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BACKGROUND PAPER A1

THE FISHERY FOR TUNAS AND BILLFISH IN THE EASTERN PACIFIC OCEAN IN 2001

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1. THE FISHERY FOR TUNAS IN THE EASTERN PACIFIC OCEAN

1.1. The surface fleet

The IATTC maintains detailed records of gear, flag, and fish-carrying capacity for most of the vessels that fish with surface gear for yellowfin (*Thunnus albacares*), skipjack (*Katsuwonus pelamis*), bigeye (*Thunnus obesus*), or Pacific bluefin (*T. orientalis*) tuna in the eastern Pacific Ocean (EPO; Figure 1). Historically, detailed records have not been maintained for most longline vessels, nor for sport-fishing vessels and small craft such as canoes and launches, though recently the staff began compiling and maintaining these records, and will continue to do so in the future. The fleet described here includes purse seiners and pole-and-line vessels (hereafter referred to as surface gear) that have fished all or part of the year in the EPO for these four species.

Historically the owner's or builder's estimates of vessel-carrying capacities, in tons of fish, were used until landing records indicated that revision of these estimates was required. The vessels are grouped, by carrying capacity in metric tons (mt), into the following size classes:

Class	Carrying capacity (mt)
1	<46
2	46-91
3	92-181
4	182-272
5	273-363
6	>363

During the past several years the IATTC staff has used well volume, in cubic meters (m^3), instead of weight, in metric tons (mt), to measure the carrying capacity of vessels. Since a well can be loaded with different densities of fish, measuring carrying capacity in weight is subjective, as a load of fish packed into a well at a higher density will weigh more than a load of fish packed at a lower density. Using volume as a measure of capacity eliminates this problem. The six size classes used for reporting and monitoring purposes are still based on metric-ton capacity, but the total capacities by year and flag are reported in cubic meters. The IATTC staff began collecting vessel-capacity data by volume in 1999, but has not yet obtained this information for all vessels. For vessels for which reliable information on well volume is not available, a factor of 1.171 is used to convert the estimated capacity in metric tons to cubic meters. This conversion factor was also applied to all carrying-capacity data for 1961-1998 to make comparisons among years (Table 1).

Until about 1960 fishing for tunas in the EPO was dominated by pole-and-line vessels operating in the more coastal regions and in the vicinity of offshore islands. During the late 1950s and early 1960s most of the larger pole-and-line vessels were converted to purse seiners, and by 1961 the EPO surface fleet was

dominated by these vessels. During the 1961-2001 period the number of pole-and-line vessels decreased from 93 to 11, and their total capacity from about 11 to 1 thousand cubic meters (m^3). During the same period the number of purse seiners increased from 125 to 203, and their capacity from about 31 thousand m^3 to about 189 thousand m^3, at an average of about 931 m^3 per vessel. An earlier peak in numbers and capacity of purse seiners occurred from the mid-1970s to the early 1980s, when the number of vessels reached 282 and the capacity about 196 thousand m^3, at an average of about 695 m^3 per vessel.

The construction of new purse seiners, which began during the mid-1960s, resulted in an increase in the total surface fleet capacity from about 42 thousand m^3 in 1966 to about 188 thousand m^3 in 1976. During the 1976-1981 period the fleet capacity increased slightly. 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. The catch rates in the EPO were low during 1978-1981 due to concentration of fishing effort on small fish, and the situation was exacerbated by a major El Niño event, which began in mid-1982 and persisted until late 1983 and made the fish less vulnerable to capture. In 1982 the fleet capacity declined by about 18 thousand m^3 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 30 thousand m^3 during 1983 and 1984; in 1984 it reached its lowest level since 1971, about 121 thousand m^3. In 1985, however, due primarily to the return of vessels from the western Pacific, the capacity increased to about 138 thousand m^3, but in 1986 it decreased slightly to about 132 thousand m^3. During 1987 several new vessels were added to the fleet, and others returned from the western Pacific, causing the fleet capacity to increase to about 152 thousand m^3. This trend continued in 1988, resulting in a fleet capacity of about 156 thousand m^3, the highest level since 1982. In early 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 U.S.-flag vessels to leave the EPO, with a consequent reduction in the fleet to about 117 thousand m^3 in 1992. With increases in participation of vessels of other nations in the fishery, the capacity has increased steadily since 1992, and in 2001 was 191 thousand m^3.

The 2000 and preliminary 2001 data for numbers and carrying capacities of purse seiners and pole-and-line vessels that fished for tunas in the EPO are shown in Tables 2a and 2b. The fleet was dominated by vessels operating under the Mexican and Ecuadorian flags during 2001. The Mexican fleet has been the largest fleet since 1987, with about 25 percent of the total capacity during 2001, while vessels registered in Ecuador, Venezuela, Spain, and Panama comprised about 25, 17, 6, and 5 percent of the total capacity, respectively.

Class-6 purse seiners made up about 90 percent of the total capacity of the surface gear operating in the EPO during 2001.

1.2. Catches and landings

1.2.1. Tunas

1.2.1.a Surface catches

Estimates of the catches and landings of tunas come from several sources, including logbooks kept by the fishermen, data recorded by observers, export and import records, and unloading data provided by canneries and other processors. Estimating total catch from a fishery is difficult, however, due to the lack of information on fish that are caught, but, for various reasons, discarded at sea, dead or dying in the case of tunas. Data on fish discarded at sea by Class-6 vessels have been collected by observers since 1993. This information allows for better estimation of the total amount of fish caught by the surface fleet. Estimates of the total amount of catch that is landed (hereafter referred to as retained catch) are based principally on data from unloadings. Annual estimates of the retained and discarded catches of the various species of tunas captured by vessels of the EPO surface fleet are shown in Table 3, which also

includes catch data for U.S.-flag sport-fishing vessels and other miscellaneous types of surface gear. In the case of bluefin, the recreational catches have become an increasingly important component of the total catch in recent years. The statistics for 2001 are compared to those for 1986-2000.

There were no restrictions on fishing for tunas in the EPO during 1980-1997. 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, from December 1 through 31, 2000, and from October 27 through December 31, 2001. 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, the 1990s, and the early 2000s. As mentioned previously, there was a major El Niño event during 1982-1983, which made the fish less vulnerable to capture and reduced the numbers of vessels operating 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 retained catch of yellowfin in the EPO by surface gear during 1986-2000 was 259 thousand mt (range: 219 to 297 thousand mt). The preliminary estimate of the retained catch of yellowfin in 2001, 395 thousand mt, is the greatest on record, exceeding the average for 1986-2000 by 53 percent. The average amount of yellowfin discarded at sea by the surface fisheries during 1993-2001 was about 2.1 percent (range: 1.7 to 2.4 percent) of the total surface catch of yellowfin (landings plus discards).

During 1986-2000 the annual retained catch of skipjack from the EPO averaged 115 thousand mt (range: 62 to 268 thousand mt). The preliminary estimate of the retained catch of skipjack in 2001, 144 thousand mt, is less than those of 1999 and 2000, but 25 percent greater than the average for 1986-2000. The average amount of skipjack discarded at sea during 1993-2001 was about 12.3 percent (range: 8.5 to 18.2 percent) of the total catch of skipjack.

Prior to 1994 the average annual retained catch of bigeye in the EPO by surface gear was about 5 thousand mt (range: <1 to 15 thousand mt). After 1993 the annual retained catches increased from 29 thousand mt in 1994 to 35 to 52 thousand mt during 1995-1999 to 76 thousand mt in 2000. The preliminary estimate of the retained catch of bigeye in the EPO in 2001 is 44 thousand mt. These increasing catches of bigeye followed the development of FADs placed in the water by the fishermen to aggregate skipjack and yellowfin. The average amount of bigeye discarded at sea by the surface fisheries during 1993-2001 was about 7.8 percent (range: 6.8 to 11.2 percent) of the total surface catch of bigeye.

While yellowfin, skipjack, and bigeye comprise the most significant portion of the retained catches of the surface fleet in the EPO, Pacific bluefin, albacore (*Thunnus alalunga*), black skipjack (*Euthynnus lineatus)*, bonito (*Sarda orientalis*), and other species contribute to the overall harvest in this area. The total retained catch of these other species by these fisheries was about 3 thousand mt in 2001, which is well below the 1986-2000 annual average retained catch of about 8 thousand mt (range: 1.9 to 17.3 thousand mt). The estimated discarded catches of these species for the 1993-2001 period are presented in Table 3. Estimates of the discards of other species, in numbers of individuals, can be found in Tables 11b and 11c of the IATTC Annual Report for 2000.

The retained catches in the EPO during 2000, by flag, and the landings of EPO-caught tunas taken by surface gear in the EPO, by country, are given in Table 4a, and preliminary estimates of equivalent data for 2001 are given in Table 4b. The estimated retained catch of all species in the EPO during 2001 was about 586 thousand mt, which was slightly greater than that of 2000, 560 thousand mt, and much greater than the average of 1986-2000 of 405 thousand mt. Ecuadorian- and Mexican-flag vessels each harvested about 25 percent, and Venezuelan-flag vessels about 19 percent, of the retained catches of all species made in 2001.

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 591 thousand mt of tunas landed in 2001, 231 thousand mt (39 percent) was landed in Ecuador. The landings in Mexico (139 thousand mt; 24 percent) and Panama (87 thousand mt; 15 percent) were next in terms of magnitude. Other countries with significant landings of tunas caught in the EPO included Colombia (7 percent), Costa Rica and Venezuela (5 percent each), and Spain (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 1987-2001 period, and the retained 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 (PROBECUADOR), 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 with IATTC observers aboard.

	Flotsam		FADs		Unknown		Total
	Number	Percent	Number	Percent	Number	Percent	
1992	945	63.3	521	34.9	26	1.7	1,492
1993	1,118	57.7	811	41.8	9	0.5	1,938
1994	709	27.6	1,830	71.3	28	1.1	2,567
1995	579	17.8	2,647	81.6	19	0.6	3,245
1996	520	12.9	3,523	87.1	0	0.0	4,043
1997	718	12.8	4,859	86.9	16	0.3	5,593
1998	663	12.5	4,588	86.6	46	0.9	5,297
1999	778	17.3	3,719	82.5	10	0.2	4,507
2000	378	10.3	3,285	89.3	16	0.4	3,679
2001	564	10.0	5,076	89.7	16	0.3	5,659

The average annual distributions of the logged retained catches of yellowfin, skipjack, and bigeye by set type, by purse seiners in the EPO during the 1986-2000 period (1994-2000 for bigeye), are shown in Figures 2a, 3a, and 4a, and the preliminary estimates for 2001 are shown in Figures 2b, 3b, and 4b. The distributions of the catches of yellowfin and skipjack during 2001 were similar to those of 1986-2000, although some differences are evident.

Bigeye are not often caught by surface gear north of about 7°N. The distribution of the catch of bigeye during 2001 was similar to those of 1994-2000, although some differences are evident. 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.

1.2.1.b Longline catches

Data on retained catch for most of the larger longline vessels operating in the EPO, and for an increasing portion of the smaller vessels, are obtained from various sources. These vessels, particularly the larger ones, direct their effort primarily at bigeye and yellowfin tuna. The annual retained catches by these fisheries are shown in Tables 7a and 7c. During 1985-1997 (the last year for which complete data are available) the retained catches of yellowfin remained relatively stable, averaging about 20 thousand mt (range: 13 to 30 thousand mt) per year, or about 7.5 percent of the total retained catches. Prior to 1985 the retained longline catches of bigeye averaged about 51 thousand mt (range: 31 to 74 thousand mt). In about 1985 the level of retained catches of bigeye increased significantly, and during 1985-1994 they averaged about 81 thousand mt (range: 66 to 102 thousand mt). During 1970-1993, prior to the increased use of FADs and resultant greater catches of bigeye by purse-seine vessels, the longline fisheries, on average, accounted for 93 percent of the retained catches of this species from the EPO. During 1995-1997 the annual retained catches of bigeye by the longline fisheries ranged from about 40 to 56 thousand mt (average: 46 thousand mt), which is well within the pre-1985 historical range, but significantly less than the retained catches during 1985-1994.

1.2.2. 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 platypterus*) are fished with longline and recreational gear, and they are occasionally caught by 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 6.

2. SIZE COMPOSITIONS OF THE SURFACE CATCHES OF TUNAS

Length-frequency samples are the basic source of data used for estimating the size and age compositions of the various species of fish in the landings. This information is necessary to obtain age-structured estimates of the population for various purposes, including age-structured population modeling. The results of that modeling can be used to estimate recruitment, which can be compared to spawning biomass and oceanographic conditions. Also, the estimates of mortality obtained from age-structured population modeling can be used, in conjunction with growth estimates, for yield-per-recruit modeling. The results of such studies have been described in IATTC Bulletins, its Annual Reports for 1954-1998, and its Stock Assessment Reports.

Length-frequency samples of yellowfin, skipjack, bigeye, Pacific bluefin, and occasionally black skipjack from purse-seine, pole-and-line, and recreational catches made in the eastern Pacific Ocean (EPO) are collected by IATTC personnel at ports of landing in Ecuador, Mexico, Panama, the USA (California and Puerto Rico), and Venezuela. The catches of yellowfin and skipjack were first sampled in 1954, bluefin in 1973, and bigeye in 1975, and sampling has continued to the present.

Beginning on January 1, 2000, the methods for sampling the catches of tunas were changed, as described in the IATTC Annual Report for 2000. Briefly, the fish in a well of a purse seiner or pole-and-line vessel are selected for sampling only if all the fish in the well were caught during the same calendar month, in the same type of set (floating-object, unassociated school, or dolphin), and in the same sampling area. These data are then categorized by fishery (Figure 5). Samples from 1003 wells were taken during 2001.

Data for fish caught during the 1996-2001 are presented in this report. Two length-frequency histograms

are presented for each species. For yellowfin, skipjack, and bigeye, the first shows the data by fishery (gear type, set type, and area) for 2001. The second, which is similar to those of previous years, shows the catch for the current year and the previous five years. For bluefin, the first and second histograms show the 1996-2001 catches by commercial and recreational gear, respectively.

There are ten yellowfin surface fisheries defined for stock assessments: four floating-object, two unassociated school, three dolphin, and one pole-and-line (Figure 5). Of the 1003 wells sampled, 849 contained yellowfin. The estimated size compositions of the fish caught during 2001 are shown in Figure 6a. The majority of the yellowfin catch was taken in unassociated school sets and dolphin sets. The average weight of the fish caught in association with dolphins was more than twice that of those caught in association with floating objects or in unassociated school sets. The average weights of yellowfin caught in unassociated school sets in the Southern area and by floating-object sets in the Inshore area in 2001 were greater than those of the previous five years.

The estimated size compositions of the yellowfin caught by all fisheries combined during 1996-2001 are shown in Figure 6b. The size ranges of yellowfin are generally consistent over time (40-160 cm), but the size distributions differ among quarters and among years. The average weight of the yellowfin caught during 2001 was greater than those of the fish caught during previous five years, probably due mostly to the catches of large yellowfin off Peru during the first half of 2001.

There are eight skipjack fisheries defined for stock assessments: four floating-object, two unassociated school, one dolphin, and one pole-and-line. The last two fisheries include all 13 sampling areas. Of the 1003 wells sampled, 459 contained skipjack. The estimated size compositions of the fish caught during 2001 are shown in Figure 7a. The majority of the fish was taken in floating-object sets. Less catch was taken by unassociated sets in the Southern area than in 2000. Negligible amounts of skipjack were caught by pole-and-line vessels and in dolphin sets.

The estimated size compositions of the skipjack caught by all fisheries combined during 1996-2001 are shown in Figure 7b. The average weight of the fish caught during 2000 was greater than those of the fish caught during 2001 or any of the previous four years.

There are seven bigeye surface fisheries defined for stock assessments: four floating-object, one unassociated school, one dolphin, and one pole-and-line. The last three fisheries include all 13 sampling areas. Of the 1003 wells sampled, 204 contained bigeye. The estimated size compositions of the fish caught during 2001 are shown in Figure 8a. During 2001 significantly less bigeye was caught in sets on floating objects in the Galapagos area than during 2000. Small amounts of bigeye were caught in unassociated school sets and dolphin sets. There were no recorded catches of bigeye by pole-and-line-vessels.

The estimated size compositions of the bigeye caught by all fisheries combined during 1996-2001 are shown in Figure 8b. The average weight of the fish caught during 2001 was greater than during 1996-1999, but much less than during 2000.

Pacific bluefin are caught by surface gear by both commercial and sport-fishing vessels off California and Baja California, with most of the catch being taken between about 23°N to 35°N during May through October. During 2001 bluefin were caught between 25°N and 37°N. The catch of bluefin by commercial vessels was less during 2001 than during any of the past five years, and all of the recorded catch was taken during July and August. Most of the catches by sport-fishing vessels were taken during June through September, but smaller amounts were taken in March and May. Histograms showing the estimated commercial and sport catches of bluefin during each year of the 1996-2001 period appear in Figures 9a and 9b, respectively. Distinct modal groups are evident in most of the years for both the commercial and sport catches.

The numbers of samples of bluefin obtained from the commercial and recreational catches during recent years were as follows:

Year	Commercial	Recreational	Year	Commercial	Recreational
1990	14	0	1996	67	5
1991	4	0	1997	17	9
1992	1	1	1998	23	22
1993	4	35	1999	51	12
1994	2	11	2000	20	58
1995	6	16	2001	3	95

The greatest number of samples from the commercial fleet was taken in 1996, a year of unusually high catches. The large numbers of samples taken from the commercial fleet during 1999 and from the recreational fleet during 2000 and 2001 were due to greater sampling effort, rather than to greater catches of fish.

Black skipjack are caught incidentally by fishermen who are directing their effort toward yellowfin, skipjack, and bigeye tuna. The demand for this species is low, so most of the catch is discarded at sea, but small amounts, mixed with the more desirable species, are sometimes retained. Because only nine samples of black skipjack were taken from the 1003 wells sampled during 2001, length-frequency histograms for this species are not presented in this report.

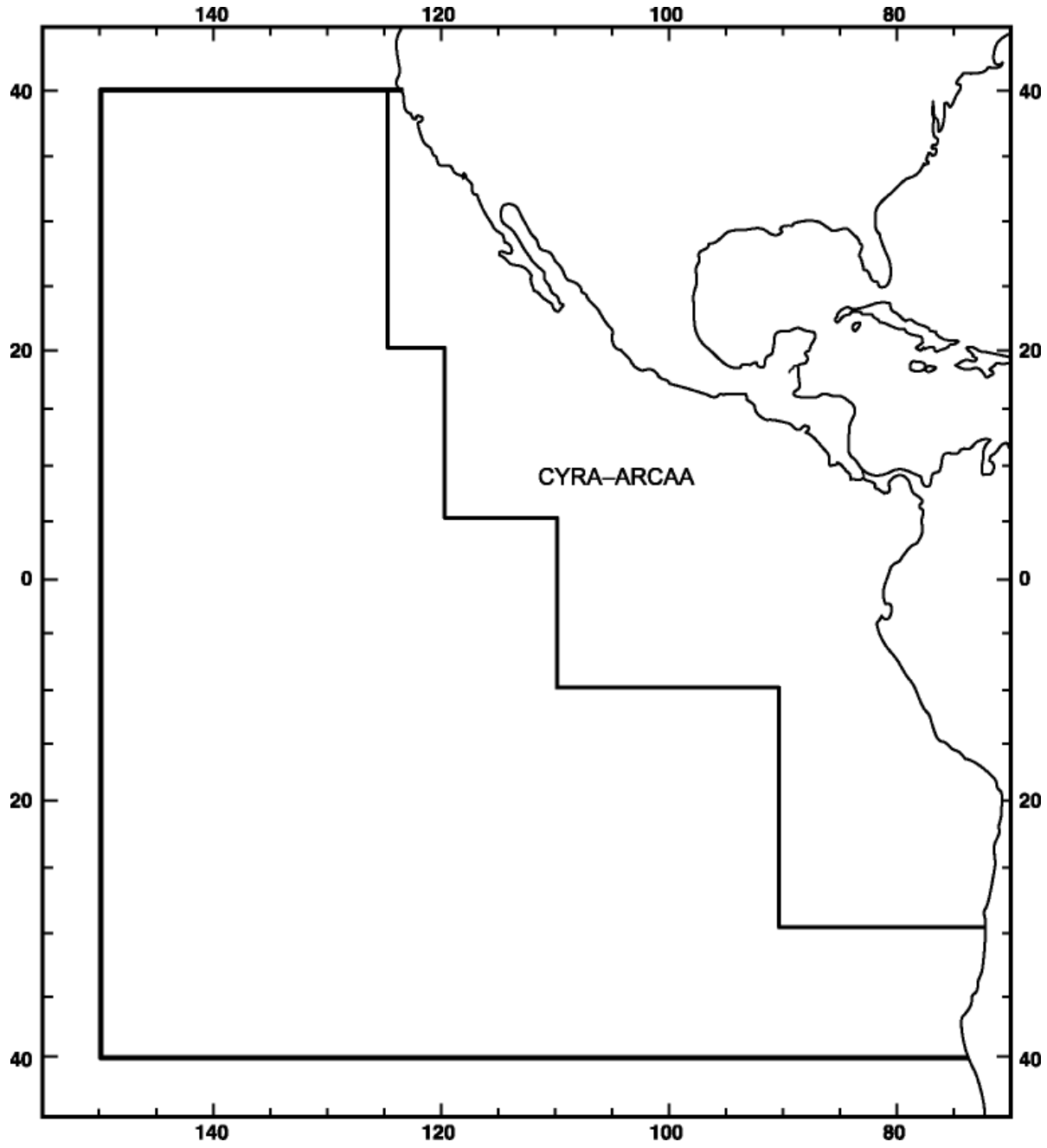

FIGURE 1. The eastern Pacific Ocean (EPO), as defined by the Agreement on the International Dolphin Conservation Program (area inside the heavy line), and the Commission's Yellowfin Regulatory Area (CYRA).

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).

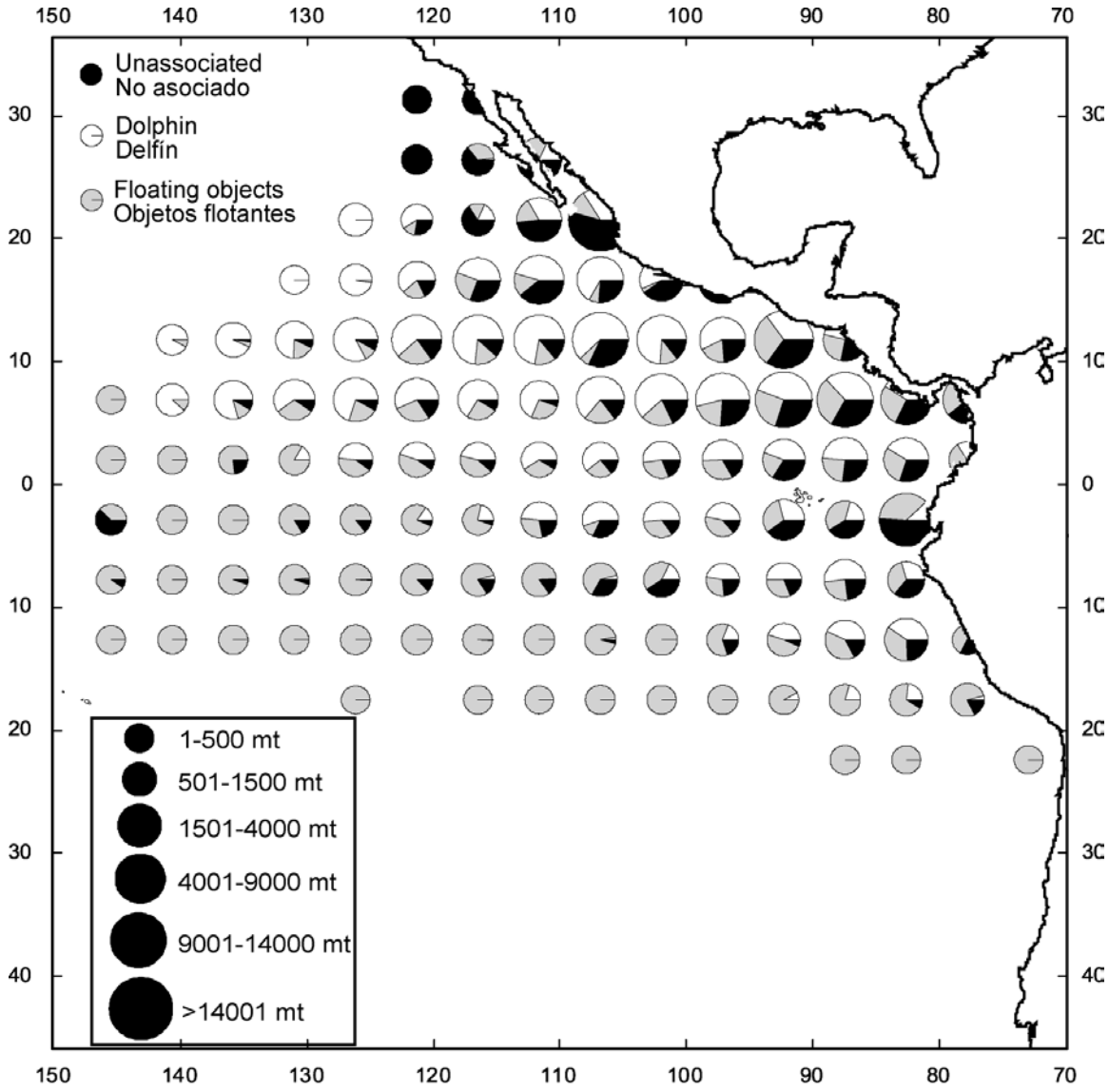

FIGURE 2a. Average annual distribution of the logged retained catches of yellowfin, in metric tons, in the eastern Pacific Ocean during 1986-2000. The average catches and effort were calculated only for the 1-degree areas for which three or more years of data were available.
FIGURA 2a. Distribución anual media de las capturas retenidas registradas de aleta amarilla, en toneladas métricas, en el Océano Pacífico oriental durante 1986-2000. 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.

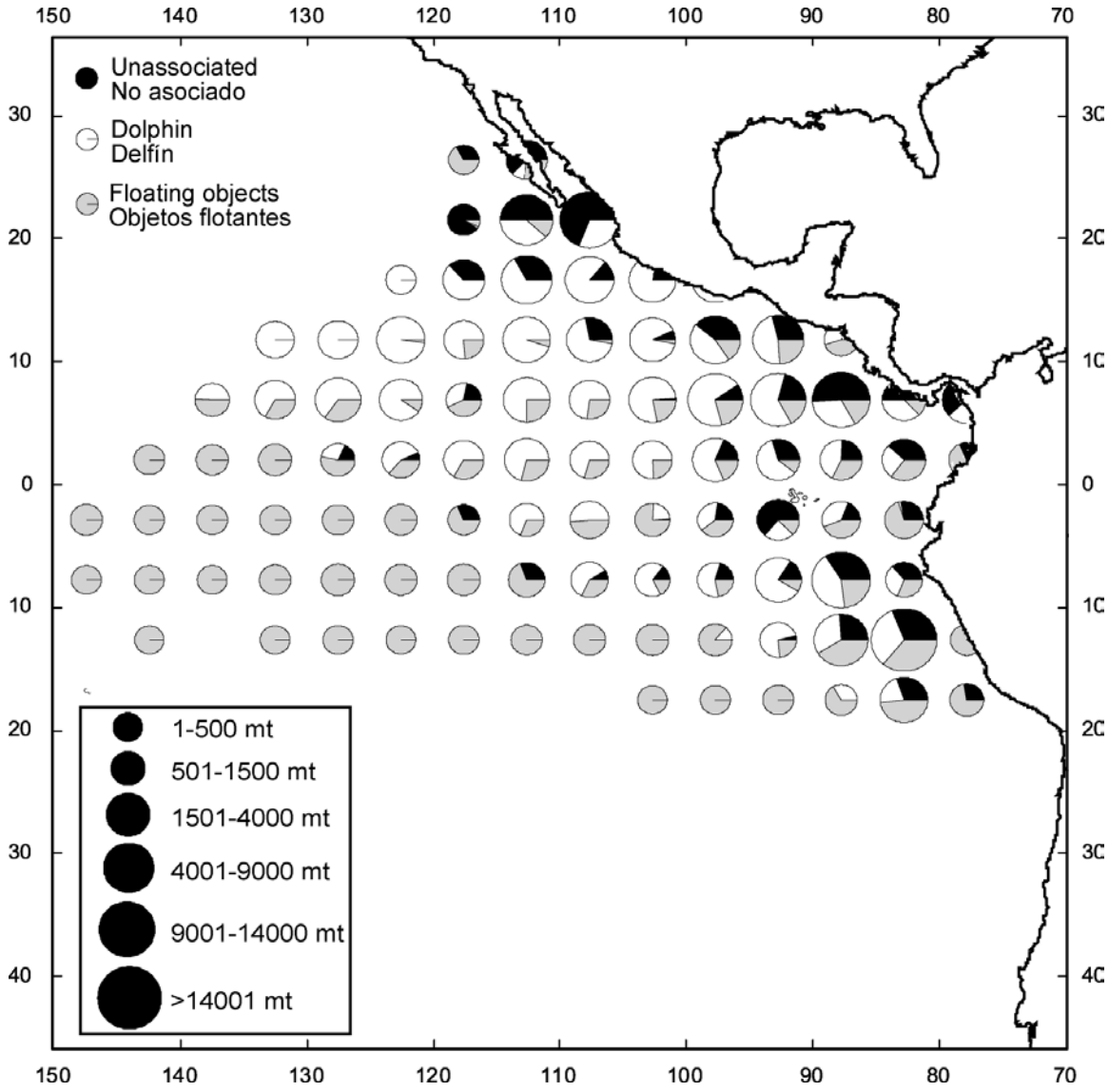

FIGURE 2b. Distribution of the logged retained catches of yellowfin, in metric tons, in the eastern Pacific Ocean during 2001.
FIGURA 2b. Distribución de las capturas retenidas registradas de aleta amarilla, en toneladas métricas, en el Océano Pacífico oriental durante 2001.

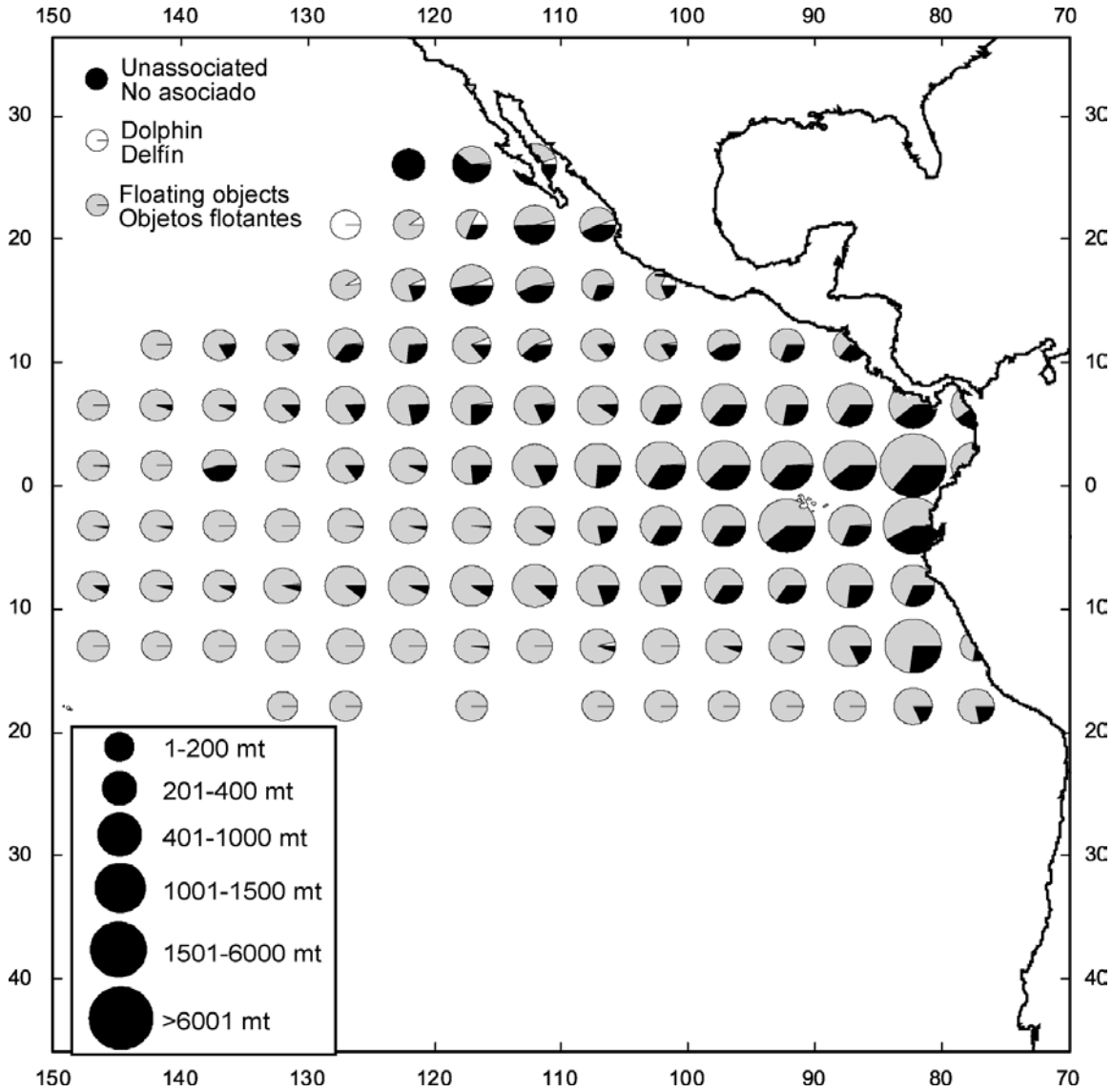

FIGURE 3a. Average annual distribution of the logged retained catches of skipjack, in metric tons, in the eastern Pacific Ocean during 1986-2000. The average catches and effort were calculated only for the 1-degree areas for which three or more years of data were available.
FIGURA 3a. Distribución anual media de las capturas retenidas registradas de barrilete, en toneladas métricas, en el Océano Pacífico oriental durante 1986-2000. 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.

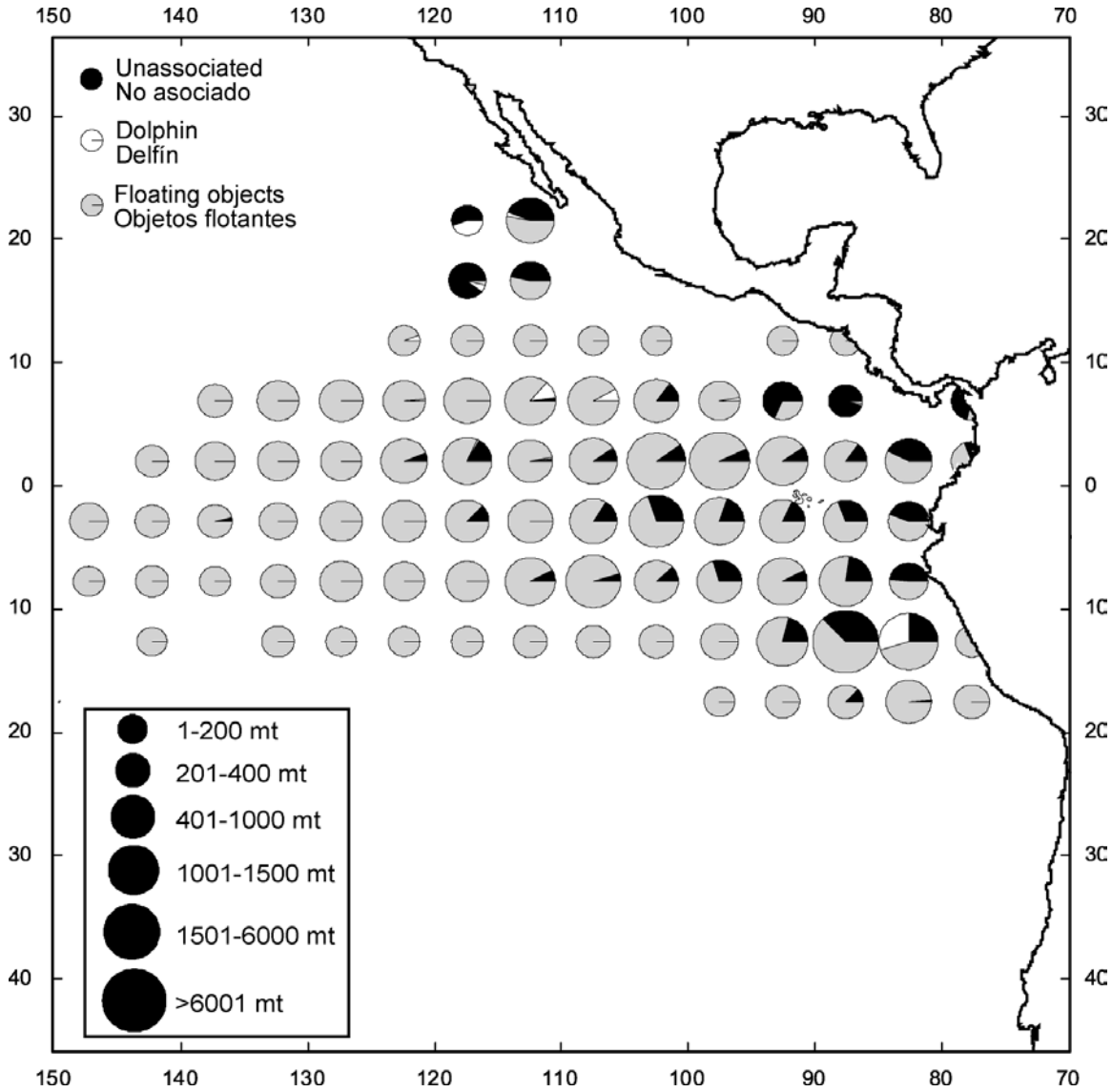

FIGURE 3b. Distribution of the logged retained catches of skipjack, in metric tons, in the eastern Pacific Ocean during 2001.
FIGURA 3b. Distribución de las capturas retenidas registradas de barrilete, en toneladas métricas, en el Océano Pacífico oriental durante 2001.

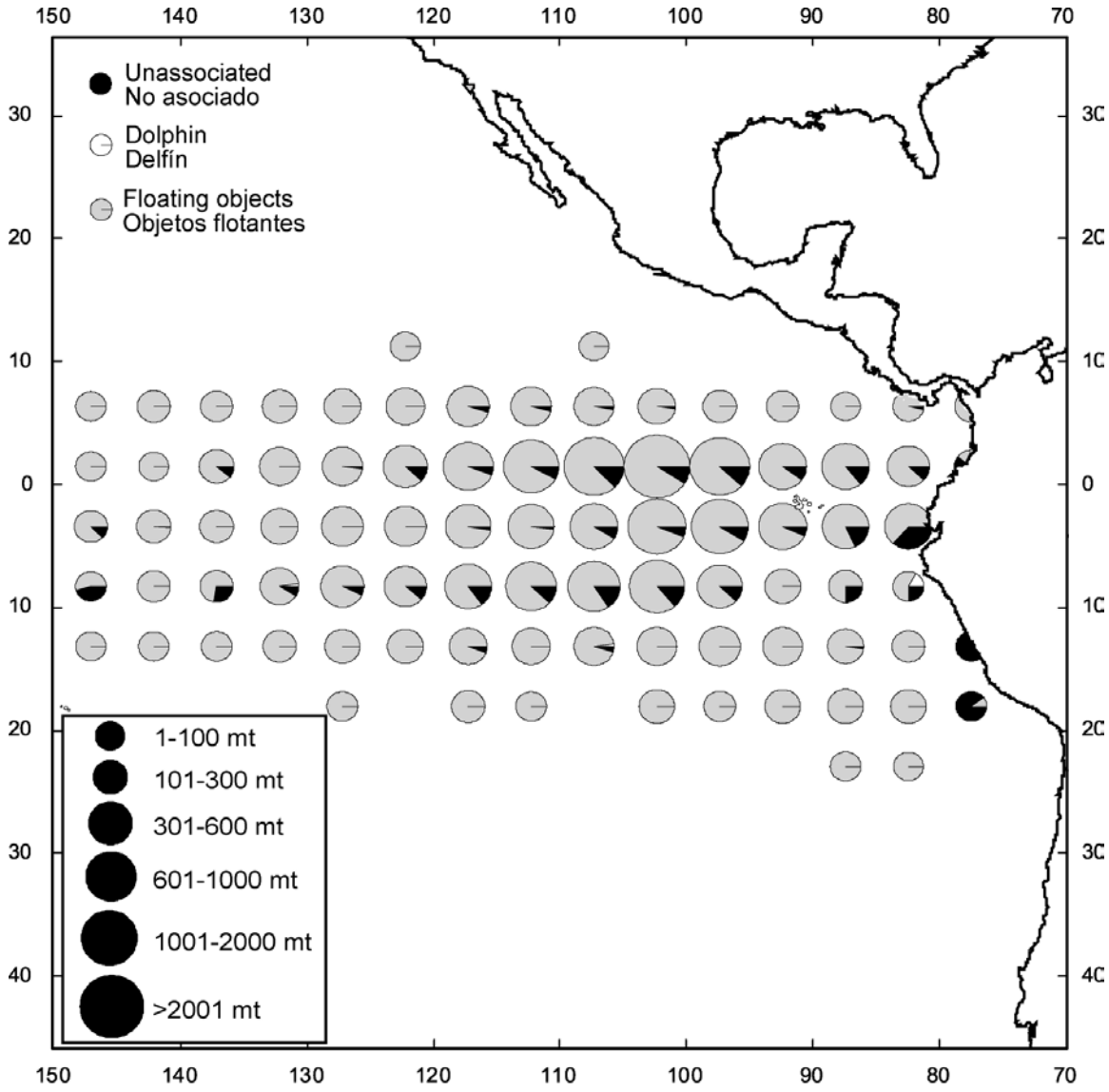

FIGURE 4a. Average annual distribution of the logged retained catches of bigeye, in metric tons, in the eastern Pacific Ocean during 1994-2000. The average catches and effort were calculated only for the 1-degree areas for which two or more years of data were available.
FIGURA 4a. Distribución anual promedia de las capturas retenidas registradas de patudo, en toneladas métricas, en el Océano Pacífico oriental durante 1994-2000. Se calcularon promedios de captura ye esfuerzo solamente para las áreas de 1° para las cuales se disponía de dos años o más de datos.

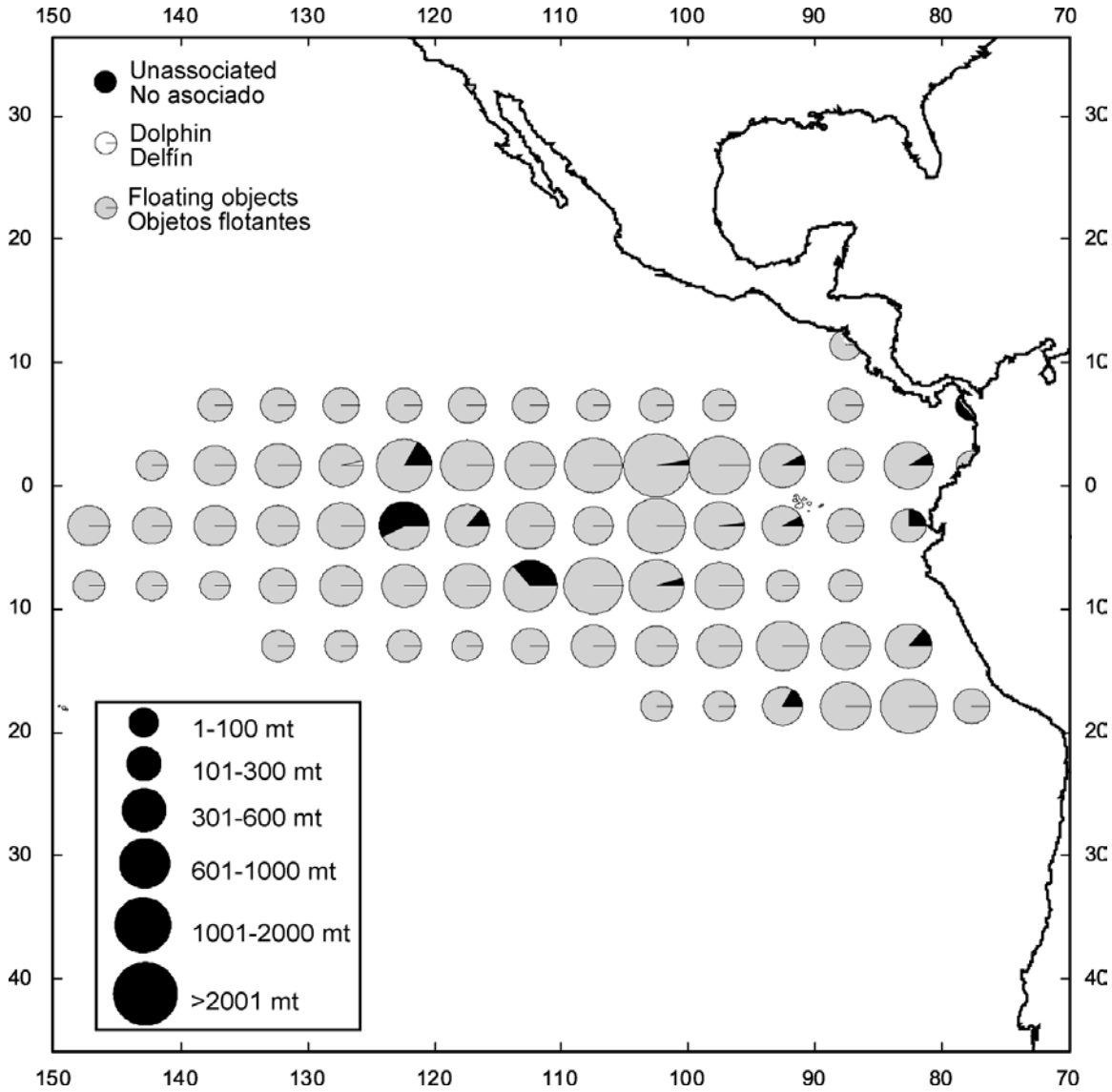

FIGURE 4b. Distribution of the logged retained catches of bigeye, in metric tons, in the eastern Pacific Ocean during 2001.
FIGURA 4b. Distribución de las capturas retenidas registradas de patudo, en toneladas métricas, en el Océano Pacífico oriental durante 2001.

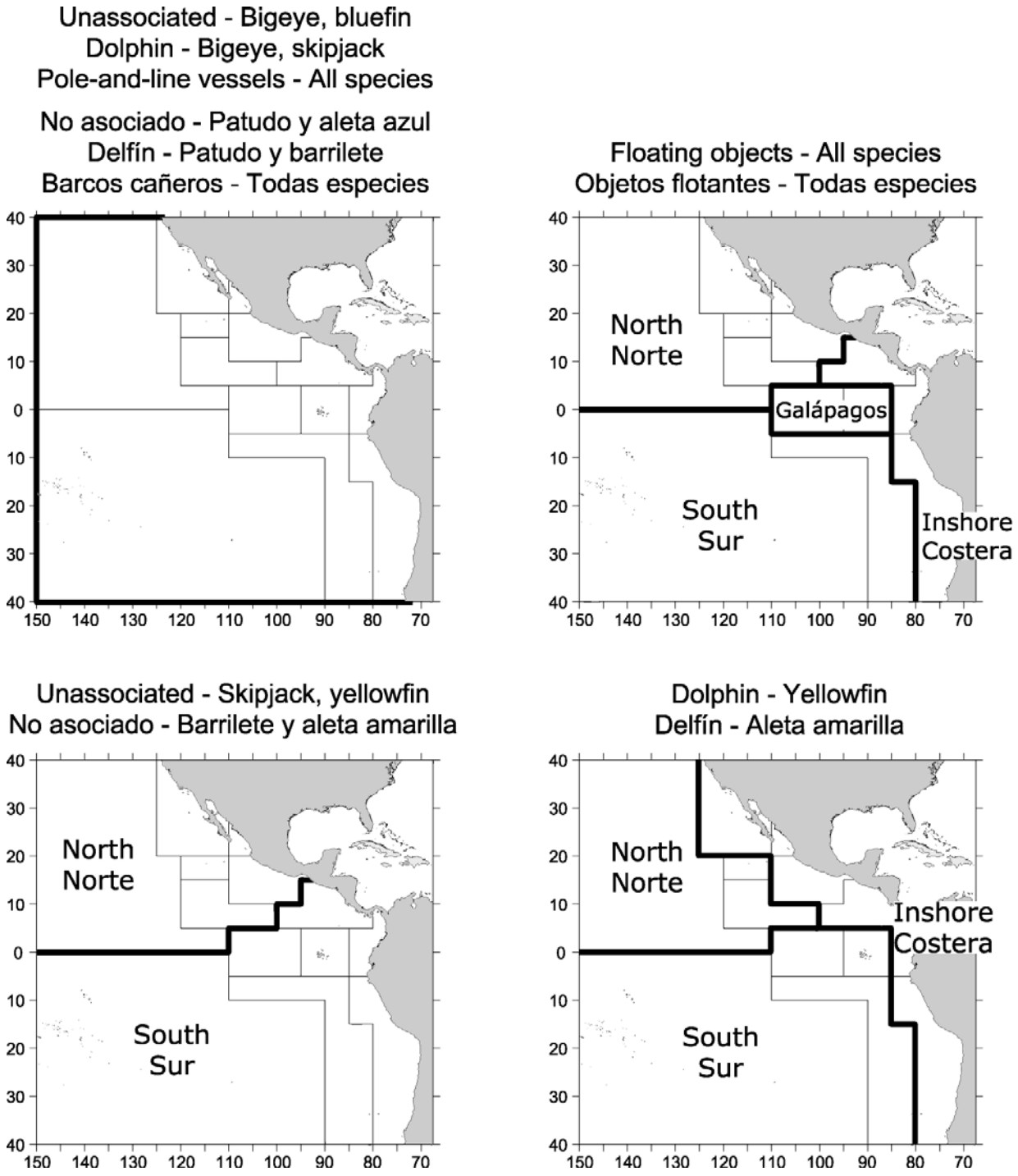

FIGURE 5. Areas used for sampling lengths of surface-caught tunas in the eastern Pacific Ocean (EPO).
FIGURA 5. Zonas usadas para el muestreo de tallas de atunes capturados con artes de superficie en el Océano Pacífico oriental (OPO).

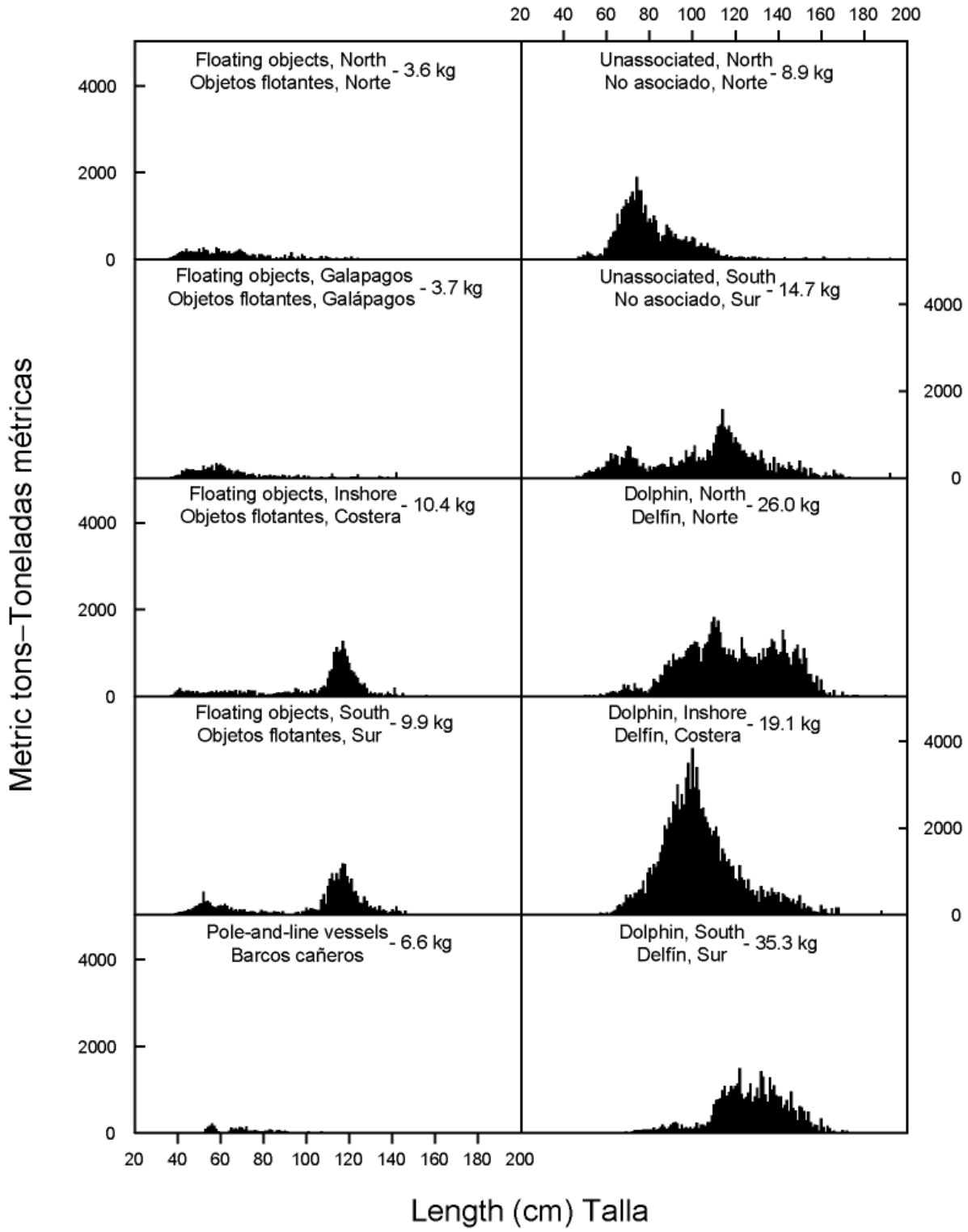

FIGURE 6a. Estimated size compositions of the yellowfin caught in each fishery of the EPO during 2001. The average weights of the fish in the samples are given at the tops of the panels.
FIGURA 6a. Composición por tallas estimada para el aleta amarilla capturado en cada pesquería del OPO en 2001. En cada recuadro se detalla el peso promedio de los peces en las muestras.

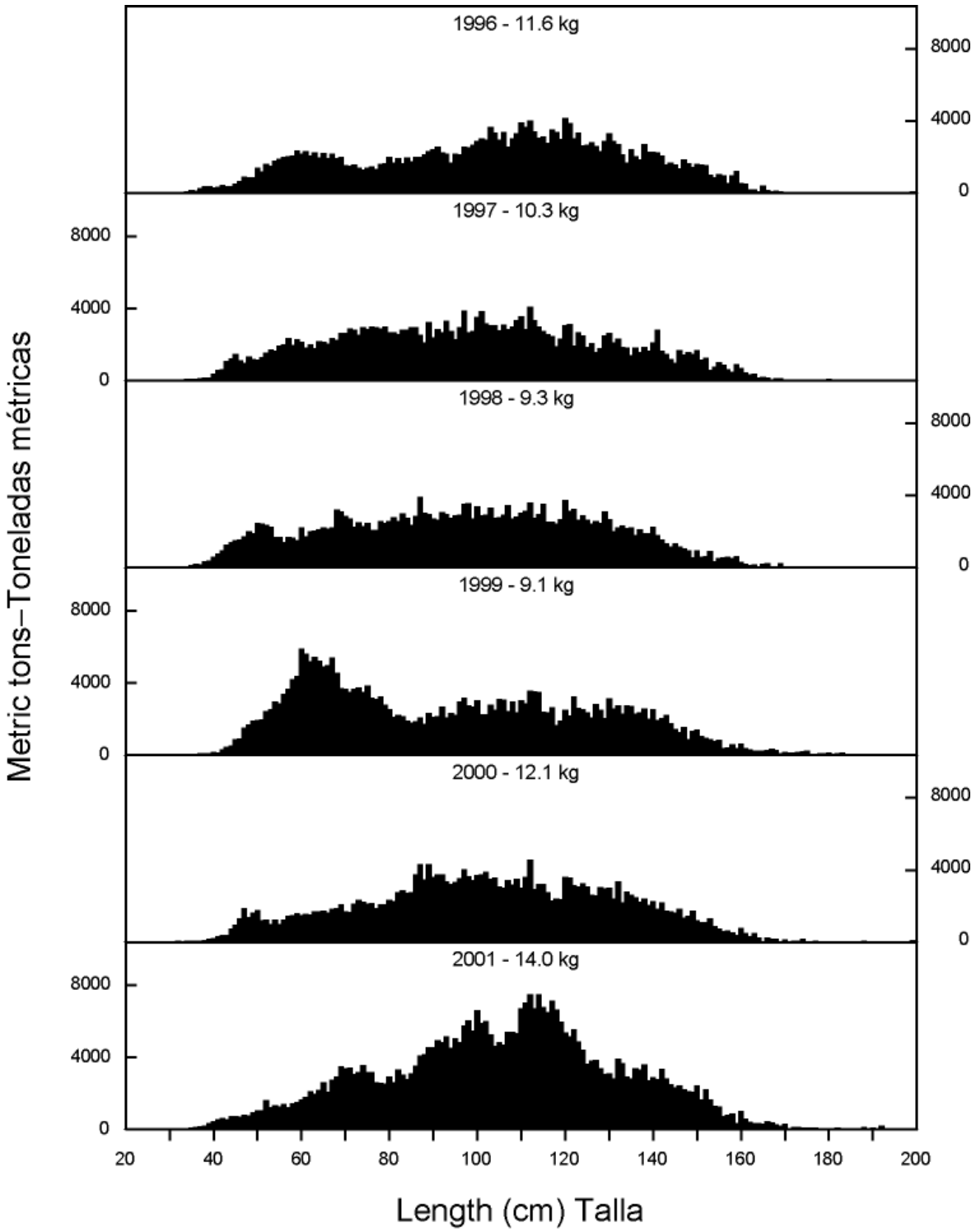

FIGURE 6b. Estimated size compositions of the yellowfin caught in the EPO during 1996-2001. The average weights of the fish in the samples are given at the tops of the panels.
FIGURA 6b. Composición por tallas estimada para el aleta amarilla capturado en el OPO durante 1996-2001. En cada recuadro se detalla el peso promedio de los peces en las muestras.

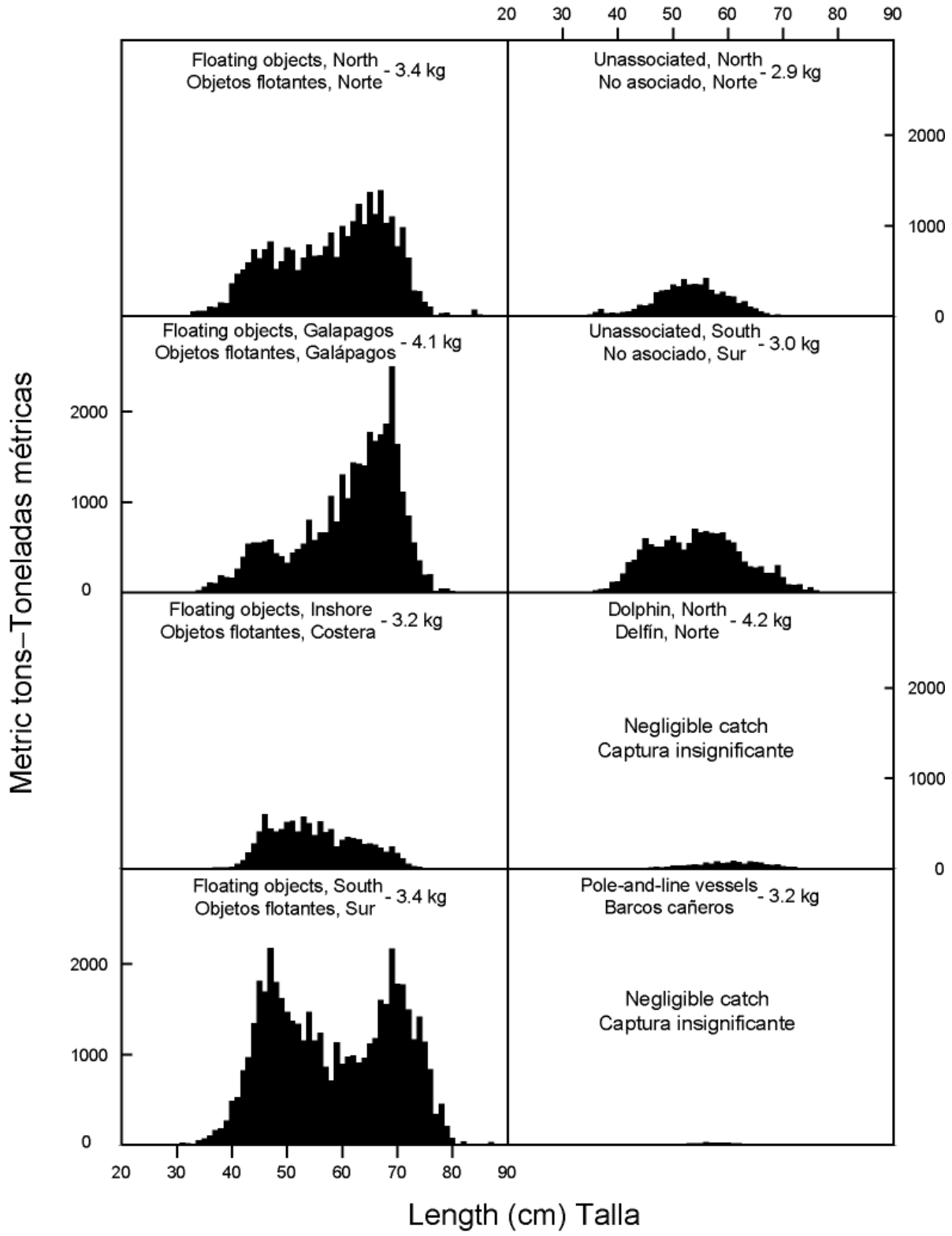

FIGURE 7a. Estimated size compositions of the skipjack caught in each fishery of the EPO during 2001. The average weights of the fish in the samples are given at the tops of the panels.
FIGURA 7a. Composición por tallas estimada para el barrilete capturado en cada pesquería del OPO en 2001. En cada recuadro se detalla el peso promedio de los peces en las muestras.

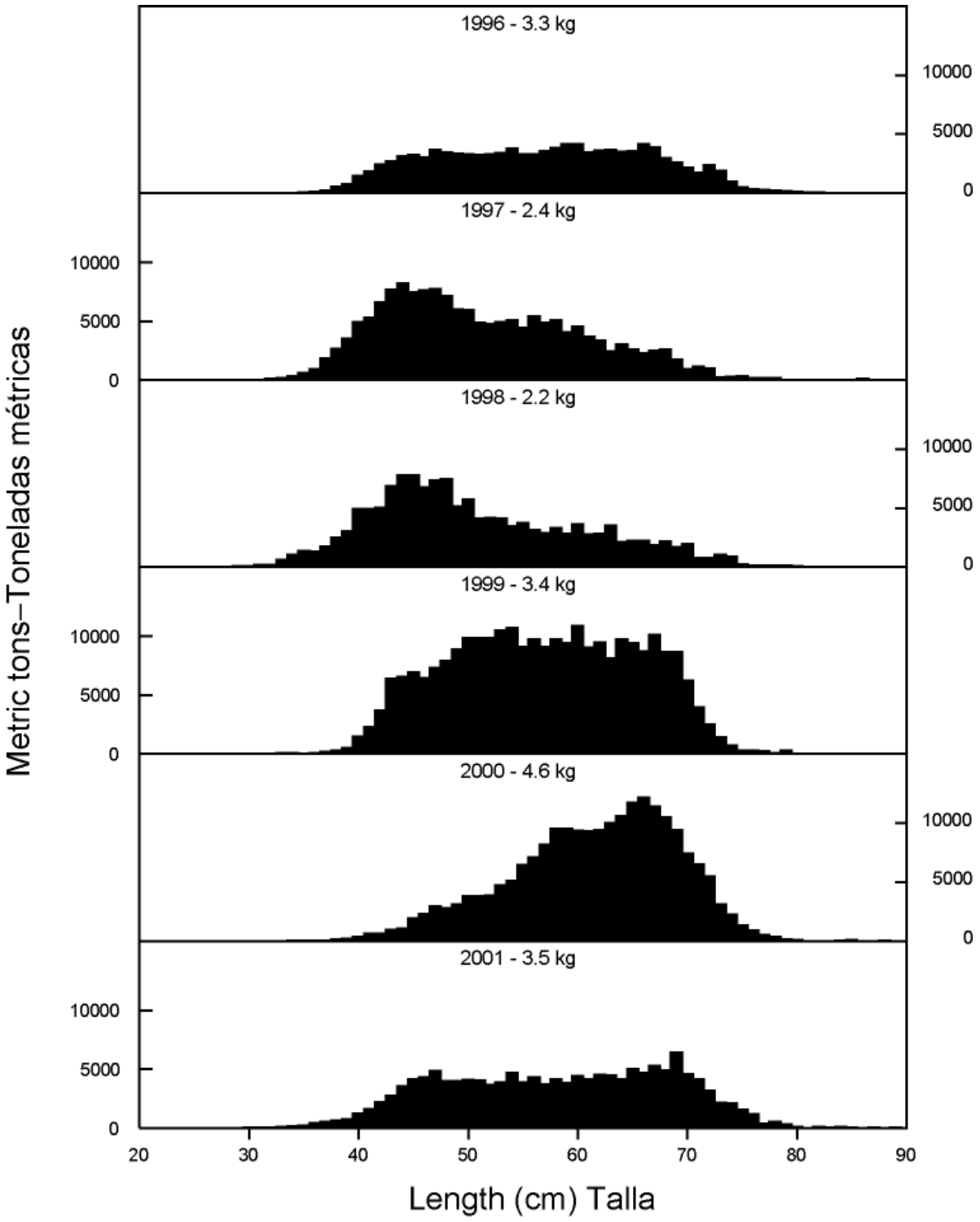

FIGURE 7b. Estimated size compositions of the skipjack caught in the EPO during 1996-2001. The average weights of the fish in the samples are given at the tops of the panels.
FIGURA 7b. Composición por tallas estimada para el barrilete capturado en el OPO durante 1996-2001. En cada recuadro se detalla el peso promedio de los peces en las muestras.

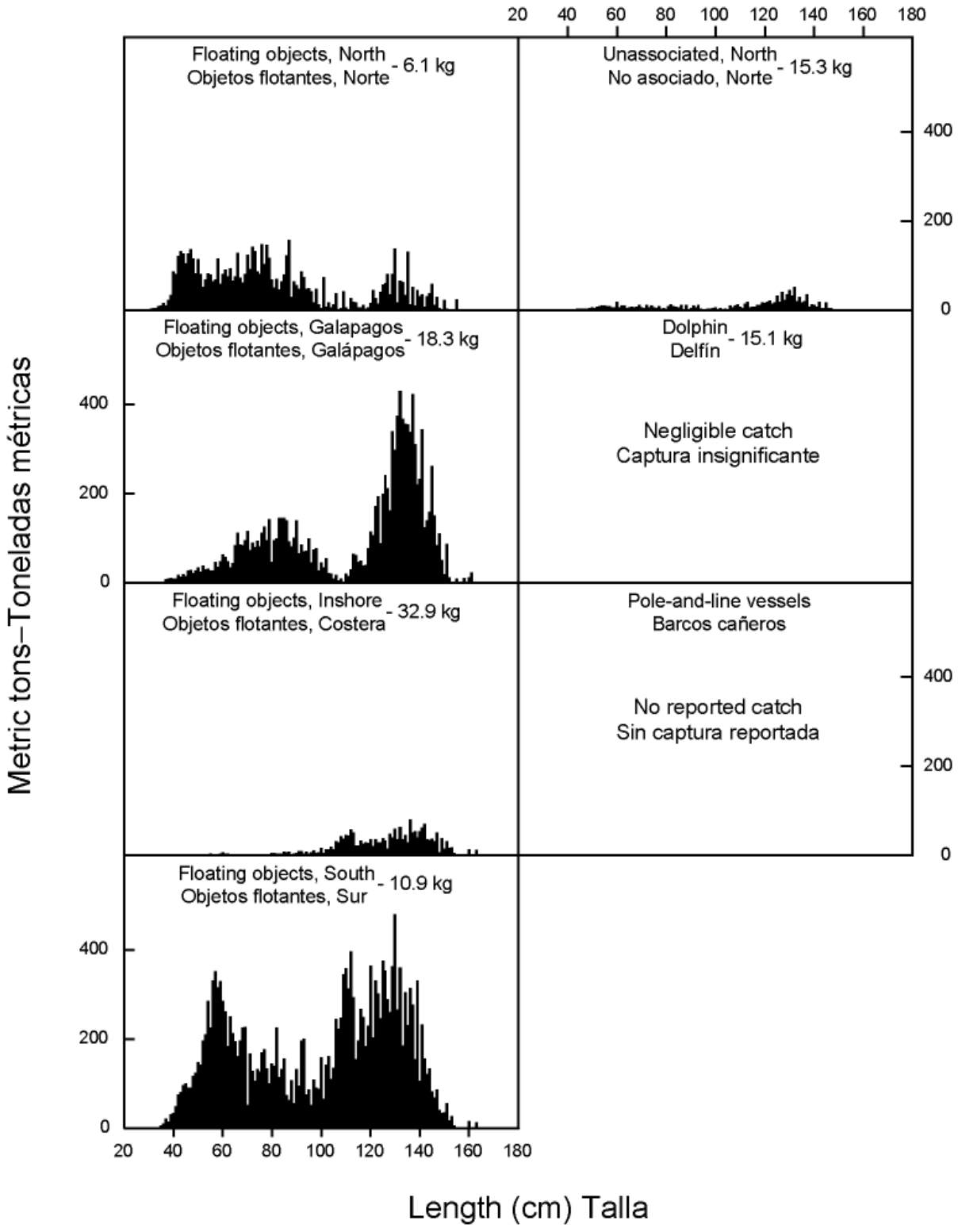

FIGURE 8a. Estimated size compositions of the bigeye caught in each fishery of the EPO during 2001. The average weights of the fish in the samples are given at the tops of the panels.
FIGURA 8a. Composición por tallas estimada para el patudo capturado en cada pesquería del OPO en 2001. En cada recuadro se detalla el peso promedio de los peces en las muestras.

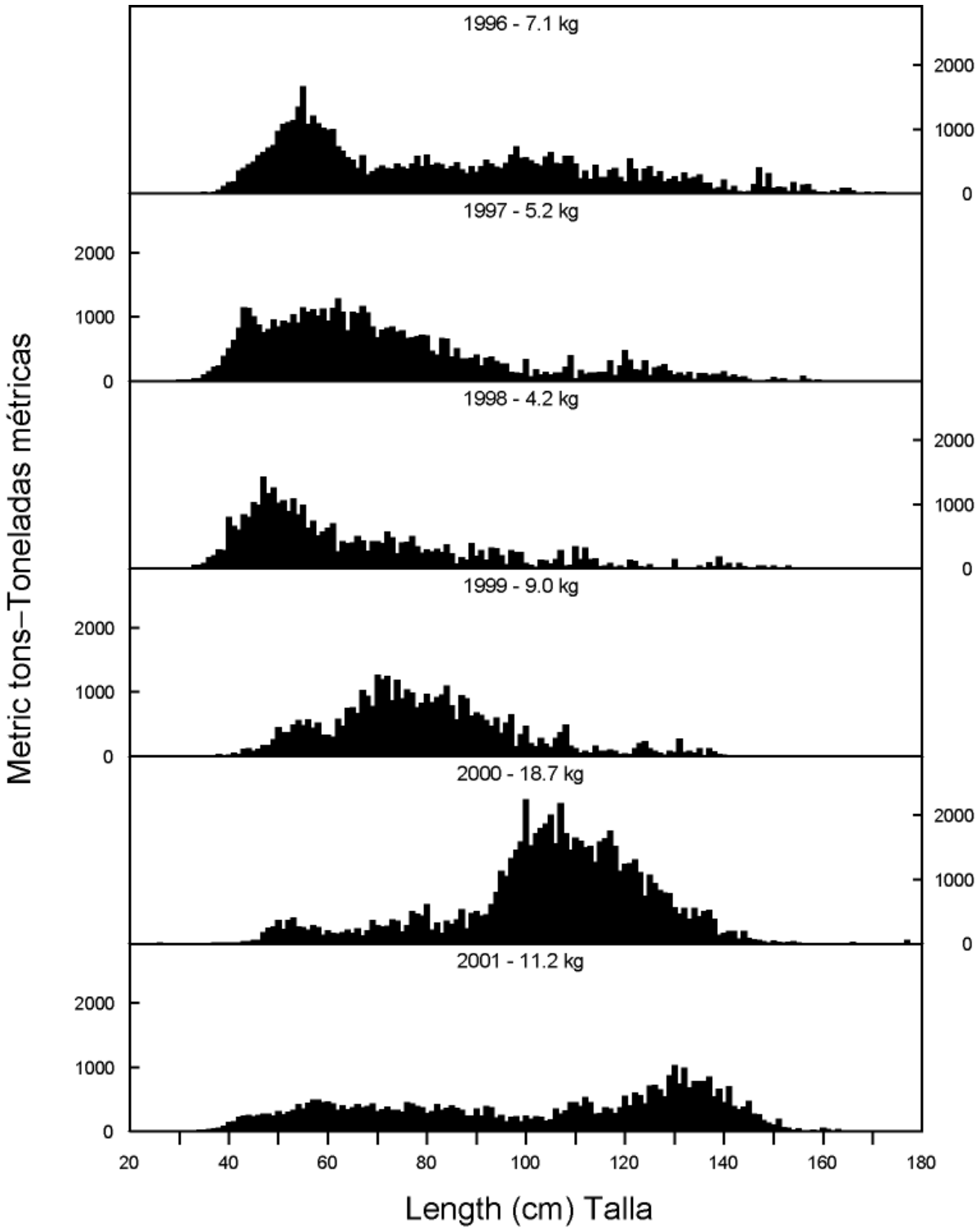

FIGURE 8b. Estimated size compositions of the bigeye caught in the EPO during 1996-2001. The average weights of the fish in the samples are given at the tops of the panels.
FIGURA 8b. Composición por tallas estimada para el patudo capturado en el OPO durante 1996-2001. En cada recuadro se detalla el peso promedio de los peces en las muestras.

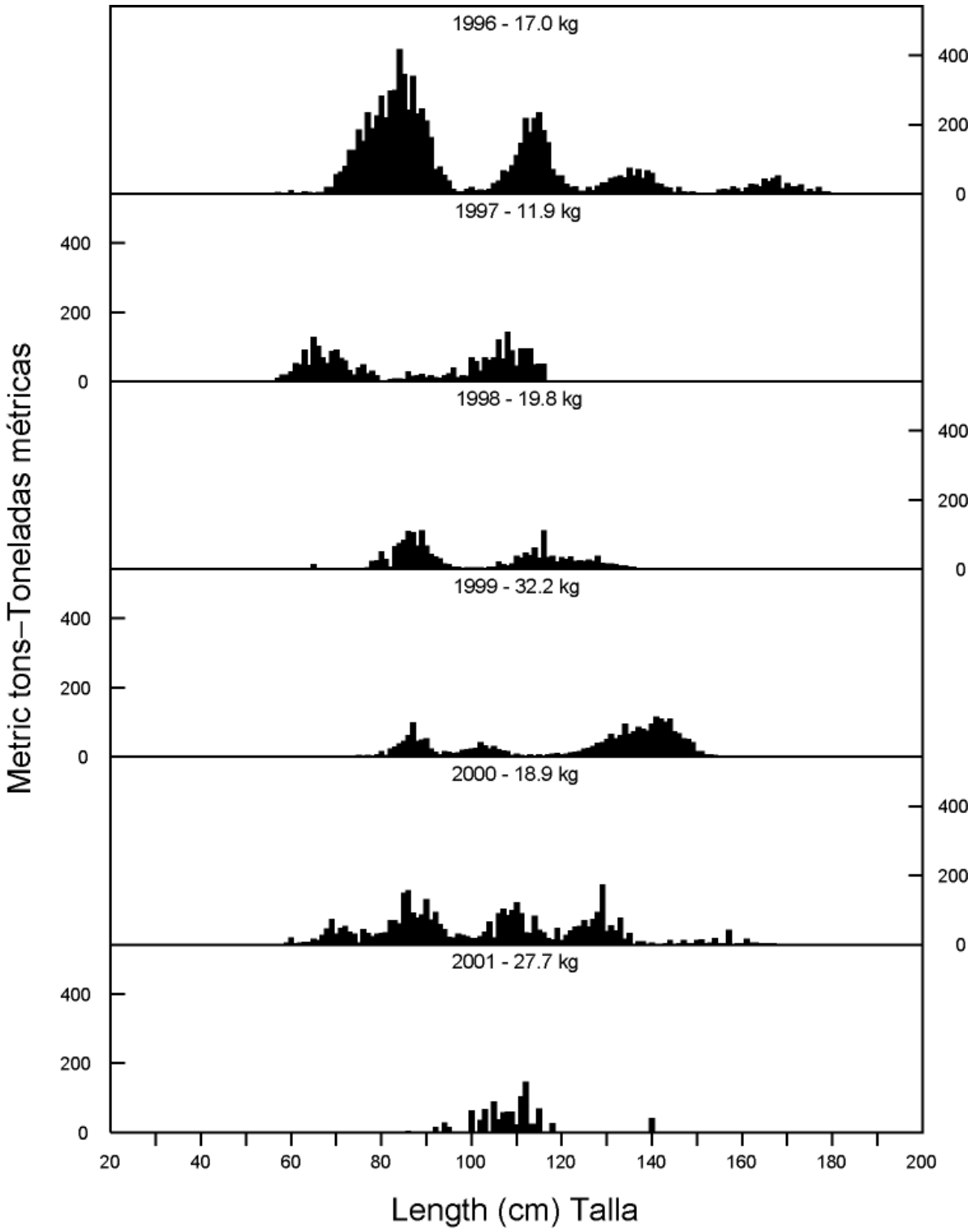

FIGURE 9a. Estimated catches of Pacific bluefin by purse-seine gear in the EPO during 1996-2001. The values at the tops of the panels are the average weights.
FIGURA 9a. Captura estimada de aleta azul del Pacífico por buques cerqueros en el OPO durante 1996-2001. El valor en cada recuadro representa el peso promedio.

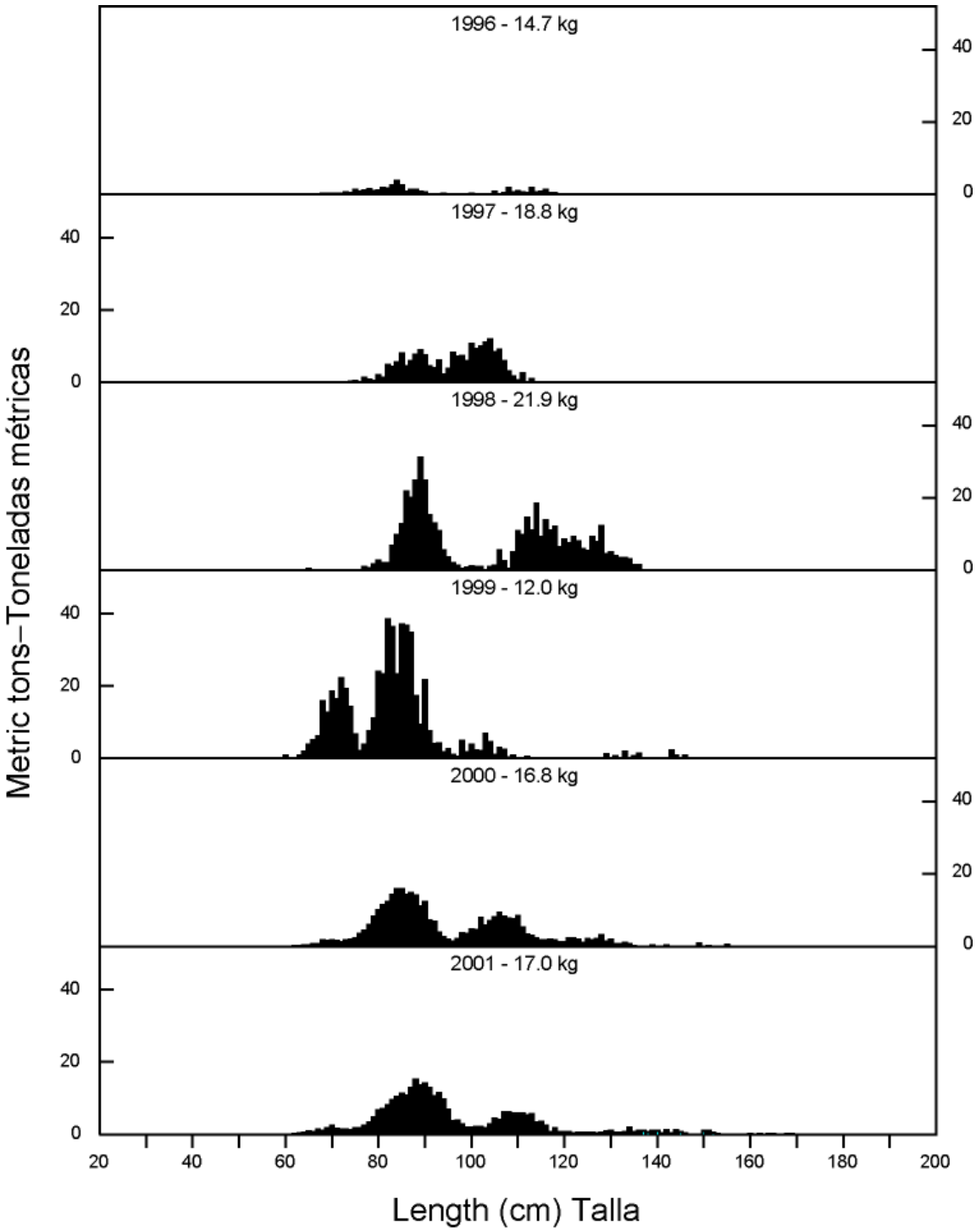

FIGURE 9b. Estimated catches of Pacific bluefin by recreational gear in the EPO during 1996-2001. The values at the tops of the panels are the average weights.
FIGURA 9b. Captura estimada de aleta azul del Pacífico por artes deportivas en el OPO durante 1996-2001. El valor en cada recuadro representa el peso promedio.

TABLE 1. Numbers and carrying capacities, in cubic meters, of purse seiners and pole-and-line vessels of the eastern Pacific Ocean (EPO) tuna fleet. Information for 1950-1960 (in short tons) is given in Table 4 of the IATTC Annual Report for 1988. The data for 2001 are preliminary.
TABLA 1. Número y capacidad de acarreo, en metros cúbicos, de los buques cerqueros y cañeros 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 (en toneladas cortas). Los datos de 2001 son preliminares.

Year	Purse seiners		Pole-and-line vessels		Total	
	Number	Capacity	Number	Capacity	Number	Capacity
Año	Buques cerqueros		Barcos cañeros		Total	
	Número	Capacidad	Número	Capacidad	Número	Capacidad
1961	125	31,896	93	11,171	218	43,068
1962	146	36,477	88	7,132	234	43,609
1963	159	42,782	108	6,350	267	49,132
1964	137	42,877	88	5,016	225	47,893
1965	163	45,332	109	6,144	272	51,476
1966	133	42,494	113	6,612	246	49,106
1967	130	42,899	108	6,234	238	49,133
1968	143	53,858	89	6,104	232	59,962
1969	153	60,641	69	5,268	222	65,909
1970	162	71,689	49	4,569	211	76,258
1971	191	94,423	102	5,916	293	100,338
1972	210	119,418	108	7,123	318	126,540
1973	219	140,150	106	7,279	325	147,429
1974	234	156,203	111	8,246	345	164,450
1975	253	174,016	102	7,862	355	181,879
1976	254	187,512	99	7,508	353	195,020
1977	253	189,967	79	5,766	332	195,733
1978	271	192,259	68	5,352	339	197,610
1979	282	195,494	45	4,223	327	199,717
1980	270	196,476	46	4,072	316	200,548
1981	251	196,484	39	3,249	290	199,733
1982	223	178,234	36	2,877	259	181,111
1983	215	149,404	52	3,681	267	153,085
1984	175	121,650	40	3,245	215	124,895
1985	178	137,814	25	2,574	203	140,387
1986	166	131,806	17	2,060	183	133,867
1987	177	152,351	29	2,376	206	154,727
1988	189	156,636	36	3,274	225	159,910
1989	178	141,956	30	3,135	208	145,091
1990	172	143,946	23	2,044	195	145,990
1991	155	124,501	19	1,629	174	126,131
1992	160	117,017	19	1,612	179	118,629
1993	152	118,730	15	1,543	167	120,272
1994	167	122,214	20	1,725	187	123,939
1995	175	124,096	20	1,784	195	125,880
1996	183	132,731	17	1,639	200	134,370
1997	194	146,533	23	2,105	217	148,637
1998	203	161,560	22	2,217	225	163,777
1999	208	180,009	14	1,642	222	181,651
2000	205	180,808	11	1,229	216	182,037
2001	203	189,430	11	1,291	214	190,721

TABLE 2a. Estimates of the numbers and carrying capacities, in cubic meters, of the purse seiners and pole-and-line vessels 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; PL = pole-and-line vessel.

TABLA 2a. Estimaciones del número y capacidad de acarreo, en metros cúbicos, de los buques cerqueros y cañeros 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; PL = cañero.

Flag	Gear	Size class—Clase de arqueo							Capacity
Bandera	Arte	1	2	3	4	5	6	Total	Capacidad
					Number—Número				
Belize—Belice	PS	-	-	-	1	1	2	4	2,249
Bolivia	PS	-	-	-	-	-	3	3	3,956
Colombia	PS	-	-	2	-	2	5	9	7,127
Ecuador	PS	-	7	13	13	6	36	75	45,888
	PL	1	-	-	-	-	-	-	32
España—Spain	PS	-	-	-	-	-	5	5	11,438
Guatemala	PS	-	-	-	-	-	4	4	7,640
Honduras	PS	-	-	-	-	-	1	1	628
México	PS	-	-	7	3	4	40	54	48,358
	PL	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	PL	2	4	5	-	-	-	11	
	PS+PL	2	14	31	19	15	135	216	
					Capacity—Capacidad				
Grand total	PS	-	984	4,677	5,470	7,166	162,511	180,808	
Total general	PL	85	383	761	-	-	-	1,229	
	PS+PL	85	1,367	5,438	5,470	7,166	162,511	182,037	

TABLE 2b. Preliminary estimates of the numbers and carrying capacities, in cubic meters, of the purse seiners and pole-and-line vessels of the EPO tuna fleet in 2001, 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; PL = pole-and-line vessel.

TABLA 2b. Estimaciones preliminares del número y capacidad de acarreo, en metros cúbicos, de buques cerqueros y cañeros de la flota atunera en el OPO en 2001, 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; PL = cañero.

Flag	Gear	Size class—Clase de arqueo							Capacity
Bandera	Arte	1	2	3	4	5	6	Total	Capacidad
					Number—Número				
Belize—Belice	PS	-	-	-	-	-	2	2	1,850
Bolivia	PS	-	-	-	-	-	5	5	5,830
Colombia	PS	-	-	2	1	2	5	10	7,397
Ecuador	PS	-	5	12	10	7	38	72	48,034
	PL	1	-	-	-	-	-	1	32
El Salvador	PS	-	-	-	-	-	2	2	4,469
España—Spain	PS	-	-	-	-	-	5	5	12,137
Guatemala	PS	-	-	-	-	-	4	4	7,640
Honduras	PS	-	-	-	-	-	3	3	2,254
México	PS	-	-	4	4	9	37	54	47,145
	PL	1	3	6	-	-	-	10	1,259
Nicaragua	PS	-	-	-	-	-	1	1	1,229
Panamá	PS	-	-	2	2	-	6	10	9,517
USA—EE.UU.	PS	-	-	1	-	2	5	8	7,362
Venezuela	PS	-	-	-	-	-	25	25	31,687
Vanuatu	PS	-	-	-	-	-	6	6	7,803
Unknown	PS	-	-	-	1	-	2	3	1,512
Grand total	PS	-	5	21	17	20	140	203	
Total general	PL	2	3	6	-	-	-	11	
	PS+PL	2	8	27	17	20	140	214	
					Capacity—Capacidad				
Grand total	PS	-	453	3,801	4,931	9,166	171,079	189,430	
Total general	PL	85	293	913	-	-	-	1,291	
	PS+PL	85	746	4,714	4,931	9,166	171,079	190,721	

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 2000 and 2001 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 2000 y 2001 son preliminares. En el texto se presenta información adicional sobre esta tabla.

Year	Yellowfin					Skipjack			Bigeye			Bluefin		
	Retained			Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total
	CYRA	Outside	Total											
Año	Aleta amarilla					Barrilete			Patudo			Aleta azul		
	Retenido			Descartado	Total	Retenido	Descartado	Total	Retenido	Descartado	Total	Retenido	Descartado	Total
	ARCAA	Afuera	Total											
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	190,236	46,111	236,347		236,347	126,287		126,287	10,243		10,243	10,645		10,645
1977	182,676	16,140	198,816		198,816	86,337		86,337	7,055		7,055	5,473		5,473
1978	166,045	14,549	180,594		180,594	169,895		169,895	11,759		11,759	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		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	267,592	20,811	288,403		288,403	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	221,702	51,000	272,702	6,815	279,517	211,263	26,364	237,627	70,134	5,624	75,758	4,218	0	4,218
2001	344,060	50,448	394,508	7,918	402,426	144,305	13,518	157,823	43,614	1,262	44,876	1,232	3	1,235

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

Year	Albacore			Bonito			Black skipjack			Others			All species combined		
	Retained	Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total	Retained	Discarded	Total
Año	Albacora			Bonito			Barrilete negro			Otros			Todas las especies		
	Retenido	Descartado	Total	Retenido	Descartado	Total	Retenido	Descartado	Total	Retenido	Descartado	Total	Retenido	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	394,478		394,478
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	377,195		377,195
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	388,608		388,608
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	293	1,885	2,178	388	1,496	1,884	559,754	42,184	601,938
2001	24	0	24	18	0	18	1,760	1,261	3,021	284	766	1,050	585,745	24,728	610,473

TABLE 4a. Estimates of the retained 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 = Pacific bluefin; BEP = bonito; ALB = albacore; BKJ = black skipjack; Misc. = other species, including sharks, other tunas, and miscellaneous fishes.

TABLA 4a. Estimaciones de las capturas retenidas 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 del Pacífico; BEP = bonito; ALB = albacora; BKJ = barrilete negro; Misc. = otras especies, incluyendo tiburones, otros túnidos, y peces diversos.

Flag Bandera	YFT		SKJ	BET	PBF	ALB	BEP	BSJ	Misc.	Total	% of total % del total
	CYRA	Outside									
Retained catches—Capturas retenidas											
Colombia	13,202	3,254	6,293	1,022	-	-	-	-	-	23,771	4.3
Ecuador	33,655	4,578	110,421	27,937	-	-	-	268	98	176,957	31.6
España—Spain	3,144	2,876	16,368	17,482	-	-	-	-	-	39,870	7.1
México	78,331	23,565	16,384	82	3,091	92	428	2	221	122,196	21.8
Panamá	5,735	466	12,477	3,926	-	-	-	10	29	22,643	4.1
U.S.A.—EE.UU.	3,468	1,077	10,669	2,067	1,127	59	177	1	40	18,645	3.3
Venezuela	59,475	10,331	5,118	206	-	-	-	12	-	75,142	13.4
Vanuatu	11,476	2,722	11,037	6,041	-	-	-	-	-	31,276	5.6
Other—Otros[1]	13,216	2,131	22,496	11,371	-	-	-	-	-	49,214	8.8
Total	221,702	51,000	211,263	70,134	4,218	151	605	293	388	559,754	
Landings—Descargas											
Colombia	35,632	9,712	17,530	5,873	-	-	-	10	-	68,757	12.6
Costa Rica	14,533	258	3,936	805	-	-	-	-	-	19,532	3.6
Ecuador	44,123	6,866	132,299	34,073	-	-	-	268	148	217,777	39.9
España—Spain	5,383	2,343	9,401	12,608	-	5	-	-	-	29,740	5.4
México	73,611	22,975	14,930	944	3,030	86	427	6	221	116,230	21.3
U.S.A.—EE.UU.	2,798	1,178	6,951	1,881	796	59	176	2	24	13,865	2.5
Venezuela	25,500	3,204	3,565	52	-	-	-	6	-	32,327	5.9
Other-Otros[2]	15,039	2,207	19,227	11,039	390	-	-	-	-	47,902	8.8
Total	216,619	48,743	207,839	67,275	4,216	150	603	292	393	546,130	

[1] Includes Belize, Bolivia, Guatemala, Honduras, and Nicaragua. This category is used to avoid revealing the operations of individual vessels or companies.
[1] Incluye Belice, Bolivia, Guatemala, Honduras, y Nicaragua. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.
[2] Includes Ghana, Italy, Libya, Peru, and Turkey. This category is used to avoid revealing the operations of individual vessels or companies.
[2] Incluye Ghana, Italia, Libia, Perú, y Turquía. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

TABLE 4b. Preliminary estimates of the retained catches and landings, in metric tons, of tunas caught by surface gear in the EPO in 2001, by species and vessel flag (upper panel) and location where processed (lower panel). YFT = yellowfin; SKJ = skipjack; BET = bigeye; PBF = Pacific 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 retenidas y descargas de atún capturado con artes de superficie en el OPO en 2001, 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; PBT = aleta azul del Pacífico; BEP = bonito; ALB = albacora; BKJ = barrilete negro; Misc. = otras especies, incluyendo tiburones, otros túnidos, y peces diversos

Flag / Bandera	YFT		SKJ	BET	PBF	ALB	BEP	BSJ	Misc.	Total	% of total / % del total
	CYRA	Outside									
Retained catches—Capturas retenidas											
Ecuador	48,851	4,062	70,678	19,980	-	-	-	1,608	269	145,448	24.8
España—Spain	6,282	3,991	20,974	7,199	-	-	-	-	-	38,446	6.6
México	112,139	22,654	8,078	91	786	22	18	-	-	143,788	24.5
Panamá	11,890	1,238	6,586	1,842	-	-	-	-	3	21,559	3.7
U.S.A.—EE.UU.	4,060	1,383	4,137	2,194	446	2	-	73	-	12,295	2.1
Venezuela	100,001	9,708	2,171	53	-	-	-	-	-	111,933	19.1
Vanuatu	9,647	1,029	8,025	3,954	-	-	-	-	-	22,655	3.9
Other—Otros[1]	51,190	6,383	23,656	8,301	-	-	-	79	12	89,621	15.3
Total	344,060	50,448	144,305	43,614	1,232	24	18	1,760	284	585,745	
Landings—Descargas											
Colombia	29,030	2,300	6,472	2,017	-	-	-	-	-	39,819	6.7
Costa Rica	25,298	541	2,037	548	-	-	-	-	-	28,424	4.8
Ecuador	89,617	10,260	98,011	31,545	-	-	-	1,687	284	231,404	39.2
España—Spain	5,628	2,133	5,351	2,378	-	-	-	-	-	15,490	2.6
México	108,183	22,267	8,109	90	785	21	17	-	-	139,472	23.6
U.S.A.—EE.UU.	397	364	1,236	464	446	2	-	72	-	2,981	0.5
Venezuela	25,064	2,223	702	-	-	-	-	-	-	27,989	4.7
Other-Otros[2]	63,497	11,157	23,349	7,188	-	-	-	-	-	105,191	17.8
Total	346,714	51,245	145,267	44,230	1,231	23	17	1,759	284	590,770	

[1] Includes Belize, Bolivia, Colombia, El Salvador, Guatemala, Honduras, Nicaragua, and unidentified. This category is used to avoid revealing the operations of individual vessels or companies.

[1] Incluye Belice, Bolivia, Colombia, El Salvador, Guatemala, Honduras, Nicaragua, y no identificados. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

[1] Includes Peru and unidentified. This category is used to avoid revealing the operations of individual vessels or companies.

[1] Incluye Perú y no identificados. 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 retained 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 retenidas estimadas, en toneladas métricas, de atunes aleta amarilla, barrilete, y patudo en el OPO. Los datos de 2000 son preliminares.

Year	Sets on fish associated with dolphins					
	Number of sets			Catch		
	Classes 1-5	Class 6	Total	Yellowfin	Skipjack	Bigeye
Año	Lances sobre peces asociados con delfines					
	Número de lances			Captura		
	Clases 1-5	Clase 6	Total	Aleta amarilla	Barrilete	Patudo
1987	33	13,286	13,319	190,431	332	20
1988	41	11,160	11,201	157,174	4,898	0
1989	29	12,827	12,856	194,845	1,447	0
1990	29	10,997	11,026	179,254	867	0
1991	0	9,661	9,661	159,259	786	38
1992	26	10,398	10,424	169,348	869	0
1993	34	6,953	6,987	110,046	714	97
1994	3	7,804	7,807	125,380	516	0
1995	0	7,185	7,185	131,934	1,032	0
1996	2	7,472	7,474	137,256	729	0
1997	35	8,977	9,012	156,163	6,004	35
1998	0	10,645	10,645	151,677	2,879	66
1999	0	8,648	8,648	143,144	1,077	0
2000	1	9,235	9,236	155,127	484	0
2001	0	9,577	9,577	235,492	1,352	12

Year	Sets on fish associated with floating objects					
	Number of sets			Catch		
	Classes 1-5	Class 6	Total	Yellowfin	Skipjack	Bigeye
Año	Lances sobre peces asociados con objetos flotantes					
	Número de lances			Captura		
	Clases 1-5	Clase 6	Total	Aleta amarilla	Barrilete	Patudo
1987	1,314	1,813	3,127	27,189	32,160	562
1988	813	2,281	3,094	23,933	35,950	569
1989	960	2,339	3,299	28,362	41,452	1,215
1990	718	2,558	3,276	34,248	34,980	3,359
1991	802	2,165	2,967	23,758	37,655	1,950
1992	873	1,763	2,636	13,058	45,556	1,154
1993	498	2,063	2,561	15,964	48,144	4,547
1994	619	2,770	3,389	17,360	47,991	27,472
1995	669	3,521	4,190	20,569	81,253	32,765
1996	1,197	4,007	5,204	31,839	74,260	48,253
1997	1,662	5,652	7,314	27,623	123,002	50,226
1998	1,198	5,481	6,679	31,271	115,370	31,332
1999	623	4,620	5,243	39,165	181,817	36,072
2000	516	3,916	4,432	42,396	121,049	67,281
2001	698	5,659	6,357	64,628	121,711	42,352

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

Year	Sets on fish in unassociated schools					
	Number of sets			Catch		
	Classes 1-5	Class 6	Total	Yellowfin	Skipjack	Bigeye
Año	Lances sobre peces en cardúmenes no asociados					
	Número de lances			Captura		
	Clases 1-5	Clase 6	Total	Aleta amarilla	Barrilete	Patudo
1987	1,804	3,981	5,785	49,400	26,303	194
1988	4,161	7,536	11,697	102,042	39,536	481
1989	2,925	5,878	8,803	60,228	46,332	255
1990	3,656	5,397	9,053	56,548	35,788	1,351
1991	3,577	3,612	7,189	52,772	22,958	1,726
1992	4,160	4,079	8,239	53,506	35,333	4,344
1993	5,708	6,267	11,975	100,974	34,865	3,423
1994	5,407	5,064	10,471	72,764	22,916	1,903
1995	6,021	4,782	10,803	69,984	50,715	4,561
1996	5,719	5,118	10,837	77,342	34,635	3,100
1997	5,294	4,694	9,988	69,657	29,510	1,354
1998	5,645	4,631	10,276	77,642	25,108	3,758
1999	5,552	6,143	11,695	111,677	81,150	4,539
2000	6,023	5,482	11,505	72,761	89,491	2,854
2001	4,635	2,973	7,608	90,485	20,795	1,252

Year	Sets on all types of schools					
	Number of sets			Catch		
	Classes 1-5	Class 6	Total	Yellowfin	Skipjack	Bigeye
Año	Lances sobre todos tipos de cardumen					
	Número de lances			Captura		
	Clases 1-5	Clase 6	Total	Aleta amarilla	Barrilete	Patudo
1987	3,151	19,080	22,231	267,020	58,795	776
1988	5,015	20,977	25,992	283,148	80,383	1,050
1989	3,914	21,044	24,958	283,436	89,231	1,471
1990	4,403	18,952	23,355	270,050	71,635	4,710
1991	4,379	15,438	19,817	235,789	61,399	3,713
1992	5,059	16,240	21,299	235,912	81,758	5,498
1993	6,240	15,283	21,523	226,984	83,723	8,068
1994	6,029	15,638	21,667	215,505	71,423	29,375
1995	6,690	15,488	22,178	222,488	133,000	37,327
1996	6,918	16,597	23,515	246,437	109,624	51,353
1997	6,991	19,323	26,314	253,443	158,515	51,615
1998	6,843	20,757	27,600	260,591	143,357	35,156
1999	6,175	19,411	25,586	293,986	264,043	40,611
2000	6,540	18,633	25,173	270,284	211,024	70,135
2001	5,333	18,209	23,542	390,606	143,857	43,616

TABLE 6. Preliminary estimates of commercial catches, in metric tons, 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 6. Estimaciones preliminares de las capturas comerciales, en toneladas métricas, 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	Swordfish		Blue marlin		Black marlin		Striped marlin		Shortbill spearfish		Sailfish	
	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	Palangre	Superficie	Palangre	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	

TABLE 7a. Annual retained catches of yellowfin tuna, in thousands of metric tons. JPN: Japan; KOR: Republic of Korea; TWN: Taiwan; WCPO = western and central Pacific Ocean.
TABLA 7a. Capturas retenidas anuales de atún aleta amarilla, en miles de toneladas métricas. JPN: Japón; KOR: República de Corea; TWN: Taiwan; OPOC = Océano Pacífico occidental y central.

Year	Pacific Ocean									Atlantic Ocean[5]	Indian Ocean[6]	Total
	Eastern							WCPO[3]	Total[4]			
	Surface[1]	Longline[2]					Total					
		JPN	KOR	TWN	Others	Total						
Año	Océano Pacífico											
	Oriental							OPOC[3]	Total[4]	Oceáno Atlántico[5]	Oceáno Indico[6]	Total
	Superficie[1]	Palangre[2]					Total					
		JPN	KOR	TWN	Otros	Total						
1970	155.6	13.8	*	0.1	0.0	13.9	169.5	89.4	259.0	74.3	41.1	374.4
1971	122.8	7.4	*	0.3	0.0	7.7	130.5	81.0	211.5	73.8	40.6	325.9
1972	177.1	16.0	*	0.5	0.0	16.5	193.7	105.7	299.4	94.1	42.1	435.5
1973	205.3	11.4	*	0.3	0.0	11.7	217.0	127.8	344.8	95.1	33.7	473.6
1974	210.4	6.9	*	0.3	0.0	7.2	217.5	133.6	351.1	107.1	36.0	494.3
1975	202.1	10.3	0.2	0.3	0.0	10.8	213.0	134.1	347.0	124.8	35.4	507.3
1976	236.3	15.0	0.4	0.2	0.0	15.6	251.9	145.0	396.9	125.0	35.4	557.2
1977	198.8	11.2	0.8	0.1	0.0	12.1	210.9	166.6	377.5	131.0	56.5	565.0
1978	180.6	9.2	0.8	0.1	0.0	10.1	190.7	183.2	373.9	134.0	46.1	554.1
1979	189.7	10.9	0.4	0.1	0.0	11.4	201.1	187.0	388.1	127.5	39.9	555.5
1980	159.4	11.5	1.9	0.1	0.0	13.5	173.0	200.4	373.4	131.0	35.1	539.5
1981	181.8	7.1	0.8	0.1	0.0	8.0	189.8	196.0	385.8	155.8	37.6	579.2
1982	125.1	9.8	1.1	0.1	0.0	11.0	136.0	221.6	357.6	165.0	51.9	574.5
1983	94.3	9.4	1.4	0.0	0.1	10.9	105.2	257.5	362.6	165.4	61.6	589.6
1984	145.1	9.1	1.2	0.0	0.0	10.3	155.4	229.2	384.6	113.9	100.8	599.4
1985	217.0	10.6	2.5	0.0	0.0	13.1	230.1	214.3	444.4	156.5	120.6	721.6
1986	268.3	17.8	4.8	0.1	0.1	22.7	291.0	208.9	499.9	146.5	141.0	787.5
1987	272.2	13.5	4.1	0.1	0.3	18.0	290.3	273.5	563.8	144.4	157.1	865.4
1988	288.4	12.5	0.5	0.0	0.3	13.3	301.7	256.8	558.5	135.2	212.0	905.7
1989	289.4	15.3	0.3	0.2	0.0	15.8	305.2	288.4	593.6	161.3	212.2	967.2
1990	273.3	29.3	0.9	0.3	0.0	30.5	303.8	319.6	623.4	192.5	264.6	1080.5
1991	239.1	23.7	1.6	0.3	0.2	25.8	264.9	333.1	598.0	166.2	245.4	1009.5
1992	239.8	15.3	0.8	0.0	0.1	16.2	256.1	388.4	644.5	162.3	317.3	1124.1
1993	232.1	20.3	3.6	0.1	0.2	24.2	256.3	363.0	619.3	160.1	397.7	1177.1
1994	219.3	26.0	2.3	0.2	0.8	29.4	248.6	383.9	632.5	170.5	310.8	1113.9
1995	223.8	17.0	2.0	0.0	0.7	19.8	243.5	326.7	570.3	152.0	319.1	1041.4
1996	250.2	12.6	1.8	0.0	0.6	15.0	265.2	252.7	517.9	153.4	310.8	982.1
1997	257.8	13.6	2.8	0.1	1.0	17.5	275.4	406.9	682.2	138.2	284.7	1105.1
1998**	265.7	10.0	*	0.1	1.5	11.7	277.4	399.5	676.9	148.0	272.4	1097.4
1999**	296.9	7.4	*	*	1.7	9.2	306.1	358.6	664.7	143.9	301.9	1110.5
2000**	272.7	15.0	*	*	*	15.0	287.7	343.0	630.8	135.2	*	766.0
2001**	394.5	13.3	*	*	*	13.3	407.8	*	*	*	*	*

[1] Source: Table 3—Fuente: Tabla 3
[2] 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.
[2] 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.
[3] Source: Column 10 - Column 8—Fuente: Columna 10 - Columna 8
[4] Source: FAO data set for Fishstat+—Fuente: datos de FAO para Fishstat+
[5] Source: ICCAT data set for Fishstat+—Fuente: datos de CICAA para Fishstat+
[6] Source: IOTC data set for Fishstat+— Fuente: datos de CTOI para Fishstat+
* not available—no disponible
**preliminary—preliminares

TABLE 7b. Annual retained catches of skipjack tuna, in thousands of metric tons. WCPO = western and central Pacific Ocean.
TABLA 7b. Capturas retenidas anuales de atún barrilete, en miles de toneladas métricas. OPOC = Océano Pacífico occidental y central.

Year	Eastern Pacific[1]	WCPO[2]	Total Pacific[3]	Atlantic[4]	Indian[5]	Total
Año	**Pacífico oriental[1]**	**OPOC[2]**	**Pacífico total[3]**	**Atlántico[4]**	**Indico[5]**	**Total**
1970	56.0	258.5	314.5	50.3	46.9	411.7
1971	104.7	246.6	351.3	78.4	45.2	474.9
1972	33.4	311.1	344.5	77.4	40.3	462.2
1973	44.0	402.2	446.2	78.4	43.0	567.6
1974	78.8	445.9	524.7	117.3	55.0	697.0
1975	123.9	344.5	468.4	56.0	42.2	566.6
1976	126.3	432.4	558.7	69.3	43.8	671.9
1977	86.3	420.0	506.4	110.6	35.7	652.6
1978	169.9	531.3	701.2	108.1	34.3	843.6
1979	132.0	469.5	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	651.0	709.2	135.0	64.7	908.9
1984	60.6	770.9	831.4	126.8	106.5	1,064.7
1985	49.5	610.5	659.9	118.7	133.6	912.2
1986	63.6	751.2	814.8	122.2	148.2	1,085.2
1987	62.3	687.0	749.4	114.6	161.5	1,025.4
1988	85.3	851.9	937.2	140.0	197.9	1,275.1
1989	92.4	772.7	865.0	116.1	246.7	1,227.8
1990	72.6	867.3	939.9	138.7	226.0	1,304.5
1991	63.3	1,194.8	1,258.0	213.8	242.5	1,714.4
1992	84.0	924.8	1,008.8	161.4	268.2	1,438.3
1993	87.4	921.9	1,009.3	192.4	284.2	1,485.9
1994	74.5	988.0	1,062.5	175.5	319.7	1,557.8
1995	138.2	1,046.4	1,184.7	161.6	313.6	1,659.9
1996	112.2	1,040.6	1,152.8	150.3	280.0	1,583.1
1997	161.8	1,010.6	1,172.4	144.4	288.2	1,605.1
1998	145.0	1,281.5	1,426.5	147.7	309.5	1,883.7
1999**	268.0	1,157.7	1,425.7	166.4	399.3	1,991.5
2000**	211.3	1,210.8	1,422.1	139.3	*	1,561.4
2001**	144.3	*	*	*	*	*

[1] Source: Table 3—Fuente: Tabla 3
[2] Column 4 - Column 2—Columna 4 - Columna 2
[3] Source: FAO data set for Fishstat+—Fuente: datos de FAO para Fishstat+
[4] Source: ICCAT data set for Fishstat+—Fuente: datos de ICCAT para Fishstat+
[5] Source: IOTC data set for Fishstat+—Fuente: datos de IOTC para Fishstat+
* not available—no disponible
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TABLE 7c. Annual retained catches of bigeye tuna, in thousands of metric tons. JPN: Japan; KOR: Republic of Korea; TWN: Taiwan; WCPO = western and central Pacific Ocean.
TABLA 7c. Capturas retenidas anuales de atún patudo, en miles de toneladas métricas. JPN: Japón; KOR: República de Corea; TWN: Taiwan; OPOC = Océano Pacífico occidental y central.

Year	Pacific Ocean									Atlantic Ocean[5]	Indian Ocean[6]	Total
	Eastern							WCPO[3]	Total[4]			
	Surface[1]	Longline[2]				Total						
		JPN	KOR	TWN	Others	Total						
Año	Océano Pacífico									Oceáno Atlántico[5]	Oceáno Indico[6]	Total
	Oriental							OPOC[3]	Total[4]			
	Superficie[1]	Palangre[2]					Total					
		JPN	KOR	TWN	Otros	Total						
1970	1.3	31.8	*	0.7	0.4	32.9	34.2	50.0	84.2	42.3	24.9	151.5
1971	2.6	28.9	*	1.7	0.3	30.9	33.5	32.5	66.0	55.8	20.4	142.2
1972	2.2	35.1	*	2.4	0.8	38.3	40.6	47.2	87.7	47.2	18.8	153.7
1973	2.0	49.7	*	1.2	1.3	52.2	54.2	36.2	90.4	57.0	15.8	163.2
1974	0.9	36.0	*	0.9	0.6	37.5	38.4	49.6	87.9	64.1	26.3	178.3
1975	3.7	40.7	0.6	0.5	0.4	42.2	46.0	57.1	103.1	61.3	35.8	200.2
1976	10.2	52.8	1.2	0.4	0.2	54.6	64.9	64.1	129.0	45.3	27.4	201.7
1977	7.1	70.0	3.5	0.4	0.2	74.1	81.2	63.8	145.0	54.9	33.9	233.8
1978	11.8	67.2	3.0	0.3	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	62.0	2.2	1.3	0.6	66.1	81.5	51.0	132.5	63.6	33.8	229.9
1981	10.1	50.0	3.0	0.6	0.4	54.0	64.1	40.1	104.2	67.8	34.5	206.5
1982	4.1	50.2	3.0	0.4	0.1	53.7	57.8	51.6	109.4	73.5	43.2	226.2
1983	3.3	57.2	2.6	0.2	0.1	60.1	63.3	48.1	111.4	59.4	48.1	218.9
1984	5.9	44.6	1.6	0.2	0.0	46.5	52.4	51.4	103.8	71.1	40.9	215.8
1985	4.5	61.6	4.5	0.2	0.0	66.3	70.8	53.9	124.7	78.2	49.2	252.1
1986	1.9	92.0	10.2	0.1	0.1	102.4	104.4	46.2	150.5	65.4	56.3	272.3
1987	0.8	87.9	9.8	0.6	0.4	98.6	99.4	49.6	149.0	56.0	63.0	268.0
1988	1.1	66.0	1.6	0.4	0.4	68.5	69.5	50.4	119.9	65.8	71.8	257.4
1989	1.5	67.5	1.1	0.1	0.5	69.2	70.7	54.9	125.6	78.1	62.3	266.0
1990	4.7	86.1	4.2	0.1	0.3	90.7	95.4	67.2	162.6	84.3	68.0	315.0
1991	3.7	85.0	4.5	0.0	0.2	89.8	93.5	50.1	143.6	95.9	68.1	307.6
1992	5.5	74.5	2.5	0.0	0.1	77.1	82.6	75.8	158.4	99.0	64.3	321.8
1993	8.1	63.2	10.7	0.1	0.2	74.2	82.3	47.6	129.9	112.2	92.5	334.5
1994	29.4	61.5	7.3	0.4	0.3	69.4	98.8	47.5	146.3	132.2	95.4	374.0
1995	37.3	49.0	6.6	0.4	0.0	56.0	93.4	46.7	140.1	126.3	115.5	381.9
1996	51.4	36.7	5.4	0.5	0.1	42.7	94.0	38.9	132.9	121.5	122.9	377.4
1997	51.6	32.9	6.8	0.3	0.1	40.1	91.8	71.4	163.2	106.8	132.6	402.6
1998**	35.2	35.8	*	0.1	0.2	36.1	71.2	82.0	153.3	109.8	140.8	403.9
1999**	41.2	22.5	*	0.1	*	22.6	63.8	92.8	156.6	123.8	143.5	423.9
2000**	70.1	26.6	*	*	*	26.6	96.7	92.9	189.6	100.0	*	*
2001**	43.6	32.3	*	*	*	32.3	75.9	*	*	*	*	*

[1] Source: Table 3—Fuente: Tabla 3
[2] 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.
[2] 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.
[3] Source: Column 10 - Column 8—Fuente: Columna 10 - Columna 8
[4] Source: FAO data set for Fishstat+—Fuente: datos de FAO para Fishstat+
[5] Source: ICCAT data set for Fishstat+—Fuente: datos de CICAA para Fishstat+
[6] Source: IOTC data set for Fishstat+— Fuente: datos de CTOI para Fishstat+
* not available—no disponible
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TABLE 7d. Annual retained catches of Pacific bluefin, in metric tons.
TABLA 7d. Capturas retenidas anuales de aleta azul del Pacífico, en toneladas métricas.

Year	Western Pacific nations[1]			Eastern Pacific nations				Total
	Surface	Longline	Subtotal	Surface		Longline[4]	Subtotal	
				Commercial[2]	Recreational[3]			
Año	Naciones de Pacífico occidental[1]			Naciones de Pacífico oriental				Total
	Superficie	Palangre	Subtotal	Superficie		Palangre[4]	Subtotal	
				Comercial[2]	Deportiva[3]			
1970	7,505	1,123	8,629	3,951	15		3,966	12,595
1971	8,672	757	9,428	8,354	6		8,360	17,788
1972	7,951	724	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	520	9,705	10,628	17		10,645	20,350
1977	12,618	712	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**	*	*	*	3,874	344	*	4,218	*
2001**	*	*	*	929	303	*	*	*

[1] 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.

[1] 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.

[2] Source: Table 3 minus recreational catch—Fuente: Tabla 3, menos la captura deportiva.

[3] 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, unpublished data; 1993-1999, Calif. Coop. Ocean. Fish. Inves., Rep., 35-41.

[3] 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.

[4] 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.

[4] 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.

* not available—no disponible

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