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ESTIMATES OF ANNUAL CATCHES IN THE WCPFC STATISTICAL AREA

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Paper prepared by

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INTRODUCTION

Estimates of annual catches in the WCPFC Statistical Area (Figure 1) are presented for target tuna species, i.e., albacore (*Thunnus alalunga*) bigeye (*Thunnus obesus*), skipjack (*Katsuwonus pelamis*) and yellowfin (*Thunnus albacares*), and major billfish species, i.e., black marlin (*Makaira indica*), blue marlin (*Makaira mazara*), striped marlin (*Tetrapturus audax*) and swordfish (*Xiphias gladius*). Estimates of discards of target tunas and catches in recent years of other non-target fish species, determined from observer data, are also presented. Estimates of catches of southern bluefin tuna (*Thunnus maccoyii*), which are compiled by the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), and catches of small tunas in the domestic fisheries of Indonesia and the Philippines are not presented. Recent catches of tuna in the domestic fisheries of Vietnam may have amounted to about 19,000 tonnes of skipjack, 18,000 tonnes of yellowfin and 5,500 tonnes of bigeye, for a total of 42,500 tonnes (Lewis 2005); however, these catches have been ignored in the tables and figures presented below. The compilation of estimates of catches of Pacific bluefin tuna (*Thunnus orientalis*) commenced only recently; estimates for Pacific bluefin will be presented in future editions of this report.

TARGET TUNA SPECIES

Tables 1–3 and Figures 2 and 3 present estimates of annual catches of target tunas in the WCPFC Statistical Area. For the sources of the annual catch estimates, see Lawson (2006). For discussion regarding trends, see Williams & Reid (2007). Estimates of purse-seine catches of bigeye and yellowfin that were not already been adjusted for the misidentification of bigeye as yellowfin have been adjusted by the OFP (Lawson 2007).

Notable revisions to the catch estimates include a decrease in the estimated catch of albacore in 2005 from 115,747 t reported last year to 98,626 t reported this year, and a decrease in the bigeye catch in 2005 from 163,592 t to 140,354 t. The change in albacore is primarily due to a downward revision of the pole-and-line catch by Japan, which last year had been carried over from 2004. The change in bigeye is due to a downward revision of the catch in domestic fisheries of the Philippines based on port sampling data and to lower estimates of the proportion of bigeye in 'yellowfin plus bigeye' caught by purse seiners in 2005 based on more recent observer data (Lawson 2007). It should also be noted that the increase in the bigeye catch from 115,989 t in 2003 to 152,362 t in 2004 is largely due to an increase in the catch reported for the domestic fisheries of Indonesia; the magnitude of the change is a statistical artifact related to the fact that the Bureau of Agricultural Statistics reported bigeye separately from yellowfin starting with 2004.

Tables 4–7 present estimates of annual catches of target tunas in the WCPO Area and the EPO Area (Figure 1) by gear type. Tables 8–10 present estimates of annual catches of target tunas for the WCPO, the EPO and the Pacific Ocean by species. Table 11 and 12, and Figures 4 and 5, present global catches of target tunas, by species and ocean area respectively.

DISCARDS

An analysis of variance of discard rates for albacore, bigeye and yellowfin and bigeye caught by longliners, determined from observer data stratified by trip, indicated that species, year and flag were significant predictors. Discards by longliners in the WCPFC Statistical Area during 1994–2005 were estimated with the predicted discard rates; the estimates are presented in Table 13. For flags for which no observer data are available to predict discard rates, discard rates averaged over all other flags, for the species and year, were used. The total discard rate for the three target tuna species during the period was 3.6%.

An analysis of variance of discard rates for skipjack, yellowfin and bigeye caught by purse seiners, determined from observer data stratified by trip, indicated that species, school association (associated or unassociated) and flag, but not year, were significant predictors. Discards by purse seiners in the WCPFC Statistical Area, from 20°S to 20°N and excluding the domestic fisheries of Indonesia and the Philippines, during 1995–2005, were estimated with the predicted discard rates; the estimates are presented in Table 14. The total discard rate for the three target tuna species during the period was 4.4%. In comparison, the total discard rate for the purse-seine fleet in the Eastern Pacific Ocean during the same period was 5.3% [1].

MAJOR BILLFISH SPECIES

Table 15 presents estimates of commercial catches of the four major billfish species by gear type. Table 16 and Figure 6 present estimates of the major billfish catches for all gear types combined. Tables 17 and 18 present estimates of commercial catches of striped marlin and swordfish in the WCPFC Statistical Area north and south of the equator respectively.

OTHER NON-TARGET SPECIES AND SPECIES GROUPS

Estimates of annual catches of other non-target species and species groups were determined from observer data held by the SPC Oceanic Fisheries Programme. Tables 19 and 20 present statistics on observer coverage of longliners and purse seiners. No observer data are available for the domestic fisheries of Indonesia, the Philippines and Chinese Taipei; hence, the catch estimates exclude these sectors.

For longline, observer coverage from 1992 to 2006 has been 0.71% of total effort. Distant-water fleets accounted for 56%, 36% and 56% of the longline catch of albacore, bigeye and yellowfin in the WCPFC Statistical Area during 1992–2006 respectively; however, coverage of the distant-water longline fleets by data held by the OFP is less than 0.05%. Observer data covering the Hawaii longline fleet during 2005–2006 and the New Zealand domestic longline fleet during 2004–2006 were not yet available at the time of the analysis.

For purse-seine, observer coverage from 1994 to 2006 has been 5.64%. Coverage rates have increased from 2002 onwards due to higher coverage of the fleets of the FSM Arrangement, including Federated States of Micronesia, Marshall Islands, Papua New Guinea, Solomon Islands and Vanuatu. Coverage rates for sets on unassociated and associated schools have been similar.

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[1] Determined from statistics in Table A–2a in IATTC (2007).

Catches for each non-target species or species group were estimated using model-based predictors of the catch rate. The logistic and lognormal components of a zero-inflated lognormal (ZILN) model were fitted with the 'glm' function in R [2]. For longline, the predicted variable was the logarithm of the catch rate for the observed trip, and predictors were year, month, the number hooks between floats (a proxy for depth), latitude, longitude, sea surface salinity, sea surface temperature and the depth of the 20°C isotherm. For purse seine, the predicted variable was the logarithm of the catch rate for the observed trip, and predictors were school association (associated or unassociated), year, month, latitude, longitude, sea surface salinity, sea surface temperature and the depth of the 20°C isotherm. All numerical predictors were smoothed with cubic splines. The inclusion of predictors in the model, and the degrees of freedom for the smoothed predictors, were determined using a stepwise procedure that minimised the Bayesian information criterion (BIC). The degrees of freedom and other statistics for each of the models for longline and purse seine are presented in Tables 21 and 22 respectively. For longline, sector was not included as a predictor in the catch estimation procedure due to insufficient data for the distant-water sectors, but the effect of sector was still evaluated by adding it to the model that was selected for the catch estimation procedure and noting whether the BIC declined further (Table 21).

The ZILN models of catch rates were applied to stratified effort data. For longline, effort data for the WCPFC Statistical Area were stratified by year, month, 5° of latitude and 5°of longitude; for each time-area stratum, averages of the number of hooks between floats and the oceanographic variables were determined. For purse seine, effort data for the area bounded by 130°E, 150°W, 20°N and 20°S were stratified by year, month, 2° of latitude, 5°of longitude and school association (associated or unassociated); for each time-area stratum, averages of the oceanographic variables were determined. Confidence intervals for the catch estimates were determined from a parametric bootstrap, i.e., from the 2.5% and 97.5% quantiles of catches estimated by taking 1,000 random samples from the posterior distributions of estimates of the model coefficients; the median was taken to be the point estimate. The confidence intervals do not account for errors in the estimates of total effort and model uncertainty, hence they underestimate the true uncertainty.

Catch estimates for longline and purse-seine are presented in Tables 23 and 24 respectively. Figures 7 and 8 present estimated catches and catch rates for non-target species caught by longline and purse seine respectively. The following points are of interest:

- For longline, latitude and longitude are the most important predictors of catch rate, followed by year, sea surface temperature and the number of hooks between floats. For purse seine, longitude is the most important predictor, followed by year, school association and latitude.

- The average degrees of freedom of model predictors and deviance explained was 17.6 and 34.4% respectively for longline, and 4.1 and 16.8% respectively for purse seine. The larger values for longline reflect the broader geographic area and variation in catch rates compared to purse seine.

- For longline, sector was a significant predictor in the logistic component for three species or species groups, in the lognormal component for three, in both for five and in neither for six. For those species or species groups for which sector is significant, the estimates of catch rates could be improved by including sector as a predictor; however, doing so would almost certainly

[2] R Development Core Team. 2007. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org.

introduce bias into the estimates for the two distant-water sectors, which are covered by only 12 observed trips over the entire time series.

- The estimated catch rates for longline differ considerably from observed catch rates, particularly for individual year-sector strata. For the distant-water longline fleets in particular, for which observer data are lacking, the estimated catch rates are, for many species or species groups, unreasonably high or low. The catch estimates in Table 17 and Figure 7 should therefore be considered only as roughly indicative.

- The extreme values predicted by the ZILN model for the point estimate of the catch rate for 'other sharks and rays' caught by longliners in 2005, and the 97.5% quantile of the catch rate for escolars and opah caught by longliners in 2005, are probably due to the fact that relatively few observer data are available for 2005 and 2006.

- Low values of observed and estimated catch rates for silky shark caught by longliners in 1994 may be due to species identification errors during the initial implementation of observer programmes covering the offshore tropical sector. Species identification errors may also be responsible for the low values of observed and estimated catch rates for oceanic whitetip sharks and silky sharks caught by purse seiners, and high values for 'other sharks and rays', during the early period of the time series. Data quality in observer programmes covering offshore longline and purse seine increased considerably from 1995 onwards through technical support provided by the South Pacific Regional Tuna Resources Assessment and Monitoring Project of SPC.

- Low values of observed and estimated catch rates for ocean sunfish caught by longliners during 2003–2005 are due to the lack of data covering the New Zealand domestic fleet during those years; observed catch rates for ocean sunfish are generally higher in that sector than in others.

The methodology for estimating catches of non-target species in the WCPFC Statistical Area from observer data should be developed further. Future work should consider (i) the development of better diagnostics for detecting bias in estimated catch rates; (ii) examination of the effects of the ordering of predictor variables and of the selection criterion used in the model selection procedure; (iii) the inclusion of interactions among predictors, such as two-variable smoothing for latitude and longitude, and possibly interaction terms for year and other variables, if supported by the observer data; (iv) including sector as a predictor for longline, but limiting the analysis to sectors other than the distant-water sectors due to the lack of data, and (v) including other oceanographic variables and rates of change of oceanographic variables across geographic strata, which may indicate frontal conditions.

Figure 9 and 10 presents the species group composition in the WCPFC Statistical Area (excluding the domestic fisheries of Indonesia, the Philippines and Chinese Taipei) during 1995–2005 for longliners and purse seiners respectively.

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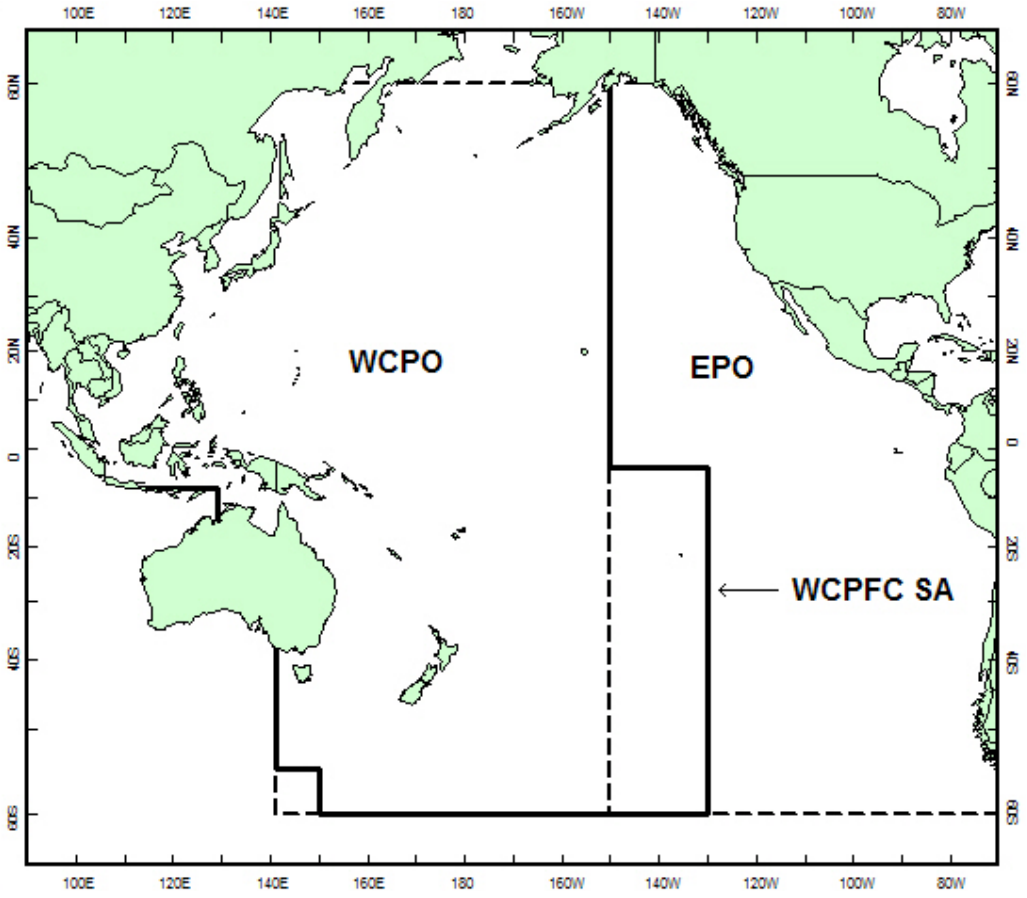


Figure 1. WCPFC Statistical Area (WCPFC SA), the Western and Central Pacific Ocean (WCPO) Area and the Eastern Pacific Ocean (EPO) Area

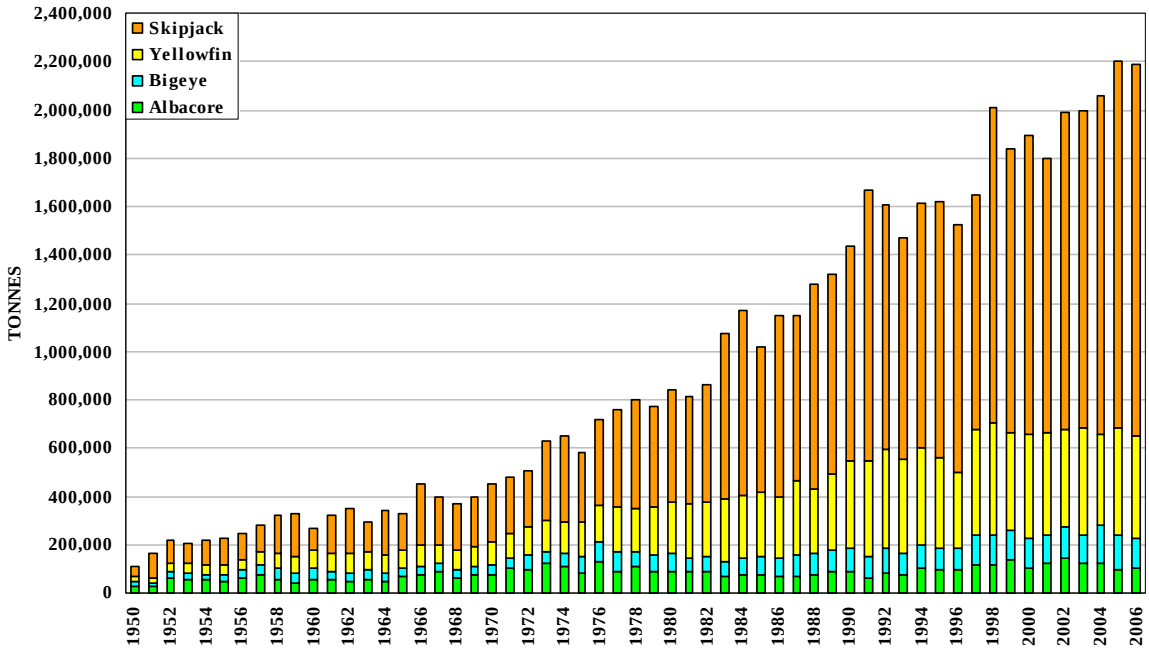


Figure 2. Catches of tuna in the WCPFC Statistical Area, by species

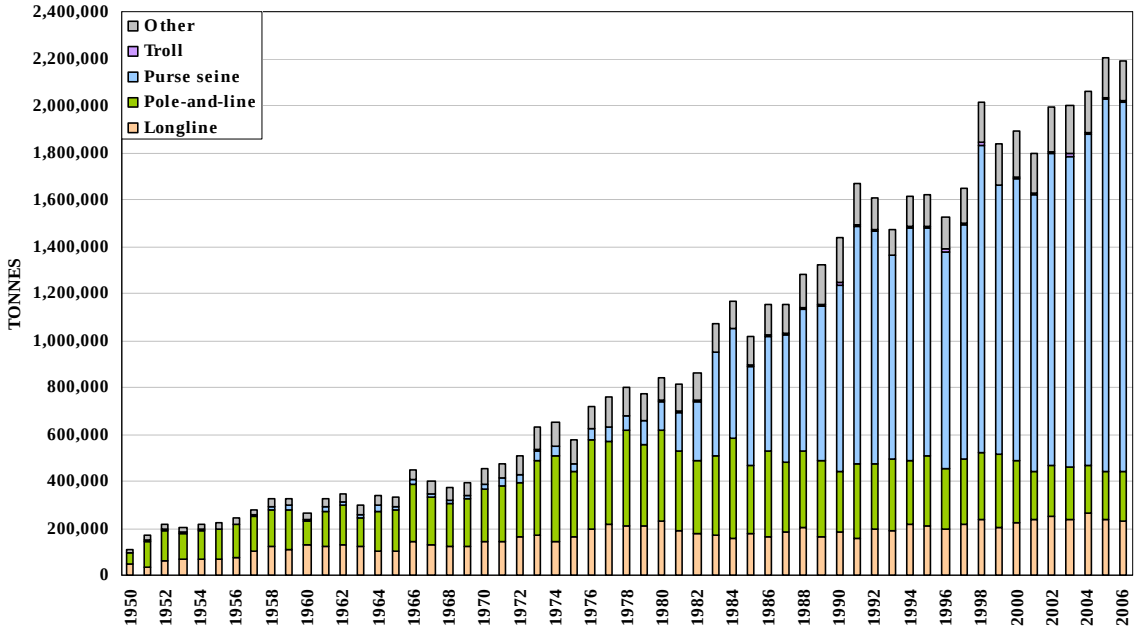


Figure 3. Catches of tuna in the WCPFC Statistical Area, by gear type

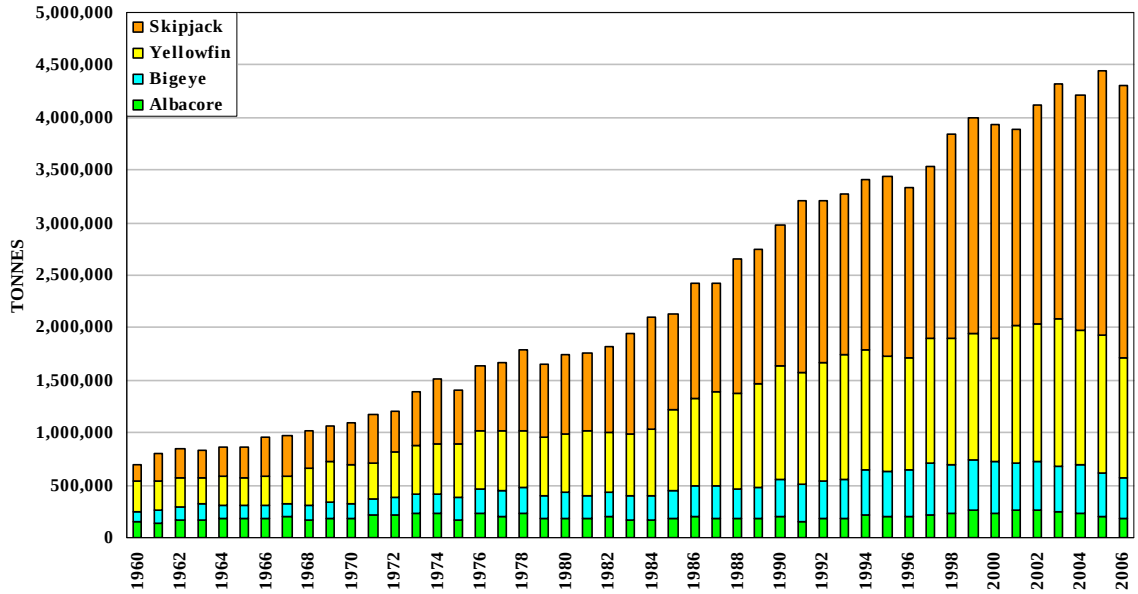


Figure 4. Global catches of tuna, by species

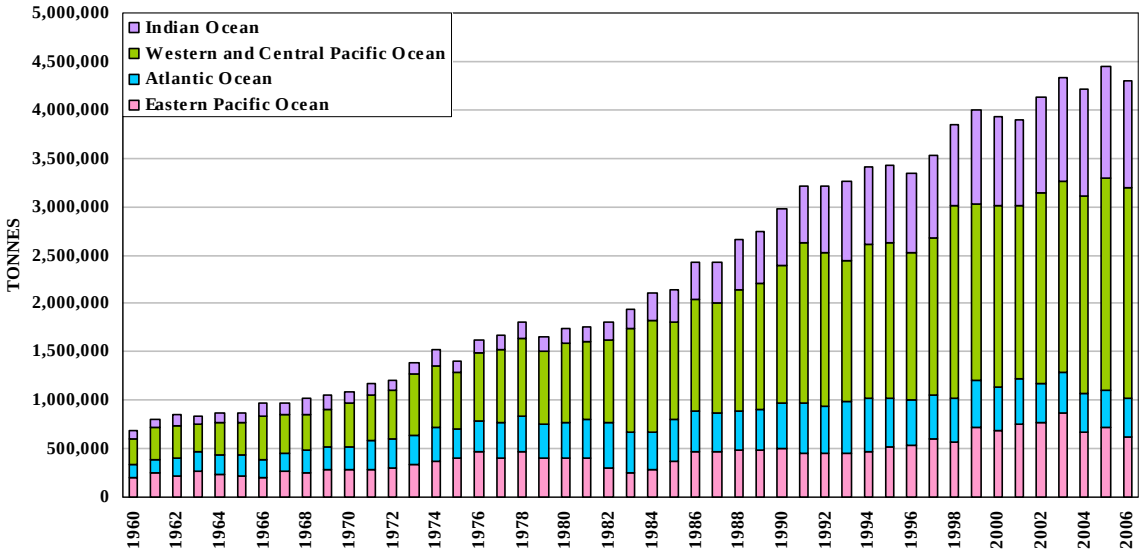


Figure 5. Global catches of tuna, by ocean area

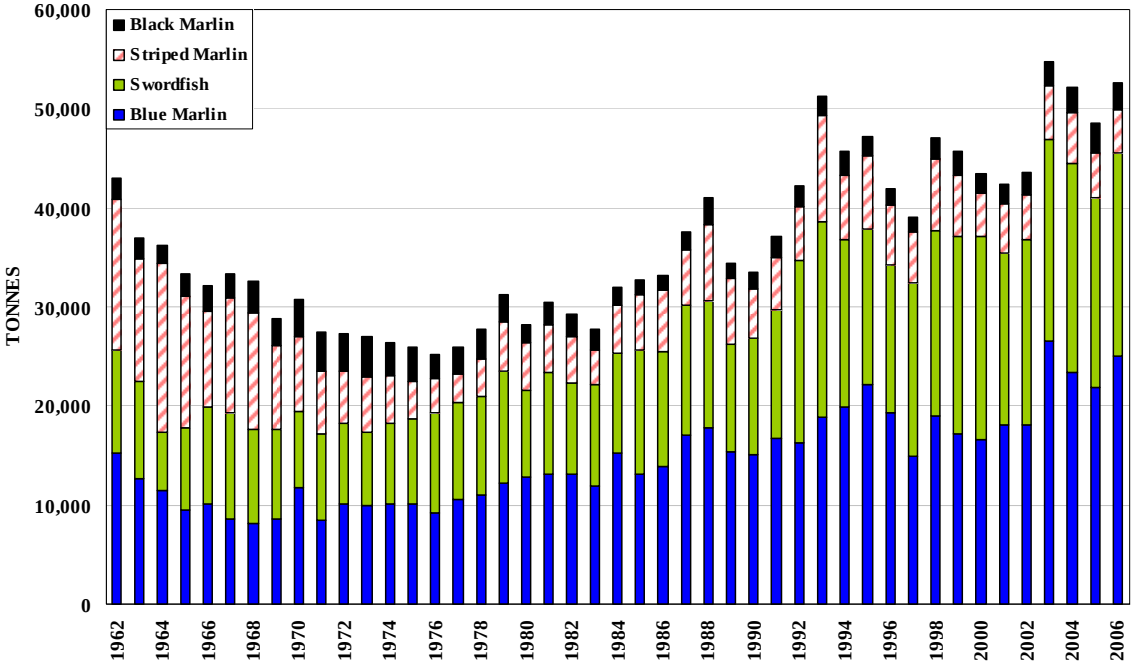
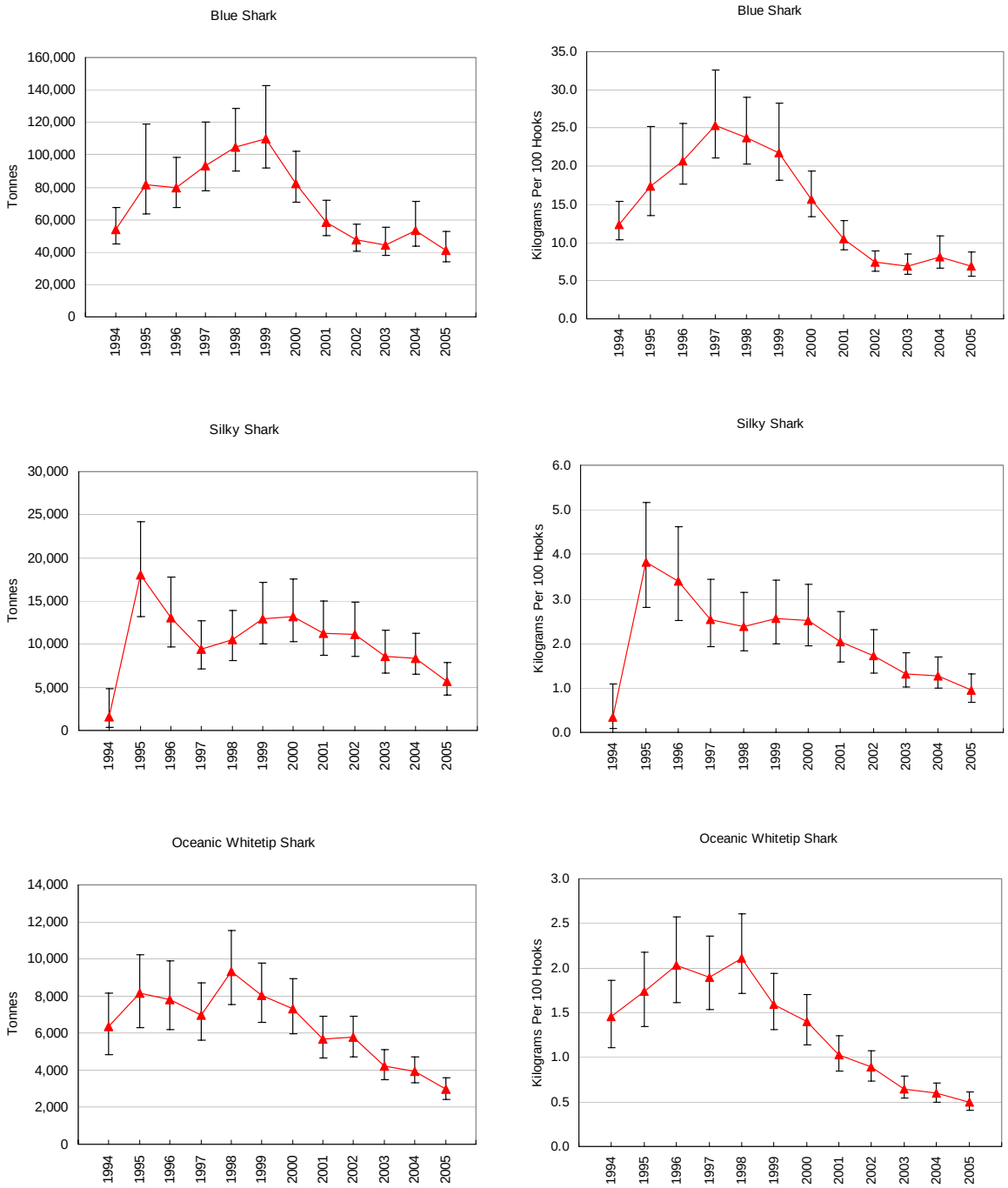


Figure 6. Commercial catches of major billfish species in the WCPFC Statistical Area

Figure 7. Catches and catch rates of non-target species by longliners in the WCPFC Statistical Area (excluding the domestic fleets of Indonesia, the Philippines and Chinese Taipei)



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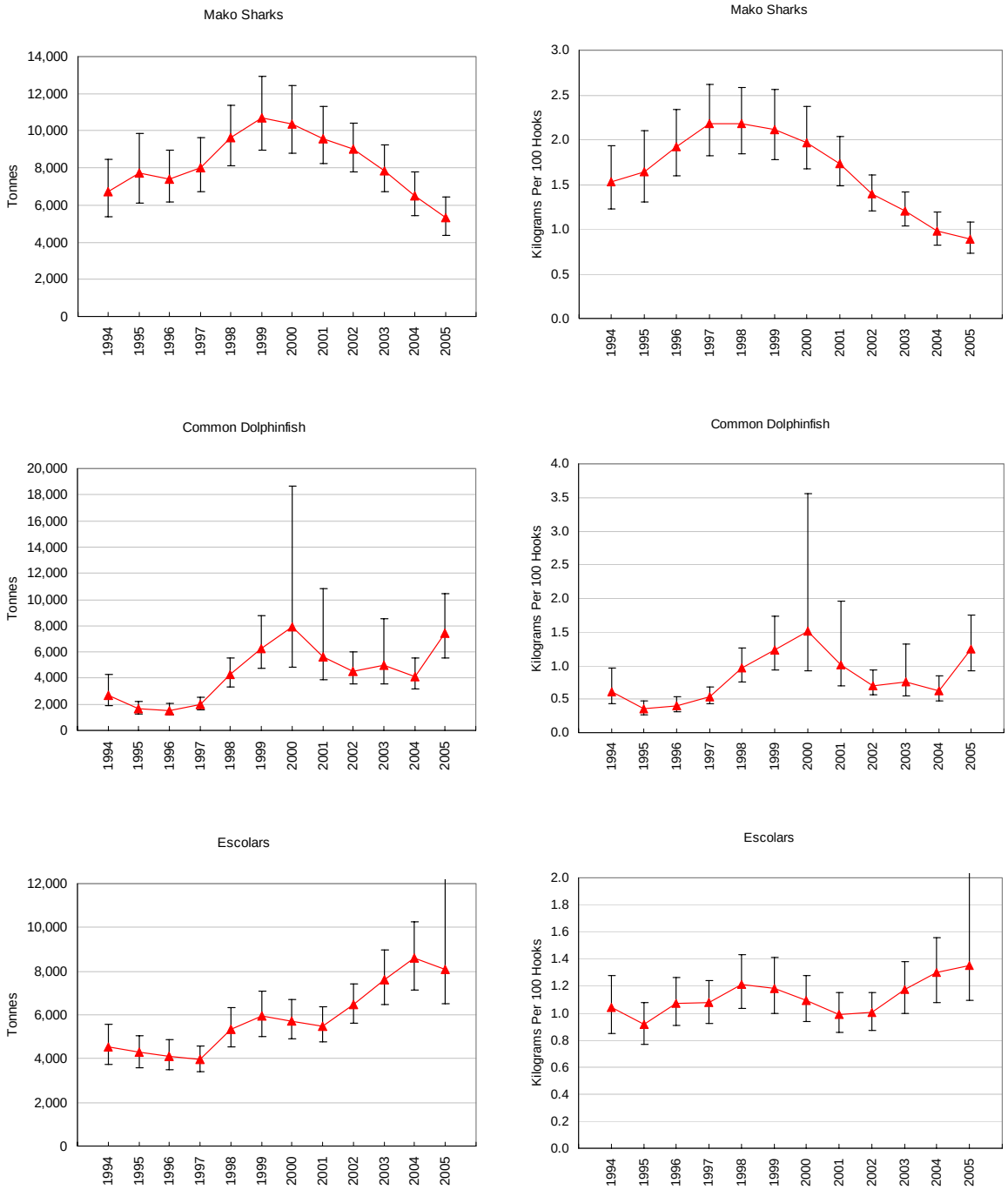

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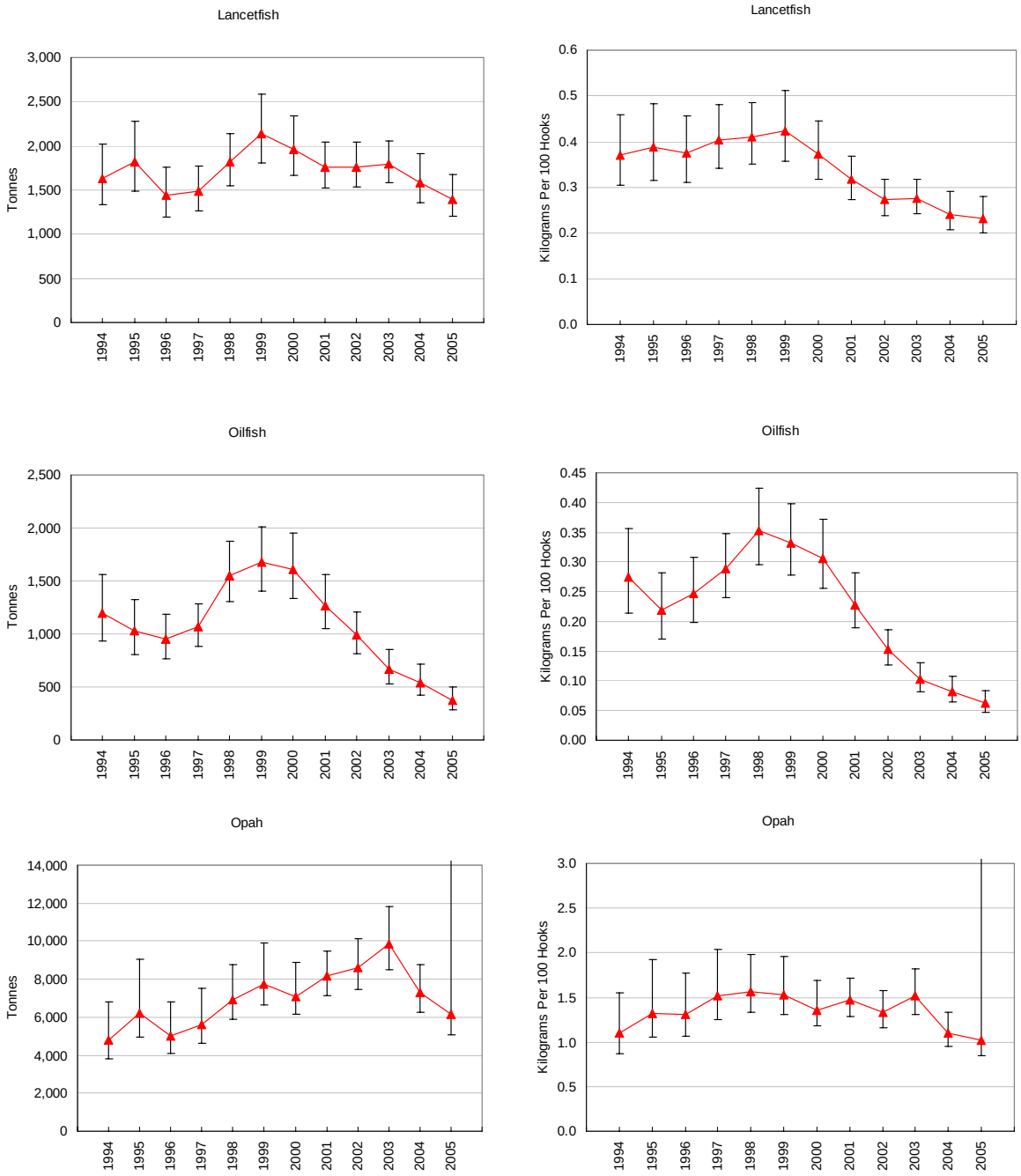

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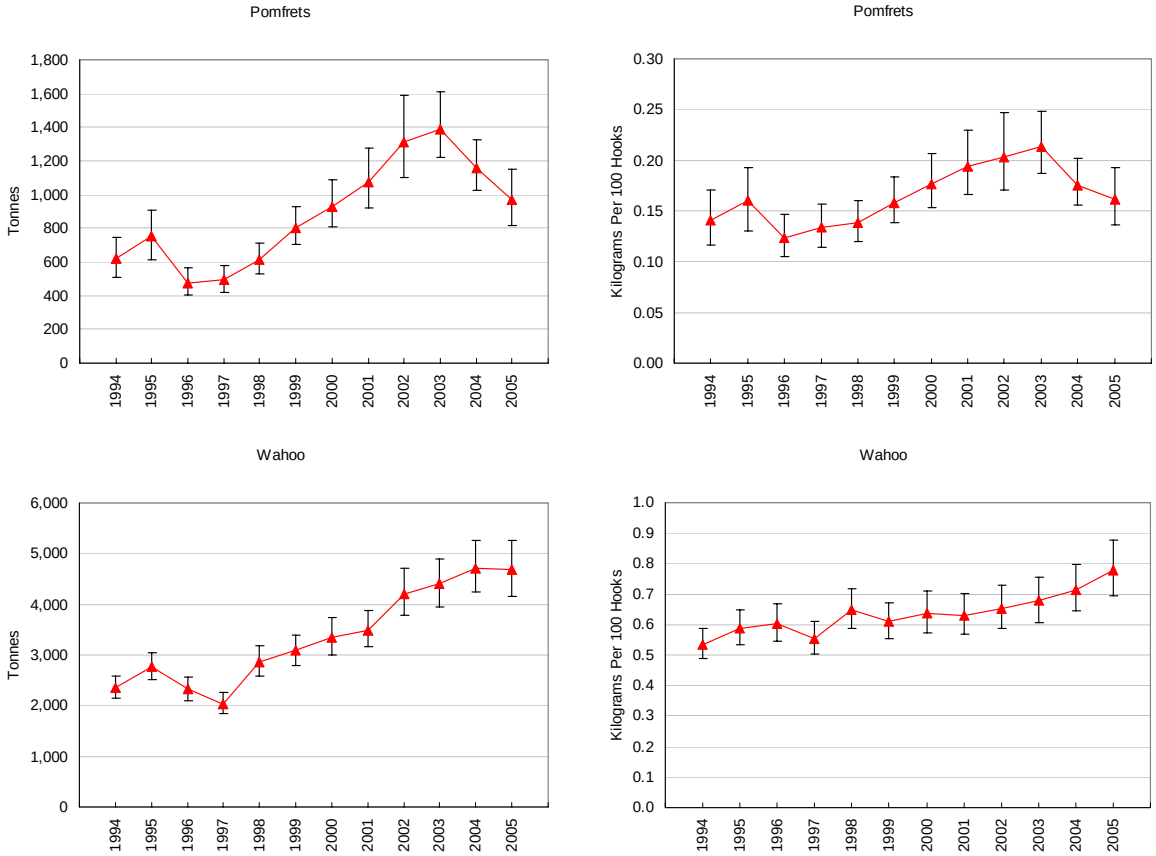
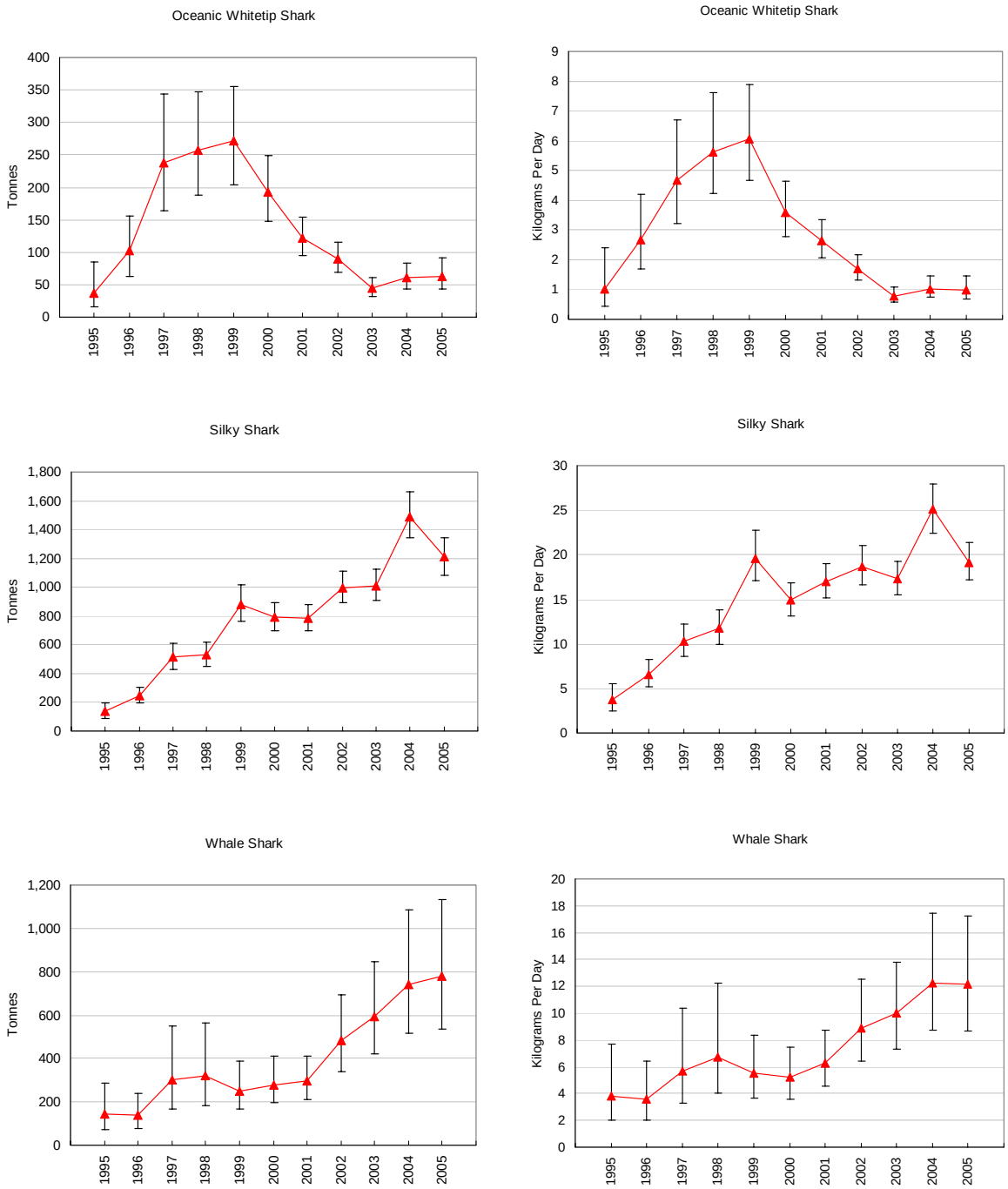


Figure 8. Catches and catch rates of non-target species by purse seiners in the WCPFC Statistical Area (excluding the domestic fleets of Indonesia and the Philippines)



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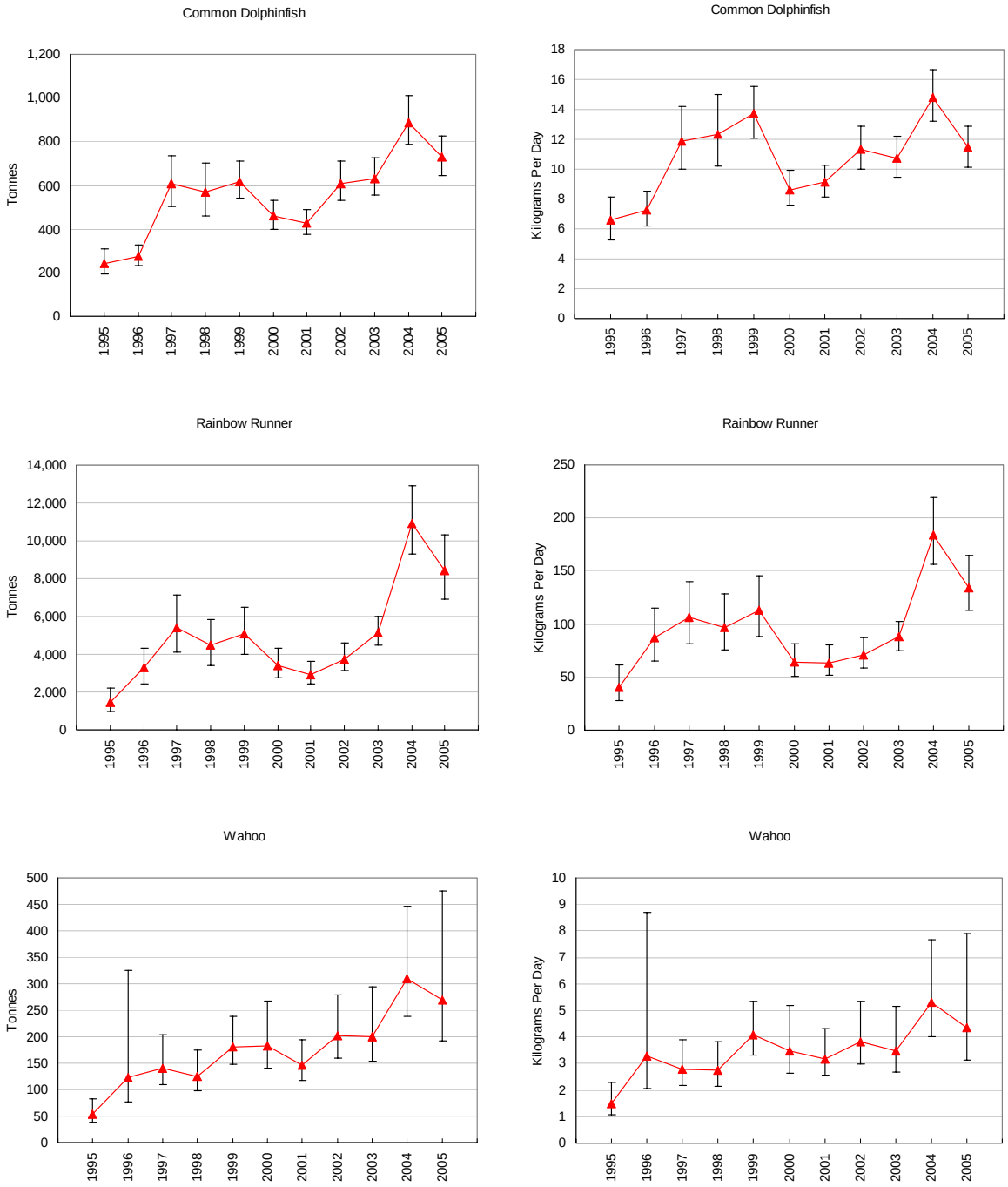

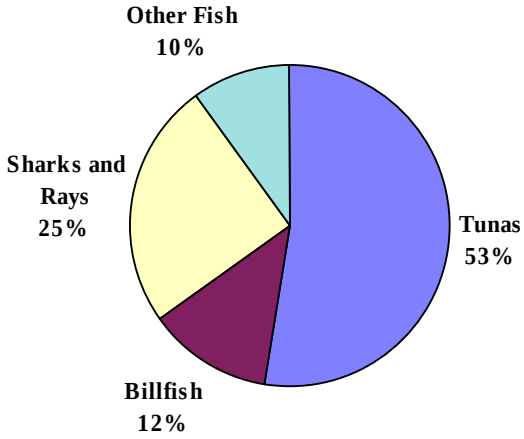

Figure 9. Composition of species groups in the catch by longliners in the WCPFC Statistical Area (excluding the domestic fisheries of Indonesia, the Philippines and Chinese Taipei) during 1995–2005

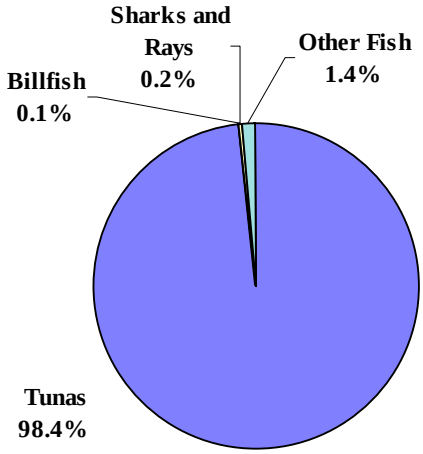

Figure 10. Composition of species groups in the catch by purse seiners in the WCPFC Statistical Area (excluding the domestic fisheries of Indonesia, the Philippines and Chinese Taipei) during 1995–2005

Table 1. Catches of target tunas in the WCPFC Statistical Area, by species. Estimates for 2006 are preliminary.

YEAR	ALBACORE		BIGEYE		SKIPJACK		YELLOWFIN		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	56,619	21	45,025	17	89,938	34	73,667	28	265,249
1961	51,561	16	39,380	12	156,736	49	75,438	23	323,115
1962	46,331	13	36,868	11	181,624	52	83,944	24	348,767
1963	53,235	18	44,346	15	122,703	41	75,756	26	296,040
1964	50,416	15	32,391	10	182,919	54	74,154	22	339,880
1965	70,215	21	31,333	9	155,221	47	73,635	22	330,404
1966	75,003	17	33,187	7	249,514	55	93,099	21	450,803
1967	89,214	22	36,748	9	204,831	51	68,939	17	399,732
1968	63,946	17	30,416	8	194,978	53	81,967	22	371,307
1969	72,065	18	34,381	9	203,341	52	84,810	21	394,597
1970	74,312	16	40,093	9	242,230	53	97,224	21	453,859
1971	101,587	21	43,192	9	228,618	48	102,676	22	476,073
1972	98,022	19	57,164	11	237,818	47	116,148	23	509,152
1973	123,176	20	48,966	8	328,784	52	128,375	20	629,301
1974	111,080	17	52,800	8	356,484	55	131,269	20	651,633
1975	80,420	14	69,088	12	288,788	50	141,185	24	579,481
1976	126,541	18	82,183	11	358,389	50	152,498	21	719,611
1977	86,464	11	82,622	11	405,040	53	183,272	24	757,398
1978	108,092	13	64,956	8	452,387	56	175,847	22	801,282
1979	86,863	11	72,890	9	414,303	54	198,420	26	772,476
1980	91,934	11	70,437	8	459,608	55	215,650	26	837,629
1981	86,914	11	57,605	7	438,261	54	227,478	28	810,258
1982	89,502	10	61,983	7	490,244	57	222,038	26	863,767
1983	64,993	6	63,754	6	683,685	64	259,685	24	1,072,117
1984	75,423	6	70,140	6	762,093	65	259,092	22	1,166,748
1985	78,273	8	74,881	7	603,632	59	261,843	26	1,018,629
1986	70,643	6	72,840	6	755,407	66	253,128	22	1,152,018
1987	67,399	6	87,954	8	687,888	60	306,333	27	1,149,574
1988	77,637	6	86,034	7	849,161	66	267,706	21	1,280,538
1989	91,089	7	87,380	7	823,473	62	317,251	24	1,319,193
1990	86,914	6	100,452	7	890,150	62	357,984	25	1,435,500
1991	62,898	4	85,926	5	1,117,849	67	399,709	24	1,666,382
1992	84,390	5	103,011	6	1,014,574	63	404,316	25	1,606,291
1993	76,335	5	88,103	6	915,950	62	388,963	26	1,469,351
1994	101,196	6	100,054	6	1,015,023	63	398,376	25	1,614,649
1995	94,435	6	91,248	6	1,056,854	65	376,571	23	1,619,108
1996	94,304	6	90,882	6	1,028,404	67	313,987	21	1,527,577
1997	117,207	7	118,733	7	968,852	59	440,506	27	1,645,298
1998	117,368	6	120,827	6	1,304,138	65	468,504	23	2,010,837
1999	135,520	7	122,792	7	1,173,385	64	404,678	22	1,836,375
2000	101,517	5	123,695	7	1,240,149	65	429,468	23	1,894,829
2001	121,177	7	115,604	6	1,138,703	63	423,699	24	1,799,183
2002	141,260	7	129,578	7	1,314,397	66	407,662	20	1,992,897
2003	124,646	6	115,989	6	1,314,546	66	442,339	22	1,997,520
2004	124,785	6	152,362	7	1,402,347	68	378,159	18	2,057,653
2005	98,626	4	140,354	6	1,520,246	69	445,109	20	2,204,335
2006	99,861	5	125,874	6	1,537,524	70	426,726	19	2,189,985

Table 2. Catches of target tunas in the WCPFC Statistical Area, by gear type. Estimates for 2006 are preliminary.

YEAR	LONGLINE		POLE-AND-LINE		PURSE SEINE		TROLL		OTHER		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	129,874	49	98,956	37	5,224	2	0	0	31,195	12	265,249
1961	123,330	38	150,709	47	14,540	4	0	0	34,536	11	323,115
1962	128,804	37	166,141	48	18,875	5	0	0	34,947	10	348,767
1963	122,263	41	125,048	42	11,934	4	0	0	36,795	12	296,040
1964	102,481	30	167,181	49	29,012	9	0	0	41,206	12	339,880
1965	103,955	31	176,112	53	8,621	3	0	0	41,716	13	330,404
1966	145,278	32	241,730	54	16,913	4	0	0	46,882	10	450,803
1967	128,047	32	205,255	51	14,508	4	5	0	51,917	13	399,732
1968	120,136	32	183,954	50	15,143	4	14	0	52,060	14	371,307
1969	122,806	31	204,646	52	9,442	2	0	0	57,703	15	394,597
1970	141,360	31	226,532	50	20,912	5	50	0	65,005	14	453,859
1971	143,625	30	238,062	50	30,501	6	0	0	63,885	13	476,073
1972	161,534	32	231,202	45	34,374	7	268	0	81,774	16	509,152
1973	166,399	26	323,859	51	41,539	7	484	0	97,020	15	629,301
1974	145,192	22	366,285	56	36,786	6	898	0	102,472	16	651,633
1975	164,049	28	275,338	48	35,276	6	646	0	104,172	18	579,481
1976	198,013	28	376,083	52	48,030	7	25	0	97,460	14	719,611
1977	218,413	29	348,508	46	61,504	8	621	0	128,352	17	757,398
1978	212,059	26	405,150	51	59,798	7	1,686	0	122,589	15	801,282
1979	211,221	27	345,548	45	99,351	13	814	0	115,542	15	772,476
1980	227,707	27	392,423	47	120,884	14	1,489	0	95,126	11	837,629
1981	188,516	23	342,392	42	162,423	20	2,118	0	114,809	14	810,258
1982	177,765	21	309,705	36	254,692	29	2,552	0	119,053	14	863,767
1983	170,384	16	337,080	31	443,954	41	949	0	119,750	11	1,072,117
1984	157,072	13	422,837	36	469,308	40	3,124	0	114,407	10	1,166,748
1985	172,886	17	293,838	29	423,770	42	3,468	0	124,667	12	1,018,629
1986	163,964	14	366,813	32	487,831	42	2,284	0	131,126	11	1,152,018
1987	180,581	16	298,117	26	546,171	48	2,350	0	122,355	11	1,149,574
1988	200,281	16	326,101	25	605,637	47	4,671	0	143,848	11	1,280,538
1989	164,878	12	320,381	24	660,841	50	8,687	1	164,406	12	1,319,193
1990	184,185	13	255,857	18	796,906	56	7,220	1	191,332	13	1,435,500
1991	157,518	9	314,439	19	1,013,545	61	8,005	0	172,875	10	1,666,382
1992	193,757	12	283,739	18	988,411	62	6,845	0	133,539	8	1,606,291
1993	188,514	13	308,013	21	864,473	59	4,613	0	103,738	7	1,469,351
1994	213,993	13	275,205	17	990,512	61	7,494	0	127,445	8	1,614,649
1995	209,073	13	298,431	18	967,264	60	10,397	1	133,943	8	1,619,108
1996	198,895	13	254,105	17	925,041	61	11,071	1	138,465	9	1,527,577
1997	217,587	13	276,648	17	994,236	60	8,848	1	147,979	9	1,645,298
1998	236,632	12	287,848	14	1,307,572	65	9,970	0	168,815	8	2,010,837
1999	206,264	11	306,854	17	1,144,753	62	6,417	0	172,087	9	1,836,375
2000	226,128	12	262,171	14	1,198,150	63	9,472	0	198,908	10	1,894,829
2001	235,675	13	207,142	12	1,174,926	65	12,051	1	169,389	9	1,799,183
2002	248,972	12	218,245	11	1,328,325	67	10,693	1	186,662	9	1,992,897
2003	237,376	12	220,379	11	1,327,285	66	11,104	1	201,376	10	1,997,520
2004	261,038	13	206,212	10	1,410,820	69	7,987	0	171,596	8	2,057,653
2005	234,468	11	207,664	9	1,586,064	72	5,964	0	170,175	8	2,204,335
2006	229,323	10	211,829	10	1,573,447	72	4,843	0	170,543	8	2,189,985

Table 3. Catches of target tunas in the WCPFC Statistical Area, by flag. Estimates for 2006 are preliminary.

YEAR	AUSTRALIA	CANADA	CHINA	COOK ISLANDS	FEDERATED STATES OF MICRONESIA	FIJI ISLANDS	FRENCH POLYNESIA	INDONESIA
1960	–	...	–	–	–	–	–	7,415
1961	–	...	–	–	–	–	–	8,054
1962	–	...	–	–	–	–	–	8,749
1963	–	...	–	–	–	–	–	9,505
1964	–	...	–	–	–	–	–	10,327
1965	–	...	–	–	–	–	–	11,223
1966	–	...	–	–	–	–	–	12,198
1967	–	...	–	–	–	–	–	13,260
1968	–	...	–	–	–	–	–	14,417
1969	–	...	–	–	–	–	–	15,677
1970	100	...	–	–	–	–	–	17,600
1971	100	...	–	–	–	–	–	18,100
1972	100	...	–	–	–	–	–	28,600
1973	100	...	–	–	–	–	–	32,500
1974	100	...	–	–	–	12	-	33,779
1975	2,000	...	–	–	–	11	...	34,378
1976	147	...	–	–	–	742	...	33,375
1977	131	...	–	–	–	1,711	...	37,235
1978	375	...	–	–	–	2,524	...	40,024
1979	100	...	–	–	–	3,494	696	50,973
1980	117	...	–	–	–	2,496	936	61,795
1981	357	...	–	–	–	5,836	1,001	68,809
1982	238	...	–	–	–	4,428	1,034	74,056
1983	230	...	–	–	–	3,741	836	84,532
1984	147	...	–	–	–	4,572	1,250	96,662
1985	18	...	–	–	–	3,946	836	101,905
1986	101	...	–	–	–	3,125	961	111,733
1987	1,455	...	–	–	–	3,889	878	124,175
1988	1,752	235	44	–	–	3,891	715	129,922
1989	2,836	235	144	–	–	5,189	856	145,320
1990	6,983	235	453	–	–	3,830	2,109	142,237
1991	9,380	235	1,007	–	11,338	5,298	2,335	168,844
1992	9,524	235	2,715	–	15,472	4,790	2,019	194,659
1993	7,212	235	6,419	–	16,157	4,966	2,387	173,969
1994	5,415	235	12,677	32	21,702	5,937	2,804	196,897
1995	6,288	259	10,586	55	6,490	7,009	3,343	204,837
1996	5,249	1,028	6,026	59	7,819	6,803	3,583	230,449
1997	7,550	1,122	3,664	0	8,777	4,354	4,564	211,816
1998	5,153	882	3,272	22	15,232	4,013	5,710	277,732
1999	7,551	418	7,515	56	11,205	4,075	5,200	296,242
2000	6,997	916	6,244	335	21,688	9,660	6,833	298,256
2001	5,279	591	9,947	206	17,647	11,309	7,736	264,852
2002	5,232	413	15,336	970	21,708	11,551	7,347	268,123
2003	5,809	440	42,207	2,502	30,829	10,854	6,291	251,591
2004	4,200	182	40,165	2,703	27,684	17,311	5,373	262,678
2005	3,095	84	61,529	3,238	27,786	11,975	5,024	280,422
2006	4,665	135	61,529	3,186	27,786	13,999	5,938	280,422

Table 3 continued

YEAR	JAPAN	KIRIBATI	REPUBLIC OF KOREA	MARSHALL ISLANDS	MEXICO	NAURU	NEW CALEDONIA	NEW ZEALAND
1960	231,762	...	744	–	–	–	–	–
1961	287,830	...	385	–	–	–	–	–
1962	310,905	...	708	–	–	–	–	–
1963	255,137	...	1,955	–	–	–	–	–
1964	294,236	...	2,527	–	–	–	–	–
1965	274,324	...	7,078	–	–	–	–	–
1966	378,557	...	13,405	–	–	–	–	–
1967	311,960	...	14,469	–	–	–	–	5
1968	273,336	...	10,794	–	–	–	–	14
1969	292,671	...	17,077	–	–	–	–	...
1970	322,292	...	16,927	–	–	–	–	50
1971	317,227	...	16,541	–	–	–	–	...
1972	330,221	...	17,678	–	–	–	–	268
1973	410,075	...	25,938	–	–	–	–	484
1974	424,932	...	14,105	–	–	–	–	899
1975	353,806	...	29,343	–	–	–	–	647
1976	468,581	...	44,464	–	–	–	–	25
1977	462,611	...	43,722	–	–	–	–	621
1978	510,322	...	33,102	–	–	–	–	1,701
1979	467,290	...	41,915	–	–	–	–	830
1980	519,616	1,812	46,102	–	–	–	–	1,519
1981	459,448	2,376	33,326	–	–	–	229	2,111
1982	501,836	2,269	39,797	–	–	–	868	2,436
1983	553,332	3,406	37,822	–	468	–	461	6,565
1984	639,401	3,843	33,809	–	6,600	–	150	7,005
1985	512,242	2,531	44,868	–	0	–	281	5,713
1986	580,483	3,226	63,760	–	–	–	367	6,793
1987	505,242	2,246	92,018	–	–	–	1,102	5,035
1988	600,366	3,284	114,669	–	–	–	1,092	3,923
1989	525,802	4,094	140,927	–	–	–	871	10,323
1990	476,423	2,407	205,415	–	–	–	1,730	7,120
1991	491,002	2,036	248,802	–	–	–	1,536	7,765
1992	474,596	2,363	213,824	9	–	–	1,092	4,524
1993	515,697	2,104	150,165	137	–	–	1,294	4,415
1994	478,521	3,131	226,531	48	–	–	1,355	8,513
1995	482,592	5,423	206,176	22	–	–	1,274	8,147
1996	419,708	6,645	174,948	...	–	–	1,201	10,194
1997	510,511	7,020	188,667	–	–	–	977	10,451
1998	547,671	9,389	247,929	–	–	–	1,543	15,154
1999	486,101	9,793	173,490	–	–	–	1,616	10,141
2000	493,621	14,723	207,498	7,560	–	9	1,662	18,918
2001	438,726	5,399	216,691	35,774	–	11	1,718	17,533
2002	442,867	9,830	254,593	38,952	–	5	1,926	38,574
2003	466,044	6,895	221,079	37,875	–	20	2,007	30,614
2004	440,415	6,661	212,655	46,676	–	1	2,190	33,886
2005	484,325	9,165	237,353	56,164	–	0	2,114	27,917
2006	460,766	6,723	274,859	41,019	–	0	1,807	21,233

Table 3 continued

YEAR	NIUE	PALAU	PAPUA NEW GUINEA	PHILIPPINES	RUSSIA	SAMOA	SOLOMON ISLANDS	SPAIN
1960	–	–	–	20,585	–	–	–	–
1961	–	–	–	21,735	–	–	–	–
1962	–	–	–	22,957	–	–	–	–
1963	–	–	–	24,252	–	–	–	–
1964	–	1,166	–	25,626	–	–	–	–
1965	–	2,670	–	27,084	–	–	–	–
1966	–	2,686	–	28,632	–	–	–	–
1967	–	3,406	–	30,275	–	–	–	–
1968	–	5,056	–	32,021	–	–	–	–
1969	–	4,762	–	33,875	–	–	–	–
1970	–	8,082	2,428	52,000	–	–	–	–
1971	–	2,143	16,974	57,200	–	–	4,711	–
1972	–	1,519	13,130	60,700	–	–	7,905	–
1973	–	2,350	28,216	70,900	–	–	6,624	–
1974	–	6,808	41,630	81,188	–	–	10,332	–
1975	–	6,269	17,369	84,450	–	–	7,094	–
1976	–	5,323	32,921	73,653	–	–	15,763	–
1977	–	4,012	24,115	118,149	–	–	12,202	–
1978	–	9,694	48,859	87,319	–	–	18,353	–
1979	–	5,688	26,857	94,308	–	–	24,289	–
1980	–	6,576	33,994	77,505	–	–	23,241	–
1981	–	9,411	31,412	94,616	–	–	22,832	–
1982	–	4,053	–	104,047	–	–	20,071	–
1983	–	–	–	118,529	–	–	33,432	–
1984	–	–	2,744	105,217	–	–	35,615	–
1985	–	97	9,300	137,308	2,111	–	29,997	–
1986	–	131	–	145,097	4,175	–	42,249	–
1987	–	161	–	141,461	8,995	–	29,437	–
1988	–	157	–	124,786	6,189	–	40,513	–
1989	–	77	–	151,124	4,935	–	34,262	–
1990	–	88	–	204,808	2,126	–	26,612	–
1991	–	–	–	224,530	3,715	–	46,888	–
1992	–	213	–	167,045	2,126	–	30,558	–
1993	–	206	8	135,882	8,714	300	28,006	–
1994	–	184	1,381	167,399	6,722	736	33,925	–
1995	–	100	12,700	198,941	...	2,151	49,665	–
1996	–	100	10,572	205,324	...	2,375	38,697	–
1997	–	107	19,400	212,484	...	5,498	47,442	–
1998	–	100	50,727	239,742	...	5,925	48,378	–
1999	–	100	38,980	230,554	...	5,056	45,662	8,613
2000	–	240	68,818	238,793	...	5,375	12,929	12,896
2001	–	62	92,806	214,295	...	5,503	17,217	2,402
2002	–	4	124,705	236,426	...	4,776	18,707	214
2003	–	20	159,622	297,536	...	2,637	27,424	0
2004	–	35	202,626	306,550	...	1,820	24,138	5,587
2005	103	0	223,160	312,630	...	1,542	20,098	3,453
2006	55	0	211,456	312,630	...	2,505	30,433	791

Table 3 continued

YEAR	CHINESE TAIPEI	TONGA	TUVALU	UNITED STATES OF AMERICA	VANUATU	EASTERN PACIFIC NEI	TOTAL
1960	4,035	–	–	708	–	–	265,249
1961	4,485	–	–	626	–	–	323,115
1962	4,779	–	–	669	–	–	348,767
1963	4,642	–	–	549	–	–	296,040
1964	5,482	–	–	516	–	–	339,880
1965	7,524	–	–	501	–	–	330,404
1966	14,812	–	–	513	–	–	450,803
1967	25,911	–	–	446	–	–	399,732
1968	35,302	–	–	367	–	–	371,307
1969	30,096	–	–	439	–	–	394,597
1970	33,887	–	–	493	–	–	453,859
1971	42,640	–	–	437	–	–	476,073
1972	48,612	–	–	419	–	–	509,152
1973	51,807	–	–	307	–	–	629,301
1974	37,501	–	–	347	–	–	651,633
1975	43,804	–	–	310	–	–	579,481
1976	43,546	–	–	1,071	–	0	719,611
1977	50,858	–	–	1,359	–	672	757,398
1978	46,606	–	–	1,477	–	926	801,282
1979	43,450	–	–	11,852	–	734	772,476
1980	48,323	–	–	13,483	–	114	837,629
1981	37,900	–	–	40,496	–	98	810,258
1982	32,644	205	216	75,494	–	75	863,767
1983	44,458	208	337	181,593	–	2,167	1,072,117
1984	56,407	218	540	162,380	–	10,188	1,166,748
1985	55,987	233	4	110,031	–	1,221	1,018,629
1986	65,658	252	390	123,517	–	0	1,152,018
1987	87,072	299	632	145,072	–	405	1,149,574
1988	125,254	276	1,090	122,380	–	0	1,280,538
1989	143,475	235	149	148,339	–	0	1,319,193
1990	181,341	192	90	171,301	–	0	1,435,500
1991	216,405	197	29	225,040	–	0	1,666,382
1992	271,051	225	8	209,243	–	0	1,606,291
1993	207,231	329	–	203,518	–	0	1,469,351
1994	223,590	411	–	215,683	820	0	1,614,649
1995	228,798	461	–	176,201	6,927	663	1,619,108
1996	226,436	579	–	158,306	9,405	2,071	1,527,577
1997	217,026	663	–	154,213	26,164	2,828	1,645,298
1998	306,849	833	–	184,352	37,393	2,836	2,010,837
1999	252,529	1,084	–	191,813	46,162	2,419	1,836,375
2000	280,692	1,161	–	135,448	37,545	6,012	1,894,829
2001	285,928	1,733	–	132,810	11,917	1,091	1,799,183
2002	318,806	1,672	–	139,518	28,032	2,610	1,992,897
2003	257,683	971	–	103,185	28,442	4,943	1,997,520
2004	262,567	388	–	80,234	65,054	5,874	2,057,653
2005	245,233	629	–	97,879	85,051	4,366	2,204,335
2006	255,874	759	–	79,374	87,675	4,366	2,189,985

Table 4. Catches of albacore in the Pacific Ocean. Symbols: '–' = no effort, hence no catch; '0' = effort, but no catch. Estimates for 2006 are preliminary.

YEAR	SOUTH PACIFIC OCEAN					NORTH PACIFIC OCEAN					TOTAL
	LONGLINE	POLE-AND-LINE	TROLL	OTHER	SUBTOTAL	LONGLINE	POLE-AND-LINE	TROLL	OTHER	SUBTOTAL	
1960	22,248	45	–	–	22,293	17,373	25,156	20,105	769	63,403	85,696
1961	23,742	0	–	–	23,742	17,442	21,476	12,059	1,631	52,608	76,350
1962	35,219	0	–	–	35,219	15,771	9,814	19,753	1,926	47,264	82,483
1963	31,095	16	–	–	31,111	13,471	28,852	25,145	1,438	68,906	100,017
1964	22,824	0	–	–	22,824	15,488	27,269	18,391	1,142	62,290	85,114
1965	25,455	0	–	–	25,455	13,965	41,908	16,557	852	73,282	98,737
1966	38,661	0	–	–	38,661	25,329	24,430	15,377	1,174	66,310	104,971
1967	43,952	0	5	–	43,957	29,516	34,594	17,975	1,227	83,312	127,269
1968	32,368	0	14	–	32,382	24,670	21,503	21,462	2,060	69,695	102,077
1969	24,805	0	0	–	24,805	18,654	34,908	20,192	1,838	75,592	100,397
1970	34,775	100	50	–	34,925	17,747	28,679	21,422	1,656	69,504	104,429
1971	38,530	100	0	–	38,630	13,123	55,028	22,272	3,286	93,709	132,339
1972	39,131	122	268	–	39,521	16,095	52,876	27,521	1,468	97,960	137,481
1973	46,705	141	484	–	47,330	16,843	64,124	17,053	915	98,935	146,265
1974	33,039	812	898	–	34,749	13,862	73,527	21,509	1,416	110,314	145,063
1975	22,849	105	646	–	23,600	14,164	51,170	19,043	1,213	85,590	109,190
1976	28,957	100	25	–	29,082	17,787	81,592	16,183	3,255	118,817	147,899
1977	38,019	100	621	–	38,740	17,158	36,782	10,022	2,206	66,168	104,908
1978	32,890	100	1,686	–	34,676	13,400	58,595	16,636	7,227	95,858	130,534
1979	26,162	100	814	–	27,076	14,557	45,814	7,302	4,218	71,891	98,967
1980	30,972	101	1,468	–	32,541	15,513	43,902	7,768	4,702	71,885	104,427
1981	32,694	0	2,085	5	34,784	18,557	26,983	12,837	11,520	69,897	104,681
1982	28,347	1	2,434	6	30,788	17,664	29,942	6,713	13,953	68,272	99,060
1983	24,309	0	744	39	25,092	15,988	20,604	9,584	7,550	53,726	78,818
1984	20,340	2	2,773	1,589	24,704	15,564	27,369	9,354	18,712	70,999	95,703
1985	27,138	0	3,253	1,937	32,328	14,564	22,844	6,471	14,952	58,831	91,159
1986	32,641	0	2,003	1,946	36,590	13,047	14,611	4,738	11,015	43,411	80,001
1987	21,970	9	2,134	930	25,043	15,285	19,423	2,870	11,749	49,327	74,370
1988	28,284	0	4,296	5,283	37,863	15,316	8,110	4,367	18,956	46,749	84,612
1989	18,224	0	8,370	21,968	48,562	13,878	11,262	2,000	19,585	46,725	95,287
1990	19,368	245	6,975	7,538	34,126	16,173	14,114	2,905	26,117	59,309	93,435
1991	23,385	14	7,805	1,489	32,693	17,499	6,563	1,984	11,664	37,710	70,403
1992	30,592	11	6,578	65	37,246	19,423	15,029	4,934	17,240	56,626	93,872
1993	30,230	74	4,296	70	34,670	30,549	12,845	6,748	2,903	53,045	87,715
1994	34,119	67	7,164	89	41,439	30,371	30,524	13,134	3,682	77,711	119,150
1995	29,341	139	7,716	104	37,300	32,292	23,084	10,758	1,827	67,961	105,261
1996	23,817	57	7,379	156	31,409	38,961	22,620	21,849	745	84,175	115,584
1997	27,104	21	4,679	133	31,937	47,365	35,115	18,674	2,767	103,921	135,858
1998	37,797	47	6,280	85	44,209	47,598	27,878	20,074	2,723	98,273	142,482
1999	31,910	138	3,419	74	35,541	45,759	55,044	13,853	10,833	125,489	161,031
2000	33,968	102	6,269	139	40,478	40,720	21,853	15,245	4,738	82,556	123,034
2001	48,638	37	5,142	199	54,016	36,072	29,411	16,738	3,007	85,228	139,244
2002	60,793	18	4,574	152	65,537	23,008	49,956	16,323	5,988	95,275	160,812
2003	55,632	12	5,612	138	61,394	30,101	34,707	21,886	3,409	90,103	151,497
2004	60,131	110	4,531	124	64,896	22,230	35,076	22,173	8,802	88,281	153,177
2005	57,316	22	3,664	137	61,139	24,958	16,274	14,724	3,244	59,200	120,339
2006	64,410	37	2,886	197	67,530	22,010	16,219	19,341	1,181	58,751	126,281

Table 5. Catches of bigeye in the Pacific Ocean. Symbols: '…' = missing data; '–' = no effort, hence no catch; '0' = effort, but no catch. Estimates for 2006 are preliminary.

YEAR	WESTERN AND CENTRAL PACIFIC OCEAN					EASTERN PACIFIC OCEAN					TOTAL
	LONGLINE	POLE-AND-LINE	PURSE SEINE	OTHER	SUBTOTAL	LONGLINE	POLE-AND-LINE	PURSE SEINE	OTHER	SUBTOTAL	
1960	43,467	1,500	58	...	45,025	17,722	0	24	...	17,746	62,771
1961	37,517	1,800	63	...	39,380	52,431	106	105	–	52,642	92,022
1962	35,895	800	173	...	36,868	45,050	318	302	–	45,670	82,538
1963	42,540	1,800	6	...	44,346	66,617	140	...	–	66,757	111,103
1964	30,978	1,143	231	28	32,380	46,279	127	...	–	46,406	78,786
1965	29,844	1,254	201	30	31,329	29,164	231	...	–	29,395	60,724
1966	31,949	1,108	9	86	33,152	34,800	292	210	–	35,302	68,454
1967	32,791	2,803	60	253	35,907	35,878	1,305	1,697	–	38,880	74,787
1968	27,199	2,272	183	204	29,858	35,233	116	4,618	–	39,967	69,825
1969	32,371	1,700	48	62	34,181	52,071	0	1,093	–	53,164	87,345
1970	34,348	1,600	726	2,802	39,476	33,341	0	2,410	–	35,751	75,227
1971	36,798	900	876	3,057	41,631	29,804	75	4,359	18	34,256	75,887
1972	49,334	1,762	865	3,497	55,458	36,128	126	3,972	–	40,226	95,684
1973	40,285	1,258	1,078	4,218	46,839	50,777	236	3,342	–	54,355	101,194
1974	41,787	1,039	1,389	4,719	48,934	36,961	0	1,554	–	38,515	87,449
1975	57,623	1,334	1,328	4,938	65,223	41,733	36	6,574	–	48,343	113,566
1976	68,514	3,423	1,312	4,123	77,372	54,290	75	17,214	7	71,586	148,958
1977	66,249	3,325	1,587	5,627	76,788	74,086	2	11,162	–	85,250	162,038
1978	50,375	3,337	1,151	4,231	59,094	70,659	0	18,539	–	89,198	148,292
1979	57,186	2,540	2,031	4,615	66,372	55,435	0	12,097	1	67,533	133,905
1980	56,553	2,278	2,160	4,142	65,133	64,335	0	21,939	130	86,404	151,537
1981	41,564	2,596	4,268	4,918	53,346	53,416	0	14,922	2	68,340	121,686
1982	45,204	4,108	5,251	4,738	59,301	53,365	42	6,939	0	60,346	119,647
1983	41,412	4,055	9,442	4,987	59,896	60,043	39	4,575	97	64,754	124,650
1984	46,429	3,465	9,615	5,171	64,680	46,394	2	8,860	17	55,273	119,953
1985	51,326	4,326	6,944	6,110	68,706	66,325	2	6,056	21	72,404	141,110
1986	46,741	2,865	7,712	6,459	63,777	102,425	0	2,685	9	105,119	168,896
1987	59,357	3,134	11,215	5,563	79,269	100,121	0	1,177	16	101,314	180,583
1988	49,663	4,125	8,220	6,439	68,447	72,758	5	1,535	6	74,304	142,751
1989	53,173	4,298	12,629	7,137	77,237	70,963	0	2,031	0	72,994	150,231
1990	65,239	3,918	12,411	8,850	90,418	98,871	0	5,920	15	104,806	195,224
1991	47,244	1,991	13,750	10,782	73,767	104,194	31	4,870	21	109,116	182,883
1992	61,971	1,757	19,151	8,183	91,062	84,800	0	7,179	21	92,000	183,062
1993	56,366	2,330	14,146	7,042	79,884	72,473	0	10,302	59	82,834	162,718
1994	66,063	2,951	10,904	9,286	89,204	71,359	0	37,161	808	109,328	198,532
1995	56,365	3,776	12,517	9,285	81,943	58,256	0	48,570	1,381	108,207	190,150
1996	45,916	3,864	22,365	10,432	82,577	46,957	0	67,001	746	114,704	197,281
1997	58,440	3,611	39,680	9,551	111,282	52,571	0	69,752	23	122,346	233,628
1998	72,648	2,446	25,766	11,099	111,959	46,347	0	46,981	617	93,945	205,904
1999	65,040	2,176	37,720	11,427	116,363	36,425	0	56,334	541	93,300	209,663
2000	60,593	2,988	37,040	12,677	113,298	47,579	0	99,402	269	147,250	260,548
2001	62,905	2,349	28,997	11,493	105,744	68,726	0	62,702	47	131,475	237,219
2002	78,359	2,805	25,701	12,633	119,498	74,405	0	58,374	31	132,810	252,308
2003	68,826	1,778	24,610	13,035	108,249	59,666	0	56,769	39	116,474	224,723
2004	86,676	8,743	28,021	18,517	141,957	43,354	0	68,925	210	112,489	254,446
2005	71,972	6,754	34,533	19,217	132,476	43,433	0	70,671	47	114,151	246,627
2006	72,822	6,754	24,180	19,222	122,978	30,271	0	73,043	8	103,322	226,300

Table 6. Catches of skipjack in the Pacific Ocean. Estimates for 2006 are preliminary.

YEAR	WESTERN AND CENTRAL PACIFIC OCEAN					EASTERN PACIFIC OCEAN				TOTAL
	LONGLINE	POLE-AND-LINE	PURSE SEINE	OTHER	SUBTOTAL	POLE-AND-LINE	PURSE SEINE	OTHER	SUBTOTAL	
1960	0	70,428	3,728	15,782	89,938	28,929	16,649	481	46,059	135,997
1961	0	127,011	11,693	18,032	156,736	28,995	45,706	428	75,129	231,865
1962	4	152,387	11,674	17,559	181,624	17,660	58,939	503	77,102	258,726
1963	0	94,757	9,592	18,354	122,703	17,138	82,404	2,389	101,931	224,634
1964	5	137,106	25,006	20,802	182,919	10,306	51,759	3,609	65,674	248,593
1965	11	129,933	4,657	20,620	155,221	19,867	64,056	1,046	84,969	240,190
1966	52	215,600	10,949	22,913	249,514	14,083	50,264	1,960	66,307	315,821
1967	101	168,846	10,931	24,930	204,808	18,016	104,928	5,041	127,985	332,793
1968	60	162,379	7,587	24,929	194,955	7,339	59,642	10,130	77,111	272,066
1969	124	168,084	5,057	30,070	203,335	6,970	46,019	11,917	64,906	268,241
1970	1,595	197,873	10,585	32,164	242,217	7,470	47,467	7,257	62,194	304,411
1971	1,440	180,945	17,034	29,164	228,583	11,680	94,502	6,703	112,885	341,468
1972	1,524	172,827	21,664	41,783	237,798	6,555	29,804	1,144	37,503	275,301
1973	1,838	253,217	23,299	50,407	328,761	9,135	39,248	638	49,021	377,782
1974	2,088	289,202	15,630	49,528	356,448	7,629	79,416	510	87,555	444,003
1975	1,893	218,271	18,409	50,189	288,762	13,848	120,358	527	134,733	423,495
1976	2,056	276,582	28,495	51,216	358,349	11,256	124,958	713	136,927	495,276
1977	3,107	294,641	40,797	66,475	405,020	7,521	84,606	1,984	94,111	499,131
1978	3,219	331,401	44,109	73,644	452,373	6,048	172,293	1,334	179,675	632,048
1979	2,175	285,859	65,825	60,440	414,299	6,345	133,695	1,463	141,503	555,802
1980	630	333,457	82,700	42,807	459,594	5,226	130,912	1,971	138,109	597,703
1981	754	294,292	94,987	48,209	438,242	5,906	119,165	931	126,002	564,244
1982	1,013	262,244	173,901	53,020	490,178	3,760	100,498	411	104,669	594,847
1983	2,143	299,762	324,900	56,725	683,530	4,387	56,851	911	62,149	745,679
1984	867	379,474	337,471	43,994	761,806	2,884	59,859	870	63,613	825,419
1985	1,100	250,010	308,957	43,411	603,478	946	50,829	226	52,001	655,479
1986	1,434	336,695	368,138	48,916	755,183	1,921	65,635	192	67,748	822,931
1987	2,320	262,466	375,265	47,660	687,711	2,233	64,019	214	66,466	754,177
1988	1,930	301,031	497,052	48,842	848,855	4,325	87,113	689	92,127	940,982
1989	2,502	289,706	482,785	48,231	823,224	2,941	94,935	1,055	98,931	922,155
1990	1,290	224,592	603,347	60,740	889,969	823	74,370	1,925	77,118	967,087
1991	1,539	292,950	777,350	45,859	1,117,698	1,717	62,229	1,950	65,896	1,183,594
1992	1,148	251,717	725,134	36,406	1,014,405	1,957	84,283	1,114	87,354	1,101,759
1993	1,032	280,066	608,779	25,894	915,771	3,772	94,418	2,331	100,521	1,016,292
1994	1,455	227,921	760,145	25,248	1,014,769	3,240	80,598	803	84,641	1,099,410
1995	1,328	256,462	765,798	32,815	1,056,403	5,253	143,425	1,992	150,670	1,207,073
1996	4,681	212,093	784,699	26,414	1,027,887	2,555	128,810	1,564	132,929	1,160,816
1997	6,046	225,612	695,165	41,520	968,343	3,260	185,044	256	188,560	1,156,903
1998	6,120	244,446	1,010,219	42,829	1,303,614	1,684	163,487	502	165,673	1,469,287
1999	5,288	235,739	891,702	40,176	1,172,905	2,044	288,416	1,610	292,070	1,464,975
2000	6,566	223,552	955,912	53,639	1,239,669	231	231,874	135	232,240	1,471,909
2001	6,579	163,328	929,448	38,750	1,138,105	448	157,017	1,694	159,159	1,297,264
2002	5,189	152,487	1,116,055	40,207	1,313,938	616	166,023	649	167,288	1,481,226
2003	5,843	171,997	1,087,374	48,880	1,314,094	638	297,792	3,452	301,882	1,615,976
2004	6,172	146,990	1,192,844	55,238	1,401,244	528	216,233	1,828	218,589	1,619,833
2005	3,436	169,048	1,292,347	55,057	1,519,888	1,278	281,024	2,027	284,329	1,804,217
2006	3,830	172,187	1,305,405	55,192	1,536,614	429	321,303	273	322,005	1,858,619

Table 7. Catches of yellowfin in the Pacific Ocean. Symbols: '…' = missing data; '–' = no effort, hence no catch; '0' = effort, but no catch. Estimates for 2006 are preliminary.

YEAR	WESTERN AND CENTRAL PACIFIC OCEAN					EASTERN PACIFIC OCEAN					TOTAL
	LONGLINE	POLE-AND-LINE	PURSE SEINE	OTHER	SUBTOTAL	LONGLINE	POLE-AND-LINE	PURSE SEINE	OTHER	SUBTOTAL	
1960	55,020	1,872	1,438	15,337	73,667	5,934	22,151	79,425	458	107,968	181,635
1961	53,166	3,259	2,777	16,236	75,438	12,500	15,220	80,058	949	108,727	184,165
1962	55,547	4,225	6,975	17,197	83,944	10,211	11,052	56,271	706	78,240	162,184
1963	53,185	2,071	2,277	18,223	75,756	18,973	7,041	48,004	688	74,706	150,462
1964	45,241	5,074	3,647	20,186	74,148	16,975	3,989	78,318	738	100,020	174,168
1965	45,487	3,434	3,752	20,956	73,629	15,620	6,983	65,348	312	88,263	161,892
1966	61,623	2,192	5,844	23,409	93,068	9,097	5,302	68,982	507	83,888	176,956
1967	35,720	3,125	3,428	26,303	68,576	9,286	4,511	65,441	1,491	80,729	149,305
1968	45,572	2,706	7,106	26,085	81,469	14,986	4,306	86,541	3,223	109,056	190,525
1969	51,372	2,714	3,857	26,612	84,555	15,329	7,194	113,664	1,869	138,056	222,611
1970	55,481	2,674	9,322	29,422	96,899	12,643	4,260	139,386	4,856	161,145	258,044
1971	56,927	2,866	10,840	31,204	101,837	8,013	5,301	104,863	2,496	120,673	222,510
1972	60,251	7,465	11,759	35,749	115,224	16,859	6,059	164,297	1,060	188,275	303,499
1973	61,818	7,458	16,900	41,726	127,902	11,697	3,933	194,200	659	210,489	338,391
1974	57,490	6,582	19,574	46,997	130,643	7,190	8,188	191,625	1,230	208,233	338,876
1975	68,416	7,801	15,386	48,536	140,139	10,640	5,630	183,029	568	199,867	340,006
1976	76,363	17,186	17,076	40,666	151,291	15,632	3,280	215,106	353	234,371	385,662
1977	92,680	15,257	18,509	55,092	181,538	12,355	1,841	184,922	262	199,380	380,918
1978	108,555	12,767	14,260	38,491	174,073	10,188	3,888	158,801	1,119	173,996	348,069
1979	105,065	11,638	31,364	46,375	194,442	11,473	4,789	170,650	225	187,137	381,579
1980	120,373	13,168	35,701	43,897	213,139	13,477	1,481	143,042	850	158,850	371,989
1981	93,125	19,269	62,922	50,606	225,922	7,999	1,477	168,234	804	178,514	404,436
1982	84,014	13,835	74,989	48,172	221,010	10,961	1,538	114,755	283	127,537	348,547
1983	83,662	13,266	109,388	50,793	257,109	10,895	4,007	83,929	1,182	100,013	357,122
1984	70,258	13,558	118,800	53,631	256,247	10,345	2,991	135,785	357	149,478	405,725
1985	73,966	18,156	106,331	61,022	259,475	13,198	1,070	211,459	309	226,036	485,511
1986	62,614	13,074	110,362	64,611	250,661	22,808	2,537	260,512	292	286,149	536,810
1987	74,092	13,243	158,246	57,984	303,565	18,911	5,107	262,008	333	286,359	589,924
1988	84,802	13,433	99,169	65,628	263,032	14,660	3,723	277,293	959	296,635	559,667
1989	65,523	15,169	163,307	69,794	313,793	17,032	4,145	277,996	566	299,739	613,532
1990	71,024	13,103	179,195	90,170	353,492	34,633	2,676	263,253	1,722	302,284	655,776
1991	56,169	12,921	218,927	106,695	394,712	30,730	2,856	231,257	1,248	266,091	660,803
1992	69,828	15,225	239,362	76,493	400,908	18,527	3,789	228,121	3,277	253,714	654,622
1993	64,031	12,698	239,868	69,545	386,142	23,809	4,951	224,214	3,701	256,675	642,817
1994	70,262	13,742	217,241	91,725	392,970	29,545	3,625	213,099	1,979	248,248	641,218
1995	78,022	15,050	187,670	91,350	372,092	20,054	1,268	220,709	2,570	244,601	616,693
1996	74,705	15,492	117,721	101,177	309,095	16,425	3,762	244,921	1,355	266,463	575,558
1997	69,535	12,362	258,292	96,241	436,430	21,448	4,418	250,394	2,004	278,264	714,694
1998	64,279	13,110	270,547	114,450	462,386	14,212	5,085	258,677	2,166	280,140	742,526
1999	58,168	13,817	208,781	119,969	400,735	10,651	1,783	288,558	3,947	304,939	705,674
2000	74,472	13,745	203,037	132,164	423,418	22,772	2,431	261,821	2,034	289,058	712,476
2001	72,355	12,163	215,502	118,710	418,730	28,475	3,916	390,037	1,339	423,767	842,497
2002	72,685	13,357	183,497	133,146	402,685	24,003	950	416,426	1,799	443,178	845,863
2003	72,547	11,944	214,449	139,051	437,991	23,763	470	386,485	2,894	413,612	851,603
2004	78,599	14,831	182,931	97,363	373,724	16,970	1,884	272,430	3,153	294,437	668,161
2005	71,619	15,630	258,273	95,283	440,805	10,442	1,844	271,765	3,968	288,019	728,824
2006	69,684	16,021	243,620	95,456	424,781	(10,442)	693	168,233	1,878	181,246	606,027

Table 8. Catches of albacore, bigeye, skipjack and yellowfin in the WCPO.
Estimates for 2006 are preliminary.

YEAR	ALBACORE		BIGEYE		SKIPJACK		YELLOWFIN		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	56,619	21	45,025	17	89,938	34	73,667	28	265,249
1961	51,561	16	39,380	12	156,736	49	75,438	23	323,115
1962	46,331	13	36,868	11	181,624	52	83,944	24	348,767
1963	53,235	18	44,346	15	122,703	41	75,756	26	296,040
1964	50,381	15	32,380	10	182,919	54	74,148	22	339,828
1965	70,204	21	31,329	9	155,221	47	73,629	22	330,383
1966	74,899	17	33,152	7	249,514	55	93,068	21	450,633
1967	85,795	22	35,907	9	204,808	52	68,576	17	395,086
1968	61,112	17	29,858	8	194,955	53	81,469	22	367,394
1969	71,096	18	34,181	9	203,335	52	84,555	22	393,167
1970	71,458	16	39,476	9	242,217	54	96,899	22	450,050
1971	96,975	21	41,631	9	228,583	49	101,837	22	469,026
1972	95,063	19	55,458	11	237,798	47	115,224	23	503,543
1973	121,565	19	46,839	7	328,761	53	127,902	20	625,067
1974	108,745	17	48,934	8	356,448	55	130,643	20	644,770
1975	79,633	14	65,223	11	288,762	50	140,139	24	573,757
1976	125,214	18	77,372	11	358,349	50	151,291	21	712,226
1977	82,728	11	76,788	10	405,020	54	181,538	24	746,074
1978	102,702	13	59,094	7	452,373	57	174,073	22	788,242
1979	85,734	11	66,372	9	414,299	54	194,442	26	760,847
1980	90,901	11	65,133	8	459,594	55	213,139	26	828,767
1981	85,204	11	53,346	7	438,242	55	225,922	28	802,714
1982	86,853	10	59,301	7	490,178	57	221,010	26	857,342
1983	63,118	6	59,896	6	683,530	64	257,109	24	1,063,653
1984	74,335	6	64,680	6	761,806	66	256,247	22	1,157,068
1985	77,246	8	68,706	7	603,478	60	259,475	26	1,008,905
1986	69,931	6	63,777	6	755,183	66	250,661	22	1,139,552
1987	64,379	6	79,269	7	687,711	61	303,565	27	1,134,924
1988	71,990	6	68,447	5	848,855	68	263,032	21	1,252,324
1989	87,528	7	77,237	6	823,224	63	313,793	24	1,301,782
1990	84,055	6	90,418	6	889,969	63	353,492	25	1,417,934
1991	61,048	4	73,767	4	1,117,698	68	394,712	24	1,647,225
1992	72,444	5	91,062	6	1,014,405	64	400,908	25	1,578,819
1993	70,585	5	79,884	6	915,771	63	386,142	27	1,452,382
1994	96,050	6	89,204	6	1,014,769	64	392,970	25	1,592,993
1995	92,015	6	81,943	5	1,056,403	66	372,092	23	1,602,453
1996	91,809	6	82,577	5	1,027,887	68	309,095	20	1,511,368
1997	113,622	7	111,282	7	968,343	59	436,430	27	1,629,677
1998	112,293	6	111,959	6	1,303,614	65	462,386	23	1,990,252
1999	131,907	7	116,363	6	1,172,905	64	400,735	22	1,821,910
2000	99,261	5	113,298	6	1,239,669	66	423,418	23	1,875,646
2001	117,639	7	105,744	6	1,138,105	64	418,730	24	1,780,218
2002	136,139	7	119,498	6	1,313,938	67	402,685	20	1,972,260
2003	113,339	6	108,249	5	1,314,094	67	437,991	22	1,973,673
2004	117,881	6	141,957	7	1,401,244	69	373,724	18	2,034,806
2005	94,982	4	132,476	6	1,519,888	69	440,805	20	2,188,151
2006	96,893	4	122,978	6	1,536,614	70	424,781	19	2,181,266

Table 9. Catches of albacore, bigeye, skipjack and yellowfin in the EPO. Estimates for 2006 are preliminary.

YEAR	ALBACORE		BIGEYE		SKIPJACK		YELLOWFIN		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	23,292	12	17,746	9	46,059	24	107,968	55	195,065
1961	15,862	6	52,642	21	75,129	30	108,727	43	252,360
1962	22,659	10	45,670	20	77,102	34	78,240	35	223,671
1963	29,799	11	66,757	24	101,931	37	74,706	27	273,193
1964	22,586	10	46,406	20	65,674	28	100,020	43	234,686
1965	17,939	8	29,395	13	84,969	39	88,263	40	220,566
1966	17,938	9	35,302	17	66,307	33	83,888	41	203,435
1967	22,524	8	38,880	14	127,985	47	80,729	30	270,118
1968	26,249	10	39,967	16	77,111	31	109,056	43	252,383
1969	22,646	8	53,164	19	64,906	23	138,056	50	278,772
1970	26,809	9	35,751	13	62,194	22	161,145	56	285,899
1971	24,517	8	34,256	12	112,885	39	120,673	41	292,331
1972	29,548	10	40,226	14	37,503	13	188,275	64	295,552
1973	18,763	6	54,355	16	49,021	15	210,489	63	332,628
1974	25,257	7	38,515	11	87,555	24	208,233	58	359,560
1975	23,051	6	48,343	12	134,733	33	199,867	49	405,994
1976	20,577	4	71,586	15	136,927	30	234,371	51	463,461
1977	24,024	6	85,250	21	94,111	23	199,380	50	402,765
1978	31,108	7	89,198	19	179,675	38	173,996	37	473,977
1979	10,953	3	67,533	17	141,503	35	187,137	46	407,126
1980	11,568	3	86,404	22	138,109	35	158,850	40	394,931
1981	20,283	5	68,340	17	126,002	32	178,514	45	393,139
1982	12,522	4	60,346	20	104,669	34	127,537	42	305,074
1983	15,730	6	64,754	27	62,149	26	100,013	41	242,646
1984	21,857	8	55,273	19	63,613	22	149,478	52	290,221
1985	14,840	4	72,404	20	52,001	14	226,036	62	365,281
1986	11,284	2	105,119	22	67,748	14	286,149	61	470,300
1987	12,977	3	101,314	22	66,466	14	286,359	61	467,116
1988	15,770	3	74,304	16	92,127	19	296,635	62	478,836
1989	9,502	2	72,994	15	98,931	21	299,739	62	481,166
1990	10,851	2	104,806	21	77,118	16	302,284	61	495,059
1991	11,482	3	109,116	24	65,896	15	266,091	59	452,585
1992	23,076	5	92,000	20	87,354	19	253,714	56	456,144
1993	15,606	3	82,834	18	100,521	22	256,675	56	455,636
1994	20,618	4	109,328	24	84,641	18	248,248	54	462,835
1995	14,075	3	108,207	21	150,670	29	244,601	47	517,553
1996	16,112	3	114,704	22	132,929	25	266,463	50	530,208
1997	17,279	3	122,346	20	188,560	31	278,264	46	606,449
1998	25,913	5	93,945	17	165,673	29	280,140	50	565,671
1999	26,464	4	93,300	13	292,070	41	304,939	43	716,773
2000	23,275	3	147,250	21	232,240	34	289,058	42	691,823
2001	33,336	4	131,475	18	159,159	21	423,767	57	747,737
2002	30,155	4	132,810	17	167,288	22	443,178	57	773,431
2003	45,538	5	116,474	13	301,882	34	413,612	47	877,506
2004	40,834	6	112,489	17	218,589	33	294,437	44	666,349
2005	24,809	3	114,151	16	284,329	40	288,019	40	711,308
2006	12,901	2	103,322	17	322,005	52	181,246	29	619,474

Table 10. Catches of albacore, bigeye, skipjack and yellowfin in the Pacific Ocean. Estimates for 2006 are preliminary.

YEAR	ALBACORE		BIGEYE		SKIPJACK		YELLOWFIN		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	79,911	17	62,771	14	135,997	30	181,635	39	460,314
1961	67,423	12	92,022	16	231,865	40	184,165	32	575,475
1962	68,990	12	82,538	14	258,726	45	162,184	28	572,438
1963	83,034	15	111,103	20	224,634	39	150,462	26	569,233
1964	72,967	13	78,786	14	248,593	43	174,168	30	574,514
1965	88,143	16	60,724	11	240,190	44	161,892	29	550,949
1966	92,837	14	68,454	10	315,821	48	176,956	27	654,068
1967	108,319	16	74,787	11	332,793	50	149,305	22	665,204
1968	87,361	14	69,825	11	272,066	44	190,525	31	619,777
1969	93,742	14	87,345	13	268,241	40	222,611	33	671,939
1970	98,267	13	75,227	10	304,411	41	258,044	35	735,949
1971	121,492	16	75,887	10	341,468	45	222,510	29	761,357
1972	124,611	16	95,684	12	275,301	34	303,499	38	799,095
1973	140,328	15	101,194	11	377,782	39	338,391	35	957,695
1974	134,002	13	87,449	9	444,003	44	338,876	34	1,004,330
1975	102,684	10	113,566	12	423,495	43	340,006	35	979,751
1976	145,791	12	148,958	13	495,276	42	385,662	33	1,175,687
1977	106,752	9	162,038	14	499,131	43	380,918	33	1,148,839
1978	133,810	11	148,292	12	632,048	50	348,069	28	1,262,219
1979	96,687	8	133,905	11	555,802	48	381,579	33	1,167,973
1980	102,469	8	151,537	12	597,703	49	371,989	30	1,223,698
1981	105,487	9	121,686	10	564,244	47	404,436	34	1,195,853
1982	99,375	9	119,647	10	594,847	51	348,547	30	1,162,416
1983	78,848	6	124,650	10	745,679	57	357,122	27	1,306,299
1984	96,192	7	119,953	8	825,419	57	405,725	28	1,447,289
1985	92,086	7	141,110	10	655,479	48	485,511	35	1,374,186
1986	81,215	5	168,896	10	822,931	51	536,810	33	1,609,852
1987	77,356	5	180,583	11	754,177	47	589,924	37	1,602,040
1988	87,760	5	142,751	8	940,982	54	559,667	32	1,731,160
1989	97,030	5	150,231	8	922,155	52	613,532	34	1,782,948
1990	94,906	5	195,224	10	967,087	51	655,776	34	1,912,993
1991	72,530	3	182,883	9	1,183,594	56	660,803	31	2,099,810
1992	95,520	5	183,062	9	1,101,759	54	654,622	32	2,034,963
1993	86,191	5	162,718	9	1,016,292	53	642,817	34	1,908,018
1994	116,668	6	198,532	10	1,099,410	53	641,218	31	2,055,828
1995	106,090	5	190,150	9	1,207,073	57	616,693	29	2,120,006
1996	107,921	5	197,281	10	1,160,816	57	575,558	28	2,041,576
1997	130,901	6	233,628	10	1,156,903	52	714,694	32	2,236,126
1998	138,206	5	205,904	8	1,469,287	57	742,526	29	2,555,923
1999	158,371	6	209,663	8	1,464,975	58	705,674	28	2,538,683
2000	122,536	5	260,548	10	1,471,909	57	712,476	28	2,567,469
2001	150,975	6	237,219	9	1,297,264	51	842,497	33	2,527,955
2002	166,294	6	252,308	9	1,481,226	54	845,863	31	2,745,691
2003	158,877	6	224,723	8	1,615,976	57	851,603	30	2,851,179
2004	158,715	6	254,446	9	1,619,833	60	668,161	25	2,701,155
2005	119,791	4	246,627	9	1,804,217	62	728,824	25	2,899,459
2006	109,794	4	226,300	8	1,858,619	66	606,027	22	2,800,740

Table 11. Global catches of albacore, bigeye, skipjack and yellowfin. Estimates for 2006 are preliminary.

YEAR	ALBACORE		BIGEYE		SKIPJACK		YELLOWFIN		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	155,384	22	87,997	13	155,410	22	293,285	42	692,076
1961	137,548	17	124,030	16	253,006	32	284,420	36	799,004
1962	165,739	19	124,149	15	286,249	34	274,151	32	850,288
1963	174,915	21	150,442	18	263,654	31	248,833	30	837,844
1964	182,955	21	120,221	14	287,301	33	277,365	32	867,842
1965	192,155	22	119,185	14	290,432	33	265,384	31	867,156
1966	183,433	19	117,554	12	369,706	38	291,073	30	961,766
1967	205,734	21	124,563	13	390,982	40	254,068	26	975,347
1968	177,090	17	130,812	13	354,008	35	362,186	35	1,024,096
1969	189,936	18	153,234	14	333,717	32	381,449	36	1,058,336
1970	181,695	17	142,982	13	397,559	36	372,877	34	1,095,113
1971	216,131	19	152,571	13	461,552	40	337,686	29	1,167,940
1972	219,299	18	161,236	13	389,044	32	440,136	36	1,209,715
1973	237,496	17	174,058	13	505,524	36	472,675	34	1,389,753
1974	233,290	15	178,148	12	615,368	41	486,651	32	1,513,457
1975	173,635	12	210,951	15	519,000	37	505,943	36	1,409,529
1976	237,889	15	222,019	14	615,422	38	553,880	34	1,629,210
1977	194,697	12	251,351	15	650,890	39	577,387	34	1,674,325
1978	225,178	13	250,249	14	782,307	44	540,034	30	1,797,768
1979	189,099	11	213,250	13	694,087	42	561,051	34	1,657,487
1980	178,034	10	249,487	14	761,211	44	558,128	32	1,746,860
1981	180,007	10	223,795	13	749,929	43	608,866	35	1,762,597
1982	197,388	11	236,009	13	807,375	45	572,611	32	1,813,383
1983	165,878	9	233,360	12	951,512	49	588,936	30	1,939,686
1984	172,972	8	234,233	11	1,065,993	51	627,837	30	2,101,035
1985	178,730	8	271,242	13	915,738	43	767,341	36	2,133,051
1986	202,680	8	291,171	12	1,095,659	45	829,979	34	2,419,489
1987	191,039	8	300,823	12	1,037,832	43	897,243	37	2,426,937
1988	184,332	7	282,096	11	1,282,044	48	910,336	34	2,658,808
1989	181,009	7	297,052	11	1,284,040	47	980,816	36	2,742,917
1990	197,020	7	352,933	12	1,335,788	45	1,090,048	37	2,975,789
1991	157,936	5	355,026	11	1,638,349	51	1,059,812	33	3,211,123
1992	186,972	6	353,041	11	1,539,998	48	1,133,339	35	3,213,350
1993	178,185	5	375,615	11	1,517,400	46	1,195,106	37	3,266,306
1994	212,883	6	439,399	13	1,616,692	47	1,138,566	33	3,407,540
1995	196,665	6	435,497	13	1,701,754	50	1,102,475	32	3,436,391
1996	198,409	6	444,694	13	1,624,950	49	1,070,857	32	3,338,910
1997	217,977	6	486,849	14	1,638,393	46	1,192,734	34	3,535,953
1998	235,069	6	456,780	12	1,956,050	51	1,200,487	31	3,848,386
1999	263,254	7	481,320	12	2,053,891	51	1,203,613	30	4,002,078
2000	231,672	6	491,745	12	2,033,689	52	1,176,914	30	3,934,020
2001	261,743	7	447,819	11	1,872,787	48	1,313,004	34	3,895,353
2002	259,330	6	462,675	11	2,085,384	51	1,316,420	32	4,123,809
2003	245,190	6	431,915	10	2,237,222	52	1,413,604	33	4,327,931
2004	233,986	6	459,229	11	2,235,662	53	1,283,734	30	4,212,611
2005	197,752	4	419,877	9	2,504,159	56	1,318,420	30	4,440,208
2006	187,720	4	390,199	9	2,591,990	60	1,134,028	26	4,303,937

Table 12. Catches of albacore, bigeye, skipjack and yellowfin by ocean area (Western and Central Pacific Ocean, Eastern Pacific Ocean, Atlantic Ocean and Indian Ocean). Estimates for 2006 are preliminary; estimates for the Atlantic Ocean for 2006 have been carried over from 2005.

YEAR	WCPO		EPO		ATLANTIC		INDIAN		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	265,249	38	195,065	28	145,385	21	86,377	12	692,076
1961	323,115	40	252,360	32	135,230	17	88,299	11	799,004
1962	348,767	41	223,671	26	169,697	20	108,153	13	850,288
1963	296,040	35	273,193	33	188,395	22	80,216	10	837,844
1964	339,828	39	234,686	27	201,987	23	91,341	11	867,842
1965	330,383	38	220,566	25	222,199	26	94,008	11	867,156
1966	450,633	47	203,435	21	181,817	19	125,881	13	961,766
1967	395,086	41	270,118	28	184,929	19	125,214	13	975,347
1968	367,394	36	252,383	25	228,017	22	176,302	17	1,024,096
1969	393,167	37	278,772	26	236,694	22	149,703	14	1,058,336
1970	450,050	41	285,899	26	237,191	22	121,973	11	1,095,113
1971	469,026	40	292,331	25	290,958	25	115,625	10	1,167,940
1972	503,543	42	295,552	24	301,937	25	108,683	9	1,209,715
1973	625,067	45	332,628	24	304,880	22	127,178	9	1,389,753
1974	644,770	43	359,560	24	358,304	24	150,823	10	1,513,457
1975	573,757	41	405,994	29	302,119	21	127,659	9	1,409,529
1976	712,226	44	463,461	28	316,778	19	136,745	8	1,629,210
1977	746,074	45	402,765	24	372,569	22	152,917	9	1,674,325
1978	788,242	44	473,977	26	368,658	21	166,891	9	1,797,768
1979	760,847	46	407,126	25	338,014	20	151,500	9	1,657,487
1980	828,767	47	394,931	23	367,603	21	155,559	9	1,746,860
1981	802,714	46	393,139	22	414,704	24	152,040	9	1,762,597
1982	857,342	47	305,074	17	467,020	26	183,947	10	1,813,383
1983	1,063,653	55	242,646	13	427,425	22	205,962	11	1,939,686
1984	1,157,068	55	290,221	14	371,668	18	282,078	13	2,101,035
1985	1,008,905	47	365,281	17	429,527	20	329,338	15	2,133,051
1986	1,139,552	47	470,300	19	422,657	17	386,980	16	2,419,489
1987	1,134,924	47	467,116	19	397,709	16	427,188	18	2,426,937
1988	1,252,324	47	478,836	18	408,206	15	519,442	20	2,658,808
1989	1,301,782	47	481,166	18	418,852	15	541,117	20	2,742,917
1990	1,417,934	48	495,059	17	482,619	16	580,177	19	2,975,789
1991	1,647,225	51	452,585	14	524,778	16	586,535	18	3,211,123
1992	1,578,819	49	456,144	14	487,679	15	690,708	21	3,213,350
1993	1,452,382	44	455,636	14	536,347	16	821,941	25	3,266,306
1994	1,592,993	47	462,835	14	549,697	16	802,015	24	3,407,540
1995	1,602,453	47	517,553	15	507,074	15	809,311	24	3,436,391
1996	1,511,368	45	530,208	16	481,348	14	815,986	24	3,338,910
1997	1,629,677	46	606,449	17	445,566	13	854,261	24	3,535,953
1998	1,990,252	52	565,671	15	462,125	12	830,338	22	3,848,386
1999	1,821,910	46	716,773	18	493,496	12	969,899	24	4,002,078
2000	1,875,646	48	691,823	18	447,602	11	918,949	23	3,934,020
2001	1,780,218	46	747,737	19	475,578	12	891,820	23	3,895,353
2002	1,972,260	48	773,431	19	390,159	9	987,959	24	4,123,809
2003	1,973,673	46	877,506	20	416,981	10	1,059,771	24	4,327,931
2004	2,034,806	48	666,349	16	405,665	10	1,105,791	26	4,212,611
2005	2,188,151	49	711,308	16	400,098	9	1,140,651	26	4,440,208
2006	2,181,266	51	619,474	14	(400,098)	9	1,103,099	26	4,303,937

Table 13. Discards (tonnes) by longliners in the WCPFC Statistical Area

Year	Albacore			Bigeye			Yellowfin			Total		
	Retained + Discarded	Discarded	%	Retained + Discarded	Discarded	%	Retained + Discarded	Discarded	%	Retained + Discarded	Discarded	%
1994	63,623	3,590	6.0%	86,581	9,669	4.6%	78,750	3,183	4.9%	222,119	9,607	5.0%
1995	65,033	4,101	6.7%	76,553	10,884	5.2%	85,226	4,108	5.7%	218,312	10,593	5.8%
1996	65,728	3,895	6.3%	63,453	9,419	4.9%	82,212	3,874	5.4%	203,578	9,373	5.4%
1997	79,270	6,129	8.4%	80,727	14,930	7.1%	77,479	4,948	7.7%	225,670	14,201	7.7%
1998	84,188	4,328	5.4%	90,970	9,698	4.2%	72,078	2,852	4.8%	239,720	9,362	4.7%
1999	72,141	3,311	4.8%	78,661	7,291	3.6%	62,879	2,227	4.2%	208,001	7,149	4.1%
2000	72,201	2,824	4.1%	77,039	6,257	2.9%	81,739	2,340	3.3%	225,965	6,407	3.3%
2001	83,150	3,005	3.8%	79,044	6,506	2.8%	78,894	2,492	3.5%	236,032	6,947	3.3%
2002	80,860	1,957	2.5%	91,580	3,729	1.5%	78,415	1,431	2.1%	248,027	4,289	2.0%
2003	82,323	3,364	4.3%	84,010	7,683	3.3%	78,672	2,553	3.7%	238,849	7,444	3.7%
2004	77,786	1,719	2.3%	99,970	3,412	1.3%	83,300	1,271	1.6%	258,704	4,050	1.7%
2005	79,698	3,519	4.6%	88,174	8,570	3.7%	78,000	2,789	4.1%	240,480	9,486	4.2%
Total	906,002	41,743	4.6%	996,763	98,049	9.8%	937,645	34,069	3.6%	2,765,457	98,908	3.6%

Table 14. Discards (tonnes) by purse seiners in tropical waters of the WCPFC Statistical Area, excluding the domestic fisheries of Indonesia and the Philippines

Year	Skipjack			Yellowfin			Bigeye			Total		
	Retained + Discarded	Discarded	%	Retained + Discarded	Discarded	%	Retained + Discarded	Discarded	%	Retained + Discarded	Discarded	%
1995	616,650	29,510	4.8%	168,137	4,868	2.9%	7,476	358	4.8%	792,263	34,736	4.4%
1996	653,822	32,481	5.0%	93,659	3,319	3.5%	17,764	863	4.9%	765,245	36,663	4.8%
1997	511,808	25,699	5.0%	227,417	7,361	3.2%	53,214	2,393	4.5%	792,440	35,453	4.5%
1998	792,990	38,630	4.9%	239,242	5,983	2.5%	24,577	1,019	4.2%	1,056,809	45,632	4.3%
1999	735,465	38,759	5.3%	182,607	6,399	3.5%	28,343	1,329	4.7%	946,415	46,488	4.9%
2000	784,379	36,934	4.7%	180,727	5,170	2.9%	24,378	1,113	4.6%	989,484	43,217	4.4%
2001	747,349	33,426	4.5%	208,783	5,357	2.6%	22,372	924	4.1%	978,504	39,706	4.1%
2002	953,372	43,732	4.6%	151,834	4,273	2.8%	21,582	847	3.9%	1,126,788	48,852	4.3%
2003	863,139	37,550	4.4%	196,345	5,276	2.7%	18,573	765	4.1%	1,078,058	43,590	4.0%
2004	982,876	48,985	5.0%	149,781	4,692	3.1%	19,289	849	4.4%	1,151,946	54,525	4.7%
2005	1,037,738	45,895	4.4%	243,470	6,674	2.7%	18,488	782	4.2%	1,299,697	53,351	4.1%
Total	8,679,589	411,601	4.7%	2,042,001	59,371	2.9%	256,058	11,243	4.4%	10,977,648	482,214	4.4%

Table 15. Commercial catches of billfish in the WCPFC Statistical Area, by gear type and species

YEAR	LONGLINE					PURSE SEINE			OTHER COMMERCIAL GEARS					TOTAL
	BLUE MARLIN	BLACK MARLIN	STRIPED MARLIN	SWORD-FISH	SUB-TOTAL	BLUE MARLIN	BLACK MARLIN	SUB-TOTAL	BLUE MARLIN	BLACK MARLIN	STRIPED MARLIN	SWORD-FISH	SUB-TOTAL	
1960	…	…	…	…	…	-	-	-	910	58	0	34	1,002	…
1961	…	…	…	…	…	-	-	-	965	61	0	36	1,062	…
1962	14,197	2,091	15,207	10,354	41,849	-	-	-	1,023	65	0	38	1,126	42,975
1963	11,583	2,100	12,384	9,741	35,808	-	-	-	1,084	69	0	41	1,194	37,002
1964	10,240	1,697	17,023	5,942	34,902	-	-	-	1,149	73	0	43	1,265	36,167
1965	8,303	2,260	13,298	8,176	32,036	-	-	-	1,218	77	0	46	1,341	33,377
1966	8,763	2,408	9,648	9,821	30,640	-	-	-	1,291	82	0	49	1,422	32,062
1967	7,287	2,362	11,506	10,643	31,798	0	0	0	1,369	87	0	52	1,508	33,306
1968	6,673	2,951	11,783	9,504	30,911	2	1	3	1,451	92	0	55	1,598	32,512
1969	7,091	2,619	8,500	8,945	27,155	1	1	2	1,538	98	0	58	1,694	28,852
1970	9,977	3,544	7,594	7,578	28,692	11	18	29	1,795	125	0	67	1,987	30,708
1971	6,450	3,776	6,373	8,615	25,215	15	25	40	2,008	140	0	75	2,223	27,477
1972	7,957	3,696	5,194	8,111	24,957	17	27	44	2,087	146	0	78	2,311	27,312
1973	7,483	3,794	5,550	7,304	24,131	26	41	67	2,496	174	0	93	2,763	26,961
1974	7,253	3,115	4,789	7,990	23,146	16	22	38	2,901	201	0	109	3,211	26,396
1975	7,078	3,280	3,764	8,518	22,640	18	22	40	2,961	206	0	111	3,278	25,958
1976	6,709	2,242	3,497	9,955	22,403	21	21	42	2,497	175	0	93	2,765	25,210
1977	7,020	2,426	2,948	9,583	21,976	25	28	52	3,534	243	0	132	3,909	25,937
1978	8,862	2,787	3,744	9,871	25,264	30	26	56	2,141	156	0	80	2,377	27,697
1979	9,415	2,395	5,059	11,178	28,047	39	37	76	2,741	196	0	102	3,039	31,161
1980	10,245	1,553	4,822	8,740	25,361	40	37	77	2,504	177	0	94	2,775	28,213
1981	10,331	2,010	4,773	10,111	27,224	83	79	162	2,763	195	0	103	3,061	30,448
1982	10,400	2,023	4,536	9,215	26,173	114	116	230	2,558	175	0	95	2,828	29,231
1983	9,004	1,740	3,476	10,109	24,329	145	164	308	2,788	194	0	104	3,086	27,723
1984	12,197	1,317	4,837	9,975	28,324	188	203	391	2,884	211	0	106	3,201	31,916
1985	9,667	1,047	5,510	12,416	28,640	166	165	331	3,311	257	0	122	3,690	32,661
1986	10,349	1,120	6,175	11,474	29,118	150	157	307	3,395	268	0	125	3,788	33,213
1987	14,403	1,533	5,559	12,936	34,432	163	177	340	2,541	195	0	94	2,830	37,602
1988	14,553	2,294	7,612	12,809	37,268	153	167	320	3,039	222	0	112	3,373	40,961
1989	11,893	1,208	6,645	10,693	30,439	166	195	361	3,284	241	0	121	3,646	34,447
1990	10,354	1,166	4,900	11,550	27,970	172	211	383	4,598	342	1	168	5,109	33,463
1991	11,032	1,505	5,275	12,809	30,621	203	278	482	5,455	388	1	200	6,044	37,146
1992	13,365	1,669	5,375	18,349	38,758	223	277	500	2,700	218	1	96	3,015	42,274
1993	15,902	1,443	10,609	19,657	47,611	221	279	499	2,767	221	1	99	3,088	51,198
1994	15,690	1,868	6,365	16,884	40,806	207	268	476	3,928	295	1	143	4,367	45,648
1995	18,115	1,355	7,372	15,558	42,400	216	271	487	3,879	324	1	139	4,343	47,231
1996	14,598	967	5,990	14,860	36,416	262	295	556	4,415	333	56	145	4,949	41,921
1997	12,698	1,010	5,106	17,345	36,158	267	285	552	1,998	219	40	53	2,310	39,020
1998	16,634	1,594	7,224	18,636	44,089	255	284	539	2,106	247	27	62	2,442	47,069
1999	14,779	1,975	6,089	19,757	42,601	235	239	474	2,238	252	30	63	2,583	45,658
2000	14,108	1,325	4,457	20,311	40,200	241	256	497	2,301	263	15	68	2,647	43,344
2001	15,686	1,473	4,916	17,301	39,377	234	256	490	2,167	243	45	63	2,518	42,384
2002	15,449	1,712	4,476	18,640	40,278	265	281	546	2,304	269	30	68	2,671	43,495
2003	23,756	1,844	5,381	20,373	51,354	272	283	555	2,460	316	30	73	2,879	54,788
2004	21,293	2,076	5,085	21,053	49,506	310	297	608	1,757	277	30	46	2,110	52,224
2005	19,730	2,454	4,451	19,191	45,825	327	317	644	1,749	283	20	47	2,100	48,569
2006	19,822	2,003	4,364	20,226	46,415	401	388	789	4,867	404	27	165	5,462	52,666

Table 16. Commercial catches of billfish in the WCPFC Statistical Area, by species

YEAR	BLUE MARLIN		BLACK MARLIN		STRIPED MARLIN		SWORDFISH		TOTAL
	TONNES	%	TONNES	%	TONNES	%	TONNES	%	
1960	…	…	…	…	…	…	…	…	…
1961	…	…	…	…	…	…	…	…	…
1962	15,220	35	2,156	5	15,207	35	10,392	24	42,975
1963	12,667	34	2,169	6	12,384	33	9,782	26	37,002
1964	11,389	31	1,770	5	17,023	47	5,985	17	36,167
1965	9,521	29	2,337	7	13,298	40	8,222	25	33,377
1966	10,054	31	2,490	8	9,648	30	9,870	31	32,062
1967	8,656	26	2,449	7	11,506	35	10,695	32	33,306
1968	8,126	25	3,044	9	11,783	36	9,559	29	32,512
1969	8,631	30	2,717	9	8,500	29	9,003	31	28,852
1970	11,783	38	3,687	12	7,594	25	7,645	25	30,708
1971	8,473	31	3,940	14	6,373	23	8,690	32	27,477
1972	10,061	37	3,869	14	5,194	19	8,189	30	27,312
1973	10,005	37	4,009	15	5,550	21	7,397	27	26,961
1974	10,171	39	3,338	13	4,789	18	8,099	31	26,396
1975	10,057	39	3,508	14	3,764	14	8,629	33	25,958
1976	9,227	37	2,438	10	3,497	14	10,048	40	25,210
1977	10,578	41	2,697	10	2,948	11	9,715	37	25,937
1978	11,033	40	2,970	11	3,744	14	9,951	36	27,697
1979	12,195	39	2,627	8	5,059	16	11,280	36	31,161
1980	12,790	45	1,767	6	4,822	17	8,834	31	28,213
1981	13,177	43	2,284	8	4,773	16	10,214	34	30,448
1982	13,071	45	2,314	8	4,536	16	9,310	32	29,231
1983	11,936	43	2,097	8	3,476	13	10,213	37	27,723
1984	15,269	48	1,730	5	4,837	15	10,081	32	31,916
1985	13,143	40	1,469	4	5,510	17	12,538	38	32,661
1986	13,894	42	1,545	5	6,175	19	11,599	35	33,213
1987	17,107	45	1,905	5	5,559	15	13,030	35	37,602
1988	17,745	43	2,683	7	7,612	19	12,921	32	40,961
1989	15,343	45	1,644	5	6,645	19	10,814	31	34,447
1990	15,125	45	1,719	5	4,901	15	11,718	35	33,463
1991	16,690	45	2,171	6	5,276	14	13,009	35	37,146
1992	16,288	39	2,165	5	5,376	13	18,445	44	42,274
1993	18,890	37	1,943	4	10,610	21	19,756	39	51,198
1994	19,825	43	2,431	5	6,366	14	17,027	37	45,648
1995	22,210	47	1,950	4	7,373	16	15,697	33	47,231
1996	19,275	46	1,595	4	6,046	14	15,005	36	41,921
1997	14,963	38	1,514	4	5,146	13	17,398	45	39,020
1998	18,995	40	2,124	5	7,251	15	18,698	40	47,069
1999	17,252	38	2,466	5	6,119	13	19,820	43	45,658
2000	16,650	38	1,844	4	4,472	10	20,379	47	43,344
2001	18,087	43	1,972	5	4,961	12	17,364	41	42,384
2002	18,018	41	2,262	5	4,506	10	18,708	43	43,495
2003	26,488	48	2,443	4	5,412	10	20,446	37	54,788
2004	23,360	45	2,650	5	5,115	10	21,099	40	52,224
2005	21,806	45	3,054	6	4,471	9	19,238	40	48,569
2006	25,090	48	2,794	5	4,391	8	20,391	39	52,666

Table 17. Commercial catches of striped marlin and swordfish in the WCPFC Statistical Area north of the equator

YEAR	STRIPED MARLIN		SWORDFISH		TOTAL
	TONNES	%	TONNES	%	
1960	…	…	…	…	…
1961	…	…	…	…	…
1962	8,573	59	5,995	41	14,568
1963	6,819	56	5,358	44	12,177
1964	9,776	73	3,550	27	13,326
1965	7,994	61	5,007	39	13,001
1966	4,994	49	5,279	51	10,273
1967	7,602	51	7,262	49	14,864
1968	7,525	54	6,352	46	13,877
1969	5,678	48	6,044	52	11,722
1970	4,899	49	5,140	51	10,040
1971	3,755	42	5,258	58	9,013
1972	3,196	38	5,189	62	8,385
1973	3,366	42	4,692	58	8,058
1974	3,049	36	5,425	64	8,475
1975	2,594	30	6,168	70	8,762
1976	1,998	25	6,139	75	8,138
1977	1,760	22	6,090	78	7,850
1978	2,299	26	6,569	74	8,868
1979	3,065	30	7,144	70	10,209
1980	2,602	35	4,777	65	7,379
1981	2,416	32	5,240	68	7,656
1982	2,379	32	5,108	68	7,488
1983	2,125	26	5,978	74	8,103
1984	3,014	33	6,043	67	9,057
1985	3,248	32	7,046	68	10,294
1986	3,466	36	6,210	64	9,676
1987	3,446	32	7,248	68	10,694
1988	4,182	39	6,521	61	10,703
1989	4,092	38	6,629	62	10,722
1990	3,075	30	7,260	70	10,335
1991	3,335	27	9,136	73	12,471
1992	3,407	21	12,553	79	15,961
1993	8,222	37	13,844	63	22,065
1994	3,636	25	11,139	75	14,775
1995	4,861	32	10,446	68	15,307
1996	4,075	31	9,217	69	13,291
1997	3,254	23	10,846	77	14,100
1998	4,272	28	11,119	72	15,390
1999	3,712	23	12,642	77	16,353
2000	2,565	17	12,686	83	15,251
2001	2,975	24	9,539	76	12,514
2002	2,152	19	9,265	81	11,416
2003	2,652	20	10,771	80	13,423
2004	2,751	19	12,047	81	14,798
2005	2,938	19	12,655	81	15,593
2006	3,159	18	14,386	82	17,545

Table 18. Commercial catches of striped marlin and swordfish in the WCPFC Statistical Area south of the equator

YEAR	STRIPED MARLIN		SWORDFISH		TOTAL
	TONNES	%	TONNES	%	
1960	…	…	…	…	…
1961	…	…	…	…	…
1962	6,634	60	4,398	40	11,032
1963	5,565	56	4,423	44	9,989
1964	7,247	75	2,434	25	9,681
1965	5,304	62	3,215	38	8,518
1966	4,654	50	4,591	50	9,245
1967	3,904	53	3,433	47	7,337
1968	4,258	57	3,207	43	7,465
1969	2,822	49	2,959	51	5,782
1970	2,694	52	2,504	48	5,199
1971	2,618	43	3,432	57	6,050
1972	1,997	40	2,999	60	4,997
1973	2,184	45	2,705	55	4,889
1974	1,739	39	2,673	61	4,413
1975	1,169	32	2,461	68	3,631
1976	1,499	28	3,909	72	5,407
1977	1,188	25	3,624	75	4,812
1978	1,444	30	3,382	70	4,827
1979	1,994	33	4,136	67	6,130
1980	2,220	35	4,057	65	6,277
1981	2,357	32	4,973	68	7,330
1982	2,156	34	4,202	66	6,358
1983	1,351	24	4,235	76	5,586
1984	1,823	31	4,038	69	5,861
1985	2,263	29	5,491	71	7,754
1986	2,709	33	5,389	67	8,097
1987	2,112	27	5,783	73	7,895
1988	3,430	35	6,400	65	9,830
1989	2,553	38	4,185	62	6,738
1990	1,826	29	4,458	71	6,284
1991	1,941	33	3,873	67	5,814
1992	1,969	25	5,891	75	7,860
1993	2,388	29	5,912	71	8,300
1994	2,729	32	5,888	68	8,617
1995	2,512	32	5,251	68	7,764
1996	1,972	25	5,789	75	7,760
1997	1,892	22	6,551	78	8,443
1998	2,980	28	7,579	72	10,559
1999	2,408	25	7,179	75	9,586
2000	1,907	20	7,693	80	9,600
2001	1,986	20	7,825	80	9,811
2002	2,355	20	9,444	80	11,798
2003	2,759	22	9,675	78	12,434
2004	2,364	14	14,638	86	17,002
2005	1,858	13	12,076	87	13,934
2006	1,878	14	11,913	86	13,791

Table 19. Coverage (%) of longline effort (hooks) and purse-seine effort (days fished or searched) by observer data held by the SPC Oceanic Fisheries Programme

LONGLINE																	
Sector	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	1992-2006
Australia - Domestic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	1.90	0.40	1.60	0.31
Australia - Japan	9.80	9.80	6.10	4.00	5.80	3.60	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.97
Distant-Water - Albacore	0.00	0.00	0.00	0.00	0.20	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Distant-Water - Yellowfin & Bigeye	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.20	0.00	0.00	0.10	0.00	0.04
Hawaii	0.00	0.00	4.40	4.60	5.40	3.80	4.50	3.40	9.20	15.60	24.50	21.90	16.90	0.00	0.00	8.97
New Zealand - Domestic	0.50	0.00	0.60	2.60	4.80	5.30	3.60	0.50	0.40	3.70	1.50	7.70	0.00	0.00	0.00	2.46
New Zealand - Japan	3.20	16.40	27.80	52.80	0.00	42.90	23.90	43.30	38.40	33.30	100.00	25.20	0.00	0.00	0.00	25.84
Offshore - Albacore	0.10	0.00	0.10	0.70	1.20	0.60	0.80	0.40	0.10	0.10	0.60	0.80	0.90	1.20	1.10	0.77
Offshore - Tropical	0.10	0.30	0.40	0.30	0.30	1.00	0.70	0.50	0.70	0.10	1.40	1.40	1.00	0.70	1.10	0.74
Total	0.49	0.74	0.57	0.51	0.55	0.66	0.55	0.40	0.54	0.59	1.26	1.40	0.92	0.30	0.56	0.71
PURSE SEINE																	
School Association	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	1994-2006
Unassociated Schools	–	–	2.54	4.12	6.49	4.98	5.43	2.33	1.78	4.16	6.18	5.87	9.56	7.02	1.16	4.78
Associated Schools	–	–	0.42	3.05	4.98	4.91	5.80	3.53	5.05	5.64	10.17	10.64	11.53	8.37	2.79	6.36
Total	–	–	1.53	3.63	5.66	4.94	5.62	3.14	3.51	4.83	8.16	8.22	10.93	7.73	2.10	5.64

Table 20. Number of trips by longliners and purse seiners covered by observer data held by the SPC Oceanic Fisheries Programme

LONGLINE																
Sector	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	1992-2006
Australia - Domestic	0	0	0	0	0	0	0	0	0	0	0	6	34	11	39	90
Australia - Japan	56	85	62	41	33	31	2	0	0	0	0	0	0	0	0	310
Distant-Water - Albacore	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	4
Distant-Water - Yellowfin & Bigeye	0	0	0	1	0	0	1	0	1	0	2	1	0	2	0	8
Hawaii	0	0	43	45	52	33	46	37	100	187	280	262	212	0	0	1,297
New Zealand - Domestic	1	0	1	3	5	7	9	3	8	18	7	5	0	0	0	67
New Zealand - Japan	6	17	7	8	0	7	5	6	4	4	4	4	0	0	0	72
Offshore - Albacore	1	1	1	7	11	10	6	11	5	5	32	43	51	52	46	282
Offshore - Tropical	1	8	19	23	19	37	33	23	34	5	74	54	56	31	49	466
Total	65	111	133	128	121	125	104	81	152	219	399	375	353	96	134	2,596
PURSE SEINE																
School Association	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	1994-2006
Unassociated Schools	–	–	11	32	58	62	79	54	54	65	129	145	208	171	48	1,116
Associated Schools	–	–	14	34	53	54	79	21	39	62	97	99	152	127	34	865
Total	–	–	25	66	111	116	158	75	93	127	226	244	360	298	82	1,981

Table 21. Statistics for ZILN models of longline catch rates

Species or Species Group	Observed Non-Zero Trips		Model	Year	Month	Hooks Between Floats	Latitude	Longitude	Sea Surface Salinity	Sea Surface Temperature	Depth of 20C Isotherm	Total	Deviance Explained	Sector
	Trips	%												
Indo-Pacific saifish	614	23.7%	Logistic	3		3	3	7		1		17	34.7%	√
			Lognormal			4	5	1				10	36.3%	x
Shortbill spearfish	1,613	62.1%	Logistic	1	3	1	6			3		14	46.8%	√
			Lognormal	1	1	7	7	3	3	3		25	35.0%	√
Blue shark	2,417	93.1%	Logistic	1			3	5	1		1	11	44.6%	x
			Lognormal	5		1	7	6		4		23	50.6%	√
Silky shark	798	30.7%	Logistic	7	1		3	3				14	37.6%	x
			Lognormal	1		3	8			3	1	16	42.4%	x
Mako sharks	1,675	64.5%	Logistic	3		3	3	5		3		17	14.1%	x
			Lognormal	4	1	4	5		1	4		19	32.3%	x
Oceanic whitetip shark	1,429	55.0%	Logistic	1		1	5	4		3		14	33.2%	x
			Lognormal	3		4	9	5		3		24	37.2%	√
Other sharks and rays	2,254	86.8%	Logistic	1		3		4	1			9	19.0%	√
			Lognormal	6		1	8	3	6	5	5	34	28.9%	√
Barracudas	1,041	40.1%	Logistic	1		1	9	9				20	39.3%	x
			Lognormal	1		1	4	9			1	16	23.5%	x
Dolphinfish	1,954	75.3%	Logistic	1	3		5			3		12	52.3%	x
			Lognormal	8	7	4	6	8		4	3	40	54.7%	√
Escolars	1,920	74.0%	Logistic				4	1	1	3	3	12	34.5%	√
			Lognormal	1	3	1	7	7	3	3	3	28	34.0%	x
Lancetfishes	2,087	80.4%	Logistic			6	6	3				15	30.3%	√
			Lognormal	4		5	8	9		4	1	31	52.7%	√
Oceanic sunfish	549	21.1%	Logistic	4	1			5	3			13	22.3%	√
			Lognormal	3	1		7	3	3			17	40.8%	√
Oilfish	992	38.2%	Logistic	5			8	1	1			15	8.2%	x
			Lognormal	4		1		9				14	24.9%	x
Opah	1,861	71.7%	Logistic	3	1	3	8				1	16	46.8%	√
			Lognormal	3	3	3	8	1	5	6	1	30	35.3%	√

Table 21 continued

Species or Species Group	Observed Non-Zero Trips		Model	Year	Month	Hooks Between Floats	Latitude	Longitude	Sea Surface Salinity	Sea Surface Temperature	Depth of 20C Isotherm	Total	Deviance Explained	Sector
	Trips	%												
Pomfrets	1,937	74.6%	Logistic	3		4	8			1		16	37.4%	√
			Lognormal	3		1	9	4		5	3	25	41.7%	x
Rainbow runner	136	5.2%	Logistic				3	3				6	17.7%	x
			Lognormal	1								1	6.2%	x
Wahoo	1,845	71.1%	Logistic			1	7	3		1		12	52.9%	x
			Lognormal		4		7	8		3		22	36.2%	x
Other fish	2,045	78.8%	Logistic	1			5		1	3		10	21.6%	√
			Lognormal	4	3	1	3	5		1		17	34.1%	√

Table 22. Statistics for ZILN models of purse-seine catch rates

Species or Species Group	Observed Non-Zero Trips		Model	School Association	Year	Month	Latitude	Longitude	Sea Surface Salinity	Sea Surface Temperature	Depth of 20C Isotherm	Total	Deviance Explained
	Trips	%											
Indo-Pacific saifish	230	11.6%	Logistic		1			1				2	2.5%
			Lognormal									0	0.0%
Shortbill spearfish	50	2.5%	Logistic									0	0.0%
			Lognormal									0	0.0%
Blue shark	17	0.9%	Logistic						1			1	7.0%
			Lognormal			1			1		1	3	72.4%
Silky shark	965	48.7%	Logistic	1	3		1	1				6	21.7%
			Lognormal	1				3				4	16.8%
Mako sharks	56	2.8%	Logistic	1								1	2.0%
			Lognormal		1							1	9.1%
Oceanic whitetip shark	325	16.4%	Logistic	1	5			1	1			8	13.3%
			Lognormal	1	1		1					3	16.2%

Table 22 continued

Species or Species Group	Observed Non-Zero Trips		Model	School Association	Year	Month	Latitude	Longitude	Sea Surface Salinity	Sea Surface Temperature	Depth of 20C Isotherm	Total	Deviance Explained
	Trips	%											
Whale shark	98	4.9%	Logistic		1							1	1.9%
			Lognormal	1							1	2	17.5%
Other sharks and rays	843	42.6%	Logistic	1	1			1			3	6	5.1%
			Lognormal	1	1			4				6	11.1%
Barracudas	761	38.4%	Logistic	1			1	4				6	23.0%
			Lognormal	1			3	4				8	19.8%
Dolphinfish	944	47.7%	Logistic	1	1		3			1		6	32.7%
			Lognormal	1				3			1	5	12.8%
Oceanic sunfish	58	2.9%	Logistic		1							1	2.5%
			Lognormal									0	0.0%
Pomfrets	144	7.3%	Logistic	1	3		3					7	24.7%
			Lognormal				1	3				4	12.3%
Rainbow runner	1,177	59.4%	Logistic	1	1							2	42.1%
			Lognormal	1	4		3	3	1			12	32.7%
Wahoo	789	39.8%	Logistic	1	1			1				3	27.4%
			Lognormal	1		3	1	5	3			13	29.8%
Other fish	1,173	59.2%	Logistic	1	1			1				3	28.3%
			Lognormal	1	5				1	1		8	18.2%

Table 23. Estimates of catches (tonnes) of non-target species of finfish by longliners in the WCPFC Statistical Area (excluding the domestic fleets of Indonesia, the Philippines and Chinese Taipei)

Species or Species Group	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Indo-Pacific sailfish	644	874	631	651	910	981	1,086	1,196	1,454	1,050	1,025	823
Shortbill spearfish	2,134	2,272	1,677	1,461	1,842	1,817	1,714	1,649	1,669	1,970	1,644	1,841
Blue shark	54,218	81,646	79,628	93,410	104,589	109,918	82,102	58,155	47,487	44,556	53,490	40,958
Mako sharks	6,699	7,705	7,404	8,030	9,606	10,680	10,345	9,599	9,024	7,824	6,473	5,301
Oceanic whitetip shark	6,374	8,170	7,826	6,969	9,306	8,050	7,331	5,678	5,764	4,198	3,952	2,970
Silky shark	1,534	18,024	13,078	9,383	10,533	12,967	13,234	11,293	11,130	8,553	8,397	5,702
Other sharks and rays	13,076	13,906	8,584	6,690	8,878	9,991	9,539	8,288	7,184	5,171	6,163	…
Barracudas	728	852	617	544	601	676	796	819	990	751	741	667
Common dolphinfish	2,655	1,646	1,527	1,963	4,244	6,246	7,939	5,608	4,491	4,955	4,089	7,454
Escolars	4,549	4,287	4,115	3,975	5,331	5,953	5,724	5,495	6,461	7,611	8,580	8,069
Lancetfishes	1,628	1,823	1,445	1,489	1,813	2,138	1,956	1,758	1,761	1,792	1,580	1,390
Ocean sunfish	2,521	2,685	2,694	2,530	3,644	4,417	4,689	3,777	2,143	853	284	109
Oilfish	1,200	1,029	948	1,066	1,553	1,678	1,609	1,264	988	669	543	377
Opah	4,810	6,223	5,019	5,608	6,900	7,729	7,108	8,163	8,598	9,837	7,275	6,129
Pomfrets	619	752	477	492	613	801	929	1,075	1,310	1,387	1,158	968
Wahoo	2,347	2,768	2,321	2,041	2,866	3,083	3,346	3,496	4,210	4,405	4,710	4,675
Other fish	5,485	6,182	6,432	6,808	8,187	8,133	8,546	6,205	5,377	3,487	2,219	2,348

Table 24. Estimates of catches (tonnes) of non-target species of finfish by purse seiners in the WCPFC Statistical Area (excluding the domestic fleets of Indonesia and the Philippines)

Species or Species Group	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Oceanic whitetip shark	37	102	237	258	272	192	123	90	45	60	62
Silky shark	136	247	513	528	879	790	784	996	1,011	1,491	1,211
Whale shark	145	139	301	320	250	279	297	483	594	741	781
Barracudas	33	38	47	45	48	38	38	39	48	64	57
Common dolphinfish	242	277	606	568	616	459	425	609	630	886	728
Rainbow runner	1,437	3,275	5,394	4,462	5,072	3,396	2,941	3,755	5,138	10,946	8,458
Wahoo	53	123	140	124	181	182	145	201	200	309	270
Other fish	4,192	8,293	8,991	5,744	5,570	5,427	4,478	7,093	11,777	20,265	15,293