

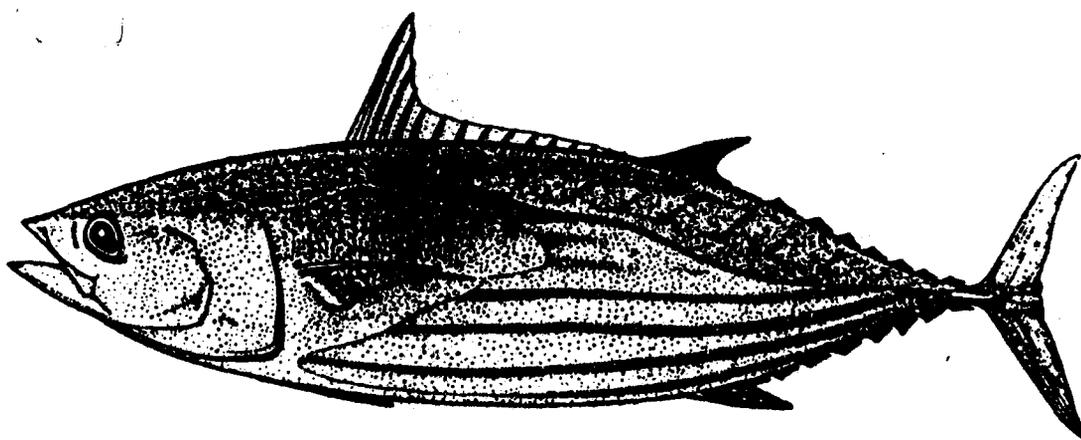
SECOND SOUTH PACIFIC ALBACORE RESEARCH WORKSHOP

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**ESTIMATES OF CATCH AND EFFORT FOR TUNA FISHERIES
IN THE CENTRAL AND WESTERN PACIFIC OCEAN
FOR 1987 AND 1988**



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

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INTRODUCTION

The estimation of catch and effort for tuna fisheries in the Central and Western Pacific Ocean by the South Pacific Commission is made difficult due to the unavailability of catch and effort statistics from most non-member countries whose tuna fleets operate in the region.

Non-member countries which fish for tuna in the region include Indonesia, Japan, Korea, the Philippines, the Soviet Union and Taiwan. The combined catch by purse seiners, longliners and pole-and-line vessels of these countries in 1987 is estimated below at about 440,000 mt, or 70 per cent of the total catch of roughly 640,000 mt.

In the absence of catch statistics from most non-member countries, an attempt has been made to estimate total catch and effort from daily catch and effort data provided to SPC by member countries. These data have been collected by member countries either from local vessels or from foreign vessels operating under access agreements. The data cover purse seiners, longliners and pole-and-line vessels, but not gillnetters, trollers or artisanal tuna fisheries.

Countries supplying data covering tuna fishing activities during 1987 and 1988 include Australia, the Cook Islands, the Federated States of Micronesia, Fiji, French Polynesia, Kiribati, the Marshall Islands, New Caledonia, Palau, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, the United States and Vanuatu. Since June 1988, when the United States Multilateral Fisheries Treaty went into effect, data covering American purse seiners have been forwarded to SPC by the South Pacific Forum Fisheries Agency.

DATA HOLDINGS

Table 1 lists the amount of daily catch and effort data held in the SPC regional tuna fisheries database for 1987 and 1988, by gear type and vessel nationality.

For 1987, the database covers 67,339 days of fishing and non-fishing activities by 776 vessels, including 93 purse seiners, 562 longliners and 121 pole-and-line vessels. For 1988, the database covers 61,343 days by 774 vessels, including 125 purse seiners, 540 longliners and 109 pole-and-line vessels.

DATA HOLDINGS FOR PURSE SEINERS

The increase in the number of purse seiners covered, from 93 in 1987 to 125 vessels in 1988, is largely due to increased coverage of the American fleet and expansion of the Taiwanese fleet. Subsequent to the implementation of the Multilateral Fisheries Treaty in June 1988, the number of American seiners covered by the database increased from 18 in 1987 to 32 vessels in 1988. The Taiwanese purse seine fleet increased from 13 vessels in 1987 to 19 in 1988.

During 1988, seven American seiners transferred to Korea; however, coverage of the Korean fleet increased by only one vessel, from 17 in 1987 to 18 in 1988. During 1988, four additional seiners from Japan and four additional vessels from the Philippines were covered.

DATA HOLDINGS FOR LONGLINERS

The reduction in the number of days covered for longliners, from 43,474 in 1987 to 31,112 in 1988, is largely due to the lack of forthcoming 1988 data for roughly 55 Taiwanese and 45 Korean longliners based in Pago Pago, American Samoa, whereas almost full coverage for these vessels has been provided to SPC for 1987.

Nevertheless, in spite of the missing Pago Pago longline data, the number of Taiwanese vessels covered in 1988 increased to 122, from 109 in 1987. Some of the Taiwanese vessels covered in 1988 are based in Pago Pago, but the 1988 data have been obtained under access agreements and not under the voluntary data collection programme for the Pago-based Taiwanese and Korean vessels co-ordinated by the National Marine Fisheries Service of the United States. Thus daily coverage of Taiwanese vessels is far lower than for 1987, 3,297 days in 1988 compared to 8,346 days in 1987. Similarly, the daily coverage of Korean longliners is only 1,691 days for 1988, compared to 10,850 for 1987. The effect of poor coverage of Taiwanese and Korean longliners on estimates of albacore catches during 1988 will be discussed below.

The number of Japanese longliners covered in the database increased substantially, from 307 vessels in 1987 to 344 vessels in 1988.

DATA HOLDINGS FOR POLE-AND-LINE VESSELS

The number of pole-and-line vessels covered in the SPC database declined from 121 in 1987 to 109 in 1988, due to a decrease in the number of Japanese vessels covered, from 77 in 1987 to 63 in 1988. While the number of Japanese vessels declined, the average number of days covered per vessel for Japanese pole-and-liners more than doubled, rising from 41 days per vessel per year for 1987 to 91 days per vessel per year for 1988. Thus the total number of days covered for Japanese vessels increased from 3,137 days in 1987 to 5,702 days in 1988, while the number of days covered for all pole-and-line vessels combined increased from 11,768 in 1987 to 13,752 in 1988.

ESTIMATES OF TOTAL EFFORT AND COVERAGE RATES

Table 2 presents estimates of total effort and coverage rates for 1987 and 1988, by gear type and vessel nationality, for data held in the SPC regional tuna fisheries database. The geographic area to which the coverage rates refer is shown in Figure 1.

The number of "days fished" and "days covered" in Table 2 (Total Effort) refer to days fishing or searching and exclude all other days (i.e., days in transit, days idle due to engine breakdown, etc.), whereas "days covered" in Table 1 (Data Holdings) refers to all days, including days fishing, days searching and all other days. Thus, for a given gear type and vessel nationality, "days covered" in Table 2 (Total Effort) will usually be slightly less than "days covered" in Table 1 (Data Holdings).

For a number of fleets, coverage in Table 2 is given as 100 per cent, or full coverage. For several of these fleets, the data provided to SPC do in fact represent full coverage. For the others, full coverage has been assumed in the absence of information from which useful estimates of total effort could be obtained.

Fleets for which full coverage has been achieved include Kiribati pole-and-liners, Solomon Islands purse seiners and pole-and-liners, and Tonga longliners.

Fleets for which full coverage has been assumed are relatively small in size, therefore the assumption of full coverage will not have a major effect on estimates of total catch and effort for the region as a whole. These fleets include Australia purse seiners and longliners, Indonesia purse seiners, Philippines purse seiners and the Tuvalu pole-and-liner.

For the remaining fleets, total effort (in days fished) has been estimated from independent estimates of the total number of vessels active in conjunction with either an estimate of the average number of annual fishing days per vessel or an independent estimate of the total catch.

Estimates of catch and effort for the following fleets were not included in the analysis due to the absence of data: New Caledonia longliners, New Zealand purse seiners and Soviet Union longliners and purse seiners. Data for New Caledonia longliners have recently been provided to SPC and are currently being processed, while data for New Zealand purse seiners are forthcoming.

PURSE SEINE COVERAGE

It is suspected that most if not all of the distant-water purse seiners operating in the region have access agreements with at least one SPC member country and that they provide at least some data to member countries under the agreements. Thus, for purse seine fleets for which full coverage has not been achieved or assumed, the number of vessels active has been estimated from the number of vessels covered in the SPC database. The one exception is for American seiners active in 1987; from other sources it is known that 34 vessels were active, while only 18 vessels are covered in the SPC database.

The average number of annual fishing days per vessel for purse seiners was estimated at 200 for Korean and Japanese vessels, at 230 for Taiwanese vessels during 1987, at 200 days for Taiwanese vessels during 1988 and at 230 for American vessels during 1988. For American purse seiners active in 1987, total effort was estimated from an independent estimate of the total catch.

For Japanese, Korean and Taiwanese vessels, coverage appears to have remained relatively constant, at about 60-65 per cent for the Japanese, 40-45 per cent for the Koreans and 80-90 per cent for the Taiwanese. As noted earlier, coverage for American vessels increased substantially with the implementation of the Multilateral Fisheries Treaty in June 1988, rising from about 10 per cent for 1987 to around 55 per cent for 1988.

Overall, coverage of purse seiners by the SPC database is about 50 per cent for 1987 and 61 per cent for 1988.

LONGLINE COVERAGE

Total effort for Japanese, Korean and Taiwanese longliners in 1987 and 1988 was estimated by assuming that:

- (1) most Japanese longliners have access agreements with SPC member countries and are thus covered by the SPC database;
- (2) there are approximately 125 Korean vessels and 125 Taiwanese vessels active in the region; and
- (3) the average number of annual days fished per vessel for each of the three fleets was 200 days.

These assumptions are crude at best; thus caution should be taken when using the estimates of effort and coverage rates given in Table 2.

Coverage appears to have remained the same for Japanese vessels for 1987 and 1988, at about 30 per cent. Coverage of Korean longliners dropped considerably, from about 43 per cent for 1987 to about 7 per cent for 1988, while coverage of Taiwanese longliners dropped from about 33 per cent for 1987 to about 11 per cent for 1988. As noted earlier, the decline in coverage for the Korean and Taiwanese vessels is largely due to the lack of Pago Pago longline data for 1988.

For all vessels combined, coverage by the SPC database is estimated to be about 35 per cent for 1987 and 22 per cent for 1988.

POLE-AND-LINE COVERAGE

Total effort for Fijian pole-and-line vessels for 1987 and the single New Zealand vessel for 1988 was estimated by assuming that the vessels active fished for an average of 175 days. For 1988, total effort for the Fijian vessels was estimated from an independent estimate of the total catch.

Total effort for Japanese vessels was estimated by assuming that:

- (1) most vessels have access agreements with SPC member countries and are thus covered by the SPC database; and
- (2) there was an average of 100 days fished per vessel in 1987 and an average of 125 days fished per vessel in 1988.

As noted earlier, the average annual coverage of individual Japanese vessels more than doubled between 1987 and 1988. If the assumptions above hold true, it would appear that coverage of Japanese pole-and-line vessels increased from about 37 per cent in 1987 to about 68 per cent in 1988.

Coverage of all pole-and-line vessels is estimated to be 69 per cent for 1987 and 82 per cent for 1988. The high coverage rates for pole-and-line vessels is due to the full coverage of the Solomon Islands fleet, which accounts for about 40 per cent of all pole-and-line effort in the region.

ESTIMATES OF CATCH

Table 3 presents estimates of catches for 1987 and 1988, by vessel nationality and gear type.

For all fleets for which full coverage was not achieved or assumed, catches were estimated by raising catches covered by the SPC database by the coverage rates given in Table 2, except for the following:

- (1) estimates of the catch by American purse seiners for 1987 are statistics provided by the Fisheries Statistics Unit of the Food and Agriculture Organization of the United Nations for FAO Area 71; and
- (2) the estimate of the total catch for Fijian pole-and-line vessels in 1988 was taken from landing statistics.

PURSE SEINE CATCH

While the catch by purse seiners for 1987 and 1988 appears to have remained relatively constant, at 394,000 mt in 1987 and 392,000 mt in 1988, the species composition changed considerably. The daily catch and effort data held at SPC indicates that catch rates for yellowfin in 1987 were unusually high, while catch rates for skipjack were elevated in 1988. Thus, the species composition for 1987 is 65 per cent skipjack and 35 per cent yellowfin, while the species composition for 1988 is 82 per cent skipjack and 18 per cent yellowfin.

LONGLINE CATCH

The estimates of the longline catch given in Table 3 indicate that catches declined from 156,000 mt in 1987 to 139,000 mt in 1988, although the apparent decline is probably an artifact due to the lack of data for Pago-based longliners for 1988.

The catch rates of Korean and Taiwanese longliners based in Pago Pago are usually greater than for Korean and Taiwanese vessels based elsewhere. Thus, when data for the Pago-based vessels are eventually included in the analysis, the estimate of the total catch for 1988 should increase.

An additional problem concerns the estimate of the total catch of albacore by Korean longliners in 1988. The Korean vessels based in Pago Pago tend to catch more albacore than Korean vessels based elsewhere. Thus the total catch by longliners in 1988 is disproportionately weighted towards yellowfin and bigeye, at the expense of albacore.

POLE-AND-LINE CATCH

The total catch by pole-and-line vessels appears to have increased considerably, from 88,000 mt in 1987 to 128,000 mt in 1988. The difference was due in part to an increase in effort in the region during 1988, which was probably dependent on the increase in catch rates.

CONCLUSION

The total catch by purse seiners, longliners and pole-and-line vessels in the Central and Western Pacific has been estimated at 638,000 mt for 1987 and 659,000 mt for 1988. However, it should be obvious from the foregoing that these estimates are approximate at best.

The principal obstacle to obtaining reliable estimates of catch and effort for tuna fisheries in the region continues to be the lack of information concerning the fleets of non-member countries. Though the estimates presented above are perhaps useful for comparative purposes, they should by no means be regarded as definitive. The lack of reliable information concerning the amount of fishing effort expended by the fleets of non-member countries has resulted in questionable estimates of coverage rates for the SPC database, which in turn have resulted in questionable estimates of the catch.

Figure 1. Pacific Island tuna fishery statistical area

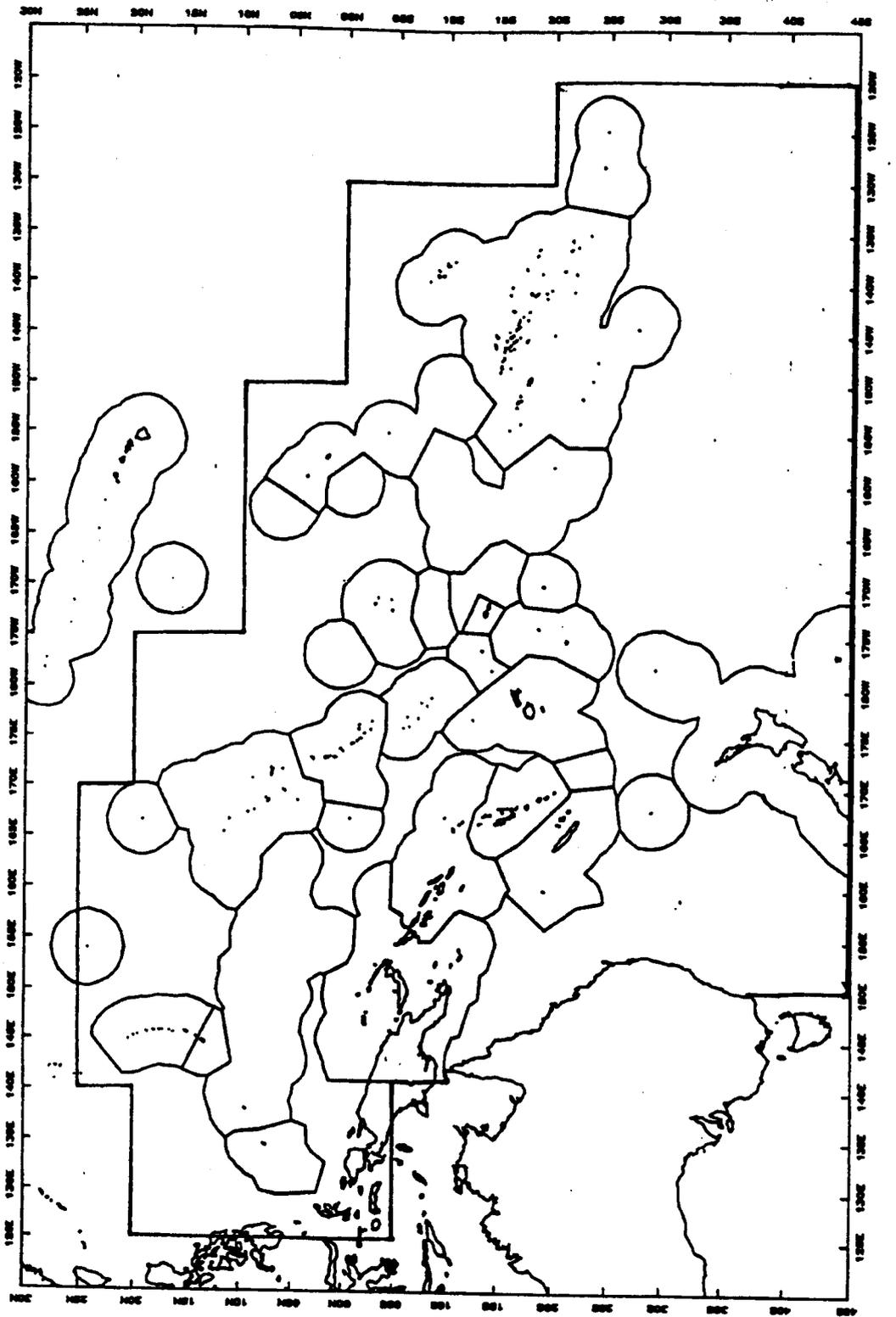


Table 1a. Data holdings in the SPC regional tuna fisheries database for 1987

PURSE SEINE						
VESSEL NATIONALITY	VESSELS COVERED	DAYS COVERED	ANNUAL COVERAGE	TRIPS COVERED	TRIP DURATION	TRIP COVERAGE
INDONESIA	3	201	67	20	34	18
JAPAN	36	5,262	146	246	42	21
KOREA	17	2,125	125	46	110	50
PHILIPPINES	5	715	143	5	-	-
SOLOMON ISLANDS	1	189	189	n/a	-	-
TAIWAN	13	3,024	233	36	100	59
UNITED STATES	18	581	32	25	63	32
TOTAL	93	12,097	130	378	59	30

LONGLINE						
VESSEL NATIONALITY	VESSELS COVERED	DAYS COVERED	ANNUAL COVERAGE	TRIPS COVERED	TRIP DURATION	TRIP COVERAGE
AUSTRALIA	46	940	20	67	-	-
JAPAN	307	23,142	75	723	62	31
KOREA	99	10,850	110	193	193	17
TAIWAN	109	8,346	77	206	83	4
TONGA	1	196	196	5	53	39
TOTAL	562	43,474	77	1,194	84	24

POLE AND LINE						
VESSEL NATIONALITY	VESSELS COVERED	DAYS COVERED	ANNUAL COVERAGE	TRIPS COVERED	TRIP DURATION	TRIP COVERAGE
FIJI	5	891	178	n/a	-	-
JAPAN	77	3,137	41	220	52	14
KIRIBATI	4	684	171	n/a	-	-
SOLOMON ISLANDS	34	6,903	203	n/a	-	-
TUVALU	1	153	153	n/a	-	-
TOTAL	121	11,768	97	220	52	14

Table 1b. Data holdings in the SPC regional tuna fisheries database for 1988

PURSE SEINE						
VESSEL NATIONALITY	VESSELS COVERED	DAYS COVERED	ANNUAL COVERAGE	TRIPS COVERED	TRIP DURATION	TRIP COVERAGE
AUSTRALIA	1	26	26	1	-	-
INDONESIA	3	121	40	9	31	16
JAPAN	40	5,445	136	255	39	22
KOREA	18	2,102	117	40	118	56
PHILIPPINES	9	736	82	15	100	16
SOLOMON ISLANDS	3	179	60	n/a	-	-
TAIWAN	19	3,209	169	49	100	55
UNITED STATES	32	4,661	146	83	74	66
TOTAL	125	16,479	132	452	59	36

LONGLINE						
VESSEL NATIONALITY	VESSELS COVERED	DAYS COVERED	ANNUAL COVERAGE	TRIPS COVERED	TRIP DURATION	TRIP COVERAGE
AUSTRALIA	27	781	29	42	-	-
JAPAN	344	25,170	73	843	51	27
KOREA	46	1,691	37	56	250	50
TAIWAN	122	3,297	27	174	34	19
TONGA	1	173	173	10	23	17
TOTAL	540	31,112	58	1,125	52	26

POLE AND LINE						
VESSEL NATIONALITY	VESSELS COVERED	DAYS COVERED	ANNUAL COVERAGE	TRIPS COVERED	TRIP DURATION	TRIP COVERAGE
FIJI	5	619	124	n/a	-	-
JAPAN	63	5,702	91	303	47	17
KIRIBATI	5	763	153	n/a	-	-
NEW ZEALAND	1	45	45	n/a	-	-
SOLOMON ISLANDS	34	6,448	190	n/a	-	-
TUVALU	1	175	175	n/a	-	-
TOTAL	109	13,752	126	303	47	17

Table 2a. Total effort and coverage rates for 1987

PURSE SEINE					
VESSEL NATIONALITY	VESSELS ACTIVE	VESSELS COVERED	DAYS FISHED	DAYS COVERED	COVERAGE RATE
INDONESIA	3	3	182	182	100.0
JAPAN	36	36	7,200	4,651	64.6
KOREA	17	17	3,400	1,544	45.4
PHILIPPINES	5	5	632	632	100.0
SOLOMON ISLANDS	1	1	192	192	100.0
TAIWAN	13	13	2,990	2,748	91.9
UNITED STATES	34	18	6,278	502	8.0
TOTAL	109	93	20,874	10,451	50.1

LONGLINE					
VESSEL NATIONALITY	VESSELS ACTIVE	VESSELS COVERED	DAYS FISHED	DAYS COVERED	COVERAGE RATE
AUSTRALIA	46	46	939	939	100.0
JAPAN	307	307	61,400	19,003	30.9
KOREA	125	99	25,000	10,787	43.1
TAIWAN	125	109	25,000	8,244	33.0
TONGA	1	1	196	196	100.0
TOTAL	604	562	112,535	39,169	34.8

POLE AND LINE					
VESSEL NATIONALITY	VESSELS ACTIVE	VESSELS COVERED	DAYS FISHED	DAYS COVERED	COVERAGE RATE
FIJI	6	5	1,050	769	73.2
JAPAN	77	77	7,700	2,833	36.8
KIRIBATI	4	4	684	684	100.0
SOLOMON ISLANDS	34	34	6,781	6,781	100.0
TUVALU	1	1	162	162	100.0
TOTAL	122	121	16,377	11,229	68.6

ALL VESSELS					
TOTAL	835	776	149,786	60,849	40.6
TOTAL	835	776	149,786	60,849	40.6

Table 2b. Total effort and coverage rates for 1988

PURSE SEINE					
VESSEL NATIONALITY	VESSELS ACTIVE	VESSELS COVERED	DAYS FISHED	DAYS COVERED	COVERAGE RATE
AUSTRALIA	1	1	26	26	100.0
INDONESIA	3	3	109	109	100.0
JAPAN	40	40	8,000	4,865	60.8
KOREA	18	18	3,600	1,548	43.0
PHILIPPINES	9	9	537	537	100.0
SOLOMON ISLANDS	3	3	334	334	100.0
TAIWAN	19	19	3,800	2,966	78.1
UNITED STATES	32	32	7,360	4,092	55.6
TOTAL	125	125	23,766	14,477	60.9

LONGLINE					
VESSEL NATIONALITY	VESSELS ACTIVE	VESSELS COVERED	DAYS FISHED	DAYS COVERED	COVERAGE RATE
AUSTRALIA	27	27	781	781	100.0
JAPAN	344	344	68,800	21,560	31.3
KOREA	125	46	25,000	1,676	6.7
TAIWAN	125	122	25,000	2,683	10.7
TONGA	1	1	173	173	100.0
TOTAL	622	540	119,754	26,873	22.4

POLE AND LINE					
VESSEL NATIONALITY	VESSELS ACTIVE	VESSELS COVERED	DAYS FISHED	DAYS COVERED	COVERAGE RATE
FIJI	8	5	1,139	613	53.8
JAPAN	63	63	7,875	5,324	67.6
KIRIBATI	5	5	763	763	100.0
NEW ZEALAND	1	1	175	45	25.7
SOLOMON ISLANDS	34	34	8,030	8,030	100.0
TUVALU	1	1	190	190	100.0
TOTAL	112	109	18,172	14,965	82.4

ALL VESSELS					
TOTAL	859	774	161,692	56,315	34.8
TOTAL	859	774	161,692	56,315	34.8

Table 3a. Total catch for 1987

COUNTRY GEAR TYPE	DAYS FISHED	SKJ	YFT	BET	ALB	BUM	MLS	BLM	SWO	SHK	OTH	TOTAL
AUSTRALIA												
LONGLINE	939	-	534	18	69	25	27	8	6	-	5	692
FIJI												
POLE AND LINE	1,050	3,512	346	-	-	-	-	-	-	-	-	3,858
INDONESIA												
PURSE SEINE	182	2,462	460	-	-	-	-	-	-	-	-	2,922
JAPAN												
PURSE SEINE	7,200	108,659	44,180	786	-	-	-	-	-	-	2	153,627
LONGLINE	61,400	-	38,094	26,444	4,794	3,473	1,174	680	3,251	101	2,017	80,028
POLE AND LINE	7,700	59,044	1,236	-	-	-	-	-	-	-	241	60,521
TOTAL	76,300	167,703	83,510	27,230	4,794	3,473	1,174	680	3,251	101	2,260	294,176
KIRIBATI												
POLE AND LINE	684	241	124	-	-	-	-	-	-	-	11	376
KOREA												
PURSE SEINE	3,400	30,060	16,201	22	-	-	-	-	-	-	22	46,305
LONGLINE	25,000	38	6,614	7,795	26,866	1,381	332	332	224	117	573	44,272
TOTAL	28,400	30,098	22,815	7,817	26,866	1,381	332	332	224	117	595	90,577
PHILIPPINES												
PURSE SEINE	632	5,103	2,007	56	-	-	-	-	-	-	140	7,306
SOLOMON ISLANDS												
PURSE SEINE	192	3,398	3,385	56	-	-	-	-	-	-	550	7,389
POLE AND LINE	6,781	19,388	2,965	56	-	-	-	-	-	-	291	22,700
TOTAL	6,973	22,786	6,350	112	-	-	-	-	-	-	841	30,089
TAIWAN												
PURSE SEINE	2,990	14,687	2,344	-	-	-	-	-	-	-	-	17,031
LONGLINE	25,000	9	2,270	1,132	25,784	642	119	-	99	218	110	30,383
TOTAL	27,990	14,696	4,614	1,132	25,784	642	119	-	99	218	110	47,414
TONGA												
LONGLINE	196	1	28	14	227	-	-	-	1	11	37	319
TUVALU												
POLE AND LINE	162	532	74	14	227	-	-	-	1	11	25	884
UNITED STATES												
PURSE SEINE	6,278	90,084	69,616	64	56	-	-	-	-	-	10	159,830

Table 3a continued

COUNTRY GEAR TYPE	DAYS FISHED	SKJ	YFT	BET	ALB	BUM	MLS	BLM	SWO	SHK	OTH	TOTAL
ALL VESSELS												
PURSE SEINE	20,874	254,453	138,193	984	-	-	-	-	-	-	724	394,354
LOGLINE	112,535	48	47,540	35,403	57,740	5,521	1,652	1,020	3,581	447	2,742	155,694
POLE AND LINE	16,377	82,717	4,745	-	-	-	-	-	-	-	568	88,030
TOTAL	149,786	337,218	190,478	36,387	57,740	5,521	1,652	1,020	3,581	447	4,034	638,078

Table 3b. Total catch for 1988

COUNTRY GEAR TYPE	DAYS FISHED	SKJ	YFT	BET	ALB	BUM	MLS	BLM	SWO	SHK	OTH	TOTAL
AUSTRALIA												
PURSE SEINE	26	70	9	-	-	-	-	-	-	-	-	79
LONGLINE	781	-	315	18	65	17	30	6	4	-	8	463
TOTAL	807	70	324	18	65	17	30	6	4	-	8	542
FIJI												
POLE AND LINE	1,139	3,281	357	-	-	-	-	-	-	-	-	3,638
INDONESIA												
PURSE SEINE	109	763	335	-	-	-	-	-	-	-	2	1,100
JAPAN												
PURSE SEINE	8,000	150,204	26,087	230	-	-	-	-	-	-	-	176,521
LONGLINE	68,800	-	54,520	19,077	7,871	4,867	1,712	776	4,628	56	2,382	95,889
POLE AND LINE	7,875	90,666	447	-	-	-	-	-	-	-	230	91,343
TOTAL	84,675	240,870	81,054	19,307	7,871	4,867	1,712	776	4,628	56	2,612	363,753
KIRIBATI												
POLE AND LINE	763	871	396	-	-	-	-	-	-	-	19	1,286
KOREA												
PURSE SEINE	3,600	32,556	11,286	-	-	-	-	-	-	-	-	43,842
LONGLINE	25,000	1	11,415	8,756	1,703	1,135	267	338	220	320	448	24,603
TOTAL	28,600	32,557	22,701	8,756	1,703	1,135	267	338	220	320	448	68,445
NEW ZEALAND												
POLE AND LINE	175	173	18	-	-	-	-	-	-	-	-	191
PHILIPPINES												
PURSE SEINE	537	4,416	2,143	9	-	-	-	-	-	-	4	6,572
SOLOMON ISLANDS												
PURSE SEINE	334	6,134	4,068	9	-	-	-	-	-	-	518	10,729
POLE AND LINE	8,030	27,479	2,251	9	-	-	-	-	-	-	371	30,110
TOTAL	8,364	33,613	6,319	18	-	-	-	-	-	-	889	40,839
TAIWAN												
PURSE SEINE	3,800	19,899	3,162	-	-	-	-	-	-	-	29	23,090
LONGLINE	25,000	-	2,838	1,968	7,545	2,365	289	-	662	1,961	342	17,970
TOTAL	28,800	19,899	6,000	1,968	7,545	2,365	289	-	662	1,961	371	41,060
TONGA												
LONGLINE	173	1	21	7	212	2	-	18	1	2	14	278
TUVALU												
POLE AND LINE	190	1,048	31	7	212	2	-	18	1	2	7	1,328

Table 3b continued

COUNTRY GEAR TYPE	DAYS FISHED	SKJ	YFT	BET	ALB	BUM	MLS	BLM	SWO	SHK	OTH	TOTAL
UNITED STATES												
PURSE SEINE	7,360	107,466	22,910	-	-	-	-	-	-	-	39	130,415
ALL VESSELS												
PURSE SEINE	23,766	321,508	70,000	248	-	-	-	-	-	-	592	392,348
LOGLINE	119,754	2	69,109	29,826	17,396	8,386	2,298	1,138	5,515	2,339	3,194	139,203
POLE AND LINE	18,172	123,518	3,500	-	-	-	-	-	-	-	627	127,645
TOTAL	161,692	445,028	142,609	30,074	17,396	8,386	2,298	1,138	5,515	2,339	4,413	659,196