DISTANT-WATER LONGLINE CATCH AND EFFORT IN THE VICINITY OF WALLIS AND FUTUNA

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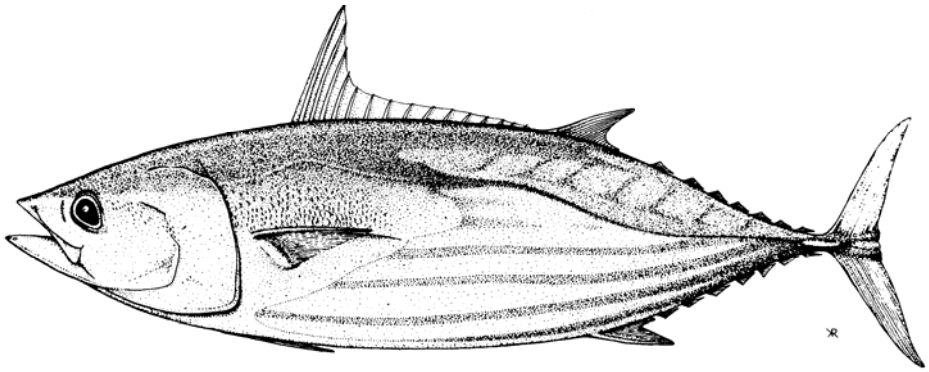

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INTRODUCTION

This report was prepared in response to a request from the office of the President of the Territorial Assembly of Wallis and Futuna for a summary of available tuna fishery catch and effort data for the waters of Wallis and Futuna.

The Oceanic Fisheries Programme (OFP) of the Secretariat of the Pacific Community (SPC) holds catch and effort data, aggregated by 5° longitude by 5° latitude and by month, covering the distant-water longline fisheries of Japan from 1962 to 1995 (Fisheries Agency of Japan, undated, and unpublished data), the Republic of Korea from 1975 to 1993 (National Fisheries Research and Development Agency, 1980, 1981, 1985, 1986, 1988, 1990, 1993, and unpublished data), and Taiwan from 1967 to 1995 (Tuna Research Center, 1975—1993, and unpublished data). These data were used to document the level of fishing that has taken place in the vicinity of the Wallis and Futuna (Figure 1). Coverage for the Japanese data is high, except for 1995, for which the data are preliminary, while coverage for the Taiwanese has been high in the past, but low in recent years. Coverage by the Korean data has been relatively high.

Maps of annual fishing effort for each of the three longline fleets are shown in Figures 2–4, and tables of annual catch statistics are presented in Tables 1–3. In order to examine the viability of distant-water longlining in the waters of Wallis and Futuna, average catch rates for the three main commercial species caught by distant-water longliners — albacore (*Thunnus alalunga*), bigeye (*T. obesus*) and yellowfin (*T. albacares*) — are compared in Tables 4–6 to catch rates at latitudes within the central and western Pacific Ocean at which the three species are targeted.

The maps shown in Figures 2–4 present the level of annual fishing effort in quadrangles of 5° latitude and 5° longitude. The circles which represent the level of effort are scaled such that a circle with a diameter of 5° longitude represents fishing effort of 2.5 million hooks or more; the area of circles of less than 5° longitude is proportional to the level of effort.

The available catch and effort data are aggregated by 5° by 5°; therefore, it is not possible to estimate the catch and effort in the waters of Wallis and Futuna with precision. Tables 1–3 present statistics for "the vicinity of Wallis and Futuna", which is defined as the area from 10°S to 15°S and from 175°W to 180°.

Tables 4–6 compare catch rates for Wallis and Futuna to catch rates in areas across the region where the species are targeted. The tables present average catch rates for the period for which data are available, and for the period from 1980 to the most recent year for which data are available. The averages have been determined by including only years for which data are available for both the broad area and for Wallis and Futuna, such that the average catch rates are comparable.

DISCUSSION

Japanese Longline

Figure 2 and Table 1 summarise the activities of the Japanese longline fleet. The maps indicate that fishing effort by the Japanese in the vicinity of Wallis and Futuna was high from 1962 to 1968, but then declined considerably. From 1969 to 1972, effort was low, and since 1973, there has been no effort by the Japanese in the vicinity of Wallis and Futuna. Effort in areas near Wallis and Futuna has been sporadic since 1969, with most effort occurring to the north.

The distribution of Japanese fishing effort can be partly explained by targeting practices. Yellowfin and bigeye in the central Pacific are usually targeted to the north of 15°S, while albacore were targeted to the south of 10°S in the 1960s and thereafter to the south of 20°S. Wallis and Futuna are therefore at the southern extent of the area for yellowfin and bigeye and at the northern extent of the area for albacore. From 1962 until the late 1960s, the Japanese fleet targeted albacore; hence fishing effort in the vicinity of Wallis and Futuna, which lie to the south of 10°S, was relatively high. Since the late 1960s, the Japanese fleet has targeted yellowfin and bigeye.

The lack of fishing effort in the vicinity of Wallis and Futuna since 1979, when EEZs were declared throughout the region, may also be partly due to the absence of fishing agreements between France and Japan covering Wallis and Futuna during certain periods. The Japanese fleet has been licensed to fish in the waters of Wallis and Futuna from July 1979 to August 1988, from March 1989 to June 1992, and from August 1994 to August 1996 (Etaix-Bonnin, personal communication, September 1998).

Korean Longline

Figure 3 and Table 2 summarise the activities of the Korean distant-water longline fleet. In contrast to the Japanese fleet, fishing effort by the Korean fleet in the vicinity of Wallis and Futuna remained relatively high during the late 1970s and early 1980s. Fishing effort by the Korean fleet has been negligible since 1984, while effort further to the north has remained relatively high. The Korean fleet targeted albacore, yellowfin and bigeye until the late 1980s, when the fleet concentrated on yellowfin and bigeye at the expense of albacore. The decline in effort in the vicinity of Wallis and Futuna occurred well before the late 1980s; hence, changes in targeting are probably not responsible for the decline.

The Korean fleet has been licensed to fish in the waters of Wallis and Futuna from December 1980 to January 1993 and from September 1993 to the present (Yen, personal communication, September 1998); hence, the decline in effort since 1984 is not related to the absence of access agreements, except for an eight-month period in 1993.

Taiwanese Longline

Figure 4 and Table 3 summarise the activities of the Taiwanese distant-water longline fleet. While the Japanese and Koreans have switched from albacore to bigeye and yellowfin, the Taiwanese have continued to target albacore. Since the early 1970s, part of the Taiwanese fleet has been based in Levuka, Fiji, so there has consistently been high effort in the Fiji EEZ, to the southwest of Wallis and Futuna. The Taiwanese fleet has never been licensed to fish in the waters of Wallis and Futuna; hence, most of the effort depicted in Figure 4 in "the vicinity of Wallis and Futuna" may actually have occurred in that part of the 5° square (10°S–15°S, 175°W–180°W) that falls in the Fiji EEZ. Taiwanese effort in the vicinity of Wallis and Futuna has been negligible or low since 1989.

Albacore

Table 4 compares catch rates for albacore in the vicinity of Wallis and Futuna with those in the area in which albacore have been targeted in the central and western Pacific Ocean since the 1970s, i.e. from 20°S to 45°S and from 140°E to 110°W. During the periods for which data are available, albacore catch rates in the vicinity of Wallis and Futuna have usually been lower than average catch rates by the Korean and Taiwanese fleets throughout the broader area. In contrast, the albacore catch rate for the Japanese fleet, which fished in the vicinity of Wallis and Futuna from 1962 to 1972, was 37 percent greater than that for the broader area. However, the Japanese have not fished in the

vicinity of Wallis and Futuna since 1972; therefore, no information is available to compare Japanese catch rates in recent years. More importantly, Table 4 shows that for the Taiwanese fleet, which continues to target albacore, the albacore catch rate in the vicinity of Wallis and Futuna has, on average, been much lower, e.g. 48 percent of the catch rate for the broader area.

Bigeye

Table 5 compares catch rates for bigeye in the vicinity of Wallis and Futuna with those in the area in which bigeye are targeted in the central and western Pacific Ocean, i.e. from 15°N to 15°S and from 140°E to 110°W. The Japanese fleet targeted albacore during the period when the fleet fished in the vicinity of Wallis and Futuna, and the Taiwanese fleet have continued to target albacore; hence, catch rates for the Korean fleet may be more representative. The bigeye catch rate in the vicinity of Wallis and Futuna for the Korean fleet has usually been much lower, e.g. 49 percent of the catch rate throughout the broader area.

Yellowfin

Table 6 compares catch rates for yellowfin in the vicinity of Wallis and Futuna with those in the area in which yellowfin are targeted in the western and central Pacific Ocean, i.e. from 15°N to 15°S and from 140°E to 110°W. Yellowfin catch rates in the vicinity of Wallis and Futuna for the Korean fleet, which are the most reliable indicators compared to the other fleets, have usually been lower, e.g. 75 percent of the catch rate throughout the broader area. In recent years, from 1980 to 1993, the bigeye catch rate for the Korean fleet in the vicinity of Wallis and Futuna has been 91 percent of the catch rate for the broader area, but this figure is based on only a small amount of fishing effort.

New Caledonia Longline

In May 1991, a longliner from New Caledonia fished in the waters of Wallis and Futuna. The available data cover four days fishing, during which four sets of 2,730 hooks each were made. The average catch rates for albacore, bigeye and yellowfin were 0.85, 0.03 and 0.64 fish per 100 hooks respectively. In comparison, the average catch rates for albacore, bigeye and yellowfin for the entire fleet based in New Caledonia during May 1991 were 1.97, 0.09 and 0.69 fish per 100 hooks respectively. The catch rates for bigeye and yellowfin were similar, but the catch rate for albacore in the waters of Wallis and Futuna was much lower, 43 percent of the albacore catch rate for the fleet based in New Caledonia. Estimates of annual catches and average catch rates for the longline fleet based in New Caledonia, for 1983–1997, are presented in Table 7.

Oceanographic Conditions

The generally lower catch rates for Wallis and Futuna are consistent with the observation that Wallis and Futuna are located at the boundaries of the main fishing grounds for albacore, bigeye and yellowfin. Albacore are caught primarily to the south, while yellowfin and bigeye are caught primarily to the north.

The geographical distribution of the stocks is related to oceanographic conditions. Figure 5 shows the ocean depth around Wallis and Futuna, while Figures 6–9 show sea surface temperature, sea surface salinity, primary production and surface forage for tuna, respectively, for the period from April 1992 to June 1995.

Wallis and Futuna is located in the southern subtropical gyre of the Pacific Ocean. The subtropical gyre is characterized by nutrient-depleted waters and is frequently named the ‘ocean desert’ of mid-

latitudes, in contrast to the highly productive waters of the temperate areas, the coastal areas and the equatorial region. Wallis and Futuna lies between the productive equatorial band from 10°N to 10°S, which is favorable for skipjack and yellowfin in surface waters and yellowfin and bigeye in subsurface waters, and the southern convergence zone, which is favorable for albacore.

Furthermore, the islands are small and cannot produce a large amount of local enrichment from run-off waters, in contrast to larger islands, such as Fiji, New Caledonia and Papua New Guinea.

Figures 10 and 11 show the relationship between bigeye catch rates for longliners and the average depths of the 15°C isotherm and the 2.0 ml dissolved oxygen isotherm. These temperature and dissolved oxygen levels broadly define the preferred habitat for bigeye. Bigeye catch rates are higher where the isotherm depths are less than 300 m. When the isotherms are deeper than 300 m, bigeye are too deep to be available to longline gear. It can be seen that Wallis and Futuna is situated at the boundary of the area where the isotherms are located at depths less than 300 m. For further information concerning bigeye habitat in relation to water temperature and dissolved oxygen, see Hampton et al. (1998).

CONCLUSION

Catch rates for albacore by the Taiwanese longline fleet and bigeye by the Korean longline fleet, in the vicinity of Wallis and Futuna, have been low, i.e. less than 50 percent of the catch rates for the main fishing grounds for the two species. Catch rates for yellowfin by the Korean longline fleet in the vicinity of Wallis and Futuna have been 75 percent of the catch rates for the main yellowfin fishing grounds, although the percentage for recent years may be higher. The low longline catch rates observed in Wallis and Futuna can be related to the low productivity of the southern subtropical gyre and the lack of local enrichment from run-off waters.

In contrast to the low catch rates observed for longline, two surveys conducted by the South Pacific Commission in May 1978 and May 1980, using a pole-and-line vessel, found that skipjack (*Katsuwonus pelamis*) were abundant in the waters of Wallis and Futuna (South Pacific Commission 1984). This would suggest that the abundance of tuna forage, while low relative to neighbouring areas, may be sufficient to support surface fisheries for skipjack in Wallis and Futuna. The presence of several seamounts in the waters of Wallis and Futuna (Figure 5) also offer potential for the development of surface fisheries.

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Figure 1. SPC statistical area

Figure 2. Japanese longline effort

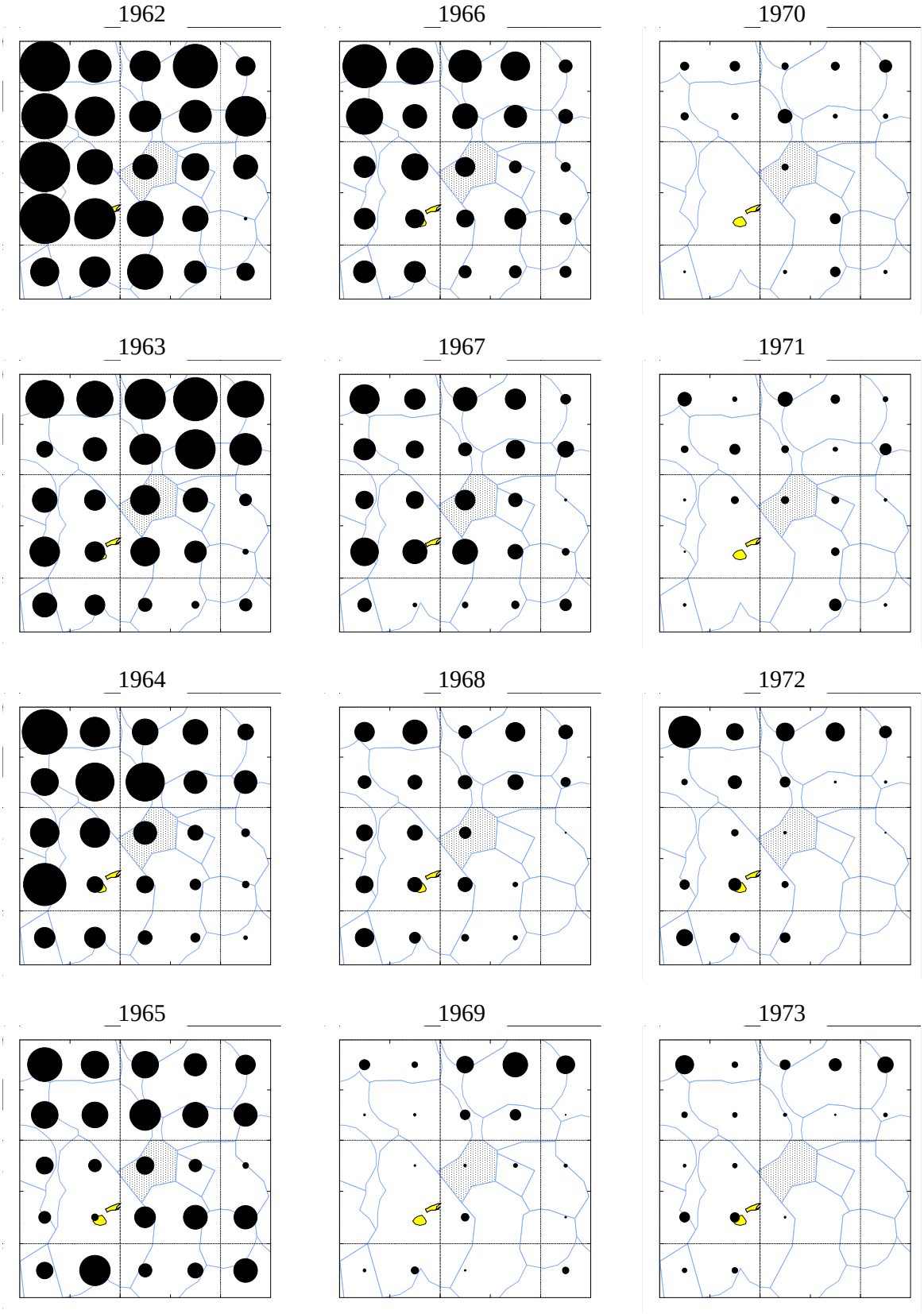
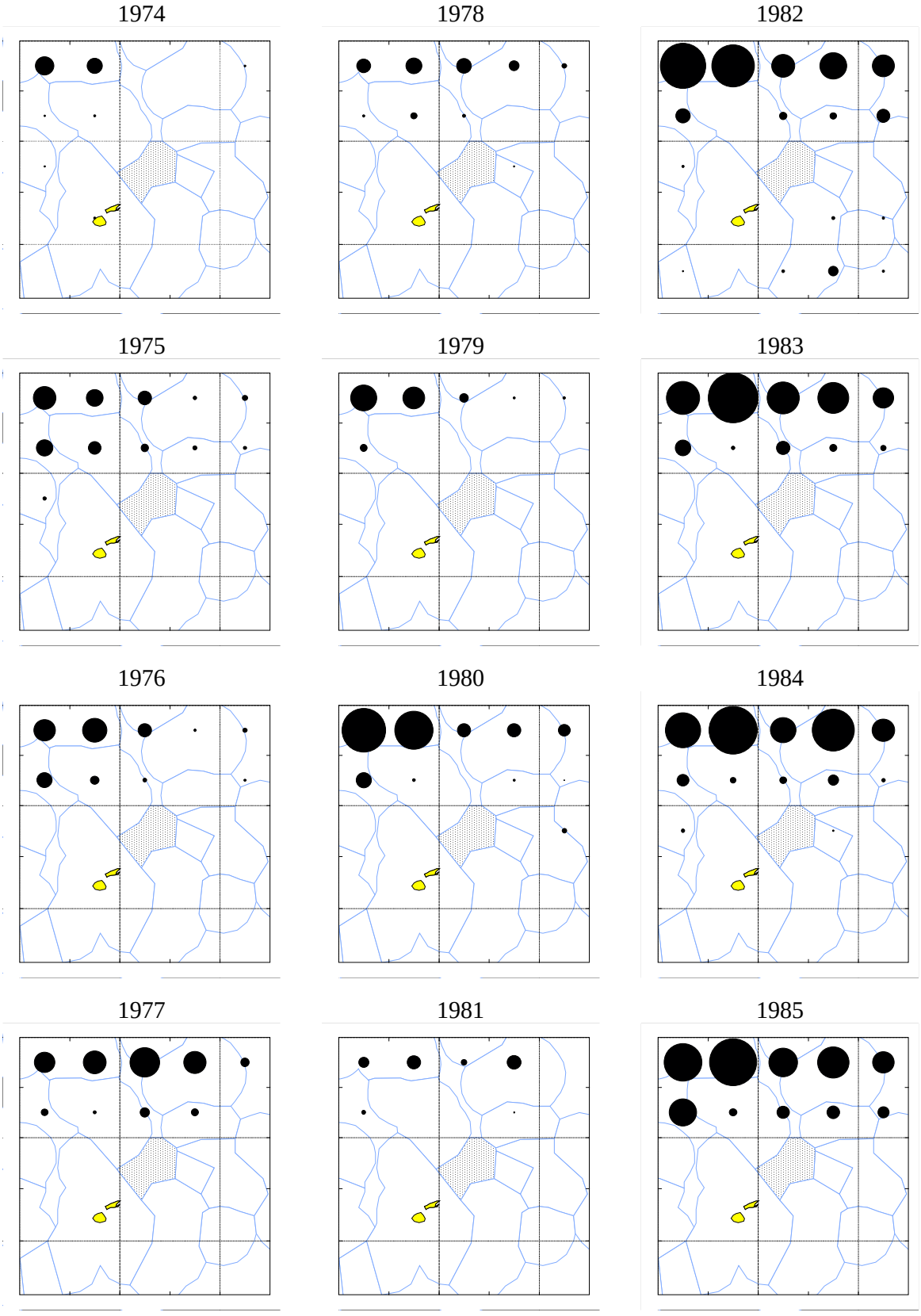


Figure 2. Japanese longline effort (continued)



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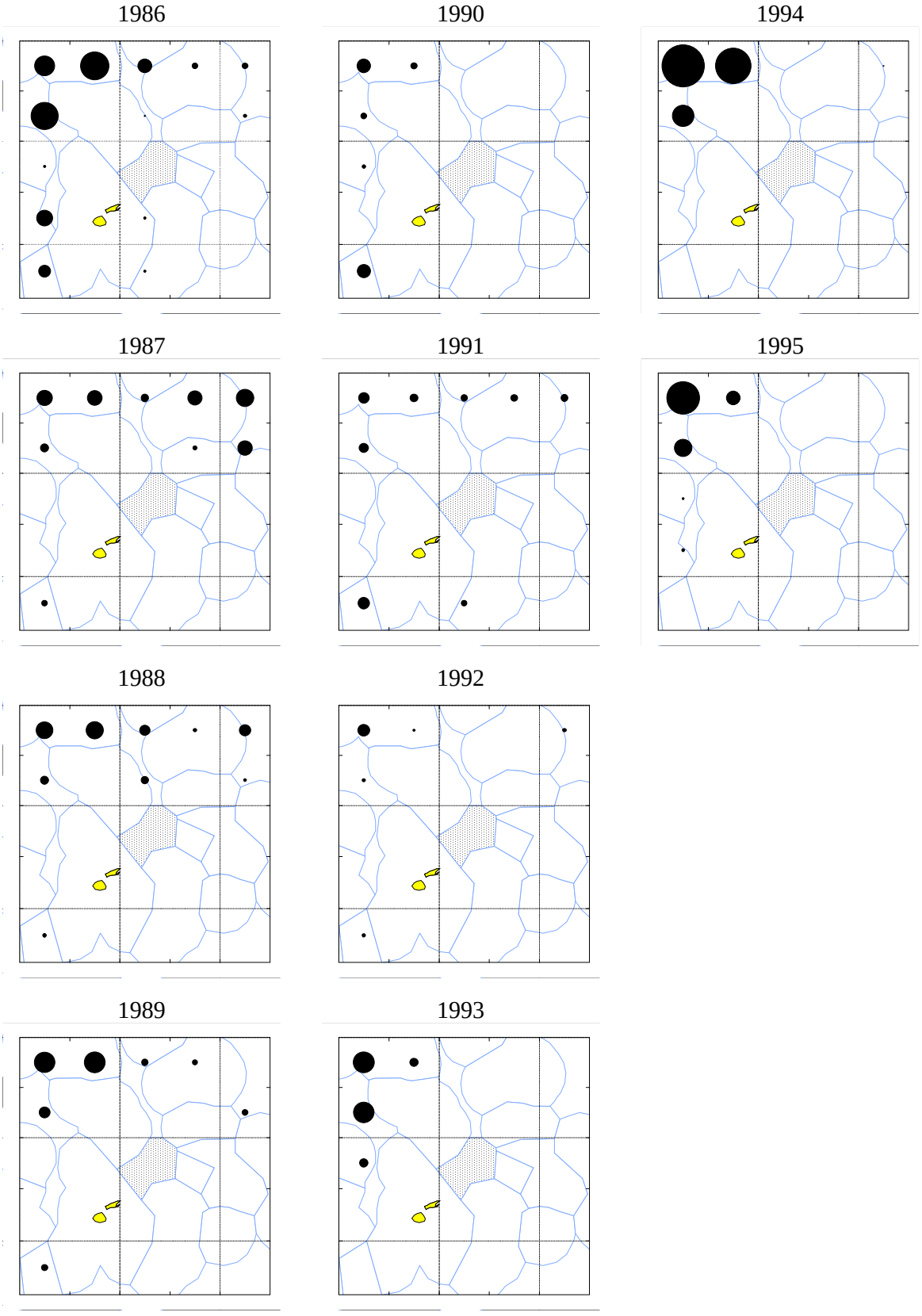

Figure 3. Korean longline effort

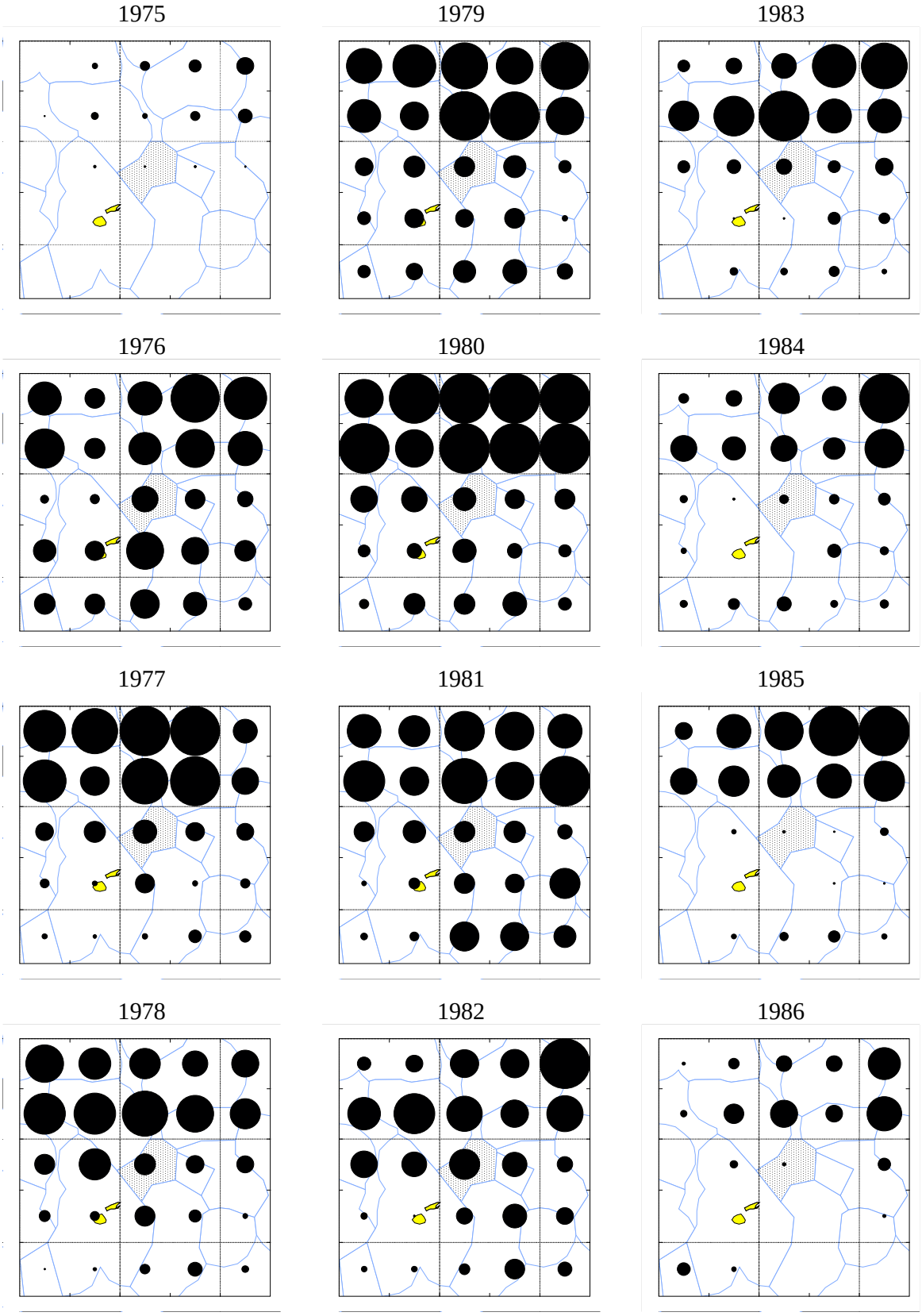

Figure 3. Korean longline effort (continued)

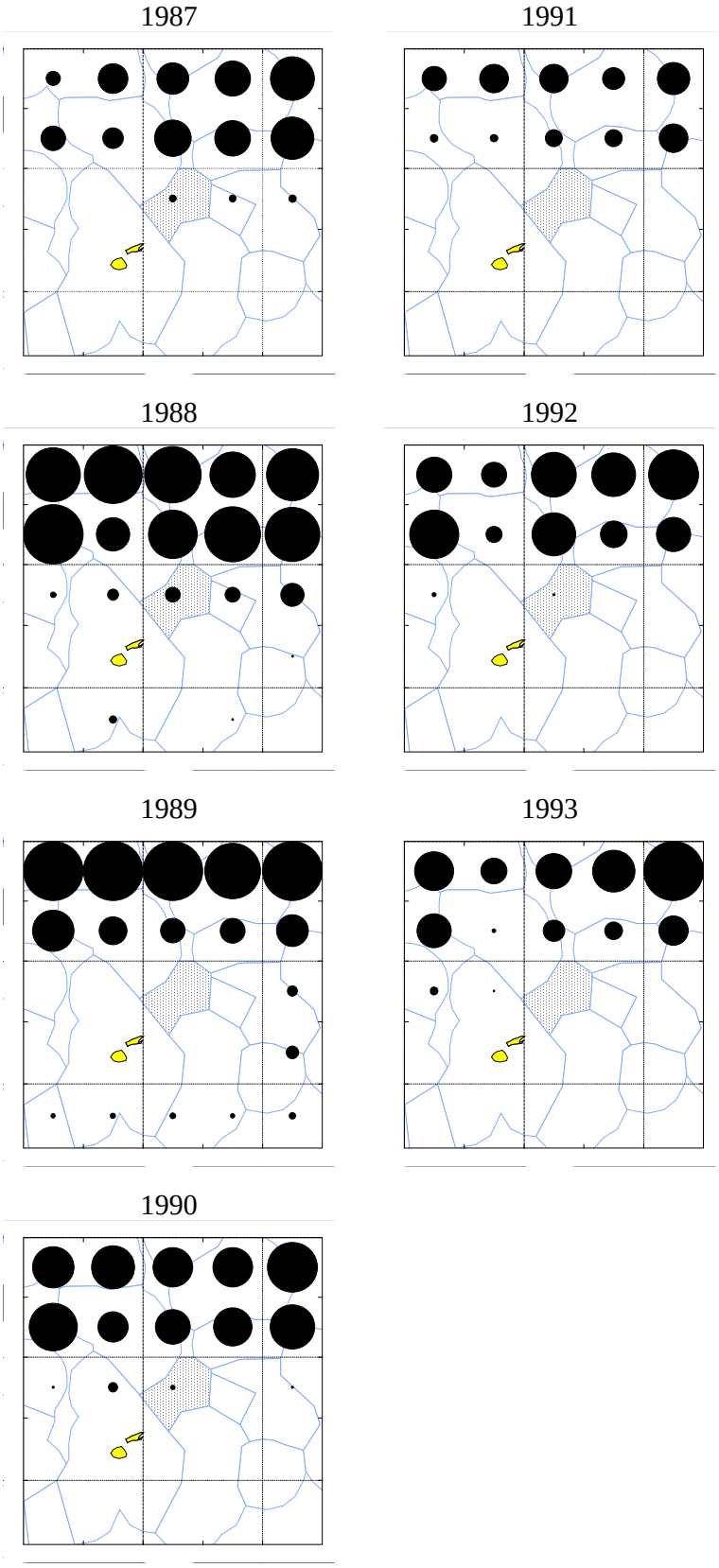

Figure 4. Taiwanese longline effort

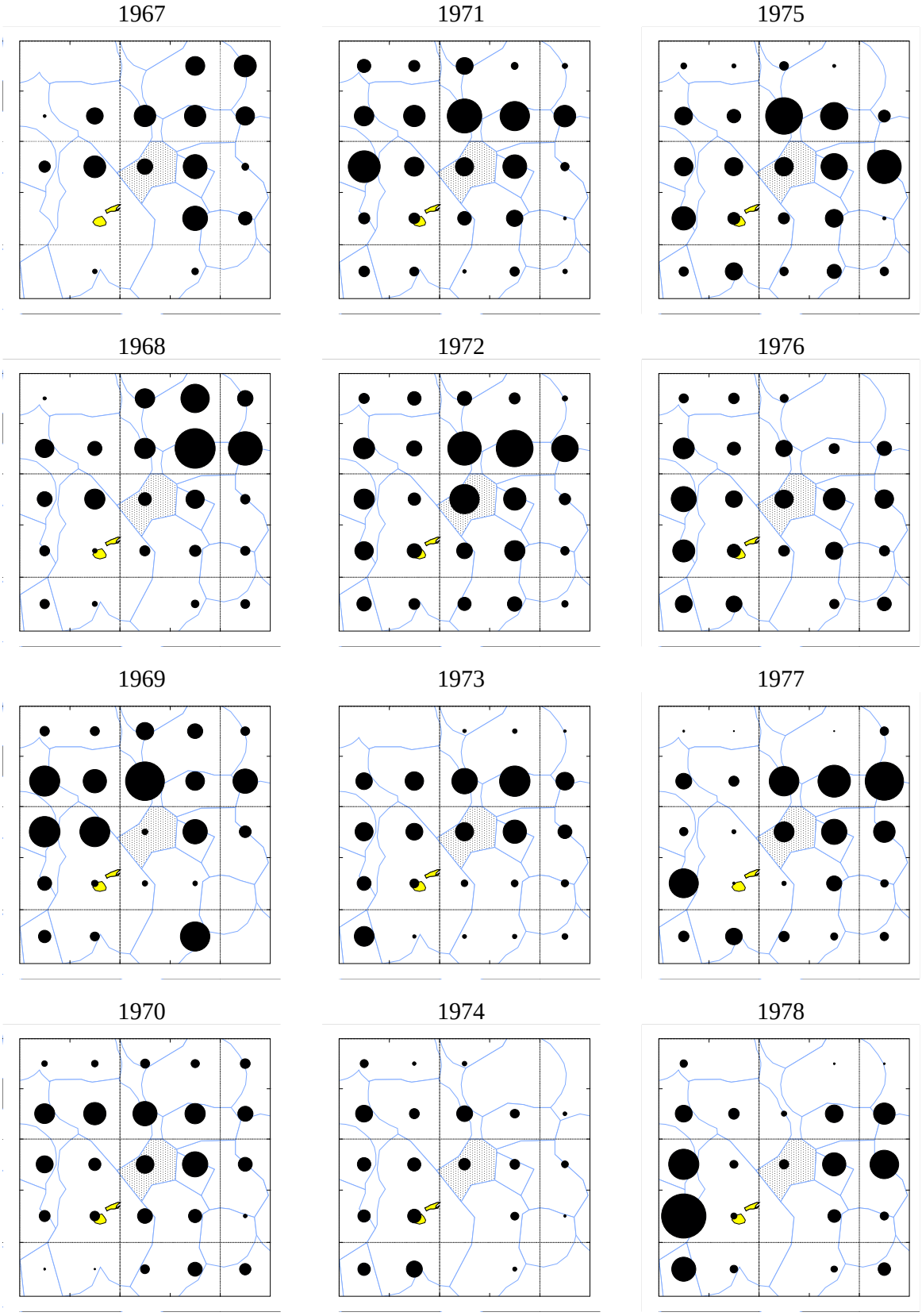

Figure 4. Taiwanese longline effort (continued)

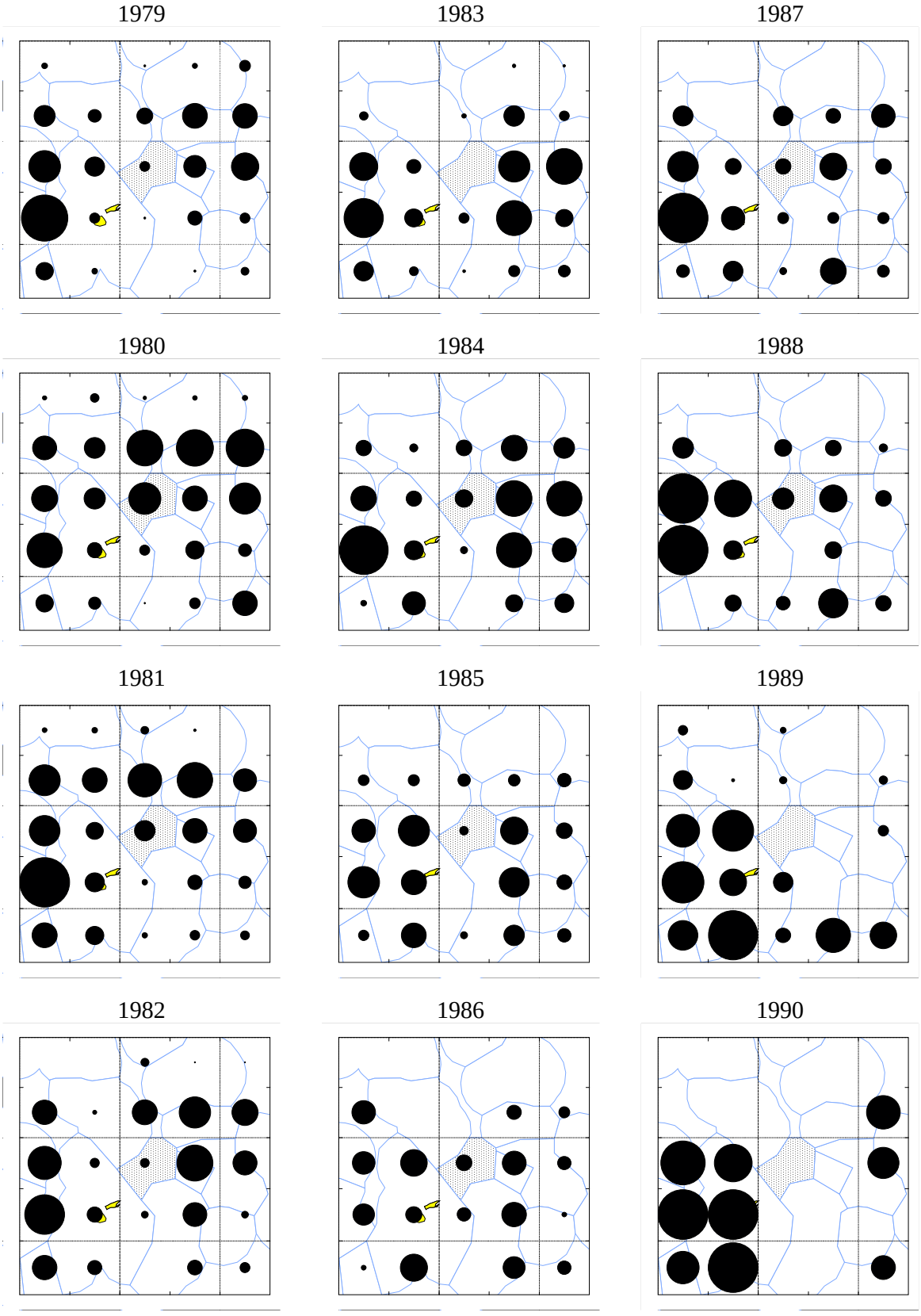

Figure 4. Taiwanese longline effort (continued)

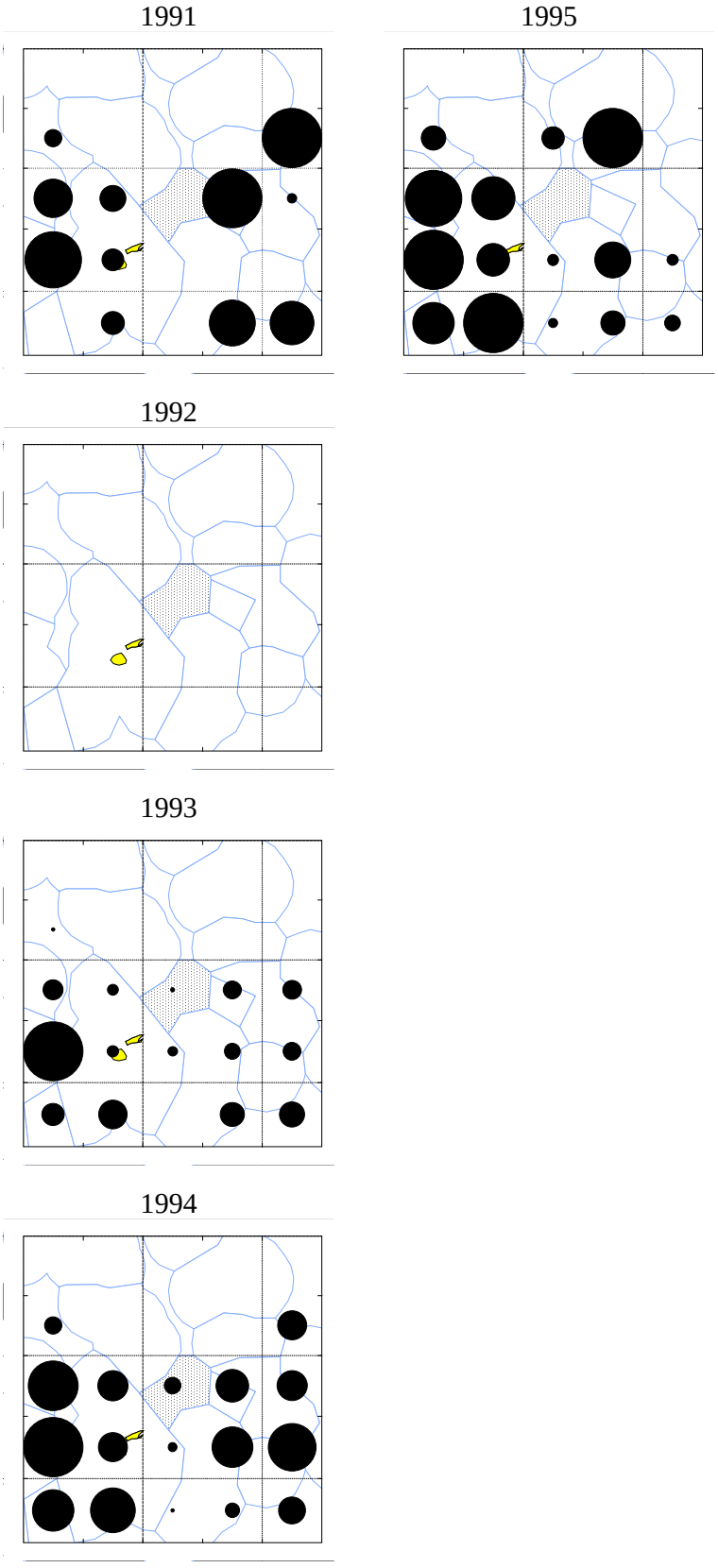

Figure 5. Ocean depth near Wallis and Futuna

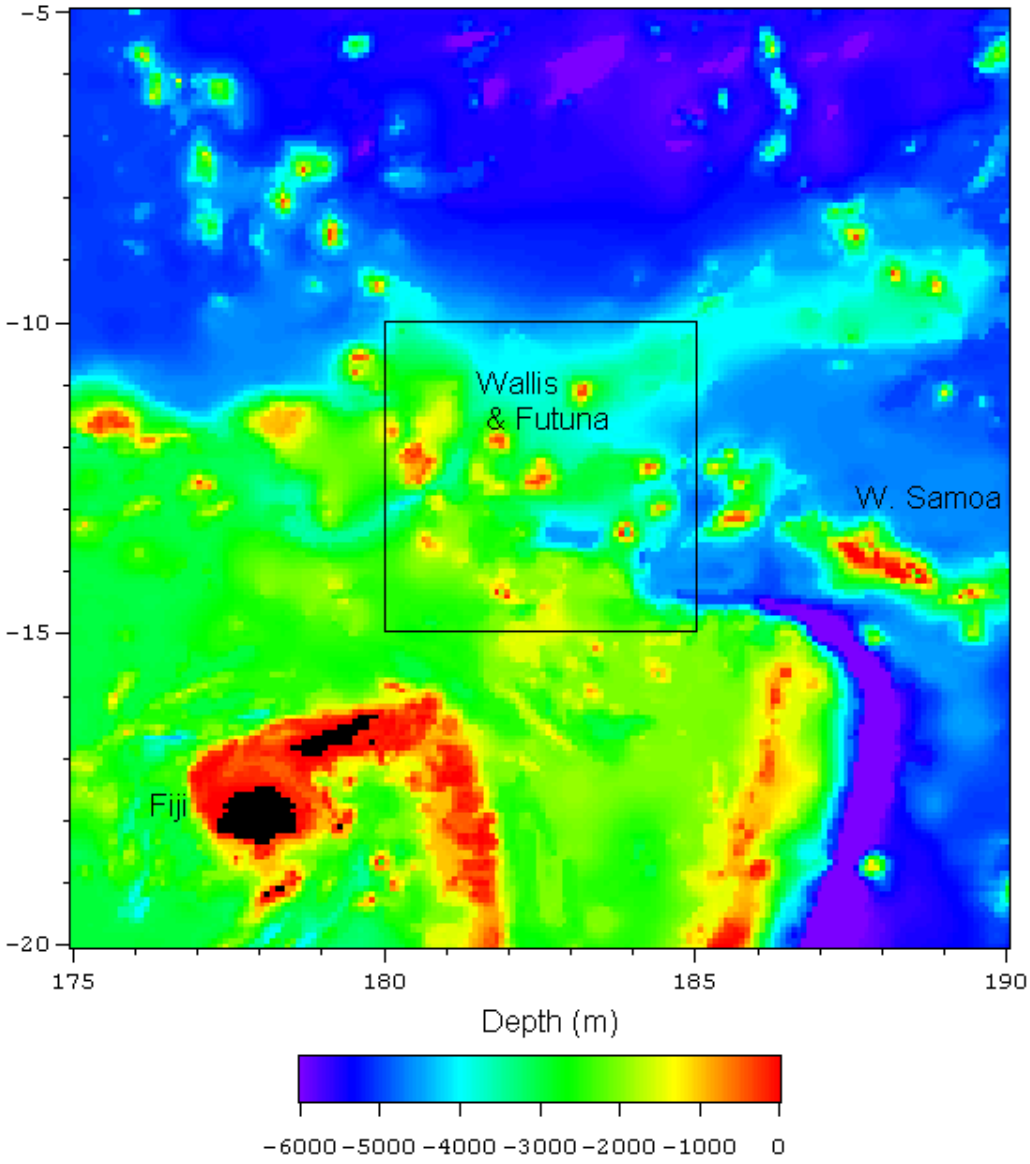

Figure 6. Sea surface temperature (°C) near Wallis and Futuna (box)

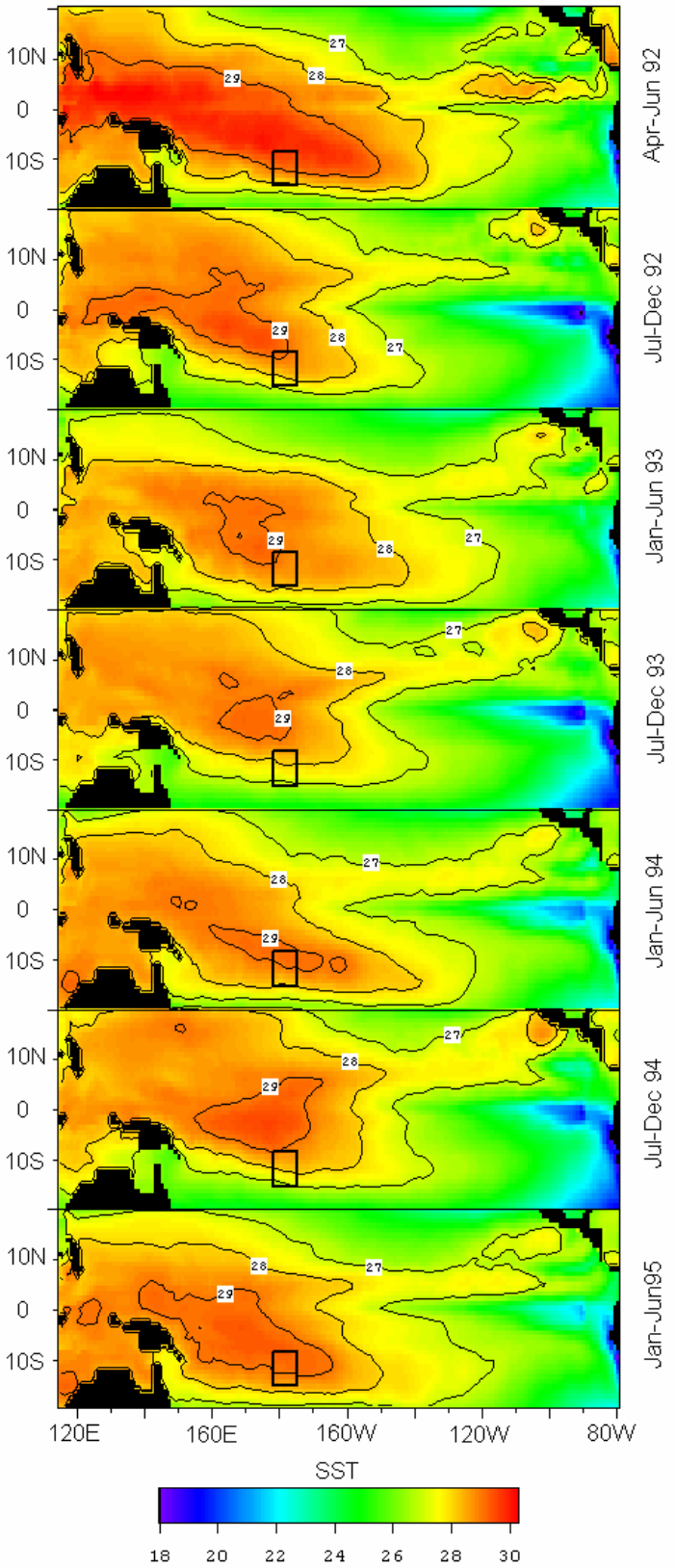

Figure 7. Sea surface salinity (parts per thousand) near Wallis and Futuna (box)

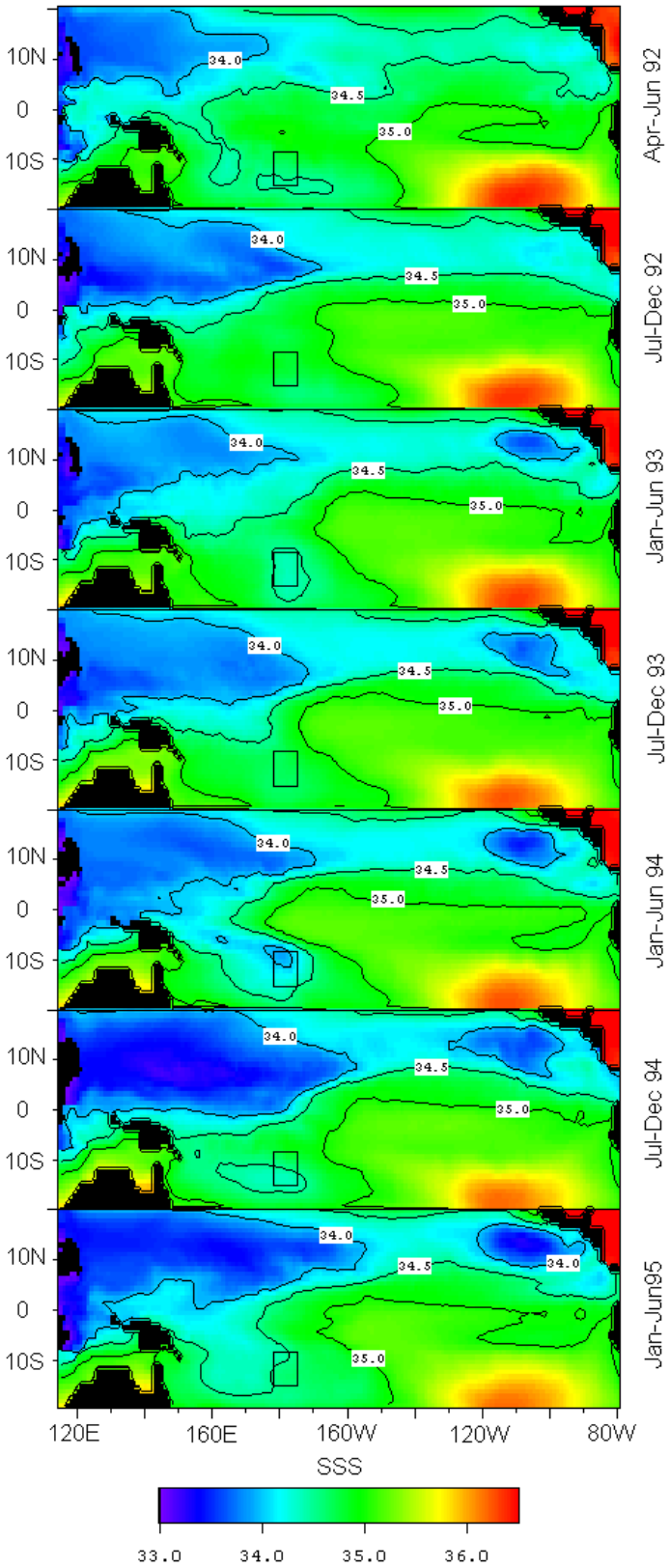

Figure 8. Primary production near Wallis and Futuna (box)

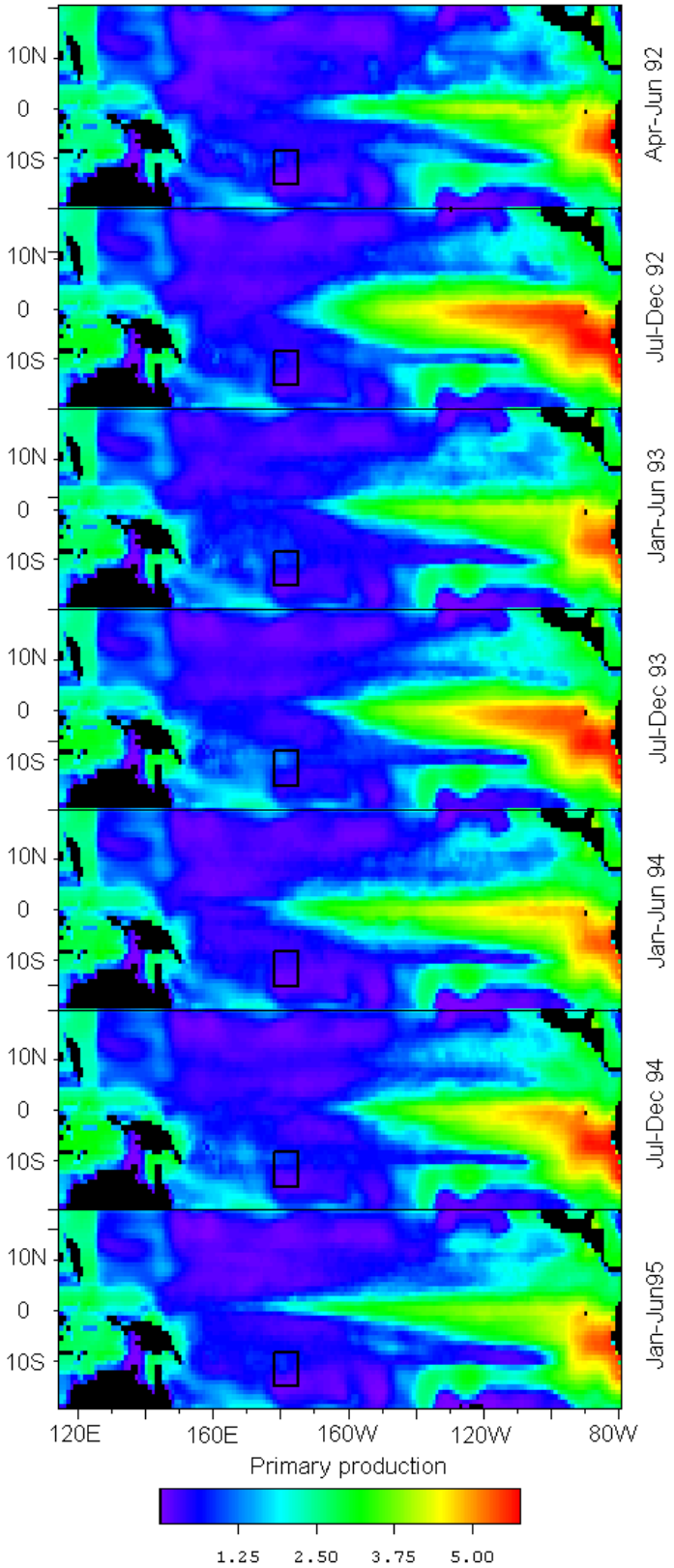

Figure 9. Tuna forage near Wallis and Futuna (box)

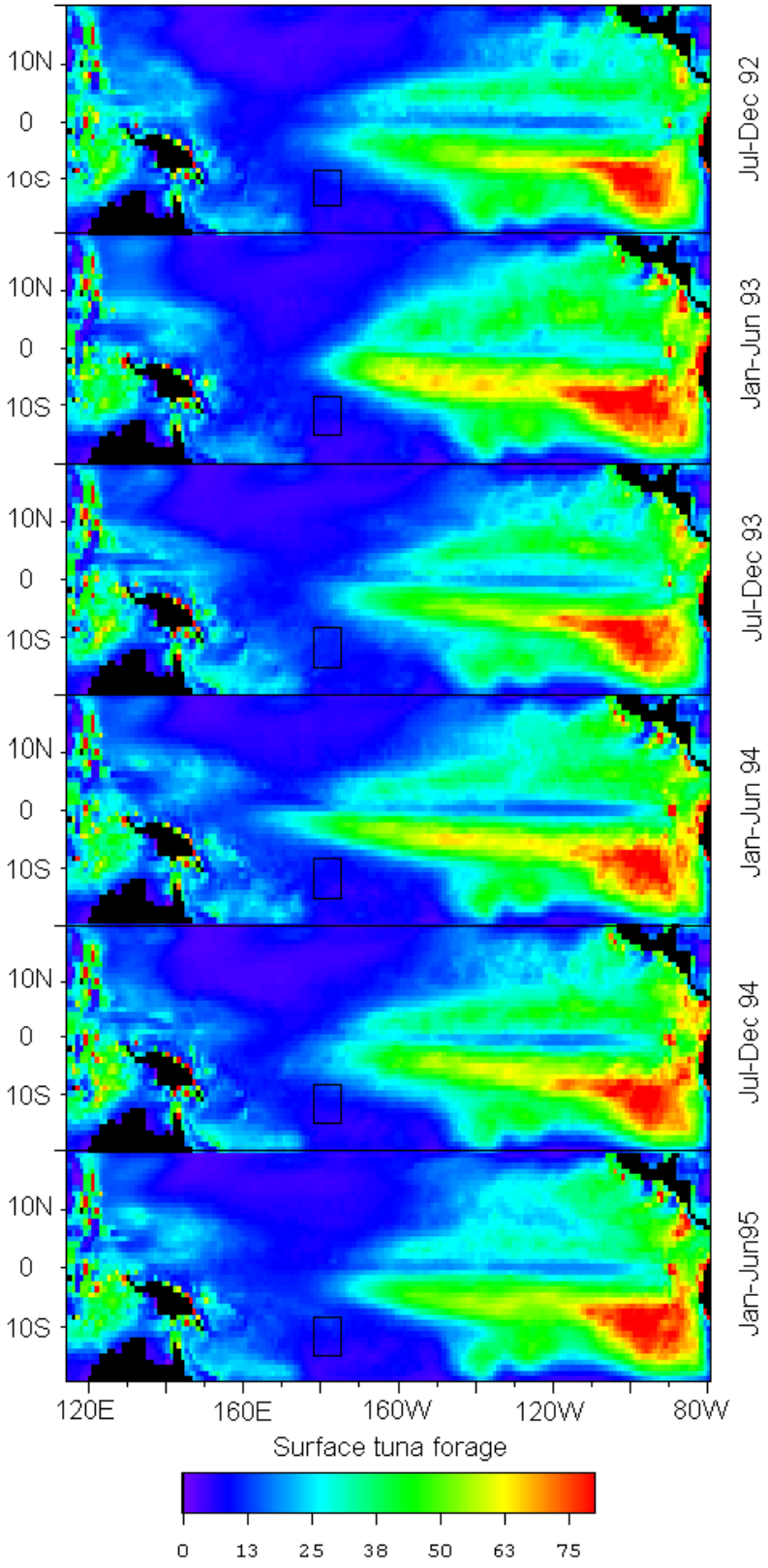

Figure 10. Average depth distribution (metres) of 15°C isotherm and bigeye catch rates for the Japanese longline fleet, 1986–1995

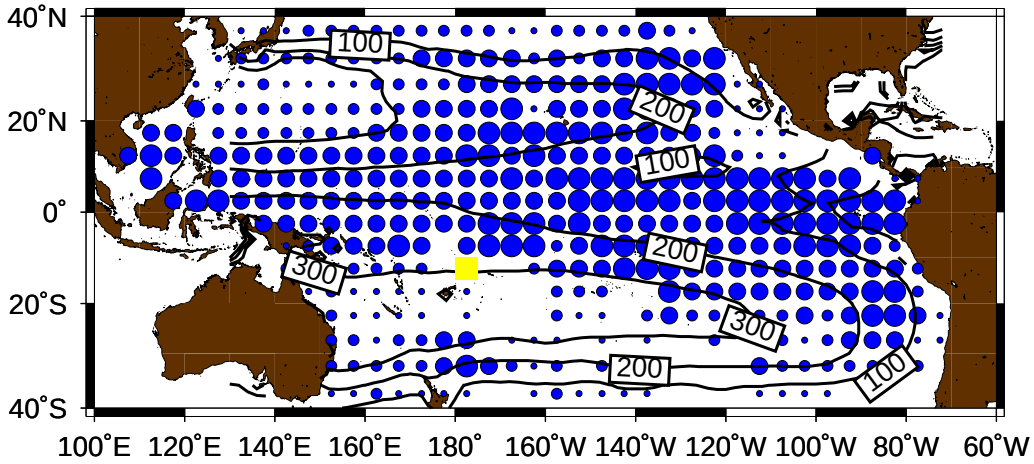

Figure 11. Average depth distribution (metres) of 2.0 ml O_2 per litre isotherm and bigeye catch rates for the Japanese longline fleet, 1986–1995

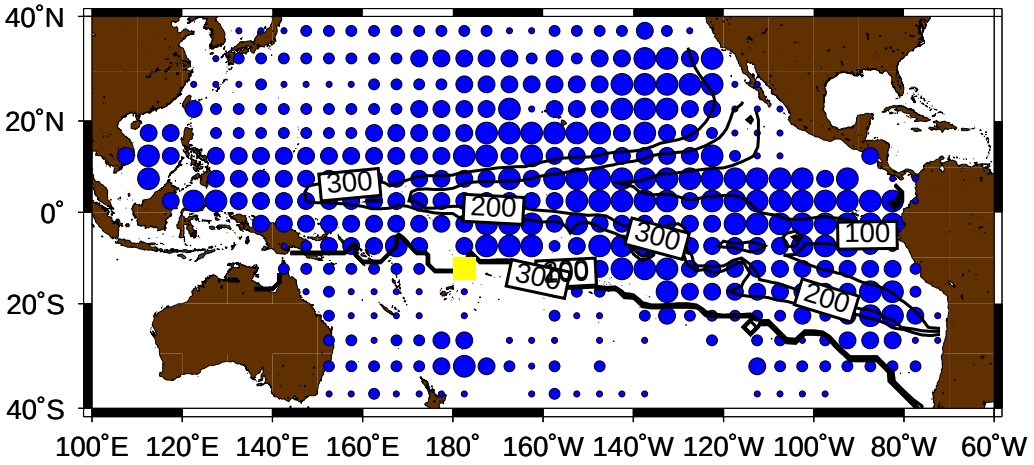

Table 1. Effort (thousand hooks), catch (metric tonnes) and catch per unit effort (number of fish per 100 hooks) by Japanese distant-water longliners in the vicinity of Wallis and Futuna (10S–15S, 175W–180W)

		ALBACORE		BIGEYE		YELLOWFIN		TOTAL	
YEAR	EFFORT	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE
1962	451	188	3.19	14	0.10	53	0.47	332	4.08
1963	863	407	3.61	50	0.19	156	0.72	687	4.67
1964	534	256	3.67	51	0.31	182	1.34	524	5.44
1965	313	107	2.62	13	0.14	81	1.03	229	3.92
1966	374	178	3.64	24	0.21	151	1.59	385	5.59
1967	404	117	2.22	24	0.19	49	0.48	212	2.98
1968	134	40	2.29	7	0.17	37	1.11	92	3.67
1969	8	0	0.63	0	0.10	1	0.73	4	1.95
1970	41	13	2.46	2	0.18	17	1.72	36	4.49
1971	55	14	1.94	1	0.11	5	0.36	32	2.77
1972	9	2	1.80	0	0.15	3	1.43	6	3.49
1973	-	-	-	-	-	-	-	-	-
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-

Table 2. Effort (thousand hooks), catch (metric tonnes) and catch per unit effort (number of fish per 100 hooks) by Korean distant-water longliners in the vicinity of Wallis and Futuna (10S–15S, 175W–180W)

		ALBACORE		BIGEYE		YELLOWFIN		TOTAL	
YEAR	EFFORT	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE
1975	3	0	0.16	1	0.69	0	0.16	1	1.03
1976	148	28	1.03	22	0.33	20	0.37	73	1.77
1977	271	37	0.98	16	0.18	58	0.78	115	1.98
1978	338	87	1.72	36	0.31	47	0.45	184	2.57
1979	158	24	1.07	13	0.25	19	0.46	64	1.87
1980	342	43	0.73	30	0.24	88	0.84	170	1.86
1981	175	18	0.70	6	0.10	28	0.55	59	1.41
1982	458	67	1.11	13	0.08	44	0.34	139	1.61
1983	153	29	1.29	4	0.10	14	0.39	52	1.85
1984	61	9	1.18	5	0.28	5	0.35	21	1.88
1985	6	0	1.07	0	0.20	0	0.10	1	1.43
1986	7	2	2.00	0	0.13	1	0.58	4	3.00
1987	28	5	1.17	1	0.13	4	0.53	12	1.96
1988	140	22	0.96	4	0.09	24	0.56	59	1.71
1989	-	-	-	-	-	-	-	-	-
1990	12	0	0.11	0	0.17	0	0.11	1	0.42
1991	-	-	-	-	-	-	-	-	-
1992	4	1	2.12	2	1.58	3	2.70	8	6.72
1993	-	-	-	-	-	-	-	-	-

Table 3. Catch (metric tonnes), effort (thousand hooks) and catch per unit effort (number of fish per 100 hooks) by Taiwanese distant-water longliners in the vicinity of Wallis and Futuna (10S–15S, 175W–180W)

		ALBACORE		BIGEYE		YELLOWFIN		TOTAL	
YEAR	EFFORT	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE
1967	247	265	6.38	15	0.27	105	2.54	398	9.27
1968	174	89	2.75	8	0.18	45	0.97	162	4.05
1969	38	18	2.73	0	0.05	6	0.52	33	3.66
1970	326	240	4.04	24	0.21	36	0.32	321	4.70
1971	348	162	2.50	11	0.12	41	0.60	227	3.30
1972	865	333	2.08	22	0.11	343	1.58	740	3.86
1973	345	140	2.11	52	0.49	93	1.05	308	3.77
1974	143	45	1.61	1	0.04	9	0.29	58	1.97
1975	355	105	1.69	14	0.16	33	0.39	165	2.31
1976	343	112	1.73	10	0.14	47	0.49	179	2.47
1977	417	91	1.20	10	0.10	35	0.33	153	1.70
1978	91	34	2.73	4	0.10	5	0.12	45	2.97
1979	103	32	1.66	2	0.09	9	0.51	49	2.34
1980	1,038	393	2.09	41	0.14	338	1.35	793	3.61
1981	427	115	1.52	13	0.13	33	0.34	171	2.04
1982	86	30	2.13	1	0.06	2	0.13	37	2.38
1983	-	-	-	-	-	-	-	-	-
1984	320	71	1.16	9	0.14	34	0.51	120	1.86
1985	82	22	1.40	1	0.05	2	0.10	27	1.58
1986	258	80	1.93	4	0.08	12	0.20	105	2.26
1987	252	119	2.71	2	0.04	8	0.14	133	2.91
1988	471	221	2.75	1	0.01	89	0.83	336	3.71
1989	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-
1993	13	4	1.95	0	0.02	0	0.02	4	2.06
1994	184	84	2.56	0	0.00	0	0.00	87	2.65
1995	-	-	-	-	-	-	-	-	-

Table 4. Albacore catch rates (number of fish per 100 hooks) for distant-water longline fleets in the vicinity of Wallis and Futuna (10S–15S, 175W–180W), compared to the main albacore fishing grounds in the central and western Pacific Ocean (20S–45S, 140E–110W).

	JAPAN			KOREA			TAIWAN		
YEAR	WF	20S-45S	%	WF	20S-45S	%	WF	20S-45S	%
1962	3.19	3.27	98						
1963	3.61	2.25	160						
1964	3.67	2.43	151						
1965	2.62	2.28	115						
1966	3.64	2.54	143						
1967	2.22	2.58	86				6.38	7.07	90
1968	2.29	1.55	148				2.75	6.18	44
1969	0.63	1.01	62				2.73	7.60	36
1970	2.46	1.23	200				4.04	6.18	65
1971	1.94	0.79	246				2.50	6.13	41
1972	1.80	0.55	327				2.08	5.85	36
1973	-	0.69	-				2.11	4.66	45
1974	-	0.48	-				1.61	3.62	44
1975	-	0.49	-	0.16	1.51	11	1.69	4.25	40
1976	-	0.37	-	1.03	2.28	45	1.73	4.73	37
1977	-	0.44	-	0.98	1.86	53	1.20	5.76	21
1978	-	0.48	-	1.72	3.52	49	2.73	6.11	45
1979	-	0.44	-	1.07	2.81	38	1.66	4.38	38
1980	-	0.27	-	0.73	2.10	35	2.09	4.07	51
1981	-	0.45	-	0.70	1.83	38	1.52	3.37	45
1982	-	0.57	-	1.11	2.71	41	2.13	3.48	61
1983	-	0.78	-	1.29	2.79	46	-	4.49	-
1984	-	0.71	-	1.18	2.38	50	1.16	3.16	37
1985	-	0.99	-	1.07	3.05	35	1.40	3.98	35
1986	-	0.99	-	2.00	3.84	52	1.93	6.21	31
1987	-	0.85	-	1.17	2.33	50	2.71	3.82	71
1988	-	0.86	-	0.96	2.29	42	2.75	3.63	76
1989	-	0.85	-	-	1.52	-	-	2.23	-
1990	-	0.92	-	0.11	1.01	11	-	1.83	-
1991	-	0.89	-	-	-	-	-	2.65	-
1992	-	1.02	-	2.12	2.03	104	-	3.10	-
1993	-	1.35	-	-	0.23	-	1.95	3.19	61
1994	-	1.27	-				2.56	3.26	79
1995	-	1.48	-				-	3.31	-
AVG	2.55	1.86	137	1.09	2.40	45	2.32	4.81	48
80-95	-	-	-	1.13	2.40	47	2.02	3.82	53

Table 5. Bigeye catch rates (number of fish per 100 hooks) for distant-water longline fleets in the vicinity of Wallis and Futuna (10S–15S, 175W–180W), compared to the main bigeye fishing grounds in the central and western Pacific Ocean (15N–15S, 140E–110W)

	JAPAN			KOREA			TAIWAN		
YEAR	WF	15N-15S	%	WF	15N-15S	%	WF	15N-15S	%
1962	0.10	1.01	10						
1963	0.19	0.99	19						
1964	0.31	0.87	36						
1965	0.14	0.77	18						
1966	0.21	0.68	31						
1967	0.19	0.77	25				0.27	0.44	61
1968	0.17	0.68	25				0.18	0.33	55
1969	0.10	0.85	12				0.05	0.24	21
1970	0.18	0.71	25				0.21	0.45	47
1971	0.11	0.68	16				0.12	0.27	44
1972	0.15	0.81	19				0.11	0.37	30
1973	-	0.71	-				0.49	0.30	163
1974	-	0.69	-				0.04	0.40	10
1975	-	0.73	-	0.69	0.71	97	0.16	0.22	73
1976	-	0.78	-	0.33	0.69	48	0.14	0.18	78
1977	-	0.84	-	0.18	0.75	24	0.10	0.14	71
1978	-	0.73	-	0.31	0.73	42	0.10	0.16	63
1979	-	0.77	-	0.25	0.59	42	0.09	0.20	45
1980	-	0.68	-	0.24	0.43	56	0.14	0.20	70
1981	-	0.54	-	0.10	0.37	27	0.13	0.17	76
1982	-	0.66	-	0.08	0.44	18	0.06	0.09	67
1983	-	0.73	-	0.10	0.58	17	-	0.09	-
1984	-	0.69	-	0.28	0.57	49	0.14	0.08	175
1985	-	0.84	-	0.20	0.65	31	0.05	0.10	50
1986	-	0.89	-	0.13	0.67	19	0.08	0.07	114
1987	-	0.86	-	0.13	0.73	18	0.04	0.11	36
1988	-	0.65	-	0.09	0.51	18	0.01	0.05	20
1989	-	0.64	-	-	0.44	-	-	0.13	-
1990	-	0.78	-	0.17	0.67	25	-	0.11	-
1991	-	0.70	-	-	0.71	-	-	0.10	-
1992	-	0.71	-	1.58	0.75	211	-	2.58	-
1993	-	0.63	-	-	0.73	-	0.02	0.03	67
1994	-	0.61	-				0.00	0.15	0
1995	-	0.57	-				-	0.10	-
AVG	0.17	0.80	21	0.30	0.62	49	0.12	0.21	57
80-95	-	-	-	0.28	0.58	49	0.07	0.11	64

Table 6. Yellowfin catch rates (number of fish per 100 hooks) for distant-water longline fleets in the vicinity of Wallis and Futuna (10S–15S, 175W–180W), compared to the main yellowfin fishing grounds in the central and western Pacific Ocean (15N–15S, 140E–110W)

	JAPAN			KOREA			TAIWAN		
YEAR	WF	15N-15S	%	WF	15N-15S	%	WF	15N-15S	%
1962	0.47	1.33	35						
1963	0.72	1.27	57						
1964	1.34	1.32	102						
1965	1.03	1.23	84						
1966	1.59	1.65	96						
1967	0.48	1.00	48				2.54	0.65	391
1968	1.11	1.27	87				0.97	1.12	87
1969	0.73	1.21	60				0.52	1.46	36
1970	1.72	1.09	158				0.32	0.76	42
1971	0.36	0.93	39				0.60	1.82	33
1972	1.43	0.91	157				1.58	1.37	115
1973	-	0.88	-				1.05	1.15	91
1974	-	0.54	-				0.29	0.86	34
1975	-	0.59	-	0.16	0.38	42	0.39	0.52	75
1976	-	0.67	-	0.37	0.73	51	0.49	0.59	83
1977	-	0.95	-	0.78	0.99	79	0.33	0.44	75
1978	-	1.22	-	0.45	1.27	35	0.12	0.71	17
1979	-	0.87	-	0.46	1.14	40	0.51	0.79	65
1980	-	1.09	-	0.84	0.96	88	1.35	0.80	169
1981	-	0.88	-	0.55	0.51	108	0.34	0.39	87
1982	-	0.92	-	0.34	0.69	49	0.13	0.24	54
1983	-	1.16	-	0.39	0.97	40	-	0.28	-
1984	-	0.80	-	0.35	0.72	49	0.51	0.21	243
1985	-	0.77	-	0.10	0.73	14	0.10	0.29	34
1986	-	0.66	-	0.58	0.76	76	0.20	0.23	87
1987	-	0.54	-	0.53	0.60	88	0.14	0.22	64
1988	-	0.51	-	0.56	0.58	97	0.83	0.40	208
1989	-	0.50	-	-	0.48	-	-	0.19	-
1990	-	0.59	-	0.11	0.57	19	-	0.22	-
1991	-	0.47	-	-	0.45	-	-	0.15	-
1992	-	0.48	-	2.70	0.70	386	-	1.50	-
1993	-	0.50	-	-	0.51	-	0.02	0.12	17
1994	-	0.60	-				0.00	0.28	0
1995	-	0.71	-				-	0.18	-
AVG	1.00	1.20	83	0.58	0.77	75	0.58	0.67	86
80-95	-	-	-	0.64	0.71	91	0.36	0.32	114

Table 7. Catches (metric tonnes), days fished and catch per unit of effort (number of fish per 100 hooks) for longliners based in New Caledonia

YEAR	VESSELS ACTIVE	DAYS FISHED	ALBACORE			BIGEYE			YELLOWFIN			OTHER	TOTAL	
			CATCH	CPUE	%	CATCH	CPUE	%	CATCH	CPUE	%	CATCH	CATCH	CPUE
1983	1	41	12	0.72	20	1	0.03	2	8	0.27	13	39	60	1.99
1984	2	130	112	1.90	57	9	0.08	5	25	0.30	13	49	195	2.60
1985	3	279	131	1.12	33	15	0.06	4	119	0.77	30	137	402	2.38
1986	2	266	179	1.38	33	17	0.07	3	151	0.61	28	202	549	2.71
1987	3	...	563	1.59	42	33	0.05	2	448	1.00	33	307	1,351	3.32
1988	4	...	584	2.62	45	18	0.03	1	436	1.41	34	259	1,297	4.60
1989	4	...	566	1.79	49	24	0.04	2	248	0.63	22	310	1,148	2.89
1990	7	...	1,053	1.98	53	54	0.04	3	551	0.53	28	327	1,985	2.84
1991	6	...	909	1.73	49	54	0.06	3	506	0.61	28	371	1,840	2.78
1992	4	...	692	1.85	54	24	0.03	2	333	0.65	26	232	1,281	2.81
1993	4	...	755	2.75	56	95	0.04	7	387	0.71	29	101	1,338	3.80
1994	5	...	840	1.77	53	70	0.08	4	390	0.45	24	300	1,600	2.84
1995	8	...	332	1.47	23	92	0.09	6	749	1.10	53	246	1,419	3.19
1996	8	...	414	1.78	31	208	0.08	15	495	1.15	37	236	1,353	3.41
1997	9	...	267	1.86	26	209	0.05	20	416	1.19	40	154	1,046	3.40