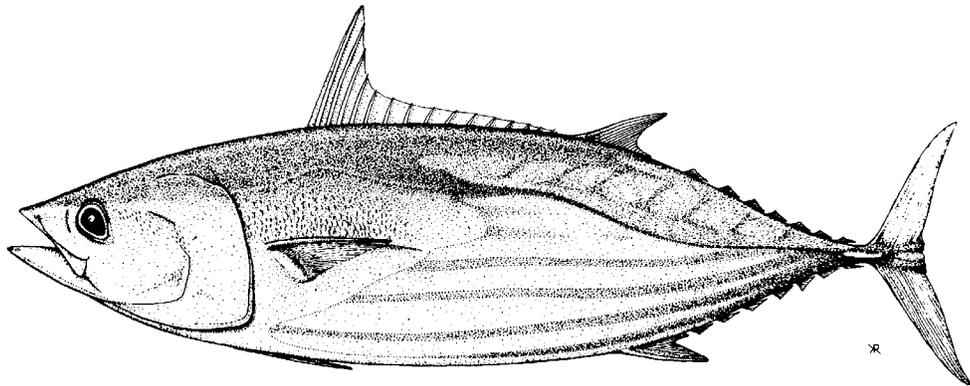


DISTANT-WATER LONGLINE CATCH AND EFFORT
IN THE VICINITY OF THE COOK ISLANDS

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INTRODUCTION

This report was prepared in response to a request from the Cook Islands Ministry of Marine Resources of July 1996 for a summary of available tuna fishery catch and effort data for the Cook Islands Exclusive Economic Zone (EEZ). A more detailed National Fisheries Assessment, which will also consider stock assessment and management issues, will be prepared at a later date; this report should therefore be considered as interim in nature.

The Oceanic Fisheries Programme (OFP) of the South Pacific Commission (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covering the distant-water longline fisheries of Japan from 1962 to 1995 (Fisheries Agency of Japan, undated, and unpublished data), the Republic of Korea from 1975 to 1993 (National Fisheries Research and Development Agency, 1980, 1981, 1985, 1986, 1988, 1990, 1993, and unpublished data), and the Republic of China (Taiwan) from 1967 to 1993 (Tuna Research Center, 1975—1993, and unpublished data).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 Cook Islands (Figure 1). The Japanese and Taiwanese data are raised and therefore represent total catches; 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. The Korean data are unraised, but coverage has been relatively high, therefore the data should be considered representational. The OFP holds a small amount of logsheet data collected from the Korean longline fleet under the terms of a bilateral access agreement with the Cook Islands; however, coverage is poor, therefore these data have not been considered in this report.

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 Table 1—4. In order to examine the viability of distant-water longlining in the waters of the Cook Islands, average catch rates for the three main commercial species caught by distant-water longliners — albacore (*Thunnus alalunga*), bigeye (*Thunnus obesus*) and yellowfin (*Thunnus albacares*) — are compared in Tables 5—7 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 catch and effort data are aggregated by 5° by 5°; therefore, precise estimates of catch and effort in the waters of the Cook Islands EEZ alone are unavailable. Tables 1—4 present statistics for “the vicinity of the Cook Islands”, which is defined as the area from 5°S to 25°S and from 155°W to 170°W. Tables 5—7 compare catch rates for the northern Cook Islands and the southern Cook Islands to catch rates in areas across the region where the species are targeted; the northern Cook Islands is defined as the area from 5°S to 15°S and from 155°W to 170°W, while the southern Cook Islands is defined as the area from 15°S to 25°S and from 155°W to 170°W.

Table 5—7, which compare catch rates in the northern and southern Cook Islands to broader areas where each species is targeted, 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 the northern and southern Cook Islands.

Table 8 presents monthly catch statistics covering two longliners based in Rarotonga during 1995, while Figure 5 shows the distribution of fishing effort.

DISCUSSION

Japanese Longline

Figure 2 and Table 1 summarise the activities of the Japanese longline fleet. The maps for 1962 to 1970 indicate that the Japanese fished both to the north of the Cook Islands and to the south, but only to a lesser extent in the vicinity of the Cook Islands. Since 1970, the amount of effort expended by the Japanese in the area to the south of the Cook Islands has been negligible, while effort to the north of the Cook Islands, particularly in the area to the north of French Polynesia, has remained high.

The distribution of Japanese fishing effort can be explained by targeting practices. Yellowfin and bigeye in the central Pacific are usually targeted to the north of 10°S, while albacore are usually targeted south of 25°S. Much of the Cook Islands lies between these latitudes; hence fishing effort within the Cook Islands has been comparatively low. The Japanese ceased targeting albacore around 1970; thus Japanese effort to the south of the Cook Islands declined at that time.

Korean Longline

Figure 3 and Table 2 summarise the activities of the Korean distant-water longline fleet. While the times series, from 1975 to 1993, is not as extensive as for the Japanese fleet, a similar pattern in the distribution of effort is evident. Effort is concentrated to the north of the Cook Islands and, to a lesser extent, to the south of the Cook Islands. The Korean fleet ceased targeting albacore in the late 1980s; therefore, it has only been in recent years, since 1990, that effort to the south of the Cook Islands by the Korean fleet has been negligible. Effort to the north of the Cook Islands by the Korean fleet in recent years covers a wider longitudinal band than for the Japanese, which is partly due to the bilateral access agreements that the Koreans have held with French Polynesia and Kiribati.

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. Therefore, fishing effort by the Taiwanese has usually been concentrated to the south of the Cook Islands. Since 1990, it would appear that a moderate level of effort has been expended each year in the vicinity of the Cook Islands.

Total Catch by Distant-Water Longline

Table 4 presents total catch and effort in the vicinity of the Cook Islands by the Japanese, Korean and Taiwanese fleets combined, for 1975–1993, the period for which data for all three fleets are available. The total catch has ranged widely, from 1,860 mt to 6,398 mt; the average catch during 1975–1993 was 3,354 mt.

Albacore

Table 5 compares catch rates for albacore in the southern Cook Islands with those in the area in which albacore are targeted in the central and western Pacific Ocean, 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 southern Cook Islands have usually been inferior to average catch rates by the Korean and Taiwanese fleets throughout the broader area. In contrast, the albacore catch rate in the southern Cook Islands for the Japanese fleet has been 27 per cent greater than that for the broader area.

However, fishing effort by the Japanese in the southern Cook Islands has been negligible since 1970, when the Japanese ceased to target albacore; therefore, this result should not be considered indicative. More importantly, Table 5 shows that for the Taiwanese, who continue to target albacore, the albacore catch rate in the southern Cook Islands has been 51 per cent of the catch rate for the broader area.

Bigeye

Table 6 compares catch rates for bigeye in the northern Cook Islands 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. Effort in the vicinity of the Cook Islands by the Japanese fleet has been low since the late 1960s; therefore, bigeye catch rates for the Japanese fleet in the northern Cook Islands are less reliable indicators than those for the Korean fleet, which has expended consistently moderate levels of effort in the vicinity of the Cook Islands. Bigeye catch rates in the northern Cook Islands for the Korean fleet have usually been similar to, or slightly higher than, average catch rates throughout the broader area. Bigeye catch rates in the northern Cook Islands for the Taiwanese fleet have been much less than average catch rates throughout the broader area; however, the Taiwanese fleet has not usually targeted bigeye in the northern Cook Islands.

Yellowfin

Table 7 compares catch rates for yellowfin in the northern Cook Islands 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. The situation is similar to that for bigeye. Yellowfin catch rates in the northern Cook Islands for the Korean fleet, which are the most reliable indicators compared to the other fleets, have usually been similar to average catch rates throughout the broader area. It is of interest to note that since 1989, by which time the Korean fleet had ceased targeting albacore, yellowfin catch rates in the northern Cook Islands have been considerably greater than for the broader area.

Cook Islands Longline

Table 8 presents monthly catch statistics for two longliners based in Rarotonga during 1995, while Figure 5 shows the distribution of fishing effort. The two vessels fished mainly in the southern Cook Islands and caught primarily albacore and swordfish; other important species included yellowfin, bigeye and blue marlin. The albacore catch rate during 1995, 0.36 fish per 100 hooks, was low compared to the albacore catch rate for the Taiwanese fleet in the southern Cook Islands, which averaged 3.52 fish per 100 hooks during 1980–1993.

CONCLUSION

Catch rates for albacore in the southern Cook Islands are low compared to the prime albacore fishing grounds further to the south. On the other hand, catch rates for bigeye and yellowfin in the northern Cook Islands are similar to, or greater than, catch rates in other bigeye and yellowfin fishing grounds.

While the available data are not adequate for formulating a precise management plan for longline fisheries in the Cook Islands, several conclusions can be drawn from the findings presented above.

- Given that historical annual catches by distant-water longliners in the vicinity of the Cook Islands EEZ has approached 6,000 mt of target species, and that stocks of most tuna species are

considered to be in a healthy state, the abundance of the resource is unlikely to represent a constraint to domestic tuna longline development.

- Low catch rates for albacore in the southern Cook Islands by both distant-water vessels and recent domestic activity suggest that this is unlikely to be an appropriate target species; on the other hand, the good catch rates for bigeye and yellowfin tuna in the northern Cook Islands suggest this as a more attractive operational area for sashimi-oriented vessels, provided the logistical difficulties posed by the distance from the only operating base, Rarotonga, were not excessive.
- The large volume of non-tuna by-catch taken by the present domestic vessels (greater than 50 per cent of the landed catch) suggests that (a) local demand for generic oceanic fish species could be met from this source and (b) locating export markets for selected by-catch would be an important component of economic viability of the operations.

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Figure 1. SPC statistical area

Figure 2. Japanese longline effort

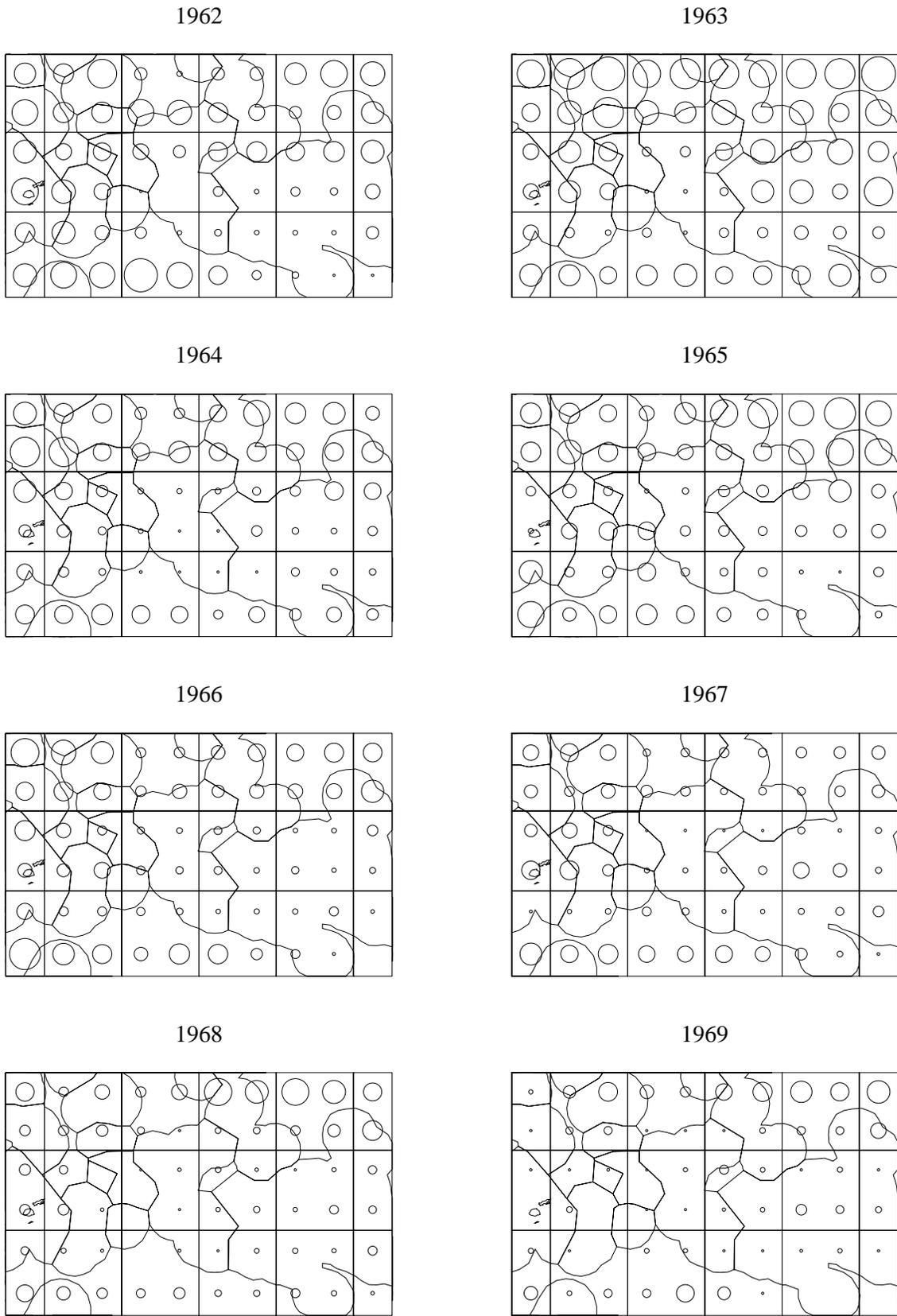


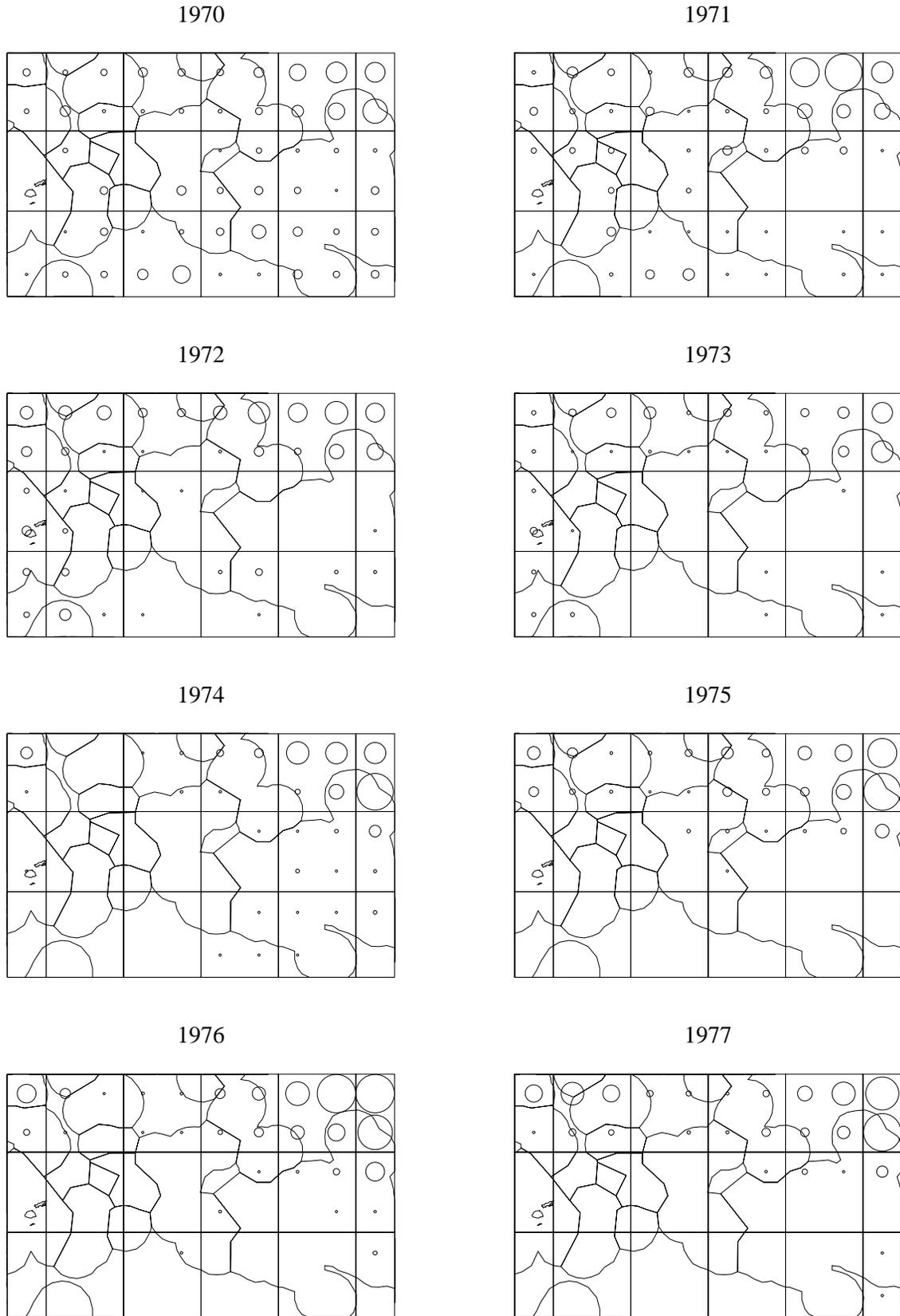
Figure 2. Japanese longline effort, continued

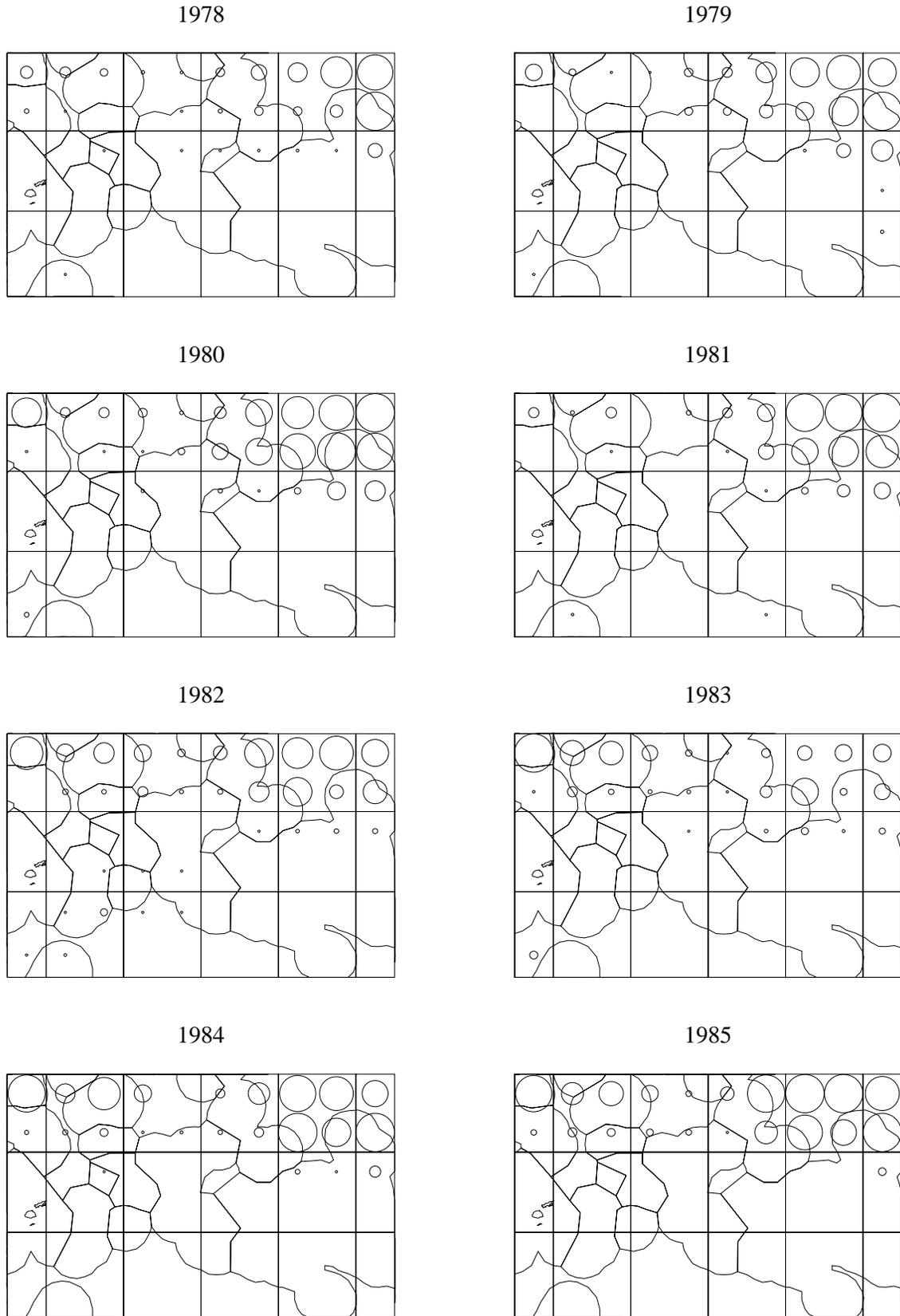
Figure 2. Japanese longline effort, continued

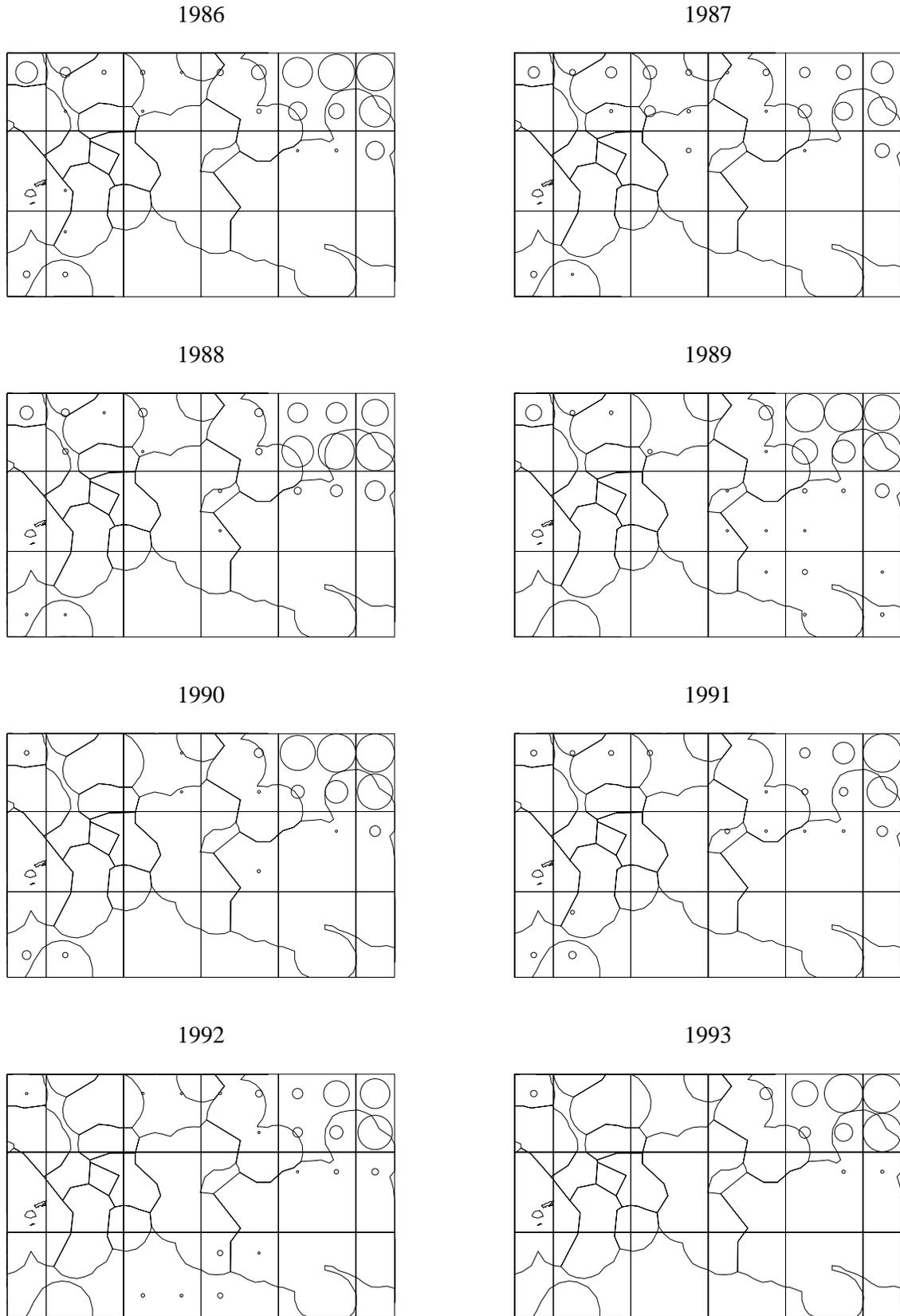
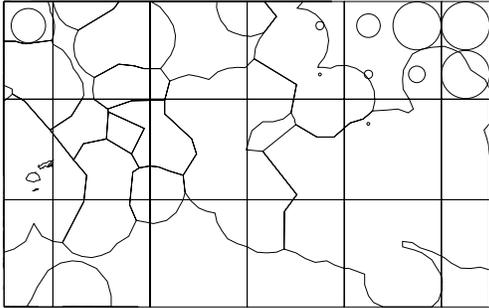
Figure 2. Japanese longline effort, continued

Figure 2. Japanese longline effort, continued

1994



1995

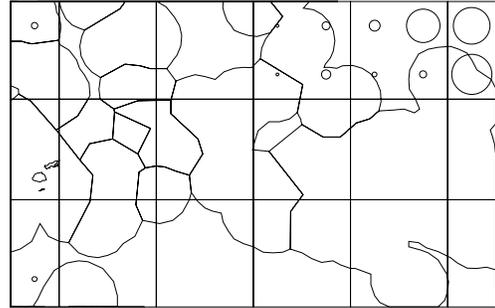


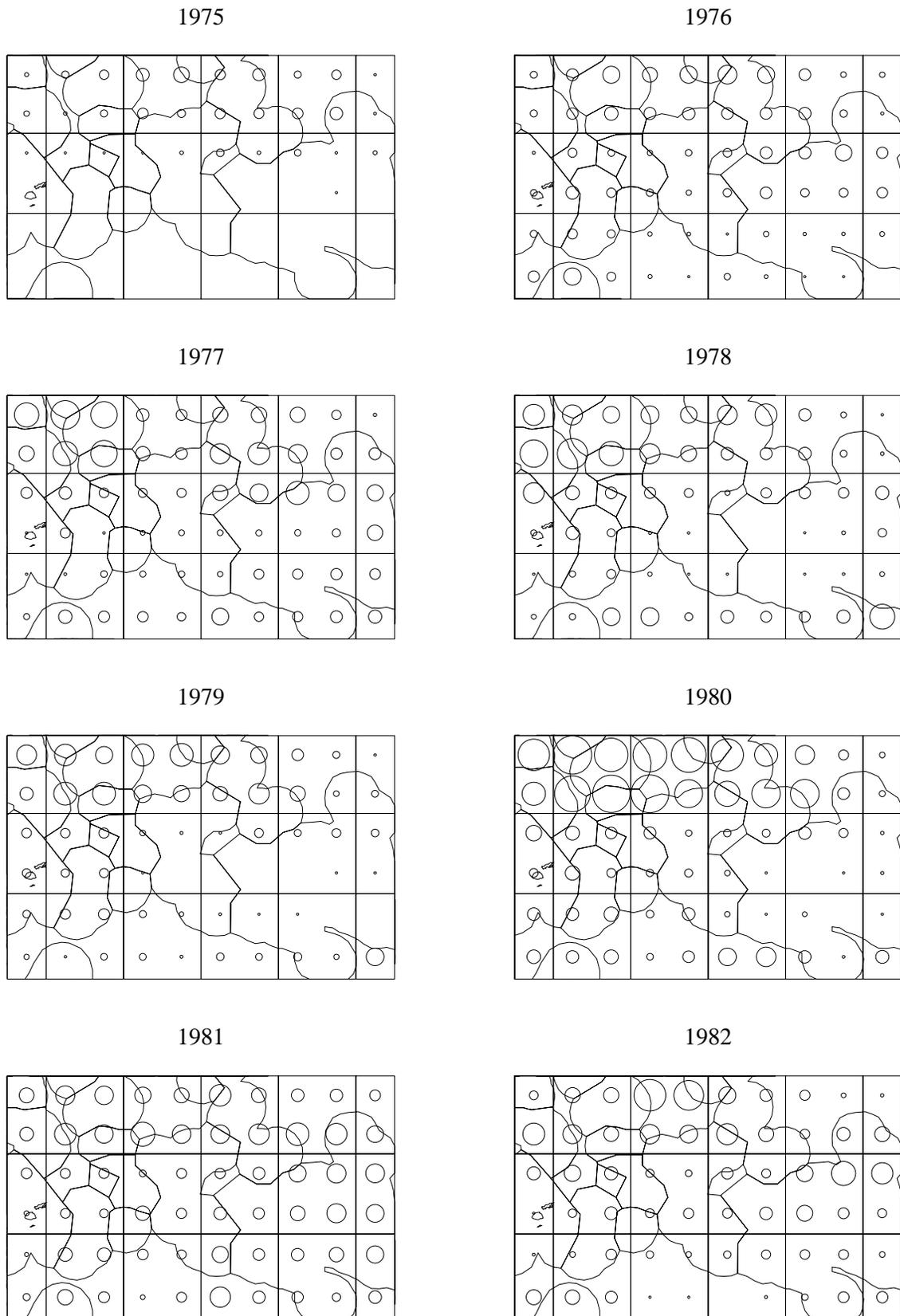
Figure 3. Korean longline effort

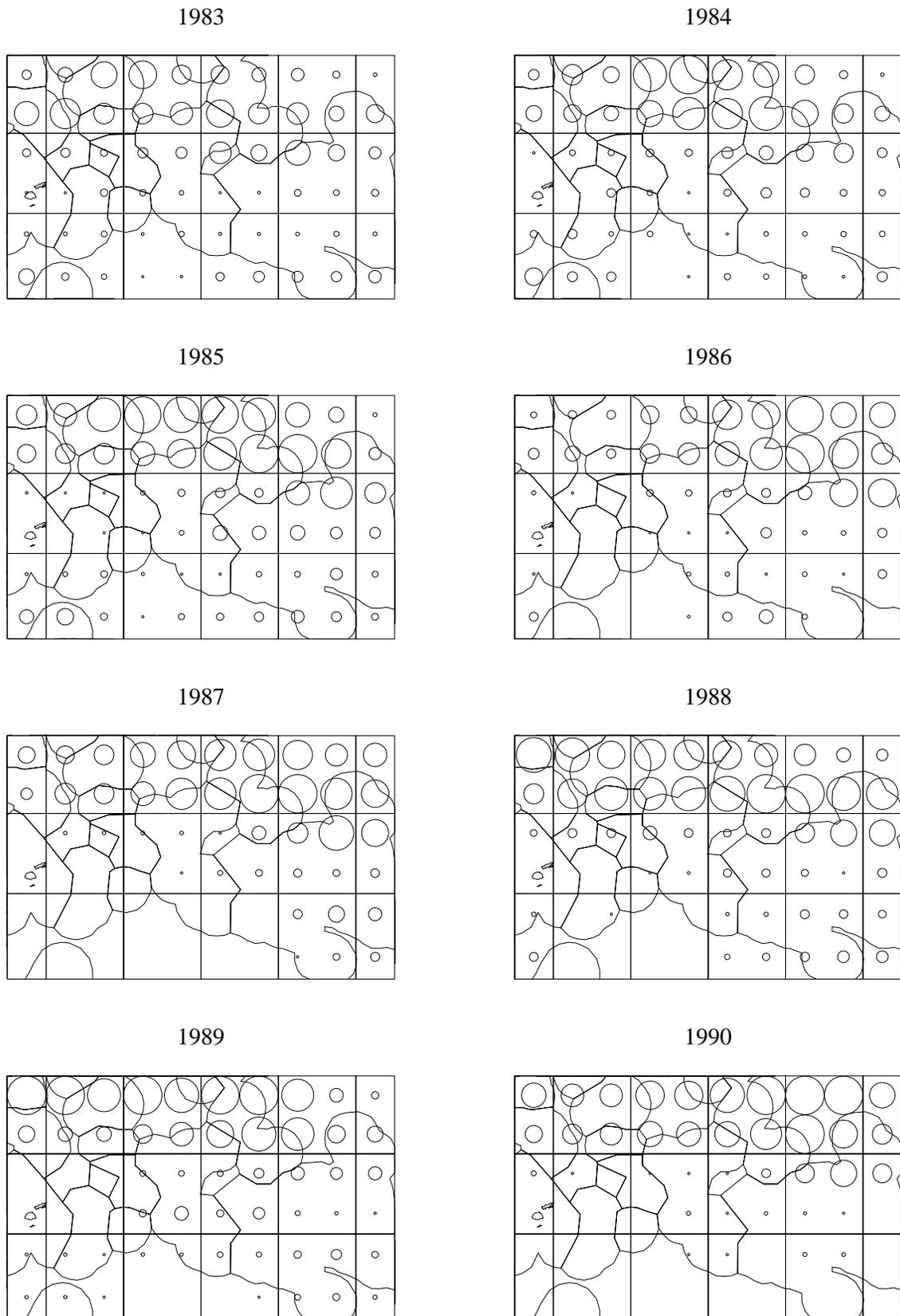
Figure 3. Korean longline effort, continued

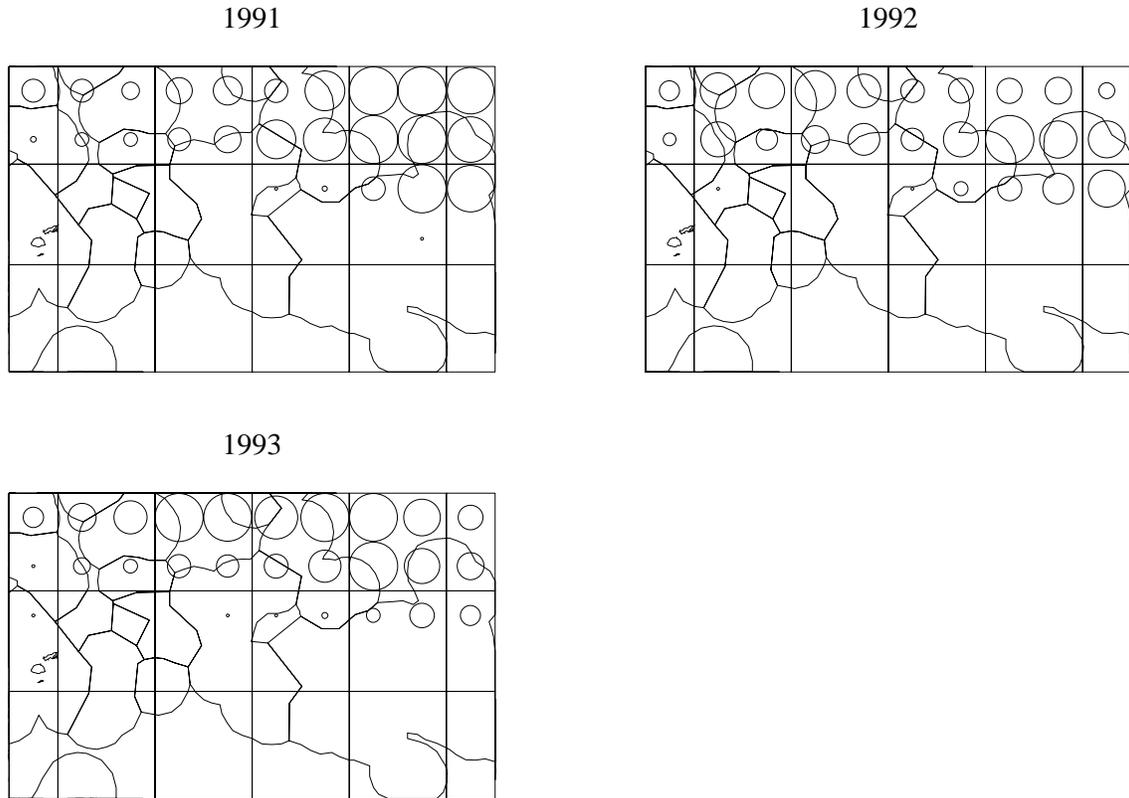
Figure 3. Korean longline effort, continued

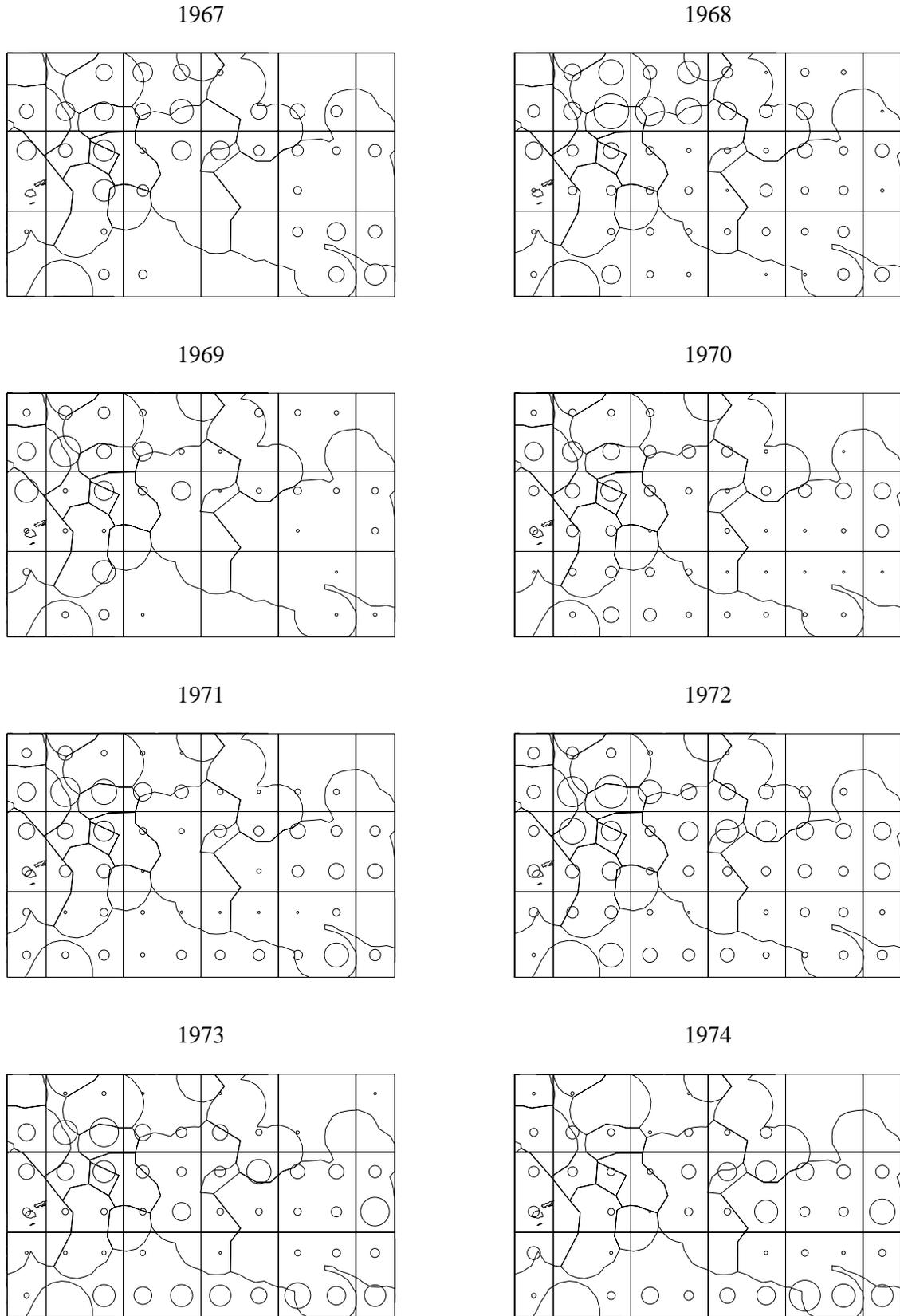
Figure 4. Taiwanese longline effort

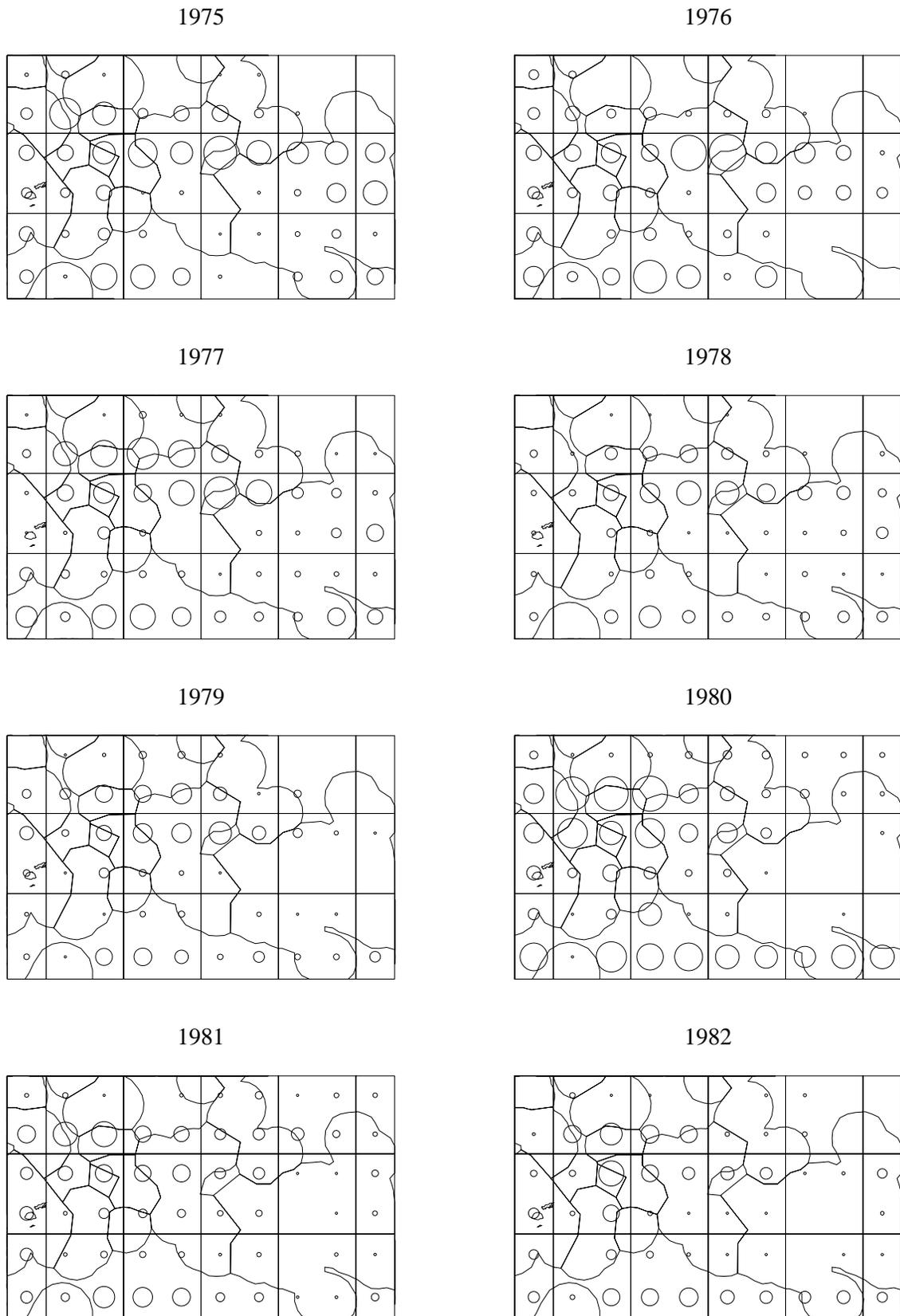
Figure 4. Taiwanese longline effort, continued

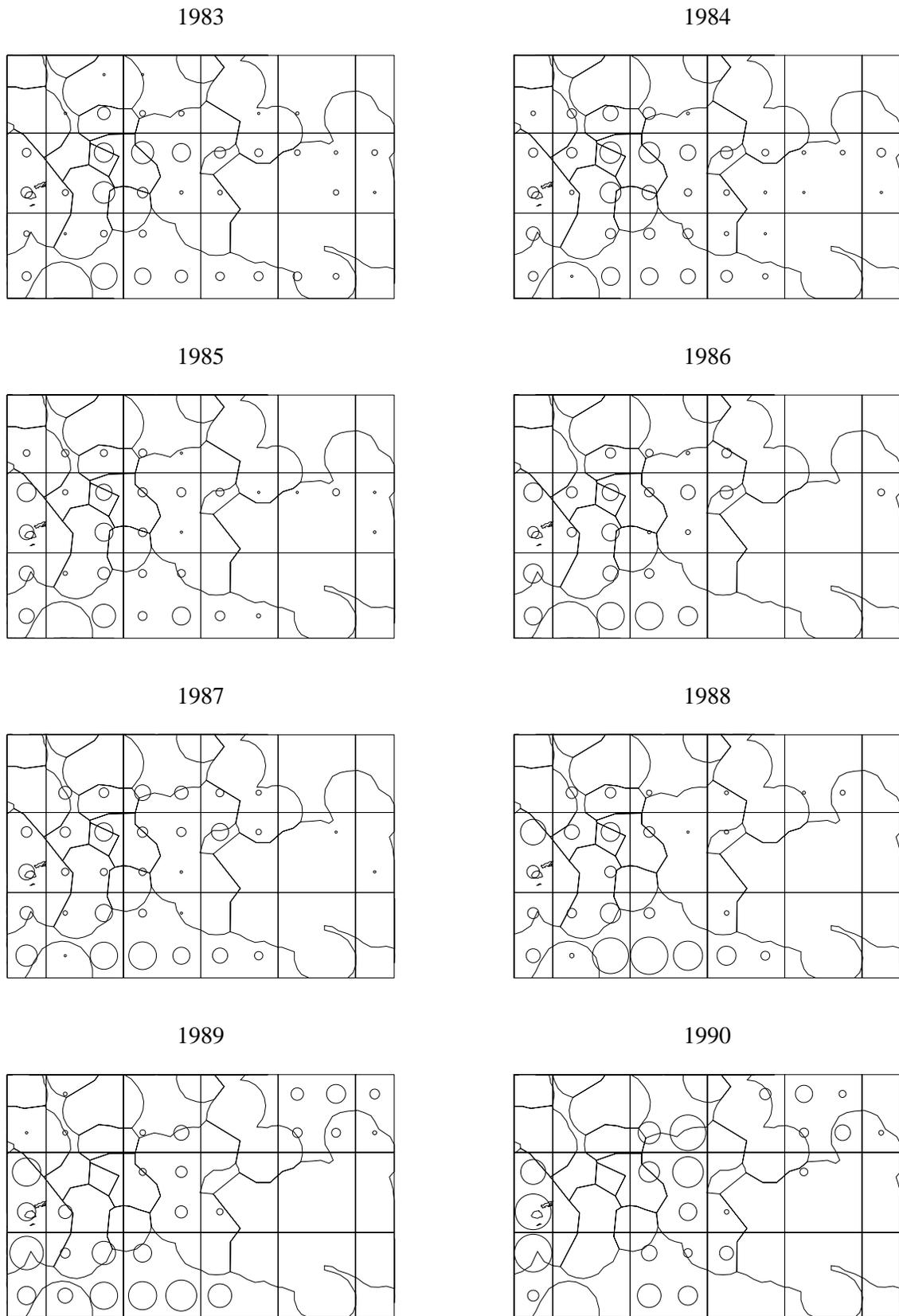
Figure 4. Taiwanese longline effort, continued

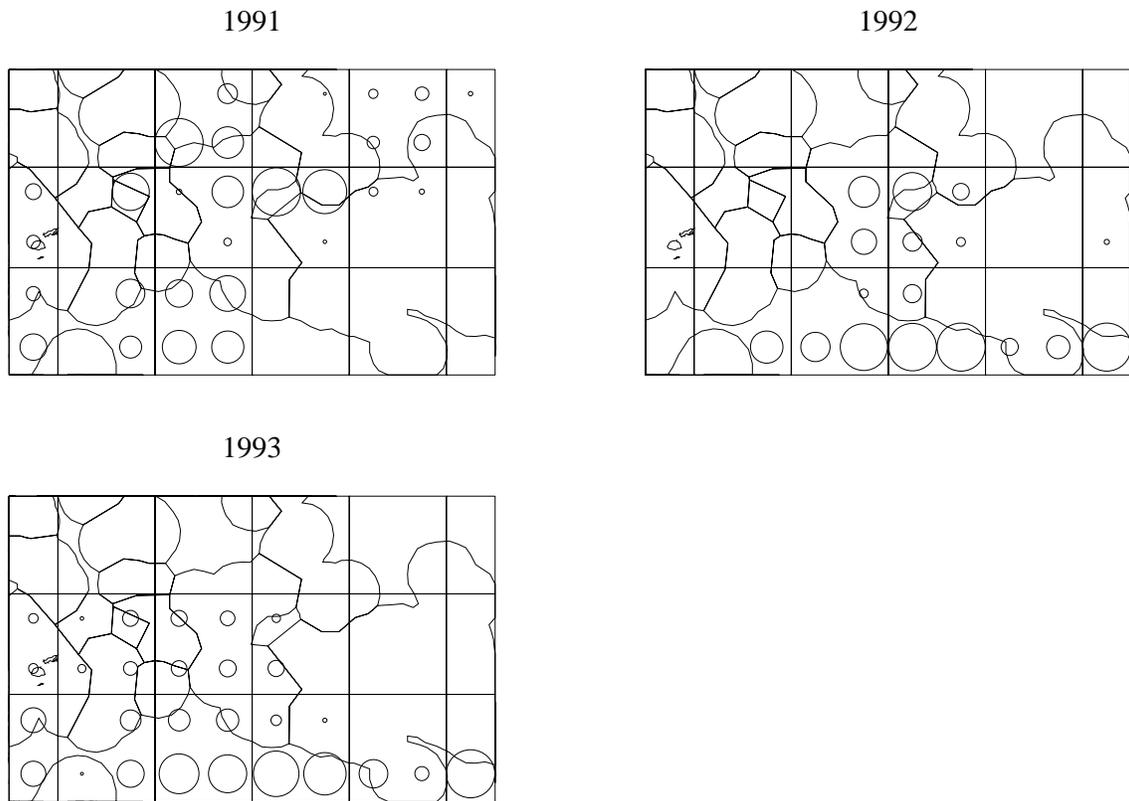
Figure 4. Taiwanese longline effort, continued

Figure 5. Effort during 1995 by longliners based in Rarotonga

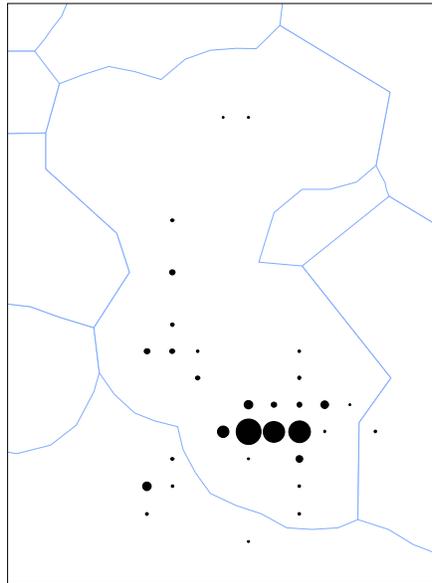


Table 1. Catch (metric tonnes), effort (thousand hooks) and catch per unit effort (number of fish per 100 hooks) by Japanese distant-water longliners in the vicinity of the Cook Islands (5S–25S, 155W–170W)

YEAR	HOOKS	ALBACORE		BIGEYE		YELLOWFIN		TOTAL	
		CATCH	CPUE	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE
1962	4,719	4,018	6.51	374	0.26	796	0.67	5,397	7.53
1963	4,164	1,715	3.15	749	0.58	704	0.67	3,604	4.63
1964	2,152	1,073	3.82	442	0.66	406	0.75	2,061	5.37
1965	3,481	1,372	3.02	358	0.33	520	0.59	2,643	4.17
1966	1,716	666	2.97	229	0.43	212	0.49	1,271	4.11
1967	985	311	2.42	194	0.64	77	0.31	669	3.56
1968	319	69	1.67	25	0.26	83	1.03	228	3.28
1969	331	129	2.99	21	0.20	18	0.22	197	3.59
1970	481	108	1.72	19	0.13	56	0.47	273	2.69
1971	409	112	2.09	48	0.38	65	0.63	264	3.30
1972	53	1	0.14	9	0.55	2	0.15	20	1.08
1973	21	1	0.54	6	0.93	10	1.83	20	3.52
1974	31	0	0.10	3	0.40	1	0.19	7	0.78
1975	219	9	0.34	79	1.17	18	0.33	120	1.95
1976	86	2	0.22	14	0.55	17	0.78	44	1.78
1977	40	2	0.46	11	0.88	6	0.68	21	2.07
1978	40	0	0.07	10	0.87	7	0.68	21	1.79
1979	217	17	0.60	79	1.17	100	1.82	214	3.78
1980	589	14	0.18	92	0.50	237	1.59	395	2.48
1981	13	0	0.34	1	0.42	1	0.48	4	1.28
1982	279	9	0.27	76	0.89	56	0.80	159	2.09
1983	81	0	0.05	12	0.49	10	0.49	25	1.11
1984	70	0	0.08	16	0.77	22	1.26	44	2.27
1985	155	3	0.15	37	0.78	34	0.88	80	1.89
1986	12	0	0.00	1	0.36	8	2.59	9	3.00
1987	278	14	0.40	103	1.20	112	1.60	248	3.37
1988	39	5	0.98	4	0.36	2	0.25	17	1.89
1989	54	8	1.26	17	1.07	14	1.06	44	3.51
1990	4	0	0.11	0	0.55	0	0.32	1	1.13
1991	45	3	0.59	10	0.71	2	0.17	21	1.69
1992	52	1	0.27	4	0.28	5	0.41	30	1.67
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-
1995	3	0	0.00	0	0.12	0	0.18	0	0.67

Table 2. Catch (metric tonnes), effort (thousand hooks) and catch per unit effort (number of fish per 100 hooks) by Korean distant-water longliners in the vicinity of the Cook Islands (5S–25S, 155W–170W)

YEAR	HOOKS	ALBACORE		BIGEYE		YELLOWFIN		TOTAL	
		CATCH	CPUE	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE
1975	653	35	0.27	143	0.71	50	0.30	242	1.35
1976	1,405	245	0.94	200	0.46	128	0.36	595	1.82
1977	2,357	330	0.98	379	0.52	284	0.48	1,015	2.02
1978	1,886	333	1.17	443	0.76	207	0.43	1,113	2.50
1979	1,618	148	0.63	278	0.55	411	1.00	949	2.35
1980	6,021	633	0.61	893	0.48	1,073	0.70	2,662	1.83
1981	4,312	467	0.83	341	0.25	244	0.22	1,231	1.41
1982	3,175	478	1.15	346	0.35	398	0.49	1,332	2.09
1983	4,296	704	1.11	755	0.57	756	0.69	2,356	2.48
1984	5,160	291	0.42	849	0.53	884	0.68	2,231	1.75
1985	4,964	284	0.44	749	0.49	853	0.68	2,022	1.68
1986	2,821	476	1.27	378	0.43	565	0.79	1,528	2.61
1987	4,462	514	0.74	929	0.67	656	0.58	2,256	2.08
1988	6,637	660	0.76	866	0.42	851	0.51	2,712	1.81
1989	3,666	258	0.54	429	0.38	530	0.57	1,371	1.59
1990	3,305	125	0.29	820	0.80	909	1.09	1,972	2.26
1991	2,998	152	0.39	1,024	1.10	781	1.03	2,084	2.62
1992	2,518	220	0.67	811	1.04	621	0.97	1,782	2.81
1993	1,785	99	0.36	841	1.16	406	0.76	1,434	2.37

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 the Cook Islands (5S–25S, 155W–170W)

YEAR	HOOKS	ALBACORE		BIGEYE		YELLOWFIN		TOTAL	
		CATCH	CPUE	CATCH	CPUE	CATCH	CPUE	CATCH	CPUE
1967	2,948	1,379	2.83	248	0.36	282	0.48	2,039	3.87
1968	3,875	2,960	4.03	388	0.33	743	0.59	4,323	5.15
1969	1,512	1,013	3.75	88	0.17	320	0.75	1,529	4.79
1970	1,436	1,088	4.17	134	0.34	159	0.35	1,470	5.16
1971	1,481	894	3.25	101	0.28	267	0.91	1,339	4.55
1972	4,118	2,237	2.88	196	0.18	791	0.68	3,367	3.81
1973	2,582	1,033	2.24	140	0.20	180	0.27	1,471	2.81
1974	1,394	378	1.47	27	0.08	39	0.10	481	1.71
1975	5,326	2,202	2.25	245	0.18	241	0.19	2,794	2.66
1976	5,967	2,685	2.34	107	0.07	220	0.13	3,162	2.62
1977	7,009	2,785	2.12	351	0.18	551	0.29	3,874	2.65
1978	4,030	1,803	2.37	222	0.19	348	0.31	2,890	3.26
1979	3,932	1,243	1.73	206	0.23	311	0.39	1,880	2.43
1980	7,153	2,230	1.74	304	0.18	632	0.36	3,341	2.34
1981	2,755	681	1.37	78	0.11	113	0.17	931	1.73
1982	2,334	693	1.65	61	0.09	97	0.15	962	2.20
1983	2,113	738	1.93	38	0.07	118	0.22	975	2.47
1984	2,710	702	1.42	44	0.06	68	0.10	893	1.72
1985	925	295	1.64	18	0.08	19	0.09	361	1.87
1986	1,353	426	1.61	24	0.08	38	0.11	521	1.85
1987	1,969	630	1.70	48	0.09	36	0.07	765	1.91
1988	578	265	2.54	4	0.02	11	0.07	317	2.84
1989	1,675	374	1.27	13	0.03	39	0.11	445	1.45
1990	6,830	1,655	1.40	49	0.02	237	0.14	2,061	1.62
1991	11,812	2,352	1.18	109	0.04	146	0.05	2,743	1.32
1992	4,204	1,442	2.09	9	0.01	55	0.06	1,562	2.20
1993	2,700	755	1.64	12	0.02	26	0.04	858	1.77

Table 4. Total catch (metric tonnes) and effort (thousand hooks) by Japanese, Korean and Taiwanese distant-water longliners in the vicinity of the Cook Islands (5S–25S, 155W–170W)

YEAR	HOOKS	ALBACORE	BIGEYE	YELLOWFIN	OTHERS	TOTAL
1975	6,198	2,246	467	309	134	3,156
1976	7,458	2,932	321	365	183	3,801
1977	9,406	3,117	741	841	211	4,910
1978	5,956	2,136	675	562	651	4,024
1979	5,767	1,408	563	822	250	3,043
1980	13,763	2,877	1,289	1,942	290	6,398
1981	7,080	1,148	420	358	240	2,166
1982	5,788	1,180	483	551	239	2,453
1983	6,490	1,442	805	884	225	3,356
1984	7,940	993	909	974	292	3,168
1985	6,044	582	804	906	171	2,463
1986	4,186	902	403	611	142	2,058
1987	6,709	1,158	1,080	804	227	3,269
1988	7,254	930	874	864	378	3,046
1989	5,395	640	459	583	178	1,860
1990	10,139	1,780	869	1,146	239	4,034
1991	14,855	2,507	1,143	929	269	4,848
1992	6,774	1,663	824	681	206	3,374
1993	4,485	854	853	432	153	2,292
MIN	4,186	582	321	309	134	1,860
MAX	14,855	3,117	1,289	1,942	651	6,398
AVG	7,457	1,605	736	767	246	3,354

Table 5. Albacore catch rates (number of fish per 100 hooks) for distant-water longline fleets in the vicinity of the southern Cook Islands (15S–25S, 155W–170W), compared to the main albacore fishing grounds in the central and western Pacific Ocean (20S–45S, 140E–110W)

YEAR	JAPAN			KOREA			TAIWAN		
	S. COOKS	20S-45S	%	S. COOKS	20S-45S	%	S. COOKS	20S-45S	%
1962	4.05	3.28	123						
1963	2.37	2.26	105						
1964	2.36	2.44	97						
1965	3.12	2.28	137						
1966	2.46	2.55	96						
1967	2.19	2.58	85				2.22	7.08	31
1968	1.71	1.56	110				4.70	6.18	76
1969	4.55	1.02	446				-	7.61	-
1970	1.86	1.23	151				5.14	6.18	83
1971	1.81	0.79	229				2.66	6.14	43
1972	0.30	0.56	54				2.71	5.85	46
1973	-	0.70	-				2.23	4.67	48
1974	-	0.48	-				1.52	3.63	42
1975	0.00	0.50	0	-	1.51	-	2.32	4.25	55
1976	0.00	0.37	0	1.94	2.29	85	2.41	4.74	51
1977	-	0.45	-	1.42	1.86	76	2.12	5.76	37
1978	-	0.48	-	2.15	3.52	61	3.47	6.12	57
1979	-	0.45	-	1.01	2.82	36	1.93	4.38	44
1980	-	0.28	-	1.22	2.11	58	2.57	4.07	63
1981	-	0.45	-	1.10	1.84	60	1.36	3.37	40
1982	1.06	0.57	186	1.91	2.72	70	1.62	3.48	47
1983	-	0.78	-	1.00	2.79	36	1.84	4.49	41
1984	-	0.71	-	1.03	2.38	43	1.56	3.17	49
1985	-	1.00	-	1.14	3.06	37	1.95	3.99	49
1986	-	0.99	-	1.50	3.85	39	2.42	6.21	39
1987	-	0.85	-	1.83	2.34	78	1.47	3.83	38
1988	1.61	0.87	185	1.69	2.29	74	2.92	3.63	80
1989	1.72	0.85	202	1.64	1.52	108	1.30	2.24	58
1990	-	0.93	-	0.61	1.02	60	1.10	1.84	60
1991	-	0.89	-	-	-	-	1.24	2.66	47
1992	0.27	1.03	-	-	2.03	-	2.09	3.10	67
1993	-	1.36	-	-	0.23	-	1.82	3.20	57
1994	-	1.25	-						
1995	-	1.49	-						
AVG	1.85	1.46	127	1.41	2.43	58	2.26	4.39	51
80-93	1.17	0.83	140	1.33	2.36	57	1.80	3.52	51

Table 6. Bigeye catch rates (number of fish per 100 hooks) for distant-water longline fleets in the vicinity of the northern Cook Islands (5S–15S, 155W–170W), compared to the main bigeye fishing grounds in the central and western Pacific Ocean (15N–15S, 140E–110W)

YEAR	JAPAN			KOREA			TAIWAN		
	N. COOKS	15N-15S	%	N. COOKS	15N-15S	%	N. COOKS	15N-15S	%
1962	0.27	1.02	26						
1963	0.64	1.00	64						
1964	0.68	0.87	78						
1965	0.52	0.77	68						
1966	0.61	0.69	88						
1967	0.93	0.78	119				0.38	0.44	86
1968	0.28	0.68	41				0.34	0.33	103
1969	0.24	0.86	28				0.17	0.24	71
1970	0.33	0.72	46				0.36	0.46	78
1971	0.45	0.68	66				0.29	0.27	107
1972	0.90	0.81	111				0.20	0.38	53
1973	0.93	0.72	129				0.19	0.31	61
1974	0.40	0.70	57				0.06	0.41	15
1975	1.18	0.73	162	0.71	0.72	99	0.19	0.22	86
1976	0.68	0.78	87	0.57	0.70	81	0.07	0.18	39
1977	0.88	0.84	105	0.60	0.75	80	0.19	0.15	127
1978	0.87	0.73	119	0.76	0.74	103	0.20	0.16	125
1979	1.17	0.77	152	0.60	0.60	100	0.24	0.21	114
1980	0.50	0.68	74	0.52	0.44	118	0.21	0.21	100
1981	0.42	0.54	78	0.36	0.38	95	0.12	0.17	71
1982	0.93	0.67	139	0.42	0.45	93	0.09	0.09	100
1983	0.49	0.74	66	0.59	0.59	100	0.07	0.09	78
1984	0.77	0.69	112	0.55	0.58	95	0.07	0.09	78
1985	0.78	0.85	92	0.53	0.65	82	0.10	0.11	91
1986	0.36	0.89	40	0.45	0.67	67	0.09	0.08	113
1987	1.20	0.87	138	0.68	0.73	93	0.10	0.12	83
1988	0.45	0.65	69	0.43	0.51	84	0.03	0.06	50
1989	1.23	0.64	192	0.45	0.44	102	0.06	0.13	46
1990	0.55	0.79	70	0.81	0.67	121	0.03	0.11	27
1991	0.71	0.70	101	1.10	0.72	153	0.04	0.10	40
1992	-	0.72	-	1.04	0.76	137	0.01	2.59	0
1993	-	0.64	-	1.16	0.73	159	0.04	0.04	100
1994	-	0.59	-						
1995	0.12	0.59	20						
AVG	0.66	0.76	87	0.65	0.62	104	0.15	0.29	51
80-95	0.65	0.72	92	0.65	0.59	109	0.08	0.29	27

Table 7. Yellowfin catch rates (number of fish per 100 hooks) for distant-water longline fleets in the vicinity of the northern Cook Islands (5S–15S, 155W–170W), compared to the main yellowfin fishing grounds in the central and western Pacific Ocean (15N–15S, 140E–110W)

YEAR	JAPAN			KOREA			TAIWAN		
	N. COOKS	15N-15S	%	N. COOKS	15N-15S	%	N. COOKS	15N-15S	%
1962	0.72	1.34	54						
1963	0.72	1.27	57						
1964	0.77	1.33	58						
1965	0.98	1.24	79						
1966	0.64	1.66	39						
1967	0.44	1.00	44				0.50	0.65	77
1968	1.17	1.27	92				0.64	1.13	57
1969	0.28	1.21	23				0.75	1.47	51
1970	1.13	1.09	104				0.31	0.76	41
1971	0.72	0.93	77				0.94	1.82	52
1972	0.11	0.91	12				0.76	1.37	55
1973	1.83	0.88	208				0.27	1.15	23
1974	0.19	0.54	35				0.09	0.86	10
1975	0.33	0.59	56	0.30	0.38	79	0.19	0.52	37
1976	1.13	0.67	169	0.43	0.73	59	0.12	0.59	20
1977	0.68	0.95	72	0.54	0.99	55	0.30	0.45	67
1978	0.68	1.22	56	0.43	1.28	34	0.32	0.71	45
1979	1.82	0.87	209	1.08	1.14	95	0.40	0.80	50
1980	1.59	1.10	145	0.74	0.97	76	0.42	0.81	52
1981	0.48	0.88	55	0.31	0.52	60	0.18	0.40	45
1982	0.85	0.92	92	0.62	0.69	90	0.16	0.25	64
1983	0.49	1.17	42	0.72	0.97	74	0.24	0.28	86
1984	1.26	0.81	156	0.70	0.72	97	0.12	0.22	55
1985	0.88	0.77	114	0.74	0.73	101	0.06	0.30	20
1986	2.59	0.67	387	0.81	0.77	105	0.10	0.23	43
1987	1.60	0.55	291	0.59	0.60	98	0.07	0.23	30
1988	0.30	0.52	58	0.52	0.58	90	0.09	0.41	22
1989	1.22	0.51	239	0.59	0.48	123	0.20	0.19	105
1990	0.32	0.59	54	1.10	0.58	190	0.16	0.22	73
1991	0.17	0.47	36	1.03	0.45	229	0.06	0.15	40
1992	-	0.49	-	0.97	0.70	139	0.08	1.50	5
1993	-	0.50	-	0.76	0.52	146	0.04	0.12	33
1994	-	0.59	-						
1995	0.18	0.66	27						
AVG	0.85	0.92	92	0.68	0.73	94	0.28	0.65	43
80-95	0.92	0.74	124	0.73	0.66	110	0.14	0.38	37

Table 8. Catch statistics for longliners based in Rarotonga during 1995 determined from logsheet data held at SPC. The catch of 'other' species includes 21.6 mt of swordfish, 12.6 mt of blue marlin, and smaller amounts of mahimahi, black marlin, spearfish, wahoo and shark.
Units: DAYS COVERED (days on which hooks were set); CPUE (number of fish per 100 hooks)

MONTH	VESSELS COVERED	DAYS COVERED	--ALBACORE--		---BIGEYE---		---YELLOWFIN---		-OTHER--	---TOTAL---	
			MT	CPUE	MT	CPUE	MT	CPUE	MT	MT	CPUE
JAN/95	2	30	2	0.26	0	0.03	2	0.16	4	8	0.84
FEB	2	44	1	0.11	0	0.02	1	0.08	6	9	0.66
MAR	2	38	1	0.20	1	0.05	2	0.11	5	9	0.76
APR	2	30	0	0.08	3	0.31	1	0.11	5	9	1.02
MAY	2	35	2	0.34	3	0.21	2	0.17	6	13	1.52
JUN	2	35	3	0.53	2	0.19	3	0.21	10	19	2.22
JUL	2	38	5	0.67	1	0.07	2	0.17	10	18	2.07
AUG	2	38	4	0.53	2	0.11	1	0.05	8	14	1.43
SEP	2	32	3	0.44	1	0.05	1	0.06	6	10	1.04
OCT	2	32	3	0.47	1	0.09	1	0.06	5	10	1.12
NOV	1	15	1	0.26	0	0.01	0	0.02	2	3	0.72
DEC	0	-	-	-	-	-	-	-	-	-	-
TOT	2	367	25	0.36	14	0.10	16	0.11	69	123	1.24
AVE	2	33	2	0.35	1	0.10	1	0.11	6	11	1.22