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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

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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 5° squares. This data set is available from 1965 to 1979. The second data set is Japanese longline catch and effort by month reported by 1° 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 1° 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<br>tuna | Bigeye<br>tuna | Bluefin<br>tuna | Skipjack<br>tuna | Blue<br>marlin | Black<br>marlin | Striped<br>marlin | Swordfish | Sailfish and<br>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<br>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  $1^{\circ}$  and  $5^{\circ}$  squares within these zones. Where the  $1^{\circ}$  or  $5^{\circ}$  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  $1^{\circ}$  square data were available (Table 19). These data show a general trend of increasing catch and effort in the lower latitudes from  $11^{\circ}$  to  $16^{\circ}$  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.

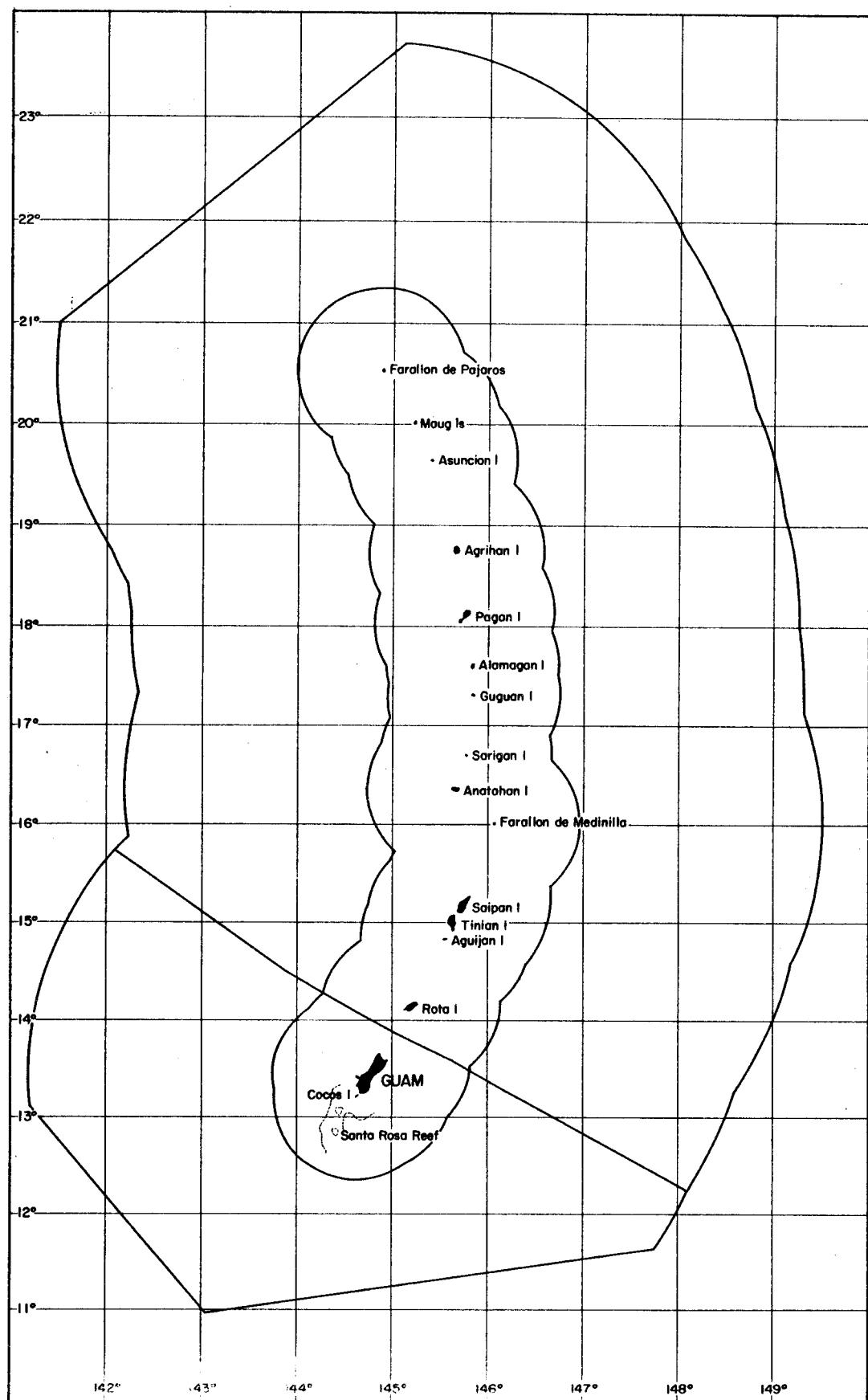


Figure 1.--The 50-mile limits and the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands.

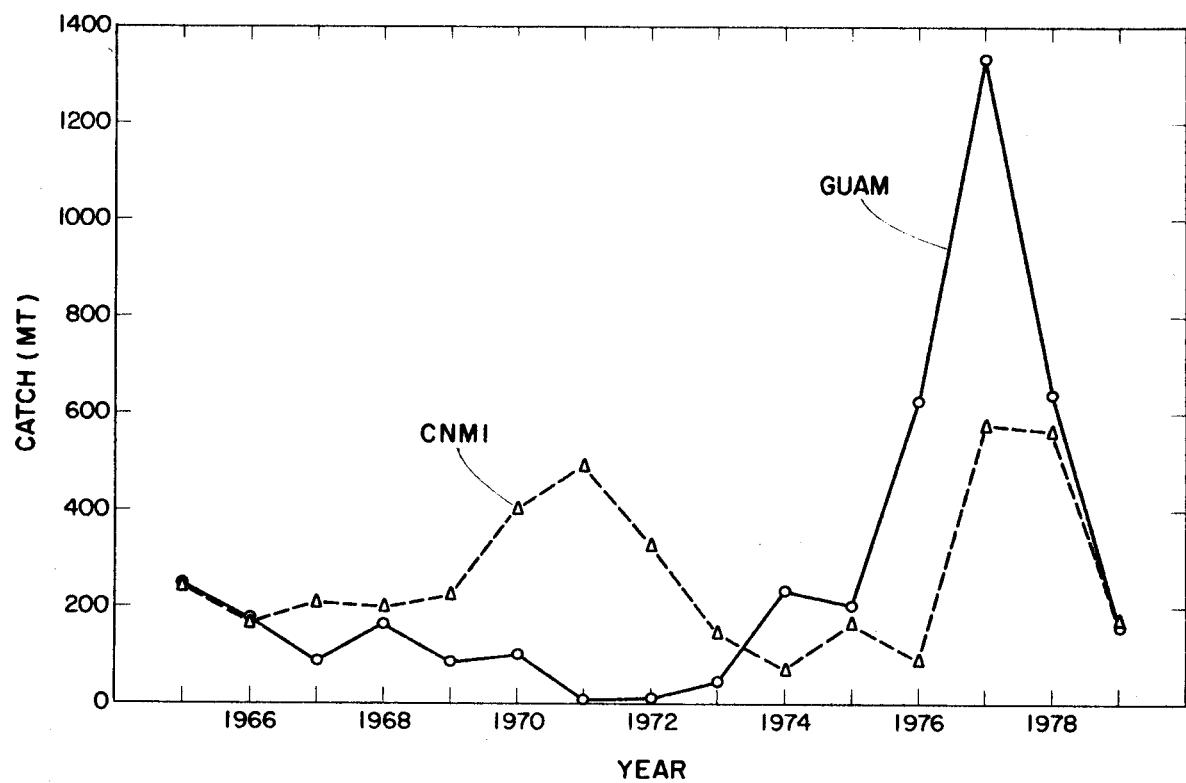


Figure 2.—Total tuna catches from Japanese longliners in the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1965-79).

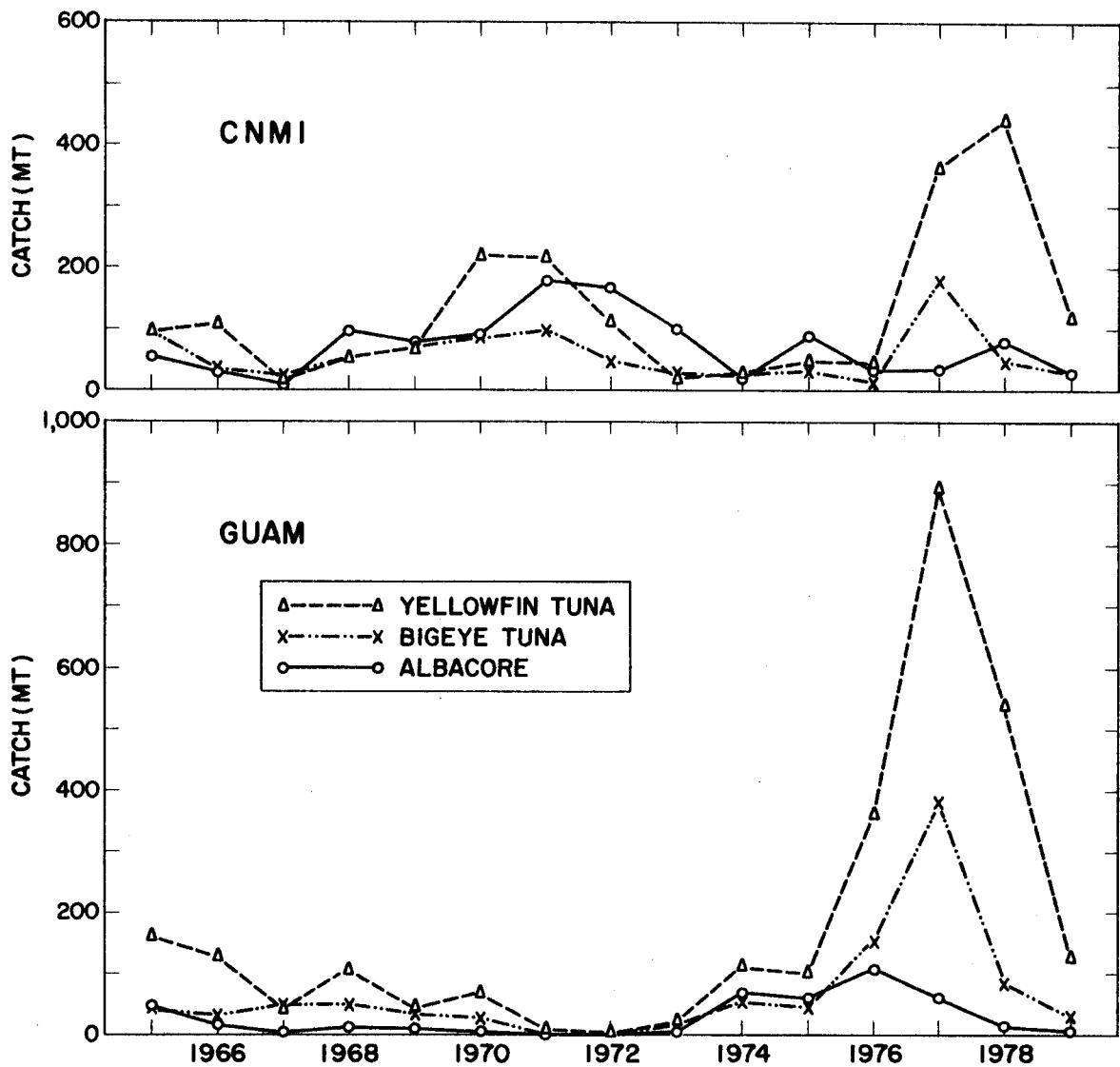


Figure 3.--Catches of albacore and yellowfin and bigeye tunas from Japanese longliners in the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1965-79).

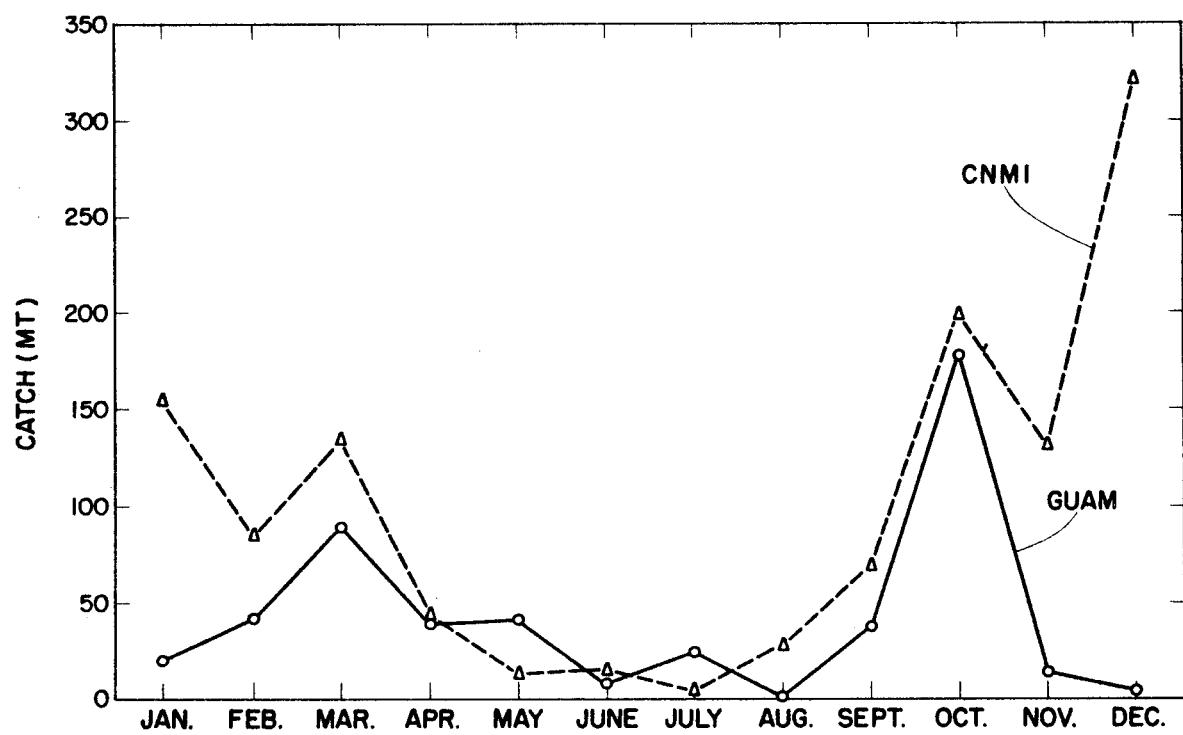


Figure 4.--Total tuna catches from Japanese longliners aggregated by month for the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1971-75).

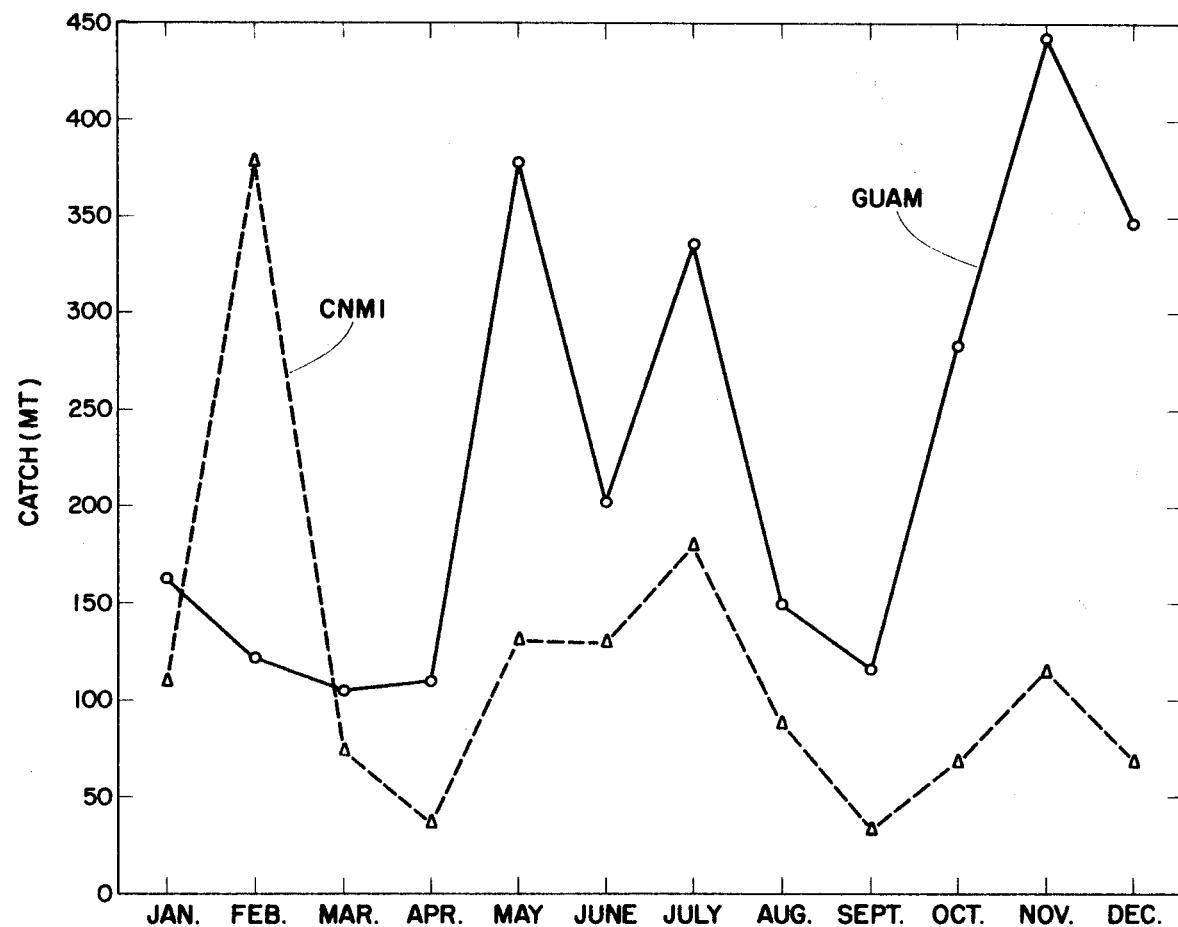


Figure 5.--Total tuna catches from Japanese longliners aggregated by month for the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1976-79).

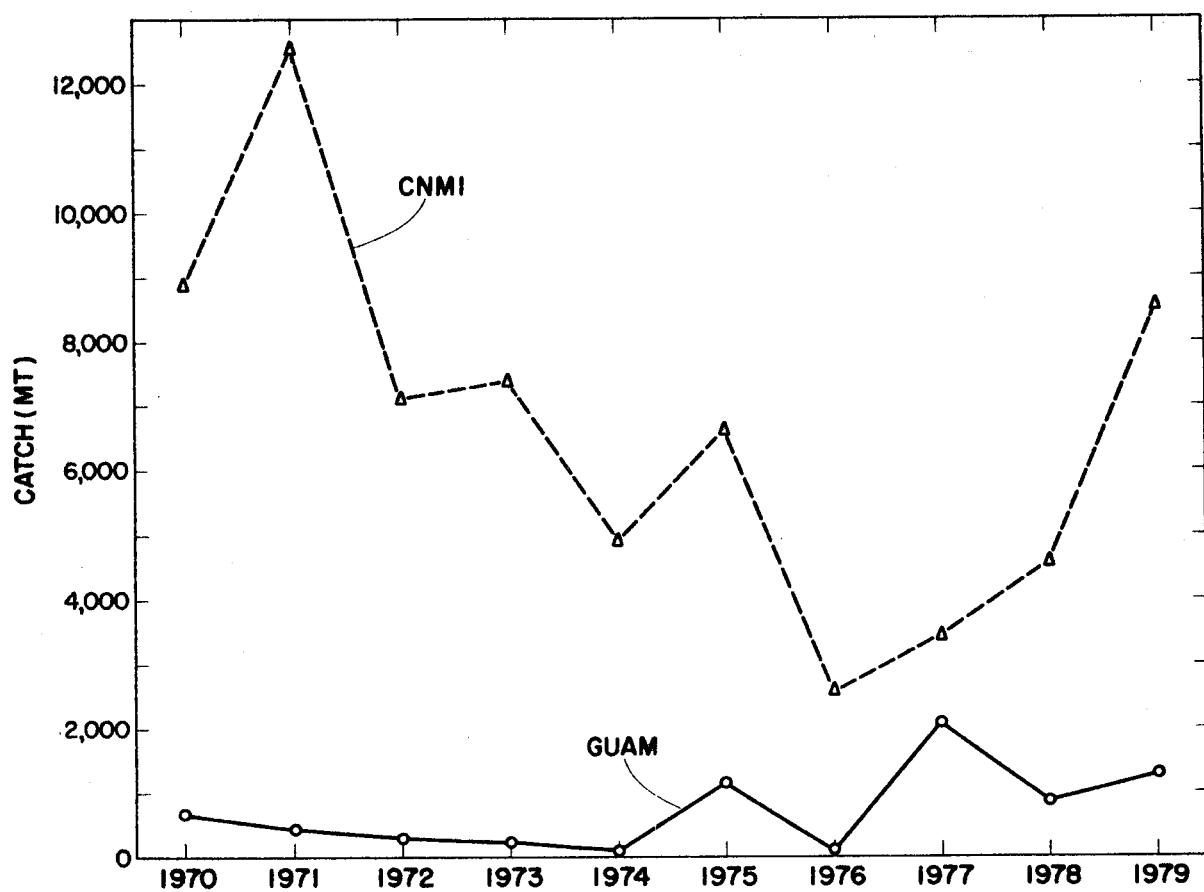


Figure 6.--Total tuna catches from Japanese baitboats for the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1970-79).

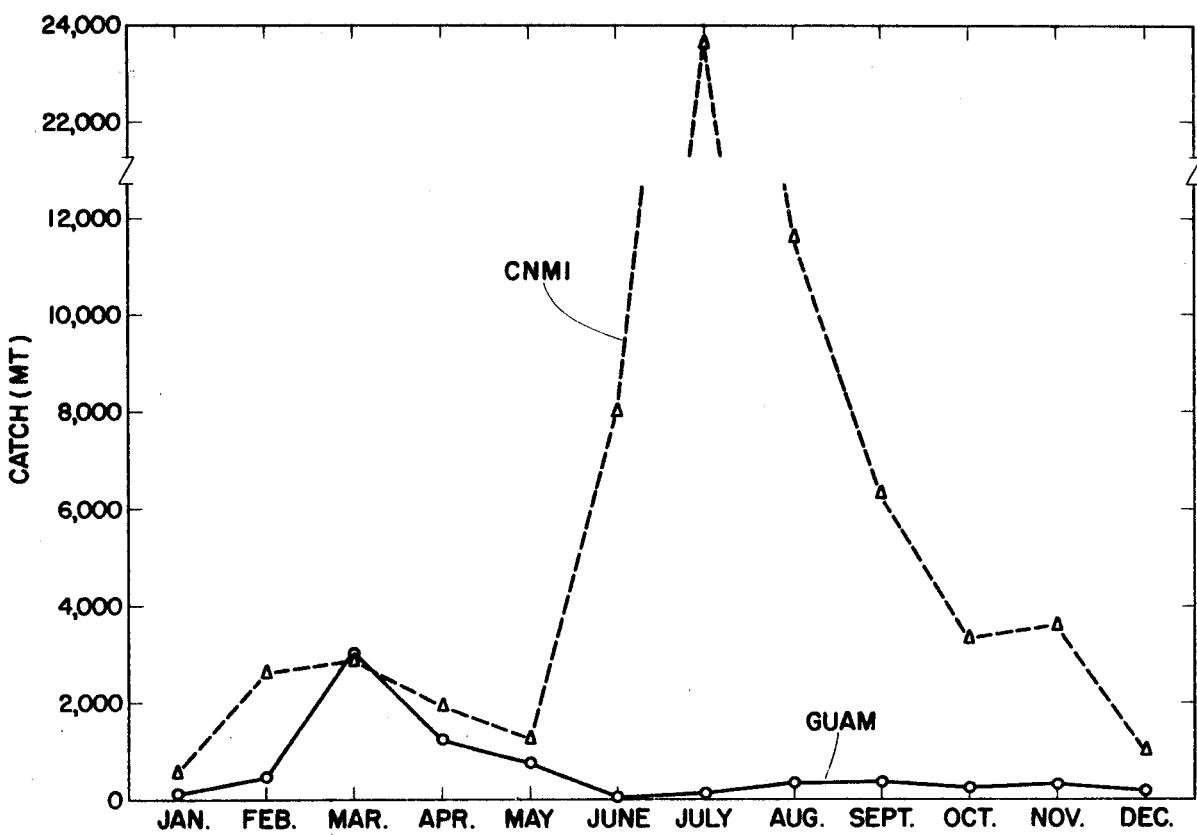


Figure 7.--Total tuna catches from Japanese baitboats aggregated by month for the Fishery Conservation Zone around Guam and the Commonwealth of the Northern Mariana Islands (1970-79).

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 <sup>1</sup> |               |            |               |            |                        |            |
| 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                    | 878        |
| Annual catch <sup>2</sup>           |               |            |               |            |                        |            |
| 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                        | *             | *          | *             | 2          | *                      | 2          |
| Skipjack tuna                       | *             | *          | *             | *          | *                      | *          |
| Total tunas                         | 40            | 249        | 43            | 248        | 83                     | 497        |
| Annual catch <sup>2</sup>           |               |            |               |            |                        |            |
| Blue marlin                         | 6             | 36         | 8             | 40         | 14                     | 76         |
| Striped marlin                      | *             | 1          | 4             | 36         | 4                      | 37         |
| Swordfish                           | *             | 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        |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi.                    | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
|                           | Monthly nominal effort <sup>1</sup> |               |                  |               |                        |               |
| 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 <sup>2</sup> |                                     |               |                  |               |                        |               |
| 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 <sup>2</sup> |                                     |               |                  |               |                        |               |
| 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           |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Albacore                            | *             | 3          | 9             | 79         | 9                      | 82         |
| Yellowfin tuna                      | 7             | 42         | 9             | 47         | 16                     | 89         |
| Bigeye tuna                         | 7             | 44         | 13            | 81         | 20                     | 125        |
| Bluefin tuna                        | 0             | 0          | *             | *          | *                      | *          |
| Skipjack tuna                       | *             | *          | *             | *          | *                      | *          |
| Total tunas                         | 14            | 89         | 31            | 207        | 45                     | 296        |
| Annual catch <sup>2</sup>           |               |            |               |            |                        |            |
| 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         |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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                        | *             | *          | *             | *          | *                      | *          |
| Skipjack tuna                       | 0             | 1          | *             | *          | *                      | 1          |
| Total tunas                         | 27            | 165        | 30            | 199        | 57                     | 364        |
| Annual catch <sup>2</sup>           |               |            |               |            |                        |            |
| Blue marlin                         | 3             | 20         | 4             | 25         | 7                      | 45         |
| Striped marlin                      | *             | 1          | 2             | 16         | 2                      | 17         |
| Swordfish                           | *             | 1          | 4             | 32         | 4                      | 33         |
| Black marlin                        | *             | 1          | *             | *          | *                      | 1          |
| Spearfish & sailfish                | *             | 3          | 1             | 3          | 1                      | 6          |
| Total billfishes                    | 3             | 26         | 11            | 76         | 14                     | 102        |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 mi. | Within FCZ | Within 50 mi. | Within FCZ | Within 50 mi.          | Within FCZ |
| Monthly nominal effort <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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                       | *             | *          | *             | *          | *                      | *          |
| Total tunas                         | 13            | 86         | 37            | 222        | 50                     | 308        |
| Annual catch <sup>2</sup>           |               |            |               |            |                        |            |
| 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         |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 mi. | Within FCZ | Within 50 mi. | Within FCZ | Within 50 mi.          | Within FCZ |
| Monthly nominal effort <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Albacore                            | 1             | 7          | 17            | 92         | 18                     | 99         |
| Yellowfin tuna                      | 10            | 68         | 44            | 220        | 54                     | 288        |
| Bigeye 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Blue marlin                         | 2             | 13         | 11            | 63         | 13                     | 76         |
| Striped marlin                      | *             | 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        |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi.                    | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
|                           | Monthly nominal effort <sup>1</sup> |               |                  |               |                        |               |
| 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 <sup>2</sup> |                                     |               |                  |               |                        |               |
| 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 <sup>2</sup> |                                     |               |                  |               |                        |               |
| 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           |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 mi. | Within FCZ | Within 50 mi. | Within FCZ | Within 50 mi.          | Within FCZ |
| Monthly nominal effort <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Blue marlin                         | 0             | 2          | 8             | 22         | 8                      | 24         |
| Striped marlin                      | 0             | *          | 3             | 20         | 3                      | 20         |
| Swordfish                           | 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         |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi.                    | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
|                           | Monthly nominal effort <sup>1</sup> |               |                  |               |                        |               |
| 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 <sup>2</sup> |                                     |               |                  |               |                        |               |
| 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 <sup>2</sup> |                                     |               |                  |               |                        |               |
| 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            |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi.                    | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
|                           | Monthly nominal effort <sup>1</sup> |               |                  |               |                        |               |
| 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             | •                | 1             | *                      | 1             |
| September                 | *                                   | 23            | 0                | 0             | *                      | 23            |
| October                   | 0                                   | 42            | 0                | 7             | 0                      | 49            |
| November                  | 0                                   | 0             | 0                | 15            | 0                      | 15            |
| December                  | 0                                   | •             | *                | 3             | *                      | 3             |
| Total                     | 18                                  | 273           | 39               | 337           | 57                     | 610           |
| Annual catch <sup>2</sup> |                                     |               |                  |               |                        |               |
| 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             | •                | *             | *                      | *             |
| Skipjack tuna             | 0                                   | *             | *                | *             | *                      | •             |
| Total tunas               | 20                                  | 234           | 10               | 71            | 30                     | 305           |
| Annual catch <sup>2</sup> |                                     |               |                  |               |                        |               |
| Blue marlin               | 1                                   | 27            | 2                | 19            | 3                      | 46            |
| Striped marlin            | *                                   | 3             | 6                | 63            | 6                      | 66            |
| Swordfish                 | *                                   | 2             | 4                | 29            | 4                      | 31            |
| Black marlin              | 0                                   | •             | *                | *             | •                      | *             |
| Spearfish & sailfish      | *                                   | 4             | *                | 2             | *                      | 6             |
| Total billfishes          | 1                                   | 36            | 12               | 113           | 13                     | 149           |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi.                    | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
|                           | Monthly nominal effort <sup>1</sup> |               |                  |               |                        |               |
| 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 <sup>2</sup> |                                     |               |                  |               |                        |               |
| 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             | *                | 1             | *                      | 1             |
| Skipjack tuna             | *                                   | *             | *                | *             | *                      | *             |
| Total tunas               | 14                                  | 202           | 24               | 169           | 38                     | 371           |
| Annual catch <sup>2</sup> |                                     |               |                  |               |                        |               |
| Blue marlin               | 3                                   | 36            | 3                | 14            | 6                      | 50            |
| Striped marlin            | *                                   | *             | 3                | 21            | 3                      | 21            |
| Swordfish                 | *                                   | 1             | 5                | 36            | 5                      | 37            |
| Black marlin              | 0                                   | *             | *                | *             | *                      | *             |
| Spearfish & sailfish      | 0                                   | *             | *                | 1             | *                      | 1             |
| Total billfishes          | 3                                   | 37            | 11               | 72            | 14                     | 109           |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 mi. | Within FCZ | Within 50 mi. | Within FCZ | Within 50 mi.          | Within FCZ |
| Monthly nominal effort <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Blue marlin                         | 9             | 58         | 6             | 32         | 15                     | 90         |
| Striped marlin                      | *             | 2          | 1             | 8          | 1                      | 10         |
| Swordfish                           | 2             | 10         | 3             | 20         | 5                      | 30         |
| Black marlin                        | *             | 1          | *             | 1          | *                      | 2          |
| Spearfish & sailfish                | *             | 2          | *             | 2          | *                      | 4          |
| Total billfishes                    | 11            | 73         | 10            | 63         | 21                     | 136        |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 mi. | Within FCZ | Within 50 mi. | Within FCZ | Within 50 mi.          | Within FCZ |
| Monthly nominal effort <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Albacore                            | 7             | 49         | 12            | 109        | 19                     | 158        |
| Yellowfin tuna                      | 217           | 1368       | 208           | 861        | 425                    | 2229       |
| Bigeye tuna                         | 90            | 572        | 94            | 406        | 184                    | 978        |
| Bluefin tuna                        | *             | *          | *             | 1          | *                      | 1          |
| Skipjack tuna                       | *             | *          | *             | *          | *                      | *          |
| Total tunas                         | 314           | 1989       | 314           | 1377       | 628                    | 3366       |
| Annual catch <sup>2</sup>           |               |            |               |            |                        |            |
| Blue marlin                         | 14            | 87         | 15            | 63         | 29                     | 150        |
| Striped marlin                      | *             | 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        |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi. | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
| Monthly nominal effort <sup>1</sup> |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| 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            |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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         |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 <sup>1</sup> | Effort <sup>2</sup> | CPUE <sup>3</sup> | Catch <sup>1</sup> | Effort <sup>2</sup> | CPUE <sup>3</sup> |
| 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              |

<sup>1</sup>Catch in metric tons.

<sup>2</sup>Effort in vessel days.

<sup>3</sup>CPUE 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 | <sup>1</sup> * | 8              | 1           | 178      | 216            | 97          |
| 1972 | <sup>1</sup> * | 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          |

<sup>1</sup> < 1 mt.

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

<sup>1</sup>Catch in metric tons.

<sup>2</sup>Effort in vessel days.

<sup>3</sup>CPUE 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 <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Frigate tuna                        | 0             | 0          | 0             | 0          | 0                      | 0          |
| Others                              | *             | *          | 3             | 13         | 3                      | 13         |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Frigate tuna                        | 0             | 0          | *             | *          | *                      | *          |
| Others                              | 0             | 1          | 1             | 19         | 1                      | 20         |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 <sup>1</sup> |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| 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 <sup>2</sup>           |               |            |               |            |                        |            |
| Frigate tuna                        | 0             | 0          | 0             | 0          | 0                      | 0          |
| Others                              | 1             | 1          | 1             | 2          | 2                      | 3          |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi. | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
| Monthly nominal effort <sup>1</sup> |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| Frigate tuna                        | 0                | 0             | 0                | 0             | 0                      | 0             |
| Others                              | 0                | 0             | *                | 2             | *                      | 2             |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi. | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
| Monthly nominal effort <sup>1</sup> |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| Albacore                            | 0                | 0             | 1                | 1             | 1                      | 1             |
| Yellowfin<br>tuna                   | 0                | 7             | 101              | 294           | 101                    | 301           |
| Bigeye<br>tuna                      | 0                | 0             | 0                | 0             | 0                      | 0             |
| Bluefin<br>tuna                     | 0                | 0             | 0                | 0             | 0                      | 0             |
| Skipjack<br>tuna                    | 8                | 76            | 1798             | 4627          | 1806                   | 4703          |
| Total tunas                         | 8                | 83            | 1900             | 4922          | 1908                   | 5005          |
| Annual catch <sup>2</sup>           |                  |               |                  |               |                        |               |
| Frigate tuna                        | 0                | 0             | 0                | 0             | 0                      | 0             |
| Others                              | 0                | 0             | 23               | 39            | 23                     | 39            |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi. | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
| Monthly nominal effort <sup>1</sup> |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| Frigate tuna                        | 0                | 0             | 0                | 0             | 0                      | 0             |
| Others                              | 0                | 3             | 16               | 31            | 16                     | 34            |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi. | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
| Monthly nominal effort <sup>1</sup> |                  |               |                  |               |                        |               |
| January                             | 0                | 6             | 22               | 78            | 22                     | 84            |
| February                            | 0                | 2             | 7                | 30            | 7                      | 32            |
| March                               | 0                | 0             | 4                | 17            | 4                      | 17            |
| April                               | *                | 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| Frigate tuna                        | 0                | 0             | 0                | 0             | 0                      | 0             |
| Others                              | 0                | *             | 2                | 13            | 2                      | 13            |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi. | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
| Monthly nominal effort <sup>1</sup> |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| Albacore                            | 0                | 0             | *                | 5             | *                      | 5             |
| Yellowfin<br>tuna                   | 0                | 13            | 63               | 431           | 63                     | 444           |
| Bigeye<br>tuna                      | 0                | 1             | 1                | 6             | 1                      | 7             |
| Bluefin<br>tuna                     | 0                | 1             | 0                | 8             | 0                      | 9             |
| Skipjack<br>tuna                    | 94               | 2044          | 846              | 2995          | 940                    | 5039          |
| Total tunas                         | 94               | 2059          | 910              | 3445          | 1004                   | 5504          |
| Annual catch <sup>2</sup>           |                  |               |                  |               |                        |               |
| Frigate tuna                        | 0                | 0             | 0                | 0             | 0                      | 0             |
| Others                              | 0                | 7             | 15               | 70            | 15                     | 77            |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi. | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
| Monthly nominal effort <sup>1</sup> |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| Frigate tuna                        | *                | *             | *                | *             | *                      | *             |
| Others                              | *                | 2             | 5                | 36            | 5                      | 38            |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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<br>50 mi. | Within<br>FCZ | Within<br>50 mi. | Within<br>FCZ | Within<br>50 mi.       | Within<br>FCZ |
| Monthly nominal effort <sup>1</sup> |                  |               |                  |               |                        |               |
| 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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| Albacore                            | 2                | 24            | 13               | 26            | 15                     | 50            |
| Yellowfin<br>tuna                   | *                | 8             | 132              | 436           | 132                    | 444           |
| Bigeye<br>tuna                      | *                | 5             | 2                | 14            | 2                      | 19            |
| Bluefin<br>tuna                     | *                | *             | *                | *             | *                      | *             |
| Skipjack<br>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 <sup>2</sup>           |                  |               |                  |               |                        |               |
| Frigate tuna                        | *                | *             | *                | *             | *                      | *             |
| Others                              | *                | 2             | 14               | 64            | 14                     | 66            |

<sup>1</sup>Effort in vessel days, \* = < 1 vessel day.

<sup>2</sup>Catch 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 <sup>1</sup> | Effort <sup>2</sup> | CPUE <sup>3</sup> | Catch <sup>1</sup> | Effort <sup>2</sup> | CPUE <sup>3</sup> |
| 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              |

<sup>1</sup>Catch in metric tons.

<sup>2</sup>Effort in vessel days.

<sup>3</sup>CPUE in metric tons per vessel day.

Table 32.--Annual catch,<sup>1</sup> effort,<sup>2</sup> and catch per unit effort (CPUE)<sup>3</sup> 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<br>4<br>2.7      | 1<br>2<br>0.5       | 1<br>1<br>1.4       | 6<br>0<br>13.0      | 4<br>1<br>3.1     | 2<br>1<br>2.4       | 11<br>2<br>5.5    | 1<br>4<br>0.3       | 1<br>1<br>0.9       | 3<br>3<br>1.0       |
| 22-23  | 138<br>39<br>3.5    | 104<br>28<br>3.7    | 56<br>22<br>2.6     | 44<br>13<br>3.3     | 33<br>14<br>2.3   | 59<br>24<br>2.4     | 85<br>17<br>5.1   | 49<br>17<br>2.9     | 115<br>34<br>3.4    | 289<br>57<br>5.1    |
| 21-22  | 1,485<br>288<br>5.2 | 657<br>183<br>3.6   | 406<br>132<br>3.1   | 808<br>185<br>4.4   | 595<br>204<br>2.9 | 404<br>118<br>3.4   | 312<br>97<br>3.2  | 295<br>143<br>2.1   | 790<br>194<br>4.1   | 735<br>233<br>3.2   |
| 20-21  | 1,808<br>350<br>5.2 | 1,738<br>356<br>4.9 | 1,742<br>348<br>5.0 | 1,164<br>282<br>4.1 | 984<br>302<br>3.3 | 1,172<br>332<br>3.5 | 596<br>159<br>3.8 | 506<br>218<br>2.3   | 1,059<br>262<br>4.0 | 2,323<br>556<br>4.2 |
| 19-20  | 1,634<br>256<br>6.4 | 1,742<br>331<br>5.3 | 1,578<br>320<br>4.9 | 1,190<br>249<br>4.8 | 693<br>210<br>3.3 | 662<br>199<br>3.3   | 405<br>128<br>3.2 | 464<br>124<br>3.7   | 500<br>138<br>3.6   | 1,391<br>298<br>4.7 |
| 18-19  | 1,124<br>253<br>4.4 | 2,787<br>517<br>5.4 | 1,390<br>325<br>4.3 | 1,411<br>298<br>4.7 | 921<br>221<br>4.2 | 1,031<br>264<br>3.9 | 656<br>149<br>4.4 | 893<br>256<br>3.5   | 830<br>224<br>3.7   | 772<br>199<br>3.9   |
| 17-18  | 1,344<br>286<br>4.7 | 2,450<br>483<br>5.1 | 899<br>213<br>4.2   | 1,430<br>306<br>4.7 | 761<br>202<br>3.8 | 1,543<br>336<br>4.6 | 315<br>99<br>3.2  | 657<br>169<br>3.9   | 395<br>123<br>3.2   | 331<br>127<br>2.6   |
| 16-17  | 948<br>191<br>5.0   | 1,859<br>403<br>4.6 | 661<br>163<br>4.1   | 951<br>156<br>6.1   | 670<br>146<br>4.6 | 1,153<br>255<br>4.5 | 112<br>56<br>2.0  | 284<br>91<br>3.1    | 213<br>58<br>3.7    | 285<br>111<br>2.6   |
| 15-16  | 323<br>72<br>4.5    | 1,143<br>317<br>3.6 | 281<br>83<br>3.4    | 252<br>61<br>4.1    | 242<br>55<br>4.4  | 474<br>135<br>3.5   | 71<br>44<br>1.6   | 222<br>63<br>2.1    | 246<br>61<br>3.5    | 298<br>101<br>4.0   |
| 14-15  | 142<br>60<br>2.4    | 322<br>111<br>2.9   | 167<br>63<br>2.6    | 154<br>55<br>2.8    | 72<br>29<br>2.5   | 714<br>128<br>5.6   | 34<br>16<br>2.1   | 145<br>44<br>3.3    | 70<br>22<br>3.1     | 963<br>292<br>3.3   |
| 13-14  | 57<br>25<br>2.2     | 121<br>37<br>3.2    | 150<br>60<br>2.5    | 117<br>24<br>4.8    | 21<br>33<br>0.6   | 372<br>65<br>5.8    | 40<br>15<br>2.7   | 170<br>47<br>3.6    | 210<br>24<br>8.6    | 1,245<br>303<br>4.1 |
| 12-13  | 62<br>35<br>1.8     | 58<br>21<br>2.7     | 59<br>19<br>3.1     | 31<br>9<br>3.4      | 5<br>16<br>0.3    | 112<br>24<br>4.7    | 1<br>2<br>0.4     | 427<br>91<br>4.7    | 855<br>94<br>9.1    | 763<br>207<br>3.7   |
| 11-12  | 457<br>84<br>5.5    | 27<br>19<br>1.4     | 17<br>17<br>1.0     | 54<br>16<br>3.3     | 4<br>8<br>0.5     | 56<br>20<br>2.8     | 27<br>8<br>3.4    | 1,392<br>174<br>8.0 | 181<br>25<br>7.2    | 420<br>109<br>3.8   |

<sup>1</sup>Catch in metric tons.

<sup>2</sup>Effort in vessel days.

<sup>3</sup>CPUE 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 <sup>1</sup> | Effort <sup>2</sup> | CPUE <sup>3</sup> | Catch <sup>1</sup> | Effort <sup>2</sup> | CPUE <sup>3</sup> |
| 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              |

<sup>1</sup>Catch in metric tons.

<sup>2</sup>Effort in vessel days.

<sup>3</sup>CPUE in metric tons per vessel day.