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SOUTH PACIFIC COMMISSION
REGIONAL TUNA BULLETIN

First Quarter 1988

(Paper Prepared by the Secretariat)

1. This document is the final draft of the first edition of the SPC Regional Tuna Bulletin. It will be presented to the RTMF for approval and if approved will be circulated, with future editions appearing on a quarterly basis. The RTMF is invited to provide comments on the content and format of the Bulletin, which will be incorporated into subsequent editions.

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Tuna and Billfish Assessment Programme
South Pacific Commission
Noumea, New Caledonia

August 1988

PREFACE

The Tuna and Billfish Assessment Programme (TBAP) is an extra-budgetary programme of the South Pacific Commission based at SPC headquarters in Noumea, New Caledonia. Current donors to the TBAP include: Australia, France, New Zealand and the United States of America.

As part of the recent restructuring of SPC fisheries programmes, two projects have been defined within the Tuna and Billfish Assessment Programme: the Fisheries Statistics Project and the Tuna and Billfish Research Project. These projects, while interacting to a large extent, reflect the two basic types of work undertaken by the TBAP: (i) the collection, processing and dissemination of fisheries statistics pertaining to tuna and billfish stocks in the region; and (ii) the conduct of a programme of research on those stocks, particularly in regard to the state of exploitation of the stocks and to interactions between components of the fishery.

The major activities of the Fisheries Statistics Project are (1) to process on behalf of SPC member countries daily catch and effort logsheets, which either have been provided to member countries by distant-water fishing nations (DWFNs) under access agreements or have been collected from vessels operating locally, and (2) to provide member countries regular summaries and analyses of their data in the form of trip reports, monthly catch statistics, maps of fishing effort, etc.

As a further effort to provide SPC member countries with timely information on tuna fisheries in the region, the TBAP will be publishing the SPC Regional Tuna Bulletin on a quarterly basis. In its present form, the Bulletin presents the most recent data available on catch rates for purse seiners, longliners and pole-and-line vessels, the three main gear types operating in the industrial fishery. It is anticipated that eventually the Bulletin will also incorporate information on size frequencies for the major species, on unloading statistics and cannery receipts, and on fleet composition by vessel size class.

Preparation of the Bulletin was a co-operative effort involving several staff members. Tim Lawson edited the Bulletin and was assisted by members of the Fisheries Statistics Project, including Peter Williams, Sam Taufao, Helen Hnepeune and Nathalie Lemesle. Research highlights were contributed by John Hampton and Jim Ianelli.

1. SOURCES OF DATA AND COVERAGE

More so than in other ocean areas, the collection of logsheet data on tuna fishing activities for both DWFN fleets and local vessels in the region has presented problems. For DWFN vessels, logsheets are only submitted under access agreements; data on activities in high seas areas inside the region are generally lacking. For certain DWFNs, not all vessels supply logsheets, even though in principle they must do so under the conditions of access agreements.

Table 1 presents statistics on coverage of tuna vessels in the region during 1987 by daily catch and effort logsheet data submitted to SPC. Table 2 presents estimates of total fishing effort in the region, together with estimates of coverage rates. The coverage rates presented in Table 2 and discussed below refer to the percentage of fishing effort in the statistical area shown in Figure 1.

For purse seiners, 345 trips by 87 vessels were covered, resulting, on average, in coverage of four trips per vessel. From trips for which the dates of departure and return to port are known, the average trip duration was 58 days and the average percentage of a trip reported on logsheets submitted to member countries was 49 percent.

Trip days are missing from logsheets due to time spent outside the EEZs of the countries with which the DWFN vessels have access agreements. In order to determine coverage rates, it would be useful to estimate the number of missing trip days attributable to fishing in high seas areas within the region; however, it is difficult to distinguish between missing trip days which are spent fishing and those spent in transit. Transit time for all DWFN vessels based outside the region is significant, and even for vessels based inside the region, transit time can be considerable depending on the location of the fishing grounds, which can vary widely from month to month.

At least some data are received from most purse seiners active in the region, with the exception of American vessels, for which logsheets were received for only 14 out of 34 vessels active, and Soviet vessels, for which no data were received. The number of vessels from the U.S.S.R. that were active in the region during 1987 is unknown, although during a twelve-month period ending in 1986, it is known that at least seven vessels were operating. Data are missing for several Korean boats, although of these, a few only began operations during mid- to late-1987. Overall, it is estimated that roughly 122 purse seiners were active, and that coverage by SPC daily catch and effort data is about 48 percent.

Table 2 also presents the number of vessels on the Regional Register maintained by the Forum Fisheries Agency. Not all vessels on the Regional Register are currently active in the region, therefore the number of vessels on the Regional Register

will often be greater than the estimate in Table 2 of the number of vessels active.

Coverage for longliners was generally much poorer than for purse seiners during 1987. Data were received for 315 vessels, including 209 Japanese longliners, 61 Taiwanese vessels and 37 Korean vessels. A total of 688 trips was covered, or, on average, about two trips per vessel. Trip duration and the proportion of trip days reported were similar to purse seiners; on average, trips lasted 57 days and 52 percent of all trip days were recorded on logsheets submitted to member countries. However, because a lower number of trips was reported, average coverage on an annual basis was only 63 days per vessel, or less than half that for seiners.

On a geographic basis, the best coverage for longliners is in a band from the equator to 15°N extending across the Federated States of Micronesia, the Marshall Islands and the Gilbert Island and Line Island groups. Within this band, however, there is a large high seas area between the Marshall Islands and the Line Islands, and another to the east of the Line group, where coverage is negligible. South of the equator, coverage is generally poor, with the exception of vessels operating in Papua New Guinea and the Solomon Islands. One effect of poor coverage north of 15°N and south of 10°S is that the estimates presented below of catch rates for albacore by longliners are underestimated, since albacore are more commonly taken at higher latitudes.

The information available to estimate total effort for longliners in the region, and thus to estimate coverage rates, is extremely poor. Even estimates of the current number of vessels in each of the fleets are difficult to obtain. For the Japanese, the entire far seas tuna longline fleet numbered 962 vessels in 1974 and then declined to 747 vessels in 1983. In 1984 and 1985, the number of vessels increased to 810 and 823 vessels, respectively. It is known that 41 vessels were constructed during 1987, but no information on the either the current total number of vessels in the fleet nor the number of vessels active in the region is available.

For the Korean longline fleet, it is known that there are presently 188 longliners, and that the number will probably increase to 200 in the near future, but it is uncertain how many of these are active in the western and central Pacific.

For the Taiwanese distant-water tuna longline fleet, which targets on albacore, the only information available records that the total number of vessels increased from 157 in 1979 to 182 in 1980, then declined to 140 in 1981, to 115 in 1982 and to 65 in 1983. For the smaller (less than 50 tonnes) vessels of the inshore tuna longline fishery, based in Kaohsiung and Tung-Kang, which target on yellowfin using live bait, the most recent data at hand give the total number of vessels in 1983 as 1,872. Vessels of the inshore fishery have been known to operate in the area from the western part of the region to the South China Sea,

although no information is available as to the current number of vessels active in the region.

The estimates of the number of longliners active and total effort for Japan, Panama, Korea and Taiwan in Table 2 are thus inexact and should be considered as educated guesses. The number of Japanese vessels is probably around 350; given the average catch per vessel per year and historical catches by the Japanese in the western and central Pacific, it is unlikely that the number of vessels operating is greater. The number of Korean longliners is estimated at 125, and the number of Taiwanese vessels at 100. In total, roughly 600 longliners were active in the region during 1987. Coverage rates for DWFN longliners ranged from 4 percent for Taiwanese vessels to 16 percent for the Japanese. Overall, coverage for longliners was only about 12 percent.

For pole-and-line vessels, coverage was somewhat better than for longliners but still far less than for purse seiners. The pole-and-line fleet is dominated by Japanese vessels; the number of vessels in the entire Japanese far seas pole-and-line fleet has declined from 325 boats in 1974 to 129 in 1985. During 1987, daily logsheets were received for 77 Japanese boats. A total of 201 trips was covered, resulting in coverage of about two to three trips per vessel for the Japanese. While the average trip duration was similar to that for purse seiners and longliners at 52 days, the average proportion of trip days reported on logsheets submitted to member countries was only 25 percent. For Japanese pole-and-line vessels, the average annual coverage was only 41 days per vessel, which is low in comparison to the annual coverage of purse seiners and longliners due to the seasonal nature of their activity in the region. Total coverage for pole-and-line vessels by daily catch data has been estimated at about 21 percent.

2. THE PURSE SEINE FISHERY

For 1987 it has been estimated that approximately 120 purse seiners from ten countries were active in the region. The majority of vessels active were registered in Japan (about 36 boats), the United States (34), South Korea (about 18) and Taiwan (about 13). Other vessels were registered in Cayman Islands, Indonesia, Philippines, Solomon Islands, USSR and Vanuatu. Tables 3-8 present catch rates for vessels from Indonesia, Japan, Philippines, South Korea, Taiwan and the United States, respectively, based on logsheet data provided to SPC by member countries. Statistics for the principal purse seine fishing nations are highlighted below.

JAPAN PURSE SEINE

For Japanese purse seiners, the catch rate for all species combined during the first quarter of 1988 was 25.9 MT per day, compared to 21.4 MT per day for 1987 as a whole. The first quarter was marked by the continuation of an increase in catch rates for skipjack that had begun in October 1987. The average skipjack CPUE during the first quarter was 21 MT per day, compared to 15.1 MT per day for the whole of 1987. Yellowfin catch rates dropped slightly to 4.4 MT per day during the first quarter, compared to 6.1 MT per day during 1987.

Figure 2 shows the distribution of purse seine effort for all vessel nationalities combined during 1987. Throughout 1987 the Japanese fleet operated as usual in a band between 5° south and 10° north in the western portion of the region. In January 1987 the Japanese fleet was concentrated in the northwestern part of the PNG EEZ. After a large decline in catch rates in February 1987, in which yellowfin CPUE dropped from 12.0 MT per day in January to 4.9 MT per day and skipjack CPUE dropped from 12.1 MT per day to only 10.9 MT per day, the fleet began moving to the north and east. It has been reported in a Japanese trade journal that the decline in catch rates was due to oceanographic conditions associated with El Nino. By July 1987 the fleet had spread out along the southern part of the FSM EEZ. In August 1987, the boats were again concentrated, this time in the northwest part of the FSM zone; then, for the remainder of the year, they spread out steadily, again towards the east. During the first quarter of 1988, the Japanese fleet was concentrated along the equator north of the Papua New Guinea EEZ between 145°E and 160°E.

SOUTH KOREA PURSE SEINE

For Korean purse seiners, CPUE for all species combined amounted to 16.3 MT per day during the first quarter of 1988. January 1988 saw average catch rates for skipjack rise to 16.9 MT per day, compared to the 1987 maximum monthly skipjack CPUE of 12.0 MT per day of January 1987. Skipjack catch rates dropped to 5.4 MT per day in February 1988, while for Japanese vessels, skipjack CPUE during the first quarter of 1988 peaked during February at 25.0 MT per day. Yellowfin catch rates for Korean vessels during the first quarter of 1988 were only slightly less than for Japanese vessels, 3.8 MT per day compared to 4.4 MT per day.

During the first half of 1987, the Korean fleet operated in the same area as the Japanese fleet, starting out concentrated in the northwestern part of the PNG EEZ, then spreading towards the east. In August, while the Japanese fleet was concentrated in northwestern FSM, the Koreans continued to move to the east, with at least one vessel operating to the east of Howland Island. In November and December, the Korean fleet was once again concentrated, this time in the eastern portion of the FSM and PNG zones. During the first quarter of 1988, the available data

indicate that the Korean fleet operated in much the same area as the Japanese fleet.

TAIWAN PURSE SEINE

For Taiwanese purse seiners, the catch rate for all species combined during the first quarter of 1987 was 8.5 MT per day, compared to 25.9 MT per day for the Japanese and 16.3 MT per day for the Koreans. As for the Japanese and Koreans, skipjack catch rates for the Taiwanese were also above the 1987 average during the first quarter of 1988, peaking in February at 9.1 MT per day. For Taiwanese boats, yellowfin represents a small proportion of the total catch, 14 percent during 1987, compared to 29 percent for Japanese seiners and 36 percent for Korean vessels.

The Taiwanese fleet fished in roughly the same areas as the Japanese fleet throughout 1987: in January they were concentrated in northwestern PNG, then spread continuously towards the east for the remainder of the year, except for a period during August when they were concentrated in the western part of FSM. During most of the first quarter of 1988, the Taiwanese fished the same grounds as the Japanese and Koreans, though by March they had moved further to the southeast to the northern portion of the Papua New Guinea EEZ.

UNITED STATES PURSE SEINE

For American purse seiners, the data available suggest that skipjack catch rates during the first quarter of 1988 were considerably greater than in 1987, while yellowfin catch rates had significantly declined. In 1987, yellowfin made up about 50 percent of the catch, whereas during the first quarter of 1988 the proportion of yellowfin dropped to about 27 percent. Total CPUE amounted to about 26 MT per day during the first quarter of 1988.

Daily catch and effort logsheet data held by SPC are insufficient to determine movements of the American fleet. However, during August 1987 several boats were making good catches of yellowfin to the east of Howland and Baker. In September 1987, a few vessels were operating in the eastern part of the Gilberts, while others were fishing in the western part of the Phoenix zone. In October 1987, several boats were concentrated in an area to the south of the Gilberts and west of Tuvalu.

3. THE LONGLINE FISHERY

Figure 3 shows the distribution of longline effort during 1987 for all vessel nationalities combined and highlights the problems of coverage discussed above. Most of the data plotted represents the Japanese fleet, which accounts for 13,297 days fished out of a total of 16,098 days covered. From the equator to 15°N, coverage is relatively good, with the exception of the high seas between the Marshall Islands and the Line Islands and the high seas to the east of the Line group. South of the equator coverage is poorer, particularly south of 10°S. Tables 9-11 present estimates of catch rates for vessels from Japan, Korea and Taiwan, respectively.

JAPAN LONGLINE

While yellowfin catch rates declined slightly for most purse seiners during the first quarter of 1988, they increased considerably for Japanese longliners. Yellowfin CPUE during the first quarter of 1988 was 40.2 kg per 100 hooks, compared to 29.3 kg per 100 hooks for 1987. Bigeye catch rates were only 16.9 kg per 100 hooks in January 1988, then rose during February to 21.8 kg per 100 hooks, close to the average level during 1987, then declined to 14.5 kg per 100 hooks in March.

SOUTH KOREA LONGLINE

The available data indicate that catch rates for all species combined for Korean longliners during the first quarter of 1988 amounted to 39.7 kg per 100 hooks, compared to 62.5 kg per 100 hooks for the Japanese. There is no indication that the high catch rates for yellowfin that were experienced by the Japanese were also achieved by the Korean fleet.

TAIWAN LONGLINE

Coverage of Taiwanese longliners during the first quarter of 1988 has been minimal, yet the data point to catch rates for albacore that are higher than the relatively low catch rates that are evident in the data for 1987. As the Taiwanese fleet targets on albacore to a greater extent than do the Japanese or Koreans, the problem of geographical coverage mentioned above is particularly relevant. Thus the catch rates for albacore and bigeye from 1987 data, which are about equal, may be the result of an anomaly due to geographic coverage.

4. THE POLE-AND-LINE FISHERY

The pole-and-line fishery in the region is dominated by Japanese vessels, of which 77 boats were covered by daily logsheet data during 1987, followed by about 34 vessels operating out of the Solomon Islands, 7 vessels based in Fiji, 3 Kiribati boats, and one vessel registered in Tuvalu. Figure 4 presents the distribution of pole-and-line effort during 1987. Tables 12-13 present estimates of catch rates for Fiji and Japan, respectively.

FIJI POLE-AND-LINE

During the first quarter of 1988, skipjack CPUE, at 3.7 MT per day, was less than the skipjack CPUE during the first quarter of 1987, 4.6 MT per day. During January, the catch rate for all species combined was 5.0 MT per day; then the total CPUE dropped to 3.4 MT per day in February and to 3.3 MT per day in March.

JAPAN POLE-AND-LINE

The Japanese pole-and-line fishery shows strong seasonality in the region. February, March and April are months with consistently high effort. From May onwards, effort within the region drops as the vessels move north. Then, during September or October, effort begins to increase and continues to do so through the end of the year.

During the first quarter of 1988, total CPUE was 6.7 MT per day, compared to 6.3 MT per day during the same period in 1987.

5. TOTAL CATCH FOR 1987

In spite of problems associated with estimating total fishing effort and coverage rates, an attempt has been made to estimate total catch by species in the region. Table 14 presents estimated catches by vessel nationality, by gear type and by species for 1987.

All figures in Table 14 were derived by raising logsheet data submitted to member countries using coverage rates presented in Table 2, with the following exceptions. Estimates for Solomon Islands purse seine and pole-and-line were derived from figures on the total catch by gear type for all species combined during 1987 and statistics on the species composition and effort for 1986. Catch estimates for United States purse seine are from statistics provided by the Fishery Statistics Unit of the Food

and Agriculture Organization of the United Nations for FAO Area 71. Catch estimates for USSR purse seine were derived from catch rates for seven vessels operating in 1986. Estimates for Tuvalu pole-and-line are only a rough approximation, as no logsheet or other data were available. The estimate of the catch of blue marlin by Taiwanese longline also includes some black marlin, due to difficulties in distinguishing between the two species on logsheet data.

Though the estimates presented in Table 14 will probably change as more information becomes available, the catch of skipjack by purse seiners during 1987 is currently estimated to be of the order of 247,000 MT, while the catch of yellowfin is estimated to be about 136,000 MT; the total catch by purse seiners is considered to be about 385,000 MT.

Due to poor coverage, the estimates of total catches for longliners and pole-and-line vessels should be treated with caution. The total catch by longliners in the region is estimated at about 156,000 MT, while the total catch by pole-and-line vessels is estimated at 109,000 MT.

The total catch of tuna and associated species by the industrial fleets in the region during 1987 is thus estimated to be 649,000 MT.

6. RESEARCH HIGHLIGHTS

SPC REGIONAL TUNA TAGGING PROJECT

The TBAP is currently preparing to undertake a major new field initiative - the SPC Regional Tuna Tagging Project. The project, funded by the EEC (US \$4.3 million), is scheduled to begin in early 1989 and will run for three years. Field work will take place during 1989 and 1990.

The overall objectives of the project are to provide a basis for (i) the assessment of skipjack and yellowfin stocks in areas of the most intense exploitation and (ii) the assessment of fishery interaction. During the 1980s, the catch of both skipjack and yellowfin in the region expanded enormously. This was mainly due to an increase in purse-seining activity by several distant-water fishing nations, principally in the western part of the region (10°N - 10°S , 130°E - 180°E). In addition, Pacific Island countries, e.g. Solomon Islands and Kiribati, have developed their own tuna fishing capability, while others, such as Papua New Guinea and Palau, are seeking to revive their tuna industries. Each of the countries in the region also has artisanal/subsistence tuna fisheries which, while contributing only a small fraction to the total tuna catch nevertheless have

important cultural, social and economic value to the people of the region.

There is, therefore, the potential for fisheries interaction at a number of levels. At the country level, the activities of national industrial fisheries could affect artisanal/subsistence tuna catches. DWFN fleets operating in close proximity to countries could also have an effect on national industrial and artisanal/subsistence fisheries. Finally, large catches of yellowfin by DWFN purse seiners could potentially reduce subsequent recruitment into the longline fishery and result in reduced catch rates.

The Regional Tuna Tagging Project is being designed to address each of these types of fishery interaction. Tagging will be carried out in the inshore areas of Solomon Islands, Kiribati, Federated States of Micronesia, Palau, Papua New Guinea and possibly others, in order to address the specific concerns of those countries. In addition, attempts will be made to tag skipjack and yellowfin in oceanic waters where the DWFN purse-seine fishery is most intense. A long-range pole-and-line vessel will be chartered for this purpose.

Progress reports on the Tagging Project will be given in subsequent editions of the Regional Tuna Bulletin. For further details, contact the Chief Fisheries Scientist, TBAP.

KIRIBATI PILOT TAGGING STUDY

During April 18-25 1988, a pilot tagging study was conducted by James Ianelli, Fisheries Research Scientist with the TBAP, in Kiribati, using local skiffs that employ pearl-shell lure fishing techniques. The experiment was very successful, with a total of 503 tuna tagged over six days fishing; the species breakdown of tag releases was 371 skipjack, 115 yellowfin and 17 bigeye. A T-shirt reward will be given for the return of recovered tags to SPC, along with information on location and date of capture, length of fish (to the fork in the tail) and, if possible, its whole weight. To date two tags have been recovered and reported to the TBAP. Given the encouraging results from this pilot study, it is likely that tagging from local small-scale vessels will form an important part of the Regional Tagging Project.

AUSTRALIAN EAST COAST TUNA AND BILLFISH WORKSHOP, SYDNEY, APRIL 18TH 1988

This workshop examined data primarily on yellowfin tuna gathered during a major research programme carried out jointly by New South Wales Fisheries Research Institute, Queensland Department of Primary Industries, Bureau of Rural Science and CSIRO. John Hampton of the TBAP attended the workshop and gave an account of SPC's proposed Regional Tuna Tagging Project.

The basic stock assessment questions relevant to the Australian east coast yellowfin tuna resource are not unlike those in many Pacific Island countries; the relationship of the local resource to the broader central/western Pacific region and the extent to which local fisheries affect local tuna abundance are particularly important. There was general agreement that the results of SPC's Regional Tuna Tagging Project will contribute to a greater understanding of these questions.

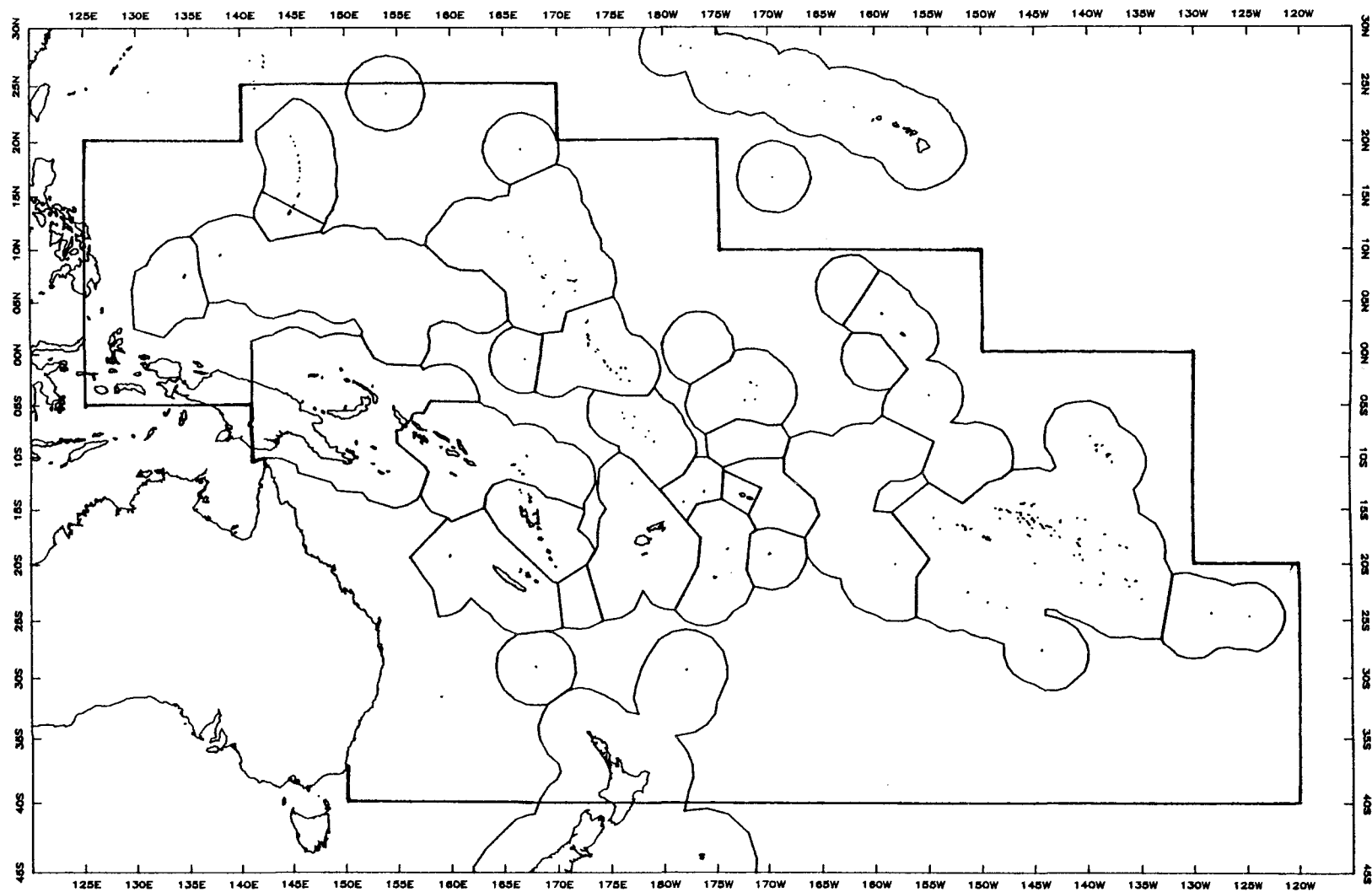


FIG.1. PROPOSED PACIFIC ISLAND TUNA FISHERY STATISTICAL AREA

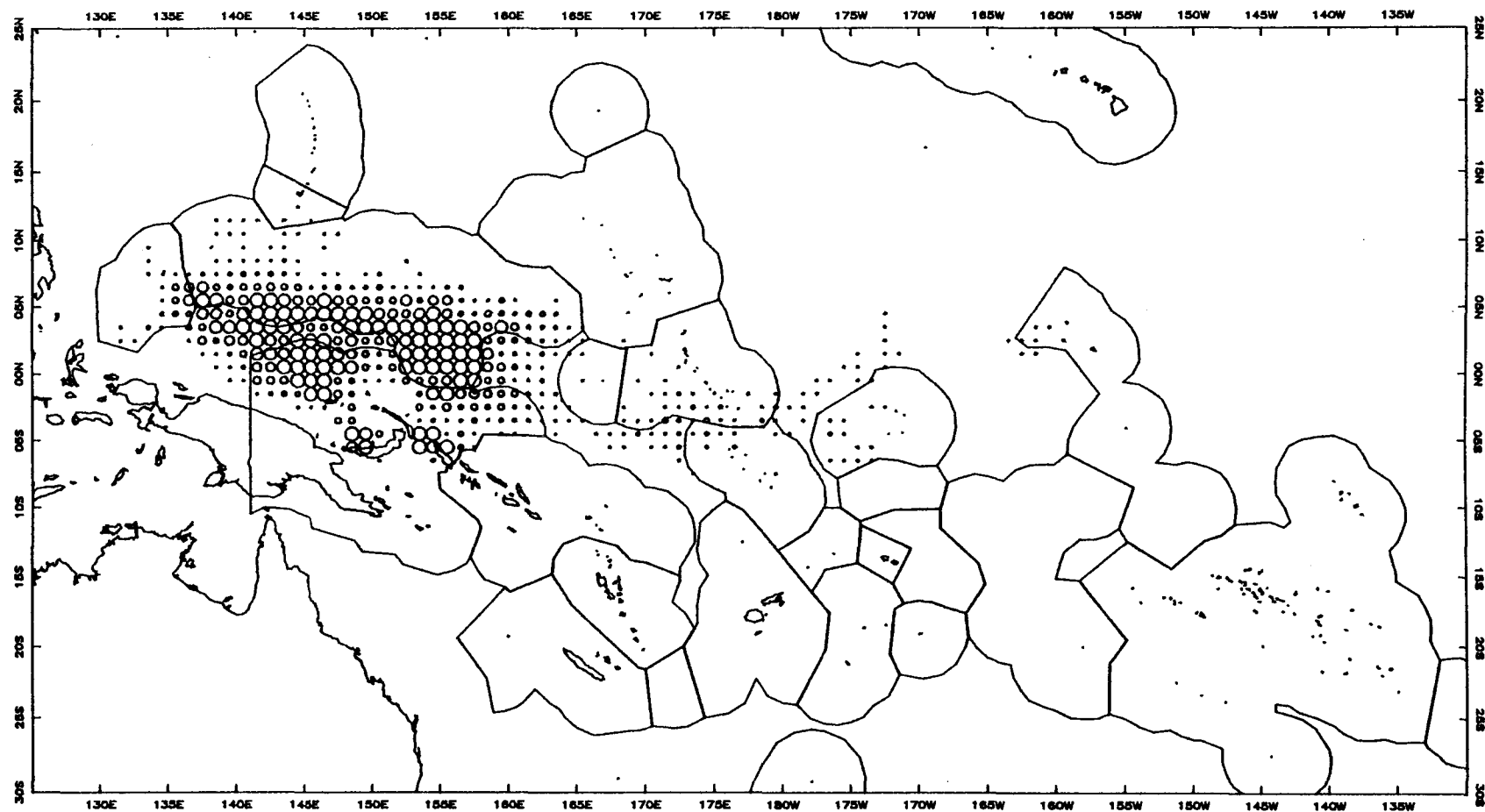


FIG.2. SPC LOGSHEET DATA FOR PURSE SEINE EFFORT — 1987

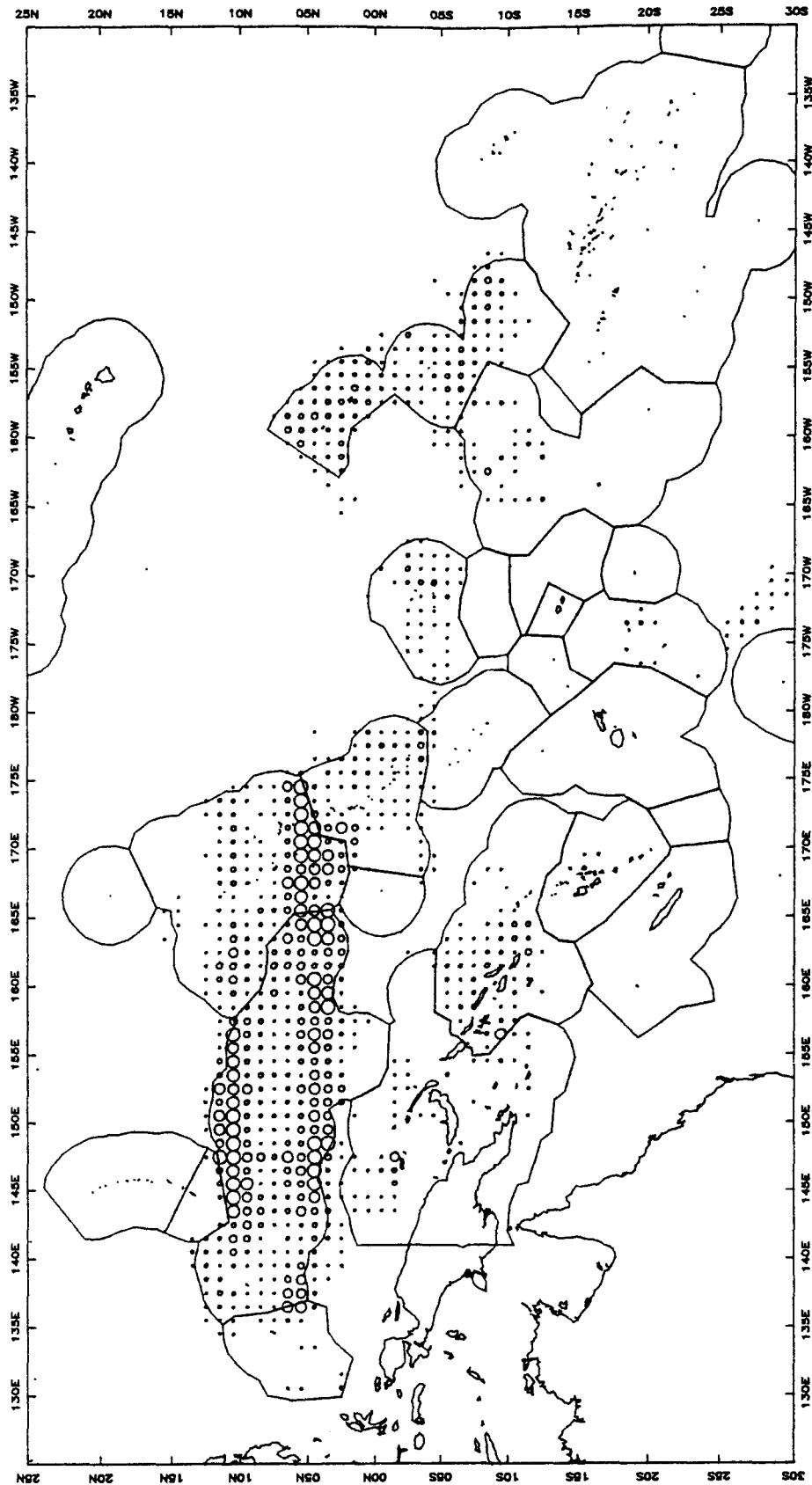


FIG.3. SPC LOGSHEET DATA FOR LONGLINE EFFORT — 1987

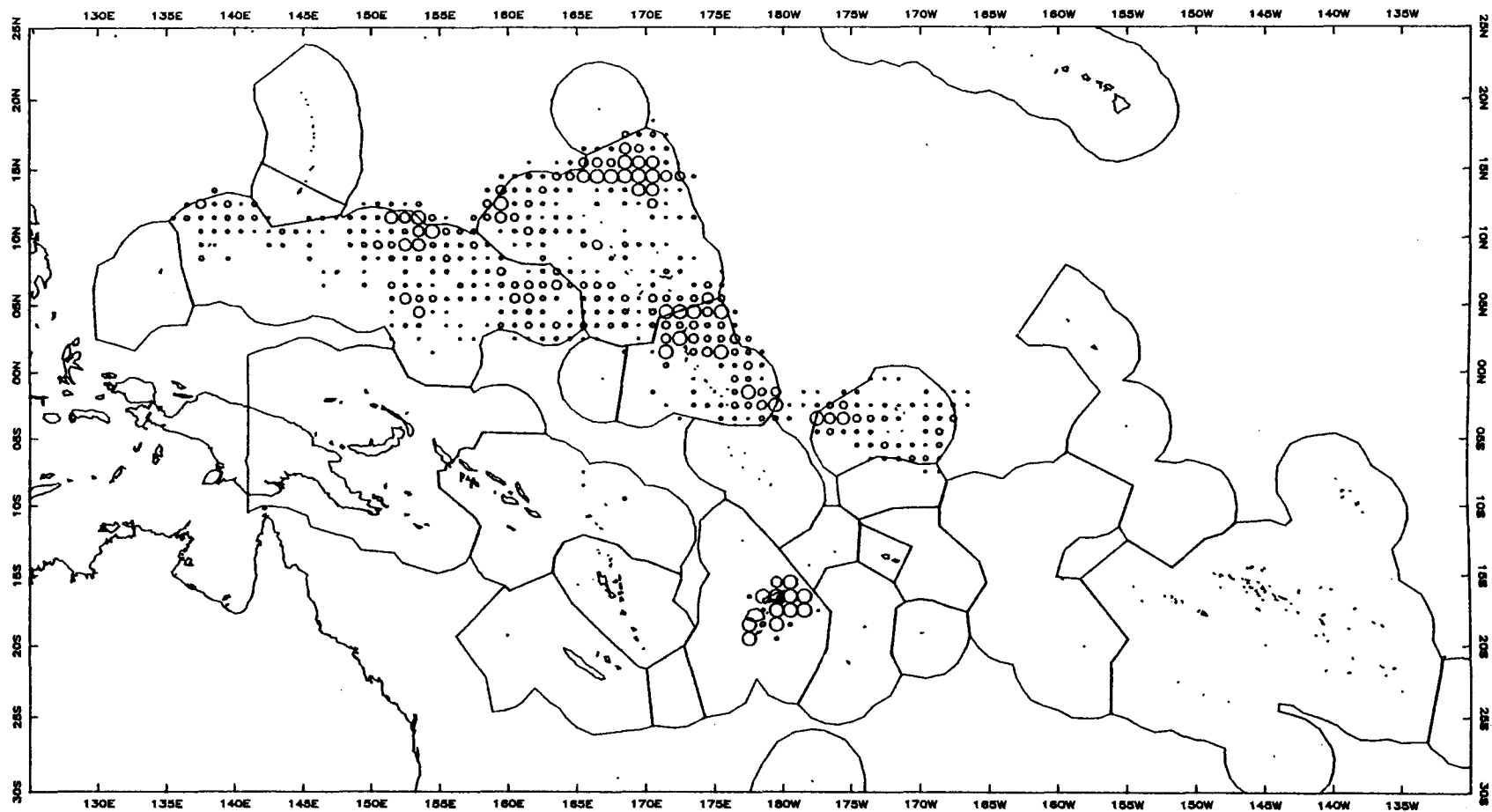


FIG.4. SPC LOGSHEET DATA FOR POLE AND LINE EFFORT — 1987

Table 1. Coverage of Tuna Vessels In the Western and Central Pacific During 1987 By Logsheet Data Submitted To SPC.

Trip duration and trip coverage are estimated from trips for which the departure and return dates are known; if data are insufficient, trip duration and coverage are omitted.
(Units: TRIP DURATION, days; TRIP DAYS REPORTED, percentage of trip duration reported on logsheets; ANNUAL DAYS REPORTED, days per vessel)

VESSEL NATIONALITY	VESSELS COVERED	TRIPS COVERED	AVERAGE TRIP DURATION	TRIP DAYS REPORTED (%)	ANNUAL DAYS REPORTED
PURSE SEINE					
CAYMAN ISLANDS	2	3			20
INDONESIA	3	18	36	48.0	67
JAPAN	36	226	42	46.6	145
PHILIPPINES	5	5			143
SOUTH KOREA	11	29	111	50.0	164
TAIWAN	13	37	96	63.0	234
UNITED STATES	14	21	63	52.0	37
VANUATU	3	6	68	37.6	67
TOTAL	87	345	58	48.9	135
LONGLINE					
JAPAN	209	549	54	56.2	81
PANAMA	7	9			42
SOUTH KOREA	37	39	237	17.2	39
TONGA	1	5	52	51.2	196
TAIWAN	61	86	27	32.8	16
TOTAL	315	688	57	52.3	63
POLE AND LINE					
FIJI	5	n/a			178
JAPAN	77	201	52	24.9	41
KIRIBATI	3	n/a			238
TOTAL	85	201	52	24.9	56

Table 2. Estimates of Vessels Active In the Central and Western Pacific During 1987.

REGIONAL REGISTER is the number of vessels on the Forum Fisheries Agency list of registered tuna vessels as of November 1987. For purse seiners, only group and single seiners are counted; catcher, support and reefer vessels are omitted.

VESSEL NATIONALITY	REGIONAL REGISTER	VESSELS COVERED	VESSELS ACTIVE	TOTAL DAYS FISHED	FISHING DAYS COVERED	COVERAGE RATE
PURSE SEINE						
CAYMAN ISLANDS	3	2	2	260	36	13.8
INDONESIA	3	3	3	210	182	86.7
JAPAN	45	36	36	5,724	4,619	80.7
MEXICO	2	-	-	-	-	-
NEW ZEALAND	2	-	-	-	-	-
PANAMA	7	-	-	-	-	-
PHILIPPINES	14	5	5	750	632	84.3
SOLOMON ISLANDS	0	0	1	180	0	0.0
SOUTH KOREA	18	11	18	3,600	1,323	36.8
TAIWAN	13	13	13	2,990	2,770	92.6
UNITED STATES	62	14	34	5,945	449	7.6
USSR	14	0	7	1,050	0	0.0
VANUATU	1	3	3	600	126	21.0
TOTAL	184	87	122	21,309	10,137	47.6
LONGLINE						
CAYMAN ISLANDS	1	-	-	-	-	-
HONDURAS	7	-	-	-	-	-
JAPAN	1,012	209	350	81,550	13,297	16.3
PANAMA	27	7	20	4,660	278	6.0
SOLOMON ISLANDS	2	-	-	-	-	-
SOUTH KOREA	154	37	125	29,125	1,437	4.9
TONGA	0	1	1	196	196	100.0
TAIWAN	245	61	100	23,300	890	3.8
USSR	9	-	-	-	-	-
TOTAL	1,457	315	596	138,831	16,098	11.6
POLE AND LINE						
FIJI	7	5	7	1,400	769	54.9
JAPAN	127	77	100	10,000	2,822	28.2
KIRIBATI	0	0	3	715	715	100.0
SOLOMON ISLANDS	0	0	34	7,663	0	0.0
TUVALU	1	0	1	200	0	0.0
TOTAL	135	82	145	19,978	4,306	21.6

Table 3. Catch Rates For Purse Seiners of INDONESIA
In the Central and Western Pacific Ocean.

(Units: CPUE, MT per day)

MONTH	VESSELS COVERED	DAYS COVERED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
JAN/87	1	19	280	14.7	100	0	0.0	0	0	280	14.7
FEB	2	4	65	16.2	100	0	0.0	0	0	65	16.2
MAR	2	8	220	27.5	100	0	0.0	0	0	220	27.5
APR	1	3	70	23.3	100	0	0.0	0	0	70	23.3
MAY	2	20	328	16.4	100	0	0.0	0	0	328	16.4
JUN	2	10	115	11.5	96	5	0.5	4	0	120	12.0
JUL	2	6	24	4.0	20	98	16.3	80	0	122	20.3
AUG	1	2	35	17.5	78	10	5.0	22	0	45	22.5
SEP	2	7	195	27.9	93	15	2.1	7	0	210	30.0
OCT	3	35	659	18.8	78	186	5.3	22	0	845	24.1
NOV	2	27	202	7.5	82	43	1.6	18	0	245	9.1
DEC	3	41	269	6.6	72	103	2.5	28	0	372	9.1
TOT	3	182	2,462	13.5	84	460	2.5	16	0	2,922	16.1
AVE	2	15	205	16.0	85	38	2.8	15	0	243	18.8
JAN/88	3	39	203	5.2	70	87	2.2	30	0	290	7.4
FEB	2	27	202	7.5	72	80	3.0	28	0	282	10.4
MAR	2	22	127	5.8	49	131	6.0	50	2	260	11.8
TOT	3	88	532	6.0	64	298	3.4	36	2	832	9.5
AVE	2	29	177	6.2	63	99	3.7	36	1	277	9.9

Table 4. Catch Rates For Purse Seiners of JAPAN
In the Central and Western Pacific Ocean.
 (Units: CPUE, MT per day)

MONTH	VESSELS COVERED		DAYS COVERED	SKIPJACK		%	YELLOWFIN		%	OTHER		TOTAL	
	MT	CPUE		MT	CPUE		MT	CPUE		MT	CPUE		
JAN/87	30	397	4,802	12.1	50	4,756	12.0	50	9	9,567	24.1		
FEB	28	290	3,153	10.9	68	1,433	4.9	31	48	4,634	16.0		
MAR	34	421	7,301	17.3	74	2,447	5.8	25	74	9,822	23.3		
APR	35	504	8,947	17.8	70	3,764	7.5	29	82	12,793	25.4		
MAY	33	448	6,968	15.6	68	3,219	7.2	31	52	10,239	22.9		
JUN	27	330	4,779	14.5	70	1,944	5.9	29	72	6,795	20.6		
JUL	26	310	3,592	11.6	70	1,483	4.8	29	25	5,100	16.5		
AUG	25	290	3,514	12.1	65	1,879	6.5	35	8	5,401	18.6		
SEP	25	300	3,021	10.1	68	1,397	4.7	32	3	4,421	14.7		
OCT	27	369	5,054	13.7	75	1,711	4.6	25	6	6,771	18.3		
NOV	31	453	7,422	16.4	77	2,112	4.7	22	49	9,583	21.2		
DEC	30	507	11,392	22.5	84	2,073	4.1	15	65	13,530	26.7		
TOT	36	4,619	69,945	15.1	71	28,218	6.1	29	493	98,656	21.4		
AVE	29	384	5,828	14.5	70	2,351	6.0	29	41	8,221	20.7		
JAN/88	28	306	6,674	21.8	84	1,221	4.0	15	24	7,919	25.9		
FEB	22	261	6,520	25.0	83	1,333	5.1	17	19	7,872	30.2		
MAR	29	382	7,089	18.6	81	1,663	4.4	19	10	8,762	22.9		
TOT	32	949	20,283	21.4	83	4,217	4.4	17	53	24,553	25.9		
AVE	26	316	6,761	21.8	83	1,405	4.5	17	18	8,184	26.3		

Table 5. Catch Rates For Purse Seiners of the PHILIPPINES
In the Central and Western Pacific Ocean.

(Units: CPUE, MT per day)

MONTH	VESSELS COVERED	DAYS COVERED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
JAN/87	0	-	-	-	-	-	-	-	-	-	-
FEB	0	-	-	-	-	-	-	-	-	-	-
MAR	0	-	-	-	-	-	-	-	-	-	-
APR	0	-	-	-	-	-	-	-	-	-	-
MAY	0	-	-	-	-	-	-	-	-	-	-
JUN	2	38	79	2.1	41	86	2.3	45	28	193	5.1
JUL	0	-	-	-	-	-	-	-	-	-	-
AUG	5	121	822	6.8	70	319	2.6	27	29	1,170	9.7
SEP	5	134	1,443	10.8	76	405	3.0	21	58	1,906	14.2
OCT	5	102	1,026	10.1	69	430	4.2	29	33	1,489	14.6
NOV	5	141	1,011	7.2	70	416	3.0	29	22	1,449	10.3
DEC	5	96	722	7.5	66	351	3.7	32	26	1,099	11.4
TOT	5	632	5,103	8.1	70	2,007	3.2	27	196	7,306	11.6
AVE	4	105	850	7.4	65	334	3.1	30	33	1,217	10.9
JAN/88	3	23	117	5.1	67	57	2.5	33	0	174	7.6
FEB	0	-	-	-	-	-	-	-	-	-	-
MAR	0	-	-	-	-	-	-	-	-	-	-
TOT	3	23	117	5.1	67	57	2.5	33	0	174	7.6
AVE	3	23	117	5.1	67	57	2.5	33	0	174	7.6

Table 6. Catch Rates For Purse Seiners of SOUTH KOREA
In the Central and Western Pacific Ocean.

(Units: CPUE, MT per day)

MONTH	VESSELS COVERED	DAYS COVERED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
JAN/87	6	85	1,016	12.0	73	384	4.5	27	0	1,400	16.5
FEB	6	91	879	9.7	66	456	5.0	34	0	1,335	14.7
MAR	7	50	540	10.8	57	406	8.1	43	0	946	18.9
APR	9	139	1,539	11.1	62	904	6.5	37	20	2,463	17.7
MAY	10	141	1,402	9.9	64	786	5.6	36	0	2,188	15.5
JUN	11	151	1,760	11.7	63	1,019	6.7	37	0	2,779	18.4
JUL	10	91	477	5.2	56	368	4.0	44	0	845	9.3
AUG	7	62	476	7.7	51	465	7.5	49	0	941	15.2
SEP	5	76	331	4.4	34	642	8.4	66	0	973	12.8
OCT	8	54	560	10.4	59	388	7.2	41	0	948	17.6
NOV	12	204	1,792	8.8	70	757	3.7	30	0	2,549	12.5
DEC	12	222	2,005	9.0	79	548	2.5	21	0	2,553	11.5
TOT	12	1,366	12,777	9.4	64	7,123	5.2	36	20	19,920	14.6
AVE	9	113	1,064	9.2	61	593	5.8	39	2	1,660	15.0
JAN/88	7	92	1,558	16.9	76	497	5.4	24	0	2,055	22.3
FEB	5	53	287	5.4	87	43	0.8	13	0	330	6.2
MAR	2	10	91	9.1	66	46	4.6	34	0	137	13.7
TOT	8	155	1,936	12.5	77	586	3.8	23	0	2,522	16.3
AVE	5	51	645	10.5	76	195	3.6	24	0	840	14.1

Table 7. Catch Rates For Purse Seiners of TAIWAN
In the Central and Western Pacific Ocean.
 (Units: CPUE, MT per day)

MONTH	VESSELS COVERED	DAYS COVERED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
JAN/87	7	120	307	2.6	88	41	0.3	12	0	348	2.9
FEB	8	146	1,121	7.7	92	100	0.7	8	0	1,221	8.4
MAR	9	200	1,400	7.0	88	194	1.0	12	0	1,594	8.0
APR	9	159	1,133	7.1	83	224	1.4	17	0	1,357	8.5
MAY	7	141	857	6.1	99	8	0.1	1	0	865	6.1
JUN	10	228	824	3.6	87	124	0.5	13	0	948	4.2
JUL	10	262	431	1.6	81	100	0.4	19	0	531	2.0
AUG	9	213	607	2.8	93	44	0.2	7	0	651	3.1
SEP	11	261	975	3.7	79	260	1.0	21	0	1,235	4.7
OCT	12	353	2,194	6.2	84	410	1.2	16	0	2,604	7.4
NOV	13	338	1,913	5.7	84	352	1.0	16	0	2,265	6.7
DEC	13	327	1,736	5.3	85	297	0.9	15	0	2,033	6.2
TOT	13	2,748	13,498	4.9	86	2,154	0.8	14	0	15,652	5.7
AVE	10	229	1,124	5.0	87	179	0.7	13	0	1,304	5.7
JAN/88	10	250	1,767	7.1	82	382	1.5	18	18	2,167	8.7
FEB	12	229	2,077	9.1	85	365	1.6	15	5	2,447	10.7
MAR	9	168	690	4.1	80	172	1.0	20	0	862	5.1
TOT	14	647	4,534	7.0	83	919	1.4	17	23	5,476	8.5
AVE	10	215	1,511	6.7	82	306	1.4	17	8	1,825	8.2

Table 8. Catch Rates For Purse Seiners of the UNITED STATES
In the Central and Western Pacific Ocean.

(Units: CPUE, MT per day)

MONTH	VESSELS COVERED	DAYS COVERED	SKIPJACK			YELLOWFIN			OTHER MT	TOTAL	
			MT	CPUE	%	MT	CPUE	%		MT	CPUE
JAN/87	4	45	1,081	24.0	82	243	5.4	18	0	1,324	29.4
FEB	0	-	-	-	-	-	-	-	-	-	-
MAR	0	-	-	-	-	-	-	-	-	-	-
APR	0	-	-	-	-	-	-	-	-	-	-
MAY	0	-	-	-	-	-	-	-	-	-	-
JUN	3	20	284	14.2	52	262	13.1	48	0	546	27.3
JUL	2	38	528	13.9	51	510	13.4	49	0	1,038	27.3
AUG	10	85	186	2.2	10	1,594	18.8	89	18	1,798	21.2
SEP	9	132	1,118	8.5	43	1,370	10.4	53	99	2,587	19.6
OCT	8	91	823	9.0	32	1,764	19.4	68	0	2,587	28.4
NOV	4	26	1,014	39.0	86	159	6.1	14	0	1,173	45.1
DEC	3	49	1,165	23.8	77	351	7.2	23	0	1,516	30.9
TOT	15	486	6,199	12.8	49	6,253	12.9	50	117	12,569	25.9
AVE	5	60	774	16.8	54	781	11.7	45	15	1,571	28.7
JAN/88	1	13	546	42.0	100	0	0.0	0	0	546	42.0
FEB	3	41	632	15.4	61	402	9.8	39	0	1,034	25.2
MAR	4	28	390	13.9	69	176	6.3	31	0	566	20.2
TOT	7	82	1,568	19.1	73	578	7.0	27	0	2,146	26.2
AVE	3	27	522	23.8	77	192	5.4	23	0	715	29.1

Table 9. Catch Rates For Longliners of JAPAN
In the Central and Western Pacific Ocean.

(Units: HOOKS COVERED, 1000 Hooks; CPUE, kg per 100 hooks)

MONTH	VESSELS COVERED	HOOKS COVERED	ALBACORE		BIGEYE		YELLOWFIN		OTHER	TOTAL	
			MT	CPUE	MT	CPUE	MT	CPUE	MT	MT	CPUE
JAN/87	79	2,742	6	0.2	584	21.3	671	24.5	76	1,337	48.8
FEB	96	3,150	3	0.1	796	25.3	1,003	31.8	91	1,893	60.1
MAR	92	2,661	2	0.1	615	23.1	962	36.1	93	1,672	62.8
APR	75	2,412	3	0.1	513	21.3	795	33.0	121	1,432	59.4
MAY	74	2,553	2	0.1	604	23.7	879	34.4	138	1,623	63.6
JUN	82	2,179	6	0.3	524	24.0	884	40.6	94	1,508	69.2
JUL	92	2,397	7	0.3	502	20.9	869	36.2	96	1,474	61.5
AUG	94	2,552	3	0.1	525	20.6	713	27.9	88	1,329	52.1
SEP	85	2,592	11	0.4	451	17.4	483	18.6	69	1,014	39.1
OCT	98	2,936	16	0.5	539	18.4	534	18.2	98	1,187	40.4
NOV	104	3,100	8	0.3	559	18.0	706	22.8	120	1,393	44.9
DEC	89	2,401	7	0.3	438	18.2	772	32.1	86	1,303	54.3
TOT	217	31,679	74	0.2	6,650	21.0	9,271	29.3	1170	17,165	54.2
AVE	88	2,639	6	0.2	554	21.0	772	29.7	98	1,430	54.7
JAN/88	62	1,729	11	0.6	293	16.9	842	48.7	53	1,199	69.3
FEB	44	1,210	1	0.1	264	21.8	421	34.8	54	740	61.2
MAR	27	608	1	0.2	88	14.5	165	27.1	26	280	46.0
TOT	81	3,547	13	0.4	645	18.2	1,428	40.2	133	2,219	62.5
AVE	44	1,182	4	0.3	215	17.7	476	36.9	44	739	58.8

Table 10. Catch Rates For Longliners of SOUTH KOREA
In the Central and Western Pacific Ocean.

(Units: HOOKS COVERED, 1000 Hooks; CPUE, kg per 100 hooks)

MONTH	VESSELS COVERED	HOOKS COVERED	ALBACORE		BIGEYE		YELLOWFIN		OTHER	TOTAL	
			MT	CPUE	MT	CPUE	MT	CPUE	MT	MT	CPUE
JAN/87	13	521	8	1.5	79	15.1	83	15.9	25	195	37.4
FEB	19	797	27	3.4	123	15.4	82	10.3	24	256	32.1
MAR	16	603	7	1.2	75	12.4	85	14.1	19	186	30.8
APR	7	232	2	0.9	50	21.5	44	19.0	5	101	43.5
MAY	7	338	2	0.6	83	24.5	84	24.8	16	185	54.6
JUN	9	242	3	1.2	60	24.7	49	20.2	9	121	49.8
JUL	10	258	8	3.1	66	25.6	43	16.7	7	124	48.1
AUG	8	199	2	1.0	48	24.1	29	14.6	12	91	45.7
SEP	7	263	6	2.3	44	16.7	36	13.6	15	101	38.3
OCT	11	533	11	2.1	104	19.5	69	12.9	27	211	39.6
NOV	6	194	3	1.5	33	16.9	34	17.5	17	87	44.7
DEC	8	256	2	0.8	37	14.4	47	18.4	25	111	43.3
TOT	41	4,441	81	1.8	802	18.1	685	15.4	201	1,769	39.8
AVE	10	370	6	1.6	66	19.2	57	16.5	17	147	42.3
JAN/88	9	281	2	0.7	43	15.3	49	17.4	21	115	40.9
FEB	6	108	1	0.9	17	15.6	22	20.2	5	45	41.4
MAR	4	106	3	2.8	15	14.1	13	12.2	6	37	34.8
TOT	11	496	6	1.2	75	15.1	84	16.9	32	197	39.7
AVE	6	165	2	1.4	25	14.9	28	16.5	11	65	39.0

Table 11. Catch Rates For Longliners of TAIWAN
In the Central and Western Pacific Ocean.

(Units: HOOKS COVERED, 1000 Hooks; CPUE, kg per 100 hooks)

MONTH	VESSELS COVERED	HOOKS COVERED	ALBACORE		BIGEYE		YELLOWFIN		OTHER	TOTAL	
			MT	CPUE	MT	CPUE	MT	CPUE	MT	MT	CPUE
JAN/87	0	-	-	-	-	-	-	-	-	-	-
FEB	0	-	-	-	-	-	-	-	-	-	-
MAR	0	-	-	-	-	-	-	-	-	-	-
APR	0	-	-	-	-	-	-	-	-	-	-
MAY	1	3	0	0.0	1	30.3	0	0.0	1	2	60.6
JUN	2	16	1	6.1	8	49.1	1	6.1	6	16	98.3
JUL	5	60	2	3.3	6	9.9	3	4.9	12	23	37.8
AUG	32	319	44	13.8	36	11.3	11	3.4	81	172	53.9
SEP	18	151	11	7.3	25	16.5	9	5.9	30	75	49.5
OCT	20	230	20	8.7	28	12.1	12	5.2	36	96	41.6
NOV	11	186	43	23.1	12	6.4	6	3.2	28	89	47.7
DEC	4	40	10	24.7	5	12.3	4	9.9	6	25	61.6
TOT	61	1,008	131	13.0	121	12.0	46	4.6	200	498	49.4
AVE	12	126	16	10.4	15	17.6	5	6.0	25	62	56.4
JAN/88	1	26	13	50.0	0	0.0	8	30.8	0	21	80.8
FEB	3	77	18	23.2	3	3.9	16	20.6	5	42	54.1
MAR	0	-	-	-	-	-	-	-	-	-	-
TOT	3	103	31	29.9	3	2.9	24	23.2	5	63	60.8
AVE	2	51	15	37.3	1	1.9	12	25.9	2	31	67.4

Table 12. Catch Rates For Pole-and-Line Vessels of FIJI
In the Central and Western Pacific Ocean.

(Units: CPUE, MT per day)

MONTH	VESSELS COVERED	DAYS COVERED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
JAN/87	5	107	533	5.0	89	66	0.6	11	0	599	5.6
FEB	5	104	428	4.1	94	26	0.3	6	0	455	4.4
MAR	5	105	505	4.8	94	29	0.3	6	0	535	5.1
APR	4	89	260	2.9	91	25	0.3	9	0	285	3.2
MAY	4	78	282	3.6	90	29	0.4	9	0	313	4.0
JUN	3	69	173	2.5	80	43	0.6	20	0	217	3.1
JUL	3	20	20	1.0	72	7	0.4	27	0	29	1.4
AUG	1	18	11	0.6	90	1	0.1	11	0	13	0.7
SEP	2	35	41	1.2	93	2	0.1	6	0	45	1.3
OCT	2	33	32	1.0	101	0	0.0	1	0	32	1.0
NOV	4	49	99	2.0	85	16	0.3	14	0	117	2.4
DEC	3	62	181	2.9	98	4	0.1	2	0	186	3.0
TOT	5	769	2,573	3.3	91	253	0.3	9	0	2,826	3.7
AVE	3	64	214	2.7	90	21	0.3	10	0	235	2.9
JAN/88	5	117	559	4.8	95	27	0.2	5	0	587	5.0
FEB	5	104	323	3.1	91	33	0.3	9	0	356	3.4
MAR	4	91	277	3.0	92	24	0.3	8	0	301	3.3
TOT	6	312	1,160	3.7	93	84	0.3	7	0	1,244	4.0
AVE	5	104	386	3.6	93	28	0.3	7	0	414	3.9

Table 13. Catch Rates For Pole-and-Line Vessels of JAPAN
In the Central and Western Pacific Ocean.

(Units: CPUE, MT per day)

MONTH	VESSELS COVERED	DAYS COVERED	SKIPJACK			YELLOWFIN			OTHER	TOTAL	
			MT	CPUE	%	MT	CPUE	%	MT	MT	CPUE
JAN/87	28	237	962	4.1	89	105	0.4	10	10	1,077	4.5
FEB	67	765	4,836	6.3	97	117	0.2	2	18	4,973	6.5
MAR	46	279	1,968	7.1	99	12	0.0	1	3	1,984	7.1
APR	45	370	5,406	14.6	100	2	0.0	0	0	5,408	14.6
MAY	26	170	1,685	9.9	100	0	0.0	0	0	1,686	9.9
JUN	1	4	2	0.5	67	1	0.2	33	0	3	0.8
JUL	7	36	578	16.1	100	2	0.1	0	0	580	16.1
AUG	15	67	510	7.6	97	11	0.2	2	5	527	7.9
SEP	7	35	151	4.3	90	16	0.5	10	0	167	4.8
OCT	23	114	549	4.8	95	26	0.2	4	4	579	5.1
NOV	37	317	2,182	6.9	97	65	0.2	3	8	2,256	7.1
DEC	40	427	2,857	6.7	96	90	0.2	3	40	2,989	7.0
TOT	77	2,821	21,690	7.7	98	451	0.2	2	88	22,229	7.9
AVE	28	235	1,807	7.4	94	37	0.2	6	7	1,852	7.6
JAN/88	30	203	1,271	6.3	97	38	0.2	3	6	1,317	6.5
FEB	39	431	2,831	6.6	97	67	0.2	2	29	2,929	6.8
MAR	24	256	1,718	6.7	98	28	0.1	2	8	1,754	6.9
TOT	54	890	5,822	6.5	97	135	0.2	2	43	6,000	6.7
AVE	31	296	1,940	6.5	97	45	0.2	2	14	2,000	6.7

Table . Estimates of Total Catch and Effort In the Western and Central Pacific During 1987.

(Units: MT; Species codes: SKJ skipjack, YFT yellowfin, BET bigeye, ALB albacore, BFT bluefin, BUM blue marlin, MLS striped marlin, BLM black marlin, SAI sailfish, SWO swordfish, SHK shark, OTH other)

VESSEL NATIONALITY	DAYS FISHED	SKJ	YFT	BET	ALB	BUM	MLS	BLM	SWO	SHK	OTH	TOTAL
CAYMAN ISLANDS PURSE SEINE	260	2,080	3,272								58	5,410
INDONESIA PURSE SEINE	210	2,841	531									3,372
FIJI POLE AND LINE	1,400	4,682	462									5,144
JAPAN PURSE SEINE	5,724	86,678	34,969	610							1	122,258
LONGLINE	81,550		55,706	40,695	454	5,114	220	245	994	147	405	103,980
POLE AND LINE	10,000	76,889	1,596								315	78,800
TOTAL		163,567	92,271	41,305	454	5,114	220	245	994	147	721	305,038
KIRIBATI POLE AND LINE	715	242	120								11	373
PANAMA LONGLINE	4,660	8	1,778	2,656	262	196	191	2	83	48	16	5,240
PHILIPPINES PURSE SEINE	750	6,056	2,382	66							166	8,670
SOLOMON ISLANDS PURSE SEINE	275	4,406	3,441								636	8,483
POLE AND LINE	7,663	23,590	239								96	23,925
TOTAL		27,996	3,680								732	32,408
SOUTH KOREA PURSE SEINE	3,600	34,196	19,287	27							27	53,537
LONGLINE	29,125	12	13,018	15,112	1,568	1,807	212	264	368	162	600	33,123
TOTAL		34,208	32,305	15,139	1,568	1,807	212	264	368	162	627	86,660
TAIWAN PURSE SEINE	2,990	14,609	2,337									16,946
LONGLINE	23,300		1,240	3,178	3,420	2,091	264		633	1,879	384	13,089
TOTAL		14,609	3,577	3,178	3,420	2,091	264		633	1,879	384	30,035
TONGA LONGLINE	196	1	28	14	227				1	11	37	319
TUVALU POLE AND LINE	200	400	40									440
UNITED STATES PURSE SEINE	5,945	90,084	69,616	64	56						10	159,830
USSR PURSE SEINE	1,050	5,250	105									5,355
VANUATU PURSE SEINE	600	645	60									705
ALL NATIONALITIES PURSE SEINE	21,404	246,845	136,000	767							898	384,510
LONGLINE	138,831	21	71,770	61,655	5,931	9,208	887	511	2,079	2,247	1,442	155,751
POLE AND LINE	19,978	105,803	2,457								422	108,682
TOTAL		352,669	210,227	62,422	5,931	9,208	887	511	2,079	2,247	2,762	648,943