ANNUAL OREGON ALBACORE TUNA (*THUNNUS ALALUNGA*) REPORT, 2009

Prepared by:

Aaron C. Chappell

Oregon Department of Fish and Wildlife
Marine Resources Program
2040 SE Marine Science Drive
Newport, OR 97365

December 2009

ANNUAL PROGRESS REPORT
ALBACORE PORT SAMPLING PROGRAM
Contract No. 09-103
June 2009 through April 2010

INTRODUCTION

Albacore is a highly migratory species found worldwide in temperate seas. Albacore caught off Oregon belong to the North Pacific stock and are generally juvenile and sub-adult fish that have not spawned. During their trans-Pacific migrations, albacore are targeted at different times of the year by fisheries of several nations including the United States, Canada, Taiwan and Japan. The United States West Coast fishery harvests this stock during the summer and fall months.

Albacore has been fished commercially off Oregon since the mid-1930s when the fishery expanded north from the traditional grounds off southern California. For many years, both baitboats and jigboats fished for albacore off Oregon, but in recent years predominantly jig-caught, also termed troll-caught, albacore have been landed. The current fleet consists primarily of small to medium (20 ft. to 60 ft.) "combination" boats which may fish crab, salmon, or groundfish at other times of the year, and several large freezer boats (mostly longer than 60 ft.) that travel the north and south Pacific, fishing primarily albacore.

Commercial albacore landings in Oregon have been highly variable through the years, ranging from a low of 27,600 pounds in 1936 to a high of almost 38 million pounds in 1968. In the last decade, landings in Oregon have averaged 8.8 million pounds per year.

Beginning in 2005 under the Highly Migratory Species Fisheries Management Plan (HMSFMP), the National Marine Fisheries Service (NMFS) required vessels to submit logbook data while fishing for albacore inside the 200 mile economic exclusive zone (EEZ). Prior to this, the logbook program was voluntary and only vessels fishing outside the EEZ were required to submit logbooks under the High Seas Fishing Compliance Act.

Sampling of Oregon's commercial albacore fishery is a cooperative effort between the Oregon Department of Fish and Wildlife (ODFW), the NMFS's Southwest Fisheries Science Center (SWFSC), and the Pacific States Marine Fisheries Commission (PSMFC). This report documents the progress of the 2009 fishery off Oregon and associated sampling activities.

Recreational fishing for albacore off Oregon has been growing in popularity during the past decade. Catches have ranged from a low of 2,901 fish (approximately 50,000 pounds) in 2000 to a high of 58,928 fish (approximately 1,173,726 pounds) in 2007. Since 2000, catches have averaged 18,500 fish (approximately 360,000 pounds) per year.

2009 COMMERCIAL FISHERY

The 2009 Oregon albacore season began with a small landing on June 16th in Newport. The main fishery began in early July and continued through early October. The peak of landings occurred during the first week of August.

Rough ocean conditions at the end of July and mid-September caused two brief declines in landings (Figure 1). Albacore jigboat fishermen were hoping for consistent troll fishing late into the season, but the fish began their schooling and 'jumping' behavior around the middle of August and became increasingly difficult for jigboats to catch. However, the few boats left jig fishing in late October and early November experienced excellent fishing before bad weather brought the season to an end. Large schools of albacore were present 50 to 75 miles offshore from Oregon's major ports through the first week of November, and bait vessels had excellent success fishing on these schools.

- **2009 Albacore Landings**

A total of 418 vessels made at least one landing of albacore in 2009, up 24% from 337 vessels in 2008. These vessels made 1,314 landings in 2009, which is a 31% increase from 902 landings in 2008.

Albacore landings (pounds) can be significant into October and often continue into November. However, the amount of albacore landed in the fall in 2009 was much lower on average, than the previous four years (Figure 2).

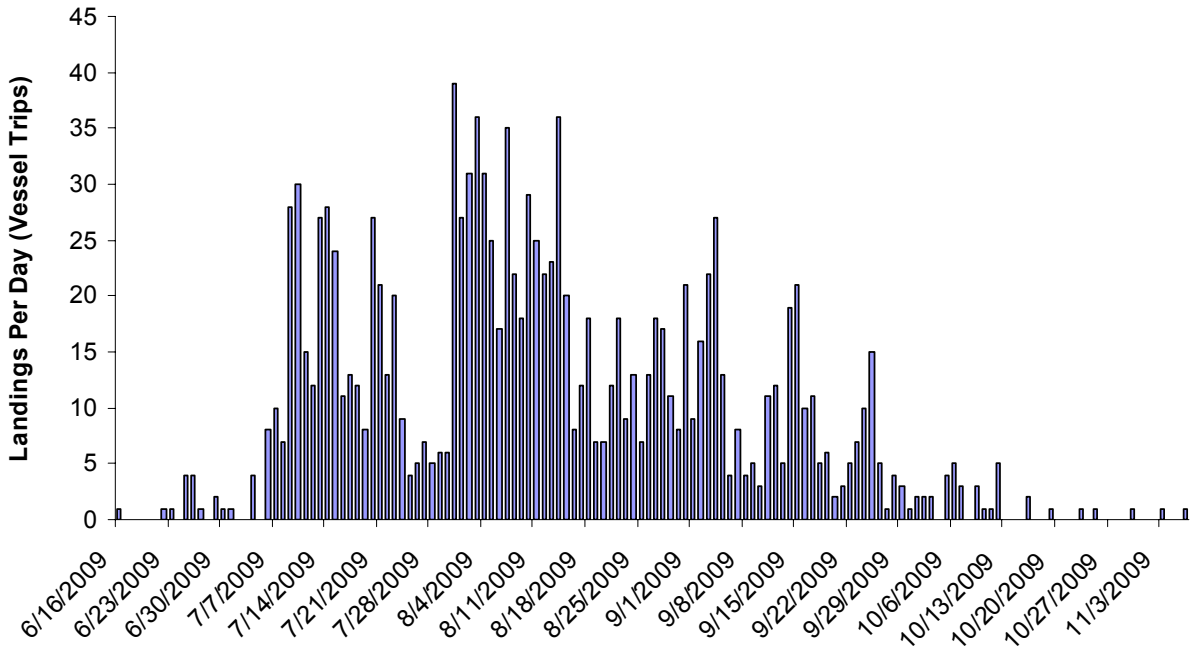

Figure 1. Distribution of daily Oregon commercial albacore landings (vessel trips), 2009.

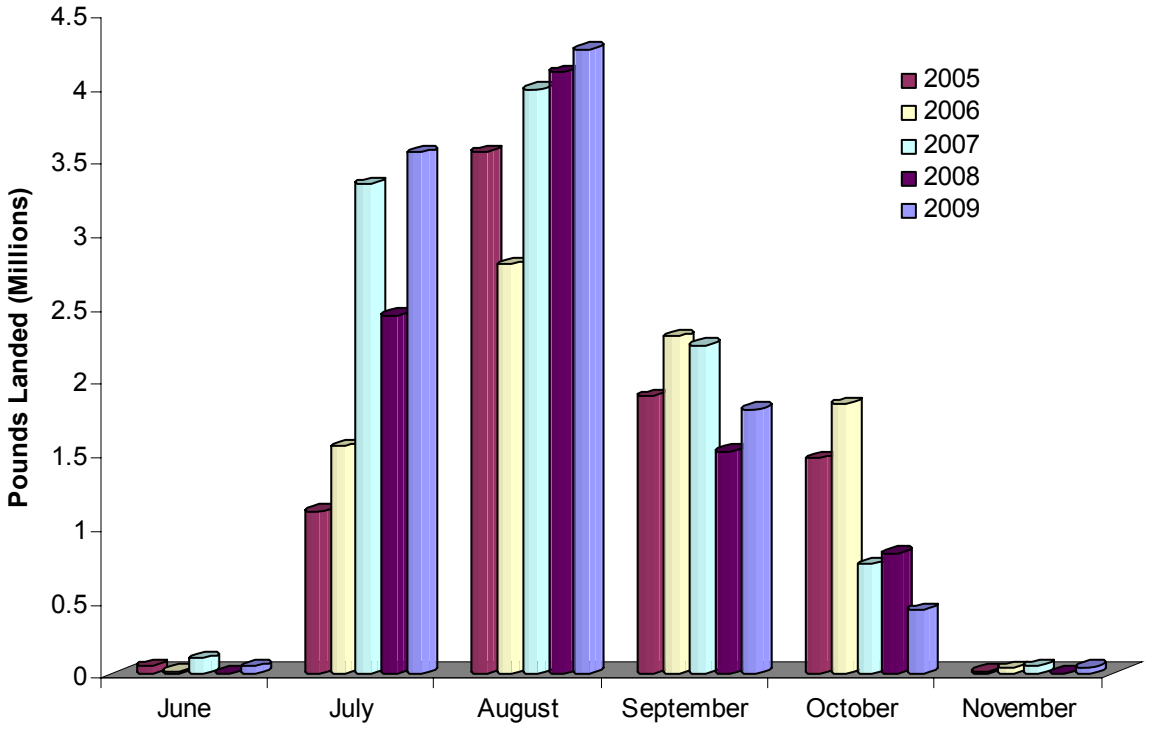

Figure 2. Five-year Oregon albacore landing (by weight) distribution by month.
* 2005-2008 data updated since published in the 2008 Annual Albacore Report.

The preliminary total for 2009 commercial landings is 10,122,630 pounds. This is a 14% increase from the 8,876,158 pounds landed in 2008, and is 15% higher than the ten-year average (2000-2009) of 8,804,592 pounds (Table 1 and Figure 3).

Landings (both vessel trips and total pounds landed) in 2009 were higher than in 2008 for several reasons. First, the albacore showed up in similar areas off the Oregon coast approximately three weeks earlier than in 2008, and many albacore fishermen were able to fill their boats up and make a delivery before they had even started albacore fishing in 2008. Second, although the blast frozen and fresh markets were not as strong as last year, Europe's demand for brine frozen albacore was strong all season, with dealers raising the price for tuna to fishers in order to supply their markets. Third, the closure of the ocean commercial salmon fishery south of Cape Falcon, Oregon likely caused many vessels to fish for albacore to supplement their income. Fourth, catches of albacore were excellent in July and August, with fish available from as close as 30 miles from some ports, enticing many boats to go albacore fishing. Fifth, fuel prices were much lower than in 2008, making exploratory fishing trips and moderate catches still economically viable for many fishermen. These factors in addition to relatively good weather in July and August provided the opportunity for many vessels to make quick trips, often filling their boats

Newport received the majority of Oregon's albacore landings (total pounds) in 2009 with 50% of the albacore poundage landed; followed by Astoria with 26%, and Charleston with 20%. Eleven other ports also received deliveries in 2009, accounting for about 4% of the total albacore landed (Figure 4 and Table 2). Landings in Pacific City, Depoe Bay, Newport, Bandon, Port Orford, Gold Beach and Brookings increased in 2009 from last year's totals.

Table 1. Total Oregon commercial albacore landings 1985 – 2009.
*1992, 1998-2008 data updated since published in the 2008 Annual Albacore Report.

Year	Pounds Landed	Year	Pounds Landed
1985	1,524,601	1998	10,603,155
1986	2,461,004	1999	4,552,878
1987	2,288,045	2000	8,756,755
1988	3,967,120	2001	8,958,529
1989	1,079,657	2002	4,361,742
1990	2,079,312	2003	9,165,362
1991	1,258,818	2004	10,754,016
1992	3,895,618	2005	8,086,960
1993	4,754,450	2006	8,515,152
1994	4,698,223	2007	10,448,617
1995	5,033,810	2008	8,876,158
1996	8,948,355	2009	10,122,630
1997	9,167,738		
10-Year Average (2000-2009): 8,804,592			

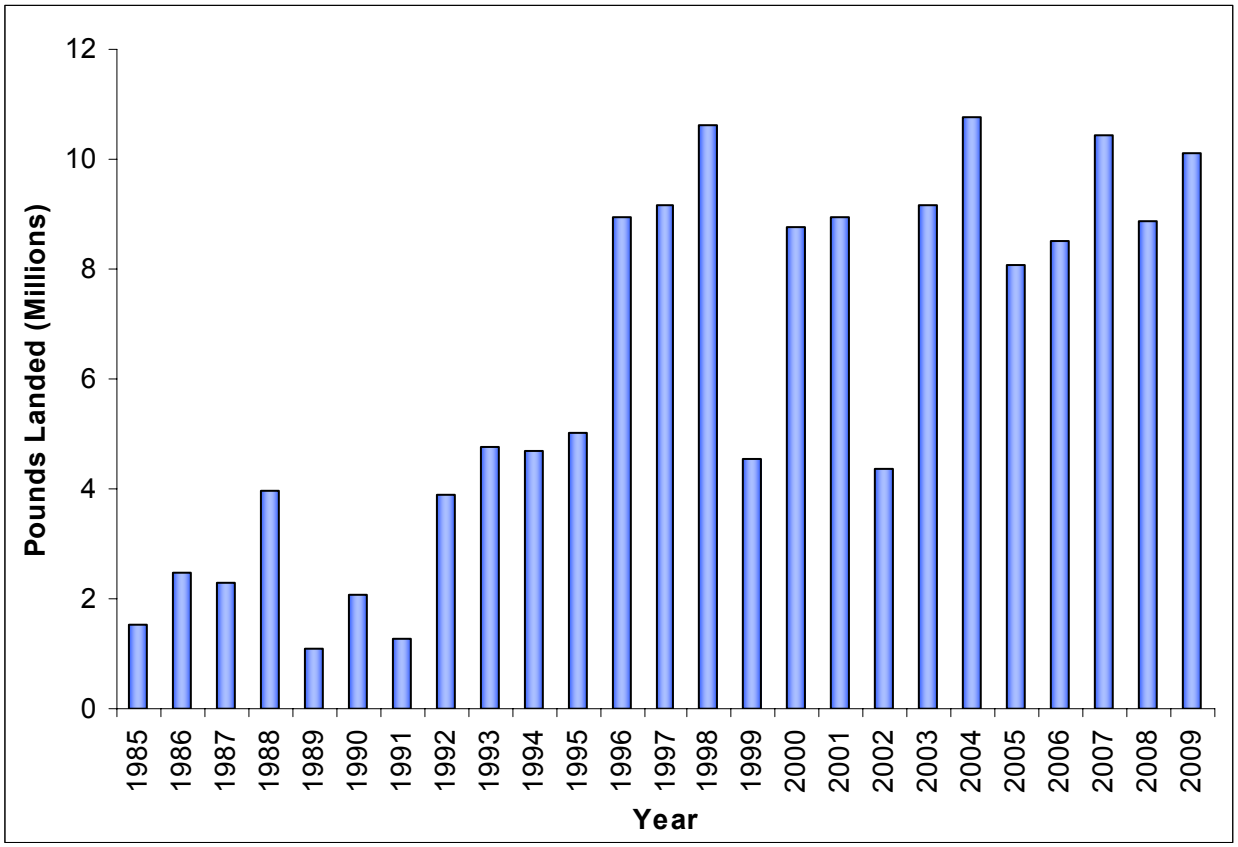

Figure 3. Oregon commercial albacore landings (total weight), 1985 – 2009.
*1992, 1998-2008 data updated since published in the 2008 Annual Albacore Report.

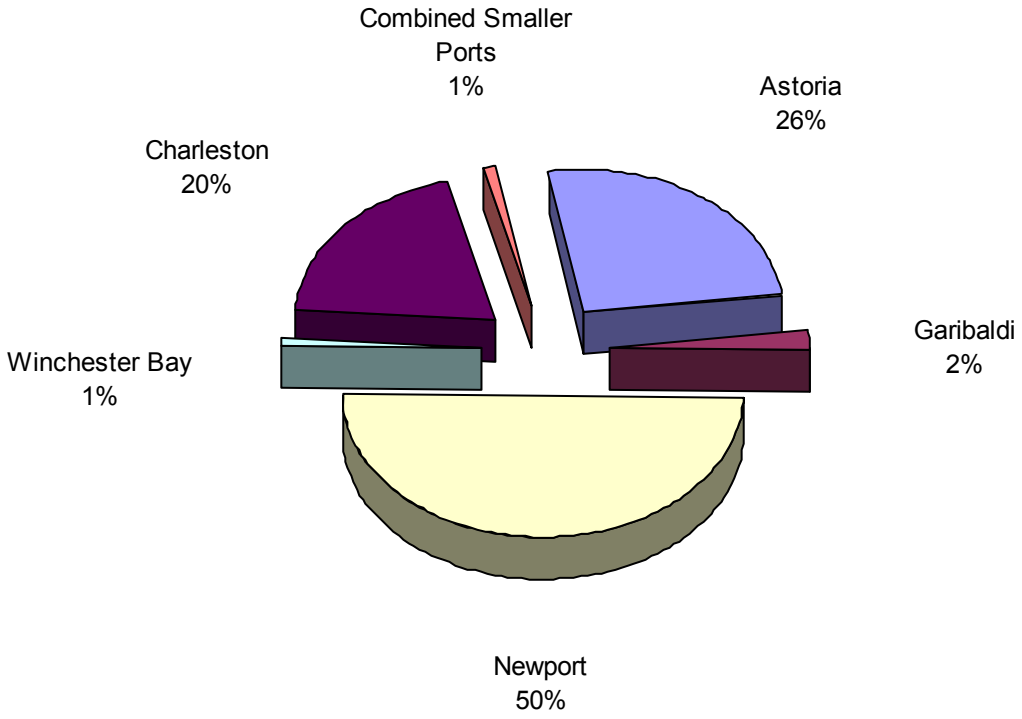

Figure 4. Percentage of 2009 Oregon commercial albacore landings (by weight) by port.

Table 2. Oregon commercial albacore landings (total pounds) by port, 2009 season and 10-year average.

*2000-2008 data updated since published in the 2008 Annual Albacore Report.

	2009		10-Year Average	
Port	**Pounds Landed**	**Percent of Pounds Landed**	**Pounds Landed**	**Percent of Pounds Landed**
Newport	5,068,507	50%	3,922,770	45%
Astoria	2,611,095	26%	2,597,496	30%
Charleston	2,032,925	20%	1,793,112	20%
Garibaldi	215,037	2%	220,329	3%
Winchester Bay	87,666	1%	127,878	1%
Brookings	38,010	<1%	54,281	1%
Florence	20,045	<1%	52,444	1%
Port Orford	15,293	<1%	16,335	<1%
Pacific City	9,853	<1%	4,615	<1%
Depoe Bay	6,353	<1%	6,102	<1%
Gold Beach	12,714	<1%	3,740	<1%
Smaller Ports*	5,132	<1%	5,292	<1%

*For confidentiality, smaller Ports include Portland, Seaside, Cannon Beach and Bandon.

The average landing in 2009 was 7,705 pounds, down 21% from 9,797 pounds in 2008. Table 3 describes the quartile partition of landing size in the 2009 Oregon albacore fishery, which better explains the landing size characteristics of the fishery. For example, although the average weight of a landing was 7,705 pounds, for 50% of the vessel trips, landings consisted of 2,919 or fewer pounds (Table 3).

Vessel participation in the Oregon albacore fishery has been sporadic over the last two decades, following availability and proximity of albacore, as well as ex-vessel prices and fuel costs. It has appeared to have peaked in the late 1990's or early 2000's after the Eastern Pacific albacore population had recovered from overfishing, most likely due to a substantial decrease in the high seas drift net fishery (Figure 5) (Kohin et al, 2005).

Table 3. Quartile partition of 2009 Oregon albacore landings.

Quartile		Pounds
100%	Maximum	139,430
75%	Quartile	8,298
50%	Median	2,919
25%	Quartile	1,022
0%	Minimum	20

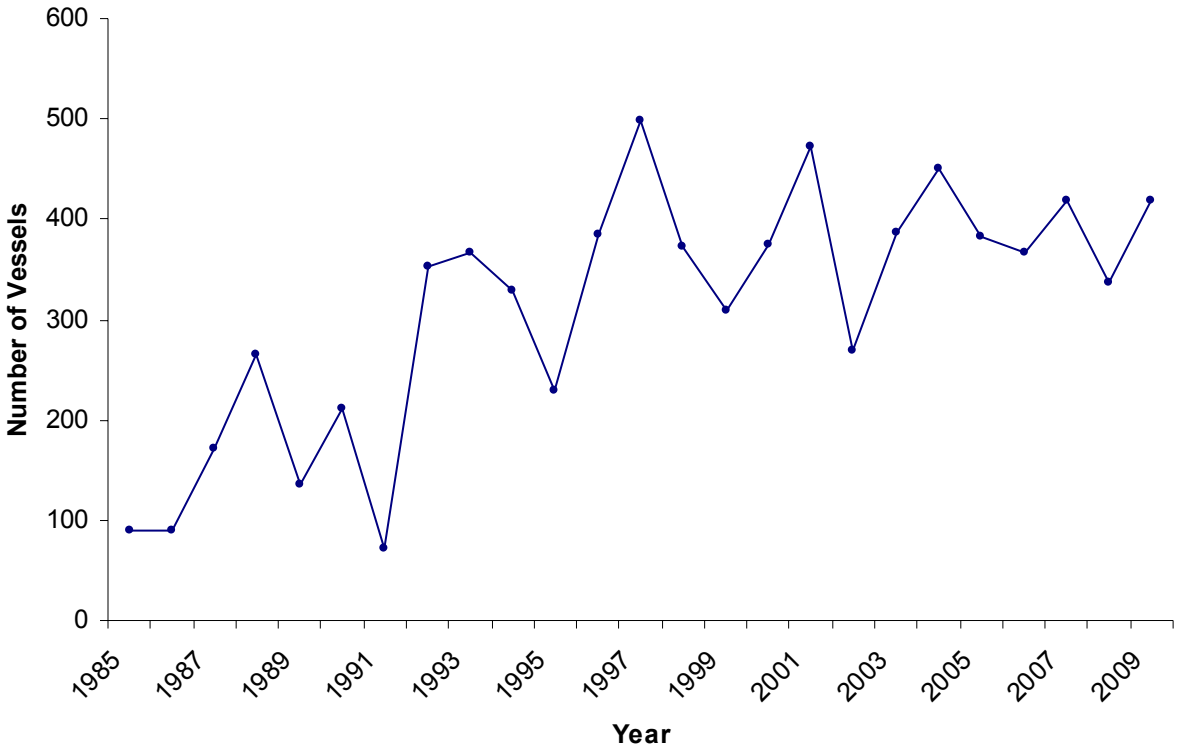

Figure 5. Number of vessels participating in the Oregon albacore fishery, 1985 - 2009.
* 2005-2008 data updated since published in the 2008 Annual Albacore Report.

- **2009 Albacore Revenue**

Most markets for the West Coast's albacore were much weaker in 2009 than in 2008. Fishermen and buyers placed a majority of the blame on the slow worldwide economy and the decline of the value of the U.S. Dollar. Markets for blast frozen albacore started off weaker than last year at $1.15 per pound, and quickly diminished further with the first wave of landings, when dealers paid $.85 - $.95 per pound. These lower prices represented prices in the brine frozen market, which is where a majority of blast frozen fish were sold in 2009. Brine markets started off with moderate demand at the start of the season with prices from $.80 to $95, and by the end of July had increased dramatically with prices boosting from $.90 to $1.05. Additional demand from Spain, Portugal and France triggered another boost in prices in early August, with prices ranging from $1.00 to $1.15 per pound. Fresh, iced prices at the beginning of the season ranged from $.90 to $1.00 per pound, dropping as low as $.80 at larger dealers for most of July and August. These prices did increase slightly in late August and September to $.85 to $1.00. Demand and prices for fresh fish at alternative, smaller markets were strong throughout the 2009 season in all Oregon ports, with prices ranging from $1.00 to $1.75 per pound. A recent strategy developed by local commercial fishers to improve the value of their albacore is to sell their catches directly off their vessel to the public, using Oregon's Limited Fish Seller's License. Limited Fish Sellers received between $1.50 and $2.25 per pound. Demand remained strong in this market throughout the albacore season, with many vessels hoping for extended fishing opportunities late into the fall.

Ex-vessel revenue generated from albacore in 2009 totaled $10,238,503, a 4% decrease from 2008's ex-vessel value of $10,666,250 (Figure 6). The average, weighted, price per pound for albacore in Oregon for 2009 was $1.01 per pound. This is down $.19 per pound from 2008 but $.23 per pound higher than the 25-year average of $0.78 per pound (1985-2009).

Albacore accounted for 11% of Oregon's marine fish revenue in 2009 (Figure 7). The 2009 albacore landings revenue ranked 4th among fishery landings behind Dungeness crab at 36%, sablefish at 17%, and other groundfish at 13%.

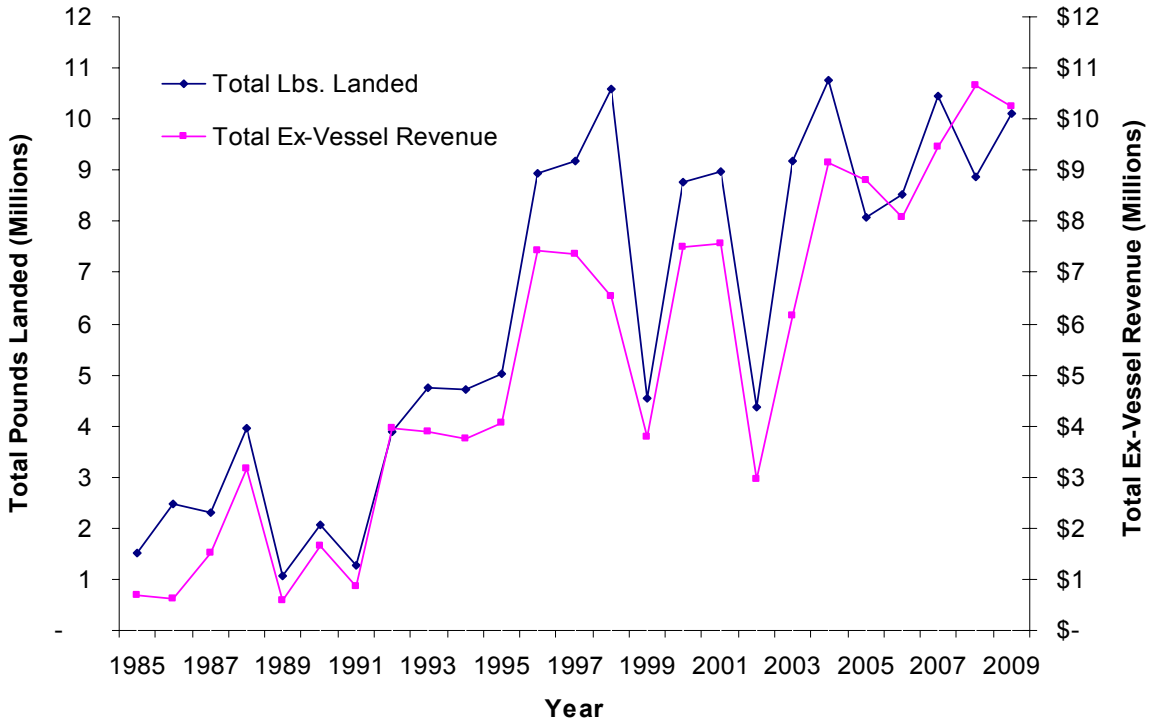

Figure 6. Total albacore ex-vessel revenue in relation to total albacore landings, 1985 – 2009.
*1992, 1998-2008 data updated since published in the 2008 Annual Albacore Report.

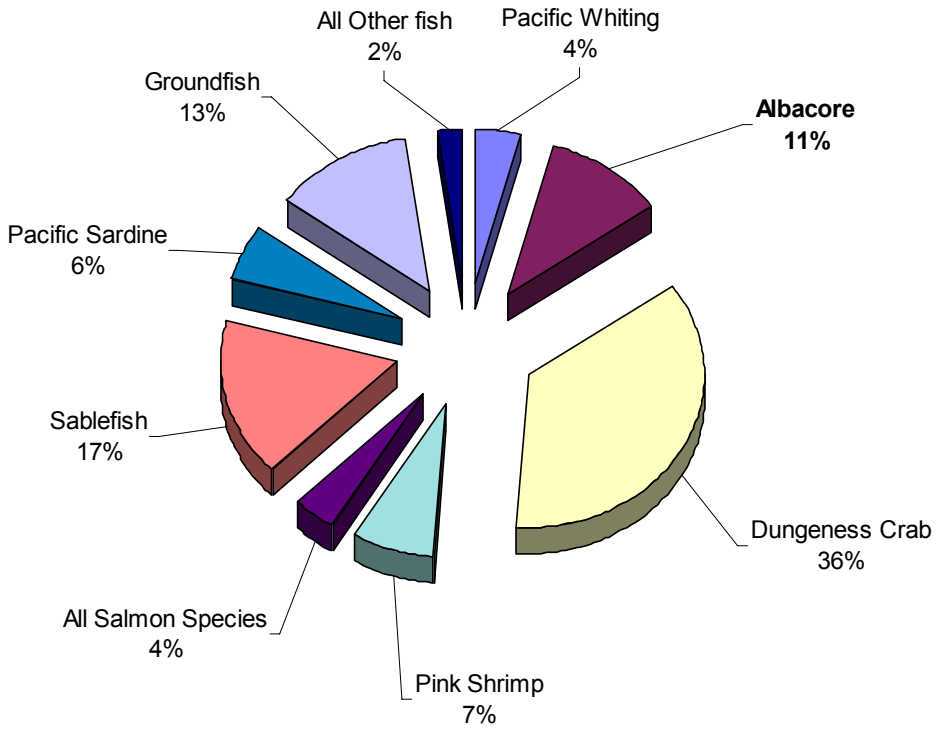

Figure 7. Oregon Marine Fish Revenue (ex-vessel), 2009.

2009 COMMERCIAL SAMPLING RESULTS

Albacore sampling was conducted by albacore tuna sampling staff on a full-time basis in Newport starting June 21, and for three months each in Astoria and Charleston beginning July 1. Additional sampling was conducted by ODFW commercial groundfish port samplers prior to and after the start of the dedicated albacore sampling period. Sampling activities included distribution of logbooks and logbook envelopes for completed logbooks, and measuring fish for length-frequencies. The 2009 Oregon Albacore Season Summary (Appendix A) presents data requested in Oregon's contractual agreement with NMFS and PSMFC for albacore sampling funding. Organized by port and Oregon totals, these are:

a. Number of logbooks issued to commercial albacore vessels
b. Estimated landings (pounds) sampled for length-frequency
c. Total number of fish measured for length-frequency
d. Number of landings (vessel trips) sampled for length-frequency
e. Estimated number of commercial trips
f. Estimated number of total commercial vessels with at least one trip into an Oregon port
g. Estimated number of total pounds landed by jig/troll vessels
h. Estimated number of total pounds landed by bait vessels
i. Estimated number of total pounds landed by jig & bait vessels
j. Estimated sport landings (pounds)

In 2009, 16 logbooks were distributed to albacore fishermen. Logbooks were distributed at local ODFW offices and by staff in the field to vessels with valid Highly Migratory Species Permits.

- **2009 Length-Frequency Analysis**

During 2009, albacore from 205 vessels were sampled from a total of 433 separate vessel trips for length-frequency measurements. A total of 39,559 fish were measured for an average of 91 fish per length-frequency sample (Table 4). Albacore port samplers broke every Oregon sampling record in 2009, surpassing previous length-frequency totals and total number of fish measured for the three major ports of Astoria, Newport and Charleston. Sampled albacore delivered to Oregon buyers ranged in fork length from 50 cm to 99 cm. This length range of albacore converts to weights of 5.7 and 43.7 pounds. Figures 8 and 9 show length-frequency histograms of non-sorted, randomly sampled albacore during the 2009 and 2008 seasons. The 2008 histogram portrays a bimodal population representing two distinct age classes. These two age-classes represent approximately 3.5 and 4.5 year-old fish, measuring 65 cm and 76 cm, respectively. The 2009 histogram also shows a bimodal population distribution, consisting of age classes representing approximately 3.5 and 4.3 year-old fish, measuring 65 cm and 74 cm, respectively. However, the 2009 histogram shows a much higher percentage of the younger age-class of albacore, and slightly lower percentages of the older-age classes of albacore, possibly indicating good recruitment of the younger age-class into the 2009 West Coast albacore fishery. Additionally, the left tail of the 2009 histogram, representing 2.5 to 3.2 year-old fish, measuring 55 cm to 61 cm, respectively, is not as apparent as in the 2008 fishery. This could indicate a possible weaker age-class of albacore that will be entering the fishery as 3.5 year-old, 65 cm fish in 2010. However, albacore samplers may not be able to account for these younger albacore accurately due to the markets desire for larger fish, possibly influencing albacore fishermen to discard smaller fish at sea. The average length for the entire 2009 commercially exploited population delivered to Oregon was 69.4 cm. Fish of this size are approximately four years old and weigh 15.1 pounds (Suda 1966; Clemons 1961).

Table 4. Length-Frequencies, number of fish measured, and number of fish per length/frequency by port, 2009.

Port	Length-Frequencies Taken	Number of Fish Measured	Average Fish Per Length-Frequency
Astoria	90	6,981	78
Newport	248	23,965	97
Charleston	95	8,613	91
Oregon	433	39,559	91

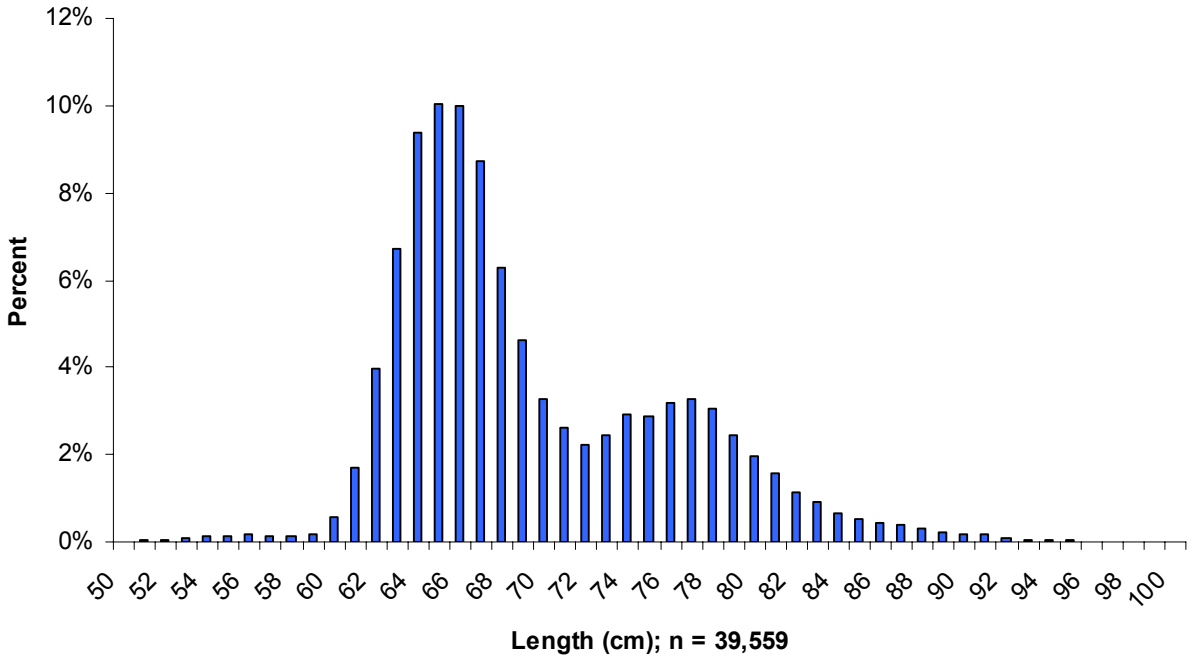

Figure 8. Length-frequencies of commercially landed albacore sampled in Oregon, 2009.

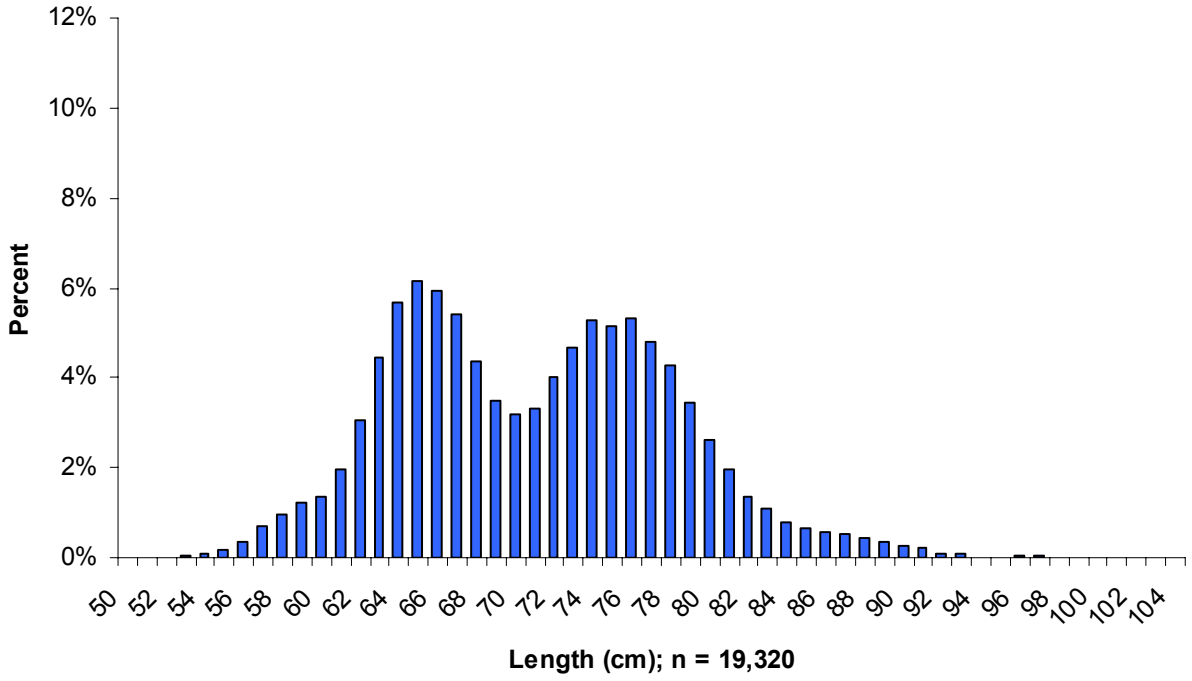

Figure 9. Length-frequencies of commercially landed albacore sampled in Oregon, 2008.

- **2009 Length-Frequency Analysis by Port**

Although there appears to be significant differences in length-frequency analysis between 2008 and 2009, length-frequency data for 2009 appears fairly consistent from all ports were commercial data was collected. Newport and Charleston show fairly similar length-frequency data, while Astoria shows two differences in slightly higher percentages of the 3.5 year-old, 65 cm age-class, and slightly lower percentages of the 4.5 year-old, 76 cm older age-class (Figures 10, 11 and 12) (Suda 1966). Average length and weight statistics based on Clemons (1961) also vary between the three areas:

- Astoria/Garibaldi average length: 69.1 cm; average weight: 14.87 pounds
- Newport average length: 69.6 cm; average weight: 15.22 pounds
- Charleston average length: 69.1 cm; average weight: 14.87 pounds

The number of sampled fish does dramatically vary between the three ports where length-frequencies were taken on commercially landed albacore. However, unlike 2008, monthly length-frequency histograms between ports in 2009 are relatively similar, with no significant differences.

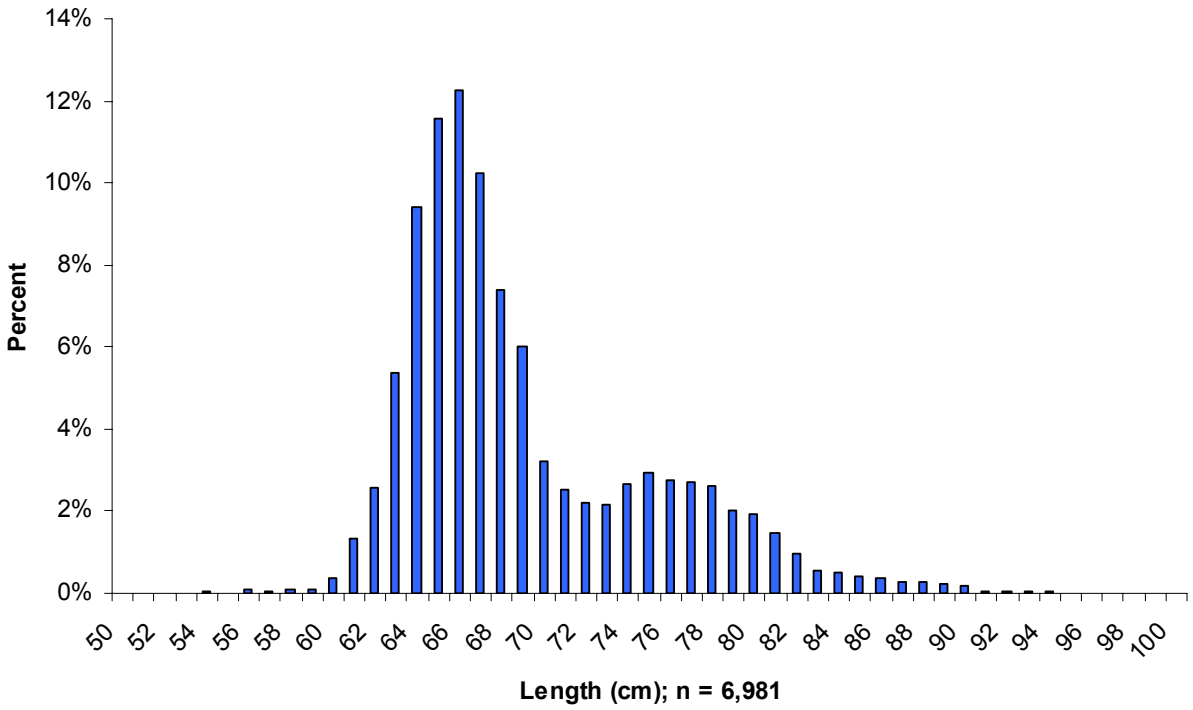

Figure 10. Length-frequencies of commercially landed albacore sampled in Astoria, 2009.

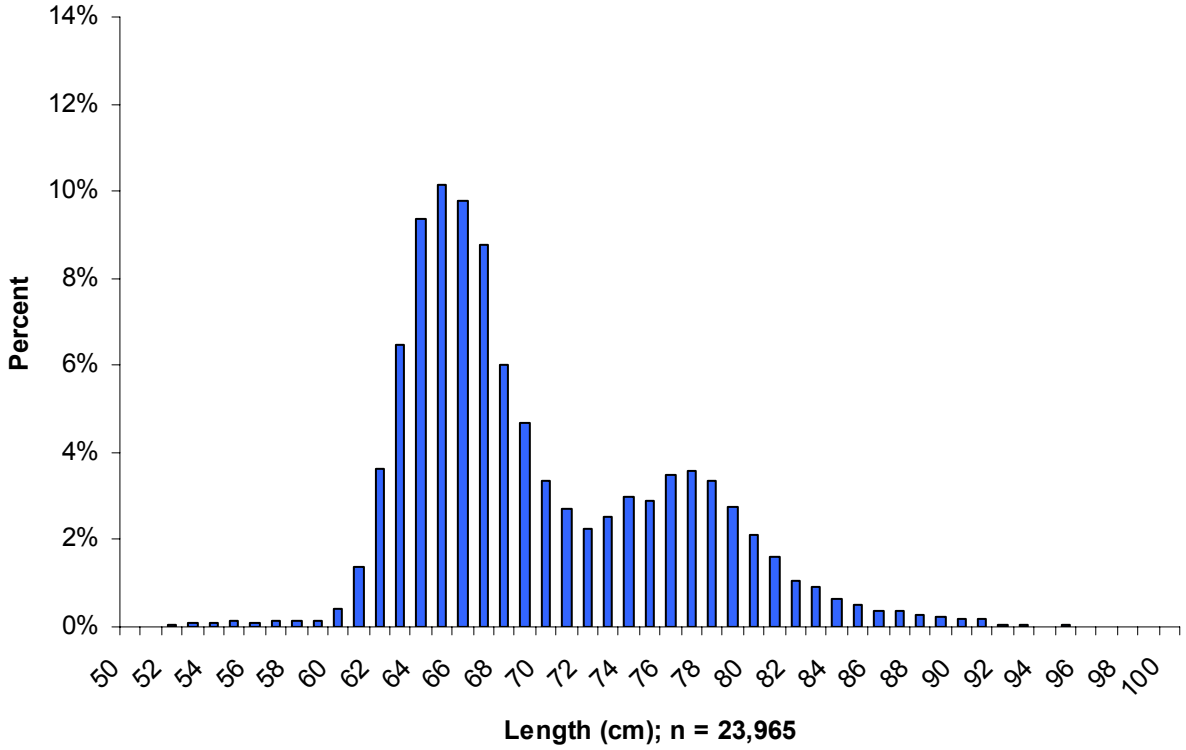

Figure 11. Length-frequencies of commercially landed albacore sampled in Newport, 2009.

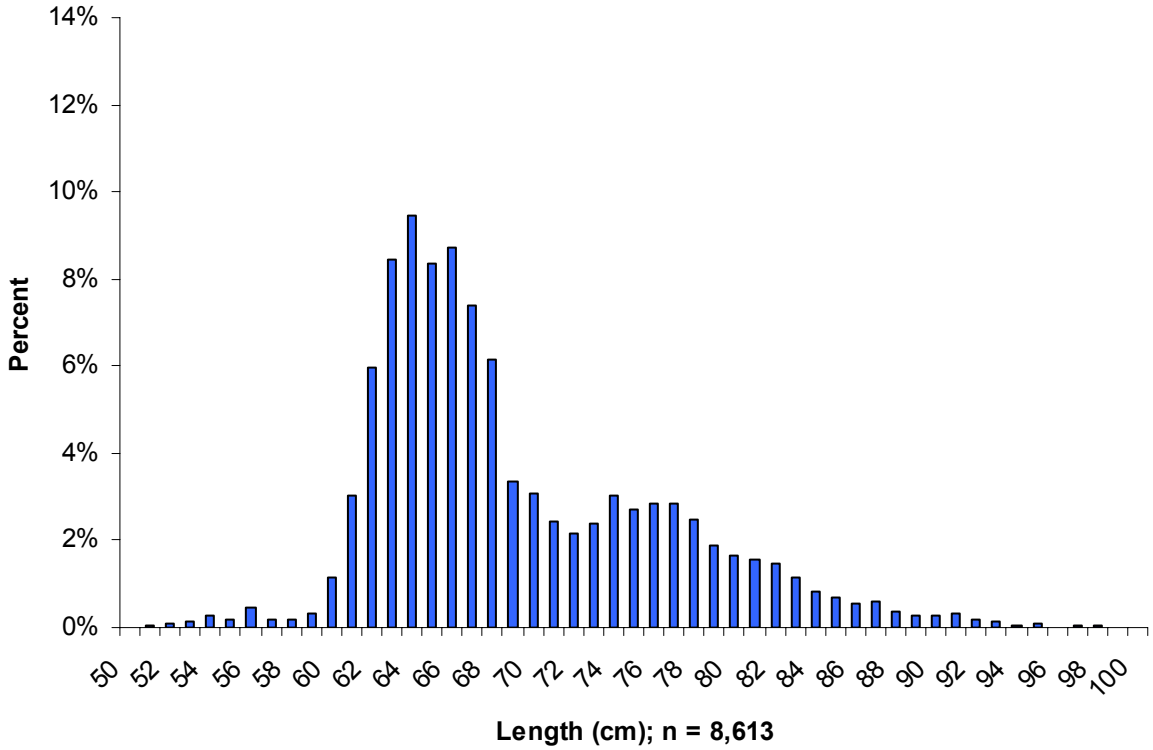

Figure 12. Length-frequencies of commercially landed albacore sampled in Charleston, 2009.

- **2009 Sampling Rate Analysis**

Sampling rates in 2009 were above the 50% minimum for the entire state, but varied dramatically by port. An additional dedicated albacore sampler in 2009 located in Charleston provided expanded coverage in Oregon's second busiest port (in terms of vessel trips). Sampling rates by port and year are presented in Table 5. Only Astoria, Newport and Charleston have had dedicated albacore port samplers since 2005. Charleston had limited sampling coverage in 2005 and 2006, and did not have a dedicated albacore port sampler in 2007 or 2008. Additional sampling percentages in smaller ports come from samples taken by Port Biologists and groundfish sampling staff. The sample rates in these smaller ports are lower than 50% because usually only one or two length-frequency samples are taken in these ports. Additionally, the total pounds of albacore landed in these ports is considerably small compared to the higher volume ports, and length-frequencies taken associated with those landings usually do not influence Oregon's overall sample rate significantly.

In addition to the current definition of sampling rates (percentage of total weight landed by commercial vessels represented with length-frequencies), analyzing the sampling percent of total landings with a length-frequency, and more importantly, the difference between each type of sample rate is important to determine if any sampling bias has occurred on a port and/or state-wide level. In Table 6, this difference value is calculated as the percent of Weight Sampled minus (-) the percent of Landings sampled.

When the percent of weight sampled percentages are smaller, (<30%), large differences between the percent of landings samples and the percent of total weight sampled may indicate sampling bias (denoted as Type A sampling bias for the purpose of this report) occurred on the size of offloading vessels sampled. This type of difference (indicated by the † symbol in Table 6) may indicate samplers focused limited efforts on vessels with larger amounts of albacore, and possibly occurred in Astoria in 2005, and Charleston in 2005 and 2008. Additionally, although the sampling percentage is slightly higher than the other comparable values, Type A sampling bias possibly occurred on a state-wide level in 2005. The difference between percent landings and percent sampled weight appears to be close to the yearly average for Oregon, but the percent of landings sampled is significantly lower than any other year.

When the weight sampled percentages are higher (>30%), large differences between the percent of landings sampled and the percent of total weight sampled may also indicate sample bias (denoted as Type B sampling bias for the purpose of this report) towards offload size. This type of difference (indicated by the ◊ symbol in Table 6) may also indicate sampling bias occurred on the size of the offloading vessels sampled, but in the opposite manner as previously discussed. Type B bias may indicate samplers focused efforts on obtaining a greater number of length-frequency samples, but from vessels with smaller amounts of albacore. Type B sampling bias possibly occurred in Astoria in 2006 and Charleston in 2005 and 2009. Additionally, this type of sampling bias possibly occurred on a state-wide level in 2009. Although the difference between landing and weight sampling percentages is greatest in 2009, landing and weight sampling percentages are also the highest in the past six years, and may be closer to 'average' at the elevated sampling levels experienced in 2009 (Table 6).

Without analyzing average weight per landing data and comparing it to the difference between the two sampling percentage types for every port and year, it is difficult to determine if these potential biases are real or anomalies. However, with a large amount of total weight of albacore landed at the three major ports [ten year averages of 3.9 million pounds in Newport, 2.6 million pounds in Astoria, and 1.8 million pounds in Charleston, (Table 2)] large variations between percent of landings and percent of weight sampled over time should not be ignored.

With the current strategy of sampling for the highest amount of weight landed, it may not be possible to reduce this bias. Many commercial fishers sell their catch off their vessels directly to the public, or to smaller dealers in which offloads may only take several minutes and are often out of view of albacore samplers. These types of deliveries often take place simultaneously to other, larger deliveries at major fish plants and buyers, forcing albacore samplers to choose which sample to take, possibly lowering their overall sampling percentage. However, whenever possible, albacore samplers attempt to take advantage of opportunities to sample smaller vessels, deliveries or vessels selling their catch directly to the public.

Table 5. Albacore sampling rates by port and year, 2005-2009.

*2005-2008 data updated since published in the 2008 Annual Albacore Report.

Port	2005 % Weight Sampled	2006 % Weight Sampled	2007 % Weight Sampled	2008 % Weight Sampled	2009 % Weight Sampled
Astoria	26%	40%	57%	53%	73%
Garibaldi	6%	3%	3%	18%	0%
Pacific City	0%	0%	12%	0%	0%
Newport	61%	72%	77%	75%	75%
Winchester Bay	0%	4%	0%	5%	0%
Charleston	32%	33%	4%	26%	45%
Port Orford	0%	16%	0%	0%	0%
Gold Beach	0%	90%	0%	0%	0%
Brookings	12%	9%	0%	0%	0%
Oregon	**39%**	**48%**	**52%**	**51%**	**65%**

* Sampling rates are defined as the percentage of total weight landed in a port of which a length-frequency was taken from offloading vessels.

Table 6. Comparison of albacore length-frequency sampling rates, in both percent of landings sampled and percent of total weight landed, 2005-2009.

Year	Port	% Landings Sampled	% Weight Sampled	Difference between % Landings Sampled - % Weight Sampled
2005	Astoria	9.5%	25.7%	16.1%
2006	Astoria	19.5%	40.4%	20.9%
2007	Astoria	36.8%	56.8%	19.9%
2008	Astoria	32.1%	53.2%	21.2%
2009	Astoria	48.1%	72.9%	24.8%
2005	Newport	27.4%	61.2%	33.8%
2006	Newport	42.1%	71.5%	29.4%
2007	Newport	40.1%	76.6%	36.4%
2008	Newport	42.6%	74.7%	32.1%
2009	Newport	46.6%	74.7%	28.1%
2005	Charleston	10.9%	31.8%	20.9%
2006	Charleston	16.9%	32.9%	16.0%
2007	Charleston	0.7%	4.4%	3.6%
2008	Charleston	7.8%	26.2%	18.4%
2009	Charleston	24.4%	44.9%	20.5%
2005	Oregon	15.5%	39.2%	23.7%
2006	Oregon	24.9%	47.7%	22.9%
2007	Oregon	22.8%	51.6%	28.8%
2008	Oregon	26.4%	51.3%	24.9%
2009	Oregon	33.0%	65.3%	32.3%

* Astoria, Newport and Charleston are major ports of albacore landings. Oregon includes all Oregon ports.
¥ The value in this column represents the value of % Weight Sampled minus % Landings Sampled
† indicates possible Type A sampling bias
◊ Indicates possible Type B sampling bias

2009 RECREATIONAL FISHERY

The 2009 recreational Oregon albacore fishery moved well ahead of 2008 catches to yield the second highest catch on record. The first sampled recreational albacore were landed on the Fourth of July in Depoe Bay, Newport, Winchester Bay, and Charleston. Recreational albacore fishing continued into the first week of October, with small catches in Garibaldi and Depoe Bay. An estimated 42,055 albacore weighing approximately 807,754 pounds were landed for the year. These values are up more than 70% from last year, and are above the five-year average (2005-2009) of 28,000 albacore weighing approximately 360,000 pounds. Access to albacore for recreational vessels off Oregon is highly variable due to both distances to the fish and weather conditions. The 2008 season experienced typical NE Pacific weather conditions consisting of strong northerly winds keeping a large mass of cool water off Oregon, which limited albacore largely to areas outside of 30-50 miles, and sporadic weather windows that limited access. These oceanic changes coupled with record high fuel prices significantly reduced sport fishing effort during the 2008 season. Weather conditions were much calmer in 2009, allowing significantly more recreational vessels to target albacore. Large schools of albacore also moved within sport fishing range nearly three weeks earlier than in 2008. These factors along with lower fuel prices allowed for increased sport fishing effort during the 2009 season (Tables 7 & 8).

Directed charter fishing effort for albacore totaled 2,700 angler trips in 2009, a 26% increase from 2,100 angler trips in 2008. Charleston set a record for the number of charter angler trips for albacore in 2009. Directed private albacore trips totaled 7,700 angler trips, a 54% increase from 5,000 angler trips in 2008. Private angler trips for albacore from Winchester Bay, Charleston, and Bandon also set angler trip records in 2009 (Tables 9 & 10, Figure 13).

Most of the recreational effort and catch (charter and private vessels combined) of albacore came from the ports of Newport, Charleston, Garibaldi, and Depoe Bay (Figure 15). Although total catches of albacore for both private and charter vessels were much lower than from the record setting 2007, they were substantially higher than in 2008, which was the previous second-highest catch year on record (Figure 14).

Table 7. **Oregon private vessel albacore fishing effort (angler trips) by port, 2000 - 2009.**

*2001-2008 data updated since published in the 2008 Annual Albacore Report.

Port	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 ◊	5-Year Average ¥
Astoria	0	0	19	77	95	186	187	338	422	59	238
Garibaldi	33	63	49	94	88	120	641	1,263	960	1,059	809
P. City	22	197	12	134	132	58	80	209	35	92	95
D. Bay	34	33	100	227	419	406	385	1,644	743	694	774
Newport	164	240	132	224	697	586	644	2,415	1,475	1,991	1,422
Florence	0	0	0	NS	0	0	NS	30	67	15	28
W. Bay	0	14	0	44	98	20	12	367	231	370	200
Charleston	21	582	103	528	561	19	144	1,712	960	2,962	1,159
Bandon	0	30	0	4	53	0	76	132	0	239	89
P. Orford	0	0	NS	10	NS	NS	NS	NS	NS	NS	-
G. Beach	4	0	NS	55	NS	0	6	12	0	28	9
Brookings	0	101	51	610	505	39	179	932	85	166	280
Total	**278**	**1,260**	**466**	**2,007**	**2,648**	**1,434**	**2,354**	**9,054**	**4,978**	**7,675**	**5,099**

◊ 2009 Preliminary Totals

¥ 5-year average includes 2005-2009

NS Indicates no port samplers present that year

Table 8. Oregon charter vessel albacore fishing effort (angler trips) by port, 2000 - 2009.

*2001-2008 data updated since published in the 2008 Annual Albacore Report.

Port	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 ◊	5-Year Average ¥
Astoria	0	0	0	28	46	72	108	311	390	330	242
Garibaldi	0	64	50	31	64	80	38	111	164	117	102
P. City	0	3	0	0	12	5	0	9	5	1	4
D. Bay	366	325	221	110	256	151	94	683	245	432	321
Newport	313	426	587	583	722	611	646	1,463	1,089	1,260	1,014
W. Bay	0	31	25	109	160	77	0	12	0	12	20
Charleston	0	101	0	55	68	0	10	69	109	240	86
Bandon	0	22	0	36	48	14	83	231	107	222	131
G. Beach	0	0	NS	14	NS	0	0	30	0	48	16
Brookings	0	18	0	51	46	12	0	57	14	20	21
Total	**679**	**990**	**883**	**1,017**	**1,422**	**1,022**	**979**	**2,976**	**2,123**	**2,682**	1,956

◊ 2009 Preliminary Totals

¥ 5-year average includes 2005-2009

NS Indicates no port samplers present that year

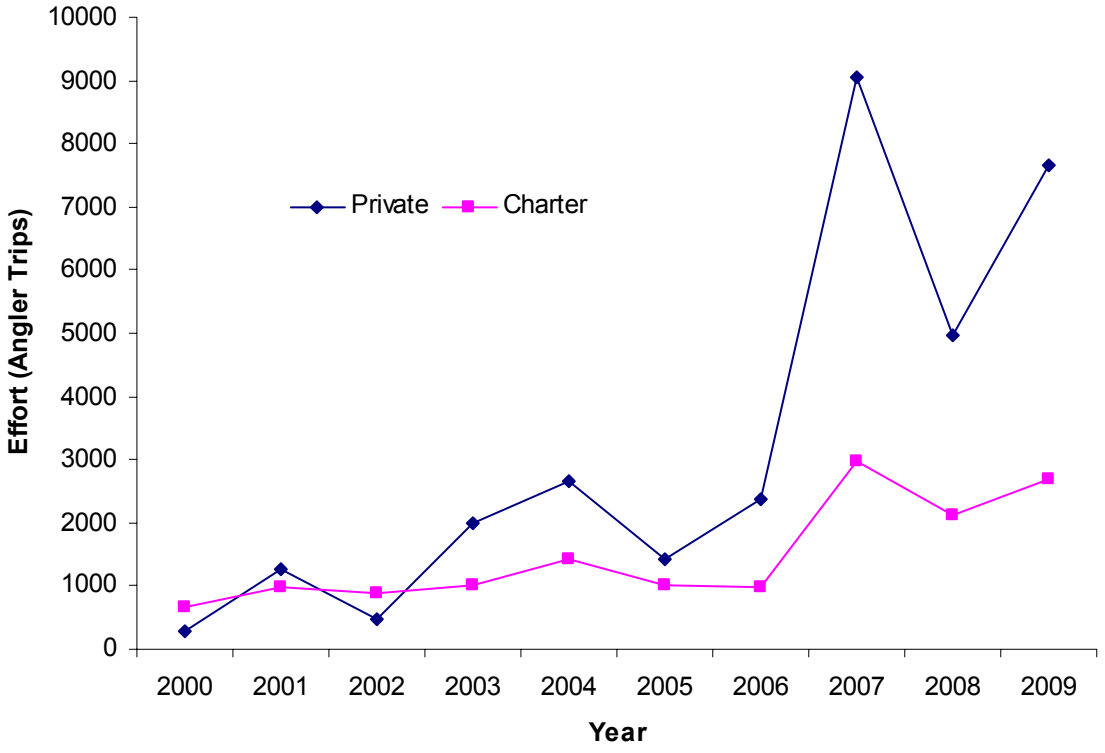

Figure 13. Oregon recreational albacore fishing effort (angler trips), 2000-2009.

*2001-2008 data updated since published in the 2008 Annual Albacore Report.

Table 9. Oregon private vessel albacore catch (number of fish) by port, 2000 - 2009.

Port	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 ◊	5-Year Average ¥
Astoria		0	16	496	499	317	804	1,832	1,809	247	1,002
Garibaldi		279	60	498	819	155	3,160	4,943	3,993	4,119	3,274
P. City		991	7	369	1,932	53	92	1,910	314	767	627
D. Bay		177	490	1,230	2,259	943	1,413	9,100	2,666	3,458	3,516
Newport		852	562	762	2,894	1,472	1,875	14,825	6,267	10,887	7,065
Florence		0	0	NS	0	0	NS	65	287	41	98
W. Bay		7	0	191	624	8	0	1,571	460	969	602
Charleston		1,777	72	811	2,258	12	816	8,370	2,153	12,036	4,677
Bandon		102	0	2	167	0	517	624	0	813	391
P. Orford		12	NS	46	NS	NS	NS	NS	NS	NS	-
G. Beach		0	NS	109	NS	0	0	210	0	21	46
Brookings		338	208	1,962	812	2	303	4,289	136	184	983
Total		**4,535**	**1,415**	**6,476**	**12,264**	**2,962**	**8,980**	**47,739**	**18,085**	**33,542**	**22,262**

◊ 2009 Preliminary Totals

¥ 5-year average includes 2005-2009

NS Indicates no port samplers present that year

Table 10. Oregon charter vessel albacore catch (number of fish) by port, 2000 - 2009.

Port	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 ◊	5-Year Average ¥
Astoria		0	0	106	172	275	231	907	1,167	1,016	719
Garibaldi		298	144	119	186	170	204	628	440	322	353
P. City		3	0	0	62	3	0	70	98	4	35
D. Bay		885	390	254	572	186	113	2,139	670	942	810
Newport		2,135	1,612	1,978	2,934	1,043	1,653	4,920	3,126	3,419	2,832
W. Bay		144	15	555	782	327	0	36	0	31	79
Charleston		400	0	281	192	0	50	301	269	850	294
Bandon		116	0	243	216	46	398	1,607	333	1,727	822
G. Beach		0	NS	147	NS	0	0	256	0	161	83
Brookings		52	0	91	327	3	0	319	81	41	89
Total		**4,033**	**2,161**	**3,774**	**5,443**	**2,053**	**2,649**	**11,183**	**6,184**	**8,513**	**6,116**

◊ 2009 Preliminary Totals

¥ 5-year average includes 2005-2009

NS Indicates no port samplers present that year

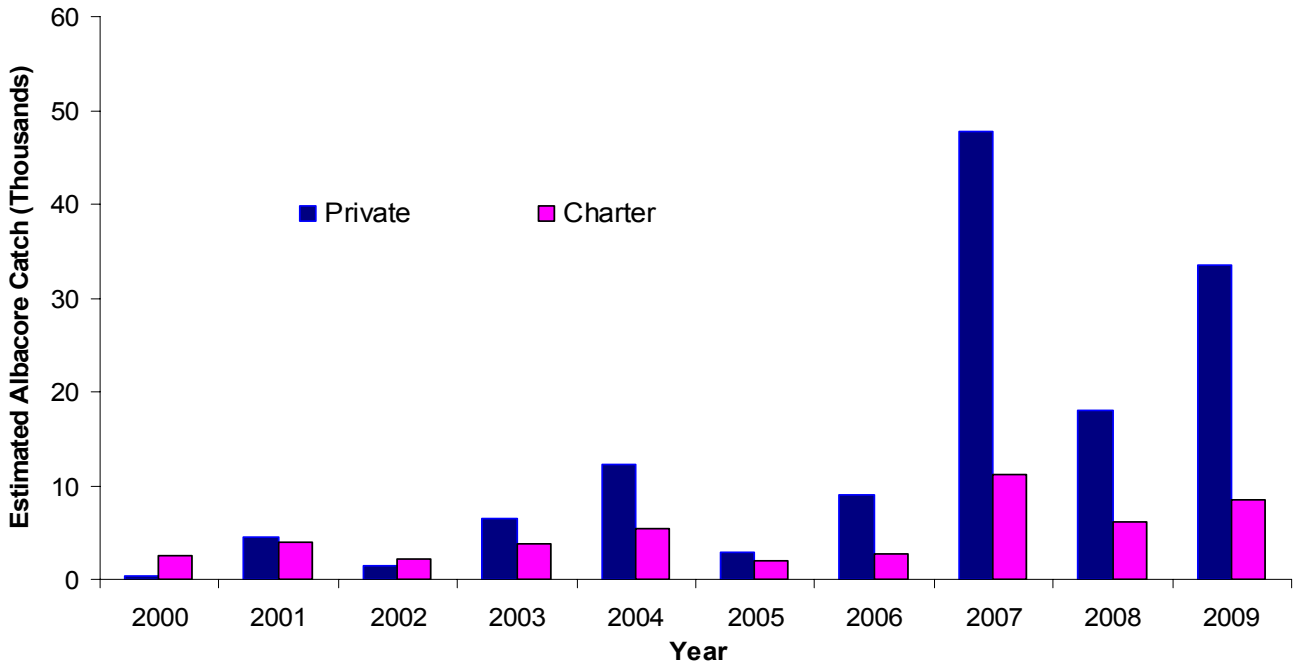

Figure 14. Oregon recreational albacore catch (number of fish) by vessel type 2000-2009.
*2001-2008 data updated since published in the 2008 Annual Albacore Report.

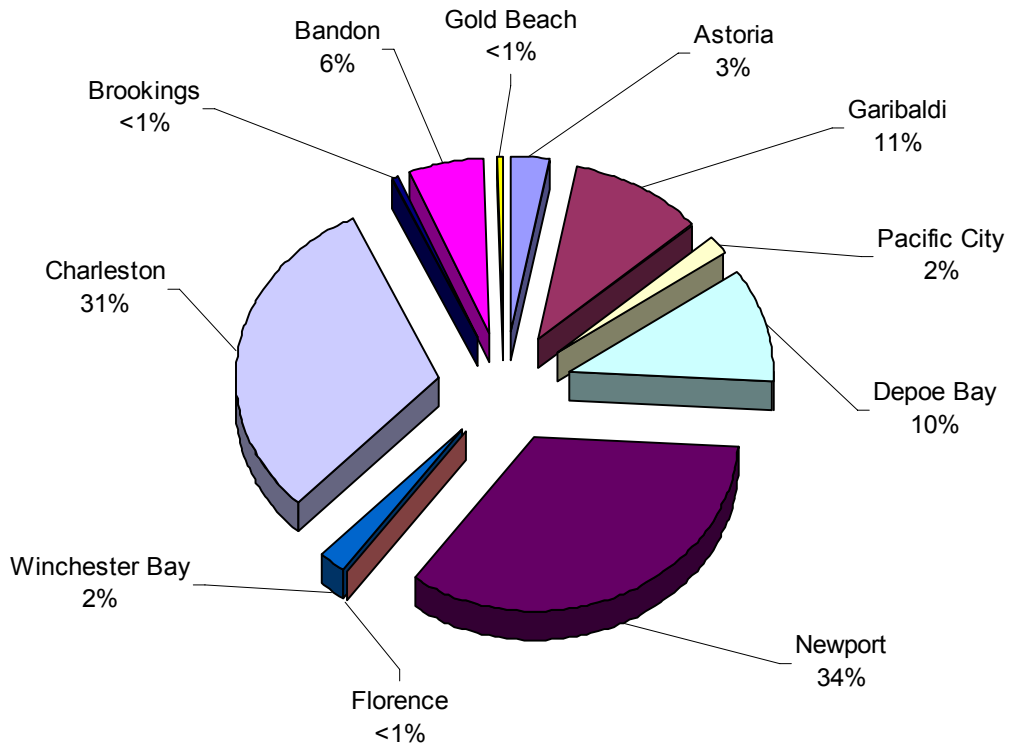

Figure 15. Percentage of Oregon's recreational albacore catch by port, 2009.

Private vessel catch-per-unit of effort (CPUE) in 2009 (4.4 albacore per angler) was more than 20% higher from 2008 (3.6 albacore per angler). Charter vessel CPUE in 2009 (3.2 albacore per angler) was also higher from 2008, with charter CPUE up 14% this year from 2.8 albacore per angler. (Table 11). The recreational (private and charter) CPUE values range significantly among Oregon's ports, and are indicative of variable weather and ocean conditions along with a wide range in the distance to productive fishing areas from each port. Additionally, catch rates for both private and charter vessels were highest in July, and dropped off later in the summer as albacore "jumpers" increased. This jumping behavior is usually accompanied by a sharp drop in catch rates as albacore become more boat shy and are less likely to be caught on typical troll gear.

Table 11. Oregon private, charter, and total Oregon albacore recreational catch, effort, and Catch-Per-Unit of Effort (CPUE defined as the estimated number of albacore caught divided by the estimated number of albacore angler trips), 2009.

	Catch (No. of Albacore)			Effort (Angler Trips)			Catch per Unit of Effort		
Port	**Private**	**Charter**	**Total**	**Private**	**Charter**	**Total**	**Private**	**Charter**	**Total**
Astoria	247	1016	1,263	59	330	389	4.2	3.1	3.2
Garibaldi	4,119	322	4,441	1,059	117	1,176	3.9	2.8	3.8
Pacific City	767	4	771	92	1	93	8.3	4	8.3
Depoe Bay	3,458	942	4,400	694	432	1,126	5	2.2	3.9
Newport	10,887	3,419	14,306	1,991	1,260	3,251	5.5	2.7	4.4
Florence	41	0	41	15	0	15	2.7	-	2.7
Winchester	969	31	1,000	370	12	382	2.6	2.6	2.6
Charleston	12,036	850	12,886	2,962	240	3,202	4.1	3.5	4
Bandon	813	1,727	2,540	239	222	461	3.4	7.8	5.5
Gold Beach	21	161	182	28	48	76	0.8	3.4	2.4
Brookings	184	41	225	166	20	186	1.1	2.1	1.2
Total	**33,542**	**8,513**	**42,055**	**7,675**	**2,682**	**10,357**	**4.4**	**3.2**	**4.1**

SUMMARY

Oregon's commercial albacore landings in 2009 totaled 10,122,630 pounds; a 14% increase from 2008 and a 15% increase from the 10 year average (2000-2009) of 8,804,592 pounds. Additionally, albacore ex-vessel revenue was the second highest on record in 2009, with a total gross ex-vessel value of $10,238,592. Recreational fishers landed approximately 42,055 albacore weighing approximately 808,000 pounds, ranking 2009 as the second-highest year for recreational landings on record.

ACKNOWLEDGMENTS

Thanks to the many albacore fishing vessel operators who provided fishing information during our sampling project and to the managers and staff of the fish buyers that allow us opportunities to measure fish on their premises. Also, many thanks to port samplers: Clifford Owen, Sheryl Flores, Dave Douglas, Craig Good, Lacie Eastlick, Dean Headlee, Nick Wilsman, Ryan Easton, Christine Burdett and Jessica Moll for their hard work in collecting data and distributing logbooks and logbook envelopes. Thanks to Scott Malvitch for his assistance with sampling and providing his knowledge of Oregon's albacore fishery. Mark Karnowski, Mark Freeman, Ted Calavan, Kevin Kemper, Suzanne Bauer, Pam Costello, Nadine Hurtado and John Seabourne helped with fish ticket data and overall data support. Carrie White and Eric Schindler provided assistance with the recreational data component of the sampling program. Thanks also go to John Childers and Amy Betcher of the Southwest Fisheries Science Center for their assistance, and Carla Sowell for her guidance.

REFERENCES

Clemens, H.B. 1961. The migration, age, and growth of Pacific albacore (*Thunnus germo*), 1951–1958. Fish Bull.Calif.Dep.Fish *Game,* (115):128 p.

Kohin, S., Childers, J., and Sakagawa, G. Archival Tagging of North Pacific Albacore: The Latest Success in Over 30 Years of Cooperation with the U.S. Albacore Fishery. Poster Presented At: 135th Annual Meeting American Fisheries Society Meeting. 2005 September 11-15; Anchorage, AK.

Suda, Akira. 1966. Catch variations in the North Pacific albacore-VI. The speculations about the influences of fisheries on the catch and abundance of the albacore in the North Pacific by use of some simplified mathematical models. Nankai Reg. Fish. Res. Lab., Rep. 24: 1-14.

Appendix A

2009 Summary Statistics for Oregon's Albacore Port Sampling Program

PORT NAME	**Astoria**	Garibaldi	**Newport**	Winchester Bay	**Charleston**	Brookings	All Other Oregon Ports	TOTAL
NO. OF LOGBOOKS ISSUED	1	0	14	0	1	0	0	16
LBS LANDED BY COMMERCIAL SAMPLED VESSELS	1,904,417	0	3,785,569	0	913,294	0	2,575	6,605,855
NO. FISH MEASURED	6,981	0	23,965	0	8,613	0	0	39,559
NO. COMMERCIAL TRIPS SAMPLED FOR LENGTH-FREQUENCY	90	0	248	0	95	0	1 **¥**	433
TOTAL NO. OF COMMERCIAL TRIPS/LANDINGS	187	101	532	23	390	20	61	1,314
TOTAL NO. OF COMMERCIAL VESSELS	70	32	196	10	143	14	34	418 **Ω**
LBS LANDED BY COMMERCIAL JIG/TROLL VESSELS	1,818,321	215,037	4,826,400	87,666	1,978,350	38,010	69,390	9,033,174
LBS LANDED BY COMMERCIAL BAIT VESSELS	325,439	0	94,784	0	54,575	0	0	474,798
LBS LANDED BY COMMERICIAL JIG&BAIT VESSELS	467,335	0	147,323	0	0	0	0	614,658
LBS LANDED BY COMMERCIAL GILLNET VESSELS	0	0	0	0	0	0	0	0
LBS LANDED BY SPORT VESSELS**	25,325	82,642	294,216	19,396	229,843	3,209	153,123	807,754
LBS LANDED BY OTHER VESSELS	0	0	0	0	0	0	0	0
PERCENT COMMERCIAL COVERAGE (weight)	72.9%	0%	74.7%	0%	44.9%	0%	0%	65.3%
PERCENT COMMERCIAL COVERAGE (trips)	48.1%	0%	46.6%	0%	24.4%	0%	0%	33.0%

¥ One vessel landed Florence that was part of a vessel trip that was sampled in Newport.

Ω Several vessels made trips into multiple ports, so total numbers of vessels at each port will not add up to Oregon's total.

****** Sport-caught albacore weight estimated using Clemons, 1961.