

INFORMATION ON PARTICIPATION IN THE WEST COAST POLE (BAITBOAT)
AND TROLL ALBACORE SURFACE FISHERY RELATIVE TO CONSIDERATION OF
FISHING EFFORT LIMITATION

Albacore Landings and Fishery Participation for Vessels with Pole/Troll Albacore Catch

PacFIN vessel summary files for 2004-2008 were used to examine participation in the west coast albacore troll fishery. Non-Tribal commercial vessels were selected. However, Canadian vessels were not excluded. From these vessels those with albacore landings with pole (baitboat) or troll gear were selected (using the PacFIN GRID values of POL and TRL).

Vessel Participation Measured by Landings

Table 1 categorizes vessels according to the proportion of their total landings (all species, all gear types) that are pole/troll caught albacore. Table 2 shows comparable data in terms of revenue.¹

Figures 1 and 2 present this information graphically. The distribution of the number of vessels (the line in the figures) across the landings categories is generally U-shaped. What is immediately apparent is the large number of vessels where albacore accounts for less than 10 percent of their total landings and a second, slightly smaller category of vessels with greater than 90 percent of their catch comprising pole/troll albacore. The first category of vessels accounts for only 4 percent of all albacore landings over the time period (but 7 percent of albacore revenue). They may be vessels that either participate very occasionally in the fishery or entered the fishery for a brief period. The second category clearly comprises full-time participants in the fishery. They account for 52 percent of albacore landings and 49 percent of revenue. This leaves the largest fraction of vessels spanning the middle categories representing increasing specialization. These vessels account for 39 percent of total albacore landings and 32 percent of total albacore revenue.

Another way of looking at this data is to consider vessels for which albacore comprises more than 50 percent of their total landings. This could be one way to distinguish “full time” from “part time” fishery participants. (This would be similar to the analytical distinction made between “directed” and “incidental” groundfish vessels, although the distinction is measured at the trip level.) They comprise 45 percent of all vessels but 82 percent of total landings. In terms of revenue, 36 percent of the vessels have albacore as 50 percent or more of their revenue and those vessels account for 73 percent of total revenue of all the vessels in the data set.

¹ Note that the total number of vessels in the two tables does not match. The discrepancy (5 vessels) may result from missing price information in the summary data.

Table 1. Summary of pole/troll albacore landings expressed as a percent of total landings. (In total row, value for average albacore landings is average for all vessels).

Albacore, % total landings	No. vessels	No. of vessel as % total	Total catch for bin	Landings for vessel category as % of total landings	Average albacore landings per vessel
≤10%	446	34%	2546.65	4%	5.71
11-20%	115	9%	2139.19	4%	18.60
21-30%	91	7%	2980.00	5%	32.75
31-40%	65	5%	2966.44	5%	45.64
41-50%	60	5%	2469.73	4%	41.16
51-60%	48	4%	3378.24	6%	70.38
61-70%	45	3%	3492.78	6%	77.62
71-80%	42	3%	4408.16	7%	104.96
81-90%	42	3%	3613.56	6%	86.04
91-100%	356	27%	30902.57	52%	86.80
TOTAL	1310		58897.33	100%	44.96

Table 2. Summary of pole/troll albacore revenue expressed as a percent of total revenue.

Albacore, % total landings	No. vessels	No. of vessel as % total	Total revenue for bin	Revenue for vessel category as % of total landings	Average annual albacore revenue per vessel
≤10%	558	43%	\$ 8,720,199.43	7%	\$ 3,125.52
11-20%	133	10%	\$ 8,373,808.09	7%	\$ 12,592.19
21-30%	83	6%	\$ 6,682,779.64	5%	\$ 16,103.08
31-40%	60	5%	\$ 8,663,973.95	7%	\$ 28,879.91
41-50%	42	3%	\$ 6,534,897.97	5%	\$ 31,118.56
51-60%	29	2%	\$ 8,078,555.95	7%	\$ 55,714.18
61-70%	22	2%	\$ 2,163,283.75	2%	\$ 19,666.22
71-80%	30	2%	\$ 6,770,194.54	6%	\$ 45,134.63
81-90%	20	2%	\$ 5,855,404.28	5%	\$ 58,554.04
91-100%	328	25%	\$ 60,481,174.13	49%	\$ 36,878.76
TOTAL	1305		\$ 122,324,271.73	100%	\$ 18,747.01

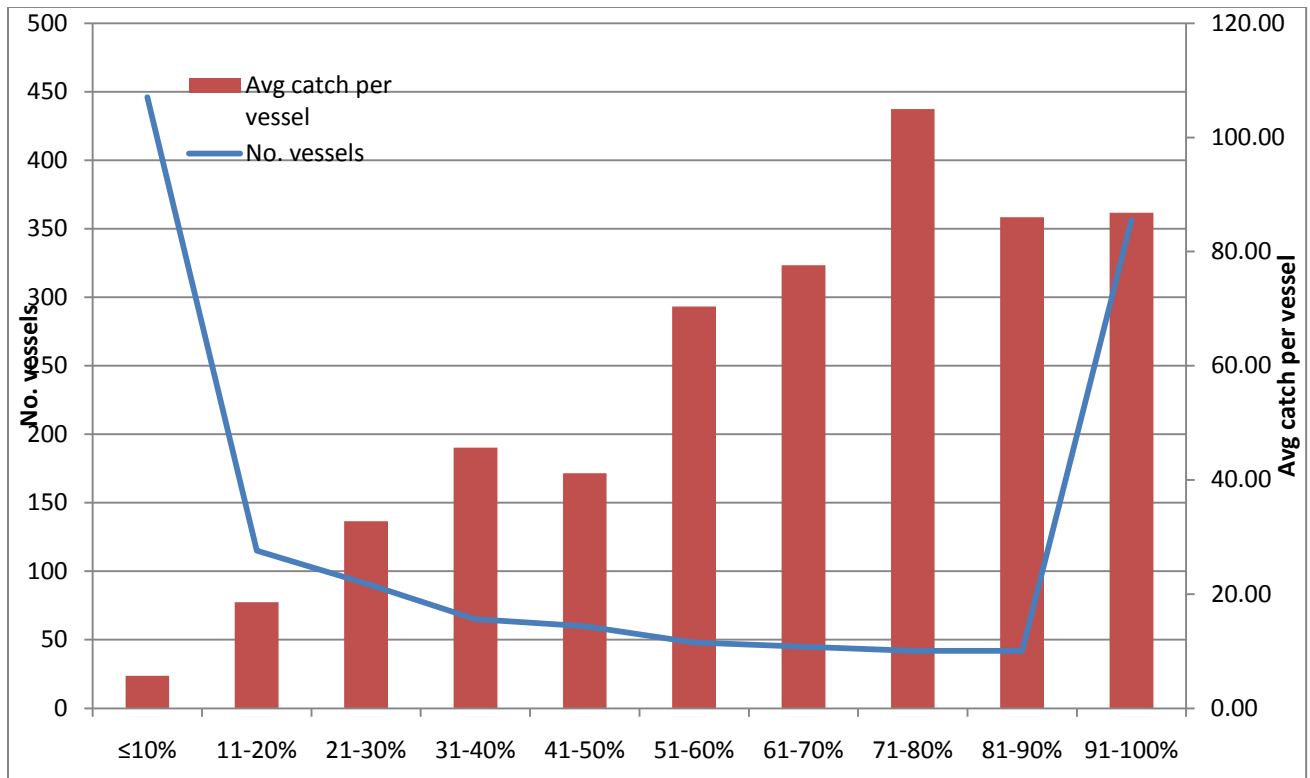


Figure 1. Number of vessels and average landings categorized by troll/pole caught albacore as a proportion of total landings for each vessel.

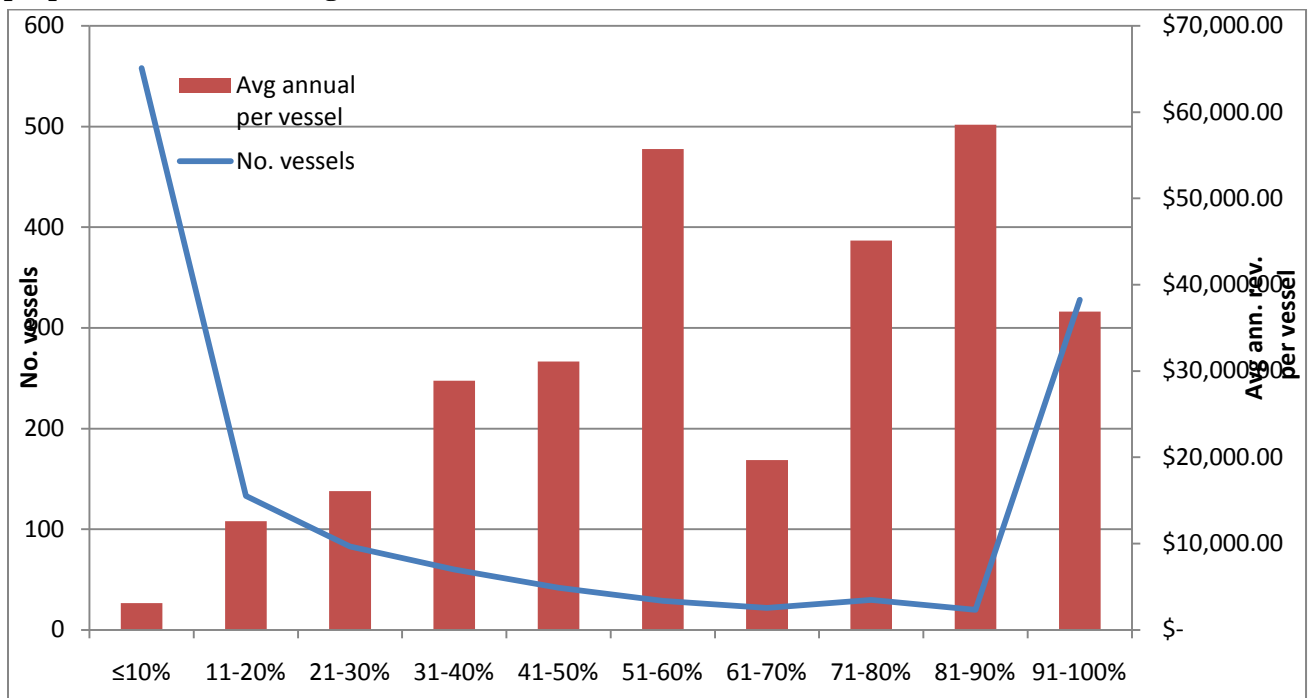


Figure 2. Number of vessels and average annual revenue categorized by troll/pole caught albacore as a proportion of total revenue for each vessel.

Participation in Other Fisheries by Vessels with Troll/Pole Caught Albacore

Another way to look at participation is to see what other fisheries vessels with pole/troll albacore catch participate in. This was done by identifying which combination of gear type (Pacfin code GRID) and species represents the largest proportion of the vessel's landings or revenue. Species were identified at the management group level (PacFIN code MGRP) except albacore, which is reported separately from the other HMS management unit species (other species in the group are categorized as "Other HMS"). The number of vessels in each of these "primary fishery" gear-species combinations was counted along with tabulating information on their landings and revenue. The results are shown in Table 3 for landings and Table 4 for revenue. In addition to the number of vessels, the tables show albacore landings by pole and troll gear and these landings as a percent of landings of all species for the primary fishery category. For confidentiality reasons primary fishery categories with three or less vessels are combined into a single category labeled "remainder."

In the tables the primary fishery categories are ranked from largest to smallest in terms of the number of vessels in the category. It can be seen that, not surprisingly, the troll-caught albacore primary fishery category has the largest number of vessels, accounting for about 41 percent of all the vessels when categorized by landings and 33 percent when categorized by revenue. These vessels account for 79 percent of troll/pole caught albacore landings and 71 percent of albacore revenue. For the albacore troll primary fishery, troll-caught albacore accounts for 83 percent of total catch by weight and value. Counted by number of vessels, other primary fisheries that are major participants in the albacore fishery include salmon troll and crab pots. However, measured by albacore landings and revenue they account for less than a fifth of the total

Table 5 shows, for vessels whose primary fishery is troll albacore, either in terms of landings or revenue, what gear-species combinations accounted for their total catch by weight and revenue. All combinations greater than 1 percent of the total are shown; the rest of the categories are grouped in the "remainder" row. The distribution of gear-species combinations within the troll albacore primary fishery category is similar to the distribution of primary fishery categories across all vessels catching troll/pole albacore: troll albacore, crab pot, and salmon troll account for the top three combinations.

Table 3. Primary fishery (gear-species combination) by landings (mt), ranked by number of vessels.

Primary Fishery by Landings	No. Vessels	Pct. All Vessels	Albacore Landings				Albacore Landings as a Pct of Total Landings in Primary Fishery		
			Pole Albacore	Troll Albacore	Total	Pct of Albacore Caught by All Vessels	Pole Albacore	Troll Albacore	Both
Troll: Albacore	534	40.8%	1,304.89	44,919.26	46,224.15	78.5%	2.4%	83.2%	85.6%
Crab Pot: Crab	255	19.5%	2.81	6,513.64	6,516.46	11.1%	<0.1%	12.5%	12.5%
Troll: Salmon	175	13.4%	21.15	415.17	436.31	0.7%	0.8%	15.8%	16.6%
Crab/Lobster Pot: Crab	106	8.1%	265.27	2,444.33	2,709.60	4.6%	1.5%	13.4%	14.8%
Longline: Groundfish	30	2.3%	0.26	212.44	212.70	0.4%	<0.1%	5.7%	5.7%
Other Hook And Line: Gfish	22	1.7%	0.00	15.88	15.88	<0.1%	0.0%	6.5%	6.5%
Pole (Commercial): Other	21	1.6%	5.90	0.19	6.09	<0.1%	13.1%	0.4%	13.5%
D. Rig Shrimp Trawl: Shrimp	18	1.4%	2.20	760.21	762.42	1.3%	<0.1%	3.1%	3.1%
Roller Trawl: Groundfish	18	1.4%	0.00	259.49	259.49	0.4%	0.0%	1.2%	1.2%
Pole (Commercial): Albacore	17	1.3%	14.67	1.14	15.81	<0.1%	67.3%	5.2%	72.6%
Pole (Commercial): Groundfish	14	1.1%	2.32	2.19	4.51	<0.1%	2.1%	2.0%	4.1%
Fish Pot: Other	9	0.7%	3.12	135.75	138.87	0.2%	0.2%	8.5%	8.7%
Midwater Trawl: Groundfish	9	0.7%	0.00	42.26	42.26	0.1%	<0.1%	<0.1%	<0.1%
Fish Pot: Groundfish	8	0.6%	1.53	8.63	10.15	<0.1%	1.3%	7.3%	8.5%
S. Rig Shrimp Trawl: Shrimp	8	0.6%	0.00	341.88	341.88	0.6%	0.0%	6.9%	6.9%
Crab/Lobster Pot: Other	7	0.5%	2.79	6.62	9.41	<0.1%	1.9%	4.5%	6.4%
DGN: Other HMS	7	0.5%	4.79	113.54	118.33	0.2%	0.5%	12.1%	12.6%
Flatfish Trawl: Groundfish	6	0.5%	0.40	65.09	65.50	0.1%	<0.1%	1.8%	1.8%
Groundfish Trawl: Groundfish	6	0.5%	24.31	208.64	232.94	0.4%	0.3%	2.6%	3.0%
Pole (Commercial): Other HMS	6	0.5%	2.29	0.00	2.29	<0.1%	24.3%	0.0%	24.3%
Dip Net: CPS	5	0.4%	23.29	113.15	136.44	0.2%	1.4%	6.7%	8.1%
Seine: CPS	5	0.4%	9.42	87.81	97.23	0.2%	0.1%	0.7%	0.8%
Other: Other HMS	4	0.3%	0.59	0.00	0.59	<0.1%	0.5%	0.0%	0.5%
Remainder	20	1.5%	1304.89	526.444	538.03	0.9%	0.1%	3.3%	3.4%
Total	1310		1,703.58	57,193.76	323,206.47				

Table 4. Primary fishery (gear-species combination) by revenue (\$), ranked by number of vessels.

Fishery	No. Vessels	Pct. All Vessels	Albacore Revenue				Albacore Revenue as a Pct. of Total Revenue in Primary Fishery		
			Pole Albacore	Troll Albacore	Total	Pct of Albacore Caught by All Vessels	Pole Albacore	Troll Albacore	Both
Troll: Albacore	426	32.6%	\$ 2,405,357	\$ 83,485,381	\$ 85,890,738	70.5%	2.4%	83.1%	85.5%
Crab Pot: Crab	287	22.0%	\$ 6,203	\$ 20,210,027	\$ 20,216,230	16.6%	<0.1%	8.4%	8.4%
Troll: Salmon	257	19.7%	\$ 95,862	\$ 3,855,970	\$ 3,951,832	3.2%	0.4%	15.2%	15.6%
Crab/Lobster Pot: Crab	114	8.7%	\$ 650,289	\$ 7,357,098	\$ 8,007,387	6.6%	0.8%	9.4%	10.2%
Longline: Groundfish	31	2.4%	\$ 640	\$ 625,631	\$ 626,271	0.5%	0.0%	4.5%	4.5%
Other Hook and Line: Gfish	21	1.6%	\$ -	\$ 43,608	\$ 43,608	<0.1%	0.0%	5.0%	5.0%
Pole (Commercial): Albacore	20	1.5%	\$ 60,810	\$ 4,019	\$ 64,828	0.1%	60.7%	4.0%	64.7%
Pole: Other	19	1.5%	\$ 7,537	\$ 6,938	\$ 14,475	0.0%	3.0%	2.7%	5.7%
Roller Trawl: Groundfish	17	1.3%	\$ -	\$ 537,436	\$ 537,436	0.4%	0.0%	1.8%	1.8%
Pole (Commercial): Gfish	12	0.9%	\$ 6,722	\$ 6,294	\$ 13,016	<0.1%	1.4%	1.3%	2.7%
Crab/Lobster Pot: Other	11	0.8%	\$ 10,406	\$ 7,880	\$ 18,287	<0.1%	0.3%	0.2%	0.5%
D. Rig Shrimp Trawl: Shrimp	11	0.8%	\$ 3,643	\$ 323,906	\$ 327,549	0.3%	<0.1%	1.5%	1.5%
DGN: Other HMS	10	0.8%	\$ 93,676	\$ 580,477	\$ 674,153	0.6%	2.1%	13.2%	15.3%
Pole: Other HMS	8	0.6%	\$ 17,385	\$ -	\$ 17,385	<0.1%	23.1%	0.0%	23.1%
Fish Pot: Groundfish	6	0.5%	\$ 781	\$ 11,442	\$ 12,223	<0.1%	0.4%	5.7%	6.1%
Fish Pot: Other	6	0.5%	\$ 6,921	\$ 236,769	\$ 243,690	0.2%	0.4%	12.7%	13.0%
Other: Other HMS	6	0.5%	\$ 3,736	\$ 14,993	\$ 18,729	<0.1%	0.6%	2.2%	2.8%
S. Rig Shrimp Trawl: Shrimp	6	0.5%	\$ -	\$ 177,486	\$ 177,486	0.1%	0.0%	4.2%	4.2%
Dip Net: CPS	5	0.4%	\$ 40,950	\$ 210,975	\$ 251,925	0.2%	3.1%	16.1%	19.2%
Groundfish Trawl: Gfish	5	0.4%	\$ 30,388	\$ 469,278	\$ 499,665	0.4%	0.3%	5.0%	5.3%
Midwater Trawl: Groundfish	5	0.4%	\$ -	\$ 10,654	\$ 10,654	<0.1%	0.0%	0.1%	0.1%
Seine: CPS	4	0.3%	\$ 11,765	\$ 149,548	\$ 161,313	0.1%	0.2%	2.6%	2.8%
Remainder	17	1.3%	\$ 45,306	\$ 499,961	\$ 545,266	0.4%	0.1%	1.3%	1.4%
Total	1305	100.0%	\$ 3,498,501	\$ 118,825,771	\$ 122,324,272				

Table 5. Landings (mt) and revenue (\$) from fisheries for vessels whose primary fishery is troll albacore by landings (left columns) or revenue (right columns).

For Troll Albacore Primary Fishery by Landings			For Troll Albacore Primary Fishery by Revenue		
Gear: Species	Landings	Percent	Gear: Species	Revenue	Percent
Troll: Albacore	44919.26	83.2%	Troll: Albacore	\$ 83,485,381.46	83.1%
Crab Pot: Crab	2911.36	5.4%	Troll: Salmon	\$ 4,930,841.08	4.9%
Troll: Salmon	1666.47	3.1%	Crab Pot: Crab	\$ 2,650,356.33	2.6%
Crab/Lobster Pot: Crab	1623.22	3.0%	Pole (Commercial): Albacore	\$ 2,405,357.01	2.4%
Pole (Commercial): Albacore	1304.89	2.4%	Crab/Lobster Pot: Crab	\$ 2,304,215.41	2.3%
DGN: Other HMS	633.62	1.2%	DGN: Other HMS	\$ 1,904,058.76	1.9%
Remaining Combinations	916.67	1.7%	Remaining Combinations	\$ 2,816,554.89	2.8%

This data provides context for the tables and figures shown above for the distribution of vessels by albacore in their total catch. There are a large number of vessels (60-70 percent depending on whether considering landings or revenue) that have some other fishery as their “primary” fishery as defined here. By the same token, vessels in the albacore troll primary fishery participate in other fisheries (defined by gear-species combinations). The top-ranked primary fisheries suggest a portfolio strategy where the vessels in these three primary fisheries (albacore troll, salmon troll, and crab pot) also spend part of their time in one or the other (or possibly both) of these fisheries. The fact that salmon troll uses similar gear and the crab fishery mainly occurs at different time of year lends operational support to such a portfolio strategy. Nonetheless, most of the albacore landings and revenue comes from vessels whose primary fishery is troll albacore. Comparing Table 1 and Table 3 we can see that there are 398 vessels where albacore comprises 80 percent or more of their landings and 534 vessels in the primary fishery. This probably brackets the range of what could be considered “full time” albacore troll vessels. Albacore pole vessels account for a much smaller proportion of the makeup of the fishery. By landings there are 17 vessels categorized in the pole albacore primary fishery and their landings make up a tiny proportion of total albacore landings. Looking at the albacore troll primary fishery, 2.4 percent of their total landings was pole albacore.

Information on Participation in the Albacore Pole/Troll Fishery Relative to the March 9, 2000, HMS Control Date

PacFIN data was queried to derive a list of vessels that made at least one albacore landing with HMS pole or troll gear types (see Table 4-53 in the 2009 HMS SAFE) in the years 1990-2009. (Note that 2009 data may be provisional at the time of the PacFIN data download, 3/1/10. Only non-tribal vessels were counted, but Canadian vessels were not excluded from the data set.) This time period was chosen so that an equal number of years were examined before and after the March 9, 2000 HMS controls date.

First, we compare the 10-year periods 1990-1999 and 2000-2009 (see Table 6). There are 2,649 vessels that made a landing in at least one of the years 1990-2009. Of these, 911 or 34 percent, made a landing 1990-1999 but made no landings 2000-2009; 773, or 29 percent, made a landing in 2000-2009 but no landings in 1990-1999. There were 965 vessels, or 36 percent, that made at least one landing in both periods.

Looking at the 10 years before the control date (e.g. 1990-1999) could introduce a bias since there is likely to be a natural attrition out of the fishery over time, so participation in those earlier years may be less relevant to the make-up of the fishery today. To address this we can also look at just the participation in the two 5-year periods surrounding the control date (1995-1999 and 2000-2004). There were 2,125 vessels that made a landing in at least one of these 10 years. Of these, 713 vessels, or 34 percent, made a landing in the 1995-1999 period but no landings in the 2000-2004 period; 549, or 26 percent, made a landing in the 2000-2004 period but no landings in the 1995-1999 period. Finally, 853 vessels, or 40 percent made a landing in at least 1 year in both periods.

Table 6. Number of vessels participating in the albacore pole/troll fishery before and after the control date, based on landings.

	1990-2009	1995-2004
Landings in first half of period only	911 (34%)	713 (34%)
Landings in second half of period only	773 (29%)	549 (26%)
Landings in both first and second half of period	965 (36%)	853 (40%)
Total no of vessels for period	2,649	2,115

It is interesting to note that the relative proportions are very similar for either the longer or shorter time periods. To simplify, about a third of vessels made landings both before 2000 and in 2000 or later years, a third in the earlier years but not the later years, and a third in the later years but not the earlier years. At this aggregate level, this suggests changing the control date would have relatively little effect. In the comparisons, those vessels with landings only in the later period might be considered “new entrants” while those with landings only in the earlier period might be considered “attrition.” In the aggregate these two groups are close to canceling each other out (“new entrants” replace “attrition”). Looking at the 1990-2009 period, for example, 1,876 vessels made landings before 2000 and 1,738 vessels in 2000 and later, a net decline of 138. Since control dates are considered a warning that participation after the date might not count towards qualification for a permit it does not seem like a more recent control date would have much effect on qualification, all other factors being equal.

Figure 3 shows number of vessels with landings and total albacore landings for the west coast surface fishery from 1990 to 2008. It can be seen that overall participation has declined since 2000, from 761 vessels to 517 vessels in 2008. However, landings have increased from 8,098 mt in 2000 to 9,739 mt in 2008. On the other hand, landings were lowest in 2000 for the time series from 1996 onwards. Although there was an uptick in participation in 2001, the overall time series suggests that the control date has not had a discernable effect on participation in terms of “speculative” entry into the fishery.

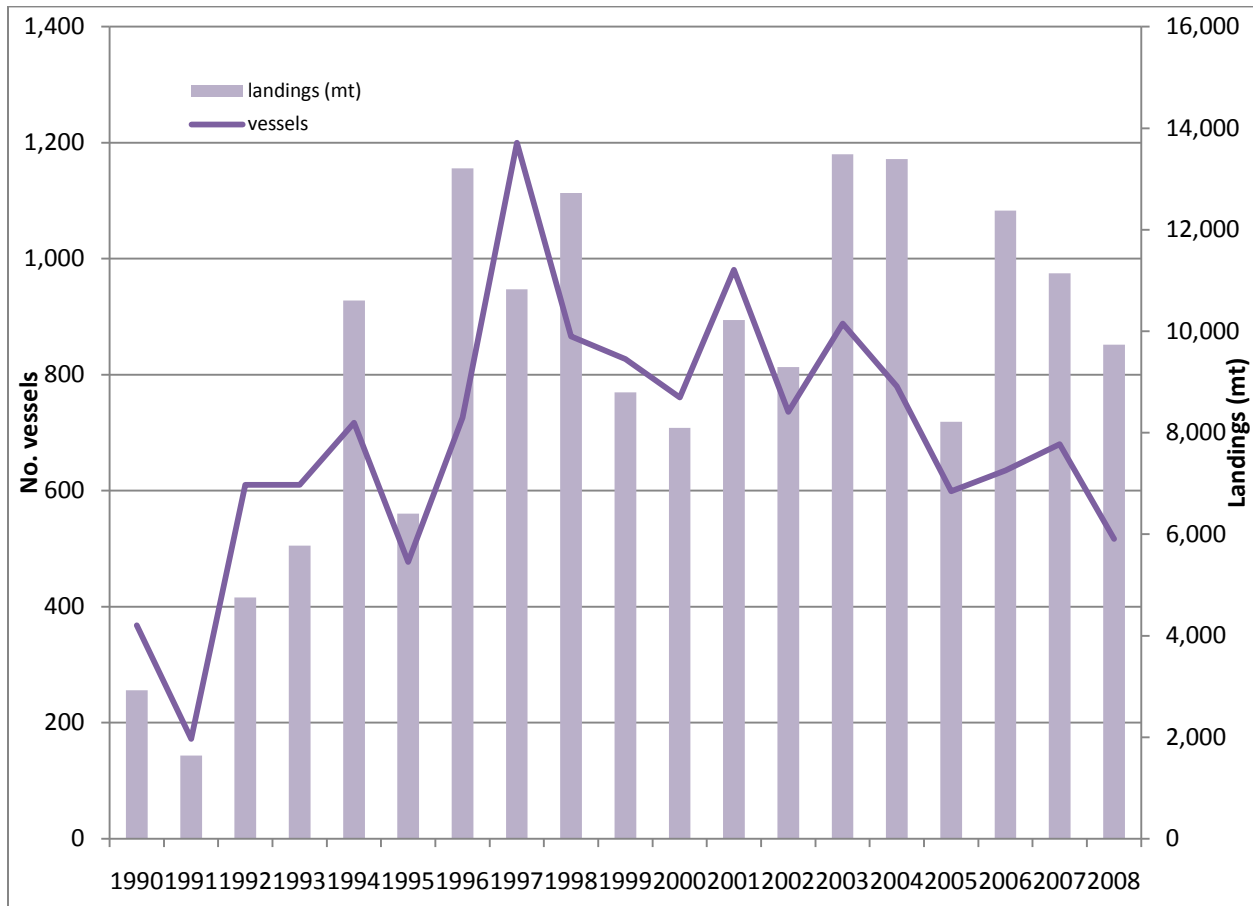


Figure 3. Number of vessels and landings in the albacore surface hook-and-line (troll and baitboat) fishery, 1990-2008; landings by Canadian vessels excluded (Source: HMS SAFE, Tables 4-9 and 4-55).