

**SUMMARY OF THE 2009 AND 2010 U.S.A. NORTH AND SOUTH
PACIFIC ALBACORE TROLL AND POLE-AND-LINE FISHERIES**

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INTRODUCTION

Albacore (*Thunnus alalunga*) is a commercially valuable member of the family Scombridae that is harvested throughout the temperate latitudes of the North and South Pacific Oceans by various fisheries (Table 1). Immature albacore tend to congregate in surface waters along the productive edges of oceanic fronts in the North and South Pacific transition zones (Laurs and Lynn, 1977) where they are targeted by surface fisheries, including the U.S.A. albacore Troll and Pole-and-Line fisheries.

A total of 70,211 metric tons (t) of albacore were harvested from the North Pacific in 2010, which is below the average annual harvest of approximately 74,879 t since 1952. Japanese fisheries have traditionally harvested the greatest amount of albacore within the North Pacific, accounting for approximately 72% of the total annual albacore catch from all commercial fisheries that harvest albacore in the North Pacific (Table 1). The U.S.A. albacore fisheries annually harvest approximately 20% of the total North Pacific albacore catch. U.S.A. Troll vessels, using artificial lures with barbless hooks, have fished for albacore in the North Pacific since the early 1900's (Clemens and Craig, 1965). The Troll fishery has been the dominant producer of albacore in all U.S.A. fisheries in the North Pacific.

Cooperative fishing surveys between National Marine Fisheries Service (NMFS) and the American Fishermen's Research Foundation (AFRF) began in 1971 which led to the expansion of the U.S.A. Troll fishery to areas north of Hawaii and west of the International Dateline (Laurs, et al., 1975b). In past years, the North Pacific albacore Troll and Pole-and-Line season has begun as early as mid-April in areas northwest of Midway Atoll. In July and August, fishing effort expands to the east, towards the west coast of North America. Fishing areas along the west coast of North America extend from Vancouver Island, Canada to southern California. Fishing can continue into November if weather permits and albacore remain available to Troll and Pole-and-Line gear. During the winter months, juvenile albacore move offshore to the waters of the mid-Pacific, and then return to the coast the following summer (Childers, et al. 2011).

Albacore is also harvested in the South Pacific by several nations (Table 2). Chinese-Taipei harvests the largest proportion of albacore caught annually in the South Pacific (37% since 1963). The annual U.S.A. portion of the South Pacific albacore catch has averaged 4% since its inception in 1986. U.S.A. Troll vessels began exploratory fishing operations for

albacore in areas east of New Zealand in 1986, which led to the development of the U.S.A. albacore Troll fishery in the South Pacific (Laurs et al., 1987) during the austral summer months (November through April). U.S.A. Troll vessels that participate in the South Pacific fishery depart from the U.S.A. west coast or Hawaii after the end of the North Pacific albacore season and travel to American Samoa or Tahiti to prepare for the South Pacific season. The U.S.A. Albacore Troll fishing areas in the South Pacific extend eastward from the International Dateline to approximately 120°W between 30°S and 50°S. In recent years, most U.S.A. south Pacific Albacore Troll vessels unload in Canada then prepare for the next North Pacific fishing season.

This report presents summaries of the catch, effort, and size composition information collected from the U.S.A. Albacore Troll and Pole-and-Line fleets during the 2009 and 2010 North Pacific and the 2008-2009 and 2009-2010 South Pacific albacore fishing seasons. Data from previous North Pacific seasons, South Pacific seasons, and from other fisheries (where available) are included for comparison. Electronic copies of this report, and for the years 1995 to 2008, are available on the internet at <http://swfsc.noaa.gov/FRD-CommercialFisheries.aspx>. Agencies currently involved in the collection of catch, effort, and size composition information from U.S.A. Pacific Albacore Troll and Pole-and-Line fisheries include NMFS's Southwest Fisheries Science Center (SWFSC), Southwest Regional Office (SWRO), Pacific Islands Fisheries Science Center (PIFSC), Pacific Islands Regional Office (PIRO), foreign fishery agencies where Troll vessels unload and the state fisheries agencies of California, Oregon, and Washington. Western Fishboat Owners Association (WFOA), American Fishermen's Research Foundation (AFRF), American Albacore Fishing Association (AAFA), Pacific States Marine Fisheries Commission (PSMFC) and the Pacific Coast Fisheries Information Network (PacFIN) also contribute information from these fisheries.

DATA COLLECTED

Total annual catch data from the various fisheries that harvest albacore in the Pacific Ocean are available from 1952 to 2010 (Tables 1 and 2). Daily catch and effort data are obtained directly from logbooks submitted by U.S.A. Albacore Troll and Pole-and-Line fishermen. The collection of logbook and catch data from the South Pacific fishery began in 1987. The collection of voluntary logbook data from the U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries began in 1954 (Laurs et al., 1975a). The U.S.A. West Coast Highly Migratory Species Fisheries Management Plan (HMS FMP) was implemented in April, 2005. This HMS FMP requires all U.S.A. fishing vessels targeting highly migratory species (including albacore) in the Pacific to obtain a federal permit and submit copies of their fishing logbook to NMFS for each trip.

Samplers in the ports of Ilwaco, Washington; Newport, Astoria, and Charleston, Oregon; and Pago Pago, American Samoa collect length-frequency data by measuring albacore as they are unloaded from catcher vessels. This sampling of length-frequency data from the U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries began in 1951. The collection of length-frequency data from the U.S.A. South Pacific Albacore Troll fishery began in 1987.

Catch-Per-Unit Effort (CPUE) is used as an indication of relative abundance of albacore available to Troll and Pole-and-Line gears, or a measure of fishing success. It is expressed in numbers of fish caught per vessel-day fished for the U.S.A. Troll and Pole-and-Line fisheries.

Catch (in numbers of fish) and effort (in vessel-days fished) from logbook data were summarized by 10-day and 1°-square area strata in which there was at least one day of fishing effort in a stratum (Kleiber and Perrin, 1991). Average CPUE is calculated as follows:

$$\text{Average CPUE} = \frac{\sum_{i=1}^n \frac{C_i}{E_i}}{n}$$

Where C_i is the total sampled catch in the i^{th} stratum, E_i is the total sampled effort in the i^{th} stratum, and n is the total number of strata. Annual fishing effort in the Albacore Troll and Pole-and-Line fisheries is measured in number of fishing days, and is estimated by the following equation:

$$\text{Effort (days)} = \text{Catch (pounds)} \div [\text{CPUE} (\text{fish}/\text{day}) \times \text{Average Weight} (\text{pounds}/\text{fish})]$$

Logbook sampling coverage is expressed as the ratio of catch from sampled trips (those trips from which logbook data were received) to total catches (Tables 3 and 4). Total catch from each sampled trip is not completely available from past seasons. For consistent comparison of sampling coverage between seasons, sampled catch is estimated by multiplying numbers of fish caught by the average weight of those fish (recorded in logbooks) and summing these estimates from sampled logbooks. If logbooks were submitted from all trips, logbook sampling coverage is estimated to be 100% for that season.

Length-frequency sampling coverage is expressed as the ratio of the number of fish sampled (measured) to the total estimated number of fish landed for the season. The total number of fish landed for the season is estimated by dividing total catch by the average weight of fish landed. The length-weight relationship for North Pacific albacore from Bartoo and Foreman (1993) was used to estimate weights from fork lengths.

TOTAL CATCH AND EFFORT

Total catch from the U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries decreased minimally from 12,793 t in 2009 to 12,661 t in 2010 (Table 1). An estimated 632 U.S.A. Troll and Pole-and-Line vessels fished in 2010 (Table 3), an 8% decrease from 690 Troll and Pole-and-Line vessels that fished in 2009. U.S.A. Troll and Pole-and-Line vessels fished an estimated 25,540 vessel-days during the 2010 North Pacific albacore season, an increase from the 25,144 vessel-days fished in 2009. The average price paid for albacore caught by Troll and Pole-and-Line vessels in 2010 was \$1.21 per pound. This is an 8% increase from the average price of \$1.12 per pound paid in 2009.

Since the South Pacific Albacore Troll fishery begins in November or December and can continue into April of the following year, total annual landings are computed differently than total seasonal landings. Annual totals (Table 2) are a combination of catches from portions of two consecutive South Pacific albacore seasons. The annual catch of South Pacific albacore by U.S.A. Troll vessels increased 13% from 272 t in 2009 to 307 t in 2010 (this value does not include catches made in December, 2010). Seasonal totals (Table 4) include catches that occurred between November of one year and April of the following year. The 2009-2010

season catch by U.S.A. Troll vessels increased 30% to 307 t from 237 t in the 2008-2009 season (Table 4). Six U.S.A. Troll vessels participated in the 2009-2010 South Pacific fishery, two vessels more than the number that fished in the 2008-2009 season. Total fishing effort declined between the 2002-2003 season and the 2008-2009 season. Adverse market conditions, increased fuel costs, and poor availability of fish have all contributed to this decline. Effort for the 2009-2010 South Pacific albacore season is estimated at 413 vessel-days, a significant increase from the 199 vessel-days fished in the 2008-2009 season.

Albacore may be discarded during a fishing trip because they are undersized (less than 58 cm fork length or 9 pounds), damaged, or have spoiled due to refrigeration problems. During the 2010 North Pacific Troll and Pole-and-Line season, 39 trips (of 1,565 sampled trips) recorded a total of 1,712 albacore discarded, significantly more fish than the 58 trips that recorded a total of 888 albacore discarded during the 2009 North Pacific Troll and Pole-and-Line season. Albacore Troll and Pole-and-Line vessels catch minor amounts of other pelagic fish species that are usually caught during transit to or from the fishing grounds. The most common species that are incidentally caught include skipjack tuna (*Katsuwonus pelamis*), mahi mahi (*Coryphaena hippurus*), yellowtail (*Seriola lalandi*), Eastern Pacific bonito (*Sarda chiliensis*), bigeye tuna (*Thunnus obesus*), and Pacific bluefin tuna (*Thunnus orientalis*).

DISTRIBUTION OF CATCHES

Logbook data from the 2009 U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries indicates the general fishing area extended from 150°W to the west coasts of the U.S.A. and Canada, between approximately 29°N and 53°N (Figure 1). The offshore portion of the Troll and Pole-and-Line fisheries has been relatively unproductive in recent years. The highest catch areas along the west coast in 2009 were off Oregon and Washington from 43°N to 47°N, between 125°W and 127°W.

Logbook data from the 2010 U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries indicates the general fishing area extended from 158°W to the west coasts of the U.S.A. and Canada, between approximately 30°N and 55°N (Figure 2). The offshore component of Troll and Pole-and-Line fisheries in 2010 had the highest catch near 47°N, between 143°W and 145°W. The highest catch areas along the west coast were off Oregon and Washington from 43°N to 47°N, between 124°W and 128°W.

Albacore catches recorded during the 2008-2009 South Pacific season were summarized by 5° squares of latitude and longitude (Figure 3). The general catch area during the season spanned between 35°S and 45°S and between 135°W and 165°W. The highest albacore catches of the season were made between 40°S and 45°S and between 160°W and 165°W.

Albacore catches recorded during the 2009-2010 South Pacific season were also summarized by 5° squares of latitude and longitude (Figure 4). The general catch area during the season spanned between 30°S and 45°S and between 125°W and 175°W. The highest albacore catches of the season were made between 40°S and 45°S and between 155°W and 160°W.

CATCH-PER-UNIT EFFORT

The average CPUE for the North Pacific Albacore Troll and Pole-and-Line fisheries has

fluctuated between 35 fish per day and 104 fish per day since 1990 (Figure 5). The CPUE has remained above the twenty-year average of 61 fish per day since 2005. The CPUE decreased slightly in 2010 to 66 fish per day, from 76 fish per day in 2009.

CPUE values were summarized by 1°x1° squares of latitude and longitude for the 2009 North Pacific season (Figure 6). The highest CPUE values for the 2009 North Pacific season ranged from 140 fish per day to 430 fish per day. The highest CPUE values in the offshore area were distributed between 138°W and 144°W, from 45°N to 47°N. The highest CPUE values along the west coast of North America were distributed between 125°W and 129°W, from 43°N to 50°N.

CPUE values were summarized by 1°x1° squares of latitude and longitude for the 2010 North Pacific season (Figure 7). The highest CPUE values for the 2010 North Pacific season ranged from 139 fish per day to 636 fish per day. The highest CPUE values in the offshore area were distributed between 140°W and 146°W, from 46°N to 48°N. The highest CPUE values along the west coast of North America were distributed between 127°W and 130°W, from 44°N to 46°N.

The average CPUE for the U.S.A. South Pacific Albacore Troll fishery has fluctuated between 43 fish per day and 175 fish per day since 1990 (Figure 5). The twenty-year average for CPUE in the South Pacific from 1990 through 2010 is 79 fish per day. The CPUE from the 2009-2010 season declined 32% to 61 fish per day, from 90 fish per day in the 2008-2009 season.

CPUE values for the 2008-2009 season were summarized by 5°x5° squares of latitude and longitude (Figure 8). The highest values ranged from 107 fish per day to 156 fish per day and were located at between 160°W and 165°W, from 40°S to 45°S. The highest CPUE values for the 2009-2010 season ranged from 88 fish per day to 135 fish per day and were located between 155°W and 170°W, from 40°S to 45°S (Figure 9).

LOGBOOK SAMPLING COVERAGE

Despite the new mandatory logbook submission requirements established under the HMS FMP, not all logbooks are typically received from all of the trips that are completed by U.S.A. Troll and Pole-and-Line vessels during a given season. Logbooks were received from 1,851 trips of an estimated 2,167 total trips completed during the 2009 North Pacific Albacore Troll and Pole-and-Line season. Estimated catches from submitted logbooks totaled 10,666 t, resulting in a logbook sampling coverage rate of 83% (Table 3). Logbooks were received from 1,565 trips of an estimated 2,003 total trips completed during the 2010 North Pacific Albacore Troll and Pole-and-Line season, resulting in a logbook sampling coverage rate of 70%.

Logbook data from the 2008-2009 South Pacific Albacore Troll season were collected from all four trips completed during the season resulting in a 100% sampling coverage rate (Table 4). Logbook data from the 2009-2010 South Pacific Albacore Troll season were collected from all six trips made by U.S.A. albacore troll vessels, resulting in a 100% sampling coverage rate.

LENGTH FREQUENCIES

Port samplers measured 61,091 albacore out of an estimated 1,910,966 albacore landed during the 2009 North Pacific season, resulting in a length-frequency sampling coverage of 3.2% (Table 3). Port samplers measured 57,235 albacore out of an estimated 1,685,652 albacore landed during the 2010 North Pacific season, resulting in a length-frequency sampling coverage of 3.4%. Fork lengths of albacore sampled in 2009 ranged from 38 cm (2.5 lb or 1.1 kg) to 99 cm (43.7 lb or 19.8 kg) and averaged 69 cm (14.8 lb or 6.7 kg; Table 3). Fork lengths of albacore sampled in 2010 ranged from 45 cm (4.1 lb or 1.9 kg) to 99 cm (43.7 lb or 19.8 kg) and averaged 72 cm (16.6 lb or 7.5 kg; Table 3). The histogram of length-frequency samples from the 2009 North Pacific season has a bimodal distribution with peaks at 65 cm (12.4 lb or 5.6 kg) and 76 cm (19.8 lb or 9 kg; Figure 10). The histogram of length-frequency samples from the 2010 North Pacific season also has a bimodal distribution with peaks at 65 cm (12.4 lb or 5.6 kg) and 76 cm (19.8 lb or 9 kg; Figure 11). The majority of albacore that are taken in both the North and South Pacific Troll and Pole-and-Line fisheries range from two to four years old. Small albacore (less than 58 cm fork length) may not be adequately represented in the length-frequency data collected from the North Pacific fishery due to discarding of small fish.

Due to the limited availability of fish for sampling, no albacore were sampled from the 2008-2009 South Pacific albacore Troll fishery. Insufficient samples were collected during the 2009-2010 South Pacific season to include in this report.

SUMMARY

Total catch from the 2010 U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries decreased by 1% from the previous year's fishery. A total of 632 vessels landed 12,661 t during the 2010 season compared to 690 vessels that landed 12,793 t in 2009. U.S.A. Troll and Pole-and-Line vessels fished an estimated 25,540 vessel-days during the 2010 North Pacific albacore season, an increase from the 25,144 vessel-days fished in 2009. The most successful catch areas in 2009 ranged from 43°N to 47°N, between 125°W and 127°W. The average CPUE for the 2010 North Pacific season decreased from 76 fish per day in 2009 to 66 fish per day. The highest CPUE values were distributed between 138°W and 144°W, from 45°N to 47°N and between 125°W and 129°W, from 43°N to 50°N. Logbook sampling coverage for the North Pacific albacore fisheries decreased from 83% in the 2009 season to 70% in 2010. Length-frequency sampling coverage rates from the North Pacific fishery were 3.2% in 2009 and 3.4% in 2010. The average fork length of albacore measured during the 2010 North Pacific season is 72 cm (16.6 lb or 7.5 kg) compared to 69 cm (14.7 lb or 6.7 kg) in 2009.

Total catch from the 2009-2010 South Pacific season increased from 237 t in the 2008-2009 season to 307 t. The annual catch increased from 272 t in 2009 to 307 t in 2010. Six U.S.A. Troll vessels fished 413 vessel-days in the 2009-2010 season compared to four vessels that fished 199 vessel-days in the 2008-2009 season. The areas of highest catch for the 2008-2009 South Pacific season were distributed between 40°S and 45°S and between 160°W and 165°W. The areas of highest catch for the 2009-2010 South Pacific season ranged between 40°S and 45°S and between 155°W and 160°W. The CPUE for the 2009-2010 season greatly decreased from 90 fish per day in the 2008-2009 season to 61 fish per day. The highest CPUE values for the 2008-2009 South Pacific fishery were distributed between 160°W and 165°W,

from 40°S to 45°S. The highest CPUE values for the 2009-2010 season were located between 155°W and 170°W, from 40°S to 45°S. Logbook sampling coverage for the 2009-2010 South Pacific Albacore Troll fishery remained 100% as it was in the 2008-2009 season.

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Table 1. North Pacific albacore catches (in metric tons) by fisheries, 1990-2010¹

Blank indicates no effort. -- indicates data not available. 0 indicates less than 1 metric ton. Provisional estimates are in ().

Year	Japan							Korea		Chinese-Taipei		
	Purse Seine	Gill Net	Set Net	Pole and Line	Troll	Longline	Other	Gill Net	Longline	Gill Net	Distant Water Longline	Offshore Longline
1990	1,995	6,064	5	8,532	--	15,785	248	1,016	1	16,701	4	
1991	2,652	3,401	4	7,103	--	17,039	395	852	0	3,398	12	
1992	4,104	2,721	12	13,888	--	19,042	1,522	271	1	7,866	--	
1993	2,889	287	3	12,797	--	29,933	897		21		5	
1994	2,026	263	11	26,389	--	29,565	823		54		83	
1995	1,177	282	28	20,981	856	29,050	78		14		4,280	
1996	581	116	43	20,272	815	32,440	127		158		7,596	
1997	1,068	359	40	32,238	1,585	38,899	135		404		9,119	337
1998	1,554	206	41	22,926	1,190	35,755	104		226		8,617	193
1999	6,872	289	90	50,369	891	33,339	62		99		8,186	207
2000	2,408	67	136	21,550	645	29,995	86		15		7,898	944
2001	974	117	78	29,430	416	28,801	35		64		7,852	832
2002	3,303	332	109	48,454	787	23,585	85		112		7,055	910
2003	627	126	69	36,114	922	20,907	85		146		6,454	712
2004	7,200	61	30	32,255	772	17,341	54		78		4,061	927
2005	850	154	97	16,133	665	20,420	234		420		3,990	483
2006	364	221	55	15,400	460	21,027	42		138		3,848	469
2007	5,682	226	30	37,768	519	22,336	44		56		2,465	451
2008	825	1,531	101	19,060	549	19,092	15		365		2,490	579
2009	2,076	149	33	31,172	410	21,995	43		(365)		1,866	(512)
2010	(308)	(149)	(33)	(21,757)	(410)	(22,434)	(43)		(365)		(2,236)	(512)

¹ Data are from the ISC Working Group meeting, June 8, 2011 except as noted.

Table 1. (Continued)

Year	United States of America ²							Mexico		Canada	Other		Grand Total
	Purse Seine	Gill Net	Albacore Troll ³	Tropical Troll & Handline	Sport	Longline	Other ⁴	Purse Seine	Pole and Line ⁵	Troll	Troll ⁶	Longline ⁷	
1990	71	29	2,718	15	24	177	4	2	0	302			53,693
1991	0	17	1,845	72	6	312	71	2	0	139			37,320
1992	0	0	4,572	54	2	334	72	10	0	363			54,833
1993		0	6,254	71	25	438		11	0	494			54,125
1994		38	10,978	90	106	544	213	6	0	1,998	158		73,345
1995		52	8,125	177	102	882	1	5	0	1,763	94		67,947
1996	11	83	16,962	188	88	1185		21	0	3,316	469	1,735	86,207
1997	2	60	14,325	133	1,018	1653	1	53	0	2,168	336	2,824	106,756
1998	33	80	14,489	88	1,208	1120	2	8	0	4,177	341	5,871	98,229
1999	48	149	10,120	331	3,621	1542	1	0	57	2,734	228	6,307	125,542
2000	4	55	9,714	120	1,798	940	3	70	33	4,531	386	3,654	85,052
2001	51	94	11,349	194	1,635	1295		5	18	5,248	230	1,471	90,189
2002	4	30	10,768	235	2,357	525		28	0	5,379	466	700	105,224
2003	44	16	14,161	85	2,214	524		28	0	6,861	378	(2,400)	92,873
2004	1	12	13,473	157	1,506	361		104	0	7,856	--	4,375	90,625
2005		20	8,479	175	1,719	296		0	0	4,845	--	4,315	63,295
2006		3	12,547	95	385	270		109	0	5,832	--	5,136	66,400
2007		4	11,908	98	1,225	250		40	0	6,075	--	3,539	92,717
2008	0	1	11,761	29	415	353	0	10		5,446		2,812	65,435
2009	39	3	12,793	100	677	201	0	17		5,643		1,581	79,675
2010		(5)	(12,661)	(76)	(690)	(410)	(19)	(25)		(6,497)		(1,581)	(70,211)

² U.S.A. estimates updated October 2011.³ Albacore Troll estimates include catches caught with Pole-and-Line gear.⁴ Other includes catches by Purse Seine.⁵ Mexico Pole-and-Line catches for 1999 and 2000 include 34 and 4 metric tons, respectively, from Longline.⁶ Other Troll catches are from vessels registered in Belize, Cook Islands, Tonga, and Ecuador.⁷ Other Longline data for 2004-2009 are from Peter Williams, SPC, for non-member nations. Other Longline also includes data provided by China.

Table 2. South Pacific albacore catches (in metric tons) by fisheries, 1990-2010.¹

Blank indicates no effort. -- indicates data not available. 0 indicates less than 1 metric ton. Provisional estimates are in ().

YEAR	JAPAN			CHINESE-TAIPEI		KOREA		NEW ZEALAND			FRENCH POLYNESIA		AUSTRALIA	
	GILL NET	LONG ² LINE	POLE & LINE	GILL NET	LONG LINE	GILL NET	LONG LINE	LONG LINE	POLE & LINE	TROLL ³	LONG LINE	TROLL ⁴	LONG LINE	TROLL ⁵
1990	5,567	5,590		1,859	11,621		690	170	242	2,599	20	355	269	15
1991		4,858		1,394	16,517		536	85	9	2,365	100	391	225	20
1992		5,482			22,229		1,343	209	6	3,272	195	115	320	70
1993		8,480	12		18,469		558	345	60	2,982	714	86	312	55
1994		9,080	2		19,726		1,073	635	62	4,620	913	61	400	70
1995		7,758			15,316		1,184	810	136	5,349	772	255	457	25
1996		4,493	27		10,858		1,020	1,079	26	5,241	1,463	153	408	50
1997		4,797	12		10,156		1,144	847		2,781	2,595	102	258	50
1998		7,781	27		10,532		4,484	2,057	1	4,468	3,189	38	478	60
1999		3,829	100		10,418		733	2,103		1,800	2,580	61	373	50
2000		2,992	22		10,235		589	1,344	72	3,336	3,473	97	381	50
2001		4,883	18		12,330		2,101	2,614	4	2,738	4,261	155	591	59
2002		5,414	11		12,796		3,742	2,545		3,013	4,557	106	553	52
2003		4,393	7		14,105		2,741	2,971		3,722	3,846	84	490	51
2004		5,633	104		13,307		1,660	1,248	0	3,213	2,218	143	667	53
2005		6,473	17		11,168		4,137	602	2	2,856	2,426	170	743	54
2006		5,046	6		10,449		1,346	496	3	2,043	2,918	296	2,591	50
2007		4,985			9,878		1,237	357		1,736	3,957	27	1,825	50
2008		3,061			7,909		1,500	382		3,352	3,068	172	1,277	
2009		(4,247)			(13,160)		(1,745)	(422)		(1,794)	(3,560)	(232)	(1,523)	
2010		(4,247)			(16,059)		(2,053)	(456)		(1,834)	(3,483)	(204)	(745)	

¹ Data prior to 2000 are from the Western and Central Pacific Fisheries Commission Tuna Fishery Yearbook data files (<http://www.wcpfc.int/node/1759>), except as noted. 2000-2010 data is from C. Millar, pers. comm.

² 1989-1995 Japan Longline catches include catches from Australia-Japan joint venture vessels.

³ 1990-2010 New Zealand Troll include unclassified vessels. Troll catches are seasonal estimates (November through May) and include other gears.

⁴ French Polynesia Troll catches include catches from Troll, Pole-and-Line, and other gears.

⁵ Australia Troll catches from 1989-2010 include Pole-and-Line and other gears.

Table 2 (Continued).

YEAR	U.S.A.		CANADA	COOK ISLANDS		NEW CALEDONIA	TONGA	FIJI	WESTERN SAMOA	SOLOMON ISLANDS	VANUATU	PAPUA NEW GUINEA	CHINA	GRAND TOTAL
	LONG LINE	TROLL	TROLL	LONG LINE	TROLL	LONG LINE	LONG LINE	LONG LINE	LONG LINE	LONG LINE	LONG LINE	LONG LINE	LONG LINE	
1990		3,886	235			1,053	152	68					4	34,395
1991	1	4,894	235			909	171	208						32,918
1992		2,956	235			692	199	243						37,566
1993	1	1,010	235			755	231	463		213			1	34,982
1994	2	2,270	235	16		840	343	842		641		0	8	41,839
1995	36	1,951	235	25	8	332	379	702	1,883	24	109	6	5	37,757
1996	87	1,947	136	5	12	414	431	1,446	1,775	100	192	38	8	31,409
1997	310	1,739	149			277	493	1,842	4,108	109	95	101	2	31,967
1998	452	1,618	167		22	860	616	2,121	4,742	370	10	104	1	44,198
1999	339	1,339	253		28	690	801	2,279	4,027	136		129	3,473	35,541
2000	626	2,433	351		149	895	862	6,065	4,067	224		159	2,056	40,478
2001	3,233	2,107	206	2	91	1,020	1,268	7,971	4,820	54	655	124	2,711	54,015
2002	5,951	1,337	144	490	79	1,165	1,189	8,026	4,223	121	6,756	142	2,920	65,332
2003	3,931	1,574		1,358	316	1,111	611	6,881	2,253	95	4,903	857	6,223	62,523
2004	2,462	960	63	1,869	293	1,468	182	11,290	1,233	207	6,558	1,681	6,104	62,616
2005	2,936	600	72	2,371	37	1,590	283	8,901	1,263	0	8,290	2,256	4,103	61,350
2006	4,078	586	135	2,223	120	1,358	414	11,802	2,113		7,373	1,811	7,191	64,448
2007	5,183	218	27	2,644	47	1,324	390	7,145	3,113		7,264	1,598	5,453	58,458
2008	3,550	150		2,224		1,506	220	7,650	2,342		6,278	464	14,909	60,014
2009	(3,883)	272		(1,551)		(1,649)	(124)	(7,166)	(2,816)		(10,586)	(906)	(20,445)	(76,081)
2010	(3,914)	(307)		(2,423)		(1,939)	(57)	(7,279)	(2,529)	(7,966)	(12,058)	(883)	(12,265)	(80,701)

Table 3. Fishery statistics for the U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries.¹

FISHING SEASON	NO. TRIPS		CATCH (Metric Tons)		NO. FISH LANDED		AVG FL (cm)	AVG WT (lb)	EFFORT		CPUE (fish/day)	SAMPLING COVERAGE	
	TOTAL	SAMPLED	TOTAL	SAMPLED	TOTAL	MEASURED			NO. DAYS	NO. VESSELS		LOG	L-F
1990	845	211	2,603	1,466	366,311	20,963	70	15.7	10,047	368	36	56%	5.7%
1991	536	118	1,845	1,246	317,523	11,429	66	12.8	9,000	172	35	68%	3.6%
1992	1,590	300	4,572	1,940	857,359	25,053	64	11.8	17,202	602	50	42%	2.9%
1993	1,704	175	6,254	1,390	810,921	204	72	17.0	21,533	608	38	22%	0.0%
1994	2,135	407	10,978	4,534	1,611,968	1,067	69	15.0	25,979	721	62	41%	0.1%
1995	1,094	354	8,045	5,031	1,172,692	15,283	69	15.1	26,014	471	45	63%	1.3%
1996	1,816	413	16,938	7,049	2,919,910	32,144	66	12.8	32,694	676	89	42%	1.1%
1997	4,000	496	14,252	5,437	2,049,663	31,223	70	15.3	45,477	1,172	45	38%	1.5%
1998	2,358	272	14,410	5,061	2,217,113	15,603	68	14.3	21,253	841	104	35%	0.7%
1999	2,555	393	10,060	3,549	1,251,528	14,263	73	17.7	35,454	776	35	35%	1.1%
2000	1,880	425	9,645	3,991	1,444,407	11,636	69	14.7	37,752	645	38	41%	0.8%
2001	2,824	481	11,210	5,489	1,692,367	14,807	69	14.6	25,771	860	66	49%	0.9%
2002	1,868	355	10,387	3,971	1,687,286	12,348	67	13.6	25,274	644	67	38%	0.7%
2003	2,370	370	14,102	5,088	1,623,719	11,863	75	19.1	21,621	729	75	36%	0.7%
2004	2,400	569	13,346	6,221	2,060,653	33,816	68	14.3	26,197	695	79	47%	1.6%
2005	1,574	1,152	8,413	6,153	1,142,555	23,219	71	16.2	24,731	541	46	73%	2.0%
2006	1,857	1,459	12,524	11,585	1,905,266	32,260	68	14.5	22,006	601	87	93%	1.7%
2007	2,212	1,722	11,887	10,157	1,679,972	32,591	70	15.6	24,000	628	70	85%	1.9%
2008	1,460	1,311	11,761	9,312	1,749,595	38,269	69	14.8	24,994	503	70	79%	2.2%
2009	2,167	1,851	12,793	10,666	1,910,966	61,091	69	14.8	25,144	690	76	83%	3.2%
2010	2,003	1,565	12,661	8,870	1,685,652	57,235	72	16.6	25,540	632	66	70%	3.4%

¹ Albacore Troll catches include catches by Pole-and-Line gear.

Table 4. Fishery statistics for the U.S.A. South Pacific Albacore Troll fishery.

Values in italics may be adversely impacted by low length-frequency sampling coverage (< 0.2%).

FISHING SEASON	NO. TRIPS		CATCH ¹ (Metric Tons)		NO. FISH LANDED		AVG FL (cm)	AVG WT (lb)	EFFORT		CPUE (fish/day)	SAMPLING COVERAGE	
	TOTAL	SAMPLED	TOTAL	SAMPLED	TOTAL	MEASURED ²			NO. DAYS	NO. VESSELS		LOG	L-F
1989-1990	76	61	3,995	3,419	620,541	3,480	68	14.2	3,537	39	175	86%	0.6%
1990-1991	78	58	5,221	4,787	705,410	10,308	71	16.3	6,997	56	101	92%	1.5%
1991-1992	65	38	3,097	1,955	470,227	4,758	68	14.5	6,867	55	68	63%	1.0%
1992-1993	45	8	1,036	195	199,519	1,720	63	11.4	4,687	44	43	19%	0.9%
1993-1994	17	8	2,236	262	371,271	794	66	13.3	3,848	14	96	12%	0.2%
1994-1995	29	22	1,953	1,152	278,667	1,509	70	15.5	1,894	21	147	59%	0.5%
1995-1996	55	31	1,964	1,119	285,553	2,069	69	15.2	4,152	53	69	57%	0.7%
1996-1997	26	18	1,617	956	262,830	1,215	67	13.6	3,189	26	82	59%	0.5%
1997-1998	38	31	1,701	1,100	277,050	200	67	13.5	5,384	36	51	65%	0.1%
1998-1999	24	12	1,241	516	173,524	689	70	15.8	2,505	21	69	42%	0.4%
1999-2000	39	26	2,562	1,578	339,806	1,255	72	16.6	4,958	36	69	62%	0.4%
2000-2001	39	30	2,128	1,449	289,524	3,416	71	16.2	6,377	33	45	68%	1.2%
2001-2002	12	10	1,218	426	166,319	513	71	16.1	3,602	12	46	35%	0.3%
2002-2003	14	11	1,678	912	230,833	1,229	71	16.0	2,289	14	101	54%	0.5%
2003-2004	12	12	995	840	171,356	811	66	12.8	1,488	11	115	100%	0.5%
2004-2005	8	8	725	402	95,433	102	72	16.7	1,491	8	64	100%	0.1%
2005-2006	10	10	601	567	81,060	403	71	16.3	1,310	8	62	100%	0.5%
2006-2007	6	5	271	230	52,832	101	63	11.3	881	6	60	85%	0.2%
2007-2008	4	4	150	150	23,416	0	-	-	255	3	51	100%	0.0%
2008-2009	4	4	237	237	33,570	0	-	-	199	4	90	100%	0.0%
2009-2010	6	6	307	307	44,545	-	-	-	413	6	61	100%	-

¹ Total catches for U.S.A. South Pacific Albacore Troll fishery may include catch from November and December of the previous year. Total catches for seasons before 1996-97 may contain catch from non-U.S.A. vessels.

² Insufficient size samples collected from the 2009-2010 South Pacific albacore Troll fishery are not reported.

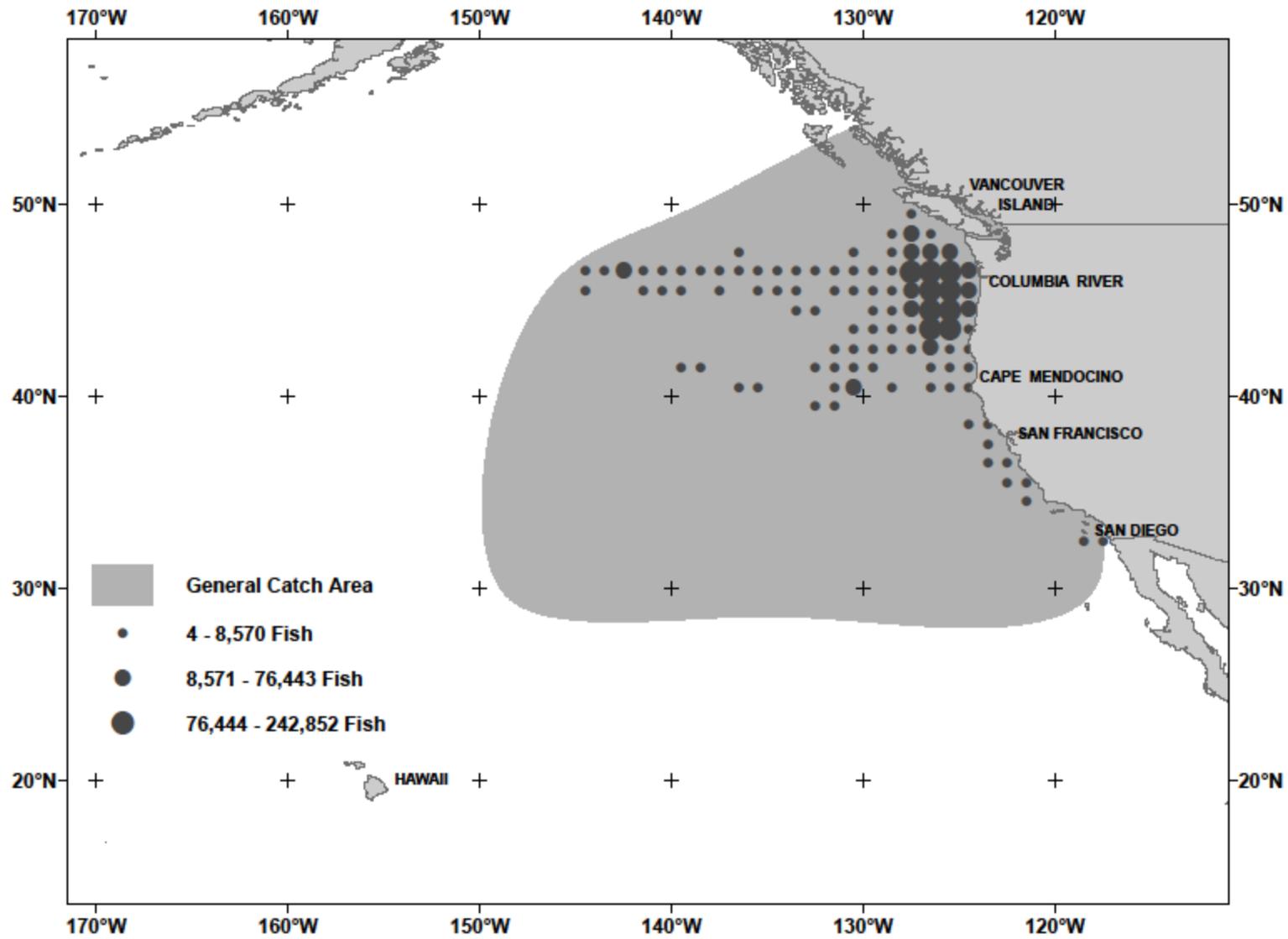


Figure 1. Geographic distribution of albacore catches by the 2009 U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries.

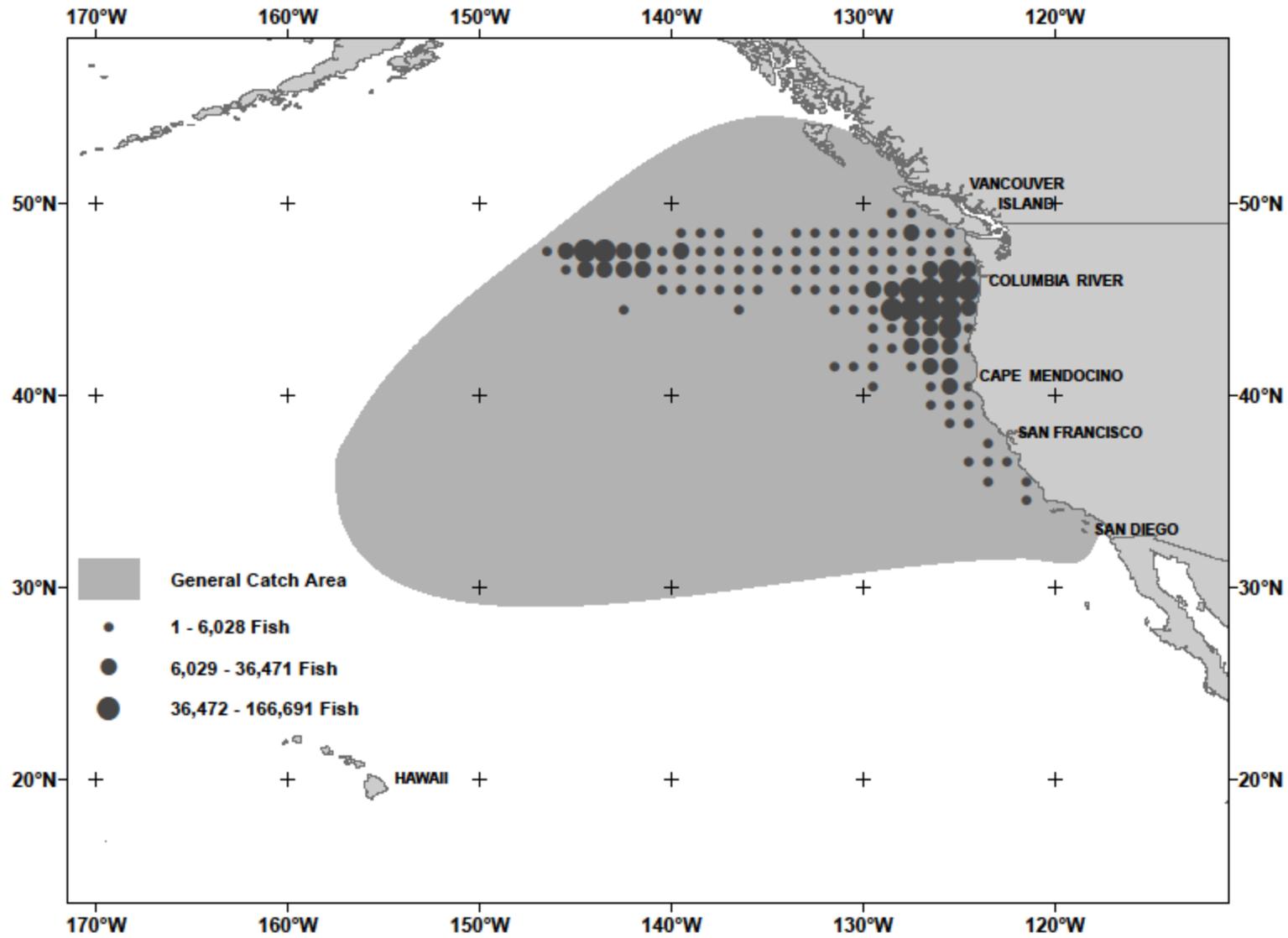


Figure 2. Geographic distribution of albacore catches by the 2010 U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries.

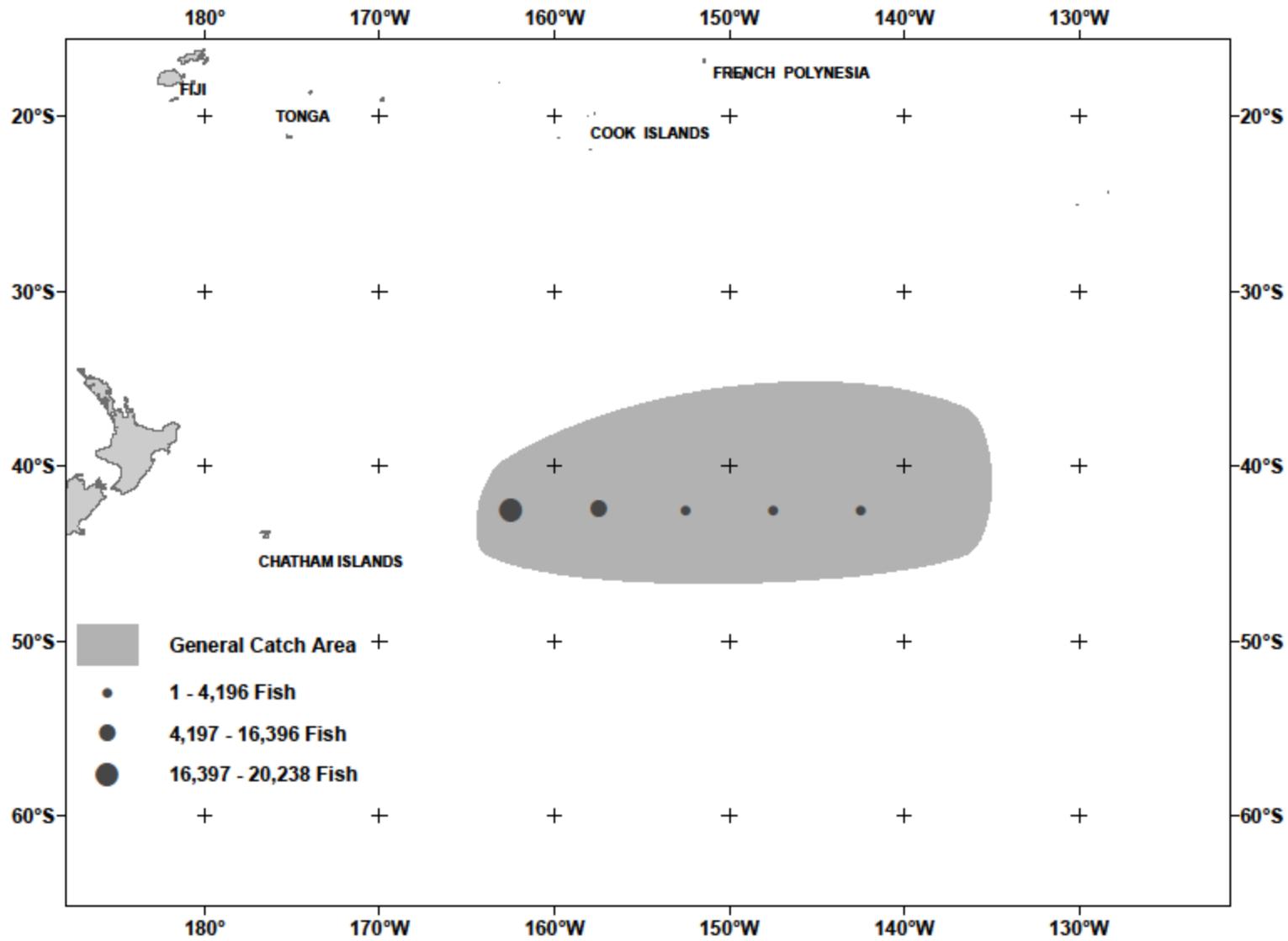


Figure 3. Geographic distribution of albacore catches by the 2008-2009 U.S.A. South Pacific Albacore Troll fishery.

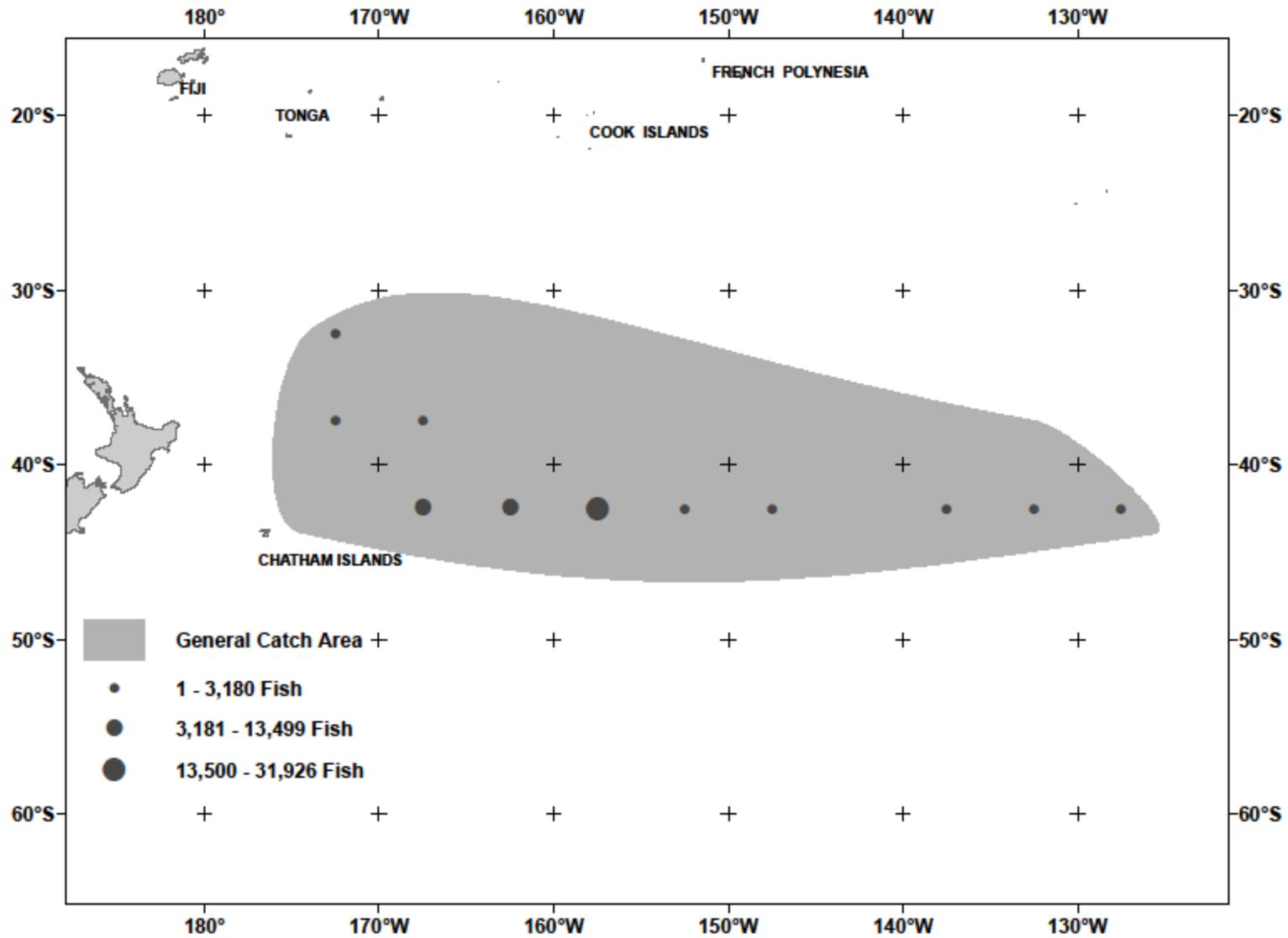


Figure 4. Geographic distribution of albacore catches by the 2009-2010 U.S.A. South Pacific Albacore Troll fishery.

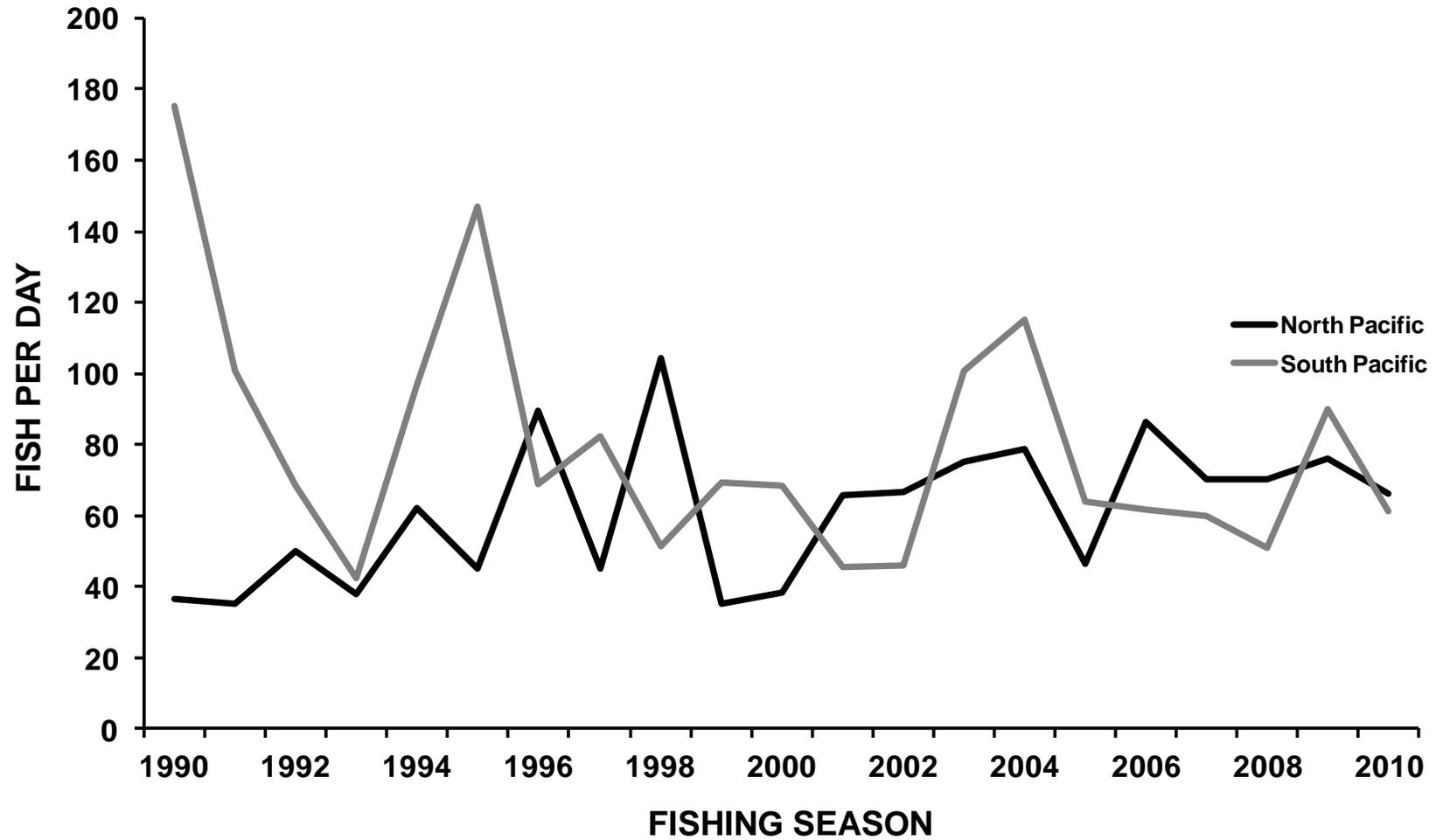


Figure 5. CPUE values from the U.S.A. North and South Pacific Albacore Troll and Pole-and-Line fisheries from 1990 through 2010.

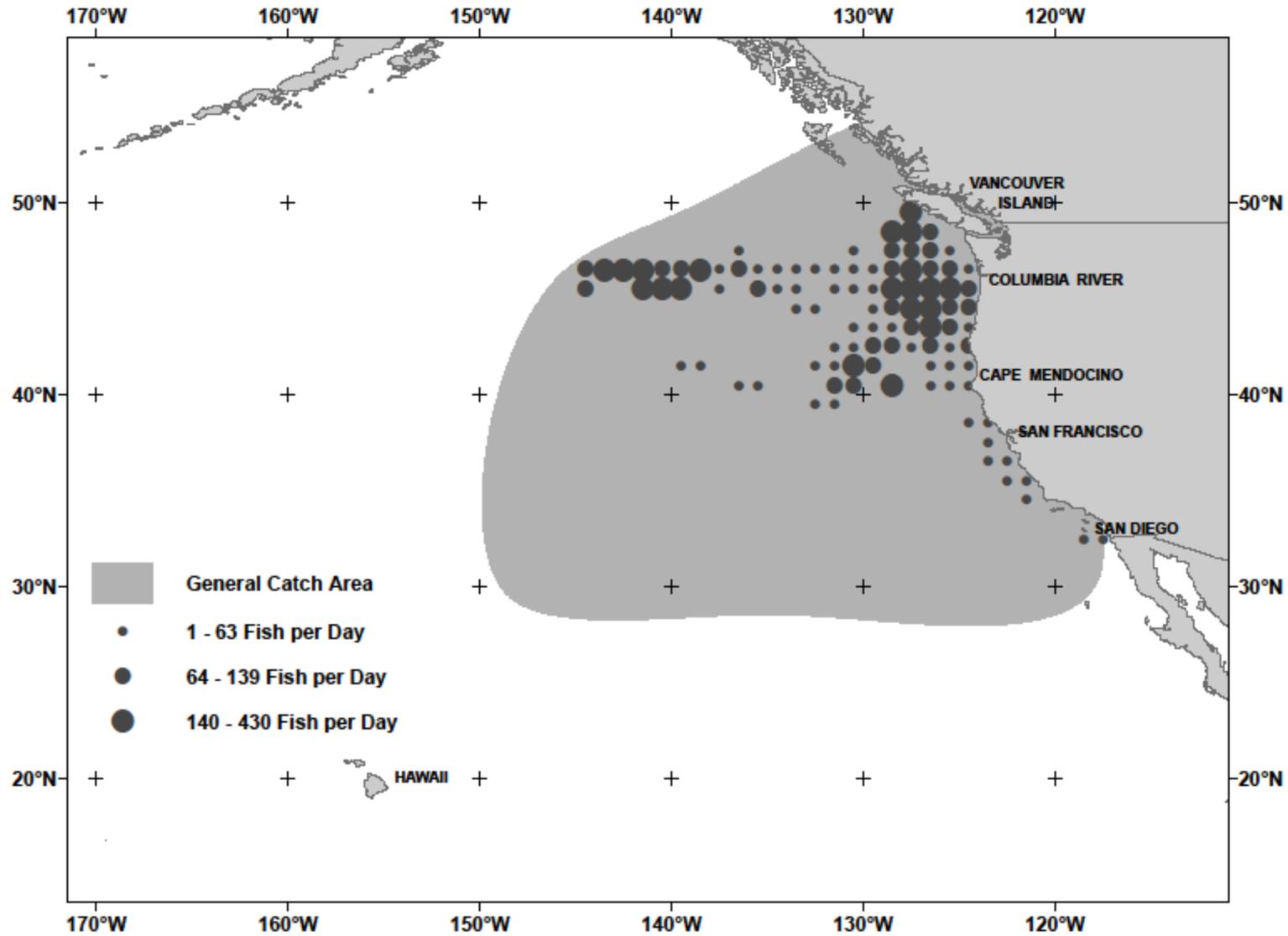


Figure 6. Geographic distribution of albacore CPUE values in the 2009 U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries.

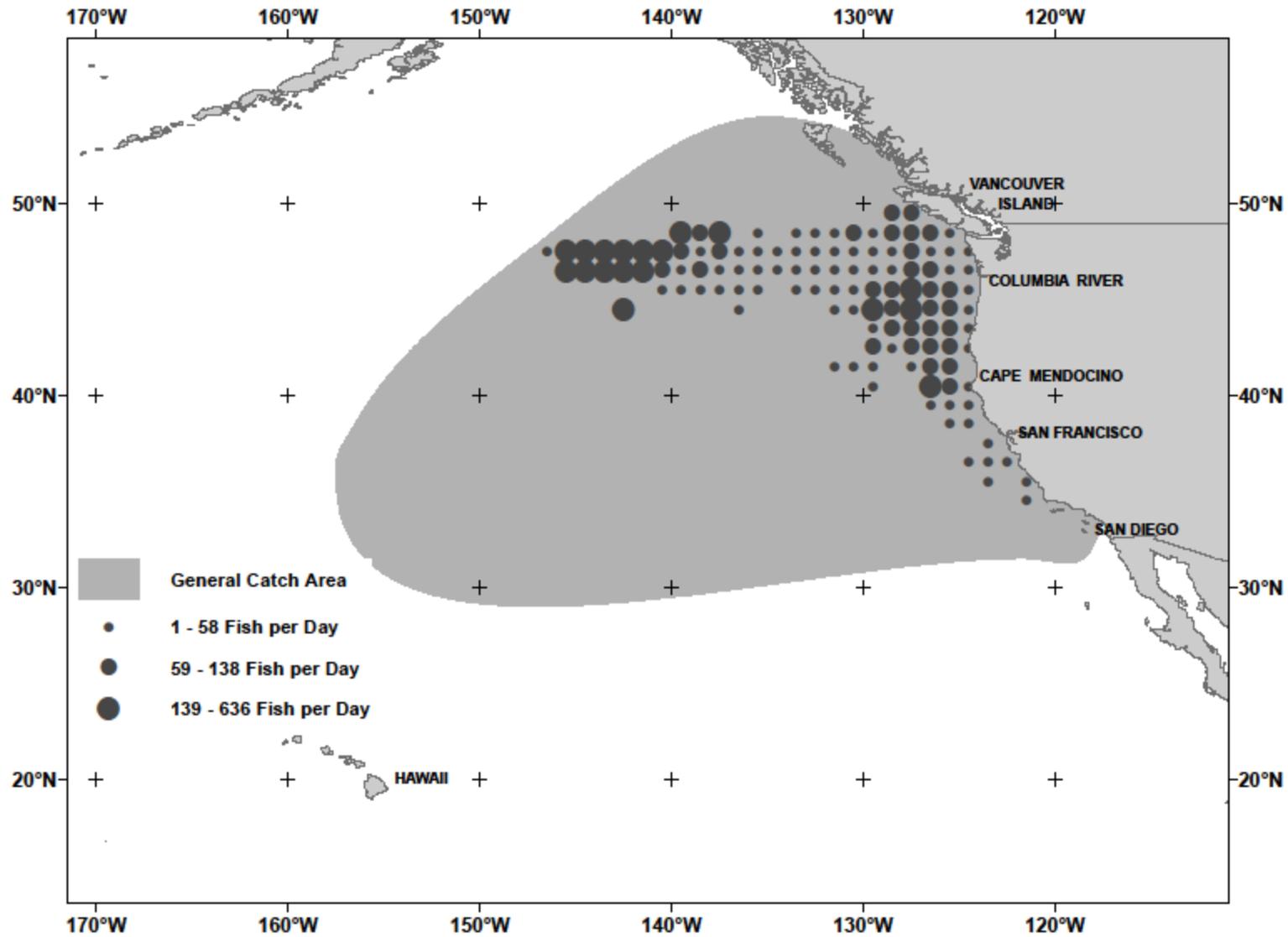


Figure 7. Geographic distribution of albacore CPUE values in the 2010 U.S.A. North Pacific Albacore Troll and Pole-and-Line fisheries.

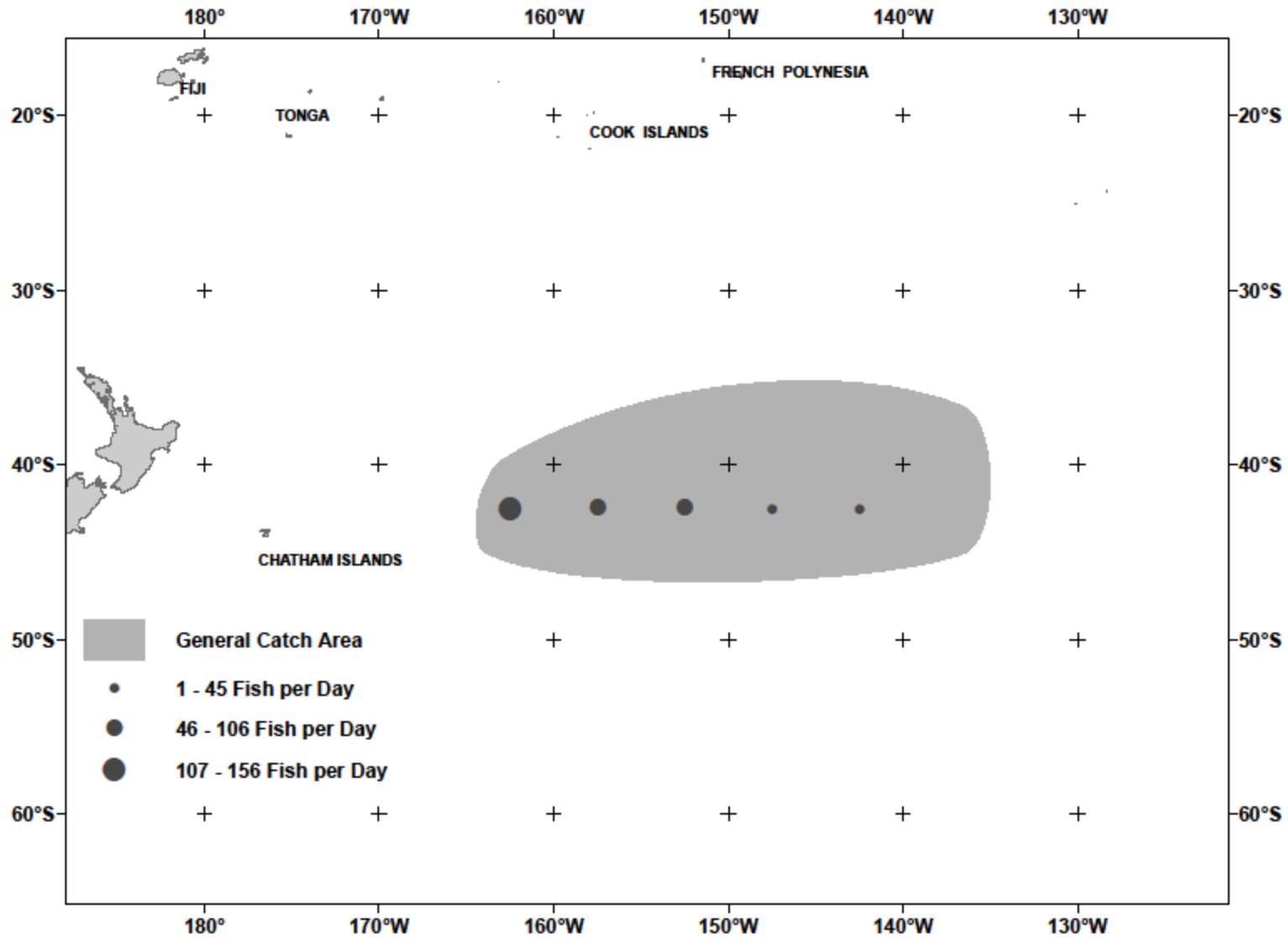


Figure 8. Geographic distribution of albacore CPUE values in the 2008-2009 U.S.A. South Pacific Albacore Troll fishery.

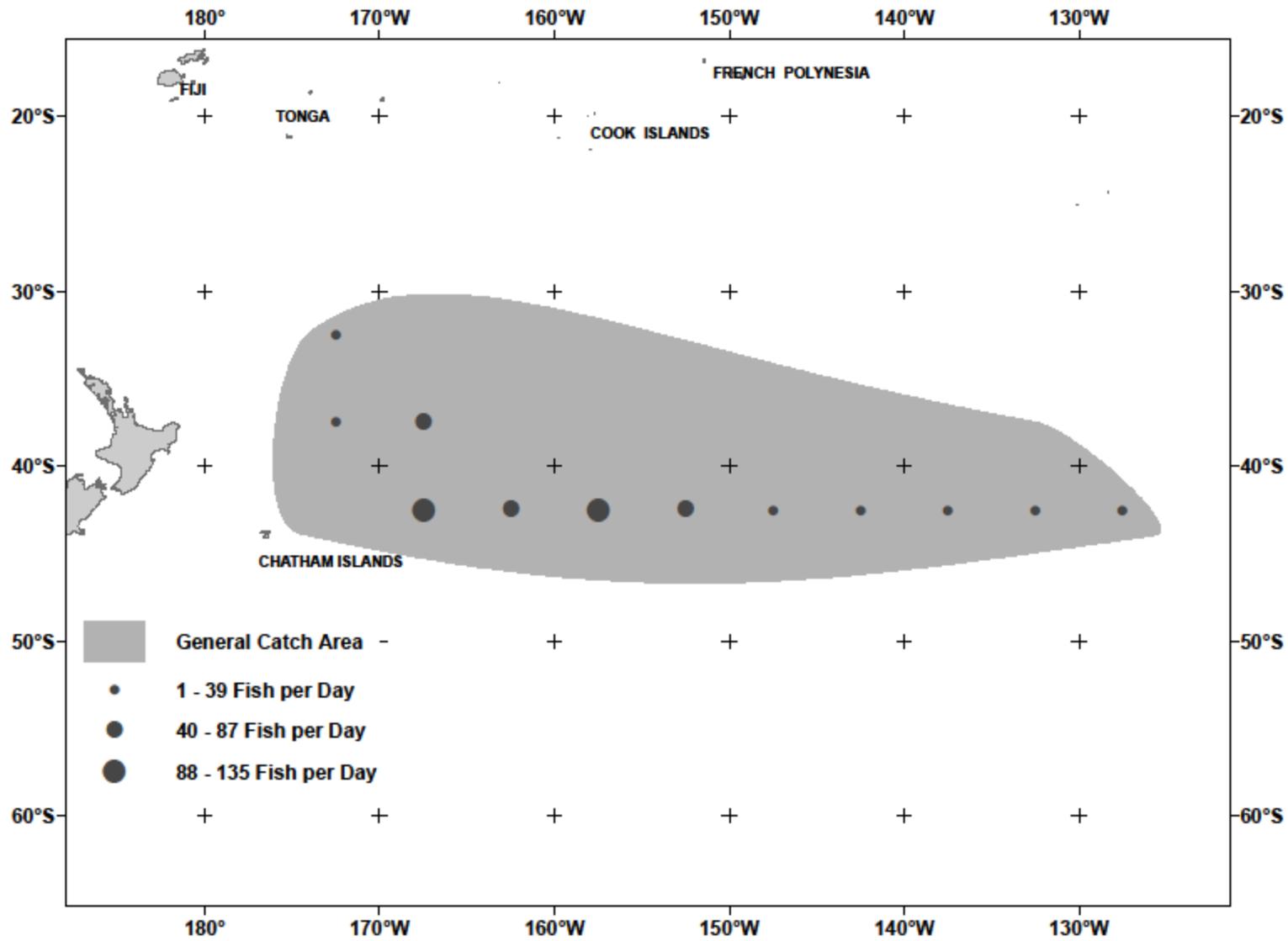


Figure 9. Geographic distribution of albacore CPUE values in the 2009-2010 U.S.A. South Pacific Albacore Troll fishery.

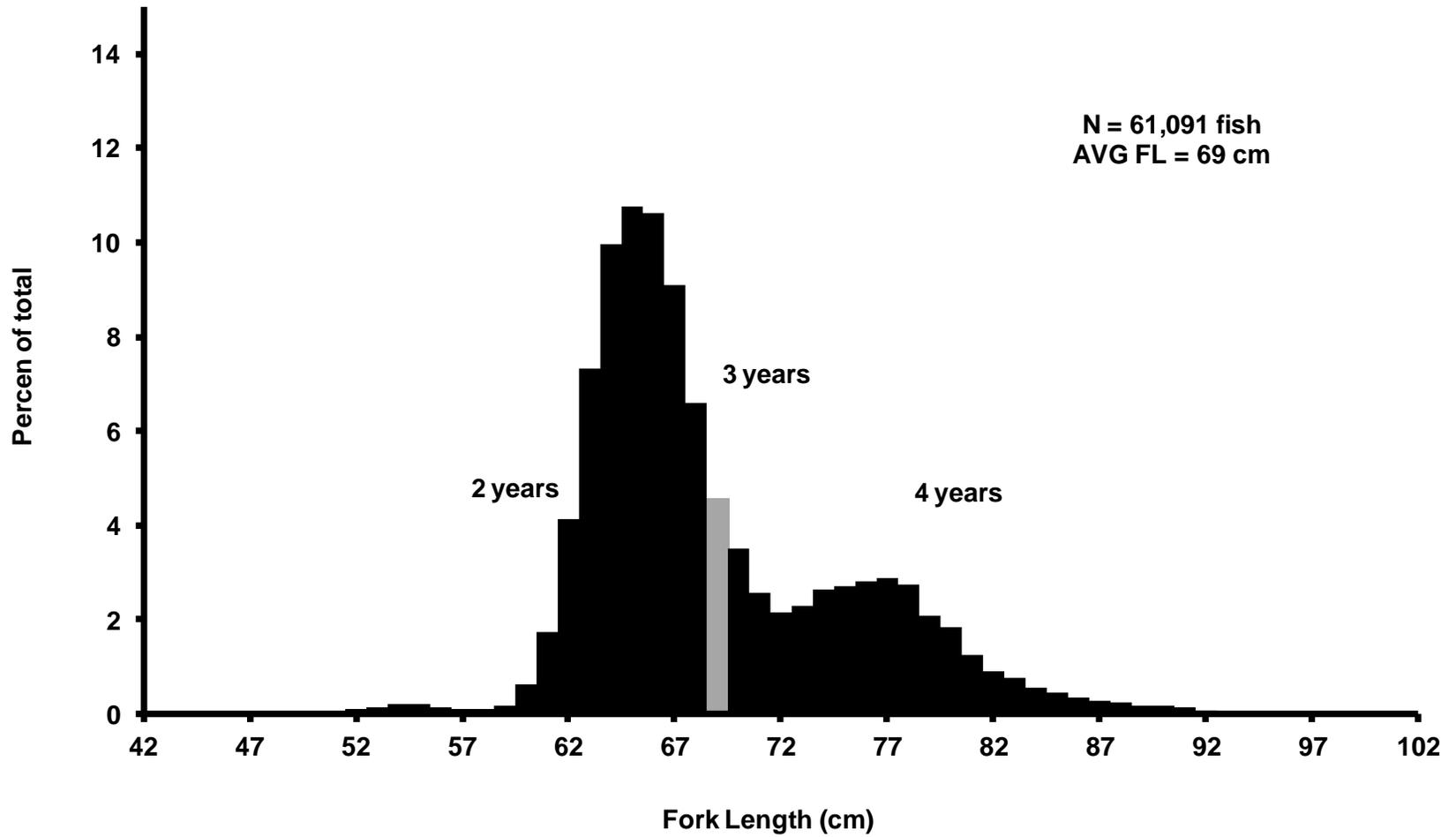


Figure 10. Length-frequency histogram of North Pacific albacore caught by U.S.A. Troll and Pole-and-Line vessels during the 2009 season.

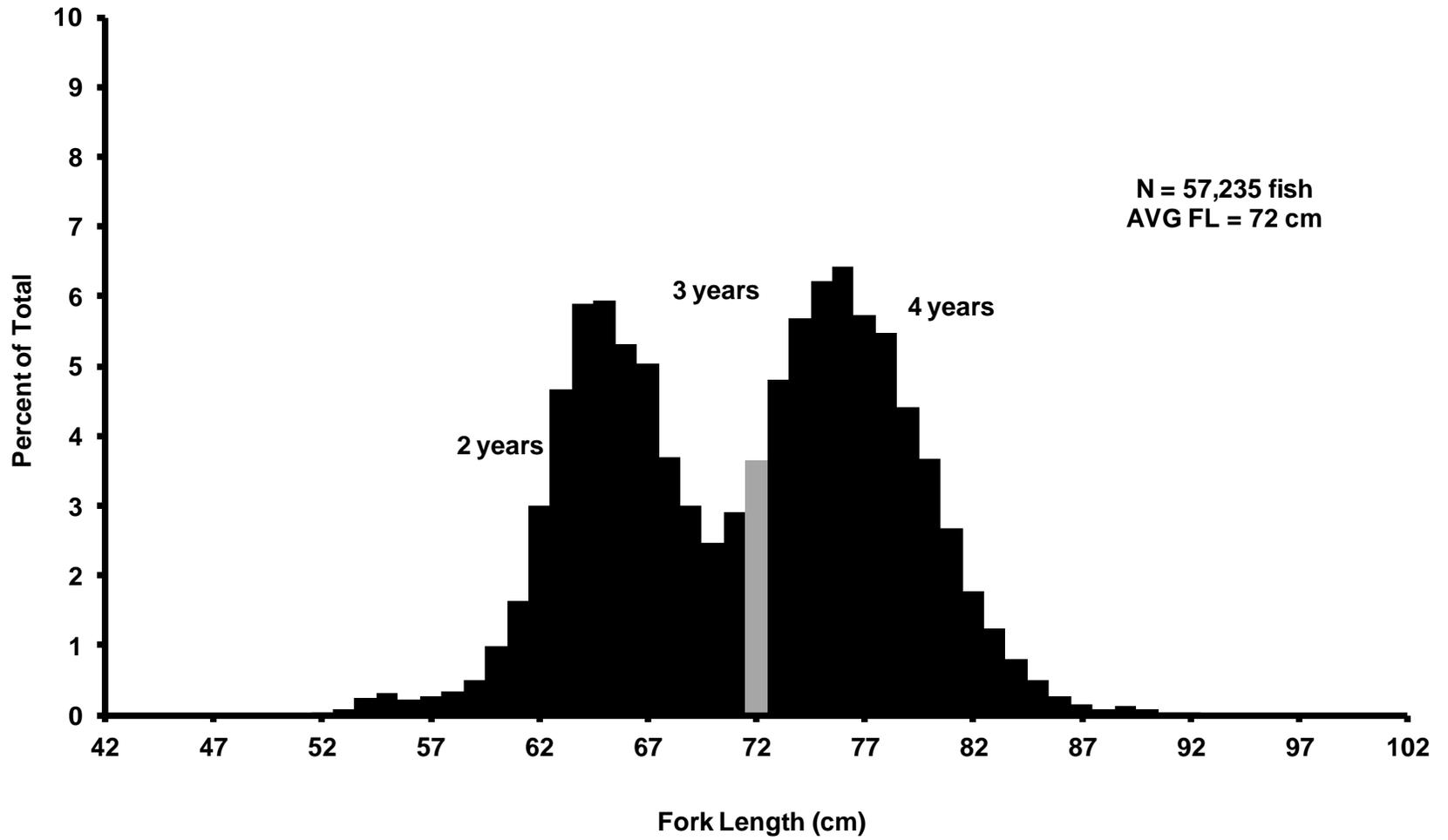


Figure 11. Length-frequency histogram of North Pacific albacore caught by U.S.A. Troll and Pole-and-Line vessels during the 2010 season.