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THE FISHERY FOR TUNAS AND BILLFISHES IN THE EASTERN
PACIFIC OCEAN IN 2007

INTRODUCTION

This report provides a summary of the fishery for tunas in the eastern Pacific Ocean (EPO) in 2007. It is based on data available to the IATTC staff in March 2008.

All weights of catches and discards are in metric tons (t). In the tables, 0 means no effort or catch <0.5 t; - means no data collected; * means data missing or not available. The following abbreviations are used:

Species:

ALB	Albacore tuna (<i>Thunnus alalunga</i>)
BET	Bigeye tuna (<i>Thunnus obesus</i>)
BIL	Unidentified istiophorid billfishes
BKJ	Black skipjack (<i>Euthynnus lineatus</i>)
BLM	Black marlin (<i>Makaira indica</i>)
BUM	Blue marlin (<i>Makaira nigricans</i>)
BZX	Bonito (<i>Sarda</i> spp.)
CAR	Chondrichthyes, cartilaginous fishes nei ¹
CGX	Carangids (Carangidae)
DOX	Dorado (<i>Coryphaena</i> spp.)
MLS	Striped marlin (<i>Tetrapturus audax</i>)
MZZ	Osteichthyes, marine fishes nei
PBF	Pacific bluefin tuna (<i>Thunnus orientalis</i>)
SFA	Indo-Pacific sailfish (<i>Istiophorus platypterus</i>)
SKJ	Skipjack tuna (<i>Katsuwonus pelamis</i>)
SKX	Unidentified elasmobranchs
SSP	Shortbill spearfish (<i>Tetrapturus angustirostris</i>)
SWO	Swordfish (<i>Xiphias gladius</i>)
TUN	Unidentified tunas
YFT	Yellowfin tuna (<i>Thunnus albacares</i>)

Set types:

DEL	Dolphin
NOA	Unassociated school
OBJ	Floating object
	FLT: Flotsam
	FAD: Fish-aggregating device

Fishing gears:

FPN	Trap
GN	Gillnet
HAR	Harpoon
LL	Longline
LP	Pole and line
LTL	Troll
LX	Hook and line
OTR	Other ²
NK	Unknown
PS	Purse seine
RG	Recreational
TX	Trawl

Ocean areas:

EPO	Eastern Pacific Ocean
WCPO	Western and Central Pacific Ocean

Stock assessment:

MSY	Maximum sustainable yield
B	Biomass
C	Catch
CPUE	Catch per unit of effort
F	Coefficient of fishing mortality
S	Index of spawning biomass
SBR	Spawning biomass ratio
SSB	Spawning stock biomass

¹ not elsewhere included

² Used to group known gear types

Flags:

BLZ	Belize
BOL	Bolivia
CAN	Canada
CHL	Chile
CHN	China
COK	Cook Islands
COL	Colombia
CRI	Costa Rica
ECU	Ecuador
ESP	Spain
GTM	Guatemala
HND	Honduras
JPN	Japan
KOR	Republic of Korea
MEX	Mexico
NIC	Nicaragua
PAN	Panama
PER	Peru
PYF	French Polynesia
SLV	El Salvador
TWN	Chinese Taipei
UNK	Unknown
USA	United States of America
VEN	Venezuela
VUT	Vanuatu

A. THE FISHERY FOR TUNAS AND BILLFISHES IN THE EASTERN PACIFIC OCEAN

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This section summarizes the fisheries for species covered by the IATTC Convention (tunas and other fishes caught by tuna-fishing vessels) in the eastern Pacific Ocean (EPO). The most important of these are the scombrids (Family Scombridae), which include tunas, bonitos, seerfishes, and mackerels. The principal species of tunas caught are yellowfin, skipjack, bigeye, and albacore, with lesser catches of Pacific bluefin, black skipjack, and frigate and bullet tunas; other scombrids, such as bonitos and wahoo, are also caught.

This report also covers other species caught by tuna-fishing vessels in the EPO: billfishes (swordfish, marlins, shortbill spearfish, and sailfish) carangids (yellowtail, rainbow runner, and jack mackerel), dorado, elasmobranchs (sharks, rays, and skates), and other fishes.

Most of the catches are made by the purse-seine and longline fleets; the pole-and-line fleet and various artisanal and recreational fisheries account for a small percentage of the total catches.

Detailed data are available for the purse-seine and pole-and-line fisheries; the data for the longline, artisanal, and recreational fisheries are incomplete.

The IATTC Regional Vessel Register contains details of vessels authorized to fish for tunas in the EPO. The IATTC has detailed records of most of the purse-seine and pole-and-line vessels that fish for yellowfin, skipjack, bigeye, and/or Pacific bluefin tuna in the EPO. The Register is incomplete for small vessels. It contains records for most large (overall length >24 m) longline vessels that fish in the EPO and in other areas.

The data in this report are derived from various sources, including vessel logbooks, observer data, unloading records provided by canners and other processors, export and import records, reports from governments and other entities, and estimates derived from the species and size composition sampling program.

1. CATCHES AND LANDINGS OF TUNAS, BILLFISHES, AND ASSOCIATED SPECIES

Estimating the total catch of a species of fish is difficult, for various reasons. Some fish are discarded at sea, and the data for some gear types are incomplete. Data for fish discarded at sea by purse-seine vessels with carrying capacities greater than 363 metric tons (t) have been collected by observers since 1993, which allows for better estimation of the total amounts of fish caught by the purse-seine fleet. Estimates of the total amount of the catch that is landed (hereafter referred to as the retained catch) are based principally on data from unloadings. Beginning with Fishery Status Report 3, which reports on the fishery in 2004, the unloading data for purse-seine and pole-and-line vessels have been adjusted, based on the species composition estimates for yellowfin, skipjack, and bigeye tunas. The current species composition sampling program, described in Section 1.3.1, began in 2000, so the catch data for 2000-

2007 are adjusted, based on estimates obtained for each year, by flag. The catch data for the previous years were adjusted by applying the average ratio by species from the 2000-2004 estimates, by flag, and summing over all flags. This has tended to increase the estimated catches of bigeye and decrease those of yellowfin and/or skipjack. These adjustments are all preliminary, and may be improved in the future. All of the purse-seine and pole-and-line data for 2007 are preliminary.

Data on the retained catches of most of the larger longline vessels are obtained from the governments of the nations that fish for tunas in the EPO. Longline vessels, particularly the larger ones, direct their effort primarily at bigeye, yellowfin, albacore, or swordfish. Data from smaller longliners, artisanal vessels, and other vessels that fish for tunas, billfishes, dorado, and sharks in the EPO were gathered either directly from the governments, from logbooks, or from reports published by the governments. Data for the western and central Pacific Ocean (WCPO) were provided by the Ocean Fisheries Programme of the Secretariat of the Pacific Community (SPC). All data for catches in the EPO by longlines and other gears for 2006 and 2007 are preliminary.

The data from all of the above sources are compiled in a database by the IATTC staff and summarized in this report. In recent years, the IATTC staff has increased its effort toward compiling data on the catches of tunas, billfishes, and other species caught by other gear types, such as trollers, harpooners, gillnetters, and recreational vessels. The estimated total catches from all sources mentioned above of yellowfin, skipjack, and bigeye in the entire Pacific Ocean are shown in Table A-1, and are discussed further in the sections below.

Estimates of the annual retained and discarded catches of tunas and other species taken by tuna-fishing vessels in the EPO during 1978-2007 are shown in Table A-2. The catches of tunas and bonitos by all gears during 2003-2007, by gear and flag, are shown in Tables A-3a-e, and the purse-seine and pole-and-line catches and the recreational landings of tunas and bonitos during 2006-2007 are summarized by flag in Tables A-4a-b. There were no restrictions on fishing for tunas in the EPO during 1988-1997, but the catches of most species have been affected by restrictions on fishing during some or all of the last six months of 1998-2007. Furthermore, regulations placed on purse-seine vessels directing their effort at tunas associated with dolphins have affected the way these vessels operate, especially since the late 1980s, as discussed in Section 3.

The catches have also been affected by climate perturbations, such as the major El Niño events that occurred during 1982-1983 and 1997-1998. These events made the fish less vulnerable to capture by purse seiners due to the greater depth of the thermocline, but had no apparent effect on the longline catches. Yellowfin recruitment tends to be greater after an El Niño event. The effects of El Niño events and other environmental conditions on the fisheries of the EPO are discussed further in Section J.5, **PHYSICAL ENVIRONMENT**.

1.1. Catches by species

1.1.1. Yellowfin tuna

The annual catches of yellowfin during 1978-2007 are shown in Table A-1. Overall, the catches in both the EPO and WCPO have increased during this period. In the EPO, the El Niño event of 1982-1983 led to a reduction in the catches in those years, whereas the catches in the WCPO were apparently not affected. Although the El Niño episode of 1997-1998 was greater in scope, it did not have the same effect on the yellowfin catches in the EPO. The catch of yellowfin in the EPO, in 2002, 444 thousand t, was the greatest on record, but in 2004, 2005, and 2006 it decreased substantially, and the catch during 2007, 171 thousand t, was the lowest since 1984. In the WCPO, the catches of yellowfin reached 353 thousand t in 1990, peaked at 457 thousand t in 1998, and remained high through 2003; they fell to 362 thousand t in 2004, increased in 2005 to 436 thousand t, and in 2006 fell to 400 thousand t.

The annual retained catches of yellowfin in the EPO by purse-seine and pole-and-line vessels during 1978-2007 are shown in Table A-2a. The average annual retained catch during 1992-2006 was 271 thousand t (range: 167 to 413 thousand t). The preliminary estimate of the retained catch in 2007, 170

thousand t, was 2% greater than in 2006, but 37% less than the average for 1992-2006. The average amount of yellowfin discarded at sea during 1993-2006 was about 2% of the total purse-seine catch (retained catch plus discards) of yellowfin (range: 1 to 3%) (Table A-2a).

The annual retained catches of yellowfin in the EPO by longliners during 1978-2007 are shown in Table A-2a. During 1992-2006 they remained relatively stable, averaging about 20 thousand t (range: 9 to 30 thousand t), or about 7% of the total retained catches of yellowfin. Yellowfin are also caught by recreational vessels, as incidental catch in gillnets, and by artisanal fisheries. Estimates of these catches are shown in Table A-2a, under “Other gears” (OTR); during 1992-2006 they averaged about 1 thousand t.

1.1.2. Skipjack tuna

The annual catches of skipjack during 1978-2007 are shown in Table A-1. Most of the skipjack catch in the Pacific is taken in the WCPO. The greatest reported catch in the WCPO, about 1.5 million t, occurred in 2006, and the greatest total catch in the EPO, 312 thousand t, also occurred in 2006.

The annual retained catches of skipjack in the EPO by purse-seine and pole-and-line vessels during 1978-2007 are shown in Table A-2a. During 1992-2006 the annual retained catch averaged 172 thousand t (range 73 to 298 thousand t). The preliminary estimate of the retained catch in 2007, 211 thousand t, is 22% greater than the average for 1992-2006, and 29% less than the previous record-high retained catch of 2006. The average amount of skipjack discarded at sea during 1993-2006 was about 11% of the total catch of skipjack (range: 4 to 19%) (Table A-2a).

Small amounts of skipjack are caught with longlines and other gears (Table A-2a).

1.1.3. Bigeye tuna

The annual catches of bigeye during 1978-2007 are shown in Table A-1. Overall, the catches in both the EPO and WCPO have increased, but with considerable fluctuation. The catches in the EPO reached 105 thousand t in 1986, and have fluctuated between about 73 and 148 thousand t since then, with the greatest catch in 2000. In the WCPO the catches of bigeye increased to more than 77 thousand t during the late 1970s, decreased during the 1980s, and then increased, with lesser fluctuations, until 1999, when the catches reached more than 115 thousand t. Catches of bigeye in the WCPO increased significantly in 2004 to 146 thousand. In 2005 and 2006 the catches of bigeye in the WCPO were 132 and 114 thousand t respectively.

Prior to 1994, the average annual retained catch of bigeye taken by purse-seine vessels in the EPO was about 8 thousand t (range 1 to 22 thousand t) (Table A-2a). Following the development of fish-aggregating devices (FADs), placed in the water by fishermen to aggregate tunas, the annual retained catches of bigeye increased from 35 thousand t in 1994 to between 44 and 95 thousand t during 1995-2000. A preliminary estimate of the retained catch in the EPO in 2007 is 61 thousand t. The average amount of bigeye discarded at sea during 1993-2006 was about 5% of the purse-seine catch of the species (range: 2 to 12%). Small amounts of bigeye have been caught in some years by pole-and-line vessels, as shown in Table A-2a.

During 1978-1993, prior to the increased use of FADs and the resulting greater catches of bigeye by purse-seine vessels, the longline catches of bigeye in the EPO ranged from 46 to 104 thousand t (average: 74 thousand t) about 89%, on average, of the retained catches of this species from the EPO. During 1994-2006 the annual retained catches of bigeye by the longline fisheries ranged from about 35 to 74 thousand t (average: 53 thousand t), an average of 45% of the total catch of bigeye in the EPO (Table A-2a). The preliminary estimate of the longline catch in the EPO in 2007 is 26 thousand t (Table A-2a).

Small amounts of bigeye are caught by other gears, as shown in Table A-2a.

1.1.4. Bluefin tuna

The catches of Pacific bluefin in the entire Pacific Ocean, by flag and gear, are shown in Table A-5. The

data, which were obtained from the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), are reported by fishing nation or entity, regardless of the area of the Pacific Ocean in which the fish were caught.

The catches of Pacific bluefin in the EPO during 1978-2007, by gear, are shown in Table A-2. During 1992-2006 the annual retained catch of bluefin from the EPO by purse-seine and pole-and-line vessels averaged 3,500 t (range 600 t to 10 thousand t). The preliminary estimate of the retained catch of bluefin in 2007, 4,200 t, is 800 t greater than the average for 1992-2006. Small amounts of bluefin are discarded at sea by purse-seine vessels (Table A-2a).

1.1.5. Albacore tuna

The catches of albacore in the entire Pacific Ocean, by gear and area (north and south of the equator) are shown in Table A-6. The catches of albacore in the EPO, by gear, are shown in Table A-2a. A significant portion of the albacore catch is taken by troll gear, included under “Other gears” (OTR) in Table A-2a. The catch data were obtained from IATTC data for the EPO and from data compiled by the SPC for the WCPO.

1.1.6. Other tunas and tuna-like species

While yellowfin, skipjack, and bigeye tunas comprise the most significant portion of the retained catches of the purse-seine and pole-and-line fleets in the EPO, other tunas and tuna-like species, such as black skipjack, bonito, wahoo, and frigate and bullet tunas, contribute to the overall harvest in this area. The estimated annual retained and discarded catches of these species during 1978-2007 are presented in Table A-2a. The catches reported in the unidentified tunas category (TUN) in Table A-2a contain some catches reported by species (frigate or bullet tunas, wahoo) along with the unidentified tunas. The total retained catch of these other species by these fisheries was about 19 thousand t in 2007, which is greater than the 1992-2006 annual average retained catch of about 3 thousand t (range: 500 t to 9 thousand t).

Black skipjack are also caught by other gears in the EPO, mostly by coastal artisanal fisheries. Bonitos are also caught by artisanal fisheries, and have been reported as catch by longline vessels in some years.

1.1.7. Billfishes

Catch data for billfishes (swordfish, blue marlin, black marlin, striped marlin, shortbill spearfish, and sailfish) are shown in Table A-2b.

Swordfish are caught in the EPO with large-scale and artisanal longline gear, gillnets, harpoons, and occasionally with recreational gear. The average annual longline catch of swordfish during 1992-2006 was 10 thousand t, but during 2002-2006 was about 14 thousand t. It is not clear whether this is due to increased abundance of swordfish or increased effort directed toward that species.

Other billfishes are caught with large-scale and artisanal longline gear and recreational gear. The average annual longline catches of blue marlin and striped marlin during 1992-2006 were about 5 thousand and 3 thousand t, respectively. Smaller amounts of other billfishes are taken by longline.

Unfortunately, little information is available on the recreational catches of billfishes, but they are believed to be substantially less than the commercial catches for all species.

Small amounts of billfishes are caught by purse seiners, but these are considered to be discarded, although some may be landed but not reported. These data are also included in Table A-2b.

1.1.8. Other species

Data on the catches and discards of carangids (yellowtail, rainbow runner, and jack mackerel), dorado, elasmobranchs (sharks, rays, and skates), and other fishes caught in the EPO are shown in Table A-2c.

Dorado are unloaded mainly in ports in South and Central America. Although the catches are greater than 10 thousand t in some years, the gear types used are often not reported.

1.2. Distributions of the catches of tunas

1.2.1. Purse-seine catches

The average annual distributions of the purse-seine catches of yellowfin, skipjack, and bigeye, by set type, in the EPO during 1997-2006, are shown in Figures A-1a, A-2a, and A-3a, and preliminary estimates for 2007 are shown in Figures A-1b, A-2b, and A-3b. The catch of yellowfin in 2007, as in 2006, was significantly less than the average of 1997-2006. Yellowfin catches from dolphin sets in the Northern areas off Mexico and Central America have been significantly lower for the past several years. The yellowfin catch off South America in 2007 was also less than the average of 1997-2006. The skipjack catch in 2007 was less than the average of 1997-2006. Significant catches of skipjack were made throughout the year from about 5°N to 15°S, with large catches recorded in the nearshore areas off South America. As had been the case in the 2004 to 2006 period, the catches of skipjack in the inshore areas off Mexico were greater, possibly due to changes in fishing strategy due to poor yellowfin fishing. The bigeye catch in 2007 was less than that of 2006, but greater than the average of 1997-2006. Bigeye are not often caught north of about 7°N. The catches of bigeye have decreased in the inshore areas off South America for several years. With the development of the fishery for tunas associated with FADs, the relative importance of the inshore areas has decreased, while that of the offshore areas has increased. Most of the bigeye catches are taken from schools associated with FADs between 5°N and 5°S.

1.2.2. Longline catches

Data on the spatial and temporal distributions of the catches in the EPO by the distant-water longline fleets of China, Chinese Taipei, French Polynesia, Japan, the Republic of Korea, Spain, the United States, and Vanuatu are maintained in databases of the IATTC. Bigeye and yellowfin tunas make up the majority of the catches by most of these vessels. The distributions of the catches of bigeye and yellowfin tunas in the Pacific Ocean by longline vessels during 2002-2006 are shown in Figure A-4. Data for the Japanese longline fishery in the EPO during 1956-1997 are available in IATTC Bulletins describing that fishery.

1.3. Size compositions of the catches of tunas

1.3.1. Purse-seine, pole-and-line, and recreational fisheries

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 populations for various purposes, including the integrated modeling that the staff has employed during the last several years. The results of such studies have been described in several IATTC Bulletins, in its Annual Reports for 1954-2002, and in its Stock Assessment Reports.

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

The methods for sampling the catches of tunas are described in the IATTC Annual Report for 2000 and in IATTC Stock Assessment Reports 2 and 4. Briefly, the fish in a well of a purse-seine 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 A-5), based on the staff's most recent stock assessments.

Data for fish caught during the 2002-2007 period are presented in this report. Two sets of length-frequency histograms are presented for each species, except bluefin and black skipjack; the first shows the data by stratum (gear type, set type, and area) for 2007, and the second shows the combined data for each year of the 2002-2007 period. For bluefin, the histograms show the 2002-2007 catches by commercial

and recreational gear combined. For black skipjack, the histograms show the 2002-2007 catches by commercial gear. Only a small amount of catch was taken by pole-and-line vessels in 2007, and no samples were obtained from these vessels.

For stock assessments of yellowfin, nine purse-seine fisheries (four associated with floating objects, three associated with dolphins, and two unassociated) and one pole-and-line fishery are defined (Figure A-5). The last fishery includes all 13 sampling areas. Of the 805 wells sampled, 569 contained yellowfin. The estimated size compositions of the fish caught during 2007 are shown in Figure A-6a. The majority of the yellowfin catch was taken in sets associated with dolphins and in unassociated sets. Most of the larger yellowfin (>100 cm) were caught throughout the year in the Inshore dolphin fishery, in the second, third and fourth quarters in the Northern dolphin fishing area, and during the second quarter in the Southern dolphin fishing area. Larger yellowfin were also caught during the second quarter in the Northern unassociated fishery, and during the fourth quarter in the Southern unassociated fishery. A small amount of large yellowfin was taken in the Southern floating-object fishery during the second and third quarters. A mode of smaller yellowfin, ranging from 40 to 60 cm in length, was evident in all the floating-object fisheries during the year, in the unassociated fishery in the South during the second quarter, and in the Northern unassociated area during the third quarter. Small amounts of yellowfin in the 40 to 60-cm size range were taken by pole-and-line vessels, mostly during the third and fourth quarters.

The estimated size compositions of the yellowfin caught by all fisheries combined during 2002-2007 are shown in Figure A-6b. The average weights of the yellowfin caught in 2007 were greater than those of 2006, but considerably less than those of the 2002 to 2005 period.

For stock assessments of skipjack, seven purse-seine fisheries (four associated with floating objects, two unassociated, one associated with dolphins) and one pole-and-line fishery are defined (Figure A-5). The last two fisheries include all 13 sampling areas. Of the 805 wells sampled, 602 contained skipjack. The estimated size compositions of the fish caught during 2007 are shown in Figure A-7a. Large amounts of skipjack in the 40- to 50-cm size range were caught in all of the floating-object fisheries, primarily during the second, third, and fourth quarters of 2007, and in the Southern unassociated area, primarily during the first and fourth quarters. Larger skipjack in the 50- to 70-cm size range were caught primarily during the first, second, and third quarters in the unassociated fishery in the South. Lesser amounts of larger skipjack were taken in the Inshore floating-object fishery in the first quarter, and in the Equatorial floating-object area in the fourth quarter. Negligible amounts of skipjack were caught by pole-and-line vessels.

The estimated size compositions of the skipjack caught by all fisheries combined during 2002-2007 are shown in Figure A-7b. The average weight of skipjack in 2007, 2.3 kg, was the same as that of 2006, but less than the average weights for 2002-2005.

For stock assessments of bigeye, six purse-seine fisheries (four associated with floating objects, one unassociated, one associated with dolphins) and one pole-and-line fishery are defined (Figure A-5). The last three fisheries include all 13 sampling areas. Of the 805 wells sampled, 219 contained bigeye. The estimated size compositions of the fish caught during 2007 are shown in Figure A-8a. In 2000 the majority of the catch was taken in floating-object sets in the Equatorial area, whereas from 2001 to 2003 the majority of the bigeye catch was taken in sets on floating objects in the Southern area. In 2007, as in 2004 through 2006, nearly equal amounts of bigeye were taken in the Northern, Equatorial, and Southern floating-object fisheries. Small amounts of bigeye were caught in unassociated sets, and in floating-object sets in the Inshore area. 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 2002-2007 are shown in Figure A-8b. The average weight of the fish was greatest in 2000, when the greatest catch of bigeye was taken. From 2002 to 2005 the average weights of bigeye were fairly constant, but in 2006 and 2007 they were considerably less. The smaller bigeye (40-60 cm) were caught primarily in the Northern, Equatorial, and Southern floating-object fisheries areas throughout the year, while most of the larger fish

(>80 cm) were caught throughout the year in the Southern floating-object fishery area.

Pacific bluefin are caught by purse-seine and recreational gear off California and Baja California from about 23°N to 35°N, with most of the catch being taken during May through October. During 2007 bluefin were caught between 26°N and 32°N from May through August. The majority of the catches of bluefin by both commercial and recreational vessels were taken during June and July. In the past, the sizes of the fish in the commercial and recreational catches have been reported separately. In 2004 through 2007, however, small sample sizes make it infeasible to estimate the size compositions separately. Therefore, the sizes of the fish in the commercial and recreational catches of bluefin were combined for each year of the 2002-2007 period. The estimated size compositions are shown in Figure A-9.

Black skipjack are caught incidentally by fishermen who direct their effort toward yellowfin, skipjack, and bigeye tuna. The demand for this species is low, so most of the catches are discarded at sea, but small amounts, mixed with the more desirable species, are sometimes retained. Seventeen samples of black skipjack were taken in 2007; the estimated size compositions are shown in Figure A-10.

1.3.2. Longline fishery

The estimated size compositions of the catches of yellowfin and bigeye by the Japanese longline fishery in the EPO during 2002-2006 are shown in Figures A-11 and A-12. The average weights of both yellowfin and bigeye taken by that fishery have remained about the same throughout its existence. Information on the size compositions of fish caught by the Japanese longline fishery in the EPO during 1958-1997 is available in IATTC Bulletins describing that fishery.

1.4. Catches of tunas and bonitos, by flag and gear

The annual retained catches of tunas and bonitos in the EPO during 2003-2007, by flag and gear, are shown in Tables A-3a-e. These tables include all of the known catches of tunas and bonitos compiled from various sources, including vessel logbooks, observer data, unloading records provided by canners and other processors, export and import records, estimates derived from the species and size composition sampling program, reports from governments and other entities, and estimates derived from the species- and size-composition sampling program. Similar information on tunas and bonitos prior to 2001, and historic data for tunas, billfishes, sharks, carangids, dorado, and miscellaneous fishes are available on the [IATTC web site](#). The purse-seine, pole-and-line, of tunas and bonitos in 2006 and 2007, by flag, are summarized in Tables A-4a-b (top panels).

1.5. Landings of tunas and bonitos by purse-seine and pole-and-line vessels

The landings are fish unloaded from fishing vessels during a calendar year, regardless of the year of catch. The country of landing is that in which the fish were unloaded or, in the case of transshipments, the country that received the transshipped fish. Preliminary landings data for 2006 and 2007 (Tables A-4a-b, lower panels) indicate that, of the 469 thousand t of tunas and bonitos landed in 2007, 49% was landed in Ecuador and 22% in Mexico. Other countries with significant landings of tunas and bonitos caught in the EPO included Colombia and Venezuela with 11% and 4% respectively. 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.

2. EFFORT

2.1. Purse seine

Estimates of the numbers of purse-seine sets of each type (associated with dolphins, associated with floating objects, and unassociated) in the EPO during the 1990-2007 period, and the retained catches of these sets, are shown in Table A-7 and in Figure 1. The estimates for vessels ≤363 t carrying capacity were calculated from logbook data in the IATTC statistical data base, and those for vessels >363 t carrying capacity were calculated from the observer data bases of the IATTC, Colombia, Ecuador, the

European Union, Mexico, Nicaragua, Panama, the United States, and Venezuela. The greatest numbers of sets associated with floating objects and unassociated sets were made 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 associated with dolphins decreased only moderately during the mid-1990s, and in 2003 were the greatest recorded.

There are two types of floating objects, flotsam and FADs. The occurrence of the former is unplanned from the point of view of the fishermen, whereas the latter are constructed by fishermen specifically for the purpose of attracting fish. FADs have been widely used for about 13 years, and their relative importance has increased during this period, while that of flotsam has decreased, as shown by the data in Table A-8.

2.2. Longline

The reported nominal fishing effort (in thousands of hooks) by longline vessels in the EPO, and their catches of the predominant tuna species, are shown in Table A-9.

3. THE FLEETS

3.1. The purse-seine and pole-and-line fleets

The IATTC staff maintains detailed records of gear, flag, and fish-carrying capacity for most of the vessels that fish with purse-seine or pole-and-line gear for yellowfin, skipjack, bigeye, and/or Pacific bluefin tuna in the EPO. The fleet described here includes purse-seine and pole-and-line vessels that have fished all or part of the year in the EPO for any of these four species.

Historically, the owner's or builder's estimates of carrying capacities of individual vessels, in tons of fish, were used until landing records indicated that revision of these estimates was required.

Since 2000, the IATTC has used well volume, in cubic meters (m^3), instead of weight, in metric tons (t), to measure the carrying capacities of the 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 weighs more than a load of fish packed at a lower density. Using volume as a measure of capacity eliminates this problem.

The IATTC staff began collecting 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, the estimated capacity in metric tons was converted to cubic meters.

Until about 1960 fishing for tunas in the EPO was dominated by pole-and-line vessels operating in coastal regions and in the vicinity of offshore islands and banks. 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 fishery was dominated by these vessels. From 1961 to 2007 the number of pole-and-line vessels decreased from 93 to 4, and their total well volume from about 11 thousand to about 380 m^3 . During the same period the number of purse-seine vessels increased from 125 to 227, and their total well volume from about 32 thousand to about 227 thousand m^3 , an average of about 1,000 m^3 per vessel. An earlier peak in numbers

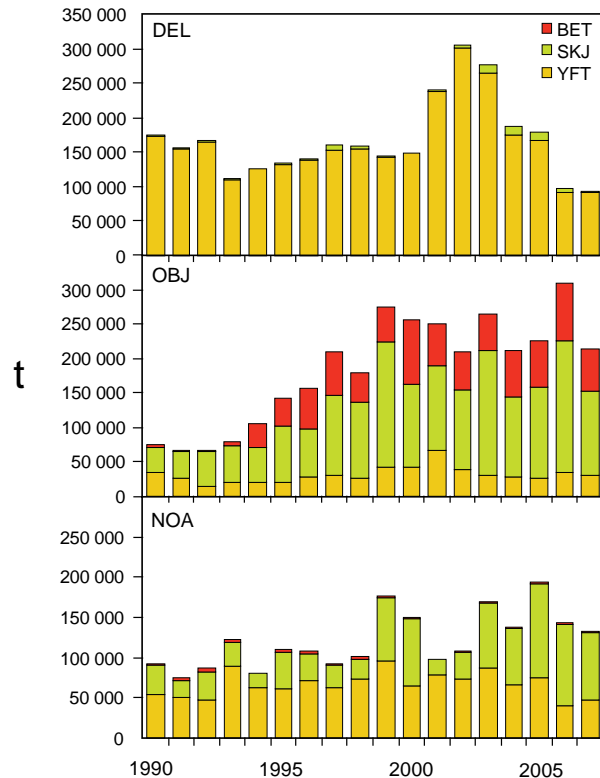


Figure 1. Purse-seine catches of tunas, by species and set type, 1990-2007

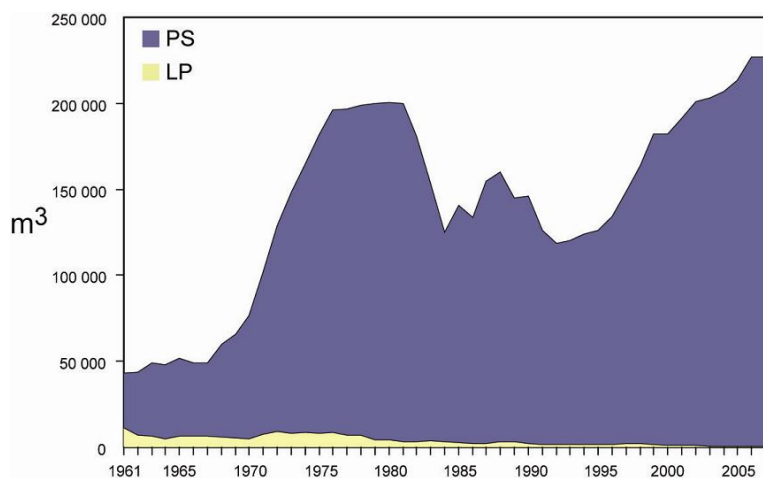


Figure 2. Carrying capacity, in cubic meters of well volume, of the purse-seine and pole-and-line fleets in the EPO, 1961-2007

and total well volume of purse seiners occurred from the mid-1970s to the early 1980s, when the number of vessels reached 282 and the total well volume about 195 thousand m^3 , an average of about 700 m^3 per vessel (Table A-10; Figure 2).

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. The total well volume of purse-seine and pole-and-line vessels then declined as

vessels were deactivated or left the EPO to fish in other areas, primarily the western Pacific Ocean, and in 1984 it reached its lowest level since 1971, about 122 thousand m^3 . 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 total well volume has increased steadily since 1992, and in 2007 was 227 thousand m^3 .

The 2006 and preliminary 2007 data for numbers and total well volumes of purse-seine and pole-and-line vessels that fished for tunas in the EPO are shown in Tables A-11a-b. The fleet was dominated by vessels operating under the Ecuadorian and Mexican flags during 2007. During 2007 the approximate percentages of the total well volumes were: Ecuador, and Mexico, 26; Panama, 16, Venezuela, 13; Colombia, 6; Spain, Nicaragua, and El Salvador, 3 each; Vanuatu, 2.

The cumulative capacity at sea during 2007 is compared to those of the previous four years in Figure 3.

The monthly average, minimum, and maximum total well volumes at sea (VAS), in thousands of cubic meters, of purse-seine and pole-and-line vessels that fished for tunas in the EPO during 1997-2006, and the 2007 values, are shown in Table A-12. The monthly values are averages of the VAS estimated at weekly intervals by the IATTC staff. The fishery was regulated during some or all of the last four months of 1998-2007, so the VAS values for September-December 2007 are not comparable to the average VAS values for those months of 1997-2006. The average VAS values for 1997-2006 and 2007 were 116 thousand m^3 (60% of total capacity) and 146 thousand m^3 (64% of total capacity), respectively.

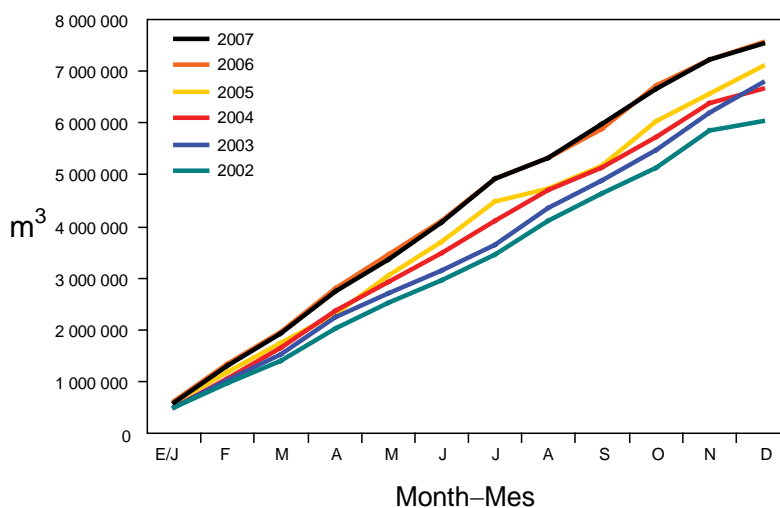


Figure 3. Cumulative capacity of the purse-seine and pole-and-line fleet at sea, by month, 2002-2007

3.2. Other fleets of the EPO

Information on other types of vessels that fish for tunas in the EPO is available on the IATTC's Regional Vessel Register, on the [IATTC web site](#). The Register is incomplete for small vessels. In some cases, particularly for large longline vessels, the Register contains information for vessels authorized to fish not only in the EPO, but also in other oceans, and which may not have fished in the EPO during 2007, or ever.

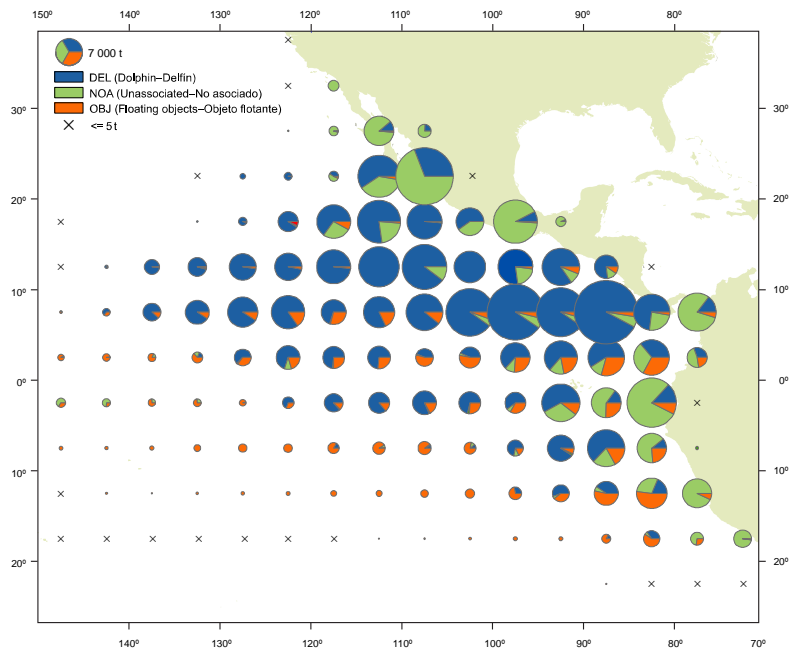


FIGURE A-1a. Average annual distributions of the purse-seine catches of yellowfin, by set type, 1997-2006. The sizes of the circles are proportional to the amounts of yellowfin caught in those 5° by 5° areas.
FIGURA A-1a. Distribución media anual de las capturas cerqueras de aleta amarilla, por tipo de lance, 1997-2006. El tamaño de cada círculo es proporcional a la cantidad de aleta amarilla capturado en la cuadrícula de 5° x 5° correspondiente.

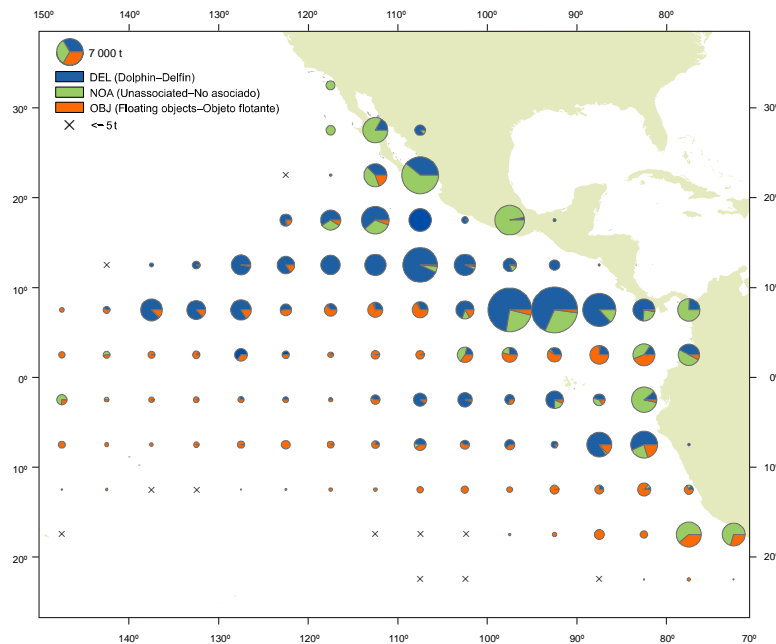


FIGURE A-1b. Annual distributions of the purse-seine catches of yellowfin, by set type, 2007. The sizes of the circles are proportional to the amounts of yellowfin caught in those 5° by 5° areas.
FIGURA A-1b. Distribución anual de las capturas cerqueras de aleta amarilla, por tipo de lance, 2007. El tamaño de cada círculo es proporcional a la cantidad de aleta amarilla capturado en la cuadrícula de 5° x 5° correspondiente.

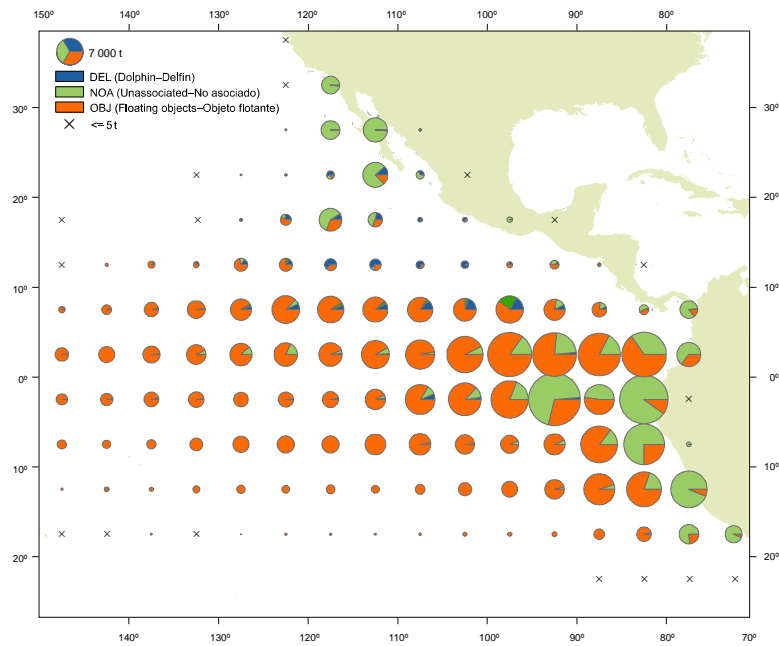


FIGURE A-2a. Average annual distributions of the purse-seine catches of skipjack, by set type, 1997-2006. The sizes of the circles are proportional to the amounts of skipjack caught in those 5° by 5° areas.

FIGURA A-2a. Distribución media anual de las capturas cerqueras de barrilete, por tipo de lance, 1997-2006. El tamaño de cada círculo es proporcional a la cantidad de barrilete capturado en la cuadrícula de 5° x 5° correspondiente.

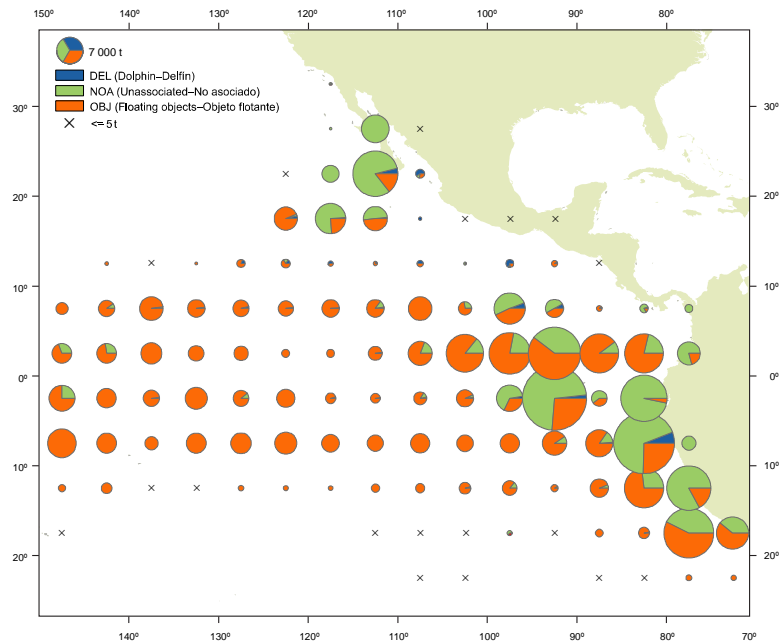


FIGURE A-2b. Annual distributions of the purse-seine catches of skipjack, by set type, 2007. The sizes of the circles are proportional to the amounts of skipjack caught in those 5° by 5° areas.

FIGURA A-2b. Distribución anual de las capturas cerqueras de barrilete, por tipo de lance, 2007. El tamaño de cada círculo es proporcional a la cantidad de barrilete capturado en la cuadrícula de 5° x 5° correspondiente.

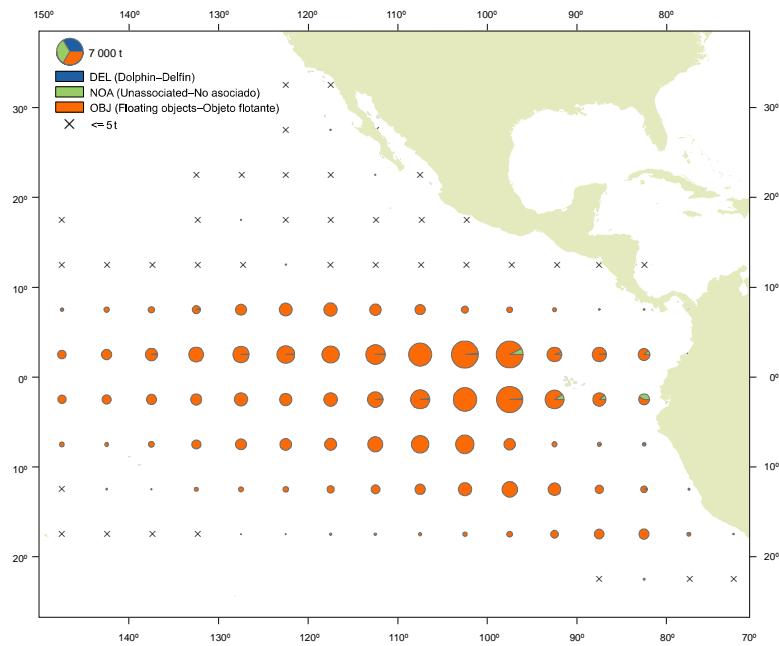


FIGURE A-3a. Average annual distributions of the purse-seine catches of bigeye, by set type, 1997-2006. The sizes of the circles are proportional to the amounts of bigeye caught in those 5° by 5° areas.

FIGURA A-3a. Distribución media anual de las capturas cerqueras de patudo, por tipo de lance, 1997-2006. El tamaño de cada círculo es proporcional a la cantidad de patudo capturado en la cuadrícula de 5° x 5° correspondiente.

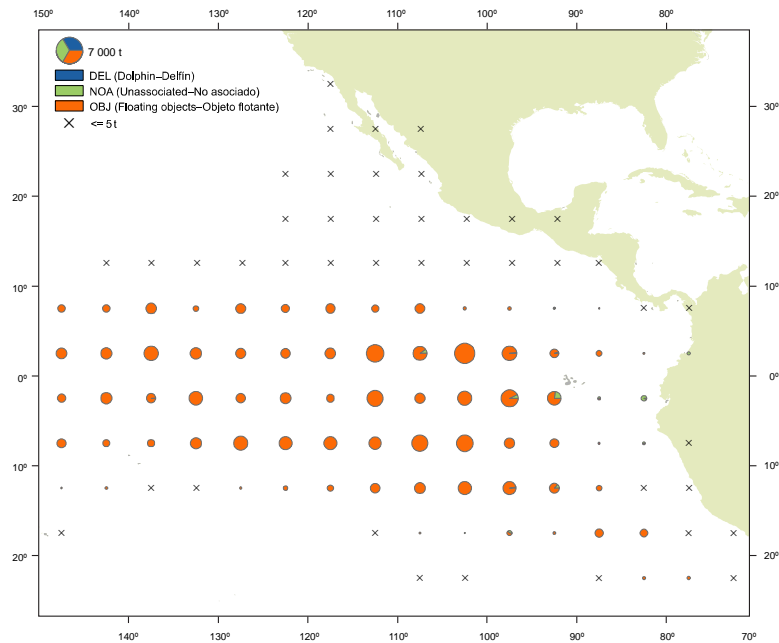


FIGURE A-3b. Annual distributions of the purse-seine catches of bigeye, by set type, 2007. The sizes of the circles are proportional to the amounts of bigeye caught in those 5° by 5° areas.

FIGURA A-3b. Distribución anual de las capturas cerqueras de patudo, por tipo de lance, 2007. El tamaño de cada círculo es proporcional a la cantidad de patudo capturado en la cuadrícula de 5° x 5° correspondiente.

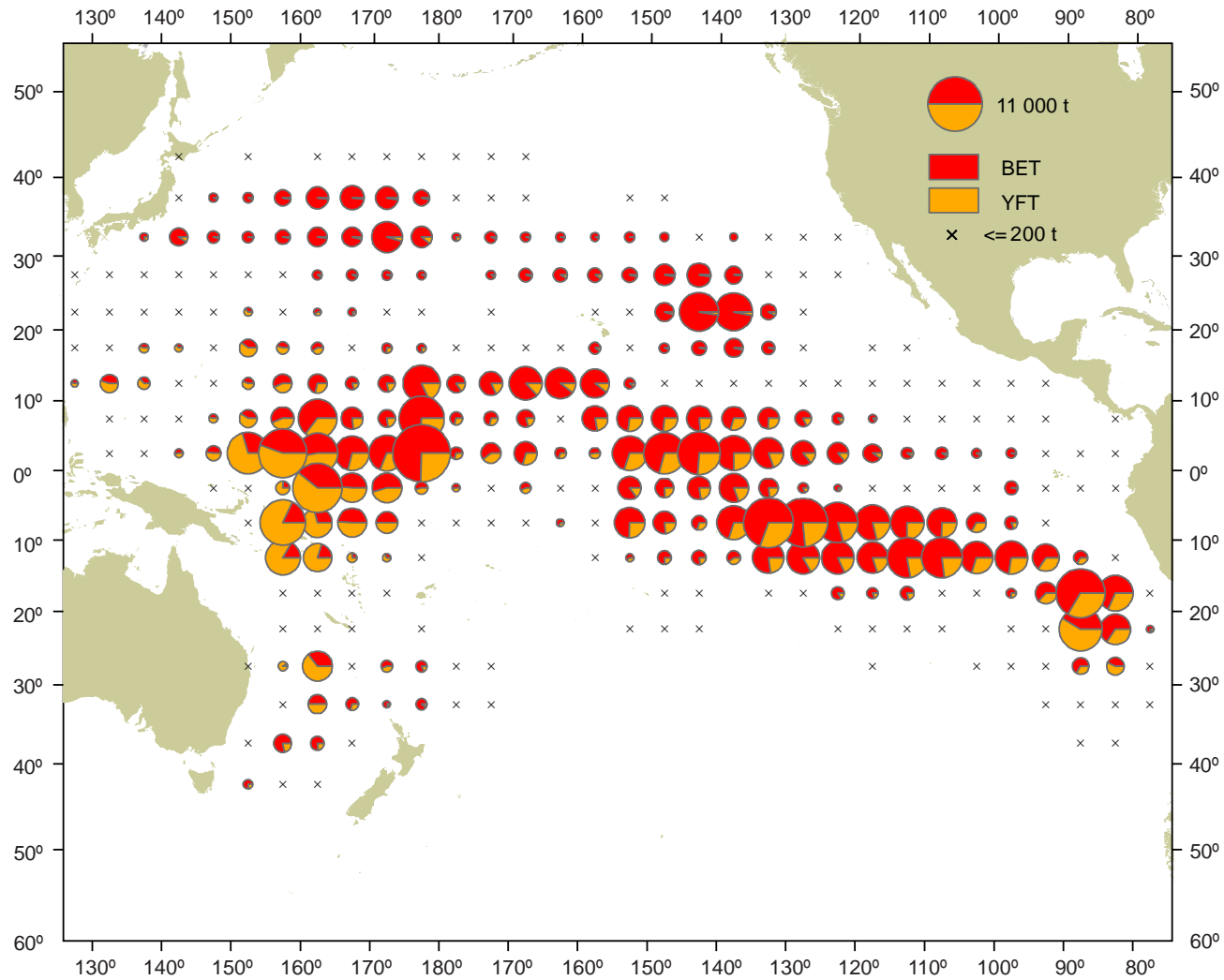


FIGURE A-4. Distributions of the catches of bigeye and yellowfin tunas in the Pacific Ocean, in metric tons, by longline vessels, 2002-2006. The sizes of the circles are proportional to the amounts of bigeye and yellowfin caught in those 5° by 5° areas.

FIGURA A-4. Distribución de las capturas de atunes patudo y aleta amarilla en el Océano Pacífico, en toneladas métricas, por buques palangreros, 2002-2006. El tamaño de cada círculo es proporcional a la cantidad de patudo y aleta amarilla capturado en la cuadrícula de 5° x 5° correspondiente.

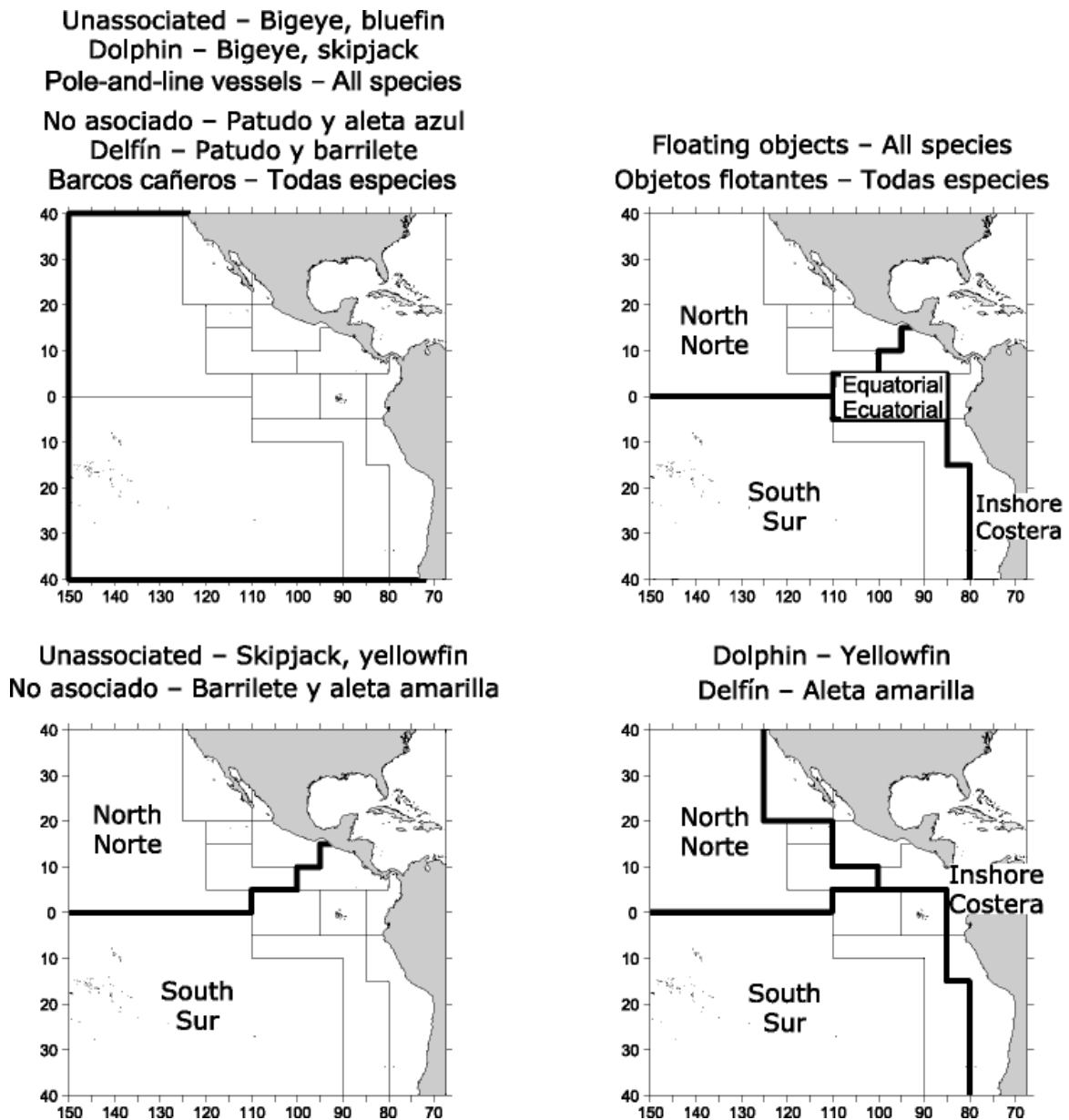


FIGURE A-5. The fisheries defined by the IATTC staff for stock assessment of yellowfin, skipjack, and bigeye in the EPO. The thin lines indicate the boundaries of the 13 length-frequency sampling areas, and the bold lines the boundaries of the fisheries.

FIGURA A-5. Las pesquerías definidas por el personal de la CIAT para la evaluación de las poblaciones de atún aleta amarilla, barrilete, y patudo en el OPO. Las líneas delgadas indican los límites de las 13 zonas de muestreo de frecuencia de tallas, y las líneas gruesas los límites de las pesquerías.

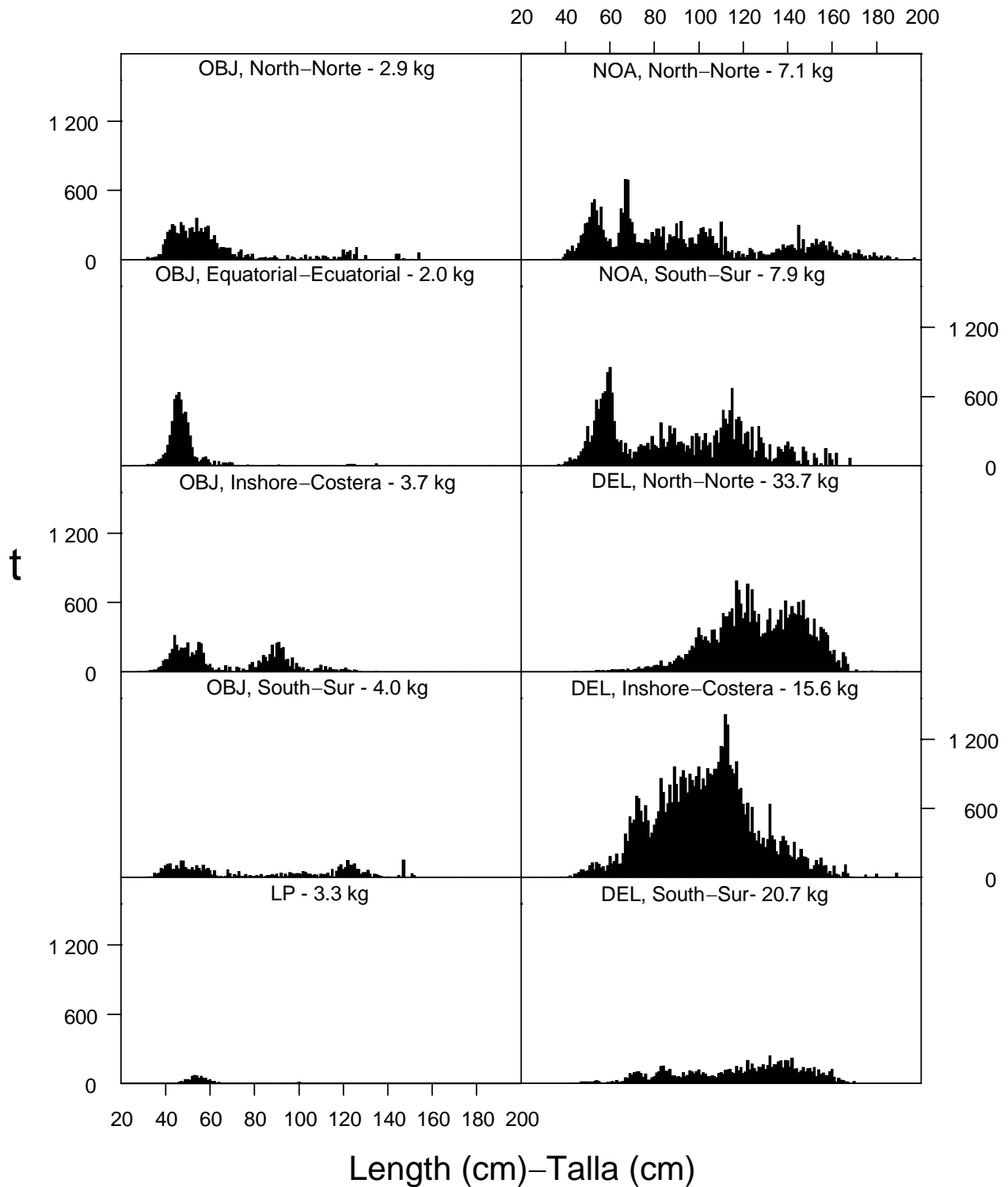


FIGURE A-6a. Estimated size compositions of the yellowfin caught in the EPO during 2007 for each fishery designated in Figure A-5. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-6a. Composición por tallas estimada del aleta amarilla capturado en el OPO durante 2007 en cada pesquería ilustrada en la Figura A-5. En cada recuadro se detalla el peso promedio de los peces en las muestras.

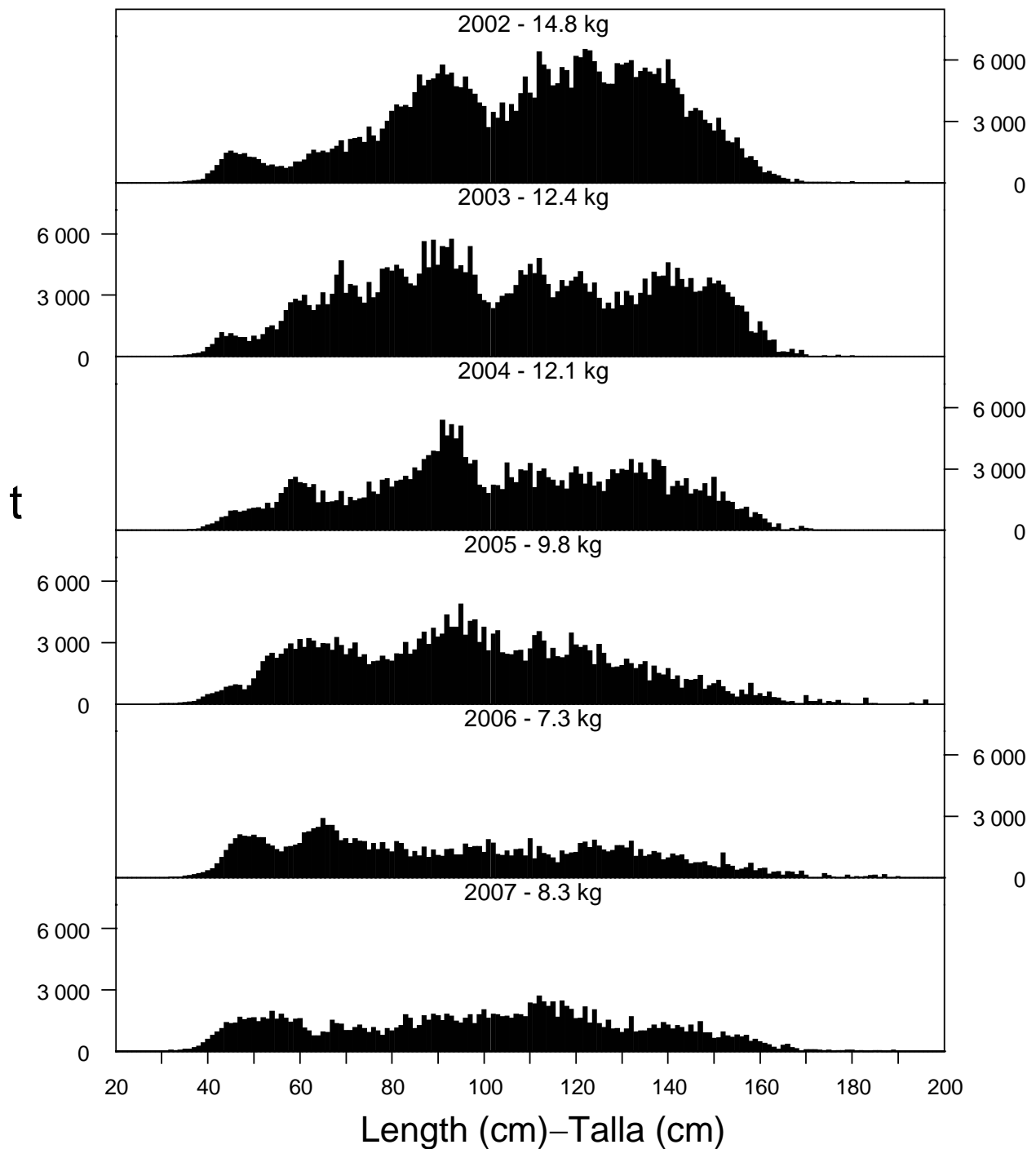


FIGURE A-6b. Estimated size compositions of the yellowfin caught by purse-seine and pole-and-line vessels in the EPO during 2002-2007. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-6b. Composición por tallas estimada del aleta amarilla capturado por buques cerqueros y cañeros en el OPO durante 2002-2007. En cada recuadro se detalla el peso promedio de los peces en las muestras.

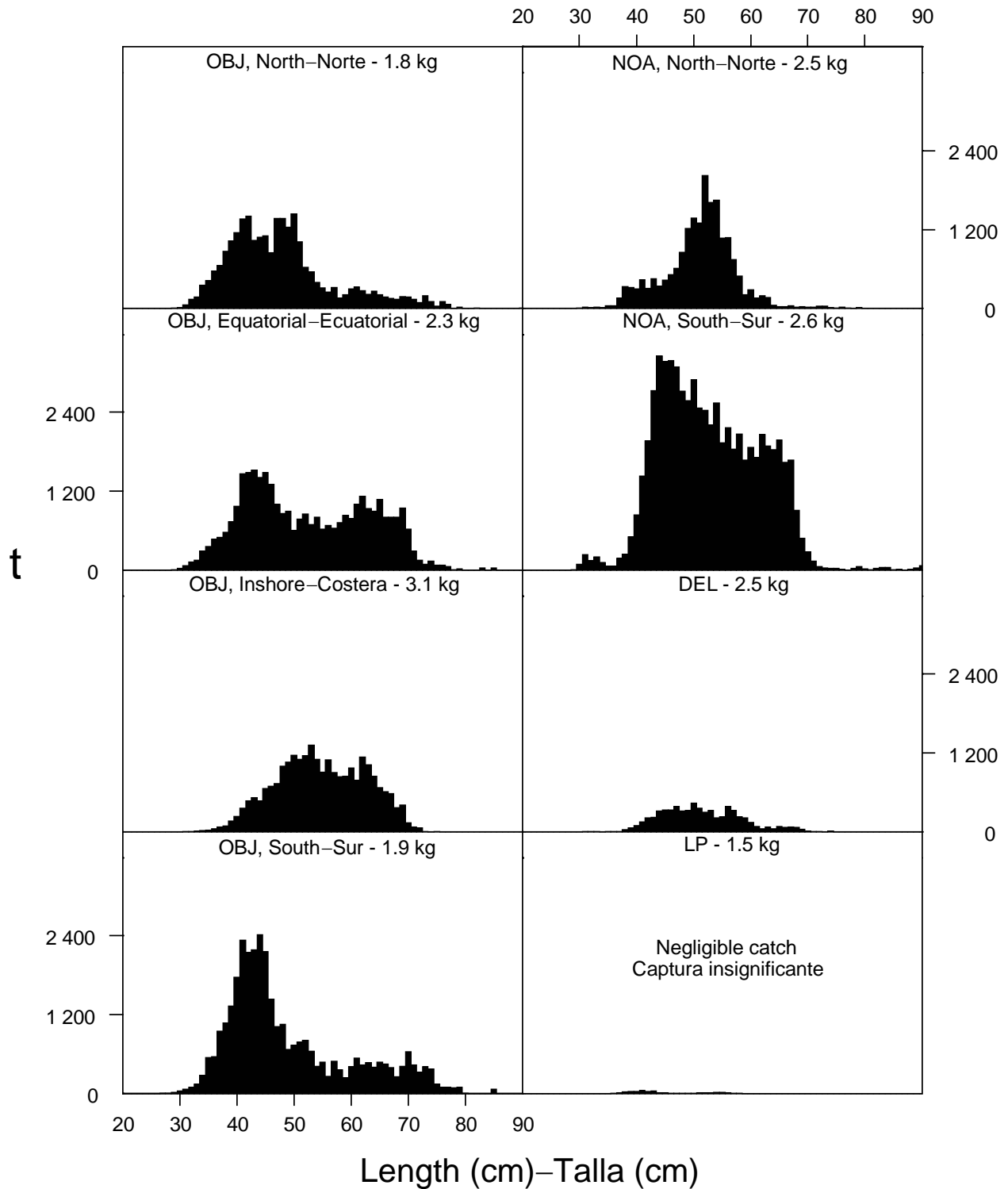


FIGURE A-7a. Estimated size compositions of the skipjack caught in the EPO during 2007 for each fishery designated in Figure A-5. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-7a. Composición por tallas estimada del barrilete capturado en el OPO durante 2007 en cada pesquería ilustrada en la Figura A-5. En cada recuadro se detalla el peso promedio de los peces en las muestras.

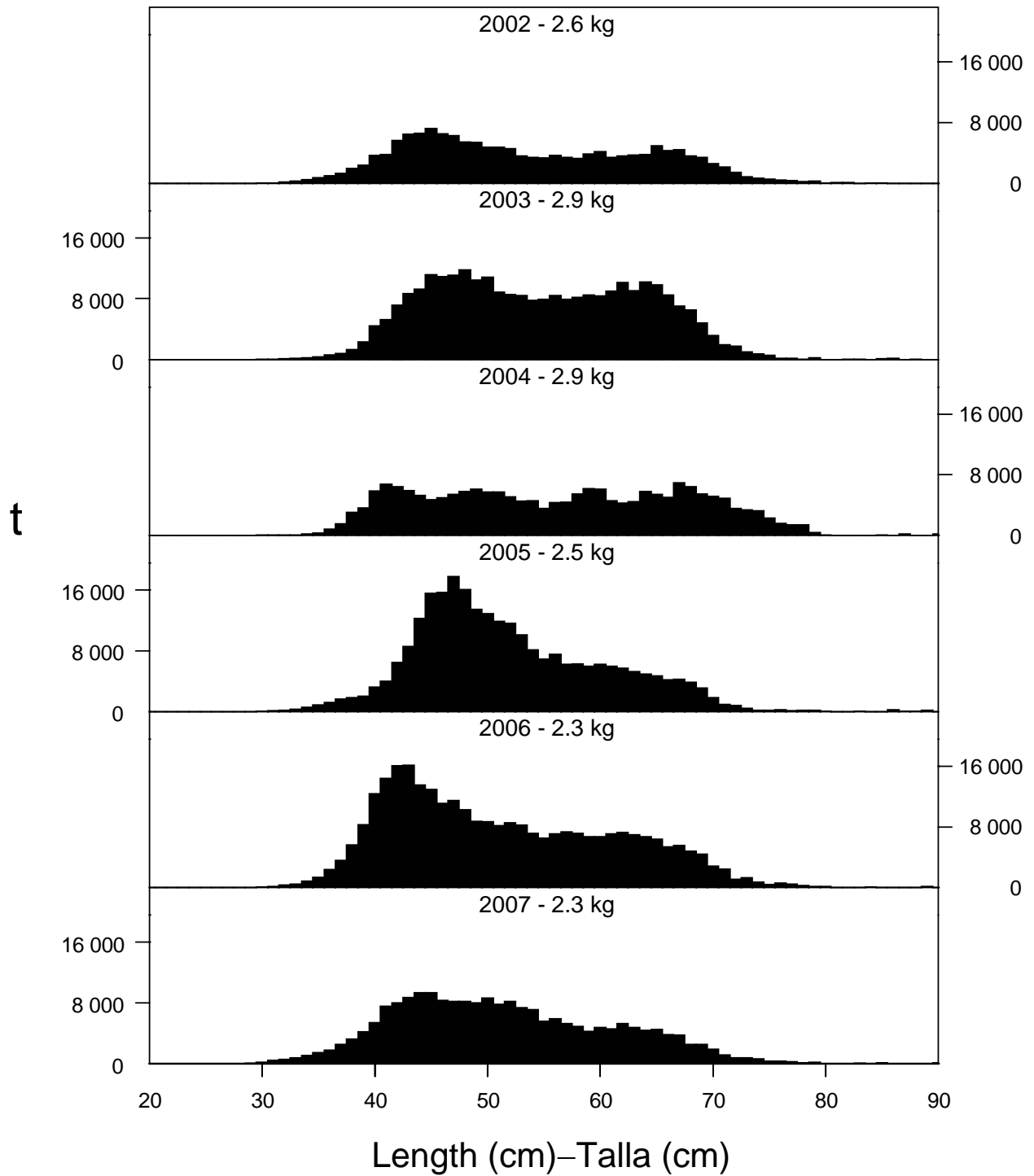


FIGURE A-7b. Estimated size compositions of the skipjack caught by purse-seine and pole-and-line vessels in the EPO during 2002-2007. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-7b. Composición por tallas estimada del barrilete capturado por buques cerqueros y cañeros en el OPO durante 2002-2007. En cada recuadro se detalla el peso promedio de los peces en las muestras.

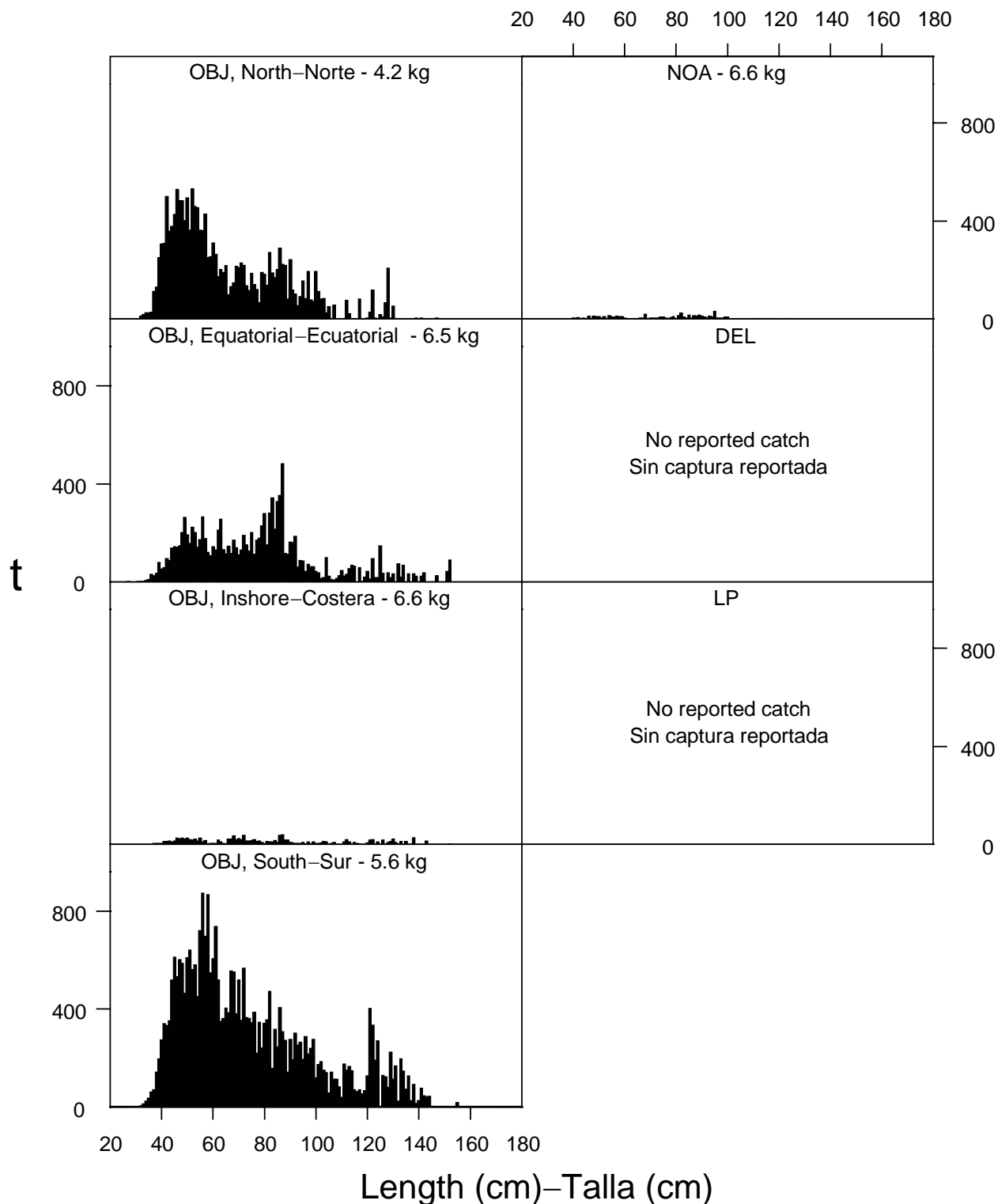


FIGURE A-8a. Estimated size compositions of the bigeye caught in the EPO during 2007 for each fishery designated in Figure A-5. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-8a. Composición por tallas estimada del patudo capturado e en el OPO durante 2007 en cada pesquería ilustrada en la Figura A-5. En cada recuadro se detalla el peso promedio de los peces en las muestras.

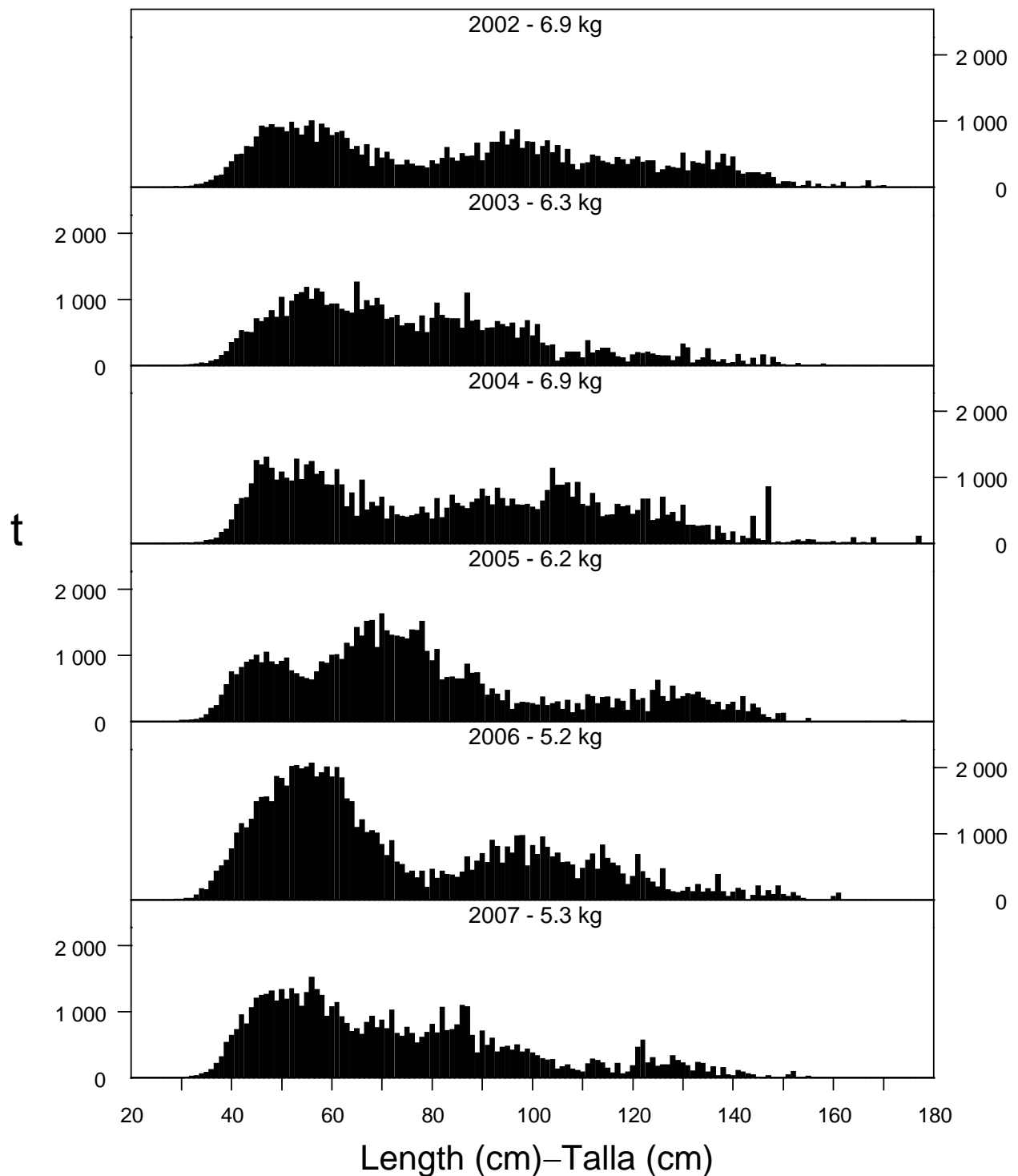


FIGURE A-8b. Estimated size compositions of the bigeye caught by purse-seine vessels in the EPO during 2002-2007. The average weights of the fish in the samples are given at the tops of the panels.
FIGURA A-8b. Composición por tallas estimada del patudo capturado por buques cerqueros en el OPO durante 2002-2007. En cada recuadro se detalla el peso promedio de los peces en las muestras.

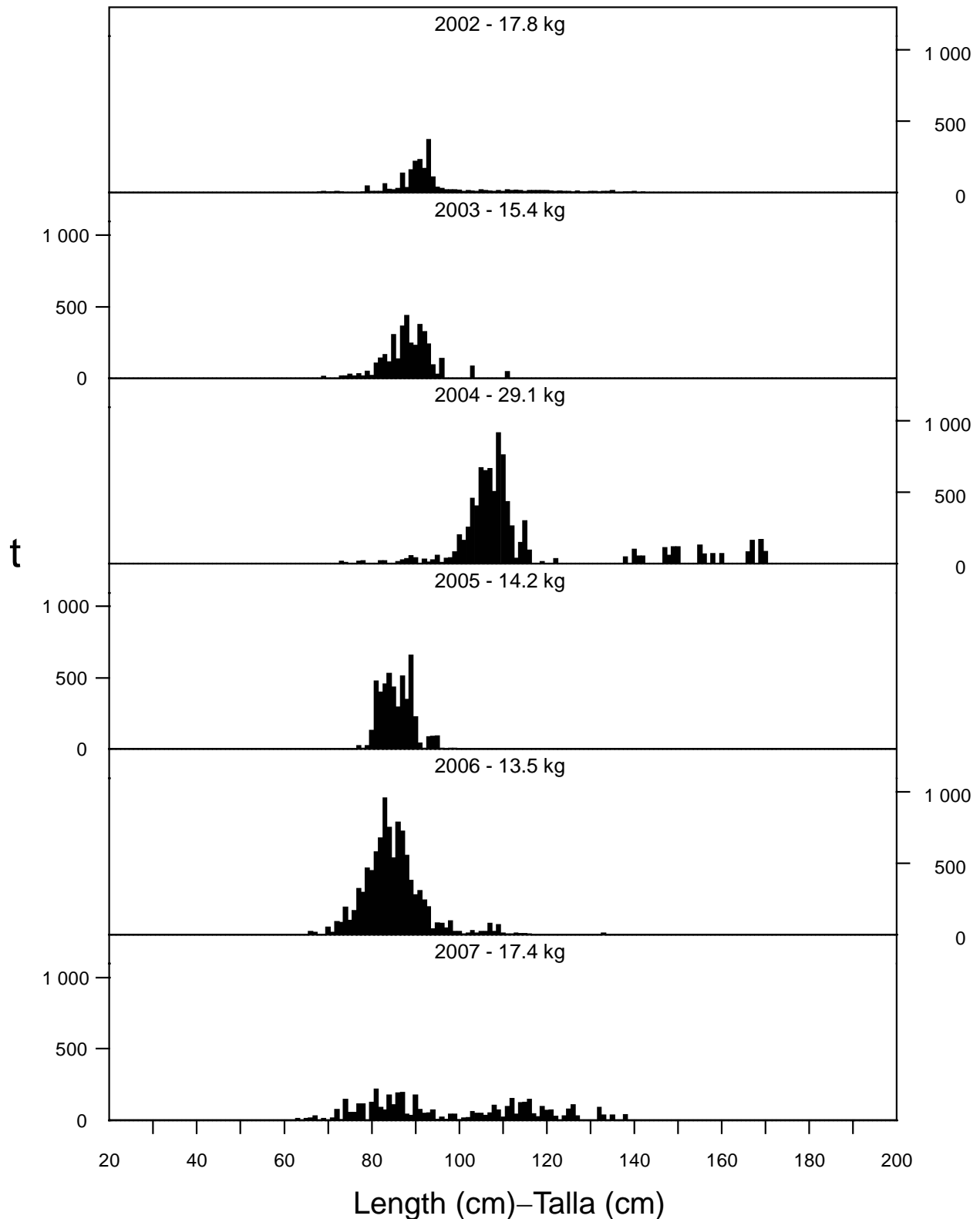


FIGURE A-9. Estimated catches of Pacific bluefin by purse-seine and recreational gear in the EPO during 2002-2007. The values at the tops of the panels are the average weights.

FIGURA A-9. Captura estimada de aleta azul del Pacífico con arte de cerco y deportiva en el OPO durante 2002-2007. El valor en cada recuadro representa el peso promedio.

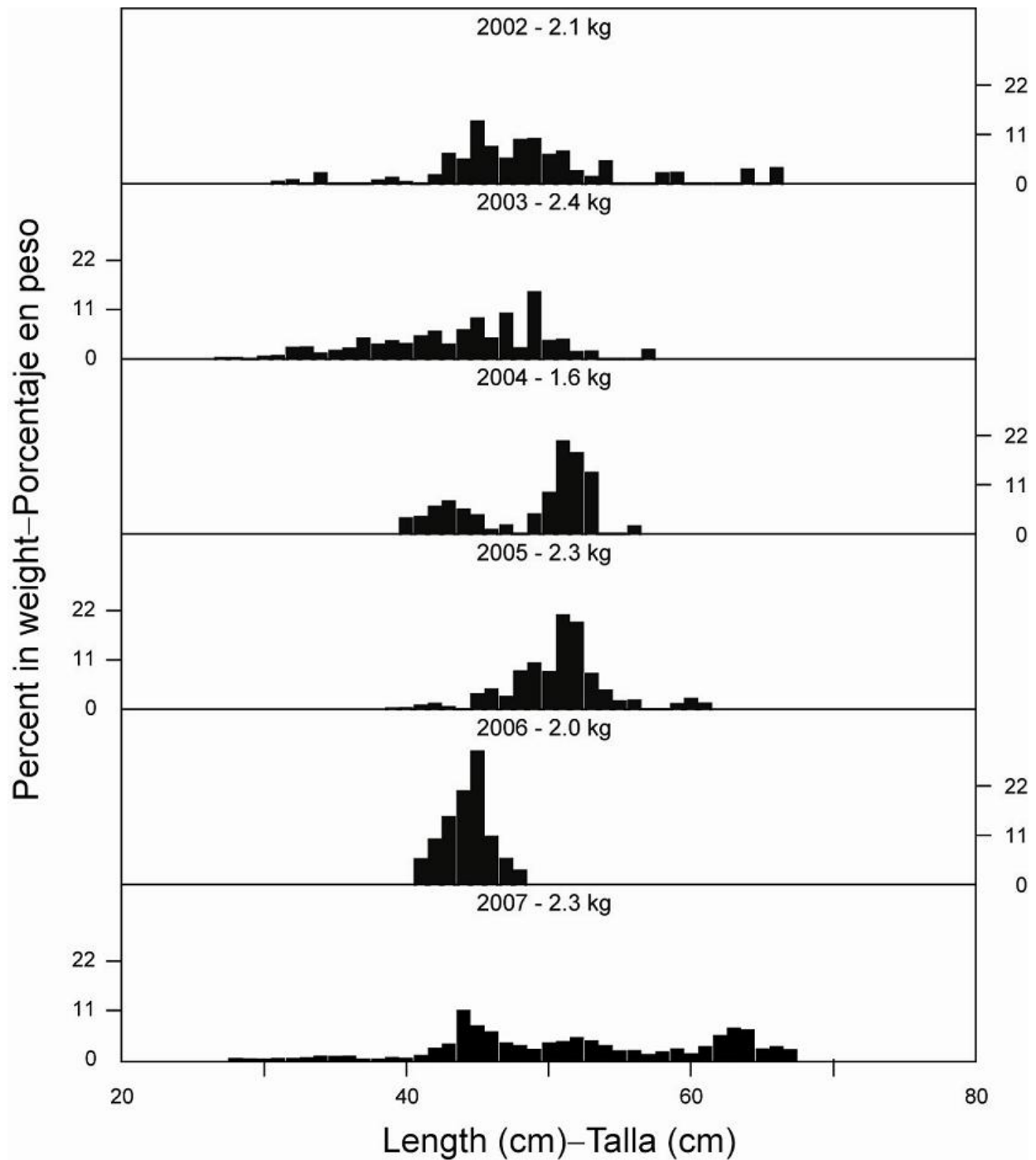


FIGURE A-10. Estimated size compositions of the catches of black skipjack by purse-seine vessels in the EPO during 2002-2007. The values at the tops of the panels are the average weights.

FIGURA A-10. Composición por tallas estimada del barrilete negro capturado por buques cerqueros en el OPO durante 2002-2007. El valor en cada recuadro representa el peso promedio.

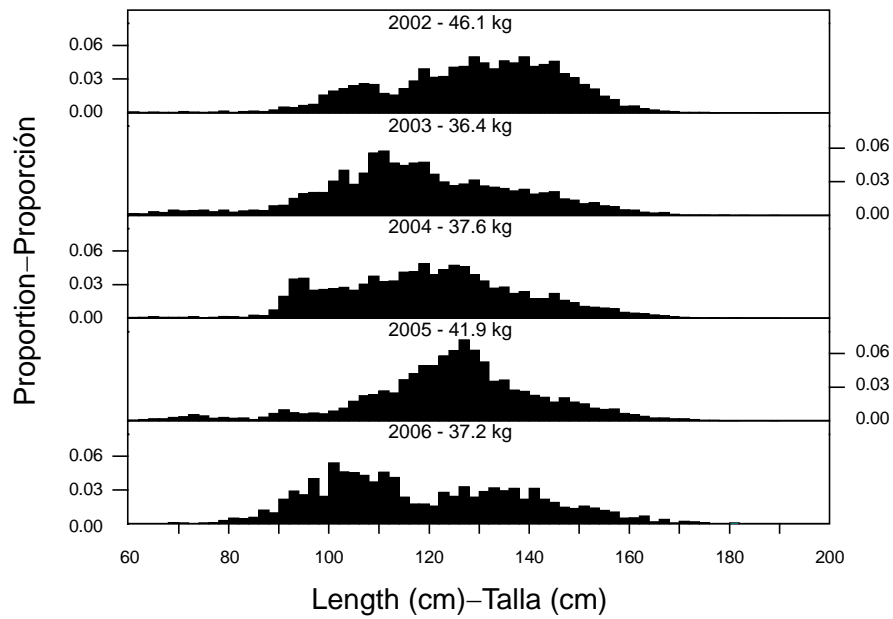


FIGURE A-11. Estimated size compositions of the catches of yellowfin tuna by the Japanese longline fishery in the EPO, 2002-2006.

FIGURA A-11. Composición por tallas estimada de las capturas de atún aleta amarilla por la pesquería palangrera japonesa en el OPO, 2002-2006.

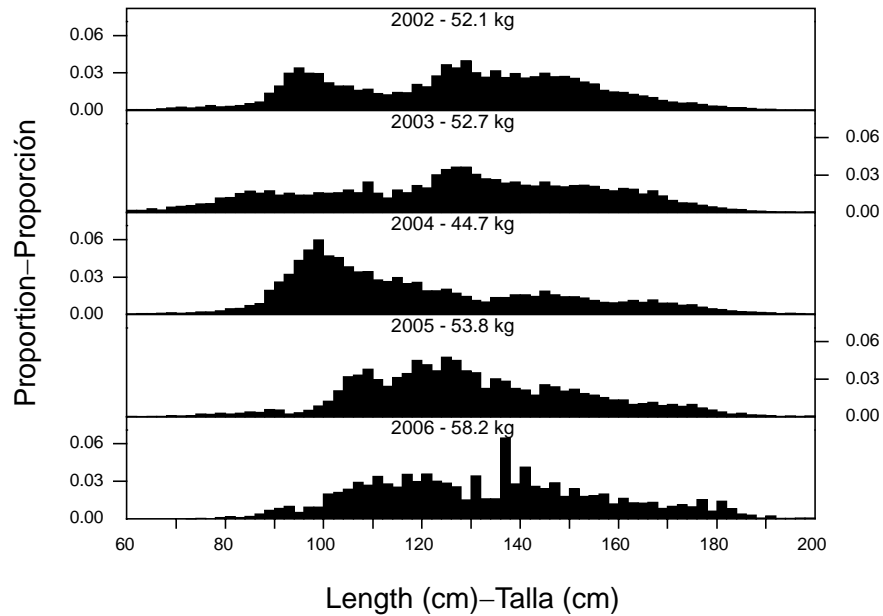


FIGURE A-12. Estimated size compositions of the catches of bigeye tuna by the Japanese longline fishery in the EPO, 2002-2006.

FIGURA A-12. Composición por tallas estimada de las capturas de atún patudo por la pesquería palangrera japonesa en el OPO, 2002-2006.

TABLE A-1. Annual catches of yellowfin, skipjack, and bigeye, by all types of gear combined, in the Pacific Ocean, 1978-2007. The EPO totals for 1993-2006 include discards from purse-seine vessels with carrying capacities greater than 363 t.

TABLA A-1. Capturas anuales de aleta amarilla, barrilete, y patudo, por todas las artes combinadas, en el Océano Pacífico, 1978-2007. Los totales del OPO de 1993-2006 incluyen los descartes de buques cerqueros de más de 363 t de capacidad de acarreo.

	YFT			SKJ			BET			Total		
	EPO	WCPO	Total	EPO	WCPO	Total	EPO	WCPO	Total	EPO	WCPO	Total
1978	173,979	174,073	348,052	179,665	452,373	632,038	89,198	59,094	148,292	442,842	685,540	1,128,382
1979	187,124	194,442	381,566	141,503	414,299	555,802	67,533	66,372	133,905	396,160	675,113	1,071,273
1980	158,860	213,139	371,999	138,102	459,594	597,696	86,403	65,133	151,536	383,366	737,866	1,121,232
1981	178,512	225,922	404,434	126,002	438,242	564,244	68,345	53,346	121,691	372,859	717,510	1,090,369
1982	127,533	221,010	348,543	104,668	490,178	594,846	60,349	59,301	119,650	292,550	770,489	1,063,039
1983	99,677	257,109	356,786	61,974	683,530	745,504	64,694	59,896	124,590	226,345	1,000,535	1,226,880
1984	149,465	256,247	405,712	63,610	761,806	825,416	55,268	64,680	119,948	268,343	1,082,733	1,351,076
1985	225,937	259,475	485,412	52,003	603,478	655,481	72,399	68,706	141,105	350,339	931,659	1,281,998
1986	286,071	250,661	536,732	67,745	755,183	822,928	105,184	63,777	168,961	459,000	1,069,621	1,528,621
1987	286,162	303,565	589,727	66,467	687,711	754,178	101,346	79,269	180,615	453,975	1,070,545	1,524,520
1988	296,428	263,032	559,460	92,127	848,855	940,982	74,314	68,447	142,761	462,868	1,180,334	1,643,202
1989	299,435	313,793	613,228	98,923	823,224	922,147	72,995	77,237	150,232	471,353	1,214,254	1,685,607
1990	301,519	353,492	655,011	77,109	889,969	967,078	104,850	90,418	195,268	483,478	1,333,879	1,817,357
1991	265,968	394,712	660,680	65,890	1,117,698	1,183,588	109,121	73,767	182,888	440,979	1,586,177	2,027,156
1992	252,513	400,908	653,421	87,293	1,014,405	1,101,698	92,001	91,062	183,063	431,807	1,506,375	1,938,182
1993	256,208	386,585	642,793	100,507	916,296	1,016,803	82,835	79,667	162,502	439,550	1,382,548	1,822,098
1994	248,238	395,554	643,792	84,643	1,019,118	1,103,761	109,327	89,672	198,999	442,207	1,504,344	1,946,551
1995	244,639	380,215	624,854	150,664	1,050,678	1,201,342	108,209	83,398	191,607	503,512	1,514,291	2,017,803
1996	266,930	316,333	583,263	132,680	1,023,159	1,155,839	114,707	84,981	199,688	514,317	1,424,473	1,938,790
1997	277,575	438,471	716,046	188,504	965,170	1,153,674	122,352	111,890	234,242	588,431	1,515,531	2,103,962
1998	280,627	456,764	737,391	165,701	1,308,963	1,474,664	93,985	113,211	207,196	540,312	1,878,938	2,419,250
1999	304,730	399,584	704,314	292,053	1,175,280	1,467,333	93,321	114,815	208,136	690,103	1,689,679	2,379,782
2000	289,423	424,318	713,741	231,088	1,238,435	1,469,523	148,148	113,633	261,781	668,659	1,776,386	2,445,045
2001	424,554	420,055	844,609	158,491	1,136,528	1,295,019	131,223	105,994	237,217	714,269	1,662,577	2,376,846
2002	443,592	397,976	841,568	166,924	1,318,355	1,485,279	132,813	119,684	252,497	743,329	1,836,015	2,579,344
2003	413,232	438,354	851,586	301,881	1,314,801	1,616,682	116,231	108,519	224,750	831,345	1,861,674	2,693,019
2004	293,843	362,431	656,274	218,565	1,412,789	1,631,354	112,852	146,111	258,963	625,260	1,921,331	2,546,591
2005	286,417	435,876	722,293	284,579	1,532,361	1,816,940	113,544	132,151	245,695	684,540	2,100,388	2,784,928
2006	178,735	399,828	578,563	311,751	1,538,112	1,849,863	121,263	114,247	235,510	611,750	2,052,187	2,663,937
2007	173,413	*	173,413	220,665	*	220,665	88,208	*	88,208	482,286	*	482,286

TABLE A-2a. Estimated retained catches (Ret.), by gear type, and estimated discards (Dis.), by purse-seine vessels with carrying capacities greater than 363 t only, of tunas and bonitos, in metric tons, in the EPO, 1978-2007. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimate and are preliminary. The data for 2005-2007 are preliminary.

TABLA A-2a. Estimaciones de las capturas retenidas (Ret.), por arte de pesca, y de los descartes (Dis.), por buques cerqueros de más de 363 t de capacidad de acarreo únicamente, de atunes y bonitos, en toneladas métricas, en el OPO, 1978-2007. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares. Los datos de 2005-2007 son preliminares.

	Yellowfin—Aleta amarilla						Skipjack—Barrilete						Bigeye—Patudo					
	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total
	Ret.	Dis.					Ret.	Dis.					Ret.	Dis.				
1978	158,800	-	3,887	10,188	1,103	173,979	172,293	-	6,048	61	1,263	179,665	18,539	-	-	70,659	0	89,198
1979	170,648	-	4,790	11,473	212	187,124	133,695	-	6,345	33	1,429	141,503	12,097	-	-	55,435	1	67,533
1980	143,042	-	1,480	13,477	861	158,860	130,912	-	5,226	26	1,939	138,102	21,939	-	-	64,335	130	86,403
1981	168,235	-	1,477	7,999	800	178,512	119,165	-	5,906	20	911	126,002	14,922	-	-	53,416	7	68,345
1982	114,754	-	1,538	10,961	280	127,533	100,498	-	3,760	28	382	104,668	6,939	-	42	53,365	3	60,349
1983	83,928	-	4,007	10,894	848	99,677	56,851	-	4,387	28	708	61,974	4,575	-	39	60,043	37	64,694
1984	135,785	-	2,991	10,345	344	149,465	59,859	-	2,884	32	836	63,610	8,860	-	2	46,394	11	55,268
1985	211,460	-	1,069	13,198	211	225,937	50,829	-	946	44	183	52,003	6,056	-	2	66,326	15	72,399
1986	260,512	-	2,537	22,807	214	286,071	65,635	-	1,921	57	132	67,745	2,685	-	-	102,425	74	105,184
1987	262,007	-	5,107	18,911	137	286,162	64,019	-	2,233	38	177	66,467	1,177	-	-	100,121	49	101,346
1988	277,293	-	3,723	14,659	752	296,428	87,113	-	4,325	26	664	92,127	1,535	-	5	72,758	15	74,314
1989	277,995	-	4,145	17,032	263	299,435	94,935	-	2,941	28	1,019	98,923	2,031	-	-	70,963	1	72,995
1990	263,251	-	2,675	34,634	960	301,519	74,370	-	824	41	1,874	77,109	5,920	-	-	98,871	59	104,850
1991	231,257	-	2,856	30,898	957	265,968	62,229	-	1,717	36	1,909	65,890	4,870	-	31	104,195	25	109,121
1992	228,121	-	3,789	18,645	1,958	252,513	84,283	-	1,956	24	1,030	87,293	7,179	-	-	84,809	13	92,001
1993	219,494	4,722	4,950	24,008	3,033	256,208	83,829	10,588	3,772	62	2,257	100,507	9,657	645	-	72,498	35	82,835
1994	208,409	4,691	3,625	30,026	1,487	248,238	70,127	10,472	3,240	73	731	84,643	34,900	2,261	-	71,360	806	109,327
1995	215,434	5,275	1,268	20,596	2,066	244,639	127,045	16,378	5,253	77	1,912	150,664	45,319	3,251	-	58,269	1369	108,209
1996	238,606	6,314	3,761	16,610	1,639	266,930	103,976	24,837	2,555	51	1,261	132,680	61,312	5,689	-	46,958	748	114,707
1997	244,878	5,516	4,418	22,163	600	277,575	153,456	31,558	3,260	135	96	188,504	64,270	5,482	-	52,580	20	122,352
1998	253,959	4,718	5,084	15,337	1,529	280,627	140,631	22,856	1,684	293	237	165,701	44,128	2,853	-	46,375	628	93,985
1999	281,920	6,638	1,783	11,683	2,706	304,730	261,564	26,851	2,044	200	1,393	292,053	51,158	5,176	-	36,450	537	93,321
2000	255,231	6,796	2,431	23,855	1,109	289,423	204,307	26,415	231	68	67	231,088	94,640	5,649	-	47,605	253	148,148
2001	382,702	7,808	3,916	29,607	521	424,554	143,561	13,233	448	1,215	34	158,491	61,156	1,294	-	68,754	19	131,223
2002	412,507	4,019	950	25,565	551	443,592	153,303	12,625	616	261	119	166,924	57,440	937	-	74,424	12	132,813
2003	381,107	5,338	470	25,173	1,145	413,232	274,529	23,302	638	635	2,777	301,881	54,174	2,260	-	59,776	21	116,231
2004	269,597	2,967	1,884	18,770	626	293,843	198,664	17,555	528	713	1,105	218,565	67,592	1,588	-	43,478	194	112,852
2005	267,599	3,186	1,822	11,958	1,852	286,417	261,780	19,488	1,299	232	1,780	284,579	69,826	1,973	-	41,720	25	113,544
2006	166,330	1,522	686	8,739	1,458	178,735	297,408	12,696	435	226	986	311,751	83,978	1,886	-	35,363	36	121,263
2007	168,952	2,363	894	961	243	173,413	210,620	8,896	276	866	6	220,665	61,434	1,215	-	25,560	*	88,208

TABLE A-2a. (continued)
 TABLA A-2a. (continuación)

	Pacific bluefin—Aleta azul del Pacífico						Albacore—Albacora						Black skipjack—Barrilete negro					
	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total
	Ret.	Dis.					Ret.	Dis.					Ret.	Dis.				
1978	5,389	-	4	9	8	5,410	157	-	1,577	11,939	17,436	31,109	2,167	-	3	-	-	2,170
1979	6,102	-	5	6	26	6,139	148	-	179	5,583	5,043	10,953	1,336	-	30	-	-	1,366
1980	2,909	-	-	-	32	2,941	194	-	407	5,319	5,649	11,569	3,653	-	28	-	-	3,680
1981	1,086	-	-	4	7	1,097	99	-	608	7,275	12,301	20,282	1,907	-	3	-	-	1,911
1982	3,145	-	-	7	6	3,158	355	-	198	8,407	3,562	12,522	1,338	-	-	-	-	1,338
1983	836	-	-	2	38	876	7	-	449	7,433	7,840	15,730	1,222	-	0	-	13	1,236
1984	839	-	0	3	51	894	3,910	-	1,441	6,712	9,794	21,857	663	-	-	-	3	666
1985	3,996	-	-	1	77	4,074	42	-	877	7,268	6,654	14,840	289	-	0	-	7	296
1986	5,040	-	-	1	63	5,104	47	-	86	6,450	4,701	11,284	568	-	-	-	18	586
1987	980	-	-	3	88	1,071	1	-	320	9,994	2,661	12,976	571	-	-	-	2	573
1988	1,380	-	-	2	52	1,433	17	-	271	9,934	5,549	15,771	956	-	-	-	311	1,267
1989	1,102	-	5	4	91	1,202	1	-	21	6,784	2,695	9,501	803	-	0	-	-	803
1990	1,430	-	61	12	103	1,606	39	-	170	6,536	4,105	10,850	787	-	-	-	4	791
1991	419	-	-	5	55	479	-	-	834	7,894	2,754	11,482	421	-	-	-	25	446
1992	1,928	-	-	21	147	2,096	-	-	255	17,081	5,740	23,076	104	-	-	3	-	107
1993	580	-	-	11	325	916	-	-	1	11,194	4,410	15,605	104	4,116	-	31	-	4,250
1994	969	-	-	12	111	1,092	-	-	85	10,390	10,143	20,618	188	834	-	40	-	1,062
1995	630	-	-	25	300	955	-	-	465	6,184	7,425	14,074	202	1,448	-	-	-	1,650
1996	8,223	-	-	19	84	8,326	11	-	72	7,631	8,398	16,112	704	2,304	-	12	-	3,020
1997	2,608	3	2	14	245	2,871	1	-	59	9,678	7,541	17,279	101	2,512	-	11	-	2,624
1998	1,772	0	0	95	525	2,392	42	0	81	12,635	13,155	25,914	490	1,876	39	-	-	2,405
1999	2,553	54	5	151	564	3,327	47	-	227	11,632	14,557	26,463	171	3,424	-	-	-	3,595
2000	3,712	-	61	46	378	4,197	71	-	86	9,663	13,455	23,275	294	1,877	-	-	-	2,170
2001	1,155	3	1	148	401	1,709	3	-	157	19,410	13,766	33,336	2,258	1,253	-	-	-	3,511
2002	1,758	6	3	70	653	2,491	31	-	381	15,289	14,453	30,155	1,459	2,207	8	-	-	3,674
2003	3,233	-	3	87	404	3,728	34	-	59	24,900	20,544	45,538	433	1,606	6	13	117	2,175
2004	8,880	19	-	15	62	8,977	105	-	126	18,444	22,159	40,835	883	392	-	27	862	2,164
2005	4,744	15	-	0	85	4,844	2	-	66	8,901	15,635	24,604	1,472	2,490	-	-	22	3,984
2006	9,806	-	-	0	102	9,908	109	-	22	10,969	19,293	30,393	1,999	1,759	-	-	-	3,758
2007	4,245	-	-	*	14	4,259	40	*	*	2,435	6,112	8,587	2,067	1,434	*	33	4	3,538

TABLE A-2a. (continued)

TABLA A-2a. (continuación)

	Bonitos						Unidentified tunas—Atunes no identificados						Total					
	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total
	Ret.	Dis.					Ret.	Dis.					Ret.	Dis.				
1978	4,801	-	35	-	2,419	7,256	190	-	-	-	6,677	6,867	362,335	-	11,555	92,857	28,906	495,653
1979	1,802	-	3	-	2,658	4,463	559	-	-	-	3,016	3,575	326,386	-	11,354	72,530	12,386	422,656
1980	6,089	-	36	-	2,727	8,852	441	-	-	-	836	1,277	309,180	-	7,176	83,156	12,174	411,686
1981	5,691	-	27	-	4,609	10,326	214	-	3	-	1,109	1,326	311,320	-	8,024	68,714	19,743	407,801
1982	2,121	-	-	-	6,776	8,897	51	-	-	-	382	433	229,202	-	5,537	72,767	11,391	318,898
1983	3,827	-	2	-	7,291	11,120	81	-	-	-	4,711	4,792	151,327	-	8,884	78,402	21,487	260,099
1984	3,514	-	-	-	7,291	10,805	6	-	-	-	2,524	2,530	213,437	-	7,318	63,486	20,854	305,095
1985	3,599	-	5	-	7,869	11,473	18	-	-	-	678	696	276,291	-	2,899	86,836	15,694	381,719
1986	232	-	258	-	1,889	2,379	177	-	4	-	986	1,167	334,896	-	4,806	131,741	8,078	479,521
1987	3,194	-	121	-	1,782	5,098	480	-	-	-	2,043	2,523	332,429	-	7,781	129,066	6,939	476,216
1988	8,811	-	739	-	947	10,497	258	-	-	-	2,939	3,197	377,363	-	9,063	97,380	11,229	495,034
1989	11,277	-	817	-	465	12,560	469	-	-	-	627	1,095	388,612	-	7,930	94,812	5,160	496,514
1990	13,641	-	215	-	371	14,227	393	-	-	3	692	1,088	359,830	-	3,946	140,096	8,168	512,041
1991	1,207	-	82	-	242	1,530	4	-	-	30	192	227	300,406	-	5,520	143,057	6,159	455,143
1992	978	-	-	-	318	1,296	133	-	-	27	1,071	1,232	322,726	-	6,000	120,610	10,277	459,614
1993	599	12	1	-	436	1,047	13	2,172	-	12	4,082	6,279	314,274	22,254	8,724	107,816	14,579	467,648
1994	8,331	147	361	-	185	9,024	10	969	-	1	464	1,444	322,934	19,373	7,311	111,902	13,927	475,447
1995	7,929	55	81	-	54	8,119	12	1,006	-	1	1,004	2,024	396,571	27,412	7,066	85,153	14,130	530,333
1996	648	1	7	-	16	672	37	1,300	-	2	1,038	2,376	413,516	40,444	6,395	71,284	13,184	544,823
1997	1,097	4	8	-	34	1,142	74	3,879	-	8	1,437	5,398	466,484	48,954	7,747	84,588	9,972	617,746
1998	1,330	4	7	-	588	1,929	15	1,633	-	26	18,158	19,832	442,367	33,940	6,896	74,759	34,821	592,784
1999	1,720	0	-	24	369	2,113	29	3,266	-	2,116	4,279	9,690	599,162	45,410	4,059	62,256	24,404	735,292
2000	636	-	-	75	56	767	190	1,795	-	1,994	1,468	5,448	559,080	42,532	2,809	83,307	16,787	704,516
2001	17	-	0	34	19	71	206	1,861	-	2,453	56	4,576	591,059	25,453	4,522	121,622	14,816	757,472
2002	-	-	-	42	1	43	576	2,709	-	3,278	1,422	7,985	627,075	22,503	1,958	118,930	17,211	787,678
2003	-	-	1	-	25	26	81	1,629	-	373	750	2,833	713,591	34,135	1,177	110,958	25,783	885,644
2004	15	35	1	8	3	62	259	1,426	-	504	258	2,448	545,995	23,982	2,539	81,960	25,269	679,745
2005	313	18	-	-	11	343	190	2,380	-	518	427	3,515	605,926	29,550	3,187	63,330	19,837	721,830
2006	3,507	84	12	-	3	3,605	99	2,457	-	163	293	3,012	563,236	20,404	1,155	55,461	22,171	662,426
2007	15,680	687	107	1,136	*	17,610	703	1,810	*	2,429	81	5,023	463,741	16,405	1,277	33,420	6,460	521,301

TABLE A-2b. Estimated retained catches, by gear type, and estimated discards, by purse-seine vessels with carrying capacities greater than 363 t only, of billfishes, in metric tons, in the EPO, 1978-2007. Data for 2005-2007 are preliminary. PS dis. = discards by purse-seine vessels.

TABLA A-2b. Estimaciones de las capturas retenidas, por arte de pesca, y de los descartes, por buques cerqueros de más de 363 t de capacidad de acarreo únicamente, de peces picudos, en toneladas métricas, en el OPO, 1978-2007. Los datos de 2005-2007 son preliminares. PS dis. = descartes por buques cerqueros.

	Swordfish—Pez espada				Blue marlin—Marlín azul				Black marlin—Marlín negro				Striped marlin—Marlín rayado			
	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total
1978	-	4,103	2,205	6,308	-	3,570	-	3,570	-	417	-	417	-	2,495	-	2,495
1979	-	2,658	614	3,272	-	4,528	-	4,528	-	332	-	332	-	4,137	-	4,137
1980	-	3,746	1,107	4,853	-	4,016	-	4,016	-	335	-	335	-	4,827	-	4,827
1981	-	3,070	1,134	4,204	-	4,476	-	4,476	-	247	-	247	-	4,876	-	4,876
1982	-	2,604	1,551	4,155	-	4,745	-	4,745	-	213	-	213	-	4,711	-	4,711
1983	-	3,341	2,338	5,679	-	4,459	-	4,459	-	240	-	240	-	4,472	-	4,472
1984	-	2,752	3,336	6,088	-	5,197	-	5,197	-	248	-	248	-	2,662	-	2,662
1985	-	1,885	3,768	5,653	-	3,588	-	3,588	-	180	-	180	-	1,599	-	1,599
1986	-	3,286	3,294	6,580	-	5,278	-	5,278	-	297	-	297	-	3,540	-	3,540
1987	-	4,676	3,740	8,416	-	7,282	-	7,282	-	358	-	358	-	7,647	-	7,647
1988	-	4,916	5,642	10,558	-	5,662	-	5,662	-	288	-	288	-	5,283	-	5,283
1989	-	5,202	6,072	11,274	-	5,392	-	5,392	-	193	-	193	-	3,473	-	3,473
1990	-	5,807	5,066	10,873	-	5,540	-	5,540	-	223	-	223	-	3,260	-	3,260
1991	17	10,671	4,307	14,995	69	6,719	-	6,788	58	246	-	304	76	2,993	-	3,069
1992	4	9,820	4,267	14,091	52	6,627	-	6,679	95	228	-	323	69	3,054	-	3,123
1993	5	6,187	4,414	10,606	105	6,571	-	6,676	93	217	-	310	71	3,575	-	3,646
1994	3	4,990	3,822	8,815	97	9,027	-	9,124	72	256	-	328	36	3,396	-	3,432
1995	4	4,495	2,974	7,473	99	7,288	-	7,387	76	158	-	234	24	3,249	-	3,273
1996	1	7,071	2,486	9,558	85	3,596	-	3,681	79	99	-	178	25	3,218	-	3,243
1997	4	10,580	1,781	12,365	150	5,808	-	5,958	101	153	-	254	28	4,473	-	4,501
1998	3	9,800	3,246	13,049	153	5,057	-	5,210	102	168	-	270	21	3,558	-	3,579
1999	2	7,569	1,965	9,536	213	3,690	-	3,903	117	94	-	211	37	2,621	-	2,658
2000	2	8,930	2,383	11,315	153	3,634	-	3,785	95	105	-	200	20	1,889	0	1,909
2001	4	16,007	1,964	17,975	175	4,197	-	4,372	122	123	-	245	23	1,961	0	1,984
2002	1	17,598	2,119	19,718	233	3,481	-	3,714	125	78	-	203	79	2,159	1	2,239
2003	5	18,161	354	18,520	209	4,016	-	4,225	144	72	-	216	35	1,906	6	1,947
2004	2	15,370	309	15,681	168	3,782	-	3,950	74	41	-	115	23	1,548	-	1,571
2005	3	8,938	4,304	13,245	236	3,350	-	3,586	103	37	-	140	39	1,532	-	1,571
2006	5	8,812	3,895	12,712	221	2,093	105	2,419	140	37	-	177	59	1,530	-	1,589
2007	5	585	11	601	180	136	*	316	91	*	-	91	36	104	*	140

TABLE A-2b. (continued)
 TABLA A-2b. (continuación)

	Shortbill spearfish—Marlín trompa corta				Sailfish—Pez vela				Unidentified istiophorid billfishes—Picudos istiofóridos no identificados				Total billfishes—Total de peces picudos			
	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total
1978	-	-	-	-	-	878	-	878	-	3	-	3	-	11,466	2,205	13,671
1979	-	-	-	-	-	251	-	251	-	6	-	6	-	11,912	614	12,526
1980	-	-	-	-	-	244	-	244	-	-	-	-	-	13,168	1,107	14,275
1981	-	-	-	-	-	379	-	379	-	9	-	9	-	13,057	1,134	14,191
1982	-	-	-	-	-	1,084	-	1,084	-	3	-	3	-	13,360	1,551	14,911
1983	-	-	-	-	-	890	-	890	-	2	-	2	-	13,404	2,338	15,742
1984	-	-	-	-	-	345	-	345	-	-	-	-	-	11,204	3,336	14,540
1985	-	-	-	-	-	395	-	395	-	1	-	1	-	7,648	3,768	11,416
1986	-	5	-	5	-	583	-	583	-	1	-	1	-	12,990	3,294	16,284
1987	-	15	-	15	-	649	-	649	-	398	-	398	-	21,025	3,740	24,765
1988	-	13	-	13	-	649	-	649	-	368	-	368	-	17,179	5,642	22,821
1989	-	-	-	-	-	192	-	192	-	51	-	51	-	14,503	6,072	20,575
1990	-	-	-	-	-	6	-	6	-	125	-	125	-	14,961	5,066	20,027
1991	-	1	-	1	40	717	-	757	-	112	-	112	260	21,459	4,307	26,026
1992	1	1	-	2	41	1,351	-	1,392	-	1,123	-	1,123	262	22,204	4,267	26,733
1993	0	1	-	1	58	2,266	-	2,324	96	1,650	-	1,746	426	20,467	4,414	25,307
1994	0	144	-	144	37	1,682	-	1,719	23	1,028	-	1,051	269	20,523	3,822	24,614
1995	1	155	-	156	28	1,351	-	1,379	12	232	1	245	243	16,928	2,975	20,146
1996	1	126	-	127	22	738	-	760	19	308	-	327	231	15,156	2,486	17,873
1997	1	141	-	142	24	1,217	-	1,241	8	1,324	-	1,332	315	23,696	1,833	25,844
1998	0	200	-	200	58	1,382	-	1,440	13	575	52	640	350	20,740	3,246	24,336
1999	1	278	-	279	40	1,216	-	1,256	16	1,135	-	1,151	425	16,603	2,101	19,129
2000	1	285	-	285	55	1,376	-	1,431	7	879	136	1,022	331	17,098	2,587	20,016
2001	1	304	-	304	34	1,477	325	1,836	6	1,742	204	1,952	364	25,811	2,303	28,477
2002	1	273	-	274	39	1,792	17	1,848	10	2,467	14	2,491	487	27,848	2,137	30,472
2003	4	290	-	294	96	1,174	-	1,270	11	1,387	-	1,398	504	27,006	360	27,870
2004	1	207	-	208	36	1,400	17	1,453	9	1,384	-	1,393	313	23,732	326	24,371
2005	1	232	-	233	40	805	15	860	10	896	-	906	432	15,790	4,694	20,916
2006	1	262	-	263	50	658	61	769	30	101	375	506	505	13,493	4,061	18,059
2007	2	*	*	2	49	114	10	173	19	41	*	60	382	980	21	1,383

TABLE A-2c. Estimated retained catches (Ret.), by gear type, and estimated discards (Dis.), by purse-seine vessels with a carrying capacity greater than 363 t only, of other species, in metric tons, in the EPO, 1978-2007. The data for 2005-2007 are preliminary.

TABLA A-2c. Estimaciones de las capturas retenidas (Ret.), por arte de pesca, y de los descartes (Dis.), por buques cerqueros de más de 363 t de capacidad de acarreo únicamente, de otras especies, en toneladas métricas, en el OPO, 1978-2007. Los datos de 2005-2007 son preliminares.

	Carangids—Carángidos						Dorado (<i>Coryphaena</i> spp.)						Elasmobranchs—Elasmobranquios						Other fishes—Otros peces					
	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total
	Ret.	Dis.					Ret.	Dis.					Ret.	Dis.					Ret.	Dis.				
1978	238	-	1	-	-	239	87	-	-	-	738	825	145	-	-	-	390	535	148	-	-	-	-	148
1979	81	-	-	-	-	81	124	-	-	-	927	1,051	7	-	-	17	1,290	1,314	478	-	-	7	-	485
1980	224	-	2	-	-	226	124	-	-	-	1,001	1,125	16	-	-	7	858	881	301	-	-	-	-	301
1981	111	-	17	-	-	128	410	-	-	-	628	1,038	49	-	-	120	1,211	1,380	201	-	3	51	-	255
1982	122	-	-	-	-	122	274	-	-	-	980	1,254	22	-	30	215	864	1,131	284	-	-	59	-	343
1983	1,240	-	-	-	-	1,240	88	-	-	-	3,374	3,462	34	-	-	85	695	814	267	-	1	-	-	268
1984	414	-	-	-	-	414	103	-	-	-	202	305	48	-	-	6	1,039	1,093	415	-	-	-	3	418
1985	317	-	4	-	-	321	93	-	-	-	108	201	27	-	-	13	481	521	77	-	-	7	-	84
1986	188	-	19	-	-	207	632	-	-	-	1,828	2,460	29	-	-	1	1,979	2,009	94	-	-	-	-	94
1987	566	-	5	-	-	571	271	-	-	-	4,272	4,543	96	-	-	87	1,020	1,203	210	-	-	535	-	745
1988	825	-	1	-	-	826	69	-	-	-	1,560	1,629	1	-	-	23	1,041	1,065	141	-	-	360	-	501
1989	60	-	2	-	-	62	210	-	-	-	1,680	1,890	29	-	-	66	1,025	1,120	237	-	-	152	-	389
1990	234	-	-	-	1	235	63	-	-	-	1,491	1,554	-	-	-	280	1,095	1,375	240	-	-	260	13	513
1991	116	-	-	-	-	116	57	-	-	7	613	677	1	-	6	1112	1,345	2,464	462	-	1	457	-	920
1992	116	-	-	-	-	116	69	-	-	37	708	814	-	-	-	2,293	1,190	3,483	445	-	-	182	-	627
1993	17	64	-	-	3	84	36	719	-	17	724	1,496	24	2,252	-	1,026	917	4,219	223	477	2	182	-	884
1994	7	40	-	-	16	63	279	1,237	-	46	3,459	5,021	113	2,351	-	1,234	1,315	5,013	10	354	-	251	-	615
1995	11	48	-	-	9	68	110	1,097	-	39	2,127	3,373	20	2,691	-	922	1,077	4,711	-	561	-	209	-	770
1996	55	217	-	-	57	329	119	1,332	-	43	183	1,677	3	2,452	-	1,120	2,151	5,726	5	354	-	455	-	814
1997	2	150	-	-	39	191	36	1,241	-	6,866	3,109	11,252	22	3,465	-	956	2,328	6,772	14	426	-	847	-	1,287
1998	57	178	-	-	4	239	15	836	-	2,528	9,167	12,546	6	3,227	-	2,099	4,392	9,724	65	983	-	1,338	-	2,386
1999	35	216	1	-	-	252	75	1,262	-	6,283	1,160	8,780	-	2,208	-	5,997	2,088	10,293	86	762	-	973	-	1,821
2000	57	121	-	4	4	186	109	1,547	-	3,537	1,041	6,233	3	1,689	-	8,621	406	10,719	1	287	-	1,487	-	1,775
2001	-	170	-	18	26	214	148	2,266	-	15,942	2,825	21,182	-	1,555	-	12,551	107	14,214	-	517	-	1,721	1	2,239
2002	-	135	-	15	20	171	45	1,849	-	11,806	4,137	17,837	-	682	-	14,694	99	15,475	-	517	-	1,895	0	2,412
2003	-	160	-	54	-	214	23	904	-	5,053	288	6,269	-	1,826	-	14,594	372	16,793	-	245	-	4,518	-	4,762
2004	-	161	-	1	-	162	99	1,005	-	3,969	4,645	9,718	-	1,455	9	11,040	164	12,668	14	684	-	515	-	1,213
2005	61	106	-	-	-	167	111	1,073	-	3,846	8,667	13,697	-	1,019	4	11,899	220	13,143	195	206	-	403	-	804
2006	133	468	-	-	-	601	132	1,272	-	1,849	13,122	16,375	-	1,308	8	2,599	2,810	6,725	509	386	-	103	-	998
2007	124	451	9	*	*	584	332	1,313	*	534	2,126	4,305	4	771	*	240	*	1,015	508	334	*	234	*	1,076

TABLE A-3a. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2003. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.

TABLA A-3a. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2003. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2003		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
BLZ	LL	353	0	604	42	600	0	0	0	1,599
CAN	LTL	0	0	0	0	6,295	0	0	0	6,295
CHL	LL	0	0	0	0	0	13	0	0	13
	NK	73	0	14	0	1	0	24	0	112
CHN	LL	2,739	0	10,066	0	1,743	0	0	0	14,548
COL	PS	17,638	5,862	258	0	0	0	0	0	23,758
CRI	LL	1,418	0	18	0	0	0	0	0	1,436
ECU	LL	148	293	0	0	0	0	0	0	441
	NK	0	93	0	0	0	0	0	0	93
	PS	33,027	139,232	24,711	0	0	61	0	38	197,069
ESP	LL	0	0	58	0	0	0	0	186	244
	PS	3,737	28,778	7,895	0	0	0	0	0	40,410
JPN	LL	9,125	50	24,888	3	2,122	0	0	0	36,187
KOR	LL	4,911	25	10,272	0	343	0	0	0	15,551
MEX	LL	365	0	0	43	0	0	0	0	408
	LP	468	637	0	0	0	6	0	0	1,111
	PS	172,164	8,793	8	3,211	29	193	0	0	184,398
PAN	PS	24,888	13,554	4,621	0	0	3	0	10	43,076
PER	NK	806	2,575	0	0	0	117	0	750	4,248
PYF	LL	462	60	346	0	3,233	0	0	144	4,246
TWN	LL	3,477	172	12,016	0	12,663	0	0	0	28,328
USA	GN	0	9	6	14	16	0	1	0	46
	LL	5	1	232	0	24	0	0	4	266
	LP	2	1	0	3	59	0	1	0	66
	LTL	0	0	0	0	11,622	0	0	0	11,622
	PS	906	8,242	2,779	22	3	163	0	25	12,140
	RG	266	100	1	390	2,212	0	0	0	2,969
VEN	PS	95,168	7,883	438	0	0	0	0	0	103,489
VUT	LL	699	0	1,258	0	4,133	0	0	0	6,090
	PS	2,925	21,182	6,510	0	0	13	0	0	30,630
OTR ¹	LL ²	1,472	33	18	0	438	0	0	39	2,001
	PS ³	30,654	41,003	6,954	0	2	0	0	8	78,621

¹ This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

² Includes Cook Islands, Honduras, Nicaragua, and Panama—Incluye Honduras, Islas Cook, Nicaragua, y Panamá.

³ Includes Belize, Bolivia, El Salvador, Guatemala, Honduras, Peru, and Unknown—Incluye Belice, Bolivia, El Salvador, Guatemala, Honduras, Perú, y Desconocido.

TABLE A-3b. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2004. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.

TABLA A-3b. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2004. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2004		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
BLZ	LL	190	26	120	0	296	0	0	0	632
CAN	LTL	0	0	0	0	7,676	0	0	0	7,676
CHL	LL	86	0	9	0	8	27	8	0	138
CHN	LL	798	0	2,645	0	590	0	0	0	4,034
CRI	LL	1,701	0	21	0	0	0	0	0	1,722
ECU	LL	0	0	312	0	0	0	0	0	312
	NK	0	0	185	0	0	0	0	0	185
	PS	40,839	89,120	31,368	0	0	97	7	12	161,442
ESP	LL	0	0	5	0	0	0	0	318	323
HND	PS	1,056	3,602	1,830	0	0	0	0	1	6,489
JPN	LL	7,338	97	21,236	2	2,264	0	0	0	30,936
KOR	LL	2,997	31	10,729	0	783	0	0	0	14,540
MEX	LL	32	0	0	14	0	0	0	0	46
	LP	1,882	528	0	0	0	0	0	0	2,410
	PS	90,902	24,968	0	8,880	104	418	8	54	125,333
NIC	LL	43	0	0	0	0	0	0	0	43
PAN	LL	2,802	148	48	0	143	0	0	11	3,152
PAN	PS	31,236	20,184	11,261	0	0	25	0	2	62,708
PER	NK	291	1,098	0	0	0	862	0	258	2,509
PYF	LL	767	56	405	0	1,802	0	0	143	3,173
TWN	LL	1,824	339	7,384	0	9,988	0	0	0	19,535
USA	GN	1	0	0	10	12	0	3	0	26
	LL	6	3	149	0	8	0	0	1	167
	LP	2	0	0	0	126	0	1	0	129
	LTL	1	0	0	0	12,718	0	0	0	12,719
	PS	2,523	5,071	3,689	0	1	296	0	178	11,758
	RG	334	7	9	52	1,506	0	0	0	1,908
VEN	PS	54,095	12,942	1,040	0	0	47	0	1	68,125
VUT	LL	171	0	407	0	2,554	0	0	0	3,132
VUT	PS	1,621	8,313	5,096	0	0	0	0	0	15,030
OTR ¹	LL	15	13	9	0	256	0	0	31	324
	PS ²	47,325	34,464	13,308	0	0	1	0	12	95,110

¹ This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

² Includes Bolivia, Colombia, El Salvador, Guatemala, Nicaragua, Spain, and Unknown—Incluye Bolivia, Colombia, El Salvador, España, Guatemala, Nicaragua, y Desconocido.

TABLE A-3c. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2005. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.

TABLA A-3c. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2005. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2005		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
BLZ	LL	164	16	112	0	46	0	0	0	338
CAN	LTL	0	0	0	0	4,799	0	0	0	4,799
CHL	NK	110	0	24	0	7	22	11	0	174
CHN	LL	682	0	2,104	0	895	0	0	0	3,681
CRI	LL	1,791	0	23	0	0	0	0	0	1,814
ECU	LL	0	0	39	0	0	0	0	0	39
	PS	40,754	138,609	32,680	0	0	141	40	28	212,252
ESP	LL	0	0	0	0	0	0	0	362	362
HND	PS	2,215	5,406	3,618	0	0	0	0	0	11,239
JPN	LL	4,028	41	19,401	0	2,633	0	0	0	26,103
KOR	LL	532	0	11,580	0	172	0	0	0	12,284
MEX	LP	1,822	1,299	0	0	0	0	0	0	3,121
	PS	111,458	31,685	0	4,542	0	1,193	273	92	149,244
NIC	LL	18	0	0	0	0	0	0	0	18
	PS	6,912	2,469	33	0	0	0	0	0	9,414
PAN	LL	1,782	94	30	0	91	0	0	0	1,997
	PS	29,897	28,055	13,026	0	0	8	0	8	70,994
PER	NK	458	365	0	0	0	0	0	427	1,250
	OTR	708	1,398	0	0	0	0	0	0	2,106
PYF	LL	530	14	398	0	1,572	0	0	146	2,661
SLV	PS	6,905	5,258	989	0	0	73	0	60	13,285
TWN	LL	2,422	66	6,441	0	3,300	0	0	0	12,229
USA	GN	2	0	0	5	20	0	0	0	27
	LL	7	1	536	0	13	0	0	9	566
	LP	0	0	0	0	66	0	0	0	66
	LTL	0	0	0	0	9,033	0	0	0	9,033
	NK	0	0	0	3	0	0	0	0	3
	RG	574	17	1	77	1,719	0	0	0	2,388
VEN	PS	41,604	14,015	116	0	0	41	0	2	55,778
VUT	LL	*	*	1,056	*	179	*	*	*	1,235
OTR ¹	LL	2	0	0	0	57	0	0	1	60
	PS ²	27,854	36,283	19,364	201	2	16	0	0	83,720

¹ This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

² Includes Colombia, Guatemala, Spain, United States, Vanuatu, and Unknown —Incluye Colombia, España, Estados Unidos, Guatemala, Vanuatú, y Desconocido.

TABLE A-3d. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2006. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.

TABLA A-3d. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2006. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2006		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
BLZ	LL	105	13	75	*	8	*	*	*	201
CAN	LTL	*	*	*	*	5,819	*	*	*	5,819
CHL	NK	79	*	36	*	5	*	3	*	123
CHN	LL	36	*	709	*	13	*	*	2	760
CRI	LL	794	*	10	*	*	*	*	*	804
ECU	PS	25,544	140,610	38,597	*	*	80	*	67	204,898
HND	PS	1,492	6,270	3,832	*	*	*	*	*	11,594
JPN	LL	3,412	20	18,017	0	2,571	*	*	*	24,020
KOR	LL	*	*	8,694	*	58	*	*	*	8,752
MEX	LP	686	435	*	*	*	*	12	*	1,133
	PS	67,958	18,220	59	9,806	109	1,897	3,259	31	101,339
NIC	PS	7,201	4,886	2,486	*	*	0	*	1	14,574
PAN	LL	2,164	114	37	*	110	*	*	*	2,425
	PS	23,516	44,013	13,247	*	*	8	*	*	80,784
PER	NK	595	73	*	*	*	*	*	192	860
PYF	LL	537	22	388	*	2,273	*	*	156	3,376
	NK	434	899	*	*	114	*	*	100	1,547
TWN	LL	1,671	57	6,412	*	4,235	*	*	*	12,375
USA	GN	1	2	*	1	3	*	*	1	8
	LL	20	*	86	*	13	*	*	2	121
	LP	*	*	*	*	22	*	*	*	22
	LTL	*	*	*	*	12,854	*	*	*	12,854
	RG	349	12	*	101	291	*	*	*	753
VEN	PS	17,916	23,804	3,729	*	*	9	248	0	45,706
VUT	LL	*	*	935	*	1,688	*	*	*	2,623
OTR ¹	LL	*	*	*	*	207	*	*	3	210
	PS ²	22,703	59,605	22,028	*	*	5	*	*	104,341

¹ This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

² Includes Bolivia, Colombia, El Salvador, Guatemala, Spain, United States, and Vanuatu—Incluye Bolivia, Colombia, El Salvador, España, Estados Unidos, Guatemala, y Vanuatu.

TABLE A-3e. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2007. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.

TABLA A-3e. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2007 Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2007		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
CAN	LTL	*	*	*	*	6,112	*	*	*	6,112
CRI	LL	59	*	4	*	*	*	*	*	63
ECU	PS	19,449	93,116	38,210	*	*	479	1,246	148	152,648
JPN	LL	*	*	13,262	*	332	*	*	*	13,594
KOR	LL	*	*	5,611	*	73	*	*	*	5,684
MEX	LL	902	866	*	*	*	33	1,136	235	3,172
	LP	894	276	*	*	*	*	107	*	1,277
	PS	64,506	22,459	0	4,245	40	1,412	14,407	304	107,373
NIC	PS	5,228	3,040	527	*	*	0	*	0	8,795
PAN	LL	*	*	*	*	*	*	*	2,194	2,194
	PS	28,878	23,616	8,592	*	*	92	23	3	61,204
PER	NK	152	5	*	*	*	4	*	81	242
TWN	LL	*	*	5,859	*	2,030	*	*	*	7,889
USA	LL	*	*	330	*	*	*	*	*	330
	RG	91	1	*	14	*	*	*	*	106
VEN	PS	24,039	21,424	1,095	*	*	48	4	16	46,626
VUT	LL	*	*	494	*	*	*	*	*	494
OTR ¹	PS ²	26,852	46,965	13,010	*	*	36	*	232	87,095

¹ This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

² Includes Bolivia, Colombia, El Salvador, Guatemala, Honduras, Spain, United States, Unknown and Vanuatu—Incluye Bolivia, Colombia, El Salvador, España, Estados Unidos, Guatemala, Vanuatu y Desconocido

TABLE A-4a Preliminary estimates of the retained catches and landings, in metric tons, of tunas and bonitos caught by purse-seine, and pole-and-line in 2006, by species and vessel flag (upper panel) and locations where processed (lower panel). The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.

TABLA A-4a. Estimaciones preliminares de las capturas retenidas y descargas de atunes y bonitos capturado por buques cerqueros, cañeros en el OPO en 2006, por especie y bandera del buque (panel superior) y localidad donde fue procesado (panel inferior), en toneladas métricas. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a las estimaciones de composición por especie, y son preliminares.

	YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total	%
Retained catches–Capturas retenidas										
ECU	25,544	140,610	38,597	*	*	80	*	67	204,898	36.3
HND	1,492	6,270	3,832	*	*	*	*	*	11,594	2.0
MEX	68,644	18,655	59	9,806	109	1,897	3,270	31	102,472	18.2
NIC	7,201	4,886	2,486	*	*	*	*	1	14,574	2.6
PAN	23,516	44,013	13,247	*	*	8	*	*	80,784	14.3
VEN	17,916	23,804	3,729	*	*	9	248	*	45,706	8.1
OTR ¹	22,703	59,605	22,028	*	22	5	*	*	104,363	18.5
Total	167,016	297,843	83,978	9,806	131	1,999	3,518	99	564,390	
Landings–Descargas										
COL	14,831	20,932	6,352	*	*	8	*	*	42,123	7.4
ECU	52,289	212,908	67,705	*	*	82	248	67	333,299	59.0
MEX	68,511	17,958	0	9,806	109	1,897	3,270	31	101,582	18.0
VEN	13,862	16,047	560	*	*	9	*	*	30,478	5.4
OTR ²	24,635	25,347	7,724	*	22	3	*	1	57,732	10.2
Total	174,128	293,191	82,342	9,806	131	1,999	3,518	99	565,214	

¹ Includes Colombia, Guatemala, Spain, United States, Vanuatu, and Unknown. This category is used to avoid revealing the operations of individual vessels or companies.

¹ Incluye, Colombia, España, Guatemala, Estados Unidos, Vanuatu, y Desconocido. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

² Includes El Salvador, Guatemala, Peru, Spain, United States, and Unknown. This category is used to avoid revealing the operations of individual vessels or companies.

² Incluye El Salvador, España, Estados Unidos, Guatemala, Perú, y Desconocido. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

TABLE A-4b Preliminary estimates of the retained catches and landings, in metric tons, of tunas and bonitos caught by purse-seine and pole-and-line in the EPO in 2007 by species and vessel flag (upper panel) and locations where processed (lower panel). The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.

TABLA A-4b. Estimaciones preliminares de las capturas retenidas y descargas de atunes y bonitos capturado por buques cerqueros, cañeros en el OPO en 2007, por especie y bandera del buque (panel superior) y localidad donde fue procesado (panel inferior), en toneladas métricas. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a las estimaciones de composición por especie, y son preliminares.

	YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total	%
	Retained catches–Capturas retenidas									
ECU	19,449	93,116	38,210	*	*	479	1,246	148	152,648	32.8
MEX	65,400	22,735	*	4,245	40	1,412	14,514	304	108,650	23.4
NIC	5,228	3,040	527	*	*	0	*	*	8,795	1.9
PAN	28,878	23,616	8,592	*	*	92	23	3	61,204	13.2
VEN	24,039	21,424	1,095	*	*	48	4	16	46,626	10.0
OTR ¹	26,852	46,965	13,010	*	*	36	*	232	87,095	18.7
Total	169,846	210,896	61,434	4,245	40	2,067	15,787	703	465,018	
	Landings–Descargas									
COL	30,412	19,212	3,390	*	*	*	*	*	53,014	11.3
ECU	38,178	136,424	52,399	*	*	595	1,439	151	229,186	48.9
MEX	59,292	22,291	377	4,242	39	1,382	14,343	304	102,270	21.8
VEN	9,615	10,552	460	*	*	22	4	5	20,658	4.4
OTR ²	35,165	22,416	5,760	3	*	42	*	232	63,618	13.6
Total	172,663	210,894	62,387	4,245	39	2,041	15,786	692	468,746	

¹ Includes Bolivia, Colombia, El Salvador, Guatemala, Spain, United States, and Vanuatu. This category is used to avoid revealing the operations of individual vessels or companies.

¹ Incluye Bolivia, Colombia, El Salvador, España, Estados Unidos, Guatemala, y Vanuatu. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

² Includes Costa Rica, El Salvador, Guatemala, Peru, United States, and Unknown. This category is used to avoid revealing the operations of individual vessels or companies.

² Incluye Costa Rica, El Salvador, Estados Unidos, Guatemala, Perú, y Desconocido. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

TABLE A-5. Annual retained catches of Pacific bluefin tuna, by gear type and flag, in metric tons. The data for 2005 and 2006 are preliminary.**TABLA A-5.** Capturas retenidas anuales de atún aleta azul del Pacífico, por arte de pesca y bandera, en toneladas métricas. Los datos de 2005 y 2006 son preliminares.

PBF	Western Pacific flags—Banderas del Pacífico occidental ¹										Eastern Pacific flags—Banderas del Pacífico oriental						Total
	JPN				KOR ¹		TWN			Sub-total	USA ²		MEX		OTR	Sub-total	
	PS	LP	LL	OTR	PS	OTR	PS	LL	OTR		PS	OTR	PS	OTR	OTR		
1977	5,110	2,256	712	5,519	-	-	-	131	-	13,727	3,265	44	2,184	-	5,493	19,220	
1978	10,427	1,154	1,049	9,486	-	-	-	66	-	22,183	4,663	12	546	-	5,221	27,404	
1979	13,881	1,250	1,223	9,418	-	-	-	58	-	25,830	5,889	24	213	-	6,126	31,956	
1980	11,327	1,392	1,170	5,945	-	-	-	114	-	19,948	2,327	31	582	-	2,940	22,888	
1981	25,430	754	796	6,428	-	-	-	179	-	33,587	867	9	218	-	1,094	34,681	
1982	19,234	1,777	880	4,161	31	-	-	207	11	26,302	2,639	12	506	-	3,157	29,459	
1983	14,784	356	707	3,883	13	-	9	175	12	19,939	621	34	214	-	869	20,808	
1984	4,433	587	360	4,797	4	-	5	477	-	10,664	673	65	167	-	905	11,569	
1985	4,162	1,817	496	5,475	1	-	80	210	67	12,308	3,320	111	676	-	4,107	16,415	
1986	7,412	1,086	249	4,944	344	-	16	70	81	14,202	4,851	66	189	-	5,106	19,308	
1987	8,672	1,565	346	3,536	89	-	21	365	87	14,681	861	54	119	-	1,034	15,715	
1988	3,601	907	241	2,436	32	-	197	108	431	7,953	923	49	448	1	1,421	9,374	
1989	6,166	754	440	1,977	71	-	259	205	578	10,450	1,045	129	57	-	1,231	11,681	
1990	2,959	536	396	2,359	132	-	149	189	454	7,174	1,380	151	50	-	1,581	8,755	
1991	4,336	286	285	3,994	265	-	-	342	107	9,614	411	94	9	-	514	10,128	
1992	4,255	166	573	3,102	288	-	73	464	76	8,998	1,928	117	0	-	2,045	11,043	
1993	5,156	129	857	1,645	40	-	1	471	4	8,302	579	329	0	-	908	9,210	
1994	7,345	162	1,138	4,887	50	-	-	559	-	14,141	906	120	63	2	1,091	15,232	
1995	5,334	270	769	6,702	821	-	-	335	2	14,233	619	275	10	-	904	15,137	
1996	5,540	94	978	4,628	102	-	-	956	-	12,299	4,523	87	3,700	-	8,310	20,609	
1997	6,137	34	1,383	3,817	1054	-	-	1814	-	14,239	2,240	266	368	-	2,874	17,113	
1998	2,715	85	1,260	3,663	188	-	-	1910	-	9,820	1,771	585	1	-	2,357	12,177	
1999	11,619	35	1,155	4,411	256	-	-	3089	-	20,565	184	656	2,369	35	3,244	23,809	
2000	8,193	102	1,005	5,763	794	-	-	2780	2	18,638	693	378	3,019	99	4,188	22,827	
2001	3,139	180	1,004	4,947	995	10	-	1839	104	12,218	28	395	863	-	1,287	13,505	
2002	4,171	99	889	4,023	674	1	-	1523	4	11,384	0	360	1,708	2	2,070	13,454	
2003	945	44	1,230	3,246	1591	-	-	1863	21	8,940	22	412	3,211	43	3,688	12,628	
2004	4,792	132	1,311	4,054	636	-	-	1714	-	12,639	0	59	8,880	14	8,953	21,592	
2005	3,927	549	1,824	8,702	950	-	-	1368	-	17,319	201	84	4,542	*	4,827	22,147	
2006	3,780	108	1,037	5,049	*	-	-	1148	-	11,123	*	96	9,795	*	9,891	21,013	

¹ Source: International Scientific Committee, Report of the 7th Working Group on Pacific Bluefin Tuna, December 2007, Table 1—Fuente: Comité Científico Internacional, Informe del 7º Grupo de Trabajo sobre el Atún Aleta Azul del Pacífico, diciembre de 2007, Tabla 1.

TABLE A-6a. Annual retained catches of North Pacific albacore by region and gear, in metric tons, compiled from IATTC data (EPO) and SPC data (WCPO). The data for 2006 and 2007 are preliminary.

TABLA A-6a. Capturas retenidas anuales de atún albacora del Pacífico Norte por región, en toneladas métricas, compiladas de datos de la CIAT (OPO) y la SPC (WCPO). Los datos de 2006 y 2007 son preliminares.

ALB (N)	Eastern Pacific Ocean Océano Pacífico oriental						Western and central Pacific Ocean Océano Pacífico occidental y central					Total
	LL	LP	LTL	PS	OTR	Subtotal	LL	LP	LTL	OTR	Subtotal	
1978	790	1,577	16,613	155	821	19,956	12,610	57,018	23	6,406	76,057	96,013
1979	1,394	179	4,955	148	74	6,750	13,163	45,635	2,347	4,144	65,289	72,039
1980	1,268	407	5,421	194	168	7,458	14,245	43,495	2,347	4,534	64,620	72,079
1981	2,040	608	12,039	99	227	15,013	16,517	26,375	798	11,293	54,983	69,996
1982	1,971	198	3,303	355	257	6,084	15,693	29,744	3,410	13,696	62,543	68,627
1983	1,572	449	7,751	7	87	9,866	14,416	20,155	1,833	7,463	43,867	53,733
1984	2,592	1,441	8,343	3,910	1427	17,713	12,972	25,928	1,011	17,285	57,196	74,909
1985	1,312	877	5,308	42	1176	8,714	13,252	21,967	1,163	13,776	50,158	58,873
1986	698	86	4,282	47	196	5,309	12,349	14,525	456	10,819	38,149	43,458
1987	1,114	320	2,300	1	171	3,906	14,171	19,103	570	11,578	45,422	49,328
1988	899	271	4,202	17	64	5,454	14,417	7,839	165	18,892	41,312	46,766
1989	957	21	1,852	1	160	2,991	12,921	11,241	148	19,425	43,735	46,726
1990	1,139	170	2,440	39	24	3,812	15,034	13,944	465	26,093	55,536	59,348
1991	1,514	834	1,783	-	6	4,137	15,985	5,729	201	11,658	33,573	37,710
1992	1,635	255	4,515	-	2	6,407	17,788	14,774	419	17,238	50,219	56,626
1993	1,772	1	4,331	-	25	6,129	28,777	12,844	2,417	2,878	46,916	53,045
1994	2,356	85	9,574	-	106	12,121	28,015	30,439	3,560	3,576	65,590	77,711
1995	1,381	465	7,306	-	102	9,254	30,911	22,619	3,452	1,725	58,707	67,961
1996	1,675	72	8,195	11	88	10,041	37,286	22,548	13,654	657	74,145	84,186
1997	1,365	59	6,057	1	1018	8,500	46,000	35,056	12,617	1,749	95,422	103,922
1998	1,730	81	11,936	42	1208	14,996	45,868	27,797	8,138	1,515	83,319	98,315
1999	2,701	227	10,831	47	3621	17,428	43,058	54,817	3,022	7,212	108,109	125,536
2000	1,880	86	10,874	71	1798	14,710	38,840	21,767	4,371	2,940	67,917	82,627
2001	1,822	157	11,597	3	1635	15,215	34,250	29,254	5,141	1,372	70,016	85,231
2002	1,226	382	11,906	31	2357	15,901	21,782	49,574	4,417	3,631	79,405	95,306
2003	1,125	59	17,786	34	2228	21,231	28,976	34,648	4,100	1,181	68,906	90,137
2004	919	126	20,196	105	1518	22,864	22,138	34,950	1,977	7,284	66,348	89,213
2005	2,597	66	13,708	2	1739	18,112	23,853	16,504	1,016	1,505	42,878	60,990
2006	4,777	22	18,258	109	291	23,458	15,496	16,370	1,083	900	33,848	57,306
2007	2,448	*	6,112	37	*	8,597	*	*	*	6,406	*	8,597

TABLE A-6b. Annual retained catches of South Pacific albacore by region, in metric tons, compiled from IATTC data (EPO) and SPC data (WCPO). The data for 2006 and 2007 are preliminary.

TABLA A-6b. Capturas retenidas anuales de atún albacora del Pacífico Sur por región, en toneladas métricas, compiladas de datos de la CIAT (OPO) y la SPC (WCPO). Los datos de 2006 y 2007 son preliminares.

ALB (S)	Eastern Pacific Ocean Océano Pacífico oriental				Western and central Pacific Ocean Océano Pacífico occidental y central					Total
	LL	LTL	OTR	Subtotal	LL	LP	LTL	OTR	Subtotal	
1978	11,149	-	2	11,151	21,740	100	1686	-	23,526	34,678
1979	4,189	-	14	4,203	21,973	100	814	-	22,887	27,090
1980	4,050	-	60	4,110	26,922	101	1468	-	28,491	32,601
1981	5,235	-	35	5,270	27,459	-	2085	-	29,544	34,814
1982	6,436	-	2	6,438	21,911	1	2434	-	24,346	30,784
1983	5,862	-	2	5,864	18,447	0	744	37	19,228	25,092
1984	4,120	-	24	4,144	16,220	2	2773	1565	20,560	24,704
1985	5,955	-	170	6,125	21,183	-	3253	1767	26,203	32,328
1986	5,752	74	149	5,975	26,889	-	1929	1797	30,615	36,590
1987	8,880	188	3	9,071	13,090	9	1946	927	15,972	25,043
1988	9,035	1,282	0	10,317	19,250	-	3014	5283	27,546	37,863
1989	5,828	593	90	6,510	12,396	-	7777	21878	42,051	48,562
1990	5,397	1,336	306	7,038	13,972	245	5639	7232	27,088	34,126
1991	6,380	795	170	7,345	17,005	14	7010	1319	25,348	32,693
1992	15,446	1,205	18	16,668	15,147	11	5373	47	20,578	37,246
1993	9,423	35	19	9,476	20,807	74	4261	51	25,194	34,670
1994	8,034	441	22	8,498	26,085	67	6723	67	32,941	41,439
1995	4,804	2	15	4,821	24,537	139	7714	89	32,479	37,300
1996	5,956	94	21	6,071	17,861	57	7285	135	25,338	31,409
1997	8,313	466	-	8,779	18,791	21	4213	133	23,158	31,937
1998	10,905	11	-	10,916	26,892	47	6269	85	33,293	44,209
1999	8,932	98	7	9,036	22,979	138	3321	67	26,505	35,541
2000	7,783	780	3	8,565	26,185	102	5489	136	31,913	40,478
2001	17,589	528	5	18,122	31,049	37	4614	194	35,894	54,016
2002	14,064	150	40	14,254	46,532	18	4424	112	51,085	65,340
2003	23,776	529	1	24,306	31,831	12	5083	137	37,062	61,368
2004	17,525	445	-	17,970	43,065	110	4086	124	47,385	65,356
2005	6,304	181	7	6,492	51,004	22	3483	130	54,639	61,131
2006	6,192	622	114	6,927	59,013	37	2264	83	61,397	68,324
2007	*	*	*	*	*	*	*	*	*	*

TABLE A-7. Estimated numbers of sets, by set type and vessel capacity category, and estimated retained catches, in metric tons, of yellowfin, skipjack, and bigeye tuna in the EPO, by purse-seine vessels. The data for 2007 are preliminary. The data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimate and are preliminary.

TABLA A-7. Números estimados de lances, por tipo de lance y categoría de capacidad de buque, y capturas retenidas estimadas, en toneladas métricas, de atunes aleta amarilla, barrilete, y patudo en el OPO. Los datos de 2007 son preliminares. Los datos de los atunes aleta amarilla, barrilete, y patudo fueron ajustados a la estimación de composición por especie, y son preliminares.

	Number of sets—Número de lances			Retained catch—Captura retenida		
	Vessel capacity—Capacidad del buque		Total	YFT	SKJ	BET
	≤363 t	>363 t				
DEL	Sets on fish associated with dolphins Lances sobre peces asociados con delfines					
1990	31	10,997	11,028	173,894	1,351	0
1991	0	9,661	9,661	155,283	1,332	0
1992	26	10,398	10,424	165,647	1,262	0
1993	34	6,953	6,987	110,893	587	51
1994	5	7,804	7,809	125,345	1,106	1
1995	0	7,185	7,185	132,710	2,548	1
1996	14	7,472	7,486	138,466	1,761	57
1997	43	8,977	9,020	152,228	8,157	0
1998	0	10,645	10,645	154,528	4,998	6
1999	0	8,648	8,648	143,166	1,705	5
2000	0	9,235	9,235	147,744	538	15
2001	0	9,823	9,823	238,137	1,807	6
2002	0	12,446	12,446	301,474	3,178	2
2003	0	13,839	13,839	264,022	13,353	1
2004	0	11,783	11,783	175,877	10,795	3
2005	0	12,173	12,173	166,410	12,158	2
2006	0	8,923	8,923	91,962	4,814	0
2007	0	8,884	8,884	91,275	3,285	0
OBJ	Sets on fish associated with floating objects Lances sobre peces asociados con objetos flotantes					
1990	719	2,558	3,277	35,527	35,571	3,995
1991	819	2,165	2,984	25,501	39,048	2,747
1992	868	1,763	2,631	15,010	49,145	2,048
1993	493	2,063	2,556	19,614	53,009	6,141
1994	668	2,770	3,438	20,843	51,125	33,960
1995	707	3,521	4,228	21,146	80,010	41,873
1996	1,230	4,007	5,237	27,842	69,614	58,371
1997	1,699	5,653	7,352	30,007	116,764	62,704
1998	1,198	5,481	6,679	26,286	110,297	41,909
1999	630	4,620	5,250	43,052	181,547	49,330
2000	504	3,916	4,420	42,695	120,381	92,339
2001	801	5,744	6,545	66,596	122,678	60,378
2002	857	5,781	6,638	37,806	116,584	55,919
2003	704	5,497	6,201	30,040	181,562	52,381
2004	613	5,083	5,696	27,586	117,532	66,079
2005	638	5,122	5,760	25,623	132,463	68,141
2006	1,164	7,137	8,301	34,095	192,154	82,271
2007	1,253	6,965	8,218	29,900	123,649	59,989

TABLE A-7. (continued)

TABLA A-7 (continuación)

	Number of sets—Número de lances			Retained catch—Captura retenida		
	Vessel capacity—Capacidad del buque		Total	YFT	SKJ	BET
	≤363 t	>363 t				
NOA	Sets on unassociated schools Lances sobre cardúmenes no asociados					
1990	3,683	5,397	9,080	53,832	37,447	1,926
1991	3,571	3,612	7,183	50,473	21,848	2,123
1992	4,010	4,079	8,089	47,464	33,876	5,131
1993	5,739	6,267	12,006	88,985	30,234	3,465
1994	5,440	5,064	10,504	62,220	17,895	938
1995	6,120	4,782	10,902	61,578	44,489	3,447
1996	5,807	5,118	10,925	72,299	32,598	2,883
1997	5,334	4,693	10,027	62,643	28,535	1,568
1998	5,700	4,631	10,331	73,145	25,336	2,214
1999	5,632	6,143	11,775	95,702	78,313	1,823
2000	5,439	5,482	10,921	64,792	83,388	2,286
2001	3,958	3,030	6,988	77,969	19,076	772
2002	4,923	3,409	8,332	73,227	33,541	1,519
2003	7,284	5,083	12,367	87,045	79,614	1,792
2004	4,949	5,698	10,647	66,134	70,337	1,510
2005	6,068	7,857	13,925	75,566	117,159	1,683
2006	6,167	8,466	14,633	40,273	100,440	1,707
2007	4,603	7,827	12,430	47,777	83,686	1,445
ALL	Sets on all types of schools Lances sobre todos tipos de cardumen					
1990	4,433	18,952	23,385	263,253	74,369	5,921
1991	4,390	15,438	19,828	231,257	62,228	4,870
1992	4,904	16,240	21,144	228,121	84,283	7,179
1993	6,266	15,283	21,549	219,492	83,830	9,657
1994	6,113	15,638	21,751	208,408	70,126	34,899
1995	6,827	15,488	22,315	215,434	127,047	45,321
1996	7,051	16,597	23,648	238,607	103,973	61,311
1997	7,076	19,323	26,399	244,878	153,456	64,272
1998	6,898	20,757	27,655	253,959	140,631	44,129
1999	6,262	19,411	25,673	281,920	261,565	51,158
2000	5,943	18,633	24,576	255,231	204,307	94,640
2001	4,759	18,597	23,356	382,702	143,561	61,156
2002	5,780	21,636	27,416	412,507	153,303	57,440
2003	7,988	24,419	32,407	381,107	274,529	54,174
2004	5,562	22,564	28,126	269,597	198,664	67,592
2005	6,706	25,152	31,858	267,599	261,780	69,826
2006	7,331	24,526	31,857	166,330	297,408	83,978
2007	5,856	23,676	29,532	168,952	210,620	61,434

TABLE A-8. Types of floating objects on which sets were made. The 2007 data are preliminary.

TABLA A-8. Tipos de objetos flotantes sobre los que se hicieron lances. Los datos de 2007 son preliminares.

OBJ	Flotsam Naturales		FADs Plantados		Unknown Desconocido		Total
	No.	%	No.	%	No.	%	
1992	1,087	61.7	556	31.5	120	6.8	1,763
1993	1,138	55.2	825	40.0	100	4.8	2,063
1994	773	27.9	1,899	68.6	98	3.5	2,770
1995	729	20.7	2,704	76.8	88	2.5	3,521
1996	537	13.4	3,447	86.0	23	0.6	4,007
1997	832	14.7	4,768	84.3	53	0.9	5,653
1998	752	13.7	4,627	84.4	102	1.9	5,481
1999	833	18.0	3,758	81.4	29	0.6	4,620
2000	488	12.5	3,381	86.3	47	1.2	3,916
2001	567	9.9	5,076	88.4	102	1.8	5,744
2002	756	13.1	4,953	85.7	72	1.2	5,781
2003	713	13.0	4,744	86.3	40	0.7	5,497
2004	590	11.6	4,469	87.9	24	0.5	5,083
2005	593	11.6	4,421	86.3	108	2.1	5,122
2006	740	10.4	6,336	88.8	61	0.8	7,137
2007	544	8.0	6,337	91.0	84	1.0	6,965

TABLE A-9. Reported nominal longline fishing effort (E; 1000 hooks), and catch (C; metric tons) of yellowfin, skipjack, bigeye, Pacific bluefin, and albacore tunas only, by flag, in the EPO.**TABLA A-9.** Esfuerzo de pesca palangrero nominal reportado (E; 1000 anzuelos), y captura (C; toneladas métricas) de atunes aleta amarilla, barrilete, patudo, aleta azul del Pacífico, y albacora solamente, por bandera, en el OPO.

LL	CHN		JPN		KOR		PYF		TWN		USA		OTR ¹
	E	C	E	C	E	C	E	C	E	C	E	C	
1978	0	0	140,006	79,320	8,571	7,012	0	0	8,743	6,525	0	0	0
1979	0	0	137,769	67,932	5,021	2,305	0	0	3,138	2,293	0	0	0
1980	0	0	138,141	75,639	11,788	5,907	0	0	3,000	1,611	0	0	0
1981	0	0	131,275	59,226	19,731	6,539	0	0	5,952	2,949	0	0	0
1982	0	0	116,200	61,370	18,612	7,488	0	0	8,117	3,910	0	0	0
1983	0	0	127,176	69,563	14,675	6,479	0	0	4,850	2,311	0	0	49
1984	0	0	119,635	57,261	11,767	4,491	0	0	3,730	1,734	0	0	0
1985	0	0	106,758	74,348	19,785	10,508	0	0	3,126	1,979	0	0	2
1986	0	0	160,553	111,672	30,765	17,432	0	0	4,874	2,569	0	0	68
1987	0	0	188,393	104,053	36,436	19,405	0	0	12,267	5,335	0	0	273
1988	0	0	182,694	82,383	43,056	10,172	0	0	9,567	4,590	0	0	234
1989	0	0	170,373	84,961	43,365	4,879	0	0	16,360	4,962	0	0	9
1990	0	0	178,419	117,923	47,167	17,415	0	0	12,543	4,755	0	0	0
1991	0	0	200,365	112,337	65,024	24,644	0	0	17,969	5,862	0	0	173
1992	0	0	191,284	93,011	45,634	13,104	0	0	33,025	14,142	43	12	128
1993	0	0	159,955	87,977	46,375	12,843	500	89	18,064	6,566	325	106	227
1994	0	0	163,976	92,606	44,788	13,250	2,605	79	12,588	4,883	417	81	523
1995	0	0	129,598	69,435	54,979	12,778	3,410	574	2,910	1,639	302	25	562
1996	0	0	103,653	52,298	40,290	14,121	3,452	559	5,830	3,553	823	180	185
1997	0	0	96,383	59,325	30,493	16,663	4,219	931	8,720	5,673	507	182	752
1998	0	0	106,569	50,167	51,817	15,089	5,490	1,941	10,586	5,039	462	215	1,176
1999	0	0	80,958	32,886	54,269	13,294	6,415	2,858	23,247	7,865	1,020	406	1,157
2000	0	0	79,311	45,216	33,585	18,759	9,190	4,446	18,152	7,809	1,680	469	4,868
2001	13,056	5,162	102,219	54,775	72,261	18,201	10,230	4,382	53,224	20,060	1,076	204	15,612
2002	36,756	10,398	103,919	45,401	96,273	14,370	11,200	5,086	77,051	31,773	1,400	238	10,292
2003	43,289	14,548	101,227	36,187	71,006	15,551	10,700	3,238	74,322	28,328	236	139	11,595
2004	15,889	4,034	76,824	30,936	55,861	14,540	14,048	4,101	51,697	19,535	1,314	262	9,180
2005	16,895	3,681	66,065	26,103	15,798	12,284	17,865	3,030	38,345	12,229	1,040	166	5,443
2006	*	758	63,157	24,020	*	8,752	13,359	2,515	49,254	12,375	2,601	557	6,053

¹ Includes the catches of—Incluye las capturas de: Belize, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, México, Nicaragua, Panamá, Vanuatu

TABLE A-10. Numbers and well volumes, in cubic meters, of purse-seine and pole-and line vessels of the EPO tuna fleet, 1977-2007. The data for 2007 are preliminary.

TABLA A-10. Número y volumen de bodega, en metros cúbicos, de buques cerqueros y cañeros de la flota atunera del OPO, 1977-2007. Los datos de 2007 son preliminares.

	PS		LP		Total	
	No.	Vol. (m ³)	No.	Vol. (m ³)	No.	Vol. (m ³)
1977	253	189,967	116	6,780	369	196,746
1978	271	192,259	118	6,736	389	198,995
1979	282	195,494	50	4,341	332	199,835
1980	270	196,476	50	4,186	320	200,662
1981	251	196,484	41	3,308	292	199,792
1982	223	178,234	40	3,016	263	181,250
1983	215	149,404	60	3,940	275	153,344
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	180,652	14	1,656	222	182,308
2000	205	180,625	13	1,311	218	181,936
2001	205	189,966	10	1,259	215	191,225
2002	218	200,075	6	925	224	201,000
2003	215	202,674	3	338	218	203,012
2004	217	206,302	3	338	220	206,640
2005	222	213,286	4	498	226	213,784
2006	226	225,950	4	498	230	226,448
2007	227	226,508	4	380	231	226,888

TABLE A-11a. Estimates of the numbers and well volume (cubic meters) of purse-seine (PS) and pole-and-line (LP) vessels that fished in the EPO in 2006, by flag and gear. Each vessel is included in the total for each flag under which it fished during the year, but is included only once in the “Grand total”; therefore the grand total may not equal the sums of the individual flags.

TABLA A-11a. Estimaciones del número y volumen de bodega (metros cúbicos) de buques cerqueros (PS) y cañeros (LP) que pescaron en el OPO en 2006, por bandera y arte de pesca. 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.

Flag Bandera	Gear Arte	Well volume—Volumen de bodega (m ³)					Total	
		<401	401-800	801-1300	1301-1800	>1800	No.	Vol. (m ³)
		Number—Número						
BOL	PS	1	-	-	-	-	1	222
COL	PS	2	1	7	3	-	13	14,439
ECU	PS	36	20	17	4	8	85	58,580
ESP	PS	-	-	-	-	3	3	6,955
GTM	PS	-	-	-	1	-	1	1,475
HND	PS	-	1	2	-	-	3	2,729
MEX	PS	8	11	22	16	-	57	55,830
	LP	4	-	-	-	-	4	498
NIC	PS	-	1	4	2	-	7	8,308
PAN	PS	2	4	8	7	5	26	35,007
SLV	PS	-	1	1	-	3	5	8,184
USA	PS	1	-	-	1	-	2	1,763
VEN	PS	-	-	11	9	2	22	30,788
VUT	PS	-	-	1	1	-	2	2,163
Grand total—	PS	50	38	73	44	21	226	
Total general	LP	4	-	-	-	-	4	
	PS + LP	54	38	73	44	21	230	
		Well volume—Volumen de bodega (m ³)						
Grand total—	PS	12,709	22,428	81,201	64,327	45,285		225,950
Total general	LP	498	-	-	-	-		498
	PS + LP	13,207	22,428	81,201	64,327	45,285		226,448

- : none—ninguno

TABLE A-11b. Estimates of the numbers and well volumes (cubic meters) of purse-seine (PS) and pole-and-line (LP) vessels that fished in the EPO in 2007 by flag and gear. Each vessel is included in the total for each flag under which it fished during the year, but is included only once in the “Grand total”; therefore the grand total may not equal the sums of the individual flags.

TABLA A-11b. Estimaciones del número y volumen de bodega (metros cúbicos) de buques cerqueros (PS) y cañeros (LP) que pescaron en el OPO en 2007, por bandera y arte de pesca. 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.

Flag Bandera	Gear Arte	Well volume —Volumen de bodega (m ³)					Total	
		<401	401-800	801-1300	1301-1800	>1800	No.	Vol. (m ³)
		Number—Número						
BOL	PS	1	-	-	-	-	1	222
COL	PS	3	1	7	3	-	14	14,689
ECU	PS	34	19	16	4	9	82	59,147
ESP	PS	-	-	-	-	3	3	6,955
GTM	PS	-	-	-	1	-	1	1,475
HND	PS	1	1	1	-	-	3	1,700
MEX	PS	8	10	23	17	-	58	57,859
	LP	4	-	-	-	-	4	380
NIC	PS	-	-	6	-	-	6	7,107
PAN	PS	1	4	9	10	4	28	36,782
PER	PS	-	1	-	-	-	1	542
SLV	PS	-	-	1	-	3	4	7,415
UNK	PS	2	-	-	-	-	2	494
USA	PS	1	-	-	2	-	3	3,288
VEN	PS	-	-	11	9	2	22	29,684
VUT	PS	-	-	1	2	-	3	3,609
Grand total—	PS	50	36	74	46	21	227	
Total general	LP	4	-	-	-	-	4	
	PS + LP	54	36	74	46	21	231	
		Well volume —Volumen de bodega (m ³)						
Grand total—	PS	12,388	20,374	82,227	67,445	44,074		226,508
Total general	LP	380	-	-	-	-		380
	PS + LP	12,768	20,374	82,227	67,445	44,074		226,888

- : none—ninguno

TABLE A-12. Minimum, maximum, and average capacity, in thousands of cubic meters, of purse-seine and pole-and-line vessels at sea in the EPO during 1997-2006 and in 2007, by month.

TABLA A-12. Capacidad mínima, máxima, y media, en miles de metros cúbicos, de los buques cerqueros y cañeros en el mar en el OPO durante 1997-2006 y en 2007 por mes.

Month Mes	1997-2006			2007
	Min	Max	Ave.-Prom.	
1	69.6	157.7	112.9	151.6
2	85.9	175.3	124.3	171.9
3	88.1	159.4	119.7	159.9
4	97.7	164.2	123.8	163.6
5	85.7	164.4	120.9	155.7
6	92.7	162.9	122.2	175.0
7	87.6	167.6	126.5	170.4
8	62.2	140.2	107.6	101.0
9	91.9	137.7	115.1	130.8
10	90.4	172.2	128.6	169.7
11	77.3	145.0	116.2	139.5
12	33.1	116.4	74.3	60.2
Ave.-Prom.	80.2	155.3	116.0	145.8