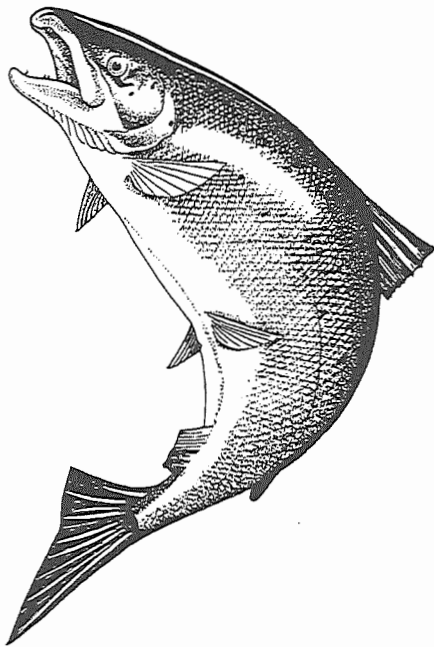


# THE 1993 OREGON OCEAN SALMON FISHERIES



**OREGON DEPARTMENT OF FISH AND WILDLIFE**  
**Ocean Salmon Management**

THE 1993 OREGON OCEAN SALMON FISHERIES

Annual Report  
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by

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## INTRODUCTION

The Ocean Salmon Management Program (OSMP) monitors ocean commercial and recreational salmon fisheries, coordinates Oregon coastal salmon spawning surveys, and conducts ocean and coastal rivers investigations for the Oregon Department of Fish and Wildlife (ODFW). The program uses data from these and other sources to develop management recommendations for the best use of Oregon's salmon resources, and to evaluate proposed ocean salmon fishery regulations. Major forums in which OSMP staff participate include the Pacific Fishery Management Council (PFMC) and its salmon technical teams (STT and SSC), the Pacific Salmon Commission (PSC) and their technical committees, and the Klamath Fishery Management Council (KFMC).

The OSMP fulfills Oregon's technical and management responsibilities to these management entities as directed under the U.S./Canada Salmon Interception Treaty (1986), the Magnuson Fishery Conservation and Management Act (MFCMA) PL 94-265 (1976), and the Anadromous Fisheries Act 89-304.

This report summarizes the activities of OSMP's Ocean Salmon Sampling Project for the 1993 ocean season. In 1993, we collected and analyzed data on Oregon's catch and fishing effort, recovered coded-wire tags (CWTs), and gathered average weight data from commercial salmon landings. In addition, we recorded length frequencies from recreational coho landings, collected chinook scales, and took scales from coho with CWTs to maintain a reference collection of hatchery coho scales. During 1993, we surveyed several estuaries where additional salmon fisheries developed, and completed an ocean recreational salmon test fishery study at the mouth of the Columbia River.

The OSMP sampling project is permanently staffed by a project leader and an assistant project leader in Newport, and one sampling coordinator at Tillamook. The sampling coordinator serves as liaison between field samplers and Newport program staff, delivers data and coded wire tags to Newport, and also samples when necessary.

Ten Oregon coastal ports were sampled in 1993, utilizing 26 seasonal samplers: one was a troll sampler, 17 were recreational, and four were "combination" samplers. Four additional samplers were hired to participate in the Columbia River Control Zone test fishery. One seasonal employee helped edit and computer process the sampled data under the direction of OSMP's Data Management Project.

## **1993 OCEAN TROLL SALMON FISHERY**

### **BACKGROUND**

The commercial salmon troll fishery was developing off the Oregon Coast by the year 1912 (Mullen, 1981). By 1919, there were between one and two thousand boats trolling off the mouth of the Columbia River. The State of Oregon began recording troll landings separately from gillnet fisheries in 1925.

Landings of ocean troll caught coho salmon remained relatively stable from 1925 to 1941, with landings between 2,000,000 and 4,000,000 pounds (dressed weight: head-on, viscera removed) for most years (Figure 1). From 1942 to 1950 catches remained near 1,000,000 pounds, but by 1957 landings had climbed back up to 3,400,000 pounds. The El Niño of 1958-59 resulted in landings dropping back below 1,000,000 pounds or 200,000 fish. During the 1960s and early 1970s, improved hatchery production and rearing techniques, a growing troll fleet, and good ocean survival rates of smolts to adults resulted in record landings that peaked in 1976 with 1,800,000 coho landed. The late 1970s and 1980s saw decreasing survival and stock sizes and increasing management restrictions, which combined to reduce ocean harvests.

Although chinook harvest by the Oregon troll fishery has also seen dramatic fluctuations, the long term trend has been one of increasing landings. The troll chinook fishery had record harvests in 1987 and 1988. The late 1980s and early 1990s have seen a decline in harvest due to decreases in many stocks, concern for critical natural stocks under both state and federal management and the federal Endangered Species Act (ESA), together with increasing allocation conflicts between river and ocean user groups.

Entry into the troll fishery was unrestricted until 1980 when a permit moratorium was adopted. Although 4,311 vessels already had Oregon troll permits, a goal of 2,400 vessels licensed to troll for salmon in Oregon was established. By the end of 1993, the number of renewed troll permits had declined to 1,804. Of the permitted vessels, only 612 recorded landings of salmon in 1993. During the 1993 Oregon legislative session, the troll permit goal was lowered to 1,800 vessels.

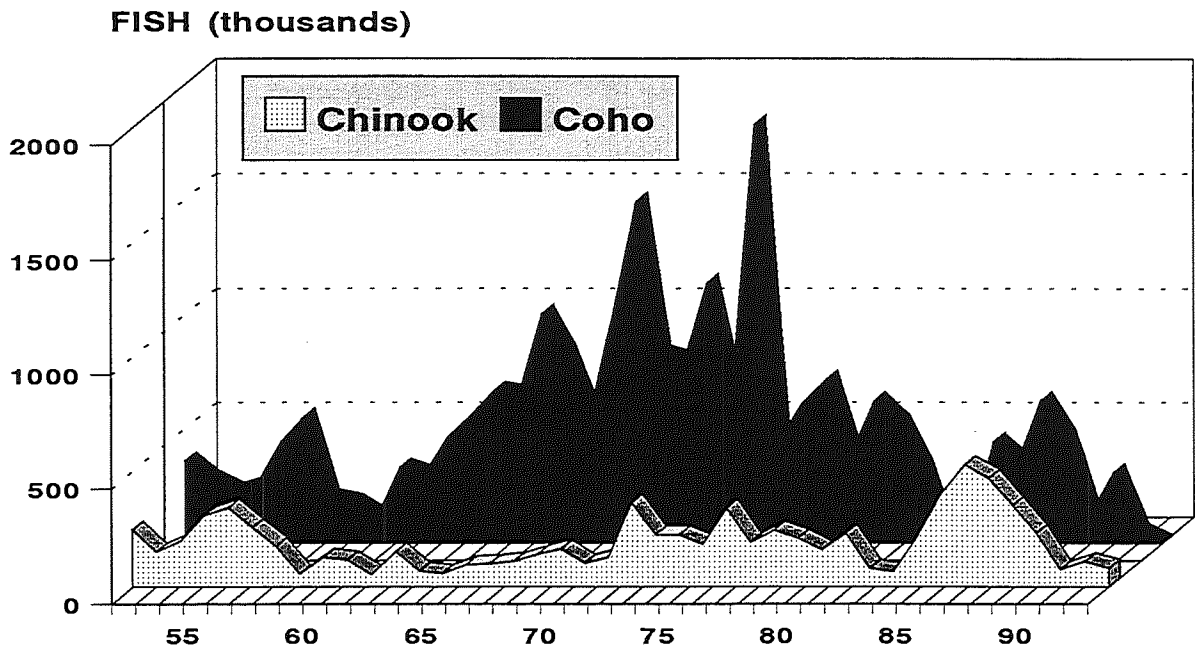
Following the most restrictive troll season ever in 1992, the 1993 season offered more time on the water in all areas except the Klamath Management Zone (KMZ): the area from Humbug Mountain, Oregon to Horse Mountain, California. South of Cape Falcon, there were no troll opportunities for coho. The extensive coho ocean closures were primarily a result of record low predictions of ocean survival for coho from Columbia River basin hatcheries as a result of poor ocean survival, and continued depressed population abundance of Oregon Coastal Natural (OCN) coho salmon.

### **SAMPLING METHODOLOGY**

#### **Sampling Areas and Staffing**

For the 1993 season, a seasonal staff of 1 troll salmon sampler and 4 combination (troll/recreational) samplers were deployed at major Oregon coastal ports (Appendix Tables 1 and 2). Samplers worked at both permanent and temporary buying stations in Astoria, Warrenton, Hammond, Garibaldi, Newport, Florence, Charleston, and Port Orford. Troll sampling was supplemented at times by the sampling coordinator.

## TROLL SALMON LANDINGS, 1952-93 Numbers of Salmon Landed



## TROLL SALMON LANDINGS, 1925-93 Pounds Dressed (head on, viscera removed)

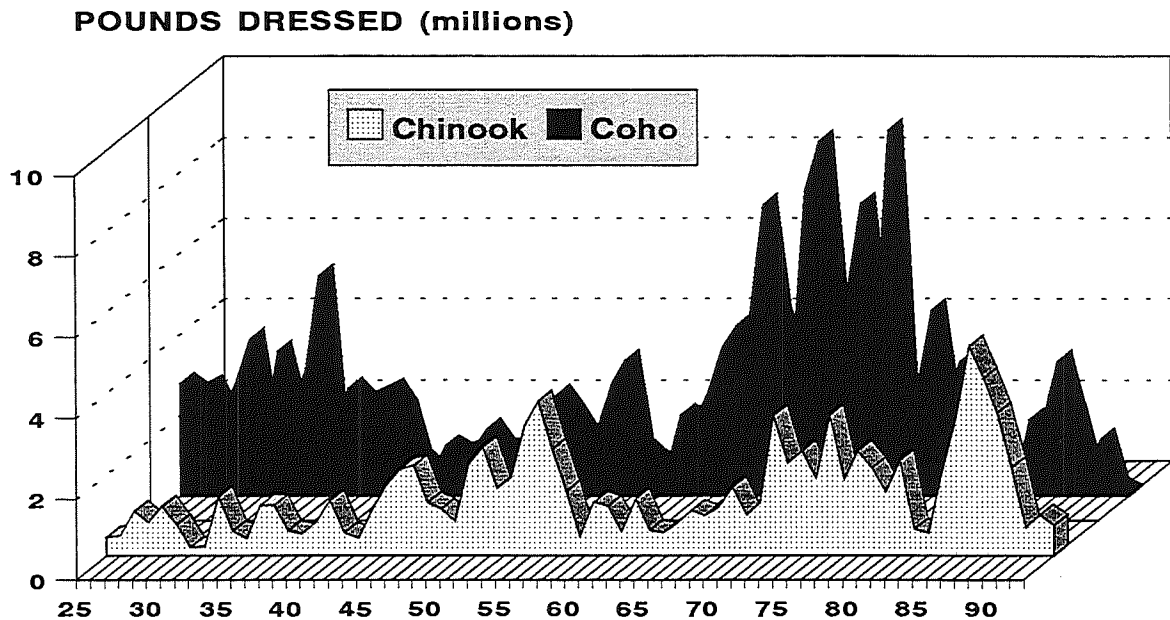


Figure 1. Historical Oregon troll salmon landings in numbers of fish (1952-93), and in pounds dressed (1925-93).

## **Sampling Design**

Sampling was conducted via an established sampling plan using a stratified random design. Samplers were instructed to sample proportionate landings from trip boats and day boats, from landings throughout the week, and from all significant buyers. Sampling data were recorded by individual vessel landings on forms designed to be read by an optical scanner. Data forms were transferred to the Newport office and scanned into a personal computer. Future data collection is scheduled to move to handheld data entry units in 1995. Buyer boats were an exception to sampling by individual vessel landings, since they off-loaded the catches from many vessels at once. All individual landings are kept confidential.

## **Average Weights and Coded Wire Tags**

Salmon were sorted and weighed by fish plant personnel. Simultaneously, OSMP employees tallied the fish by species and grade, recorded corresponding total weights, and examined the salmon for clipped adipose fins. A clipped adipose fin indicated that the fish had a coded-wire tag (CWT) implanted in its snout.

## **Quota Assessment**

Ocean salmon harvests within the PFMC area are managed to achieve specific spawning escapement goals for regional salmon stocks as adopted by the PFMC, provide for in-river fisheries, and Indian treaty requirements. Quotas or harvest ceilings for specific time and area fisheries are a primary tool of harvest management. Quotas are set based on estimates of adult recruitment, stock mix, anticipated ocean harvest patterns, impacts on critical stocks, and spawning escapement goals.

A fish receiving ticket is required for each troll salmon landing. Estimates of the number of salmon landed are derived by taking poundages from fish receiving tickets and applying average weight data from our port sampling program. Intensive ocean troll fisheries and quotas make it necessary for managers to be able to monitor catches timely and with reasonable accuracy. Standard processing of fish ticket data may take more than three weeks, and cannot be effectively used for in-season quota management.

To overcome the fish ticket time lag, the OSMP developed a "key buyer" program in 1983. This program monitors daily or periodic troll landings at major ("key") buyers along the coast as needed to provide assessment of landings. Sampling staff contact major salmon buyers in each port and summarize total pounds of salmon purchased for a specific period and fishery. The sampler then contacts OSMP staff at the Newport office with the poundages and the summarized sample data for the same period. Total poundages landed at the key buyers are expanded to account for the buyers who were not contacted. By dividing the estimated poundage of salmon landed within a given port by the average weight from the sampling data for that port, a reasonable estimate of the landings can be made within 24 hours. Key buyers typically represent more than 90% of the landings and allow for expansion of the landings with minimal error.

Estimates are also made of fish "on the water", and buyer percentages are adjusted in season to reflect current delivery patterns. As "hard data" from the fish ticket system becomes available, it is used to replace the early key buyer "soft data". Assessment of fish on the water becomes less precise as the level of trip boat participation increases, and can be complicated by buyer boats, out of area landings, and mobile buying stations.

## REGULATIONS

Ocean salmon regulations are set by the PFMC for all ocean salmon fisheries in the Exclusive Economic Zone (EEZ) from 3 to 200 miles. For state waters (0 to 3 miles), ocean salmon regulations are set by the Oregon Fish and Wildlife Commission within the ocean salmon harvest impact guidelines established by the Council. Special all-species-except-coho fisheries are set by the Oregon Fish and Wildlife Commission for state waters within 3 miles of shore.

All 1993 Oregon and PFMC Area ocean troll salmon fisheries had the requirement of single-point, single-shank, barbless hooks. Minimum length restrictions were 28 inches total length for chinook caught north of Cape Falcon, 26 inches total length for chinook caught south of Cape Falcon, 16 inches total length for coho (Figure 2, Appendix Table 3).

The normal procedure for season setting is for the PFMC to accept and vote on proposed regulations and seasons which are based on the best available stock predictions, and within the established allocation framework. These regulations are then sent to the Secretary of the Department of Commerce (DOC) for approval. "Normal" was not the case in 1993. The PFMC adopted regulations were rejected by the Secretary of Commerce, based on the allocation of Klamath River fall chinook between tribal and non-tribal users, and spawning escapement concerns. The proposed regulations were sent back to PFMC to meet two new conditions: add at least 1,100 chinook for harvest by Klamath River tribal fishermen, and increase the 35,000 natural spawning escapement "floor" for Klamath River fall chinook by 3,000 fish to 38,000. Under emergency action, the Secretary of Commerce did open seasons for the period of May 1 through 31, but required that PFMC act on his conditions prior to June. In order to meet the DOC's escapement goal modifications, the following changes were made to the original PFMC proposal:

1. Close the area from the Florence South Jetty to Cape Arago from Aug. 1-31.
2. Eliminate the scheduled fishery off the Rogue River (Sisters Rocks to Mack Arch) from Aug. 9-26.

The Secretary signed the amended regulations at the end of May, and the Oregon Fish and Wildlife Commission adopted the regulations for state waters.

### **North of Cape Falcon**

The area from Cape Falcon to the US/Canada border opened for an all species except coho season on May 1. This season which had a harvest guideline of 30,400 chinook ran through its scheduled closing date of June 15 (46 fishing days) without reaching the guideline. All salmon were required to be landed within 48 hours of any closure. Any vessels which made deliveries south of Cape Falcon, were required to contact the Newport office of the ODFW.

The all species fishery from Cape Falcon to the US/Canada border was open from July 14-17, July 21-24, July 28-31, and August 4-6 (15 fishing days). This fishery had harvest guidelines of 24,400 coho and 3,100 chinook. Boats were limited to no more than 4 spreads per wire, and were permitted to land no more than 50 coho per open period. Also the terminal gear was restricted to 6 inch or larger plugs and/or whole bait

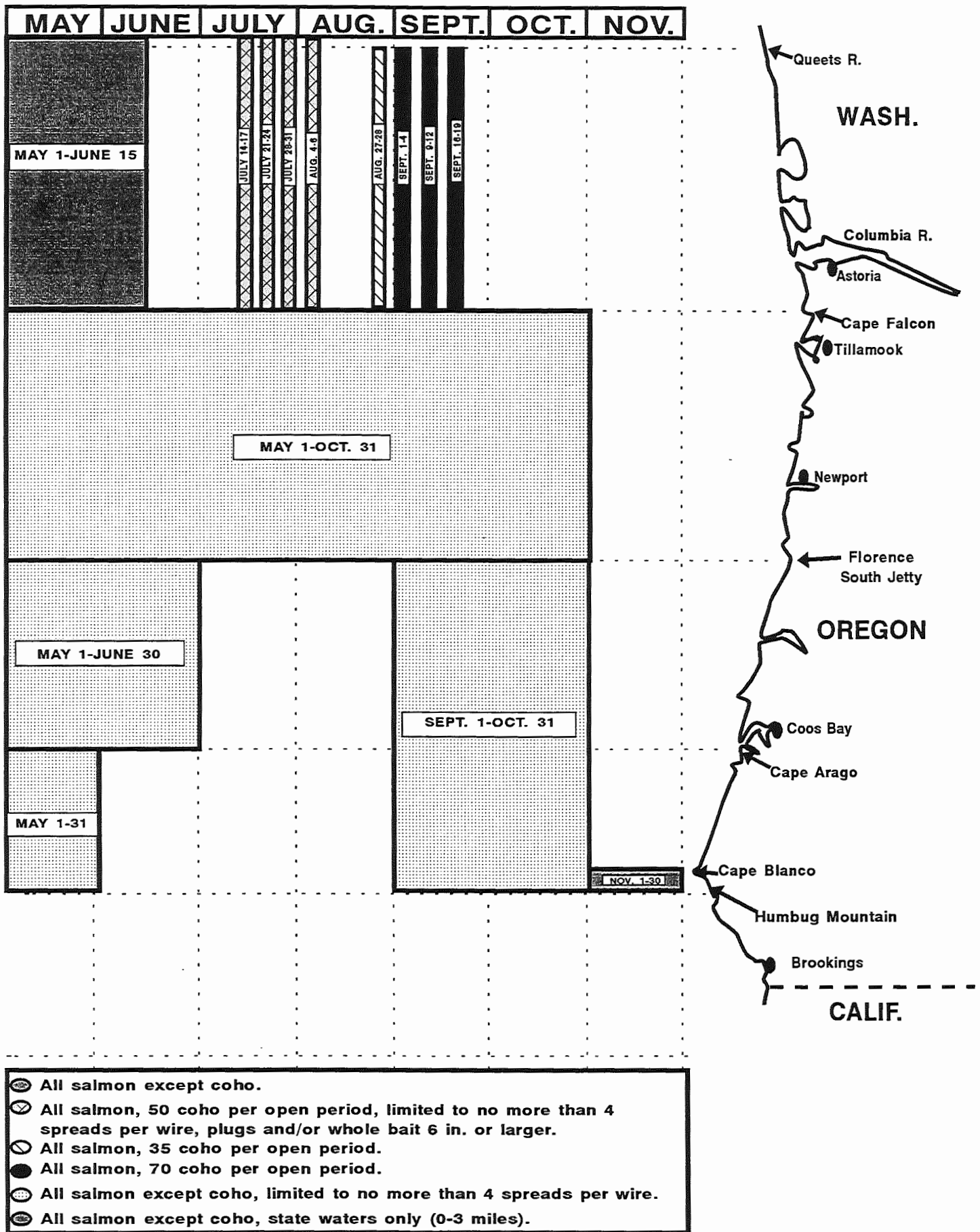


Figure 2. Open troll seasons off Oregon, 1993.

6 inches or larger. The quota was not met and the remaining salmon were made available to later seasons. All salmon caught in this season were required to be delivered in this area within 24 hours of each closure.

A second all species fishery North of Cape Falcon, was open as far north as the Queets River. Open periods were August 27-28, September 1-4, September 9-12, and September 16-19 (14 fishing days). Boats were limited to 35 coho for the first open period, and 70 coho for each of the remaining three openings. All salmon caught in this season were required to be delivered in this area or in an adjacent closed area within 24 hours of each closure

Although this second coho quota was not met, the fishery was closed early due to coho resource concerns. The Washington Department of Fisheries (WDF) noted a number of indicators of poor abundance in their appeal to close the troll (and recreational) season early. Postseason analysis of stock abundances has substantiated the WDF concerns.

### **Cape Falcon to Florence South Jetty**

The all species except coho fishery from Cape Falcon to the Florence South Jetty was open from May 1 through October 31 (184 fishing days). There were no chinook quota restrictions in this area, but gear was limited to no more than four spreads per wire for the duration of the season.

### **Florence South Jetty to Cape Arago**

Two all species except coho seasons were open from the Florence South Jetty to Cape Arago. Both seasons had the "no more than four spreads per wire" gear restriction. The first season opened May 1 and ran through its scheduled closing date of June 30 (61 fishing days). This season had a quota of 38,000 chinook for the area from the Florence South Jetty to Humbug Mountain during the May/June time period. This quota was not met.

The second all species except coho season was open from September 1 through October 31 (61 fishing days). There were no quota restrictions for this season.

### **Cape Arago to Humbug Mountain**

There were also two all species except coho seasons in the area from Cape Arago to Humbug Mountain. Both seasons had the "no more than four spreads per wire" restriction. The first season opened May 1 and ran through May 31 (31 fishing days). All chinook caught in this season counted towards the 38,000 chinook quota for the area from the Florence South Jetty to Humbug Mountain.

The second all species except coho season, opened September 1 under a 10,000 chinook quota. This quota was not met, and the fishery continued through to its scheduled closing date of October 31 (61 fishing days).

### **Cape Blanco to Humbug Mountain**

An all salmon except coho season was authorized by the Oregon Fish and Wildlife Commission for state waters (0-3 miles) for the area from Cape Blanco to Humbug Mountain. This fishery was scheduled to open the earlier of November 1 or attainment of the September/October chinook quota in the Cape Arago to Humbug Mountain troll



fishery, but not prior to October 1. No chinook quota restrictions were set. It opened November 1 and continued through November 30 (30 fishing days).

## EFFORT AND CATCH STATISTICS

Effort and catch statistics for the 1993 Oregon troll salmon fishery are preliminary. Poundages, dollar value, area of catch, and days fished were obtained directly from commercial fish receiving tickets. Pounds landed were converted to number of fish by using average weight information collected by port samplers. Prior to 1979, all Oregon troll catch statistics were reported by port of landing. Beginning in 1979, catch and effort estimates have also been reported by ocean catch area (Figure 3). Landings are allocated to correct catch areas to properly assess ocean fishery impacts. Area of catch data are recorded on fish tickets by buyers and are cross-checked with available OSMP sampling data.

### Effort

Historically, Oregon's troll effort has been estimated in vessel deliveries and, since 1979, in boat days. Troll effort for 1993 totaled 9,600 boat days. This is a slight (4%) increase in effort over the 9,200 boat days fished in 1992, but still only 19% of the record 51,100 boat days in 1988 (Table 1). The lack of troll effort in 1993 was due to a number of factors including: no coho seasons south of Cape Falcon, no seasons within the KMZ, limited seasons within the Coos Bay and Columbia River management areas, poor chinook catches especially in the Coos Bay management area, and the arrival of albacore tuna in good numbers in July.

Most of the 1993 effort (62%) occurred within the Newport management area. Effort levels were similar to 1992 in the Brookings, Newport, and Columbia River management areas; was down in the Tillamook management area; and up in the Coos Bay management area. The Brookings area again had no effort or catch due to a complete season long troll closure (Table 2, Figure 4, and Appendix Tables 4 and 5).

Typically peak effort levels occur during the general coho season in July and August. Most of the 1993 troll effort occurred in May and September, and coincided with the chinook openings in the Coos Bay area.

### Landings

**Chinook:** The 1993 chinook landings were extremely poor with only 81,400 fish landed. Even with large open time periods in the Coos Bay area, 1993 landings were down 26% from the 1992 catch of 110,300 chinook, and were only 34% of the 1979-92 average of 241,000 chinook (Table 1; Figure 5; and Appendix Tables 4, 5, and 6).

Most of the chinook were caught in the Newport management area (79%). Catches were down from 1992 levels in all areas except the Coos Bay area. The increases in chinook catch in the Coos Bay management area were a result of more time and area fishing opportunities, and are not necessarily as a result of changes in chinook abundance (Figure 6).

July is typically the month with the greatest chinook landings. However, in 1993, the month with the most landings was May with 26% of the chinook catch. June accounted for 19%, and September an additional 18% of the chinook. July ended up with only

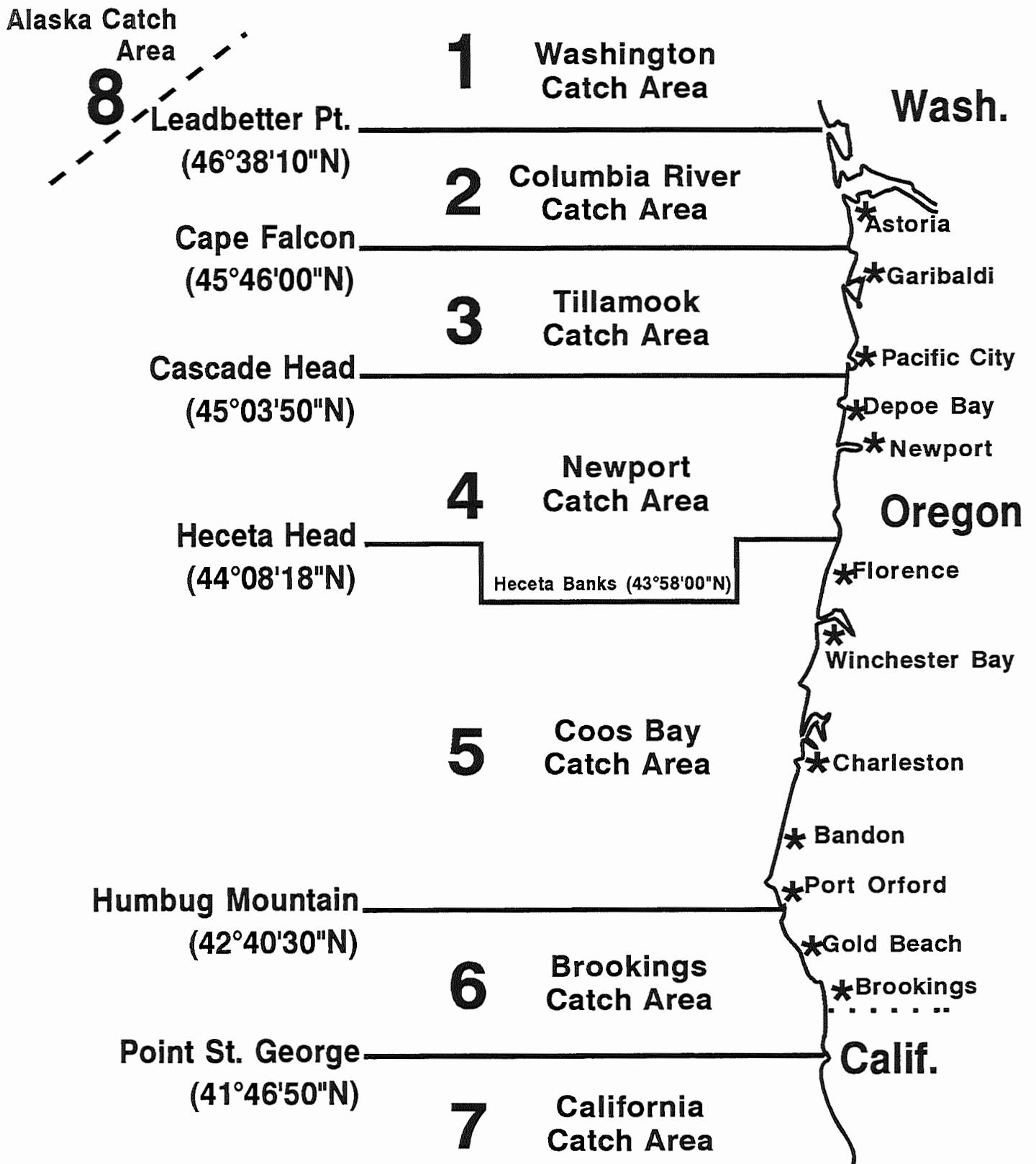


Figure 3. Oregon catch areas and major ports where commercial troll salmon are landed.

Table 1. Oregon commercial troll salmon effort and landings in number of fish and pounds dressed, 1979-93<sup>a</sup>.

Year	Effort (boat days)	Chinook		Coho		Pinks	
		No.	Lbs Dr.	No.	Lbs Dr.	No.	Lbs Dr.
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	523,500	2,708,400	0	0
1983	22,200	79,600	655,500	319,700	1,097,900	<100	200
1984	7,900	64,300	549,900	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	402,700	3,370,300	440,600	1,905,600	<100	<100
1987	39,500	529,300	5,182,400	354,000	1,915,900	17,600	87,300
1988	51,100	470,000	4,386,900	623,200	3,335,900	<100	<100
1989	42,300	353,500	3,531,900	455,700	1,995,500	3,800	17,600
1990	26,200	232,500	2,181,100	122,300	633,800	0	0
1991	14,700	74,800	695,000	306,900	1,410,700	1,800	7,600
1992	9,200	110,500	1,012,900	49,700	206,200	<100	<100
1993	9,600	81,400	760,500	1,600	8,800	<100	<100

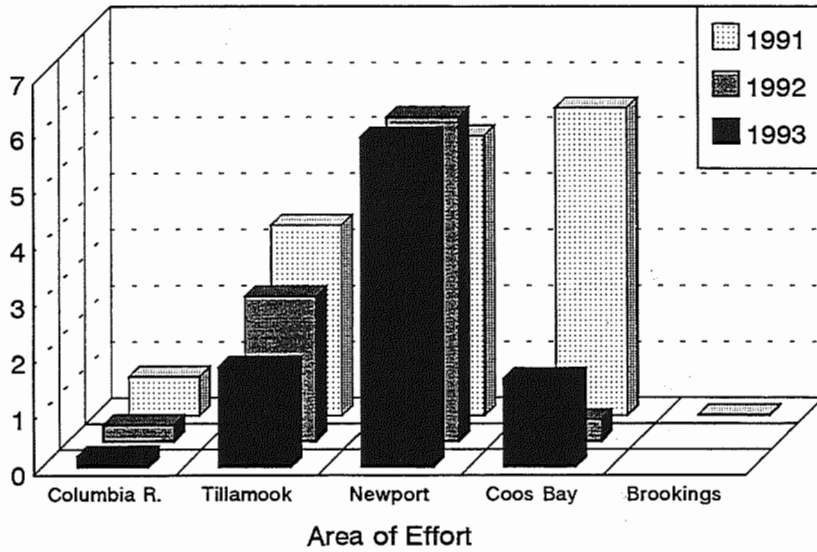
<sup>a</sup> Includes catches made off California, Washington and Alaska and landed in Oregon.

Table 2. Oregon troll salmon effort (boat days) and landings (number of fish), by area of catch and by statistical month, 1993.

Year	Area of Catch									Total
	Col. R. 2	Tillamook 3	Newport 4	Coos Bay 5	Brookings 6	OR Subtotal	Alaska 8	Wash. 1	Calif. 7	
<u>Effort</u>										
May	<50	100	1,400	600	0	2,100	0	0	0	2,100
June	<50	100	1,100	200	0	1,300	0	0	<50	1,300
July	100	200	1,500	<50	0	1,800	0	<50	0	1,800
Aug.	100	200	800	<50	0	1,000	0	0	0	1,000
Sept.	100	800	700	400	0	2,000	0	0	<50	2,000
Oct.	0	500	500	300	0	1,200	0	0	0	1,200
Nov.	0	0	0	100	0	100	0	0	0	100
Total	200	1,800	5,900	1,600	0	9,600	0	<50	<50	9,600
<u>Chinook</u>										
May	300	500	17,100	2,700	0	20,600	0	0	0	20,600
June	<50	200	13,600	900	0	14,700	0	0	<50	14,700
July	<50	800	11,900	200	0	12,900	0	0	0	12,900
Aug.	<50	600	9,400	400	0	10,400	0	0	0	10,400
Sept.	100	2,600	8,600	4,400	0	15,600	0	0	<50	15,700
Oct.	0	1,600	3,500	1,300	0	6,400	0	0	0	6,400
Nov.	0	0	0	700	0	700	0	0	0	700
Total	400	6,300	64,100	10,500	0	81,400	0	0	<50	81,400
<u>Coho</u>										
July	200	0	0	0	0	200	0	<50	0	200
Aug.	600	0	<50	0	0	600	0	0	0	600
Sept.	800	0	0	0	0	800	0	0	0	800
Oct.	0	0	0	<50	0	<50	0	0	0	<50
Total	1,600	0	<50	<50	0	1,600	0	<50	0	1,600

# Effort

BOAT DAYS (Thousands)



BOAT DAYS (Thousands)

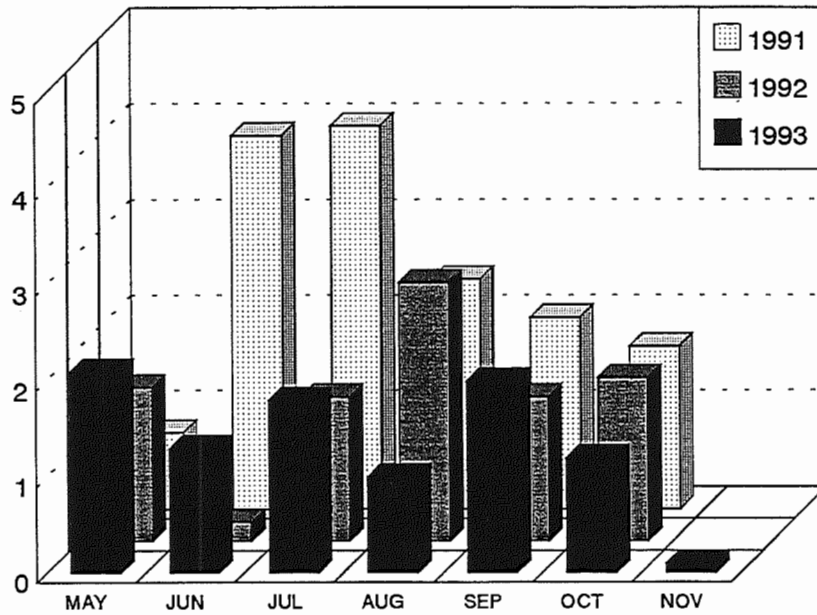
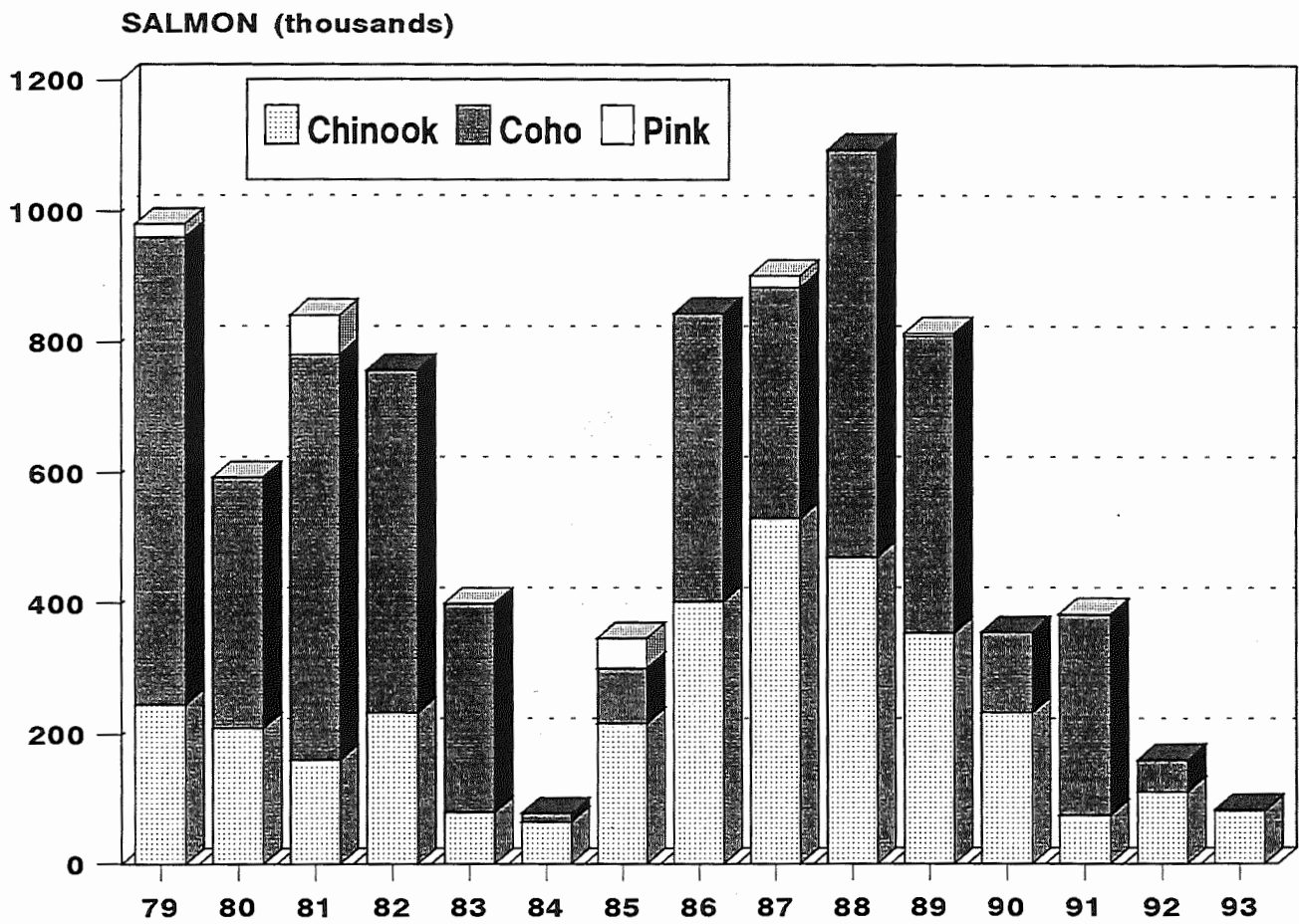
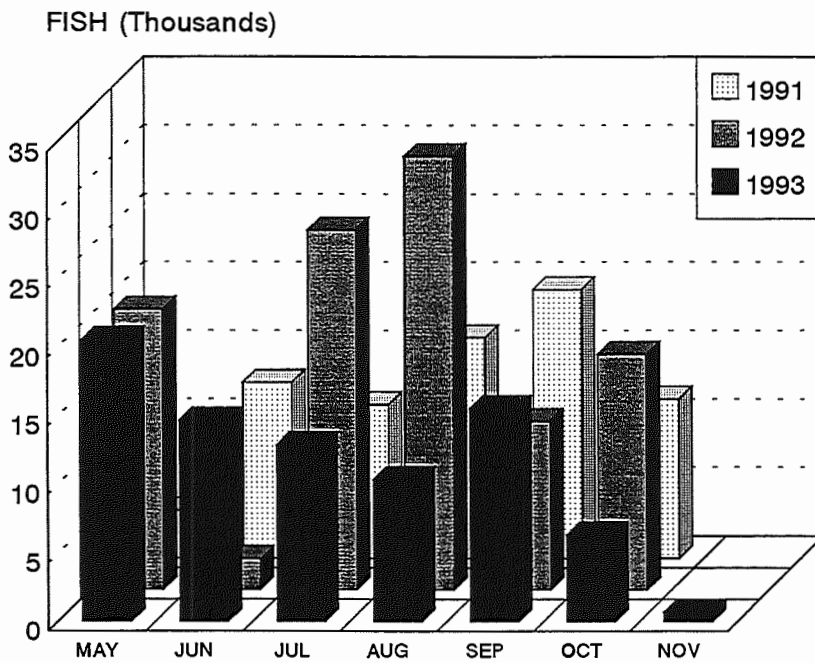
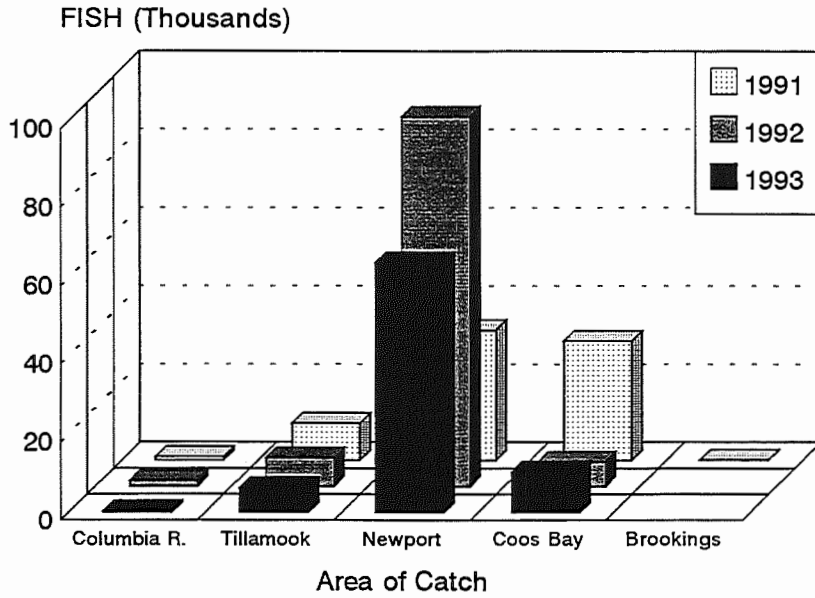


Figure 4. Oregon troll salmon effort in boat days by area of catch and by month, 1991-93.



**Figure 5. Oregon troll salmon landings, 1979-93.**

# Chinook



**Figure 6. Oregon troll chinook landings by area of catch and by month, 1991-93.**

14% of the chinook catch, and was due to no south of Cape Falcon coho seasons, and closures in the Coos Bay area in July and August (Table 3).

**Coho:** Commercial troll coho landings in Oregon in 1993 were the lowest on record. Minimal catches and extremely restrictive seasons were largely due to the effects of the 1991-93 El Niño event. Only 1,600 coho were landed in Oregon in 1993. The extremely low catches resulted from the low coho abundance, and restriction of fishing opportunities (Tables 1, 2, and 3; Figures 5 and 7; and Appendix Tables 4, 5, and 7).

### **AVERAGE WEIGHT DATA**

Average ocean troll salmon weight data was gathered from most port landing locations by OSMP port samplers and allowed for conversion of fish ticket poundage information to fish numbers. The 1993 seasonal average dressed weight (head on, viscera removed) for chinook was 9.3 pounds (Table 4). This was similar to the 1992 average weight of 9.2 pounds.

The average dressed weight for troll coho for the 1993 season was 5.4 pounds (Table 5). This average is up considerably over the 1992 average of 4.2 pounds. Most of this difference is probably a result of 1993 catches occurring later in the season than usual. Over half of the 1993 catches were made in September, while in most recent years the coho fishery has been completed by August.

An evaluation of coho condition (length to weight ratio) is made later on in the recreational fishery section. The available information suggests that the feed conditions for the coho in this area were similar to those that occurred during the 1983 El Niño.

### **THE DOLLAR VALUE OF OCEAN SALMON LANDINGS**

The 1993 Oregon troll chinook landings were only worth \$1,661,000 ex-vessel value. This was a 33% decrease from 1992, and was only 35% of the 1971-92 average of \$4,802,000. The average price paid was \$2.18 per pound, down 11% from the 1992 average price of \$2.45 (Appendix Table 8).

The all but nonexistent troll coho landings in 1993 showed a 96% decrease in ex-vessel dollar value over 1992 landings, bringing only \$222,000 to the fishermen. The average price paid for coho was \$1.13 per pound, up slightly from the 1992 price of \$1.07 per pound (Appendix Table 8).

### **CODED WIRE TAG SAMPLING**

In 1993, the troll sampling program examined 24% of all landed chinook and 5% of all landed coho for CWTs (Tables 6 and 7). The low coho sampling rate was a result of the difficulties encountered in sampling the record low and sporadic landings in the Columbia River area.

#### **Chinook**

Samplers observed 798 marked (adipose fin clip) chinook in 1993 (4.1% mark rate). Technicians recovered readable tags from 704 snouts (88%). Most of the CWTs recovered were released by Oregon Department of Fish and Wildlife (58%), and

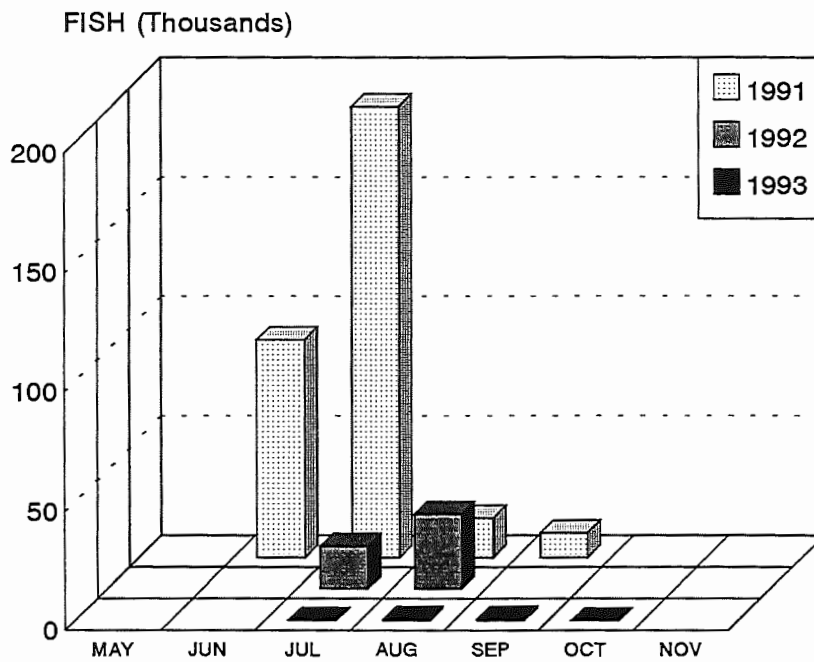
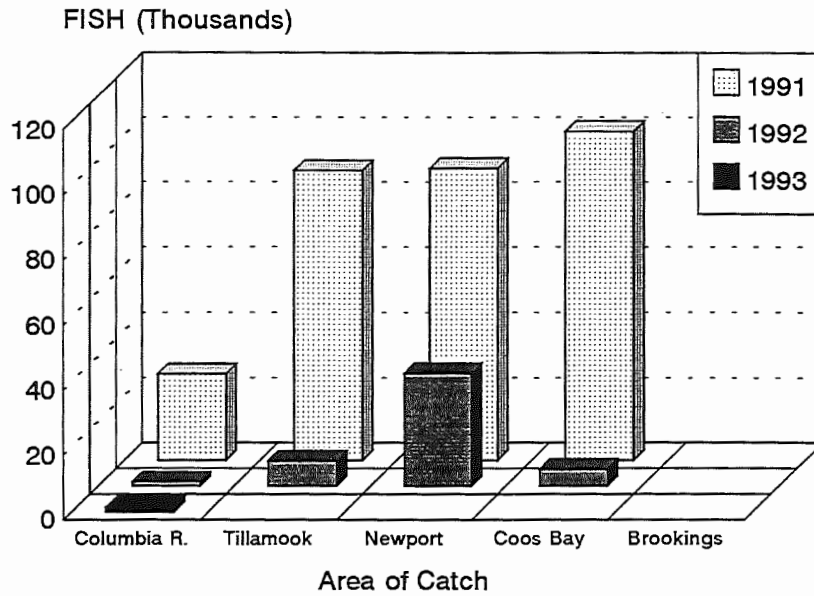
Table 3. Oregon troll salmon landings in pounds dressed, by calendar month, and port of landing, 1993.

Month	May	June	July	August	Sept.	Oct.	Nov.	Total
<u>Chinook</u>								
Astoria	2,609	138	949	550	590	263	0	5,099
Gearhart	0	0	21	61	0	0	0	82
Cannon Bch.	0	0	134	117	0	0	0	251
Garibaldi	1,829	872	6,004	4,888	29,150	28,300	0	71,043
Pacific City	3,588	1,178	232	870	7,598	1,271	0	14,737
Depoe Bay	438	232	1,541	898	560	983	221	4,873
Newport	151,804	102,675	84,634	53,888	39,016	20,754	2,436	455,207
Florence	5,337	9,322	8,070	16,280	16,910	7,287	0	63,206
Winchester	12,484	6,716	2,069	1,971	3,077	632	0	26,949
Charleston	20,348	17,381	5,670	10,074	27,950	3,914	130	85,467
Bandon	600	0	0	739	3,275	743	0	5,357
Port Orford	763	0	0	0	3,461	11,785	9,209	25,218
Brookings	12	126	0	99	2,562	173	0	2,972
<b>Total</b>	<b>199,812</b>	<b>138,640</b>	<b>109,324</b>	<b>90,435</b>	<b>134,149</b>	<b>76,105</b>	<b>11,996</b>	<b>760,461</b>
<u>Coho</u>								
Astoria	-	-	259	1,751	4,443	-	-	6,453
Gearhart	-	-	146	83	0	-	-	229
Cannon Bch.	-	-	157	899	73	-	-	1,129
Garibaldi	-	-	117*	304	373	-	-	794
Pacific City	-	-	10*	0	0	-	-	10
Depoe Bay	-	-	0	0*	0	-	-	0
Newport	-	-	0	10*	0	-	-	10
Florence	-	-	0	0	0	-	-	0
Winchester	-	-	0	0	0	-	-	0
Charleston	-	-	0	0	0	148*	-	148
Bandon	-	-	0	0	0	-	-	0
Port Orford	-	-	0	0	0	-	-	0
Brookings	-	-	0	0	0	-	-	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>689</b>	<b>3,047</b>	<b>4,889</b>	<b>148</b>	<b>0</b>	<b>8,773</b>

\* Illegal landings.



# Coho



**Figure 7. Oregon troll coho landings by area of catch and by month, 1991-93.**

Table 4. Observed average dressed weight and calculated number of chinook landed in the Oregon troll fishery by calendar month and area of catch, 1993.

Area of Landing	Month							Total
	May	June	July	Aug.	Sept.	Oct.	Nov.	
<u>Columbia R. (2)</u>								
Numbers	253	13	33	41	65	-	-	405
Pounds	2,668	138	354	381	620	-	-	4,161
Ave. wt.	10.6	10.6	10.7	9.3	9.5	-	-	10.3
<u>Tillamook (3)</u>								
Numbers	488	196	761	668	2,195	2,037	-	6,345
Pounds	5,417	2,050	6,682	6,130	37,022	30,584	-	87,885
Ave. wt.	11.1	10.5	8.8	9.2	16.9	15.0	-	13.8
<u>Newport (4)</u>								
Numbers	17,445	14,406	10,525	9,776	8,011	3,649	297	64,109
Pounds	166,262	128,275	101,069	79,847	62,349	29,774	2,657	570,233
Ave. wt.	9.5	8.9	9.6	8.2	7.8	8.2	9.0	8.9
<u>Coos Bay (5)</u>								
Numbers	2,779	885	144	500	4,282	1,295	663	10,548
Pounds	25,465	8,051	1,219	4,077	34,051	15,747	9,339	97,949
Ave. wt.	9.2	9.1	8.5	8.2	8.0	12.2	14.1	9.3
<u>Brookings (6)</u>								
Numbers	-	-	-	-	-	-	-	0
Pounds	-	-	-	-	-	-	-	0
Ave. wt.	-	-	-	-	-	-	-	NA
<u>Oregon Subtotal</u>								
Numbers	20,965	15,500	11,463	10,985	14,553	6,981	960	81,407
Pounds	199,812	138,514	109,324	90,435	134,042	76,105	11,996	760,228
Ave. Wt.	9.5	8.9	9.5	8.2	9.2	10.9	12.5	9.3
<u>Alaska (8)</u>								
Numbers	-	-	-	-	-	-	-	0
Pounds	-	-	-	-	-	-	-	0
Ave. Wt.	-	-	-	-	-	-	-	NA
<u>Washington (1)</u>								
Numbers	-	-	-	-	-	-	-	0
Pounds	-	-	-	-	-	-	-	0
Ave. Wt.	-	-	-	-	-	-	-	NA
<u>California (7)</u>								
Numbers	-	16	-	-	13	-	-	29
Pounds	-	126	-	-	107	-	-	233
Ave. Wt.	-	7.9	-	-	8.2	-	-	8.0
<u>Total</u>								
Numbers	20,965	15,516	11,463	10,985	14,566	6,981	960	81,436
Pounds	199,812	138,640	109,324	90,435	134,149	76,105	11,996	760,461
Ave. wt.	9.5	8.9	9.5	8.2	9.2	10.9	12.5	9.3

Table 5. Observed average dressed weight and calculated number of coho landed in the Oregon troll fishery by calendar month and area of catch, 1993.

Area of Landing	Month				Total
	July	Aug.	Sept.	Oct.	
<u>Astoria (2)</u>					
Numbers	203	580	805	-	1,588
Pounds	672	3,037	4,889	-	8,598
Ave. wt.	3.3	5.2	6.1	-	5.4
<u>Tillamook (3)</u>					
Numbers	-	-	-	-	0
Pounds	-	-	-	-	0
Ave. wt.	-	-	-	-	NA
<u>Newport (4)</u>					
Numbers	-	2*	-	-	2
Pounds	-	10	-	-	10
Ave. wt.	-	5.0	-	-	5.0
<u>Coos Bay (5)</u>					
Numbers	-	-	-	25*	25
Pounds	-	-	-	148	148
Ave. wt.	-	-	-	5.9	5.9
<u>Brookings (6)</u>					
Numbers	-	-	-	-	0
Pounds	-	-	-	-	0
Ave. wt.	-	-	-	-	NA
<u>Oregon Subtotal</u>					
Numbers	203	582	805	25	1,615
Pounds	672	3,047	4,889	148	8,754
Ave. wt.	3.3	5.2	6.1	5.9	5.4
<u>Alaska (8)</u>					
Numbers	-	-	-	-	0
Pounds	-	-	-	-	0
Ave. wt.	-	-	-	-	NA
<u>Washington (1)</u>					
Numbers	5	-	-	-	5
Pounds	17	-	-	-	17
Ave. wt.	3.4	-	-	-	3.4
<u>California (7)</u>					
Numbers	-	-	-	-	0
Pounds	-	-	-	-	0
Ave. wt.	-	-	-	-	NA
<u>Total</u>					
Numbers	208	582	805	25	1,620
Pounds	689	3,047	4,889	148	8,773
Ave. wt.	3.3	5.2	6.1	5.9	5.4

\* Illegal landings.

Table 6. Oregon ocean troll chinook mark sampling by statistical month and port of landing, 1993.

Area of Landing	Month							Total
	May	June	July	Aug.	Sept.	Oct.	Nov.	
<u>Astoria</u>								
No. Examined	6	0	0	0	4	0	-	10
No. Landed	248	13	116	63	64	16	-	520
% Examined	2	0	0	0	6	0	-	2
No. Marks	0	0	0	0	1	0	-	1
<u>Gearhart</u>								
No. Examined	-	-	0	0	-	-	-	0
No. Landed	-	-	2	6	-	-	-	8
% Examined	-	-	0	0	-	-	-	0
No. Marks	-	-	0	0	-	-	-	0
<u>Cannon Beach</u>								
No. Examined	-	-	0	0	-	-	-	0
No. Landed	-	-	13	12	-	-	-	25
% Examined	-	-	0	0	-	-	-	0
No. Marks	-	-	0	0	-	-	-	0
<u>Garibaldi</u>								
No. Examined	0	0	0	0	649	0	-	649
No. Landed	184	70	698	532	2,160	1,486	-	5,130
% Examined	0	0	0	0	30	0	-	13
No. Marks	0	0	0	0	19	0	-	19
<u>Pacific City</u>								
No. Examined	0	0	0	0	0	0	-	0
No. Landed	284	129	25	66	465	61	-	1,030
% Examined	0	0	0	0	0	0	-	0
No. Marks	0	0	0	0	0	0	-	0
<u>Depoe Bay</u>								
No. Examined	0	0	0	0	0	0	-	0
No. Landed	44	17	145	104	47	79	-	436
% Examined	0	0	0	0	0	0	-	0
No. Marks	0	0	0	0	0	0	-	0
<u>Newport</u>								
No. Examined	4,940	3,717	2,824	1,754	1,411	655	-	15,301
No. Landed	15,581	10,781	10,073	6,309	5,348	2,558	-	50,650
% Examined	32	34	28	28	26	26	-	30
No. Marks	124	134	147	94	68	13	-	580
<u>Florence</u>								
No. Examined	75	121	122	357	14	0	-	689
No. Landed	609	968	957	1,881	2,343	787	-	7,545
% Examined	12	12	13	19	1	0	-	9
No. Marks	3	1	1	8	0	0	-	13
<u>Winchester Bay</u>								
No. Examined	0	0	0	0	0	0	-	0
No. Landed	1,254	815	257	248	409	77	-	3,060
% Examined	0	0	0	0	0	0	-	0
No. Marks	0	0	0	0	0	0	-	0

Table 6 continued.

Area of Landing	Month							Total
	May	June	July	Aug.	Sept.	Oct.	Nov.	
<u>Charleston</u>								
No. Examined	393	240	7	0	1,246	126	-	2,012
No. Landed	2,182	1,920	657	1,131	3,657	455	-	10,002
% Examined	18	12	1	0	34	28	-	20
No. Marks	8	9	1	0	56	4	-	78
<u>Bandon</u>								
No. Examined	0	0	0	0	0	0	-	0
No. Landed	80	0	0	90	410	92	-	672
% Examined	0	0	0	0	0	0	-	0
No. Marks	0	0	0	0	0	0	-	0
<u>Port Orford</u>								
No. Examined	0	-	-	-	0	386	504	890
No. Landed	97	-	-	-	435	814	649	1,995
% Examined	0	-	-	-	0	47	78	45
No. Marks	0	-	-	-	0	47	45	92
<u>Brookings</u>								
No. Examined	0	0	0	0	0	0	-	0
No. Landed	1	16	0	7	318	21	-	363
% Examined	0	0	0	0	0	0	-	0
No. Marks	0	0	0	0	0	0	-	0
<u>Total</u>								
No. Examined	5,414	4,078	2,953	2,111	3,324	1,167	504	19,551
No. Landed	20,564	14,729	12,943	10,449	15,656	6,446	649	81,436
% Examined	26	28	23	20	21	18	78	24
No. Marks	135	144	149	102	144	64	45	783

Table 7. Oregon ocean troll coho mark sampling by statistical month and port of landing, 1993.

Area of Landing	Month				Total
	July	Aug.	Sept.	Oct.	
<u>Astoria</u>					
No. Examined	0	0	86	-	86
No. Landed	74	331	726	-	1,131
% Examined	0	0	12	-	8
No. Marks	0	0	5	-	5
<u>Gearhart</u>					
No. Examined	0	0	-	-	0
No. Landed	57	19	-	-	76
% Examined	0	0	-	-	0
No. Marks	0	0	-	-	0
<u>Cannon Beach</u>					
No. Examined	0	0	0	-	0
No. Landed	51	171	12	-	261
% Examined	0	0	-	-	0
No. Marks	0	0	-	-	0
<u>Garibaldi</u>					
No. Examined	0	0	0	-	0
No. Landed	27	569	67	-	150
% Examined	0	0	0	-	0
No. Marks	0	0	0	-	0
<u>Pacific City</u>					
No. Examined	0	-	-	-	0
No. Landed	2*	-	-	-	2
% Examined	0	-	-	-	0
No. Marks	0	-	-	-	0
<u>Newport</u>					
No. Examined	-	0*	-	-	0
No. Landed	-	2*	-	-	2
% Examined	-	0	-	-	0
No. Marks	-	0	-	-	0
<u>Charleston</u>					
No. Examined	-	-	-	0*	0
No. Landed	-	-	-	25*	25
% Examined	-	-	-	0	0
No. Marks	-	-	-	0	0
<u>Total</u>					
No. Examined	0	0	86	0	86
No. Landed	211	579	830	25	1,620
% Examined	0	0	10	0	5
No. Marks	0	0	5	0	5

\* Illegal landing.

California Department of Fish and Game (17%). Most of the recovered CWTs were released in the Columbia River (32%), the Oregon coastal streams (32%), and in the Sacramento/San Joaquin basin (23%) (Figure 8).

### **Coho**

Samplers observed only 5 marked coho in 1993 (5.8% mark rate). Technicians recovered readable CWTs from 5 snouts (100%). Three of the recovered CWTs came from releases in Oregon coastal tributaries, one from a Washington coastal release, and one from a release in the Sooes River at the entrance to Puget Sound.

**NOTE: The above information cannot be used to estimate stock contribution since tagging is not representative of stocks, and most stocks of wild fish have no tagging programs or population estimators associated with them. Also many experimental programs have very high mark rates which may give a false impression of high contribution rates.**

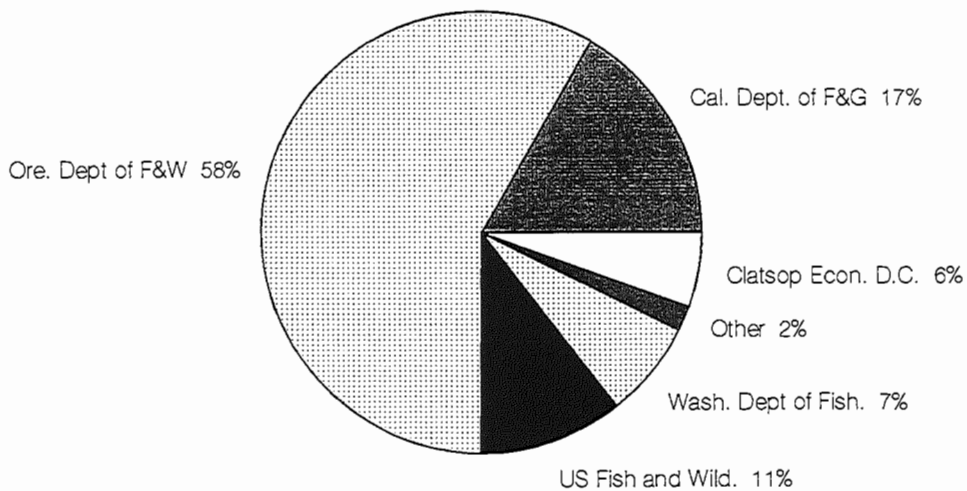
## **SPECIAL FISHERIES AND STUDIES**

### **Elk River State Waters Chinook Fishery**

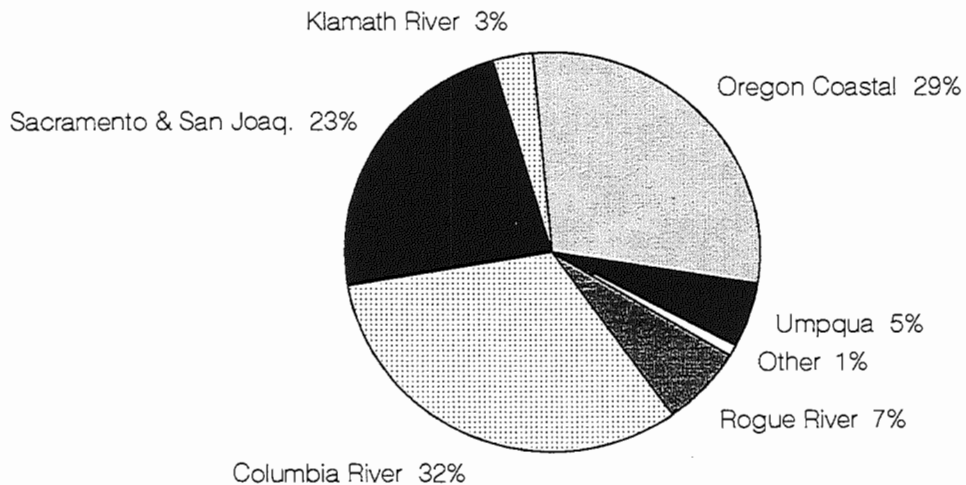
A troll fishery designed to target on returning Elk River fall chinook salmon opened immediately following the end of the general season. This fishery was open from November 1-30 within state waters (0-3 miles) in the area between Cape Blanco and Humbug Mountain.

A total of 649 chinook were landed in this fishery with an average weight of 14.2 pounds. There were 60 snouts taken from adipose fin clipped chinook from which 49 readable CWTs were recovered (82%). There were 48 CWTs from Elk River chinook releases (98%), and one four year old from a release in the nearby Pistol River (2%). Of the Elk River CWTs, there were 17 three year olds (BY 90), 28 four year olds (BY 89), and 3 five year olds (BY 88).

**RELEASE AGENCY**  
n=704



**BASIN OF RELEASE**  
n=704



**NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.**

**Figure 8. Observed recoveries of chinook coded wire tags from Oregon troll salmon landings by release agency and by basin of release, 1993.**



## **THE 1993 OCEAN RECREATIONAL SALMON FISHERY**

### **BACKGROUND**

Oregon's ocean recreational salmon fishery originated with boats fishing in the bays on stocks returning to freshwater in the fall. A few boats would fish in the ocean on favorable days. The late 1940s and early 1950s marked the beginning of increasing effort by both the charter and private boat fleet in the ocean. Better and safer equipment plus the development of small boat basins and launching ramps and other support facilities in many coastal towns encouraged ocean fishing (PFMC, 1978).

The primary targeted catch of the recreational fleet is coho salmon with chinook a distant second. The fishery has been sampled by ODFW's Ocean Salmon Management Program since the early 1960s. Ocean creel data was supplemented by salmon/steelhead tag license data through the 1980 season. Creel data alone have been used since 1981.

The peak catch and effort year was 1976 when 79,300 chinook and 501,300 coho were taken. The daily bag limit in 1976 was 3 salmon and the season lasted from mid-April to December 31. In 1993, the seasons and catch quotas were the most restrictive ever; we estimated an ocean catch of 6,500 chinook and 59,300 coho from 80,300 salmon angler trips (Table 8). A continued El Niño resulted in warmer than usual ocean temperatures and reduced productivity of the near-shore ocean, especially on the north coast.. There was also an apparent southward shift in the distribution of coho salmon as reflected in catches in the Klamath Management Zone.

### **SAMPLING METHODOLOGY**

#### **Sampling Areas And Staffing**

Twenty-one seasonal employees sampled the ocean recreational fishery at nine major ports in 1993. An additional four samplers participated in a charter test fishery at the mouth of the Columbia River. Newport had four recreational samplers; Astoria, Garibaldi, and Coos Bay each had two recreational and one combination sampler; and Winchester Bay had three recreational samplers. Brookings had two creel checkers, and Pacific City and Depoe Bay each had one. Florence had a combination sport and troll sampler (Appendix Table 1).

Limited sampling began in May in all ports except Astoria. Some of the early sampling was supported by other funds such as halibut tag monies. Additional personnel were added in late June. Astoria sampling started in July (Appendix Table 1). All samplers counted ocean boats and checked returning anglers. Total sampler months increased slightly from 1992 levels due to the special Columbia Control Zone charter boat study (Appendix Table 9).

#### **Sampling Design**

A statistical creel survey using a modified random sampling design has been used in all recent years at each port. Catch per angler data was collected at least 4 days a week, including all weekends and holidays if salmon fishing was open. Ocean anglers were interviewed at boat ramps, moorages, and charter docks. Samplers usually worked from early morning to late afternoon, but varied their hours to reflect fishing activity. The salmon catch was sampled for species, fin marks, coho scales and lengths. Snouts

Table 8. Oregon ocean recreational salmon catch and effort for 1966-93<sup>a</sup>.

Year	Effort (Angler Trips)		Salmon Catch			Fish/Angler
	Salmon	Total	Coho	Chinook	Pink	
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 <sup>b</sup>	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	226,022	275,947	175,128	38,716	14	0.95
1983	226,029	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
1986	186,483	212,600	211,666	22,366	0	1.26
1987	255,048	279,500	177,439	58,595	904	0.93
1988	251,979	288,523	226,403	38,617	0	1.05
1989	266,605	311,713	272,240	32,069	1,325	1.15
1990	246,461	293,907	200,294	26,500	3	.92
1991	190,062	230,242	259,119	14,416	280	1.44
1992	165,318	219,330	185,846	12,570	19	1.20
1979-92 average	240,176	278,742	204,810	29,320	1,784	0.98
1993	80,345	141,586	59,281	6,495	25	0.82

<sup>a</sup> Prior to 1981, sampling data were supplemented with salmon/steelhead tag data for ports and time periods not sampled.

<sup>b</sup> Odd year average.

were collected from marked (adipose fin-clipped) fish and forwarded to the ODFW tag reading laboratory in Clackamas for decoding. Bottomfish catch was also recorded. However, at the Columbia River mouth, all samplers had their days off on Fridays and Saturdays during the ocean salmon season and some very limited bottomfish effort was missed. Once Buoy 10 opened on August 1, all days were sampled.

Interview data used for catch estimates, and coded wire tag recovery data are recorded on forms designed for optical scanning. Data was collected on a weekly basis and transported to the Newport ODFW office for error checking and scanning into a personal computer. In Astoria/Warrenton, sampling was conducted with the use of hand-held data collection computers (MC-V). This was the field test of this equipment, and it is anticipated that by 1995 all OSMP ocean sampling data will be collected with these units.

Effort information was primarily obtained through boat counts by ODFW samplers, but Coast Guard bar crossing counts, and data from charter boat offices were also used. ODFW boat counters worked from dawn until 1 PM. They tallied both out-going and incoming boats crossing the bar. In Pacific City and Depoe Bay, total effort was estimated from a combination of boat trailer/moorage slip counts and a tally of outgoing vessels.

### **Quota Assessment**

Catch and effort data were error-checked and then processed on the Department's Unisys computer by Newport data staff. The angler interviews, stratified by charter and private boat angler, provided average catch rates by species. These catch rates, when multiplied by the total effort for a particular period, gave a catch estimate for that period. The same method was used to estimate total number of angler trips. The survey provided weekly estimates of Oregon's ocean recreational effort and catch within 7 days after the week ended. A preliminary catch estimate was available within one day of the end of the week. These catch estimates were necessary to monitor catch quotas.

Department samplers checked 28,769 salmon in 1993 compared to 68,866 in 1992. Catch sampling rates in 1993 ranged from a high of 84% at Pacific City to a low of 36% at Newport. Samplers checked 43% of the total salmon catch from all ports in 1993 compared to 37% in 1992. The higher rates reflect the very abbreviated seasons. With fewer salmon taken in a shorter time frame, a larger number of them could be checked (Appendix Table 9).

## **REGULATIONS**

### **General**

The Oregon coast was divided into three general salmon management areas for 1993, each with different harvest regulations. The regulations were set by the PFMC and the Oregon Fish and Wildlife Commission and signed off by the Secretary of Commerce. What is normally a straightforward process turned complicated in 1993, as detailed under the commercial regulations discussion. The Oregon Fish and Wildlife Commission also adopted two special seasons in state waters. Appendix Table 10 gives a historical perspective of recreational ocean salmon regulations.

## **North of Cape Falcon**

The recreational fishery from Cape Falcon, Oregon to Leadbetter Point, Washington had an overall guideline of 7,100 chinook and a quota of 96,300 coho. An additional 5,000 coho were set aside for a September fishery and any remaining coho from the first quota were to be added to the September quota. A control (formerly conservation) zone closure was in effect at the mouth of the Columbia River from Buoy 10 out to 6 miles (Figure 9).

The daily bag limit was 2 salmon and not more than 4 fish were allowed in seven consecutive days. Minimum size limits were 24" for chinook, and 16" for coho; there was no size limit for pink salmon. Only single point, barbless hooks were permitted and salmon fishing was only open Sunday through Thursdays through September 9 (Appendix Table 11, Figure 10).

The first season opened July 5 and continued through September 9. The September quota of 5,000 coho was increased by 30,100 fish uncaught from the earlier season and the fishery reopened September 12 without daily restrictions. Due to concerns about the status of the stocks, the season closed on September 23, without taking either the chinook or coho quotas. The Buoy 10 in-river fishery opened August 1 and continued as scheduled through December 31.

## **Cape Falcon to Humbug Mountain**

The recreational coho quota was a record low 68,000 fish south of Cape Falcon. The daily bag limit was 2 salmon, not more than 2 fish were allowed in 7 consecutive days, and the annual limit was reduced to 10 salmon. Minimum size limits were 20" for chinook and 16" for coho; there was no size restriction for pink salmon. Single point, barbless hooks were required.

The season first opened May 1 through June 6 but was restricted to inside the 27 fathom line as defined in footnote <sup>e</sup> in Appendix Table 10. The salmon season re-opened on July 13 and again on July 18 on a Sunday through Tuesday schedule until the coho quota was met on August 10.

## **Humbug Mountain to Horse Mountain, California**

The chinook quota was the limiting factor in the area from Humbug Mountain, Oregon to Horse Mountain, California. This area is commonly referred to as the Klamath Management Zone (KMZ). From May 5 through June 19, an 8,000 fish quota was in effect. The next open season ran from July 14 through August 28. Salmon fishing was only open Wednesday through Saturday during this time. The season re-opened September 1 through September 7 for seven days.

The daily catch limit was one salmon per day. Not more than six salmon could be taken in seven consecutive days; Oregon had an annual bag limit of 40 salmon. Minimum size limits for chinook and coho were 20"; there was no size restriction for pink salmon. Single point barbless hooks were required. There were no 27 fathom restrictions within the Klamath Management Zone.

## **Late season, state waters fisheries**

**October-November Fishery off Port Orford:** This state waters (0-3 miles) all-species-except-coho fishery extended from Cape Blanco south to Humbug Mountain and had no

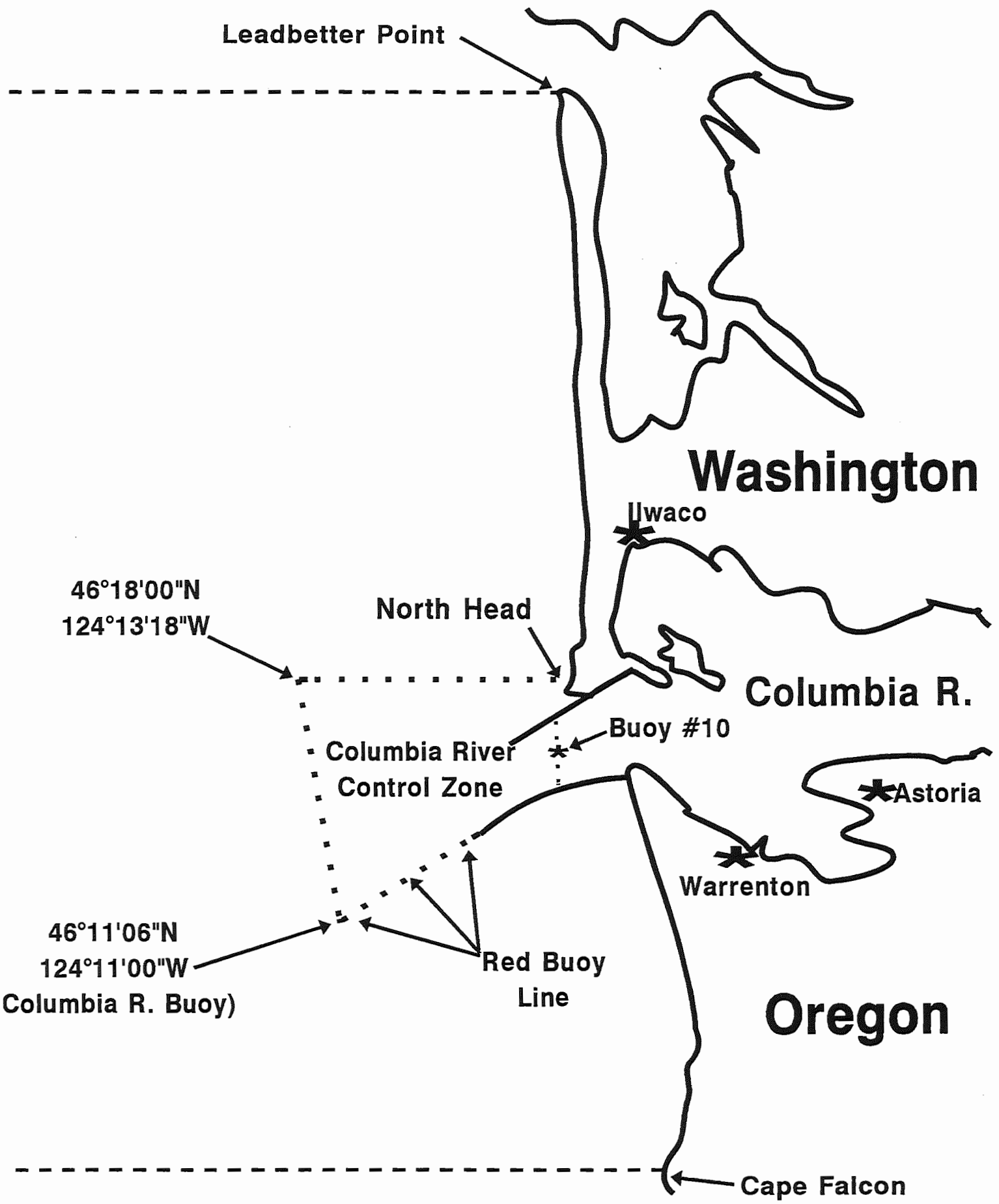


Figure 9. The Pacific Fishery Management Council designated Columbia River ocean salmon management area from Leadbetter Point, Washington to Cape Falcon, Oregon, and the Columbia River control zone, 1993.

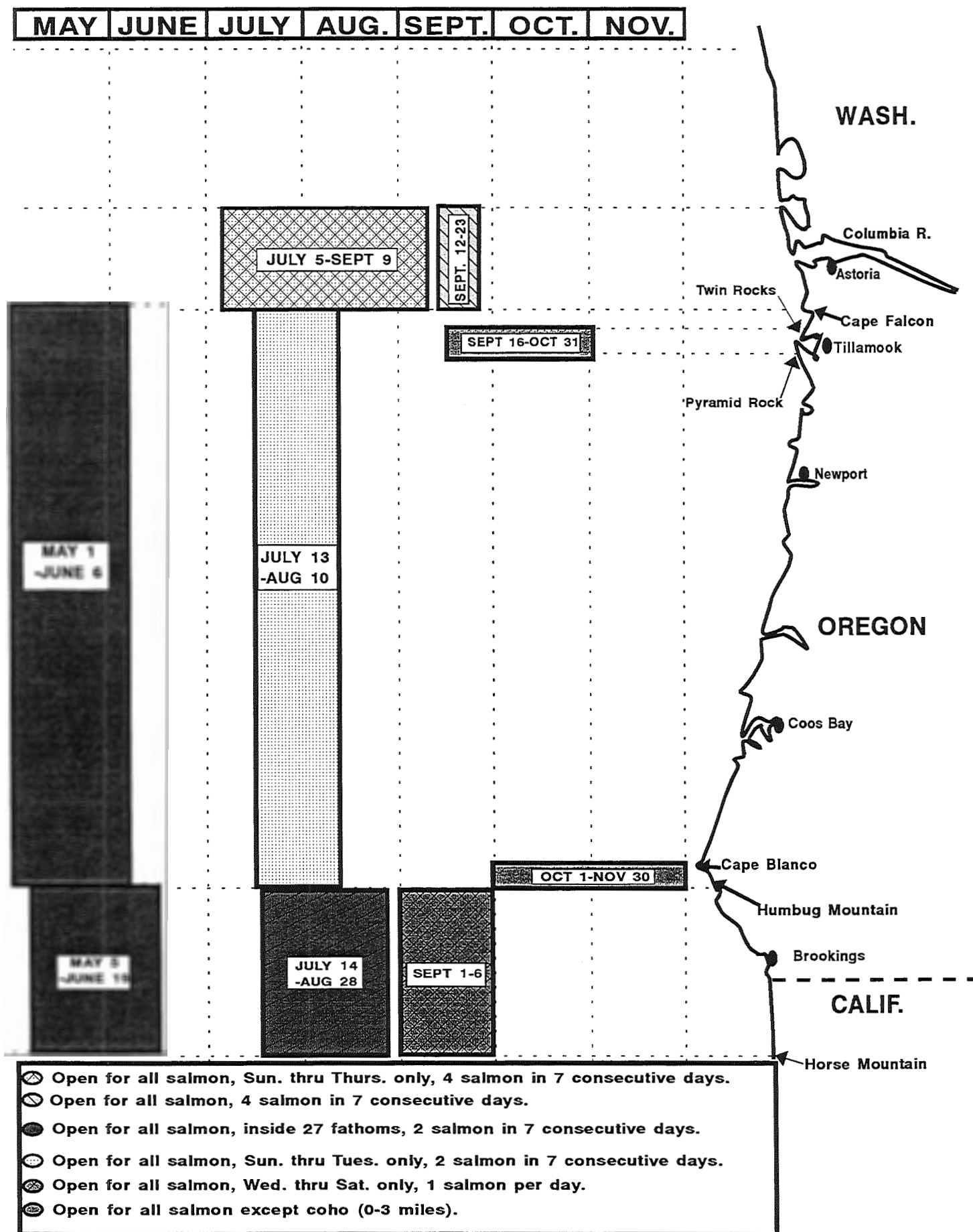


Figure 10. Open recreational seasons off Oregon, 1993.

quota. The area was open to both commercial and recreational fishers. The season opened October 1 and closed November 30. Anglers were allowed up to two fish per day, and up to six fish in seven consecutive days. We did not sample the recreational portion of this fishery but concentrated on the commercial landings. The sport catch was minimal.

**September-October Fishery off Tillamook Bay:** The Oregon Fish and Wildlife Commission set a state waters (0-3 miles) season for all-salmon-except-coho off Tillamook Bay between Twin Rocks and Pyramid Rock. The open period was September 16 through October 31. A bag limit of two fish per day, and not more than six fish in seven consecutive days. In this fishery, barbed hooks were permitted.

## EFFORT AND CATCH STATISTICS

### Effort

Before 1979, ocean recreational effort data included a small number of bottomfishing trips. Since 1979, salmon fishing trips have been tallied separately from bottomfishing trips. Usually ocean anglers choose salmon fishing over bottomfishing when both fisheries are available. However, bottomfishing trips tend to predominate in May and early June, especially in the Newport area where halibut fishing has become popular. The 27 fathom restriction also discourages salmon fishing since most coho salmon are well offshore in May. This year, the 27 fathom closure lasted until June 6 except in the KMZ which did not have such a restriction.

North of Cape Falcon, the season closed on September 23 (59 salmon fishing days) after concerns were raised regarding the status of the stocks. The quotas were not met. South of Falcon, the coho quota ran out on August 10 (50 salmon fishing days). In the Klamath Management Zone, the salmon season closed on September 6 as scheduled (74 salmon fishing days).

In 1993, 80,300 trips (56%) targeted on salmon coastwide, and 62,300 (44%) additional trips fished for bottomfish during the salmon season for a combined total of 141,600 angler trips. This total is less than the sum of the salmon and bottomfish trips because of a small number (1,039) of charter combination trips. Salmon angler trips in 1993 were only half of the 1992 value and 33% below the 1979-92 average.

The sharp drop in effort caused by limited salmon seasons was not buffered by a comparable increase in bottomfishing effort. Bottomfishing trips only increased by 9% over 1992. The total effort was down 35% from 1992 and 49% below the 1971-92 average of 278,700 angler trips. (Tables 8 and 9).

July was the peak month for effort with 37,300 salmon angler trips or 46% of the total. July was also the top month for bottomfishing effort with 21,200 trips or 34% of the total (Table 9, Figure 11, Appendix Table 12). Historically, July has the highest effort for salmon, especially from Depoe Bay south, while August is often the top month for the Tillamook and Astoria areas. Early closures and fractured seasons have obscured this trend in recent years (Appendix Table 13).

Total effort decreased from 1992 in all ports except in the Astoria/Warrenton area which increased 31% and Brookings which stayed the same. Brookings had the highest salmon fishing effort in 1993 with 23,800 angler trips or 30% of the state's total. The

Table 9. Oregon ocean recreational effort by port, by month and by trip type<sup>a</sup>, 1993.

Port/Trip Type	Month					Total <sup>b</sup>
	May	June	July	August	Sept.	
Astoria	-	-	6,118	8,335	4,311	18,764
Salmon	-	-	6,029	8,214	4,306	18,549
Bottomfish	-	-	89	121	5	215
Garibaldi	2,041	2,270	5,911	3,737	580	14,539
Salmon	789	188	2,195	1,106	0	4,278
Bottomfish	1,264	2,082	3,844	2,694	580	10,464
Pacific City	314	394	2,269	916	249	4,142
Salmon	8	7	896	382	0	1,293
Bottomfish	306	387	1,373	534	249	2,849
Depoe Bay	1,607	2,456	6,444	4,160	512	15,179
Salmon	69	31	3,234	1,267	0	4,601
Bottomfish	1,570	2,442	3,293	2,939	512	10,756
Newport	4,019	5,333	14,765	8,770	1,484	34,371
Salmon	278	84	8,354	3,795	0	12,511
Bottomfish	3,755	5,249	6,736	5,064	1,484	22,288
Florence	191	188	2,753	1,221	-	4,353
Salmon	169	79	2,623	1,028	-	3,899
Bottomfish	22	109	130	193	-	454
Winchester Bay	565	384	4,872	1,826	-	7,647
Salmon	544	186	4,357	1,541	-	6,628
Bottomfish	30	198	523	285	-	1,036
Coos Bay	872	1,330	5,489	3,438	592	11,721
Salmon	187	41	3,086	1,481	0	4,795
Bottomfish	685	1,289	2,403	1,957	592	6,926
Brookings	4,472	5,002	9,338	9,190	3,053	31,055
Salmon	3,710	2,690	6,544	8,061	2,786	23,791
Bottomfish	764	2,312	2,808	1,141	267	7,292
Total south of Cape Falcon	14,081	17,357	51,841	33,258	6,470	123,007
Salmon	5,754	3,306	31,289	18,661	2,786	61,796
Bottomfish	8,396	14,068	21,110	14,807	3,684	62,065
State Total	14,081	17,357	58,517	41,803	10,781	142,625
Salmon	5,754	3,306	37,318	26,875	7,092	80,345
Bottomfish	8,396	14,068	21,199	14,928	3,689	62,280

<sup>a</sup> Bottomfish effort is estimated only for those time periods when port sampling occurred.

<sup>b</sup> Totals may be less than the sum of trip types because of a small number of combination trips on charter boats.



ANGLER TRIPS (Thousands)

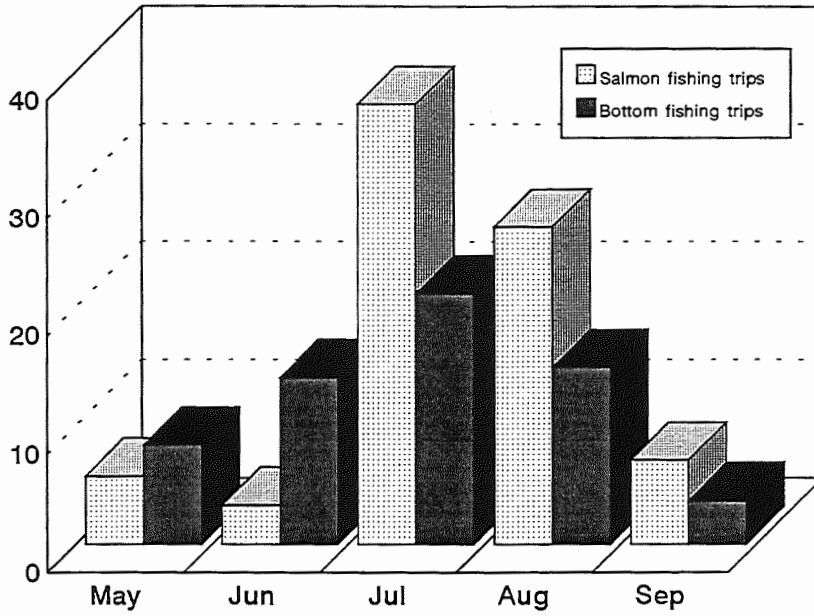


Figure 11. Oregon ocean angler trips by target species during the 1993 salmon season.

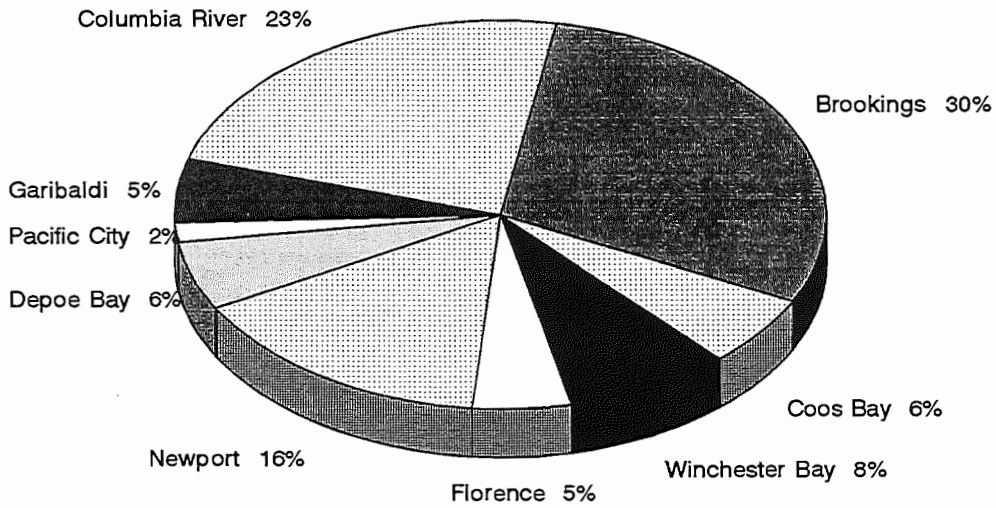


Figure 12. Recreational ocean salmon angler trips by port, 1993.

Astoria/Warrenton area and Newport followed with 18,500 and 12,500 salmon angler trips respectively (Figure 13).

Newport also had the highest bottomfishing effort with 22,300 trips. Depoe Bay and Garibaldi followed with over 10,000 bottomfishing trips each. While the coast-wide increase in bottomfishing effort was only 9%, individual ports showed larger increases, especially the traditional salmon ports of Winchester Bay and Florence (Table 9, Figure 12). Appendix Table 14 shows past ocean recreational effort and catch by management areas. Note that port and management areas are not synonymous.

## **Catch**

As with effort, catches were strongly influenced by the small quotas and restrictive seasons. The sport sampling survey estimated Oregon's 1993 ocean salmon catch by species, except for minor landings from some unsurveyed ports and time periods. Fish landed at minor ports usually represent less than two percent of the total catch. Catch estimates from salmon/steelhead tag data for such ports will not be available until mid-1994.

The 1993 Oregon ocean recreational salmon catch was estimated at 65,800 fish, a 33% decrease from 1992. This is well below the record 580,700 catch in 1976 and the 1979-92 average of 235,900 salmon (Table 8). Figure 14 shows the trend in recreational ocean catches since 1966.

**Chinook:** The chinook catch continued declining from its most recent peak in 1987. The recreational harvest of 6,500 chinook in 1993 was the lowest on record, 51% below the 1992 level and only 22% of the 1979-92 average catch of 29,300 fish.

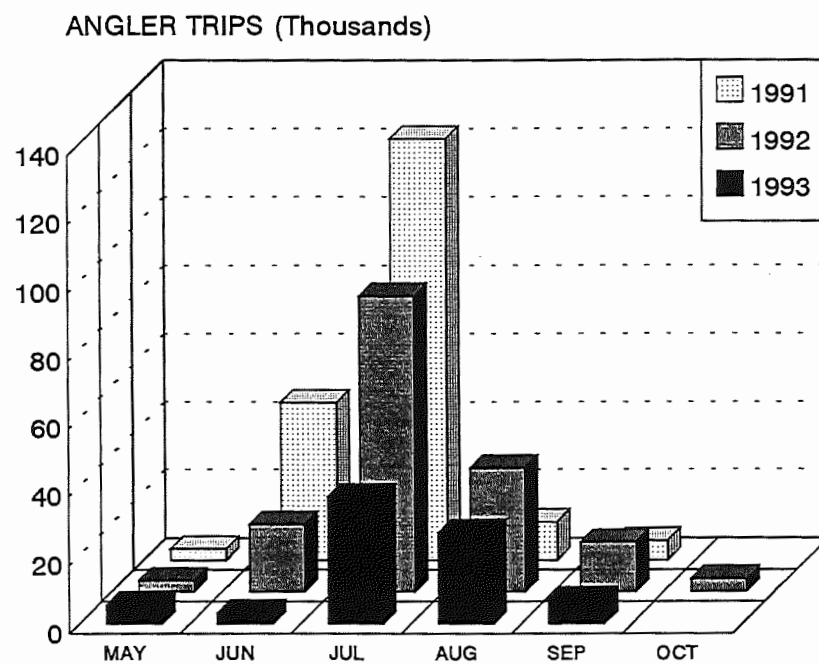
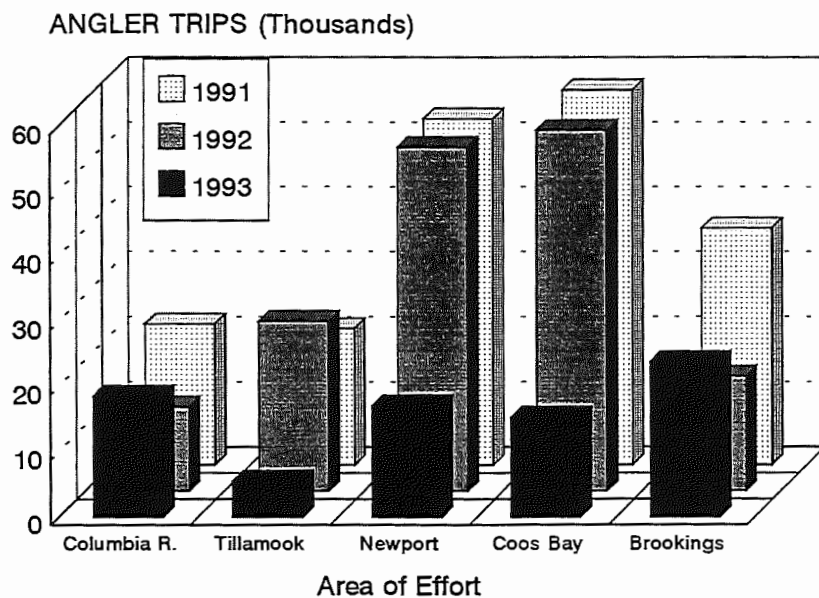
Brookings took 3,800 chinook or 59% of the total catch. The rest of the coast had modest landings in an expected pattern with Astoria/Warrenton following Brookings with 900 fish caught. (Table 10, and Figures 15 and 16). Historically, the Columbia River area has been an important chinook catch area, but complex fishery issues, restrictions, and small quotas have dampened catches (Appendix Tables 13, 14, and 15).

Monthly landings deviated from the expected July peak since the salmon season was closed for the last part of June and the first half of July. Even so, 30% of the catch came in July while 36% was taken in August. Brookings predominated in all months, especially May and August (Table 10 and Figure 15). Historical catch patterns are shown in Appendix Tables 13, 14, and 15.

**Coho:** The 1993 catch of 59,300 coho by the recreational fleet was 78% below the 1992 harvest, 71% below the 1979-92 average of 204,800 fish, and represents the lowest recorded annual ocean landings in the data base (Table 8). The Columbia River area landed the most coho, 22,300 fish or 38% of the total. Newport took 11,200 fish, making up another 19% of the catch. Landings were down from 1992 levels in all ports except Astoria (unchanged) and Brookings (up 55%) (Table 11, Figures 17 and 18, and Appendix Table 18).

The monthly pattern of coho landings for 1993 was greatly impacted by the restrictive harvest regulations since the general season did not open until mid-July and it closed on August 10 between Cape Falcon and Humbug Mountain. July was still the peak month but August was also important. May and June landings were insignificant (Table 11). A historical perspective on coho catch by month and catch area is shown in Appendix Tables 14 and 17.

# Effort



**Figure 13. Oregon ocean recreational salmon angler trips by catch area and by month, 1991-93.**

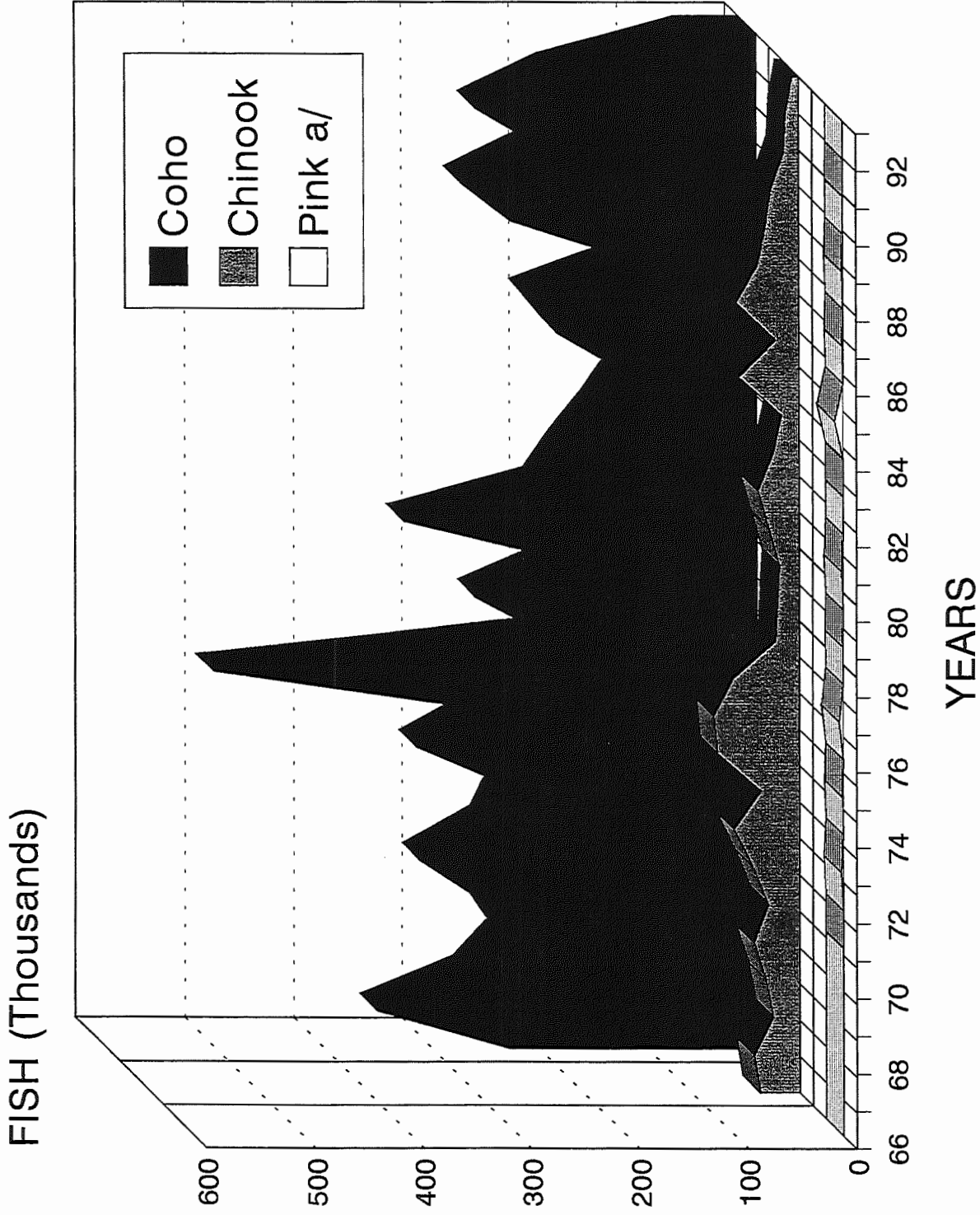


Figure 14. Trends in Oregon's recreational ocean salmon catch, 1966-93.  
 a/ Pink salmon data from 1971-93 only.

Table 10. Oregon ocean recreational chinook catch by port by month<sup>a</sup>, 1993.

Port	Month					Total
	May	June	July	Aug.	Sept.	
Columbia R.	-	-	279	439	193	911
Garibaldi	62	7	141	46	-	256
Pacific City	3	1	35	2	-	41
Depoe Bay	7	-	85	14	-	106
Newport	27	-	194	109	-	330
Florence	18	4	103	53	-	178
Winchester Bay	36	3	248	204	-	491
Coos Bay	16	-	246	153	-	415
Brookings	1,124	224	627	1,324	468	3,767
Total South of Cape Falcon	1,293	239	1,679	1,905	468	5,584
Statewide Total	1,293	239	1,958	2,344	661	6,495

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

Table 11. Oregon ocean recreational coho catch by port by month<sup>a</sup>, 1993.

Port	Month					Total
	May	June	July	Aug.	Sept.	
Columbia R.	-	-	7,622	10,917	3,810	22,349
Garibaldi	-	-	426	794	-	1,220
Pacific City	4	1	500	598	-	1,103
Depoe Bay	5	4	3,102	2,067	-	5,178
Newport	-	-	6,323	4,883	-	11,206
Florence	5	2	1,408	899	-	2,314
Winchester Bay	58	80	3,647	1,514	-	5,299
Coos Bay	13	3	2,587	1,975	-	4,578
Brookings	97	70	1,922	3,445	500	6,034
Total South of Cape Falcon	182	160	19,915	16,175	500	36,932
Statewide Total	182	160	27,537	27,092	4,310	59,281

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

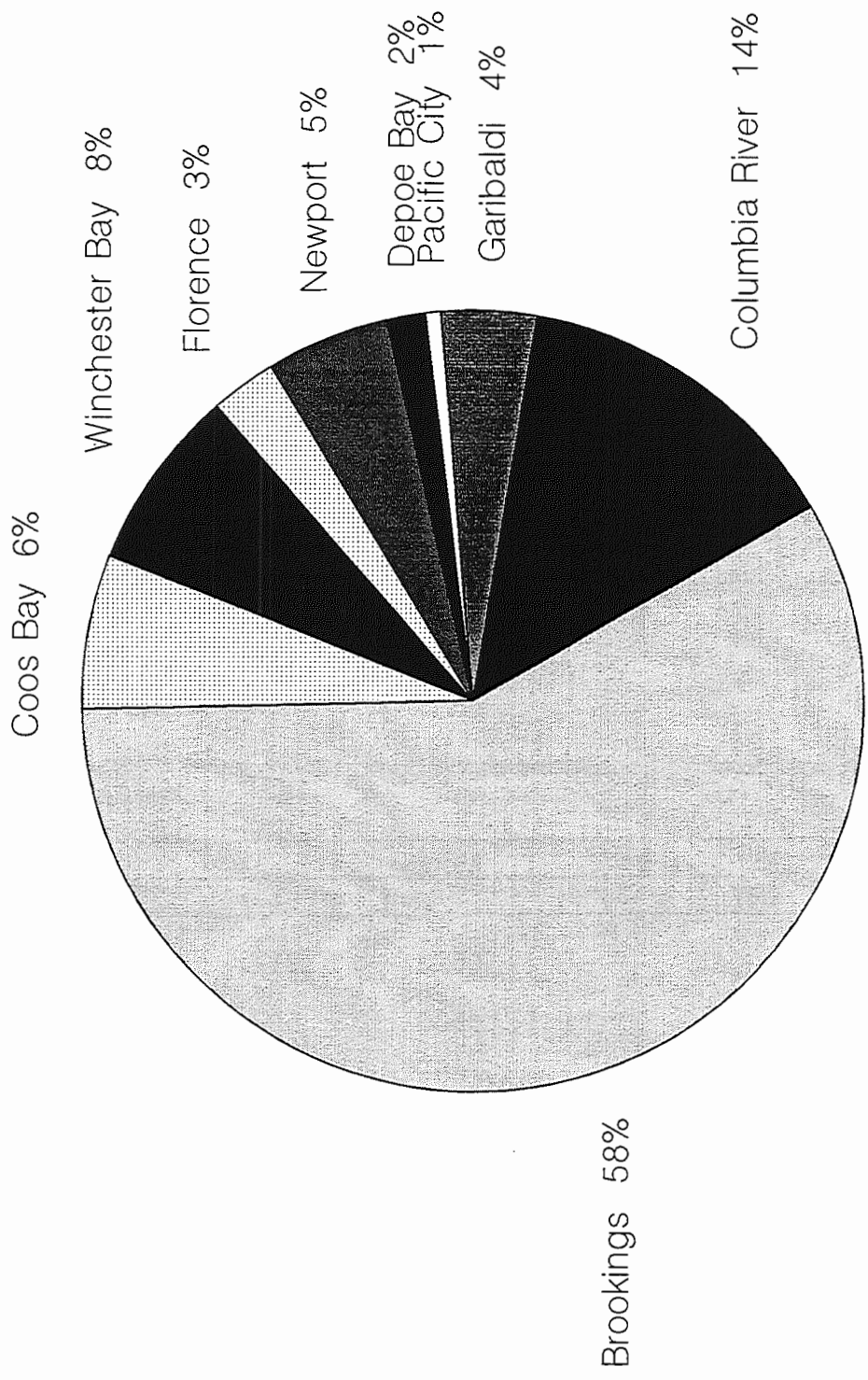
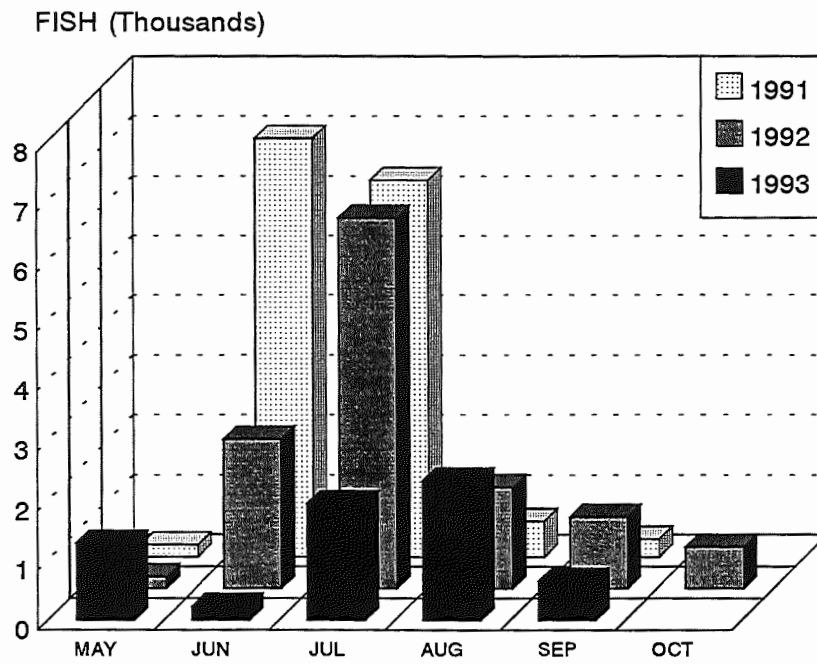
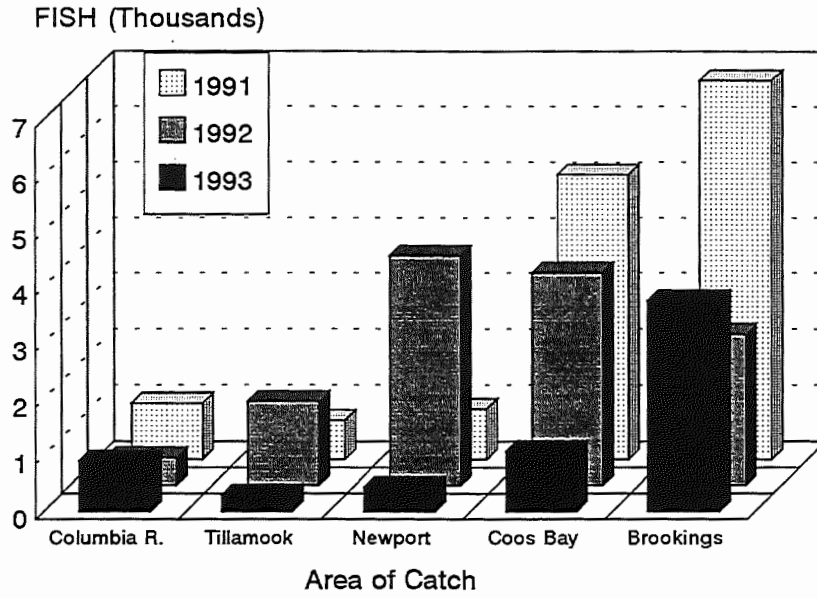
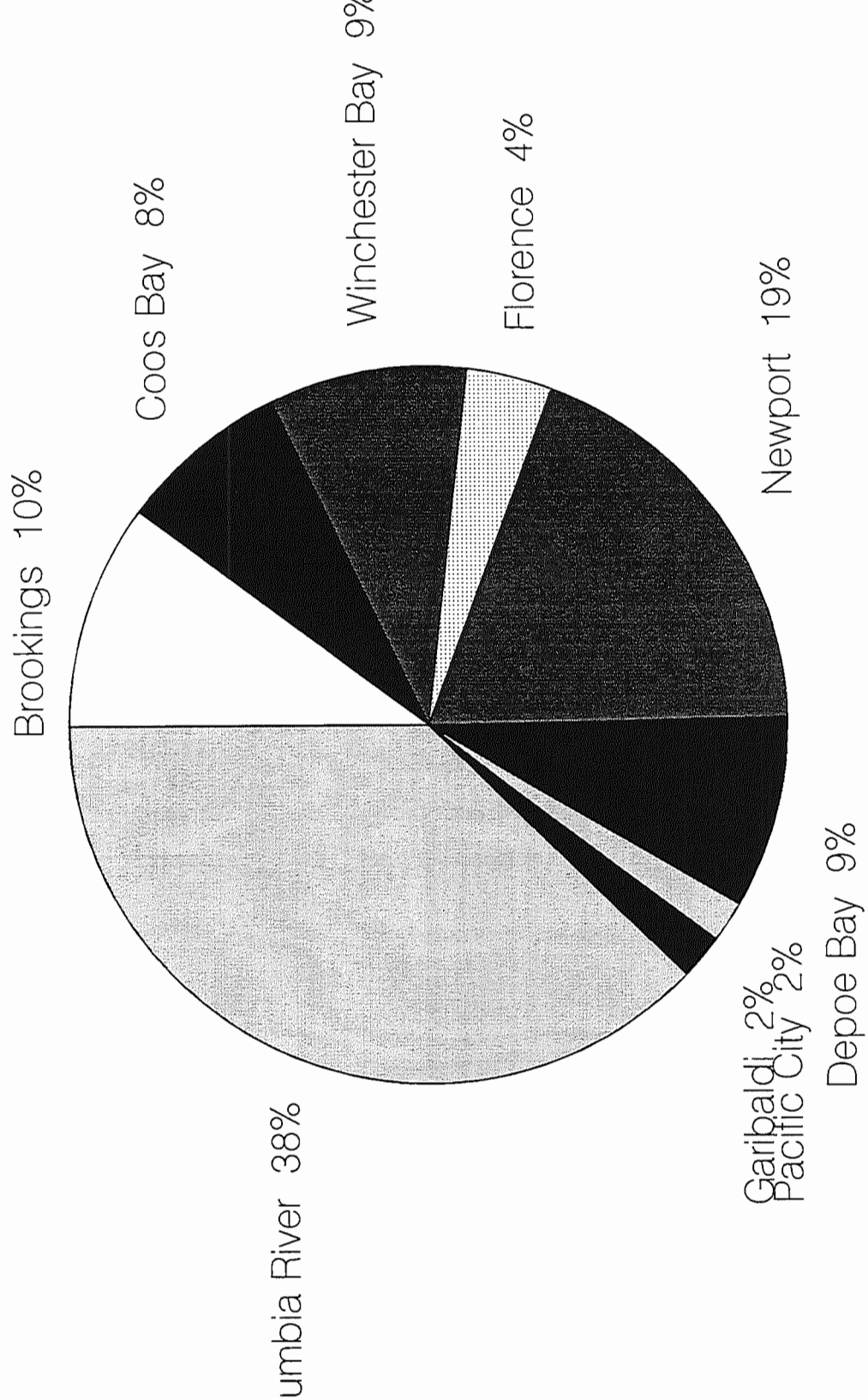


Figure 15. Oregon ocean recreational chinook catch by port, 1993.

# Chinook



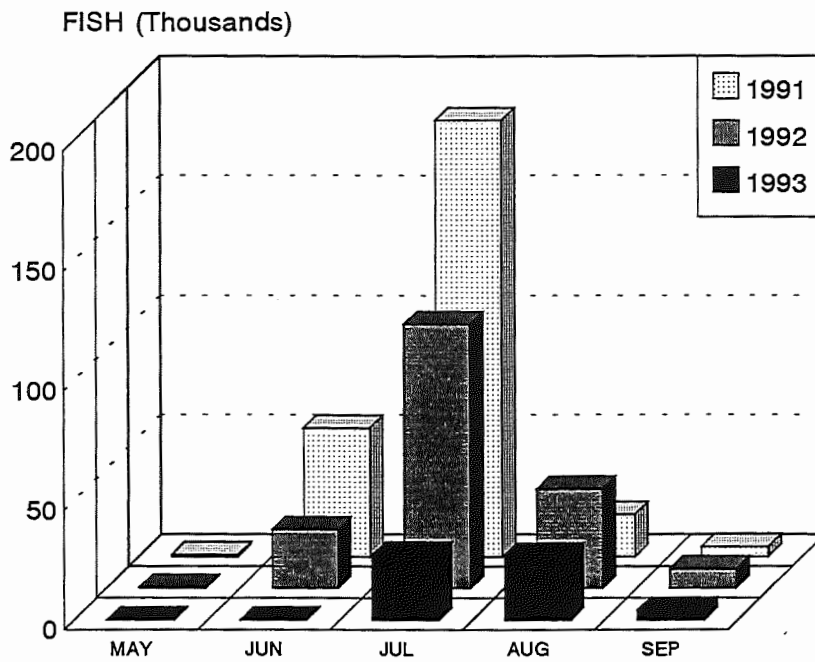
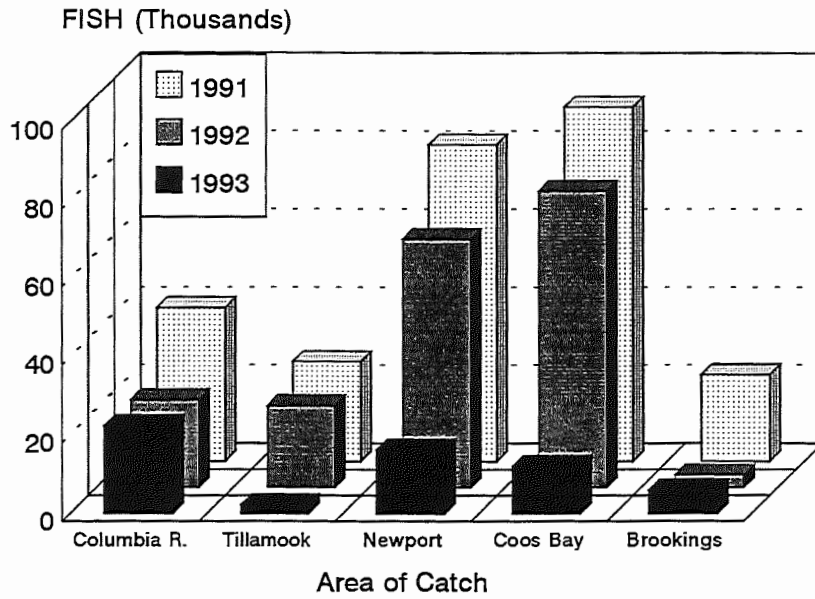
**Figure 16. Oregon ocean recreational chinook catch by catch area and by month, 1991-93.**



**Figure 17. Oregon ocean recreational coho catch by port, 1993.**



# Coho



**Figure 18. Oregon ocean recreational coho catch by catch area and by month, 1991-93.**

## **CHARTER/PRIVATE BOAT FISHERIES**

### **Background**

About 104 charter boats actively participated in Oregon ocean fisheries in 1993, compared to about 119 vessels in 1992. From 1983 through 1993, we have monitored charter boat participation in Oregon. Active vessels have ranged from 158 boats in 1988 to 104 boats this year. The charter fleets at the Columbia River mouth, Coos Bay and Winchester Bay have halved in numbers from 1983 to 1993. The Brookings fleet built up to 10 boats by 1991 but was back to 4 boats by 1993. The other major ports have been relatively stable (Appendix Table 19). Salmon is the primary pursuit in all ports when available, but bottomfishing is also important to the Garibaldi, Depoe Bay, Newport, Coos Bay, Gold Beach, and Brookings charter fleets.

No estimate is available on the number of individual private boats that fished in the ocean.

### **Charter Angler Effort**

The 1993 charter boat effort was estimated at 13,400 salmon angler trips, down 55% from the 1992 level and only a quarter of the 1979-92 average of 52,500. The 13,400 trips included 1,000 combination salmon/bottomfish trips. Charter anglers made up 17% of the total ocean salmon trips in 1993, compared to 18% in 1992 and the 1979-92 average of 22%. When bottomfish are added in, charter effort in 1993 constituted 34% of the total effort compared to 26% in 1992 (Tables 12 and 13, and Figure 19).

Charter boats operate out of most major Oregon ports, but boat and fleet sizes vary. Newport, with 30 boats, had the largest fleet and the most effort of any port with 2,400 salmon angler and 14,200 bottomfish angler trips, closely followed by Depoe Bay (21 boats) with 2,300 salmon angler trips and 9,400 bottomfish trips. Garibaldi, with 7,400 total angler trips was in third place almost entirely on the strength of the bottomfish effort. The Astoria/Warrenton area (24 boats) had the most salmon charter effort with 5,800 trips. Salmon charter effort was down from 1992 levels in all ports except Astoria and Brookings.

The severe restrictions on salmon fishing increased the percentage of charter anglers that went bottomfishing in 1993. Seventy-two percent or 34,500 charter anglers coastwide targeted on bottomfish during the salmon season. The comparable value for 1992 was 49%. An additional 1,000 combination trips fished for both salmon and bottomfish. The high interest in bottomfishing reflected both an increasing interest in halibut fishing and the tight restrictions on salmon fishing. It is important to remember that some additional bottomfishing effort takes place before and after the salmon season.

### **Charter Angler Catch**

Charter anglers landed 900 chinook, 16,200 coho, and 5 pink salmon in 1993. The total catch of 17,200 salmon by charter anglers was down by 65% from 1992. The charter fleet landed 26% of the total recreational salmon catch in 1993, compared to 25% in 1992 and the 1979-92 average of 30% (Tables 12 and 13, and Figure 19).

The Astoria charter fleet took 8,900 fish or more than half of the charter caught salmon. Newport and Depoe Bay caught 3,000 and 2,400 salmon for a combined 32% share of the charter catch. Catch rates were down; salmon per angler averages ranged from 1.6

Table 12. Oregon ocean recreational salmon effort and catch by boat type, 1993.

Port	Salmon Charter Boats <sup>a</sup>					Salmon Private Boats				
	Boat Trips	Angler Trips	Salmon Catch			Boat Trips	Angler Trips	Salmon Catch		
			Chinook	Coho	Pink			Chinook	Coho	Pink
Columbia R.	826	5,840	336	8,590	2	4,083	12,709	575	13,759	0
Garibaldi	49	476	18	295	1	1,499	3,802	238	925	0
Pacific City	0	0	0	0	0	432	1,293	41	1,103	1
Depoe Bay	289	2,304	41	2,397	0	797	2,297	65	2,781	1
Newport	289	2,431	80	2,903	0	3,506	10,080	250	8,303	3
Florence	19	173	5	141	0	1,443	3,726	173	2,173	0
Winchester Bay	182	1,145	134	1,022	2	2,076	5,483	357	4,277	11
Coos Bay	63	454	108	568	0	1,674	4,341	307	4,010	0
Brookings	103	626	211	300	0	9,843	23,165	3,556	5,734	4
Total	1,820	13,449	858	15,043	5	25,353	66,896	5,562	43,065	20
Combined totals for all Oregon craft	27,173	80,345	6,495	59,281	25					

<sup>a</sup> Includes combination salmon & bottomfish trips.

113. Oregon ocean recreational salmon and bottomfish effort and catch by boat and trip type<sup>a</sup>, 1993.

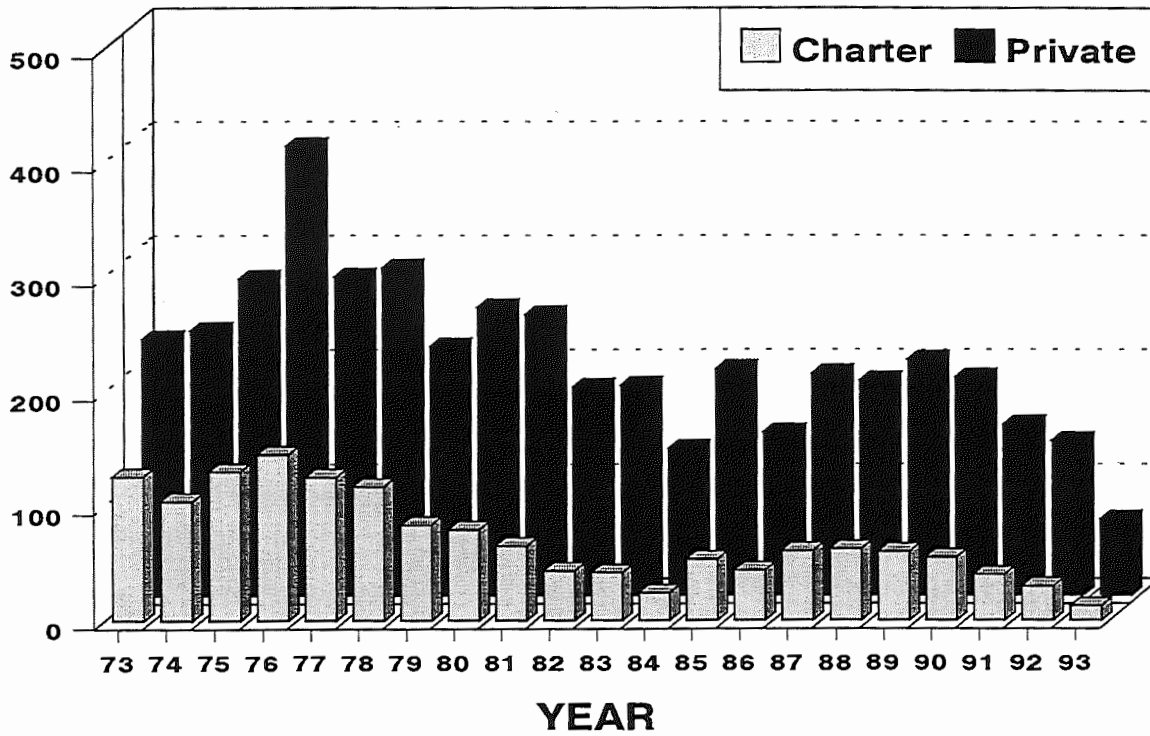
	Charter						Private											
	Boat Trips			Angler Trips			Total Catch			Boat Trips			Angler Trips			Total Catch		
	Salmon	Combination	Bottom	Salmon	Combination	Bottom	Salmon <sup>b</sup>	Bottom <sup>c</sup>		Salmon	Bottom		Salmon	Bottom		Salmon <sup>b</sup>	Bottom	
Clatsop R.	806	20	2	5,655	185	21	8,928	1,530		4,083	3	12,709	9	14,334	59	16,193	16,193	
Idi	33	16	633	273	203	6,942	314	66,659		1,499	1,183	3,802	3,319	1,163	1,145	13,522	13,522	
City	-	-	-	-	-	-	-	-		432	918	1,293	2,849	1,145	1,145	13,522	13,522	
Bay	267	22	1,192	2,126	178	9,377	2,438	80,877		797	439	2,297	1,201	2,847	7,847	31,900	31,900	
Port	246	43	1,531	2,003	428	13,728	2,983	141,343		3,506	2,938	10,080	8,132	8,556	31,900	31,900		
Ice	19	0	35	173	0	309	146	3,997		1,443	64	3,726	145	2,346	2,000	2,000		
Wester Bay	180	2	115	1,128	17	725	1,158	7,590		2,076	117	5,483	294	4,645	2,170	2,170		
Bay	63	0	315	454	0	2,348	676	27,261		1,674	1,873	4,341	4,578	4,317	27,261	27,261		
ings	99	4	147	598	28	1,001	511	9,502		9,843	2,503	23,165	6,263	9,294	40,500	40,500		
	1,713	107	3,970	12,798	1,039	34,451	17,154	338,759		25,353	9,948	66,896	26,790	48,647	141,966	141,966		

Boat types are separated by trips that target salmon, bottomfish, or combination trips. For private boats, combination trips are included as salmon trips.

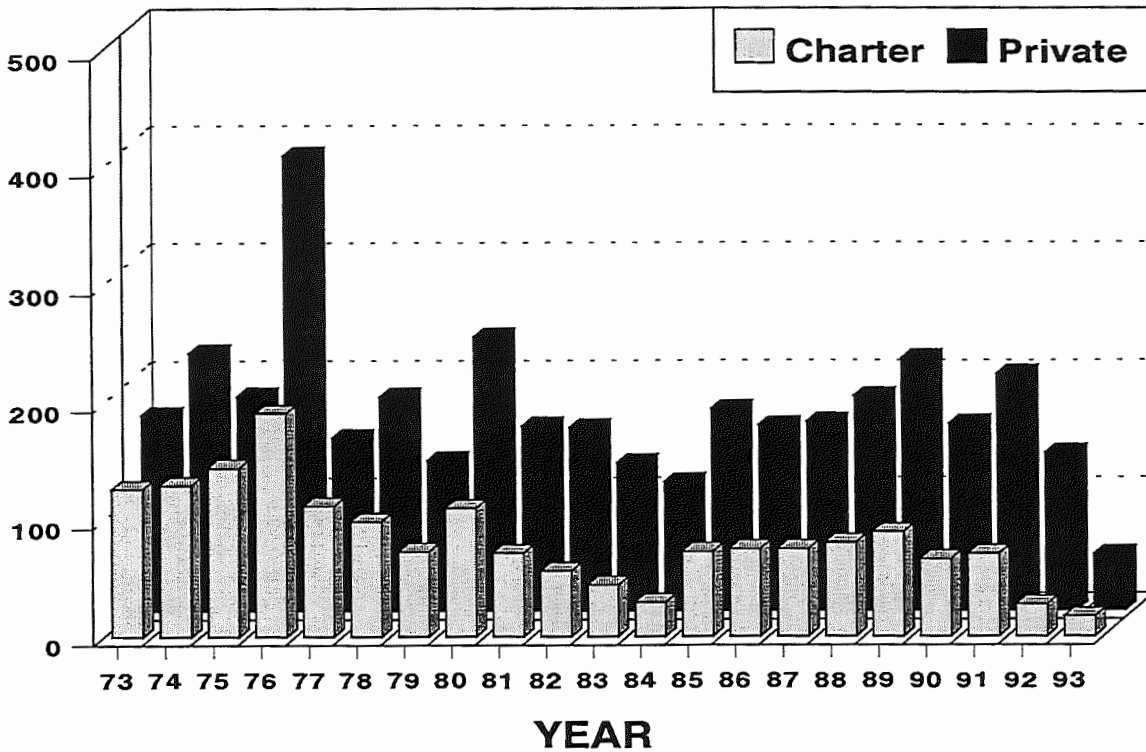
Includes: coho, chinook and pink salmon.

Bottomfish includes: rockfish, lingcod, flatfish, and miscellaneous species.

**ANGLER TRIPS (Thousands)**



**SALMON (Thousands of fish)**



**Figure 19. A comparison of effort and catch by Oregon ocean salmon charter and private anglers, 1973-93.**

in Astoria/Warrenton to 0.9 salmon per angler in Brookings. The state-wide charter average was 1.4 salmon/angler.

### **Private Boat Angler Effort**

The 1993 salmon effort from private boats was estimated at 66,900 angler trips or 83% of the total salmon effort. This is 49% less than the 1992 value and 63% below the 1979-92 average of 182,400 angler trips. An additional 26,800 angler trips were spent on bottomfishing only. (Table 13 and Figure 19).

Brookings, Newport, and the Columbia River area saw the most private boat effort for salmon in 1993. Brookings had 23,200 salmon angler trips or 35% of the private boat total, followed by Astoria/Warrenton area with 12,700 trips (19%) and Newport with 10,100 salmon trips (15%). Almost all anglers target on salmon in the Columbia River area, Florence, and Winchester Bay.

Some private boats only fish for bottomfish even during the salmon season. Trip type (salmon or bottomfish) ratios were calculated from angler interviews, and applied to the total effort. In years with full salmon seasons, that figure has been less than 10%. In the restricted 1993 season, 26,800 angler trips or 33% of the private trips targeted on bottomfish, compared to 27,000 angler trips or 17% in 1992. Newport had the most private bottomfish anglers with 8,100, followed by Brookings with 6,300, and Coos Bay with 4,600 angler trips.

### **Private Boat Angler Catch**

Anglers from private boats landed 5,600 chinook, 66,900 coho and 20 pink salmon in 1993. The total catch of 48,600 salmon was 67% below the 1992 catch and 70% below the 1979-92 average of 163,700 fish. Private boat anglers caught 74% of the total recreational salmon landed in 1993, compared to 75% in 1992, and the 1979-92 average of 71% (Table 13 and Figure 19).

Astoria/Warrenton private boat anglers landed the most salmon; 14,300 fish or 29% of the total private boat angler catch. Angler success averaged 1.1 salmon per angler. The high effort port of Brookings had landings of 9,300 salmon with an average success rate of 0.4 fish per angler. The daily bag limit in the KMZ was only one salmon. Newport caught 8,600 salmon and had a catch rate of 0.8 fish per angler. These three ports accounted for 66% of the total private boat angler catch. The coastwide angler success rate was 0.7 salmon per angler, compared to 1.1 in 1992 and the 1979-92 average of 0.9.

## **ESTIMATES OF RELEASED SALMON**

### **Background**

The number of salmon released, "shakers", is estimated each year from interview data collected during the ocean sampling survey. The data set depends on people correctly recalling the number and species of salmon released and varies with the expertise and attitude of the angler. In 1993, we discovered a programming error in the computer program that tallies this data. The error resulted in an underestimate of salmon released, especially chinook, for the years 1987 through 1992. The corrected information will be published in the 1994 annual report. This data is not used in active

management, but can be used as a rough estimate to evaluate shaker mortality or other regulation impacts.

We also had an opportunity to compare release information collected in the Columbia River area during the salmon creel with the same data collected by our samplers in a special test fishery in the Columbia River Control Zone (CZ). That comparison is discussed below.

### **North of Cape Falcon**

Our creel survey estimated that 214 chinook (20%) were released in the Columbia River area during the ocean season. This is considerably below the 1979-92 average shaker rate and the corrected 47% rate for 1992. The "shaker" rate for coho in the Columbia River area of 3% was only a quarter of the 1992 value of 12% and half the 1979-92 average (Table 14).

The CZ charter test fishery comparison with the above general season recreational creel data suggests a similar "shaker" rate for coho salmon (2% vs 3%). There is a large discrepancy in the released chinook information however. The test fishery had a 66% release rate on chinook compared to only 20% for the creel survey (Schindler et al., 1994).

### **South of Cape Falcon**

The information on released chinook for 1993 was opposite that experienced in 1992 when close to 50% were released in Florence, Winchester Bay and Coos Bay. These ports often encounter small chinook during part of the salmon season. Restrictive regulations and poor ocean productivity helped to reinforce that trend in 1992. Brookings' one salmon regulation also resulted in increased handling of fish. In 1993, the chinook shaker rates were uniformly lower from Florence south, compared to 1992, but elevated on the central coast.

The 1993 coho data showed a lower than expected shaker rate; 4% coastwide compared to 7% in 1992. Most ports ended up with an even greater reduction in the release percentages for 1993 (Table 15).

## **RECREATIONAL OCEAN SALMON CODED-WIRE TAG SAMPLING**

Samplers at nine ports observed 44% of the combined chinook and coho landed during the 1993 ocean recreational season.

### **Chinook**

The samplers examined 2,228 chinook, found 79 (3.5%) that had adipose fin clips (Table 16), and had two additional chinook heads turned in by anglers. Department staff found readable tags in 70 of the 81 chinook heads for an 86% recovery rate. Most of the recovered tags were released by the California Department of Fish and Game (29%), Washington Department of Fisheries (27%), Oregon Department of Fish and Wildlife (24%), and the U.S. Fish and Wildlife Service (16%) (Figure 20).

Table 14. Chinook and coho salmon released by Oregon ocean recreational anglers in the Columbia River area, 1979-93.

Year	Number Retained		Number Released		Percent Released	
	Chinook	Coho	Chinook	Coho	Chinook	Coho
1979	7,072	37,894	8,719	4,905	55	12
1980	5,503	55,647	7,891	1,905	59	3
1981	11,516	54,294	21,664	1,643	65	3
1982	8,235	35,476	6,949	2,082	46	6
1983	3,440	37,245	3,671	8,318	52	18
1984	26 <sup>a</sup>	10,874	1,410	654	98	6
1985	3,565	31,010	5,235	1,275	59	4
1986	1,909	36,666	2,320	2,197	55	6
1987	4,019	25,299	2,467	2,145	38	8
1988	481	9,844	289	481	38	5
1989	1,464	34,211	522	2,616	26	7
1990	3,323	36,077	2,166	2,105	39	5
1991	983	39,396	349	2,397	26	6
1992	508	22,280	162	2,926	46	12
<b>1979-92 Avg.</b>	<b>4,001<sup>b</sup></b>	<b>28,215</b>	<b>4,558<sup>b</sup></b>	<b>2,546</b>	<b>53<sup>b</sup></b>	<b>7</b>
1993 <sup>c</sup>	836	21,176	214	726	20	3

<sup>a</sup> Illegal or taken south of Cape Falcon.

<sup>b</sup> Excluding 1984.

<sup>c</sup> Excluding the Columbia River Control Zone test data.

Table 15. Chinook and coho salmon released by Oregon ocean recreational anglers in 1993, by port.

Port	Number Retained		Number Released		Percent Released	
	Chinook	Coho	Chinook	Coho	Chinook	Coho
Columbia R. <sup>1</sup>	836	21,176	214	726	20	3
Garibaldi	256	1,220	4	56	2	4
Pacific City	41	1,103	12	36	23	3
Depoe Bay	106	5,178	12	164	10	2
Newport	330	11,206	111	897	25	7
Florence	178	2,314	13	80	7	1
Winchester Bay	491	5,299	36	91	7	2
Coos Bay	415	4,578	29	113	7	2
Brookings	3,767	6,034	145	219	4	4
Total South of Cape Falcon	5,584	36,932	362	1,656	6	4
Statewide Total <sup>1</sup>	6,420	58,108	576	2,382	8	4

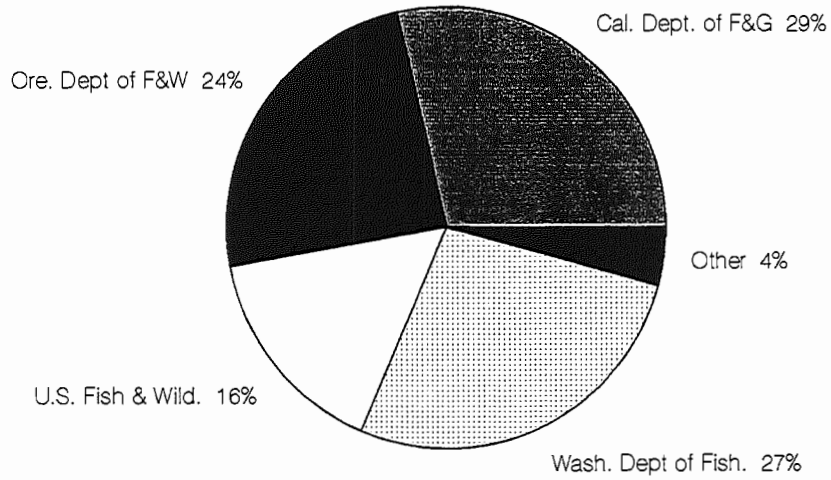
<sup>1</sup> Excluding the Columbia River Control Zone test fishery data.



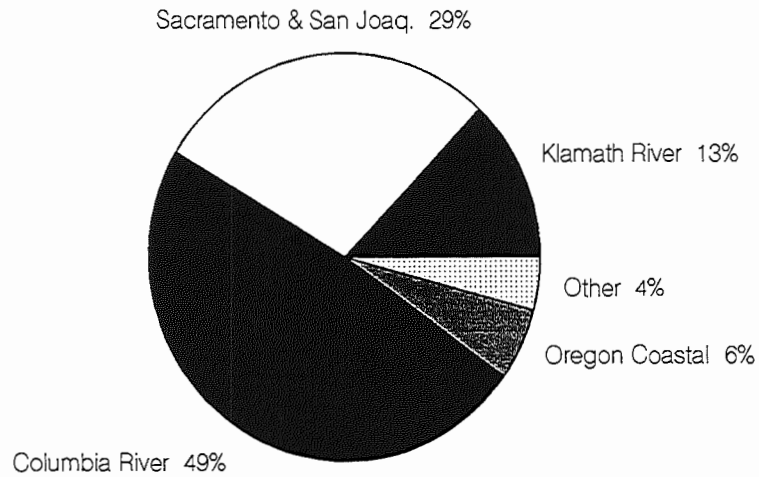
Table 16. Chinook coded-wire tag sampling from the ocean recreational fishery, by port and month, 1993.

Port	May	June	July	August	September	Total
<u>Columbia R.</u>						
Total Catch	-	-	279	439	193	911
No. Sampled	-	-	142	208	69	419
% Sampled	-	-	51	47	36	46
No. Ad Marks	-	-	7	21	3	31
<u>Garibaldi</u>						
Total Catch	62	7	141	46	-	256
No. Sampled	13	2	58	23	-	96
% Sampled	21	29	41	50	-	38
No. Ad Marks	0	0	1	0	-	1
<u>Pacific City</u>						
Total Catch	3	1	35	2	-	41
No. Sampled	3	1	35	2	-	41
% Sampled	100	100	100	100	-	100
No. Ad Marks	0	0	0	0	-	0
<u>Depoe Bay</u>						
Total Catch	7	-	85	14	-	106
No. Sampled	6	-	63	10	-	79
% Sampled	86	-	74	71	-	75
No. Ad Marks	1	-	3	0	-	4
<u>Newport</u>						
Total Catch	27	-	194	109	-	330
No. Sampled	8	-	68	32	-	108
% Sampled	30	-	35	29	-	33
No. Ad Marks	0	-	6	1	-	7
<u>Florence</u>						
Total Catch	18	4	103	53	-	178
No. Sampled	7	2	41	22	-	72
% Sampled	39	50	40	42	-	40
No. Ad Marks	0	0	1	1	-	2
<u>Winchester Bay</u>						
Total Catch	36	3	248	204	-	491
No. Sampled	17	1	124	71	-	213
% Sampled	47	33	50	35	-	43
No. Ad Marks	0	0	2	4	-	6
<u>Coos Bay</u>						
Total Catch	16	-	246	153	-	415
No. Sampled	9	-	98	49	-	156
% Sampled	56	-	40	32	-	38
No. Ad Marks	0	-	5	2	-	7
<u>Brookings</u>						
Total Catch	1,124	224	627	1,324	468	3,767
No. Sampled	186	69	214	448	127	1,044
% Sampled	17	31	34	34	27	28
No. Ad Marks	2	4	2	7	6	21
<u>Total</u>						
Total Catch	1,293	239	1,958	2,344	661	6,495
No. Sampled	249	75	805	836	196	2,228
% Sampled	19	31	42	36	30	34
No. Ad Marks	3	4	27	36	9	79

**RELEASE AGENCY**  
n=70



**BASIN OF RELEASE**  
n=70



**NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.**

**Figure 20. Recoveries of chinook coded wire tags, by release agency and by basin of release, from Oregon's ocean recreational catch, 1993.**

## **Coho**

The samplers examined 26,541 coho, found 1,256 (5%) that had adipose fin clips (Table 17), and had nine additional coho heads turned in by anglers. Staff found 1,121 readable tags in the 1,265 coho heads for an 89% recovery rate. Most of the recovered tags were released by the Oregon Department of Fish and Wildlife (40%), the Washington Department of Fisheries (25%), and Cooperatives in Washington State (12%) (Figure 21).

**NOTE: The above information cannot be used to estimate stock contribution since tagging is not representative of stocks, and most stocks of wild fish have no tagging programs or population estimators associated with them.**

## **SPECIAL FISHERIES AND STUDIES**

### **Coho Length/Weight Relationship**

Length/weight data from coho salmon has been collected by OSMP sporadically since 1983 (also in 1947 and 1948) to gauge the relative condition factors for coho. Historically this data has been collected from commercial coho landings because of the ready availability of adequate samples, and the uniform method of dressing the fish. In 1993, the samples were collected from recreational landings of coho, due to extremely limited commercial troll openings in the Columbia River area and no open commercial coho seasons to the south of Cape Falcon. Samples were collected in Astoria/Warrenton and Newport by OSMP permanent staff. Fork lengths were taken in millimeters using a measuring board, and dressed weights (head-on, viscera and gills removed) were recorded to the nearest eighth pound using a Chatillon hand scale.

A total of 929 coho were sampled for length/weight at Astoria/Warrenton over an eight week period (statistical weeks 28 - 35). At Newport, 272 coho were sampled over a four week period (statistical weeks 30 - 33) (Table 18). Most of the fish sampled in Newport had to be dressed out by OSMP staff in order to maintain uniformity with commercially dressed fish; this was not a problem in Warrenton/Hammond.

The 1993, Astoria/Warrenton coho length/weight relationship was somewhat similar to those observed during the disastrous 1983 El Niño. Generally, the coho appeared to be in slightly better condition than the 1983 El Niño coho (Table 19 and Figure 22).

In Newport, the 1993 coho length/weight data mirrored the 1983 and 1992 El Niño samples. During the period when samples were being collected, the fish that were being landed into Newport were in very poor condition (Table 20 and Figure 23).

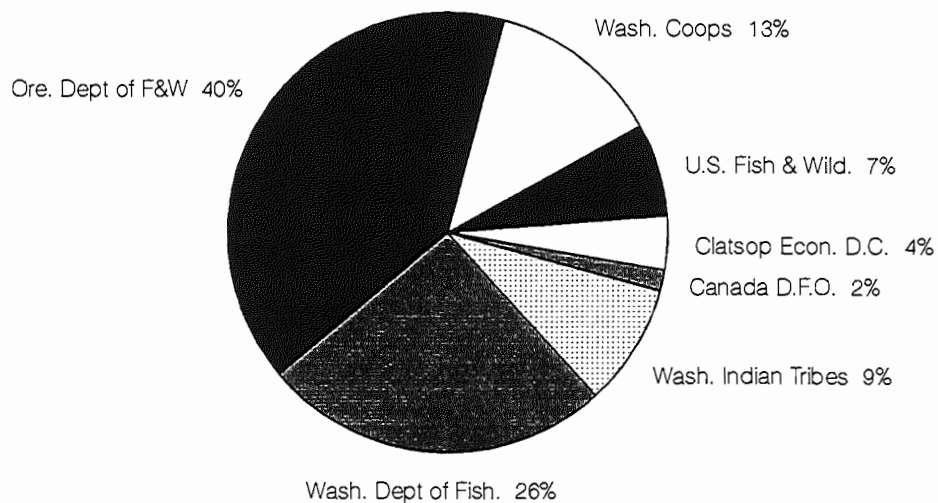
### **September-October Fishery off Tillamook Bay**

This state waters (0-3 miles) recreational fishery targets on fall chinook returning to streams that enter Tillamook Bay. This season was open from September 15 through October 31. An additional larger fishery occurs within the estuary and in fresh-water. Although this fishery was not surveyed in 1993, the catch information will be summarized from the salmon punch card returns.

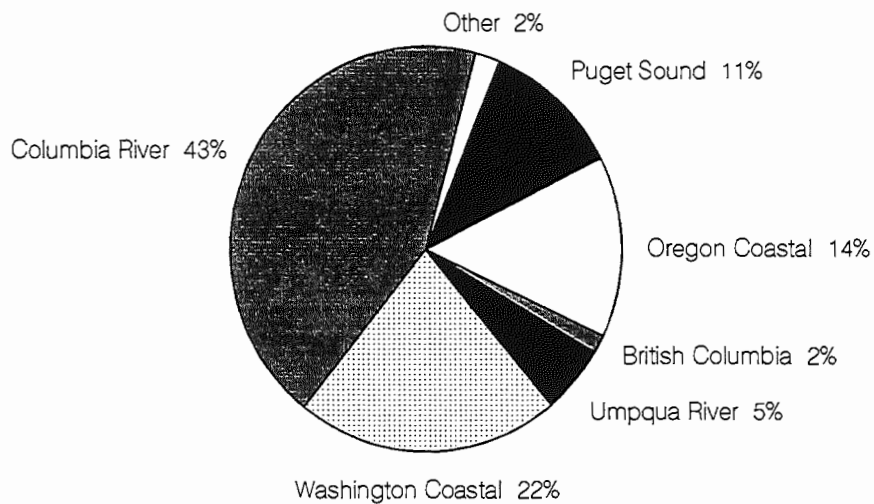
Table 17. Coho coded-wire tag sampling data from the ocean recreational fishery, by port and month, 1993.

Port	May	June	July	August	September	Total
<u>Columbia R.</u>						
Total Catch	-	-	7,622	10,917	3,810	22,349
No. Sampled	-	-	3,564	5,139	1,408	10,111
% Sampled	-	-	47	47	37	45
No. Ad Marks	-	-	138	242	59	439
<u>Garibaldi</u>						
Total Catch	0	0	426	794	-	1,220
No. Sampled	0	0	185	480	-	665
% Sampled	0	0	43	60	-	55
No. Ad Marks	0	0	8	37	-	45
<u>Pacific City</u>						
Total Catch	4	1	500	598	-	1,103
No. Sampled	4	1	444	469	-	918
% Sampled	100	100	89	78	-	83
No. Ad Marks	0	0	34	29	-	63
<u>Depoe Bay</u>						
Total Catch	5	4	3,102	2,067	-	5,178
No. Sampled	5	3	2,288	1,534	-	3,830
% Sampled	100	75	74	74	-	74
No. Ad Marks	1	0	85	74	-	160
<u>Newport</u>						
Total Catch	0	0	6,323	4,883	-	11,206
No. Sampled	0	0	2,276	1,798	-	4,074
% Sampled	0	0	36	37	-	36
No. Ad Marks	0	0	111	85	-	196
<u>Florence</u>						
Total Catch	5	2	1,408	899	-	2,314
No. Sampled	2	1	543	370	-	916
% Sampled	40	50	39	41	-	40
No. Ad Marks	0	0	30	12	-	42
<u>Winchester Bay</u>						
Total Catch	58	80	3,647	1,514	-	5,299
No. Sampled	15	27	1,841	515	-	2,398
% Sampled	26	34	50	34	-	45
No. Ad Marks	0	3	82	29	-	114
<u>Coos Bay</u>						
Total Catch	13	3	2,587	1,975	-	4,578
No. Sampled	2	1	1,070	650	-	1,723
% Sampled	15	33	41	33	-	38
No. Ad Marks	0	0	71	36	-	107
<u>Brookings</u>						
Total Catch	97	70	1,922	3,445	500	6,034
No. Sampled	11	26	641	1,086	142	1,906
% Sampled	11	37	33	32	28	32
No. Ad Marks	1	1	22	58	8	90
<u>Total</u>						
Total Catch	185	160	27,537	27,092	4,310	59,281
No. Sampled	39	59	12,852	12,041	1,550	26,541
% Sampled	21	37	47	44	36	45
No. Ad Marks	2	4	581	602	67	1,256

**RELEASE AGENCY**  
n=1,121



**BASIN OF RELEASE**  
n=1,121



**NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.**

**Figure 21. Recoveries of coho coded wire tags, by release agency and by basin of release, from Oregon's ocean recreational catch, 1993.**

Table 18. Coho salmon length (fork length) to dressed weight (head-on, viscera and gills removed) samples collected from recreational landings by statistical week and port, 1993.

Port	Statistical Week Number								Total
	28	29	30	31	32	33	34	35	
Astoria/Warrenton	152	163	163	124	75	99	93	60	929
Newport	-	-	69	82	61	60	-	-	272

Table 19. Coho salmon fork length to dressed weight sample summary at Newport, Oregon, 1993 by statistical week. Number of samples by length unit and average weight (lbs) of samples at length are displayed.

Length (mm)	Week 30		Week 31		Week 32		Week 33		Total	
	n	Avg	n	Avg	n	Avg	n	Avg	n	Avg
		Wt		Wt		Wt		Wt		Wt
400-449	1	1.63	1	1.75					2	1.38
450-499	3	2.54	2	2.13					5	2.37
500-549	9	2.81	8	2.89	2	3.00	5	2.80	24	2.85
550-599	12	3.96	15	3.99	6	4.00	6	4.13	39	4.00
600-649	23	5.16	27	4.87	25	5.04	20	5.18	95	5.05
650-699	19	6.29	24	6.56	21	6.43	21	6.27	85	6.40
700-749	2	8.38	5	7.03	7	7.95	8	7.83	22	7.74
Total	69	4.88	82	5.04	61	5.68	60	5.61	272	5.27

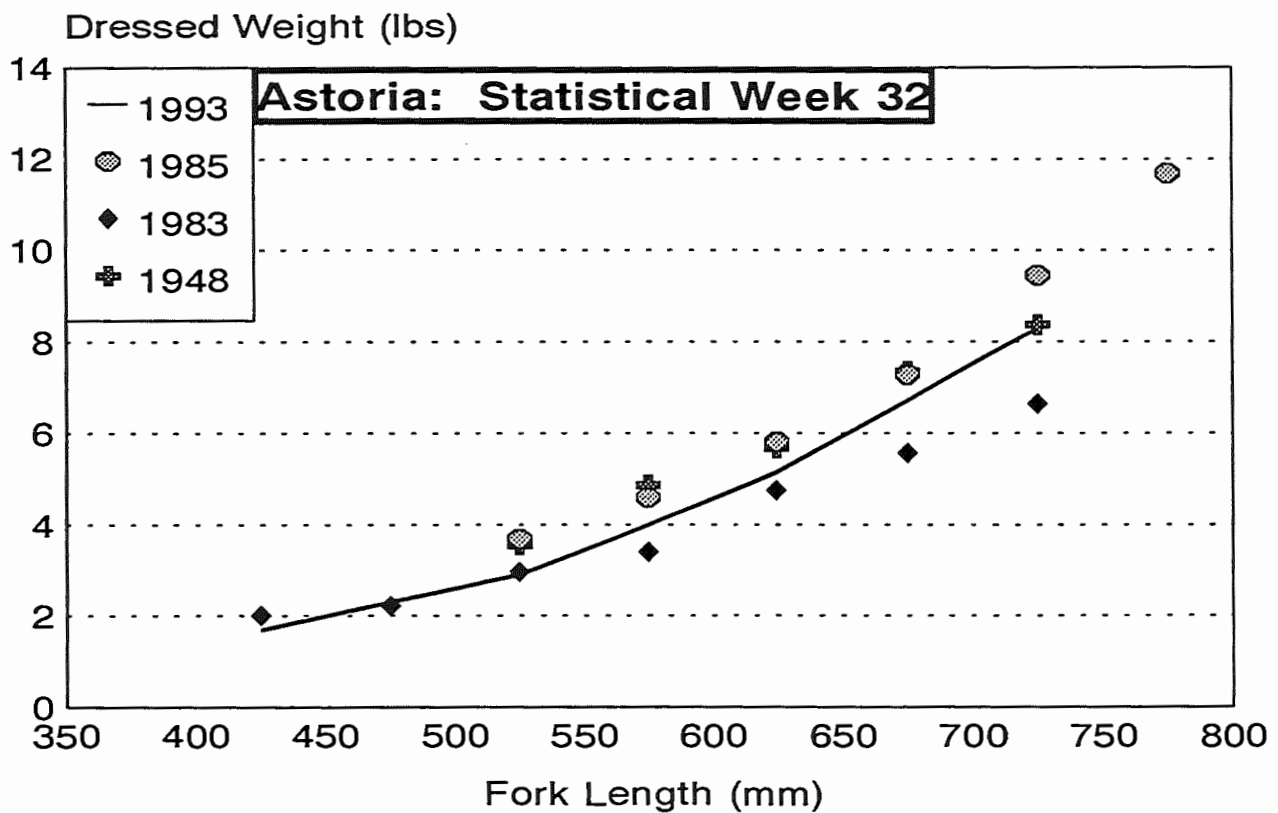
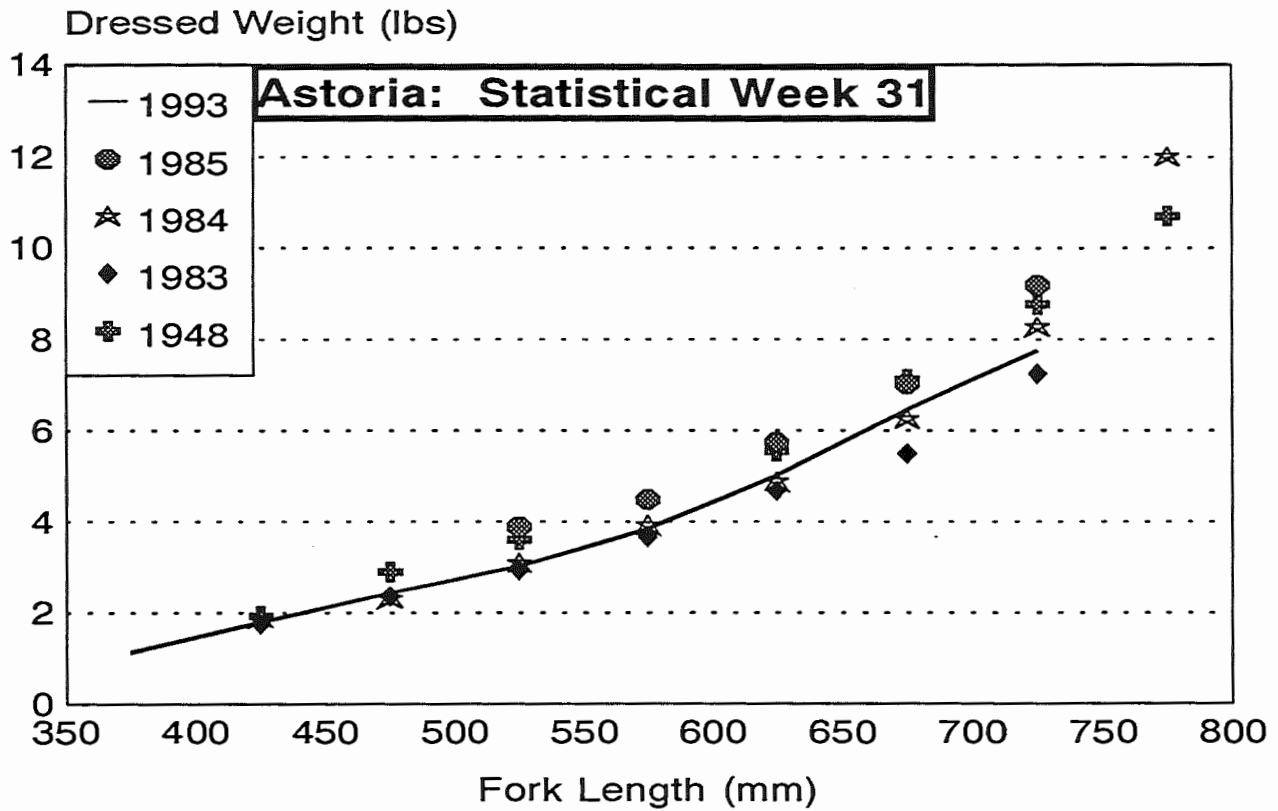


Figure 22. Coho fork length to weight (head-on, viscera and gills removed) relationship from recreational landings into Astoria and Warrenton, 1993. Data from prior years are from commercial troll salmon landings.

Table 20. Coho salmon fork length to dressed weight sample summary at Astoria/Warrenton, Oregon, 1993 by statistical week. Number of samples by length unit and average weight (lbs) of samples at length are displayed.

<u>Length (mm)</u>	<u>Week 28</u>		<u>Week 29</u>		<u>Week 30</u>		<u>Week 31</u>		<u>Week 32</u>	
	<u>n</u>	<u>Avg Wt</u>	<u>n</u>	<u>Avg Wt</u>	<u>n</u>	<u>Avg Wt</u>	<u>n</u>	<u>Avg Wt</u>	<u>n</u>	<u>Avg Wt</u>
350-399					1	1.12	2	1.13		
400-449	11	1.61	11	1.63	7	1.66	6	1.79	4	1.69
450-499	38	2.06	46	2.11	46	2.25	18	2.43	6	2.29
500-549	41	2.77	39	2.72	30	2.90	27	3.02	9	2.90
550-599	37	3.70	31	3.68	39	3.84	28	3.84	7	3.98
600-649	15	5.11	31	4.72	25	4.93	23	5.00	19	5.14
650-699	10	6.31	4	6.28	12	6.15	15	6.46	23	6.70
700-749			1	8.13	3	8.21	5	7.75	7	8.29
Total	152	3.20	163	3.16	163	3.52	124	4.00	75	5.12

<u>Length (mm)</u>	<u>Week 33</u>		<u>Week 34</u>		<u>Week 35</u>		<u>Total</u>	
	<u>n</u>	<u>Avg Wt</u>	<u>n</u>	<u>Avg Wt</u>	<u>n</u>	<u>Avg Wt</u>	<u>n</u>	<u>Avg Wt</u>
350-399							3	1.03
400-449	1	2.00	1	2.75			41	1.70
450-499	2	2.44	1	2.13	1	1.88	158	2.18
500-549	8	3.08	5	2.95	8	3.27	167	2.87
550-599	19	3.88	18	4.02	10	3.99	189	3.82
600-649	33	5.29	28	5.15	14	5.37	188	5.07
650-699	31	6.58	37	6.26	22	6.43	154	6.43
700-749	5	7.55	3	7.42	5	8.25	29	7.96
Total	99	5.27	93	5.27	60	5.43	929	4.08



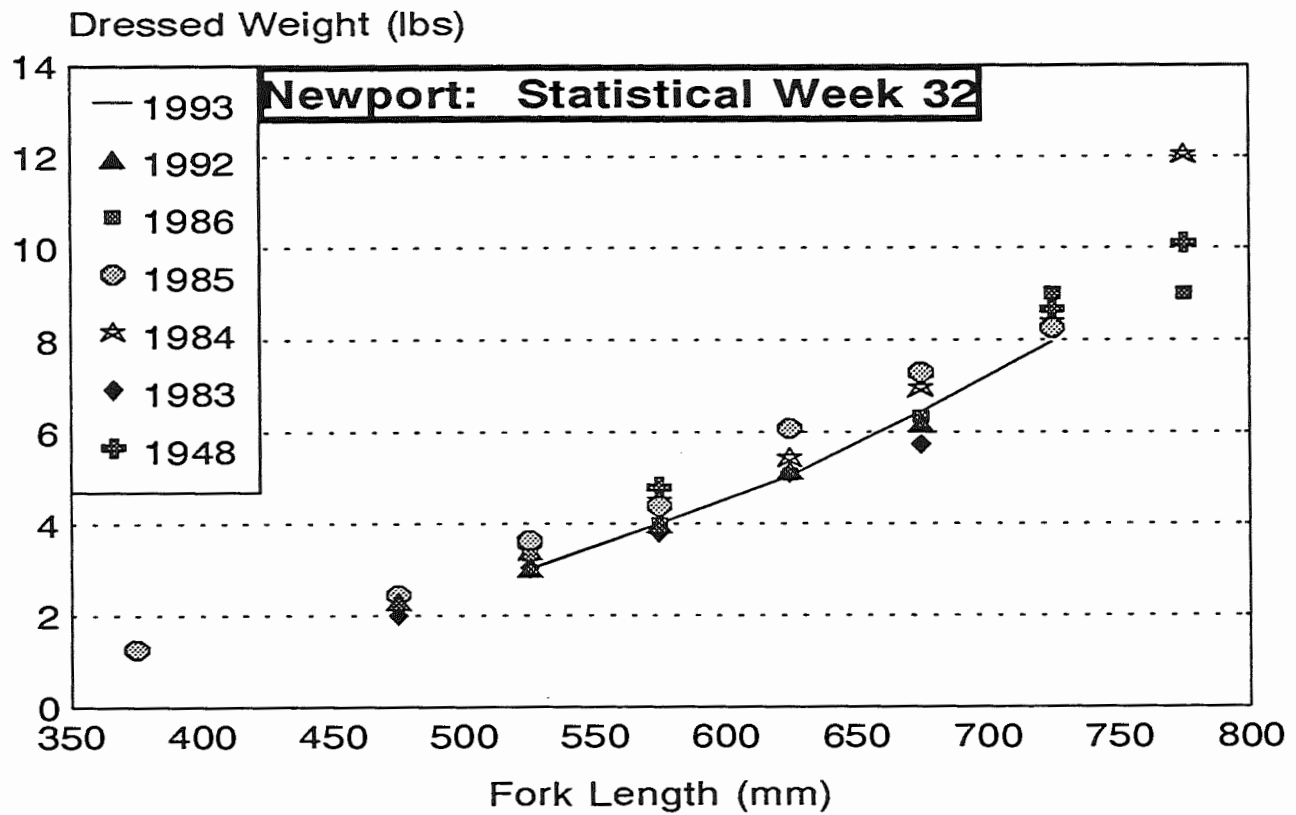
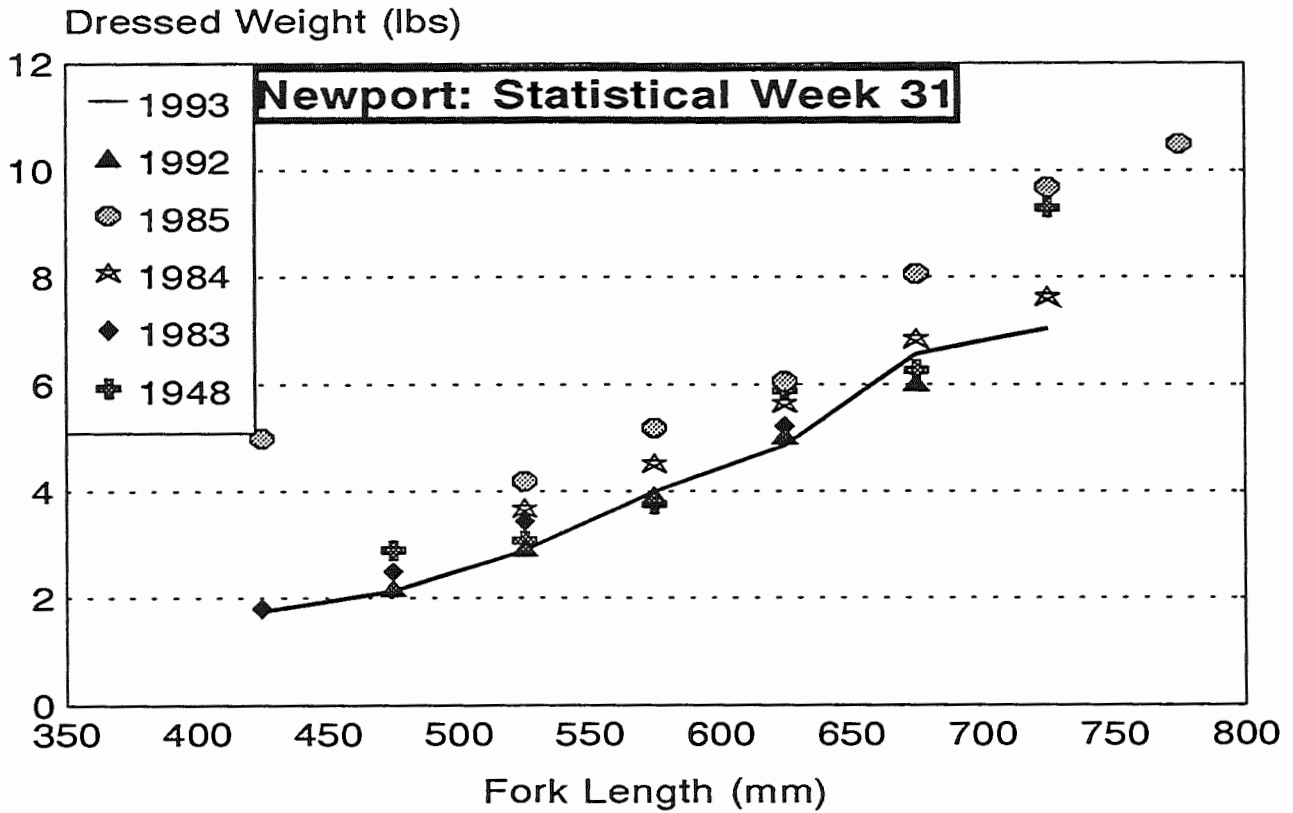


Figure 23. Coho fork length to weight (head-on, viscera and gills removed) relationship from recreational landings into Newport, 1993. Data from prior years are from commercial troll landings.

## **Columbia River Buoy 10 Estuary Fishery**

The Columbia River mouth opened upstream from Buoy 10 on August 1 for salmon fishing seven days a week, without quotas or a weekly bag limit. This fishery is intended to target surplus Columbia River hatchery coho. The Oregon/Washington combined effort was 75,800 angler trips with a catch of 5,300 chinook and 20,900 coho (Table 21). This fishery is discussed in detail in a report entitled "The 1993 Lower Columbia River and Buoy 10 Recreational Fisheries" by Curtis B. Melcher and Steven D. King of the Department's Columbia River Management Program.

## **October-November Fishery off Port Orford**

We did not sample the recreational portion of this fishery but concentrated on the commercial landings. The sport catch in this fishery has been nonexistent or minimal ( $\leq 50$  fish) in all years.

## **Oregon Coastal Lower Bay/Bar Recreational Salmon Fishery**

**Introduction:** Typically, the lower bays and bars of the coastal estuaries develop moderately popular chinook target fisheries from mid-August through September. However in 1991, the lower bay recreational salmon fishery was a windfall to coastal anglers who had seen their ocean season close in late July. The unprecedented and unexpected coho landings that occurred throughout August had not been accounted for in the preseason planning process. They resulted in harvest levels that cut into the spawning escapement and were above historical impacts.

The 1993 recreational ocean salmon season from Cape Falcon to Humbug Mountain was expected to be the shortest ever. This raised concerns over the estuary fisheries that were likely to develop when the ocean fishery was closed. To address these concerns, ODFW established emergency regulations in the lower bays beginning July 1. These regulations were established with several objectives:

1. Keep the summer, estuary catch of coho within historical levels.
2. Allow anglers the option of fishing in either the estuary or the ocean on days when the ocean was open.
3. Allow the traditional chinook fisheries in estuaries to proceed.
4. Permit the harvest of surplus hatchery coho in those areas and times when practical.

The emergency regulations were set for three different time periods with a different structure in each period. In the first period, July 1 through August 17, all lower bays<sup>a</sup> between Cape Falcon and Cape Blanco were open only when the adjacent ocean area was open, and all ocean size and bag limits applied. This resulted in the bays being open a total of 13 days (July 13, July 18-20, July 25-27, August 1-3, and August 8-10). Regulations for the tidewaters upstream from the lower bays remained as listed in the "1993 Oregon Sport Fishing Regulations".

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<sup>a</sup> The lower bays were defined as the tidewaters seaward of Highway 101 except for: lower Nehalem Bay was defined as tidewaters seaward of a line from the Nehalem Bay State Park boat ramp to Fishery Point, lower Tillamook Bay was defined as the tidewaters seaward of a line from Green Hill to Kincheloe Point, and lower Nestucca Bay was defined as the tidewaters seaward from the northern point of Cannery Hill.

Table 21. Buoy 10 Columbia River estuary season. Total salmon angler trips and catch, 1993, and totals for 1982-1992, Oregon and Washington combined data.

Year	Angler Trips	Catch		Catch/Trip	Chinook/Angler	Coho/Angler
		Chinook	Coho			
1982	17,336	723	18,857	1.13	0.04	1.09
1983	7,128	604	3,574	0.59	0.08	0.50
1984	67,365	12,177	74,370	1.28	0.18	1.10
1985	32,156	2,655	25,387	0.87	0.08	0.79
1986	102,190	15,600	120,422	1.33	0.15	1.18
1987	124,594	42,100	47,170	0.72	0.34	0.38
1988	186,051	30,770	143,417	0.94	0.17	0.77
1989	144,848	15,900	78,720	0.65	0.11	0.54
1990	76,411	5,149	18,435	0.31	0.07	0.24
1991	168,921	11,549	207,527	1.30	0.07	1.23
1992 <sup>a</sup>	115,481	10,655	43,082	0.47	0.09	0.37
1993 Total	75,774	5,288	20,932	0.35	0.07	0.28
OR Boat	20,928	1,261	5,580	0.33	0.06	0.27
OR Bank	6,052	89	1,328	0.23	0.01	0.22
WA Boat	48,186	3,938	14,002	0.37	0.08	0.29
WA Bank	608	0	22	0.04	0.00	0.04

<sup>a</sup> Includes all fishery types (boat, bank, jetty) for 1982-92.

The second set of emergency regulations were in effect from August 18 through 31. Under these regulations, all lower bays were open for chinook only salmon fishing on all days of the week. The length and bag limits were as specified in the "1993 Oregon Sport Fishing Regulations", and areas upstream of the lower bays were unaffected.

The third set of emergency regulations were in effect from September 1 through December 31. These regulations closed most bays, rivers, streams, and lakes to the take of coho salmon. A number of exceptions were made in areas and at times when hatchery coho were expected to be present. These exceptions are listed in Appendix Table 23.

The bay fisheries in Tillamook, Yaquina, Winchester (Umpqua), and Coos bays were surveyed by OSMP samplers from July 13 through September 6; and in Siuslaw Bay from August 16 through September 6. The effort and catch estimates only covered the boat anglers that fished the lower portions of the estuaries. Shore anglers throughout the estuaries and boat anglers fishing the upper bays and tributaries were not surveyed. It is important to note that traditional bay fisheries develop after mid-September and these were not surveyed by OSMP.

**Methods:** Samplers conducted a stratified creel survey which contacted private and charter boat anglers to gather data on number of anglers per boat, hours per boat and fish per angler. They also recovered snouts from coded wire tagged salmon. Effort estimates were made using Area Under the Curve (AUC) methodology by taking counts of the number of boats fishing in the lower estuary on regular intervals, then calculating total boat hours under the curve, and finally dividing total boat hours by the average hours per boat to estimate the number of boats that fished. This methodology is discussed in more detail in the 1991 Oregon Ocean Salmon Fisheries Annual Report.

**Results and discussion:** We estimated that 2,892 boat trips and 5,669 angler trips were made in the five estuaries surveyed in 1993. This is an 86% reduction from the 1991 record effort. Tillamook Bay accounted for 47% of the angler effort in 1993 with 2,666 angler trips. The lower Umpqua estuary had 1,123 angler trips, followed closely by Coos Bay with 1,109 angler trips (Table 22).

Anglers landed 406 adult and 65 "jack" sized chinook and 484 adult and 27 "jack" sized coho in 1993. This contrasts sharply with 1991 when we estimated a catch of 980 adult and 119 "jack" chinook and 32,516 adult and 1,562 "jack" coho. Most of the 1993 adult chinook were landed in Tillamook Bay (193), and most of the coho were landed in Coos Bay (305) (Figure 24).

A total of 643 coho and 24 chinook were released by anglers. Tillamook Bay accounted for the vast majority of coho that were released (416). Most were caught and released during the last two weeks of August, when 142 chinook were landed, and 405 coho were released. Releasing almost three coho for each chinook kept in a year of record low coho abundance is of concern, especially considering that the Tillamook Basin had extremely low spawning escapement of coho even compared to the dismal returns along the rest of the coast (Salmon Technical Team, 1993).

**Coded-wire tag sampling:** We only recovered 2 chinook coded-wire tags in the lower bay fishery. We did not recover any CWTs from coho in 1993.

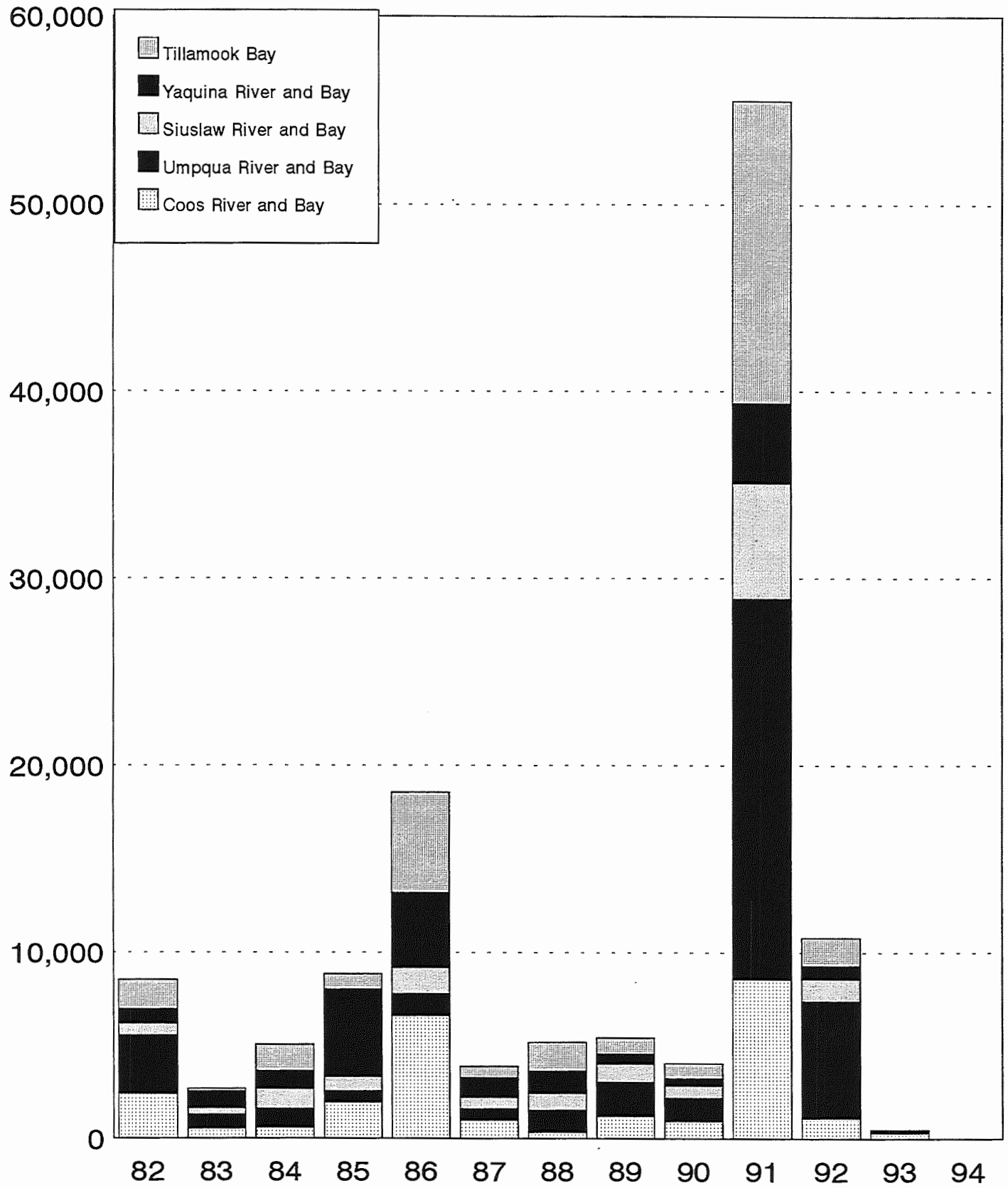
**Conclusions:** All objectives were adequately addressed by the emergency regulations in the 1993 lower estuary fishery. By matching the bay regulations with ocean regulations, several "loopholes" were also closed. Some anglers had been skirting the

Table 22. Oregon lower coastal estuary recreational salmon effort and catch, 1993.

Port	Effort <sup>1</sup>		Catch					
	Boat Trip	Angler Trip	Chinook			Coho		
			Adults	Jacks	Released	Adults	Jacks	Released
Tillamook Bay Bar	1,279	2,666	193	0	19	38	0	416
Yaquina Bay Bar	174	337	5	0	0	14	0	6
Siuslaw River Bar	180	434	21	0	0	0	0	108
Umpqua River Bar	491	1,123	129	49	5	127	20	102
Coos Bay Bar	768	1,109	58	16	0	305	7	11
Total	2,892	5,669	406	65	24	484	27	643

<sup>1</sup> Charter and private boat.

# Adult Coho



**Figure 24. Oregon recreational estuary coho salmon landings. Data from 1982-92 is from punchcards for the entire fall. Data for 1993 is from a creel in the lower estuaries only from July 13 - Sept. 6.**

ocean regulations by not tagging "jack" coho from the bays in mid-summer, or going over the weekly bag limit by tagging some fish from inside the bay and others from the ocean.

The emergency regulations allowed the usual fall estuary chinook fisheries to develop along the coast. The issue of the ability of the recreational fishery to selectively harvest chinook came into question when the incidence of released coho exceeded the harvest of chinook (more than 1.5 coho were released for each chinook kept). The value of the late summer/early fall chinook fishery needs to be weighed against the hooking mortality concern on local wild stocks of coho, and the risks to future production. This is especially important on the north coast where wild coho stocks are severely depressed and substantial fall chinook fisheries develop each fall.

The emergency regulations, although successful in getting compliance with the intent of the ocean harvest guidelines, did generate substantial confusion among anglers. It is difficult to quickly reach resident and non-resident sport anglers over a large fishing area in a short period of time with complex regulation changes. Department news releases were produced and numerous regulation signs were posted, but many anglers seemed overwhelmed by the added layer of regulations.

### **The Columbia River Control Zone (CZ) Test Fishery**

**Introduction:** Various sections off the mouth of the Columbia River have been closed at different times to salmon fishing since 1983 under defined "conservation zones", now called "control zone" (CZ). These closures were based on the premise that sublegal "shaker" chinook tend to congregate in this area during the summer months, and the closure would provide some measure of protection. The CZ was standardized in 1990 for both the commercial and recreational fisheries.

During the 1993 PFMC regulation setting process the Ilwaco, Washington Charter Boat Association proposed a study in the control zone to explore a possible re-opening of the zone to salmon fishing. The proposed study would evaluate the chinook stocks and catch rates of adult and sublegal chinook in the control zone. The ODFW together with the Washington Department of Fisheries (WDF), the National Marine Fisheries Service (NMFS), and Ilwaco and Warrenton charterboat operators agreed to cooperatively develop and implement the study. The objectives of the proposed study were:

1. Compare the catch rate and catch proportion of sublegal chinook inside and outside the control zone.
2. Evaluate the chinook stock composition through coded wire tags and genetic stock identification techniques to determine the value of the CZ in protecting Snake River fall chinook -- an Endangered Species Act (ESA) listed stock.

The ODFW agreed to hire at-sea observers, provide supervision, and implement the project. The study plan was submitted to and approved by NMFS, and experimental fishing permits were issued by WDF, ODFW, and NMFS to the seven participating charter vessels (four core boats and three alternates). The details of this study are available in a report prepared for the Pacific Fishery Management Council: "The 1993 Columbia River Control Zone Test Fishery" by Schindler et al., 1994. The Oregon portion of the study's effort and catch is incorporated in this annual report's data base. The following are high-lights from the above referenced report.

**Results:** Of the 1,906 total angler trips observed, 733 originated from Oregon charter boats. Oregon boats landed 75 chinook and 1,173 coho, and 147 chinook and 24 coho were released. Table 23 summarizes the study results, and includes data from both Oregon and Washington. It shows the total catches by area, salmon released by area, and salmon per angler-hour by area, both kept and released. The chinook catch rates seemed slightly higher inside the control zone than outside, especially in July, but statistical tests showed no significant differences. Anglers did encounter more sublegal chinook inside the zone than outside, especially in July, but again, the differences were not statistically significant.

Genetic stock identification samples were taken from all 170 chinook salmon that were kept. The minimum required sample size required was 400 fish; therefore, the tests could not be run.

Scale samples and fork lengths were taken from all retained chinook. Three-year old fish predominated at 71% with four-year old chinook making up another 22%. Statistical tests showed no difference in age structure inside and outside the zone and the fork lengths were similar in both areas.

Seventeen coded-wire tags were recovered from chinook (8 inside and 9 outside the control zone). All recoveries were from stocks originating below Bonneville Dam. We recovered 135 readable tags from coho salmon. Slightly over half the tags originated from Columbia River hatcheries. Another 26% came from Washington coastal releases, and 12% from Puget Sound.

Notes were made on the condition of released fish. For all chinook releases, 66% were in "good" condition, 24% in "fair" condition, and 10% were classified in "poor" condition. Of 206 coho observed, 71% were in "good" condition when released, 18% were "fair", and 11% were in "poor" condition.

**Discussion and conclusion:** Ocean conditions in 1993 were abnormal along much of the West Coast, including the Columbia River area, due to several years of back to back "El Niño" ocean conditions. Many of the coho salmon were small due to poor feed conditions. Chinook stocks, along with coho, were at low abundances in 1993.

No conclusions can be drawn on the stock composition of the chinook in the catch because of the low sample size. Concerns were raised by Schindler et al. (1994) with regards to apparent temporal differences in the catches (July vs August), as well as, the potential spatial bias that may have occurred due to the charter vessels fishing near the control zone boundary. These two concerns may very well be tied together, since the vessels moved nearer to the mouth of the river in August in anticipation of intercepting the returning coho and chinook salmon. Additional data in a more "normal" year is necessary, with a study plan that addresses the potential low sample size, and other concerns that surfaced during the 1993 study.

## ACKNOWLEDGMENTS

Almost everyone in the Ocean Salmon Management Program at one time or another provided assistance to the ocean sampling program. However, we especially appreciate the help of sampling coordinator David Nuzum and all seasonal samplers. Special recognition is due the Data Management Project Leader Phil Flanders and his assistant John Denton, and to Administrative Assistant Donna Lamb for their help in accessing the data and general assistance throughout the year. Marie Jones assisted with the word processing and her help is appreciated.



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**APPENDIX**

Appendix Table 1. The 1993 Ocean Salmon sampler roster and dates of sampling.

Port	Troll		Recreational	
	Sampler	Dates	Sampler	Dates
Astoria	Douglas Lager <sup>1</sup>	May 5-Sept. 30	Michala Klenda	July 5-Sept. 30
			Amy Brewster	July 5-Sept. 30
			Brent Boles <sup>2</sup>	July 5-Aug. 31
			Jennifer Boldt <sup>2</sup>	July 5-Aug. 31
Garibaldi	Sandra Lewis <sup>1</sup>	June 21-Oct. 8	Chris Roopgr <sup>2</sup>	July 5-Aug. 31
			Mike Slater <sup>2</sup>	July 5-Aug. 31
Pacific City			Koren Jarvis	June 21-Sept. 6
Depoe Bay			Hans Anderson	June 21-Sept. 6
Newport	Steve Kupillas	May 4-Oct. 31	Ron Leidich	May 4-Sept. 4
			Melissa Singh	May 4-Sept. 4
Florence	Shawn Rapp <sup>1</sup>	May 1-Sept. 6	Tamara McGuire	May 4-Aug. 10
			Jon Zeidler	May 5-Sept. 6
Winchester Bay			Lori Lasniewski	June 19-Sept. 6
			Cathy Pegau	June 19-Sept. 6
Coos Bay	Brian Riggers <sup>1</sup>	May 5-Oct. 31	Emily Beidler	May 21-Aug. 5
			Rob Preece	June 21-Aug. 31
			Kevin Young	June 19-Aug. 31
Port Orford	Brian Riggers	Nov. 1-Nov. 30	Scott Neubig	July 1-Sept. 13
			Nicole Renfro	May 5-Sept. 7
Brookings			Chris Coon	May 5-Sept. 6
			Jim Weikel	May 26-Sept. 5

<sup>1</sup> Combination troll/recreational sampler.

<sup>2</sup> Observers in the Columbia River Control Zone charter test fishery.

Appendix Table 2. Troll mark sampling rates by port, year, and species, 1980-1993.

	1980 <sup>a</sup>	1981 <sup>a</sup>	1982 <sup>a</sup>	1983 <sup>a</sup>	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
<b>CHINOOK</b>														
Astoria	20	33	50	35	37	36	46	75	24	36	25	11	52	2
Gearhart	-	-	-	-	0	0	0	0	-	27	12	8	0	0
Cannon Beach	-	-	-	-	0	0	0	0	16	0	0	0	0	0
Garibaldi	20	23	23	34	35	34	29	34	20	10	22	7	39	13
Netarts	-	-	-	-	-	-	-	-	0	0	0	0	0	-
Pacific City	-	-	-	-	0	27	20	32	15	19	27	19	2	0
Salmon River	-	-	-	-	-	-	-	-	-	0	0	-	-	-
Depoe Bay	-	-	-	-	0	0	3	73	38	0	0	0	0	0
Newport	30	27	28	44	63	47	34	59	28	21	34	29	32	30
Waldport	-	-	-	-	0	0	0	-	-	-	0	0	-	-
Florence	-	-	-	-	44	0	0	67	30	15	30	52	38	9
Winchester Bay	-	-	-	-	61	24	42	39	29	18	35	15	0	0
Coos Bay	23	24	17	42	77	42	32	31	24	14	26	21	0	20
Bandon	-	-	-	-	0	2	0	2	0	0	0	0	0	0
Port Orford	-	-	-	-	70	89	88	74	59	61	24	0	92	45
Gold Beach	-	-	-	-	53	0	12	1	10	10	0	0	0	-
Brookings	25	26	45	40	49	0	58	66	71	62	65	58	0	0
Total	25	27	30	41	59	39	35	44	30	21	27	24	29	24
<b>COHO</b>														
Astoria	18	26	38	39	80	40	81	35	6	34	34	24	14	8
Gearhart	-	-	-	-	0	0	0	0	-	22	8	40	0	0
Cannon Beach	-	-	-	-	0	0	0	0	0	6	0	2	0	0
Garibaldi	15	14	21	37	86	72	39	35	32	28	25	21	45	0
Netarts	-	-	-	-	-	-	-	-	0	0	0	0	0	-
Pacific City	-	-	-	-	-	13	14	44	21	32	32	30	18	0
Salmon River	-	-	-	-	-	-	-	-	-	0	0	-	-	-
Depoe Bay	-	-	-	-	0	0	8	80	63	0	0	2	0	-
Newport	33	34	26	39	41	58	19	57	27	22	41	29	32	0
Waldport	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Florence	-	-	-	-	-	1	0	73	28	13	39	47	49	-
Winchester Bay	-	-	-	-	-	26	51	34	35	16	40	28	0	-
Coos Bay	27	26	11	46	-	48	31	28	31	16	28	27	0	0
Bandon	-	-	-	-	-	48	0	3	0	0	0	0	0	-
Port Orford	-	-	-	-	-	76	84	73	66	70	10	0	-	-
Gold Beach	-	-	-	-	0	-	1	3	0	-	0	-	-	-
Brookings	30	33	51	54	-	0	34	41	49	41	44	1	-	-
Total	26	26	21	42	61	41	24	43	30	22	29	28	30	5
# Samplers	11	11 <sup>b</sup>	12 <sup>b</sup>	12	9	8	10	14	9 <sup>c</sup>	8 <sup>c</sup>	10 <sup>b</sup>	6 <sup>b</sup>	4 <sup>b</sup>	2 <sup>c</sup>

<sup>a</sup> Sampling rates for aggregated port areas of Astoria - Cannon Beach, Garibaldi - Pacific City, Salmon River - Waldport, Florence - Bandon, and Port Orford - Brookings.

<sup>b</sup> Two additional employees sampled the troll fishery on a part-time basis.

<sup>c</sup> Three additional employees sampled the troll fishery on a part-time basis.

Appendix Table 3. History of actual Oregon ocean commercial troll fishery regulations, 1948-93.

AREA AND SEASON	SPECIES	SIZE, GEAR, AND OTHER RESTRICTIONS
Prior to 1948	No restrictions	
1948 <u>Oregon Coast</u> 1/1 - 12/31 7/1 - 11/15	All except coho All salmon	size limit: chinook - 27", no gear restrictions. chinook - 27", coho - none.
1949-55 <u>Oregon Coast</u> 3/15 - 10/31 6/15 - 10/31	All except coho All salmon	Chin. 26". Chin. 26".
1956-75 <u>Oregon Coast</u> 4/15 - 10/31 6/15 - 10/31	All except coho All salmon	Chin. 26". Chin. 26"; coho 15" beginning in 1965.
1974-75 <u>Elk &amp; Chetco River areas</u> 11/1 - 12/31	All except coho	Chin. 26" - state waters only.
1976 <u>North of Tillamook Head</u> 5/1 - 6/14 7/1 - 9/15	All except coho All salmon	Chin. 28"; until 6/6; then 26". Chin. 26"; coho, 16".
<u>South of Tillamook Head</u> 5/1 - 6/14 6/15 - 10/31	All except coho All salmon	Chin. 26"; barbless hooks, except on whole bait or plugs. Chin. 26"; coho, 16".
<u>Elk &amp; Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26" - state waters only.
1977 as above	as above	Chin. 28" N. of Tillamook Head; 26" S. of Tillamook Head. Coho 16". Gear restrictions as above.
1978 Area boundary moved from Tillamook Head to Cape Falcon	as above	
1979 <u>North of Cape Falcon</u> 5/1 - 5/31 7/1 - 24; 8/4 - 31	All except coho All salmon	Chin. 28"; barbless hooks, except on whole bait or plugs. Chin. 28"; coho 16".
<u>South of Cape Falcon</u> 5/1 - 5/31 7/1 - 9/3 9/4 - 10/31	All except coho All salmon All except coho	Chin. 26"; barbless hooks except on whole bait or plugs. Chin. 26"; coho 16". Chin. 26".
<u>Elk &amp; Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26". State waters only.
1980 <u>North of Cape Falcon</u> 5/1 - 5/31 7/15 - 9/8	All except coho All salmon	Chin. 28"; barbless hooks, except on whole bait or plugs. Chin. 28"; coho 16".
<u>South of Cape Falcon</u> 5/1 - 5/31	All except coho	Chin. 26"; barbless hooks, except on whole bait or plugs.
<u>Cape Falcon to Cape Blanco</u> 6/16 - 6/30	All except coho	Chin. 26"; whole bait, or plugs 6" or longer.
<u>South of Cape Falcon</u> 7/15 - 9/8 9/9 - 10/31	All salmon All except coho	Chin. 26"; coho 16". Chin. 26".
<u>Elk &amp; Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26". State waters only.
1981 <u>North of Cape Falcon</u> 5/1 - 5/31 7/15 - 8/21 8/22 - 8/24	All except coho All salmon All salmon	Chin. 28", barbless hooks, except on whole bait or plugs. Chin. 28"; coho 16". Chin. 28"; coho 16". State waters only.
<u>South of Cape Falcon</u> 5/1 - 5/31 7/1 - 8/21 8/22 - 8/24	All except coho All salmon All salmon	Chin. 26"; barbless hooks, except on whole bait or plugs. Chin. 26"; coho 16". Chin. 26"; coho 16". State waters only.
<u>C. Falcon to Cape Sebastian</u> 8/22 - 8/24 08/25 - 9/8	All except coho All except coho	Chin. 26"; whole bait, or plugs 5" or larger. Chin. 26"; whole bait, or plugs 5" or larger. State waters only.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR, AND OTHER RESTRICTIONS
(1981 continued)		
<u>South of Cape Falcon</u> 9/9 - 10/31	All except coho	Chin. 26".
<u>Elk &amp; Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26". State waters only.
1982 <u>North of Cape Falcon</u>		
5/1 - 5/31	All except coho	Chin. 28"; barbless hooks, except on whole bait or plugs.
7/1 - 7/8	All salmon	Chin. 28"; coho 16".
<u>South of Cape Falcon</u>		
5/1 - 5/31	All except coho	Chin. 26"; barbless hooks, except on whole bait.
6/1 - 6/15	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
7/1 - 7/12	All salmon	Chin. 26"; coho 16".
7/13 - 9/5	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
9/6 - 10/31	All except coho	Chin. 26"; barbless hooks, except on whole bait or plugs.
<u>South of Cape Blanco</u>		
5/1 - 6/8	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
<u>Elk &amp; Chetco River areas</u> 11/1 - 11/30	All except coho	Chin. 26". State waters only.
1983 <u>North of Cape Falcon</u>		
5/1 - 5/31	All except coho	Chin. 28"; barbless hooks, except on plugs not less than 5".
7/1 - 7/31	All salmon	Chin. 28"; coho, 16"; only plugs not less than 6". Must land 2 chin. for each coho retained.
<u>Columbia River S. Jetty to Cape Falcon</u> 8/10 - 9/8	All salmon	Chin. 28"; coho 16"; open out to 10 miles only.
<u>Cape Falcon to Cape Blanco</u>		
5/1 - 5/31	All except coho	Chin. 26"; barbless hooks, except on whole bait or plugs (not less than 5").
6/1 - 6/15	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
9/5 - 10/31	All except coho	Chin. 26".
<u>Cape Falcon to Cape Kiwanda</u> 8/1 - 9/4	All salmon	Chin. 26"; coho 16".
<u>Cape Kiwanda to Heceta Head</u> 7/1 - 7/25; 8/1 - 9/4	All salmon	Chin. 26"; coho 16".
<u>Cape Perpetua to Cape Blanco</u> 7/26 - 7/31	All except coho	Chin. 26"; whole bait or plugs not less than 5".
<u>Heceta Head to Cape Blanco</u>		
7/1 - 25	All	Chin. 26", coho 16".
8/1 - 9/9	All except coho	Chin. 26"; whole bait, or plugs not less than 5".
<u>Cape Blanco to OR/CA border</u>		
5/16 - 5/31	All except coho	Chin. 26"; barbless hooks only, not more than 6 troll lines.
6/1 - 6/15	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
7/1 - 7/25	All salmon	Chin. 26"; coho 16".
7/26 - 8/31	All except coho	Chin. 26"; whole bait, or plugs not less than 5" long.
9/1 - 9/15	All except coho	Chin. 26". Open area is 12 x 24 mile rectangle around mouth of Rogue River.
10/1 - 10/31	All except coho	Chin. 26".
<u>Cape Blanco to Humbug Mtn.</u> 11/1 - 11/30	All except coho	Chin. 26". State waters only.
1984 <u>North of Cape Falcon</u>		
5/1 - 5/7	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed.
<u>Columbia River S. Jetty to Cape Falcon</u> 8/4 - 8/6	All salmon	Chin. 28"; coho 16"; barbless hooks.
<u>Cape Falcon to Cape Blanco</u>		
5/1 - 6/15; 7/1 - 8/31	All except coho	Chin. 26"; barbless hooks.
9/1 - 9/21	All except coho	Chin. 26"; state waters only. Contravention of fed. regulation.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR, AND OTHER RESTRICTIONS
(1984 continued)		
<u>Manhattan Beach to Pyramid Rock (Tillamook)</u> 10/1 - 10/31	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Blanco to OR/CA border</u> 5/16 - 6/6; 7/16 - 8/22	All except coho	Chin. 26"; barbless hooks.
<u>Cape Blanco to Humbug Mtn.</u> 10/1 - 11/30	All except coho	Chin. 26"; state waters only; barbless hooks.
1985 <u>North of Cape Falcon</u> 5/1 - 5/14; 5/21 - 5/31	All except coho	Chin. 28"; barbless hooks, except on whole bait or plugs. Columbia River Mouth Conservation Zone closed.
<u>Columbia River S. Jetty to Cape Falcon</u> 8/21	All salmon	Chin. 28"; coho 16"; barbless hooks, except on whole bait or plugs.
<u>Cape Falcon to Cape Blanco</u> 5/1 - 6/30 7/1 - 7/26	All except coho All salmon	Chin. 26"; barbless hooks, except on whole bait or plugs. Chin. 26", coho 16"; barbless hooks. One more coho than chinook may be kept, provided at least 1 chinook is kept.
7/27 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Tower Rock to Cape Blanco</u> 11/1 - 11/30	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Blanco to Humbug Mtn.</u> 10/1 - 11/30	All except coho	Chin. 26"; barbless hooks. State waters only.
1986 <u>North of Cape Falcon</u> 5/1-10; 5/14-17; 5/24-27; 5/30-31 8/2-3; 8/7-9	All except coho All salmon	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed. Chin. 28"; Coho 16". Barbless hooks.
<u>Cape Falcon to Cape Perpetua</u> 5/1 - 6/30 7/1-20; 7/23-24	All except coho All salmon	Chin. 26"; barbless hooks. Chin. 26"; coho 16"; barbless hooks. Single daily landing or possession of up to 50 coho. No additional coho can be landed or possessed unless chinook are also landed at a ratio of at least 1 chinook for every 2 coho.
7/25 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Twin Rocks to Pyramid Rock (Tillamook)</u> 11/1 - 15	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Perpetua to Cape Blanco</u> 5/1 - 6/30 7/1 - 20	All except coho All salmon	Chin. 26"; barbless hooks. Chin. 26"; Coho 16"; barbless hooks. No coho could be landed without landing chinook at a ratio of at least 1 chinook for each 2 coho.
7/23 - 24	All salmon	Same regulations as in Cape Falcon to Cape Perpetua (for 7/1-24 see above).
7/25 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Sisters Rocks to Chetco Point</u> 5/1 - 6/6	All except coho	Chin. 26"; barbless hooks. Open only within 6 nautical miles of shore.
<u>Cape Blanco to OR/CA border</u> 6/16 - 19; 6/23 - 26 6/30 - 7/5; 7/17-24	All salmon	Chin. 26"; Coho 22"; barbless hooks. At least one chinook must be possessed or landed for each 2 coho possessed or landed.
7/25 - 8/26	All except coho	Chin. 26"; barbless hooks.
<u>Sisters Rock to Mack Arch</u> 8/29	All except coho	Chin. 26"; barbless hooks. Open only within 6 nautical miles of shore.
<u>Cape Blanco to Humbug Mtn.</u> 10/1 - 11/26	All except coho	Chin. 26"; barbless hooks. State waters only.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR, AND OTHER RESTRICTIONS
1987 <u>North of Cape Falcon</u> 5/1-10; 5/14-15	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed. Chinook harvested in this fishery must be landed north of Cape Falcon unless reported to the U.S. Coast Guard.
7/25-26	All salmon	Chin. 28"; coho 16"; barbless hooks. Landing restrictions as above. Columbia River Mouth Conservation Zone closed; nearshore area closure 0 to 3 miles from Tillamook Head to Red Buoy Line and 0 to 10 miles between Red Buoy Line and Queets River.
<u>Cape Falcon to Cape Perpetua</u> 5/1 - 7/14 7/15-28; 8/1-28	All except coho All salmon	Chin. 26"; barbless hooks. Chin. 26"; coho 16"; barbless hooks. Single daily possession or landing of up to 100 coho/vessel. At least 1 chinook required for each 2 coho over 100.
<u>Cape Falcon to Cape Blanco</u> 8/29 - 9/15	All salmon	Chin. 26"; coho 16"; barbless hooks. 200 coho may be possessed or landed without chinook restrictions. Over 200 coho, at least 1 chinook must be possessed or landed for each 2 coho possessed or landed.
9/16 - 10/31	All except coho	Chin. 26"; barbless hooks. All commercial salmon fishing closed 9/16-18 from Cape Arago to Cape Blanco.
<u>Cape Perpetua to Cape Blanco</u> 5/1 - 6/30 7/1-28; 8/1-28	All except coho All salmon	Chin. 26"; barbless hooks. Chin. 26"; coho, 16"; barbless hooks. At least 1 chinook must be possessed or landed for each 2 coho possessed or landed except that 1 coho may be possessed or landed without having a chinook.
<u>Sisters Rocks to Chetco Point</u> 5/1-14	All except coho	Chin. 26"; barbless hooks.
<u>Cape Blanco to OR/CA border</u> 6/1-3; 6/7-10; 6/14-25	All salmon	Chin. 26"; coho 22"; barbless hooks. At least 1 chinook must be possessed or landed for each 1 coho except that 1 coho may be possessed or landed without having a chinook.
<u>Cape Blanco to Humbug Mtn.</u> 10/1 - 11/30	All except coho	Chin. 26"; barbless hooks. State waters fishery.
1988 <u>North of Cape Falcon</u> 5/1 - 6/14	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed.
<u>Cape Falcon to Orford Reef Red Buoy</u> 5/1 - 6/30	All except coho	Chin. 26"; barbless hooks.
<u>Cape Falcon to Cascade Head</u> 7/1 - 8/19	All salmon	Chin. 26"; coho 16"; barbless hooks. From 7/1-13 mixed loads of chinook and coho or coho only loads could not be landed between Cascade Head and Cape Arago unless the load met the possession and landing ratios for that area.
8/20 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Cascade Head to Cape Arago</u> 7/1 - 13	All salmon	Chin. 26"; coho 16"; barbless hooks. At least 1 chinook must be possessed or landed for each 2 coho possessed or landed except there was a single daily possession or landing per vessel of 2 coho w/o the ratio requirement. Mixed loads of chinook and coho or coho only loads must be delivered in the sub-area.
7/16 - 8/19 8/20 - 10/31	All salmon All except coho	As above but no ratio requirement. Chin. 26"; barbless hooks.
<u>Cape Arago to Orford Reef Red Buoy</u> 7/16 - 8/19	All salmon	Chin. 26"; coho 16"; barbless hooks. No ratio requirement.
8/20 - 31; 9/16 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Sisters Rocks to Chetco Point</u> 5/1 - 4	All except coho	Chin. 26"; barbless hooks. From shore out to 6 miles only.



Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR, AND OTHER RESTRICTIONS
(1988 continued)		
<u>Humbug Mtn. to Punta Gorda</u> 6/5 - 7	All salmon	Chin. 26"; coho 22"; barbless hooks. Sun. through Wed. only.
<u>Sisters Rocks to Mack Arch</u> 9/1 - 14	All except coho	Chin. 26"; barbless hooks.
<u>Orford Reef Red Buoy to Humbug Mountain</u> 10/1 - 31	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Blanco to Humbug Mtn.</u> 11/1 - 30	All except coho	As above.
1989 <u>North of Cape Falcon</u> 5/1 - 6/8; 6/13 - 15	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed.
8/21; 8/24 - 9/10	All salmon	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. Open south of Columbia River 8/21; and extended north to Leadbetter Point from 8/24. Daily landing limit of 40 coho and 4 chinook in effect through 8/27; daily landing of 40 coho and 8 chinook from 8/28 through 9/10. All salmon must be landed within this area.
<u>Cape Falcon to Cascade Head</u> 5/1 - 7/11; 8/18 - 10/31 7/12 - 7/14	All except coho All salmon	Chin. 26"; barbless hooks. Chin. 26"; coho 16"; barbless hooks. Mixed loads of coho and chinook, or coho only must be landed in this area.
7/18 - 8/17	All salmon	Chin. 26"; coho 16"; barbless hooks. A daily landing limit of 50 coho through 8/13; from 8/14 through 17 at least 1 chinook must be possessed or landed for each 2 coho possessed or landed; except that if no chinook were possessed, a single daily landing of 2 coho was permitted. Mixed loads of coho and chinook, or coho only must be landed in this area.
<u>Cascade Head to Orford Reef Red Buoy</u> 5/1 - 6/23; 8/18 - 10/31	All except coho	Chin. 26"; barbless hooks. The subarea from Cape Arago to Port Orford Reef Red Buoy was closed 8/18 - 31.
7/1 - 14	All salmon	Chin. 26"; coho 16"; barbless hooks. A daily landing limit of 50 coho, plus 3 coho for each chinook landed. Mixed loads of chinook and coho, or coho only must be landed in this area. All chinook must be delivered with the coho.
7/18 - 8/17	All salmon	Chin. 26"; coho 16"; barbless hooks. At least 1 chinook must be landed for each 2 coho, except that a single daily landing of 2 coho without any chinook is permitted. Mixed loads of coho & chinook, or coho only loads must be landed in this area. All chinook must be delivered with the coho.
<u>Orford Reef Red Buoy to Humbug Mountain</u> 10/1 - 31	All except coho	Chin. 26"; barbless hooks. State waters only.
<u>Cape Blanco to Humbug Mountain</u> 11/1 - 30	All except coho	As above.
<u>Sisters Rocks to House Rock</u> 5/1 - 2	All except coho	Chin. 26"; barbless hooks. Open from 0-6 nautical miles only.
<u>Sisters Rocks to Mack Arch</u> 9/1 - 14	All except coho	As above.
<u>Humbug Mountain to OR/CA Border</u> 6/5 - 8	All salmon	Chin. 26"; coho 22"; barbless hooks. A single daily landing of 20 chinook per day. All salmon must be delivered in this area.
8/18 - 20; 8/22 - 31	All except coho	As above.
1990 <u>US-Canada Border to Cape Falcon</u> 5/1 - 5/14; 5/18 - 5/27; 5/31 - 6/2; 6/8 - 6/11; 6/14	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR, AND OTHER RESTRICTIONS
(1990 continued) 8/18 - 21; 8/25 - 26	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. Open period restriction of 20 chinook & 200 coho per vessel. All fish must be landed and delivered in the area.
<u>Leadbetter Point to Cape Falcon</u> 8/30-9/14; 9/18-19; 9/22-10/15	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. Single daily landing of 50 coho, with one additional coho for each chinook landed. From 9/22 - 10/15 daily landing increased to 100 coho. All salmon must be landed in the area.
<u>Cape Falcon to Humbug Mtn.</u> 5/1 - 6/25; 9/1 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Cape Falcon to Cascade Head</u> 7/4 - 7/15 7/16 - 8/31	All except coho All	Chin. 26"; barbless hooks. Chin. 26"; coho 16"; barbless hooks. Single daily landing of 50 coho plus 1 coho for each chinook. All coho must be landed in area or in adjacent closed areas.
<u>Cascade Head to Humbug Mtn.</u> 7/4 - 31 (Cape Arago to Humbug Mtn. closed 7/10-17 & 7/24-31)	All	Chin. 26"; coho 16"; barbless hooks. At least one chinook must be landed for each coho, except a landing of 1 coho and no chinook is permitted. Loads with coho must be delivered in this area.
8/1 - 31 (Cape Arago to Humbug Mtn. closed 8/7-14)	All except coho	Chin. 26"; barbless hooks.
<u>Sisters Rocks to House Rock</u> 5/1 - 24	All except coho	Chin. 26"; barbless hooks. Open 0-6 miles from shore. All salmon must be landed in this area.
<u>Sisters Rocks to Punta Gorda</u> 8/1 - 6; 8/8 - 31	All except coho	Chin. 26"; barbless hooks. All salmon must be landed in this area.
<u>Sisters Rocks to Mack Arch</u> 9/3 - 16	All except coho	Chin. 26"; barbless hooks. All salmon must be landed in this area.
<u>43°30'00"N to Cape Arago</u> 11/1 - 14	All	Chin. 26"; coho 16"; barbless hooks. Open 0-3 miles from shore. Experimental fishery 10 vessels selected through drawing. All salmon must be landed into Coos Bay.
1991 <u>US-Canada Border to Cape Falcon</u> 5/1 - 6/15	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed.
<u>Leadbetter Point to Cape Falcon</u> 8/10 - 11	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. Open period landing restriction of 100 coho per vessel.
<u>Copalis Head to Cape Falcon</u> 9/1 - 2	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. Open period landing restriction of 75 coho per vessel. All salmon must be landed North of Cape Falcon.
<u>Cape Falcon to Cascade Head</u> 5/1 - 6/30 7/1 - 14 7/15 - 23; 8/1 - 10/31	All except coho All All except coho	Chin. 26"; barbless hooks. No more than 4 spreads per line. Chin. 26"; coho 16"; barbless hooks. Chin. 26"; barbless hooks.
<u>Cascade Head to Florence S. Jetty</u> 5/1 - 6/23 6/24 - 7/11 7/12 - 23; 8/1 - 10/31	All except coho All All except coho	Chin. 26"; barbless hooks. No more than 4 spreads per line. Chin. 26"; coho 16"; barbless hooks. Chin. 26"; barbless hooks.
<u>Florence S. Jetty to Cape Arago</u> 6/24 - 7/11 7/12 - 14; Aug. 1 - 9	All All except coho	Chin. 26"; coho 16"; barbless hooks. Chin. 26"; barbless hooks.
<u>Florence S. Jetty to Humbug Mtn.</u> 9/1 - 10/31	All except coho	Chin. 26"; barbless hooks.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR, AND OTHER RESTRICTIONS
(1991 continued)		
<u>Sisters Rocks to Mack Arch</u> 9/1 - 15	All except coho	Chin. 26"; barbless hooks. Open 0-6 miles from shore. All salmon must be landed in this area.
1992 <u>US-Canada Border to Cape Falcon</u> 5/1 - 6/15	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Conservation Zone closed.
7/20 - 21	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. No more than 4 spreads per line, 6 inch or larger plugs only. Open period landing restriction of 30 coho per vessel. All salmon must be delivered in this area or adjacent closed areas within 24 hours of closure.
7/25 - 27; 7/31 - 8/2; 8/6 - 8; 8/12 - 14; 8/20 - 22	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Conservation Zone closed. No more than 4 spreads per line, 6 inch or larger plugs only. Open period landing restriction of 44 coho per vessel. All salmon must be delivered in this area or adjacent closed areas within 24 hours of each closure.
<u>Cape Falcon to Florence S. Jetty</u> 5/1 - 31	All except coho	Chin. 26"; barbless hooks. No more than 4 spreads per line.
<u>Cape Falcon to Cascade Head</u> 7/22 - 8/21	All	Chin. 26"; coho 16"; barbless hooks. At least one chinook must be landed for each two coho. All loads with coho must be delivered in this area or in adjacent closed areas north of Cascade Head.
8/22 - 31	All	Chin. 26"; coho 16"; barbless hooks. Single daily landing limit of 25 coho plus 2 coho for each chinook. All loads with coho must be delivered in this area or in adjacent closed areas north of Cascade Head.
9/1 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Cascade Head to Florence S. Jetty</u> 7/22 - 8/7	All	Chin. 26"; coho 16"; barbless hooks. At least one chinook must be landed for each two coho. All loads with coho must be delivered in this area or in adjacent closed areas south of Cascade Head.
8/8 - 10/31	All except coho	Chin. 26"; barbless hooks.
<u>Cape Blanco to Humbug Mtn.</u> 10/24 - 26	All except coho	Chin. 26"; barbless hooks. State waters fishery.
1993 <u>US-Canada Border to Cape Falcon</u> 5/1 - 6/15	All except coho	Chin. 28"; barbless hooks. Columbia River Mouth Control Zone closed.
7/14 - 17, 7/21 - 24 7/28 - 31, 8/4 - 6	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Control Zone closed. No more than 4 spreads per line. Gear restricted to plugs and/or whole bait 6 inches or larger. Open period landing restriction at 50 coho per opening. All salmon must be delivered in this area or adjacent closed area within 24 hours of each closure.
<u>Queets River to Cape Falcon</u> 8/27 - 28	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Control Zone closed. Open period landing restriction of 35 coho per opening. All salmon must be delivered in this area or adjacent closed area within 24 hours of each closure.
9/1 - 4; 9/9 - 12; 9/16 - 19	All	Chin. 28"; coho 16"; barbless hooks. Columbia River Mouth Control Zone closed. Open period landing restriction of 70 coho per opening. All salmon must be delivered in this area or in adjacent closed area within 24 hours of each closure.
<u>Cape Falcon to Florence S. Jetty</u> 5/1 - 10/31	All except coho	Chin. 26"; barbless hooks. No more than 4 spreads per line.
<u>Florence S. Jetty to Cape Arago</u> 5/1 - 6/30; 9/1 - 10/31	All except coho	Chin. 26"; barbless hooks. No more than 4 spreads per line.
<u>Cape Arago to Humbug Mtn.</u> 5/1 - 31; 9/1 - 10/31	All except coho	Chin. 26"; barbless hooks. No more than 4 spreads per line.
<u>Cape Blanco to Humbug Mtn.</u> 11/1 - 30	All except coho	Chin. 26"; barbless hooks. State waters fishery.

Appendix Table 4. Summary of Oregon ocean commercial troll effort and landings of chinook and coho by area of catch, 1979-93.

Year	Area of Catch									Total
	Col. R. 2	Tillamook 3	Newport 4	Coos Bay 5	Brookings 6	OR Subtotal	Alaska 8	Wash. 1	Calif. 7	
<b>EFFORT (Boat Days)</b>										
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	<100	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	15,800	3,200	32,500	0	<100	<100	32,500
1987	300	7,300	8,700	21,000	2,000	39,300	0	100	<100	39,500
1988	200	10,500	12,500	26,300	1,400	50,800	0	100	100	51,100
1989	900	7,800	9,300	22,900	1,300	42,200	0	<100	<100	42,300
1990	700	5,100	4,300	15,600	400	26,200	0	100	<100	26,200
1991	700	3,400	5,000	5,500	<100	14,600	0	<100	<100	14,700
1992	300	2,600	5,800	400	0	9,100	0	100	0	9,200
1993	200	1,800	5,900	1,600	0	9,600	0	<100	<100	9,600
<b>Chinook</b>										
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	6,100	14,100	88,000	240,000	53,700	401,900	0	400	400	402,700
1987	4,600	41,400	87,600	350,400	39,800	523,800	0	3,700	1,800	529,300
1988	1,600	32,800	129,000	268,500	31,600	463,500	500	1,400	4,600	470,000
1989	2,900	30,400	70,700	232,300	17,000	353,200	0	200	100	353,500
1990	2,300	12,400	39,400	175,800	2,200	232,100	0	300	<100	232,500
1991	900	9,500	33,400	30,600	100	74,600	0	<100	100	74,800
1992	1,500	7,300	94,700	6,200	0	109,700	0	800	0	110,500
1993	400	6,300	64,100	10,500	0	81,400	0	0	<100	81,400
<b>Coho</b>										
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	46,300	96,700	192,300	86,200	19,100	440,600	0	0	0	440,600
1987	7,400	74,700	83,000	177,000	4,100	346,200	0	7,500	300	354,000
1988	0	172,300	252,500	196,400	1,200	622,400	<100	0	800	623,200
1989	21,100	136,300	137,800	159,500	1,000	455,700	0	0	<100	455,700
1990	10,900	53,300	13,800	43,400	0	121,400	0	900	<100	122,300
1991	26,700	89,000	89,700	101,100	0	306,500	0	300	100	306,900
1992	1,400	7,900	34,900	5,300	0	49,500	0	100	0	49,700
1993	1,600	0	<100	<100	0	1,600	0	<100	0	1,600

Appendix Table 5. Oregon commercial troll effort and landings of chinook and coho in number of fish by month, 1979-93<sup>a</sup>.

	May	June	July	Aug	Sept	Oct	Nov <sup>b</sup>	Total
<b>EFFORT (Boat Days)</b>								
1979	1,400	<100 <sup>c</sup>	21,500	21,700	1,300	200	800	48,000
1980	2,100	3,700 <sup>d</sup>	12,100	14,600	4,600	2,300	500	39,900
1981	3,300 <sup>e</sup>	-	21,300	16,700	1,600	1,900	500	45,200
1982	2,300	2,100	18,800	5,600	2,800	1,500	600	33,900
1983	1,600	1,900	12,200	4,100	1,200	1,100	100	22,200
1984	400	400	2,100	4,300	200	300	200	7,900
1985	3,100	2,100	6,300	6,600	1,900	900	200	21,100
1986	4,000	4,000	14,300	6,800	2,000	1,300	100	32,500
1987	3,600	3,900	16,300	7,300	5,500	2,700	300	39,500
1988	4,700	6,700	17,000	14,100	3,600	4,500	400	51,100
1989	6,300	7,100	13,600	8,800	3,500	2,200	700	42,300
1990	2,900	3,700	8,300	8,200	1,800	1,000	<100	26,200
1991	800	3,900	4,000	2,400	2,000	1,700	-	14,700
1992	1,600	200	1,500	2,700	1,500	1,700	-	9,200
1993	2,100	1,300	1,800	1,000	2,000	1,200	100	9,600
<b>Chinook</b>								
1979	11,000	200 <sup>c</sup>	73,600	119,500	13,200	25,200	2,600	245,500
1980	25,800	29,700 <sup>d</sup>	47,700	64,000	25,200	16,000	1,000	209,400
1981	28,600 <sup>e</sup>	-	34,900	65,700	16,900	13,200	1,200	160,400
1982	23,000	14,800	125,400	46,100	15,000	6,900	1,400	232,600
1983	9,500	16,300	34,100	11,500	2,700	4,600	900	79,600
1984	4,600	2,400	17,800	36,900	700	1,000	900	64,300
1985	39,900	14,900	57,900	76,300	21,400	5,300	900	216,600
1986	36,500	52,600	134,100	118,100	34,400	26,100	800	402,700
1987	43,400	56,500	264,200	87,600	60,600	15,100	1,900	529,300
1988	62,600	100,100	100,500	133,900	26,600	44,600	1,700	470,000
1989	100,300	62,500	71,300	75,200	25,100	16,000	3,100	353,500
1990	15,500	33,000	105,900	64,800	9,100	4,200	<100	232,500
1991	3,500	12,800	11,200	16,100	19,600	11,600	-	74,800
1992	20,500	2,300	26,400	31,700	12,300	17,400	-	110,500
1993	21,000	15,500	11,500	11,000	14,600	7,000	1,000	81,400
<b>Coho</b>								
1979	-	400 <sup>c</sup>	534,000	178,700	1,600	-	-	714,600
1980	-	-	228,700	137,500	17,100	-	-	383,300
1981	-	-	350,300	270,000	-	-	-	620,300
1982	-	-	522,200	-	-	-	-	522,200
1983	-	-	275,300	36,100	8,400	-	-	319,800
1984	-	-	-	14,000	-	-	-	14,000
1985	-	-	65,700	18,300	-	-	-	84,000
1986	-	12,100	382,200	46,300	-	-	-	440,600
1987	-	4,400	266,100	63,700	19,800	-	-	354,000
1988	-	1,600	387,800	233,800	-	-	-	623,200
1989	-	1,000	374,800	70,000	9,900	-	-	455,700
1990	-	100	82,400	33,200	6,200	300	-	122,300
1991	-	91,100	188,700	16,700	10,400	-	-	306,900
1992	-	-	18,100	31,600	<100	<100 <sup>f</sup>	-	49,700
1993	-	-	200	600	800	<100	-	1,600

<sup>a</sup> Catch statistics 1986-93 are reported by calendar months; monthly effort totals for 1986-93 and catch and effort for 1979-85 are the sum of statistical weeks with closest fit to calendar months. Includes catches made off California, Washington, and Alaska and landed in Oregon.

<sup>b</sup> Late season at mouth of Elk and Chetco Rivers only (initiated in 1974).

<sup>c</sup> Caught off California and landed in Oregon.

<sup>d</sup> Totals for June 1980 include landings made through July 6.

<sup>e</sup> Totals for May 1981 include landings made through June 7.

<sup>f</sup> Illegal landings.

Appendix Table 6. Oregon commercial troll salmon chinook catch, in number of fish, by statistical week<sup>a</sup> and area of catch, 1993.

Stat. Week	Area of Catch									Total
	Col. R. 2	Tillamook 3	Newport 4	Coos Bay 5	Brookings 6	OR Subtotal	Alaska 8	Wash. 1	Calif. 7	
18	0	9	262	111	-	382	-	-	-	382
19	2	1	1,635	213	-	1,851	-	-	-	1,851
20	56	72	5,373	517	-	6,018	-	-	-	6,018
21	170	79	3,874	715	-	4,838	-	-	-	4,838
22	25	307	5,963	1,180	-	7,475	-	-	-	7,475
23	10	81	3,666	297	-	4,054	-	-	-	4,054
24	2	53	2,338	291	-	2,684	-	-	-	2,684
25	1	46	4,658	112	-	4,817	-	-	-	4,817
26	-	19	2,982	157	-	3,158	-	16	-	3,174
27	-	71	3,308	150	-	3,529	-	-	-	3,529
28	-	90	1,072	2	-	1,164	-	-	-	1,164
29	18	292	4,105	17	-	4,432	-	-	-	4,432
30	11	231	2,260	35	-	2,537	-	-	-	2,537
31	8	94	1,162	17	-	1,281	-	-	-	1,281
32	9	77	1,244	56	-	1,386	-	-	-	1,386
33	-	373	2,920	107	-	3,400	-	-	-	3,400
34	-	117	3,762	180	-	4,059	-	-	-	4,059
35	28	75	1,448	53	-	1,604	-	-	-	1,604
36	45	145	1,092	1,122	-	2,404	-	-	-	2,404
37	17	377	3,560	948	-	4,902	-	-	-	4,902
38	3	469	887	1,182	-	2,541	-	-	-	2,541
39	-	655	1,284	981	-	2,920	-	13	-	2,933
40	-	996	1,732	148	-	2,876	-	-	-	2,876
41	-	764	1,800	134	-	2,698	-	-	-	2,698
42	-	399	847	329	-	1,575	-	-	-	1,575
43	-	268	190	231	-	689	-	-	-	689
44	-	185	388	600	-	1,173	-	-	-	1,173
45	-	-	297	338	-	635	-	-	-	635
46	-	-	-	218	-	218	-	-	-	218
47	-	-	-	80	-	80	-	-	-	80
48	-	-	-	24	-	24	-	-	-	24
49	-	-	-	3	-	3	-	-	-	3
Total	405	3,345	64,109	10,548	0	81,407	0	29	0	81,436

<sup>a</sup> Refer to Appendix Table 19 for 1993 statistical week calendar,

Appendix Table 7. Oregon commercial troll salmon coho catch, in number of fish, by statistical week<sup>a</sup> and area of catch, 1993.

Stat. Week	Area of Catch						OR Subtotal	Alaska	Wash.	Calif.	Total
	Col. R. 2	Tillamook 3	Newport 4	Coos Bay 5	Brookings 6						
29	115	-	-	-	-	115	-	-	-	115	
30	70	-	-	-	-	70	-	5	-	75	
31	21	-	-	-	-	21	-	-	-	21	
32	109	-	-	-	-	109	-	-	-	109	
33	-	-	-	-	-	0	-	-	-	0	
34	-	-	2 <sup>b</sup>	-	-	2	-	-	-	2	
35	468	-	-	-	-	468	-	-	-	468	
36	566	-	-	-	-	566	-	-	-	566	
37	215	-	-	-	-	215	-	-	-	215	
38	24	-	-	-	-	24	-	-	-	24	
39	-	-	-	-	-	0	-	-	-	0	
40	-	-	-	-	-	0	-	-	-	0	
41	-	-	-	-	-	0	-	-	-	0	
42	-	-	-	-	-	0	-	-	-	0	
43	-	-	-	-	-	0	-	-	-	0	
44	-	-	-	25 <sup>b</sup>	-	25	-	-	-	25	
Total	1,588	0	2	25	-	1,615	0	5	0	1,620	

<sup>a</sup> Refer to Appendix Table 19 for 1993 statistical week calendar.

<sup>b</sup> Illegal landings.

Appendix Table 8. Estimates of nominal ex-vessel value<sup>a</sup> for Oregon troll salmon landings and average price per pound, 1971-93.

Year	Chinook		Coho		Total Value
	\$ Value	\$/lb	\$ Value	\$/lb	
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	1,514,000	2.75	118,000	1.67	1,632,000
1985	5,045,000	2.48	729,000	1.51	5,773,000
1986	5,978,000	1.77	1,979,000	1.03	7,958,000
1987	13,324,000	2.57	3,264,000	1.70	16,588,000
1988	13,931,000	3.17	7,614,000	2.28	21,544,000
1989	7,830,000	2.21	2,131,000	1.06	9,961,000
1990	5,454,000	2.50	1,009,000	1.59	6,462,000
1991	1,704,000	2.45	1,395,000	0.98	3,099,000
1992	2,490,000	2.45	222,000	1.07	2,712,000
1993	1,661,000	2.18	10,000	1.13	1,671,000

<sup>a</sup> Dressed weight value



Appendix Table 9. Recreational ocean salmon sampling rates at Oregon ports, 1980-93.

Port	Percent of Catch Sampled <sup>a</sup>													
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Astoria	20	40	42	44	31	57	38	39	49	44	42	50	44	42
Garibaldi	39	36	55	61	35	47	37	40	32	37	46	34	37	52
Pacific City	-	82	87	82	71	72	75	75	79	70	72	69	72	84
Depoe Bay	45	50	68	60	65	60	55	57	50	56	45	48	46	74
Newport	39	40	31	34	48	36	35	33	39	35	35	28	36	36
Florence	-	30	37	44	27	29	41	38	46	51	46	33	34	40
Winchester Bay	33	26	32	33	27	34	33	31	36	44	42	26	25	45
Coos Bay	49	57	63	47	54	48	50	54	46	46	41	30	39	38
Gold Beach	50	48	62	43	47	43	63	64	-	-	-	-	-	-
Brookings	22	21	30	36	42	49	62	57	51	65	47	34	34	58
Coastwide percentage	34	39	44	42	42	47	44	44	43	43	42	35	37	43
Number of samplers	14	16	16	19	20	23	23	23	20	20	22	21	21	24 <sup>b</sup>
Sampler months	54	62	51	60	55	47	62	79	79	70	80	62	64	69 <sup>b</sup>

<sup>a</sup> Percentage of total catch observed by samplers = number of salmon observed/estimated catch of salmon.

<sup>b</sup> Includes 4 samplers (8 sampler months) participating in the Columbia River Control Zone test fishery.

Appendix Table 10. Summary of Oregon's recreational ocean salmon regulations, 1946-92.

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	4/10 -12/31	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	4/30 - 10/31	Same as in 1976.
	11/1-31	State waters off Elk and Chetco rivers--3 chinook/day; no size limit.
1978	4/29 - 10/31	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.
	11/1-30	State waters off Elk and Chetco rivers--3 chinook/day; 22" minimum size.
1979	5/12 - 9/16	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.
	11/1-30	State waters off Elk and Chetco rivers--2 chinook/day; 22" minimum size.
1980	5/10 - 9/14 <sup>a</sup>	3 fish/day lowered to 2 fish/day on July 16; 40 fish annual limit. Size limits as in 1978.
	9/15 - 10/31	South of Cape Falcon; 2 chinook/day; 22" minimum size.
	11/1-30	State waters off Elk and Chetco rivers--as above.
1981	5/15 - 9/20 <sup>b</sup>	South of Cape Falcon; 2 fish/day; increased to 3 fish/day on August 14; 40 fish annual limit. Size limits as in 1978.
	5/23 - 9/7 <sup>b</sup>	North of Cape Falcon; 2 fish/day; 40 fish annual limit. Size limit as in 1978.
	9/21 - 10/31	South of Cape Blanco; 2 chinook per day; 22" minimum size.
	11/1-30	State waters off Elk and Chetco rivers--as above.
1982	5/28 - 6/11	Between Cape Blanco and Cape Falcon in state waters; first 2 chinook taken per day; barbless hook only.
	5/28 - 8/1 <sup>c</sup>	South of Cape Blanco--as above.
	6/12 - 8/1 <sup>c</sup>	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.
	8/2 - 10/31	South of Cape Blanco; first 2 chinook taken/day.
	11/1-30	State waters off Elk and Chetco rivers; first 2 chinook taken/day.
1983	5/28 - 9/18	South of Cape Blanco; first 2 fish taken/day regardless of size. 40 fish annual limit.
	6/18 - 9/18	Entire coast south of Cape Falcon; as above.
	6/18 - 9/11	North of Cape Falcon; 2 fish/day.
	9/19 - 10/31	Twin Rocks to Pyramid Rock and east of longitude of the Tillamook Bay whistler buoy; 2 chinook/day.
	9/19 - 10/31	South of Cape Blanco; first 2 chinook taken/day.
	11/1-30	State waters off Elk River; first 2 chinook taken/day.

Appendix Table 10 continued.

Year	Season	Regulations
(1984 cont.) 1984	7/9 - 8/7	South of Cape Falcon; 2 fish/day; 40 fish annual limit. Minimum size 20". Single-point barbless hooks.
	7/28 - 8/8	Cape Falcon to Columbia River South Jetty; 2 coho/day; 40 fish annual limit. Minimum size 16". No chinook allowed. Single-point barbless hooks.
	8/9-24	Cape Blanco to OR/CA border; 2 chinook/day; 20" minimum size. Single-point barbless hooks.
	8/25 - 9/3	Cape Falcon to Cape Blanco; 1 fish/day; 20" minimum size. Single-point barbless (State waters only) hooks. (Cape Blanco to OR/CA border) 2 fish/day, one of which can be coho; 20" minimum size. Single-point barbless hooks.
	9/4 - 10/31	Cape Blanco to OR/CA border; 2 chinook/day; 20" minimum size. Single-point barbless hooks.
	9 15-21 <sup>d</sup>	Manhattan Beach to Pyramid Rock off Tillamook Bay; 2 chinook/day; 20" minimum size. (State waters only) Single-point barbless hooks.
	11/1-30	Cape Blanco to Humbug Mountain-Elk River; 2 chinook/day; 20" minimum size. (State waters only) Single-point barbless hooks.
1985	5/25-31	OR-CA border to Cape Blanco; first 2 fish taken per day; no more than 6 fish may be retained in 7 consecutive days.
	7/1-9/2	OR-CA border to Cape Falcon--as above.
	6/30 - 8/22	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.
	9/3 - 10/31	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.
	9/15 - 10/31	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.
	10/1 - 11/30	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.
1986	5/24 - 9/7	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.
	5/24 - 5/26 and 6/28 - 8/13	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.
	6/29 - 8/19	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.
	9/15 - 11/15	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; barbed hooks allowed.
	10/1 - 11/26	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".
	10/1-31	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".
1987	5/23 - 9/13	Cape Blanco to OR/CA Border; 2 salmon per day; not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit, minimum size 20". Single point barbless hooks.
	6/13 - 9/13	Cape Falcon to Cape Blanco; First 2 salmon per day; not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit.
	6/29 - 8/19	Leadbetter Point to Cape Falcon; 2 salmon per day; 40 salmon annual limit. Open Sunday through Thursday only. Area closures inside 3 miles from Cape Falcon to Red Buoy Line, 0-200 miles from Red Buoy line to Klipsan Beach, and inside 3 miles from Klipsan Beach to Leadbetter Point. Minimum size 24" for chinook and 16" for coho. Single point barbless hooks.
	9/14 - 10/31	Twin Rocks to Pyramid Rock, state waters off Tillamook Bay; first 2 salmon except coho per day, not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit.

Appendix Table 10 continued.

Year	Season	Regulations
(1987 cont.)	10/1 - 11/30	Cape Blanco to Humbug Mountain, state water off Elk River; 2 salmon per except coho; not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit. Minimum size 20" chinook. Single point barbless hooks.
	10/1 - 31	Bird Island to OR/CA Border east of 124 <sup>o</sup> 20'w, state waters off of Chetco River; 2 salmon per day except coho; not more than 6 salmon may be retained in 7 consecutive days; 40 salmon annual limit. Minimum size 20" chinook. Single point barbless hooks.
1988	5/1 - 27	Cape Falcon to Orford Reef Red Buoy inside the 27 fathom curve <sup>e</sup> only; 2 salmon per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20" chinook, 16" coho. Single point barbless hooks.
	5/28 - 9/11	Cape Falcon to Orford Reef Red Buoy; as above.
	5/28 - 7/9	Orford Reef Red Buoy to OR/CA border; 2 salmon per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20". Single point barbless hooks.
	7/10 - 9/11	Orford Reef Red Buoy to OR/CA Border; As above except bag decreased to 1 salmon per day.
	7/11 - 24	Cape Falcon to Leadbetter Point, WA; 2 salmon per day, only 1 of which may be a chinook; 40 salmon annual limit. Open Sunday through Thursday only. Columbia River Conservation Zone closed. Closed 5 to 200 nautical miles from shore between North Head and Klipsan Beach. Closed 3 to 200 nautical miles from shore between Columbia River South Jetty and Cape Falcon. Minimum size 24" for chinook, 16" for coho. Single point barbless hooks.
	9/12 - 10/31	Twin Rocks to Pyramid Rock, state waters off Tillamook Bay; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Barbed hooks are permitted. No minimum length.
	10/1 - 31	Orford Reef Red Buoy to Humbug Mountain, state waters off Elk River; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Single point barbless hooks. No minimum length.
	11/1 - 30	Cape Blanco to Humbug Mountain, state waters off Elk River; as above.
1989	5/1 - 26	Cape Falcon to Orford Reef Red Buoy inside the 27 fathom curve <sup>e</sup> ; 2 salmon per day; not more than 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20" chinook, 16" coho. Single point barbless hooks.
	5/27 - 7/27	Cape Falcon to Orford Reef Red Buoy, no fathom restriction. As above.
	7/28 - 8/20	Cape Falcon to Orford Reef Red Buoy. As above except salmon fishing closed Fridays and Saturdays.
	9/2 - 9/4	Cape Falcon to Orford Reef Red Buoy. As above except salmon fishing open every day.
	5/1 - 9/30	Orford Reef Red Buoy to Horse Mtn.; 2 salmon per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20" for chinook and coho - none for pink. Single point barbless hooks.
	5/28 - 6/12	Cape Falcon to US/Canada border; 2 salmon except coho per day; 40 salmon annual limit. Open Sunday through Monday only from 0 to 6 miles. Columbia River Conservation Zone closed. Minimum size 24" for chinook, 16" coho, none for pink. Single point barbless hooks.
	6/26 - 8/17	Cape Falcon to Leadbetter Point; 2 salmon per day; 40 salmon annual limit. Open Sunday through Thursday only from 0 to 200 miles. Columbia River Conservation Zone closed. Minimum size 24" for chinook, 16" coho, none for pink. Single point barbless hooks.
	9/16 - 10/31	Twin Rocks to Pyramid Rock, state waters off Tillamook Bay; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. No minimum length. Barbed hooks permitted.
	10/1 - 11/30	Cape Blanco to Humbug Mtn.; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. Single point barbless hooks. No minimum length.
1990	5/1 - 27	Cape Falcon to Humbug Mountain inside the 27 fathom curve <sup>e</sup> ; 2 salmon per day; not more than 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20" for chinook, 16" coho; none for pink salmon. Single point barbless hooks.
	5/28 - 9/16 except closed 6/23 - 6/29 and 8/1 - 8/7	Cape Falcon to Humbug Mountain, no fathom restriction. As above.

Appendix Table 10 continued.

Year	Season	Regulations
(1990 cont.)	5/1 - 9/9	Humbug Mountain to Horse Mountain, CA; 2 salmon per day except 6/30 through 8/15 only one could be a chinook; not more than 6 fish in 7 consecutive days; 40 salmon annual limit. Minimum size 20" for chinook and coho, none for pink. Single point barbless hooks.
	6/24 - 8/30	Cape Falcon to Leadbetter Point, WA; 2 salmon per day; 40 salmon annual limit. Open Sunday through Thursday only from 0 to 6 miles. Columbia River conservation Zone closed. Minimum size 24" for chinook, 16" for coho, none for pink salmon. Single point barbless hooks.
	9/8 - 9/9	Cape Falcon to Leadbetter Point, WA; as above.
	9/17 - 10/31	Twin Rocks to Pyramid Rock, state waters of Tillamook Bay; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. No minimum length. Barbed hooks permitted.
1991	5/1 - 26	Cape Falcon to Humbug Mountain inside the 27 fathom curve; <sup>e</sup> 2 salmon per day, not more than 6 salmon in 7 consecutive days. 40 salmon annual limit. minimum size 20" for chinook, 16" for coho; none for pink salmon. Single point barbless hooks.
	5/27 - 7/28	Cape Falcon to Humbug Mountain; as above except no fathom restriction.
	5/25 - 7/28 8/31 - 9/2	Humbug Mountain to Horse Mountain CA; 2 salmon per day except only 1 may be a chinook; not more than 6 fish in 7 consecutive days; 40 salmon annual limit. Minimum size 20" for chinook and coho, none for pink. Single point barbless hooks. Salmon fishing Thursday through Monday only.
	9/6 - 9/29	Humbug Mountain to Horse Mountain, CA; as above except salmon fishing Friday through Sunday only.
	6/24 - 8/12	Cape Falcon to Leadbetter Point, WA; 2 salmon per day; 40 salmon annual limit. Open Sunday through Thursday only with the Columbia River Conservation Zone closed. Minimum size 24" for chinook, 16" for coho, none for pink salmon. Single point, barbless hooks.
	9/16 - 10/31	Twin Rocks to Pyramid Rock, state waters off Tillamook Bay; 2 salmon except coho per day; 6 salmon in 7 consecutive days; 40 salmon annual limit. No minimum length. Barbed hooks allowed.
1992	5/1 - 6/6	Cape Falcon to Humbug Mountain inside the 27 fathom curve <sup>e</sup> ; 2 salmon per day, no more than 12 salmon in 7 consecutive days. Ten salmon annual limit, minimum size 20" for chinook, 16" for coho; none for pink salmon. Single point, single shank, barbless hooks.
	6/13 - 8/10	Cape Falcon to Humbug Mountain; as above except no fathom restriction and open for salmon fishing only Sunday through Tuesday.
	5/5 - 6/19	Humbug Mountain to Horse Mountain, CA; one salmon per day, no more than 6 salmon in 7 consecutive days; 40 salmon annual limit. Minimum size 20" for chinook and coho, none for pink salmon. Single point, single shank, barbless hooks. Salmon fishing Wednesday through Saturday only.
	9/1 - 9/6	Humbug Mountain to Horse Mountain, CA; as above except salmon fishing open every day.
	7/5 - 9/9	Cape Falcon to Leadbetter Point, WA; 2 salmon per day, no more than 4 salmon in 7 consecutive days; 40 salmon annual limit. Open Sunday through Thursday only with the Columbia River Control Zone (formerly conservation) closed.
	9/12 - 9/23	As above except salmon fishing open every day.
	9/16 - 10/31	Twin Rocks to Pyramid Rock, state waters off Tillamook Bay; 2 salmon except coho per day; no more than 5 fish in 7 consecutive days; 40 salmon annual limit. No minimum length. Barbed hooks allowed.
	10/1 - 11/30	Cape Blanco to Humbug Mountain, state waters only; 1 salmon except coho per day; no more than 4 fish in 7 consecutive days; barbless hooks only.

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.

Appendix Table 10 continued.

- d Pacific Ocean between 45 degrees 38 minutes N. Latitude and 45 degrees 29 minutes 45 seconds N. latitude and seaward 3 miles.
- e The 27 fathom curve is defined as follows: Within an area bounded by a line from Cape Falcon to 45°46'N, 124°01'20"W (approximately 1.6 nautical miles west of Cape Falcon) to 45°04'15"N, 123°04'W (approximately 2.2 nautical miles northwest of Cascade Head) to 44°40'40"N, 129°09'15"W (approximately 3 nautical miles west of Yaquina Head) to 44°08'30"N, 124°01'2"W (approximately 3 nautical miles west of Heceta Head) to 43°40'15"N, 124°14'30"W (approximately 0.5 miles west of the Umpqua Whistle Buoy) to 43°31'30"N, 124°01'7"W (approximately 1.7 nautical miles west of the beach) to 43°15'15"N, 124°28'W (approximately 3 nautical miles west of the beach) to 43°01'30"N, 124°29'50"W (approximately 2 nautical miles west of Four Mile Creek) to 42°56'N, 124°33'10"W (approximately 2.4 nautical miles west of Floras Creek) to 42°50'N, 124°38'30"W (approximately 3.4 nautical miles west of Cape Blanco) to 42°40'30"N, 124°28'45"W (approximately 1.1 nautical miles west of Humbug Mountain) to Humbug Mountain.

Appendix Table 11. Summary of actual Oregon ocean recreational salmon fishing regulations for 1993.

Area and Season	Quota		Daily Limit and Special Restrictions <sup>a</sup>
	Chinook	Coho	
Leadbetter Point, WA to Cape Falcon 7/5-9/9 Sun.-Thur. only and 9/12-23, all days (61 days)	7,100	101,300	2 salmon per day, no more than 4 fish in 7 consecutive days. Conservation Zone 1 (Columbia River mouth) is closed.
Cape Falcon to Humbug Mountain 5/1-6/6 all days within 27 fathoms and 7/13-8/10 Sun.-Tue. only (50 days)	none	68,000	2 salmon per day, no more than 2 fish in 7 consecutive days; no more than 10 fish/year.
Twin Rocks to Pyramid Rock (off Tillamook) 9/16-10/31 (46 days)	none	--	2 salmon except coho; no more than 6 fish in 7 consecutive days. Open only inside 3 miles.
Cape Blanco to Humbug Mountain 10/1-11/30 (61 days)	none	--	2 salmon except coho; no more than 6 fish in 7 consecutive days. Open only inside 3 miles.
Humbug Mtn. to Horse Mtn., CA 5/5-6/19 and 7/14-8/28, Wed.-Sat. only (56 days)	12,500	b	1 salmon. Control Zone 2 (Klamath River mouth) closed Aug. 1-31. No more than 6 salmon in 7 consecutive days and no more than 40 fish per year.
9/1-6 (6 days)	none	b	1 salmon. Possession limit as above.

<sup>a</sup> Single point, single shank barbless hooks were required from U.S.-Canada border to Pt. Conception, CA. Minimum size limits were (1) 24 inches for chinook and 16 inches for coho north of Cape Falcon; (2) 20 inches for chinook and 16 inches for coho from Cape Falcon to Humbug Mountain; and (3) 20 inches for both chinook and coho south of Humbug Mountain. There were no size limits on pink salmon.

<sup>b</sup> Overall recreational catch between Cape Falcon and the U.S.-Mexico border was limited by a preseason catch quota of 68,000 coho. Only the area north of Humbug Mt. closed upon projected attainment of the quota. A harvest guideline of 18,400 coho was in place for the area between Horse Mt., CA and Humbug Mtn.

Appendix Table 12. Oregon ocean recreational salmon angler effort, by port and statistical week<sup>a</sup> for 1993.

	Astoria	Garibaldi	Pacific City	Depoe Bay	Newport	Florence	Winchester Bay	Coos Bay	Brookings	Total
	-	0	0	0	34	0	4	6	235	27
	-	12	-	10	104	8	64	29	960	1,188
	-	181	2	11	74	53	143	32	475	977
	-	596	6	48	66	108	333	120	2,040	3,311
	-	188	7	31	84	79	186	41	501	1,111
	-	-	-	-	-	-	-	-	993	993
	-	-	-	-	-	-	-	-	1,196	1,196
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
	1,520	-	-	-	-	-	-	-	-	1,520
	1,555	832	291	985	2,639	847	1,618	1,091	2,093	11,955
	1,413	589	176	1,222	2,878	900	1,425	1,289	1,907	11,799
	1,541	774	429	1,027	2,837	876	1,314	706	2,544	12,044
	1,218	628	238	652	2,341	251	778	734	2,652	9,499
	2,357	478	144	615	1,454	777	763	747	2,491	9,822
	2,787	-	-	-	-	-	-	-	2,176	4,963
	1,852	-	-	-	-	-	-	-	742	2,594
	2,014	-	-	-	-	-	-	-	2,208	4,222
	1,357	-	-	-	-	-	-	-	578	1,935
	857	-	-	-	-	-	-	-	-	857
	78	-	-	-	-	-	-	-	-	78
	1,8549	4,278	1,293	4,601	12,511	3,899	6,628	4,795	23,791	80,344

Refer to Appendix Table 19 for 1993 statistical week calendar.



Appendix Table 13. Oregon recreational effort in salmon angler trips by area and month for 1979-93.<sup>a</sup>

Area	May	June	July	August	Sept.	Oct.	Nov.	Season <sup>b</sup>
<u>Columbia R.</u>								
1979	800	5,000	14,800	19,700	2,900	-	-	43,300
1980	1,300	7,800	13,700	19,700	3,800	-	-	46,300
1981	1,000	4,900	14,100	20,100	4,600	-	-	44,700
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
1988	-	-	5,700	-	-	-	-	5,700
1989	100	1,200	9,200	9,200	-	-	-	19,800
1990	-	1,900	8,900	13,200	1,400	-	-	25,500
1991	-	1,500	9,000	9,400	1,800	-	-	21,700
1992	-	-	9,800	1,800	1,300	-	-	12,900
1993	-	-	6,000	8,200	4,300	-	-	18,500
<u>Tillamook</u>								
1979	900	3,200	11,800	14,500	600	-	-	31,000
1980	400	8,500	17,300	18,100	3,600	-	-	47,800
1981	1,300	2,200	11,500	16,500	6,600	-	-	38,000
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 <sup>c</sup>	-	38,600
1986	0	1,900	13,000	3,000	-	-	-	17,900
1987	-	1,800	12,400	10,900	3,800	-	-	29,100
1988	300	2,100	9,600	13,800	7,400	-	-	33,200
1989	300	3,000	15,400	9,500	3,100	-	-	31,300
1990	100	1,200	9,900	16,300	6,000	-	-	33,500
1991	400	4,000	16,600	-	-	-	-	21,000
1992	1,200	3,400	11,700	7,100	2,800	-	-	26,100
1993	800	200	3,100	1,500	-	-	-	5,600
<u>Newport</u>								
1979	2,000	8,200	33,200	28,700	200	-	-	72,400
1980	1,800	16,700	39,000	22,600	3,800	-	-	83,900
1981	2,300	8,200	27,600	31,700	7,500	-	-	77,300
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
1988	1,000	7,100	37,900	34,200	9,400	-	-	89,600
1989	900	17,200	37,500	22,800	4,300	-	-	82,800
1990	600	5,500	32,800	28,300	4,100	-	-	71,400
1991	800	11,800	40,600	-	-	-	-	53,300
1992	1,100	7,100	27,900	14,600	2,400	-	-	53,000
1993	300	100	11,600	5,100	-	-	-	17,100

Appendix Table 13 continued.

Area	May	June	July	August	Sept.	Oct.	Nov.	Season <sup>b</sup>
<u>Coos Bay</u>								
1979	4,800	21,500	42,900	25,200	300	-	-	94,700
1980	2,200	32,100	46,200	14,300	2,600	-	-	97,400
1981	6,600	13,900	35,200	22,700	5,500	-	-	83,900
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
1988	1,400	9,800	33,100	21,000	3,600	-	-	69,000
1989	800	16,200	33,900	13,600	2,100	-	-	66,600
1990	600	8,800	24,300	24,900	6,400	-	-	65,000
1991	1,000	17,300	39,400	-	-	-	-	57,700
1992	1,400	9,400	28,600	12,800	3,300	-	-	55,600
1993	900	300	10,100	4,100	-	-	-	15,300
<u>Brookings</u>								
1979	300	4,900	27,100	18,500	3,300	5,000	900	59,900
1980	200	13,300	23,900	10,000	5,300	2,900	400	56,000
1981	2,700	16,500	23,700	19,300	2,300	2,300	300	67,100
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
1988	800	14,300	25,500	12,000	1,900	-	-	54,400
1989	3,100	15,700	26,600	14,600	6,200	-	-	66,100
1990	1,400	14,500	22,800	11,500	800	-	-	51,100
1991	1,100	11,600	17,800	1,900	4,000	-	-	36,400
1992	-	-	8,900	-	4,900	3,900	-	17,600
1993	3,700	2,700	6,500	8,100	2,800	-	-	23,800
<u>All Areas</u>								
1979	8,900	42,800	129,800	106,700	7,300	5,000	900	301,300
1980	5,900	78,400	140,000	84,700	19,100	2,900	400	331,400
1981	13,800	45,700	112,200	110,300	26,400	2,300	300	311,000
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
1988	3,600	33,300	111,800	81,000	22,400	-	-	252,000
1989	5,200	53,400	122,600	69,600	15,700	-	-	266,600
1990	2,700	32,000	98,700	94,300	18,500	-	-	246,200
1991	3,400	46,200	123,400	11,300	5,800	-	-	190,100
1992	3,400	19,900	86,900	36,300	14,700	3,900	-	165,300
1993	5,800	3,300	37,300	26,900	7,100	-	-	80,300

<sup>a</sup> 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.

<sup>b</sup> By area and calendar month. Season totals may vary from summarized months due to rounding.

<sup>c</sup> Only 600 were ocean only trips. Most were combination bay-ocean trips.

Appendix Table 14. Summary of Oregon recreational ocean salmon effort and catch by area, 1976-93.

Year	Area <sup>a</sup>					Total
	Columbia R.	Tillamook	Newport	Coos Bay	Brookings	
<b>EFFORT (Salmon Angler Trips)<sup>b</sup></b>						
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
1988	5,700	33,200	89,600	69,000	54,400	252,000
1989	19,800	31,300	82,800	66,600	66,100	266,600
1990	25,500	33,500	71,400	65,000	51,100	246,200
1991	21,700	21,000	53,300	57,700	36,400	190,100
1992	12,900	26,100	53,000	55,600	17,600	165,300
1993 <sup>c</sup>	18,500	5,600	17,100	15,300	23,800	80,300
<b>Chinook</b>						
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	19,000	26,400	59,400
1988	500	2,700	5,300	8,100	21,700	38,300
1989	1,500	900	1,800	6,700	21,300	32,100
1990	3,300	1,200	2,700	6,600	12,700	26,500
1991	1,000	700	900	5,100	6,800	14,400
1992	500	1,500	4,100	3,800	2,700	12,600
1993 <sup>c</sup>	900	300	400	1,100	3,800	6,500
<b>Coho</b>						
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	61,800	51,200	7,400	182,400
1986	36,900	23,500	78,500	61,100	11,700	211,700
1987	25,600	16,400	65,300	54,100	19,000	180,500
1988	9,800	29,900	100,900	71,200	15,000	226,900
1989	34,300	30,300	102,500	73,100	33,100	273,300
1990	36,100	22,900	64,100	62,000	15,300	200,500
1991	39,400	25,600	81,100	90,800	22,200	259,100
1992	22,300	20,800	63,600	76,000	3,300	185,800
1993 <sup>c</sup>	22,300	2,300	16,400	12,200	6,000	59,300

<sup>a</sup> 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.

<sup>b</sup> 1976-1978 effort includes a small number of bottomfishing trips.

<sup>c</sup> Preliminary.

Appendix Table 15. Oregon ocean recreational chinook catch (number of fish) by catch area and month, 1979-93.

Area <sup>a</sup>	Chinook							Season <sup>b</sup>
	May	June	July	August	Sept.	Oct.	Nov.	
<u>Columbia River</u>								
1979	600	1,600	2,100	3,100	100	-	-	7,500
1980	100	1,200	1,400	2,500	400	-	-	5,500
1981	<50	400	3,200	6,700	1,200	-	-	11,500
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	1,900	-	-	-	4,100
1988	-	-	500	-	-	-	-	500
1989	<50	200	200	1,100	-	-	-	1,500
1990	-	100	900	2,200	100	-	-	3,300
1991	-	<100	300	500	<50	-	-	1,000
1992	-	-	300	200	<50	-	-	500
1993	-	-	300	400	200	-	-	900
<u>Tillamook</u>								
1979	<50	<50	600	300	<50	-	-	1,000 <sup>c</sup>
1980	<50	200	300	800	200	-	-	1,600 <sup>c</sup>
1981	<50	<50	600	900	400	-	-	1,900 <sup>c</sup>
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
1988	<50	100	300	1,300	1,000	-	-	2,700
1989	<50	100	300	400	<50	-	-	900
1990	0	<50	500	400	300	100	-	1,200
1991	<50	300	400	-	-	-	-	700
1992	100	300	600	300	200	-	-	1,500
1993	<100	<50	200	<50	-	-	-	300
<u>Newport</u>								
1979	200	300	500	400	<50	-	-	1,400 <sup>d</sup>
1980	100	600	600	400	200	-	-	1,800 <sup>d</sup>
1981	<50	100	1,100	1,000	200	-	-	2,400 <sup>d</sup>
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
1988	100	800	2,200	1,700	500	-	-	5,300
1989	100	700	500	400	<50	-	-	1,800
1990	<50	300	1,400	800	200	-	-	2,700
1991	<100	400	400	-	-	-	-	900
1992	<100	300	2,800	900	<50	-	-	4,100
1993	<50	0	300	100	-	-	-	400
<u>Coos Bay</u>								
1979	200	2,400	1,500	500	<50	-	-	4,500
1980	<50	1,400	2,700	700	200	-	-	5,300
1981	100	400	2,300	1,300	300	-	-	4,500
1982	<50	1,000	9,100	-	-	-	-	10,100

Appendix Table 15 continued.

Area <sup>a</sup>	Chinook							Season <sup>b</sup>
	May	June	July	August	Sept.	Oct.	Nov.	
<u>Coos Bay cont.</u>								
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	-	-	-	5,900
1987	-	900	10,600	4,500	2,800	-	-	19,000
1988	200	1,700	2,800	3,100	200	-	-	8,100
1989	100	1,700	4,300	600	<50	-	-	6,700
1990	<50	600	2,800	2,300	800	-	-	6,600
1991	<50	2,100	2,900	-	-	-	-	5,100
1992	<100	2,000	1,000	300	400	-	-	3,800
1993	<100	<50	600	400	-	-	-	1,100
<u>Brookings</u>								
1979	<50	300	2,100	3,400	<50	600	100	6,400
1980	<50	1,300	1,700	1,000	400	300	100	4,800
1981	500	2,200	3,200	2,600	100	300	<50	8,900
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	-	26,400
1988	100	12,400	6,500	2,800	200	-	-	21,700
1989	400	3,600	9,400	6,800	1,100	-	-	21,300
1990	400	4,600	6,500	1,200	<50	-	-	12,700
1991	<50	4,100	2,300	<100	300	-	-	6,800
1992	-	-	1,500	-	400	700	-	2,700
1993	1,100	200	600	1,300	500	-	-	3,800
<u>All Areas</u>								
1979	1,000	4,600	6,700	7,700	200	600	100	20,900
1980	300	4,700	6,900	5,400	1,300	300	100	19,000
1981	700	3,100	10,300	12,500	2,200	300	<50	29,200
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	-	59,400
1988	400	15,000	12,400	8,900	2,000	-	-	38,300
1989	600	6,400	14,700	9,300	1,200	-	-	32,100
1990	400	5,700	12,100	6,900	1,400	100	-	26,500
1991	200	7,000	6,300	600	300	-	-	14,400
1992	200	2,500	6,200	1,700	1,200	700	-	12,600
1993	1,300	200	2,000	2,300	700	-	-	6,500

<sup>a</sup> 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 from 1979 through 1987.

<sup>b</sup> 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.

<sup>c</sup> Includes Nehalem Bay.

<sup>d</sup> Includes Salmon and Siletz Rivers and Alsea Bay.

Appendix Table 16. Oregon ocean recreational chinook catch, by port and statistical week<sup>a</sup> for 1993.

Week	Port										Total	
	Astoria	Garibaldi	Pacific City	Depoe Bay	Newport	Florence	Winchester Bay	Coos Bay	Brookings	Totals		
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	0	0	0	0	0	0	0	0	0	0	86
-	-	3	0	2	15	10	9	3	3	3	3	465
-	-	10	0	0	8	8	14	0	0	0	0	138
-	-	49	3	5	4	4	13	13	13	13	13	435
-	-	7	1	0	0	0	3	0	0	0	0	52
-	-	-	-	-	-	-	-	-	-	-	-	81
-	-	-	-	-	-	-	-	-	-	-	-	91
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
60	60	-	-	-	-	-	-	-	-	-	-	60
59	50	17	28	72	39	101	70	249	70	70	70	681
94	60	9	30	65	45	63	104	167	104	104	104	634
66	31	9	27	57	19	84	72	211	72	72	72	551
80	29	1	4	78	14	69	86	176	86	86	86	551
176	17	1	10	31	39	135	67	961	67	67	67	1,333
170	-	-	-	-	-	-	-	145	-	-	-	333
113	-	-	-	-	-	-	-	42	-	-	-	155
86	-	-	-	-	-	-	-	354	-	-	-	440
67	-	-	-	-	-	-	-	114	-	-	-	181
35	-	-	-	-	-	-	-	-	-	-	-	35
5	-	-	-	-	-	-	-	-	-	-	-	5
911	256	41	106	330	178	491	415	3,767	415	415	415	6,415

<sup>a</sup>Refer to Appendix Table 19 for 1993 statistical week calendar.

Appendix Table 17. Oregon ocean recreational coho catch (number of fish) by catch area and month, 1979-93.

Area <sup>a</sup>	Coho						Season <sup>b</sup>
	May	June	July	August	Sept.	Oct.	
<u>Columbia R.</u>							
1979	400	6,500	13,300	16,300	1,500	-	38,000
1980	1,800	17,300	19,800	15,600	1,200	-	55,600
1981	1,700	8,300	18,100	20,200	6,000	-	54,300
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	12,500	12,300	-	-	25,600
1988	-	-	9,800	-	-	-	9,800
1989	-	1,600	17,500	15,200	-	-	34,300
1990	-	3,500	14,700	16,600	1,300	-	36,100
1991	-	2,400	16,400	17,200	3,400	-	39,400
1992	-	-	17,900	3,000	1,400	-	22,300
1993	-	-	7,600	10,900	3,800	-	22,300
<u>Tillamook</u>							
1979	100	1,100	2,600	5,600	<50	-	9,400 <sup>c</sup>
1980	100	7,100	10,800	10,300	600	-	28,900 <sup>c</sup>
1981	300	1,000	5,600	9,600	1,300	-	17,700
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	-	16,400
1988	100	2,700	7,300	14,200	5,700	-	29,900
1989	<50	3,400	19,700	7,000	100	-	30,100
1990	0	900	8,700	12,400	-	-	22,900
1991	<50	2,500	23,100	-	-	-	25,600
1992	<100	1,800	11,300	6,100	1,400	-	20,800
1993	<50	<50	900	1,400	-	-	2,300
<u>Newport</u>							
1979	200	3,700	18,700	13,600	<50	-	36,300 <sup>d</sup>
1980	200	18,500	41,500	10,800	1,400	-	72,400 <sup>d</sup>
1981	400	6,300	20,700	30,500	7,000	-	61,900
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	45,600	1,400	-	61,800
1986	1,500	7,300	56,100	13,600	-	-	78,500
1987	-	1,300	43,100	14,500	6,300	-	65,300
1988	200	6,400	45,800	42,900	5,600	-	100,900
1989	800	24,000	47,100	29,300	600	-	102,500
1990	200	5,800	37,900	18,900	1,200	-	64,100
1991	<100	15,200	65,800	-	-	-	81,100
1992	<50	4,100	34,200	16,900	2,200	-	63,600
1993	<50	<50	9,400	6,900	-	-	16,400
<u>Coos Bay</u>							
1979	4,900	22,700	16,700	14,600	<50	-	79,000
1980	3,800	53,600	70,600	7,100	800	-	135,900
1981	6,300	8,100	25,100	16,500	1,700	-	57,600
1982	-	12,200	43,400	-	-	-	55,600
1983	-	20,700	28,300	9,200	4,500	-	62,700

Appendix Table 17 continued.

Area <sup>a</sup>	Coho						Season <sup>b</sup>
	May	June	July	August	Sept.	Oct.	
<u>Coos Bay cont.</u>							
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	-	54,100
1988	100	10,700	42,100	17,200	1,000	-	71,200
1989	700	22,300	38,500	11,600	<50	-	73,100
1990	<50	12,400	23,400	23,200	3,000	-	62,000
1991	800	23,400	66,500	-	-	-	90,800
1992	500	13,100	43,900	15,800	2,700	-	76,000
1993	<100	<100	7,600	4,400	-	-	12,200
<u>Brookings</u>							
1979	<50	1,600	14,500	2,100	-	-	18,200
1980	100	17,700	13,400	1,400	500	-	33,000
1981	500	2,600	1,400	3,800	<100	-	8,300
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	14,000	3,100	1,400	<50	19,000
1988	<50	1,000	12,100	1,800	100	-	15,000
1989	200	4,200	20,300	7,500	800	-	33,100
1990	100	8,400	5,000	1,800	100	-	15,300
1991	0	10,200	10,600	500	900	-	22,200
1992	-	-	2,900	-	400	-	3,300
1993	<100	<100	1,900	3,400	500	-	6,000
<u>All Areas</u>							
1979	5,700	35,600	85,800	52,200	1,600	-	180,800
1980	6,000	114,200	156,100	45,100	4,400	-	325,800
1981	9,200	26,300	70,800	80,600	12,900	-	200,600
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	108,200	2,300	-	182,400
1986	4,000	22,200	144,700	40,800	-	-	211,700
1987	<50	4,300	124,400	41,200	10,500	<50	180,500
1988	300	19,900	117,900	76,100	12,300	-	226,900
1989	1,600	55,900	143,400	70,900	1,500	-	273,300
1990	300	31,000	89,800	73,000	6,400	-	200,500
1991	900	53,800	182,400	17,700	4,300	-	259,100
1992	600	24,700	110,600	41,700	8,200	-	185,800
1993	200	200	27,500	27,100	4,300	-	59,300

<sup>a</sup> 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.

<sup>b</sup> 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.

<sup>c</sup> Includes Nehalem Bay.

<sup>d</sup> Includes Salmon and Siletz Rivers and Alsea Bay.



Appendix Table 18. Oregon ocean recreational coho catch, by port and statistical week<sup>a</sup> for 1993.

Stat. Week	Astoria	Garibaldi	Pacific City	Depoe Bay	Newport	Florence	Winchester Bay	Coos Bay	Brookings	Total
19	-	0	0	0	0	0	0	0	46	46
20	-	0	0	0	0	0	1	0	11	12
21	-	0	1	3	0	3	2	0	36	45
22	-	0	3	2	0	2	55	13	4	79
23	-	0	1	4	0	2	80	3	47	137
24	-	-	-	-	-	-	-	-	23	23
25	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-
28	2,134	-	-	-	-	-	-	-	-	2,134
29	1,878	158	152	702	2,115	437	1,409	860	134	7,845
30	1,922	83	90	1,118	1,964	636	1,466	1,047	622	8,948
31	1,688	185	258	1,282	2,244	335	772	680	1,166	8,610
32	1,600	252	399	956	2,534	134	612	982	1,291	8,760
33	3,297	542	199	1,111	2,349	765	902	993	614	10,772
34	3,431	-	-	-	-	-	-	-	1,481	4,912
35	2,589	-	-	-	-	-	-	-	59	2,648
36	1,993	-	-	-	-	-	-	-	319	2,312
37	1,272	-	-	-	-	-	-	-	181	1,453
38	540	-	-	-	-	-	-	-	-	540
39	5	-	-	-	-	-	-	-	-	5
Total	22,349	1,220	1,103	5,178	11,206	2,314	5,299	4,578	6,034	59,281

<sup>a</sup> Refer to Appendix Table 19 for 1993 statistical week calendar.

Appendix Table 19. The number of Oregon charter boats active during the ocean salmon fishery by port and year.

Port	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Astoria	44	50	42	46	50	48	42	41	34	30	24
Garibaldi	16	18	22	20	20	24	20	18	17	17	13
Pacific City	2	4	4	3	2	3	3	0	0	0	0
Depoe Bay	17	19	17	19	24	24	24	24	23	23	21
Newport	30	33	33	30	32	32	31	33	30	33	30
Florence	0	0	1	1	1	1	1	1	2	1	1
Winchester Bay	12	10	10	12	10	10	8	9	8	8	6
Coos Bay	8	6	7	5	5	5	5	5	4	4	4
Gold Beach	2	3	3	3	2	2	1	1	1	1	1
Brookings	3	3	3	5	5	9	7	9	10	6	4
Total	134	146	142	144	151	158	139	141	129	123	103

Appendix Table 20. Oregon ocean recreational salmon effort and catch by boat type, 1979-93<sup>a</sup> and 1979-92 average, in thousands.

Year	Angler Trips		Chinook Catch		Coho Catch	
	Charter	Private	Charter	Private	Charter	Private
1979	73.7	187.7	5.4	13.3	59.8	101.8
1980	79.0	218.9	5.1	11.9	98.3	207.5
1981	65.4	245.8	6.6	22.5	64.5	135.3
1982	43.3	182.7	8.2	30.6	48.5	126.7
1983	41.9	184.1	4.7	20.0	39.7	107.2
1984	24.3	128.7	2.2	14.8	27.3	96.1
1985	53.4	198.2	9.2	46.6	60.2	122.8
1986	43.7	142.8	4.0	18.4	71.1	140.5
1987	60.9	194.2	14.3	45.1	61.9	118.7
1988	63.0	189.0	7.5	30.9	73.1	153.3
1989	60.2	206.4	4.1	27.9	85.1	187.1
1990	55.3	190.9	5.1	21.4	61.6	138.9
1991	40.3	149.7	1.9	12.5	68.9	190.2
1992	30.0	135.4	2.7	9.9	46.2	139.6
1979-1992	52.5	182.5	5.8	23.2	61.9	140.4
1993 <sup>b</sup>	13.4	66.9	0.9	5.6	16.2	43.1

<sup>a</sup> Salmon data from surveyed ports only. These include Astoria, Garibaldi, Depoe Bay, Newport, Winchester Bay, Coos Bay and Brookings. Since 1981 Pacific City and Florence have also been included. Gold Beach data are included from 1981-1987.

<sup>b</sup> Preliminary.

Appendix Table 21. Oregon ocean recreational salmon effort and catch, by boat type and port, 1979-1993.

	SALMON ANGLER TRIPS		CATCH			
	Charter	Private	Chinook		Coho	
			Charter	Private	Charter	Private
<u>Columbia River</u>						
1979	18,511	24,267	3,415	3,657	20,124	17,770
1980	26,250	20,065	3,122	2,381	37,666	17,981
1981	15,967	28,728	4,298	7,218	23,679	30,615
1982	11,794	15,442	3,950	4,285	17,184	18,292
1983	12,901	17,950	1,694	1,746	17,661	19,584
1984	2,704	4,406	5	21	4,409	6,465
1985	8,328	11,693	1,469	2,098	14,466	16,543
1986	7,697	12,886	581	1,367	14,683	22,210
1987	8,044	9,086	1,935	2,128	13,423	12,224
1988	2,425	3,243	231	250	4,306	5,539
1989	9,126	10,711	524	940	16,863	17,441
1990	8,497	17,012	1,107	2,210	14,140	21,953
1991	8,102	13,552	334	649	15,534	23,862
1992	4,589	8,336	172	336	8,766	13,514
<b>1979-92 avg.</b>	<b>10,352</b>	<b>14,098</b>	<b>1,631</b>	<b>2,091</b>	<b>15,921</b>	<b>17,428</b>
1993	6,573	12,709	411	575	93763	13,759
<u>Garibaldi</u>						
1979	2,786	16,288	47	664	1,246	4,722
1980	3,688	29,347	75	722	3,302	16,105
1981	2,862	30,907	177	1,601	1,936	12,992
1982	1,859	16,588	729	671	16,513	14,159
1983	1,743	21,516	54	543	1,203	6,708
1984	2,356	16,816	147	731	2,855	12,432
1985	4,855	26,824	465	1,710	6,536	17,101
1986	2,846	11,819	106	278	4,725	13,510
1987	5,217	18,986	872	2,205	4,782	7,886
1988	7,065	21,548	604	1,738	9,003	16,181
1989	4,945	21,355	114	564	7,229	16,127
1990	5,470	24,085	209	794	5,979	13,120
1991	2,535	15,269	44	558	4,446	16,316
1992	2,721	17,887	113	1,045	4,089	10,324
<b>1979-92 avg.</b>	<b>3,639</b>	<b>20,659</b>	<b>268</b>	<b>987</b>	<b>5,274</b>	<b>12,691</b>
1993	476	3,802	18	238	295	925
<u>Pacific City</u>						
1979	-	-	-	-	-	-
1980	-	-	-	-	-	-
1981	230	4,012	9	108	110	2,655
1982	210	5,947	5	626	267	6,280
1983	90	1,958	3	92	35	862
1984	142	4,465	2	225	219	4,779
1985	477	6,400	36	399	650	6,696
1986	110	3,134	2	85	194	5,030
1987	238	4,610	27	328	440	3,432
1988	196	4,449	11	366	148	4,563
1989	254	4,743	5	188	383	6,583
1990	0	3,938	0	227	0	3,811
1991	0	3,220	0	84	0	4,888
1992	0	5,527	0	341	0	6,338
<b>1981-92 avg.</b>	<b>162</b>	<b>4,366</b>	<b>8</b>	<b>255</b>	<b>203</b>	<b>4,659</b>
1993	0	1,293	0	41	0	1,103

Appendix Table 21 continued.

	SALMON ANGLER TRIPS		CATCH			
	Charter	Private	Chinook		Coho	
			Charter	Private	Charter	Private
<u>Depoe Bay</u>						
1979	14,535	7,511	197	130	8,435	3,867
1980	14,489	10,251	260	160	15,477	8,783
1981	12,423	9,584	382	399	11,376	7,406
1982	7,883	9,762	421	857	8,608	9,803
1983	5,699	7,464	138	244	3,150	3,900
1984	5,335	8,657	305	475	5,572	8,987
1985	11,918	13,069	691	808	13,155	13,580
1986	10,441	7,129	289	169	18,048	10,800
1987	14,669	11,638	1,394	1,115	14,976	10,697
1988	18,732	13,313	793	582	20,801	14,921
1989	15,591	11,353	313	238	21,240	14,433
1990	8,497	17,012	1,107	2,210	14,140	21,953
1991	9,018	6,592	147	82	14,937	10,650
1992	7,448	8,448	573	546	10,937	10,934
<b>1979-92 avg.</b>	<b>11,191</b>	<b>10,127</b>	<b>500</b>	<b>572</b>	<b>12,918</b>	<b>10,765</b>
1993	2,304	2,297	41	65	2,397	2,781
<u>Newport</u>						
1979	12,144	37,848	249	832	5,770	18,055
1980	12,210	46,324	288	1,058	9,261	38,443
1981	13,104	42,231	480	1,151	12,000	31,071
1982	6,754	29,081	517	1,689	5,957	19,679
1983	5,836	23,560	308	918	3,561	11,237
1984	5,793	24,175	436	746	6,904	19,774
1985	11,216	34,351	669	1,924	12,052	23,100
1986	9,527	24,819	444	1,284	16,321	33,337
1987	13,725	36,917	1,600	2,332	13,250	26,343
1988	15,440	42,152	1,097	2,863	20,367	44,761
1989	12,729	43,100	357	916	18,499	47,620
1990	12,558	35,554	706	1,241	14,189	26,870
1991	10,214	27,431	219	432	17,358	38,122
1992	7,345	29,809	1,119	1,897	10,234	31,451
<b>1979-92 avg.</b>	<b>10,613</b>	<b>34,096</b>	<b>606</b>	<b>1,377</b>	<b>11,837</b>	<b>29,275</b>
1993	2,431	10,080	80	250	2,903	8,303
<u>Florence</u>						
1979	-	-	-	-	-	-
1980	-	-	-	-	-	-
1981	13	13,179	0	764	1	7,050
1982	0	8,687	0	1,749	0	6,825
1983	98	7,732	13	564	33	3,003
1984	0	8,673	0	1,370	0	8,118
1985	396	13,350	57	1,460	365	8,968
1986	625	8,269	87	1,168	1,036	11,400
1987	625	12,927	196	3,166	450	9,794
1988	716	14,357	23	1,431	707	15,485
1989	0	12,178	0	1,745	0	10,718
1990	429	15,358	11	980	314	13,852
1991	468	12,048	24	1,008	615	19,195
1992	595	15,177	6	545	836	21,355
<b>1981-92 avg.</b>	<b>330</b>	<b>11,827</b>	<b>34</b>	<b>1,329</b>	<b>363</b>	<b>11,313</b>
1993	173	3,726	5	173	141	2,173

Appendix Table 21 continued.

	SALMON ANGLER TRIPS		CATCH			
	Charter	Private	Chinook		Coho	
			Charter	Private	Charter	Private
<u>Winchester Bay</u>						
1979	14,795	34,133	668	2,089	15,385	28,473
1980	11,405	43,969	731	2,769	17,882	66,514
1981	11,096	33,393	523	2,036	7,767	22,776
1982	7,186	24,923	1,052	3,540	8,008	24,156
1983	8,273	32,654	905	3,212	8,124	27,682
1984	4,253	17,444	508	2,067	4,651	16,790
1985	8,691	25,708	2,249	3,802	8,960	20,571
1986	6,955	16,217	817	1,509	11,498	21,414
1987	10,169	22,087	4,777	6,906	9,518	18,817
1988	11,399	26,882	1,807	3,397	12,781	27,287
1989	9,583	26,220	709	2,642	12,688	29,711
1990	9,120	26,313	1,235	2,588	9,013	26,992
1991	5,553	23,400	380	2,054	9,964	36,714
1992	5,027	21,282	403	1,653	8,295	28,889
<b>1979-92 avg.</b>	<b>8,821</b>	<b>26,758</b>	<b>1,197</b>	<b>2,876</b>	<b>10,323</b>	<b>28,341</b>
1993	1,145	5,777	134	65	1,022	2,174
<u>Coos Bay</u>						
1979	7,925	18,788	480	543	8,173	11,502
1980	8,241	21,254	349	861	13,275	28,199
1981	6,481	19,738	319	813	6,803	13,251
1982	4,231	14,328	1,012	2,732	5,203	11,392
1983	3,687	19,184	357	1,532	4,958	18,854
1984	1,647	8,219	152	757	1,934	7,945
1985	3,376	11,980	569	1,319	3,424	8,874
1986	2,129	9,447	454	1,883	3,513	12,236
1987	3,607	13,112	969	2,954	3,521	12,049
1988	3,446	12,213	488	934	4,130	10,860
1989	3,551	15,077	213	1,344	4,691	15,248
1990	2,689	10,781	269	1,461	2,294	9,584
1991	2,374	13,839	102	1,488	4,139	20,153
1992	1,768	11,709	161	995	2,897	13,693
<b>1979-92 avg.</b>	<b>3,939</b>	<b>14,262</b>	<b>421</b>	<b>1,401</b>	<b>4,925</b>	<b>13,845</b>
1993	454	4,341	108	307	568	4,010
<u>Gold Beach</u>						
1979	1,515	5,840	154	974	201	625
1980	1,182	2,891	134	285	306	888
1981	1,482	3,131	246	658	247	644
1982	1,993	4,792	469	888	271	839
1983	2,174	6,685	511	1,557	366	1,192
1984	966	4,072	251	661	256	1,330
1985	1,755	4,786	723	1,857	168	539
1986	1,365	3,016	363	812	255	590
1987	1,399	2,709	394	992	446	1,176
1988	-	-	-	-	-	-
1989	-	-	-	-	-	-
1990	-	-	-	-	-	-
1991	-	-	-	-	-	-
1992	-	-	-	-	-	-
1993	-	-	-	-	-	-

Appendix Table 21 continued.

	SALMON ANGLER TRIPS		CATCH			
	Charter	Private	Chinook		Coho	
			Charter	Private	Charter	Private
<u>Brookings</u>						
1979	1,507	42,995	160	4,446	497	16,811
1980	1,590	44,783	134	3,686	1,176	30,589
1981	1,753	60,891	216	7,775	595	6,838
1982	1,398	53,171	669	13,502	565	15,234
1983	1,415	45,403	697	9,589	610	14,181
1984	1,132	31,803	424	7,709	468	9,437
1985	2,417	49,993	2,296	31,266	318	6,847
1986	1,996	46,056	838	9,830	861	10,005
1987	3,210	62,099	2,180	22,838	1,171	16,251
1988	2,660	49,572	2,252	19,353	1,178	13,653
1989	4,400	61,696	1,903	19,354	3,767	29,267
1990	2,495	48,613	1,124	11,608	1,235	14,083
1991	2,080	34,367	663	6,148	1,897	20,329
1992	468	17,182	151	2,514	184	3,110
<b>1979-92 avg.</b>	2,037	46,330	979	12,115	1,037	14,759
1993	626	23,165	211	3,556	300	5,734
<u>S. of Falcon</u>						
1979	55,207	163,403	1,955	9,678	39,707	84,055
1980	52,805	198,822	1,971	9,541	60,679	189,521
1981	49,444	217,066	2,352	15,305	40,835	104,683
1982	31,514	167,279	4,215	26,266	31,267	108,385
1983	29,015	166,156	2,986	18,251	22,040	87,619
1984	21,627	124,324	2,225	14,741	22,859	89,592
1985	45,101	186,461	7,755	44,545	45,701	106,276
1986	35,994	129,906	3,400	17,018	56,451	118,322
1987	52,859	185,085	12,409	42,948	48,442	106,445
1988	60,031	184,952	7,113	30,733	69,225	147,803
1989	51,054	195,717	3,613	26,992	68,326	169,703
1990	46,788	173,870	3,965	19,199	47,431	116,942
1991	32,242	136,166	1,579	11,854	53,356	166,367
1992	25,372	127,021	2,526	9,536	37,472	126,094
<b>1979-92 avg.</b>	42,075	168,302	4,147	21,186	45,985	122,986
1993	7,609	54,187	597	4,987	7,626	29,306
<u>Grand Total</u>						
1979	73,718	187,670	5,370	13,335	59,831	101,825
1980	79,055	218,887	5,093	11,922	98,345	207,502
1981	65,411	245,794	6,650	22,523	64,514	135,298
1982	43,308	182,721	8,165	30,551	48,451	126,677
1983	41,916	184,106	4,680	19,997	39,701	107,203
1984	24,331	128,730	2,230	14,762	27,268	96,057
1985	53,429	198,154	9,224	46,643	60,167	122,819
1986	43,691	142,792	3,981	18,385	71,134	140,532
1987	60,903	194,171	14,344	45,076	61,865	118,669
1988	62,456	188,195	7,344	30,983	73,531	153,342
1989	60,178	206,427	4,137	27,932	85,140	187,100
1990	55,285	190,882	5,072	21,409	61,571	138,895
1991	40,344	149,718	1,913	12,503	68,890	190,229
1992	29,961	135,357	2,698	9,872	46,238	139,608
<b>1979-92 avg.</b>	52,427	182,400	5,778	23,278	61,903	140,411
1993	13,449	66,896	933	5,562	16,216	43,065

Appendix Table 22. Statistical week calendar for 1993.

Stat. Week	Beginning Monday	Ending Sunday	Calendar Month
18	26 April	02 May	April
19	03 May	09 May	May
20	10 May	16 May	
21	17 May	23 May	
22	24 May	30 May	
23	31 May	06 June	June
24	07 June	13 June	
25	14 June	20 June	
26	21 June	27 June	
27	28 June	04 July	July
28	05 July	11 July	
29	12 July	18 July	
30	19 July	25 July	
31	26 July	01 August	
32	02 August	08 August	August
33	09 August	15 August	
34	16 August	22 August	
35	23 August	29 August	
36	30 August	05 September	September
37	06 September	12 September	
38	13 September	19 September	
39	20 September	26 September	
40	27 September	03 October	
41	04 October	10 October	October
42	11 October	17 October	
43	18 October	24 October	
44	25 October	31 October	
45	01 November	07 November	November
46	08 November	14 November	
47	15 November	21 November	
48	22 November	28 November	
49	29 November	05 December	December
50	06 December	12 December	
51	13 December	19 December	
52	20 December	26 December	
53	27 December		



Appendix Table 23. Oregon coastal freshwater and estuary exceptions to the coho salmon emergency closure in coastal basins for the period of September 1 through December 31, 1993.

Areas Open for Coho Angling	Open Period
Nehalem Bay and River upstream to the mouth of the North Fork Nehalem River. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
North Fork Nehalem River upstream to the 4th bridge on Hamlet Rd. (near mile post 6). <sup>a</sup>	Sept. 1 - Dec. 31, 1993
Trask River from mouth upstream to Hwy. 101 bridge. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
Trask River from Hwy. 101 bridge to junction of North and South Forks. <sup>a</sup>	Sept. 16 - Nov. 15, 1993
Salmon River up to the Longview Fiber Corp. bridge. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
Siletz Bay, Siletz River, North Fork Siletz River up to Stott Mtn. Bridge, and South Fork Siletz up to the base of the old Valsetz Dam. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
Alsea Bay and River upstream to the mouth of Fall Cr. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
Fall Creek (Alsea River) from mouth up to Carns Cr. <sup>a</sup>	Sept. 1 - Oct. 14, 1993
Umpqua Bay and River upstream to the North Fork. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
North Umpqua River up to the fly area boundary just above Rock Cr. <sup>a</sup>	Sept. 1 - Dec. 31, 1993
Ten Mile Cr. up to the mouth of Eel Cr. and Eel Lk. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
Coos Bay upstream to the mouth of Catching Slough, and Isthmus Slough. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
Coquille Bay and River upstream to the upper end of Randolph Island. <sup>a</sup>	Sept. 1 - Nov. 15, 1993
Roque Bay and River (fin-marked coho only). <sup>b</sup>	Sept. 1 - Dec. 31, 1993

<sup>a</sup> Bag limit: 2 adult salmon and 10 jacks per day, not more than 6 salmon and 20 jacks in 7 consecutive days.

<sup>b</sup> Bag limit: 2 adult chinook or fin-marked coho or 10 jack chinook or jack fin-marked coho per day, not more than 6 adults or 20 jacks in 7 consecutive days.

