

SOUTHWEST FISHERIES CENTER

HONOLULU, HI 96812

P.O. BOX 3830

February 1983

HONOLULU LABORATORY



NATIONAL MARINE FISHERIES SERVICE

ESTIMATES OF THE CATCH AND EFFORT BY JAPANESE LONGLINERS AND BAITBOATS IN THE FISHERY CONSERVATION ZONE AROUND THE MARIANA ARCHIPELAGO

JEFFREY J. POLOVINA and NATHANIEL T. SHIPPEN
Southwest Fisheries Center Honolulu Laboratory
National Marine Fisheries Service, NOAA
Honolulu, Hawaii 96812

This report is used to insure prompt dissemination of preliminary results, interim reports, and special studies to the scientific community. Contact the author if you wish to cite or reproduce this material.

**ESTIMATES OF THE CATCH AND EFFORT
BY JAPANESE LONGLINERS AND BAITBOATS
IN THE FISHERY CONSERVATION ZONE
AROUND THE MARIANA ARCHIPELAGO**

JEFFREY J. POLOVINA and NATHANIEL T. SHIPPEN

**Southwest Fisheries Center Honolulu Laboratory
National Marine Fisheries Service, NOAA
Honolulu, Hawaii 96812**

**ADMINISTRATIVE REPORT H-83-1
February 1983**

Tunas currently represent the most valuable marine resource found within the 200-mile Fishery Conservation Zone (FCZ) around the Mariana Archipelago. This report presents historical Japanese tuna catch and effort data and an analysis of the magnitude, species composition, and general location of the Japanese catches. Although there may be vessels from other nations fishing for tunas in the FCZ around the Mariana Archipelago, the vast majority of the effort and catch is thought to be due to Japanese vessels.

DATA SOURCES

This report is based on the same data sources used by Yong and Wetherall (1980); however, since their report was prepared 2 more years of data have become available and are incorporated into this report.

Two available data sets of Japanese longline catch and effort data for the western Pacific differ by their degree of data aggregation. One data set is the published Japanese longline catch and effort by month reported by 50 squares. This data set is available from 1965 to 1979. The second data set is Japanese longline catch and effort by month reported by 10 squares. These data are available from 1971 to 1979; however, for the period 1971-75 the data are reported only for the FCZ around the Mariana Archipelago south of lat. 20° N. These data were made available to the Southwest Fisheries Center, National Marine Fisheries Service by the Fisheries Agency of Japan. These data represent only a sample of the Japanese vessels fishing in the FCZ, so the data were adjusted or raised by applying raising factors taken from the "Annual report of effort and catch statistics by area on Japanese tuna longline fishery" published by the Fisheries Agency of Japan.

The catch data for both longline data sets are in numbers of fish caught. The numbers caught were converted to weight caught by using the mean weights in Table 1. The effort for the longline data sets is in vessel days.

The Japanese baitboat data are from published annual reports of the Fisheries Agency of Japan and are given as catch in metric tons and nominal effort in vessel days for 10 squares and 10-day intervals. Yong and Wetherall (1980) report that on the average the baitboat statistics cover about 80% of the actual catch, so we raised the catch and effort data by a factor of 1.25.

Table 1.--Estimated average weights (kg) used in computing longline catches in the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands. (From Yong and Wetherall 1980.)

Year	Albacore	Yellowfin tuna	Bigeye tuna	Bluefin tuna	Skipjack tuna	Blue marlin	Black marlin	Striped marlin	Swordfish	Sailfish and spearfish
1975	25	28	38	237	5	55	79	34	30	22
1976	24	30	39	237	5	55	79	34	30	22
1977	24	30	37	237	5	55	79	28	30	22
Other years	24	29	38	237	5	55	79	32	30	22

Figure 1 shows the boundary used for computing the catch and effort within the 50- and 200-mile FCZ of the Mariana Archipelago. Estimates of catch and effort within these zones were obtained by summing the catch and effort data for 1° and 5° squares within these zones. Where the 1° or 5° squares overlapped a boundary, it was assumed that the catch and effort were homogeneously distributed within the square and the fraction of the catch and effort of the total square within the bounded areas was assumed to be proportional to the relative area of the squares within the boundary.

JAPANESE LONGLINE DATA

The annual Japanese longline catch and effort data around Guam and the Commonwealth of the Northern Mariana Islands (CNMI) for the period 1965-79 are presented in Tables 2-16. The total tuna catches from Japanese longliners for the FCZ around Guam range from 9 to 1,334 metric tons (mt), and the catches for the FCZ around CNMI range from 71 to 576 mt. On the average about 80% of the tuna catch in the FCZ comes from outside the 50-mile zone. The billfish catch typically averaged about 30% of the total tuna catch, but since 1976 the billfish catches were only about 10% of the total tuna catches. The annual total tuna catch, effort, and catch per unit effort (CPUE) are summarized in Table 17 and the total tuna catch in the FCZ is plotted in Figure 2. It is interesting to note that over the period 1965-79, 1976-79 represents a period of above average CPUE and above average total tuna catches for Guam and CNMI. The Japanese longline catch for the principal species, albacore, Thunnus alalunga, yellowfin tuna, T. albacares, and bigeye tuna, T. obesus, are presented in Table 18 and Figure 3. During the period 1976-79 the increase in CPUE and total catch appears to be due to an increase specifically in catches of yellowfin and bigeye tunas.

Since the Mariana Archipelago is oriented on a north-south axis, catch and effort data by latitude indicates where along the chain the longliners are fishing. The total annual catch, effort, and CPUE data for tunas from Japanese longliners were summarized for the period 1971-79 where 1° square data were available (Table 19). These data show a general trend of increasing catch and effort in the lower latitudes from 11° to 16° N, and it is this area that contributed to the relatively high catch and CPUE for the period 1976-79.

The effort by month from Tables 2 to 16 suggests that prior to 1976 most of the effort was expended at the beginning or end of the year whereas after 1975 there was an increase in effort for the summer months. The monthly total tuna catch for two periods, 1971-75 and 1976-79, confirms that there was an increase in tuna catches during the summer months of 1976-79 (Table 20, Figures 4 and 5).

JAPANESE BAITBOAT DATA

The estimated annual catch and effort by Japanese baitboats in the FCZ around Guam and CNMI for 1970-79 are presented in Tables 21-30. Over 90% of the catch by weight is skipjack tuna, Katsuwonus pelamis, the remainder is composed mostly of yellowfin and bigeye tunas. The total tuna catch, effort, and CPUE are summarized in Table 31, and the total catch within the

FCZ for Guam and CNMI is plotted in Figure 6. The total tuna catch in the FCZ around Guam ranged from 83 to 2,059 mt and the catch in the FCZ around CNMI ranged from 2,554 to 12,564 mt. The highest catch in the FCZ around Guam for baitboats was made in 1977, the same year the longliners had their best catch around Guam for the period 1965-79. The total annual catch, effort, and CPUE data for tunas from Japanese baitboats in 1970-79 are presented by latitude in Table 32. Unlike the longliners there does not appear to be any movement in effort over latitude for this period, and good catches were consistently made in the middle latitudes between 16° and 21° N. The monthly pattern for catch, effort, and CPUE is fairly consistent over the period 1970-79 (Table 33). The catch, effort, and CPUE for baitboats in the FCZ around CNMI increase in the beginning of the year, reach a peak in July, and then decline at the end of the year. The pattern in the FCZ around Guam is not as clear but the catch, effort, and CPUE appear to peak earlier in the year around March or April (Figure 7).

LITERATURE CITED

- Yong, M. Y. Y., and J. A. Wetherall.
1980. Estimates of the catch and effort by foreign tuna longliners and baitboats in the Fishery Conservation Zone of the central and western Pacific, 1965-77. U.S. Dep. Commer., NOAA Tech. Memo. NMFS, NOAA-TM-NMFS-SWFC-2, 103 p.

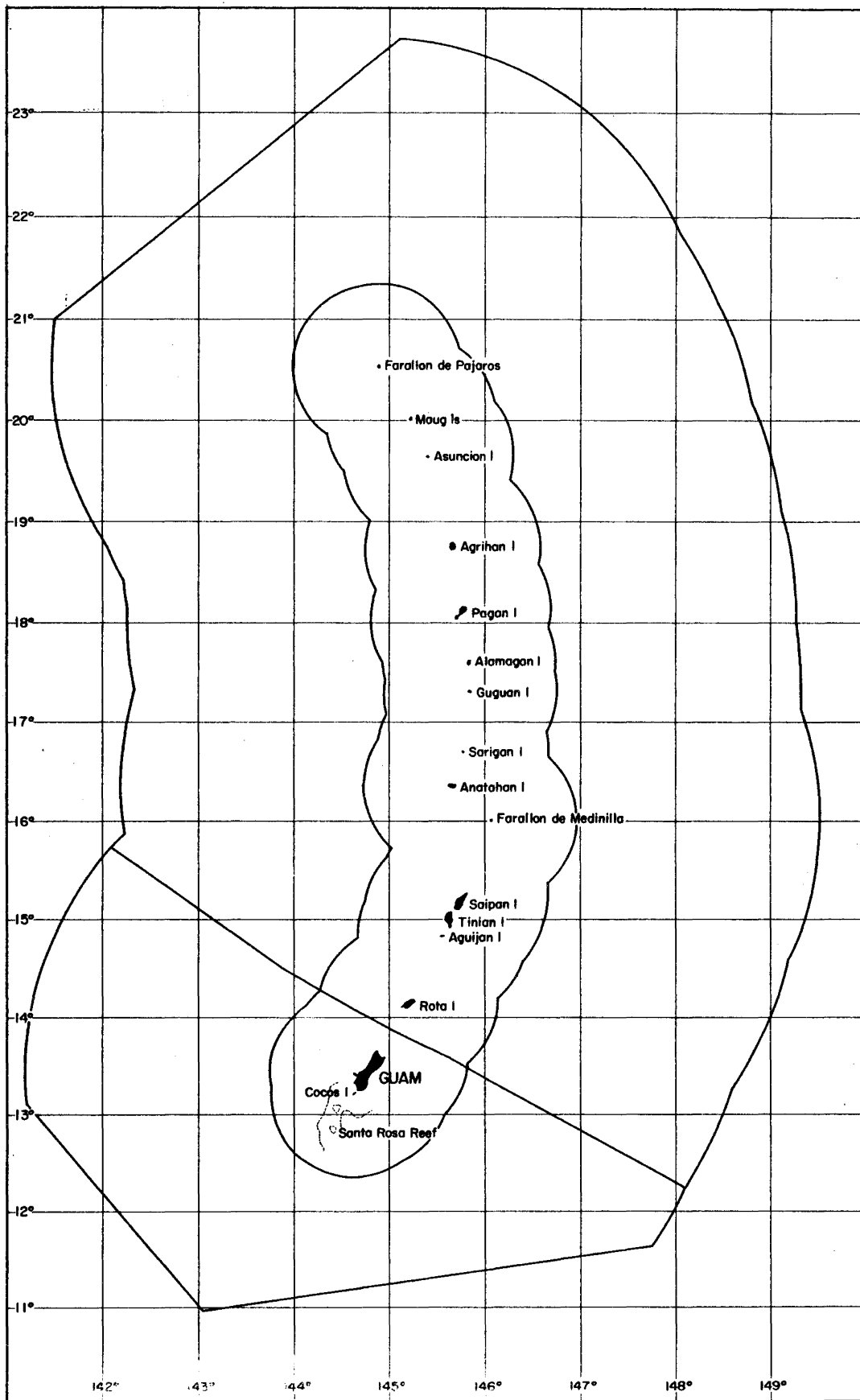


Figure 1.--The 50-mile limits and the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands.

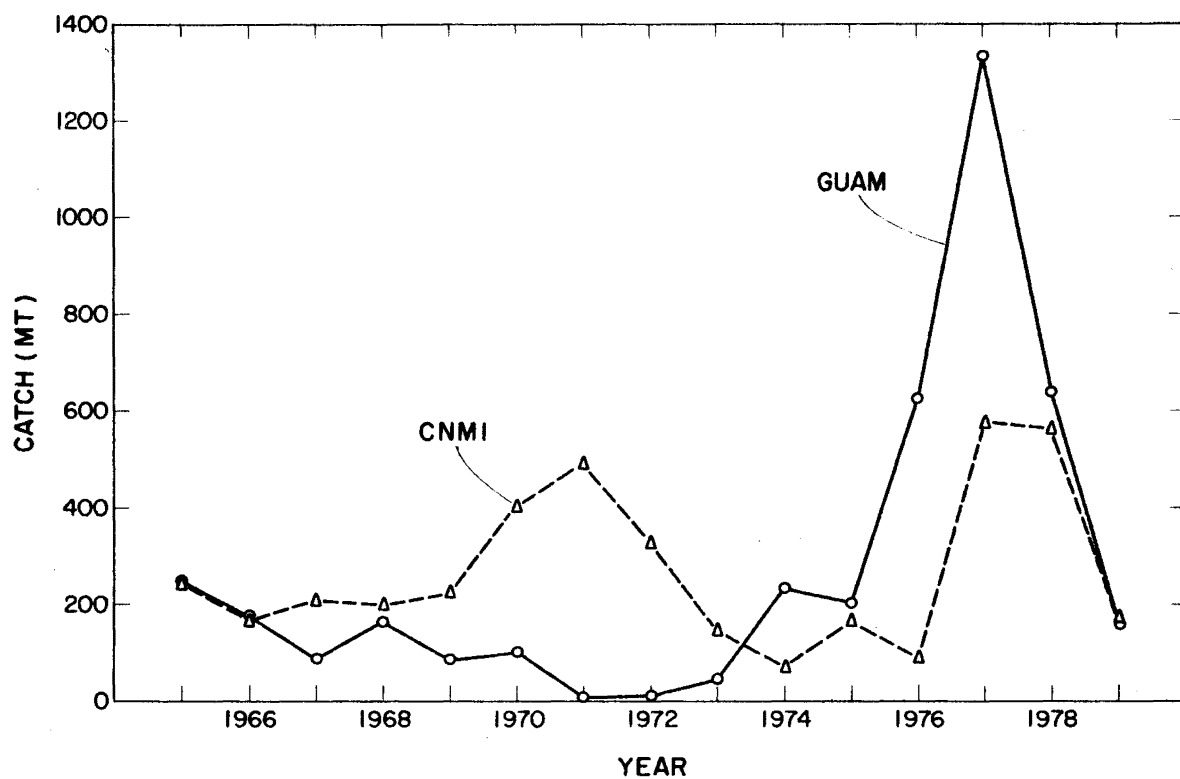


Figure 2.--Total tuna catches from Japanese longliners in the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1965-79).

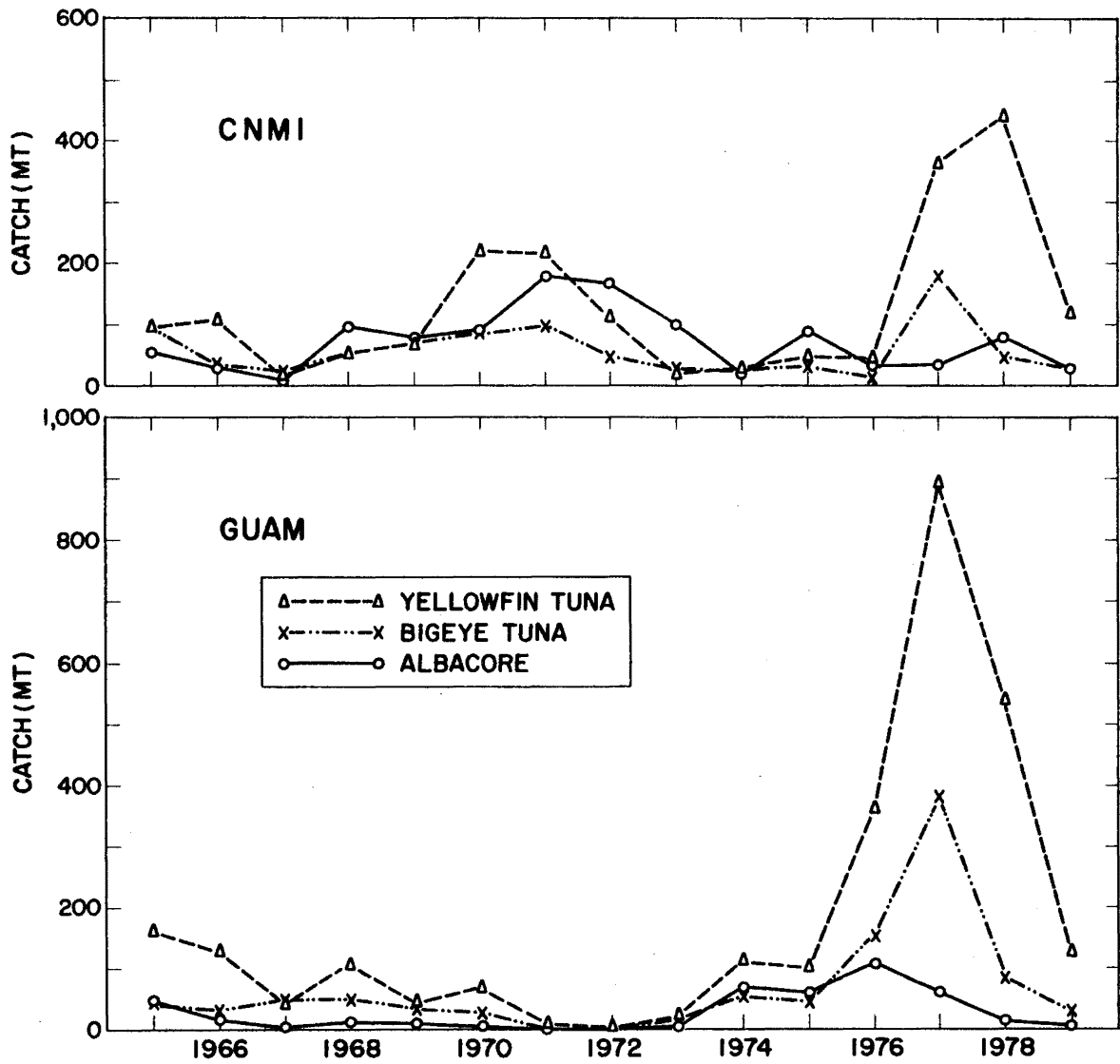


Figure 3.--Catches of albacore and yellowfin and bigeye tunas from Japanese longliners in the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1965-79).

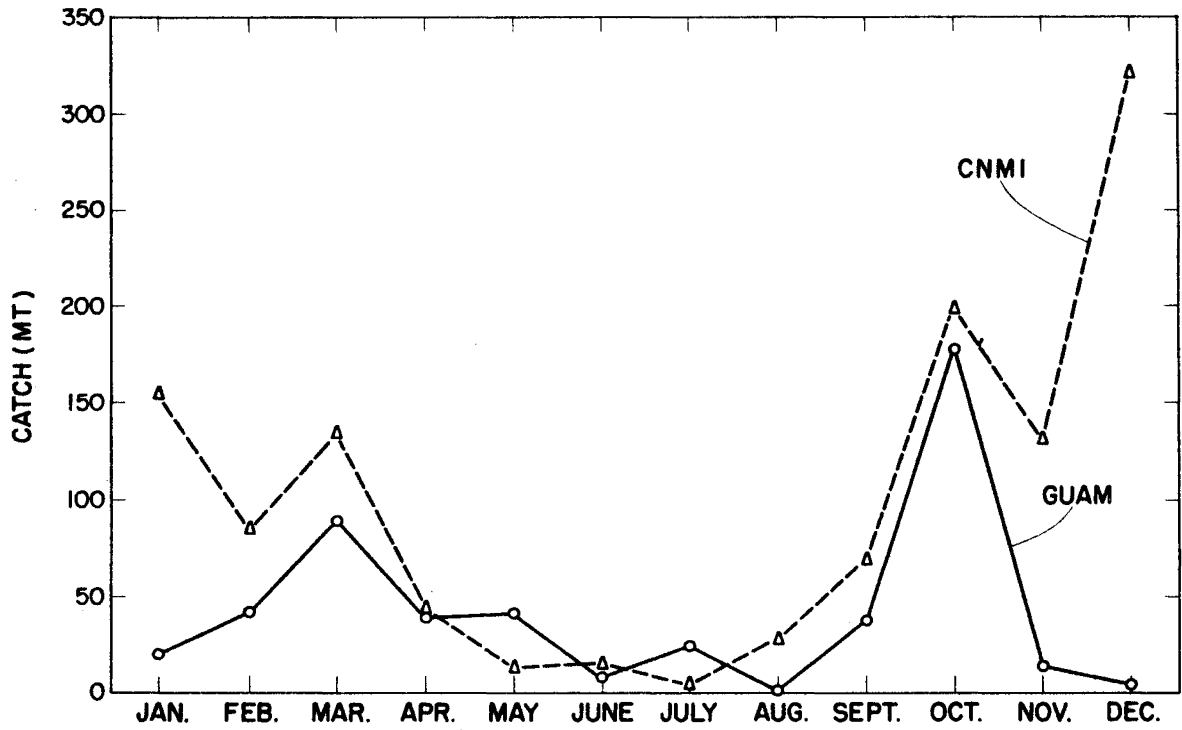


Figure 4.--Total tuna catches from Japanese longliners aggregated by month for the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1971-75).

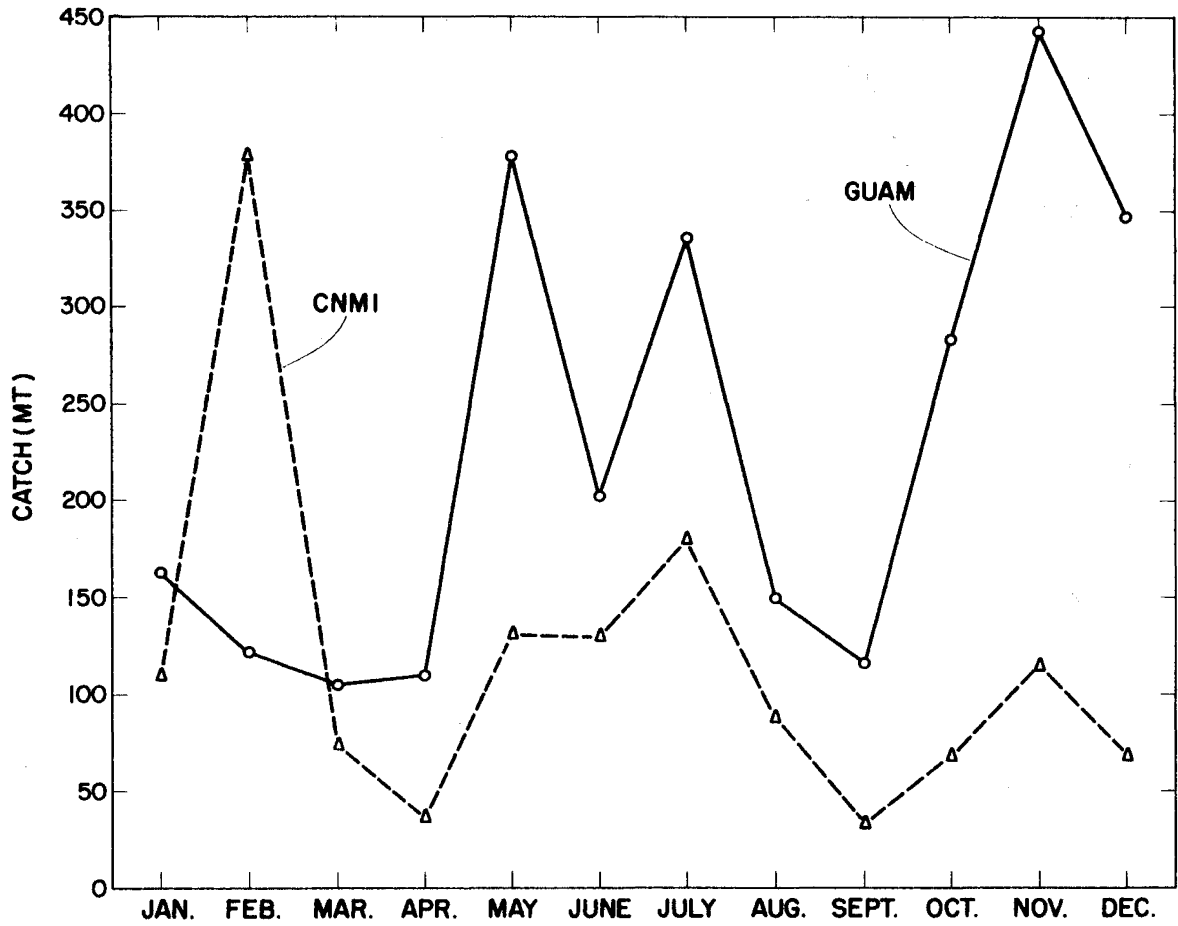


Figure 5.--Total tuna catches from Japanese longliners aggregated by month for the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1976-79).

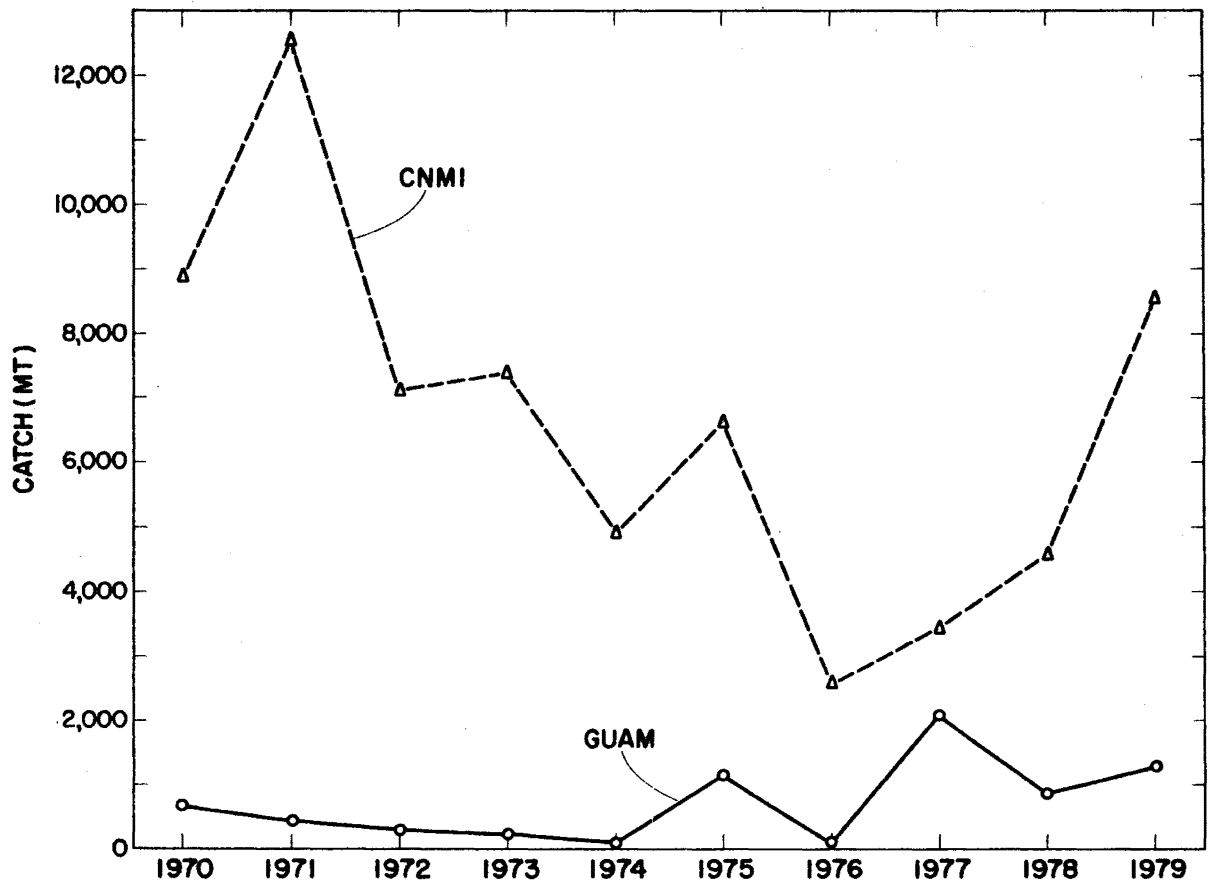


Figure 6.--Total tuna catches from Japanese baitboats for the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1970-79).

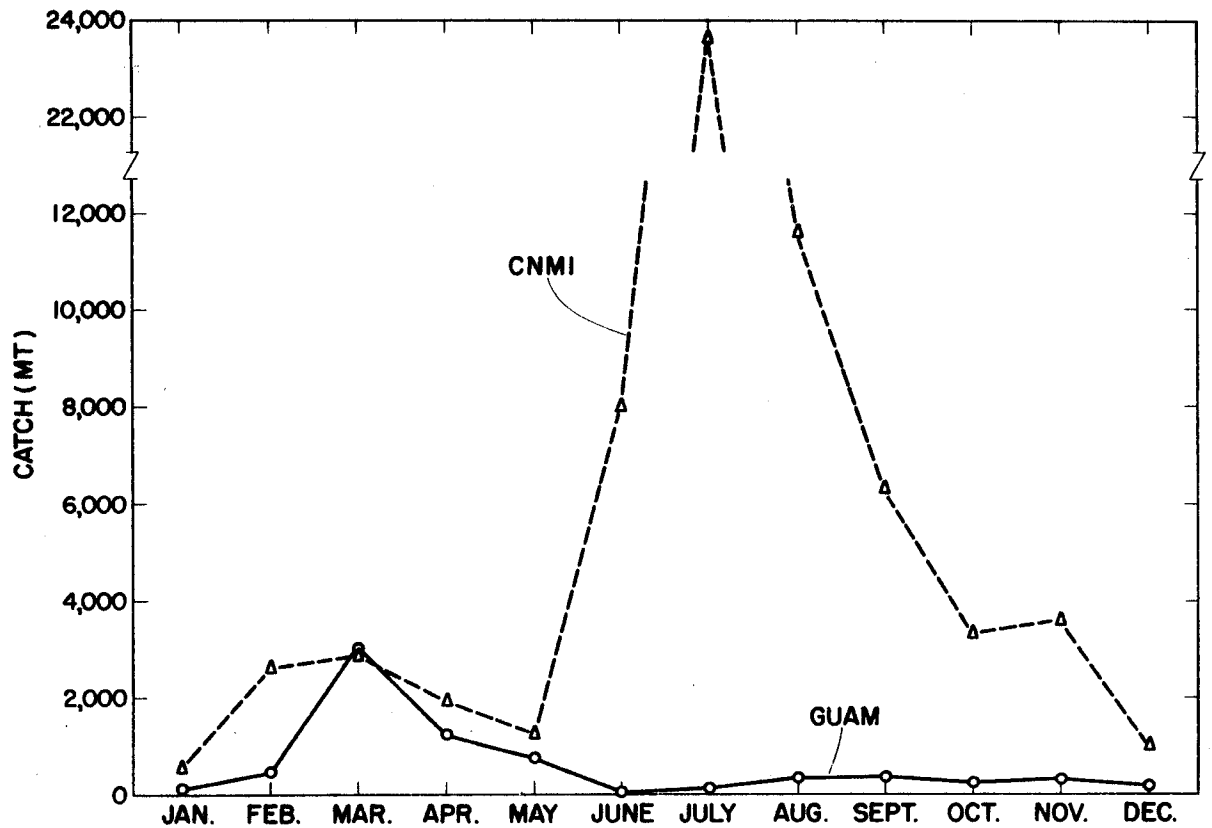


Figure 7.--Total tuna catches from Japanese baitboats aggregated by month for the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1970-79).

Table 2.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1965. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	2	13	19	155	21	168
February	3	17	11	87	14	104
March	5	32	17	122	22	154
April	1	4	3	27	4	31
May	*	1	6	49	6	50
June	1	4	6	41	7	45
July	1	8	1	5	2	13
August	1	7	1	4	2	11
September	1	9	*	1	1	10
October	17	103	10	37	27	140
November	4	27	4	20	8	47
December	8	50	10	55	18	105
Total	44	275	88	603	132	778
Annual catch ²						
Albacore	8	48	8	55	16	103
Yellowfin tuna	26	160	20	95	46	255
Bigeye tuna	6	41	15	96	21	137
Bluefin tuna	0	*	*	2	*	2
Skipjack tuna	*	*	*	*	*	0
Total tunas	40	249	43	248	83	497
Annual catch ²						
Blue marlin	6	36	8	40	14	76
Striped marlin	*	1	4	36	4	37
Swordfish	0	1	3	24	3	25
Black marlin	*	1	0	1	*	2
Spearfish & sailfish	*	2	1	7	1	9
Total billfishes	6	41	16	108	22	149

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 3.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1966. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	1	6	4	33	5	39
February	*	2	4	30	4	32
March	3	22	5	17	8	39
April	6	36	6	37	12	73
May	3	22	6	43	9	65
June	0	1	4	42	4	43
July	*	3	3	18	3	21
August	3	18	5	24	8	42
September	4	26	5	25	9	51
October	9	55	5	19	14	74
November	3	20	1	5	4	25
December	2	15	3	16	5	31
Total	34	226	51	309	85	535
Annual catch ²						
Albacore	3	17	4	28	7	45
Yellowfin tuna	20	126	19	106	39	232
Bigeye tuna	5	31	6	34	11	65
Bluefin tuna	*	*	*	1	*	1
Skipjack tuna	*	*	*	*	*	*
Total tunas	28	174	29	169	57	343
Annual catch ²						
Blue marlin	4	29	6	39	10	68
Striped marlin	*	*	1	9	1	9
Swordfish	*	*	2	19	2	19
Black marlin	*	1	*	1	*	2
Spearfish & sailfish	*	3	1	5	1	8
Total billfishes	4	33	10	73	14	106

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 4.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1967. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	2	15	11	86	13	101
February	7	44	13	80	20	124
March	3	19	5	31	8	50
April	4	26	10	46	14	72
May	5	29	7	42	12	70
June	*	3	8	65	8	68
July	*	3	1	4	1	7
August	1	7	2	9	3	16
September	*	2	*	1	*	3
October	*	3	*	*	*	3
November	0	0	*	2	*	2
December	3	16	12	102	15	118
Total	25	166	69	468	94	634
Annual catch ²						
Albacore	*	3	9	79	9	82
Yellowfin tuna	7	42	9	47	16	85
Bigeye tuna	7	44	13	81	20	125
Bluefin tuna	0	0	*	*	*	*
Skipjack tuna	*	*	*	*	*	*
Total tunas	14	89	31	207	45	296
Annual catch ²						
Blue marlin	3	17	5	27	8	44
Striped marlin	*	1	2	17	2	18
Swordfish	*	1	4	26	4	27
Black marlin	*	1	*	1	*	2
Spearfish & sailfish	*	2	1	5	1	7
Total billfishes	3	22	12	76	15	98

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 5.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1968. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	*	3	8	64	8	67
February	6	37	11	66	17	103
March	12	74	14	84	26	158
April	3	20	9	67	12	87
May	2	12	3	14	5	26
June	2	14	4	33	6	47
July	1	10	6	51	7	61
August	2	15	1	4	3	19
September	2	10	1	6	3	16
October	*	3	1	3	1	6
November	1	6	1	10	2	16
December	2	10	10	83	12	93
Total	33	214	69	485	102	699
Annual catch ²						
Albacore	2	12	10	95	12	107
Yellowfin tuna	17	104	11	52	28	156
Bigeye tuna	8	48	9	52	17	100
Bluefin tuna	*	*	*	*	*	0
Skipjack tuna	0	1	*	*	*	1
Total tunas	27	165	30	199	57	364
Annual catch ²						
Blue marlin	3	20	4	25	7	45
Striped marlin	*	1	2	16	2	17
Swordfish	*	1	4	32	4	33
Black marlin	*	1	*	*	0	1
Spearfish & sailfish	*	3	1	3	1	6
Total billfishes	3	26	11	76	14	102

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 6.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1969. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ
Monthly nominal effort ¹						
January	1	6	22	165	23	171
February	5	31	11	56	16	87
March	5	32	7	39	12	71
April	1	5	4	32	5	37
May	*	2	1	7	1	9
June	0	0	2	16	2	16
July	1	6	1	11	2	17
August	*	2	3	21	3	23
September	0	0	0	0	0	0
October	1	5	3	11	4	16
November	1	6	3	21	4	27
December	4	24	6	33	10	57
Total	19	119	63	412	82	531
Annual catch ²						
Albacore	2	10	9	79	11	89
Yellowfin tuna	6	42	14	71	20	113
Bigeye tuna	5	34	14	72	19	106
Bluefin tuna	0	0	*	*	*	*
Skipjack tuna	*	*	*	*	*	0
Total tunas	13	86	37	222	50	308
Annual catch ²						
Blue marlin	1	7	3	17	4	24
Striped marlin	*	1	2	13	2	14
Swordfish	*	1	2	17	2	18
Black marlin	*	1	*	1	*	2
Spearfish & sailfish	*	*	*	1	*	1
Total billfishes	1	10	7	49	8	59

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 7.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1970. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ
Monthly nominal effort ¹						
January	4	24	8	54	12	78
February	4	24	22	167	26	191
March	2	15	42	226	44	241
April	1	7	8	64	9	71
May	3	16	7	66	10	82
June	1	7	7	66	8	73
July	1	3	1	5	2	8
August	1	7	5	27	6	34
September	2	12	4	23	6	35
October	2	13	8	45	10	58
November	1	4	9	39	10	43
December	0	1	25	88	25	89
Total	22	133	146	870	168	1003
Annual catch ²						
Albacore	1	7	17	92	18	99
Yellowfin tuna	10	68	44	220	54	288
Bigeys tuna	4	26	14	85	18	111
Bluefin tuna	0	0	0	0	0	0
Skipjack tuna	*	0	1	4	1	4
Total tunas	15	101	76	401	91	502
Annual catch ²						
Blue marlin	2	13	11	63	13	76
Striped marlin	0	1	9	71	9	72
Swordfish	*	1	5	37	5	38
Black marlin	*	*	*	3	*	3
Spearfish & sailfish	*	1	3	16	3	17
Total billfishes	2	16	28	190	30	206

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 8.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1971. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	0	1	2	17	2	18
February	0	1	13	123	13	124
March	0	0	18	176	18	176
April	0	0	4	59	4	59
May	0	0	*	5	*	5
June	0	0	1	21	1	21
July	0	0	2	12	2	12
August	0	0	1	19	1	19
September	0	0	47	72	47	72
October	0	0	113	136	113	136
November	13	17	54	99	67	116
December	0	0	64	282	64	282
Total	13	19	319	1021	332	1040
Annual catch ²						
Albacore	0	*	71	178	71	178
Yellowfin tuna	6	8	95	216	101	224
Bigeye tuna	1	1	20	97	21	98
Bluefin tuna	0	0	*	*	0	*
Skipjack tuna	0	*	*	*	0	*
Total tunas	7	9	186	491	193	500
Annual catch ²						
Blue marlin	2	2	20	54	22	56
Striped marlin	*	*	6	48	6	48
Swordfish	*	*	4	28	4	28
Black marlin	0	0	2	5	2	5
Spearfish & sailfish	0	0	2	17	2	17
Total billfishes	2	2	34	152	36	154

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 9.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1972. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ
Monthly nominal effort ¹						
January	0	0	59	151	59	151
February	0	1	23	65	23	66
March	0	1	4	37	4	38
April	0	0	5	42	5	42
May	0	15	2	14	2	29
June	0	2	16	37	16	39
July	0	0	2	12	2	12
August	0	0	25	29	25	29
September	0	1	30	39	30	40
October	0	0	25	54	25	54
November	0	0	19	44	19	44
December	0	0	30	69	30	69
Total	0	20	240	593	240	613
Annual catch ²						
Albacore	0	*	82	168	82	168
Yellowfin tuna	0	5	70	111	70	116
Bigeye tuna	0	6	14	48	14	54
Bluefin tuna	0	0	0	0	0	0
Skipjack tuna	0	0	1	1	1	1
Total tunas	0	11	167	328	167	339
Annual catch ²						
Blue marlin	0	2	8	22	8	24
Striped marlin	0	0	3	20	3	20
Swordfish	0	0	4	20	4	20
Black marlin	0	0	1	2	1	2
Spearfish & sailfish	0	0	5	9	5	9
Total billfishes	0	2	21	73	21	75

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 10.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1973. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	0	0	16	23	16	23
February	0	8	3	26	3	34
March	*	5	4	46	4	51
April	*	9	1	5	1	14
May	0	3	*	2	*	5
June	4	10	3	16	7	26
July	0	12	*	2	*	14
August	0	0	1	11	1	11
September	0	0	1	6	1	6
October	0	3	0	1	*	4
November	0	5	8	34	8	39
December	0	0	6	61	6	61
Total	4	55	43	233	47	288
Annual catch ²						
Albacore	1	5	22	100	23	105
Yellowfin tuna	1	22	3	21	4	43
Bigeye tuna	1	17	3	24	4	41
Bluefin tuna	0	0	0	0	0	0
Skipjack tuna	0	0	*	*	*	*
Total tunas	3	44	28	145	31	189
Annual catch ²						
Blue marlin	0	7	1	7	1	14
Striped marlin	0	1	1	11	1	12
Swordfish	*	1	1	9	1	10
Black marlin	0	0	*	*	*	*
Spearfish & sailfish	*	*	0	0	*	0
Total billfishes	0	9	3	27	3	36

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 11.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1974. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	*	4	1	5	1	9
February	0	23	5	51	5	74
March	7	97	6	62	13	159
April	11	21	18	103	29	124
May	*	44	7	59	7	103
June	0	13	2	31	2	44
July	0	6	0	0	0	6
August	0	0	0	1	*	1
September	*	23	0	0	*	23
October	0	42	0	7	0	49
November	0	0	0	15	0	15
December	0	0	*	3	*	3
Total	19	273	39	337	57	610
Annual catch ²						
Albacore	1	70	1	20	2	90
Yellowfin tuna	13	111	4	28	17	139
Bigeye tuna	6	53	5	23	11	76
Bluefin tuna	0	0	0	*	*	*
Skipjack tuna	0	*	*	*	*	0
Total tunas	20	234	10	71	30	305
Annual catch ²						
Blue marlin	1	27	2	19	3	46
Striped marlin	0	3	6	63	6	66
Swordfish	*	2	4	29	4	31
Black marlin	0	0	*	*	0	*
Spearfish & sailfish	0	4	*	2	*	6
Total billfishes	1	36	12	113	13	149

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 12.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1975. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ
Monthly nominal effort ¹						
January	0	23	5	42	5	65
February	0	17	7	61	7	78
March	2	25	12	99	14	124
April	6	27	17	36	23	63
May	0	0	2	21	2	21
June	0	0	*	1	*	1
July	2	20	1	4	3	24
August	*	2	3	3	3	5
September	*	23	5	6	5	29
October	10	133	3	41	13	174
November	0	2	2	16	2	18
December	0	6	1	12	1	18
Total	20	278	58	342	78	620
Annual catch ²						
Albacore	5	58	14	90	19	148
Yellowfin tuna	7	100	7	48	14	148
Bigeye tuna	2	44	3	30	5	74
Bluefin tuna	0	0	0	1	*	1
Skipjack tuna	*	*	0	*	0	0
Total tunas	14	202	24	169	38	371
Annual catch ²						
Blue marlin	3	36	3	14	6	50
Striped marlin	*	*	3	21	3	21
Swordfish	0	1	5	36	5	37
Black marlin	0	*	*	*	*	0
Spearfish & sailfish	0	*	*	1	*	1
Total billfishes	3	37	11	72	14	109

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 13.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1976. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ
Monthly nominal effort ¹						
January	10	60	13	88	23	148
February	6	36	9	57	15	93
March	2	13	6	44	8	57
April	5	30	5	21	10	51
May	1	7	1	5	2	12
June	1	7	1	7	2	14
July	6	39	3	13	9	52
August	5	30	5	27	10	57
September	5	30	4	25	9	55
October	11	65	5	37	16	102
November	31	192	18	127	49	319
December	37	226	13	49	50	275
Total	120	735	83	500	203	1235
Annual catch ²						
Albacore	14	90	13	91	27	181
Yellowfin tuna	93	577	44	190	137	767
Bigeye tuna	41	252	21	95	62	347
Bluefin tuna	0	*	*	*	*	*
Skipjack tuna	*	3	*	1	*	4
Total tunas	148	922	78	377	226	1299
Annual catch ²						
Blue marlin	9	58	6	32	15	90
Striped marlin	*	2	1	8	1	10
Swordfish	2	10	3	20	5	30
Black marlin	0	1	*	1	0	2
Spearfish & sailfish	0	2	*	2	*	4
Total billfishes	11	73	10	63	21	136

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 14.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1977. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ	Within 50 ml.	Within FCZ
Monthly nominal effort ¹						
January	17	106	14	77	31	183
February	5	34	8	48	13	82
March	11	69	12	70	23	139
April	8	48	5	20	13	68
May	29	183	20	83	49	266
June	26	168	34	137	60	305
July	20	130	25	108	45	238
August	8	52	10	45	18	97
September	13	80	15	64	28	144
October	22	136	17	74	39	210
November	24	152	21	94	45	246
December	7	41	9	57	16	98
Total	190	1199	190	877	380	2076
Annual catch ²						
Albacore	7	49	12	109	19	158
Yellowfin tuna	217	1368	200	861	425	2229
Bigeye tuna	90	572	94	406	184	978
Bluefin tuna	*	*	*	1	*	1
Skipjack tuna	*	0	*	*	*	0
Total tunas	314	1989	314	1377	628	3366
Annual catch ²						
Blue marlin	14	87	15	63	29	150
Striped marlin	0	1	*	2	*	3
Swordfish	1	9	2	13	3	22
Black marlin	1	5	1	4	2	9
Spearfish & sailfish	*	2	*	1	*	3
Total billfishes	16	104	18	83	34	187

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 15.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1978.

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	8	39	*	26	8	65
February	2	34	17	225	19	259
March	*	11	*	12	*	23
April	*	5	*	11	*	16
May	8	52	*	8	8	60
June	2	9	3	4	5	13
July	9	67	5	30	14	97
August	8	73	18	56	26	129
September	14	37	2	7	16	44
October	*	28	3	17	3	45
November	1	66	*	19	1	85
December	1	23	5	17	6	40
Total	53	444	53	432	106	876
Annual catch ²						
Albacore	*	13	5	80	5	93
Yellowfin tuna	83	540	34	440	117	980
Bigeye tuna	12	86	6	46	18	132
Bluefin tuna	*	*	*	*	*	*
Skipjack tuna	*	*	*	*	*	*
Total tunas	95	639	45	566	140	1,205
Annual catch ²						
Blue marlin	4	30	2	16	6	46
Striped marlin	*	*	*	3	*	3
Swordfish	1	5	1	5	2	10
Black marlin	*	2	*	*	*	2
Spearfish & sailfish	*	*	*	5	*	5
Total billfishes	5	37	3	29	8	66

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 16.--Estimated catch and effort by Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1979.

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	*	4	4	11	4	15
February	*	2	25	70	25	72
March	3	13	2	23	5	36
April	1	19	*	2	1	21
May	*	13	1	6	1	19
June	3	32	5	22	8	54
July	3	17	1	20	4	37
August	3	4	1	3	4	7
September	1	19	*	16	1	35
October	5	21	1	4	6	25
November	1	15	4	14	5	29
December	*	*	*	*	*	*
Total	20	159	44	191	64	350
Annual catch ²						
Albacore	*	5	11	28	11	33
Yellowfin tuna	10	126	30	119	40	245
Bigeye tuna	4	30	7	28	11	58
Bluefin tuna	*	*	*	*	*	*
Skipjack tuna	*	*	*	*	*	*
Total tunas	14	161	48	175	62	336
Annual catch ²						
Blue marlin	1	10	1	12	2	22
Striped marlin	*	1	*	5	*	6
Swordfish	*	2	1	5	1	7
Black marlin	*	1	*	1	*	2
Spearfish & sailfish	*	1	*	1	*	2
Total billfishes	1	15	2	24	3	39

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 17.--Total tuna catch, effort, and catch per unit effort (CPUE) for Japanese longline vessels around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1965-79.

Year	Guam			CNMI		
	Catch ¹	Effort ²	CPUE ³	Catch ¹	Effort ²	CPUE ³
1965	249	275	0.91	248	603	0.41
1966	174	226	0.77	169	309	0.55
1967	89	166	0.55	207	468	0.44
1968	165	214	0.77	199	485	0.41
1969	86	119	0.72	222	412	0.54
1970	101	133	0.76	401	870	0.46
1971	9	18	0.50	491	1,022	0.48
1972	11	20	0.55	328	592	0.55
1973	44	55	0.80	145	232	0.63
1974	234	275	0.85	71	337	0.21
1975	202	278	0.73	167	341	0.49
1976	626	505	1.24	91	129	0.71
1977	1,334	847	1.58	576	364	1.58
1978	639	445	1.44	566	434	1.30
1979	161	158	1.02	175	191	0.92

¹Catch in metric tons.

²Effort in vessel days.

³CPUE in metric tons per vessel day.

Table 18.—Catches (in metric tons) of albacore, yellowfin, and bigeye tunas from Japanese longliners around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1965-79.

Year	Guam			CNMI		
	Albacore	Yellowfin tuna	Bigeye tuna	Albacore	Yellowfin tuna	Bigeye tuna
1965	48	160	41	55	95	96
1966	17	126	31	28	106	34
1967	3	42	44	9	16	20
1968	12	104	48	95	52	52
1969	10	42	34	79	71	72
1970	7	68	26	92	220	85
1971	¹ *	8	1	178	216	97
1972	¹ *	5	6	168	111	48
1973	5	22	17	100	21	24
1974	70	111	53	20	28	23
1975	58	100	44	88	48	30
1976	109	361	153	33	44	13
1977	62	892	380	34	363	179
1978	13	540	86	80	440	46
1979	5	126	30	28	119	28

¹ < 1 mt.

Table 19.—Annual catch,¹ effort,² and catch per unit effort (CPUE)³ for total tunas from longliners by latitude around Guam and the Commonwealth of the Northern Mariana Islands, 1971-79.

Lat. N	1971	1972	1973	1974	1975	1976	1977	1978	1979
20-24	94	74	82	29	82	9	18	35	17
	454	229	146	264	237	13	24	74	49
	0.2	0.3	0.6	0.1	0.4	0.7	0.8	0.5	0.3
19-20	105	42	36	1	9	5	34	41	13
	179	85	48	6	19	9	26	40	12
	0.6	0.5	0.7	0.2	0.5	0.6	1.3	1.0	1.1
18-19	151	77	23	12	9	1	6	254	47
	184	98	31	19	10	2	10	152	34
	0.8	0.8	0.7	0.6	0.9	0.5	0.6	1.7	1.4
17-18	72	73	3	8	8	2	12	29	3
	104	93	4	16	9	3	18	18	5
	0.7	0.8	0.7	0.5	0.9	0.7	0.7	1.6	0.6
16-17	51	45	0	2	22	5	90	27	0
	70	56	0	6	17	10	63	23	2
	0.7	0.8	0	0.4	1.3	0.5	1.4	1.2	0.0
15-16	6	13	0	3	4	41	71	80	4
	13	24	0	6	6	60	45	61	6
	0.4	0.5	0	0.5	0.7	0.7	1.6	1.3	0.7
14-15	9	0	4	12	21	104	130	106	33
	10	0	10	20	38	105	99	97	41
	0.9	0	0.4	0.6	0.5	1.0	1.3	1.1	0.8
13-14	11	4	16	113	66	230	422	127	92
	23	8	24	91	80	182	249	72	99
	0.5	0.5	0.7	1.2	0.8	1.3	1.7	1.8	0.9
12-13	1	9	20	50	43	226	642	285	65
	3	14	16	76	64	173	368	199	58
	0.3	0.7	1.3	0.7	0.7	1.3	1.7	1.4	1.1
11-12	0	2	5	75	105	94	485	220	63
	0	5	8	108	139	78	307	144	47
	0	0.4	0.6	0.7	0.8	1.2	1.6	1.5	1.3

¹Catch in metric tons.

²Effort in vessel days.

³CPUE in metric tons per vessel day

Table 20.--Monthly Japanese longline catches (in metric tons) around Guam and the Commonwealth of the Northern Mariana Islands (CNMI) for two periods, 1971-75 and 1976-79.

Month	1971-75		1976-79	
	Guam	CNMI	Guam	CNMI
January	20	154	163	109
February	42	85	122	379
March	89	134	105	73
April	39	44	109	37
May	41	13	378	131
June	8	15	202	130
July	24	4	336	180
August	1	28	150	88
September	38	69	117	33
October	178	199	283	68
November	14	132	443	115
December	4	321	347	68

Table 21.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1970. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
	Monthly nominal effort ¹					
January	1	13	3	38	4	51
February	0	20	8	28	8	48
March	2	71	12	52	14	123
April	2	15	28	65	30	80
May	*	4	14	35	14	39
June	0	0	9	53	9	53
July	0	1	207	602	207	603
August	*	5	78	229	78	234
September	5	28	101	207	106	235
October	0	4	21	54	21	58
November	1	14	41	292	42	306
December	2	7	3	107	5	114
Total	13	182	525	1762	538	1944
	Annual catch ²					
Albacore	0	0	*	14	*	14
Yellowfin tuna	*	16	54	414	54	430
Bigeye tuna	0	*	35	153	35	153
Bluefin tuna	0	0	1	4	1	4
Skipjack tuna	28	649	2903	8284	2931	8933
Total tunas	28	665	2993	8869	3021	9534
	Annual catch ²					
Frigate tuna	0	0	0	0	0	0
Others	*	*	3	13	3	13

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 22.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1971. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	*	20	4	38	4	58
February	*	24	20	74	20	98
March	2	14	14	66	16	80
April	0	1	1	7	1	8
May	0	0	0	8	0	8
June	0	0	14	31	14	31
July	0	1	194	678	194	679
August	4	6	218	562	222	568
September	3	15	255	564	258	579
October	11	44	178	419	189	463
November	0	30	27	173	27	203
December	1	9	4	26	5	35
Total	21	164	929	2646	950	2810
Annual catch ²						
Albacore	0	0	0	2	0	2
Yellowfin tuna	*	46	38	184	38	230
Bigeye tuna	0	0	0	0	0	0
Bluefin tuna	0	0	0	12	0	12
Skipjack tuna	78	398	4454	12366	4532	12764
Total tunas	78	444	4492	12564	4570	13008
Annual catch ²						
Frigate tuna	0	0	*	*	*	*
Others	0	1	1	19	1	20

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 23.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1972. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
	Monthly nominal effort ¹					
January	1	4	5	17	6	21
February	0	2	9	20	9	22
March	*	2	10	28	10	30
April	0	2	12	47	12	49
May	1	1	3	8	4	9
June	0	0	97	299	97	299
July	3	10	251	527	254	537
August	9	18	188	487	197	505
September	9	17	47	116	56	133
October	2	12	14	45	16	57
November	16	31	10	46	26	77
December	6	19	*	8	6	27
Total	47	118	646	1648	693	1766
	Annual catch ²					
Albacore	3	13	23	52	26	65
Yellowfin tuna	0	4	17	66	17	70
Bigeye tuna	0	0	4	16	4	16
Bluefin tuna	0	0	0	0	0	0
Skipjack tuna	131	284	2885	6971	3016	7255
Total tunas	134	301	2929	7105	3063	7406
	Annual catch ²					
Frigate tuna	0	0	0	0	0	0
Others	1	1	1	2	2	3

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 24.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1973. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
	Monthly nominal effort ¹					
January	0	2	0	13	0	15
February	*	2	3	18	3	20
March	0	8	6	73	6	81
April	0	6	7	32	7	38
May	0	0	4	14	4	14
June	0	0	13	41	13	41
July	0	5	233	532	233	537
August	8	15	202	470	210	485
September	4	4	49	134	53	138
October	0	1	16	54	16	55
November	1	2	64	140	65	142
December	*	9	27	82	27	91
Total	13	54	624	1603	637	1657
	Annual catch ²					
Albacore	0	0	9	11	9	11
Yellowfin tuna	7	10	36	258	43	268
Bigeye tuna	0	1	0	6	0	7
Bluefin tuna	0	0	0	4	0	4
Skipjack tuna	78	223	3030	7099	3108	7322
Total tunas	85	234	3075	7378	3160	7612
	Annual catch ²					
Frigate tuna	0	0	0	0	0	0
Others	0	0	*	2	*	2

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 25.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1974. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
	Monthly nominal effort ¹					
January	*	6	26	34	26	40
February	0	3	15	74	15	77
March	*	3	2	55	2	58
April	0	3	20	45	20	48
May	0	0	0	0	0	0
June	0	0	7	26	7	26
July	5	11	195	556	200	567
August	0	2	23	59	23	61
September	3	17	63	127	66	144
October	2	11	107	199	109	210
November	1	8	39	138	40	146
December	1	3	28	62	29	65
Total	12	67	525	1375	537	1442
	Annual catch ²					
Albacore	0	0	1	1	1	1
Yellowfin tuna	0	7	101	294	101	301
Bigeye tuna	0	0	0	0	0	0
Bluefin tuna	0	0	0	0	0	0
Skipjack tuna	8	76	1798	4627	1806	4703
Total tunas	8	83	1900	4922	1908	5005
	Annual catch ²					
Frigate tuna	0	0	0	0	0	0
Others	0	0	23	39	23	39

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 26.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1975. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
	Monthly nominal effort ¹					
January	0	1	15	44	15	45
February	1	3	22	36	23	39
March	3	20	35	81	38	101
April	4	21	66	137	70	158
May	2	77	5	30	7	107
June	1	9	188	391	189	400
July	1	10	85	254	86	264
August	*	8	132	260	132	268
September	1	22	51	154	52	176
October	*	8	4	56	4	64
November	1	10	52	151	53	161
December	1	17	38	102	39	119
Total	15	206	693	1696	708	1902
	Annual catch ²					
Albacore	0	0	0	4	0	4
Yellowfin tuna	0	9	82	271	82	280
Bigeye tuna	0	1	2	6	2	7
Bluefin tuna	0	0	0	0	0	0
Skipjack tuna	68	1117	2867	6345	2935	7462
Total tunas	68	1127	2951	6626	3019	7753
	Annual catch ²					
Frigate tuna	0	0	0	0	0	0
Others	0	3	16	31	16	34

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 27.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1976. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
	Monthly nominal effort ¹					
January	0	6	22	78	22	84
February	0	2	7	30	7	32
March	0	0	4	17	4	17
April	0	9	0	14	*	23
May	0	0	1	6	1	6
June	0	0	2	7	2	7
July	1	5	77	264	78	269
August	0	0	25	76	25	76
September	0	3	16	33	16	36
October	2	3	11	35	13	38
November	*	1	6	122	6	123
December	*	21	1	62	1	83
Total	3	50	172	744	175	794
	Annual catch ²					
Albacore	0	0	0	0	0	0
Yellowfin tuna	0	25	33	249	33	274
Bigeye tuna	0	0	0	1	0	1
Bluefin tuna	0	0	0	*	0	*
Skipjack tuna	9	85	563	2303	572	2388
Total tunas	9	110	596	2553	605	2663
	Annual catch ²					
Frigate tuna	0	0	0	0	0	0
Others	0	*	2	13	2	13

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 28.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1977. (From Yong and Wetherall 1980.)

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
	Monthly nominal effort ¹					
January	0	0	*	32	*	32
February	0	0	45	167	45	167
March	16	227	10	36	26	263
April	10	73	20	65	30	138
May	*	6	0	2	*	8
June	0	2	55	172	55	174
July	0	1	52	150	52	151
August	*	5	25	107	25	112
September	1	2	16	99	17	101
October	0	2	8	70	8	72
November	0	13	11	170	11	183
December	0	2	1	39	1	41
Total	27	333	243	1109	270	1442
	Annual catch ²					
Albacore	0	0	*	5	*	5
Yellowfin tuna	0	13	63	431	63	444
Bigeye tuna	0	1	1	6	1	7
Bluefin tuna	0	1	0	8	0	9
Skipjack tuna	94	2044	846	2995	940	5039
Total tunas	94	2059	910	3445	1004	5504
	Annual catch ²					
Frigate tuna	0	0	0	0	0	0
Others	0	7	15	70	15	77

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 29.—Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1978.

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	*	1	*	52	*	53
February	*	2	9	72	9	74
March	*	4	4	32	4	36
April	4	77	6	79	10	156
May	3	21	5	24	8	45
June	*	*	60	252	60	252
July	*	*	52	186	52	186
August	*	6	85	210	85	216
September	2	5	21	75	23	80
October	*	*	14	20	14	20
November	*	2	38	94	38	96
December	*	1	13	46	13	47
Total	9	119	307	1,142	316	1,261
Annual catch ²						
Albacore	*	*	1	10	1	10
Yellowfin tuna	*	11	99	348	99	359
Bigeye tuna	*	2	*	5	*	7
Bluefin tuna	*	*	*	1	*	1
Skipjack tuna	41	867	1,145	4,221	1,186	5,088
Total tunas	41	880	1,245	4,585	1,286	5,465
Annual catch ²						
Frigate tuna	*	*	*	*	*	*
Others	*	2	5	36	5	38

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 30.--Estimated catch and effort by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1979.

	Guam (A)		CNMI (B)		Areas combined (A + B)	
	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ	Within 50 mi.	Within FCZ
Monthly nominal effort ¹						
January	*	*	36	86	36	86
February	3	67	204	444	207	511
March	39	238	151	650	190	888
April	3	21	22	76	25	97
May	1	7	28	110	29	117
June	*	8	22	87	22	95
July	*	*	61	262	61	262
August	1	3	43	144	44	147
September	*	*	59	112	59	112
October	*	4	32	56	32	60
November	*	8	16	87	16	95
December	*	3	10	122	10	125
Total	47	359	684	2,236	731	2,595
Annual catch ²						
Albacore	2	24	13	26	15	50
Yellowfin tuna	*	8	132	436	132	444
Bigeye tuna	*	5	2	14	2	19
Bluefin tuna	*	*	*	*	*	*
Skipjack tuna	141	1,246	2,531	8,059	2,672	9,305
Total tunas	143	1,283	2,678	8,535	2,821	9,818
Annual catch ²						
Frigate tuna	*	*	*	*	*	*
Others	*	2	14	64	14	66

¹Effort in vessel days, * = < 1 vessel day.

²Catch in metric tons, * = < 1 mt.

Table 31.—Total tuna catch, effort, and catch per unit effort (CPUE) for Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1970-79.

Year	Guam			CNMI		
	Catch ¹	Effort ²	CPUE ³	Catch ¹	Effort ²	CPUE ³
1970	665	182	3.65	8,869	1,763	5.03
1971	444	164	2.71	12,564	2,646	4.75
1972	301	119	2.53	7,105	1,647	4.31
1973	234	54	4.33	7,378	1,603	4.60
1974	83	66	1.26	4,922	1,375	3.58
1975	1,127	205	5.50	6,626	1,696	3.91
1976	110	48	2.29	2,554	745	3.43
1977	2,059	333	6.18	3,445	1,109	3.11
1978	880	118	7.46	4,585	1,143	4.01
1979	1,283	358	3.58	8,535	2,238	3.81

¹Catch in metric tons.

²Effort in vessel days.

³CPUE in metric tons per vessel day.

Table 32.--Annual catch,¹ effort,² and catch per unit effort (CPUE)³ for total tunas from Japanese baitboats by latitude around Guam and the Commonwealth of the Northern Mariana Islands, 1970-79.

Lat. N	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
23-24	12	1	1	6	4	2	11	1	1	3
	4	2	1	0	1	1	2	4	1	3
	2.7	0.5	1.4	13.0	3.1	2.4	5.5	0.3	0.9	1.0
22-23	138	104	56	44	33	59	85	49	115	289
	39	28	22	13	14	24	17	17	34	57
	3.5	3.7	2.6	3.3	2.3	2.4	5.1	2.9	3.4	5.1
21-22	1,485	657	406	808	595	404	312	295	790	735
	288	183	132	185	204	118	97	143	194	233
	5.2	3.6	3.1	4.4	2.9	3.4	3.2	2.1	4.1	3.2
20-21	1,808	1,738	1,742	1,164	984	1,172	596	506	1,059	2,323
	350	356	348	282	302	332	159	218	262	556
	5.2	4.9	5.0	4.1	3.3	3.5	3.8	2.3	4.0	4.2
19-20	1,634	1,742	1,578	1,190	693	662	405	464	500	1,391
	256	331	320	249	210	199	128	124	138	298
	6.4	5.3	4.9	4.8	3.3	3.3	3.2	3.7	3.6	4.7
18-19	1,124	2,787	1,390	1,411	921	1,031	656	893	830	772
	253	517	325	298	221	264	149	256	224	199
	4.4	5.4	4.3	4.7	4.2	3.9	4.4	3.5	3.7	3.9
17-18	1,344	2,450	899	1,430	761	1,543	315	657	395	331
	286	483	213	306	202	336	99	169	123	127
	4.7	5.1	4.2	4.7	3.8	4.6	3.2	3.9	3.2	2.6
16-17	948	1,859	661	951	670	1,153	112	284	213	285
	191	403	163	156	146	255	56	91	58	111
	5.0	4.6	4.1	6.1	4.6	4.5	2.0	3.1	3.7	2.6
15-16	323	1,143	281	252	242	474	71	222	246	298
	72	317	83	61	55	135	44	63	61	101
	4.5	3.6	3.4	4.1	4.4	3.5	1.6	3.5	4.0	3.0
14-15	142	322	167	154	72	714	34	145	70	963
	60	111	63	55	29	128	16	44	22	292
	2.4	2.9	2.6	2.8	2.5	5.6	2.1	3.3	3.1	3.3
13-14	57	121	150	117	21	372	40	170	210	1,245
	25	37	60	24	33	65	15	47	24	303
	2.2	3.2	2.5	4.8	0.6	5.8	2.7	3.6	8.6	4.1
12-13	62	58	59	31	5	112	1	427	855	763
	35	21	19	9	16	24	2	91	94	207
	1.8	2.7	3.1	3.4	0.3	4.7	0.4	4.7	9.1	3.7
11-12	457	27	17	54	4	56	27	1,392	181	420
	84	19	17	16	8	20	8	174	25	109
	5.5	1.4	1.0	3.3	0.5	2.8	3.4	8.0	7.2	3.8

¹Catch in metric tons.

²Effort in vessel days.

³CPUE in metric tons per vessel day.

Table 33.--Monthly catch, effort, and catch per unit effort (CPUE) by Japanese baitboats around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), 1970-79.

Month	Guam			CNMI		
	Catch ¹	Effort ²	CPUE ³	Catch ¹	Effort ²	CPUE ³
January	115	52	2.21	560	434	1.29
February	443	126	3.52	2,601	964	2.70
March	3,027	586	5.17	2,888	1,088	2.65
April	1,250	228	5.48	1,920	567	3.39
May	746	115	6.49	1,236	237	5.22
June	84	19	4.42	7,995	1,361	5.87
July	120	44	2.72	23,623	4,010	5.89
August	323	69	4.68	11,615	2,603	4.41
September	367	113	3.25	6,301	1,620	3.89
October	216	89	2.43	3,317	1,008	3.29
November	320	119	2.69	3,574	1,443	2.48
December	176	89	1.98	950	657	1.45

¹Catch in metric tons.

²Effort in vessel days.

³CPUE in metric tons per vessel day.