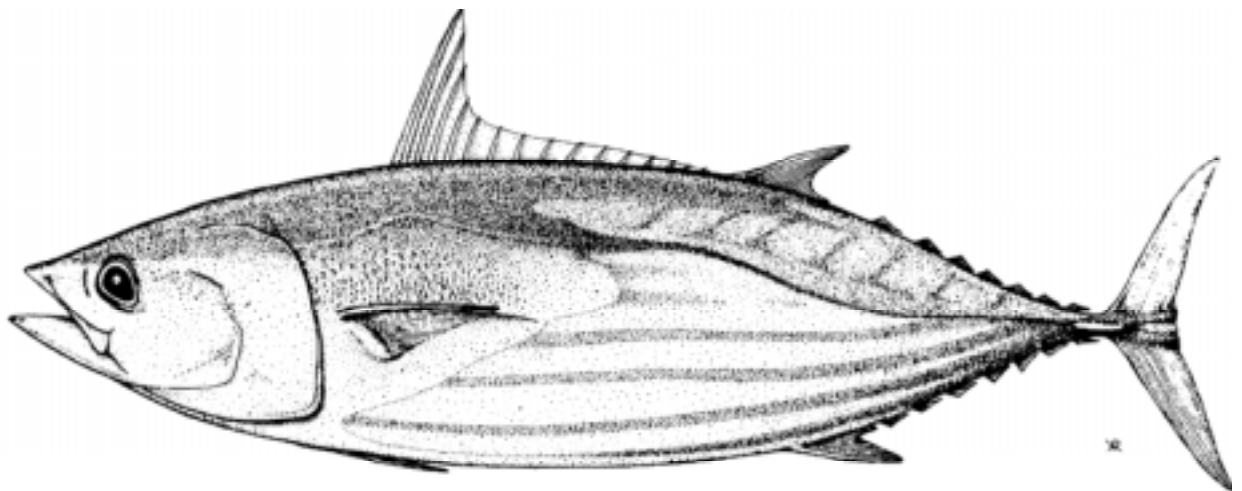




SCTB14 Working Paper

SWG-9

**OBSERVER DATA HELD BY THE OCEANIC FISHERIES PROGRAMME
COVERING TUNA FISHERY BYCATCHES IN THE
WESTERN AND CENTRAL PACIFIC OCEAN**



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INTRODUCTION

At the thirteenth meeting of the Standing Committee on Tuna and Bilfish, which was held from 5 to 12 July 2000 at SPC headquarters, a directive was provided to the Statistics Working Group to document the data that are available to estimate bycatches in the tuna fisheries of the western and central Pacific Ocean (Anon 2001). This document presents a summary of the longline, pole-and-line and purse-seine observer data held by the SPC Oceanic Fisheries Programme in April 2001 that can be used to estimate bycatches. The observer data are summarised with regard to the sources of data, the species covered, the school association (for pole-and-line and purse seine), the proportion of the observed catch not identified to the species level, the discard rate, the condition of discards (for longline), geographic coverage, temporal coverage, and the coverage by fishing nation.

LOGLINE OBSERVER DATA

Sources of Data

The longline observer data held by the OFP were obtained from eight observer programmes, i.e. the national programmes of Australia (1987–1997), Federated States of Micronesia (1992–1999), Marshall Islands (1995, 1997), New Zealand (1987–1999), Palau (1999), Papua New Guinea (1999) and Solomon Islands (1996, 1998–1999), and the SPC regional programme (1992–2000). The SPC programme covered longliners operating in the waters of American Samoa, Cook Islands, Fiji, Federated States of Micronesia, French Polynesia, Kiribati, Marshall Islands, New Caledonia, Papua New Guinea, Palau, Samoa, Solomon Islands and Tonga. The Australian and New Zealand data account for 42.6 and 38.2 percent of the data respectively, while the other national programmes account for 9.9 percent and the SPC programme accounts for 9.3 percent (Table 1).

There were 10,244 longline sets made in the WCPO, from 1987 to 2000, that were covered by observer data held by the OFP. However, 714 sets could not be used because bycatches were not monitored by the observer during the trip. An additional 66 sets made by French Polynesian longliners outside the WCPO, but near its eastern boundary, were included. The total number of sets available for the analysis of bycatch was therefore 9,596.

There were 341 sets for which the number of hooks observed was unknown, primarily covering Japanese longliners in the AFZ during 1987–1992. For these sets, the number of hooks observed has been estimated from the average number of hooks observed for other sets from the same source of observer data and for the same vessel nationality. If there were no sets in the same year that could be used to estimate the average number of hooks observed per set, then a range of years was used.

Species Covered

Table 2 presents the number of individuals from the following species groups that were observed in the catch: tunas, tuna-like species, billfish, sharks and rays, other fish, cephalopods, marine reptiles, birds, and marine mammals.¹ The most numerous species observed in the catch was albacore tuna (*Thunnus alalunga*, 129,539 observed), followed by blue shark (*Prionace glauca*, 98,066 observed), southern bluefin tuna (*Thunnus maccoyi*, 56,761 observed), yellowfin tuna (*Thunnus albacares*, 50,843 observed) and bigeye tuna (*Thunnus obesus*, 20,540 observed).

¹ One unidentified crab that was observed aboard a Japanese longliner in the New Zealand EEZ in July 1999 has been ignored in Table 2 and subsequent tables.

Table 2 represents the species and species groups observed in all observer programmes. However, the relative proportions of species observed depends on the geographic area. This is apparent when the number of individuals observed is broken down by observer programme. For example, 66.4 and 33.6 percent of southern blue tuna are covered in the observer data provided by Australia and New Zealand, whereas only one southern bluefin was observed in the other national programmes and no southern bluefin were observed by SPC observers. Table 3 presents the number of individuals observed broken down by species groups and observer programmes. The following points are of interest:

- In the Australian programme, tunas represent 71.8 percent of the catch, whereas sharks and rays and other fish represent 15.3 and 7.6 percent respectively. There were only 11 birds and no marine reptiles or marine mammals observed. It is strongly suspected that the small number of birds and the lack of marine reptiles and marine mammals in the data provided by Australia may be due to incomplete data provided to the OFP; the Australian Fisheries Management Authority has been contacted in this regard.
- In the New Zealand programme, tunas represent 29.3 percent of the catch, whereas sharks and rays and other fish represent 43.7 and 21.4 percent respectively. Almost all birds, 98.7 percent, and marine mammals, 96.5 percent, were observed in the New Zealand programme. There were only 5 marine reptiles observed.
- In the other national programmes and the SPC programme, tunas represent 56.9 percent of the catch, whereas sharks and rays and other fish represent 22.3 and 10.9 percent respectively. Almost all marine reptiles, 95.6 percent, were observed in the other programmes and only 8 birds and 12 marine mammals were observed.

Species Identification

Table 4 presents the percentage of observed individuals that were not identified to the species level. The percentage is low (less than 1.0 percent) for tuna, tuna-like species and billfish, whereas it is moderate for sharks and rays (3.6 percent), other fish (5.9 percent) and marine mammals (4.1 percent) and high for marine reptiles (42.9 percent) and birds (64.3 percent). Overall, 3.0 percent of observed individuals were not identified to the species level.

Most of the sharks and rays that were not identified to the species level were hammerhead sharks (*Sphyrna* spp.), mako sharks (*Isurus* spp.) and thresher sharks (*Alopias* spp.) that were identified to the generic level. Many of the birds that were not identified to the species level were albatross (*Diomedea* spp.) or petrels (*Procellaria* spp.).

Discard Rate and Condition of Discards

Table 5 presents the number of fish observed, and the numbers retained and discarded, by species group. Most tunas, tuna-like species and billfish were retained, while 63.8 percent of sharks and rays and 57.0 percent of other fish were known to have been discarded. The large numbers of sharks and rays and other fish for which it is not known whether they were retained or discarded represent data from the New Zealand programme; information regarding the fate of these fish was not provided.

The life status of individuals at the time of hauling was assigned by observers in the national programmes of countries other than Australia and New Zealand, and by SPC observers, using the following codes:

- A0 Alive, not classed as A1, A2 or A3
- A1 Alive, healthy
- A2 Alive, injured or distressed
- A3 Alive but dying
- D Dead
- U unknown

Codes for the condition of discards observed in the Australian programme were similar to those listed above. However, the condition of discards observed in the New Zealand programme were assigned to only three categories: 'alive, not classed as A1, A2 or A3', 'dead' and 'unknown'.

Table 6 presents a breakdown of all discards by the condition code. Overall, 59.4 percent of discards were dead or dying, while 5.9 percent of discards were alive and healthy at the time of hauling. Discards that were alive and healthy when caught have a strong probability of survival, while those discarded dying or dead are obviously removed from the population.

However, 34.7 percent of discards were individuals for which the condition code is 'alive, not classed' or 'alive, injured' or 'unknown'. For these discards, it is uncertain whether they survived. In estimating catches and catch rates below, only discards that have a condition code of 'alive, healthy' were considered to have survived. Given that an unknown proportion of discards having a condition code of 'alive, not classed' or 'alive, injured' or 'unknown' may have survived, the catches and catch rates may be over-estimated.

The condition of discards varies among the species groups. More than half of the sharks and rays, tuna-like species, birds and billfish were dead or dying, while less than half of other fish and marine reptiles were dead or dying. Almost all marine mammals were alive, but since almost all were observed in the New Zealand programme, the life status of 90.6 percent of the discarded marine mammals was not classed as 'healthy', 'injured' or 'dying'. The species group with the largest proportion of discards that were alive and healthy was marine reptiles (25.9 percent).

Geographic Coverage

The geographic coverage of the observed longline effort is compared to the total longline effort in the WCPO during 1987–1999 in Figures 1 and 2. The distribution of the observed longline effort is not representative of the total effort, with a disproportionately greater amount of observed effort in the waters of Australia and New Zealand and a smaller amount on the high seas, particularly in the northern and eastern areas of the WCPO.

Longline effort on the high seas in the WCPO is mainly conducted by the distant-water fleets of Japan, Korea and Taiwan. The paucity of observed effort on the high seas is the result of the fact that most observers that collected the data held by the OFP were placed onboard through opportunities provided by access agreements between foreign vessels and coastal states; hence, when the foreign vessel left the EEZ of the coastal state, the observer was usually required to disembark. The distant-water fleets have not been covered on a regular basis by observer programmes of those fishing nations; hence, almost no observer data have been collected for areas beyond the EEZs of the coastal states with which those fishing nations have had access agreements.

Figure 2 does not show observer coverage of the United States longline fleet based in Honolulu, since these data are not included in the OFP database. Approximately 5 percent of longline trips in Hawaii have been covered by observers of the National Marine Fisheries Service since February 1994.

Temporal Coverage

The temporal distribution of observer coverage is presented in Tables 1 and 7 and Figures 3 and 4. The total number of hooks observed reached a maximum in 1993, when coverage in the Australian programme peaked and coverage in the New Zealand programme was high. Coverage in both programmes subsequently declined. Coverage in the New Zealand programme increased considerably in 1997, which was the last year of the Australian programme. Coverage for 2000 will increase when data from the programmes of the Federated States of Micronesia and New Zealand are provided to SPC.

Coverage as a percentage of the total catch increased from 0.01 percent in 1987 to 0.42 percent in 1997 and then declined.

Total Coverage and Coverage by Fishing Nation

Total coverage of the catch of target species in the WCPO from 1987, the first year for which observer data are available, to 2000 is 0.18 percent (Table 7). The level of observer coverage is consistently low among fleets and years. There are only 15 fleet–years out of 223 for which coverage is greater than 1 percent and only one fleet–year for which coverage is greater than 5 percent. No observer data are held by the OFP for the longline fleets of Indonesia or the Philippines.

Table 8 compares the observed catch to the total catch of target species, for each fishing nation. The distribution of observer coverage by fishing nation is roughly similar to the distribution of the total catch, except for the fleets of Indonesia and the Philippines, for which no observer data are available, and the Korean fleet, which caught 17.8 percent of the total catch, but only 2.8 percent of the observed catch.

The largest proportion of the observed catch is for the Japanese fleet (67.2 percent), followed by the fleets of Taiwan (12.8 percent), China (3.6 percent), Korea (2.8 percent), Solomon Islands (2.6 percent), Papua New Guinea (2.1 percent), French Polynesia (2.0 percent), Tonga (1.6 percent), New Caledonia (1.4 percent) and Fiji Islands (1.1 percent).

POLE-AND-LINE OBSERVER DATA

Sources of Data

The pole-and-line observer data held by the OFP were obtained from the observer programme of Solomon Islands and cover 1998 only. The data cover 86 days that were fished or searched; however, 16 days cannot be used because bycatches were not monitored by the observer during the trip. The 70 days that remain were obtained from 22 trips aboard 17 vessels, all of which were flagged in Solomon Islands.

Species Covered

Tables 9 and 10 presents the number of individuals and tonnage of the following species groups that were observed in the catch: tunas, tuna-like species, sharks and rays, and other fish. Tunas accounted for 99.3 percent of the catch in weight, while non-target species accounted for 0.7 percent. Skipjack, yellowfin and bigeye accounted for 90.0 percent, 9.2 percent and 0.2 percent of the total catch respectively.

The largest catches of non-target species were of rainbow runner (*Elagatis bipinnulata*) (1.9 t) and mahi mahi (*Coryphaena hippurus*) (1.0 t). Small numbers of kawakawa (*Euthynnus affinus*) (0.5 t) and sharks and rays (0.4 t) were also taken.

School Association

The observed catches by species group are broken down by six categories of school association in Table 11. The largest proportion of the catch was from schools associated with ‘anchored raft, FAD or payao’ (68.0 percent), followed by ‘feeding on baitfish’ (15.5 percent), ‘unassociated’ (8.7 percent), ‘drifting raft, FAD or payao’ (3.5 percent) and ‘drifting log, debris or dead animal’ (1.3 percent). Tuna accounted for over 99 percent of the catch in all categories except ‘unassociated’ (97.9 percent).

Species Identification

All observed catches were identified to the species level except for 34 sharks, which represent 18.9 percent of all sharks and rays.

Discard Rate

Data on discards were not recorded during observer trips aboard the Solomon Islands pole-and-line vessels in 1998. However, comments in the observers’ trip narratives suggest that all tuna were retained, while mahi mahi, rainbow runner and kawakawa were retained for crew consumption or trade and all sharks were discarded.

Geographic Coverage

The geographic coverage of the observed pole-and-line effort is compared to the total pole-and-line effort in the WCPO during 1998 in Figures 5 and 6. The observed pole-and-line effort covers only the waters of Solomon Islands. The pole-and-line fleets of Fiji and French Polynesia, which fish in the waters of those countries, and the Japanese fleet, which operates in the waters of Japan and several other coastal states, as well as on the high seas, are not covered by observer data.

Total Coverage and Coverage

Total coverage of the pole-and-line catch of skipjack, yellowfin and bigeye in the WCPO during 1998 is 0.2 percent (Table 12). Coverage for the Solomon Islands fleet is 2.1 percent, while the coverage for all other fleets is zero.

PURSE-SEINE OBSERVER DATA

Sources of Data

The purse-seine observer data held by the OFP were obtained from seven observer programmes, i.e. the national programmes of the Federated States of Micronesia (1994–1999), Nauru (1996), Papua New Guinea (1996–1999) and Solomon Islands (1998–1999), and the regional programmes of the FSM Arrangement (1998–2000), SPC (1995–2000) and the US treaty (1994–2000). The US Treaty data account for 66.6 percent of the data, while the national programmes account for 24.6 percent and the other regional programmes account for 8.8 percent (Table 13).

There were 13,068 purse-seine sets made in the WCPO, from 1994 to 2000, that were covered by observer data held by the OFP. However, 3,073 sets cannot be used because bycatches were not monitored by the observer during the trip. An additional 3,415 sets resulted in no catch. The total number of positive sets available for the analysis of bycatch was therefore 6,580. There were 2,483 sets for which only bigeye, skipjack or yellowfin were caught, leaving 4,097 sets (62.3 percent of positive sets) from which non-target species were caught.

Species Covered

Tables 14 and 15 presents the number of individuals and tonnage of the following species groups that were observed in the catch: tunas, tuna-like species, billfish, sharks and rays, other fish, cephalopods, marine reptiles, and marine mammals. The target species – bigeye, skipjack and yellowfin – accounted for 99.2 percent of the catch in weight, while non-target species accounted for 0.8 percent.

The largest catches of non-target species groups was of other fish (1,144 t or 0.43 percent of the total catch), followed by sharks and rays (518 t or 0.19 percent). The largest catch of non-target species was of rainbow runner (*Elagatis bipinnulata*) (697 t) and mahi mahi (*Coryphaena hippurus*) (124 t). Significant catches of the oceanic triggerfish family (Balistidae) (168 t) were also taken.

School Association

The number of purse-seine sets observed and observed catches by species group are broken down by eight categories of school association in Tables 16 and 17 respectively. The most common category of school association was ‘drifting raft, FAD or payao’ (34.1 percent), followed by ‘feeding on baitfish’ (22.0 percent), ‘drifting log, debris or dead animal’ (21.1 percent) and ‘unassociated’ (12.4 percent). Tuna accounted for over 99 percent of the catch in all categories except ‘drifting log, debris or dead animal’ (98.3 percent) and ‘live whale shark’ (96.5 percent).

Species Identification

Table 18 presents the percentage of observed individuals that were not identified to the species level. The percentage is low for tuna (0.5 percent) and billfish (1.8 percent), whereas it is moderate for other fish (16.8 percent) and high for tuna-like species (46.0 percent), marine reptiles (64.3 percent) and marine mammals (100.0 percent).

Most of the unidentified tuna-like species (98.1 percent) were species of mackerel. Most of the unidentified sharks and rays (97.4 percent) were not identified to the family level. The unidentified ‘other fish’ consisted primarily of oceanic triggerfish (86.6 percent), barracudas (7.0 percent) and species of *Decapturus* (4.4 percent).

Discard Rate

Table 19 presents the tonnage or number of fish observed, and the tonnage or number retained and discarded, by species group. Only 4.1 percent of the catch of tunas were discarded, whereas 86.2 percent of tuna-like species, 67.7 percent of billfish, 96.3 percent of sharks and rays, and 88.7 percent of other fish were discarded.

Geographic Coverage

The geographic coverage of the observed purse-seine effort is compared to the total purse-seine effort in the WCPO during 1994–1999 in Figures 7 and 8. The distribution of the observed purse-

seine effort is representative of the total effort, except for the waters of Japan, Indonesia and the Philippines, for which no observer data are available.

Temporal Coverage

The temporal distribution of observer coverage is presented in Tables 20 and Figures 9 and 10. The total number of sets observed reached a maximum in 1998. The number of sets observed declined in 1999 and 2000 due to a drop in the coverage of the fleets of Japan, Korea and Taiwan.

Coverage as a percentage of the total catch increased from 1.9 percent in 1994 to over 5.0 percent during 1996–1998 and then declined.

Total Coverage and Coverage by Fishing Nation

Total coverage of the catch of target species in the WCPO from 1994, the first year for which purse-seine observer data are available, to 2000 is 3.9 percent (Table 20). The level of observer coverage is variable among fleets and years, although coverage is usually less than 5 percent, except for the United States fleet, for which coverage has ranged from 7.4 percent (1994) to 20.5 percent (1997). Excluding the United States fleet, the coverage of the catch of target species in the WCPO from 1994 to 2000 is 1.4 percent.

Table 21 compares the observed catch to the total catch of target species, during 1994–2000, for each fishing nation. The distribution of observer coverage by fishing nation is different from the distribution of the total catch because of the relatively high level of coverage of the United States fleet, which caught 71.6 percent of the observed catch, but only 18.6 percent of the total catch. The percentages of the observed catch represented by Japan, Korea and Taiwan are therefore much lower than the percentages of the total catch. It is notable that the Philippines represents 10.3 percent of the total catch, but only 1.4 percent of the observed catch.

The largest proportion of the observed catch is for the United States fleet (71.6 percent), followed by the fleets of Taiwan (11.6 percent), Korea (7.7 percent), Japan (3.5 percent), Philippines (1.4 percent), Federated States of Micronesia (1.0 percent) and Papua New Guinea (1.0 percent).

REFERENCES

Anonymous. 2001. Report of the Thirteenth Meeting of the Standing Committee on Tuna and Billfish, 5–12 July 2000, Noumea, New Caledonia. Secretariat of the Pacific Community, Noumea, New Caledonia.

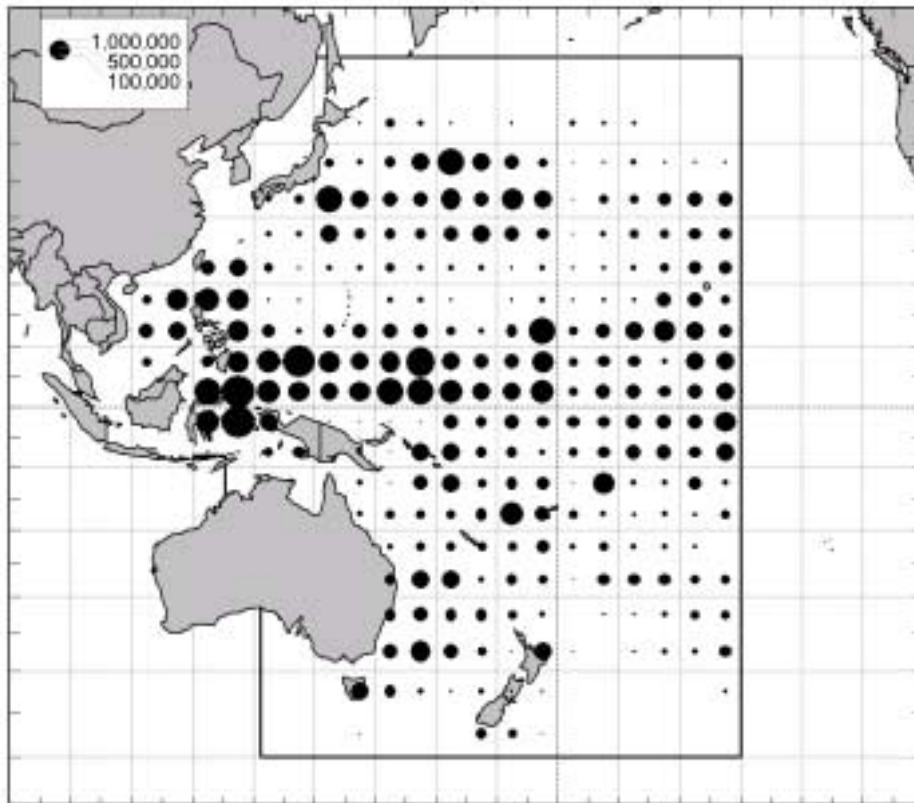


Figure 1. Total longline effort(hundred hooks) in the WCPO Area during 1987–1999

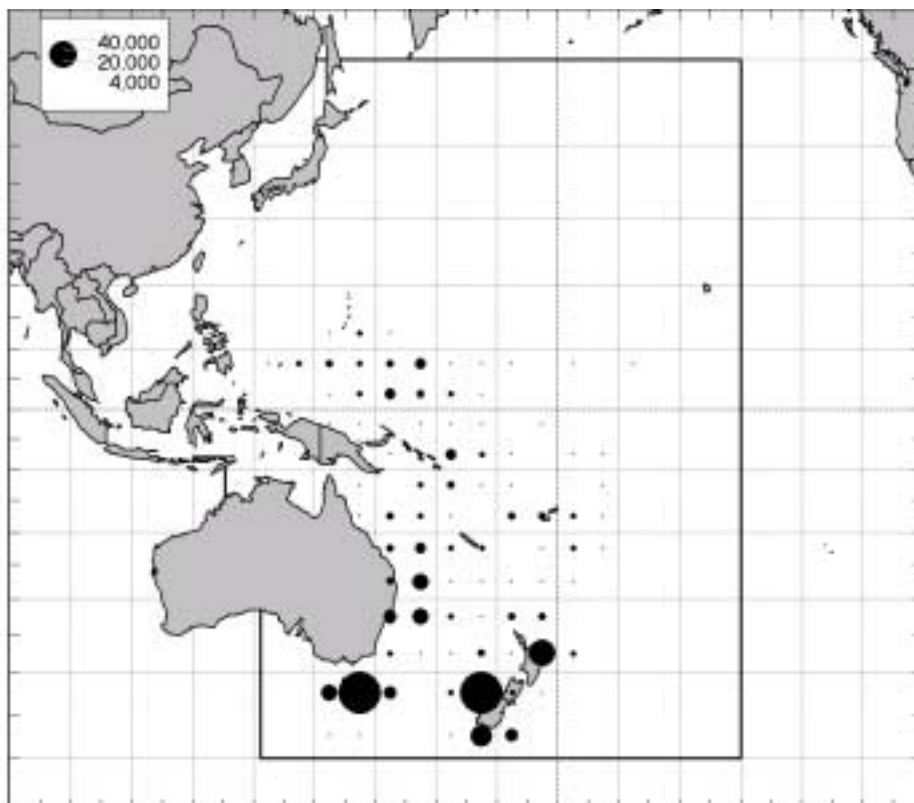


Figure 2. Observed longline effort (hundred hooks) in the WCPO during 1987–2000 determined from data held by the OFP

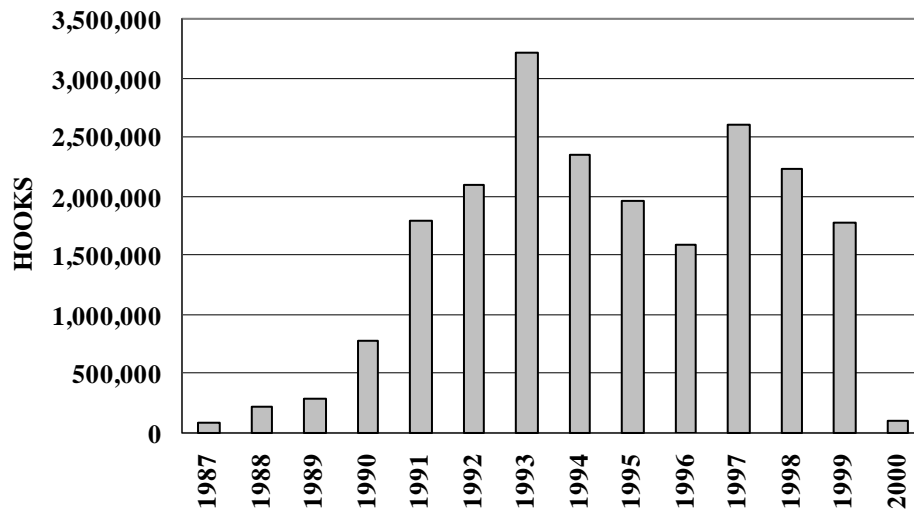


Figure 3. Observer coverage (hooks) of longliners in the WCPO Area

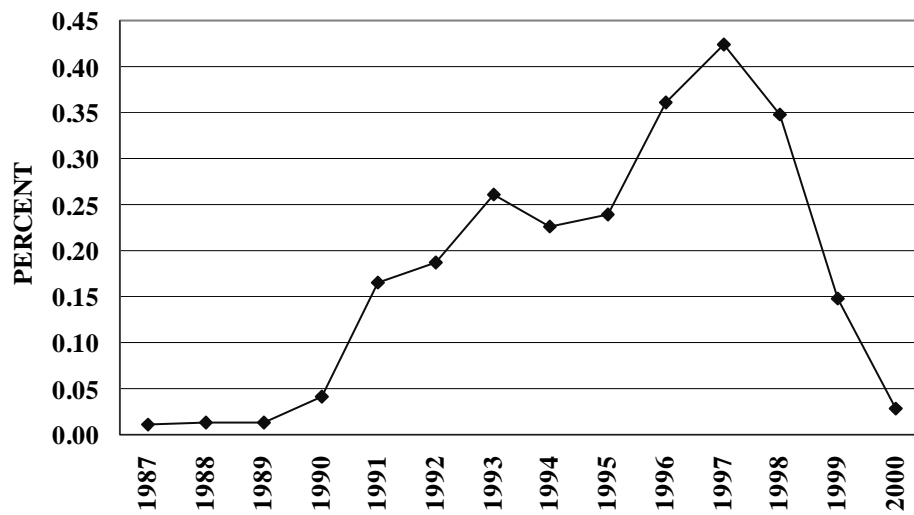


Figure 4. Observer coverage (percentage of total catch of target species) of longliners in the WCPO Area

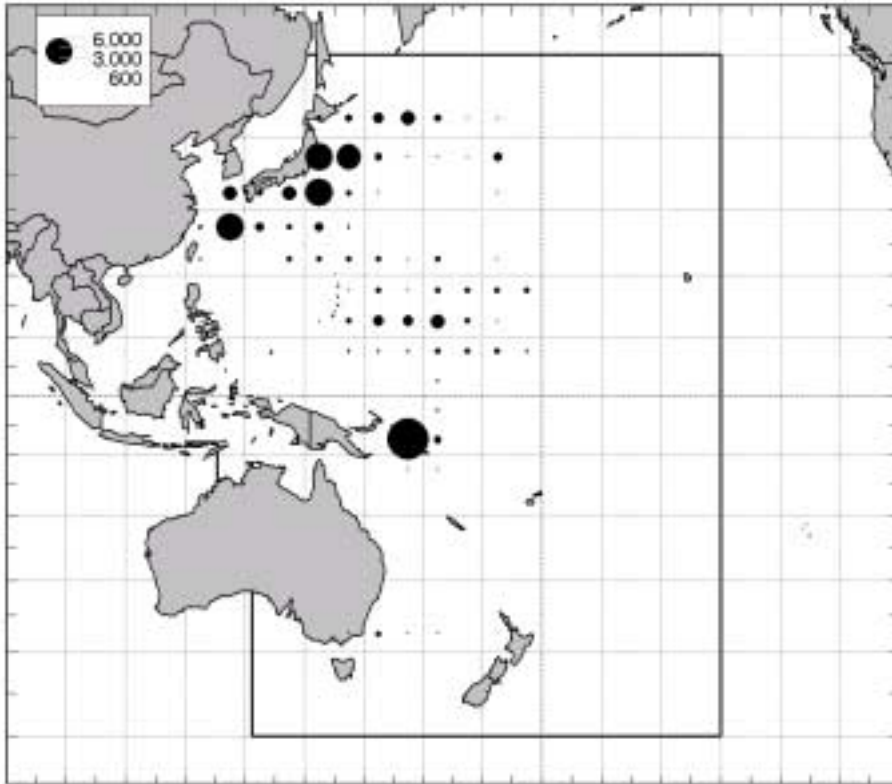


Figure 5. Total pole-and-line effort (days fished or searched) in the WCPO during 1998

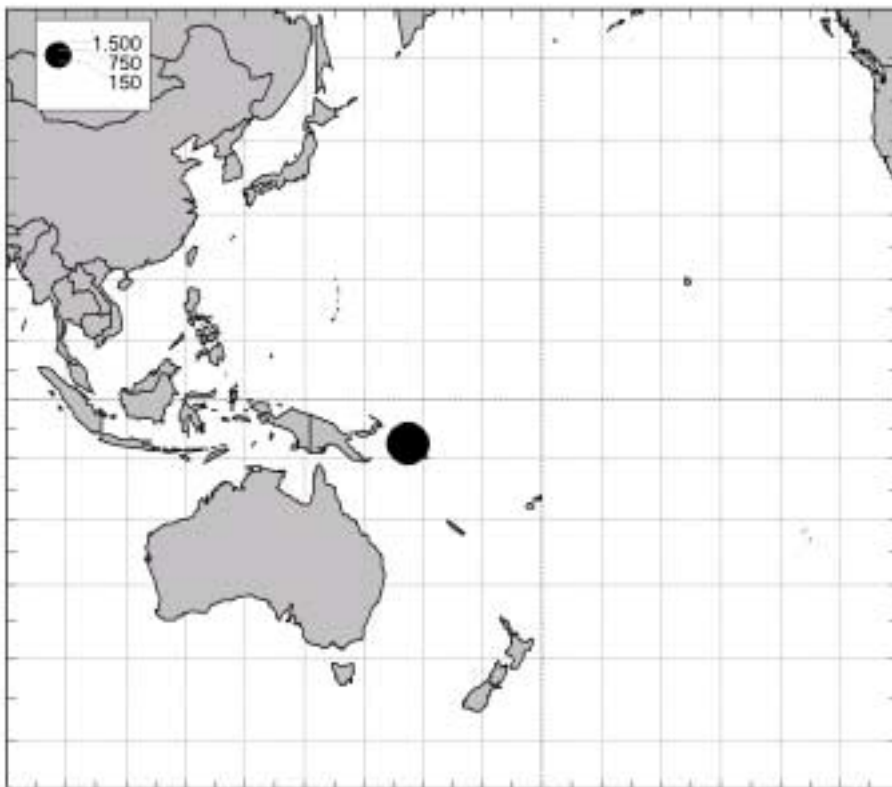


Figure 6. Observed pole-and-line effort (days fished or searched) in the WCPO during 1998 determined from data held by the OFP

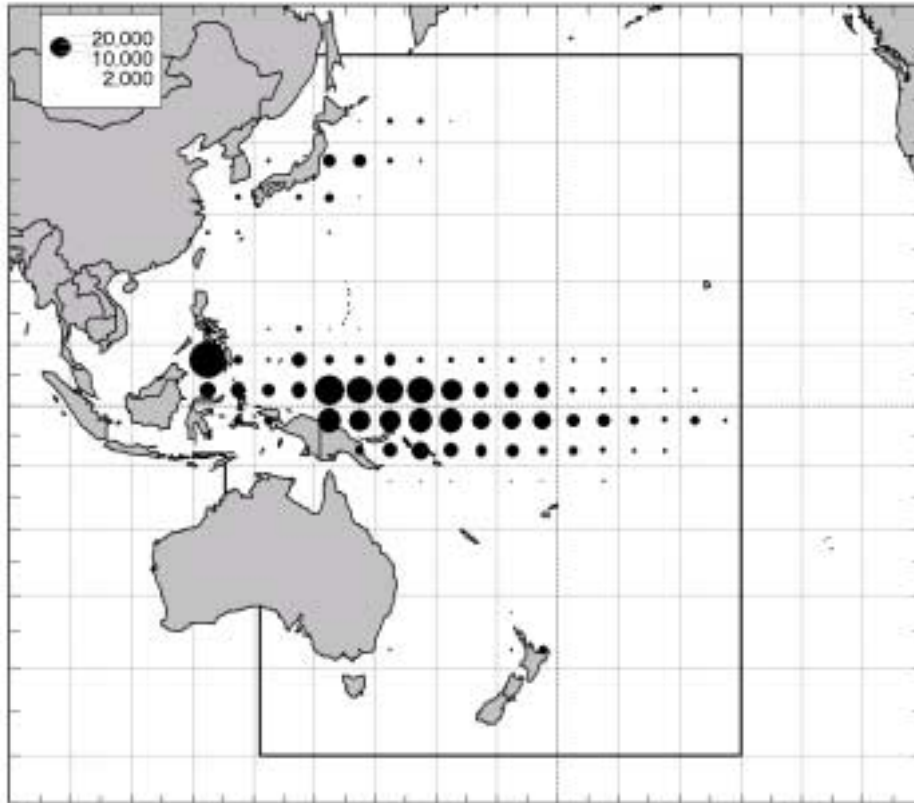


Figure 7. Total purse-seine effort (days fished or searched) in the WCPO during 1994–1999

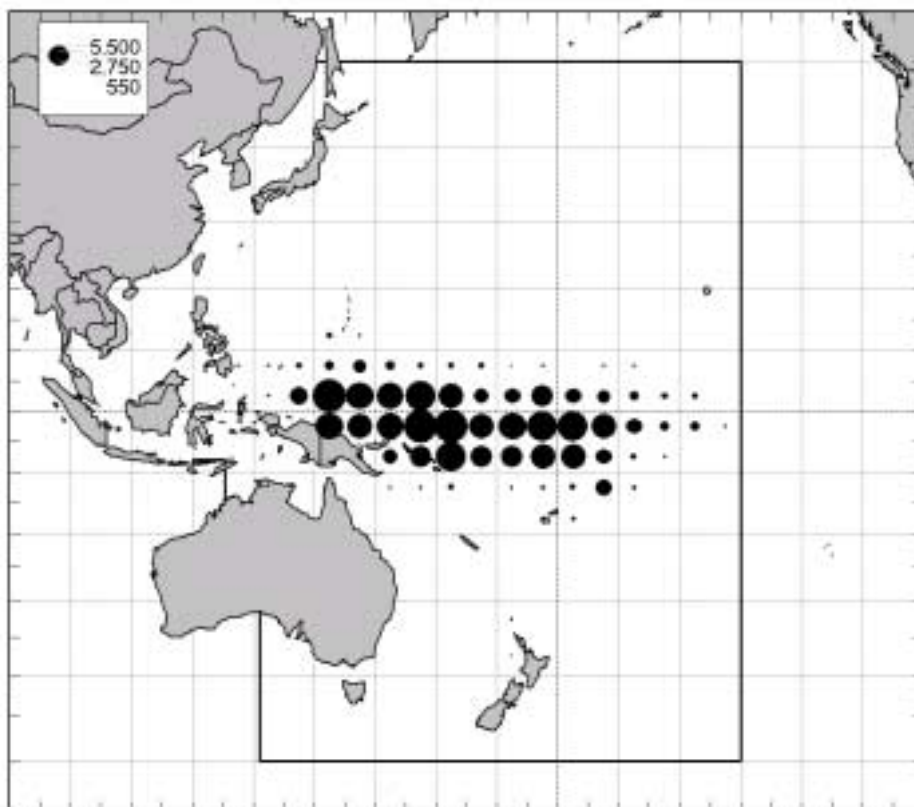


Figure 8. Observed purse-seine effort (days fished or searched) in the WCPO during 1994–2000 determined from data held by the OFP

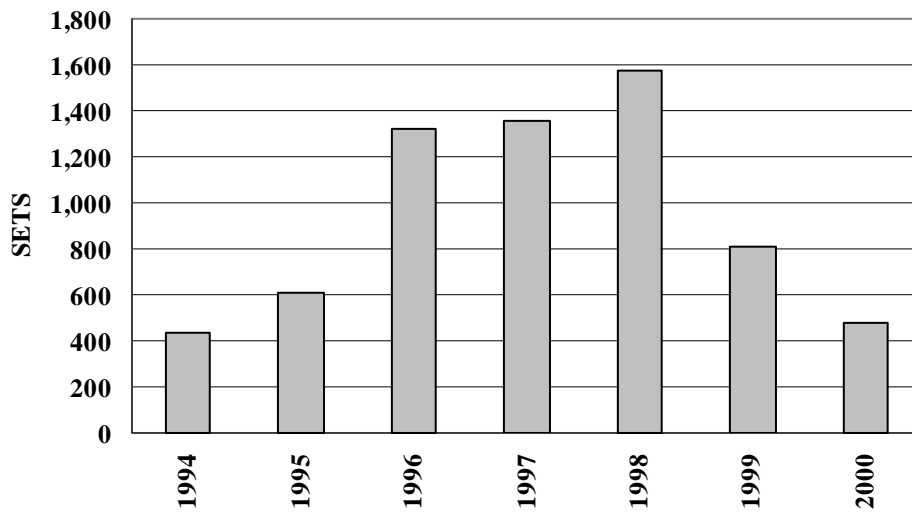


Figure 9. Observer coverage (number of sets) of purse seiners in the WCPO Area

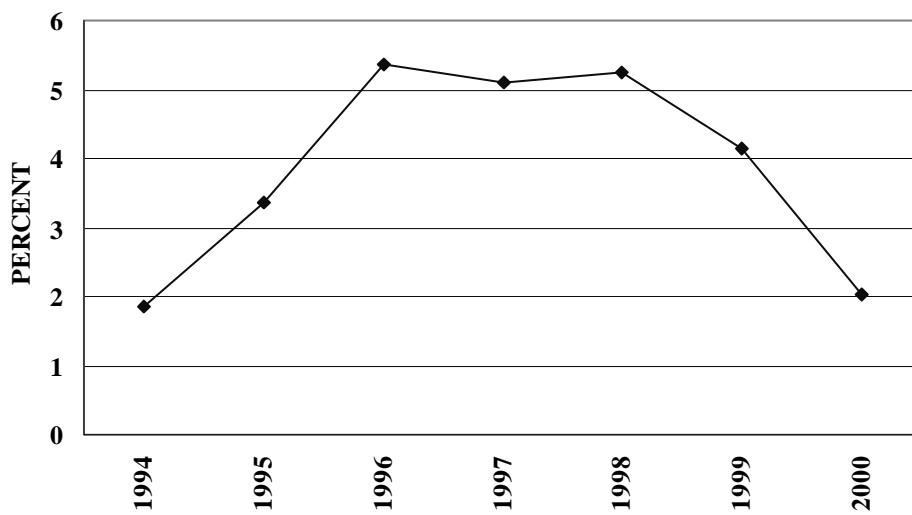


Figure 10. Observer coverage (percentage of total catch of target species) of purse seiners in the WCPO Area

Table 1. Longline hooks covered by observer data held by SPC, by observer programme

YEAR	AUSTRALIA	FSM	MARSHALL ISLANDS	NEW ZEALAND	PALAU	PAPUA NEW GUINEA	SOLOMON ISLANDS	SPC	TOTAL
1987	43,659	0	0	38,244	0	0	0	0	81,903
1988	108,108	0	0	116,880	0	0	0	0	224,988
1989	39,501	0	0	243,852	0	0	0	0	283,353
1990	330,561	0	0	447,454	0	0	0	0	778,015
1991	1,359,296	0	0	439,144	0	0	0	0	1,798,440
1992	1,543,571	11,654	0	541,254	0	0	0	5,757	2,102,236
1993	1,983,058	116,423	0	1,106,022	0	0	0	2,800	3,208,303
1994	1,361,459	229,559	0	757,514	0	0	0	7,387	2,355,919
1995	645,592	196,909	4,700	919,683	0	0	1,470	200,816	1,969,170
1996	839,902	132,129	0	160,073	0	0	0	454,747	1,586,851
1997	741,986	250,170	5,300	1,016,084	0	0	0	592,114	2,605,654
1998	0	212,736	0	1,117,556	0	0	497,199	406,359	2,233,850
1999	0	211,194	0	1,146,906	36,121	3,800	174,353	198,748	1,771,122
2000	0	0	0	0	0	0	0	94,849	94,849
TOTAL	8,996,693	1,360,774	10,000	8,050,666	36,121	3,800	673,022	1,963,577	21,094,653
PERCENT	42.6	6.5	0.0	38.2	0.2	0.0	3.2	9.3	100.0

Table 2. Species and species groups covered by longline observer data held by the OFP

TUNAS	SCIENTIFIC NAME	N	%
ALBACORE	<i>Thunnus alalunga</i>	129,539	49.4
BIGEYE	<i>Thunnus obesus</i>	20,540	7.8
NORTHERN BLUEFIN	<i>Thunnus thynnus</i>	147	0.1
SKIPJACK	<i>Katsuwonus pelamis</i>	4,203	1.6
SOUTHERN BLUEFIN	<i>Thunnus maccoyii</i>	56,761	21.6
YELLOWFIN	<i>Thunnus albacares</i>	50,843	19.4
TUNA (UNIDENTIFIED)	<i>Thunnini</i>	207	0.1
SUB-TOTAL		262,240	100.0

TUNA-LIKE SPECIES	SCIENTIFIC NAME	N	%
BUTTERFLY TUNA / KINGFISH	<i>Gasterochisma melampus</i>	4,275	57.3
DOGTUOTH TUNA	<i>Gymnosarda unicolor</i>	48	0.6
SLENDER TUNA	<i>Allothunnus fallai</i>	183	2.5
WAHOO	<i>Acanthocybium solandri</i>	2,947	39.5
OTHER TUNA-LIKE SPECIES	<i>Scombridae</i>	13	0.2
SUB-TOTAL		7,466	100.0

BILLFISH	SCIENTIFIC NAME	N	%
BLACK MARLIN	<i>Makaira indica</i>	794	4.1
BLUE MARLIN	<i>Makaira mazara</i>	2,262	11.7
INDO-PACIFIC SAILFISH	<i>Istiophorus platypterus</i>	1,155	6.0
SHORT-BILLED SPEARFISH	<i>Tetrapturus angustirostris</i>	2,384	12.4
STRIPED MARLIN	<i>Tetrapturus audax</i>	3,087	16.0
SWORDFISH	<i>Xiphias gladius</i>	9,437	49.0
BILLFISH (UNIDENTIFIED)	<i>Istophoridae, Xiphiidae</i>	134	0.7
SUB-TOTAL		19,253	100.0

SHARKS AND RAYS	SCIENTIFIC NAME	N	%
BLACKTIP SHARK	<i>Carcharhinus limbatus</i>	575	0.4
BIGEYE THRESHER SHARK	<i>Alopias superciliosus</i>	460	0.3
BLUE SHARK	<i>Prionace glauca</i>	98,066	68.3
GREY REEF SHARK	<i>Carcharhinus amblyrhynchos</i>	383	0.3
OCEANIC WHITE-TIP SHARK	<i>Carcharhinus longimanus</i>	3,231	2.2
PELAGIC STING-RAY	<i>Dasyatis violacea</i>	2,321	1.6
PORBEAGLE SHARK	<i>Lamna nasus</i>	14,498	10.1
SCHOOL SHARK	<i>Galeorhinus galeus</i>	2,221	1.5
SHORT FINNED MAKO SHARK	<i>Isurus oxyrinchus</i>	3,464	2.4
SILKY SHARK	<i>Carcharhinus falciformis</i>	8,079	5.6
SMOOTH SKIN DOGFISH	<i>Centroscyminus owstoni</i>	2,326	1.6
THRESHER SHARK	<i>Alopias vulpinus</i>	604	0.4
HAMMERHEAD SHARKS	<i>Sphyrna spp.</i>	403	0.3
OTHER DOGFISHES	<i>Squalidae</i>	1,287	0.9
OTHER MAKO SHARKS	<i>Isurus spp.</i>	2,341	1.6
OTHER THRESHER SHARKS	<i>Alopias spp.</i>	563	0.4
OTHER SHARKS AND RAYS	<i>Elasmobranchii</i>	2,848	2.0
SUB-TOTAL		143,670	100.0

Table 2 (continued)

OTHER FISH	SCIENTIFIC NAME	N	%
ATLANTIC POMFRET / RAY'S BREEM	<i>Brama brama</i>	27,454	39.0
BIG-SCALED POMFRET	<i>Taractichthys longipinnis</i>	1,327	1.9
BLUE GRENADIER / HOKI	<i>Macruronus novaezelandiae</i>	861	1.2
DEALFISH / RIBBON FISH	<i>Trachipterus trachipterus</i>	5,092	7.2
ESCOLAR	<i>Lepidocybium flavobrunneum</i>	4,107	5.8
GREAT BARRACUDA	<i>Sphyraena barracuda</i>	954	1.4
LONGSNOUTED LANCETFISH	<i>Alepisaurus ferox</i>	4,731	6.7
MAHI MAHI / DOLPHINFISH / DORADO	<i>Coryphaena hippurus</i>	2,742	3.9
MOONFISH / OPAH	<i>Lampris guttatus</i>	6,569	9.3
OCEAN SUNFISH	<i>Mola mola</i>	936	1.3
OILFISH	<i>Ruvettus pretiosus</i>	6,969	9.9
RUDDERFISH	<i>Centrolophus niger</i>	1,973	2.8
SNAKE MACKERELS AND ESCOLARS	Gempylidae	981	1.4
OTHER BARRACUDAS	<i>Sphyraena</i> spp.	1,460	2.1
OTHER LANCETFISH	<i>Alepisaurus</i> spp.	1,741	2.5
OTHER POMFRETS AND OCEAN BREAMS	Bramidae	1,014	1.4
OTHER FISH	Teleostii	1,460	2.1
SUB-TOTAL		70,371	100.0

CEPHALOPODS	SCIENTIFIC NAME	N	%
ARROW SQUID	<i>Nototodarus sloanii</i>	3	60.0
OCTOPUS	<i>Octopus maorum</i>	2	40.0
SUB-TOTAL		5	100.0

MARINE REPTILES	SCIENTIFIC NAME	N	%
GREEN TURTLE	<i>Chelonia mydas</i>	13	11.6
HAWKSBILL TURTLE	<i>Eretmochelys imbricata</i>	2	1.8
LEATHERBACK TURTLE	<i>Dermochelys coriacea</i>	3	2.7
LOGGERHEAD TURTLE	<i>Caretta caretta</i>	1	0.9
OLIVE RIDLEY TURTLE	<i>Lepidochelys olivacea</i>	21	18.8
YELLOW-BELLIED SEA SNAKE	<i>Pelamis platurus</i>	24	21.4
MARINE TURTLE (UNIDENTIFIED)	Testudinata	48	42.9
SUB-TOTAL		112	100.0

BIRDS	SCIENTIFIC NAME	N	%
FLESH-FOOTED SHEARWATER	<i>Puffinus carneipes</i>	124	8.5
GREY PETREL	<i>Procellaria cinerea</i>	126	8.6
WANDERING ALBATROSS	<i>Diomedea exulans</i>	107	7.3
OTHER ALBATROSS	<i>Diomedea</i> spp.	383	26.2
OTHER PETRELS	<i>Procellaria</i> spp.	145	9.9
OTHER BIRDS	Aves	579	39.5
SUB-TOTAL		1,464	100.0

MARINE MAMMALS	SCIENTIFIC NAME	N	%
BOTTLENOSE DOLPHIN	<i>Tursiops truncatus</i>	1	0.3
COMMON DOLPHIN	<i>Delphinus delphis</i>	2	0.6
DUSKY DOLPHIN	<i>Lagenorhynchus obscurus</i>	1	0.3
HUMPBACK WHALE	<i>Megaptera novaeangliae</i>	1	0.3
KILLER WHALE	<i>Orcinus orca</i>	1	0.3
NEW ZEALAND FUR SEAL	<i>Arctocephalus forsteri</i>	321	93.9
SPERM WHALE	<i>Physeter macrocephalus</i>	1	0.3
DOLPHINS / PORPOISES (UNIDENTIFIED)	Delphinidae	5	1.5
WHALE (UNIDENTIFIED)	Cetacea	1	0.3
MARINE MAMMAL (UNIDENTIFIED)	Mammalia	8	2.3
SUB-TOTAL		342	100.0

Table 3. Number of individuals observed, by species group, determined from longline observer data provided to the OFP by Australia, New Zealand, and the observer programmes of other SPC member countries (including the SPC regional programme)

SPECIES GROUP	AUSTRALIA	%	NEW ZEALAND	%	OTHER	%	TOTAL
TUNAS	137,380	71.8	59,697	29.3	65,163	56.9	262,240
TUNA-LIKE SPECIES	1,898	1.0	3,039	1.5	2,529	2.2	7,466
BILLFISH	7,908	4.1	3,614	1.8	7,731	6.7	19,253
SHARKS AND RAYS	29,240	15.3	88,843	43.7	25,587	22.3	143,670
OTHER FISH	14,482	7.6	43,457	21.4	12,432	10.9	70,371
CEPHALOPODS	0	0.0	5	0.0	0	0.0	5
MARINE REPTILES	0	0.0	5	0.0	107	0.1	112
BIRDS	11	0.0	1,445	0.7	8	0.0	1,464
MARINE MAMMALS	0	0.0	330	0.2	12	0.0	342
UNSPECIFIED	533	0.3	3,048	1.5	990	0.9	4,571
TOTAL	191,452	100.0	203,483	100.0	114,559	100.0	509,494

Table 4. Percentage of individuals observed in longline sets not identified to the species level

SPECIES GROUP	TOTAL	UNIDENTIFIED	
	N	N	%
TUNA	262,240	207	0.1
TUNA-LIKE SPECIES	7,466	1	0.0
BILLFISH	19,253	134	0.7
SHARKS AND RAYS	143,670	5,196	3.6
OTHER FISH	70,371	4,124	5.9
CEPHALOPODS	5	0	0.0
MARINE REPTILES	112	48	42.9
BIRDS	1,464	941	64.3
MARINE MAMMALS	342	14	4.1
UNSPECIFIED	4,571	4,571	100.0
TOTAL	509,494	15,236	3.0

Table 5. Percentage of observed longline take retained or discarded. Sharks whose fins were retained, but trunks discarded, were considered to have been discarded.

SPECIES GROUP	RETAINED		DISCARDED		UNKNOWN		TOTAL
	N	%	N	%	N	%	N
TUNA	234,220	89.3	24,648	9.4	3,372	1.3	262,240
TUNA-LIKE SPECIES	6,368	85.3	887	11.9	211	2.8	7,466
BILLFISH	16,510	85.8	2,477	12.9	266	1.4	19,253
SHARKS AND RAYS	19,010	13.2	91,686	63.8	32,974	23.0	143,670
OTHER FISH	14,963	21.3	40,088	57.0	15,320	21.8	70,371
CEPHALOPODS	0	0.0	5	100.0	0	0.0	5
MARINE REPTILES	4	3.6	108	96.4	0	0.0	112
BIRDS	20	1.4	1,444	98.6	0	0.0	1,464
MARINE MAMMALS	20	5.8	320	93.6	2	0.6	342
UNSPECIFIED	498	10.9	3,296	72.1	777	17.0	4,571
TOTAL	291,613	57.2	164,959	32.4	52,922	10.4	509,494

Table 6. Condition of observed longline discards (number of fish and percentage of discards)

SPECIES GROUP	ALIVE, NOT CLASSED		ALIVE, HEALTHY		ALIVE, INJURED		ALIVE, DYING		DEAD		CONDITION UNKNOWN	
	N	%	N	%	N	%	N	%	N	%	N	%
TUNA	8,349	33.9	979	4.0	387	1.6	164	0.7	13,086	53.1	1,683	6.8
TUNA-LIKE SPECIES	136	15.3	62	7.0	14	1.6	14	1.6	583	65.7	78	8.8
BILLFISH	498	20.1	158	6.4	80	3.2	86	3.5	1,480	59.7	175	7.1
SHARKS AND RAYS	18,442	20.1	3,288	3.6	990	1.1	525	0.6	65,466	71.4	2,975	3.2
OTHER FISH	15,245	38.0	5,104	12.7	1,684	4.2	1,442	3.6	13,934	34.8	2,679	6.7
CEPHALOPODS	3	60.0	0	0.0	0	0.0	0	0.0	2	40.0	0	0.0
MARINE REPTILES	33	30.6	28	25.9	4	3.7	3	2.8	29	26.9	11	10.2
BIRDS	247	17.1	0	0.0	0	0.0	0	0.0	891	61.7	306	21.2
MARINE MAMMALS	290	90.6	6	1.9	0	0.0	0	0.0	20	6.3	4	1.3
UNSPECIFIED	261	7.9	145	4.4	57	1.7	43	1.3	202	6.1	2,588	78.5
TOTAL	43,504	26.4	9,770	5.9	3,216	1.9	2,277	1.4	95,693	58.0	10,499	6.4

Table 7. Coverage of longliners in the WCPO by observer data held by SPC. The observed catch (tonnes) and the WCPO catch (tonnes) include albacore, bigeye, skipjack and yellowfin. Estimates of the WCPO catch during 1999 were carried over to 2000. The fleets of Kiribati and Marshall Islands, which have operated only intermittently, have been ignored.

All fishing nations

YEAR	OBSERVED						TOTAL CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	HOOKS	CATCH		
1987	5	5	32	34	81,903	18	155,493	0.011
1988	9	11	55	93	224,988	19	155,801	0.012
1989	4	8	83	106	283,353	17	135,844	0.012
1990	16	22	169	313	778,015	66	158,964	0.042
1991	49	65	190	799	1,798,440	218	132,367	0.164
1992	57	72	298	905	2,102,236	282	150,041	0.188
1993	80	107	330	1,343	3,208,303	369	141,223	0.262
1994	73	90	410	1,027	2,355,919	361	159,479	0.226
1995	70	86	478	925	1,969,170	360	150,208	0.240
1996	61	72	492	830	1,586,851	509	141,300	0.360
1997	81	98	719	1,220	2,605,654	645	152,275	0.423
1998	53	69	669	1,076	2,233,850	518	149,368	0.347
1999	39	49	479	826	1,771,122	208	140,878	0.148
2000	11	11	69	99	94,849	38	140,878	0.027
TOTAL	608	765	4,473	9,596	21,094,653	3,628	2,064,119	0.176

American Samoa

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1995	-	-	-	-	-	-	28	-
1996	-	-	-	-	-	-	100	-
1997	-	-	-	-	-	-	327	-
1998	2	2	2	2	570	0.135	515	0.026
1999	-	-	-	-	-	-	388	-
2000	-	-	-	-	-	-	388	-
TOTAL	2	2	2	2	570	0.135	1,746	0.008

Australia

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	-	-	-	-	-	-	1,385	-
1988	-	-	-	-	-	-	1,119	-
1989	-	-	-	-	-	-	1,573	-
1990	-	-	-	-	-	-	1,018	-
1991	-	-	-	-	-	-	1,186	-
1992	1	1	7	7	11,561	3.235	1,363	0.237
1993	-	-	-	-	-	-	1,266	-
1994	-	-	-	-	-	-	1,772	-
1995	-	-	-	-	-	-	1,840	-
1996	-	-	-	-	-	-	2,372	-
1997	-	-	-	-	-	-	2,972	-
1998	-	-	-	-	-	-	3,813	-
1999	-	-	-	-	-	-	3,115	-
2000	-	-	-	-	-	-	3,115	-
TOTAL	1	1	7	7	11,561	3.235	27,909	0.012

China

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1988	-	-	-	-	-	-	44	-
1989	-	-	-	-	-	-	144	-
1990	-	-	-	-	-	-	449	-
1991	-	-	-	-	-	-	1,007	-
1992	-	-	-	-	-	-	2,715	-
1993	2	2	18	18	14,950	10.119	6,419	0.158
1994	4	4	28	28	18,960	8.038	12,725	0.063
1995	11	13	59	105	73,890	29.947	10,629	0.282
1996	10	11	65	71	50,415	11.251	5,923	0.190
1997	15	15	99	108	85,113	29.615	3,666	0.808
1998	9	10	56	70	56,012	19.429	3,284	0.592
1999	12	13	89	103	92,254	20.810	3,328	0.625
2000	-	-	-	-	-	-	3,328	-
TOTAL	63	68	414	503	391,594	129.209	53,661	0.241

Cook Islands

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1994	-	-	-	-	-	-	41	-
1995	1	1	6	6	6,000	0.471	71	0.663
1996	1	1	1	1	1,530	0.017	25	0.068
TOTAL	2	2	7	7	7,530	0.488	137	0.356

Federated States of Micronesia

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1991	-	-	-	-	-	-	10	-
1992	-	-	-	-	-	-	127	-
1993	-	-	-	-	-	-	110	-
1994	1	1	5	5	3,000	0.381	187	0.204
1995	2	2	3	3	1,700	0.741	206	0.360
1996	2	2	12	12	6,495	1.320	247	0.534
1997	5	5	35	35	43,610	10.158	471	2.157
1998	4	5	26	26	24,540	9.043	1,074	0.842
1999	2	2	19	19	21,320	7.839	927	-
2000	-	-	-	-	-	-	927	-
TOTAL	16	17	100	100	100,665	29.482	4,286	0.688

Fiji Islands

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1989	-	-	-	-	-	-	27	-
1990	-	-	-	-	-	-	118	-
1991	-	-	-	-	-	-	437	-
1992	-	-	-	-	-	-	632	-
1993	-	-	-	-	-	-	986	-
1994	1	1	6	6	7,387	1.903	1,716	0.111
1995	2	2	19	19	34,687	18.734	2,029	0.923
1996	-	-	-	-	-	-	3,415	-
1997	3	3	18	23	43,637	8.018	3,228	0.248
1998	-	-	-	-	-	-	3,443	-
1999	2	2	23	23	51,943	12.258	3,466	-
2000	-	-	-	-	-	-	3,466	-
TOTAL	8	8	66	71	137,654	40.913	22,963	0.178

French Polynesia

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1990	-	-	-	-	-	-	30	-
1991	-	-	-	-	-	-	264	-
1992	-	-	-	-	-	-	409	-
1993	1	1	2	2	2,800	0.699	1,268	0.055
1994	-	-	-	-	-	-	1,396	-
1995	-	-	-	-	-	-	1,261	-
1996	-	-	-	-	-	-	2,053	-
1997	6	7	63	66	151,705	71.962	3,345	2.151
1998	-	-	-	-	-	-	4,105	-
1999	-	-	-	-	-	-	3,715	-
2000	-	-	-	-	-	-	3,715	-
TOTAL	7	8	65	68	154,505	72.661	21,561	0.337

Indonesia

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	-	-	-	-	-	-	9,254	-
1988	-	-	-	-	-	-	9,717	-
1989	-	-	-	-	-	-	5,124	-
1990	-	-	-	-	-	-	5,508	-
1991	-	-	-	-	-	-	6,059	-
1992	-	-	-	-	-	-	6,242	-
1993	-	-	-	-	-	-	6,241	-
1994	-	-	-	-	-	-	4,600	-
1995	-	-	-	-	-	-	6,946	-
1996	-	-	-	-	-	-	7,942	-
1997	-	-	-	-	-	-	7,654	-
1998	-	-	-	-	-	-	7,654	-
1999	-	-	-	-	-	-	7,654	-
2000	-	-	-	-	-	-	7,654	-
TOTAL	0	0	0	0	0	0.000	98,249	0.000

Japan

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	5	5	32	34	81,903	17.629	80,096	-
1988	9	11	55	93	224,988	18.674	78,968	-
1989	4	8	83	106	283,353	16.973	75,569	-
1990	16	22	169	313	778,015	66.053	82,803	-
1991	48	64	183	792	1,786,485	217.629	62,413	0.186
1992	53	67	266	870	2,053,739	273.209	73,709	0.371
1993	72	98	270	1,282	3,149,933	337.149	70,483	0.478
1994	54	69	283	881	2,207,204	287.350	66,285	0.434
1995	39	50	210	596	1,558,891	251.420	62,584	0.402
1996	33	36	166	419	1,026,122	363.456	52,738	0.689
1997	35	43	216	635	1,637,317	325.378	54,111	0.601
1998	7	11	159	413	1,231,830	201.086	48,857	0.412
1999	3	8	138	401	1,189,779	61.670	48,857	0.126
2000	-	-	-	-	-	-	48,857	-
TOTAL	378	492	2,230	6,835	17,209,559	2,437.676	906,330	0.269

Korea

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	-	-	-	-	-	-	30,465	-
1988	-	-	-	-	-	-	27,945	-
1989	-	-	-	-	-	-	22,309	-
1990	-	-	-	-	-	-	31,760	-
1991	-	-	-	-	-	-	21,214	-
1992	1	1	8	8	11,654	1.895	27,437	0.007
1993	1	1	5	5	6,850	3.087	21,265	0.015
1994	-	-	-	-	-	-	29,400	-
1995	-	-	-	-	-	-	24,883	-
1996	1	1	12	12	25,797	30.137	25,870	0.116
1997	-	-	-	-	-	-	27,471	-
1998	1	1	54	54	99,465	30.886	29,106	0.106
1999	1	1	24	24	79,277	35.709	23,595	0.151
2000	-	-	-	-	-	-	23,595	-
TOTAL	5	5	103	103	223,043	101.714	366,315	0.028

New Caledonia

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	-	-	-	-	-	-	1,102	-
1988	-	-	-	-	-	-	1,092	-
1989	-	-	-	-	-	-	871	-
1990	-	-	-	-	-	-	1,730	-
1991	-	-	-	-	-	-	1,536	-
1992	1	1	4	4	5,757	1.557	1,092	0.143
1993	-	-	-	-	-	-	1,294	-
1994	-	-	-	-	-	-	1,355	-
1995	-	-	-	-	-	-	1,274	-
1996	5	8	35	56	72,295	26.374	1,201	2.196
1997	-	-	-	-	-	-	967	-
1998	3	3	22	27	47,265	14.338	1,543	0.929
1999	3	3	21	23	39,350	7.930	1,616	0.544
2000	-	-	-	-	-	-	1,616	-
TOTAL	12	15	82	110	164,667	50.199	18,289	0.274

New Zealand

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1989	-	-	-	-	-	-	15	-
1990	-	-	-	-	-	-	205	-
1991	-	-	-	-	-	-	108	-
1992	1	2	13	16	19,525	1.895	133	1.425
1993	-	-	-	-	-	-	267	-
1994	1	3	13	13	18,368	2.335	560	0.417
1995	2	5	81	88	156,572	14.171	495	2.863
1996	1	5	90	144	160,073	0.758	676	0.112
1997	1	7	104	154	216,961	7.338	731	1.004
1998	1	11	98	142	213,148	6.849	1,648	0.416
1999	1	4	44	48	41,727	0.507	1,898	0.027
2000	-	-	-	-	-	-	1,898	-
TOTAL	8	37	443	605	826,374	33.853	8,634	0.392

Papua New Guinea

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1991	1	1	7	7	11,955	0.095	...	-
1992	-	-	-	-	-	-	...	-
1993	-	-	-	-	-	-	8	-
1994	-	-	-	-	-	-	30	-
1995	-	-	-	-	-	-	174	-
1996	1	1	10	10	9,400	7.358	224	3.285
1997	1	3	40	40	89,656	48.453	615	7.879
1998	-	-	-	-	-	-	388	-
1999	3	3	34	71	61,551	1.776	195	0.911
2000	6	6	45	74	59,105	19.968	195	10.240
TOTAL	12	14	136	202	231,667	77.650	1,829	4.245

Philippines

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	-	-	-	-	-	-	5,793	-
1988	-	-	-	-	-	-	4,701	-
1989	-	-	-	-	-	-	5,223	-
1990	-	-	-	-	-	-	3,137	-
1991	-	-	-	-	-	-	3,256	-
1992	-	-	-	-	-	-	1,936	-
1993	-	-	-	-	-	-	1,507	-
1994	-	-	-	-	-	-	2,514	-
1995	-	-	-	-	-	-	2,084	-
1996	-	-	-	-	-	-	2,090	-
1997	-	-	-	-	-	-	2,223	-
1998	-	-	-	-	-	-	2,223	-
1999	-	-	-	-	-	-	2,223	-
2000	-	-	-	-	-	-	2,223	-
TOTAL	0	0	0	0	0	0.000	41,133	0.000

Samoa

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1993	-	-	-	-	-	-	300	-
1994	-	-	-	-	-	-	736	-
1995	-	-	-	-	-	-	2,151	-
1996	-	-	-	-	-	-	2,159	-
1997	-	-	-	-	-	-	5,000	-
1998	5	5	7	7	2,940	1.097	5,358	0.020
1999	1	1	2	2	1,470	1.642	4,537	0.036
2000	2	2	10	11	15,089	7.763	4,537	0.171
TOTAL	8	8	19	20	19,499	10.502	24,778	0.042

Solomon Islands

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1995	-	-	-	-	-	-	1,597	-
1996	-	-	-	-	-	-	4,740	-
1997	2	2	28	28	75,886	34.126	3,390	1.007
1998	1	1	27	27	88,380	61.368	1,754	3.499
1999	-	-	-	-	-	-	1,075	-
2000	-	-	-	-	-	-	1,075	-
TOTAL	3	3	55	55	164,266	95.494	13,631	0.701

Taiwan

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	-	-	-	-	-	-	26,021	-
1988	-	-	-	-	-	-	30,103	-
1989	-	-	-	-	-	-	22,311	-
1990	-	-	-	-	-	-	29,386	-
1991	-	-	-	-	-	-	32,322	-
1992	-	-	-	-	-	-	31,990	-
1993	4	5	35	36	33,770	18.354	26,534	0.069
1994	12	12	75	94	101,000	61.096	33,129	0.184
1995	8	8	56	62	64,075	17.275	27,795	0.062
1996	5	5	95	98	229,184	66.012	25,526	0.259
1997	12	12	110	124	256,657	105.658	31,207	0.339
1998	19	19	175	265	385,163	151.905	29,730	0.511
1999	9	9	67	94	162,531	45.176	30,219	0.149
2000	-	-	-	-	-	-	30,219	-
TOTAL	69	70	613	773	1,232,380	465.476	406,492	0.115

Tonga

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	-	-	-	-	-	-	299	-
1988	-	-	-	-	-	-	276	-
1989	-	-	-	-	-	-	235	-
1990	-	-	-	-	-	-	192	-
1991	-	-	-	-	-	-	197	-
1992	-	-	-	-	-	-	225	-
1993	-	-	-	-	-	-	329	-
1994	-	-	-	-	-	-	411	-
1995	1	1	17	17	18,030	9.189	461	1.993
1996	1	1	3	3	2,030	1.939	571	0.340
1997	-	-	-	-	-	-	571	-
1998	1	1	43	43	84,537	22.270	571	3.900
1999	2	3	18	18	29,920	12.585	571	2.204
2000	3	3	14	14	20,655	10.588	571	1.854
TOTAL	8	9	95	95	155,172	56.571	5,480	1.032

United States of America

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1987	-	-	-	-	-	-	1,078	-
1988	-	-	-	-	-	-	1,836	-
1989	-	-	-	-	-	-	2,443	-
1990	-	-	-	-	-	-	2,628	-
1991	-	-	-	-	-	-	2,358	-
1992	-	-	-	-	-	-	2,031	-
1993	-	-	-	-	-	-	2,946	-
1994	-	-	-	-	-	-	2,622	-
1995	3	3	26	28	53,855	17.830	3,524	0.506
1996	1	1	3	4	3,510	0.643	2,893	0.022
1997	1	1	6	7	5,112	3.882	3,863	0.100
1998	-	-	-	-	-	-	4,214	-
1999	-	-	-	-	-	-	3,411	-
2000	-	-	-	-	-	-	3,411	-
TOTAL	5	5	35	39	62,477	22.355	39,258	0.057

Vanuatu

YEAR	VESSELS	TRIPS	DAYS	SETS	HOOKS	OBSERVED CATCH	WCPO CATCH	PERCENT COVERAGE
1995	1	1	1	1	1,470	0.040	176	0.023
1996	-	-	-	-	-	-	535	-
1997	-	-	-	-	-	-	463	-
1998	-	-	-	-	-	-	88	-
1999	-	-	-	-	-	-	88	-
2000	-	-	-	-	-	-	88	-
TOTAL	1	1	1	1	1,470	0.040	1,438	0.003

Table 8. Summary of coverage of longline catches in the WCPO by observer data held by SPC, by fishing nation. The observed catch during 1987–2000 is compared to the total catch of the primary target species.

FISHING NATION	OBSERVED CATCH		TOTAL CATCH		COVERAGE
	TONNES	%	TONNES	%	%
American Samoa	0.135	0.00	1,746	0.08	0.008
Australia	3.235	0.09	27,909	1.35	0.012
China	129.209	3.56	53,661	2.60	0.241
Cook Islands	0.488	0.01	137	0.01	0.356
Federated States of Micronesia	29.482	0.81	4,286	0.21	0.688
Fiji Islands	40.913	1.13	22,963	1.11	0.178
French Polynesia	72.661	2.00	21,561	1.04	0.337
Indonesia	0.000	0.00	98,249	4.76	0.000
Japan	2,437.676	67.20	906,330	43.91	0.269
Korea	101.714	2.80	366,315	17.75	0.028
New Caledonia	50.199	1.38	18,289	0.89	0.274
New Zealand	33.853	0.93	8,634	0.42	0.392
Papua New Guinea	77.650	2.14	1,829	0.09	4.245
Philippines	0.000	0.00	41,133	1.99	0.000
Samoa	10.502	0.29	24,778	1.20	0.042
Solomon Islands	95.494	2.63	13,631	0.66	0.701
Taiwan	465.476	12.83	406,492	19.69	0.115
Tonga	56.571	1.56	5,480	0.27	1.032
United States of America	22.355	0.62	39,258	1.90	0.057
Vanuatu	0.040	0.00	1,438	0.07	0.003
TOTAL	3,627.653	100.00	2,064,119	100.00	0.176

Table 9. Species and species groups covered by pole-and-line observer data held by the OFP

TUNAS	SCIENTIFIC NAME	N	%	T	%
BIGEYE	<i>Thunnus obesus</i>	224	0.1	0.800	0.2
SKIPJACK	<i>Katsuwonus pelamis</i>	227,005	93.6	466.154	90.6
YELLOWFIN	<i>Thunnus albacares</i>	15,328	6.3	47.584	9.2
SUB-TOTAL		242,557	100.0	514.538	100.0

TUNA-LIKE SPECIES	SCIENTIFIC NAME	N	%	T	%
KAWAKAWA	<i>Euthynnus affinis</i>	134	100.0	0.504	100.0

SHARKS AND RAYS	SCIENTIFIC NAME	N	%	T	%
GREY REEF SHARK	<i>Carcharhinus amblyrhynchos</i>	30	16.7	0.030	6.9
SHORT FINNED MAKU SHARK	<i>Isurus oxyrinchus</i>	107	59.4	0.242	55.9
SILKY SHARK	<i>Carcharhinus falciformis</i>	9	5.0	0.070	16.2
SHARKS (UNIDENTIFIED)	<i>Elasmobranchii</i>	34	18.9	0.091	21.0
SUB-TOTAL		180	100.0	0.433	100.0

OTHER FISH	SCIENTIFIC NAME	N	%	T	%
MAHI MAHI / DOLPHINFISH / DORADO	<i>Coryphaena hippurus</i>	413	25.3	0.780	29.2
RAINBOW RUNNER	<i>Elagatis bipinnulata</i>	1,219	74.7	1.892	70.8
SUB-TOTAL		1,632	100.0	2.672	100.0

Table 10. Number of individuals (N) and metric tonnage (T) observed aboard pole-and-line vessels, by species group

SPECIES GROUP	N	%	T	%
TUNAS	242,557	99.20	514.538	99.32
TUNA-LIKE SPECIES	134	0.05	0.504	0.10
SHARKS AND RAYS	180	0.07	0.433	0.08
OTHER FISH	1,632	0.67	2.589	0.50
TOTAL	244,503	100.00	518.064	100.00

Table 11. Metric tonnage observed aboard pole-and-line vessels, by school association

SPECIES GROUP	UNASSOCIATED	%	FEEDING ON BAITFISH	%	DRIFTING LOG OR DEBRIS	%
TUNAS	43.989	97.94	79.606	99.28	6.750	99.91
TUNA-LIKE SPECIES	0.000	0.00	0.502	0.63	0.000	0.00
SHARKS AND RAYS	0.190	0.42	0.010	0.01	0.000	0.00
OTHER FISH	0.735	1.64	0.069	0.09	0.006	0.09
TOTAL	44.914	100.00	80.187	100.00	6.756	100.00

SPECIES GROUP	DRIFTING RAFT, FAD OR PAYAO	%	ANCHORED RAFT, FAD OR PAYAO	%	UNKNOWN	%
TUNAS	18.036	99.87	350.437	99.44	15.720	100.00
TUNA-LIKE SPECIES	0.000	0.00	0.002	0.00	0.000	0.00
SHARKS AND RAYS	0.000	0.00	0.233	0.07	0.000	0.00
OTHER FISH	0.023	0.13	1.756	0.50	0.000	0.00
TOTAL	18.059	100.00	352.428	100.00	15.720	100.00

SPECIES GROUP	TOTAL	%
TUNAS	514.538	99.32
TUNA-LIKE SPECIES	0.504	0.10
SHARKS AND RAYS	0.433	0.08
OTHER FISH	2.589	0.50
TOTAL	518.064	100.00

Table 12. Metric tonnage observed aboard pole-and-line vessels, by school association

SPECIES GROUP	UNASSOCIATED	%	FEEDING ON BAITFISH	%	DRIFTING LOG OR DEBRIS	%
TUNAS	43.989	97.94	79.606	99.28	6.750	99.91
TUNA-LIKE SPECIES	0.000	0.00	0.502	0.63	0.000	0.00
SHARKS AND RAYS	0.190	0.42	0.010	0.01	0.000	0.00
OTHER FISH	0.735	1.64	0.069	0.09	0.006	0.09
TOTAL	44.914	100.00	80.187	100.00	6.756	100.00

SPECIES GROUP	DRIFTING RAFT, FAD OR PAYAO	%	ANCHORED RAFT, FAD OR PAYAO	%	UNKNOWN	%
TUNAS	18.036	99.87	350.437	99.44	15.720	100.00
TUNA-LIKE SPECIES	0.000	0.00	0.002	0.00	0.000	0.00
SHARKS AND RAYS	0.000	0.00	0.233	0.07	0.000	0.00
OTHER FISH	0.023	0.13	1.756	0.50	0.000	0.00
TOTAL	18.059	100.00	352.428	100.00	15.720	100.00

SPECIES GROUP	TOTAL	%
TUNAS	514.538	99.32
TUNA-LIKE SPECIES	0.504	0.10
SHARKS AND RAYS	0.433	0.08
OTHER FISH	2.589	0.50
TOTAL	518.064	100.00

Table 13. Summary of coverage of pole-and-line catches in the WCPO during 1998 by observer data held by SPC, by fishing nation. The observed catch is compared to the total catch of skipjack, yellowfin and bigeye.

FISHING NATION	OBSERVED CATCH		TOTAL CATCH		COVERAGE
	TONNES	%	TONNES	%	%
Australia	0	0.00	266	0.11	0.000
Fiji	0	0.00	466	0.19	0.000
French Polynesia	0	0.00	902	0.36	0.000
Indonesia	0	0.00	90,125	35.88	0.000
Japan	0	0.00	134,498	53.55	0.000
Solomon Islands	515	100.00	24,528	9.77	2.100
United States of America	0	0.00	384	0.15	0.000
Total	515	100.00	251,169	100.00	0.205

Table 14. Positive purse-seine sets covered by observer data held by SPC, by observer programme

YEAR	FSM ARRANGEMENT	FSM	NAURU	PAPUA NEW GUINEA	SOLOMON ISLANDS	SPC	US TREATY	TOTAL
1994	0	13	0	0	0	0	418	431
1995	0	96	0	0	0	80	437	613
1996	0	117	14	248	0	170	773	1,322
1997	0	213	0	179	0	82	882	1,356
1998	24	125	0	8	485	83	850	1,575
1999	21	81	0	18	21	78	586	805
2000	29	0	0	0	0	13	436	478
TOTAL	74	645	14	453	506	506	4,382	6,580
PERCENT	1.1	9.8	0.2	6.9	7.7	7.7	66.6	100.0

Table 15. Number of individuals (N) and metric tonnage observed (T) in purse-seine sets, by species and species group

TUNAS	SCIENTIFIC NAME	N	%	T	%
ALBACORE	<i>Thunnus alalunga</i>	14,665	0.0	67.291	0.0
BIGEYE	<i>Thunnus obesus</i>	1,858,754	2.9	11,244.029	4.3
SKIPJACK	<i>Katsuwonus pelamis</i>	55,936,086	86.1	185,269.710	70.1
YELLOWFIN	<i>Thunnus albacares</i>	6,869,143	10.6	66,644.899	25.2
TUNA (UNIDENTIFIED)	<i>Thunnini</i>	271,154	0.4	1,234.415	0.5
SUB-TOTAL		64,949,802	100.0	264,460.344	100.0

TUNA-LIKE SPECIES	SCIENTIFIC NAME	N	%	T	%
BUTTERFLY TUNA / KINGFISH	<i>Gasterochisma melampus</i>	10	0.0	0.050	0.0
KAWAKAWA	<i>Euthynnus affinis</i>	263	0.2	0.249	0.2
WAHOO	<i>Acanthocybium solandri</i>	4,925	3.7	32.365	25.2
FRIGATE AND BULLET TUNAS	<i>Auxis thazard</i> , <i>A. rochei</i>	49,272	36.6	37.972	29.5
MACKEREL (UNIDENTIFIED)	<i>Scombridae</i>	80,292	59.6	57.995	45.1
SUB-TOTAL		134,762	100.0	128.631	100.0

BILLFISH	SCIENTIFIC NAME	N	%	T	%
BLACK MARLIN	<i>Makaira indica</i>	494	33.8	43.988	38.5
BLUE MARLIN	<i>Makaira mazara</i>	668	45.8	55.525	48.6
INDO-PACIFIC SAILFISH	<i>Istiophorus platypterus</i>	96	6.6	3.081	2.7
SHORT-BILLED SPEARFISH	<i>Tetrapturus angustirostris</i>	30	2.1	0.446	0.4
STRIPED MARLIN	<i>Tetrapturus audax</i>	113	7.7	6.874	6.0
SWORDFISH	<i>Xiphias gladius</i>	40	2.7	2.362	2.1
BILLFISH (UNIDENTIFIED)	<i>Istophoridae</i> , <i>Xiphiidae</i>	19	1.3	2.006	1.8
SUB-TOTAL		1,460	100.0	114.282	100.0

SHARKS AND RAYS	SCIENTIFIC NAME	N	%	T	%
OCEANIC WHITE-TIP SHARK	<i>Carcharhinus longimanus</i>	2,768	11.9	62.796	12.1
SILKY SHARK	<i>Carcharhinus falciformis</i>	5,004	21.4	79.904	15.4
OTHER SHARKS AND RAYS	<i>Elasmobranchii</i>	15,567	66.7	375.305	72.5
SUB-TOTAL		23,339	100.0	518.005	100.0

Table 10 (continued)

OTHER FISH	SCIENTIFIC NAME	N	%	T	%
MAHI MAHI / DOLPHINFISH / DORADO	<i>Coryphaena hippurus</i>	16,087	2.5	124.137	10.8
RAINBOW RUNNER	<i>Elagatis bipinnulata</i>	321,685	50.4	696.587	60.9
AMBERJACKS	<i>Seriola</i> spp	1,072	0.2	47.948	4.2
BARRACUDAS	<i>Sphyræna</i> spp.	3,072	0.5	15.475	1.4
DECAPTURUS	<i>Decapturus</i> spp.	58,514	9.2	84.642	7.4
OCEANIC TRIGGERFISH	Balistidae	234,363	36.7	168.491	14.7
OTHER FISH		3,872	0.6	7.196	0.6
SUB-TOTAL		638,665	100.0	1,144.476	100.0

CEPHALOPODS	SCIENTIFIC NAME	N	%	T	%
SQUIDS	Ommastrephidae, Loliginidae	8	100.0	0.055	100.0

MARINE REPTILES	SCIENTIFIC NAME	N	%	T	%
GREEN TURTLE	<i>Chelonia mydas</i>	1	3.6	0.020	3.4
HAWKSBILL TURTLE	<i>Eretmochelys imbricata</i>	5	17.9	0.172	29.0
OLIVE RIDLEY TURTLE	<i>Lepidochelys olivacea</i>	4	14.3	0.184	31.0
MARINE TURTLE (UNIDENTIFIED)	Testudinata	18	64.3	0.218	36.7
SUB-TOTAL		28	100.0	0.594	100.0

MARINE MAMMALS	SCIENTIFIC NAME	N	%	T	%
DOLPHINS / PORPOISES (UNIDENTIFIED)	Delphinidae	37	29.1	1.420	10.0
WHALE (UNIDENTIFIED)	Cetacea	5	3.9	1.700	12.0
MARINE MAMMAL (UNIDENTIFIED)	Mammalia	85	66.9	11.038	78.0
SUB-TOTAL		127	100.0	14.158	100.0

Table 16. Number of individuals (N) and metric tonnage (T) observed in purse-seine sets, by species group

SPECIES GROUPS	N	%	T	%
TUNAS	64,949,802	98.76	264,460.344	99.23
TUNA-LIKE SPECIES	134,762	0.20	128.631	0.05
BILLFISH	1,460	0.00	114.282	0.04
SHARKS AND RAYS	23,339	0.04	518.005	0.19
OTHER FISH	638,665	0.97	1,144.476	0.43
CEPHALOPODS	8	0.00	0.055	0.00
MARINE REPTILES	28	0.00	0.594	0.00
MARINE MAMMALS	127	0.00	14.158	0.01
UNSPECIFIED	17,291	0.03	121.045	0.05
TOTAL	65,765,482	100.00	266,501.590	100.00

Table 17. Number of purse-seine sets observed, by school association

SCHOOL ASSOCIATION	SETS	%
UNASSOCIATED	816	12.40
FEEDING ON BAITFISH	1,446	21.98
DRIFTING LOG, DEBRIS OR DEAD ANIMAL	1,390	21.12
DRIFTING RAFT, FAD OR PAYAO	2,245	34.12
ANCHORED RAFT, FAD OR PAYAO	182	2.77
LIVE WHALE	102	1.55
LIVE WHALE SHARK	22	0.33
OTHER	377	5.73
TOTAL	6,580	100.00

Table 18. Number of individuals (cephalopods, marine reptiles, marine mammals) or metric tonnage (other species groups) observed in purse-seine sets, by school association

SPECIES GROUP	UNASSOCIATED	%	FEEDING ON BAITFISH	%	DRIFTING LOG OR DEBRIS	%
TUNAS	30,338.674	99.86	55,558.636	99.73	53,315.368	98.34
TUNA-LIKE SPECIES	9.412	0.03	0.358	0.00	70.084	0.13
BILLFISH	9.755	0.03	22.371	0.04	34.295	0.06
SHARKS AND RAYS	15.237	0.05	107.457	0.19	110.269	0.20
OTHER FISH	8.991	0.03	17.771	0.03	612.247	1.13
UNSPECIFIED	0.346	0.00	3.615	0.01	71.316	0.13
TOTAL	30,382.415	100.00	55,710.208	100.00	54,213.579	100.00
CEPHALOPODS	0		0		0	
MARINE REPTILES	6		0		18	
MARINE MAMMALS	24		0		41	

SPECIES GROUP	DRIFTING RAFT, FAD OR PAYAO	%	ANCHORED RAFT, FAD OR PAYAO	%	LIVE WHALE	%
TUNAS	99,042.553	99.22	6,151.525	99.42	3,995.269	99.88
TUNA-LIKE SPECIES	40.313	0.04	5.995	0.10	0.022	0.00
BILLFISH	34.718	0.03	1.770	0.03	1.500	0.04
SHARKS AND RAYS	240.285	0.24	4.260	0.07	3.117	0.08
OTHER FISH	442.381	0.44	23.930	0.39	0.019	0.00
UNSPECIFIED	17.918	0.02	0.001	0.00	0.308	0.01
TOTAL	99,818.168	100.00	6,187.481	100.00	4,000.235	100.00
CEPHALOPODS	8		0		0	
MARINE REPTILES	1		2		1	
MARINE MAMMALS	32		13		15	

SPECIES GROUP	LIVE WHALE SHARK	%	UNKNOWN	%	TOTAL	%
TUNAS	535.870	96.53	15,522.449	99.38	264,460.344	99.24
TUNA-LIKE SPECIES	0.007	0.00	2.440	0.02	128.631	0.05
BILLFISH	0.476	0.09	9.397	0.06	114.282	0.04
SHARKS AND RAYS	18.632	3.36	18.748	0.12	518.005	0.19
OTHER FISH	0.120	0.02	39.017	0.25	1,144.476	0.43
UNSPECIFIED	0.030	0.01	27.511	0.18	121.045	0.05
TOTAL	555.135	100.00	15,619.562	100.00	266,486.783	100.00
CEPHALOPODS	0		0		8	
MARINE REPTILES	0		0		28	
MARINE MAMMALS	1		1		127	

Table 19. Percentage of tonnage (T) or individuals (N) observed in purse-seine sets not identified to the species level

SPECIES GROUP	TOTAL	UNIDENTIFIED	
	T	T	%
TUNA	264,460.344	1,234.415	0.5
TUNA-LIKE SPECIES	128.631	59.113	46.0
BILLFISH	114.282	2.006	1.8
SHARKS AND RAYS	518.005	342.988	66.2
OTHER FISH	1,144.476	192.451	16.8
UNSPECIFIED	121.045	121.045	100.0
TOTAL	266,486.783	1,952.018	0.7

SPECIES GROUP	TOTAL	UNIDENTIFIED	
	N	N	%
CEPHALOPODS	8	8	100.0
MARINE REPTILES	28	18	64.3
MARINE MAMMALS	127	127	100.0

Table 20. Percentage of observed purse-seine take retained or discarded.

SPECIES GROUP	RETAINED		DISCARDED		TOTAL
	T	%	T	%	T
TUNA	253,514.544	95.9	10,945.800	4.1	264,460.344
TUNA-LIKE SPECIES	17.801	13.8	110.830	86.2	128.631
BILLFISH	36.933	32.3	77.349	67.7	114.282
SHARKS AND RAYS	19.057	3.7	498.948	96.3	518.005
OTHER FISH	129.448	11.3	1,015.028	88.7	1,144.476
UNSPECIFIED	5.644	4.7	115.401	95.3	121.045
TOTAL	253,723.427	95.2	12,763.356	4.8	266,486.783

SPECIES GROUP	RETAINED		DISCARDED		TOTAL
	N	%	N	%	N
CEPHALOPODS	4	50.0	4	50.0	8
MARINE REPTILES	0	0.0	28	100.0	28
MARINE MAMMALS	0	0.0	127	100.0	127

Table 21. Coverage of purse seiners in the WCPO by observer data held by SPC. The observed catch (tonnes) and the WCPO catch (tonnes) include bigeye, skipjack and yellowfin and exclude discards. Estimates of the WCPO catch during 1999 were carried over to 2000.

All fishing nations

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	16	16	172	431	15,959	856,708	1.863
1995	33	36	776	613	26,937	804,052	3.350
1996	60	64	1,124	1,322	43,312	805,877	5.375
1997	57	61	991	1,356	44,834	878,692	5.102
1998	76	87	1,186	1,575	60,792	1,161,142	5.236
1999	43	51	659	805	41,003	988,350	4.149
2000	22	22	361	478	20,038	992,350	2.019
TOTAL	307	337	5,269	6,580	252,877	6,487,171	3.898

Australia

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	1,565	-
1995	-	-	-	-	-	1,075	-
1996	-	-	-	-	-	1,799	-
1997	-	-	-	-	-	3,398	-
1998	-	-	-	-	-	897	-
1999	-	-	-	-	-	5,016	-
2000	-	-	-	-	-	5,016	-
TOTAL	0	0	0	0	0	18,767	0.000

Federated States of Micronesia

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	20,749	-
1995	1	1	63	18	898	6,555	13.704
1996	1	1	19	8	329	7,163	4.593
1997	-	-	-	-	-	7,801	-
1998	2	4	152	44	1,412	13,124	10.760
1999	-	-	-	-	-	10,037	-
2000	-	-	-	-	-	10,037	-
TOTAL	4	6	234	70	2,639	75,465	3.498

Indonesia

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	14,504	-
1995	-	-	-	-	-	19,196	-
1996	-	-	-	-	-	21,454	-
1997	-	-	-	-	-	15,950	-
1998	-	-	-	-	-	15,950	-
1999	-	-	-	-	-	15,950	-
2000	-	-	-	-	-	15,950	-
TOTAL	0	0	0	0	0	118,955	0.000

Japan

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	201,453	-
1995	4	4	118	52	1,675	189,982	0.882
1996	4	4	136	83	2,284	178,647	1.279
1997	4	4	116	69	2,836	222,789	1.273
1998	3	3	71	44	1,960	261,169	0.751
1999	-	-	-	-	-	192,083	-
2000	-	-	-	-	-	192,083	-
TOTAL	15	15	441	248	8,756	1,438,205	0.609

Kiribati

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	446	-
1995	1	1	42	26	692	3,001	23.059
1996	-	-	-	-	-	4,864	-
1997	-	-	-	-	-	3,807	-
1998	-	-	-	-	-	6,498	-
1999	1	1	15	7	429	6,183	6.940
2000	1	1	11	9	173	6,183	2.797
TOTAL	3	3	68	42	1,294	30,982	4.177

Korea

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	146,140	-
1995	2	2	44	14	908	133,576	0.679
1996	10	10	210	119	4,633	139,554	3.320
1997	8	8	120	138	4,875	151,271	3.223
1998	10	11	155	145	5,560	210,897	2.636
1999	6	9	145	86	3,407	138,643	2.457
2000	-	-	-	-	-	138,643	-
TOTAL	36	40	674	502	19,382	1,058,724	1.831

Marshall Islands

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
2000	-	-	-	-	-	4,000	-
TOTAL	0	0	0	0	0	4,000	0.000

New Zealand

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	1,197	-
1995	-	-	-	-	-	267	-
1996	-	-	-	-	-	378	-
1997	-	-	-	-	-	3,875	-
1998	-	-	-	-	-	946	-
1999	-	-	-	-	-	1,408	-
2000	-	-	-	-	-	1,408	-
TOTAL	0	0	0	0	0	9,480	0.000

Papua New Guinea

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	1,351	-
1995	2	2	90	9	640	10,968	5.836
1996	1	1	45	16	337	7,839	4.300
1997	1	1	35	17	511	9,347	5.467
1998	1	1	16	9	490	36,722	1.334
1999	1	1	27	22	657	28,301	2.322
2000	-	-	-	-	-	28,301	-
TOTAL	6	6	213	73	2,635	122,829	2.145

Philippines

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	65,446	-
1995	-	-	-	-	-	84,486	-
1996	3	3	68	28	437	88,303	0.495
1997	3	3	102	46	1,636	106,749	1.533
1998	2	3	75	50	1,574	111,948	1.406
1999	-	-	-	-	-	106,719	-
2000	-	-	-	-	-	106,719	-
TOTAL	8	9	245	124	3,647	670,370	0.544

Russia

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	4,732	-
TOTAL	0	0	0	0	0	4,732	0.000

Solomon Islands

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	12,768	-
1995	-	-	-	-	-	17,827	-
1996	-	-	-	-	-	16,571	-
1997	-	-	-	-	-	24,104	-
1998	2	2	48	18	379	23,321	1.624
1999	2	3	55	26	1,019	23,578	4.323
2000	1	1	55	20	725	23,578	3.076
TOTAL	5	6	158	64	2,123	141,747	1.498

Spain

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1999	-	-	-	-	-	8,613	-
2000	-	-	-	-	-	8,613	-
TOTAL	0	0	0	0	0	17,226	0.000

Taiwan

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	1	1	26	13	622	178,205	0.349
1995	2	2	101	51	2,837	168,526	1.683
1996	11	12	245	282	6,681	179,425	3.724
1997	8	8	229	180	4,591	161,231	2.848
1998	20	21	290	395	13,051	260,913	5.002
1999	2	2	56	25	635	220,368	0.288
2000	1	1	15	13	962	220,368	0.436
TOTAL	45	47	962	959	29,379	1,389,036	2.115

United States of America

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	15	15	146	418	15,337	207,381	7.396
1995	20	23	290	437	19,086	161,492	11.819
1996	29	32	366	773	28,150	148,918	18.903
1997	32	36	365	889	29,812	145,274	20.521
1998	35	41	358	858	35,677	177,244	20.129
1999	31	35	361	639	34,856	184,723	18.869
2000	19	19	280	436	18,178	184,723	9.841
TOTAL	181	201	2,166	4,450	181,096	1,209,756	14.970

Vanuatu

YEAR	OBSERVED					WCPO CATCH	PERCENT COVERAGE
	VESSELS	TRIPS	DAYS	SETS	CATCH		
1994	-	-	-	-	-	770	-
1995	1	1	28	6	201	7,100	2.831
1996	1	1	35	13	461	10,962	4.201
1997	1	1	24	17	573	23,096	2.481
1998	1	1	21	12	690	41,515	1.663
1999	-	-	-	-	-	46,727	-
2000	-	-	-	-	-	46,727	-
TOTAL	4	4	108	48	1,925	176,897	1.088

Table 22. Summary of coverage of purse-seine catches in the WCPO by observer data held by SPC, by fishing nation. The observed catch during 1994–2000 is compared to the total catch of bigeye, skipjack and yellowfin. Discards are excluded.

FISHING NATION	OBSERVED CATCH		TOTAL CATCH		COVERAGE
	TONNES	%	TONNES	%	%
Australia	0	0.00	18,767	0.29	0.000
Federated States of Micronesia	2,639	1.04	75,465	1.16	3.498
Indonesia	0	0.00	118,955	1.83	0.000
Japan	8,756	3.46	1,438,205	22.17	0.609
Kiribati	1,294	0.51	30,982	0.48	4.177
Korea	19,382	7.66	1,058,724	16.32	1.831
Marshall Islands	0	0.00	4,000	0.06	0.000
New Zealand	0	0.00	9,480	0.15	0.000
Papua New Guinea	2,635	1.04	122,829	1.89	2.145
Philippines	3,647	1.44	670,370	10.33	0.544
Russia	0	0.00	4,732	0.07	0.000
Solomon Islands	2,123	0.84	141,747	2.19	1.498
Spain	0	0.00	17,226	0.27	0.000
Taiwan	29,379	11.62	1,389,036	21.41	2.115
United States of America	181,096	71.61	1,209,756	18.65	14.970
Vanuatu	1,925	0.76	176,897	2.73	1.088
Total	252,877	100.00	6,487,171	100.00	3.898
Total, excluding USA	71,781	28.39	5,277,415	81.35	1.360