

THE 1987 OREGON OCEAN SALMON FISHERIES

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THE 1987 OREGON OCEAN SALMON FISHERIES

INTRODUCTION

The Ocean Salmon Management Program is responsible for collecting fishery and biological data from the commercial and recreational ocean salmon fisheries, and analyzing the data and recommending appropriate management regulations for these fisheries. Management regulations are designed to achieve the optimum sustained use of the salmon resources.

In FY 1987 we sampled and analyzed data on catch and fishing effort, investigated chinook age composition, recovered marked and coded-wire tagged salmon caught in offshore fisheries, and conducted Genetic Stock Identification sampling at Newport, Coos Bay and Brookings. Short-term activities included an evaluation of a troll season extension for chinook salmon off southern Oregon, the collection of random coho scales for a Research Section scale study to identify hatchery and wild coho, and the collection of socio-economic data from the recreational fishery to update a data base.

We continued the program of telephoning "key buyer" processors to estimate daily troll coho landings north and south of Cape Falcon. We enlarged the program to monitor the chinook quotas north of Cape Falcon and south of Cape Blanco. Chinook landings were also monitored between Cape Falcon and Cape Blanco to obtain data relevant to the Klamath Management Zone. The key buyers represented about 90% of the total area landings.

The sampling program for the ocean salmon fisheries is supervised by a program leader and 2 project leaders, one each for the troll and recreational fisheries. We sampled at 11 major ports along the coast utilizing 14 troll and 23 recreational samplers and 2 crew chiefs. One of the troll samplers was designated as a "roving sampler". This sampler was based at Newport and

traveled the length of the Oregon coast wherever extra sampling was needed. This concept worked very well and will be continued. One troll sampler at Newport worked half-time on GSI sampling and we hired a person half-time at Charleston to conduct this work. The two crew chiefs acted as liaison between samplers and the project leaders in Newport and helped sample whenever necessary. They also brought the survey data and coded wire tags to Newport each week. Three seasonal employees helped Newport staff edit, keypunch and computer process the sampled data.

Sampling program activities for 1987 were increased by using a full-time troll sampler at Pacific City, Depoe Bay and Florence. The increase was implemented because of the need to increase sampling rates south of Cape Falcon on both chinook and coho. This puts the troll sampling level back to an optimal level. This was the first year we have gone to full-time sampling at Florence. This was done because the landings of troll-caught salmon have increased drastically over the last two years at this port.

Funding of the ocean sampling program came from two sources: (1) Anadromous Fisheries Act 89-304 Grant NA85-ABD-00111 (extended) and NA86-ABD-00108 (current) (Project Number AFC-130 Segment 2, Task 1 (extended) and Segment 3, Task 1 (current)), and (2) Bonneville Power Administration-Pacific Marine Fisheries Commission (Contract Numbers 86-012 and 87-011).

The 1987 OCEAN TROLL SALMON FISHERY
REGULATIONS

Chinook and Pink Salmon

For all areas barbless hooks were required (Table 1). There were no exceptions allowing barbed hooks on bait-hooks and plugs.

In the area north of Cape Falcon to the U.S./Canada border, the season was open during the periods May 1-10, May 14-15. The May fishery had a quota of 42,400 chinook. The season opened again on July 25-26 between the Queets River and Cape Falcon with a sub-area quota of 15,000 chinook. Minimum size for areas north of Cape Falcon was 28" for chinook and 16" for pink salmon.

The area from Cape Falcon to Cape Blanco was open from May 1 to October 31 with the exception of a closure from Cape Falcon to Cape Blanco from July 29-31 and from Cape Arago to Cape Blanco from September 16-18. No chinook quotas exist for this area. Minimum size was 26" for chinook and 16" for pink salmon.

The area between Cape Blanco and Point Delgada was designated as the Klamath River Management Zone. This area has some very complicated management regulations. A sub-area fishery between Sisters Rock and Chetco Point ran from May 1-14. The quota for this sub-area was 7,500 chinook and was designed to harvest the returning Rogue River spring chinook. The entire management zone was open from June 1-14, Sunday to Wednesday only, and June 15-25 seven days/week with an original quota of 115,000 fish. A scheduled sub-area fishery between Sisters Rock and Mack Arch to harvest the returning Rogue River fall chinook was cancelled because of a higher than expected impact on Klamath stocks by fisheries north and south of the Klamath zone. Minimum size in this area was 26" for chinook and 16" for pink salmon.

Table 1. History of Oregon Troll Regulations, 1948-87.

Year	Chinook		Coho	
	Season	Size	Season	Size
Prior to 1948	No Restrictions	No Restrictions	No Restrictions	No Restrictions
1948	No Restrictions	27"	July 1-November 15	Same
1949-1955	March 15-October 31	26"	June 15-October 31	Same
1956-1964	April 15-October 31	Same	Same	Same
1965-1975	Same	Same	Same	15"
1976	North of Tillamook Head May 1-June 14 and July 1-October 31	28" until 6-4-76 26" after 6-4-76	North of Tillamook Head July 1-October 31	16"
	South of Tillamook Head May 1-October 31	26"	South of Tillamook Head June 15-October 31	16"
1977	Same	28" N. of Tillamook Head 26" S. of Tillamook Head	Same	16"
1978	Boundary moved south to Cape Falcon - same dates and size limits as 1977.			
1979	North of Cape Falcon May 1-May 31 and July 1-July 24 and August 4-August 31	28"	North of Cape Falcon July 1-July 24 and August 4-August 31	16"
	South of Cape Falcon May 1-May 31 and July 1-October 31	26"	South of Cape Falcon July 1-September 3	16"
1980	North of Cape Falcon May 1-May 31 and July 15-September 8	28"	North of Cape Falcon July 15-September 8	16"
	South of Cape Falcon May 1-May 31 and June 16-June 30 (Cape Falcon to Cape Blanco only) July 15-October 31	26"	South of Cape Falcon July 15-September 8	16"
1981	North of Cape Falcon May 1-May 31 and July 15-August 24 ^a /	28"	North of Cape Falcon July 15-August 24 ^a /	16"
	South of Cape Falcon May 1-May 31 and July 1-October 31 ^b /	26"	South of Cape Falcon July 1-August 24 ^a /	16"

Table 1. (Continued)

Year	Chinook		Coho	
	Season	Size	Season	Size
1982	North of Cape Falcon May 1-May 31 July 1-7	28"	North of Cape Falcon July 1-8	16"
	Cape Falcon to Cape Blanco May 1-May 31 June 1-June 15 July 1-October 31 ^{c/}	26"	Cape Falcon to OR/CA border July 1-12	16"
	Cape Blanco to OR/CA border May 1-May 31 June 1-June 8 July 1-October 31 ^{c/}	26"		
1983	North of Cape Falcon May 1-May 31 July 1-July 31 ^{d/} August 10-September 8 ^{e/}	28"	North of Cape Falcon July 1-July 31 ^{d/}	16"
	Cape Falcon to Cape Blanco May 1-June 15 August 1-October 31	26"	Cape Falcon to Cape Kiwanda August 1-Quota 2	16"
	Cape Blanco to OR/CA border May 16-June 15 July 1-August 31 September 1-September 15 ^{f/} October 1-October 31	26" 26"	Cape Kiwanda to Heceta Head July 1-Quota 1 August 1-Quota 2 Heceta Head to OR/CA border July 1-Quota 1	16" 16"
1984 ^{g/}	North of Cape Falcon May 1 31 or 14,000 quota August 4 - September 3 or 12,400 quota	28" 28"	August 4-September 3 or 12,400 quota	16"
	Cape Falcon to Cape Blanco May 1 - June 15	26"		
	Cape Blanco to OR/CA border May 16 - June 16 July 16 - August 22			
1985	North of Cape Falcon ^{h/} May 1-31- or 27,000 quota August 21 to 2,700 quota	28"	August 21 to 10,000 quota	16"
	Cape Falcon to Cape Blanco ^{i/} May 1 - October 31	26"	July 1 to 45,000 quota	16"

Table 1 (continued)

Year	Chinook		Coho	
		Size	Season	Size
1986	North of Cape Falcon ^{i/}	28"	August 2-3	
	May 1 thru earlier of May 10 or quota		August 7 thru earliest of Sept. 15 quota	16"
	May 14 thru earlier of May 31 or quota		or chinook quota	
	May quota - 33,700 fish			
	August 2-3		August coho quota - 110,600	
	August 7 thru earliest of Sept. 15			
	Cape Falcon to Cape Perpetua			
	May 1-July 20 and July 23-Oct 31	26"	July 1-20 ^{j/}	16"
			July 20 thru quota ^{k/}	
	Cape Perpetua to Cape Blanco			
	May 1-July 20 and July 23-Oct. 31	26"	July 1-20 ^{i/}	16"
			July 23 thru quota ^{k/}	
	South of Cape Blanco Area			
	Sisters Rock to Chetco Point			
	May 1 to earliest of June 7 or	26"		
	sub-area quota of 7,000 fish			
	Cape Blanco to OR/CA border			
	June 16-19		June 16-19	22"
	June 23-26		June 23-26	
	June 30 thru earlier of August 31	26"	June 30-earliest of July 26	
	or quota of 68,200 fish		or chinook quota	
	Sisters Rock to Mack Arch			
	Latest of Aug. 7 or chinook	26"		
	quota of 7,000 fish to earlier			
	of Sept. 30 or chinook sub-area			
	quota			
1987	North of Cape Falcon ^{i/}	28"	July 25-27 or chinook	16"
	May 1 thru earlier of May 15 or		or coho quota. Coho	
	chinook quota of 42,400		quota 121,200.	
	May 19 thru earlier of May 31			
	or quota.			
	July 25 thru July 27 or coho			
	or chinook quota. Chinook quota-15,000			
	Cape Falcon to Cascade Head ^{i/}	26"		
	May 1 thru October 31		July 15 thru coho quota ^{m/n/o/}	16"
	Cascade Head to Cape Perpetua ^{i/}	26"	July 15 thru quota ^{m/o/p/}	16"
	May 1 thru October 31			
	Cape Perpetua to Cape Blanco ^{i/}	26"	July 1 thru coho quota ^{n/o/q/r/}	16"
	May 1 thru October 31			

Table 1 (continued)

Year	Chinook		Coho	
		Size	Season	Size
1987	South of Cape Blanco ^{i/} Sisters Rock to Chetco Point May 1 thru earlier of May 31 or sub-area quota of 7,500 fish	26"		
	Cape Blanco to OR/CA border June 1 thru June 14-- Sunday thru Wednesday only	26"	June 1 thru June 14 ^{m/ s/} Sunday thru Wednesday only	22"
	June 15 thru earliest of Sept. 7 or chinook or coho quota. Chinook quota 115,000	26"	June 15 thru earliest of Sept. 7 or chinook or coho quota coho quota ^{m/}	
	Sisters Rock to Mack Arch Later of Aug. 22 or general season chinook quota thru earlier of Sept 7 or sub-area quota of 7,000 fish.	26"		

SPECIAL TROLL SEASONS IN STATE WATERS

1974-1975	November 1 through December 31 - Elk and Chetco
1976-1982	November 1 through November 30 - Elk and Chetco
1983	November 1 through November 30 - Elk River only
1984	September 1 through September 21 - Cape Falcon-Cape Blanco
	October 1 through October 31 - Manhattan Beach-Pyramid Rock
	October 1 through November 30 - Elk River area
1985	October 1 through November 30 - Elk River area
	November 1 through November 30 - Sixes River area
1986	October 1 through November 30 - Elk River area or November quota of 750 fish
	November 1 through November 15 - Twin Rocks to Pyramid Rock
1987	October 1 through November 30 - Elk River area

^{a/} Closed August 21 in FCZ (3-200 miles)

^{b/} From 3-200 miles, chinook fishery was limited to the area between Cape Falcon and Cape Sebastian from August 25 through September 8 using whole bait or five inch or larger plugs.

^{c/} Use whole bait and plugs not less than 5" from July 12 through September 5.

^{d/} Must land 2 chinook for each coho. Use plugs 6" or larger.

^{e/} Limited to area from Columbia River south jetty to Cape Falcon out to 10 miles.

^{f/} 12x24 mile rectangle open around mouth of Rogue River.

g/ Single point barbless hooks on all gear.

h/ Barbless hooks except for plugs and whole bait.

i/ Barbless hooks on all gear.

j/ A single daily possession or landing per boat of 50 coho is permitted without chinook restrictions. Over 50 coho, at least one chinook must be possessed or landed for each two coho possessed or landed.

k/ From Cape Falcon to Point Delgada the quota is 383,000 fish.

l/ From July 1-20 at least one chinook must be possessed or landed for each two coho possessed or landed. For July 23 reopening, a single daily possession or landing per boat of 50 coho is permitted without chinook restrictions.

m/ From Cape Falcon to Point Delgada the quota is 374,900 fish.

n/ A single daily possession or landing per boat of 100 coho is permitted without chinook restrictions. Over 100 coho, at least one chinook must be possessed or landed for each two coho possessed or landed.

o/ At 80% of the south of Cape Falcon coho quota, the Cape Falcon to Point Delgada area will close to all ocean troll fishing for three days.

p/ A single daily possession or landing per boat of 100 coho is permitted without chinook restrictions. Over 100 coho, at least one chinook must be possessed or landed for each two coho possessed or landed. After 80% of the coho quota is reached, at least one chinook must be possessed or landed for each two coho possessed or landed except that two coho may be possessed or landed without having chinook.

q/ Must possess or land one chinook for each two coho possessed or landed except that one coho may be possessed or landed without having chinook.

r/ Upon completion of the coho quota, the area from Cape Arago to Point Arena will be closed to all ocean troll fishing for three days.

s/ At least one chinook must be possessed or landed for each one coho possessed or landed except that one coho may be possessed or landed without having chinook.

Coho

Coho fishing was allowed from the Queets River to Cape Falcon from July 25-26 with a quota of 121,200 fish. Minimum size was 16".

From Cape Falcon to Point Delgada a quota of 374,900 fish was established. For Oregon waters, this area was divided into four sub-areas with specific regulations for each area. In all of these sub-areas the fishery closed for three days when 80% of the quota was reached.

The season from Cape Falcon to Cascade Head was open during the periods July 15-28 and August 1-September 15. A single daily possession or landing of 100 coho was permitted with no chinook restrictions. In landings in excess of 100 coho, at least one chinook must be possessed or landed for each two coho possessed or landed. Minimum size was 16".

The season from Cascade Head to Cape Perpetua was open from July 15-28 with the same restrictions as above. From August 1-September 15, at least one chinook must be possessed or landed for each two coho possessed or landed except two coho may be possessed or landed without having a chinook. Minimum size was 16".

The season from Cape Perpetua to Cape Blanco was open from July 1-28 and August 1-September 15. At least one chinook must be possessed or landed for each two coho possessed or landed except that two coho may be possessed or landed without having a chinook.

A decision was made in late August to liberalize the restriction on coho. The coho landings were not good after the August 1 re-opening and in an attempt to reach the quota, starting on August 29, 200 coho could be possessed or landed without regard to chinook. This regulation change was in effect from Cape Falcon to Cape Blanco.

The season in the area south of Cape Blanco was open June 1-14, Sunday to Wednesday only, and June 15-25 seven days a week. At least one chinook had to be possessed or landed for each one coho possessed or landed, except one coho could be possessed or landed without having a chinook. Minimum size was 22".

EFFORT AND LANDING STATISTICS

Effort and catch statistics for the 1987 Oregon troll salmon fishery are preliminary. Poundages, dollar value, area of catch, and days fished are obtained directly from commercial fish receiving tickets. Pounds landed are converted to number of fish utilizing average weight information. In early years, all troll catch statistics for Oregon were reported by port of landing; however, since 1979 catch and effort estimates have also been reported by catch area (Figure 1).

Data by port of landing are reported on a port area format that corresponds to the above catch areas. The Astoria area includes the Astoria-Warrenton-Hammond complex and dory landings at Seaside and Cannon Beach. The Garibaldi-Pacific City area includes the ports of Nehalem, Garibaldi, and Pacific City; the Depoe Bay-Waldport area includes the ports of Depoe Bay, Newport, and Waldport; the Florence-Bandon area includes the ports of Florence, Winchester Bay, Coos Bay, and Bandon; and the Port Orford-Brookings area includes the ports of Port Orford, Gold Beach, and Brookings.

Effort

Since 1979, Oregon's troll effort has been estimated in boat days. Cumulative effort for the troll fishery totaled 39,600 boat days in 1987, or 22% greater than the 32,500 boat days in 1986 (Table 2, Column 1). The Coos Bay and Newport area accounted for 76% of the effort (Table 3). Effort in the

Tillamook, Newport, and Coos Bay areas was higher than in 1986, due mainly to the excellent chinook fishing. Effort in the Columbia River and Brookings areas was down because of restrictions on fishing time in those areas. Effort was heaviest during July and August. This time period corresponded to the most productive part of the coho season from Cape Falcon to Cape Blanco and the excellent chinook catches in the Coos Bay area (Table 14).

Landings

Chinook. The 1987 troll chinook landings set an all-time record and were 30% greater than the 1986 catch and 149% greater than the 1979-82 average (Table 2, Figure 2). A total of 528,900 chinook weighing 5,178,403 pounds (dressed weight) was landed in 1987 compared to 402,000 chinook in 1986 and 212,000 chinook for 1979-82.

Of the 528,900 chinook landed in 1987, 91% were caught from the Newport area south (Table 3). Catches in the Garibaldi, Newport and Coos Bay areas were higher than in 1986. Catches in the Columbia River and Brookings areas were down from 1986 because of restrictions on fishing times in those areas.

The troll landings of chinook salmon peaked during July in the Garibaldi, Newport and Coos Bay areas and during June in the Brookings area in 1987 (Tables 4, 5, and 6).

Coho. The commercial troll landings in 1987 totaled 355,300 fish weighing 1,915,589 pounds (dressed weight) which is 81% of the 1986 landings and 63% of the 1979-82 average (Table 2, Figure 2).

The coho fishery from Cape Falcon north to the Queets River was open on July 25-26 with a quota of 121,200 fish. Most of the fleet concentrated on chinook and consequently, because of the low chinook quota, did not harvest all of the available coho. Oregon trollers landed 14,900 coho and Washington trollers landed 46,200 coho for an area total of 61,100 fish or just over 50% of the quota.

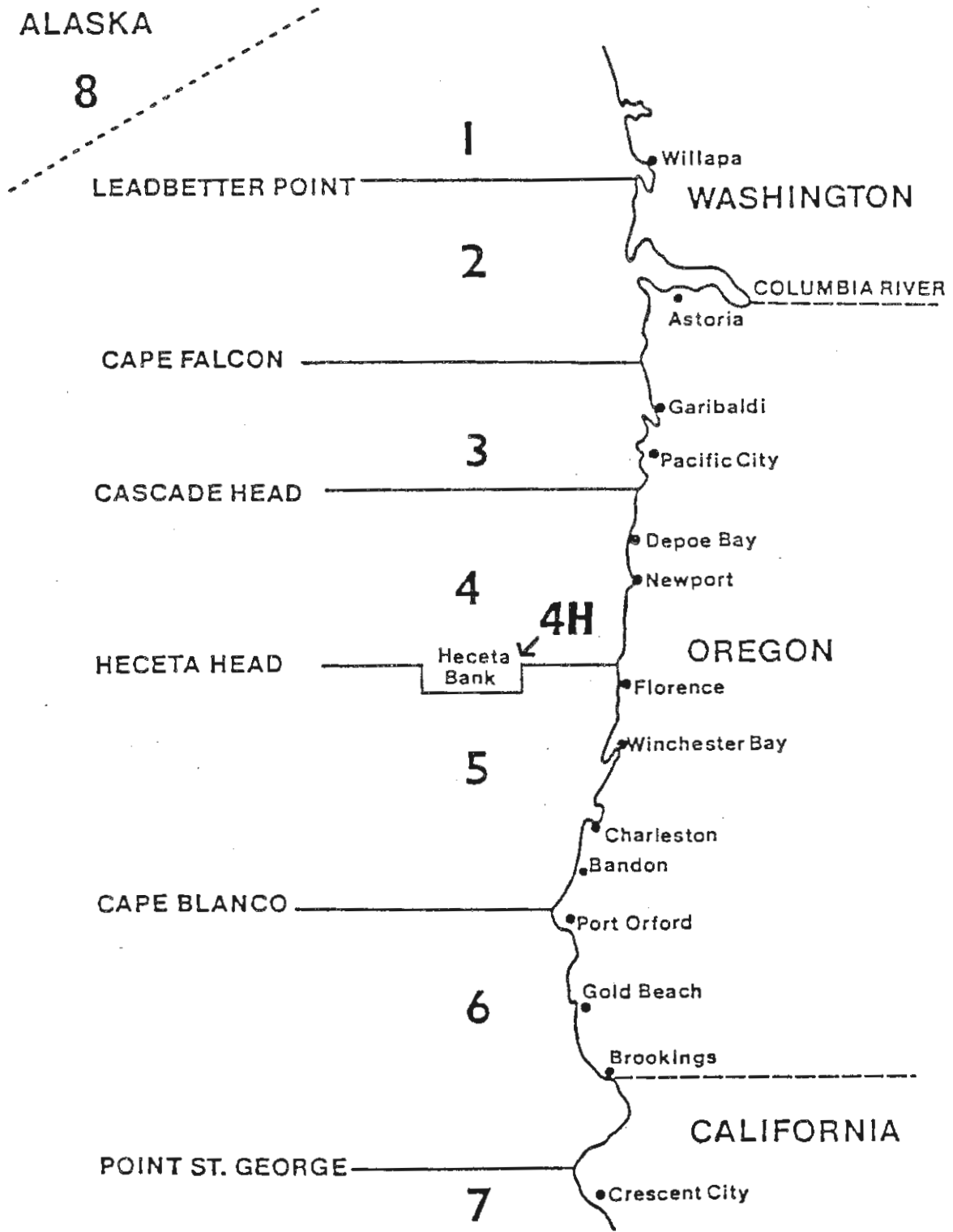


Figure 1. Ocean Salmon Management Areas.

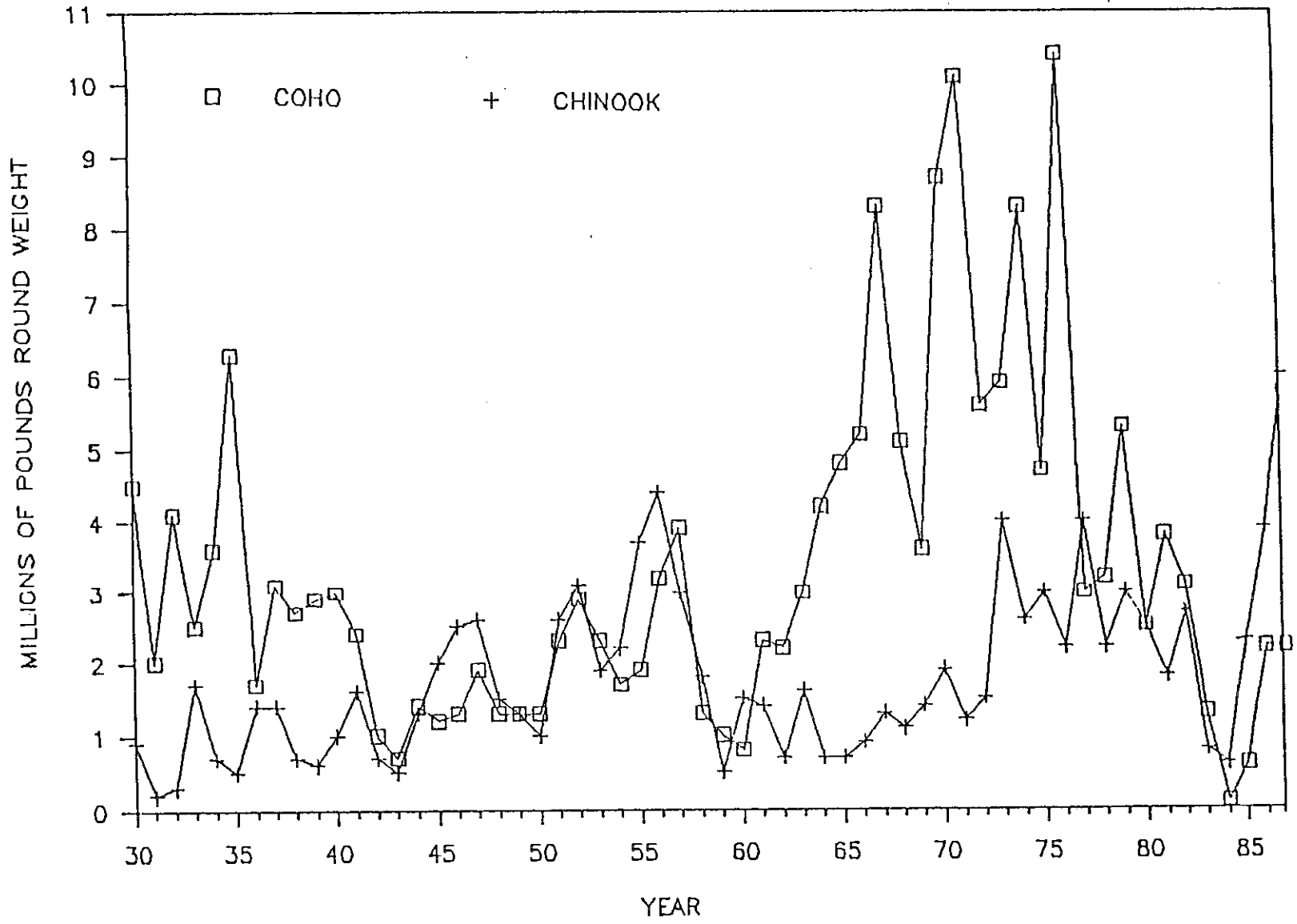


Figure 2. Oregon Ocean Troll Salmon Production, 1930-87.

Table 2. Oregon Commercial Troll Salmon Effort and Landings in Number of Fish and Pounds Dressed, 1971-1987^{a/}

Year	Effort (boat days)	Chinook		Coho		Pinks	
		No.	lbs dr.	No.	lbs dr.	No.	lbs dr.
1971	-	102,900	1,000,800	1,490,100	8,765,100	2,000	9,000
1972	-	127,300	1,303,700	824,600	4,856,300	<100	100
1973	-	363,300	3,461,300	795,500	5,137,100	3,200	14,200
1974	-	224,100	2,290,400	1,137,200	7,230,900	<100	100
1975	-	224,700	2,583,300	657,400	4,087,500	200	900
1971-75 Average	-	208,500	2,127,900	981,000	6,015,400	1,800 ^{b/}	8,000 ^{b/}
1976	-	184,300	1,921,600	1,827,000	9,061,200	0	0
1977	-	340,000	3,464,900	446,100	2,640,800	88,000	396,100
1978	-	191,500	1,893,600	611,600	2,779,000	<100	200
1979	48,800	245,500	2,580,000	714,600	4,586,300	20,500	106,300
1980	39,900	209,400	2,171,500	383,300	2,190,200	300	1,600
1981	45,200	160,400	1,573,400	620,300	3,324,300	60,200	324,000
1982	33,900	232,600	2,351,300	522,200	2,708,400	0	0
1979-82 Average	42,000	212,000	2,169,100	560,100	3,202,600	40,400 ^{b/}	215,200 ^{b/}
1983	22,200	79,600	655,300	319,800	1,097,900	<100	200
1984	7,900	64,300	549,700	14,000	71,000	0	0
1985	21,100	216,600	2,030,300	84,100	483,800	44,900	258,600
1986	32,500	402,000	3,361,700	439,600	1,904,900	<100	<100
1987 ^{c/}	39,600	528,900	5,178,400	355,300	1,915,600	17,700	87,300

^{a/} Includes catches made off California, Washington and Alaska and landed in Oregon.

^{b/} Odd-year average

^{c/} Preliminary

Table 3. Summary of Oregon Commercial Troll Effort and Landings by Area of Catch in Number of Fish, 1979-87.

Year	Area of Catch						Oregon Subtotal	Alaska	Wash.	Calif.	Total
	Col. R.	Tillamook	Newport	Coos Bay	Brookings						
EFFORT (Boat Days)											
1979	2,400	6,300	12,800	16,800	9,900	48,200	0	600	100	48,800	
1980	1,700	6,000	10,700	12,400	8,300	39,100	50	700	30	39,900	
1981	2,500	8,600	11,000	13,400	9,300	44,800	0	200	100	45,200	
1982	800	3,600	5,800	13,600	8,900	32,800	0	700	400	33,900	
1983	1,100	3,000	7,100	6,900	3,700	21,700	0	200	300	22,200	
1984	500	500	1,900	2,300	2,600	7,800	0	100	<100	7,900	
1985	600	1,400	4,100	14,000	600	20,800	0	300	<100	21,100	
1986	1,200	3,700	8,600	15,700	3,200	32,400	0	<100	<100	32,500	
1987 ^{a/}	300	7,300	8,700	21,000	2,000	39,400	0	100	100	39,600	
LANDINGS Chinook											
1979	5,900	5,000	38,600	68,700	123,800	242,000	0	2,600	900	245,500	
1980	5,600	7,800	48,700	74,800	68,400	205,300	300	2,900	900	209,400	
1981	8,400	12,200	27,100	24,400	86,000	158,200	0	1,000	1,300	160,400	
1982	7,300	9,000	27,600	109,200	69,500	222,600	0	7,000	3,100	232,600	
1983	5,400	4,900	24,000	19,800	22,000	76,100	0	1,600	1,900	79,600	
1984	1,500	1,600	18,700	15,400	24,600	61,800	0	200	300	64,300	
1985	5,500	3,300	41,700	155,600	6,100	212,200	0	3,600	800	216,600	
1986	6,000	14,000	88,700	238,900	53,500	401,200	0	400	500	402,000	
1987 ^{a/}	4,600	41,300	87,600	350,300	39,800	523,500	0	3,700	1,800	528,900	
Coho											
1979	48,700	77,900	211,800	263,100	101,200	702,700	0	11,300	600	714,600	
1980	23,500	80,600	137,300	99,200	33,500	374,200	1,800	7,200	40	383,300	
1981	41,900	160,400	192,400	161,400	53,500	609,600	0	10,400	300	620,300	
1982	24,100	114,800	117,800	227,900	22,300	506,800	0	14,100	1,200	522,200	
1983	4,900	63,300	118,000	109,700	22,500	318,400	0	100	1,300	319,800	
1984	13,900	0	0	0	0	13,900	0	200	0	14,000	
1985	18,300	1,600	12,600	29,400	200	62,100	0	21,900	<100	84,100	
1986	45,800	95,600	193,800	85,300	19,100	439,600	0	0	0	439,600	
1987 ^{a/}	7,600	75,000	82,900	177,900	4,300	347,700	0	7,200	400	355,300	

^{a/} Preliminary

Table 4. Oregon Commercial Troll Effort and Landings of Coho and Chinook in Number of Fish by Month, 1971-75 Average and 1979-87^a/.

		April	May	June	July	August	September	October	November ^b /	Total
EFFORT (Boat Days)										
1971-75										
Average		NA	NA	NA	NA	NA	NA	NA	NA	NA
1979	Monthly	-	1,400	<100 ^c /	21,500	21,700	1,300	2,000	800	
	Cumulative	-	1,400	1,500	23,000	44,700	46,000	48,000	48,800	48,800
1980	Monthly	-	2,100	3,700 ^d /	12,100	14,600	4,600	2,300	500	
	Cumulative	-	2,100	5,800	17,900	32,500	37,100	39,400	39,900	39,900
1981	Monthly	-	3,300 ^e /	-	21,300	16,700	1,600	1,900	500	
	Cumulative	-	3,300	3,300	24,600	41,300	42,800	44,700	45,200	45,200
1982	Monthly	-	2,300	2,100	18,800	5,600	2,800	1,500	600	
	Cumulative	-	2,300	4,500	23,300	29,000	31,800	33,300	33,900	33,900
1983	Monthly	-	1,600	1,900	12,200	4,100	1,200	1,100	100	
	Cumulative	-	1,600	3,500	15,700	19,800	21,000	22,100	22,200	22,200
1984	Monthly	-	400	400	2,100	4,300	200	300	200	
	Cumulative	-	400	900	2,900	7,200	7,400	7,700	7,900	7,900
1985	Monthly	-	3,100	2,100	6,300	6,600	1,900	900	200	
	Cumulative	-	3,100	5,200	11,500	18,100	20,000	20,900	21,100	21,100
1986	Monthly	-	4,000	4,000	14,300	6,800	2,000	1,300	100	
	Cumulative	-	4,000	8,000	22,300	29,100	31,100	32,400	32,500	32,500
1987	Monthly	-	3,600	3,900	16,300	7,300	5,500	2,700	300	
Preliminary	Cumulative	-	3,600	7,500	23,800	31,100	36,600	39,300	39,600	39,600
Chinook										
1971-75										
Average	Monthly	500	8,300	27,500	56,600	69,700	31,400	13,700	1,300	
	Cumulative	500	8,800	36,400	93,000	162,800	194,200	207,200	209,200	209,200
1978	Monthly	-	3,200	40,600	63,100	46,900	25,000	9,300	3,500	
	Cumulative	-	3,200	43,800	106,900	153,800	178,800	188,100	191,500	191,500
1979	Monthly	-	11,000	200 ^c /	73,600	119,500	13,200	25,200	2,600	
	Cumulative	-	11,000	11,300	84,900	204,400	217,700	242,900	245,500	245,500
1980	Monthly ^b /	-	25,800	29,700 ^d /	47,700	64,000	25,200	16,000	1,000	
	Cumulative	-	25,800	55,400	103,200	167,200	192,300	208,400	209,400	209,400
1981	Monthly	-	28,600 ^e /	-	34,900	65,700	16,900	13,200	1,200	
	Cumulative	-	28,600	28,600	63,500	129,200	146,100	159,200	160,400	160,400
1982	Monthly	-	23,000	14,800	125,400	46,100	15,000	6,900	1,400	
	Cumulative	-	23,000	37,800	163,200	209,300	224,300	231,200	232,600	232,600

1983	Monthly	-	9,500	16,300	34,100	11,500	2,700	4,600	900	
	Cumulative	-	9,500	25,800	59,900	71,400	74,100	78,700	79,600	79,600
1984	Monthly	-	4,600	2,400	17,800	36,900	700	1,000	900	
	Cumulative	-	4,600	7,000	24,800	61,700	62,400	63,400	64,300	64,300
1985	Monthly	-	39,900	14,900	57,900	76,300	21,400	5,300	900	
	Cumulative	-	39,900	54,800	112,700	189,000	210,400	215,700	216,600	216,600
1986	Monthly	-	37,200	50,000	138,500	115,100	33,900	26,500	800	
	Cumulative	-	37,200	87,200	225,700	340,800	374,700	401,200	402,000	402,000
1987	Monthly	-	43,500	49,900	273,100	82,700	60,900	16,900	1,900	
Preliminary	Cumulative	-	43,500	93,400	366,500	449,200	510,100	527,000	528,900	528,900
COHD										
1971-75										
Average	Monthly	-	-	227,800	414,400	305,800	29,700	3,300	-	
	Cumulative	-	-	227,800	642,200	948,000	977,700	981,000	-	981,000
1978	Monthly	-	-	279,600	227,200	92,800	10,400	1,600	-	
	Cumulative	-	-	279,600	506,800	599,700	610,000	611,600	-	611,600
1979	Monthly	-	-	400 ^c	534,000	178,700	1,600	-	-	
	Cumulative	-	-	400	534,400	713,100	714,600	-	-	714,600
1980	Monthly	-	-	-	228,700	137,500	17,100	-	-	
	Cumulative	-	-	-	228,700	366,200	383,300	-	-	383,300
1981	Monthly	-	-	-	350,300	270,000	-	-	-	
	Cumulative	-	-	-	350,300	620,300	-	-	-	620,300
1982	Monthly	-	-	-	522,200	-	-	-	-	
	Cumulative	-	-	-	522,200	-	-	-	-	522,200
1983	Monthly	-	-	-	275,300	36,100	8,400	-	-	
	Cumulative	-	-	-	275,300	311,400	319,800	-	-	319,800
1984	Monthly	-	-	-	-	14,000	-	-	-	
	Cumulative	-	-	-	-	14,000	-	-	-	14,000
1985	Monthly	-	-	-	65,700	18,300	-	-	-	
	Cumulative	-	-	-	65,700	84,000	-	-	-	84,000
1986	Monthly	-	-	12,000	381,800	45,800	-	-	-	
	Cumulative	-	-	12,000	393,800	439,600	-	-	-	439,600
1987	Monthly	-	-	4,600	271,200	58,800	20,700	-	-	
Preliminary	Cumulative	-	-	4,600	275,800	334,600	355,300	-	-	355,300

^a/ Statistics from 1971-78 are reported by calendar months; monthly totals from 1979-82 are the sum of statistical weeks with closest fit to calendar months. Includes catches made off California, Washington, and Alaska and landed in Oregon.

^b/ Late season at mouth of Elk and Chetco Rivers only (initiated in 1974). Averages for November include only 1974-75.

^c/ Caught off California and landed in Oregon.

^d/ Totals for June 1980 include landings made through July 6.

^e/ Totals for May 1981 include landings made through June 7.

Table 5. Oregon Troll Salmon Effort and Landings, in Number of Fish by Area of Catch and by Statistical Month, 1987.

Month	Columbia R	Tillamook	Newport	Coos Bay	Brookings	Oregon				Total
						Subtotal	Alaska	Wash.	Calif.	
<u>EFFORT (Boat Days)</u>										
May	100	100	1,400	1,400	500	3,500	0	100	0	3,600
June	-	300	1,000	1,700	900	3,900	0	-	<100	3,900
July	-	2,600	3,200	10,200	-	16,200	0	-	<100	16,300
August	200	2,100	1,600	3,500	-	7,300	0	-	0	7,300
September	-	1,200	1,200	3,100	-	5,500	0	<100	<100	5,500
October	-	900	800	700	300	2,700	0	-	-	2,700
November	-	-	-	-	300	300	0	-	-	300
Total	300	7,300	8,700	21,000	2,000	39,400	0	100	100	39,600
<u>Chinook</u>										
May	2,300	1,700	10,800	17,800	8,800	41,400	0	2,100	-	43,500
June	-	1,600	7,500	11,400	28,100	48,600	0	-	1,300	49,900
July	2,300	16,100	24,100	228,600	-	271,100	0	1,600	500	273,200
August	-	11,700	23,700	47,300	-	82,700	0	-	0	82,700
September	-	7,000	13,500	40,300	-	60,800	0	-	<100	60,800
October	-	3,200	8,000	4,800	1,000	17,000	0	-	-	17,500
November	-	0	-	-	1,900	1,900	0	-	-	1,900
Total	4,600	41,300	87,600	350,300	39,800	523,500	0	3,700	1,800	528,900
<u>Coho</u>										
June	-	-	-	-	4,300	4,300	0	-	200	4,500
July	-	49,800	59,300	147,100	-	263,800	0	7,200	100	271,200
August	7,600	19,800	18,500	20,600	-	58,900	0	-	-	58,800
September	-	5,400	5,100	10,200	-	20,700	0	-	100	20,800
Total	7,600	75,000	82,900	177,900	4,300	347,700	0	7,200	400	355,300

Table 6. Oregon Troll Salmon Landings by Species in Pounds Dressed, by Calendar Month and Port Area, 1987.

Month	Port of Landing					Total
	Astoria	Garibaldi to Pacific City	Depoe Bay to Waldport	Florence to Bandon	Port Orford to Brookings	
<u>CHINOOK</u>						
May	35,956	9,261	103,746	167,673	87,585	404,221
June	122	17,003	74,693	167,497	288,958	548,273
July	30,967	149,259	398,113	1,936,046	192,909	2,707,294
August	7,878	117,718	240,712	413,803	43,292	823,403
September	6,623	81,987	118,341	277,630	22,034	506,615
October	2,517	43,254	59,213	31,909	24,187	161,080
November	15	0	0	601	26,901	27,517
Total	84,078	418,482	994,818	2,995,159	685,866	5,178,403
<u>COHO</u>						
June	0	0	0	818	22,253	23,071
July	53,103	233,406	384,131	714,789	33,255	1,418,684
August	2,726	117,135	106,576	121,009	9,157	356,603
September	1,917	27,346	27,594	56,216	4,158	117,231
Total	57,746	377,887	518,301	892,832	68,823	1,915,589

Pink Salmon. Pink salmon were landed in all areas in 1987. Total landings were 17,700 fish weighing 87,300 pounds dressed. Coos Bay area landed about 68% of the total. Tillamook and Newport areas landed 16% and 15% respectively of the total.

THE DOLLAR VALUE OF THE LANDINGS

The chinook landings in 1987 were worth \$13,223,000 to the fishermen, the coho \$3,237,000. The average price per pound for chinook was \$2.55, for coho \$1.69 (Table 7).

EXTENDED TROLL SEASON LANDINGS

Chinook landings during the 1987 Elk River area extended season were 42,100 pounds dressed weight or an estimated 2,900 fish. There was no quota for this extended season in 1987.

One objective of the extended season was the harvest of the mature, surplus local stocks of fish. The available data indicate that the extended season accomplished this objective.

AVERAGE WEIGHT DATA

Data on average dressed weights from chinook and coho by port of landing enabled us to convert landings in pounds to numbers of fish.

The seasonal average weight for chinook in 1987 was 9.8 pounds dressed weight compared to 8.4 pounds in 1986 (Table 8). In 1987, the average weights were greater in all areas compared to 1986.

The seasonal average weight for coho in 1987 was 5.4 pounds dressed weight compared to 4.3 pounds in 1986 (Table 9). The seasonal average weights for coho were larger in all areas compared to 1986.

Table 7. Estimates of Ex-vessel Value^{a/} of Oregon Troll Salmon Landings and Average Price per Pound, 1971-87.

Year	Chinook		Coho		Total Value
	\$ Value	\$/Tb	\$ Value	\$/Tb	
1971	587,000	0.59	3,155,000	0.36	3,742,000
1972	982,000	0.75	2,475,000	0.51	3,457,000
1973	3,520,000	1.02	4,004,000	0.78	7,524,000
1974	2,412,000	1.05	5,525,000	0.76	7,937,000
1975	2,680,000	1.04	3,128,000	0.77	5,808,000
1976	3,410,000	1.77	11,458,000	1.26	14,868,000
1977	7,938,000	2.29	3,546,000	1.34	11,484,000
1978	3,584,000	1.89	3,756,000	1.35	7,340,000
1979	6,639,000	2.57	10,350,000	2.26	16,988,000
1980	5,259,000	2.42	2,926,000	1.34	8,185,000
1981	4,036,000	2.57	5,535,000	1.66	9,571,000
1982	6,094,000	2.59	3,801,000	1.40	9,895,000
1983	1,244,000	1.90	1,052,000	0.96	2,296,000
1984	1,513,00	2.75	118,000	1.67	1,631,000
1985	5,043,000	2.48	729,000	1.51	5,838,000
1986	5,963,000	1.77	1,979,000	1.04	7,942,000
1987 ^{b/}	13,223,000	2.55	3,237,000	1.69	16,460,000

^{a/} Dressed weight value

^{b/} Preliminary

Table 8. Observed Average Dressed Weight and Calculated Number of Chinook Landed in Oregon by Calendar Month and Port Area, 1987.

Port of Landing	Month							Total
	May	June	July	Aug.	Sept.	Oct.	Nov.	
<u>Astoria</u>								
Numbers	4,248	12	3,032	828	619	187	1	8,927
Pounds	35,956	122	30,967	7,878	6,623	2,517	15	84,078
Ave. wt.	8.5	10.2	10.2	9.5	10.7	13.5	15.0	9.4
<u>Garibaldi-Pacific City</u>								
Numbers	971	1,710	14,562	11,786	6,894	2,505	0	38,428
Pounds	9,261	17,003	149,259	117,653	81,966	43,254	0	418,482
Ave. wt.	9.5	9.9	10.2	10.0	11.9	17.3	0	10.9
<u>Depoe Bay-Waldport</u>								
Numbers	10,931	6,763	37,079	24,015	14,039	6,813	0	99,640
Pounds	103,746	74,693	398,113	240,712	118,341	59,213	0	994,818
Ave. wt.	9.5	11.0	10.7	10.0	8.4	8.7	0	10.0
<u>Florence-Bandon</u>								
Numbers	17,645	15,795	189,330	45,802	36,287	3,847	45	308,751
Pounds	167,673	167,497	1,936,046	413,803	277,630	31,909	601	2,995,159
Ave. wt.	9.5	10.6	10.2	9.0	7.7	8.3	13.4	9.7
<u>Port Orford-Brookings</u>								
Numbers	9,692	32,055	20,154	5,040	2,746	1,622	1,894	73,203
Pounds	87,585	288,958	192,909	43,292	22,034	24,187	26,901	685,866
Ave. wt.	9.0	9.0	9.6	8.6	8.0	14.9	14.2	9.4
<u>Total</u>								
Numbers	43,487	56,335	264,157	87,471	60,585	14,974	1,940	528,949
Pounds	404,221	548,273	2,707,294	823,403	506,615	361,080	27,517	5,178,403
Ave. wt.	9.3	9.7	10.2	9.4	8.4	10.8	14.2	9.8

Table 9. Observed Average Dressed Weight and Calculated Number of Coho Landed in Oregon by Calendar Month and Port Area, 1987.

Port of Landing	June	July	August	Sept.	Total
<u>Astoria</u>					
Numbers	0	12,339	513	356	13,208
Pounds	0	53,103	2,726	1,917	57,746
Ave. wt.	0	4.3	5.3	5.4	4.4
<u>Garibaldi-Pacific City</u>					
Numbers	0	46,669	22,298	4,910	73,877
Pounds	0	233,406	117,135	27,346	377,887
Ave. wt.	0	5.0	5.3	5.6	5.1
<u>Depoe Bay-Waldport</u>					
Numbers	0	72,330	18,891	4,769	95,990
Pounds	0	384,131	106,576	27,594	518,301
Ave. wt.	0	5.3	5.6	5.8	5.4
<u>Florence-Bandon</u>					
Numbers	172	130,182	20,449	9,013	159,816
Pounds	818	714,789	121,009	56,216	892,823
Ave. wt.	4.8	5.5	5.9	6.2	5.6
<u>Port Orford-Brookings</u>					
Numbers	4,422	5,781	1,516	705	12,424
Pounds	22,253	33,255	9,157	4,158	68,823
Ave. wt.	5.0	5.8	6.0	5.9	5.5
<u>Total</u>					
Numbers	4,594	267,301	63,667	19,753	355,315
Pounds	23,071	1,418,684	356,603	117,231	1,915,589
Ave. wt.	5.0	5.3	5.6	5.9	5.4

TROLL SALMON MARK SAMPLING

In 1987, three samplers were assigned to Newport, two to Charleston and one each to Astoria, Garibaldi, Pacific City, Depoe Bay, Florence, Winchester Bay, Port Orford, and Brookings. A roving sampler, based at Newport, assisted in sampling at Brookings, Astoria, Garibaldi, Depoe Bay, and Newport. In 1987, 31% of all chinook and 32% of all coho landings were examined for coded wire tags (Tables 10 and 11).

Chinook. Samplers found 10,042 adipose-clipped chinook in the 1987 troll landings and obtained 9,932 random snouts. Technicians found tags in 9,294 or 94% of the snouts. The main agencies contributing the tags were:

California Department of Fish and Game	37%
Oregon Department of Fish and Wildlife	36%
Washington Department of Fisheries	20%

Coho. Samplers found 7,371 adipose-clipped coho in the 1987 troll coho landings and obtained 7,305 random snouts. Technicians found coded-wire tags in 6,192 or 85% of the snouts. The main agencies contributing tags were:

Oregon Department of Fish and Wildlife	52%
Washington Department of Fisheries	16%
Anadromous	14%
Oregon Aqua-Foods	12%

Table 10. Oregon Troll Chinook Mark Sampling by Calendar Month and Port Area, 1987.

Port of Landing	Month							Total
	May	June	July	Aug.	Sept.	Oct.	Nov.	
Astoria								
No. Examined	3,128	0	1,048	0	0	0	0	4,176
No. Landed	4,248	12	3,032	828	619	187	1	8,927
% Examined	74	0	35	0	0	0	0	47
No. Marks	204	0	84	0	0	0	0	288
Garibaldi-Pacific City								
No. Examined	13	600	4,404	3,972	1,075	0	0	10,064
No. Landed	971	1,710	14,562	11,786	6,894	2,505	0	38,428
% Examined	1	35	30	34	16	0	0	26
No. Marks	0	58	371	342	57	0	0	828
Depoe Bay-Waldport								
No. Examined	2,687	2,835	15,891	11,432	7,908	3,213	0	43,966
No. Landed	10,931	6,763	37,079	24,015	14,039	6,813	0	99,640
% Examined	25	42	43	48	56	47	0	44
No. Marks	183	197	1,183	778	311	159	0	2,811
Florence-Bandon								
No. Examined	5,191	7,950	34,118	11,938	10,345	508	0	70,050
No. Landed	17,645	15,795	189,330	45,802	36,287	3,847	45	308,751
% Examined	29	25	18	28	29	13	0	23
No. Marks	263	454	1,924	705	435	11	0	3,792
Port Orford-Brookings								
No. Examined	9,064	10,792	11,612	3,015	1,410	1,077	1,034	38,004
No. Landed	9,692	32,055	20,154	5,040	2,746	1,622	1,894	73,203
% Examined	94	34	58	60	51	66	55	52
No. Marks	526	491	657	141	62	226	220	2,323
Total								
No. Examined	20,083	22,176	67,074	30,357	20,738	4,798	1,034	166,260
No. Landed	43,487	56,335	264,157	87,471	60,585	14,924	1,940	528,949
% Examined	41	61	25	35	34	32	55	31
No. Marks	1,176	1,200	4,219	1,966	865	396	220	10,042

Table 11. Oregon Troll Coho Mark Sampling by Calendar Month and Port Area, 1987.

Port of Landing	Month				Total
	June	July	August	Sept.	
<u>Astoria</u>					
No. Examined	0	3,921	0	0	3,921
No. Landed	0	12,339	513	356	13,208
% Examined	0	32	0	0	30
No. Marks	0	184	0	0	184
<u>Garibaldi-Pacific City</u>					
No. Examined	0	14,715	7,713	814	23,242
No. Landed	0	46,669	22,298	4,910	73,877
% Examined	0	32	35	17	31
No. Marks	0	870	506	55	1,431
<u>Depoe Bay-Waldport</u>					
No. Examined	0	33,561	9,302	2,874	47,737
No. Landed	0	72,330	18,891	4,769	95,990
% Examined	0	49	49	60	50
No. Marks		2,343	565	172	3,080
<u>Florence-Bandon</u>					
No. Examined	55	23,884	5,959	2,371	32,269
No. Landed	172	130,182	20,449	9,013	159,816
% Examined	32	18	29	26	20
No. Marks	3	1,692	412	154	2,261
<u>Port Orford-Brookings</u>					
No. Examined	1,410	3,169	800	331	5,710
No. Landed	4,422	5,781	1,516	705	12,424
% Examined	32	55	53	47	46
No. Marks	79	260	49	27	415
<u>Total</u>					
No. Examined	1,465	81,250	23,774	6,390	112,879
No. Landed	4,594	267,301	63,667	19,753	355,315
% Examined	32	30	37	32	32
No. Marks	82	5,349	1,532	408	7,371

THE 1987 RECREATIONAL OCEAN SALMON FISHERY

Oregon's ocean anglers that fished south of Cape Falcon had a relatively unrestricted salmon fishery with the longest season and highest quotas since 1981. North of Cape Falcon, ocean salmon seasons continued restrictive.

We estimated a catch of 58,595 chinook, 177,439 coho and 904 pink salmon from 255,048 salmon angler trips and 29,181 bottomfishing trips during the 1987 salmon season. Ocean upwelling kept cold waters inshore and also produced frequent fog. The cold waters kept the coho stocks scattered and offshore and the fog discouraged small boat effort, especially in June. This, coupled with excellent chinook catches kept the coho harvest down considerably in 1987.

REGULATIONS

The Oregon coast is divided into 3 salmon management areas, each with different regulations. The regulations were set by the Pacific Fishery Management Council and the Oregon Department of Fish and Wildlife. The Oregon Department of Fish and Wildlife also adopted some special seasons in state waters.

North of Cape Falcon

A recreational quota of 100,500 coho and 14,100 chinook was established between Leadbetter Point and Klipsan Beach and the red buoy line off the South Jetty of the Columbia River and Cape Falcon. A conservation zone closure was in effect out to 200 miles from the red buoy line north to Klipsan Beach (Figure 3). The daily bag limit was 2 salmon, with minimum size limits of 24 inches for chinook and 16 inches for other salmon. Only barbless hooks were

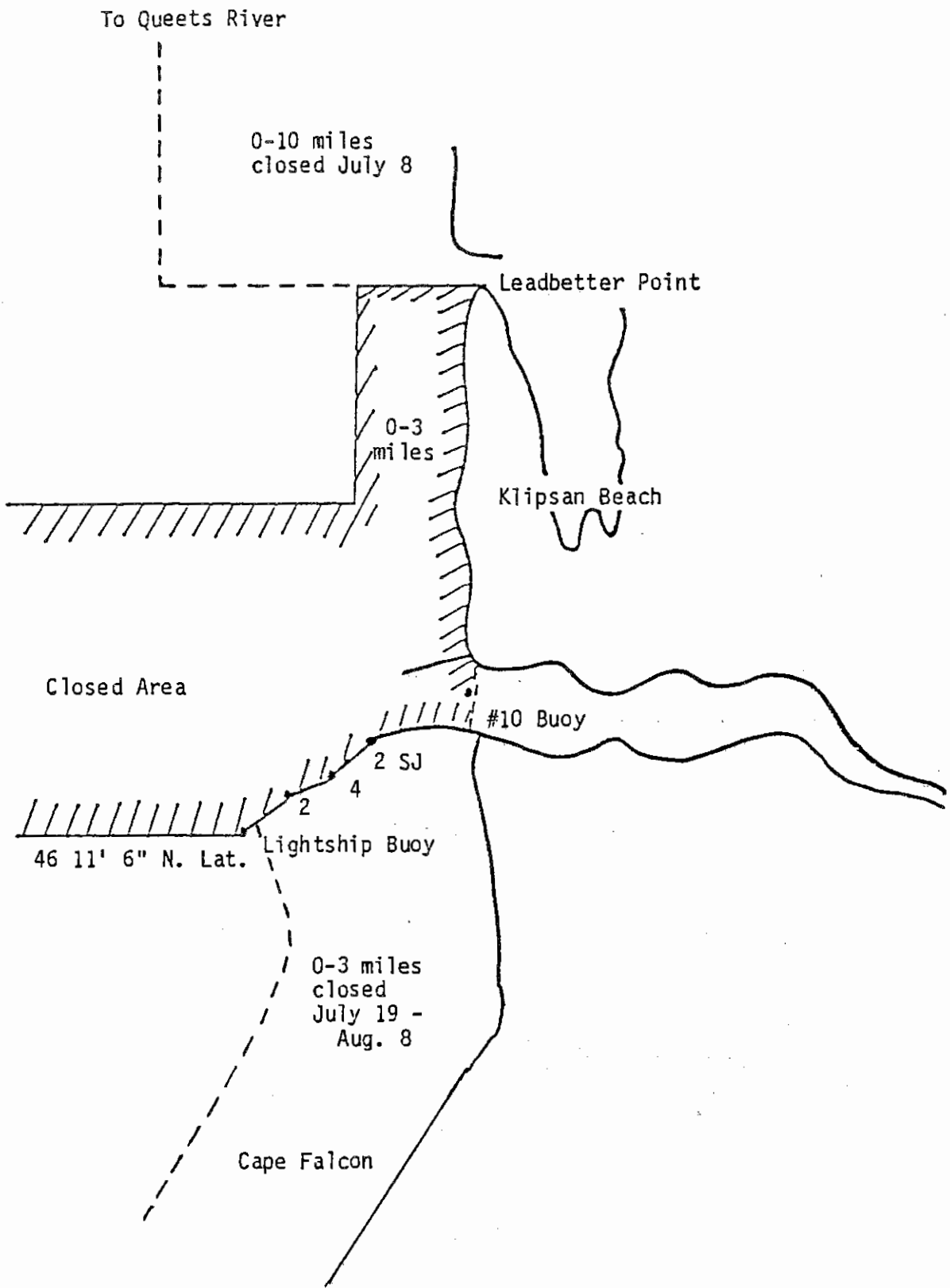


Figure 3. Area Restrictions in the Ocean Recreational Salmon Fishery off the Columbia River, 1987.

permitted. There was an annual bag limit of 40 salmon or steelhead but no weekly possession limit. Ocean salmon angling was only permitted Sunday through Thursday (Tables 12 and 13).

Cape Falcon to Cape Blanco

South of Cape Falcon, the recreational coho quota was 269,200 fish. The daily bag limit was the first 2 salmon caught regardless of species or size. Barbed or barbless hooks were allowed. The annual bag limit was 40 salmon or steelhead but there was a further restriction that not more than six salmon could be caught in 7 consecutive days. There were also provisions for in-season restrictions to extend the fishing seasons if necessary. These restrictions are listed in the footnotes in Table 12. New this year was a provision to roll over to the troll fishery any portion of the quota that was projected to be in excess of the sport fishery needs.

Cape Blanco to Point Delgada

The coho catch in this management area counted against the 269,200 fish quota but the fishery continued after the quota was met. An overall pre-season chinook quota of 200,000 was set but the recreational fishery was allocated as many chinook as was necessary to finish the season. The daily bag limit was 2 salmon of any species; the size limit for all species was 20 inches. Barbless hooks were required. The annual bag limit in Oregon was 40 salmon or steelhead and not more than six salmon could be caught in 7 consecutive days.

The Cape Blanco to Point Delgada season opened first, on May 23 and ran uninterrupted until its scheduled close on September 13.

The Cape Blanco to Cape Falcon area opened on June 13 and also went until its scheduled close on September 13.

North of Cape Falcon, the season opened June 28 and almost immediately, in-season area closures were put in place as follows. Unless specified, effective time is 0001 hours:

- June 28 - Ocean season opens.
- July 5 - Point Brown to Cape Shoalwater, Washington, is closed to salmon fishing from zero to six nautical miles.
- July 8 - Area closures are expanded from zero to ten nautical miles between Queets River and Leadbetter Point in Washington. The bag limit is modified to two salmon but no more than one chinook.
- July 12 - An area off Neah Bay is closed to salmon angling from zero to one mile off-shore.
- July 15 - Additional near-shore areas closed from the Queets River to the U.S.-Canada border.
- July 17 - The following transfers of chinook and coho are made:
(1) 250 chinook from the Leadbetter Point to Queets River area and 450 chinook from the Cape Falcon to Leadbetter Point area transferred to the area north of the Queets River and
(2) 450 coho from the area north of the Queets River to the area south of Leadbetter Point to Cape Falcon.
- July 19 - Oregon regulations closes state waters from Cape Falcon to Red Buoy Line to salmon fishing.
- July 26 - Washington state regulations closes the entire area from the Grays Harbor Buoy north to the Queets River and opens the area outside of six miles from Grays Harbor Buoy south to Leadbetter Point.
- July 30 - The decision is made to keep the coho-only recreational fishery north of the Queets River open by transferring to its quota 125 chinook from the Columbia River area and 75 chinook from the Westport area. The chinook are necessary to account for hooking mortality in the coho-only fishery.
- August 7 - The recreational season between Queets River and Leadbetter Point is closed because the chinook catch is projected to meet its quota. Subsequent to the closure, 300 chinook remain in quota. These are split evenly between two subareas north of Cape Falcon. The remainder of the coho quota was split to provide 18,700 coho to the northern area and 22,600 coho to the Columbia River subarea.
- August 9 - Oregon reopens state waters between Cape Falcon and the Red Buoy line to recreational salmon fishing.

- August 16 - Buoy 10 recreational fishery opens inside the mouth of the Columbia River.
- August 20 - Effective at 1200 hours, the recreational ocean salmon fisheries north of Cape Falcon to the U.S.-Canada border are closed as the chinook quota is reached.
- August 31 - Buoy 10 fishery is closed to assure a Labor Day "weekend" season.
- September 4 - Buoy 10 fishery reopens.
- September 6 - Bag limit increases to 3 salmon per day.
- October 1 - Bag limit returns to 2 salmon per day.

There were several state water salmon fisheries after the general seasons closed (Table 14). State waters off Tillamook Bay were open to chinook fishing from September 15 through October 31. The Chetco River area (Bird Island to the Oregon-California border) was open to salmon fishing October 1-31. The Port Orford area also had a state waters fishery scheduled from October 1 through November 30 but this area is not accessible to most recreational anglers. Only the Brookings area (Chetco River) was sampled systematically.

Table 12. Recreational Management Measures Approved for 1987 Ocean Salmon Fisheries.^{a/}

AREA AND SEASON	SALMON SPECIES	Quota		Minimum Size Limit (inches)		Daily Bag Limit and Special Restrictions by Area
		Chinook	Coho	Chinook	Coho	
UNITED STATES-CANADA BORDER TO QUEETS R.: June 28 thru earliest of Sept. 24, chinook quota, or coho quota Sunday through Thursday only	All	2,500 ^{b/}	26,000 ^{b/}	24	16	2 fish, only 1 of which may be a chinook. Barbless hooks. The area inside the Umatilla-Tatoosh Line may be closed by inseason action if necessary to extend the season.
QUEETS RIVER TO LEADBETTER PT. June 28 thru earliest of Sept. 24, or chinook or coho quota, Sunday thru Thursday only.	All	23,000 ^{b/}	74,300 ^{b/}	24	16	2 fish; barbless hooks. Closed within 3 nautical miles of shore from Leadbetter Point to Klipsan Beach. Daily bag limit may be reduced to 2 fish, only 1 of which may be a chinook, if necessary to extend the season.
LEADBETTER POINT TO KLIPSAN BEACH TO RED BUOY LINE TO CAPE FALCON, June 28 thru earliest	All	14,100	100,500	24	16	2 fish. Barbless hooks. Closed within 3 nautical miles of shore from Leadbetter Pt. to Klipsan Beach. Daily bag limit may be reduced to 2 fish, only one of which may be a chinook, if necessary to extend the season.
KLIPSAN BEACH TO RED BUOY LINE	Closed					
CAPE FALCON TO CAPE BLANCO: June 13 thru earlier of Sept. 13 or coho quota	All	None	<u>c/</u>	None	None	First 2 fish hooked per day must be retained. No more than 6 fish may be retained in 7 consecutive days. Before July 10, the catch rate will be evaluated to determine possibility of reaching quota before Labor Day. If this possibility exists, inseason actions to dampen the harvest rate could occur which would include closure of certain days each week.

CAPE BLANCO TO PT. DELGADA May 23 thru Sept. 13	All	<u>d/</u>	<u>c/</u>	20	20	2 salmon of any species; no more than 6 fish may be re-tained in 7 consecutive days. Barbless hooks. Conservation Zone 3 (Klamath River mouth) closed Aug. 1 thru Aug. 31.
TRINIDAD HEAD TO PUNTA GORDA Sept. 14 thru Sept. 30.	All	None	None	20	20	2 salmon of any species; no more than 6 fish may be retained in 7 consecutive days. Barbless hooks. Open only within 6 nautical miles of shore. Klamath River fall chinook portion of the harvest may be subtracted from 1988 area recreational quota.
POINT DELGADA TO U.S.- MEXICO BORDER. Nearest Saturday to Feb. 15 to nearest Sunday to Nov. 15	All	None	<u>e/</u>	20	20	2 salmon of any species. Barbless hooks required north of Point Conception

a/ The nontreaty ocean fisheries north of Cape Falcon (recreational and troll) will be managed not to exceed either (1) an overall 106,000 chinook quota or (2) impacts on Skagit River natural coho stocks equivalent to the overall preseason quota north of Cape Falcon of 342,100 coho.

b/ These management measures are based on a Buoy 10 fishery (Columbia River mouth to the Astoria-Megler Bridge) with a quota of 30,000 chinook and a projected harvest of 90,000 coho. Consistent with Council management objectives, Oregon may establish some additional late season, all-salmon-except-coho fisheries in state waters.

c/ There is an overall recreational impact quota of 269,200 coho south of Cape Falcon. Any portion of the recreational quota not needed to complete scheduled recreational seasons will be transferred to the troll fishery on or about August 1.

d/ There is an overall troll and recreational quota of 200,000 chinook prior to September 8, but the recreational fishery is allocated whatever amount of chinook is needed to complete the scheduled season.

e/ Catches count towards coho quota for the area south of Cape Falcon but the fishery does not close when the quota is reached. Any portion of the recreational quota not needed to complete scheduled recreational seasons will be transferred to the troll fishery on or about August 1.

Table 13. Summary of Oregon's Recreational Ocean Salmon Regulations, 1946-86

Year	Season	Regulations
1946	All Year	3 fish/day; 9 in possession.
1947	All year	2 fish/day; 6 in possession
1948-54	All year	2 fish/day; 4 in possession; 20 fish annual limit.
1955-57	All year	2 fish/day; 4 in possession; 20 fish annual limit; 20" minimum size, both species.
1958-64	All year	2 fish/day; 4 in possession; 20 fish annual limit; 20" minimum size, both species. except 22" minimum size north of Tillamook Head (July 1-October 31).
1965-69	All year	3 fish/day; 6 in possession; 20 fish annual limit; 20" minimum size, both species.
1970-75	All year	3 fish/day; no possession limit; 40 fish annual limit; North of Tillamook Head, 20" minimum size both species. South of Tillamook Head, no size limits.
1976	April 10-Dec. 31	3 fish/day; 40 fish annual limit. North of Tillamook Head--Chinook, 24" minimum size; coho, 16" minimum size. South of Tillamook Head, no size limits.
1977	April 30-Oct. 31 November 1-31	Same as in 1976. (State waters off Elk and Chetco rivers)--3 chinook/day; no size limit.
1978	April 29-Oct. 31 November 1-30	3 fish/day; 40 fish annual limit. North of Cape Falcon--chinook, 24" minimum size; coho, 16" minimum size. South of Cape Falcon--chinook, 22" minimum size; coho, 16" minimum size. (State waters off Elk and Chetco rivers)--3 chinook/day; 22" minimum size.
1979	May 12-Sept. 16 November 1-30	2 fish/day south of Cape Falcon; 3 fish/day north of Cape Falcon, of which only 2 may be chinook or coho; 40 fish annual limit. Size limits as in 1978. (State waters off Elk and Chetco rivers)--2 chinook/day; 22" minimum size.
1980	May 10-Sept. 14 ^a / Sept. 15-Oct. 31 November 1-30	3 fish/day lowered to 2 fish/day on July 16; 40 fish annual limit. Size limits as in 1978. (South of Cape Falcon) 2 chinook/day; 22" minimum size. (State waters off Elk and Chetco rivers)--as above.
1981	May 15-Sept. 20 ^b / May 23-Sept. 7 ^b / Sept. 21-Oct. 31 November 1-30	(South of Cape Falcon) 2 fish/day; increased to 3 fish/day on August 14; 40 fish annual limit. Size limits as in 1978. (North of Cape Falcon) 2 fish/day; 40 fish annual limit. Size limit as in 1978. (South of Cape Blanco) 2 chinook per day; 22" minimum size. (State waters off Elk and Chetco rivers)--as above.
1982	May 28-June 11 May 28-Aug. 1 ^c / June 12-August 1 ^c / Aug. 2-Oct. 31 November 1-30	(Between Cape Blanco and Cape Falcon in state waters) first 2 chinook taken per day; barbless hook only. (South of Cape Blanco)--as above. (Entire coast) 2 fish/day north of Cape Falcon; first 2 fish taken/day south of Cape Falcon, regardless of size. Size limit north of Cape Falcon same as in 1978. 40 fish annual limit. (South of Cape Blanco) first 2 chinook taken/day. (State waters off Elk and Chetco rivers) first 2 chinook taken/day.
1983	May 28-Sept. 18 June 18-Sept. 18 June 18-Sept. 11 Sept. 19-Oct. 31 November 1-30	(South of Cape Blanco) first 2 fish taken/day regardless of size. 40 fish annual limit. (Entire coast south of Cape Falcon) as above. (North of Cape Falcon) 2 fish/day (South of Cape Blanco) first 2 chinook taken/day. (State waters off Elk River) first 2 chinook taken/day.

Table 13 (Continued)

Year	Season	Regulations
1984	July 9-Aug. 7	(South of Cape Falcon) 2 fish/day; 40 fish annual limit. Minimum size 20". Single-point barbless hooks.
	July 28-Aug. 8	(Cape Falcon to Columbia River, South Jetty) 2 coho/day; 40 fish annual limit. Minimum size 16". No chinook allowed. Single-point barbless hooks.
	Aug. 9-Aug. 24	Cape Blanco to OR/CA border) 2 chinook/day; 20" minimum size. Single-point barbless hooks.
	Aug. 25-Sept. 3 (State waters only)	(Cape Falcon to Cape Blanco) 1 fish/day; 20" minimum size. Single-point barbless hooks. (Cape Blanco to OR/CA border) 2 fish/day, one of which can be coho; 20" minimum size. Single-point barbless hooks.
	Sept. 4-Oct. 31	(Cape Blanco to OR/CA border) 2 chinook/day; 20" minimum size. Single-point barbless hooks.
	Sept. 15-Sept. 21 ^d / (State waters only)	(Manhattan Beach to Pyramid Rock off Tillamook Bay) 2 chinook/day; 20" minimum size. Single-point barbless hooks.
	November 1-30 (State waters only)	(Cape Blanco to Humbug Mountain-Elk River) 2 chinook/day; 20" minimum size. Single-point barbless hooks.
1985	May 25-May 31	(OR-CA border to Cape Blanco) first 2 fish taken per day; no more than 6 fish may be retained in 7 consecutive days.
	July 1-Sept.	(OR-CA border to Cape Falcon)--as above.
	June 30-Aug. 22	(Cape Falcon to Leadbetter Pt.) 2 fish per day; 40 fish annual bag limit. Minimum size 24" for chinook, 16" for coho and other salmon. Barbless hooks. Area closure: Red Buoy line on Columbia R. mouth north to Klipsan Beach. Fishery closed Fridays and Saturdays.
	Sept. 3-Oct. 31	(OR-CA border to Cape Blanco) first 2 salmon except coho taken per day; no more than 6 fish may be retained in 7 consecutive days.
	Sept. 15-Oct. 31	(Twin Rocks to Pyramid Rock off Tillamook Bay; state waters only) first 2 salmon except coho taken per day; no more than 6 fish may be retained in 7 consecutive days.
1986	Oct. 1-Nov. 30	(Tower Rock to Humbug Mt.; state waters near Elk R.) first 2 salmon except coho taken per day; no more than 6 fish may be retained in 7 consecutive days.
	May 24-Sept. 7	(OR-CA border to Cape Blanco) from May 24 through June 22, not more than 1 coho and 1 chinook per day; after June 22, 2 salmon of any species. Not more than 6 fish may be retained in 7 consecutive days. Minimum size 20" for all salmon; barbless hooks.
	May 24-May 26 and June 28-Aug. 13	(Cape Blanco to Cape Falcon) first 2 fish hooked per day; not more than 6 fish in 7 consecutive days. On July 27, Sundays and Mondays were closed to salmon fishing. On July 29 possession limit reduced to not more than 2 fish in 7 consecutive days.
	June 29-Aug. 19	(Cape Falcon to Leadbetter Point) 2 fish per day; minimum size 24" for chinook and 16" for other salmon. Barbless hooks. Area closure: Red Buoy line at Columbia River mouth north to Klipsan Beach. Fishery closed Fridays and Saturdays.
	Sept. 15-Nov. 15	(Twin Rocks to Pyramid Rock off Tillamook Bay in state waters) first 2 salmon except coho per day; not more than 6 fish in 7 consecutive days; barbless hooks allowed.
	Oct. 1-Nov. 26	(South of Cape Blanco to Humbug Mountain in state waters) 2 salmon except coho per day; not more than 6 fish in 7 consecutive days; barbless hooks only. Minimum size 20".
	Oct. 1-Oct. 31	(South of Bird Island to OR-CA border in state waters) 2 salmon except coho per day; not more than 6 fish in 7 consecutive days; barbless hooks only. Minimum size 20".

^a/ Federal waters (3-200 miles) closed to coho fishing effective September 1.

^b/ Federal waters closed August 26-September 20 for all species of salmon.

^c/ Federal waters closed to coho fishing on July 21, north of Cape Falcon and July 25 south of Cape Falcon.

^d/ Pacific Ocean between 45 degrees 38 minutes N. Latitude and 45 degrees 29 minutes 45 seconds N. latitude and seaward 3 miles.

Table 14. Late 1987 Oregon Ocean Salmon Fisheries for All-Species-Except Coho^{b/}.

Geographic Area	Fishery	Quota	Fishing Season	Open Area	Minimum length Chinook	Special Restriction/ Comments
Tillamook Bay Area	Recreational	None	Sept. 14- Oct. 31	South of Latitude of Twin Rocks (45°35'49" N. Lat) north of latitude of Pyramid Rock (45°29'45") and seaward to 3 miles (state waters)	None	Bag limit: first 2 fish per day; no more than 6 fish in 7 consecutive days. Barbed hooks allowed.
Port Orford Area	Troll	None	Oct. 1- Nov. 30	South of Cape Blanco (42°50'20" N. Lat), north of Latitude of Humbug Mt. (42°40'30"), and seaward to 3 miles (state waters).	26 ^{a/}	Barbless hooks only.
	Recreational	None	Oct. 1- Nov. 30	Same as above	20	Bag limit: 2 fish per day; no more than 6 fish in 7 consecutive days. Barbless hooks only.
Brookings Area	Recreational	None	Oct. 1-31	South of Latitude of Goat (Bird) Island (42°04'N. Lat) north of OR/CA border, and east of (124°20'W. Long.)	20	Bag limit: 2 fish per day; no more than 6 fish in 7 consecutive days. Barbless hooks only. Seaward boundary at approximately the 20 fm line.

^{a/} Head-on (19.5 inches head-off) for chinook salmon.

^{b/} All Fisheries in State Waters (0 to 3 Nautical Miles) except as noted.

OCEAN SALMON SAMPLING

Twenty-three seasonal aides sampled the ocean recreational fishery in 1987. Newport had 4 samplers; Astoria, Garibaldi, Winchester Bay, Coos Bay and Brookings each had 3; Pacific City, Depoe Bay, Florence and Gold Beach each had one sampler. All samplers made boat counts and sampled anglers. One "roving" sampler was used in both the troll and recreational fisheries as needed.

A modified random sampling design was used at each port to survey the ocean recreational fishery. Catch per unit effort data were collected at least 5 days a week, including all weekends and holidays through interviews with ocean anglers at boat ramps, moorages, and charter docks. The salmon catch was sampled for species, marks, and scales. Snouts were collected from marked (adipose-clipped) fish and their coded wire tags were later recovered. We also participated in an economics survey in 1987, collecting data on angler origin.

Effort was primarily obtained through boat counts by ODFW samplers but Coast Guard bar crossing counts and information from charter boat offices were also used. In Pacific City, total effort was estimated from a combination of trailer counts and angler interviews. All catch and effort data were entered and expanded on the Department's Burroughs computer. The survey provided accurate weekly estimates of Oregon's ocean recreational effort and catch within 7 days after the week ended. Preliminary catch estimates were available within a day after the fishing week ended.

Department samplers checked 103,767 salmon in 1987 compared to 101,940 salmon in 1986. Catch sampling rates in 1987 ranged from 75% at Pacific City to 31% at Winchester Bay. Overall, 44% of the total combined salmon catch from all ports was sampled in 1987, identical to 1986 (Table 15).

Table 15. Recreational Ocean Salmon Sampling Rates at Oregon Ports, 1977-87.

Port	Percentage of Catch Sampled ^{a/}										
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Astoria	9	29	35	20	40	42	44	31	57	38	39
Garibaldi	48	33	43	39	36	55	61	35	47	37	40
Pacific City	-	41	-	-	82	87	82	71	72	75	75
Depoe Bay	26	49	47	45	50	68	60	65	60	55	57
Newport	15	15	31	39	40	31	34	48	36	35	33
Florence	-	-	-	-	30	37	44	27	29	41	38
Winchester Bay	21	22	35	33	26	32	33	27	34	33	31
Coos Bay	32	51	47	49	57	63	47	54	48	50	54
Gold Beach	29	23	42	50	48	62	43	47	43	63	64
Brookings	19	20	29	22	21	30	36	42	49	62	57
Coastwide percentage	19	27	37	34	39	44	42	42	47	44	44
Number of samplers	8	11	13	14	16	16	19	20	23	23	23
Sampler months	27	36	47	54	62	51	60	55	47	62	79
^{a/} Percentage of total catch observed by samplers =							$\frac{\text{number of salmon observed}}{\text{estimated catch of salmon}}$				

EFFORT AND CATCH STATISTICS

Effort

Historically, ocean fishing effort data have always included a small number of bottomfishing trips. Since 1979, salmon fishing trips have been tallied separately. The majority of ocean anglers choose salmon fishing over bottomfishing when both fisheries are available. In 1987, 255,000 trips (89%) targeted on salmon and 29,200 trips went out for bottomfish during the salmon season for a combined total of 279,500 angler trips. This total is less than the sum of the salmon and bottomfish trips because of a small number of combination trips. The 1987 salmon angler trips were 3% above the 1979-85 average. The total effort is 16% below the 1971-86 average of 334,700 angler trips which includes years with no closed season or 8 month seasons (Table 16).

In 1987, 130,500 angler trips or 51% of the total salmon trips occurred in July and 62,900 trips or 25% of the total took place in August. June and September had 8% and 10% of the total salmon effort, respectively, but were only open for half a month each. July was also the top month for bottomfishing effort with 10,200 trips or 35% of the total bottomfishing trips (Table 17). Historically, July has the highest salmon effort, especially from Winchester Bay south while August is the top month for the Tillamook-Astoria area. The trend is less defined on the central coast but July is usually the peak month (Table 18).

Brookings had the highest salmon effort in 1987 with 62,300 or 24% of the state's total salmon trips. The salmon season was also the longest on the southern Oregon coast. Newport had the second highest salmon effort with 50,600 angler trips followed by Winchester Bay with 32,200. Salmon effort increased from the 1986 levels in all ports except at the Columbia River and

Table 16. Oregon Ocean Recreational Salmon Catch and Effort for 1966-87^{a/}

Year	Effort (Angler Trips)		Catch			Fish/Angler
	Salmon	Total	Coho	Chinook	Pinks	
1966	-	-	227,900	37,400	-	-
1967	-	-	351,000	42,800	-	-
1968	-	-	265,800	25,100	-	-
1969	-	-	232,900	31,800	-	-
1970	-	-	257,400	42,900	-	-
1971	-	303,700	311,700	29,600	121	1.12
1972	-	331,700	248,400	44,100	58	0.88
1973	-	350,400	232,068	60,984	2,008	0.84
1974	-	335,849	314,501	36,729	34	1.05
1975	-	407,498	252,209	75,719	1,218	0.81
1971-75 Avg	-	345,829	271,776	49,426	1,115^{b/}	0.93
1976	-	538,414	501,306	79,316	50	1.08
1977	-	404,534	195,277	61,364	4,037	0.62
1978	-	403,740	259,769	22,844	24	0.70
1979	301,343	341,770	180,834	20,902	607	0.67
1980	331,443	362,015	325,843	19,014	24	1.04
1981	311,027	350,937	199,812	29,173	1,589	0.74
1982	226,029	275,947	175,128	38,716	14	0.95
1983	226,022	261,456	146,904	24,677	69	0.76
1984	153,061	203,591	123,325	16,992	3	0.91
1985	251,583	270,860	182,486	55,867	7,711	0.97
Long-term average	248,374	334,688	247,421	36,123	2,029^{b/}	0.97
1986	186,483	212,600	211,666	22,366	0	1.26
1987	255,048	279,500	177,439	58,595	904	0.93

^{a/} Prior to 1981, sampling data were supplemented with salmon/steelhead tag data for ports and time periods not sampled.

^{b/} Odd year average

Table 17. Oregon Ocean Recreational Effort by Port, by Month and by Trip Type, 1987.

Port/Trip Type	Month						Total
	May	June	July	August	Sept.	Oct.	
Columbia R.	-	584	8,514	8,075	-	-	17,173
Salmon	-	576	8,514	8,046	-	-	17,136
Bottomfish	-	8	0	29	-	-	37
Garibaldi	-	2,107	12,321	11,304	4,596	-	30,328
Salmon	-	1,363	9,679	9,706	3,456	-	24,204
Bottomfish	-	744	2,642	1,598	1,140	-	6,124
Pacific City	-	474	2,795	1,294	557	-	5,120
Salmon	-	474	2,753	1,237	384	-	4,848
Bottomfish	-	0	42	57	173	-	272
Depoe Bay	-	2,980	15,060	10,018	3,727	-	31,785
Salmon	-	1,930	13,270	8,279	2,817	-	26,296
Bottomfish	-	1,050	1,790	1,739	910	-	5,489
Newport	-	5,243	30,891	18,290	6,883	-	61,307
Salmon	-	3,220	26,706	14,940	5,773	-	50,639
Bottomfish	-	2,023	4,185	3,350	1,110	-	10,668
Florence	-	220	9,188	2,687	1,487	-	13,582
Salmon	-	220	9,180	2,687	1,461	-	13,548
Bottomfish	-	0	8	0	26	-	34
Winchester Bay	-	2,277	18,077	6,686	2,293	-	32,319
Salmon	-	2,267	21,038	6,667	2,275	-	32,247
Bottomfish	-	10	25	19	18	-	72
Coos Bay	-	1,486	10,747	3,698	1,969	-	17,900
Salmon	-	1,448	10,371	3,439	1,449	-	16,707
Bottomfish	-	38	376	259	520	-	1,193
Gold Beach	77	215	2,557	1,147	764	-	4,760
Salmon	65	133	2,345	1,022	543	-	4,108
Bottomfish	12	82	212	125	221	-	652
Brookings	2,673	10,443	27,517	14,816	7,631	6,875	69,955
Salmon	2,253	9,834	26,619	14,145	6,526	5,938	65,315
Bottomfish	420	609	898	671	1,105	937	4,640
Total south of							
Cape Falcon	2,750	25,445	132,139	69,940	29,907	6,875	267,056
Salmon	2,318	20,889	121,961	62,122	24,684	5,938	237,912
Bottomfish	432	4,556	10,178	7,818	5,223	937	29,144
State Total	2,750	26,029	140,653	78,015	29,907	6,875	284,229
Salmon	2,318	21,465	130,475	70,168	24,684	5,938	255,048
Bottomfish	432	4,564	10,178	7,847	5,223	937	29,181

Gold Beach where it decreased slightly (Table 18). Table 19 shows past ocean recreational effort and catch by management areas.

Catch

The sport sampling survey estimated the total salmon catch by species for Oregon's ocean fishery in 1987 except for minor landings at unsurveyed ports. Fish landed at these unsurveyed ports represent less than one percent of the total catch and catch estimates is available later from salmon punch cards. The 1987 success rate was down in all ports except Gold Beach and Brookings compared to 1986. This is not surprising since the estimated OPI coho stock index in 1987 was only half of that in 1986. A strong showing of chinook partly offset the lower coho stocks.

The 1987 total ocean recreational salmon catch was 236,900 fish, a 1% increase from the 1986 level. While less than half of the record 580,700 fish catch in 1976, this is 83% of the 1966-86 average of 285,700 salmon (Table 16). Figure 4 shows the trend in recreational ocean catches since 1966.

Chinook. The recreational harvest of 58,600 chinook in 1987 was 2.6 times the 1986 catch and exceeded all catches since 1977 (Tables 16 and 19). As expected, Brookings and Winchester Bay dominated the chinook landings, taking 42% and 20% of the total catch, respectively (Table 20). However, all ports south of Cape Falcon did well and the Tillamook, Newport, and Coos Bay management areas had record chinook catches. Historically, the Columbia River area has been an important chinook catch area but complex fishery issues and tight quotas north of Cape Falcon have dampened catches (Tables 19 and 21).

July accounted for 43% of the catch (25,100 fish) with Brookings taking 43% of those chinook. Catches continued strong in all ports through the season and 11,000 chinook or 19% of the season's total were landed in September's 13 day season (Tables 20 and 21).

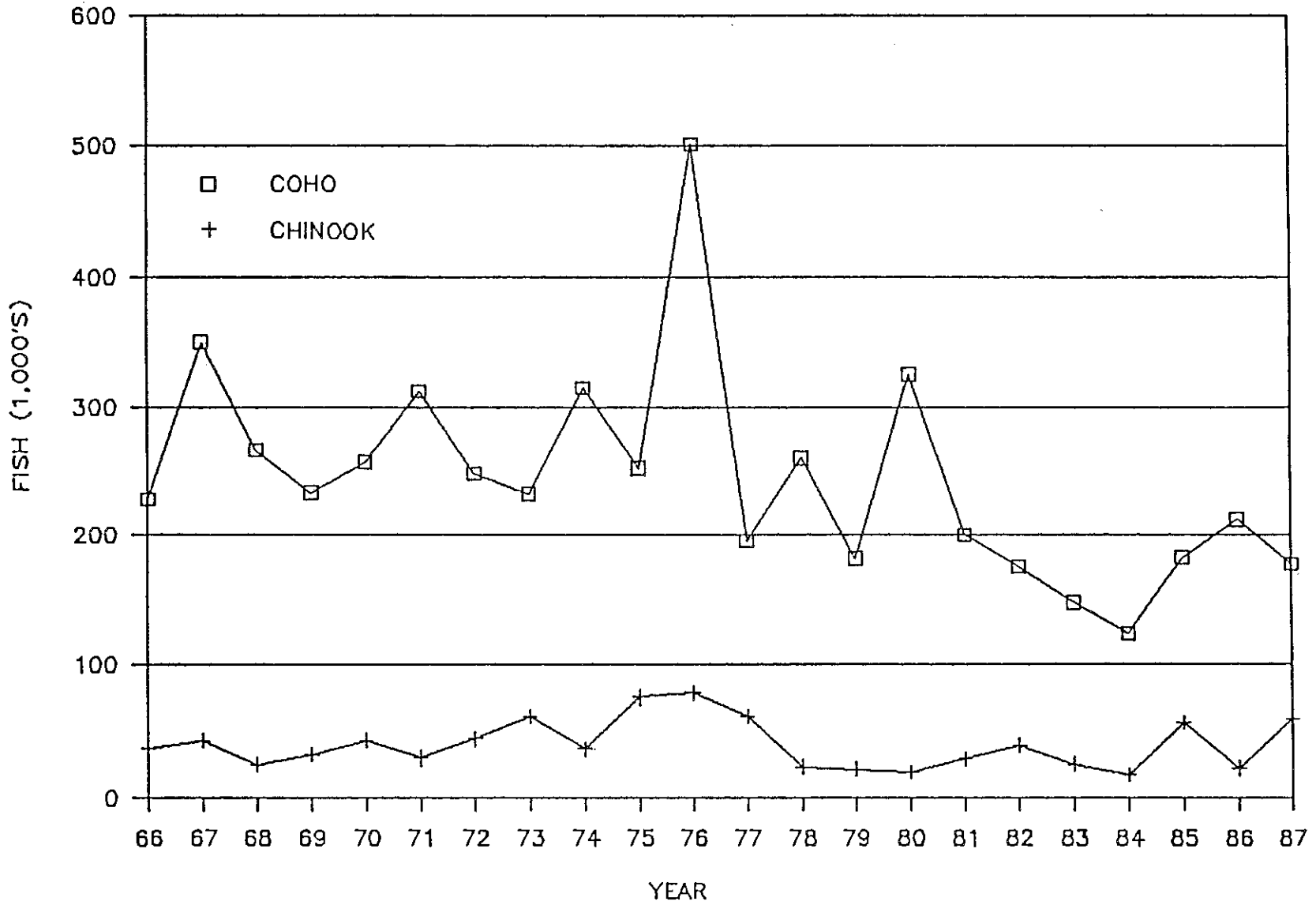


Figure 4. Trends in Oregon's Recreational Ocean Salmon Catch, 1966-87.

Table 18. Oregon Recreational Effort in Salmon Angler Trips by Management Area^{a/} and Month for 1982-1987 and 1979-81 Average.

Area	May	June	July	August	Sept.	Oct.	Nov.	Season ^{b/}
<u>Columbia R</u>								
1979-81 avg.	1,000	5,900	14,200	19,800	3,800	-	-	44,800
1982	-	4,900	22,300	-	-	-	-	27,200
1983	-	2,700	12,900	11,500	3,800	-	-	30,900
1984	-	-	2,000	5,100	-	-	-	7,100
1985	-	600	7,800	11,600	-	-	-	20,000
1986	-	700	12,100	7,800	-	-	-	20,600
1987	-	600	8,500	8,000	-	-	-	17,100
<u>Tillamook</u>								
1979-81 avg.	900	4,600	13,500	16,400	3,600	-	-	38,900
1982	100	2,700	21,800	-	-	-	-	24,600
1983	-	1,200	12,600	7,800	3,700	-	-	25,300
1984	-	-	11,800	10,800	1,200	-	-	23,800
1985	-	-	13,000	21,700	2,200	1,600 ^{c/}	-	38,600
1986	0	1,900	13,000	3,000	-	-	-	17,900
1987	-	1,800	12,400	10,900	3,800	-	-	29,100
<u>Newport</u>								
1979-81 avg.	2,000	11,000	33,300	27,700	3,800	-	-	77,900
1982	200	7,300	46,000	-	-	-	-	53,500
1983	-	3,600	22,800	10,900	5,200	-	-	42,600
1984	-	-	24,000	19,200	800	-	-	44,000
1985	-	-	24,300	44,400	1,800	-	-	70,600
1986	1,400	3,900	38,700	7,900	-	-	-	51,900
1987	-	5,200	40,000	23,200	8,600	-	-	76,900
<u>Coos Bay</u>								
1979-81 avg.	4,500	22,500	41,400	20,700	2,800	-	-	92,900
1982	100	12,000	77,300	-	-	-	-	59,400
1983	-	14,200	36,900	13,600	6,900	-	-	71,600
1984	-	-	22,000	17,900	300	-	-	40,200
1985	-	-	33,100	29,200	1,200	-	-	63,500
1986	800	4,900	33,700	4,200	-	-	-	43,600
1987	-	3,900	40,600	12,800	5,200	-	-	62,500
<u>Brookings</u>								
1979-81 avg.	1,100	11,700	24,900	15,900	3,600	3,400	500	61,000
1982	400	5,200	39,700	10,200	3,000	2,600	300	61,400
1983	800	9,800	22,700	11,200	6,100	5,000	100	55,700
1984	-	-	15,100	16,800	2,900	3,100	-	38,000
1985	4,600	-	28,500	19,300	2,600	4,000	-	59,000
1986	3,500	10,400	20,000	12,900	600	5,000	-	52,400
1987	2,300	10,000	29,000	15,200	7,100	5,900	-	69,400
<u>All Areas</u>								
1979-81 avg.	9,500	55,600	127,300	100,600	17,600	3,400	500	314,600
1982	700	32,100	177,100	10,200	3,000	2,600	300	226,000
1983	800	31,500	108,000	55,100	25,500	5,000	100	226,000
1984	-	-	74,900	69,800	5,300	3,100	-	153,100
1985	4,600	600	106,800	126,200	7,800	5,600	-	251,600
1986	5,700	21,800	117,500	35,900	600	5,000	-	186,500
1987	2,300	21,500	130,500	62,900	24,700	5,900	-	255,000

^{a/} Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

^{b/} By area and calendar month. Season totals may vary from summarized months due to rounding.

^{c/} Only 600 were ocean only trips. Most were combination bay-ocean trips.

Table 19. Summary of Oregon Recreational Ocean Salmon Effort and Catch by Area, 1974-75 Average and 1976-87.

Year	Area ^{a/}					Total
	Columbia R.	Tillamook	Newport	Coos Bay	Brookings	
EFFORT						
(Salmon Angler Trips) ^{b/}						
1974-75 Avg.	75,900	40,900	91,300	104,300	59,200	371,700
1976	100,900	56,500	132,200	154,600	94,200	538,400
1977	60,500	57,500	92,200	113,000	81,200	404,500
1978	63,400	31,700	115,600	104,400	88,600	403,700
1979	43,300	31,000	72,400	94,700	59,900	301,300
1980	46,300	47,800	83,900	97,400	56,000	331,400
1981	44,700	38,000	77,300	83,900	67,100	311,000
1982	27,200	24,600	53,500	59,400	61,300	226,000
1983	30,900	25,300	42,600	71,600	55,700	226,000
1984	7,100	23,800	44,000	40,200	38,000	153,100
1985	20,200	38,500	70,600	63,500	59,000	251,600
1986	20,600	17,900	51,900	43,600	52,400	186,500
1987	17,100	29,100	76,900	62,500	69,400	255,000
CATCH						
Chinook						
1974-75 Avg.	32,600	2,000	4,300	6,800	10,600	56,200
1976	44,600	2,300	4,600	14,600	13,200	79,300
1977	22,600	1,500	2,600	22,700	11,800	61,400
1978	7,900	800	2,100	4,800	7,300	22,800
1979	7,500	1,000	1,400	4,500	6,400	20,900
1980	5,500	1,600	1,800	5,300	4,800	19,000
1981	11,500	1,900	2,400	4,500	8,900	29,200
1982	8,200	1,400	3,500	10,100	15,500	38,700
1983	3,400	700	1,600	6,600	12,400	24,700
1984	< 100	1,100	2,000	4,900	9,000	17,000
1985	3,600	2,600	4,100	9,500	36,100	55,900
1986	1,900	500	2,200	5,900	11,800	22,400
1987	4,000	3,500	6,400	18,900	25,800	58,600
Coho						
1974-75 Avg.	70,700	27,200	65,100	90,100	30,200	283,400
1976	116,700	50,000	118,100	164,800	51,800	501,300
1977	55,300	15,600	34,000	76,300	14,000	195,300
1978	60,200	8,500	61,200	82,800	47,100	259,800
1979	38,000	9,400	36,300	79,000	18,200	180,800
1980	55,600	28,900	72,400	135,900	33,000	325,800
1981	54,300	17,700	61,900	57,600	8,300	199,800
1982	35,500	23,100	44,000	55,600	16,900	175,100
1983	37,200	8,800	21,800	62,700	16,300	146,900
1984	10,900	20,300	41,200	39,400	11,500	123,300
1985	31,000	31,000	61,900	51,200	7,400	182,500
1986	36,900	23,500	78,500	61,100	11,700	211,700
1987	25,300	16,300	64,400	54,000	17,500	177,400

^{a/} Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

^{b/} 1979-1987 effort consists of salmon angler trips only.

Table 20. Oregon Ocean Recreational Chinook Catch by Port by Month^a/, 1987.

Port	Month						Total
	May	June	July	Aug.	Sept.	Oct.	
Columbia R.	-	190	1,991	1,838	-	-	4,019
Garibaldi	-	59	634	1,807	548	-	3,048
Pacific City	-	13	172	199	83	-	467
Depoe Bay	-	67	744	829	862	-	2,502
Newport	-	153	1,598	1,287	834	-	3,872
Florence	-	30	2,248	398	685	-	3,361
Winchester Bay	-	595	5,838	3,508	1,663	-	11,604
Coos Bay	-	303	2,558	628	419	-	3,908
Gold Beach	2	27	926	278	145	-	1,378
Brookings	113	3,806	8,368	5,277	5,738	1,134	24,436
Total South of Cape Falcon	115	5,503	23,082	14,211	10,977	1,134	54,576
Statewide Total	115	5,243	25,073	16,047	10,977	1,134	58,595

^a/ Monthly totals are the sum of statistical weeks estimates with closest fit to calendar month.

Table 21. Oregon Ocean Recreational Chinook Catch (Number of Fish) by Catch Area and Month, 1982-1987, with 1974-75 and 1979-81 Averages.

Area ^a	Chinook								
	April	May	June	July	August	Sept.	Oct.	Nov.	Season ^b
Columbia R									
1974-75 ave.	100	600	2,800	12,800	10,500	5,700	100	-	32,600
1979-81 ave.	-	250	1,100	2,200	4,100	700	-	-	8,200
1982	-	-	2,200	6,000	-	-	-	-	8,200
1983	-	-	1,000	1,600	500	200	-	-	3,400
1984	-	-	-	-	-	-	-	-	-
1985	-	-	<100	1,300	2,200	-	-	-	3,600
1986	-	-	<100	1,200	700	-	-	-	1,900
1987	-	-	200	2,000	1,800	-	-	-	4,000
Tillamook									
1974-75 ave.	<50	<50	100	200	1,100	300	200	-	2,000
1979-81	-	<50	100	500	700	200	-	-	1,500 ^{c/}
1982	-	-	100	1,300	-	-	-	-	1,400
1983	-	-	<100	400	200	100	-	-	700
1984	-	-	-	600	500	<100	-	-	1,100
1985	-	-	-	1,100	1,400	<100	<100	-	2,600
1986	-	0	>50	200	200	-	-	-	500
1987	-	-	<100	800	2,000	600	-	-	3,500
Newport									
1974-75 ave.	<50	<50	600	1,800	1,400	300	100	-	4,300
1979-81 ave.	-	100	300	700	600	150	-	-	1,900 ^{d/}
1982	-	-	600	2,900	-	-	-	-	3,500
1983	-	-	400	800	300	200	-	-	1,600
1984	-	-	-	1,100	900	<100	-	-	2,000
1985	-	-	-	1,400	2,600	<100	-	-	4,100
1986	-	100	100	1,800	100	-	-	-	2,200
1987	-	-	200	2,300	2,100	1,700	-	-	6,400
Coos Bay									
1974-75 ave.	<50	200	700	1,600	2,900	1,000	200	-	6,800
1979-81 ave.	-	100	1,400	2,200	800	200	-	-	4,800
1982	-	<50	1,000	9,100	-	-	-	-	10,100
1983	-	-	1,300	2,400	1,100	1,700	-	-	6,600
1984	-	-	-	2,200	2,600	<100	-	-	4,900
1985	-	-	-	4,400	4,900	100	-	-	9,500
1986	-	>50	1,000	4,400	500	-	-	-	2,200
1987	-	-	900	10,600	4,500	2,800	-	-	18,900
Brookings									
1974-75 ave.	<50	<50	300	3,400	4,200	1,200	1,000	-	10,600
1979-81 ave.	-	200	1,300	2,300	2,000	200	400	<100	6,700
1982	-	<50	800	12,700	1,500	200	200	<50	15,500
1983	-	500	3,400	4,900	1,500	1,000	1,000	<50	12,400
1984	-	-	-	1,900	5,600	1,100	400	-	9,000
1985	-	2,500	-	23,000	9,700	400	600	-	36,100
1986	-	1,100	2,700	3,500	3,900	<50	600	-	11,800
1987	-	100	3,800	9,300	5,600	5,900	1,100	-	25,800
All Areas									
1974-75 ave.	200	900	4,800	19,700	19,700	9,200	1,800	-	56,200
1979-81 ave.	-	700	4,100	8,000	8,500	1,200	400	<100	23,000
1982	-	<50	4,700	31,900	1,500	200	200	<50	38,700
1983	-	500	6,100	10,100	3,600	3,300	1,000	-	24,700
1984	-	-	-	5,800	9,600	1,200	400	-	17,000
1985	-	2,500	<100	31,400	20,800	600	600	-	55,900
1986	-	1,200	4,000	11,100	5,400	<50	600	-	22,400
1987	-	100	5,200	25,100	16,000	11,000	1,100	-	58,600

^{a/} Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

^{b/} Individual monthly catches may not equal season total due to rounding. Season totals for individual catch areas for 1974-75 data may not equal the sum of combined months due to some effort/landings not identified by port of landing. "All Areas" summary includes unidentified data.

^{c/} Includes Nehalem Bay.

^{d/} Includes Salmon and Siletz Rivers and Alsea Bay.

Coho. The ocean recreational coho catch of 177,400 fish was the fourth lowest on record since 1966 and only 65% of the 1971-75 average of 271,800 coho. The long term 1966-85 average coho catch is 247,400 fish (Table 16).

Persistent ocean upwelling in May and June scattered the coho stocks offshore and unfavorable weather kept the pleasure boat fleet inshore. Only 4,300 coho or 2% of the total harvest was landed in June, compared to a more typical 25 to 13% (1979-81 and 1974-75 averages). July was the peak harvest month with 121,700 fish or 69% of the season's total. Newport landed the most coho, 38,900 fish or 22% of the total, but the Columbia River area, Winchester Bay and Depoe Bay each landed more than 25,000 fish, together accounting for another 45% of the total catch. Landings were down from 1986 in all ports except Gold Beach and Brookings (Table 22). An historical perspective on coho catch by month and management area is shown in Tables 19 and 23.

Table 22. Oregon Ocean Recreational Coho Catch by Port by Month, 1987^{a/}

Port	Month					Total
	May	June	July	August	September	
Columbia R.	-	864	12,209	12,226	-	25,299
Garibaldi	-	480	7,274	4,212	611	12,577
Pacific City	-	95	2,882	708	53	3,738
Depoe Bay	-	789	16,678	5,915	2,047	25,429
Newport	-	515	25,790	8,389	4,249	38,943
Florence	-	4	8,419	1,264	554	10,241
Winchester Bay	-	420	23,648	3,103	1,082	28,253
Coos Bay	-	596	12,392	1,994	498	15,480
Gold Beach	0	0	1,460	118	40	1,618
Brookings	1	492	10,946	3,022	1,371	15,861 ^{b/}
Total South of Cape Falcon	1	3,391	109,489	28,725	10,505	152,140
Statewide Total	1	4,255	121,698	40,951	10,505	177,439 ^{b/}

^{a/} Monthly totals are the sum of statistical weeks estimates with closest fit to calendar month.

^{b/} Includes 29 illegal coho landed in October.

Table 23. Oregon Ocean Recreational Coho Catch (Number of Fish) by Catch Area and Month, 1982-87, with 1974-75 and 1979-81 Averages.

Area ^{a/}	Coho								Season ^{b/}
	April	May	June	July	August	Sept.	Oct.	Nov.	
Columbia R									
1974-75 ave.	200	800	3,900	17,600	35,000	11,700	100	-	70,700
1979-81 ave.	-	1,300	10,700	17,100	17,400	2,900	-	-	49,300
1982	-	-	5,300	30,200	-	-	-	-	35,500
1983	-	-	3,600	18,900	9,700	5,100	-	-	37,200
1984	-	-	-	3,600	7,300	-	-	-	10,900
1985	-	-	700	11,600	18,800	-	-	-	31,000
1986	-	-	1,300	21,500	14,000	-	-	-	36,900
1987	-	-	900	12,200	12,200	-	-	-	25,300
Tillamook									
1974-75 ave.	<50	100	1,500	5,000	15,300	4,500	200	-	27,200
1979-81 ave.	-	200	3,100	6,300	8,500	700	-	-	18,700 ^{c/}
1982	-	-	1,300	21,800	-	-	-	-	23,100
1983	-	-	200	6,100	1,600	900	-	-	8,800
1984	-	-	-	9,300	10,600	500	-	-	20,300
1985	-	-	-	8,900	21,700	400	-	-	31,000
1986	-	0	3,300	15,200	5,000	-	-	-	23,500
1987	-	-	600	10,200	4,900	700	-	-	16,300
Newport									
1974-75 ave.	100	100	8,100	24,800	26,400	4,500	100	-	65,100
1979-81 ave.	-	300	9,500	27,000	18,300	2,800	-	-	56,900 ^{d/}
1982	-	-	3,600	40,500	-	-	-	-	44,000
1983	-	-	600	13,500	4,300	3,500	-	-	21,800
1984	-	-	-	24,700	16,400	100	-	-	41,200
1985	-	-	-	14,900	45,700	1,400	-	-	61,900
1986	-	1,500	7,300	56,100	13,600	-	-	-	78,500
1987	-	-	1,300	42,500	14,300	6,300	-	-	64,400
Coos Bay									
1974-75 ave.	300	3,400	17,900	39,100	21,000	6,700	200	-	90,100
1979-81 ave.	-	5,000	28,100	39,100	13,900	900	-	-	90,800
1982	-	-	12,200	43,400	-	-	-	-	55,600
1983	-	-	20,700	28,300	9,200	4,500	-	-	62,700
1984	-	-	-	19,600	19,700	100	-	-	39,400
1985	-	-	-	30,900	19,700	500	-	-	51,200
1986	-	1,000	7,700	46,300	6,000	-	-	-	61,100
1987	-	-	1,000	44,500	6,400	2,100	-	-	54,000
Brookings									
1974-75 ave.	100	900	4,100	16,000	5,300	3,100	100	-	30,200
1979-81 ave.	-	200	7,300	9,800	2,400	200	-	-	19,800
1982	-	<50	1,700	15,200	-	-	-	-	16,900
1983	-	500	4,900	8,900	1,600	500	-	-	16,300
1984	-	-	-	7,400	4,000	200	-	-	11,500
1985	-	<50	-	4,900	2,500	<50	-	-	7,400
1986	-	1,500	2,500	5,600	2,100	0	0	-	11,700
1987	-	1	500	12,400	3,100	1,400	<50	-	17,500
All Areas									
1974-75 ave.	800	5,800	36,500	102,500	103,000	33,900	900	-	283,400
1979-81 ave.	-	6,900	58,800	100,200	63,300	6,300	-	-	235,700
1982	-	<50	24,100	151,000	-	-	-	-	175,100
1983	-	500	30,000	75,600	26,400	14,400	-	-	146,900
1984	-	-	-	64,600	57,900	900	-	-	123,300
1985	-	<50	700	71,100	108,300	2,300	-	-	182,500
1986	-	4,000	22,200	144,700	40,800	-	-	-	211,700
1987	-	1	4,300	121,700	41,000	10,500	<50	-	177,400

^{a/} Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

^{b/} Individual monthly catches may not equal season total due to rounding. Season totals for individual catch areas for 1974-1975 data may not equal the sum of combined months due to some effort/landings not identified by port of landing. "All Areas" summary includes unidentified data.

^{c/} Includes Nehalem Bay.

^{d/} Includes Salmon and Siletz Rivers and Aisea Bay.

Pink Salmon. The catch of pink salmon is minor in Oregon, averaging 2,200 fish for odd years, 1971-85. The 900 pink salmon caught in 1987 is only 41% of that average and is the fourth lowest odd year catch in that time span.

July had the highest catch with 700 fish or 82% of the total. The Winchester Bay-Coos Bay areas landed 52% of the catch (475 fish) with Newport and Depoe Bay accounting for another 32% (Table 24).

Table 24. Oregon Ocean Recreational Pink Salmon Catch by Port by Month, 1987.

Port	Month				Total
	June	July	August	September	
Columbia River	0	20	3	0	23
Garibaldi	9	45	8	0	62
Pacific City	0	17	2	0	19
Depoe Bay	3	52	67	1	123
Newport	10	136	18	2	166
Florence	0	8	1	2	11
Winchester Bay	4	263	5	0	272
Coos Bay	21	177	4	1	203
Gold Beach	0	0	3	0	3
Brookings	1	20	1	0	22
Total south of Cape Falcon	48	718	109	6	881
Statewide Total	48	738	112	6	904

Table 25. Weekly Effort and Salmon Catch in the 1987 Buoy 10 Recreational Fishery^{a/}

Week	Ending Date of Period		Angler Trips	Catch	
				Chinook	Coho
33	Aug. 16	WA	3,531	1,236	2,669
		OR	2,407	634	1,451
		Total	5,938	1,870	4,120
34	Aug. 23	WA	22,318	9,951	7,765
		OR	12,147	4,012	3,448
		Total	34,465	14,023	11,213
35	Aug. 30	WA	22,732	10,860	7,994
		OR	13,307	4,937	4,549
		Total	36,039	15,797	12,543
36	Sept. 6	WA	8,974	4,257	4,569
		OR	5,222	2,213	2,599
		Total	14,196	6,470	7,168
37	Sept. 13	WA	14,410	2,454	5,997
		OR	9,038	1,150	2,946
		Total	23,438	3,604	8,943
38	Sept. 20	WA	4,506	301	1,415
		OR	2,847	144	597
		Total	7,353	445	2,012
39	Sept. 27	WA	1,809	70	944
		OR	695	4	132
		Total	2,504	74	1,076
40 ^{b/}	Oct. 4	WA	757	6	310
		OR	291	0	43
		Total	1,048	6	353
TOTALS		WA	79,137	29,135	31,663
		OR	45,844	13,154	15,765
GRAND TOTAL			124,981	42,289	47,428

^{a/} Includes boat anglers and shore anglers at Clatsop Spit and Columbia River North Jetty.

^{b/} Oregon data for week 40 extrapolated from Washington estimates.

CHARTER/PRIVATE BOAT FISHERIES

There were 254 charter boat licenses issued in 1987 but only about 152 vessels (60%) were active. This compares to about 143 vessels (58%) active last year out of 247 licensed. No estimate is available of the number of individual private boats that fished. Since 1973, catch and effort statistics have been compiled by boat type at all ports sampled.

Charters

Effort. The 1987 charter boat effort was estimated at 60,900 salmon angler trips, up 28% from the 1986 level and 11% above the 1979-86 average (54,400) for charter angler trips. The data prior to 1979 includes bottomfish effort. Charter anglers made up 24% of the total ocean salmon trips in 1987, compared to 23% in 1986 and the 1979-86 average of 22% (Table 26, Figure 5).

Charter boat fleets operate out of most major Oregon ports but vary greatly in size and number of vessels. The Astoria-Warrenton-Hammond area had the largest fleet in 1987 (50 boats) but only 8,000 salmon angler trips in the ocean. In contrast, the 1979-83 average for Astoria area charter trips for comparable time periods was 12,900. This 38% decrease reflects, in part, the Friday-Saturday prohibition on salmon fishing north of Cape Falcon. The same value for 1986 was 40%. Depoe Bay, with 25 active charter boats, had the most salmon effort with 14,700 angler trips, closely followed by Newport (32 boats) with 13,700 trips. Salmon charter effort was up in all ports except Florence compared to 1986 (Table 26).

Not all charter anglers go salmon fishing during the salmon season. Salmon is the primary pursuit of the Astoria and Winchester Bay charters but bottomfishing is important to the Garibaldi, Depoe Bay, Newport, and Coos Bay charter fleets (Table 27). Coastwide in 1987, 21,000 trips (26%) of the total 81,900 charter trips targeted on bottomfish during the sampling season. In

1986, 17,200 (30%) of the total charter anglers went bottomfishing during the salmon season.

Catch. Charter anglers landed 60,700 coho, 14,100 chinook and 300 pink salmon in 1987. The total catch of 75,100 salmon by charter anglers in 1987 is the same as in 1986 even though the effort increased 28% this year. The charter fleet landed 32% of the total recreational salmon catch in 1987, same as in 1986 and approaching the 1973-86 average share of 34% or 95,600 fish (Figure 5).

The Depoe Bay charter fleet landed 16,100 salmon or 21% of the total catch in 1987. Success varied through most of the season with a final average of 1.1 salmon/angler. Astoria, Newport, and Winchester Bay charters took 15,100, 14,400, and 14,300 salmon respectively and averaged 1.9, 1.1, and 1.4 salmon/angler. These four ports made up 80% of the charter catch (Table 29). The state-wide average charter angler success was 1.2 fish/angler, same as the 1979-86 average.

Private Anglers

Effort. The 1987 salmon effort by private boats was estimated at 194,100 angler trips or 76% of the total salmon effort. This total contrasts with the 1986 effort of 142,800 and matches the 1979-86 average of 194,000 trips (Table 26 and Figure 5). Brookings as usual had most effort with 62,100 private salmon trips or 32% of the coast total. Brookings' relatively long salmon season, safe bar, and large population of retired people all contribute to make this the leading small boat port on the Oregon coast. Newport, often a contender with Brookings for the most effort, had 36,900 angler trips or 19% of the total followed by Winchester Bay with 22,100 salmon angler trips. These three ports accounted for 62% of the total private boat effort. Astoria's 9,100 angler trips is 19% below the 1979-83 average for pleasure

Table 26. Oregon Ocean Recreational Salmon Effort and Catch by Boat Type, 1987^{a/}

Port	Salmon Charter Boats					Salmon Private Boats				
	Boat Trips	Angler Trips	Salmon Catch			Boat Trips	Angler Trips	Salmon Catch		
			Chinook	Coho	Pink			Chinook	Coho	Pink
Columbia R.	998	8,043	1,915	13,182	12	2,626	9,093	2,104	12,117	11
Garibaldi	612	5,217	844	4,714	25	7,445	18,987	2,204	7,863	37
Pacific City	55	238	27	328	0	1,518	4,610	440	3,410	19
Depoe Bay	1,771	14,666	1,389	14,747	84	3,974	11,630	1,113	10,682	39
Newport	1,645	13,725	1,559	12,799	79	12,858	36,914	2,313	26,144	87
Florence	65	625	196	450	1	4,842	12,923	3,165	9,791	10
Winchester Bay	1,557	10,169	4,740	9,494	93	8,267	22,078	6,864	18,759	179
Coos Bay	474	3,606	955	3,450	30	5,023	13,101	2,953	12,030	173
Gold Beach	257	1,399	390	446	0	1,219	2,709	988	1,172	3
Brookings	525	3,211	2,125	1,064	5	26,358	62,104	22,311	14,797	17
Total	7,959	60,899	14,140	60,674	332	74,130	194,149	44,455	116,765	575
Combined totals for all Oregon craft	82,089	255,048	58,595	177,439	907					

^{a/} All ports were sampled the entire ocean salmon season except Garibaldi where sampling ended September 13.

Table 27. Oregon Ocean Recreational Effort and Catch by Boat and Trip Type^{a/} 1987^{b/}.

Port	Charter						Private					
	Boat Trips		Angler Trips		Total Catch		Boat Trips		Angler Trips		Total Catch	
	Sal	Bot ^{c/}	Sal	Bot ^{c/}	Sal ^{d/}	Bot ^{c/}	Sal	Bot ^{c/}	Sal	Bot ^{c/}	Sal ^{d/}	Bot ^{c/}
Columbia R.	997	1	8,043	4	15,109	149	2,626	6	9,093	33	14,232	480
Garibaldi	612	510	5,217	5,303	5,583	45,255	7,445	300	18,987	821	10,104	7,360
Pacific City	55	10	238	37	355	191	1,444	156	4,610	235	3,869	4,921
Depoe Bay	1,771	633	14,666	5,121	16,220	25,930	3,974	158	11,630	368	11,834	3,910
Newport	1,645	1,038	13,725	9,250	14,437	35,314	12,851	517	36,914	1,418	28,544	10,172
Florence	65	1	625	12	647	194	4,837	10	12,923	22	12,966	330
Winchester Bay	1,557	3	10,169	13	14,327	143	8,267	23	22,078	59	25,802	445
Coos Bay	474	76	3,606	579	4,435	4,066	5,023	242	13,101	614	15,156	7,646
Gold Beach	254	48	1,399	258	836	3,509	1,215	191	2,709	394	2,163	6,496
Brookings	525	79	3,211	420	3,189	4,016	26,410	1,884	62,104	4,220	37,125	57,784
Total	7,955	2,399	60,899	20,997	75,143	118,776	74,092	3,487	194,149	8,184	161,795	99,544

^{a/} Trip-types are separated by boat trips that target for salmon (SAL) and for bottomfish (BOT). Combination salmon and bottomfish trips are included in salmon trip estimates.

^{b/} All ports were sampled the entire ocean salmon season except for Garibaldi where sampling ended September 13.

^{c/} Bottomfish include rockfish, lingcod, flatfish and miscellaneous species.

^{d/} Includes chinook, coho, pink, and chum salmon.

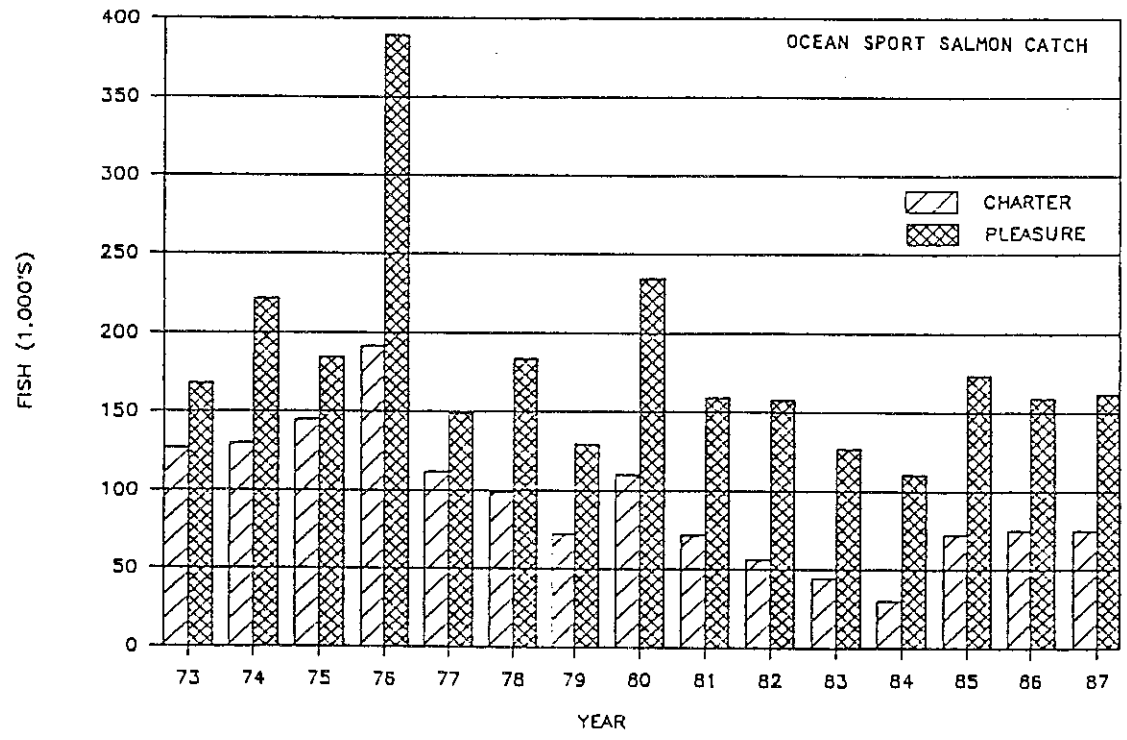
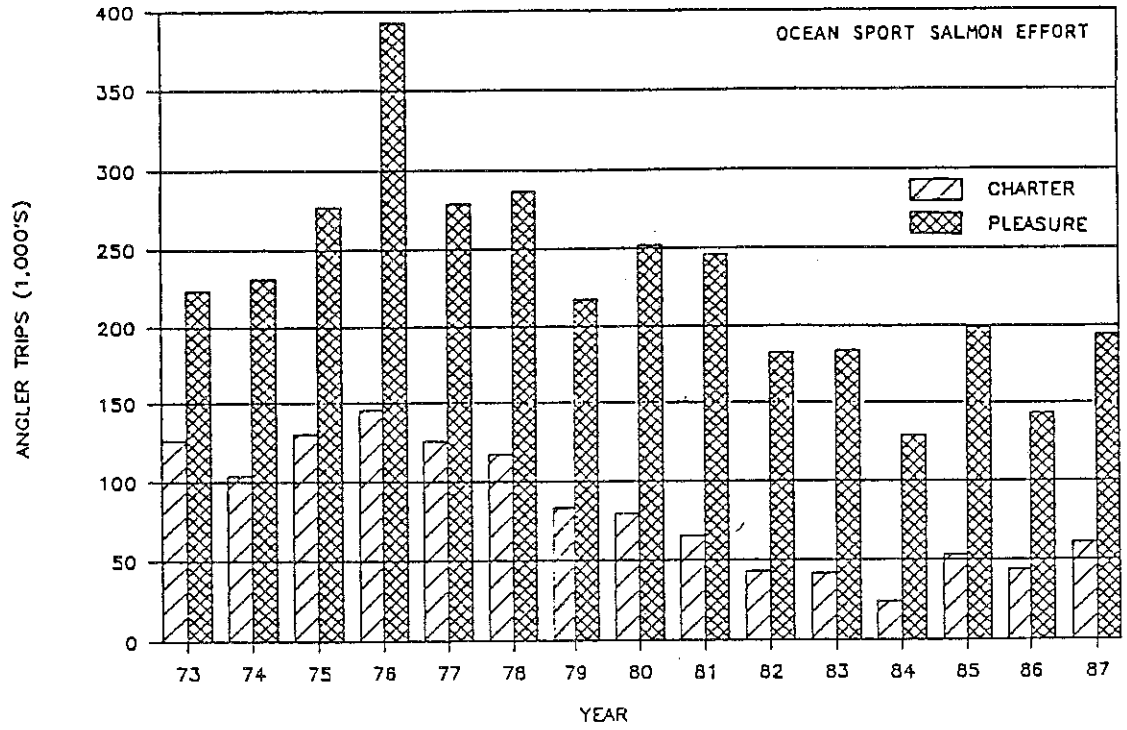


Figure 5. A Comparison of Effort and Catch by Oregon Ocean Salmon Charter and Pleasure Anglers, 1973-87.

boats for comparable time periods (15,800 angler trips). This, in part, reflects the Friday-Saturday restriction on salmon fishing and inshore area closures.

As with charters, some private boats only fish for bottomfish, even during the salmon season. Effort data by trip type (salmon or bottomfish) was collected through interviews and applied proportionately to the total effort counts. These data showed that 8,200 angler trips or 4% of the private trips targeted on bottomfish, compared to 12,000 angler trips or 8% in 1986. Brookings had the most private bottomfish anglers, followed by Newport (Table 27). Almost all anglers target on salmon in the Columbia River, Florence, and Winchester Bay areas.

Catch. Anglers from private boats landed 116,800 coho, 44,500 chinook and 600 pink salmon in in 1987. The total salmon catch of 161,804 fish in 1987 is 2% above the 1986 catch and 11% less than the 1973-86 average of 181,800 fish (Figure 5). Private boat anglers caught 68% of the total recreational salmon catch in 1987 compared to the 1973-86 average of 66%.

Brookings anglers caught the most salmon, 37,100, or 23% of the total private boat angler catch. Angler success was 0.6 fish/angler. Anglers in Newport and Winchester Bay landed 28,500 and 25,800 salmon with an average success rate of 0.7 and 1.2 fish/angler respectively. These three ports accounted for 56% of the total private boat angler catch but Astoria and Coos Bay also had substantial catches. The average angler success on private boats was 0.8 salmon/angler, compared to 1.1 in 1986 and the 1979-86 average of 0.8 (Table 26).

EVALUATION OF MINIMUM SIZE LIMITS

North of Cape Falcon

The number of shakers (undersized salmon or prohibited species) was estimated from interview data collected during the ocean sampling survey. We estimated that 2,500 chinook (38%) were released in the Columbia River area during the ocean season. Shaker rates have always been high in this area with the 1979-86 average (less 1984) shaker rate for chinook at 58% (Table 28).

Table 28. Chinook Salmon Released by Oregon Ocean Recreational Anglers in the Columbia River Area, 1979-1987.

Year	Number of Fish Retained	Number of Fish Released	Total Number of Fish Caught	Percentage of Catch Released
1979	7,072	8,719	15,791	55
1980	5,503	7,891	13,394	59
1981	11,516	21,664	33,180	65
1982	8,235	6,949	15,184	46
1983	3,440	3,671	7,111	52
1984	26 ^{a/}	1,410	1,436	98
1985	3,565	5,235	8,800	59
1986	1,909	2,320	4,229	55
1979-86 Average^{b/}	5,891	8,266	14,157	58
1987	4,019	2,467	6,486	38

^{a/} Illegal or taken south of Cape Falcon

^{b/} Excluding 1984

The minimum size limit for coho in the Columbia River area was 16 inches. The shaker rate was 8% in 1987, compared to the 1979-86 average of 7% (Table 29).

Table 29. Coho Salmon Released by Oregon Ocean Recreational Anglers in the Columbia River Area, 1979-1987.

Year	Number Retained	Number Released	Total Catch	Percentage of catch released
1979	37,894	4,905	42,799	12
1980	55,647	1,905	57,552	3
1981	54,294	1,643	55,937	3
1982	35,476	2,082	37,558	6
1983	37,245	8,318	45,563	18
1984	10,874	654	11,528	6
1985	31,010	1,275	32,285	4
1986	36,666	2,197	38,863	6
1979-85 Average	37,388	2,872	40,260	7
1987	25,299	2,145	27,444	8

South of Cape Falcon

Anglers fishing between Cape Falcon and Cape Blanco were required to keep the first two salmon caught regardless of size in 1987, same as in 1986, 1985, 1983, and 1982. South of Cape Blanco there was a 20 inch minimum size limit in effect for all salmon.

The season's total for chinook released was 22% (Table 30). This is almost 2.5 times the 1986 release rate. Coho shaker data indicated that 13% of the season's coho catch was released (Table 31).

Table 30. Chinook Salmon Released by Oregon Ocean Recreational Anglers South of Cape Blanco, 1987.

Month	No. of Fish Retained	No. of Fish Released	Total Number of Fish Caught	Percentage of catch released
May	115	3	118	2
June	3,833	800	4,633	17
July	9,293	3,691	12,984	28
August	5,555	828	6,383	13
September	5,884	1,940	7,284	25
October	1,133	226	1,359	17
Total	25,813	7,488	33,301	22

Table 31. Coho Salmon Released by Oregon Ocean Recreational Anglers South of Cape Blanco, 1987.

Month	No. of Fish Retained	No. of Fish Released	Total Number of Fish Caught	Percentage of catch released
May	1	1	2	50
June	493	58	551	11
July	12,408	1,697	14,105	12
August	3,139	255	3,394	8
September	1,411	144	1,555	9
October	28	453	481	94
Total	17,480	2,608	20,088	13

SPECIAL RECREATIONAL SEASONS

Oregon anglers had three ocean salmon fishing opportunities in addition to the seasons set by the Pacific Fishery Management Council: (1) a mid September-through October chinook fishery off Tillamook Bay, (2) an October chinook fishery off Brookings, and (3) a November chinook fishery in state waters between Cape Blanco and Humbug Mountain. In addition, the Buoy 10 fishery inside the Columbia River is popular with many ocean anglers.

September-October Fishery off Tillamook Bay

The Fish and Wildlife Commission set an open season for all salmon except coho in state waters off Tillamook Bay between Twin Rocks (45° 35' 49" N. Lat.) and Pyramid Rock to the south (45° 29' 45" N. Lat.) and seaward to 3 miles. The season was set for September 15 through October 31. The bag limit remained the first two fish caught with either barbed or barbless hooks permitted.

This fishery targets on returning hatchery fall chinook and most of the effort and catch is inside Tillamook Bay. Some of the boats will troll across the bar and circle right back into the bay again. Our 1985 creel between September 15 and October 31 estimated a total 19,300 angler trips of which 2,650 (18%) crossed the Tillamook Bay bar but only 600 (3%) fished only in the ocean. Our 1985 survey estimated an ocean catch of 66 chinook and 5 coho (illegal). We did not have a statistical creel of this late fishery in 1986 or 1987.

October-November Fisheries South of Cape Blanco

Traditionally, the recreational fishery off Brookings stayed open through October. In 1987, the season closed after September 13 but reopened for salmon (except coho) in October (Table 14). Two samplers were assigned to

this late creel. We sampled 48% of the 1,134 chinook catch, recovered 41 tagged fish (including one coho) and documented 5,938 salmon angler trips. An estimated 29 coho were landed illegally. Although 20 of the 40 tagged chinook were Chetco River releases, we also saw fish from Elk, Feather, Trinity, Merced and Mokelumne rivers.

The November chinook fishery in state waters between Cape Blanco and Humbug Mountain is inaccessible to most recreational anglers and was not sampled.

Buoy 10 Fishery Inside the Columbia River

The river mouth opened August 16 with quotas of 30,000 chinook and 90,000 coho. The area closed on August 30 but reopened September 4 for the Labor Day weekend. The fishery continued on September 8 without a quota and remained open for the remainder of the year. We sampled the Buoy 10 fishery until the end of September. The total Oregon estimated effort was 45,800 angler trips and harvest was 13,200 chinook and 15,800 coho (Table 25). This fishery is discussed in more detail in the 1987 Annual Report on the Lower Columbia River and Estuary Salmon (Buoy 10) Recreational Fisheries by Sam Hess and Steve King of the Department's Columbia River Management Group.

RECREATIONAL OCEAN SALMON CODED-WIRE TAG SAMPLING

Samplers at ten ports observed 44% of the combined chinook and coho landed during the 1987 port sampling survey.

Chinook

The samplers examined 28,196 chinook and found 1,557 or 6% had been adipose fin clipped (Table 32). The samplers collected 1,546 heads from these fish in order to recover coded-wire tags. An additional 38 chinook heads were taken from marked fish that were not sampled in the survey. Department staff found readable tags in 1,434 of the 1,584 chinook heads for a 90% recovery ratio.

Major contributors of the chinook tags were:

California Department of Fish and Game	59%
Oregon Department of Fish and Wildlife	21%
Washington Department of Fisheries	14%
Various private hatcheries	3%

Coho

The samplers examined 75,571 coho and found that 4,857 or 6% had their adipose fin clipped (Table 33). They collected 4,723 heads from these marked fish for coded wire recovery. An additional 76 coho heads were collected from marked fish that were not sampled in the survey. Technicians found 4,197 readable tags in the 4,796 coho heads. This is an 87% recovery ratio.

Major agencies contributing coho tags were:

Oregon Department of Fish and Wildlife	51%
Washington Department of Fisheries	15%
Various private hatcheries	23%

Table 33. Coho Coded-wire Tag Sampling Data from the Ocean Recreational Fishery, by Port and Month, 1987.

Port	May	June	July	August	September	October	Total
<u>Columbia R.</u>							
Total Catch	-	864	12,209	12,226	-	-	25,299
No. Sampled	-	459	4,866	4,559	-	-	9,884
% Sampled	-	53%	39%	3%	-	-	39%
No. Ad Marks	-	19	229	204	-	-	452
<u>Garibaldi</u>							
Total Catch	-	480	7,274	4,212	611	-	12,577
No. Sampled	-	240	2,883	1,635	332	-	5,090
% Sampled	-	50%	39%	38%	54%	-	40%
No. Ad Marks	-	19	159	87	29	-	294
<u>Pacific City</u>							
Total Catch	-	95	2,882	708	53	-	3,738
No. Sampled	-	67	2,085	598	46	-	2,796
% Sampled	-	70%	72%	84%	86%	-	74%
No. Ad Marks	-	3	106	21	1	-	131
<u>Depoe Bay</u>							
Total Catch	-	789	16,678	5,915	2,047	-	25,429
No. Sampled	-	515	9,595	3,394	1,005	-	14,509
% Sampled	-	65%	57%	57%	49%	-	57%
No. Ad Marks	-	43	622	255	58	-	978
<u>Newport</u>							
Total Catch	-	515	25,790	8,389	4,249	-	38,943
No. Sampled	-	301	7,875	3,313	1,167	-	12,656
% Sampled	-	58%	30%	39%	27%	-	32%
No. Ad Marks	-	30	528	212	64	-	834
<u>Florence</u>							
Total Catch	-	4	8,419	1,264	554	-	10,241
No. Sampled	-	2	2,902	637	260	-	3,801
% Sampled	-	50%	34%	50%	46%	-	37%
No. Ad Marks	-	0	207	50	22	-	279
<u>Winchester Bay</u>							
Total Catch	-	420	23,648	3,103	1,082	-	28,253
No. Sampled	-	185	7,092	1,219	309	-	8,805
% Sampled	-	44%	29%	39%	28%	-	31%
No. Ad Marks	-	15	412	61	14	-	502
<u>Coos Bay</u>							
Total Catch	-	596	12,392	1,994	498	-	15,480
No. Sampled	-	408	6,388	1,323	273	-	8,392
% Sampled	-	68%	51%	66%	54%	-	54%
No. Ad Marks	-	22	505	98	12	-	637
<u>Gold Beach</u>							
Total Catch	0	0	1,460	118	40	-	1,618
No. Sampled	0	0	951	93	19	-	1,063
% Sampled	0	0	65%	78%	47%	-	65%
No. Ad Marks	0	0	79	10	3	-	92
<u>Brookings</u>							
Total Catch	1	492	10,946	3,022	1,371	29	15,861
No. Sampled	1	319	5,468	1,983	784	20	8,575
% Sampled	100%	64%	49%	65%	57%	68%	54%
No. Ad Marks	0	30	436	140	51	1	658
<u>Total</u>							
Total Catch	1	4,255	121,698	40,951	10,505	28	177,439
No. Sampled	1	2,496	50,105	18,754	4,195	20	75,571
% Sampled	100%	59%	41%	46%	40%	68%	42%
No. Ad Marks	0	181	3,283	1,138	254	1	4,857

Table 32. Chinook Coded-wire Tag Sampling from the Ocean Recreational Fishery, by Port and Month, 1987.

Port	May	June	July	August	September	October	Total
<u>Columbia R.</u>							
Total Catch	-	190	1,991	1,838	-	-	4,019
No. Sampled	-	95	757	678	-	-	1,530
% Sampled	-	50%	38%	36%	-	-	38%
No. Ad Marks	-	7	70	59	-	-	136
<u>Garibaldi</u>							
Total Catch	-	59	634	1,807	548	-	3,048
No. Sampled	-	31	244	706	243	-	1,224
% Sampled	-	52%	38%	39%	44%	-	40%
No. Ad Marks	-	2	12	43	11	-	68
<u>Pacific City</u>							
Total Catch	-	13	172	199	83	-	467
No. Sampled	-	13	127	168	69	-	377
% Sampled	-	100%	73%	84%	83%	-	80%
No. Ad Marks	-	2	12	12	0	-	26
<u>Depoe Bay</u>							
Total Catch	-	67	744	829	862	-	2,502
No. Sampled	-	38	445	515	403	-	1,401
% Sampled	-	56%	59%	62%	46%	-	55%
No. Ad Marks	-	4	26	46	14	-	90
<u>Newport</u>							
Total Catch	-	153	1,598	1,287	834	-	3,872
No. Sampled	-	69	520	578	251	-	1,418
% Sampled	-	45%	32%	44%	30%	-	36%
No. Ad Marks	-	2	31	38	6	-	77
<u>Florence</u>							
Total Catch	-	30	2,248	398	685	-	3,361
No. Sampled	-	17	779	212	338	-	1,346
% Sampled	-	56%	34%	53%	49%	-	40%
No. Ad Marks	-	0	24	15	15	-	50
<u>Winchester Bay</u>							
Total Catch	-	595	5,838	3,508	1,663	-	11,604
No. Sampled	-	291	1,726	1,111	450	-	3,578
% Sampled	-	48%	29%	31%	27%	-	30%
No. Ad Marks	-	15	95	45	27	-	182
<u>Coos Bay</u>							
Total Catch	-	303	2,558	628	419	-	3,908
No. Sampled	-	178	1,335	422	214	-	2,149
% Sampled	-	58%	52%	67%	51%	-	54%
No. Ad Marks	-	10	79	26	6	-	121
<u>Gold Beach</u>							
Total Catch	2	27	926	278	145	-	1,378
No. Sampled	2	24	570	195	64	-	855
% Sampled	100%	88%	61%	70%	44%	-	62%
No. Ad Marks	1	1	30	7	4	-	43
<u>Brookings</u>							
Total Catch	113	3,806	8,368	5,277	5,738	1,134	24,436
No. Sampled	80	2,453	4,224	3,509	3,278	774	14,318
% Sampled	70%	64%	50%	66%	57%	68%	58%
No. Ad Marks	4	120	219	193	188	40	764
<u>Total</u>							
Total Catch	115	5,243	25,077	16,049	10,977	1,134	58,595
No. Sampled	82	3,209	10,727	8,094	5,310	774	28,196
% Sampled	71%	61%	43%	50%	48%	68%	48%
No. Ad Marks	5	163	598	480	271	40	1,557

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