# INTER-AMERICAN TROPICAL TUNA COMMISSION COMISION INTERAMERICANA DEL ATUN TROPICAL

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# **BACKGROUND PAPER A1**

# THE FISHERY FOR TUNAS AND TUNA-LIKE FISHES IN THE EASTERN PACIFIC OCEAN IN 2000

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#### **FLEET**

The IATTC staff maintains detailed records of gear, flag, and fish-carrying capacity for most of the vessels that fish at the surface for yellowfin (*Thunnus albacares*), skipjack (*Katsuwonus pelamis*), bigeye (*Thunnus obesus*), or Pacific northern bluefin (*T. orientalis*) tuna in the eastern Pacific Ocean (EPO; Figure 1). Detailed records are not maintained for most longline vessels, nor for sport-fishing vessels and small craft such as canoes and launches. However, catch data for most of the larger longline vessels, and for U.S.-flag sport-fishing vessels and some other vessels, are obtained from various sources and entered into the IATTC's data bases. The fleet described here includes purse seiners and baitboats that have fished all or part of the year in the EPO for yellowfin, skipjack, bigeye, or bluefin tuna.

The owner's or builder's estimates of vessel carrying capacities are used until landing records indicate that revision of these is appropriate. The vessels are grouped, by carrying capacity, into the following size classes for reporting purposes: class 1, 46 metric tons (mt); class 46-91 mt; class 3, 92-181 mt; class 4, 182-272 mt; class 5, 273-363 mt; and class 6, more than 363 mt.

Until about 1960 fishing for tunas in the EPO was dominated by baitboats operating in the more coastal regions and in the vicinity of offshore islands. During the late 1950s and early 1960s most of the larger baitboats were converted to purse seiners, and by 1961 the EPO surface fleet was dominated by these vessels. During the 1961-2000 period the number of baitboats decreased from 93 to 11, and their total capacity from about 10 to 1 thousand mt. During the same period the number of purse seiners increased from 125 to 205, and their capacity from about 27 to 150 thousand mt. The peak in numbers and capacity of purse seiners occurred from the mid-1970s to the early 1980s, when the maximum number of vessels, 282, and the maximum capacity, about 168 thousand mt, were reached (Table 1).

The construction of new and larger purse seiners, which began during the mid-1960s, resulted in an increase in the total surface fleet capacity from about 42 thousand mt in 1966 to about 167 thousand mt in 1976. During the 1977-1981 period the fleet capacity remained fairly stable. During this period the construction of new vessels continued, but the new capacity was offset by losses due to sinkings and vessels leaving the fishery. A major El Niño event began in mid-1982 and persisted until late 1983. The catch rates in the EPO were low during the 1978-1981 period due to concentration of fishing effort on small fish, and the situation was exacerbated by the El Niño episode, which made the fish less vulnerable to capture. In 1982 the fleet capacity declined by about 16 thousand mt as vessels were deactivated or left the EPO to fish in other areas, primarily the western Pacific Ocean. This trend continued through 1983 as the catch rates in the EPO declined further, and the fleet capacity declined by about 48 thousand mt during 1983 and 1984. The fleet capacity in 1984, about 107 thousand mt, was the lowest it had been since 1971. In 1985, however, due primarily to the return of vessels from the western Pacific, the capacity increased to about 120 thousand mt, but in 1986 it decreased slightly to about 114 thousand mt. During 1987 several new vessels were added to the fleet, and others returned to the EPO fishery from the western Pacific, causing the fleet capacity to increase to about 132 thousand mt. This trend continued in 1988, resulting in a fleet capacity of about 137 thousand mt. This was the greatest fleet capacity since 1982. In the spring of 1990 the U.S. tuna-canning industry adopted a policy of not purchasing tunas caught during trips during which sets on tunas associated with dolphins were made. This caused many of the U.S.-flag vessels fishing in the EPO to leave that fishery and enter the fisheries of the Atlantic or western Pacific, with a consequent reduction in the EPO fleet to about 101 thousand mt in 1992. With increases in participation of non-U.S.-flag vessels in the fishery, the capacity has increased steadily since 1992, and the 2000 capacity was about 150 thousand mt.

The 1999 and preliminary 2000 data for numbers and carrying capacities of purse seiners and baitboats that fished for tunas in the EPO are shown in Tables 2a and 2b. The EPO tuna fleet was dominated by vessels operating under the Mexican and Ecuadorian flags during 2000. The Mexican fleet has been the largest fleet since 1987, with about 27 percent of the total capacity during 2000, while vessels registered in Ecuador, Venezuela, Vanuatu, and Spain comprised 25, 15, 8, and 6 percent of the total capacity, respectively.

Class-6 purse seiners make up the majority of the total capacity of the fleet of vessels that fish at the surface for tunas in the EPO. This group of vessels comprised 89 percent of the total fishing capacity operating in the EPO during 2000.

The monthly average, minimum, and maximum capacities at sea (CAS), in metric tons, of vessels that fished at the surface for tunas in the EPO during 1989-1999, and the 2000 values, are shown in Figure 2. The monthly values are averages of the CAS estimates given in the Weekly Reports prepared by the IATTC staff. The fishery for yellowfin was regulated after November 25, 1998, after October 14, 1999 and after December 1, 2000 (see the section entitled **MEASURES FOR THE MANAGEMENT OF TUNAS**), so the CAS values for December of 1998, October, November, and December of 1999, and December of 2000 are not comparable to the CAS values for those months of 1988-1997. Overall, the 2000 CAS values are greater than the 1989-1999 averages. During the 1989-1999 period an average of 57 percent of the fleet capacity was at sea during each month; during 2000 the average was about 56 percent.

#### **CATCHES**

#### Tunas

Estimates of the catches of tunas come from several sources, including logbooks kept by the fishermen, data recorded by observers, and unloading data provided by the canneries. The word "catch" in the text of this subsection, Figures 3-5, and Tables 4-6 refers to the retained catches, unless otherwise noted. The principal source of this information is unloading data. Some of the tunas caught are, for various reasons, discarded at sea. Data on fish discarded at sea by Class-6 vessels have been collected by observers since 1993. Annual estimates of the catches and discards of the various species of tunas landed by vessels of the EPO fleet that fish for tunas with surface gear are shown in Table 3. Recreational catches landed in California are included in the landings. In the case of bluefin, these landings have become an increasingly important component of the catch in recent years.

The statistics for 2000 are compared to those for 1984-1999. There were no restrictions on fishing for tunas in the EPO during the 1980-1997 period. However, there were restrictions on fishing for yellowfin in the Commission's Yellowfin Regulatory Area (CYRA) (Figure 1) from November 26 through December 31, 1998, from October 14 through December 31, 1999, and from December 1 to 31, 2000. In addition, fishing for tunas associated with fish-aggregating devices (FADs) was prohibited in the EPO from November 9 through December 31, 1999, and from September 15 through December 15, 2000. Furthermore, regulations placed on purse-seine vessels directing their effort at tunas associated with dolphins have probably affected the way these vessels operate, especially during the late 1980s and the 1990s. As mentioned in the previous subsection, there was a major El Niño event during 1982-1983, which made the fish less vulnerable to capture and reduced the numbers of vessels in the EPO. The fishing effort remained relatively low during 1984-1986. During the 1997-1998 period another major El Niño event occurred in the EPO, and the effects of this on the vulnerability of the fish to capture are currently being studied.

The average annual catch of yellowfin by surface gear in the CYRA during the 1985-1999 period was 226 thousand mt (range: 192 to 264 thousand mt). The preliminary estimate of the 2000 yellowfin catch in the CYRA is 220 thousand mt. During the 1985-1999 period the annual yellowfin catch by surface gear in the area between the CYRA boundary and 150°W averaged 29 thousand mt (range: 19 to 44 thousand mt). The preliminary estimate of the 2000 yellowfin catch from that area is 51 thousand mt. The estimated 2000 yellowfin catch from the EPO, 272 thousand mt, is less than the 1999 estimated catch, but is greater than that of any of the other previous years and about 6 percent greater than the 1985-1999 average of 256 thousand mt (Table 4). The average amount of yellowfin discarded at sea during the 1993-2000 period was 5.7 thousand mt.

During the 1985-1999 period the annual catch of skipjack in the EPO averaged 104 thousand mt (range: 49 to 268 thousand mt). The preliminary estimate of the 2000 skipjack catch in the EPO, 210 thousand mt, is less than that of 1999, but nearly twice the average of the annual catches for the last 15 years. The average estimated amount of skipjack discarded at sea during the 1993-2000 period was 21.3 thousand mt.

Prior to 1994 the average catch of bigeye in the EPO by surface gear was about 5 thousand mt (range: <1 to 15 thousand mt). Since 1993 the catch increased from 29 thousand mt in 1994 to 41 thousand mt in 1999. The preliminary estimate of the 2000 bigeye catch in the EPO is 70 thousand mt. These increasing catches of bigeye resulted from the discovery, made during the early 1990s, that tunas, principally skipjack, associated with floating objects, but well below the surface, can be detected with sonar and caught with purse seines. Many of these floating objects are FADs placed in the water by the fishermen. The average amount of bigeye discarded at sea during the 1993-2000 period was 3.9 thousand mt.

While yellowfin, skipjack, and bigeye comprise the most significant portion of the catch made by vessels fishing for tunas at the surface in the EPO, Pacific northern bluefin, albacore (*Thunnus alalunga*), black skipjack (*Euthynnus lineatus*), bonito (*Sarda orientalis*), and other species contribute to the overall harvest in this area. The total catch of these other species in the EPO was just over 5 thousand mt in both 1999 and 2000, well below the 1984-1998 average of 9 thousand mt (range: 3 to 17 thousand mt). The estimated discarded catches of these species for the 1993 to 2000 period are presented in Table 3. Estimates of the discards of other species, in numbers of individuals, can be found in Tables 40 and 41 of the IATTC Annual Report for 1998.

The 1999 catches in the EPO, by flag, and the landings of tunas caught by surface gear in the EPO, by country, are given in Table 4a, and preliminary estimates of the 2000 catches and landings are given in Table 4b. The estimated catch of all species in the EPO during 2000 was about 557 thousand mt, which is less than the 1999 estimate of 611 thousand mt, but much greater than the previous record total catch of 475 thousand mt, taken in 1997. Ecuadorian-, Mexican-, and Venezuelan-flag vessels harvested 32, 22, and 14 percent, respectively, of the total EPO catch. The landings are fish unloaded during a calendar year, regardless of the year of catch. The country of landing is that in which the fish were unloaded from the fishing vessel or, in the case of transshipments, the country that received the transshipped fish. Preliminary landings data (Table 4b) indicate that, of the 547 thousand mt of tunas landed in 2000, 218 thousand mt (40 percent) was landed in Ecuador. The landings in Mexico (116 thousand mt; 21 percent) and Colombia (60 thousand mt; 11 percent) were next in terms of magnitude. Other countries with significant landings of tunas caught in the EPO included Venezuela (6 percent), Spain (5 percent), Costa Rica (4 percent), and the United States (3 percent). It is important to note that when final information is available, the landings currently assigned to various countries may change due to exports from storage facilities to processors in other nations.

Tunas are caught by surface gear in three types of schools, those in which the fish are associated with dolphins, those in which the fish are associated with floating objects, such as flotsam or FADs, and those

in which the fish are associated only with other fish (unassociated schools). Estimates of the numbers of purse-seine sets of each type in the EPO during the 1987-2000 period, and the catches of these sets, are listed in Table 5. The estimates for Class-1 to -5 vessels were calculated from logbook data in the IATTC statistical data base, and those for Class-6 vessels were calculated from logbook data and from the observer data bases of the IATTC, the Programa Nacional de Aprovechamiento del Atún y de Protección de Delfines (PNAAPD) of Mexico, the Programa Nacional de Observadores de Venezuela (PNOV), the Programa de Observadores Pesqueros de Ecuador (PROB ECUADOR), and the U.S. National Marine Fisheries Service. The greatest numbers of sets on schools associated with floating objects and on unassociated schools of tuna were made during the period from the mid-1970s to the early 1980s. Despite opposition to fishing for tunas associated with dolphins and the refusal of U.S. canners to accept tunas caught during trips during which sets were made on dolphin-associated fish, the numbers of sets made on fish associated with dolphins decreased only moderately during the mid-1990s, and in 1998 were the greatest since 1990.

There are two types of floating objects, flotsam and FADs. The occurrence of the former is fortuitous, whereas the latter are constructed by fishermen specifically for the purpose of attracting fish. FADs have been in use for only a few years, but their importance has increased during that period while that of flotsam has decreased, as shown by the data on numbers and percentages of the sets made on floating objects by Class-6 vessels.

	1992		1993		1994		1995		1996		1997		1998		1999	
	No.	%														
Flotsam	1,087	61.7	1,138	55.2	773	27.9	729	20.7	537	13.4	832	14.7	752	13.7	839	18.2
FADs	556	31.5	825	40.0	1,899	68.6	2,704	76.8	3,447	86.0	4,768	84.4	4,627	84.4	3,715	80.4
Unknown	120	6.8	100	4.8	98	3.5	88	2.5	23	0.6	52	0.9	102	1.9	66	1.4

The average annual distributions of the logged catches of yellowfin and skipjack by purse seiners in the EPO during the 1985-1999 period are shown in Figures 3a and 4a and preliminary estimates for 2000 are shown in Figures 3b and 4b. During 2000 the catches of yellowfin were relatively greater north of about 5°N and west of about 85°W. Those of skipjack were relatively greater offshore between 5°S and 5°N between about 80°W and 125°W, and relatively less in waters off Baja California and off Central America and northern South America.

Bigeye are not often caught by surface gear north of about 7°N. The catches of bigeye by purse seiners during the 1994-1998 period was made in two principal areas, (1) between about 6°N and 16°S from about 93°W to 140°W, and (2) between about 3°N and 3°S from about 82°W to 88°W (Figure 5a). A preliminary estimate of these catches in 2000 shows that the most of them were made between about 16°S and 6°N from the coast of South America to about 140°W (Figure 5b). With the development of the fishery for tunas associated with floating objects, described above, the relative importance of the nearshore areas has decreased, while that of the offshore areas has increased.

Under the terms of the convention that established the IATTC, the primary objective of the IATTC staff's research is monitoring the condition of the stocks of tunas and other species taken in the EPO by tuna fisheries. Taking into consideration the extensive movements of the tunas, the mobility of the vessels of the tuna fleets of various nations, and the international nature of the tuna trade, statistics on the catch and effort from the EPO must be viewed in the light of global statistics. Statistics of the global catches of tunas during 1970-1999, by oceans, appear in Table 6.

### **Billfishes**

Swordfish (*Xiphias gladius*) are fished in the EPO with longline gear and gillnets, and occasionally with recreational gear. Most of those caught with commercial gear are retained. Marlins (*Makaira nigricans*, *M. indica*, and *Tetrapturus audax*), shortbill spearfish (*T. angustirostris*), and sailfish (*Istiophorus platyp-*

*terus*) are fished with longline and recreational gear, and they comprise a small part of the bycatches of purse-seine vessels. Most of the longline-caught marlins, spearfish, and sailfish are retained, and most of those caught with commercial surface gear are discarded at sea. Information on the commercial catches and bycatches of billfishes in the EPO is given in Table 7.

#### MEASURES TAKEN FOR THE MANAGEMENT OF TUNAS

The scientific staff of the IATTC has the responsibility for conducting studies of the biology of the tunas and related species of fish inhabiting the eastern Pacific Ocean and the effects of fishing upon them, and recommending appropriate conservation measures when necessary so that the stocks of fish can be maintained at levels that will yield the maximum sustainable catches.

The restrictions described below were enforced by the states in which the vessels were registered.

# Yellowfin tuna

The Director first recommended that an annual quota be set on the catch of yellowfin in the CYRA in 1962. However, the member governments could not reach agreement on a yellowfin quota until 1966. Agreement was reached on a quota for every year from 1966 through 1986 and 1988 through 2000. The Director did not recommend a quota for 1987 because, due primarily to exceptionally high levels of recruitment in 1984 and 1985, the abundance of yellowfin appeared to be at its greatest level in recent years. The regulations were implemented during each year of the 1966-1979 and 1998-2000 periods.

At the IATTC's 61st meeting (June 10-12, 1998) the Director recommended a yellowfin quota of 210,000 mt for that year, with the option to increase this limit by up to three increments of 15,000 mt each. This quota was also adopted. By October 1998 the Director had decided that one increment should be added, making the quota 225,000 mt, and a resolution to that effect was adopted at the 62nd meeting of the IATTC (October 15-17, 1998). Since all Class-6 vessels had observers aboard, these vessels were to cease fishing for yellowfin in the CYRA on a date to be designated by the Director. After that date, until January 1, 1999, each vessel would be limited to a 15-percent incidental catch of yellowfin. Purse seiners and baitboats without observers aboard which were at sea on the closure date could continue to fish without restriction until they returned to port to unload. For any subsequent trips commenced in 1998 each boat would be limited to a 15-percent incidental catch of yellowfin. If a trip extended into 1999 the 15-percent rule would continue to apply until the vessel came to port to unload. The closure date that was subsequently announced was November 26, 1998.

A resolution implementing the catch limit for yellowfin tuna in 1999 was adopted at the 65th meeting of the IATTC (October 4-11, 1999). At that meeting the Director announced that he had decided to add one increment of 15,000 mt to the base quota of 225,000 mt. On October 13, 1999, he announced that he estimated that the catch of yellowfin in the CYRA would reach 240,000 mt on October 14, 1999, and that the "restricted period" would begin on that date. From that date until the end of the year fishing for yellowfin with surface gear in two areas, one off northern Mexico and the other off northern South America, was restricted. On November 12, 1999, the Director announced that he estimated that catch of yellowfin in the CYRA would reach 265,000 mt on November 23, 1999, at which time the "second phase of the restriction" would come into effect. From that date until the end of the year fishing for yellowfin with surface gear in the CYRA was restricted. The rules concerning incidental catches of yellowfin and vessels without observers were the same as in 1998.

The regulations for 2000, established at the 66th meeting of the IATTC (June 12 and 14-15, 2000), were the same as those for 1999, except that the period during which purse-seine fishing for yellowfin would be prohibited in the CYRA would begin on December 1, rather than on December 2 (unless 265,000 mt of yellowfin were caught before that date). The catch of yellowfin in the CYRA did not reach 240,000 mt.

# Bigeye tuna

The rapidly-increasing catches of bigeye by surface gear during the mid-1990s is obviously a matter of concern. The possible effects of the purse-seine fishery on the longline fishery are discussed on pages 25-26 of the IATTC Annual Report for 1997. At the time that that report was written there was insufficient information, particularly on natural mortality rates, to come to definite conclusions. Nevertheless, a resolution was passed at the 61st meeting of the IATTC (June 10-12, 1998) calling for cessation of making purse-seine sets on schools of tunas associated with floating objects during 1998 after 45,000 mt of bigeye had been caught in the EPO by surface gear. The catch of bigeye by the surface fishery during 1998 was less than 45,000 mt, so there were no restrictions on the catch of that species during that year.

A resolution calling for restriction of the fishery for tunas associated with floating objects in 1999 was approved at the 64th meeting of the IATTC (July 21-22, 1999). The object of this resolution was to limit the catch of bigeye in the EPO by surface gear to 40,000 mt, and fishing for tunas associated with floating objects was to be prohibited after the date that the catch of bigeye in the EPO by the surface fleet reached that amount until the end of the year. On October 13, 1999, the Director announced that his best estimate of that date was November 8, 1999, and that the prohibition would commence on November 9, 1999.

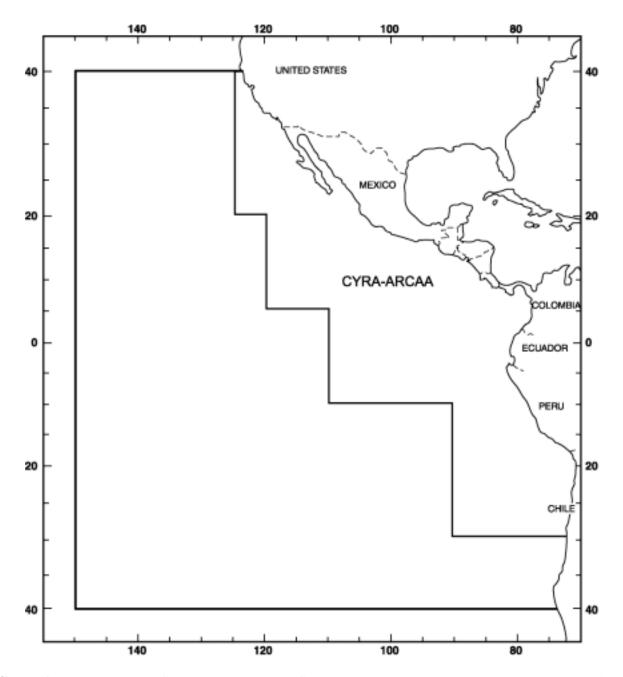
In 2000, in accordance with a resolution adopted at the 66th meeting of the IATTC (June 12 and 14-15, 2000), a ban similar to that of 1999 was imposed from September 15 through December 15.

# Fish-aggregating devices

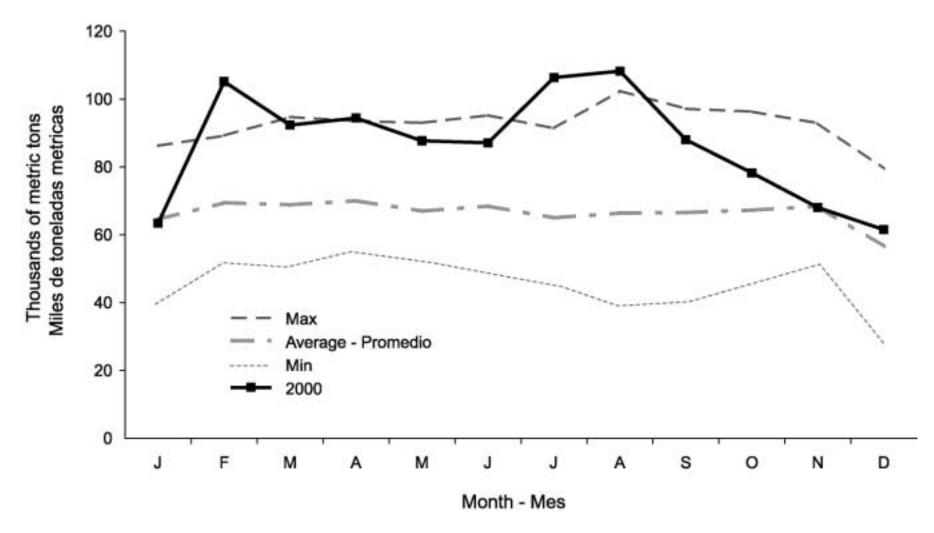
A resolution adopted at the 62nd meeting of the IATTC (October 15-17, 1998) (1) prohibited the use of tender vessels (non-fishing vessels which deploy, maintain, repair, and pick up FADs in the EPO, (2) prohibited the "transshipment of tuna on the high seas by purse-seine vessels fishing for tunas in the EPO," and (3) stated that the number of FADs a fishing vessel could carry would be limited. The limits were to be "decided through consultation among the Parties, based on recommendations of the Working Group." A resolution adopted at the 64th meeting of the IATTC (July 21-22, 1999) reaffirmed the first two points of the resolution adopted at the 62nd meeting. Fishing for tunas associated with FADs was prohibited in the EPO from November 9 through December 31, 1999, and from September 15 through December 15, 2000.

#### Fleet size

A resolution adopted at the 62nd meeting of the IATTC (October 15-17, 1998) established limits, for 1999, on the capacities of the purse-seine fleets of individual nations, ranging from 499 mt for Honduras to 49,500 mt for Mexico. It was agreed that the 1999 limits would not set a precedent for succeeding years.

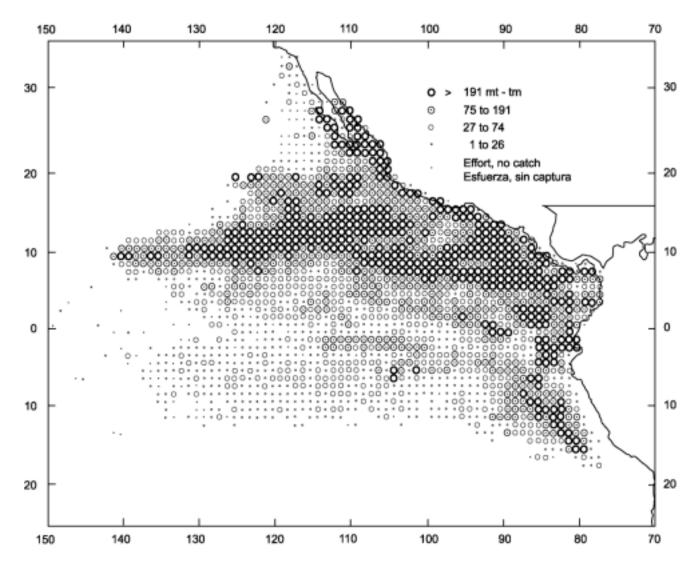


**FIGURE 1.** The eastern Pacific Ocean (EPO), as defined by the Agreement on the International Dolphin Conservation Program (area inside the heavy line), and the Commission's Yellowfin Regulatory Area (CYRA). **FIGURA 1.** El Océano Pacífico oriental (OPO), definido por el Acuerdo sobre el Programa Internacional para la Comisión de los Delfines (área encerrada con línea gruesa), y el Area Reglamentaria de la Comisión para el Aleta Amarilla (ARCAA).



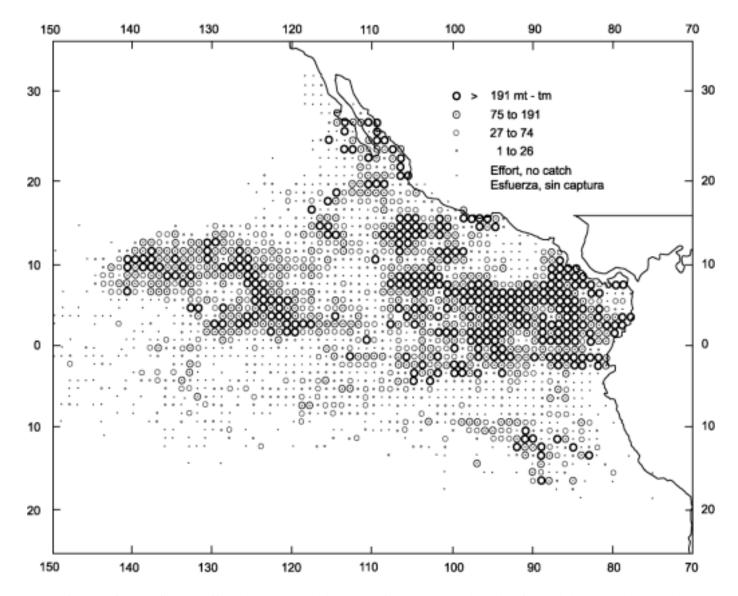
**FIGURE 2.** Average, minimum, and maximum values for monthly capacity of purse seiners and baitboats at sea in the EPO during 1989-1999, and the 2000 monthly values.

**FIGURA 2.** Valores mensuales medios, mínimos, y máximos de la capacidad de barcos cerqueros y de carnada en el mar en el OPO durante 1989-1999, y los valores mensuales de 2000.

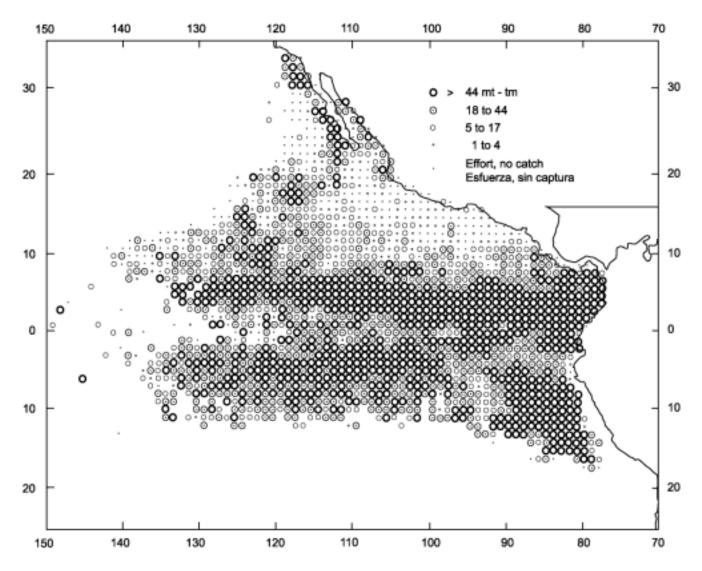


**FIGURE 3a.** Average annual catches of yellowfin and average annual fishing effort in the EPO during 1985-1999 for all purse-seine trips for which usable logbook data were obtained. The average catches and effort were calculated only for 1-degree areas for which three or more years of data were available.

**FIGURA 3a.** Capturas medias anuales de aleta amarilla y esfuerzo medio anual de pesca en el OPO durante 1985-1999, de todos los viajes de barcos cerqueros de los que se obtuvieron datos de bitácora utilizables. Se calcularon promedios de captura y esfuerzo solamente para las áreas de 1° para las cuales se disponía de tres años o más de datos.

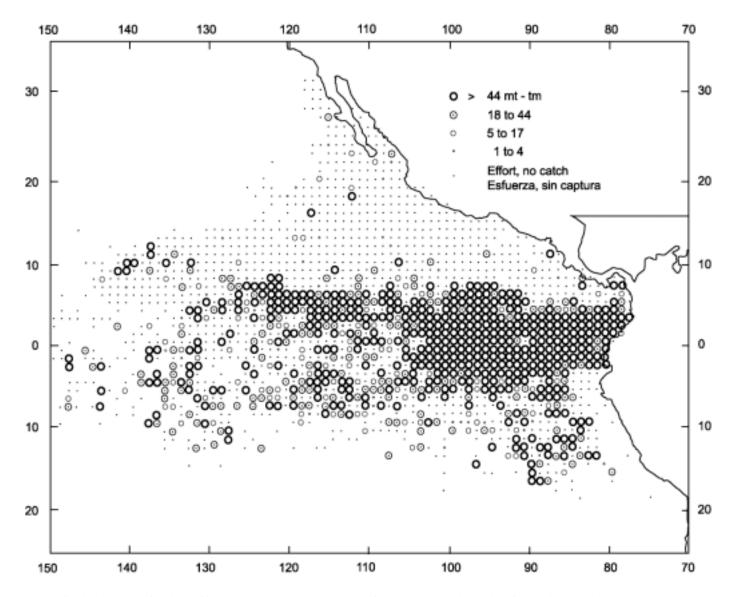


**FIGURE 3b.** Catches of yellowfin and fishing effort in the EPO during 2000 for all purse-seine trips for which usable logbook data were obtained. **FIGURA 3b.** Capturas de aleta amarilla y esfuerzo de pesca en el OPO en 2000, de todos los viajes de barcos cerqueros de los que se obtuvieron datos de bitácora utilizables.

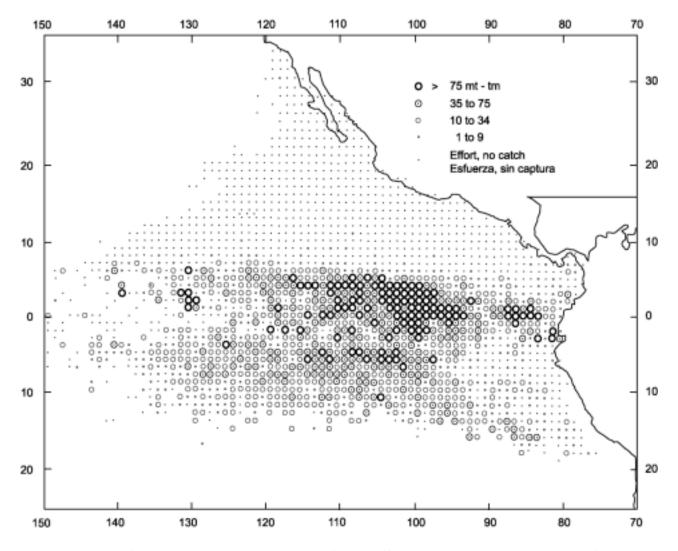


**FIGURE 4a.** Average annual catches of skipjack and average annual fishing effort in the EPO during 1985-1999 for all purse-seine trips for which usable logbook data were obtained. The average catches and effort were calculated only for 1-degree areas for which three or more years of data were available.

**FIGURA 4a.** Capturas medias anuales de barrilete y esfuerzo medio anual de pesca en el OPO durante 1985-1999, de todos los viajes de barcos cerqueros de los que se obtuvieron datos de bitácora utilizables. Se calcularon promedios de captura y esfuerzo solamente para las áreas de 1° para las cuales se disponía de tres años o más de datos.

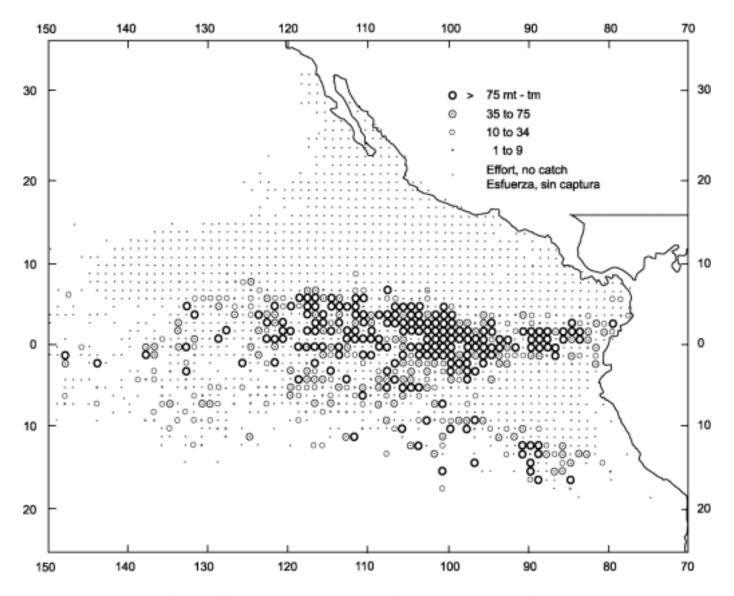


**FIGURE 4b.** Catches of skipjack and fishing effort in the EPO during 2000 for all purse-seine trips for which usable logbook data were obtained. **FIGURA 4b.** Capturas de barrilete y esfuerzo de pesca en el OPO en 2000, de todos los viajes de barcos cerqueros de los que se obtuvieron datos de bitácora utilizables.



**FIGURE 5a.** Average annual catches of bigeye tuna and average annual fishing effort in the EPO during 1985-1999 for all purse-seine trips for which usable logbook data were obtained. The averages were calculated only for 1-degree areas for which two or more years of data were available. **FIGURA 5a.** Capturas medias anuales de atún patudo y esfuerzo medio anual de pesca en el OPO durante 1985-1999, de todos los viajes de barcos cerqueros de los que se obtuvieron datos de bitácora utilizables. Se calcularon los promedios solamente para las áreas de 1° para las cuales se disponía de

dos o más años de datos.



**FIGURE 5b.** Catches of bigeye tuna and fishing effort in the EPO during 2000 for all purse-seine trips for which usable logbook data were obtained. **FIGURA 5b.** Capturas de atún patudo y esfuerzo de pesca en el OPO en 2000, de todos los viajes de barcos cerqueros de los que se obtuvieron datos de bitácora utilizables.

**TABLE 1.** Numbers and carrying capacities, in metric tons, of purse seiners and baitboats of the eastern Pacific Ocean (EPO) tuna fleet. Information for 1950-1960 is given in Table 4 of the IATTC Annual Report for 1988. The data for 2000 are preliminary.

**TABLA 1**. Número y capacidad de acarreo, en toneladas métricas, de los buques cerqueros y de carnada de la flota atunera del Océano Pacífico oriental (OPO). En la Tabla 4 del Informe Anual de la CIAT de 1988 se presentan los datos de 1950-1960. Los datos de 2000 son preliminares.

Year	No. Cap.	ners	Bait	boats	Т	otal
Año	Cerq	ueros	Buques	de carnada	1	otai
Allo	No.	Cap.	No.	Cap.	No.	Cap.
1961	125	27,250	93	9,544	218	36,794
1962	146	31,163	88	6,093	234	37,256
1963	159	36,550	108	5,425	267	41,975
1964	137	36,631	88	4,285	225	40,916
1965	163	38,728	109	5,249	272	43,977
1966	133	36,304	113	5,649	246	41,953
1967	130	36,650	108	5,326	238	41,976
1968	143	46,012	89	5,215	232	51,227
1969	153	51,807	69	4,501	222	56,308
1970	162	61,246	49	3,903	211	65,149
1971	191	80,668	102	5,054	293	85,722
1972	210	102,022	108	6,085	318	108,107
1973	219	119,734	106	6,219	325	125,953
1974	234	133,449	111	7,045	345	140,494
1975	253	148,667	102	6,717	355	155,384
1976	254	160,197	99	6,414	353	166,611
1977	253	162,294	79	4,926	332	167,220
1978	271	164,252	68	4,572	339	168,824
1979	282	167,016	45	3,608	327	170,624
1980	270	167,855	46	3,479	316	171,334
1981	251	167,862	39	2,776	290	170,638
1982	223	152,270	36	2,458	259	154,728
1983	215	127,640	52	3,145	267	130,785
1984	175	103,929	40	2,772	215	106,701
1985	178	117,738	25	2,199	203	119,937
1986	166	112,606	17	1,760	183	114,366
1987	177	130,158	29	2,030	206	132,188
1988	189	133,819	36	2.797	225	133,822
1989	178	121,277	30	2,678	208	123,955
1990	172	122,977	23	1,746	195	124,723
1991	155	106,365	19	1,392	174	107,757
1992	160	99,971	19	1,377	179	101,348
1993	152	101,434	15	1,318	167	102,752
1994	167	104,411	20	1,474	187	105,885
1995	175	106,019	20	1,524	195	107,543
1996	183	113,396	17	1,400	200	114,796
1997	194	125,187	23	1,798	217	126,985
1998	203	138,025	22	1,894	225	139,919
1999	208	149,268	14	1,404	222	150,672
2000	205	150,072	11	1,050	216	151,122

**TABLE 2a.** Estimates of the numbers and carrying capacities, in cubic meters, of the purse seiners and baitboats of the EPO tuna fleet in 1999 by flag, gear, and size class. Each vessel is included in the totals for each flag under which it fished during the year, but is included only once in "Grand total." Therefore the grand totals may not equal the sums of the individual flag entries. PS = purse seiner; BB = baitboat. **TABLA 2a.** Estimaciones del número y capacidad de acarreo, en metros cúbicos, de buques cerqueros y de carnada de la flota atunera en el OPO en 1999, por bandera, arte de pesca, y clase de arqueo. Se incluye cada buque en los totales de cada bandera bajo la cual pescó durante el año, pero solamente una vez en el "Total general"; por consiguiente, los totales generales no equivalen necesariamente a las sumas de las banderas individuales. PS = cerquero; BB = barco de carnada.

Flag	Gear			Size clas	ss—Clase	de arqueo			Capacity
Bandera	Arte	1	2	3	4	5	6	Total	Capacidad
				Nur	nber—Nú	mero			
BelizeBelice	PS	-	-	1	1	1	3	6	3,691
Colombia	PS	-	-	2	-	2	5	9	7,130
Ecuador	PS	-	7	14	11	5	36	73	44,558
EspañaSpain	PS	-	-	-	-	-	5	5	11,466
Guatemala	PS	-	-	-	-	-	4	4	7,640
Honduras	PS	-	-	-	-	-	2	2	1,926
México	PS	-	-	8	3	3	40	54	47,411
	BB	1	4	7	-	-	-	12	1,501
Nicaragua	PS	-	-	-	-	-	1	1	1,229
Panamá	PS	-	-	2	3	-	4	9	8,082
El Salvador	PS	-	-	-	-	-	2	2	1,523
USAEE.UU.	PS	-	4	3	-	2	5	14	8,039
	BB	1	1	-	-	-	-	2	141
Venezuela	PS	-	-	-	-	-	23	23	27,733
Vanuatu	PS	-	-	-	-	-	11	11	13,355
Grand total	PS	_	11	29	18	13	137	208	
Total general	BB	2	5	7	-	-	-	14	
	PS+BB	2	16	36	18	13	137	222	
				Capa	city—Cap	acidad			
Grand total	PS	-	1,184	4,939	5,117	6,280	162,299	179,819	
Total general	BB	95	482	1,065	-	-	-	1,642	
	PS+BB	95	1,666	6,004	5,117	6,280	162,299	181,461	

**TABLE 2b.** Preliminary estimates of the numbers and carrying capacities, in cubic meters, of the purse seiners and baitboats of the EPO tuna fleet in 2000 by flag, gear, and size class. Each vessel is included in the totals for each flag under which it fished during the year, but is included only once in "Grand total." Therefore the grand totals may not equal the sums of the individual flag entries. PS = purse seiner; BB = baitboat.

**TABLA 2b.** Estimaciones preliminares del número y capacidad de acarreo, en metros cúbicos, de buques cerqueros y de carnada de la flota atunera en el OPO en 2000, por bandera, arte de pesca, y clase de arqueo. Se incluye cada buque en los totales de cada bandera bajo la cual pescó durante el año, pero solamente una vez en el "Total general"; por consiguiente, los totales generales no equivalen necesariamente a las sumas de las banderas individuales. PS = cerquero; BB = barco de carnada.

Flag	Gear			Size cla	ass—Clase	e de arque	0		Capacity
Bandera	Arte	1	2	3	4	5	6	Total	Capacidad
				Nu	ımber—N	úmero			
Belize—Belice	PS	-	-	-	1	1	2	4	2,249
Bolivia	PS	-	-	-	-	-	3	3	3,956
Colombia	PS	-	-	2	-	2	5	9	7,130
Ecuador	PS		7	13	13	6	36	72	45,814
	BB	1	-	-	-	-	-	1	32
EspañaSpain	PS	-	-	-	-	-	5	5	11,466
Guatemala	PS	-	-	-	-	-	4	4	7,640
Honduras	PS	-	-	-	-	-	1	1	628
México	PS	-	-	7	3	4	40	54	48,358
	BB	1	4	5	-	-	-	10	1,197
Nicaragua	PS	-	-	-	-	-	1	1	1,229
Panamá	PS	-	-	2	2	-	5	9	8,413
USA—EE.UU.	PS	-	3	2	-	2	6	13	9,229
Venezuela	PS	-	-	-	-	-	22	22	28,025
Vanuatu	PS	-	-	-	-	-	11	11	13,668
Grand total	PS	_	10	26	19	15	135	205	
Total general	BB	2	4	5	-	-	-	11	
Total general	PS+BB	2	14	31	19	15	135	216	
				Capa	acity—Ca	pacidad			
Grand total	PS	-	984	4,654	5,470	7,118	162,539	180,765	
Total general	BB	85	383	761	_	_	-	1,229	
	PS+BB	85	1,367	5,415	5,470	7,118	162,539	181,994	

**TABLE 3.** Estimated retained and discarded catches by surface gear, in metric tons, of the EPO tuna fleet. "Others" includes sharks, other tunas, and miscellaneous fishes; CYRA = Commission's Yellowfin Regulatory Area; Outside = area between the CYRA and 150°W. The 1999 and 2000 data are preliminary. Additional information concerning this table is given in the text.

**TABLA 3.** Estimaciones de capturas retenidas y descartadas, en toneladas métricas, por artes de superficie de la flota atunera del OPO. "Otros" incluye tiburones, otros atunes, y peces diversos; ARCAA = Area de Regulación de la Comisión para el Aleta Amarilla; Exterior = zona entre el ARCAA y 150°O. Los datos de 1999 y 2000 son preliminares. En el texto se presenta información adicional sobre esta tabla.

		,	Yellowfin				Skipjack			Bigeye			Bluefin	
Year		Retained		Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total
	CYRA	Outside	Total		Total	Retained		Total	Retained		Total	Retained		10141
			eta amaril	la			Barrilete			Patudo			Aleta azul	
Año		Retenido		Descartado	Total	Retenido	Descartado	Total	Retenido	Descartado	Total	Retenido	Descartado	Total
	ARCAA	Afuera	Total							200000000				
1970	127,793	27,833	155,626		155,626	56,020		56,020	1,332		1,332	3,966		3,966
1971	102,194	20,645	122,839		122,839	104,721		104,721	2,566		2,566	8,360		8,360
1972	136,515	40,612	177,127		177,127	33,409		33,409	2,238		2,238	13,347		13,347
1973	160,341	44,912	205,253		205,253	43,954		43,954	1,979		1,979	10,744		10,744
1974	173,180	37,184	210,364		210,364	78,803		78,803	890		890	5,617		5,617
1975	158,843	43,299	202,142		202,142	123,868		123,868	3,723		3,723	9,583		9,583
1976	190,216	46,111	236,327		236,327	126,161		126,161	10,186		10,186	10,645		10,645
1977	182,676	16,140	198,816	i	198,816	86,337		86,337	7,055		7,055	5,473		5,473
1978	165,985	14,549	180,534		180,534	169,810		169,810	11,714		11,714	5,397		5,397
1979	175,906	13,768	189,674		189,674	132,024		132,024	7,532		7,532	6,117		6,117
1980	131,998	27,427	159,425		159,425	130,671		130,671	15,421		15,421	2,939		2,939
1981	157,733	24,080	181,813		181,813	119,606		119,606	10,091		10,091	1,089		1,089
1982	106,868	18,216	125,084		125,084	98,757		98,757	4,102		4,102	3,150		3,150
1983	82,026	12,230	94,256	i	94,256	58,142		58,142	3,260		3,260	853		853
1984	128,559	16,502	145,061		145,061	60,551		60,551	5,936		5,936	881		881
1985	192,543	24,449	216,992		216,992	49,460		49,460	4,532		4,532	4,055		4,055
1986	228,125	40,149	268,274		268,274	63,552		63,552	1,939		1,939	5,085		5,085
1987	248,153	24,094	272,247		272,247	62,345		62,345	776		776	1,005		1,005
1988	267,263	20,811	288,074		288,074	85,326		85,326	1,053		1,053	1,424		1,424
1989	242,342	47,033	289,375		289,375	92,374		92,374	1,470		1,470	1,170		1,170
1990	226,465	46,864	273,329	)	273,329	72,575		72,575	4,712		4,712	1,542		1,542
1991	219,525	19,596	239,121		239,121	63,260		63,260	3,740		3,740	461		461
1992	221,309	18,540	239,849	)	239,849	83,964		83,964	5,497		5,497	1,999		1,999
1993	213,258	18,813	232,071	5,040	237,111	87,357	10,589	97,946	8,069	585	8,654	879	0	879
1994	197,064	22,197	219,261	4,614	223,875	74,534	10,314	84,848	29,375	2,304	31,679	1,062	0	1,062
1995	196,220	27,556	223,776	5,344	229,120	138,239	16,614	154,853	37,328	3,260	40,588	874	0	874
1996	218,114	32,056	250,170	6,660	256,830	112,205	24,970	137,175	51,353	5,786	57,139	8,259	0	8,259
1997	214,277	43,554	257,831	5,631	263,462	161,809	31,867	193,676	51,619	5,627	57,246	2,807	3	2,810
1998	236,503	29,216	265,719	4,718	270,437	145,000	22,856	167,856	35,155	2,853	38,008	2,223	0	2,223
1999	264,739	32,176	296,915	6,628	303,543	268,021	26,813	294,834	41,163	5,166	46,329	3,091	55	3,146
2000	220,545	51,474	272,019	6,796	278,815	209,968	26,298	236,266	69,745	5,624	75,639	4,098	0	4,098

TABLE 3. (continued)
TABLA 3. (continuación)

Year		Albacore			Bonito		F	Black skipjack	[		Others		All sp	ecies comb	oined
1 ear	Retained	Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total
Año		Albacora			Bonito		E	arrilete negro	)		Otros		Toda	as las espec	cies
Allo	Retenido	Descartado	Total	Retenido	Descartado	Total	Retenido	Descartado	Total	Retenido	Descartado	Total	Retenido I	Descartado	Total
1970	4,476		4,476	4,738		4,738	0		0	27		27	226,185		226,185
1971	2,490		2,490	9,600		9,600	6		6	61		61	250,643		250,643
1972	4,832		4,832	8,872		8,872	601		601	367		367	240,793		240,793
1973	2,316		2,316	7,864		7,864	1,674		1,674	355		355	274,139		274,139
1974	4,783		4,783	4,436		4,436	3,742		3,742	985		985	309,620		309,620
1975	3,332		3,332	16,838		16,838	511		511	277		277	360,274		360,274
1976	3,733		3,733	4,370		4,370	1,526		1,526	1,327		1,327	394,275		394,275
1977	1,963		1,963	11,275		11,275	1,458		1,458	1,950		1,950	314,327		314,327
1978	1,745		1,745	4,837		4,837	2,162		2,162	806		806	377,005		377,005
1979	327		327	1,805		1,805	1,366		1,366	1,249		1,249	340,094		340,094
1980	601		601	6,110		6,110	3,680		3,680	953		953	319,800		319,800
1981	739		739	5,918		5,918	1,911		1,911	1,010		1,010	322,177		322,177
1982	553		553	2,121		2,121	1,338		1,338	783		783	235,888		235,888
1983	456		456	3,829		3,829	1,236		1,236	1,709		1,709	163,741		163,741
1984	5,351		5,351	3,514		3,514	666		666	987		987	222,947		222,947
1985	919		919	3,604		3,604	296		296	536		536	280,394		280,394
1986	133		133	490		490	595		595	1,140		1,140	341,208		341,208
1987	417		417	3,326		3,326	557		557	1,612		1,612	342,285		342,285
1988	288		288	9,550		9,550	1,267		1,267	1,297		1,297	388,279		388,279
1989	1		1	12,095		12,095	783		783	1,072		1,072	398,340		398,340
1990	184		184	13,856		13,856	792		792	944		944	367,934		367,934
1991	834		834	1,288		1,288	446		446	649		649	309,799		309,799
1992	255		255	978		978	104		104	762		762	333,408		333,408
1993	1	0	1	599	12	611	104	3,950	4,054	314	1,981	2,295	329,394	22,157	351,551
1994	85	0	85	8,692	145	8,837	188	805	993	419	522	941	333,616	18,704	352,320
1995	465	2	467	8,009	55	8,064	187	1,415	1,602	172	668	840	409,050	27,358	436,408
1996	83	0	83	655	1	656	704	2,417	3,121	219	1,052	1,271	423,648	40,886	464,534
1997	60	0	60	1,104	4	1,108	101	2,582	2,683	148	3,407	3,555	475,479	49,121	524,600
1998	124	0	124	1,337	4	1,341	527	1,857	2,384	168	1,233	1,401	450,253	33,521	483,774
1999	276	0	276	1,597	0	1,597	178	3,412	3,590	240	3,096	3,336	611,481	45,170	656,651
2000	151	0	151	605	0	605	244	1,870	2,144	374	1,846	1,860	557,204	42,074	599,278

**TABLE 4a.** Estimates of the catches and landings, in metric tons, of tunas caught by surface gear in the EPO in 1999, by species and vessel flag (upper panel) and location where processed (lower panel). YFT = yellowfin; SKJ = skipjack; BET = bigeye; PBF = bluefin; BEP = bonito; ALB = albacore; BKJ = black skipjack; Misc. = other species, including sharks, other tunas, and miscellaneous fishes **TABLA 4a.** Estimaciones de las capturas y descargas de atún capturado con artes de superficie en el OPO en 1997, por especie y bandera del buque (panel superior) y localidad donde fue procesado (panel inferior), en toneladas métricas. YFT = aleta amarilla; SKJ = barrilete;

del buque (panel superior) y localidad donde fue procesado (panel inferior), en toneladas métricas. YFT = aleta amarilla; SKJ = barrilete; BET = patudo; PBF = aleta azul; BEP = bonito; ALB = albacora; BKJ = barrilete negro; Misc. = otras especies, incluyendo tiburones, otros túnidos, y peces diversos.

Flag	Y	FT	SKJ	BET	BFT	BEP	ALB	BSJ	Misc.	Total	% of total
Bandera	CYRA	Outside	-								% del to- tal
					Catche	es—Captu	ras				
Colombia	12,617	294	11,766	1,416	-	-	-	-	86	26,179	4.3
Costa Rica	30	-	96	20	-	-	-	-	-	146	0.0
Ecuador	55,686	4,197	126,870	19,047	-	-	-	6	75	205,881	33.7
EspañaSpain	4,862	4,273	35,201	10,632	-	-	-	-	20	54,988	9.0
México	100,136	14,888	19,773	365	2,373	1,573	23	72	57	139,260	22.8
Panamá	6,178	-	5,023	961	-	-	-	-	-	12,162	2.0
U.S.AEE.UU.	3,958	371	13,804	1,757	718	24	253	64	2	20,951	3.4
Venezuela	52,015	6,001	14,582	7	-	-	-	35	-	72,640	11.9
Vanuatu	18,043	1,277	21,914	4,387	-	-	-	-	-	45,621	7.5
OtherOtros <sup>1</sup>	11,214	875	18,992	2,571	-	-	-	1	-	33,653	5.5
Total	264,739	32,176	268,021	41,163	3,091	1,597	276	178	240	611,481	
					Landing	gs—Desca	ırgas				_
Colombia	34,456	2,724	30,121	4,275	-	-	-	3	6	71,585	11.3
Costa Rica	24,429	1,992	11,061	885	-	-	-	25	-	38,392	6.1
Ecuador	69,594	6,825	172,720	27,133	-	-	-	10	150	276,432	43.7
EspañaSpain	3,287	881	10,342	4,978	-	-	-	-	13	19,501	3.1
Mexico	86,230	12,639	18,014	168	1,303	1,572	23	72	56	120,077	19.0
U.S.AEE.UU.	3,573	187	15,094	2,502	534	24	252	63	1	22,230	3.5
Venezuela	24,804	3,108	7,572	4	-	-	-	78	-	35,566	5.6
OtherOtros <sup>2</sup>	20,271	5,408	16,876	4,269	1,252	-	-	-	-	48,076	7.2
Total	266,644	33,764	281,800	44,214	3,089	1,596	275	251	226	631,859	

<sup>&</sup>lt;sup>1</sup> Includes Belize, El Salvador, Guatemala, Honduras, and Nicaragua. This category is used to avoid revealing the operations of individual vessels or companies.

<sup>&</sup>lt;sup>1</sup> Incluye Belice, El Salvador, Guatemala, Honduras, y Nicaragua. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

<sup>&</sup>lt;sup>2</sup> Includes Algeria, Italy, Japan, Libya, Thailand, and Turkey. This category is used to avoid revealing the operations of individual vessels or companies.

<sup>&</sup>lt;sup>2</sup> Incluye Argelia, Italia, Japón, Libia, Tailandia, y Turquía. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

**TABLE 4b.** Preliminary estimates of the catches and landings, in metric tons, of tunas caught by surface gear in the EPO in 2000, by species and vessel flag (upper panel) and location where processed (lower panel). YFT = yellowfin; SKJ = skipjack; BET = bigeye; PBF = bluefin; BEP = bonito; ALB = albacore; BKJ = black skipjack; Misc. = other species, including sharks, other tunas, and miscellaneous fishes

**TABLA 4b.** Estimaciones preliminares de las capturas y descargas de atún capturado con artes de superficie en el OPO en 2000, por especie y bandera del buque (panel superior) y localidad donde fue procesado (panel inferior), en toneladas métricas. YFT = aleta amarilla; SKJ = barrilete; BET = patudo; PBF = aleta azul; BEP = bonito; ALB = albacora; BKJ = barrilete negro; Misc. = otras especies, incluyendo tiburones, otros túnidos, y peces diversos

Flag	Y	FT	SKJ	BET	BFT	BEP	ALB	BSJ	Misc.	Total	% of total
Bandera	CYRA	Outside	-								% del to-
											tal
					Catche	es—Captu	ras				
Colombia	13,146	3,508	6,202	1,022	-	-	-	-	-	23,878	4.3
Ecuador	33,771	4,537	109,601	27,669	-	-	-	220	95	175,893	31.6
España—Spain	3,219	2,655	16,481	17,268	-	-	-	-	-	39,623	7.1
México	78,685	23,163	16,372	82	3,091	428	92	2	221	122,136	21.9
Panamá	5,604	466	12,225	3,926	-	-	-	10	29	22,260	4.0
U.S.A.—EE.UU.	3,101	1,078	10,665	2,067	1,007	177	59	-	29	18,183	3.3
Venezuela	58,483	11,272	5,139	206	-	-	-	12	-	75,112	13.5
Vanuatu	11,326	2,742	10,980	6,283	-	-	-	-	-	31,331	5.6
Other—Otros <sup>1</sup>	13,210	2,053	22,303	11,222	-	-	-	-	-	48,788	8.8
Total	220,545	51,474	209,968	69,745	4,098	605	151	244	374	557,204	
					Landing	gs—Desca	rgas				_
Colombia	30,303	8,673	15,865	5,356	-	-	-	10	-	60,207	11.0
Costa Rica	15,064	258	3,942	805	-	-	-	-	-	20,069	3.7
Ecuador	43,964	6,881	131,638	34,811	-	-	-	219	135	217,648	39.8
España—Spain	4,403	2,343	9,401	12,608	-	-	5	-	-	28,760	5.2
México	73,724	22,581	14,932	944	3,030	427	86	6	221	115,951	21.2
Peru	608	-	1;690	-	-	-	-	-	-	2,298	.4
U.S.A.—EE.UU	2,430	1,178	6,946	1,958	677	176	59	2	24	13,450	2.5
Venezuela	24,797	3,204	3,391	52	-	-	-	6	-	31,450	5.7
Other—Otros <sup>2</sup>	20,425	3,313	18,669	14,758	690	-	<u>-</u>			57,555	10.5
Total	215,718	48,431	206,474	71,292	4,097	603	150	243	380	547,388	

<sup>&</sup>lt;sup>1</sup> Includes Belize, Bolivia, Guatemala, Honduras, Nicaragua, and unidentified. This category is used to avoid revealing the operations of individual vessels or companies.

<sup>&</sup>lt;sup>1</sup> Incluye Belice, Bolivia, Guatemala, Honduras, Nicaragua, y no identificados. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

<sup>&</sup>lt;sup>2</sup> Includes Ghana, Italy, Libya, and Turkey, This category is used to avoid revealing the operations of individual vessels or companies.

<sup>&</sup>lt;sup>2</sup> Incluye Ghana, Libia, Italia, y Turquía. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

**TABLE 5.** Estimated numbers of sets by set type and vessel size class, and estimated catches, in metric tons, for yellowfin, skipjack, and bigeye tuna in the EPO, by purse-seine vessels. The data for 2000 are preliminary.

**TABLA 5.** Números estimados de lances, por tipo de lance y clase de arqueo de los buques, y capturas estimadas, en toneladas métricas, de atunes aleta amarilla, barrilete, y patudo en el OPO. Los datos de 2000 son preliminares.

		Se	ets on fish asso	ciated with dolphin	S	
Year		Number of sets			Catch	
	Classes 1-5	Class 6	Total	Yellowfin	Skipjack	Bigeye
		Lanc	es sobre peces	asociados con delf	ines	
Año	N	Vúmero de lance	es		Captura	
	Clases 1-5	Clase 6	Total	Aleta amarilla	Barrilete	Patudo
1987	33	13,286	13,319	190,434	138	24
1988	40	11,160	11,200	157,274	4,860	0
1989	29	12,827	12,856	195,043	1,502	0
1990	29	10,997	11,026	179,523	601	0
1991	0	9,661	9,661	159,265	717	0
1992	25	10,398	10,423	169,430	734	0
1993	34	6,953	6,987	110,405	697	98
1994	3	7,804	7,807	124,955	437	0
1995	0	7,185	7,185	131,499	938	0
1996	2	7,472	7,474	135,608	736	0
1997	35	8,977	9,012	153,654	6,222	35
1998	0	10,645	10,645	149,892	2,991	64
1999	0	8,648	8,648	142,056	1,116	0
2000	1	9,250	9,251	152,658	499	0

	_	Sets or	n fish associate	ed with floating ob	jects	
Year		Number of sets			Catch	
	Classes 1-5	Class 6	Total	Yellowfin	Skipjack	Bigeye
		Lances so	bre peces asoc	iados con objetos i	flotantes	_
Año	1	Número de lances	S		Captura	_
	Clases 1-5	Clase 6	Total	Aleta amarilla	Barrilete	Patudo
1987	1,311	1,813	3,124	27,232	32,049	474
1988	775	2,281	3,056	23,573	35,355	750
1989	953	2,339	3,292	28,220	41,269	1,231
1990	721	2,558	3,279	34,244	35,080	3,466
1991	795	2,165	2,960	23,642	37,821	1,971
1992	877	1,763	2,640	13,168	45,583	1,189
1993	491	2,063	2,554	16,389	47,812	4,498
1994	621	2,770	3,391	17,743	47,804	27,391
1995	671	3,521	4,192	21,540	80,705	32,634
1996	1194	4,007	5,201	34,343	73,702	48,221
1997	1685	5,652	7,337	31,115	122,299	50,233
1998	1204	5,481	6,685	35,192	114,532	31,328
1999	624	4,620	5,244	42,368	182,423	36,516
2000	621	3,901	4,522	53,617	127,229	68,082

TABLE 5. (continued)
TABLE 5. (continuación)

		S	ets on fish in u	nassociated school	S	
Year		Number of sets			Catch	
	Classes 1-5	Class 6	Total	Yellowfin	Skipjack	Bigeye
		Lances	sobre peces en	cardúmenes no aso	ociados	
Año		Número de lance	es		Captura	
	Clases 1-5	Clase 6	Total	Aleta amarilla	Barrilete	Patudo
1987	1,799	3,981	5,780	49,350	26,606	275
1988	3,978	7,536	11,514	101,967	40,166	298
1989	2,925	5,878	8,803	60,168	46,456	238
1990	3,665	5,397	9,062	56,279	35,954	1,242
1991	3,932	3,612	7,544	52,875	22,858	1,743
1992	4,148	4,079	8,227	53,312	35,437	4,306
1993	5,755	6,267	12,022	100,186	35,212	3,470
1994	5,404	5,064	10,468	72,767	23,130	1,927
1995	6,021	4,782	10,803	69,490	51,310	4,690
1996	5,721	5,118	10,839	76,487	35,186	3,133
1997	5,299	4,694	9,993	68,677	29,997	1,348
1998	5,617	4,631	10,248	75,506	25,834	3,764
1999	5,519	6,143	11,662	110,504	82,469	4,626
2000	5,838	5,482	11,320	71,873	82,347	7,327
				ypes of schools		
Year		Number of sets			Catch	
	Classes 1-5	Class 6	Total	Yellowfin	Skipjack	Bigeye
				os tipos de cardume		
Año		Número de lance			Captura	
	Clases 1-5	Clase 6	Total	Aleta amarilla	Barrilete	Patudo
1987	3,143	19,080	22,223	267,016	58,793	773
1988	4,793	20,977	25,770	282,814	80,381	1,048
1989	3,907	21,044	24,951	283,431	89,227	1,469
1990	4,415	18,952	23,367	270,046	71,635	4,708
1991	4,727	15,438	20,165	235,782	61,396	3,714
1992	5,050	16,240	21,290	235,910	81,754	5,495
1993	6,280	15,283	21,563	226,980	83,721	8,066
1994	6,028	15,638	21,666	215,465	71,371	29,318
1995	6,692	15,488	22,180	222,529	132,953	37,324
1996	6,917	16,597	23,514	246,438	109,624	51,354
1997	7,019	19,323	26,342	253,446	158,518	51,616
1998	6,821	20,757	27,578	260,590	143,357	35,156
1999	6,143	19,411	25,554	294,928	266,007	41,142
2000	6,460	18,633	25,093	278,148	210,075	75,409

**TABLE 6a.** Annual catches of yellowfin tuna, in thousands of metric tons. JPN: Japan; KOR: Republic of Korea; TWN: Taiwan; WCPO = western and central Pacific Ocean.

**TABLA 6a.** Capturas anuales de atún aleta amarilla, en miles de toneladas métricas. JPN: Japón; KOR: República de Corea; TWN: Taiwan; OPOC = Océano Pacífico occidental y central.

					cific Oce	an						
Year				Eastern						Atlantic	Indian	Total
1 cai	Surface <sup>1</sup>			Longline	2		Total	$WCPO^3$	Total	Ocean <sup>5</sup>	Ocean <sup>6</sup>	Total
	Surface	JPN	KOR	TWN	Others	Total	Total					
				Océ	ano Pací	fico						
Año				Oriental						Oceáno	Oceáno	Total
Allo	Superficie <sup>1</sup>			Palangre <sup>2</sup>	2		Total	OPOC <sup>3</sup>	Total	Atlántico <sup>5</sup>	Indico <sup>6</sup>	Total
	Superficie	JPN	KOR	TWN	Otros	Total	Total					
1970	155.6	13.8	*	0.1	0.0	13.9	169.5	94.9	264.5	74.3	37.2	376.0
1971	122.8	7.4	*	0.3	0.0	7.7	130.5	86.7	217.2	73.8	41.6	332.6
1972	177.1	16.0	*	0.5	0.0	16.5	193.6	114.7	308.4	94.1	43.6	446.1
1973	205.3	11.4	*	0.3	0.0	11.7	217.0	137.9	355.0	95.1	34.5	484.6
1974	210.4	6.9	*	0.3	0.0	7.2	217.6	143.7	361.3	107.1	37.8	506.2
1975	202.1	10.3	0.2	0.3	0.0	10.8	212.9	145.2	358.1	124.8	37.3	520.2
1976	236.3	15.0	0.4	0.2	0.0	15.6	251.9	153.0	404.9	125.0	37.5	567.4
1977	198.8	11.2	0.8	0.1	0.0	12.1	210.9	177.4	388.3	131.0	61.4	580.7
1978	180.5	9.2	0.8	0.1	0.0	10.1	190.6	193.9	384.5	134.0	46.1	564.6
1979	189.7	10.9	0.4	0.1	0.0	11.4	201.1	201.2	402.3	127.5	39.9	569.7
1980	159.4	11.5	1.9	0.1	0.0	13.5	172.9	217.4	390.3	131.0	35.1	556.5
1981	181.8	7.1	0.8	0.1	0.0	8.0	189.8	217.2	407.0	155.8	37.6	600.4
1982	125.1	9.8	1.1	0.1	0.0	11.0	136.1	244.5	380.5	165.0	51.9	597.4
1983	94.3	9.4	1.4	0.0	0.1	10.9	105.2	279.5	384.7	165.4	60.9	611.1
1984	145.1	9.1	1.2	0.0	0.0	10.3	155.4	255.5	410.9	113.9	102.6	627.4
1985	217.0	10.6	2.5	0.0	0.0	13.1	230.1	243.6	473.7	156.5	116.9	747.2
1986	268.3	17.8	4.8	0.1	0.1	22.7	291.0	243.3	534.3	146.5	132.8	813.6
1987	272.2	13.5	4.1	0.1	0.3	18.0	290.2	308.3	598.5	144.4	145.1	888.0
1988	288.1	12.5	0.5	0.0	0.3	13.3	301.4	294.0	595.4	135.2	205.9	936.6
1989	289.4	15.3	0.3	0.2	0.0	15.8	305.2	344.5	649.7	161.3	202.5	1013.4
1990	273.3	29.3	0.9	0.3	0.0	30.5	303.8	401.2	705.0	192.5	258.3	1155.8
1991	239.1	23.7	1.6	0.3	0.2	25.8	264.9	404.2	669.1	166.1	245.4	1080.6
1992	239.8	15.3	0.8	0.0	0.1	16.2	256.0	470.9	727.0	162.2	317.4	1206.5
1993	232.1	20.3	3.6	0.1	0.2	24.2	256.3	432.4	688.8	158.6	397.7	1245.0
1994	219.3	26.0	2.3	0.2	0.8	29.4	248.7	464.2	712.8	169.5	310.8	1193.2
1995	223.8	17.0	2.0	0.0	0.7	19.8	243.6	410.4	653.9	149.7	319.2	1122.8
1996	250.2	12.6	1.8	0.0	0.6	15.0	265.2	356.8	622.0	150.0	311.4	1083.4
1997	257.8	13.6	2.8	0.1	1.0	17.5	275.3	509.8	785.1	133.5	290.3	1208.9
1998**	265.7	10.5	*	0.1	1.5	12.2	277.9	541.4	819.2	143.2	274.6	1237.0
1999**	296.9	7.3	*	*	1.7	9.0	305.9	510.9	816.8	138.2	*	955.0
2000**	272.0	*	*	*	*	*	*	*	*	*	*	*
l c	· Table 3—Fue	4 TO 11	2									

Source: Table 3—Fuente: Tabla 3

<sup>&</sup>lt;sup>2</sup> Sources: published and unpublished data from the National Research Institute of Far Seas Fisheries (NRIFSF), Shimizu, Japan, Institute of Oceanography, National Taiwan University, Taipei, Taiwan, and National Fisheries Research and Development Agency, Republic of Korea. The data were converted from numbers of fish to weight in metric tons with average weight data estimated by the IATTC staff.

<sup>&</sup>lt;sup>2</sup> Fuentes: datos publicados e inéditos del Instituto Nacional de Investigación de Pesquerías de Ultramar (NRIFSF) en Shimizu (Japón), el Instituto de Oceanografía de la Universidad Nacional de Taiwan en Taipei, y la Agencia Nacional de Investigación y Desarrollo Pesquero de Corea. Se convirtieron los datos de números de peces a peso en toneladas métricas usando datos de peso promedio estimados por el personal de la CIAT.

<sup>&</sup>lt;sup>3</sup> Source: Column 10 - Column 8—Fuente: Columna 10 - Columna 8

<sup>&</sup>lt;sup>4</sup> Source: FAO data set for Fishstat+--Fuente: datos de FAO para Fishstat+

Source: ICCAT data set for Fishstat+--Fuente: datos de CICAA para Fishstat+

<sup>&</sup>lt;sup>6</sup> Source: IOTC data set for Fishstat+-- Fuente: datos de CTOI para Fishstat+

<sup>\*</sup> not available—no disponible

<sup>\*\*</sup>preliminary--preliminares

**TABLE 6b.** Annual catches of skipjack tuna, in thousands of metric tons. WCPO = western and central Pacific Ocean.

**TABLA 6b.** Capturas anuales de atún barrilete, en miles de toneladas metricas. OPOC = Océano Pacífico occidental y central.

Year	Eastern Pacific <sup>1</sup>	WCPO <sup>2</sup>	Total Pacific <sup>3</sup>	Atlantic <sup>4</sup>	Indian <sup>5</sup>	Total
Año	Pacífico oriental <sup>1</sup>	OPOC <sup>3</sup>	Pacífico total <sup>2</sup>	Atlántico <sup>2</sup>	Indico <sup>2</sup>	Total
1970	56.0	258.5	314.5	50.3	41.5	406.2
1971	104.7	246.6	351.3	78.4	41.1	470.8
1972	33.4	311.1	344.5	77.4	35.7	457.6
1973	44.0	402.2	446.2	78.4	34.1	558.6
1974	78.8	445.9	524.7	117.3	39.5	681.5
1975	123.9	344.5	468.4	56.0	35.2	559.6
1976	126.2	432.5	558.7	69.3	38.6	666.7
1977	86.3	420.1	506.4	110.6	30.3	647.3
1978	169.8	531.4	701.2	108.1	34.3	843.6
1979	132.0	469.6	601.6	89.7	41.2	732.5
1980	130.7	502.8	633.5	111.4	49.8	794.7
1981	119.6	455.7	575.3	131.1	50.6	757.0
1982	98.8	469.8	568.6	154.9	54.0	777.5
1983	58.1	651.1	709.2	135.0	64.3	908.5
1984	60.6	770.8	831.4	126.8	107.0	1,065.2
1985	49.5	611.3	660.8	118.7	133.5	912.9
1986	63.6	753.3	816.9	122.2	138.3	1,077.4
1987	62.3	687.1	749.4	114.6	154.3	1,018.2
1988	85.3	853.7	939.0	140.0	209.2	1,288.1
1989	92.4	773.7	866.1	116.1	256.1	1,238.3
1990	72.6	869.0	941.6	138.7	230.4	1,310.6
1991	63.3	1,195.6	1,258.9	213.8	242.6	1,715.2
1992	84.0	925.3	1,009.3	161.4	268.2	1,438.9
1993	87.4	922.3	1,009.7	193.6	284.3	1,487.6
1994	74.5	986.5	1,061.0	175.8	319.7	1,556.5
1995	138.2	1,047.6	1,185.8	163.0	314.2	1,663.1
1996	112.2	1,038.8	1,151.0	149.8	281.1	1,582.0
1997	161.8	1,008.2	1,170.0	144.8	290.3	1,605.2
1998	144.0	1,281.8	1,425.8	147.6	304.7	1,878.1
1999	268.0	1,161.0	1,429.0	166.2	*	1,595.2
2000**	210.0	*	*	*	*	*

<sup>&</sup>lt;sup>1</sup> Source: Table 3—Fuente: Tabla 3

<sup>&</sup>lt;sup>2</sup> Column 4 - Column 2—Columna 4 - Columna 2

<sup>&</sup>lt;sup>3</sup> Source: FAO data set for Fishstat+—Fuente: datos de FAO para Fishstat+

<sup>&</sup>lt;sup>4</sup> Source: ICCAT data set for Fishstat+—Fuente: datos de ICCAT para Fishstat+

<sup>&</sup>lt;sup>5</sup> Source: IOTC data set for Fishstat+—Fuente: datos de IOTC para Fishstat+

<sup>\*</sup> not available—no disponible

<sup>\*\*</sup>preliminary--preliminares

**TABLE 6c.** Annual catches of bigeye tuna, in thousands of metric tons. JPN: Japan; KOR: Republic of Korea; TWN: Taiwan; WCPO = western and central Pacific Ocean.

**TABLA 6a.** Capturas anuales de atún patudo, en miles de toneladas métricas. JPN: Japón; KOR: República de Corea; TWN: Taiwan; OPOC = Océano Pacífico occidental y central.

	Pacific Ocean											
Year			Eastern					Atlantic	Indian	Total		
	Surface <sup>1</sup>	Longline			2		Tatal	WCPO <sup>3</sup>	Total	Ocean <sup>5</sup>	Ocean <sup>6</sup>	Total
	Surface	JPN	KOR	TWN	Others	Total	Total		İ			
				Oce	éano Pací							
Año	Oriental									Oceáno	Oceáno	Total
	Superficie <sup>1</sup>	Palangre <sup>2</sup>					Takal	$OPOC^3$	Total	Atlántico <sup>5</sup>	Indico <sup>6</sup>	1 Otal
		JPN	KOR	TWN	Otros	Total	Total					
1970	1.3	31.8	0.7	*	0.4	32.9	34.2	50.0	84.2	42.3	22.3	148.8
1971	2.6	28.9	1.7	*	0.3	30.9	33.5	32.4	66.0	55.8	21.0	142.8
1972	2.2	35.1	2.4	*	0.8	38.3	40.5	47.2	87.7	47.2	19.4	154.3
1973	2.0	49.7	1.2	*	1.3	52.2	54.2	36.2	90.4	57.0	15.5	162.9
1974	0.9	36	0.9	*	0.6	37.5	38.4	49.5	87.9	64.1	28.2	180.2
1975	3.7	40.7	0.5	0.6	0.4	42.2	45.9	57.2	103.1	61.3	39.4	203.8
1976	10.2	52.8	0.4	1.2	0.2	54.6	64.8	64.2	129.0	45.3	30.5	204.8
1977	7.1	70	0.4	3.5	0.2	74.1	81.2	63.8	145.0	54.9	37.5	237.3
1978	11.7	67.2	0.3	3.0	0.2	70.7	82.4	39.2	121.6	52.7	48.3	222.6
1979	7.5	54.4	0.8	0.8	0.1	56.2	63.7	65.3	129.0	46.0	32.9	207.9
1980	15.4	62	1.3	2.2	0.6	66.1	81.5	51.1	132.5	63.6	33.8	229.9
1981	10.1	50	0.6	3.0	0.4	54.0	64.1	40.1	104.2	67.8	34.5	206.5
1982	4.1	50.2	0.4	3.0	0.1	53.7	57.8	51.6	109.4	73.5	43.2	226.2
1983	3.3	57.2	0.2	2.6	0.1	60.1	63.4	48.0	111.4	59.4	48.0	218.8
1984	5.9	44.6	0.2	1.6	0.0	46.5	52.4	51.5	103.8	71.1	40.5	215.4
1985	4.5	61.6	0.2	4.5	0.0	66.3	70.8	53.9	124.7	78.2	47.8	250.7
1986	1.9	92	0.1	10.2	0.1	102.4	104.3	46.2	150.5	65.4	54.0	269.9
1987	0.8	87.9	0.6	9.8	0.4	98.6	99.4	49.5	149.0	56.0	59.2	264.2
1988	1.1	66	0.4	1.6	0.4	68.5	69.6	50.3	119.9	65.8	67.2	252.9
1989	1.5	67.5	0.1	1.1	0.5	69.2	70.7	54.9	125.6	78.1	59.7	263.3
1990	4.7	86.1	0.1	4.2	0.3	90.7	95.4	67.2	162.6	84.3	63.7	310.6
1991	3.7	85	0.0	4.5	0.2	89.8	93.5	50.1	143.6	95.9	68.1	307.6
1992	5.5	74.5	0.0	2.5	0.1	77.1	82.6	75.8	158.4	99.0	64.3	321.8
1993	8.1	63.2	0.1	10.7	0.2	74.2	82.3	47.5	129.9	112.9	92.5	335.3
1994	29.4	61.5	0.4	7.3	0.3	69.4	98.8	45.9	144.7	132.9	95.5	373.1
1995	37.3	49	0.4	6.6	0.0	56.0	93.3	46.6	140.0	127.1	115.6	382.6
1996	51.4	36.7	0.5	5.4	0.1	42.7	94.1	39.1	133.2	121.8	123.0	377.9
1997	51.6	32.9	0.3	6.8	0.1	40.1	91.7	70.1	161.8	107.6	131.6	401.0
1998**	35.2	36.8	0.2	*	0.2	37.2	72.4	80.2	152.6	110.8	143.0	406.4
1999**	41.2	22.8	*	*	*	22.8	64.0	85.3	149.3	123.2	*	406.4
2000**	69.7	*	*	*	*	*	*	*	*	*	*	*
1 c	· Table 3—Fue	T-1.1.	. 2									

Source: Table 3—Fuente: Tabla 3

<sup>&</sup>lt;sup>2</sup> Sources: published and unpublished data from the National Research Institute of Far Seas Fisheries (NRIFSF), Shimizu, Japan, Institute of Oceanography, National Taiwan University, Taipei, Taiwan, and National Fisheries Research and Development Agency, Republic of Korea. The data were converted from numbers of fish to weight in metric tons with average weight data estimated by the IATTC staff.

<sup>&</sup>lt;sup>2</sup> Fuentes: datos publicados e inéditos del Instituto Nacional de Investigación de Pesquerías de Ultramar (NRIFSF) en Shimizu (Japón), el Instituto de Oceanografía de la Universidad Nacional de Taiwan en Taipei, y la Agencia Nacional de Investigación y Desarrollo Pesquero de Corea. Se convirtieron los datos de números de peces a peso en toneladas métricas usando datos de peso promedio estimados por el personal de la CIAT.

<sup>&</sup>lt;sup>3</sup> Source: Column 10 - Column 8—Fuente: Columna 10 - Columna 8

<sup>&</sup>lt;sup>4</sup> Source: FAO data set for Fishstat+--Fuente: datos de FAO para Fishstat+

<sup>&</sup>lt;sup>5</sup> Source: ICCAT data set for Fishstat+--Fuente: datos de CICAA para Fishstat+

<sup>&</sup>lt;sup>6</sup> Source: IOTC data set for Fishstat+-- Fuente: datos de CTOI para Fishstat+

<sup>\*</sup> not available—no disponible

<sup>\*\*</sup>preliminary--preliminares

**TABLE 6d.** Annual catches of Pacific bluefin, in metric tons.

**TABLA 6d.** Capturas anuales de aleta azul del Pacífico, en toneladas métricas.

IADLA		tern Pacific na		acifico, en tone				
Year				Surf	Eastern Pacific			Total
	Surface <sup>1</sup>	Longline <sup>1</sup>	Subtotal <sup>1</sup>	Commercial <sup>2</sup>	Recreational <sup>3</sup>	Longline <sup>4</sup>	Subtotal	
	Naciones	s de Pacífico o	ccidental		aciones de Pací	fico oriental		
Año	Superficie <sup>1</sup>	Palangre <sup>1</sup>	Subtotal <sup>1</sup>	Super	ficie	Palangre <sup>4</sup>	Subtotal	Total
	Superficie	Falangie		Comercial <sup>2</sup>	Deportiva <sup>3</sup>	Falangie		
1970	7,505	1,123	8,629	3,951	15		3,966	12,595
1971	8,672	756.77	9,428	8,354	6		8,360	17,788
1972	7,951	723.55	8,674	13,335	12		13,347	22,021
1973	8,798	1,158	9,956	10,700	44		10,744	20,700
1974	14,762	3,533	18,295	5,570	47		5,617	23,912
1975	10,770	1,558	12,328	9,556	27		9,583	21,911
1976	9,185	519.61	9,705	10,628	17		10,645	20,350
1977	12,618	712.16	13,330	5,458	15		5,473	18,803
1978	21,285	1,049	22,334	5,393	4		5,397	27,731
1979	25,311	1,223	26,534	6,108	9		6,117	32,651
1980	18,372	1,170	19,542	2,933	6		2,939	22,481
1981	29,576	975	30,551	1,084	5		1,089	31,640
1982	24,095	1,056	25,151	3,145	5		3,150	28,301
1983	18,047	8,634	18,911	837	16		853	19,764
1984	10,564	831	11,395	858	23		881	12,276
1985	11,985	706	12,691	4,014	41		4,055	16,746
1986	14,496	319	14,815	5,079	6		5,085	19,900
1987	13,315	711	14,026	990	15		1,005	15,031
1988	7,331	349	7,680	1,421	3		1,424	9,104
1989	9,099	645	9,744	1,117	53		1,170	10,914
1990	6,294	585	6,879	1,511	31		1,542	8,421
1991	14,084	627	14,711	418	43		461	15,172
1992	10,221	1,037	11,258	1,929	70	1	2,000	13,258
1993	7,818	1,328	9,146	581	298	45	924	10,070
1994	11,052	1,521	12,573	974	88	24	1,086	13,659
1995	22,825	920	23,745	629	245	27	901	24,646
1996	10,148	1,873	12,021	8,222	37	53	8,312	20,333
1997	14,757	2,823	17,580	2,657	150	52	2,859	20,439
1998**	7,389	3,134	10,523	1,826	397	56	2,279	12,802
1999**	16,868	3,490	20,358	2,644	447	39	3,130	23,488
2000**				3,873	225		4,098	

<sup>1</sup> Sources: The data for Japan were obtained from the National Research Institute of Far Seas Fisheries of Japan. The data for Taiwan and the Republic of Korea were obtained from FAO yearbooks of fisheries statistics and data published by the Institute of Oceanography, National Taiwan University, Taipei, Taiwan, and the National Fisheries Research and Development Agency of Korea.

<sup>&</sup>lt;sup>1</sup> Fuentes: Los datos de Japón provienen del Instituto Nacional de Investigación de Pesquerías de Ultramar del Japón. Los datos de Taiwan y la República de Corea provienen de compendios anuales de estadísticas pesqueras de la FAO y datos publicados por el Instituto de Oceanografía de la Universidad Nacional de Taiwan en Taipei y la Agencia Nacional de Investigación y Desarrollo Pesquero de Corea.

<sup>&</sup>lt;sup>2</sup> Source: Table 3 minus recreational catch.

<sup>&</sup>lt;sup>2</sup> Fuente: Tabla 3, menos la captura deportiva.

Sources: 1970-1990, California's Living Marine Resources and their Utilization, published by the California Department of Fish and Game; 1991-1992, California Department of Fish and Game, unpub. data; 1993-1999, Calif. Coop. Ocean. Fish. Inves., Rep., 35-41.

<sup>&</sup>lt;sup>3</sup> Fuentes: 1970-1990, *California's Living Marine Resources and their Utilization*, publicado por el California Department of Fish and Game; 1991-1992, California Department of Fish and Game, datos inéditos; 1993-1998, Calif. Coop. Ocean. Fish. Inves., Rep., 35-41

<sup>&</sup>lt;sup>4</sup> Sources: NOAA Tech. Rep. NMFS 142: page 149, and Pelagic Fisheries of the Western Pacific Region, 1998 Annual Report, Western Pacific Fishery Management Council, Honolulu, Hawaii: page 3-57.

<sup>&</sup>lt;sup>4</sup> Fuentes: NOAA Tech. Rep. NMFS 142: página 149, y Pesquerías Pelágicas de la Región del Pacífico Occidental, Informe Anual de 1998, Western Pacific Fishery Management Council, Honolulu, Hawaii: página 3-57.

<sup>\*\*</sup>preliminary—preliminares

**TABLE 7.** Preliminary estimates of commercial catches of billfishes in the eastern Pacific Ocean. Most of the longline-caught fish were retained, and most of those caught by surface gear were discarded.

**TABLA 7.** Estimaciones preliminares de las capturas comerciales de peces picudos en el Océano Pacífico oriental. La mayoría del pescado capturado con palangre fue retenida, y la mayoría de la captura de superficie desechada.

Year	Swor	dfish	Blue marlin		Black marlin		Striped marlin		Shortbill spearfish		Sailfish	
rear	Longline	Surface	Longline	Surface	Longline	Surface	Longline	Surface	Longline	Surface	Longline	Surface
Año	Pez espada		Marlín azul		Marlín negro		Marlín rayado		Marlín trompa corta		Pez vela	
	Palangre	Superficie	Palangre	Superficie	Palangre	Superficie		Superficie			Palangre	Superficie
1970	9,294	•	4,126	•	275	•	10,976	•		•		
1971	4,844		2,832		308		10,118					
1972	2,847		2,653		455		7,106					
1973	5,105		3,825		307		5,277					
1974	5,014		2,826		249		5,402					
1975	3,065		2,281		182		5,429				554	
1976	2,700		3,271		285		6,473				494	
1977	4,258		3,106		188		3,086				753	
1978	6,555		3,630		283		2,496				878	
1979	4,722		4,500		291		4,123				251	
1980	4,209		4,030		182		4,879				243	
1981	6,572		4,453		169		4,870				379	
1982	5,918		4,717		143		4,682				1,083	
1983	5,008		4,432		209		4,455				889	
1984	6,604		5,163		121		2,652				345	
1985	6,557		3,574		194		1,592				392	
1986	5,717		5,268		313		3,534		5		529	
1987	7,357		7,232		199		7,282		15		604	
1988	10,393		5,190		135		5,130		13		642	
1989	12,159		5,064		151		3,311		0		171	
1990	13,797		4,925		112		2,959		0		2	
1991	15,683	17	5,780	81	145	58	2,594		1		710	40
1992	15,234	4	6,391	59	208	95	2,674	80	1	1	980	41
1993	12,695	4	6,831	85	178	85	3,354	67	3	0	1,963	47
1994	10,217	3	9,278	112	170	89	3,295	63	143	0	1,516	24
1995	8,483	7	7,160	124	95	111	3,082	35	156	1	1,297	38
1996	9,655	3	3,426	140	112	139	2,834	41	127	1	704	29
1997	13,318	13	5,531	220	183	154	3,932	40	164	1	1,186	32
1998	14,104		4,451		52		2,229	40	142		1,023	
1999	15,839		2,829		6		1,536		174		1,135	