	33,051	4.4
1989	33	7,122	24,286	3.4	94	1,474	0.2	6	108	25,868	3.6
1990	34	6,264	18,565	3.0	86	2,888	0.5	13	83	21,536	3.4

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database.

1. Days fished, total catch and total CPUE for 1971—1980 were taken from Anon (1988a). Catches of skipjack and yellowfin for 1971—1980 were estimated by arbitrarily applying a species composition of 97 per cent skipjack and 3 per cent yellowfin to the total catches presented in Anon (1989a).
2. The numbers of vessels active during 1973—1980 were taken from Anon (1985).
3. Estimates for 1981—1990 were determined from daily catch and effort logsheet data corrected with unloading data, provided by the Fisheries Department, Honiara.

Table 21. Catch statistics for pole-and-line vessels of Tuvalu

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1982	1	68	163	2.4	75	53	0.8	25	—	217	3.2
1983	1	122	286	2.3	85	51	0.4	15	—	337	2.8
1984	1	...	513	4.5	95	27	0.2	5	—	540	4.7
1985	1	...	4	...	100	—	—	—	—	4	...
1986	1	...	378	1.7	97	12	0.1	3	—	390	1.7
1987	1	153	542	3.5	85	90	0.6	14	5	637	4.2
1988	1	190	1,069	5.6	98	21	0.1	2	1	1,090	5.7
1989	1	...	142	...	95	7	...	5	—	149	...
1990	1	—	—	—	—	—	—	—	—	—	—

Units: CPUE, metric tonnes per day

SOURCES

1. All statistics for 1982—1983 and 1987—1988 were determined from data held in the Regional Tuna Fisheries Database; coverage by data in the Regional Tuna Fisheries Database for Tuvalu pole-and-line for these years is complete.
2. The total catches for 1984—1986 and 1989 were provided by the National Fishing Company of Tuvalu (NAFICOT) (Faulkner, personal communication, 1990); catches by species were estimated by applying the species composition determined from data held in the Regional Tuna Fisheries Database for Tuvaluan pole-and-line for 1984—1986, and by assuming a species composition of 95 per cent skipjack and 5 per cent yellowfin for 1989. Catches while under charter from October 1984 to May 1986 and December 1989 to December 1990 are not included.

Table 22. Catch statistics for purse seine vessels of Australia fishing in the Australian Fishing Zone

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1974	..	...	1,900	...	..	...	...	..	...	1,900	...
1975	4	...	...	...	..	...	...	..	...	...	...
1976	2	...	...	...	..	...	...	..	...	...	...
1977	1	...	...	...	..	...	...	..	...	...	...
1978	2	...	...	...	..	...	...	..	...	...	...
1979	1	...	...	...	..	...	...	..	...	...	...
1980	1	...	...	...	..	...	...	..	...	...	...
1981	5	98	339	3.5	14	—	—	—	2,129	2,468	25.2
1982	5	50	101	2.0	10	—	—	—	864	965	19.3
1983	5	28	110	3.9	12	—	—	—	791	901	32.2
1984	2	...	...	...	..	...	...	..	...	...	...
1985	1	...	...	...	..	...	...	..	...	...	...
1986	1	...	...	...	..	...	...	..	...	...	...
1987	0	...	...	...	..	...	...	..	...	...	...
1988	2	...	...	...	..	...	...	..	...	...	...
1989	1	...	...	...	..	...	...	..	...	...	...
1990	..	...	...	...	..	...	...	..	...	...	...

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, which were provided by the Australian Fisheries Service, except where noted. Coverage is known to be relatively low in most years.

1. The catch of skipjack during the 1974/75 season was taken from Blackburn and Serventy (1981), quoted in Tuna Programme (1984).

In accordance with the standard policy on confidentiality of data at the Australian Fisheries Service, statistics for Australian purse seiners have not been included for years during which the number of vessels covered by the data is less than five.

Table 23. Catch statistics for purse seine vessels of Australia fishing outside the Australian Fishing Zone

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1988 ²	3	36	101	2.8	77	30	0.8	23	0	131	3.6
1989	..	...	...	...	..	...	...	..	...	...	...
1990 ¹	9	186	3,444	18.5	76	1,066	5.7	14	...	4,510	24.2

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database.

1. All statistics for 1990 were provided by the Department of Fisheries and Marine Resources, Konedobu; they cover Australian purse seiners active in the waters of Papua New Guinea.
2. Statistics for 1988 include two vessels which fished in Solomon Islands waters and one vessel which fished in Papua New Guinea waters. The data for the vessels which fished in the Solomon Islands were taken from Anon (1989a); statistics for the vessel which fished in the Solomon Islands were determined from data held in the Regional Tuna Fisheries Database.

Table 24. Catch statistics for purse seine vessels of Indonesia licensed to fish in the waters of SPC member countries

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1984	...	...	...	...	..	...	...	..	...	...	...
1985	...	...	...	...	..	...	...	..	...	...	...
1986	3	...	7,121	8.7	83	1,441	1.7	17	—	8,562	10.5
1987	3	...	11,050	13.5	84	2,120	2.5	16	—	13,170	16.1
1988	3	...	11,050	13.5	85	1,950	2.3	15	—	13,000	15.8
1989	3	...	10,313	12.6	81	2,543	3.0	19	—	12,856	15.6
1990	3	...	10,790	...	83	2,210	...	17	...	13,000	...

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database.

1. The total catch in 1988 was provided by PT Multi-Transpêche (Marcille, personal communication, 1989); catches for skipjack and yellowfin in 1988 were determined by applying the species composition from data held in the Regional Tuna Fisheries Database to the total catch. An unknown proportion of the total catch was taken outside the SPC area.
2. Catches for 1986—1987 and 1989 were estimated by adjusting the catches during 1988 by the ratio of the catch rates in 1986—1987 and 1989 to the catch rates in 1988. An unknown proportion of the total catch was taken outside the SPC area.
3. The catches for 1990 were estimated assuming the three vessels caught 13,000 mt, consisting of 83 per cent skipjack and 13 per cent yellowfin, the average species composition during 1986—1989 determined from data held in the Regional Tuna Fisheries Database for Indonesian purse seiners during 1986—1989. An unknown proportion of the total catch was taken outside the SPC area.

Table 25. Catch statistics for purse seiners of Japan

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1973	6	...	1,245	...	71	412	...	24	95	1,752	...
1974	7	...	2,437	...	72	728	...	21	227	3,392	...
1975	7	...	4,566	...	73	1,664	...	27	...	6,229	...
1976	10	...	10,353	...	76	3,304	...	24	...	13,658	...
1977	13	...	13,566	...	73	4,989	...	27	...	18,556	...
1978	16	...	23,249	...	75	7,654	...	25	...	30,903	...
1979	16	...	24,875	10.9	70	10,671	4.7	30	...	35,546	15.8
1980	18	...	31,391	13.7	77	9,607	3.4	23	...	40,999	17.3
1981	28	...	37,188	10.6	63	21,730	5.0	37	...	58,918	15.7
1982	39	...	70,000	11.5	71	28,774	4.7	29	...	98,774	16.3
1983	41	6,581	109,830	16.7	81	26,191	4.0	19	...	136,021	20.7
1984	48	7,262	110,052	15.2	78	30,836	4.2	12	...	140,889	19.4
1985	40	7,209	103,647	14.4	75	34,730	4.8	25	...	138,377	19.2
1986	40	6,302	108,486	17.2	75	39,724	6.3	25	...	148,210	23.5
1987	37	6,450	88,442	13.7	69	40,392	6.3	31	...	128,834	20.0
1988	40	6,898	137,965	20.0	85	24,928	3.6	15	...	162,894	23.6
1989	36	...	115,300	14.7	77	33,500	5.0	22	1,035	149,835	19.9
1990	39	...	130,212	19.9	77	37,203	4.4	22	1,691	169,106	24.5

Units: CPUE, metric tonnes per day

SOURCES

1. The number of days fished and CPUE for 1983—1988, and catches of skipjack and yellowfin for 1975—1988, were estimated during joint research conducted in 1989 by the SPC Tuna and Billfish Assessment Programme and the National Research Institute of Far Seas Fisheries. The area covered is bordered by 20°N—20°S and 120°E—180°.
2. Catches for 1989 were provided by the National Research Institute of Far Seas Fisheries (Tsuji, personal communication, August 1990). The estimates are for an area bordered by 25°N—25°S and 130°E—180°. The catch of other species includes 950 mt of bigeye.
3. Preliminary catch estimates for 1990 were determined by raising the catches for 1988 by the ratio of the catch rate in 1990 to the catch rate in 1988.
4. Catch statistics for 1973—1974 are from the Fisheries Agency of Japan, quoted in Habib (1984).
5. The number of vessels during 1973—1982 were determined from the number of single seiners given in Habib (1984) and the number of group seiners for which data are held in the Regional Tuna Fisheries Database. The numbers of single seiners include one survey vessel in 1974—1975, two survey vessels in 1976, and three survey vessels in 1977—1982. The numbers of group seiners operating each year during 1980—1982 were 4, 4 and 6 respectively.
6. The number of vessels active for 1983—1990 were determined from data held in the Regional Tuna Fisheries Database. Purse seiners licensed in Japan for exploratory fishing may be included. The numbers of group seiners each year during 1983—1990 were 7, 7, 7, 7, 5, 7, 3 and 7 respectively.

Table 26. Catch statistics for purse seiners of Korea

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1980	..	...	1,643	...	100	—	...	—	—	1,643	...
1981	..	...	3,109	...	100	—	...	—	...	3,109	...
1982	..	...	11,559	...	81	2,711	...	19	...	14,270	...
1983	..	...	15,427	...	79	4,101	...	21	...	19,528	...
1984	..	...	13,722	...	78	3,870	...	22	...	17,592	...
1985	..	...	11,270	...	87	1,684	...	13	...	22,954	...
1986	..	...	25,573	...	69	11,489	...	31	...	37,062	...
1987	16	...	40,733	...	65	21,933	...	35	...	62,666	...
1988	23	...	59,678	...	76	18,846	...	24	...	78,524	...
1989	28	...	88,320	...	69	39,680	...	31	...	128,000	...
1990	38	...	112,480	...	74	39,520	...	26	...	152,000	...

SOURCES

1. The number of vessels active and the total catch for 1988 were provided by the National Fisheries Administration of Korea (Kim, personal communication, June 1989). The total catch was broken down to the catches by species using the species composition determined from the SPC Regional Tuna Fisheries Database for 1988.
2. The number of vessels active in 1989 was taken from Anon (1989b).
3. The number of vessels active in 1990 was taken from Forum Fisheries Committee (1991).
4. The total catch for 1989 was taken from Forum Fisheries Agency (1990c); the catches by species were estimated by applying the species composition determined from data for Korean purse seiners for 1989 held in the Regional Tuna Fisheries Database.
5. The total catch for 1990 was estimated by assuming an average of 4,000 mt was caught by each vessel active; the catches by species were estimated by applying the species composition determined from data for Korean purse seiners for 1990 held in the Regional Tuna Fisheries Database.
6. Skipjack catches for 1980—1987 were taken from FAO Yearbooks for FAO Area 71; yellowfin catches for 1980-1987 were estimated by adjusting the skipjack catches by the species composition determined from data for Korean seiners for 1980—1987 held in the Regional Tuna Fisheries Database.
7. The number of vessels active in 1987 was taken from Doulman (1987).

Table 27. Catch statistics for purse seiners of Mexico

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1984	2	167	2,017	12.1	63	1,174	7.0	37	-	3,191	19.1

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database.

Table 28. Catch statistics for purse seiners of New Zealand

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1983	7	277	5,581	20.1	96	239	0.9	4	5	5,825	21.0
1984	5	226	3,999	17.7	91	231	1.0	5	159	4,389	19.4
1985	5	164	2,289	14.0	78	170	1.0	6	459	2,918	17.8
1986	4	183	4,875	26.6	89	-	-	-	622	5,497	30.0
1987	3	157	4,178	26.6	91	1	0.0	0	429	4,608	29.4
1988	4	166	2,907	17.5	84	-	-	-	565	3,472	20.9
1989	..	...	4,474	...	..	..	...	..	...	4,474	...
1990	..	...	4,750	...	..	..	...	..	...	4,750	...

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. The catches of skipjack for 1989 and 1990 were provided by the Ministry of Agriculture and Fisheries (McKoy, personal communication, June 1990). The catches are for the 1988/89 and 1989/90 seasons respectively.

Table 29. Catch statistics for purse seiners of the Philippines

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1982	1	...	...	...	..	...	...	..	...	...	...
1983	0	...	...	...	..	...	...	..	...	...	...
1984	3	...	...	...	..	...	...	..	...	...	...
1985	5	1,473	9,148	6.2	73	3,331	2.3	27	...	12,479	8.5
1986	5	1,609	6,989	4.3	81	1,630	1.0	19	...	8,619	5.3
1987	5	1,606	12,035	7.5	76	3,867	2.4	24	...	15,902	9.9
1988	9	2,750	20,588	7.5	75	6,829	2.5	25	...	27,417	10.0
1989	10	2,980	21,434	7.2	65	11,636	3.9	35	...	33,070	11.1
1990	11	3,261	18,880	5.8	70	8,026	2.5	30	...	26,906	8.3

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. All statistics for 1985—1987 were provided by an industry source (Personal communication, June 1991). A small proportion of the catch may have been taken outside the SPC area, in the waters of Malaysia and the Philippines.
2. The number of days fished and catch estimates for 1988—1990 were determined by raising statistics provided by an industry source (Personal communication, June 1991) by the number of vessels active covered in the Regional Tuna Fisheries Database. A small proportion of the catch may have been taken outside the SPC area, in the waters of Malaysia and the Philippines.

Table 30. Catch statistics for group purse seiners of Solomon Islands

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1980	1	60	497	8.3	52	449	7.5	47	16	962	16.0
1981	1	129	1,486	11.5	52	1,342	10.4	47	45	2,873	22.3
1982	1	127	1,598	12.6	52	1,444	11.4	47	49	3,091	24.3
1983	1	173	2,800	16.2	52	2,530	14.6	47	85	5,415	31.3
1984	1	178	3,050	17.1	56	2,397	13.9	44	—	5,447	30.6
1985	1	188	2,824	15.0	49	2,882	15.3	50	57	5,763	30.7
1986	1	177	3,267	18.4	55	2,258	12.8	38	418	5,943	33.6
1987	1	192	3,183	16.6	52	3,300	17.2	45	850	7,333	38.2
1988	1	156	3,655	23.4	55	2,991	19.2	45	510	6,646	42.6
1989	1	168	3,094	18.4	48	3,347	19.9	52	10	6,451	38.4
1990	2	266	3,210	12.1	47	3,620	13.6	53	...	6,830	25.7

Units: CPUE, metric tonnes per day

SOURCES

1. The total catches for 1980—1987 and the number of days fished were taken from Anon (1989a); catches by species were estimated by applying the species composition determined from data held in the Regional Tuna Fisheries Database for Solomon Islands group seiners for 1980-1987 to the total catches.
2. All statistics for 1988 were taken from Anon (1989a).
3. All statistics for 1989—1990 were determined from data held in the Regional Tuna Fisheries Database.
4. The total catch and the number of days fished for 1990 were provided by the Fisheries Division, Honiara; the catches by species were estimated using the species composition for 1990 determined from data held in the Regional Tuna Fisheries Database.

Table 31. Catch statistics for single purse seiners of Solomon Islands

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1987	1	25	397	15.9	42	537	21.5	56	18	952	38.1
1988	3	155	2,812	18.1	69	1,253	8.1	31	..	4,074	26.3
1989	3	160	2,856	17.8	76	805	5.0	21	99	3,760	23.5
1990	3	180	1,977	11.0	67	888	4.9	30	93	2,958	16.4

Units: CPUE, metric tonnes per day

SOURCES

1. All statistics for 1987—1988 were taken from Anon (1989a). Data for 1988 cover one Taiwanese vessel on charter to Solomon Taiyo Ltd, but not two Australian vessels which conducted trials for a limited duration.
2. All statistics for 1989—1990 were determined from data held in the Regional Tuna Fisheries Database.

Table 32. Catch statistics for purse seiners of the Soviet Union

YEAR	VESSELS ACTIVE	DAYS FISHED	—SKIPJACK—			—YELLOWFIN—			—OTHER—	—TOTAL—	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1985	5	258	754	2.9	38	1,193	4.6	61	19	1,966	7.6
1986	7	996	3,427	3.4	96	137	.1	4	9	3,573	3.6
1987	..	...	...	...	..	...	...	..	..	...	...
1988	..	...	...	...	..	...	...	..	..	...	...
1989	..	...	...	...	..	...	...	..	..	...	...
1990	..	...	...	...	..	...	...	..	..	...	...

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database.

Table 33. Catch statistics for purse seiners of Taiwan

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER MT	TOTAL	
			MT	CPUE	%	MT	CPUE	%		MT	CPUE
1983	3	...	9,840	...	82	2,160	...	18	—	12,000	...
1984	6	...	20,160	...	84	3,840	...	16	—	24,000	...
1985	7	...	23,520	...	84	4,480	...	16	—	28,000	...
1986	10	...	34,400	...	86	5,600	...	14	—	40,000	...
1987	13	...	44,720	...	86	7,280	...	14	—	52,000	...
1988	19	...	66,880	...	88	9,120	...	12	—	76,000	...
1989	25	...	84,000	...	84	16,000	...	16	—	100,000	...
1990	32	...	104,960	...	82	23,040	...	18	—	128,000	...

SOURCES

The number of vessels active was estimated from data held in the Regional Tuna Fisheries Database. Total catches were estimated assuming each vessel caught 4,000 mt annually; catches by species were determined by applying the species composition for data held in the Regional Tuna Fisheries Database for Taiwanese purse seiners during 1983—1990.

Table 34. Catch statistics for purse seiners of the United States

YEAR	VESSELS ACTIVE	DAYS FISHED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
1976	...	...	500	...	..	200	...	..	...	700	...
1977	...	...	700	...	..	200	...	..	...	900	...
1978	...	...	800	...	..	200	...	..	...	800	...
1979	...	...	8,000	...	..	600	...	..	20	8,620	...
1980	...	...	9,900	...	..	1,100	...	..	—	11,000	...
1981	18	2,362	16,228	6.9	46	18,785	8.0	54	—	35,013	14.8
1982	29	4,310	50,191	11.6	61	31,578	7.3	39	—	81,770	19.0
1983	39	...	104,100	12.9	..	49,600	7.7	..	...	153,700	20.6
1984	52	...	124,300	10.6	..	45,100	5.7	..	60	169,460	16.3
1985	39	...	87,700	12.8	..	29,000	3.8	..	...	116,700	16.6
1986	...	...	93,500	...	..	36,600	...	..	...	130,100	...
1987	...	...	79,800	...	..	66,400	...	..	...	146,200	...
1988	32	...	99,400	14.8	..	25,200	3.1	..	...	124,600	17.9
1989	36	6,629	92,109	13.9	66	46,793	7.1	33	863	139,865	21.1
1990	43	6,394	106,035	16.6	65	57,706	9.0	35	300	164,041	25.7

Units: CPUE, metric tonnes per day

SOURCES

All statistics were determined from data held in the Regional Tuna Fisheries Database, except where noted.

1. Catch estimates for 1976—1980 and 1983—1988 were provided by the National Marine Fisheries Service (Sakagawa, personal communication, June 1991); these statistics represent landings of tuna caught in the Central and Western Pacific. Since trips that start late in one year may land their catch in the next, landings in each calendar year may contain some catches from the previous year.
2. All statistics for 1981—1982 and the number of vessels during 1983—1985 were determined from data provided by the American Tunaboat Association.

Table 35. Catches of albacore by trollers of New Zealand

YEAR	VESSELS ACTIVE	DAYS FISHED	—ALBACORE—	
			MT	CPUE
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989	5,205	...
1990

SEASON	VESSELS ACTIVE	DAYS FISHED	—ALBACORE—	
			MT	CPUE
1973/74	..	...	898	...
1974/75	..	...	646	...
1975/76	..	...	25	...
1976/77	..	...	621	...
1977/78	..	...	1,686	...
1978/79	..	...	814	...
1979/80	..	...	1,468	...
1980/81	..	...	2,085	...
1981/82	..	...	2,434	...
1982/83	..	...	744	...
1983/84	..	...	2,773	...
1984/85	..	...	3,253	...
1985/86	..	...	1,911	...
1986/87	100	...	1,227	...
1987/88	25	...	330	...
1988/89	200	...	5,202	...
1989/90	125	...	3,341	...

SOURCES

1. The annual catch for 1989 was provided by the Ministry of Agriculture and Fisheries (McKoy, personal communication, June 1990).
2. Seasonal catches and the number of vessels active were provided to SPAR 3 by the Ministry of Agriculture and Fisheries (SPC 1990).

**Table 36. Catches of albacore by
trollers of the United States**

YEAR	VESSELS ACTIVE	DAYS FISHED	—ALBACORE—	
			MT	CPUE
1986	3	...	89	...
1987	20	...	865	...
1988	46	...	3,650	...
1989	49	...	4,464	...
1990	49	...	4,208	...

SEASON	VESSELS ACTIVE	DAYS FISHED	—ALBACORE—	
			MT	CPUE
1985/86	2	83	89	1.0
1986/87	7	378	748	2.0
1987/88	43	2,185	3,527	1.6
1988/89	46	2,464	3,810	1.6
1989/90	49	2,998	5,102	1.7

Units: CPUE, metric tonnes per day

SOURCES

1. All statistics were provided by the National Marine Fisheries Service (NMFS) (Sakagawa, personal communication, June 1991). In 1987, 1988, 1989 and 1990, a few vessels from New Zealand, French Polynesia and Canada participated in the albacore troll fishery and were monitored by NMFS. Statistics for these vessels are included with those from American vessels.
2. Statistics for 1990 cover January to April only; these estimates should be considered preliminary.
3. Estimates of the number of days fished during the 1985/86—1989/90 seasons were determined from the total catch and CPUE.

Table 37. Catches (mt) from domestic fisheries in Indonesia

YEAR	LL	BB	PS	GILL	UNCL	TOTAL
SKIPJACK						
1979	-	-	-	-	42,834	42,834
1980	-	-	-	-	51,818	51,818
1981	-	-	-	-	53,498	53,498
1982	43	22,121	6,483	-	32,930	61,577
1983	-	-	-	-	76,790	79,790
1984	-	42,910	9,508	-	28,240	80,658
1985	-	43,999	10,575	-	27,346	81,920
1986	-	48,305	8,946	287	22,259	79,797
1987	-	49,271	9,117	293	22,650	81,331
1988	-	51,735	9,572	308	23,783	85,398
1989	-	64,763	9,294	917	26,141	101,115
1990	-	64,763	9,294	917	26,141	101,115
YELLOWFIN						
1979	-	-	-	-	17,899	17,899
1980	-	-	-	-	20,898	20,898
1981	-	-	-	-	25,239	25,239
1982	4,120	963	1,445	-	21,552	28,080
1983	-	-	-	-	26,088	26,088
1984	2,255	2,282	2,135	-	24,025	30,697
1985	2,907	2,344	2,136	-	26,743	34,130
1986	2,557	2,278	1,794	21	30,858	37,508
1987	-	2,323	1,832	21	31,530	35,706
1988	-	2,439	1,923	22	33,107	37,491
1989	13,147	4,707	2,547	122	37,472	57,995
1990	13,147	4,707	2,547	122	37,472	57,995

KEY: LL LONGLINE
BB POLE-AND-LINE
PS PURSE SEINE
GILL GILLNETS
UNCL UNCLASSIFIED

SOURCE

All statistics were taken from IPTP (1991), except where noted.

1. Catch estimates for 1989 were used as preliminary estimates for 1990.

Table 38. Catches (mt) from domestic fisheries in the Philippines

YEAR	LL	PS	GILL	UNCL	TOTAL
SKIPJACK					
1979	-	27,050	4,435	13,599	45,084
1980	-	15,004	4,908	11,266	31,178
1981	440	18,731	2,995	16,273	38,439
1982	530	30,688	2,437	17,140	50,795
1983	-	39,971	1,980	15,200	57,151
1984	652	29,976	1,221	12,822	44,671
1985	735	42,780	2,183	14,838	60,536
1986	590	57,325	2,851	16,202	76,968
1987	2,019	50,998	2,656	18,076	73,749
1988	-	-	-	55,940	55,940
1989	-	-	-	64,654	64,654
1990 ¹	-	-	-	64,654	64,654
YELLOWFIN					
1979	-	12,301	2,027	34,896	49,224
1980	-	12,463	2,301	33,259	48,023
1981	1,073	18,182	2,655	34,266	56,176
1982	1,897	17,676	1,386	30,963	51,922
1983	-	20,779	1,260	39,997	62,036
1984	1,284	22,989	2,161	32,490	58,924
1985	1,819	21,591	2,040	38,843	64,293
1986	2,411	17,591	2,137	37,371	59,510
1987	3,774	18,087	2,161	27,788	51,810
1988	-	-	-	57,060	57,060
1989	-	-	-	62,146	62,146
1990 ¹	-	-	-	62,146	62,146

KEY: LL LONGLINE
 PS PURSE SEINE
 GILL GILLNETS
 UNCL UNCLASSIFIED

SOURCE

All statistics were taken from IPTP (1991), except where noted.

1. Catch estimates for 1989 were used as preliminary estimates for 1990.

Table 39. Quality of estimates of annual catches presented in Tables 1—38

FLEET	QUALITY OF ESTIMATES OF ANNUAL CATCHES
DRIFTNET	
JAPAN	GOOD
KOREA	GOOD
TAIWAN	GOOD
LOGLINE	
AUSTRALIA - DOMESTIC	COVERAGE UNKNOWN
AUSTRALIA - EX-JAPANESE	POOR
FIJI	POOR
JAPAN - DISTANT-WATER	POOR 1952-1961, GOOD 1962-1980, POOR 1981-1990
JAPAN - GUAM-BASED VESSELS	POOR 1987-1989, GOOD 1990
KOREA	GOOD 1975-1980, POOR 1981-1982, GOOD 1983-1987, POOR 1988-1990
NEW CALEDONIA	GOOD
SOLOMON ISLANDS	GOOD
TAIWAN - LESS THAN 100 GRT	POOR
TAIWAN - GREATER THAN 100 GRT	POOR 1964-1966, GOOD 1967-1990
TONGA	GOOD
POLE-AND-LINE	
AUSTRALIA	COVERAGE UNKNOWN
FIJI	GOOD
JAPAN	GOOD 1972-1979, POOR 1980-1990
KIRIBATI	POOR 1979-1982, GOOD 1983-1990
NEW CALEDONIA	GOOD
PAPUA NEW GUINEA	GOOD
PALAU	GOOD
SOLOMON ISLANDS	GOOD
TUVALU	GOOD
PURSE SEINE	
AUSTRALIA - AFZ	COVERAGE UNKNOWN
AUSTRALIA - FOREIGN	POOR
INDONESIA	POOR 1984-1987, GOOD 1988, POOR 1989-1990
JAPAN	GOOD 1973-1988, POOR 1989-1990
KOREA	POOR
MEXICO	COVERAGE UNKNOWN
NEW ZEALAND	GOOD
PHILIPPINES	POOR 1982-1984, GOOD 1985-1987, POOR 1988-1990
SOLOMON ISLANDS - GROUP SEINERS	GOOD
SOLOMON ISLANDS - SINGLE SEINERS	GOOD
SOVIET UNION	COVERAGE UNKNOWN 1985-1986, POOR 1987-1990
TAIWAN	POOR
UNITED STATES	POOR 1976-1980, GOOD 1981-1982, POOR 1983-1988, GOOD 1989-1990
TROLL	
NEW ZEALAND	GOOD
UNITED STATES	GOOD
SOUTHEAST ASIA	
INDONESIA	UNKNOWN
PHILIPPINES	UNKNOWN

Table 40. Seasonal catches (mt) by driftnet vessels in the SPC statistical area

SEASON	ALBACORE	BIGEYE	SKIPJACK	YELLOWFIN	TOTAL
1982/83	32	-	-	-	32
1983/84	1,581	-	-	-	1,581
1984/85	1,928	-	-	-	1,928
1985/86	1,936	-	-	-	1,936
1986/87	919	-	-	-	919
1987/88	5,271	-	-	-	5,271
1988/89	24,946	-	-	-	24,946
1989/90	8,277	-	-	-	8,277

Table 41. Annual catches (mt) by longliners in the SPC statistical area

YEAR	ALBACORE	BIGEYE	SKIPJACK	YELLOWFIN	TOTAL
1952	210	0	0	0	210
1953	1,091	0	0	0	1,091
1954	10,200	0	0	0	10,200
1955	8,420	0	0	0	8,420
1956	6,220	0	0	0	6,220
1957	9,764	0	0	0	9,764
1958	21,558	0	0	0	21,558
1959	19,344	0	0	0	19,344
1960	23,756	0	0	0	23,756
1961	25,628	0	0	0	25,628
1962	34,526	29,818	0	53,327	117,671
1963	21,980	27,739	0	49,715	99,434
1964	15,276	20,276	0	41,270	76,822
1965	22,809	23,307	0	43,563	89,679
1966	29,974	21,168	0	49,966	101,108
1967	42,558	20,076	0	28,168	90,802
1968	32,907	16,662	0	38,401	87,970
1969	25,235	21,076	0	37,598	83,909
1970	30,166	17,085	0	33,253	80,504
1971	39,042	23,078	0	40,677	102,737
1972	39,342	33,125	0	48,649	121,116
1973	47,452	28,079	0	49,494	125,025
1974	34,066	38,388	0	49,087	121,541
1975	15,162	22,470	0	28,937	66,569
1976	22,720	27,327	0	36,310	86,357
1977	23,171	33,657	0	52,657	109,504
1978	24,860	28,601	0	72,573	126,034
1979	15,755	32,720	0	57,673	106,148
1980	35,014	37,589	0	81,384	153,987
1981	19,438	27,909	0	57,330	104,677
1982	18,009	30,400	0	45,908	94,317
1983	17,133	24,079	0	46,162	87,374
1984	13,883	22,980	0	34,706	71,569
1985	14,566	30,147	0	38,761	83,474
1986	17,437	32,029	0	32,538	82,004
1987	17,157	46,037	0	48,995	112,189
1988	24,039	44,760	0	42,661	111,460
1989	17,339	36,653	0	43,082	97,074
1990	19,487	40,026	0	44,885	104,398

Table 42. Annual catches (mt) by pole-and-line vessels in the SPC statistical area

YEAR	ALBACORE	BIGEYE	SKIPJACK	YELLOWFIN	TOTAL
1964	-	-	1,025	141	1,166
1965	-	-	2,497	173	2,670
1966	-	-	2,615	71	2,686
1967	-	-	3,354	52	3,406
1968	-	-	5,039	17	5,056
1969	-	-	4,629	133	4,762
1970	-	-	10,435	75	10,510
1971	-	-	23,565	263	23,828
1972	-	-	84,083	2,796	86,879
1973	-	-	152,997	2,688	155,685
1974	-	-	198,519	3,180	201,699
1975	-	-	132,257	4,177	136,434
1976	-	-	156,993	11,944	168,937
1977	-	-	190,621	9,759	200,380
1978	-	-	205,665	5,885	211,550
1979	-	-	155,121	5,440	160,561
1980	-	-	200,981	11,048	212,029
1981	-	-	200,590	10,258	210,848
1982	-	-	122,904	3,296	126,200
1983	-	-	116,807	2,581	119,388
1984	-	-	146,819	3,133	149,952
1985	-	-	135,059	5,653	140,712
1986	-	-	177,507	3,221	180,728
1987	-	-	147,075	5,113	152,188
1988	-	-	165,398	4,701	170,099
1989	-	-	149,644	4,081	153,725
1990	-	-	102,036	4,616	106,652

Table 43. Annual catches (mt) by purse seiners in the SPC statistical area

YEAR	ALBACORE	BIGEYE	SKIPJACK	YELLOWFIN ¹	TOTAL
1973	0	0	1,245	412	1,657
1974	0	0	4,337	728	5,065
1975	0	0	4,566	1,664	6,230
1976	0	0	10,853	3,504	14,357
1977	0	0	14,266	5,189	19,455
1978	0	0	24,049	7,854	31,903
1979	0	0	32,875	11,271	44,146
1980	0	0	43,431	11,156	54,587
1981	0	0	58,350	41,857	100,207
1982	0	0	133,449	64,507	197,956
1983	0	0	247,688	84,821	332,509
1984	0	0	277,300	87,448	364,748
1985	0	0	241,152	77,470	318,622
1986	0	0	287,638	98,879	386,517
1987	0	0	284,538	145,830	430,368
1988	0	0	405,036	91,147	496,183
1989	0	0	421,900	154,304	576,204
1990	0	0	496,738	173,279	670,017

1. Catches of yellowfin may include as much as 10 per cent bigeye.

Table 44. Seasonal catches (mt) by troll vessels in the SPC statistical area

SEASON	ALBACORE	BIGEYE	SKIPJACK	YELLOWFIN	TOTAL
1973/74	898	-	-	-	898
1974/75	646	-	-	-	646
1975/76	25	-	-	-	25
1976/77	621	-	-	-	621
1977/78	1,686	-	-	-	1,686
1978/79	814	-	-	-	814
1979/80	1,468	-	-	-	1,468
1980/81	2,085	-	-	-	2,085
1981/82	2,434	-	-	-	2,434
1982/83	744	-	-	-	744
1983/84	2,773	-	-	-	2,773
1984/85	3,253	-	-	-	3,253
1985/86	2,000	-	-	-	2,000
1986/87	1,975	-	-	-	1,975
1987/88	3,857	-	-	-	3,857
1988/89	9,012	-	-	-	9,012
1989/90	8,443	-	-	-	8,443

Table 45. Annual catches (mt) in the SPC statistical area by species

YEAR	ALBACORE ¹	BIGEYE	SKIPJACK	YELLOWFIN	TOTAL
1952	210	0	0	0	210
1953	1,091	0	0	0	1,091
1954	10,200	0	0	0	10,200
1955	8,420	0	0	0	8,420
1956	6,220	0	0	0	6,220
1957	9,764	0	0	0	9,764
1958	21,558	0	0	0	21,558
1959	19,344	0	0	0	19,344
1960	23,756	0	0	0	23,756
1961	25,628	0	0	0	25,628
1962	34,526	29,818	0	53,327	117,671
1963	21,980	27,739	0	49,715	99,434
1964	15,276	20,276	1,025	41,411	77,988
1965	22,809	23,307	2,497	43,736	92,349
1966	29,974	21,168	2,615	50,037	103,794
1967	42,558	20,076	3,354	28,220	94,208
1968	32,907	16,662	5,039	38,418	93,026
1969	25,235	21,076	4,629	37,731	88,671
1970	30,166	17,085	10,435	33,328	91,014
1971	39,042	23,018	23,565	40,940	126,565
1972	39,342	33,125	84,083	51,445	207,995
1973	47,452	28,079	154,242	52,594	282,367
1974	34,964	38,388	202,856	52,995	329,203
1975	15,808	22,470	136,823	34,778	209,879
1976	22,745	27,327	167,846	51,758	269,676
1977	23,792	33,676	204,887	67,605	329,960
1978	26,546	28,601	229,714	86,312	371,173
1979	16,569	32,720	187,996	74,384	311,669
1980	36,482	37,589	244,412	103,588	422,071
1981	21,523	27,909	258,940	109,445	417,817
1982	20,443	30,400	256,353	113,711	420,907
1983	17,909	24,079	364,495	133,564	540,047
1984	18,237	22,980	424,119	125,287	590,623
1985	19,747	30,147	376,211	121,884	547,989
1986	21,373	32,029	465,145	134,638	653,185
1987	20,051	46,037	431,613	199,938	697,639
1988	33,167	44,760	570,434	138,509	786,870
1989	51,297	36,653	571,544	201,467	860,961
1990	36,207	40,026	598,774	222,780	897,787

1. Catches of albacore include statistics by fishing season for driftnet vessels and trollers, rather than by calendar year; catches were allocated to the calendar year at the end of the season.

Table 46. Annual catches (mt) in the SPC statistical area and the waters of Eastern Indonesia and the Philippines by species¹

YEAR	ALBACORE ¹	BIGEYE	SKIPJACK	YELLOWFIN	TOTAL
1952	210	0	0	0	210
1953	1,091	0	0	0	1,091
1954	10,200	0	0	0	10,200
1955	8,420	0	0	0	8,420
1956	6,220	0	0	0	6,220
1957	9,764	0	0	0	9,764
1958	21,558	0	0	0	21,558
1959	19,344	0	0	0	19,344
1960	23,756	0	0	0	23,756
1961	25,628	0	0	0	25,628
1962	34,526	29,818	0	53,327	117,671
1963	21,980	27,739	0	49,715	99,434
1964	15,276	20,276	1,025	41,411	77,988
1965	22,809	23,307	2,497	43,736	92,349
1966	29,974	21,168	2,615	50,037	103,794
1967	42,558	20,076	3,354	28,220	94,208
1968	32,907	16,662	5,039	38,418	93,026
1969	25,235	21,076	4,629	37,731	88,671
1970	30,166	17,085	10,435	33,328	91,014
1971	39,042	23,018	23,565	40,940	126,565
1972	39,342	33,125	84,083	51,445	207,995
1973	47,452	28,079	154,242	52,594	282,367
1974	34,964	38,388	202,856	52,995	329,203
1975	15,808	22,470	136,823	34,778	209,879
1976	22,745	27,327	167,846	51,758	269,676
1977	23,792	33,676	204,887	67,605	329,960
1978	26,546	28,601	229,714	86,312	371,173
1979	16,569	32,720	275,914	141,507	466,710
1980	36,482	37,589	327,408	172,509	573,988
1981	21,523	27,909	350,877	190,860	591,169
1982	20,443	30,400	368,725	193,713	613,281
1983	17,909	24,079	501,436	221,688	765,112
1984	18,237	22,980	549,448	214,908	805,573
1985	19,747	30,147	518,667	220,307	788,868
1986	21,373	32,029	621,910	231,656	906,968
1987	20,051	46,037	586,693	287,454	940,235
1988	33,167	44,760	711,772	233,060	1,022,759
1989	51,297	36,653	737,313	321,608	1,146,871
1990	36,207	40,026	764,543	342,921	1,183,697

1. Catches of albacore include statistics by fishing season for driftnet vessels and trollers, rather than by calendar year; catches were allocated to the calendar year at the end of the season.

Table 47. Annual catches (mt) in the SPC statistical area by fishing nation

YEAR	AU	FJ	ID	JP	KI	KR	MX	NC	NZ	PG	PH	PU	SB	SU	TO	TV	TW	US	TOTAL
1952	-	-	-	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	210
1953	-	-	-	1,091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,091
1954	-	-	-	10,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,200
1955	-	-	-	8,420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,420
1956	-	-	-	6,220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,220
1957	-	-	-	9,764	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,764
1958	-	-	-	21,558	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,558
1959	-	-	-	19,344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,344
1960	-	-	-	23,756	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,756
1961	-	-	-	25,628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,628
1962	-	-	-	117,671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117,671
1963	-	-	-	99,434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99,434
1964	-	-	-	76,822	-	-	-	-	-	-	-	1,166	-	-	-	-	-	-	77,988
1965	-	-	-	80,574	-	9,105	-	-	-	-	-	2,670	-	-	-	-	-	-	92,349
1966	-	-	-	84,391	-	16,717	-	-	-	-	-	2,686	-	-	-	-	-	-	103,794
1967	-	-	-	53,610	-	18,817	-	-	-	-	-	3,406	-	-	-	-	18,375	-	94,208
1968	-	-	-	49,803	-	16,038	-	-	-	-	-	5,056	-	-	-	-	22,129	-	93,026
1969	-	-	-	52,343	-	15,963	-	-	-	-	-	4,762	-	-	-	-	15,603	-	88,671
1970	-	-	-	48,404	-	16,099	-	-	-	2,428	-	8,082	-	-	-	-	16,001	-	91,014
1971	-	-	-	47,560	-	24,482	-	-	-	16,974	-	2,143	4,711	-	-	-	30,695	-	126,565
1972	-	-	-	117,472	-	34,039	-	-	-	13,130	-	1,519	7,905	-	-	-	33,930	-	207,995
1973	-	-	-	167,566	-	38,352	-	-	-	28,216	-	2,350	6,624	-	-	-	39,259	-	282,367
1974	1,900	-	-	199,794	-	41,742	-	-	898	41,630	-	6,808	10,332	-	-	-	26,099	-	329,203
1975	-	-	-	158,494	-	2,713	-	-	646	17,369	-	6,269	7,169	-	-	-	17,219	-	209,879
1976	47	742	-	181,586	-	9,608	-	-	25	32,921	-	5,323	15,977	-	-	-	22,747	700	269,676
1977	31	1,711	-	243,480	-	21,145	-	-	621	24,115	-	4,013	12,356	-	-	-	21,588	900	329,960
1978	162	2,524	-	244,211	-	24,558	-	-	1,686	48,859	-	9,694	17,707	-	-	-	20,772	1,000	371,173
1979	-	3,494	-	212,333	-	13,879	-	-	814	26,857	-	5,688	24,401	-	-	-	15,603	8,600	311,669
1980	-	2,496	-	279,013	-	30,486	-	-	1,468	33,994	-	6,576	23,569	-	-	-	33,469	11,000	422,071
1981	447	5,821	-	273,637	-	21,512	-	229	2,085	31,412	-	9,411	25,173	-	-	-	13,077	35,013	417,817
1982	302	4,658	-	263,360	-	32,673	-	868	2,434	-	-	4,053	20,182	-	205	216	10,187	81,769	420,907
1983	219	4,183	-	285,294	1,734	32,710	-	459	6,564	-	-	-	34,478	-	208	337	20,161	153,700	540,047
1984	83	4,572	-	300,905	2,252	32,274	3,191	146	7,003	2,744	-	-	36,117	-	218	291	31,427	169,400	590,623
1985	-	3,943	-	298,112	826	33,214	-	265	5,712	9,300	12,479	-	30,690	1,947	233	214	34,354	116,700	547,989
1986	156	3,111	8,562	341,352	240	56,205	-	347	6,786	-	8,619	-	44,170	3,564	251	632	49,001	130,189	653,185
1987	429	3,885	13,170	321,203	421	87,412	-	1,044	5,406	-	15,902	-	31,026	-	298	1,090	69,405	146,948	697,639
1988	1,308	4,288	13,000	368,652	1,521	96,927	-	1,038	3,237	-	27,417	-	43,383	-	274	-	97,698	128,127	786,870
1989	1,848	5,876	12,856	342,219	2,250	146,575	-	838	9,676	-	33,070	-	35,862	-	234	-	126,945	142,712	860,961
1990	8,483	4,023	13,000	316,272	563	170,403	-	767	8,091	-	26,906	-	31,148	-	191	-	149,097	168,843	897,787

See Table 49 for fishing nation codes

Table 48. Annual catches (mt) in the SPC statistical area and the waters of Eastern Indonesia and the Philippines by fishing nation

YEAR	AU	FJ	ID	JP	KI	KR	MX	NC	NZ	PG	PH	PU	SB	SU	TO	TV	TW	US	TOTAL
1952	-	-	-	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	210
1953	-	-	-	1,091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,091
1954	-	-	-	10,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,200
1955	-	-	-	8,420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,420
1956	-	-	-	6,220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,220
1957	-	-	-	9,764	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,764
1958	-	-	-	21,558	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,558
1959	-	-	-	19,344	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,344
1960	-	-	-	23,756	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23,756
1961	-	-	-	25,628	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25,628
1962	-	-	-	117,671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117,671
1963	-	-	-	99,434	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99,434
1964	-	-	-	76,822	-	-	-	-	-	-	-	1,166	-	-	-	-	-	-	77,988
1965	-	-	-	80,574	-	9,105	-	-	-	-	-	2,670	-	-	-	-	-	-	92,349
1966	-	-	-	84,391	-	16,717	-	-	-	-	-	2,686	-	-	-	-	-	-	103,794
1967	-	-	-	53,610	-	18,817	-	-	-	-	-	3,406	-	-	-	-	18,375	-	94,208
1968	-	-	-	49,803	-	16,038	-	-	-	-	-	5,056	-	-	-	-	22,129	-	93,026
1969	-	-	-	52,343	-	15,963	-	-	-	-	-	4,762	-	-	-	-	15,603	-	88,671
1970	-	-	-	48,404	-	16,099	-	-	-	2,428	-	8,082	-	-	-	-	16,001	-	91,014
1971	-	-	-	47,560	-	24,482	-	-	-	16,974	-	2,143	4,711	-	-	-	30,695	-	126,565
1972	-	-	-	117,472	-	34,039	-	-	-	13,130	-	1,519	7,905	-	-	-	33,930	-	207,995
1973	-	-	-	167,566	-	38,352	-	-	-	28,216	-	2,350	6,624	-	-	-	39,259	-	282,367
1974	1,900	-	-	199,794	-	41,742	-	-	898	41,630	-	6,808	10,332	-	-	-	26,099	-	329,203
1975	-	-	-	158,494	-	2,713	-	-	646	17,369	-	6,269	7,169	-	-	-	17,219	-	209,879
1976	47	742	-	181,586	-	9,608	-	-	25	32,921	-	5,323	15,977	-	-	-	22,747	700	269,676
1977	31	1,711	-	243,480	-	21,145	-	-	621	24,115	-	4,013	12,356	-	-	-	21,588	900	329,960
1978	162	2,524	-	244,211	-	24,558	-	-	1,686	48,859	-	9,694	17,707	-	-	-	20,772	1,000	371,173
1979	-	3,494	60,733	212,333	-	13,879	-	-	814	26,857	94,308	5,688	24,401	-	-	-	15,603	8,600	466,710
1980	-	2,496	72,716	279,013	-	30,486	-	-	1,468	33,994	79,201	6,576	23,569	-	-	-	33,469	11,000	573,988
1981	447	5,821	78,737	273,637	-	21,512	-	229	2,085	31,412	94,615	9,411	25,173	-	-	-	13,077	35,013	591,169
1982	302	4,658	89,657	263,360	-	32,673	-	868	2,434	-	102,717	4,053	20,182	-	205	216	10,187	81,769	613,281
1983	219	4,183	105,878	285,294	1,734	32,710	-	459	6,564	-	119,187	-	34,478	-	208	337	20,161	153,700	765,112
1984	83	4,572	111,355	300,905	2,252	32,274	3,191	146	7,003	2,744	103,595	-	36,117	-	218	291	31,427	169,400	805,573
1985	-	3,943	116,050	298,112	826	33,214	-	265	5,712	9,300	137,308	-	30,690	1,947	233	214	34,354	116,700	788,868
1986	156	3,111	125,867	341,352	240	56,205	-	347	6,786	-	145,097	-	44,170	3,564	251	632	49,001	130,189	906,968
1987	429	3,885	130,207	321,203	421	87,412	-	1,044	5,406	-	141,461	-	31,026	-	298	1,090	69,405	146,948	940,235
1988	1,308	4,288	135,889	368,652	1,521	96,927	-	1,038	3,237	-	140,417	-	43,383	-	274	-	97,698	128,127	1,022,759
1989	1,848	5,876	171,966	342,219	2,250	146,575	-	838	9,676	-	159,870	-	35,862	-	234	-	126,945	142,712	1,146,871
1990	8,483	4,023	172,110	316,272	563	170,403	-	767	8,091	-	153,706	-	31,148	-	191	-	149,097	168,843	1,183,697

See Table 49 for fishing nation codes

Table 49. Fishing nation codes

CODE	FISHING NATION
AU	Australia
FJ	Fiji
ID	Indonesia
JP	Japan
KI	Kiribati
KR	Republic of Korea
MX	Mexico
NC	New Caledonia
NZ	New Zealand
PG	Papua New Guinea
PH	Philippines
PU	Palau
SB	Solomon Islands
SU	Union of Soviet Socialist Republics
TO	Tonga
TV	Tuvalu
TW	Republic of China (Taiwan)
US	United States of America