

**ANNUAL OREGON ALBACORE TUNA (*Thunnus alalunga*)  
REPORT, 2017**

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## **ANNUAL REPORT**

### **ALBACORE PORT SAMPLING PROGRAM**

Pacific States Marine Fisheries Commission Contract No. 17-40C; Amendment 1  
Subcontract of NOAA Award Number NA16NMF4370321  
July 1, 2016 through June 30, 2018

## **INTRODUCTION**

Albacore tuna (*Thunnus alalunga*) is a highly migratory species found worldwide in temperate seas. Albacore caught off Oregon belong to the North Pacific stock and are generally juvenile or 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 early fall months.

Albacore has been fished commercially off Oregon since 1929 when the fishery expanded north from the traditional grounds off Southern California. Originally, both bait-boats and jig-boats fished for albacore off Oregon, but in recent years jig-caught (troll-caught) albacore have predominated. Bait fishing with live anchovies is once again beginning to gain some popularity, especially late in the season, but is still less common in Oregon due to live anchovies not being available in Oregon ports. The west coast fleet consists primarily of 20 to 60 foot 'combination' boats with multiple permits to fish crab, salmon, or groundfish at other times of the year. There are also several large freezer boats (>60 ft.) that travel the North and South Pacific year-round while primarily fishing for albacore. An agreement under the US/Canada Albacore treaty allows up to 45 Canadian vessels to fish and land tuna in the US EEZ, between June 15 and September 15. Several Canadian vessels again took advantage of this agreement to land albacore into Oregon this year.

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 9.5 million pounds per year. Beginning in 2005 under the Highly Migratory Species Fisheries Management Plan, 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 Southwest Fisheries Science Center (SWFSC) and the Pacific States Marine Fisheries Commission (PSMFC). This report documents the progress of the 2017 fishery off Oregon and associated sampling activities.

The Oregon Department of Fish and Wildlife's Ocean Recreational Boat Survey (ORBS) made adjustments to sampling protocol beginning in 2000 to better estimate effort and catch in the growing recreational albacore fishery off Oregon. Recreational fishing for albacore off Oregon has grown in popularity since 2000, especially in the past decade. Recreational catches have ranged from a low of 2,901 fish (approximately 57,000

pounds) in 2000 to a high of 63,167 fish (approximately 1,105,000 pounds) in 2012. Since 2008, catches have averaged 34,375 fish (approximately 600,000 pounds) per year.

## **2017 ALBACORE COMMERCIAL FISHERY**

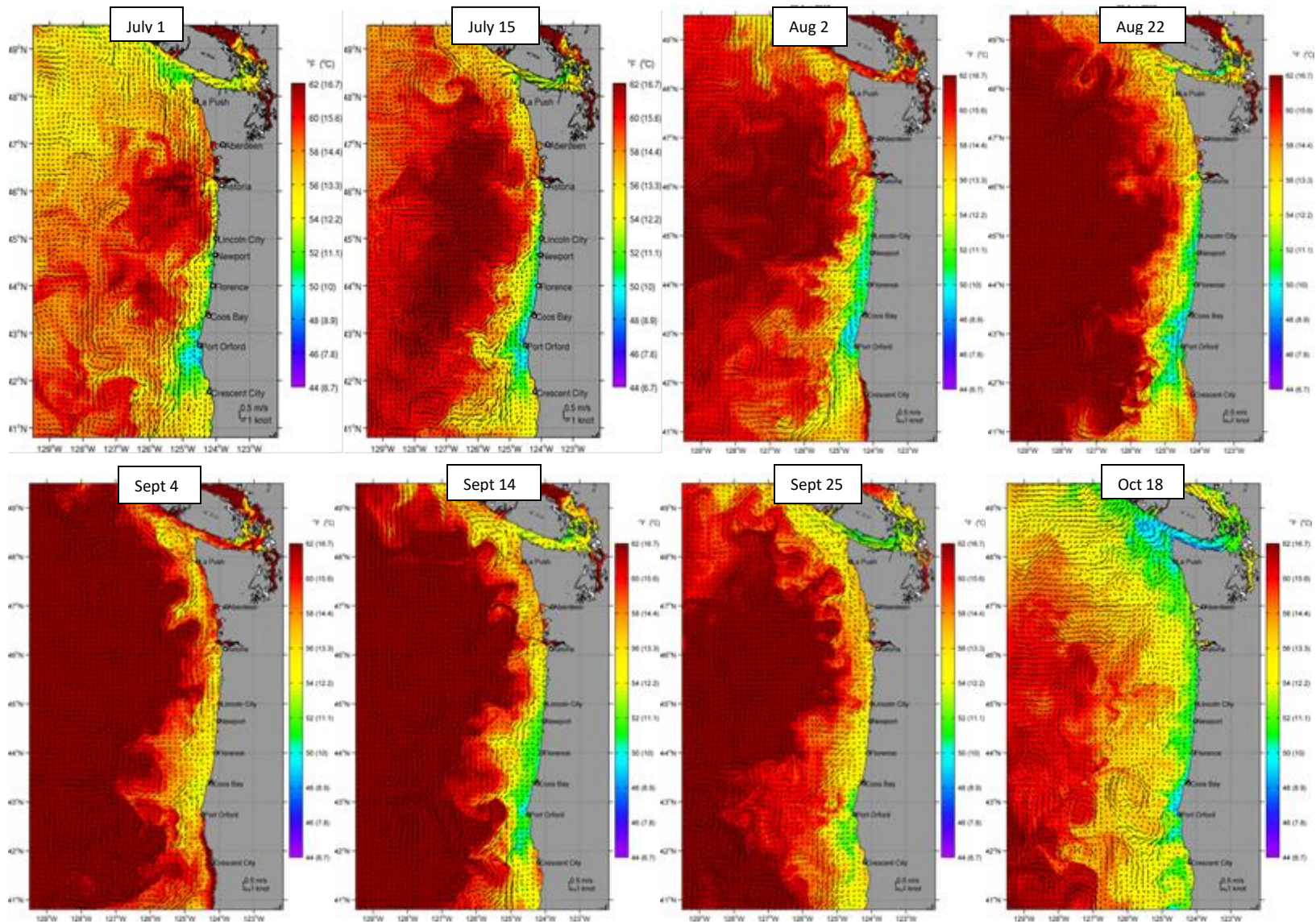
The 2017 albacore season was favored with generally good weather, with a general lack of wind strong enough to deter fishing at any point. Warm water first appeared off the north Oregon coast in late June, and spread along the coast (Figure 1), reaching a high of 20.6° C (69° F) at buoy station 46089, 85 nautical miles west of Tillamook, Oregon. Upwelling along the Oregon coast in the first half of October cooled the coastal ocean temperatures and brought the 2017 season to a close.

The primary fishing grounds for Oregon-landed tuna were much expanded this year, with boats ranging further from their home ports in search of the fish. Off the Oregon and Washington coast, warm waters spread out with fewer “breaks”, places where currents shear and temperatures differ. Albacore are often found in concentrations along these breaks. Many boats reported observing fish below the surface on their sounders, and tuna remained scattered without the usual concentrations. Most boats reported having to continually search for tuna this year. The common advice was that once tuna was found, to stay on them and not spend valuable fishing time looking for bigger schools or denser congregations. On top of that, getting tuna to hit the jigs with aggression was also a frustration over most of the season. During years with average conditions, fishing might occur within 50 miles north or south of a given port, and out 50-100 miles for most, often closer. This year, boats ranged further, and most of the season found larger boats out 180-200 miles, with smaller boats also working farther than normal offshore. Albacore fishing started off slow, and never achieved the kind of production that fishers have come to expect during the height of the season. The general consensus from albacore fishers suggested below average daily catches throughout the fishing season. Many smaller troll vessels would have chosen to fish salmon, but that was also a poor fishery in 2017.

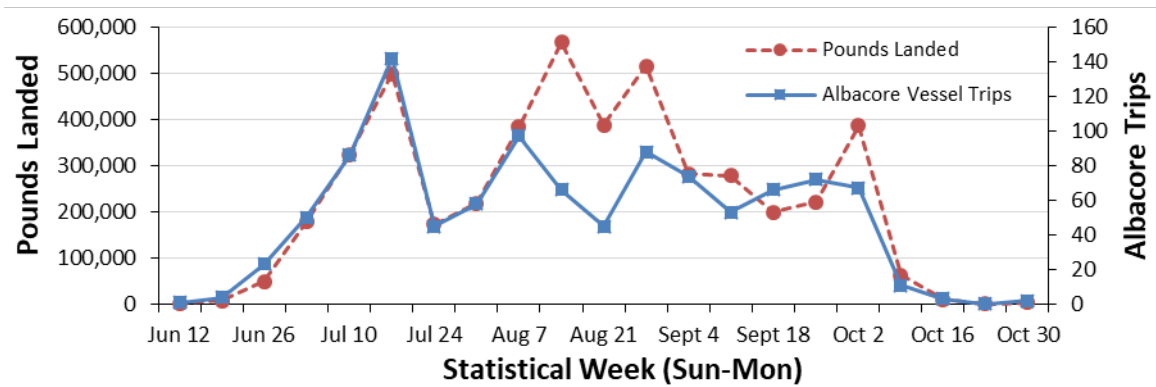
### **2017 Albacore Landings**

The first landings of albacore in Oregon for the 2017 season occurred in June, with several small landings made into Astoria, Newport, and Charleston. Only 31,318 pounds were landed in June, getting the season off to a slow start. Landings continued to build smoothly into July, peaking with 142 trips during the third week of the month, but an intense, productive bite never truly materialized. Fishing effort dropped off after the mid-July peak, and effort hovered between 50 and 100 trips per week throughout late July, August, and September (Figure 2). Astoria experienced a sharp drop in landings in September, while the number of offloads in Newport and Charleston remained relatively strong into early October. The season ended with the last recorded landing made on November 1<sup>st</sup> in Charleston.

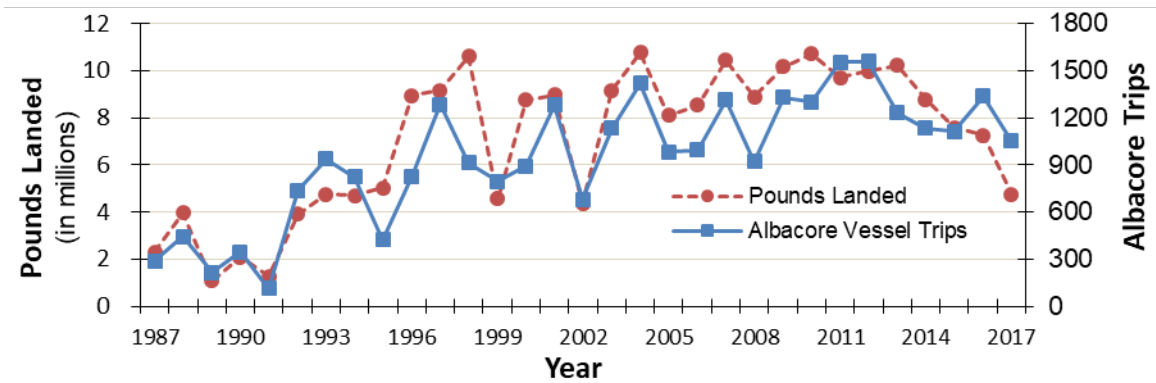
Tuna fishers collectively made 1,053 trips on 347 commercial vessels and landed just over 4.7 million pounds of albacore in Oregon during 2017. The total number of vessel trips targeting albacore was lower than the 10-year average of 1,253. The 2017 landings in Oregon represent the lowest albacore landings in Oregon since 2002 (Figure 3), while the number of different commercial vessels targeting albacore remained below the 10-year average of 392 (Figure 4).



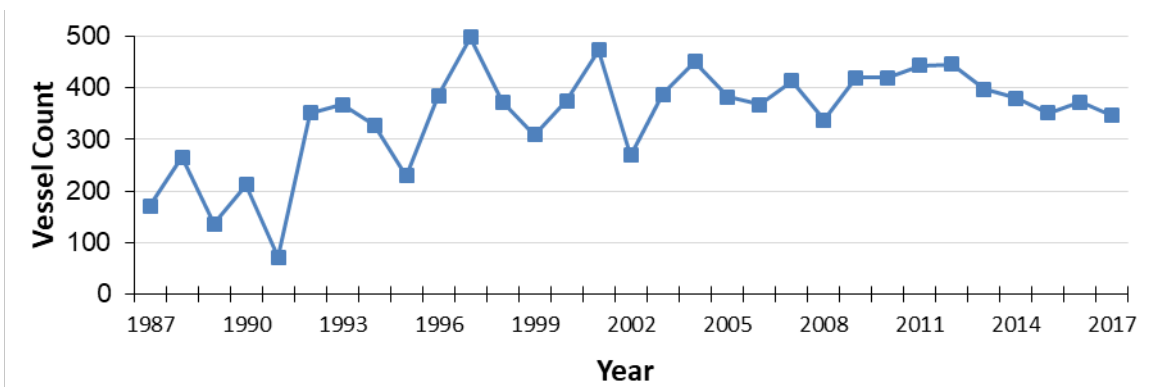
**Figure 1.** Sea surface temperature plots off Oregon and Washington out to 129°W from July 1 through October 18, 2017. Dark red areas indicate the warmest surface waters at around 17° C (62° F), and lighter green and blue areas the colder waters.



**Figure 2.** Total pounds of albacore landings and number of albacore vessel trip landings per week in 2017.

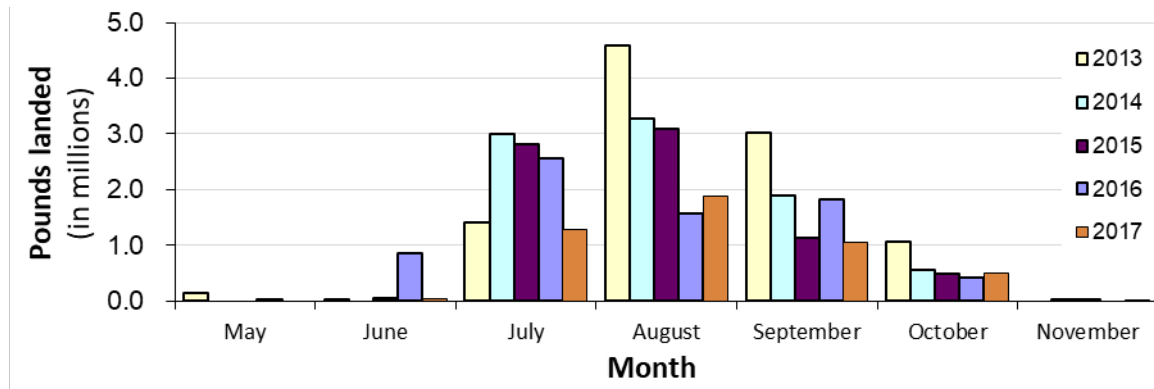


**Figure 3.** Total pounds of albacore landings and number of albacore vessel trip landings in Oregon by year.



**Figure 4.** Total number of vessels landing albacore in Oregon by year.

The month of August was the peak month for albacore landings in 2017, yielding 1,877,110 pounds, or 39.6% of the total landings for the year (Figure 5). Historically, fishing for tuna during the month of August yields the highest quantity of tuna and profit for fishers.



**Figure 5.** Total pounds of albacore landings by month; 2013 through 2017.

The preliminary total for 2017 commercial landings is 4,744,814 pounds. This is just 65% of the 2016 catch of 7,249,854 pounds, and only 53.5% of the ten-year average (2008-2017) of 8.8 million pounds (Table 1).

Six Canadian vessels made ten landings, totaling 255,401 total pounds of blast-frozen albacore in Oregon during their three month eligibility in 2017, with a value of \$694,614.

Newport had the highest albacore landings of any Oregon port in 2017, with 43.1% of the total weight (Table 2). Charleston landed 32.8% of the total weight, followed by Astoria. Other ports showing landings tallies of over 100,000 pounds were Garibaldi, Winchester Bay and Brookings.

**Table 1.** Annual albacore landings (pounds) and percentage difference from the 10-year average (2007-2016).

<b>Year</b>	<b>Total Landings (lbs)</b>	<b>% of 10-year Average</b>
2017	4,744,814	-46.5%
2016	7,249,854	-17.6%
2015	7,584,044	-13.8%
2014	8,770,100	-0.3%
2013	10,228,014	16.2%
2012	9,964,238	13.2%
2011	9,699,216	10.2%
2010	10,713,209	21.8%
2009	10,156,183	15.4%
2008	8,876,158	0.9%
<b>Average</b>	<b>8,798,583</b>	

**Table 2.** Albacore landings by port for 2017 (pounds and percentage) and average landings (pounds and percentage) across 10 years (2008-2017). Gearhart, Seaside, Pacific City, Bandon and Gold Beach are combined as “Other Ports” due to a limited number of albacore offloads at each port.

Port	2017		Port	10-Year Average	
	Landings (lbs)	Landing %		Landings (lbs)	Landing %
Newport	2,044,394	43.1%	Newport	3,649,156	41.5%
Charleston	1,556,572	32.8%	Charleston	2,019,063	22.9%
Astoria	484,665	10.2%	Astoria	2,608,218	29.6%
Garibaldi	286,798	6.0%	Garibaldi	215,402	2.4%
Winchester Bay	190,190	4.0%	Winchester Bay	135,975	1.5%
Brookings	140,432	3.0%	Brookings	107,085	1.2%
Port Orford	34,726	0.7%	Port Orford	20,025	0.2%
Other Ports	7,037	0.1%	Florence	22,749	0.3%
			Pacific City	8,499	0.1%
			Depoe Bay	5,197	0.1%

The average landing in Oregon for 2017 was 4,506 pounds, only 84% of the average landing of 2016 (Table 3). Although the largest landing was over 57,000 pounds, only two landings exceeded 50,000 pounds, and just twelve exceeded 30,000 pounds, out of a total of 1,053 albacore landings.

The albacore fishery engages a wide range of vessel sizes and refrigeration types, some able to freeze fish and stay out for indefinite periods, while others employing ice can only remain at sea a few days at a time. Quartile partitioning of the landing weights shows that 50% of all vessel trips landed less than or equal to 1,955 pounds, and 75% of the landings were 4,517 pounds or less, which helps us understand how many small and moderate-sized vessels make up the bulk of the fleet.

**Table 3.** Quartile partition and mean of 2017 Oregon albacore landings.

All Landings		
Quartile		Pounds
100%	<b>Max</b>	57,006
75%	<b>Quartile</b>	4,517
50%	<b>Median</b>	1,955
25%	<b>Quartile</b>	700
0%	<b>Min</b>	20
	<b>Average</b>	4,506

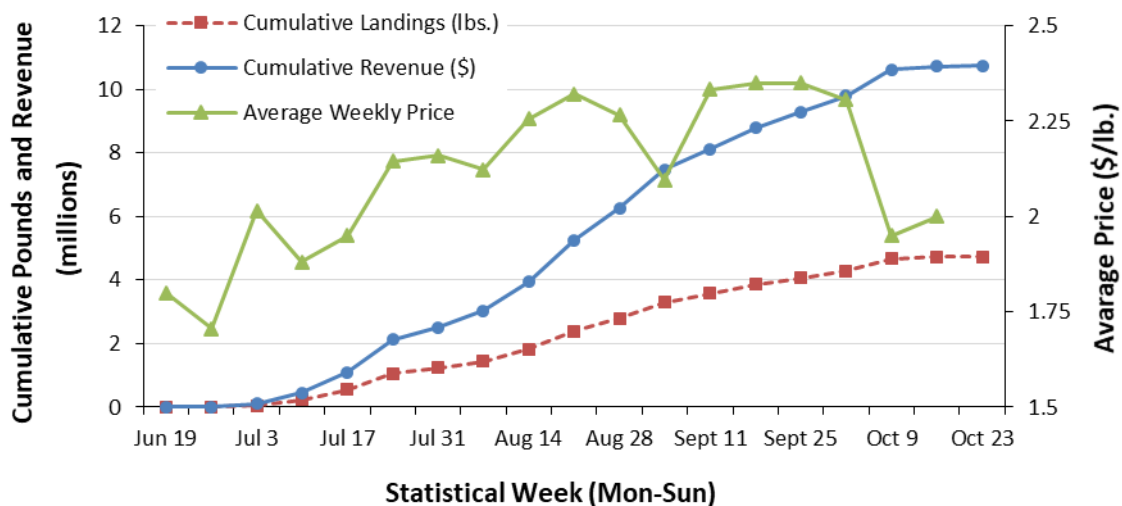
## 2016 Albacore Prices and Value

Low volume throughout the 2017 season caused prices to float upward, with record high prices being paid especially for blast-frozen fish in September and October. Blast-frozen albacore showed the strongest price in the latter half of the season, rising to over \$3.00 per pound, and finishing at \$3.25, the highest price yet sustained in the Oregon albacore market. The market value of fresh-iced and brine-frozen prices increased as well, with fresh-iced tuna selling for two dollars a pound regularly during the months of September and October. For the season, fresh-iced tuna prices averaged \$1.90 per pound (max \$3.17), blast-frozen tuna prices averaged \$2.67 per pound (max \$3.25), and brine-frozen tuna prices averaged \$1.85 per pound (max \$3.10). Public sales of tuna began the season

around \$3.00 per pound, rose to \$3.75 by mid-August, and held steady the rest of the season.

Past reports have broken out landings of albacore into categories of fresh, brine-frozen, and blast-frozen fish. The method of refrigeration is no longer recorded on fish tickets, and is only known from sampled fish where it was directly observed. Accordingly, this report is not able to confidently list the proportion of tuna within each category.

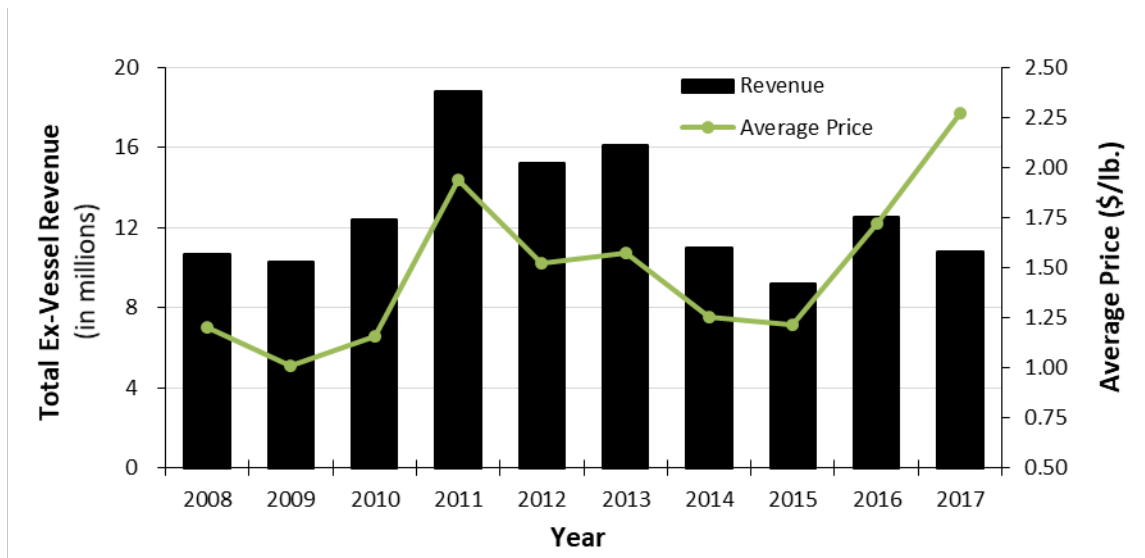
The 2017 general price for albacore increased gradually throughout the season. (Figure 6). The overall average price can be strongly influenced week-to-week by large landings of blast-frozen fish, which are sold at significantly higher prices than fresh or brine-frozen fish. “Freezer boats” have the ability to stay at sea longer, and so these larger quantities tend to hit the dock on a more irregular schedule. The price paid for blast-frozen tuna is often 25-40% higher, and these fish are generally offloaded in larger quantities from bigger vessels. When a pulse of blast-frozen fish is offloaded, the quality and price difference of these fish may push the average price for a given week upwards. Smaller ice boats need to get the fish off within a few days, which results in a more regular schedule so long as weather does not disrupt fishing. In Figure 6, the seemingly large drop in the average weekly price in early October is entirely due to the larger blast-freezer boats ending their albacore season, and turning to preparations for the winter Dungeness crab season.



**Figure 6.** Cumulative landings, cumulative ex-vessel revenue, and average price by week in 2017.

Ex-vessel revenue generated from albacore in 2017 totaled \$10,787,616 (Figure 7). Though the landings were down drastically from 2016 (46% below the 10-year average) the record high prices in 2017 resulted in revenues being only 15% off the 10-year average. The average price for 2017 was \$2.27 per pound, historically the highest average price per pound and well above the ten-year average of \$1.44 per pound (Figure 7).





**Figure 7.** Total revenue (ex-vessel) and average price by year for Oregon commercial albacore.

Albacore typically ranks 4<sup>th</sup> or 5<sup>th</sup> for total annual revenues generated in Oregon marine fisheries. This year, albacore tuna revenue ranked 6<sup>th</sup> relative to other Oregon fisheries representing 7.6% of the total annual revenue (Table 4).

**Table 4.** Oregon annual marine fish revenue (ex-vessel) for January 1 – December 7, 2017 ranked by ex-vessel revenue.

Fishery Species	Pounds Landed	Revenue	Revenue Percentage
Dungeness Crab <sup>o</sup>	19,005,063	\$58,704,528	41.6%
Groundfish <sup>x</sup>	38,861,160	\$18,507,339	13.1%
Pacific Whiting	201,497,838	\$16,383,775	11.6%
Sablefish	5,066,656	\$14,052,550	10.0%
Pink Shrimp	23,057,080	\$12,688,411	9.0%
Albacore Tuna	4,744,814	\$10,787,615	7.6%
Chinook Salmon	1,180,269	\$5,524,994	3.9%
All Other Marine Species <sup>**</sup>	4,461,880	\$4,382,738	3.1%
<b>Total</b>	<b>297,874,760</b>	<b>\$141,031,950</b>	<b>100.0%</b>

<sup>x</sup> Groundfish excluding Pacific Whiting and Sablefish.

<sup>\*\*</sup> Including Pacific Halibut.

<sup>o</sup> Includes Bay and Ocean Dungeness fisheries. Season opening delays in 2017 resulted in no December harvest.

### 2017 Sampling & Coverage Rate Analysis

The sampling goals for the 2017 albacore port samplers in Oregon were again set at 20% for Astoria and Newport and 10% for Charleston, unchanged from 2016. These sampling goals are defined as a sampling coverage rate that is expressed as the percentage of the total albacore trips with landings that were sampled for length frequency for each required port (Astoria, Newport, and Charleston). Port sampling coverage rates, shown in the last column of Table 5, were well above the specified goals. The average number of fish per length-frequency sample also significantly exceeded the 20 fish minimum. In addition, port samplers acquired samples from Garibaldi, Port Orford, and Brookings, which were not included in the minimum sampling goals.

In 2017, commercial albacore sampling began in June, a month earlier than expected. Funding for tuna samplers is allocated to cover the months of July through October, so port biologists and assistants arranged to collect a few albacore samples during the month of June, and the assigned tuna samplers began sampling on July 10. Samplers in Astoria (4 months), Newport (4 months), and Charleston (4 months at half time) were trained, prepared, and stationed on site, and achieved an overall statewide 2017 coverage rate of 26.9% (sampled trips/trips landed). Additional sampling was conducted by ODFW commercial groundfish port biologists and samplers when available. Sampling activities included measuring 20-100 albacore for fork length, collecting information on fishing patterns, distributing logbooks to vessels, and providing information to fishers. Table 5 presents a summary of commercial sampling rates and coverage rates for the 2017 season. Additional summary information required by the contractual agreement with NMFS and PSMFC for albacore sampling funding are presented in Appendix A.

**Table 5.** 2017 preliminary Oregon commercial albacore sampling season summary. Gearhart, Seaside, Pacific City, Depoe Bay, Florence, Bandon, and Gold Beach combined as "Other Ports" due to low number of landings.

Port	Total Pounds Landed	Pounds Sampled	Commercial Albacore Trips	Albacore Trips Sampled	Total Fish Sampled	Average # of tuna sampled	Coverage Rate (sampled trips/ total trips)
Astoria	484,665	296,534	81	35	1,341	38.3	43.2%
Garibaldi	286,798	53,675	77	4	99	24.8	5.2%
Newport	2,044,394	1,331,495	410	145	7,585	52.3	35.4%
Winchester Bay	190,190	-	53	-	-	-	-
Charleston	1,556,572	635,867	342	93	3,891	41.8	27.2%
Port Orford	34,726	9,809	20	3	150	50.0	15.0%
Brookings	140,432	20,890	57	3	150	50.0	5.3%
Other Ports	7,037	-	13	-	-	-	-
<b>Total</b>	<b>4,744,814</b>	<b>2,348,270</b>	<b>1,053</b>	<b>283</b>	<b>13,216</b>	<b>46.7</b>	<b>26.9%</b>

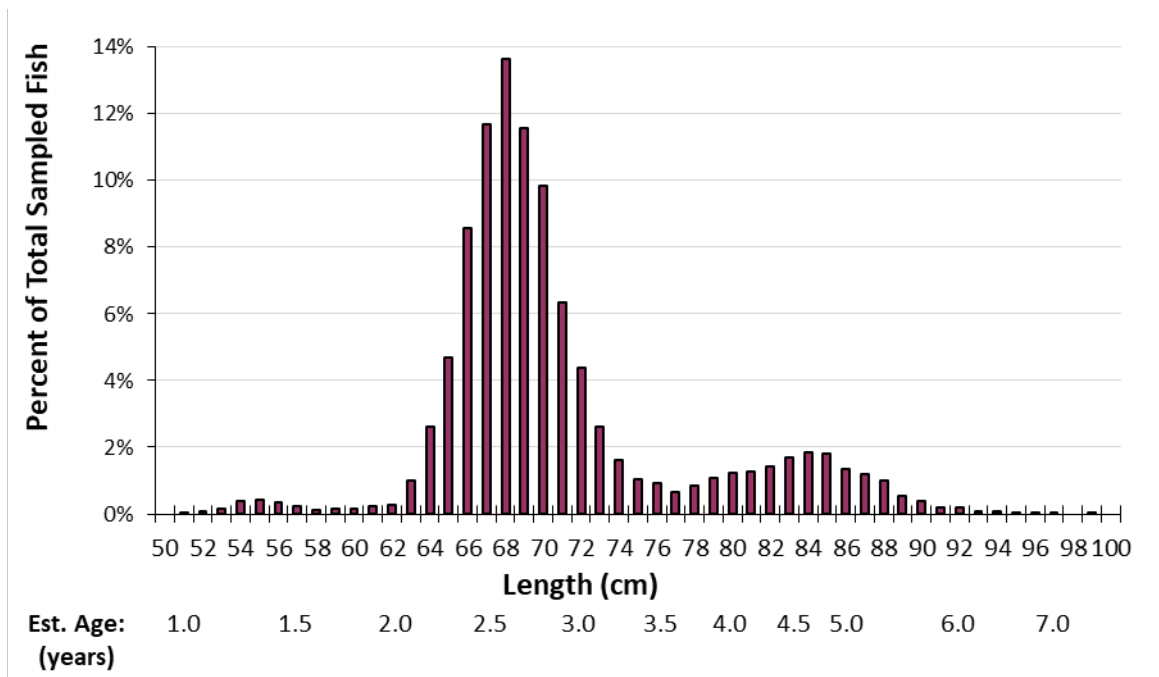
Further analysis between the sampled trip landing weights and all individual trip landing weights is important to understand what the sampled data describes (Table 6). Large landings are defined as total trip landing weights greater than 75% of all individual albacore trip landing weights, while small landings are defined as total trip landing weights less than 25% of all individual albacore trip landing weights. For 2017, the 75% quartile landing weight for all landings was 4,517 pounds. Sampled “large” landings in 2017 consisted of 45% sampled trips greater than or equal to than 4,517 pounds, suggesting that again this year, the distribution of sampled trips were skewed “large” relative to the distribution of all landings. Comparing the average landing weight to the average sampled landing weight also suggests that our sampling was biased to some extent toward larger landings.

**Table 6.** Quartile partition for all Oregon albacore landings and sampled landings in 2016.

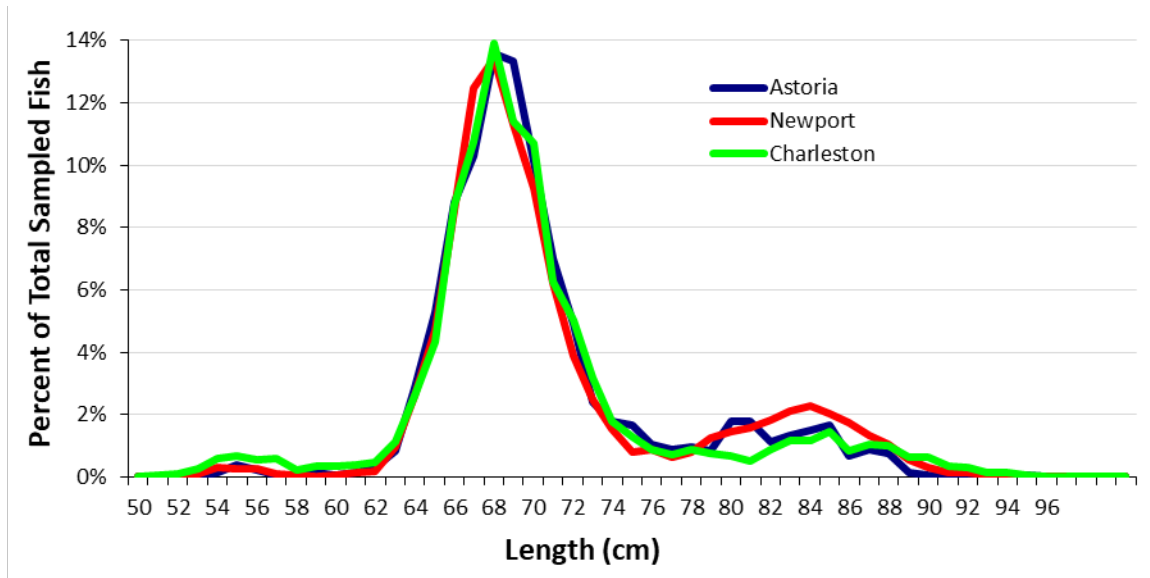
All Landings			Sampled Landings		
Quartile		Pounds	Quartile		Pounds
100%	<b>Max</b>	57,006	100%	<b>Max</b>	57,006
75%	<b>Quartile</b>	4,517	75%	<b>Quartile</b>	11,011
50%	<b>Median</b>	1,955	50%	<b>Median</b>	3,831
25%	<b>Quartile</b>	700	25%	<b>Quartile</b>	2,079
0%	<b>Min</b>	20	0%	<b>Min</b>	342
	<b>Average</b>	4,506		<b>Average</b>	8,360

### 2017 Length Frequency Analysis

Length frequency measurements were collected from unsorted commercially harvested albacore during fish buying offloads by port samplers from June through October of 2017. A total of 13,216 albacore tuna were measured for length frequencies in the ports of Astoria, Newport, Charleston, Garibaldi, Port Orford, and Brookings (Figure 8). Collectively, the length data from the sampled ports suggest a tri-modal distribution. The primary mode centered around 68 cm represents an age-class of approximately 2-1/2 year-old tuna, the secondary mode around 84 cm represents an older age-class of approximately four year-old tuna, and the tertiary mode represents the youngest age-class of approximately 1-1/2 year-old tuna (Wells, 2013). Although the number of fish sampled in each port widely varied, the distribution and trend appear to be very similar among the three primary sampled ports for all months combined (Figure 9).



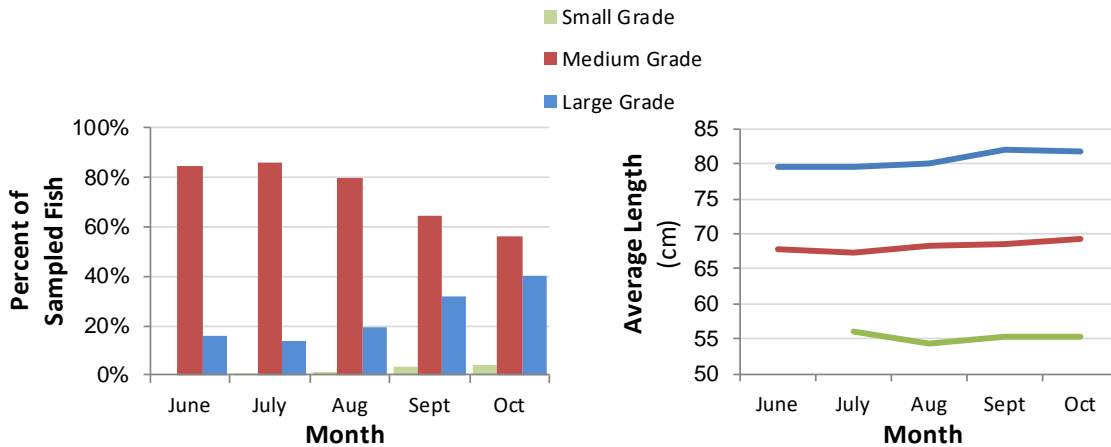
**Figure 8.** Length frequency data for all sampled ports, all months combined in 2017. Average length = 70.8 cm, N = 13,216. Estimated age at length from Wells, 2013.



**Figure 9.** Length frequency data for all sampled months by port in 2017. Astoria n = 1,341. Newport n = 7,585. Charleston n = 3,891

Average lengths for sampled fish throughout the 2017 season increased steadily as the fishing season progressed. During the month of October, the percent of large grade albacore landed by fishers was 40% compared to the 56% of the medium grade landed (Figure 10). These size grades are set by the market as follows; small grade (known as peanuts) are tuna that weigh nine pounds or less (under approx. 58 cm; mean 55.1 cm), medium grade (most common) are tuna that weigh 10-15 pounds (59 cm to 73 cm; mean 68.2 cm), and large grade are tuna over 15 pounds (over approx. 73 cm; 82.1 cm). The common bench mark for large vs medium size tuna for 2017 was 15 pounds, though grades are determined by individual dealers and occasionally the buyer will set the larger grade fish at 14 or 16 pounds. Fresh albacore kept on ice are rarely sorted between the large and medium grade fish. Tuna under nine pounds can be difficult to find a market for, thus these “peanuts” are typically avoided and/or released at sea by fishers.

Oregon-landed albacore have consistently been observed to weigh somewhat less for a given length than is indicated in the length-weight-age table found in the current commercial albacore logbook (12<sup>th</sup> edition, March 2017). Based on length-to-weight approximations in that table, and adjusting for the difference observed, the approximate average weight for small grade fish is around 7 pounds, medium grade fish around 12.5 pounds, and about 18-20 pounds for large grade fish. The latter months of the 2017 commercial albacore season were influenced strongly by the large grade fish, as they began showing up in greater numbers, first in the catch of ice boats working closer to port, and then in the catch of all vessels by mid-September.



**Figure 10.** 2017 proportion (left) & average length (right) of small, medium & large grade fish sampled each month. June n = 109. July n = 3,983. August n = 4,101. September n = 3,783. October n = 1,240.

*Recommendation for 2018 sampling:* Samplers, while not ignoring the usual opportunities at processors and buying stations, should also focus on the smaller buyers supplying fresh tuna to local restaurants and across the docks directly to the public. In 2017 sampling was frequently conducted on one buyer's skiff, but only later in the season. The Newport sampler should be sure to carry a PFD in the truck each day to take advantage of these opportunities. Efforts should be made from the beginning of the season in 2018 to establish solid communications with these smaller buyers. Do not wait for the convenient landings at the plants to diminish in late September before beginning to work more with the smaller boats and buyers. Treat all landings as equally important throughout the season.

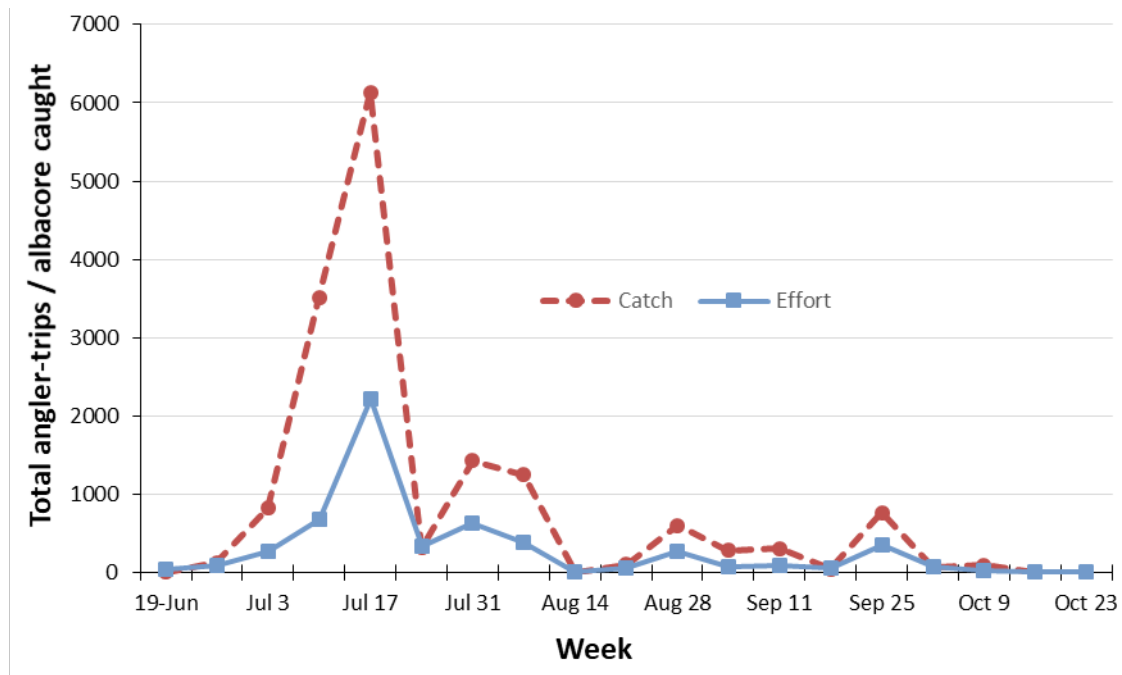
## 2017 ALBACORE RECREATIONAL FISHERY

Access to albacore for recreational vessels off Oregon can be highly variable, depending on weather conditions and distance offshore to the fish. This year, tuna arrived off the Oregon coast during the third week of June, but remained further offshore than was practical and safe for most sport boats, and effort remained scattered and very low. While albacore were available to the commercial fleet, they remained frustratingly far offshore, generally at least 80 miles out. Recreational charter vessels attempted trips throughout the summer and fall, but catch was poor.

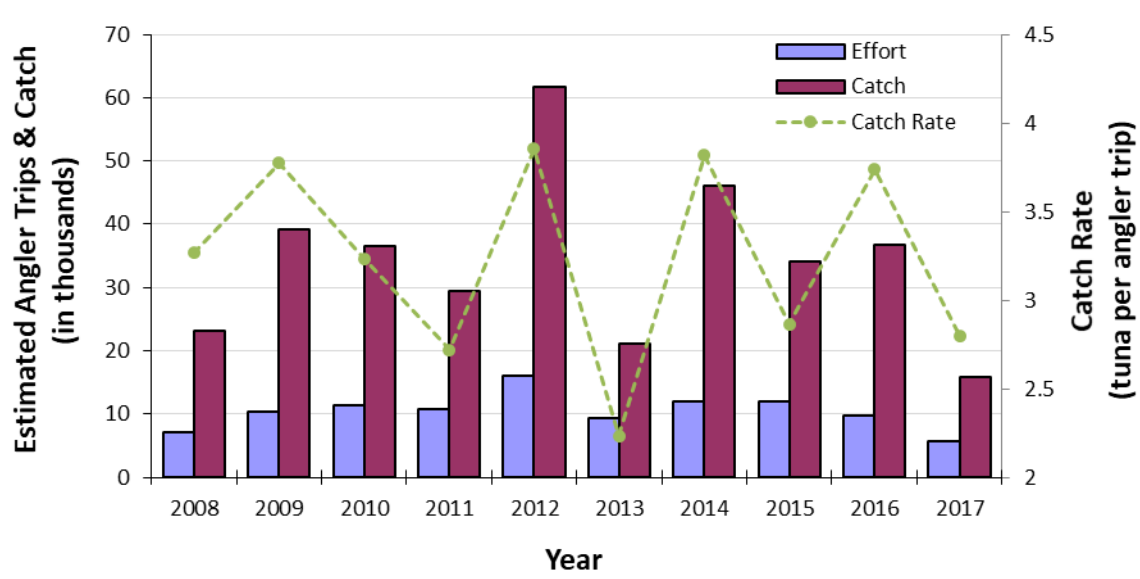
ODFW's Ocean Recreational Boat Survey (ORBS) deploys samplers to monitor Oregon's sport fisheries and provide estimates of overall effort and catch. Peak activity occurred during the 3rd full week of July, with an estimate of 2,937 albacore tuna landed. Tuna were landed through the middle of October, but generally in very low numbers (Figure 11).

An estimate of 15,996 albacore tuna were landed during four months of fishing for tuna this year, only 43.1% of the landings compared to the 2016 sport albacore season. The graphs and tables that follow reference albacore harvested on tuna-specific trips from the

recreational fishery. For 2017, the recreational albacore season fell far short of the ten-year average for landings and effort (Figure 12).



**Figure 11.** Oregon recreational albacore catch (number of tuna landed) and angler-trips by week from tuna-specific fishing trips in 2017. Both charter and private vessels are combined.



**Figure 12.** Oregon recreational albacore fishing effort (number of anglers), catch (number of tuna landed) and catch rate (albacore per angler effort) from tuna-specific fishing trips.

Recreational fishing effort for albacore totaled 5,664 angler trips in 2017, a little more than half of ten-year average of 10,448 angler trips (Table 7). The number of albacore tuna landed from these tuna-specific trips totaled 15,854 fish, just 46.1% of the the ten-year average of 34,375 albacore (Table 8). An additional 142 albacore were caught on either a bottomfish trip, halibut trip, salmon trip, or combo trip (salmon & other fish).

Combined charter and private albacore-specific landings for 2017 indicate that Charleston was the top port with 50.2% of the total recreational catch, followed by Brookings, Winchester Bay, and Garibaldi, which accounted for another 35.5% of the statewide recreational landings of albacore tuna (Table 9). Though landings in most ports were level or down from past years, Brookings experienced a modest boom in recreational albacore landings, jumping from 50 fish in 2016 to 2,528 in 2017.

Charter vessel catch-per-unit of effort (CPUE) in 2017 was 1.2 albacore per angler trip, while the private vessel CPUE was 3.0 albacore per angler trip (Table 10). The combined CPUE for Oregon's recreational albacore season for charter and private was 2.8 albacore per angler trip, the same CPUE as occurred in 2015, and well below the ten-year average of 3.3 albacore per angler trip.

**Table 7.** Oregon recreational albacore fishing effort (angler trips) by port, 2008-2017. NS indicates no port samplers present that year.

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-Year Average
Astoria	815	390	640	290	564	404	560	284	164	169	428
Garibaldi	1,124	1,176	2,685	728	2,385	2,214	1,845	1,662	1,586	826	1,623
P. City	40	93	254	80	337	132	265	247	239	140	183
D. Bay	988	1,138	1,661	1,433	2,930	2,489	1,760	2,117	936	386	1,584
Newport	2,567	3,251	3,929	3,734	5,201	3,368	2,823	4,080	2,760	765	3,248
Florence	67	15	16	24	28	NS	20	17	7	0	22
W. Bay	231	382	177	474	403	302	547	158	520	444	364
Charleston	1,067	3,202	1,667	3,076	3,744	427	4,049	2,650	3,470	2,387	2,574
Bandon	107	461	168	207	399	7	173	152	108	116	190
Port Orford	NS	NS	NS	56	0	NS	NS	NS	NS	NS	-
G. Beach	0	76	0	108	0	6	0	51	4	12	26
Brookings	99	183	114	577	21	85	0	514	36	419	205
<b>Total</b>	<b>7,105</b>	<b>10,367</b>	<b>11,311</b>	<b>10,787</b>	<b>16,012</b>	<b>9,434</b>	<b>12,042</b>	<b>11,932</b>	<b>9,830</b>	<b>5,664</b>	<b>10,448</b>

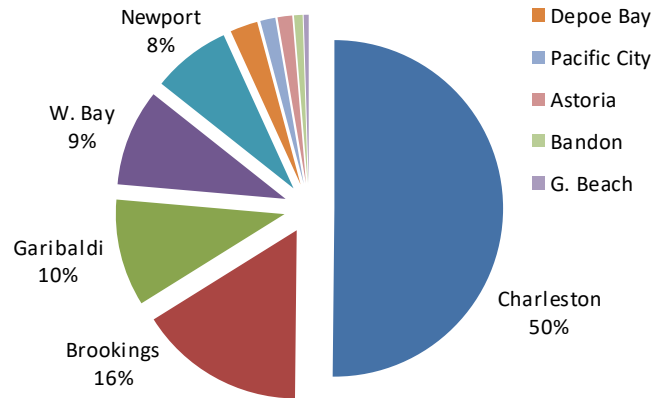
**Table 8.** Oregon recreational albacore catch\* (number of fish) by port, 2008-2017.

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-Year Average
Astoria	2,914	1,176	1,598	556	2,272	1,060	2,092	660	661	229	940
Garibaldi	4,291	4,203	10,734	683	6,841	6,373	6,597	4,800	3,874	1,629	4,655
P. City	397	771	1,476	383	1,712	163	872	637	1,026	222	584
D. Bay	3,301	4,011	5,001	3,114	10,336	5,271	6,401	5,523	2,730	420	4,069
Newport	8,605	12,298	11,536	8,043	21,512	7,026	9,143	12,746	6,837	1,193	7,389
Florence	287	27	22	11	36	NS	56	39	20	0	29
W. Bay	449	983	516	1,275	1,229	169	2,006	212	1,863	1,474	1,145
Charleston	2,422	12,733	5,016	11,166	15,558	817	17,913	7,519	19,261	7,953	10,693
Bandon	333	2,508	496	1,149	2,194	30	888	365	419	130	366
Port Orford	NS	NS	NS	455	0	NS	NS	NS	NS	NS	-
G. Beach	0	182	0	967	0	0	0	65	0	76	28
Brookings	205	225	187	1,546	9	176	0	1,590	50	2,528	869
<b>Total</b>	<b>23,204</b>	<b>39,117</b>	<b>36,582</b>	<b>29,348</b>	<b>61,699</b>	<b>21,085</b>	<b>45,968</b>	<b>34,156</b>	<b>36,741</b>	<b>15,854</b>	<b>34,375</b>
<b>CPUE</b>	<b>3.3</b>	<b>3.8</b>	<b>3.2</b>	<b>2.7</b>	<b>3.9</b>	<b>2.2</b>	<b>3.8</b>	<b>2.9</b>	<b>3.7</b>	<b>2.8</b>	<b>3.2</b>

\* Albacore caught from tuna-specific fishing trips.

**Table 9.** Preliminary percentage of Oregon’s recreational albacore catch by port in 2017, for tuna-specific trips.

<b>Port</b>	<b>Landing %</b>
<b>Charleston</b>	50.2%
<b>Brookings</b>	15.9%
<b>Garibaldi</b>	10.3%
<b>Winchester Bay</b>	9.3%
<b>Newport</b>	7.5%
<b>Depoe Bay</b>	2.6%
<b>Pacific City</b>	1.4%
<b>Astoria</b>	1.4%
<b>Bandon</b>	0.8%
<b>Gold Beach</b>	0.5%



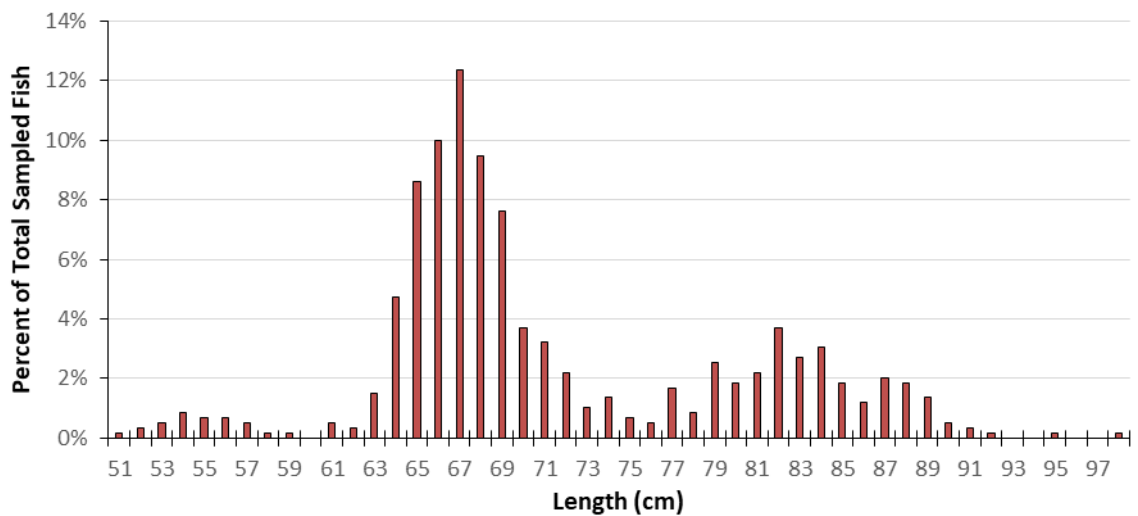
**Table 10.** Oregon’s preliminary 2017 recreational catch, effort, and CPUE by vessel type, port total, and statewide total. CPUE calculated as number of albacore caught divided by the number of angler trips for each category and port.

<b>Port</b>	<b>Catch (No. of Albacore)</b>			<b>Effort (Angler Trips)</b>			<b>Catch per Unit of Effort</b>		
	<b>Private</b>	<b>Charter</b>	<b>Total</b>	<b>Private</b>	<b>Charter</b>	<b>Total</b>	<b>Private</b>	<b>Charter</b>	<b>Total</b>
<b>Astoria</b>	223	6	229	141	28	169	1.6	0.2	1.4
<b>Garibaldi</b>	1,595	34	1,629	777	49	826	2.1	0.7	2.0
<b>Pacific City</b>	222	0	222	140	0	140	1.6	-	1.6
<b>Depoe Bay</b>	200	220	420	210	176	386	1.0	1.3	1.1
<b>Newport</b>	1,096	97	1,193	617	148	765	1.8	0.7	1.6
<b>Florence</b>	0	0	0	0	0	0	-	-	-
<b>W. Bay</b>	1,474	0	1,474	444	0	444	3.3	-	3.3
<b>Charleston</b>	7,818	135	7,953	2,312	75	2,387	3.4	1.8	3.3
<b>Bandon</b>	60	70	130	87	29	116	0.7	2.4	1.1
<b>G. Beach</b>	76	0	76	12	0	12	6.3	-	6.3
<b>Brookings</b>	2,491	37	2,528	413	6	419	6.0	6.2	6.0
<b>Total</b>	<b>15,255</b>	<b>599</b>	<b>15,854</b>	<b>5,153</b>	<b>511</b>	<b>5,664</b>	<b>3.0</b>	<b>1.2</b>	<b>2.8</b>

### Recreational Albacore Length Frequency Analysis

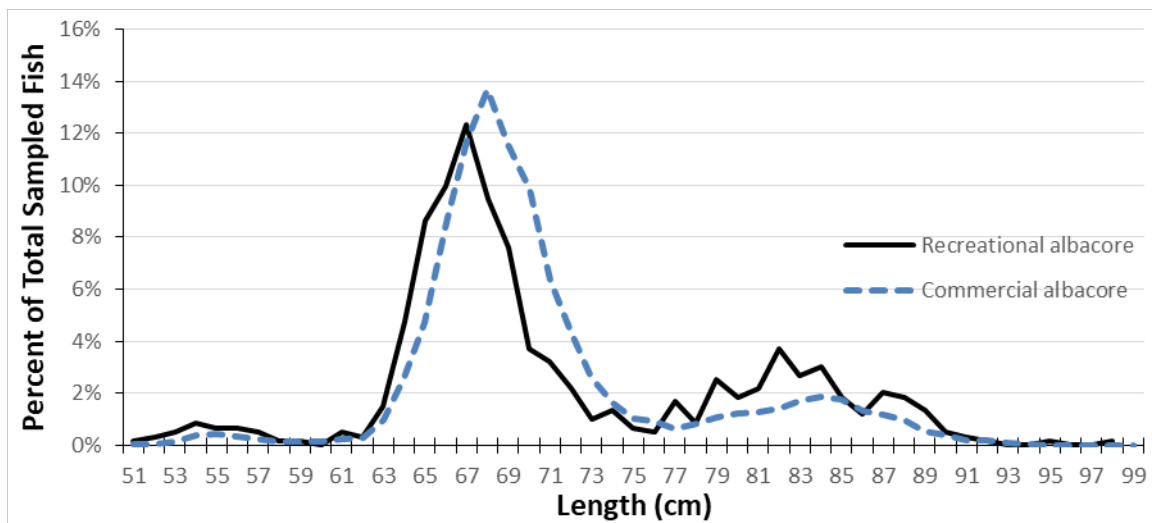
Length frequency information was collected on 592 recreationally caught albacore by ORBS port samplers in 2017. Figure 13 shows the length frequency distribution of non-sorted, randomly sampled albacore during the 2017 recreational season. The length data suggests a tri-modal distribution, similar to the commercially caught samples, where the primary mode represents the age-class of approximately 2-1/2 year-old tuna (Wells, 2013).





**Figure 13:** Length frequency data for all ports sampled for tuna by ORBS in 2017. Average Length = 71.4cm; N = 592.

To investigate if there were differences between commercially and recreationally-caught albacore, we compare the overall length frequency curves as well as the means of each size class. The overall length frequency distributions compared well (Figure 14), while the average lengths for each size grade of albacore sampled for fork length from both commercially and recreationally caught albacore showed no statistical difference in 2017 (Table 11).



**Figure 14.** Comparison of length-frequencies of commercially caught and recreationally caught albacore landed in Oregon in 2017.

**Table 11.** Comparison of means between commercially and recreationally caught albacore landed in Oregon in 2017. Each of the three grades show the means being within 1 standard deviation.

Grade	Commercial Mean ± 1 STD	Recreational Mean ± 1 STD
Small	55.1 ±1.6 cm	54.7 ±1.8 cm
Medium	68.2 ±2.4 cm	67.2 ±2.4 cm
Large	82.1 ±4.7 cm	82.6 ±4.4 cm

## **SUMMARY**

The preliminary total for Oregon commercial landings in 2017 is 4,744,814 pounds. This is just 65% of the 2016 catch and only 53.5% of the ten-year average (2008-2017) of 8.8 million pounds. Ex-vessel revenue generated from albacore in 2017 totaled \$10,787,616, only 15% below the 10-year average. Sampling coverage rates exceeded the goals set for the three primary ports, and was 26.9% for Oregon overall.

Six Canadian vessels landed 255,401 total pounds of albacore in Oregon on ten total landings; one in Astoria and nine in Newport during the 2017 tuna season, nearly double what Canadian vessels landed into Oregon in 2016. Canadian albacore landed in Oregon consisted of high quality blast frozen fish which totaled to \$694,614.

Recreational tuna fishers had a poor fishing season, landing a total of 15,996 estimated tuna (from all types of recreational effort and vessels). This is just 46.1% of the ten-year average of tuna harvested recreationally from 2008 to 2017.

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## APPENDIX A

### 2016 Summary Statistics for Oregon's Albacore Port Sampling Program

PORT NAME	Astoria	Garibaldi	Newport	W. Bay	Charleston	Brookings	Other Ports	TOTAL
<b>Logbooks issued</b>	5	0	8	0	0	3	0	<b>16</b>
<b>Lbs. landed by commercial sampled vessels</b>	296,534	53,675	1,331,495	0	635,867	20,890	9,809	<b>2,348,270</b>
<b>Total number of commercial fish measured</b>	1,341	99	7,585	0	3,891	150	150	<b>13,216</b>
<b>No. commercial trips sampled</b>	35	4	145	0	93	3	3	<b>283</b>
<b>Total no. of commercial trips/landings</b>	81	77	410	53	342	57	33	<b>1,053</b>
<b>Total no. of commercial vessels*</b>	40	27	145	16	93	24	12	<b>347</b>
<b>Lbs. landed by US vessels</b>	467,547	286,798	1,806,111	190,190	1,556,572	140,432	41,763	<b>4,489,413</b>
<b>Lbs. landed by Canadian vessels</b>	17,118	0	238,283	0	0	0	0	<b>255,401</b>
<b>Total lbs. landed by all commercial vessels</b>	484,665	286,798	2,044,394	190,190	1,556,572	140,432	41,763	<b>4,744,814</b>
<b>Lbs. landed by sport vessels**</b>	3,425	24,441	17,845	23,005	119,602	37,813	13,133	<b>239,263</b>
<b>Percent commercial sampling (weight)</b>	61.2%	18.7%	65.1%	0.0%	40.9%	14.9%	13.7%	<b>49.5%</b>
<b>Percent commercial sampling coverage (trips)</b>	<b>43.2%</b>	5.2%	<b>35.4%</b>	0.0%	<b>27.2%</b>	5.3%	15.0%	<b>26.9%</b>

\* Several vessels made trips into multiple ports, so total numbers of vessels at each port will add up to more than Oregon's total.

\*\* Number of albacore landed in each port multiplied by the 14.96 lb. overall weighted average (weighted by size grade).