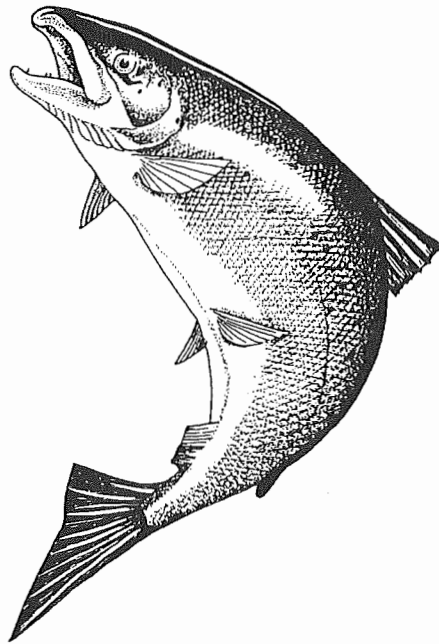


THE 1991 OREGON OCEAN SALMON FISHERIES



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OREGON DEPARTMENT OF FISH AND WILDLIFE
Ocean Salmon Management

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by

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Fish Division
Ocean Salmon Management Program

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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 stream research projects. 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 1991 ocean season. In 1991, we collected and analyzed data on Oregon's catch and fishing effort, recovered coded-wire tags (CWT's), 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 CWT's to maintain a reference collection of hatchery coho scales. Following the early closure of the 1991 recreational seasons, we surveyed several estuaries where salmon fisheries developed.

The OSMP sampling project is permanently staffed by a project leader and an assistant project leader in Newport, and two sampling coordinators, one at Tillamook and one at Coos Bay. Up to 35 seasonal aides are hired each year as port samplers. The sampling coordinators serve as liaison between field samplers and Newport program staff, and also deliver data and coded wire tags to Newport.

Nine Oregon coastal ports were sampled in 1991, utilizing 28 seasonal samplers: six were troll, 20 were recreational, and two were "combination" samplers. Most troll samplers did some recreational sampling when there were commercial closures. Two seasonal employees helped edit and computer process the sampled data under the direction of OSMP's Data Management Project.

1991 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 to record 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 to 4,000,000 pounds dressed for most years (Figure 1). From 1942 to 1950 catches remained near 1,000,000 pounds, but by 1957 landings had climbed to 3,400,000 pounds. The back-to-back El Nino oceanographic cycles in 1958 and 1959 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 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 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 a general decrease in abundance for many stocks, concern for critical natural stocks under both state management and the federal Endangered Species Act (ESA), and 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. Through permit non-use, the number of troll permits has declined to approximately 2,500 in 1990; in 1991, 1,215 vessels recorded landings of salmon.

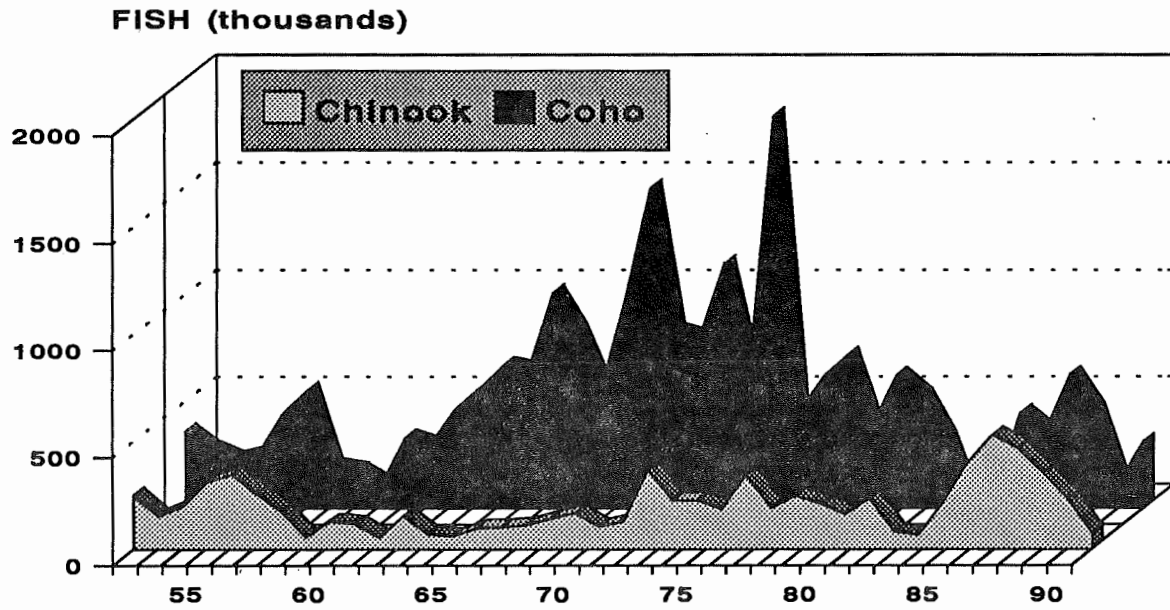
Allocation conflicts intensified in 1991 with continued concern for adult recruitment of Klamath River fall chinook. The 1991 ocean salmon troll season off Oregon and California saw the largest time and area block closures, and the most restrictive troll chinook fisheries in history, resulting in extremely low catches of chinook. In addition, continued depressed Oregon Coastal Natural (OCN) coho stocks limited the directed coho troll fishery. Extremely low prices paid for coho added to the bleak troll season in 1991.

SAMPLING METHODOLOGY

Sampling Areas and Staffing

For the 1991 season, a seasonal staff of 6 troll salmon samplers and 2 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, Gearhart, Garibaldi, Pacific City, Newport, Florence, Winchester Bay, Coos Bay, and Brookings. Troll sampling was supplemented at times by the two sampling coordinators and the assistant project leader.

TROLL SALMON LANDINGS, 1952-91 Numbers of Salmon Landed



TROLL SALMON LANDINGS, 1925-91 Pounds Dressed (head on, viscera removed)

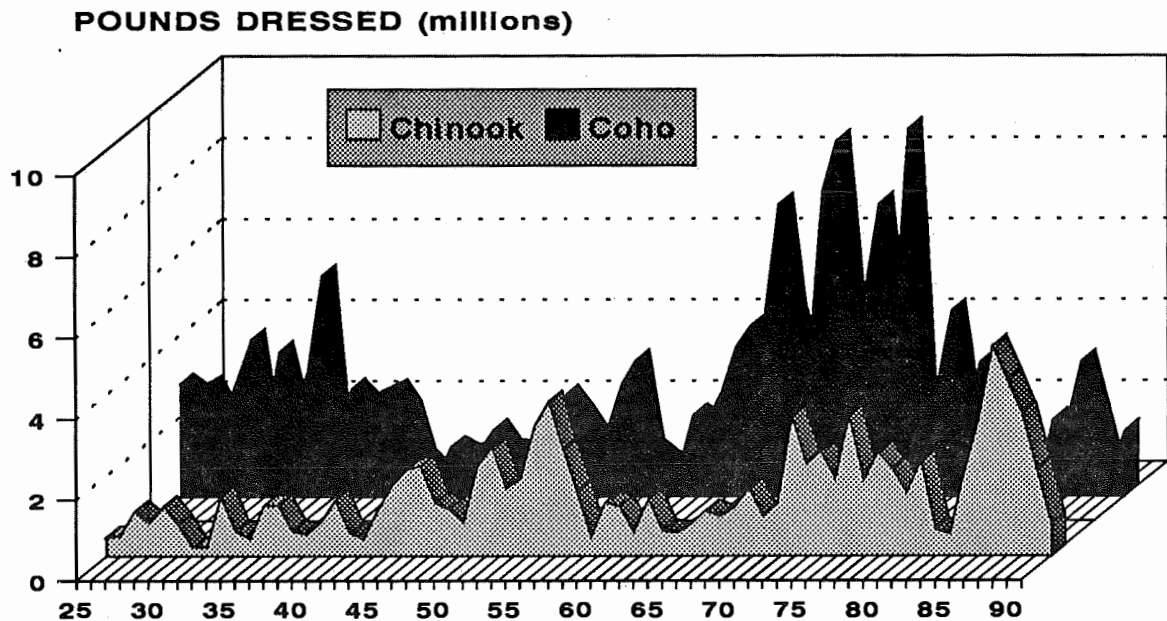


Figure 1. Historical Oregon troll salmon landings in numbers of fish (1952-91), and in pounds dressed (1925-91).

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. 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 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, and provide for in-river fisheries. 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 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 permit 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.

REGULATIONS

Ocean salmon regulations are set by the PFMC for all ocean salmon fisheries from 3 to 200 miles. From 0 to 3 miles, ocean salmon regulations are set by the Oregon Fish and Wildlife Commission within the ocean impact guidelines established by the Council. Special all-species-except-coho fisheries have been set in many recent years by the Oregon Fish and Wildlife Commission for state waters within 3 miles of shore, but no special near shore troll seasons were authorized for 1991.

All 1991 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 caught north of Humbug Mountain, and 22 inches total length for coho caught south of Sisters Rocks (Figure 2, Appendix Table 3).

In an attempt to reduce ocean harvest rates on Klamath River fall chinook, no troll salmon fishery occurred below the Florence South Jetty prior to June 24, and the last week of July was closed throughout the state. An additional month of closures from the Florence South Jetty to Cape Arago were instituted from mid-July to the end of August, and no troll fishery took place south of Cape Arago prior to September 1.

North of Cape Falcon

The area from Cape Falcon north to the US/Canada border opened for all species except coho on May 1 and ran through to its scheduled closing date of June 15 (46 fishing days). The chinook guideline of 32,100 fish for this fishery was not reached. Vessels were required to land and deliver fish within 48 hours of any closure, and were required to notify the Newport office of the Oregon Department of Fish and Wildlife of any landings south of Cape Falcon.

A second season north of Cape Falcon to Leadbetter Point, Washington, was open August 10 through 11 (2 fishing days). This all species fishery had a restriction of 100 coho per vessel per open period. Following a conference call on August 8, landing restrictions were changed to allow salmon to be landed outside this area. This fishery had initial guidelines of 2,000 chinook and 19,500 coho. The coho guideline was exceeded due in large part to landings made south of Cape Falcon, and the overage was taken from the final season.

The final 1991 troll season north of Cape Falcon that included Oregon waters was open from Cape Falcon to Copalis Head, Washington. This season was open from September 1 through 2 (2 fishing days). An open period landing limit of 75 coho was in effect. The initial coho quota of 32,500 fish was reduced to 22,900 fish following the overage in the previous season. The initial chinook guideline for this fishery was 3,300 fish. All salmon caught in this season were required to be landed in this area or in an adjacent closed area. In all seasons north of Cape Falcon, chinook catches did not approach guidelines and were not a factor in the 1991 seasons.

The Columbia River Conservation Zone was closed to all salmon fishing in 1991. The conservation zone is defined as follows: The area within a line extending 6 nautical miles due west from North Head along $46^{\circ}18'00''\text{N}$ to $124^{\circ}13'18''\text{W}$, then southerly to the Columbia River Buoy ($46^{\circ}11'06''\text{N}$, $124^{\circ}11'00''\text{W}$), then northeast along the Red Buoy Line to the tip of the Columbia River south jetty (Figure 10).

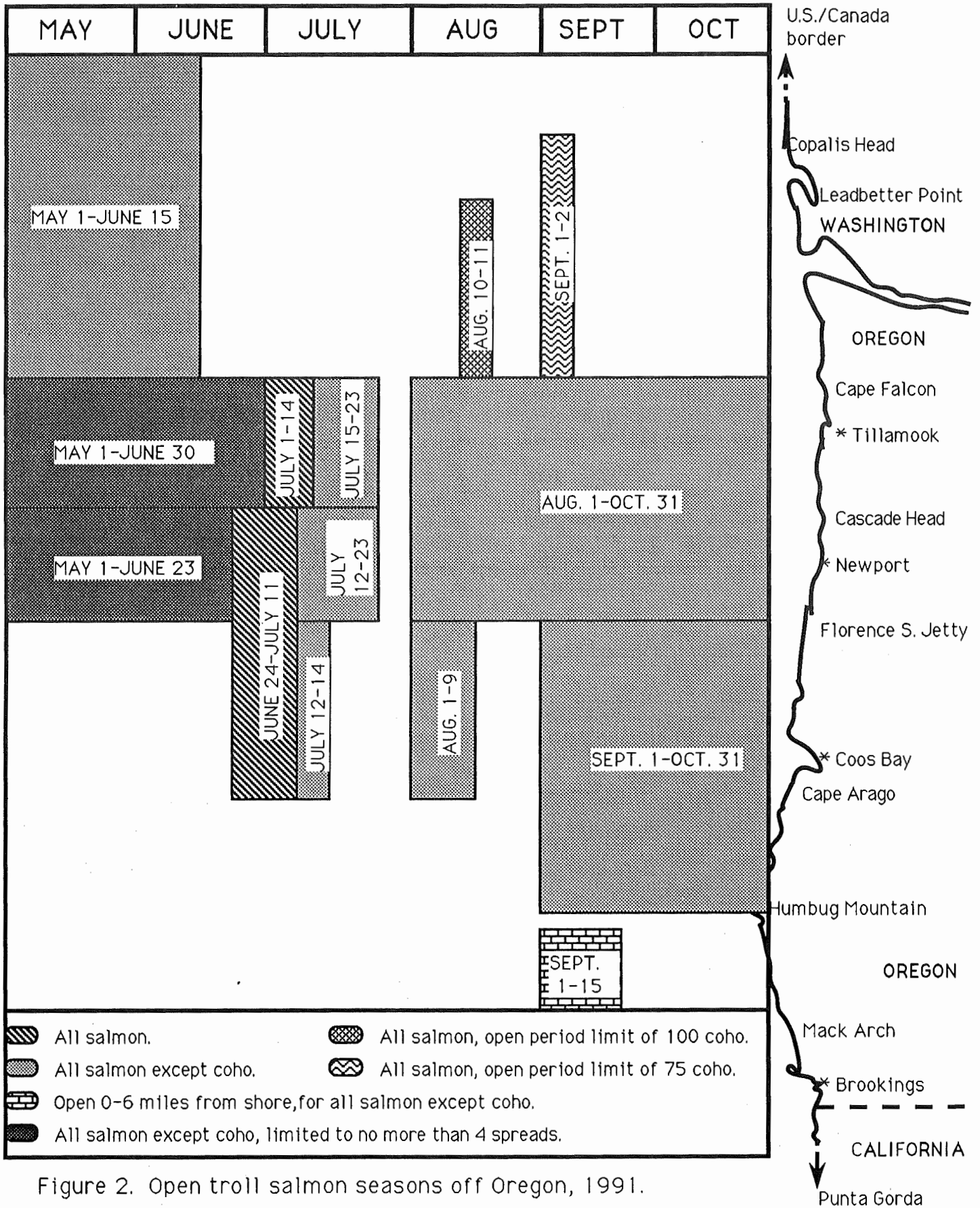


Figure 2. Open troll salmon seasons off Oregon, 1991.

Cape Falcon to Cascade Head

The all species except coho fishery from Cape Falcon to Cascade Head was open from May 1 through June 30, July 15 through 23, and August 1 through October 31 (162 fishing days). There were no chinook quota restrictions in this area. During the May/June period, a four spread per wire gear restriction was in place to reduce coho hooking mortality (Lawson, 1991).

The all species fishery from Cape Falcon to Cascade Head was open from July 1 through 14 (14 fishing days). The coho catch quota for this fishery was included in the 361,000 coho allocated for troll landings from Cape Falcon to the US/Mexico border.

Cascade Head to Florence South Jetty

The all species except coho fishery between Cascade Head and the South Jetty at Florence was open from May 1 through June 23, July 12 through 23, and August 1 through October 31 (148 fishing days). There were no chinook quotas in this area. During this fishery, a four spread per wire restriction was in effect to reduce coho hooking mortality.

The all species fishery was open from June 24 through July 11 (18 fishing days). The coho landed in this area counted against the 361,000 fish quota, and there was a subarea ceiling of 271,000 coho for the area south of Cascade Head. A 5,000 coho reserve (included in the previous figures) was allocated to the fishery south of Horse Mountain, California, and was available following attainment of the overall coho quota minus the 5,000 reserve.

Florence South Jetty to Cape Arago

The all species fishery from the Florence South Jetty to Cape Arago was open concurrently with the all species fishery from Cascade Head to the Florence South Jetty, June 24 through July 11 (18 fishing days). The coho landed in this area counted against the quotas as above.

The all species except coho fishery in this area was closed during May and June, as well as the second half of July, and the last two thirds of August. The open periods included July 12 through 14 and August 1 through 9 (12 fishing days). These openings were not under any chinook quota restrictions. This area was also included in a chinook guideline fishery discussed below.

Florence South Jetty to Humbug Mountain

The area from the Florence South Jetty to Humbug Mountain was scheduled to be open from September 1 through 30 and October 8 through 31 for all species except coho. The planned closure from October 1 through 7 was rescinded when landing information indicated that the catches would not exceed the 15,000 chinook guideline (61 fishing days).

Humbug Mountain to Sisters Rocks

The area from Humbug Mountain to Sisters Rocks was designated as a Klamath Management Zone "buffer", and no commercial salmon fishing was allowed in this area in 1991.

Sisters Rocks to Punta Gorda (Klamath Management Zone)

Only one troll season was authorized in KMZ waters off Oregon for 1991. This was a subarea fishery from Sisters Rocks to Mack Arch within 6 miles of shore. This all species except coho fishery had a quota of 7,500 chinook and was open September 1 through 15 (15 fishing days). All fish caught were required to be landed in the KMZ.

EFFORT AND CATCH STATISTICS

Effort and catch statistics for the 1991 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 OSMF sampling data.

Effort

Historically, Oregon's troll effort has been estimated in vessel deliveries, and since 1979 in boat days. Troll effort for 1991 totaled 14,700 boat days, 43% below the 1990 level of 25,900, and only 29% of the 1988 record of 51,100 boat days (Table 1). Reduced effort was the result of extensive time and area closures, a coho season without ratio or landing limits that allowed for rapid attainment of quota, extremely poor coho prices, and poor chinook abundance.

Most 1991 fishing effort (38%) occurred within the Coos Bay management area (Figure 4, Appendix Table 4). Effort declined from 1990 levels in all areas south of Cape Falcon, but most notably in the Coos Bay (64%) and Brookings areas (94%).

As usual, peak effort coincided with the general all species salmon fishery in most areas. For the Tillamook, Newport, and Coos Bay areas this was during June and July (Table 2, Appendix Table 4). In the Astoria area, limited seasons with late all species openers resulted in most effort occurring in August and September. The Brookings area had no open coho season or general all species except coho season in 1991, and effort was limited to a late season subarea chinook fishery near the Rogue River.

Landings

Chinook: The 1991 chinook landings were 68% below 1990 catches, and 72% below the 1979-90 average of 266,400 chinook (Table 1, Figure 5). A total of 74,600 chinook were landed in 1991 in Oregon as compared to 232,500 in 1990.

Most of the chinook landings (45%) were caught in the Coos Bay area (Table 2, Figure 6). Catches were down in all areas when compared to 1990. The Brookings area had the largest relative drop in chinook landings with a 92% decline. This decline was primarily due to reduced chinook abundance and extremely limited seasons within the KMZ.

July is historically the peak catch month for chinook, but in 1991 landings peaked in September largely due to a special late season opening in the Coos Bay area (Tables 2

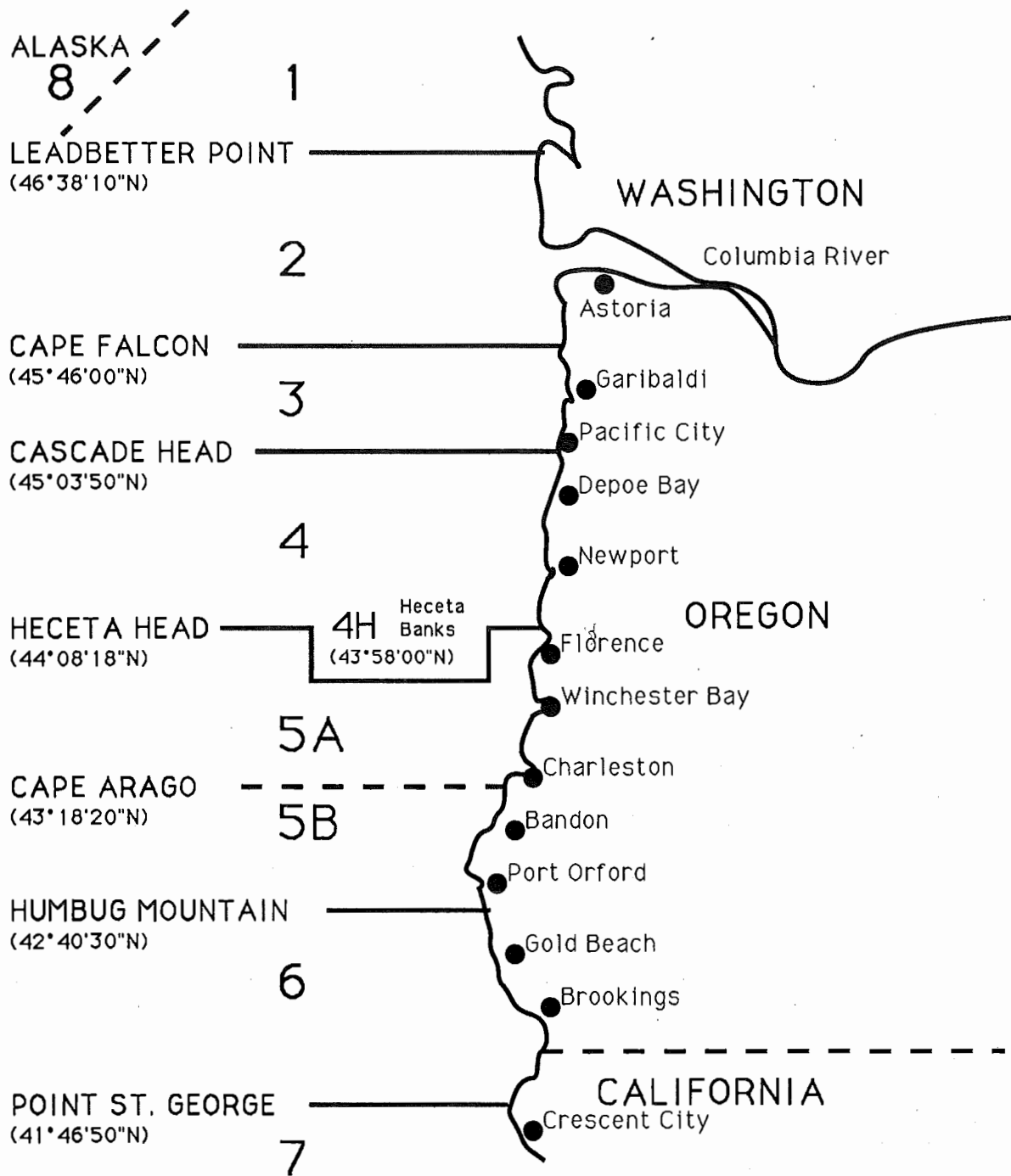


Figure 3. Oregon catch areas and major ports where commercial troll salmon are landed.

Table 1. Oregon Commercial Troll Salmon Effort and Landings in Number of Fish and Pounds Dressed, 1979-91^a.

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	403,100	3,370,400	440,500	1,905,100	<100	<100
1987	39,600	529,500	5,182,400	354,000	1,915,900	17,600	87,300
1988	51,100	469,700	4,384,800	623,100	3,335,900	<100	<100
1989	42,300	353,400	3,531,900	455,700	1,995,500	3,800	17,600
1990	25,900	232,500	2,180,600	122,000	633,600	0	0
1991	14,700	74,600	693,500	306,800	1,410,200	1,800	7,600

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

Effort

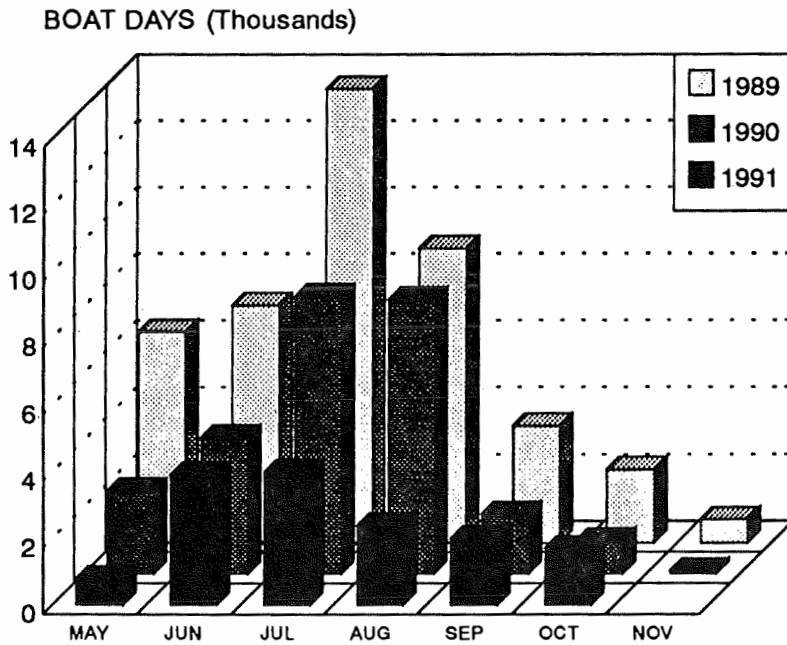
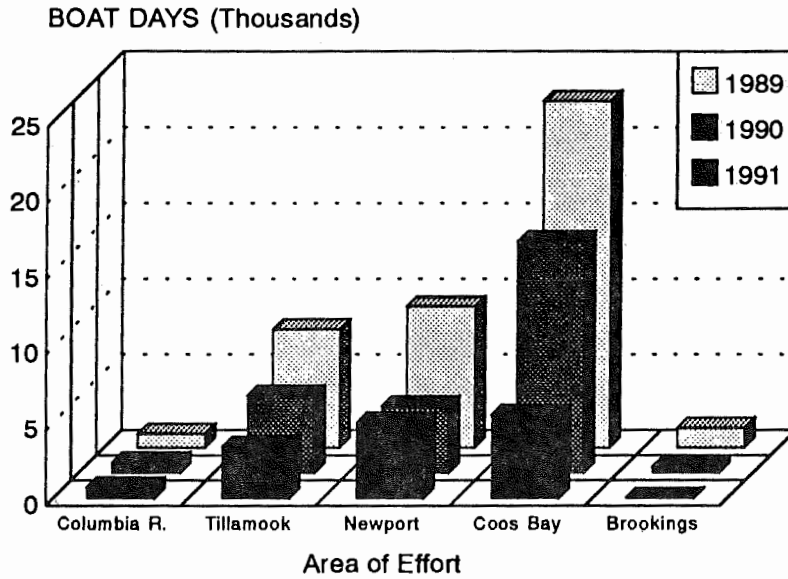


Figure 4. Oregon troll salmon effort in boat days by area of catch and by month, 1989-91.

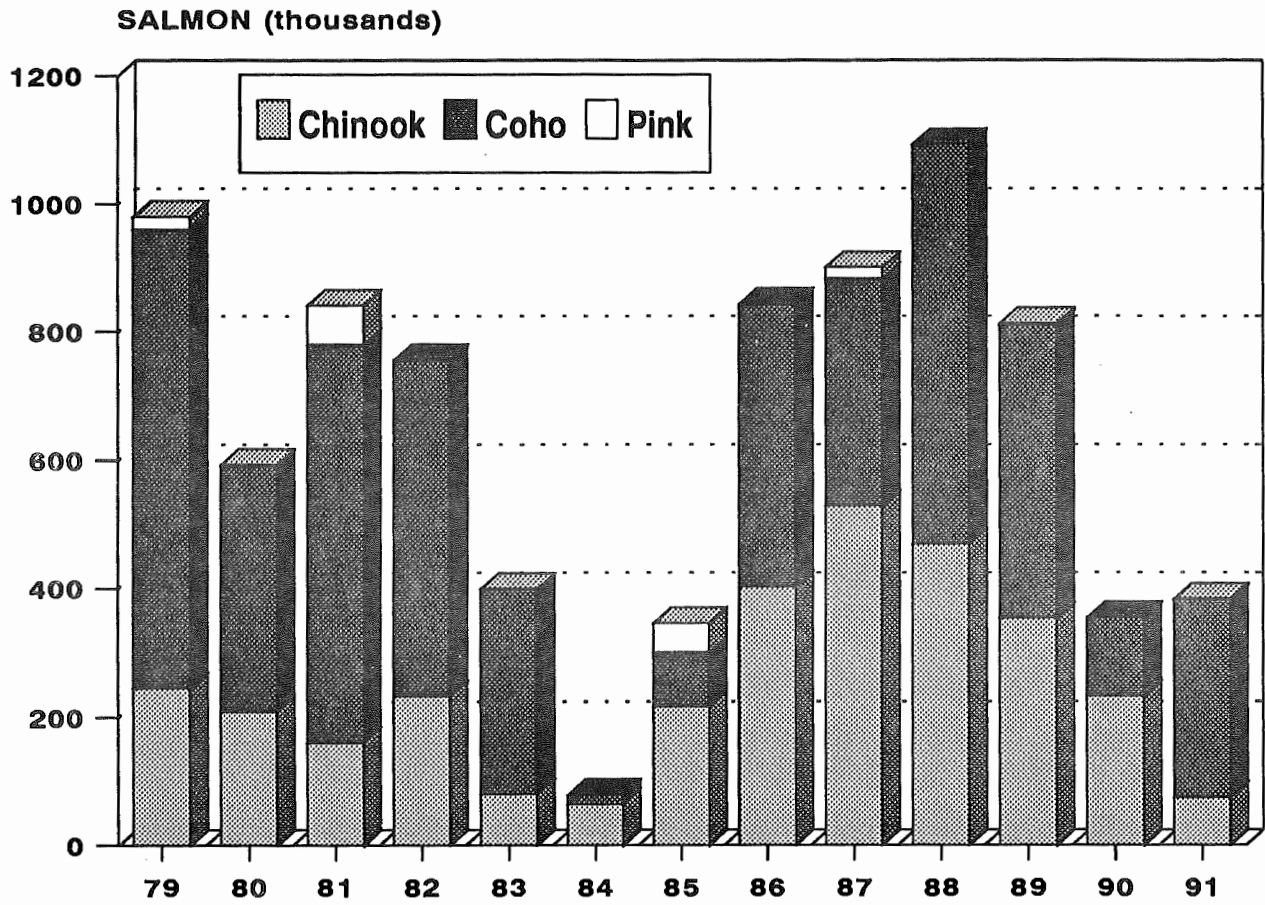


Figure 5. Oregon troll salmon landings, 1979-91.

Table 2. Oregon troll salmon effort and landings, number of fish by area of catch and by statistical month, 1991.

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	
EFFORT (Boat Days)										
May	100	100	600	<50	0	800	0	<50	0	800
June	<50	100	2,000	1,800	0	3,800	0	<50	<50	3,900
July	0	1,700	900	1,500	0	4,000	0	0	0	4,000
Aug.	400	400	600	1,000	<50	2,400	0	<50	<50	2,400
Sept.	200	500	500	800	<50	2,000	0	<50	<50	2,000
Oct.	0	800	400	500	0	1,700	0	0	0	1,700
Total	700	3,500	5,000	5,500	<50	14,700	0	<50	<50	14,700
Chinook										
May	300	220	2,900	100	0	3,600	0	<50	0	3,600
June	<50	200	7,300	5,200	0	12,700	0	<50	<50	12,700
July	<50	3,000	2,900	5,300	0	11,300	0	0	0	11,300
Aug.	400	2,000	6,300	7,600	<50	16,300	0	<50	<50	16,300
Sept.	100	2,100	6,900	8,900	200	18,200	0	<50	100	18,300
Oct.	<50	2,000	6,900	3,500	0	12,400	0	0	0	12,400
Total	900	9,500	33,300	30,500	200	74,500	0	<50	100	74,600
Coho										
June	0	0	58,100	33,000	0	91,100	0	0	0	91,100
July	0	89,000	31,500	68,200	0	188,700	0	0	0	188,700
Aug.	21,500	0	0	0	0	21,500	0	<50	0	21,500
Sept.	5,200	0	0	0	0	5,200	0	200	100	5,500
Total	26,700	89,000	89,600	101,100	0	306,400	0	300	100	306,800

Chinook

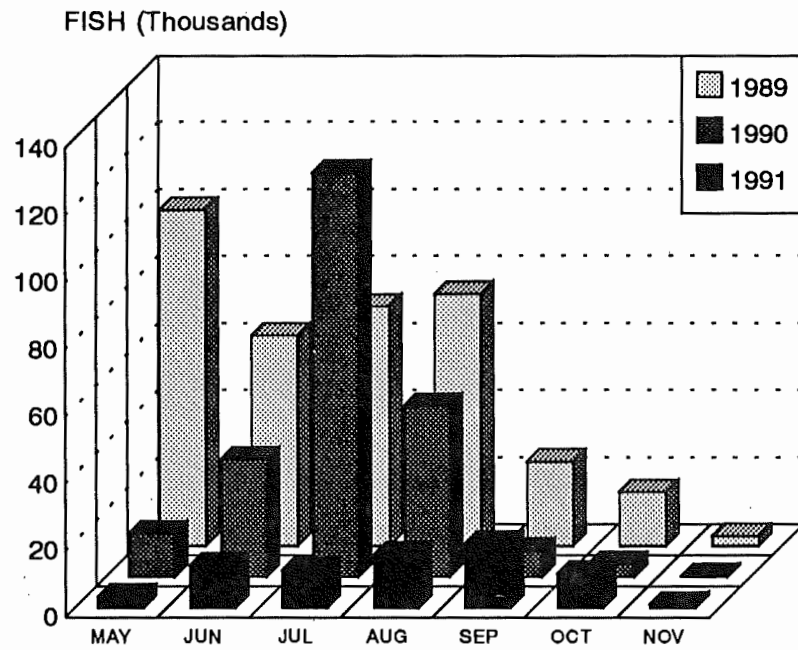
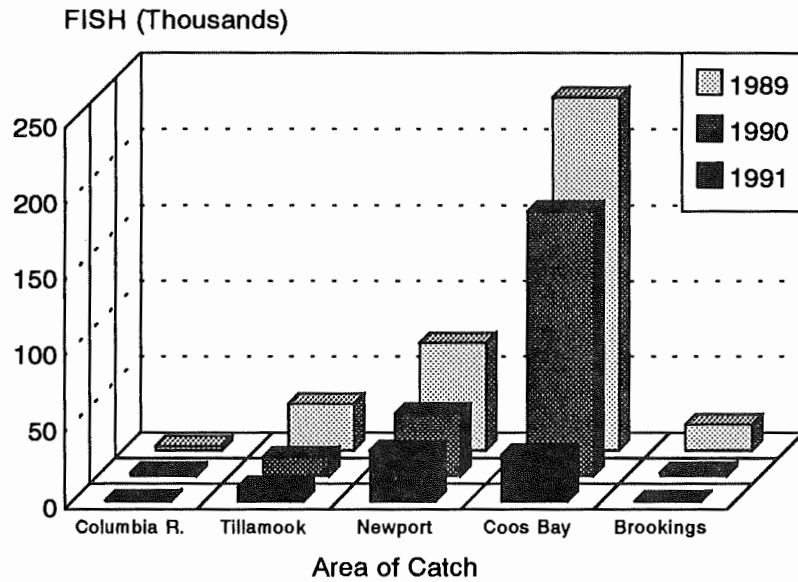


Figure 6. Oregon troll chinook landings by area of catch and by month, 1989-91.

and 3, Appendix Tables 4, 5 and 6). Chinook catches in the Newport area peaked in June with 22% of the catch landed.

Coho: Oregon coho landings during the 1991 season were 251% above 1990 landings (Figures 5 and 7, Table 1), but still 21% below the 1979-90 average of 387,900. Oregon coho landings in 1991 totaled 306,800 fish as compared to deliveries of 122,000 coho in 1990. The Coos Bay catch area had the highest 1991 troll coho landings, with 33% of the Oregon harvest. The Brookings catch area had no coho season in 1991. July accounted for 62% of the coho landings, while landings in June made up another 30% of the total. The June landings were all from the last week of the month when the coho fishery south of Cascade Head opened (Appendix Table 5 and 7).

AVERAGE WEIGHT DATA

Average ocean troll salmon weight data was gathered from most port landing locations by the samplers and allowed for conversion of fish ticket poundage information to fish numbers. The 1991 seasonal average dressed weight (head on, viscera removed) for chinook was 9.3 pounds (Table 4). This was similar to the 1990 average weight of 9.4 pounds.

The average dressed weight for troll coho for the 1991 season was 4.6 pounds (Table 5), down substantially from the 1990 average of 5.2 pounds. Much of the difference between the two years can be attributed to an early season that reached its quota rapidly in 1991, as opposed to 1990 seasons that continued until very late in the summer when the fish had reached their full size.

THE DOLLAR VALUE OF OCEAN SALMON LANDINGS

The 1991 Oregon troll chinook landings were worth \$1,703,000 ex-vessel value. This was the lowest chinook value since 1984 and reflected the reduced catch. The average price paid was \$2.45 per pound, a 2% decrease from 1990 prices.

Troll coho landings in 1991 showed a 30% increase in ex-vessel dollar value over 1990 landings, bringing \$1,394,000 to the fishermen. However, the average price for coho was only \$0.98 per pound, the lowest since 1983, and only 62% of the 1990 price paid (Appendix Table 8).

CODED WIRE TAG SAMPLING

In 1991, the troll sampling program examined 24% of all landed chinook and 28% of all landed coho for coded wire tags (Tables 6 and 7).

Chinook

Samplers observed 902 marked (adipose fin clip) chinook in 1991 (5.1% mark rate). Technicians recovered readable tags from 787 snouts (87%). Most of the tag recoveries were released by Oregon Department of Fish and Wildlife (44%), and California Department of Fish and Game (22%) (Figure 9). Most of the recovered tags were released in the Columbia River (49%), the Sacramento River (17%), and Oregon private hatcheries (10%) (Figure 8).

Table 3. Oregon troll salmon landings in pounds dressed, by calendar month, and port of landing, 1991.

Month	May	June	July	August	Sept.	Oct.	Nov.	Total
<u>Chinook</u>								
Astoria	2,734	601	459	1,455	835	1,605	-	7,689
Gearhart	30	-	640	208	9	-	-	887
Cannon Bch.	-	-	-	119	63	-	-	182
Garibaldi	1,491	1,577	18,115	17,469	27,207	28,630	-	94,489
Netarts	-	-	29	-	39	-	-	68
Pacific City	640	2,032	6,966	2,207	703	2,541	-	15,089
Depoe Bay	1,595	990	634	1,773	1,625	1,242	-	7,859
Newport	25,550	54,039	30,787	43,200	55,998	40,312	8,869	258,755
Waldport	-	-	-	385	-	-	-	385
Florence	3,159	21,948	8,641	18,373	2,159	419	-	54,699
Winchester	1,014	20,677	12,122	11,985	8,676	842	-	55,316
Charleston	402	24,478	29,022	35,036	54,449	24,768	122	168,277
Bandon	-	483	543	1,628	9,161	223	-	12,038
Port Orford	-	170	-	261	4,396	6,749	28	11,604
Gold Beach	-	-	156	-	-	-	-	156
Brookings	-	6	628	206	4,782	368	-	5,990
Total	36,615	127,001	108,742	134,305	170,102	107,699	9,019	693,483
<u>Coho</u>								
Astoria	-	-	2,628	21,906	25,161	-	-	49,695
Gearhart	-	-	21	7,610	2,598	-	-	10,229
Cannon Bch.	-	-	-	4,483	4,509	-	-	8,992
Garibaldi	-	4,637	214,165	39,094	14,329	-	-	272,225
Netarts	-	-	1,820	-	-	-	-	1,820
Pacific City	-	3,854	145,404	5,023	2,294	-	-	156,575
Depoe Bay	-	18,291	1,487	-	-	-	-	19,778
Newport	-	211,635	200,772	6,414	688	-	-	419,509
Waldport	-	-	-	-	-	-	-	0
Florence	-	23,888	53,115	775	-	-	-	77,778
Winchester	-	42,682	128,344	-	-	-	-	171,026
Charleston	-	72,680	137,105	-	-	-	-	209,785
Bandon	-	1,701	3,859	-	-	-	-	5,560
Port Orford	-	266	-	-	-	-	-	266
Gold Beach	-	38	1,506	-	-	-	-	1,544
Brookings	-	87	5,019	-	340	-	-	5,446
Total	-	379,759	895,245	85,305	49,919	-	-	1,410,228
<u>Pink</u>								
Astoria	-	-	-	213	-	-	-	213
Gearhart	-	-	-	47	-	-	-	47
Cannon Bch.	-	-	-	5	-	-	-	5
Garibaldi	-	22	1,130	642	-	-	-	1,794
Netarts	-	-	20	-	-	-	-	20
Pacific City	-	7	1,372	-	-	-	-	1,379
Depoe Bay	-	-	95	13	-	-	-	108
Newport	2	393	2,015	286	12	-	-	2,708
Waldport	-	-	-	-	-	-	-	0
Florence	34	57	10	46	-	-	-	147
Winchester	-	43	61	45	-	-	-	149
Charleston	-	506	396	68	-	-	-	970
Bandon	-	57	-	-	-	-	-	57
Port Orford	-	19	-	-	-	-	-	19
Gold Beach	-	-	-	-	-	-	-	0
Brookings	-	-	-	-	-	-	-	0
Total	36	1,104	5,099	1,365	12	-	-	7,616

Coho

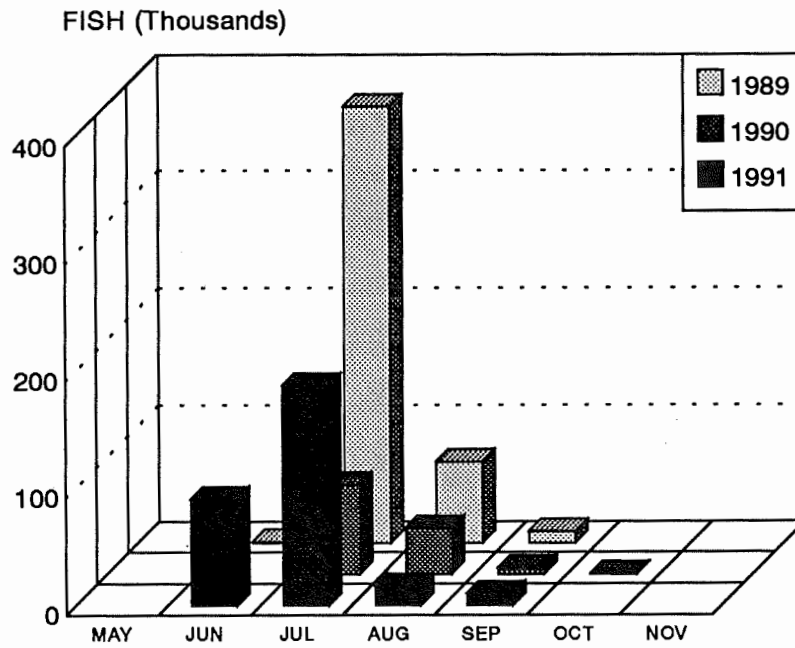
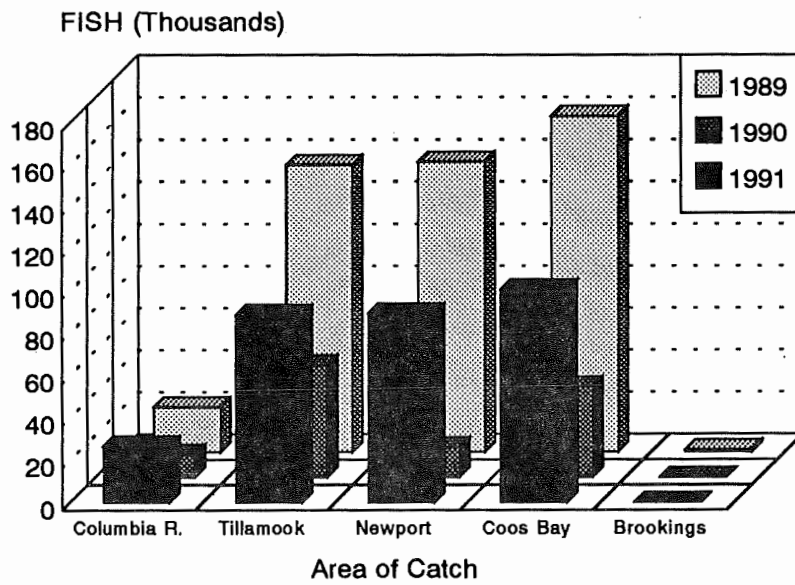


Figure 7. Oregon troll coho landings by area of catch and by month, 1989-91.

Table 4. Observed average dressed weight and calculated number of chinook landed in the Oregon troll fishery by calendar month and area of catch, 1991.

Area of Landing	Month							Total
	May	June	July	Aug.	Sept.	Oct.	Nov.	
<u>Columbia R. (2)</u>								
Numbers	316	36	-	417	138	-	-	907
Pounds	2,933	354	-	3,911	1,075	-	-	8,273
Ave. wt.	9.3	9.8	-	9.4	7.8	-	-	9.1
<u>Tillamook (3)</u>								
Numbers	202	192	3,040	1,997	2,257	1,847	-	9,535
Pounds	2,131	2,333	30,297	18,180	28,280	32,776	-	113,997
Ave. wt.	10.6	12.2	10.0	9.1	12.5	17.7	-	12.0
<u>Newport (4)</u>								
Numbers	2,884	7,372	2,931	6,289	7,594	5,160	1,109	33,339
Pounds	30,375	74,891	30,707	51,249	59,983	42,100	8,869	298,174
Ave. wt.	10.5	10.2	10.5	8.2	7.9	8.2	8.0	8.9
<u>Coos Bay (5)</u>								
Numbers	107	5,201	5,286	7,374	9,134	3,379	17	30,498
Pounds	1,131	49,142	47,738	60,736	78,030	32,823	150	269,750
Ave. wt.	10.6	9.4	9.0	8.2	8.5	9.7	8.8	8.8
<u>Brookings (6)</u>								
Numbers	-	-	-	-	172	-	-	172
Pounds	-	-	-	-	1,463	-	-	1,463
Ave. wt.	-	-	-	-	8.5	-	-	8.5
<u>Oregon Subtotal</u>								
Numbers	3,509	12,801	11,257	16,077	19,295	10,386	1,126	74,451
Pounds	36,570	126,720	108,742	134,076	169,428	170,102	9,019	691,657
Ave. Wt.	10.4	9.9	9.7	8.3	8.8	10.4	8.0	9.3
<u>Alaska (8)</u>								
Numbers	-	-	-	-	-	-	-	-
Pounds	-	-	-	-	-	-	-	-
Ave. Wt.	-	-	-	-	-	-	-	-
<u>Washington (1)</u>								
Numbers	4	22	-	2	6	-	-	34
Pounds	45	247	-	23	60	-	-	375
Ave. Wt.	11.2	11.2	-	11.5	10.0	-	-	11.0
<u>California (7)</u>								
Numbers	-	3	-	21	120	-	-	144
Pounds	-	34	-	206	1,211	-	-	1,451
Ave. Wt.	-	11.3	-	9.8	10.1	-	-	10.1
<u>Total</u>								
Numbers	3,513	12,826	11,257	16,100	19,421	10,386	1,126	74,629
Pounds	36,615	127,001	108,742	134,305	170,699	170,102	9,019	693,483
Ave. wt.	10.4	9.9	9.7	8.3	8.8	10.4	8.0	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, 1991.

Area of Landing	Month				Total
	June	July	Aug.	Sept.	
<u>Astoria (2)</u>					
Numbers	-	-	16,593	10,098	26,691
Pounds	-	-	85,260	47,656	132,916
Ave. wt.	-	-	5.1	4.7	5.0
<u>Tillamook (3)</u>					
Numbers	-	88,966	-	-	88,966
Pounds	-	414,884	-	-	414,884
Ave. wt.	-	4.7	-	-	4.7
<u>Newport (4)</u>					
Numbers	58,127	31,535	-	-	89,662
Pounds	244,107	152,273	-	-	396,380
Ave. wt.	4.2	4.8	-	-	4.4
<u>Coos Bay (5)</u>					
Numbers	32,967	68,150	-	-	101,117
Pounds	135,652	328,088	-	-	463,740
Ave. wt.	4.1	4.8	-	-	4.6
<u>Brookings (6)</u>					
Numbers	-	-	-	-	-
Pounds	-	-	-	-	-
Ave. wt.	-	-	-	-	-
<u>Oregon Subtotal</u>					
Numbers	91,094	188,651	16,593	10,098	306,436
Pounds	379,759	895,245	85,260	47,656	1,407,920
Ave. wt.	4.2	4.8	5.1	4.7	4.6
<u>Alaska (8)</u>					
Numbers	-	-	-	-	-
Pounds	-	-	-	-	-
Ave. wt.	-	-	-	-	-
<u>Washington (1)</u>					
Numbers	-	-	9	271	280
Pounds	-	-	45	1,923	1,968
Ave. wt.	-	-	5.0	7.1	7.0
<u>California (7)</u>					
Numbers	-	-	-	55	55
Pounds	-	-	-	340	340
Ave. wt.	-	-	-	6.2	6.2
<u>Total</u>					
Numbers	91,094	188,651	16,602	10,424	306,771
Pounds	379,759	895,245	85,305	49,919	1,410,228
Ave. wt.	4.2	4.8	5.1	4.8	4.6

Table 6. Oregon ocean troll chinook mark sampling by statistical month and port of landing, 1991.

Area of Landing	Month						Total
	May	June	July	Aug.	Sept.	Oct.	
Astoria							
No. Examined	12	42	0	33	2	0	89
No. Landed	309	46	52	157	110	162	836
% Examined	3.9	91.3	0	21.0	1.8	0	10.6
No. Marks	0	2	0	2	0	0	4
Gearhart							
No. Examined	0	-	0	7	-	-	7
No. Landed	3	-	67	23	-	-	93
% Examined	0	-	0	30.4	-	-	7.5
No. Marks	0	-	0	0	-	-	0
Cannon Beach							
No. Examined	-	-	-	0	0	-	0
No. Landed	-	-	-	17	3	-	20
% Examined	-	-	-	0	0	-	0
No. Marks	-	-	-	0	0	-	0
Garibaldi							
No. Examined	29	8	408	85	0	0	530
No. Landed	160	150	1,836	1,969	2,025	1,688	7,828
% Examined	18.1	5.3	22.2	4.3	0	0	6.8
No. Marks	3	0	33	6	0	0	42
Netarts							
No. Examined	-	-	0	-	0	-	0
No. Landed	-	-	4	-	2	-	6
% Examined	-	-	0	-	0	-	0
No. Marks	-	-	0	-	0	-	0
Pacific City							
No. Examined	15	47	169	2	0	0	233
No. Landed	60	153	642	182	34	140	1,211
% Examined	25.0	30.7	26.3	1.1	0	0	19.2
No. Marks	0	1	7	0	0	0	8
Depoe Bay							
No. Examined	0	0	0	0	0	0	0
No. Landed	160	88	58	194	160	108	768
% Examined	0	0	0	0	0	0	0
No. Marks	0	0	0	0	0	0	0
Newport							
No. Examined	783	2,391	1,058	2,013	1,880	438	8,563
No. Landed	2,480	5,207	2,960	5,359	6,687	6,522	29,215
% Examined	31.6	45.9	35.7	37.6	28.1	6.7	29.3
No. Marks	33	109	82	124	72	18	438
Waldport							
No. Examined	-	-	-	0	-	-	0
No. Landed	-	-	-	47	-	-	47
% Examined	-	-	-	0	-	-	0
No. Marks	-	-	-	0	-	-	0
Florence							
No. Examined	143	1,640	288	1,057	31	0	3,159
No. Landed	302	2,328	893	2,252	215	74	6,064
% Examined	47.4	70.4	32.2	46.9	14.4	0	52.1
No. Marks	5	87	17	44	0	0	153

Table 6 continued.

Area of Landing	Month						Total
	May	June	July	Aug.	Sept.	Oct.	
Winchester Bay							
No. Examined	0	568	308	88	0	0	964
No. Landed	95	2,279	1,439	1,555	1,029	125	6,522
% Examined	0	24.9	21.4	5.7	0	0	14.8
No. Marks	0	30	17	5	0	0	52
Charleston							
No. Examined	0	722	758	644	1,243	542	3,909
No. Landed	39	2,396	3,150	4,258	6,008	3,083	18,934
% Examined	0	30.1	24.1	15.1	20.1	16.0	20.6
No. Marks	0	41	34	35	53	19	182
Bandon							
No. Examined	-	0	0	0	0	0	0
No. Landed	-	60	60	230	1,029	28	1,407
% Examined	-	0	0	0	0	0	0
No. Marks	-	0	0	0	0	0	0
Port Orford							
No. Examined	-	0	-	0	0	0	0
No. Landed	-	23	-	72	454	434	983
% Examined	-	0	-	0	0	0	0
No. Marks	-	0	-	0	0	0	0
Gold Beach							
No. Examined	-	-	0	-	-	-	0
No. Landed	-	-	23	-	-	-	23
% Examined	-	-	0	-	-	-	0
No. Marks	-	-	0	-	-	-	0
Brookings							
No. Examined	-	0	0	1	387	0	388
No. Landed	-	1	73	22	540	36	672
% Examined	-	0	0	4.6	71.7	0	57.7
No. Marks	-	0	0	0	23	0	23
Total							
No. Examined	982	5,418	2,989	3,930	3,543	980	17,842
No. Landed	3,608	12,731	11,257	16,337	18,296	12,400	74,629
% Examined	27.2	42.6	26.6	24.1	19.4	7.9	23.9
No. Marks	41	270	190	216	148	37	902

Table 7. Oregon ocean troll coho mark sampling by statistical month and port of landing, 1991.

Area of Landing	Month				Total
	June	July	Aug.	Sept.	
<u>Astoria</u>					
No. Examined	-	0	1,769	616	2,385
No. Landed	-	623	6,351	3,094	10,068
% Examined	-	0	27.8	19.9	23.7
No. Marks	-	0	94	29	123
<u>Gearhart</u>					
No. Examined	-	0	844	0	844
No. Landed	-	5	1,915	218	2,133
% Examined	-	0	44.1	0	39.6
No. Marks	-	0	31	0	31
<u>Cannon Beach</u>					
No. Examined	-	-	26	0	26
No. Landed	-	-	1,202	492	1,694
% Examined	-	-	2.2	0	1.5
No. Marks	-	-	0	0	0
<u>Garibaldi</u>					
No. Examined	167	10,541	1,817	0	12,525
No. Landed	1,029	47,134	9,128	1,487	58,778
% Examined	16.2	22.4	19.9	0	21.3
No. Marks	15	413	79	0	507
<u>Netarts</u>					
No. Examined	-	0	-	-	0
No. Landed	-	420	-	-	420
% Examined	-	0	-	-	0
No. Marks	-	0	-	-	0
<u>Pacific City</u>					
No. Examined	257	9,893	0	0	10,150
No. Landed	943	30,818	1,526	45	33,332
% Examined	27.2	32.1	0	0	30.4
No. Marks	13	344	0	0	357
<u>Depoe Bay</u>					
No. Examined	22	69	-	-	91
No. Landed	4,147	317	-	-	4,464
% Examined	0.5	21.8	-	-	2.0
No. Marks	1	3	-	-	4
<u>Newport</u>					
No. Examined	13,758	12,398	540	0	26,696
No. Landed	50,630	41,027	1,222	143	93,022
% Examined	27.2	30.2	44.2	0	28.7
No. Marks	660	605	41	0	1,306
<u>Waldport</u>					
No. Examined	-	-	-	-	0
No. Landed	-	-	-	-	0
% Examined	-	-	-	-	0
No. Marks	-	-	-	-	0
<u>Florence</u>					
No. Examined	3,006	4,983	100	-	8,089
No. Landed	5,816	11,090	148	-	17,054
% Examined	51.7	44.9	67.6	-	47.4
No. Marks	153	254	6	-	413

Table 7 continued.

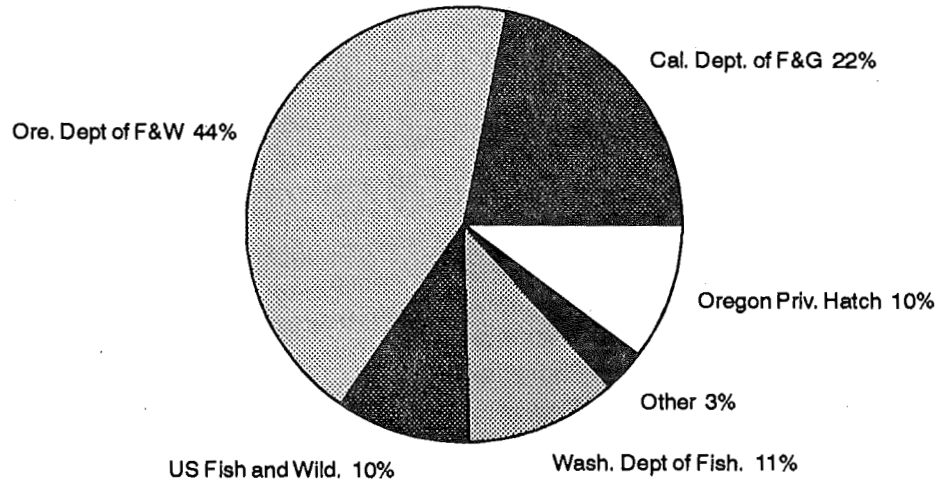
Area of Landing	Month				Total
	June	July	Aug.	Sept.	
Winchester Bay					
No. Examined	3,548	7,187	-	-	10,735
No. Landed	10,724	26,999	-	-	37,723
% Examined	33.1	26.6	-	-	28.5
No. Marks	175	421	-	-	596
Charleston					
No. Examined	5,461	7,239	-	-	12,700
No. Landed	17,264	28,189	-	-	45,453
% Examined	31.6	25.7	-	-	27.4
No. Marks	280	377	-	-	657
Bandon					
No. Examined	0	0	-	-	0
No. Landed	436	873	-	-	1,309
% Examined	0	0	-	-	0
No. Marks	0	0	-	-	0
Port Orford					
No. Examined	0	-	-	-	0
No. Landed	74	-	-	-	74
% Examined	0	-	-	-	0
No. Marks	0	-	-	-	0
Gold Beach					
No. Examined	0	0	-	-	0
No. Landed	7	264	-	-	271
% Examined	0	0	-	-	0
No. Marks	0	0	-	-	0
Brookings					
No. Examined	0	0	-	12	12
No. Landed	24	892	-	55	971
% Examined	0	0	-	21.8	1.2
No. Marks	0	0	-	0	0
Total					
No. Examined	26,219	52,310	5,096	628	84,253
No. Landed	91,094	188,651	21,492	5,534	306,771
% Examined	28.8	27.7	23.7	11.4	27.5
No. Marks	1,297	2,417	251	29	3,994

Coho

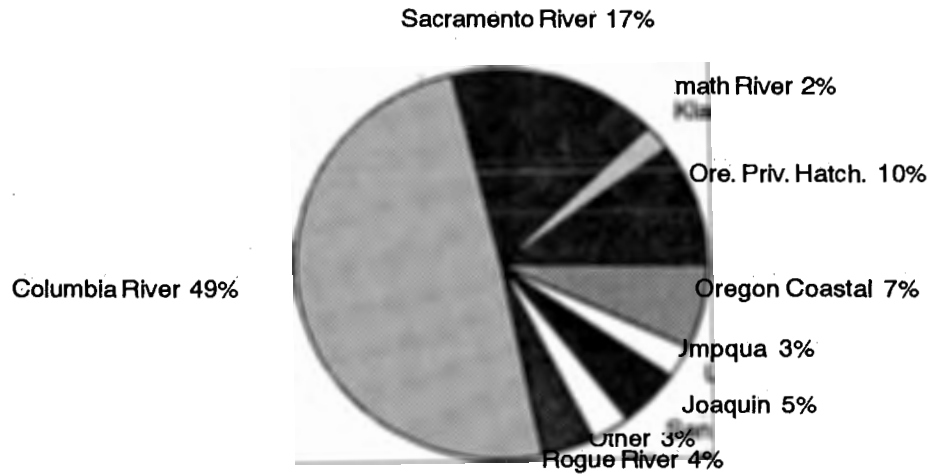
Samplers observed 3,994 marked coho in 1991 (4.7% mark rate). Technicians recovered readable tags from 1,352 snouts (81%). Most of the tag recoveries were from fish tagged and released by Oregon Department of Fish and Wildlife (42%), and Washington Department of Fisheries (34%) (Figure 8). Most of the recovered tags were from releases in the Columbia River (64%), Washington coastal rivers (15%), Oregon coastal rivers (9%), and Oregon private hatcheries (5%) (Figure 9).

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.

RELEASE AGENCY



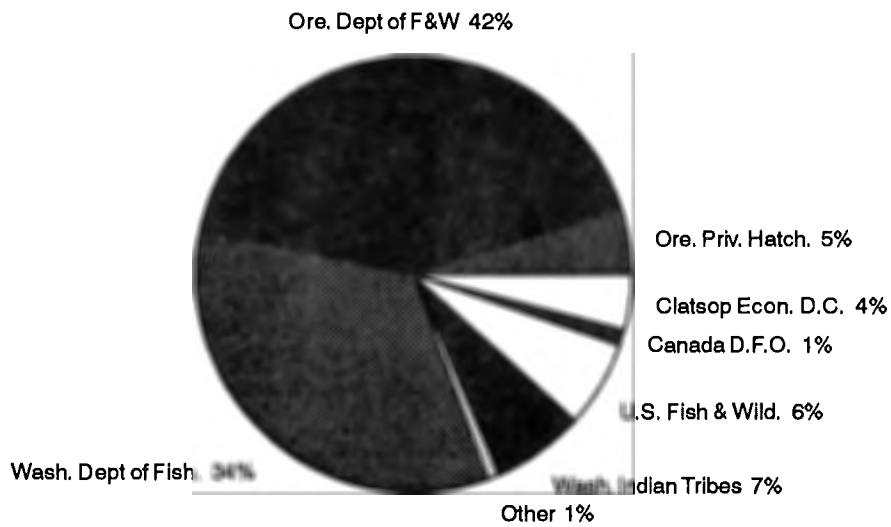
BASIN OF RELEASE



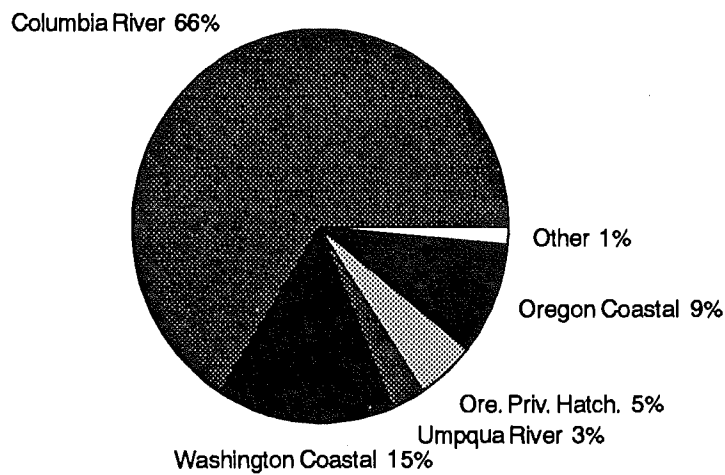
NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.

Figure 8. Observed recoveries of chinook coded wire tags from Oregon troll salmon landings by release agency and by basin of release, 1991.

RELEASE AGENCY



BASIN OF RELEASE



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

Figure 9. Observed recoveries of coho coded wire tags from Oregon troll salmon landings by release agency and by basin of release, 1991.

THE 1991 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 catch of the present day recreational fleet is coho salmon with chinook a distant second. The fishery has been sampled by ODFW's Ocean Salmon Management Program intermittently 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. In 1991, we estimated an ocean catch of 14,400 chinook and 259,100 coho from 190,100 salmon angler trips (Table 8). The 1991 season was characterized by high coho catch rates coastwide and early attainment of quotas.

SAMPLING METHODOLOGY

Sampling areas and staffing

Twenty seasonal employees sampled the ocean recreational fishery at 9 major ports in 1991. Newport had four people; Astoria had three recreational and one combination samplers; and Garibaldi, Winchester Bay, and Brookings each had three samplers. Coos Bay had two creel checkers, and Pacific City and Depoe Bay each had one. Florence had a combination sport and troll sampler. Limited sampling began in May in all ports except Astoria. Additional samplers were added in mid-June and sampling started in Astoria. Gold Beach was not surveyed in 1991. All samplers counted ocean boats and checked returning anglers. Total sampler months and staff size decreased from 1990 levels due to shorter salmon seasons (Appendix Table 1).

Sampling Design

An adopted sampling plan using a modified random sampling design has been used in all recent years at each port to survey the ocean recreational fishery. Catch per angler data was collected at least 4 days a week, including all weekends and holidays. 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, and scales. Snouts were collected from marked (adipose fin-clipped) fish and forwarded to the ODFW tag reading laboratory in Clackamas for decoding. Information on the catch of bottomfish was also taken.

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

Table 8. Oregon ocean recreational salmon catch and effort for 1966-91^a.

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 ^b	0.93
1976	-	538,414	501,306	79,316	50	1.08
1977	-	404,534	195,277	61,364	4,037	0.62
1978	-	403,740	259,769	22,844	24	0.70
1979	301,343	341,770	180,834	20,902	607	0.67
1980	331,443	362,015	325,843	19,014	24	1.04
1981	311,027	350,937	199,812	29,173	1,589	0.74
1982	226,022	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
Long-term average	250,590	326,433	242,904	38,966	1,806 ^b	1.13 ^c
1991	190,062	230,242	259,119	14,416	280	1.44

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

^b Odd year average.

^c 1979-90 average.

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, resulted in 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 96,318 salmon in 1991 compared to 96,118 in 1990. Catch sampling rates in 1991 ranged from a high of 69% at Pacific City to a low of 26% at Winchester Bay. Overall, an average of 35% of the total salmon catch from all ports was sampled in 1991 compared to 42% in 1990 (Appendix Table 9).

REGULATIONS

General

The Oregon coast was divided into three salmon management areas for 1991, each with different regulations. The regulations were set by the PFMC and the Oregon Fish and Wildlife Commission. The Oregon Fish and Wildlife Commission also adopted one special season 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 to the US/Canada border had an overall quota of 40,000 chinook and 233,000 coho. A conservation zone closure was in effect at the mouth of the Columbia River from Buoy 10 out to 6 miles (Figure 10). A subarea quota of 109,500 coho was established between Leadbetter Point, Washington, and Cape Falcon. The daily bag limit was 2 salmon, with an annual limit of 40 fish, but no weekly possession limit. Minimum size limits were 24" for chinook, and 16" for coho; there was no size restriction for pink salmon. Only single point barbless hooks were permitted. Salmon fishing was closed Fridays and Saturdays (Appendix Table 11, Figure 11).

The season opened June 24 and continued through August 12. The season reopened south of the Red Buoy line for four days, September 15 through 18. It reopened again for one day, September 26, to catch the remaining quota. The Buoy 10 fishery opened August 9.

Cape Falcon to Humbug Mountain

The recreational coho quota was 259,000 fish south of Cape Falcon. An August 1-9 in-season "block" closure was set preseason for the Cape Falcon to Humbug Mtn. area to dampen effort and catch, but the quota was met early and the season closed July 28. The daily bag limit was 2 salmon, not more than 6 fish were allowed in 7 consecutive days, and the annual limit was 40 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.

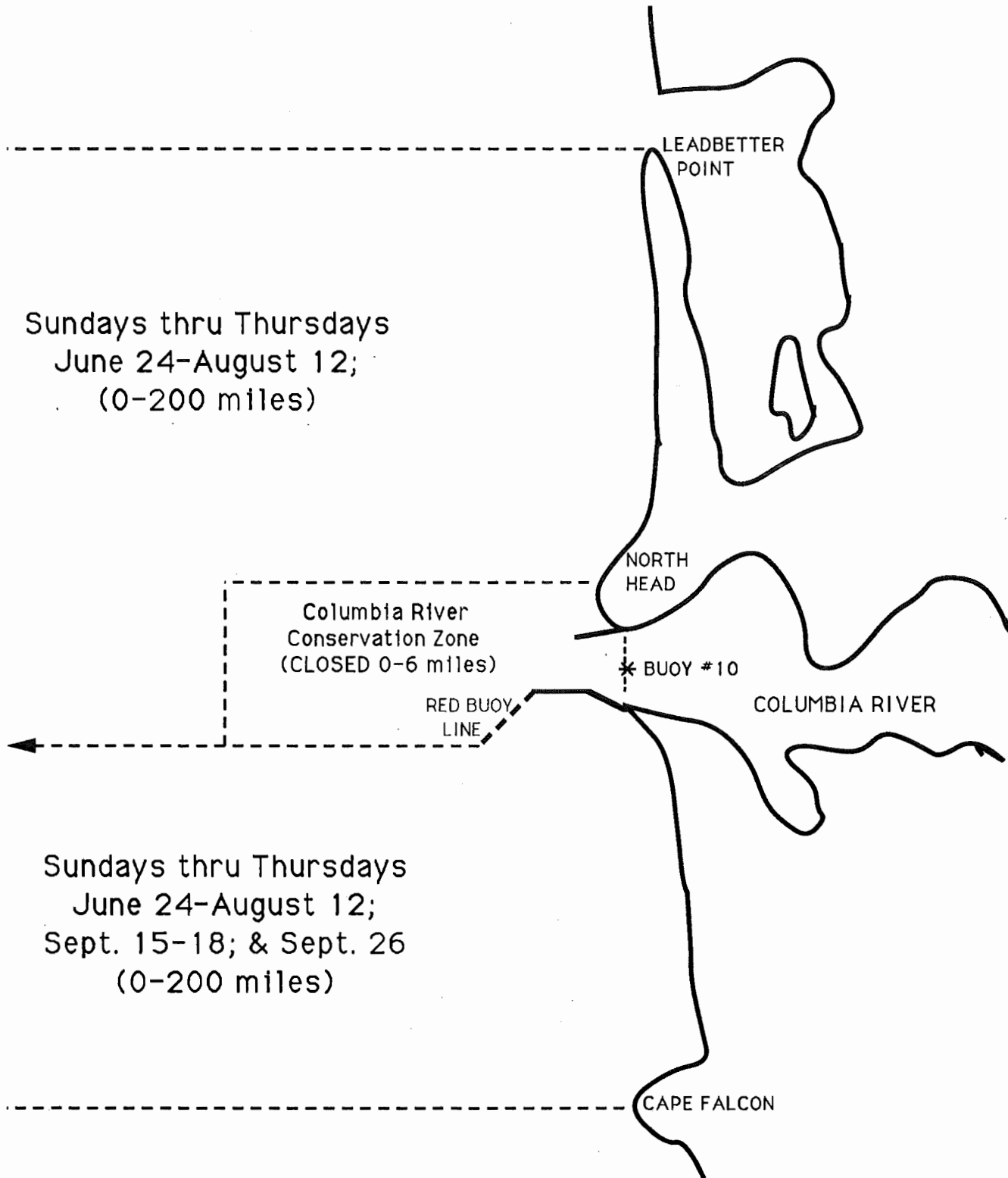


Figure 10. Open areas in the ocean recreational salmon fishery in the Columbia River Area, 1991.

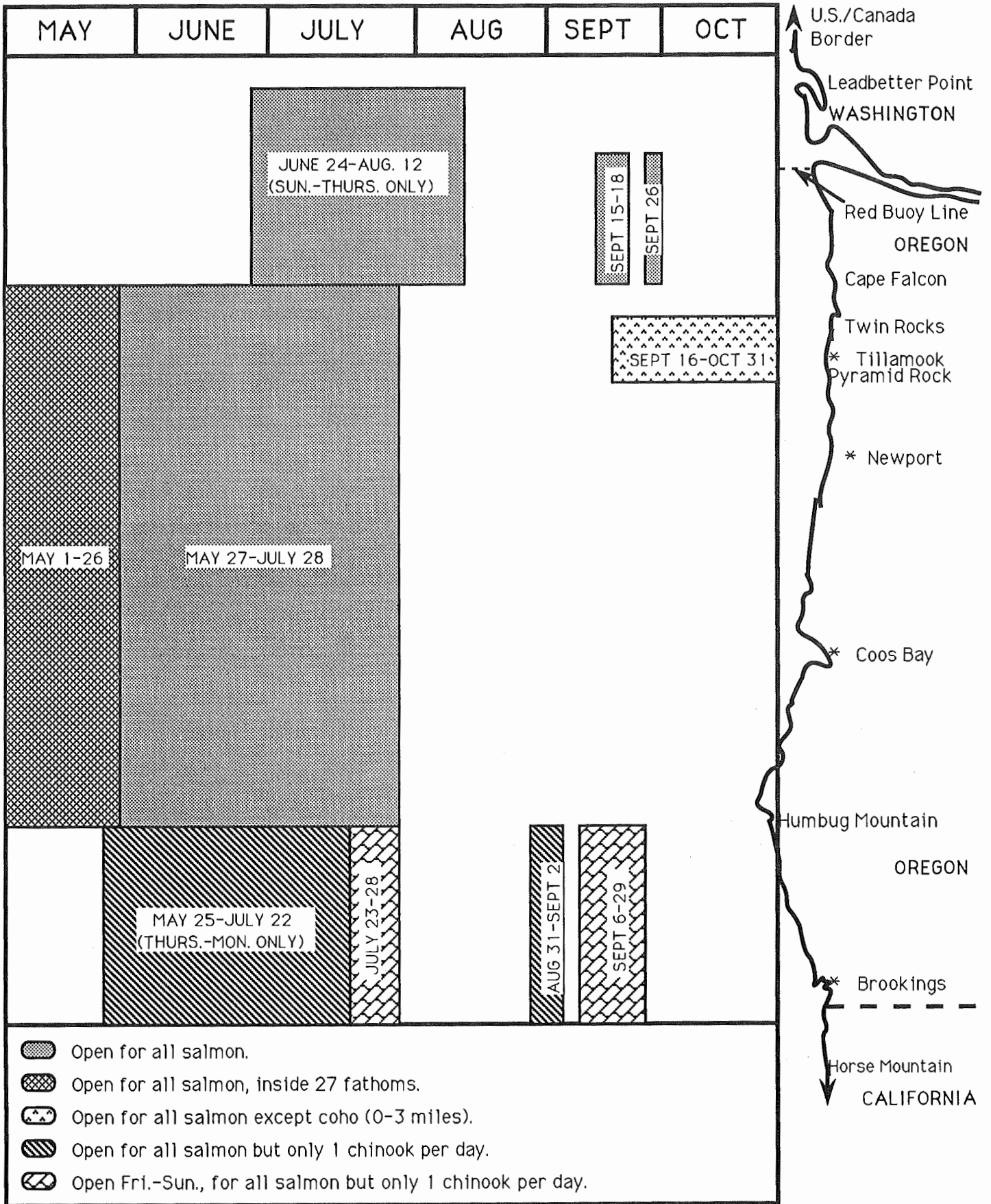


Figure 11. Open recreational salmon seasons off Oregon, 1991.

This season was open from May 1 through July 28. From May 1 through 27 the fishery was restricted to the area inside the 27 fathom curve as defined in Appendix Table 11.

Humbug Mountain to Horse Mountain, California

The coho catch in this area counted against the 259,000 coho quota for South of Cape Falcon, but this fishery was not closed when the overall quota was met. The daily catch limit was 2 salmon per day except only one fish in the bag could be a chinook. 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, and salmon fishing was closed on Tuesdays and Wednesdays.

The season was open from May 25 through July 28. Effective July 23 salmon fishing was restricted to Friday through Sunday only. There were no 27 fathom restrictions within the Klamath Management Zone. The season re-opened on August 31 through Labor Day, September 2, and remained open to salmon fishing on Friday, Saturday, and Sunday through September 30.

Late season, state waters fisheries

State waters off Tillamook Bay, between Twin Rocks (north boundary) and Pyramid Rock (south boundary), were open from September 16 through October 31. This was an all salmon except coho fishery; barbed hooks were allowed and there were no size limits.

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 predominated in May and early June in all sampled ports except Winchester Bay and Florence. This may, in part, be due to the 27 fathom restriction since most coho salmon are well offshore in May, but bottomfish are available. In addition, halibut fishing has greatly increased in popularity in the Newport area and has accounted for a large increase in the May/June recreational effort.

In 1991, 190,100 trips (83%) targeted on salmon coastwide, and 40,200 additional trips bottomfished during the salmon season for a combined total of 227,400 angler trips. This total is less than the sum of the salmon and bottomfish trips because of a small number of charter combination trips. The number of 1991 salmon angler trips was 24% below the 1979-90 average and reflects the early closure of the salmon season. The total effort was 29% below the 1971-90 average of 326,400 angler trips; this average includes some years with year round seasons (Table 8).

July was the peak month for effort with 123,400 salmon angler trips or 65% of the total. August was the top month for bottomfishing effort with 16,500 trips or 41% of the total bottomfishing trips (Table 9, Figure 12, 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

Table 9. Oregon ocean recreational effort by port, by month and by trip type^a, 1991.

Port/Trip Type	Month					Total ^b
	May	June	July	August	Sept.	
Columbia R.	-	1,500	8,959	9,441	1,777	21,677
Salmon	-	1,496	8,959	9,422	1,777	21,654
Bottomfish	-	10	0	247	0	257
Garibaldi	911	4,316	15,097	2,348	75	22,747
Salmon	380	3,300	14,124	0	0	17,804
Bottomfish	536	1,231	1,313	2,348	75	5,503
Pacific City	159	854	2,627	73	-	3,713
Salmon	46	690	2,484	0	-	3,220
Bottomfish	113	164	143	73	-	493
Depoe Bay	1,999	4,897	13,487	4,861	134	25,378
Salmon	209	3,112	12,289	0	0	15,610
Bottomfish	1,828	2,086	1,771	4,861	134	10,680
Newport	5,287	10,228	28,958	4,876	440	49,789
Salmon	639	8,725	28,265	16	0	37,645
Bottomfish	4,694	1,870	1,304	4,860	440	13,168
Florence	69	2,604	9,864	14	-	12,551
Salmon	54	2,604	9,858	0	-	12,516
Bottomfish	15	0	6	14	-	35
Winchester Bay	628	8,637	19,755	16	-	29,036
Salmon	593	8,637	19,723	0	-	28,953
Bottomfish	41	0	32	16	-	89
Coos Bay	1,085	6,371	9,807	350	14	17,627
Salmon	367	6,039	9,807	0	0	16,213
Bottomfish	718	332	0	350	14	1,414
Brookings	1,752	13,594	19,205	5,644	4,718	44,913
Salmon	1,110	11,581	17,848	1,911	3,997	36,447
Bottomfish	642	2,064	1,366	3,733	736	8,541
Total south of						
Cape Falcon	11,890	51,501	118,800	18,182	5,381	205,754
Salmon	3,398	44,688	114,398	1,927	3,997	168,408
Bottomfish	8,587	7,747	5,935	16,255	1,399	39,923
State Total	11,890	53,001	127,759	27,623	7,158	227,431
Salmon	3,398	46,184	123,357	11,349	5,774	190,062
Bottomfish	8,587	7,757	5,935	16,502	1,399	40,180

^a Bottomfish effort is estimated only for those time periods when port sampling occurred.

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

ANGLER TRIPS (Thousands)

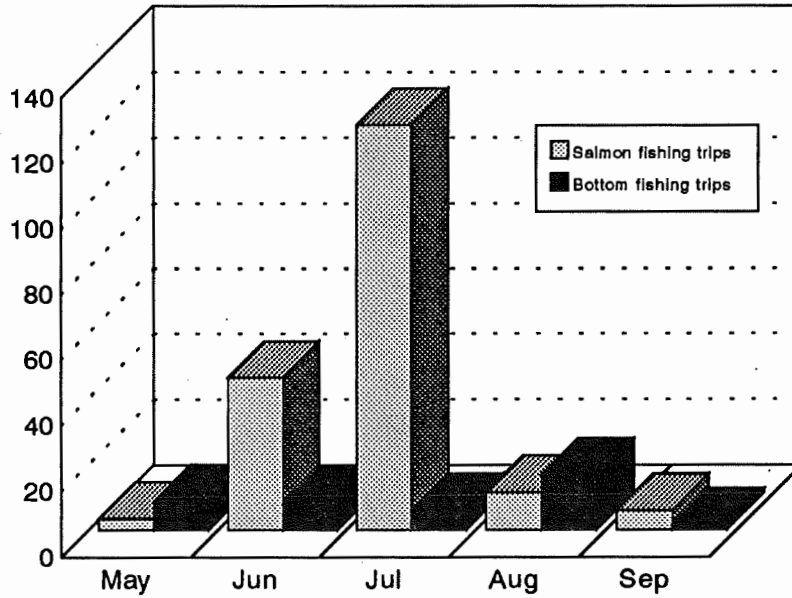


Figure 12. Oregon ocean angler trips by target species during the 1991 salmon season.

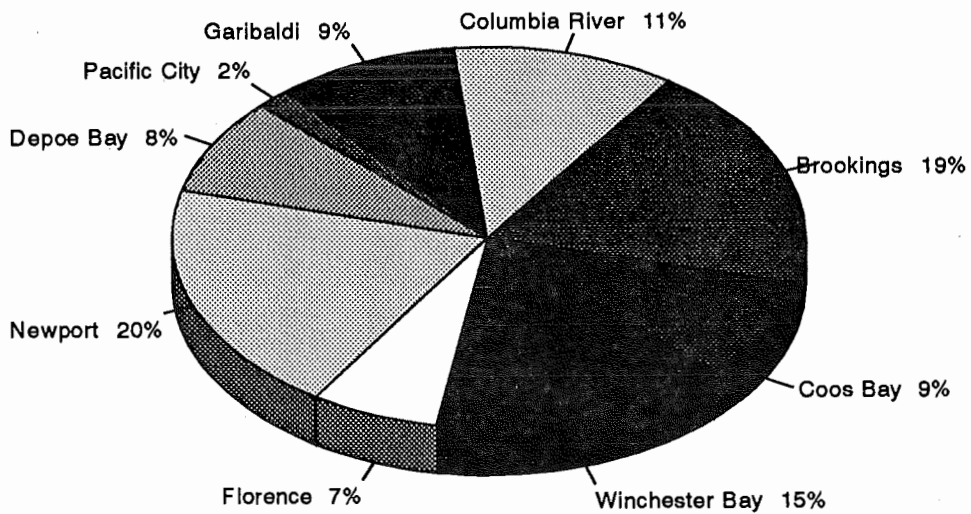


Figure 13. Recreational ocean salmon angler trips by port, 1991.

have often obscured this trend (Appendix Table 13). Newport had the highest salmon fishing effort in 1991 with 37,600 angler trips, 21% of the state's total (Figure 13). Brookings and Winchester Bay followed with 36,400 and 29,000 salmon angler trips. Newport also had the highest bottomfishing effort with 13,200 trips. Depoe Bay was a close second with 10,700 bottomfishing trips. Salmon effort was down from the 1990 levels in all areas except Coos Bay which saw a 15% increase (Table 9, Figure 14). Appendix Table 14 shows past ocean recreational effort and catch by management areas. Note that port and management areas are not synonymous.

Catch

The sport sampling survey estimated Oregon's 1991 ocean salmon catch by species, except for minor landings from unsurveyed ports and time periods. Fish landed at these unsurveyed ports usually represent less than one percent of the total catch. Catch estimates from salmon/steelhead tag data for such ports will not be available until mid-1992.

The 1991 Oregon ocean recreational salmon catch was estimated at 273,500 fish, an 18% increase over 1990. This is well below the record 580,700 catch in 1976, but is within 4% of the 1966-90 average of 283,700 salmon (Table 8). Figure 15 shows the trend in recreational ocean catches since 1966.

Chinook: The chinook catch continued its downward spiral from its most recent peak in 1987. The recreational harvest of 14,400 chinook in 1991 was the lowest on record; 54% below the 1990 level and only 37% of the 1966-90 average catch of 39,000 fish. Regulations in the KMZ were partly responsible. Only one chinook was allowed in the daily bag limit in the Gold Beach-Brookings area. Brookings still dominated the chinook landings, taking 47% of the total catch (Table 10, Figure 16 and 17). Historically, the Columbia River area has been an important chinook catch area, but complex fishery issues, restrictions, and resulting small quotas have dampened catches (Appendix Tables 15 and 16). July accounted for 48% of the catch, 7,000 fish, with Brookings taking 58% of those chinook (Table 10, Figure 16).

Coho: The 1991 catch of 259,100 coho by the recreational fleet was 23% above the 1990 harvest, and 6% above the 1966-90 average of 242,900 fish (Table 8). Newport landed the most coho, 55,500 fish or 21% of the total. Winchester Bay and the Columbia River area each took 46,700 and 39,400 coho, together making up another 33% of the catch. Landings were above 1990 levels in all ports (Table 11, Figures 18 and 19, Appendix Table 18). July had 70% of the catch, 182,400 fish, but another 21%, 53,800 coho, were landed in June. The season was closed in August along most of the coast. A historical perspective on coho catch by month and catch area is shown in Appendix Tables 14 and 17.

Pink Salmon: The catch of pink salmon is minor in Oregon, averaging 1, 806 fish for odd years 1971-89. The 1992 harvest was 280 pink salmon with Newport landing the most fish (Table 12).

CHARTER/PRIVATE BOAT FISHERIES

Charter anglers

A total of 123 charter boats actively fished in Oregon ocean fisheries in 1991, compared to about 142 vessels in 1990. No estimate is available of the number of individual

Effort

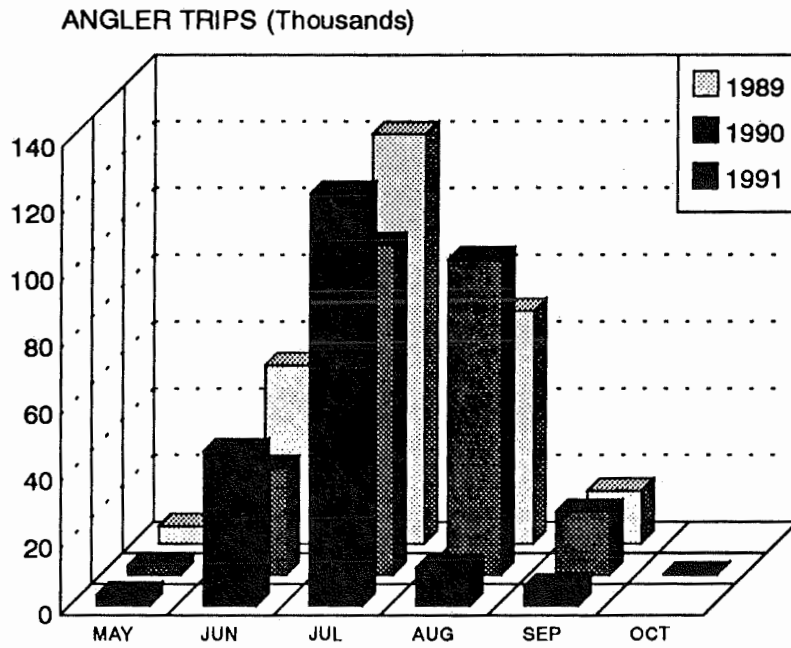
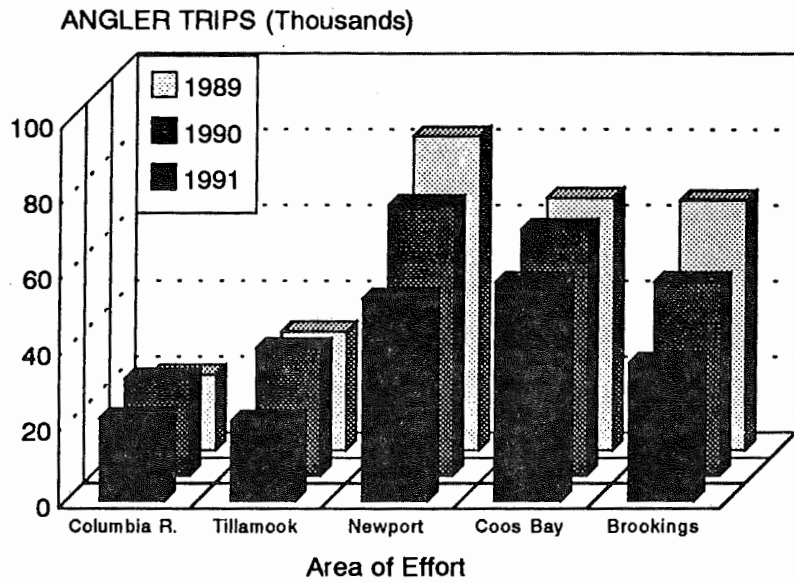


Figure 14. Oregon ocean recreational salmon angler trips by catch area and by month, 1989-91.

FISH (Thousands)

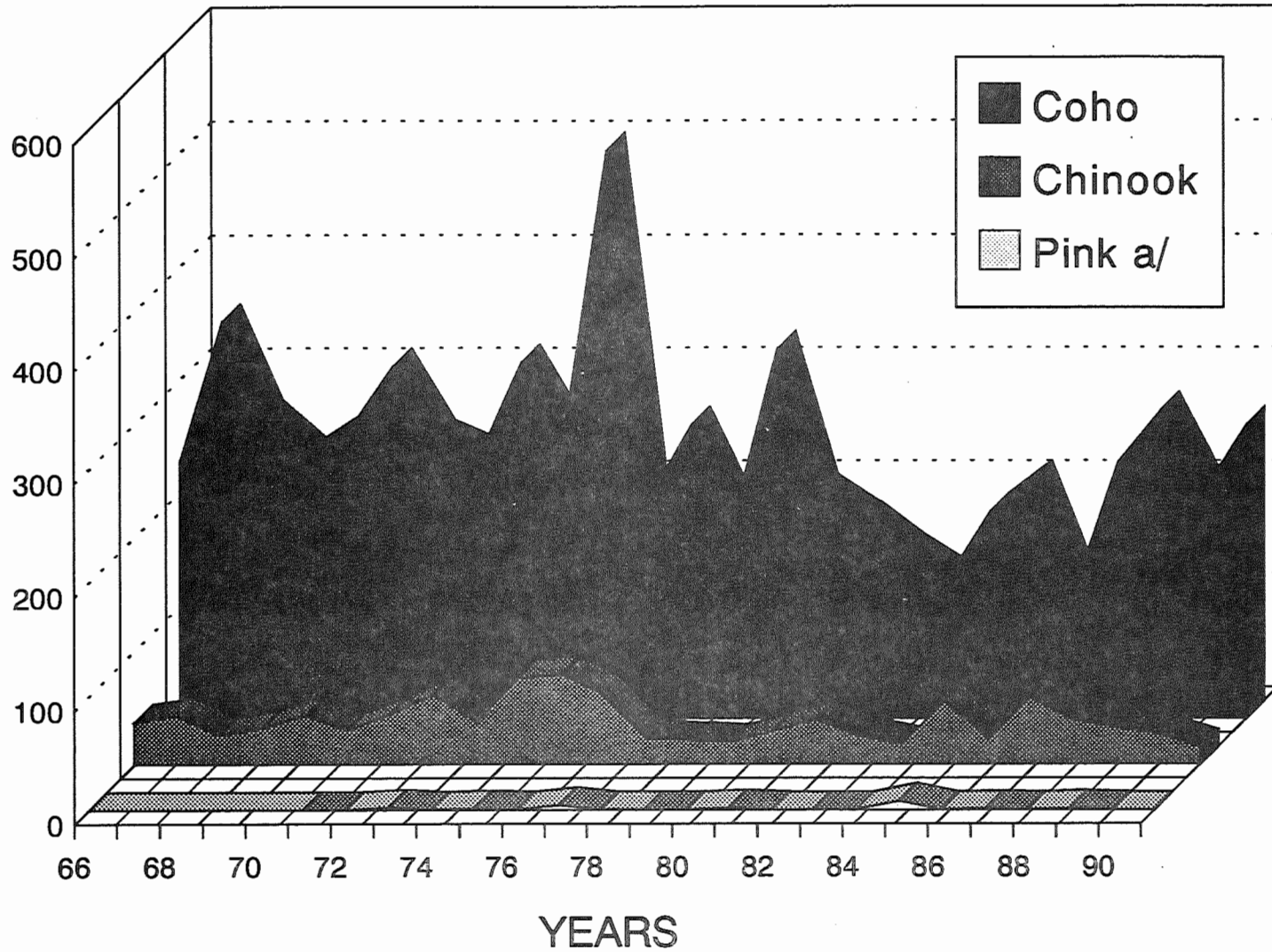


Figure 15. Trends in Oregon's recreational ocean salmon catch, 1966-91.
a/ Pink salmon data from 1971-91 only.

Table 10. Oregon ocean recreational chinook catch by port by month^a, 1991.

Port	Month					Total
	May	June	July	Aug.	Sept.	
Columbia R.	-	81	335	550	17	983
Garibaldi	24	264	314	-	-	602
Pacific City	1	21	62	-	-	84
Depoe Bay	17	69	143	-	-	229
Newport	64	336	251	-	-	651
Florence	-	322	710	-	-	1,032
Winchester Bay	30	1,057	1,347	-	-	2,434
Coos Bay	19	746	825	-	-	1,590
Brookings	48	4,080	2,321	64	298	6,811
Total South of Cape Falcon	203	6,895	5,973	64	298	13,433
Statewide Total	203	6,976	6,308	614	315	14,416

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

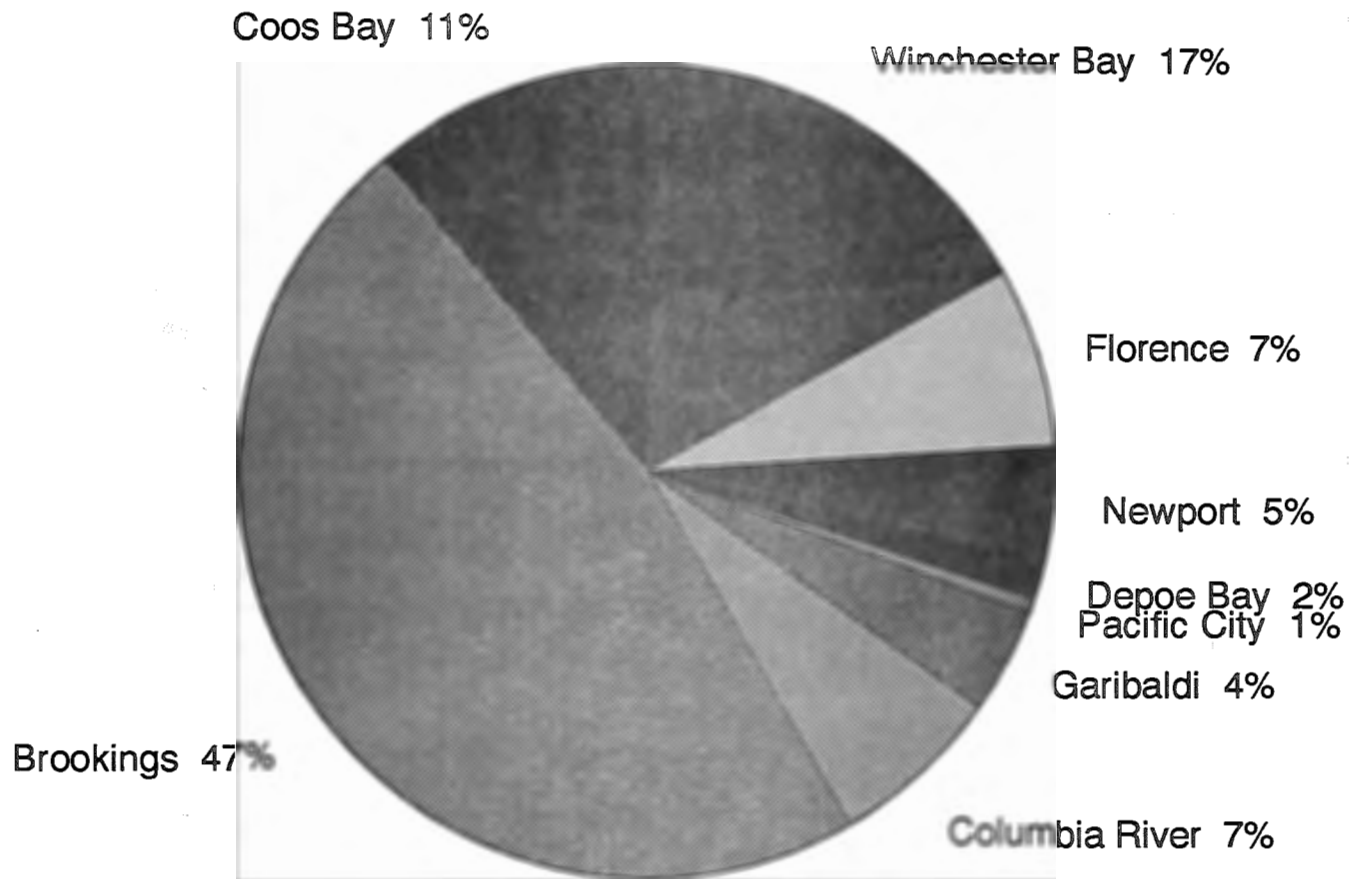


Figure 16. Oregon ocean recreational chinook catch by port, 1991.

Chinook

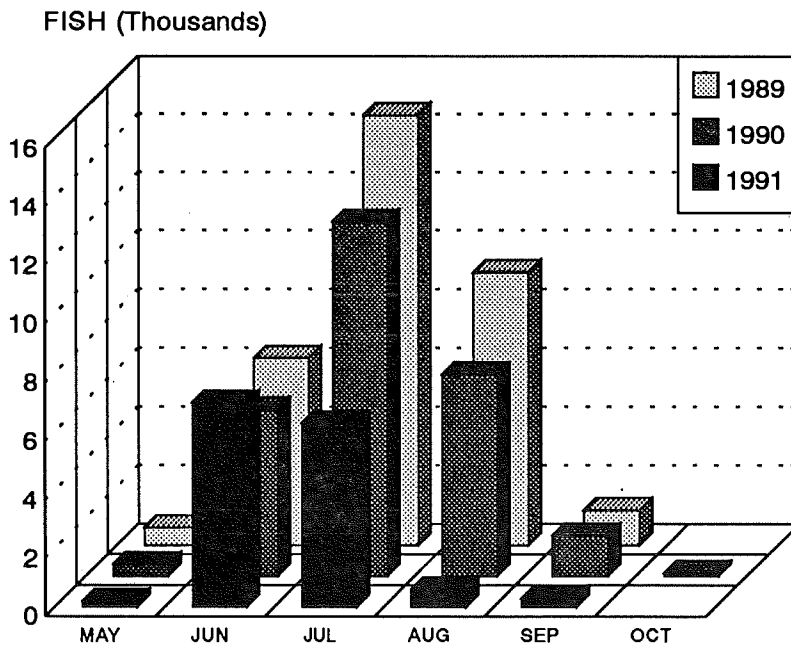
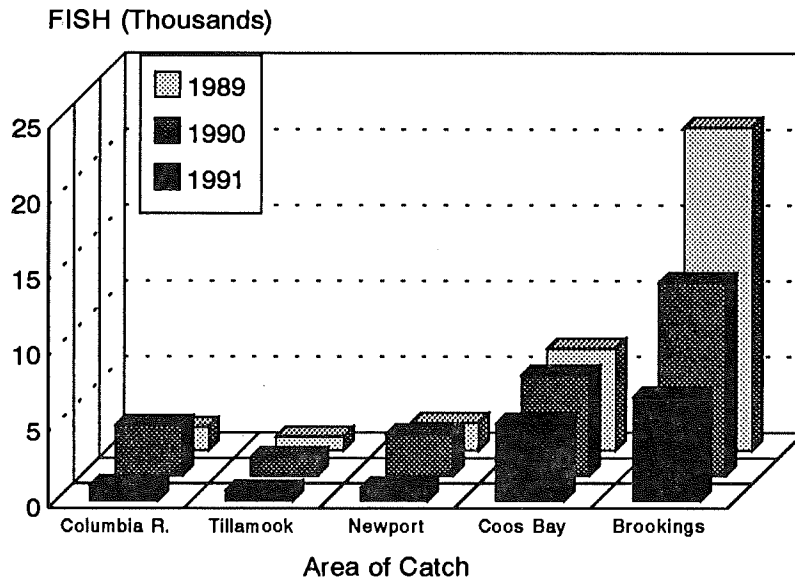


Figure 17. Oregon ocean recreational chinook catch by catch area and by month, 1989-91.

Table 11. Oregon ocean recreational coho catch by port by month^a, 1991.

Port	Month					Total
	May	June	July	Aug.	Sept.	
Columbia R.	-	2,409	16,368	17,222	3,397	39,396
Garibaldi	12	1,732	19,018	-	-	20,762
Pacific City	1	789	4,098	-	-	4,888
Depoe Bay	50	3,886	21,651	-	-	25,587
Newport	9	11,330	44,137	4	-	55,480
Florence	1	3,383	16,426	-	-	19,810
Winchester Bay	604	12,044	34,030	-	-	46,678
Coos Bay	189	8,016	16,087	-	-	24,292
Brookings	-	10,236	10,582	513	895	22,226
Total South of Cape Falcon	866	51,416	166,029	517	895	219,723
Statewide Total	866	53,825	182,397	17,739	4,292	259,119

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

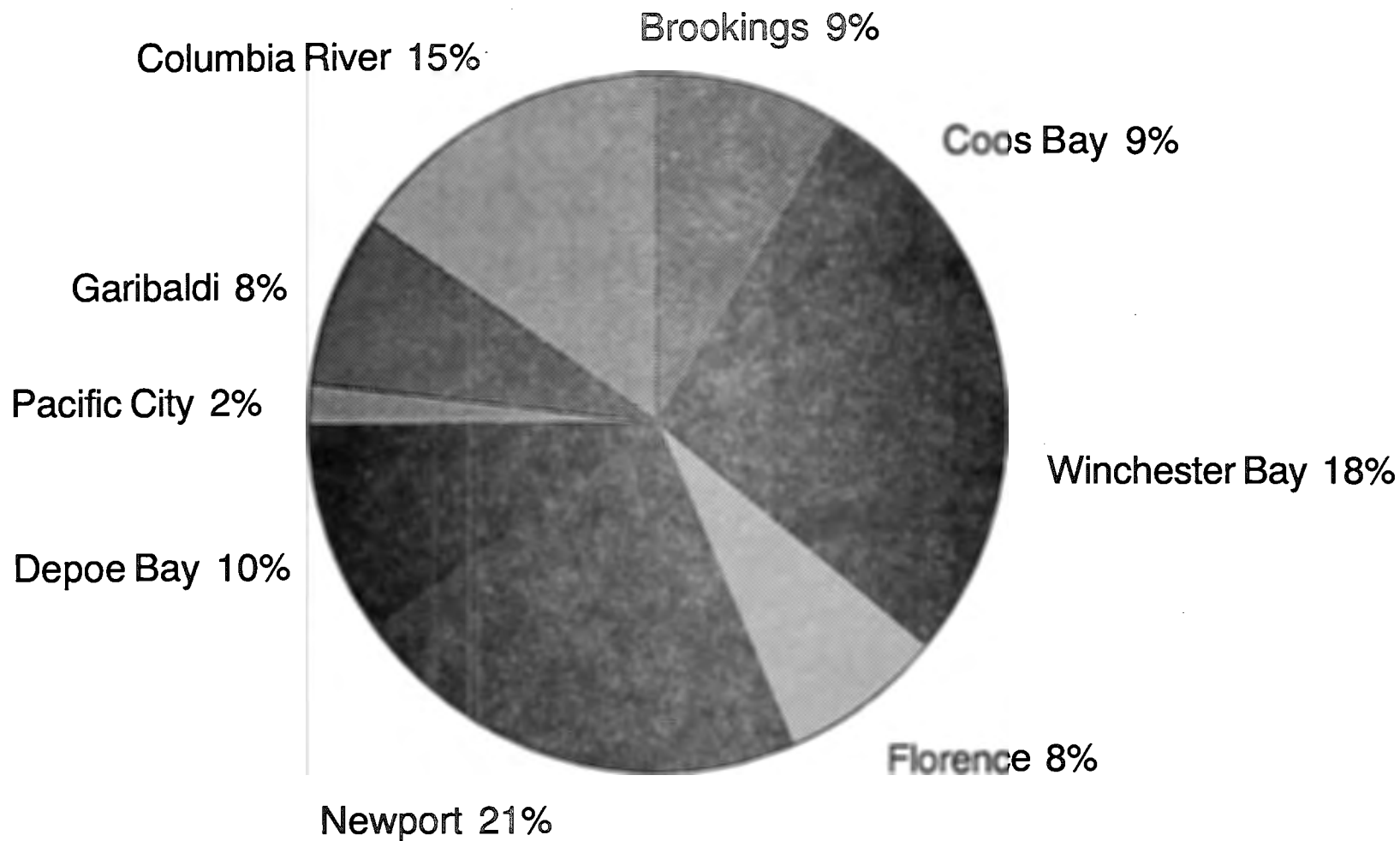


Figure 18. Oregon ocean recreational coho catch by port, 1991.

Coho

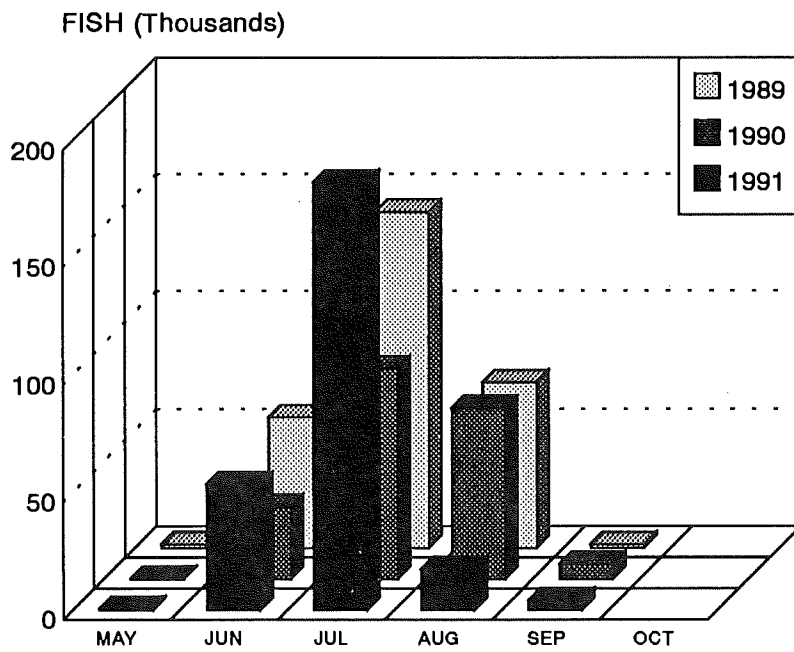
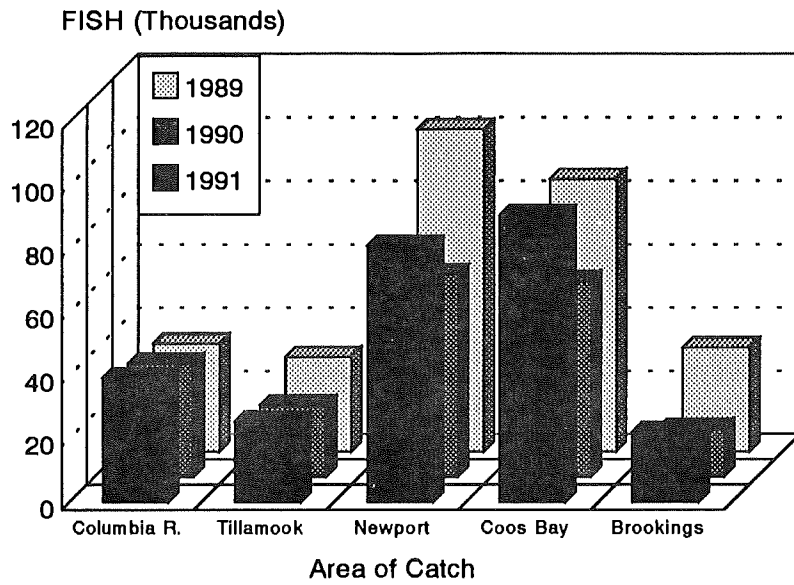


Figure 19. Oregon ocean recreational coho catch by catch area and by month, 1989-91.

Table 12. Oregon ocean recreational pink salmon catch by port by month^a, 1991.

Port	Month			Total
	June	July	Aug.	
Columbia R.	0	10	16	26
Garibaldi	0	7	0	7
Pacific City	2	9	0	11
Depoe Bay	4	61	0	65
Newport	11	89	0	100
Florence	6	0	0	6
Winchester Bay	4	7	0	11
Coos Bay	0	0	0	0
Brookings	49	5	0	54
Total South of Cape Falcon	76	178	0	254
Statewide Total	76	188	16	280

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

private boats that fished. Since 1973 catch and effort statistics have been compiled by boat type for all sampled ports.

Effort: The 1991 charter boat effort was estimated at 40,300 salmon angler trips, down 27% from the 1990 level and about half of the 1973-90 average of 79,000. The data prior to 1979 included bottomfish effort. Charter anglers made up 21% of the total ocean salmon trips in 1991, compared to 22% in 1990 and the 1973-90 average of 26% (Table 13 and Figure 20).

Charter boats operate out of most major Oregon ports, but boat and fleet sizes vary. The Astoria-Warrenton-Hammond area had the largest fleet in 1991 with 34 boats that registered 8,100 salmon angler trips in the ocean. Newport, with 24 active charter boats, had the most salmon effort of any port with 10,200 angler trips, followed by Depoe Bay (23 boats) with 9,000 angler trips. Salmon charter effort was down from 1990 levels in all ports (Table 13).

Salmon is the primary pursuit in all ports, but bottomfishing is also important to the Garibaldi, Depoe Bay, Newport, Coos Bay, Gold Beach, and Brookings charter fleets. Halibut fishing is especially important in Newport during May and June. The early close of the salmon season increased the percentage of charter anglers that went bottomfishing in 1991. Thirty-nine percent or 26,000 charter anglers coastwide targeted on bottomfish during the salmon season. An additional 2,800 combination trips fished for both salmon and bottomfish (Table 14). In 1990, 30,300 (33%) of the total charter anglers went bottomfishing during the salmon season.

Catch: Charter anglers landed 1,900 chinook, 68,900 coho, and 108 pink salmon in 1991. The total catch of 70,900 salmon by charter anglers was up 6% from 1990, even though effort decreased by 27%. The charter fleet landed 26% of the total recreational salmon catch in 1991, down 3% from 1990 and 7% less than the 1973-90 average (Figure 20).

The Columbia River area had a comparatively long season in 1991, and its large charter fleet took 15,900 salmon or 22% of the total charter salmon catch. The salmon fishery in this area was only open 5 days per week but success was high through most of the season and averaged 1.96 salmon per angler. The Newport and Depoe Bay charter fleets took 17,600 and 15,100 salmon, respectively, for a combined 46% share of the charter catch. Catch rates were a record high. Salmon per angler averaged 1.7 in Newport and Depoe Bay compared to the state-wide average of 1.75 and the 1973-90 average of 1.2 salmon per angler.

Private Anglers

Effort: The 1991 salmon effort from private boats was estimated at 149,700 angler trips or 79% of the total salmon effort. This is 22% less than the 1990 effort of 191,200, and 33% below the 1973-90 average of 223,500 angler trips (Table 13, Figure 20). Brookings, as usual, had the most effort with 34,400 private salmon angler trips or 23% of the total. Brookings' relatively long salmon season, safe bar, large population of retirees, and varied fishing opportunities all contribute to make this the most active small boat port on the Oregon coast. Newport had 27,400 salmon angler trips or 18% of the total, followed by Winchester Bay with 23,400 angler trips (15%). These three ports accounted for 57% of the total private boat effort for salmon.

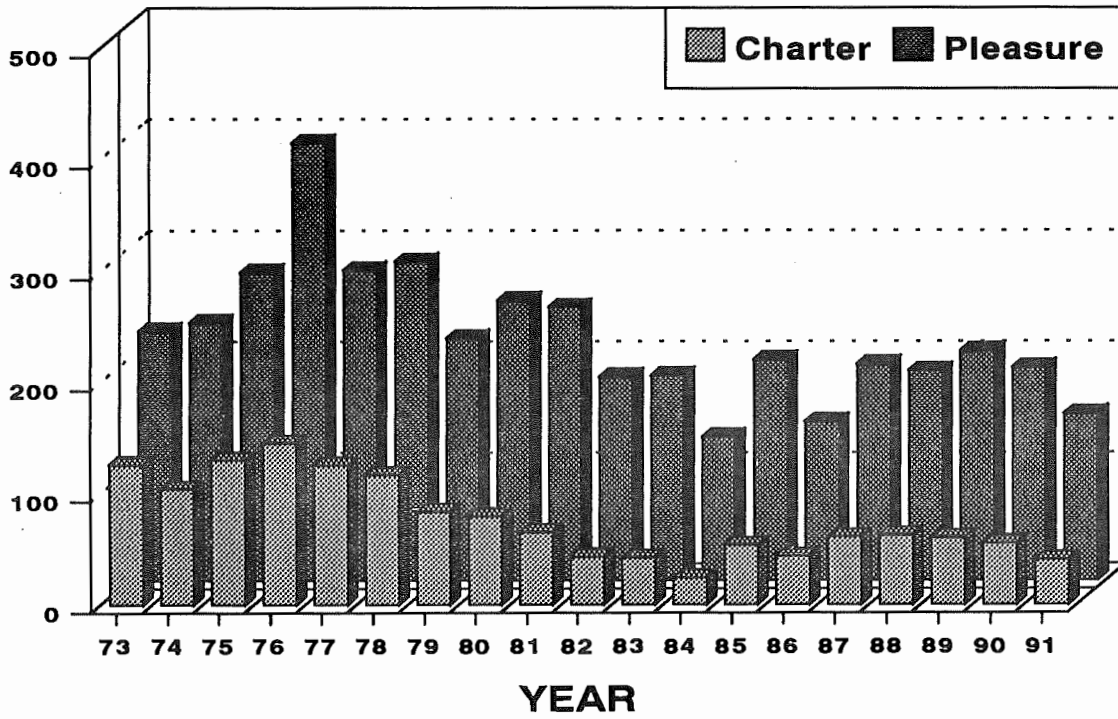
Some boats only fish for bottomfish even during the salmon season. Trip type (salmon or bottomfish) ratios were calculated from interviews, and applied to the total effort. This

Table 13. Oregon ocean recreational salmon effort and catch by boat type, 1991.

Port	Salmon Charter Boats ^a					Salmon Private Boats				
	Boat Trips	Angler Trips	Salmon Catch			Boat Trips	Angler Trips	Salmon Catch		
			Chinook	Coho	Pink			Chinook	Coho	Pink
Columbia R.	873	8,102	334	15,534	11	4,174	13,552	647	23,864	15
Garibaldi	221	2,535	44	4,446	3	5,695	15,269	558	16,316	4
Pacific City	0	0	0	0	0	1,015	3,220	84	4,888	11
Depoe Bay	886	9,018	147	14,937	53	2,235	6,592	82	10,650	12
Newport	1,050	10,214	219	17,358	34	9,275	27,431	432	38,122	66
Florence	83	468	24	615	0	4,370	12,048	1,008	19,195	6
Winchester Bay	818	5,553	380	9,964	0	8,182	23,400	2,054	36,714	11
Coos Bay	279	2,374	102	4,139	0	4,993	13,839	1,488	20,153	0
Brookings	357	2,080	663	1,897	7	13,793	34,367	6,148	20,329	47
Total	4,567	40,344	1,913	68,890	108	53,732	149,718	12,501	190,231	172
Combined totals for all Oregon craft	58,299	190,062	14,414	259,121	280					

^a Includes combination salmon & bottomfish trips.

ANGLER TRIPS (Thousands)



SALMON (Thousands of fish)

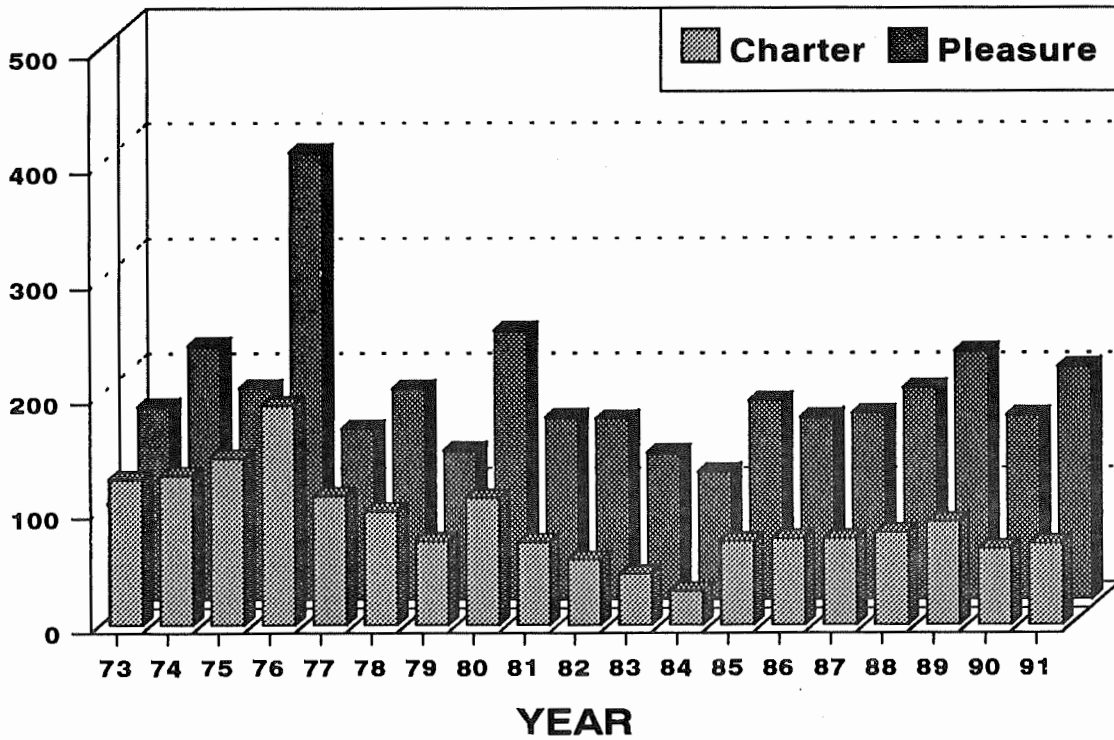


Figure 20. A comparison of effort and catch by Oregon ocean salmon charter and private anglers, 1973-91.

Table 14. Oregon ocean recreational salmon and bottomfish effort and catch by boat and trip type^a, 1991.

Port	Charter						Private							
	Boat Trips			Angler Trips			Total Catch		Boat Trips		Angler Trips		Total Catch	
	Salmon	Combination	Bottom	Salmon	Combination	Bottom	Salmon ^b	Bottom ^c	Salmon	Bottom	Salmon	Bottom	Salmon ^b	Bottom ^c
Columbia R.	873	21	2	8,102	234	253	15,879	819	4,174	2	13,552	4	24,526	463
Garibaldi	221	64	412	2,535	560	4,722	4,493	35,345	5,695	263	15,269	781	16,874	4,579
Pacific City	0	0	0	0	0	0	0	0	1,015	183	3,220	493	4,983	4,832
Depoe Bay	886	96	986	9,018	912	9,931	15,137	50,085	2,235	330	6,592	749	10,744	3,713
Newport	1,050	118	997	10,214	1,024	9,322	17,611	50,343	9,275	1,737	27,431	3,846	38,620	9,462
Florence	83	0	3	468	0	15	639	158	4,370	22	12,048	20	20,209	380
Winchester Bay	818	1	5	5,553	6	41	10,344	162	8,182	13	23,400	48	38,779	1,161
Coos Bay	279	0	98	2,374	0	767	4,241	5,380	4,993	387	13,839	647	21,641	5,369
Brookings	357	15	188	2,080	75	984	2,567	5,810	13,793	4,172	34,367	7,557	26,524	32,191
Total	4,567	315	2,691	40,344	2,811	26,035	70,911	148,102	53,732	7,109	149,718	14,145	202,904	62,150

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

^b Includes: coho, chinook and pink salmon.

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

data showed that 14,100 angler trips or 9% of the private trips only targeted on bottomfish, compared to 17,200 angler trips or 8% in 1990. Brookings had the most private bottomfish anglers, followed by Newport (Table 14). Almost all anglers target on salmon in the Columbia River area, Florence, and Winchester Bay.

Catch: Anglers from private boats landed 12,500 chinook, 190,200 coho and 172 pink salmon in 1991. The total catch of 202,900 salmon in 1991 was 21% above the 1990 catch and 11% above the 1973-90 average of 181,500 fish (Figure 20). Private boat anglers caught 74% of the total recreational salmon landed in 1991, compared to 71% in 1990, and the 1973-90 average of 66%.

Winchester Bay private boat anglers landed the most salmon; 38,800 fish or 19% of the total private boat angler catch. Angler success averaged 1.6 salmon per angler. The top effort ports of Newport and Brookings had landings of 38,600 and 26,500 salmon with an average success rate of 1.4 and 0.8 fish per angler, respectively. These three ports accounted for 52% of the total private boat angler catch. The coastwide angler success rate was 1.4 salmon per angler, compared to 0.8 in 1990 and the 1973-90 average of 0.8 (Table 13).

ESTIMATES OF RELEASED SALMON

Background

The number of salmon released, "shakers", was estimated 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 of the angler. This data is not used in active management every year, but can be used as a "rough" estimate to evaluate shaker mortalities or other regulation impacts.

North of Cape Falcon

We estimated that 349 chinook (26%) were released in the Columbia River area during the ocean season. This is considerably below the 1979-90 average (less 1984) shaker rate of 55% and the 39% rate for 1990. The "shaker" rate for coho in the Columbia River area was 6% in 1991 and comparable with the 1979-90 average (Table 15).

South of Cape Falcon

The information on released chinook resembled historical patterns in most ports. Winchester Bay and Coos Bay often encounter small chinook during part of the salmon season. Brookings had a regulation where not more than one chinook could be taken in the daily limit. The data does not suggest that many chinook were sorted. The coho data also resembled historical patterns with a 3% statewide "shaker" rate (Table 16).

RECREATIONAL OCEAN SALMON CODED-WIRE TAG SAMPLING

Samplers at ten ports observed 35% of the combined chinook and coho landed during the 1991 ocean recreational season.

Table 15. Chinook and coho salmon released by Oregon ocean recreational anglers in the Columbia River area, 1979-91.

Year	Number Retained		Number Released		Total Fish Caught		Percent Released	
	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho
1979	7,072	37,894	8,719	4,905	15,791	42,799	55	12
1980	5,503	55,647	7,891	1,905	13,394	57,552	59	3
1981	11,516	54,294	21,664	1,643	33,180	55,937	65	3
1982	8,235	35,476	6,949	2,082	15,185	37,558	46	6
1983	3,440	37,245	3,671	8,318	7,111	45,563	52	18
1984	26 ^a	10,874	1,410	654	1,436	11,528	98	6
1985	3,565	31,010	5,235	1,275	8,800	32,285	59	4
1986	1,909	36,666	2,320	2,197	4,229	38,863	55	6
1987	4,019	25,299	2,467	2,145	6,486	27,444	38	8
1988	481	9,844	289	481	770	10,325	38	5
1989	1,464	34,211	522	2,616	1,986	36,827	26	7
1990	3,323	36,077	2,166	2,105	5,489	38,182	39	5
1979-90 Average^b	4,593	33,711	5,627	2,527	10,220	36,239	55	7
1991	983	39,396	349	2,397	1,332	41,793	26	6

^a Illegal or taken south of Cape Falcon.

^b Excluding 1984.

Table 16. Chinook and coho salmon released by Oregon ocean recreational anglers in 1991, by port.

Port	Number Retained		Number Released		Total Fish Caught		Percent Released	
	Chinook	Coho	Chinook	Coho	Chinook	Coho	Chinook	Coho
Columbia R.	983	39,396	349	2,397	1,332	41,793	26	6
Garibaldi	602	20,762	4	49	606	20,811	<1	<1
Pacific City	84	4,888	0	7	84	4,895	0	<1
Depoe Bay	229	25,587	0	39	229	25,626	0	<1
Newport	651	55,480	15	741	666	56,221	2	1
Florence	1,032	19,810	3	603	1,035	20,413	<1	3
Winchester Bay	2,434	46,678	115	1,776	2,549	48,454	5	4
Coos Bay	1,590	24,292	51	593	1,641	24,885	3	2
Brookings	6,811	22,226	532	1,536	7,343	23,762	7	6
South of Falcon	13,434	219,723	720	5,344	14,154	225,067	5	2
Total	14,416	259,119	1,069	7,741	15,485	266,860	7	3

Chinook

The samplers examined 4,964 chinook and found 238 (4.8%) that had adipose fin clips (Table 17). Department staff found readable tags in 230 of the 248 chinook heads for a 93% recovery rate. Most of the recovered tags were released by the Oregon Department of Fish and Wildlife (50%) and the California Department of Fish and Game (24%) (Figure 22)

Coho

The samplers examined 91,354 coho and found that 4,337 (5%) that had adipose fin clips (Table 18). Staff found 3,709 readable tags in the 4,333 coho heads for an 86% recovery rate. Most of the recovered tags were released by the Oregon Department of Fish and Wildlife (44%) and the Washington Department of Fisheries (37%) (Figure 23).

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

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. The bag limit remained two fish, and barbed hooks were permitted.

This fishery targets on returning fall chinook, and most of the effort and catch is inside Tillamook Bay. However, some of the boats do troll back and forth across the bar. This fishery was not surveyed in 1991. In 1990, the Ocean Salmon Management Program cooperated with the Tillamook Fisheries District and assisted in a creel survey of lower Tillamook Bay and got data on ocean effort and catch as well. The ocean creel ran from the last week in September through October 31, 1990. During that time, the survey tallied 30,900 lower bay angler trips and 7,400 ocean angler trips. An estimated 1,017 chinook were taken in the ocean in 1990, compared to 3,327 fish in the lower bay. An estimated 51 coho were taken illegally in the late ocean season in 1990.

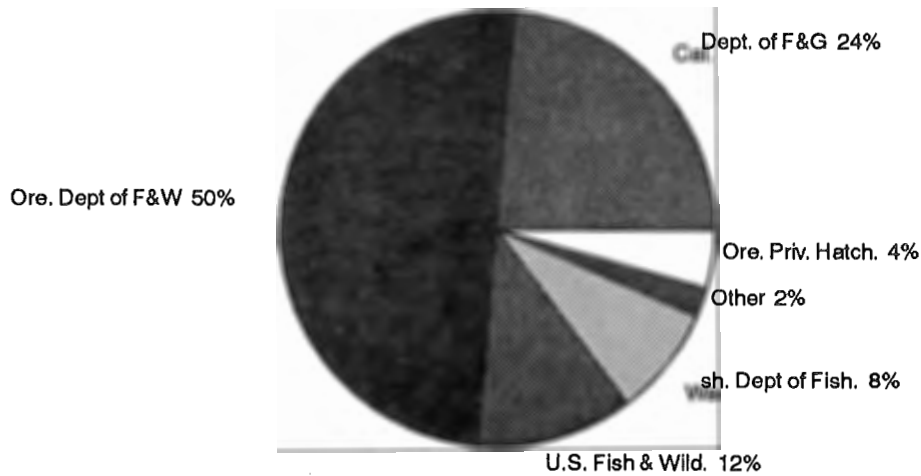
Columbia River Buoy 10 Estuary Fishery

The river mouth opened August 9 for salmon fishing seven days a week, without a weekly bag limit, and without quotas. The Oregon/Washington combined effort was 168,900 angler trips with a catch of 11,500 chinook and a record 207,500 coho (Table 19). This fishery is discussed in detail in "The 1991 Lower Columbia River and Buoy 10 Recreational Fisheries" by Steven D. King of the Department's Columbia River Management Program.

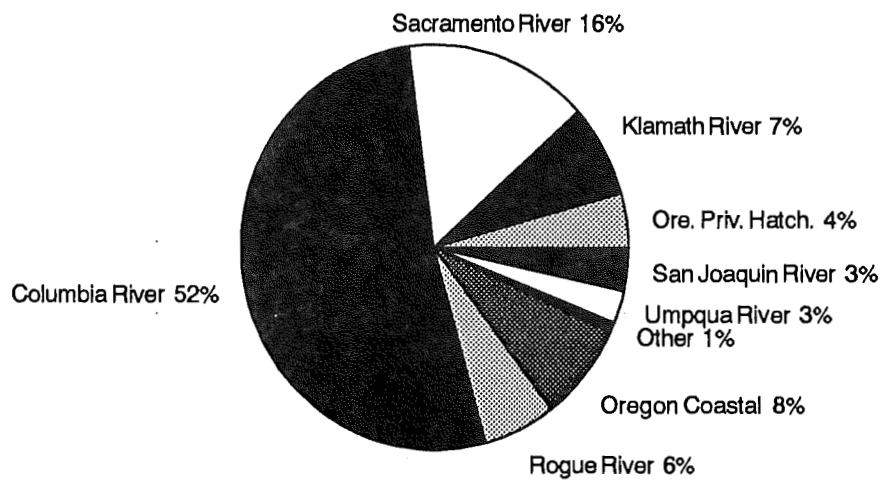
Oregon Coastal Lower Bay/Bar Recreational Salmon Fisheries

Introduction: In a "typical" year, the recreational salmon season runs from about mid-May to mid-September for the Oregon coast south of Cape Falcon. The 1991 ocean recreational salmon fishery from Cape Falcon to Humbug Mtn. closed July 29 as a result of attainment of the coho quota. This early closure precipitated very popular and

RELEASE AGENCY



BASIN OF RELEASE



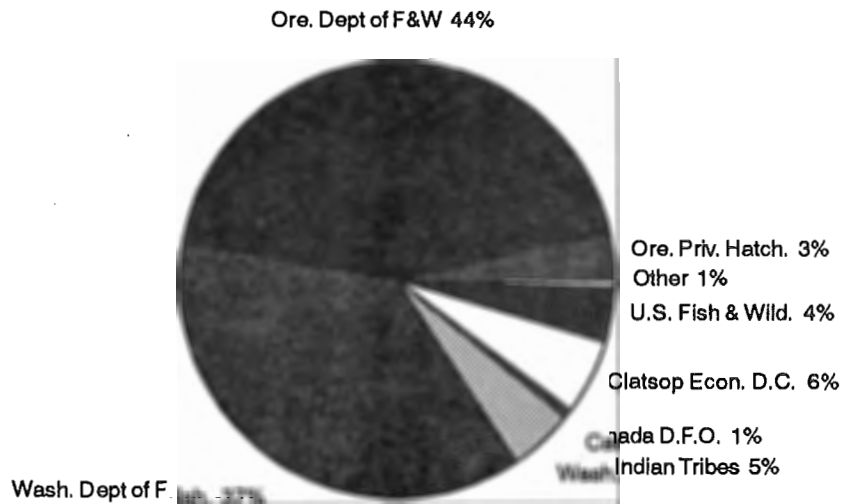
NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.

Figure 21. Recoveries of chinook coded wire tags, by release agency and by basin of release, from Oregon's ocean recreational catch, 1991.

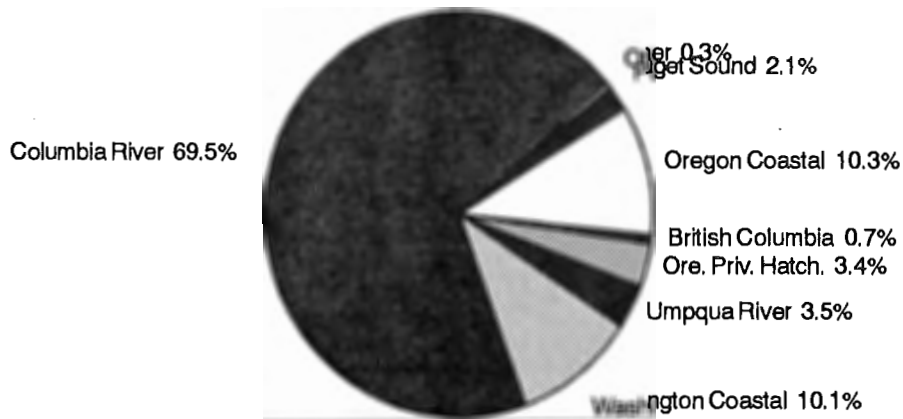
Table 17. Chinook coded-wire tag sampling from the ocean recreational fishery, by port and month, 1991.

Port	May	June	July	August	September	Total
<u>Columbia R.</u>						
Total Catch	-	81	335	550	17	983
No. Sampled	-	42	171	263	7	483
% Sampled	-	52	51	48	41	49
No. Ad Marks	-	2	8	17	0	27
<u>Garibaldi</u>						
Total Catch	24	264	314	-	-	602
No. Sampled	6	66	97	-	-	169
% Sampled	25	25	31	-	-	28
No. Ad Marks	0	6	4	-	-	10
<u>Pacific City</u>						
Total Catch	1	21	62	-	-	84
No. Sampled	1	17	27	-	-	45
% Sampled	100	81	44	-	-	54
No. Ad Marks	0	2	2	-	-	4
<u>Depoe Bay</u>						
Total Catch	17	69	143	-	-	229
No. Sampled	15	49	60	-	-	124
% Sampled	88	71	42	-	-	54
No. Ad Marks	2	2	6	-	-	10
<u>Newport</u>						
Total Catch	64	336	251	-	-	651
No. Sampled	31	125	61	-	-	217
% Sampled	48	37	24	-	-	33
No. Ad Marks	0	8	4	-	-	12
<u>Florence</u>						
Total Catch	-	322	710	-	-	1,032
No. Sampled	-	142	228	-	-	370
% Sampled	-	44	32	-	-	36
No. Ad Marks	-	6	16	-	-	22
<u>Winchester Bay</u>						
Total Catch	30	1,057	1,347	-	-	2,434
No. Sampled	13	315	331	-	-	659
% Sampled	43	30	25	-	-	27
No. Ad Marks	2	16	11	-	-	29
<u>Coos Bay</u>						
Total Catch	19	746	825	-	-	1,590
No. Sampled	10	274	232	-	-	516
% Sampled	53	37	28	-	-	32
No. Ad Marks	1	10	6	-	-	17
<u>Brookings</u>						
Total Catch	48	4,080	2,321	64	298	6,811
No. Sampled	22	1,457	711	34	157	2,381
% Sampled	46	36	31	53	53	35
No. Ad Marks	1	68	33	0	5	107
<u>Total</u>						
Total Catch	203	6,976	6,308	614	315	14,416
No. Sampled	98	2,487	1,918	297	164	4,964
% Sampled	48	36	30	48	52	34
No. Ad Marks	6	120	90	17	5	238

RELEASE AGENCY



BASIN OF RELEASE



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

Figure 22. Recoveries of coho coded wire tags, by release agency and by basin of release, from Oregon's ocean recreational catch, 1991.

Table 18. Coho coded-wire tag sampling data from the ocean recreational fishery, by port and month, 1991.

Port	May	June	July	August	September	Total
<u>Columbia R.</u>						
Total Catch	-	2,409	16,368	17,222	3,397	39,396
No. Sampled	-	1,270	8,378	8,479	1,632	19,759
% Sampled	-	53	51	49	48	50
No. Ad Marks	-	46	297	335	68	746
<u>Garibaldi</u>						
Total Catch	12	1,732	19,018	-	-	20,762
No. Sampled	11	864	6,258	-	-	7,133
% Sampled	92	50	33	-	-	34
No. Ad Marks	0	34	262	-	-	296
<u>Pacific City</u>						
Total Catch	1	789	4,098	-	-	4,888
No. Sampled	1	683	2,691	-	-	3,375
% Sampled	100	87	66	-	-	69
No. Ad Marks	0	21	107	-	-	128
<u>Depoe Bay</u>						
Total Catch	50	3,886	21,651	-	-	25,587
No. Sampled	48	2,505	9,640	-	-	12,193
% Sampled	96	64	45	-	-	48
No. Ad Marks	3	129	520	-	-	652
<u>Newport</u>						
Total Catch	9	11,330	44,137	4	-	55,480
No. Sampled	8	4,214	11,380	2	-	15,604
% Sampled	89	37	26	50	-	28
No. Ad Marks	0	212	555	0	-	767
<u>Florence</u>						
Total Catch	1	3,383	16,426	-	-	19,810
No. Sampled	1	1,407	5,100	-	-	6,508
% Sampled	100	42	31	-	-	33
No. Ad Marks	0	67	281	-	-	348
<u>Winchester Bay</u>						
Total Catch	604	12,044	34,030	-	-	46,678
No. Sampled	271	3,838	7,898	-	-	12,007
% Sampled	45	32	23	-	-	26
No. Ad Marks	9	176	391	-	-	576
<u>Coos Bay</u>						
Total Catch	189	8,016	16,087	-	-	24,292
No. Sampled	130	2,761	4,392	-	-	7,283
% Sampled	69	34	27	-	-	30
No. Ad Marks	12	137	268	-	-	417
<u>Brookings</u>						
Total Catch	-	10,236	10,582	513	895	22,226
No. Sampled	-	3,410	3,372	268	442	7,492
% Sampled	-	33	32	52	49	34
No. Ad Marks	-	192	187	9	19	407
<u>Total</u>						
Total Catch	866	53,825	182,397	17,739	4,292	259,119
No. Sampled	470	20,952	59,109	8,749	2,074	91,354
% Sampled	54	39	32	49	48	35
No. Ad Marks	24	1,014	2,868	344	87	4,337

successful salmon fisheries at the entrances of most coastal estuaries. Although catch rates were high, crowded conditions caused navigation hazards, and boats were frequently observed crossing into the ocean with lines still in the water. The U.S. Coast Guard, Oregon State Police, and local county sheriff marine patrols were all kept busy citing vessels for navigation and angling violations.

The OSMP maintained recreational fishery sampling crews to monitor ocean bottomfish harvest and to sample these estuary fisheries in most major ports. The following tables and figures include catch estimates for these 1991 fisheries at Tillamook, Yaquina, Siuslaw, Winchester, and Coos bays. These data represent landings for the period of July 29 through September 2, 1991, from catches made by boat anglers in the lower portion of the estuary, i.e., between the jetties. No estimate of catch is made for the catch of shore anglers, although sampler comments indicated that landings were occurring on the jetties in several ports. Estuary entrance fisheries also developed at several smaller ports, but these were not sampled (i.e. Nehalem, Alsea, and Coquille bays).

Methods: Samplers conducted a stratified creel survey which contacted private and charter boat anglers to gather data on anglers per boat, hours per boat, fish per angler, and to recover snouts from coded wire tagged salmon. Effort estimates were generated for charter boats by contacting charter offices to determine the number of trips each vessel made in the estuary. Effort estimates for private boats 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.

Estimates for the period were calculated in two separate ways: first by summing the weekly estimates, and second by dropping the weekly strata and lumping all samples to generate an estimate. Charter boat catch and effort estimates may be more accurate using the lumped data approach due to gaps in the sampling data for some weeks. Confidence limits at the 95 percentile were calculated for all catch estimates (for specific formulas for effort, catch, and confidence interval estimates refer to Schindler, 1992).

Results and discussion: An estimated 14,287 private boat trips and 710 charter boat trips took place in the estuary fishery during the sample period. This expanded out to 35,411 private angler trips and 4674 charter angler trips. Private boat salmon landings totaled 26,430 adult and 1,242 jack coho, and 898 adult and 93 jack chinook. Charter angler landings totaled 6,086 adult and 320 jack coho, and 82 adult and 26 jack chinook (Appendix Table 20).

Most of the coho catch occurred at Winchester Bay: 11,398 adults and 719 jacks, 36% of the estimated total catch. Most of the chinook harvest also occurred at Winchester Bay: 435 adults and 86 jacks, 47% of the total.

Tillamook Bay had the most private boat angler trips with 10,613 or 30% of the total. Winchester Bay had the most charter boat angler trips with 2,149 trips, 46% of the total.

Catch per unit of effort (CPUE) was highest at Winchester Bay for both private boat anglers, 1.18 salmon per angler, and charter boat anglers, 1.82 salmon per angler. Coos Bay also had high success rates with 0.94 salmon per private boat angler, and 1.39 salmon per charter boat angler. Lowest CPUEs were observed at Yaquina Bay for the private boat anglers with 0.56 salmon per angler, and at Siuslaw Bay for charter boat anglers with 0.36 salmon per angler.

Table 19. Oregon and Washington Buoy 10 season total salmon angler trips and catch, 1991, and totals for 1982-1990.

1991 Fishery	Angler Trips	Catch		Catch/ Trip	Chinook/ Angler	Coho/ Angler
		Chinook	Coho			
OR Boat	48,326	2,995	60,523	1.31	0.06	1.25
OR Bank	6,884	26	3,030	0.44	0.00	0.44
WA Boat	96,647	8,460	138,022	1.52	0.09	1.43
WA Bank	17,064	68	5,952	0.35	0.00	0.35
1991 Total	168,921	11,549	207,527	1.30	0.07	1.23
1990 ^a	76,411	5,149	18,435	0.31	0.07	0.24
1989	144,848	15,900	78,720	0.65	0.11	0.54
1988	186,051	30,770	143,417	0.94	0.17	0.77
1987	124,594	42,100	47,170	0.72	0.34	0.38
1986	102,190	15,600	120,422	1.33	0.15	1.18
1985	32,156	2,655	25,387	0.87	0.08	0.79
1984	67,365	12,177	74,370	1.28	0.18	1.10
1983	7,128	604	3,574	0.59	0.08	0.50
1982	17,336	723	18,857	1.13	0.04	1.09

^a Includes all fishery types (boat, bank, jetty) for 1982-90.

For most ports and strata, sampling was well above the 20% minimum guideline. The sampling staff size was reduced late in August, and this hindered our sampling ability significantly in Yaquina Bay and Winchester Bay (Appendix Table 21).

Very little data is available to compare with the 1991 estuary fishery. Early ocean closures also occurred in 1982 (August 1), and 1986 (August 13). Punchcard data that has been expanded for non-reporting is the most comprehensive long-term data base that is available for comparison. The punchcard data is not directly comparable since it includes a much larger portion of the estuary and river and a longer time frame; therefore, it can be expected to yield higher catch estimates than the lower estuary creel. Figure 23 presents expanded coho catches for the years 1982-89 from punchcard data as compared to the 1991 creel survey. In all eight years, the coho catch was significantly below what was seen in 1991. It should be noted that in 1985 and 1986, the coho catch was greatly influenced by the extensive fisheries that developed to target on returning private hatchery fish at Coos Bay (Anadromous, Inc.) and Newport (Oregon Aqua Foods, Inc.). Punchcard data for the 1991 season will not be available until late 1992.

In an attempt to characterize the lower estuary fishery, both the percent of adipose clipped coho and the origins of coded wire tagged (CWT) coho and chinook were examined (Figures 25 and 26). Figure 24 displays the rate of ad-clipped coho in the sample data for the last six weeks of the ocean season as compared to the six weeks of sample data from the estuary fishery. The trend in mark rates was similar in both fisheries.

Figure 27 is a comparison of the percentages of CWT coho for the two fisheries from aggregated release sites (Alaska and British Columbia, Washington - Puget Sound and coastal, Columbia River - Oregon and Washington, and Oregon coastal). This data is preliminary, but does not indicate any radical shift in CWT contributions from ocean to estuary fisheries. The proportion of CWT's from northern areas stayed almost constant, although there was a gradual shift from Columbia River stocks to Oregon coastal stocks as the season continued. This is the expected trend as the earlier spawning stocks of coho from the Columbia River move back to the river.

Figure 28 shows the relative proportions of CWT coho by release agency for the last few years. It is important to remember that tagging rates have varied from year to year by agency, and this data should only be used as an indicator of the potential variability. The data for the 1991 estuary fishery falls within the expected ranges for the ocean fishery.

Conclusion: The 1991 lower estuary fishery can best be described as similar to the ocean fishery in stock composition, very crowded and compressed, with lower CPUEs than the ocean fishery, but better CPUEs than are normally observed in these fisheries. It is relatively unlikely that estuary fisheries with similar catches will occur again in the near future. Such fisheries require a closed ocean season, abundant fish, and ocean conditions that bring the fish into the very nearshore waters.

Thousands of Adult Coho

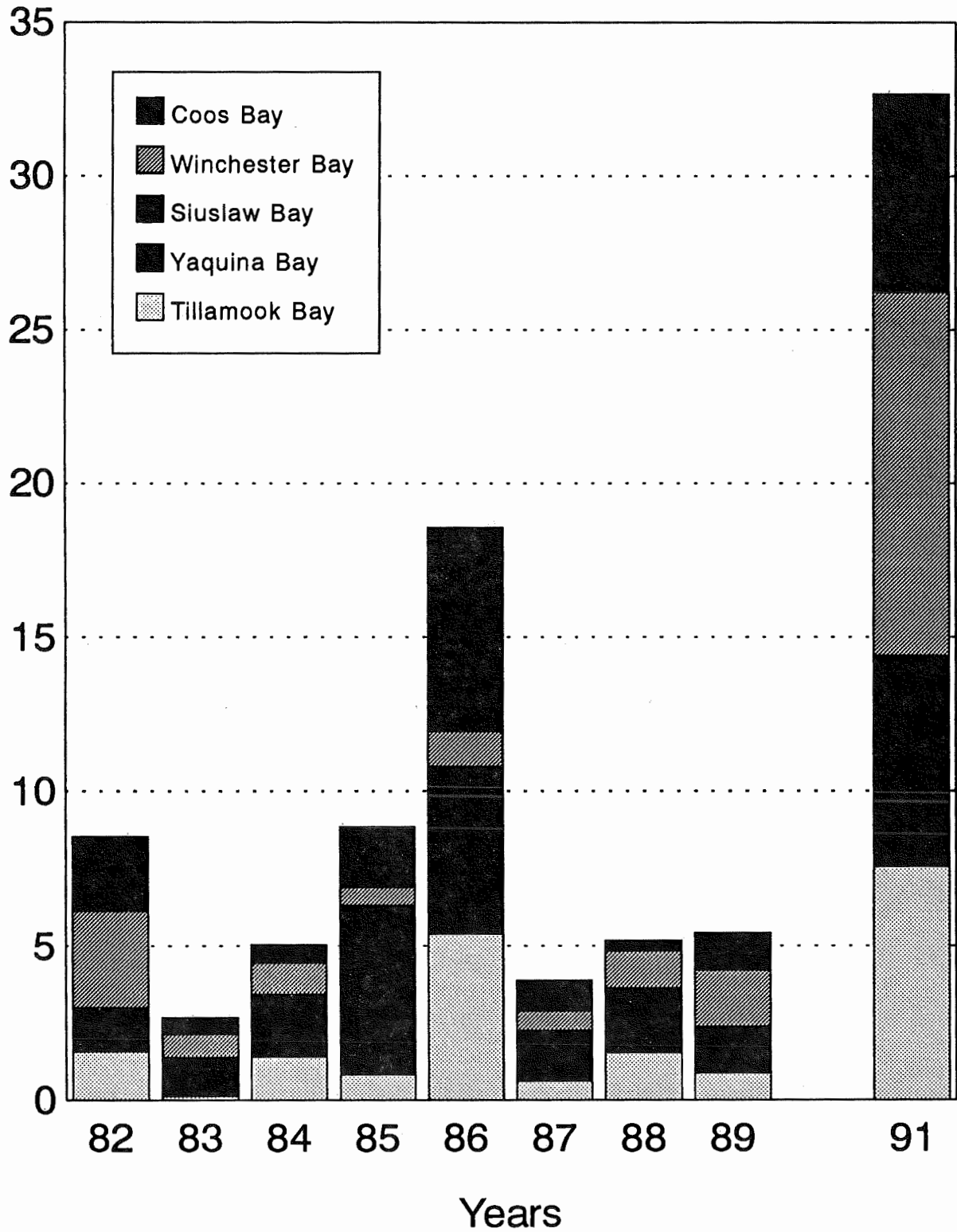


Figure 23. Oregon recreational estuary coho salmon landings. Data from 1982-89 is from punchcards; 1991 data is from creel survey.

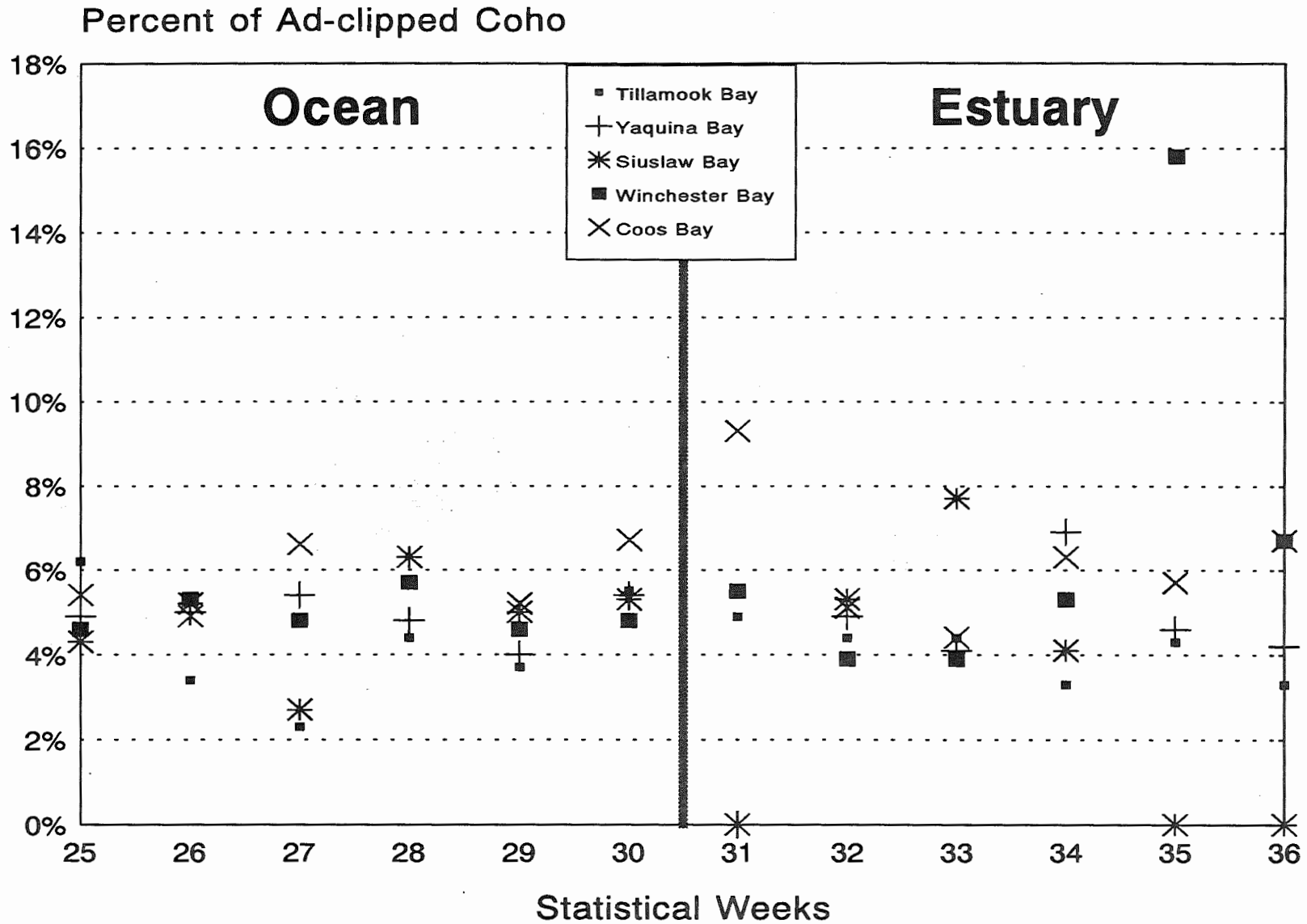
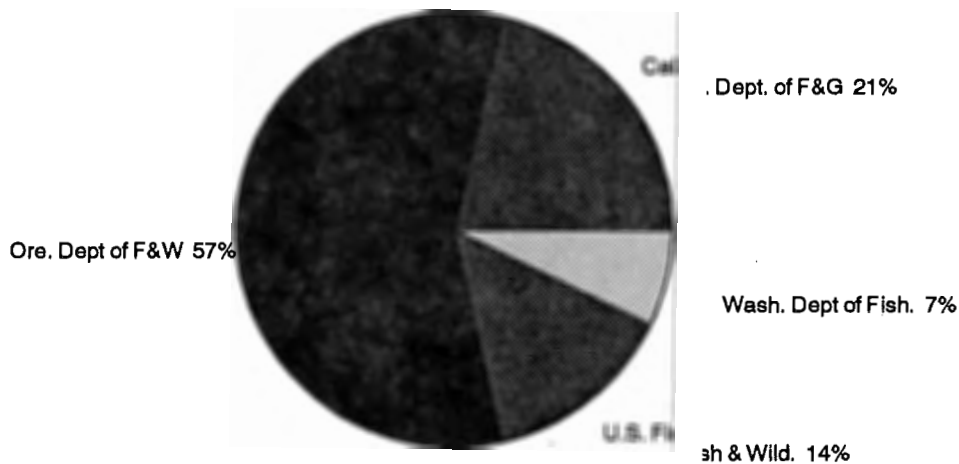
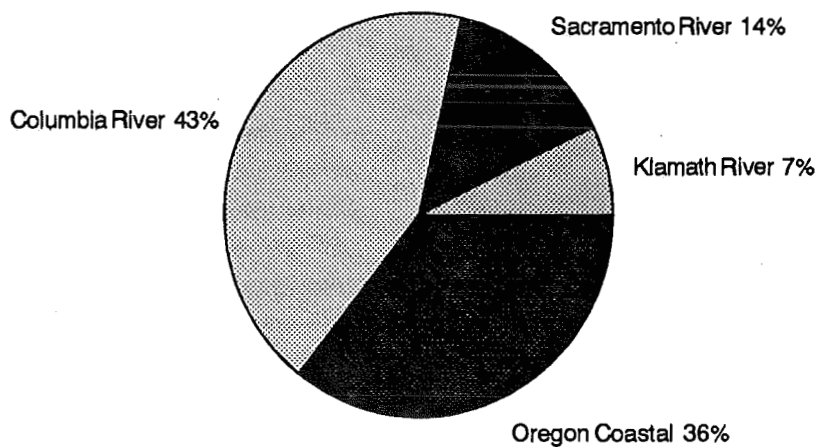


Figure 24. Percent of coho salmon in creel survey which had been adipose fin-clipped. Data for statistical weeks 25-36, 1991.

RELEASE AGENCY



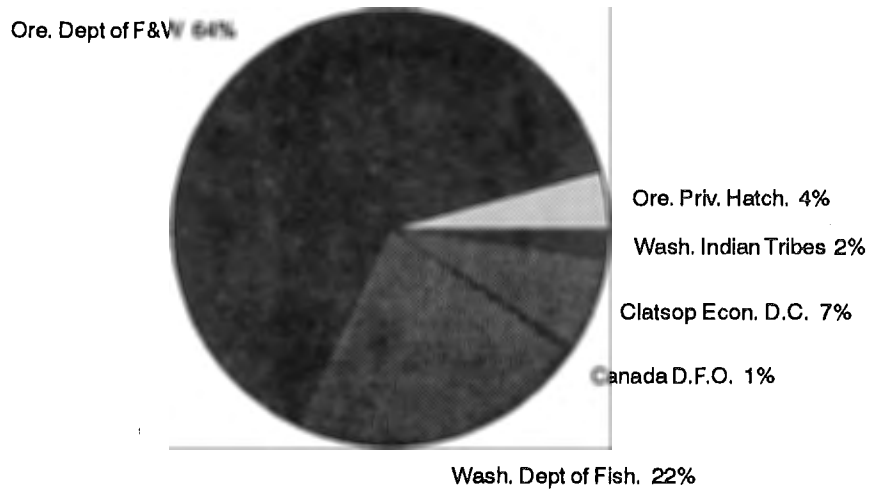
BASIN OF RELEASE



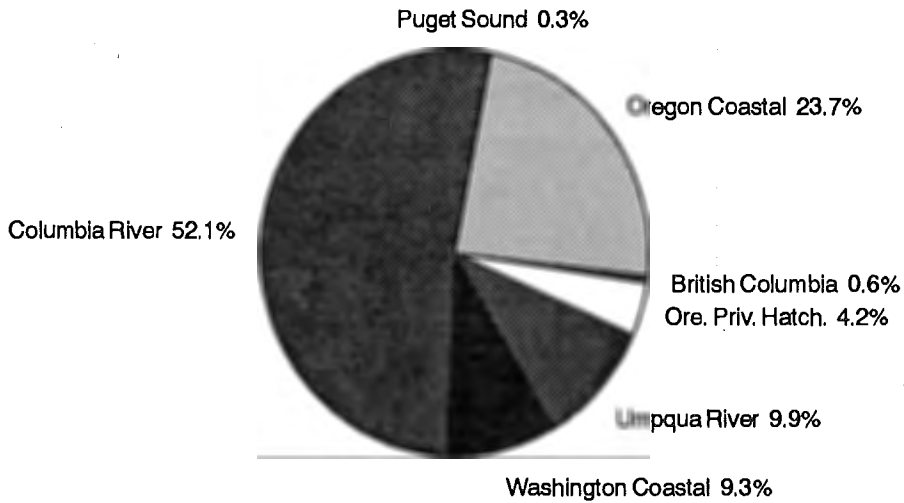
NOTE: Does not represent stock contribution rates, since tagging is not representative of all stocks.

Figure 25. Recoveries of chinook coded wire tags, by release agency and by basin of release, from Oregon's estuary recreational catch, 1991.

RELEASE AGENCY



BASIN OF RELEASE



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

Figure 26. Recoveries of coho coded wire tags, by release agency and by basin of release, from Oregon's estuary recreational catch, 1991.

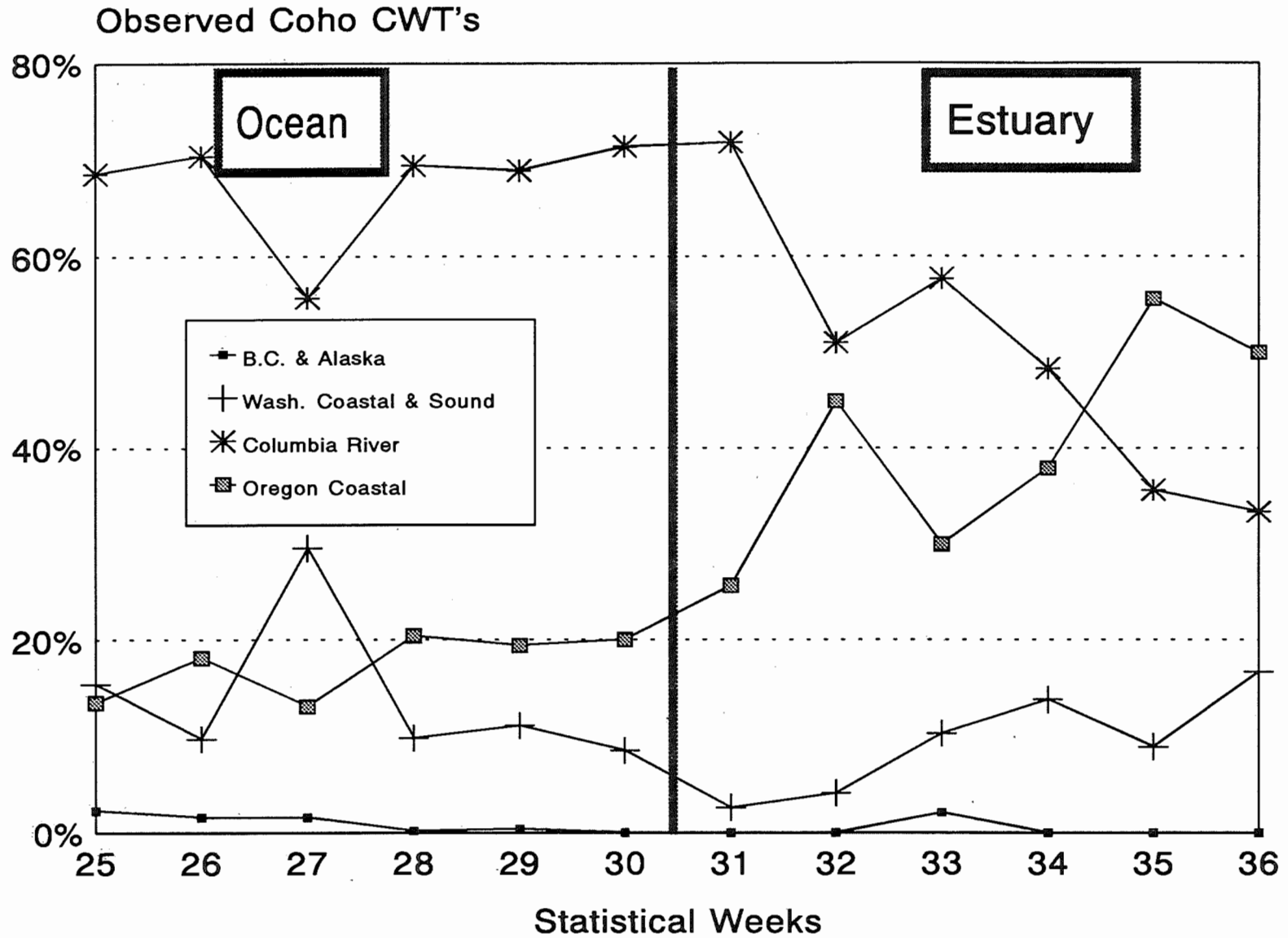


Figure 27. Relative incidence of coded wire tagged coho by major area of release, from Oregon ocean and estuary recreational fisheries. Data is for statistical weeks 25-36, 1991.

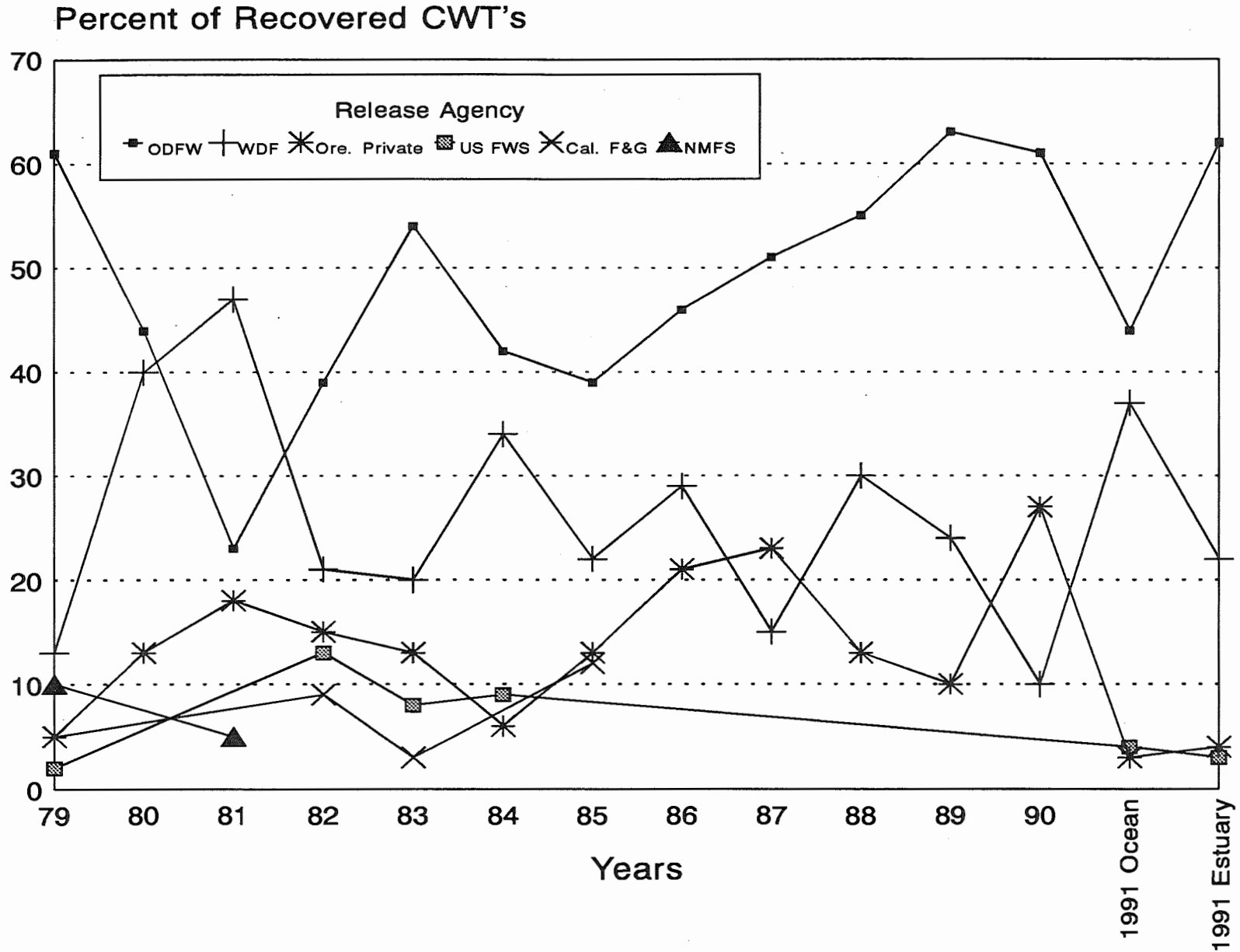


Figure 28. Oregon recreational ocean salmon fishery coho coded wire tag recoveries for 1979-91, as compared to 1991 estuary recoveries.

ACKNOWLEDGMENTS

Almost everyone in the Ocean Salmon Management Program at one time or another provided assistance to the sampling program. However, we especially appreciate the help of sampling coordinators Mark Vargas and David Nuzum and all seasonal samplers. Special recognition also goes to the Data Management Project Leader Phil Flanders and his assistant Donna Lamb for help in accessing the data and general assistance throughout the sampling year. Mary Buckman supplied the preliminary data from the 1990 Tillamook creel survey. Marie Jones did the word processing and her help is appreciated.

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APPENDIX

Appendix Table 1. The 1991 Ocean Salmon sampler roster and dates of sampling.

Port	Troll		Recreational	
	Sampler	Dates	Sampler	Dates
Astoria	Mark Thompson ¹	May 1-Oct. 6	Kristin Dolan Jay Hensley Tim Shibahara	June 24-Sept. 30 June 24-Sept. 17 June 24-Aug. 19
Garibaldi	Beth Nelson	May 1-Aug. 18	Greg Love Alan Ritchey Wes Kelley	June 10-Aug. 18 June 10-Sept. 2 July 8-Sept. 2
Pacific City	Michael Slater	June 10-Sept. 8	Jon Silva	May 15-Aug. 6
Depoe Bay			Ben Koch	May 1-Sept. 2
Newport	Erick Van Dyke Rich Titgen	May 1-Aug. 31 May 1-Oct. 16	Aaron Currier Andy Murrett Tomas Jamir Lisa Johnson	May 1-Aug. 18 May 12-Sept. 3 June 10-Aug. 18 June 10-July 31
Florence			Shawn Rapp	May 7-Sept. 2
Winchester Bay	Russell Sparks	June 10-Aug. 18	Clayton Johnson Parker Ogburn Gary Christofferson	May 1-Aug. 18 May 15-Aug. 18 June 10-Aug. 18
Coos Bay	Scott Neubig	May 1-Oct. 31	Lisa Favero Jane Chen	May 1-Aug. 18 May 1-Aug. 18
Brookings			Carla Sowell Debra Newman Steve Ulrich	May 23-Sept. 30 June 10-Sept. 15 May 23-Aug. 15
Newport Data Support				
	John Denton Pat Mesmer	April 22-Dec. 31 July 8-Oct. 11		

¹ Combination sampler.

Appendix Table 2. Troll mark sampling rates by port, year, and species, 1978-1991.

	1978 ^a	1979 ^a	1980 ^a	1981 ^a	1982 ^a	1983 ^a	1984	1985	1986	1987	1988	1989	1990	1991
CHINOOK														
Astoria	9	15	20	33	50	35	37	36	46	75	24	36	25	11
Gearhart	-	-	-	-	-	-	0	0	0	0	-	27	12	8
Cannon Beach	-	-	-	-	-	0	0	0	0	0	16	0	0	0
Garibaldi	28	18	20	23	23	34	35	34	29	34	20	10	22	7
Netarts	-	-	-	-	-	-	-	-	-	-	0	0	0	0
Pacific City	-	-	-	-	-	-	0	28	20	32	15	19	27	19
Salmon River	-	-	-	-	-	-	-	-	-	-	-	0	0	-
Depoe Bay	-	-	-	-	-	-	0	0	3	73	38	0	0	0
Newport	16	25	30	27	28	44	63	47	34	59	28	21	34	29
Waldport	-	-	-	-	-	-	0	0	0	-	-	-	0	0
Florence	-	-	-	-	-	-	44	0	0	67	30	15	30	52
Winchester Bay	-	-	-	-	-	-	61	24	42	39	29	18	35	15
Coos Bay	16	14	23	24	17	42	77	42	32	31	24	14	26	21
Bandon	-	-	-	-	-	-	0	2	0	2	0	0	0	0
Port Orford	-	-	-	-	-	-	70	89	88	74	59	61	24	0
Gold Beach	-	-	-	-	-	-	53	0	12	1	10	10	0	0
Brookings	27	17	25	26	45	40	49	0	58	66	71	62	65	58
Total	19	17	25	27	30	41	59	39	35	44	30	21	27	24
COHO														
Astoria	15	13	18	26	38	39	80	40	81	35	6	34	34	24
Gearhart	-	-	-	-	-	-	0	0	0	0	-	22	8	40
Cannon Beach	-	-	-	-	-	-	0	0	0	0	0	6	0	2
Garibaldi	20	12	15	14	21	37	86	72	39	35	32	28	25	21
Netarts	-	-	-	-	-	-	-	-	-	-	0	0	0	0
Pacific City	-	-	-	-	-	-	-	13	14	44	21	32	32	30
Salmon River	-	-	-	-	-	-	-	-	-	-	-	0	0	-
Depoe Bay	-	-	-	-	-	-	0	0	8	80	63	0	0	2
Newport	20	24	33	34	26	39	41	58	19	57	27	22	41	29
Waldport	-	-	-	-	-	-	0	-	-	-	-	-	-	0
Florence	-	-	-	-	-	-	-	1	0	73	28	13	39	47
Winchester Bay	-	-	-	-	-	-	-	26	51	34	35	16	40	28
Coos Bay	16	15	27	26	11	46	-	48	31	28	31	16	28	27
Bandon	-	-	-	-	-	-	-	48	0	3	0	0	0	0
Port Orford	-	-	-	-	-	-	-	76	84	73	66	70	10	0
Gold Beach	-	-	-	-	-	-	0	-	1	3	0	-	0	-
Brookings	33	13	30	33	51	54	-	0	34	41	49	41	44	1
Total	19	17	26	26	21	42	61	41	24	43	30	22	29	28
# Samplers	11	11	11	11^b	12^b	12	9	8	10	14	9^c	8^c	10^b	6^b

^a Sampling rates for aggregated port areas of Astoria - Canon Beach, Garibaldi - Pacific City, Salmon River - Waldport, Florence - Bandon, and Port Orford - Brookings.

^b Two additional employees sampled the troll fishery on a part-time basis.

^c Three additional employees sampled the troll fishery on a part-time basis.

Appendix Table 3. History of actual Oregon ocean commercial troll fishery regulations, 1948-91.

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 & 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 & 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 & 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 & 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 & 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 7/1 - 7/8	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 6/1 - 6/15 7/1 - 7/12 7/13 - 9/5 9/6 - 10/31	All except coho All except coho All salmon All except coho All except coho	Chin. 26"; barbless hooks, except on whole bait. Chin 26"; whole bait, or plugs not less than 5" long. Chin. 26"; coho 16". Chin. 26"; whole bait, or plugs not less than 5" long. 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 & 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 7/1 - 7/31	All except coho All salmon	Chin 28"; barbless hooks, except on plugs not less than 5". 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 6/1 - 6/15 9/5 - 10/31 9/5 - 10/31	All except coho All except coho All except coho All except coho	Chin. 26"; barbless hooks, except on whole bait or plugs (not less than 5"). Chin. 26"; whole bait, or plugs not less than 5" long. Chin 26". 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> 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 6/1 - 6/15 7/1 - 7/25 7/26 - 8/31 9/1 - 9/15 10/1 - 10/31	All except coho All except coho All salmon All except coho All except coho All except coho	Chin. 26"; barbless hooks only, not more than 6 troll lines. Chin. 26"; whole bait, or plugs not less than 5" long. Coho 16". Chin. 26"; whole bait, or plugs not less than 5" long. Chin. 26". Open area is 12 x 24 mile rectangle around mouth of Rogue River. 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.
<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 9/1 - 9/21	All except coho All except coho	Chin. 26"; barbless hooks. Chin. 26"; state waters only. Contravention of fed. regulation.
<u>Manhattan Beach to Pyramid Rock (Tillamook)</u> 10/1 - 10/31	All except coho	Chin. 26"; barbless hooks. State waters only.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
(1984 continued)		
<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.
<u>Columbia River S. Jetty</u> <u>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 7/27 - 10/31	All except coho All salmon All except coho	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. 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 7/25 - 10/31	All except coho All salmon All except coho	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. Chin. 26"; barbless hooks.
<u>Twin Rocks to Pyramid Rock</u> <u>(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 7/23 - 24 7/25 - 10/31	All except coho All salmon All salmon All except coho	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. Same regulations as in Cape Falcon to Cape Perpetua (for 7/1-24 see above). 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 7/25 - 8/26	All salmon All except coho	Chin. 26"; Coho 22"; barbless hooks. At least one chinook must be possessed or landed for each 2 coho possessed or landed. 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.
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.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
(1987 continued) 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.
<u>Humbug Mtn. to Punta Gorda</u> 6/5 - 7	All salmon	Chin. 26"; coho 22"; barbless hooks. Sup. through Wed. only.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
(1988 continued)		
<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.
<u>US-Canada Border to Cape Falcon</u> 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.

Appendix Table 3 continued.

AREA AND SEASON	SPECIES	SIZE, GEAR AND OTHER RESTRICTIONS
(1990 continued)		
<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 South 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.
<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.

Appendix Table 4. Summary of Oregon ocean commercial troll effort and landings of chinook and coho by area of catch, 1979-91.

Year	Area of Catch					OR Subtotal	Alaska 8	Wash. 1	Calif. 7	Total
	Col. H. 2	Tillamook 3	Newport 4	Coos Bay 5	Brookings 6					
EFFORT (Boat Days)										
1979	2,400	6,300	12,800	16,800	9,900	48,200	0	600	100	48,800
1980	1,700	6,000	10,700	12,400	8,300	39,100	<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	15,700	3,200	32,400	0	<100	<100	32,500
1987	200	7,300	8,700	21,000	2,000	39,300	0	100	<100	39,500
1988	300	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	4,400	15,300	400	25,900	0	100	<100	25,900
1991	700	3,400	5,000	5,500	<100	14,700	0	<100	<100	14,700
Chinook										
1979	5,900	5,000	38,600	68,700	123,800	242,000	0	2,600	900	245,500
1980	5,600	7,800	48,700	74,800	68,400	205,300	300	2,900	900	209,400
1981	8,400	12,200	27,100	24,400	86,000	158,200	0	1,000	1,300	160,400
1982	7,300	9,000	27,600	109,200	69,500	222,600	0	7,000	3,100	232,600
1983	5,400	4,900	24,000	19,800	22,000	76,100	0	1,600	1,900	79,600
1984	1,500	1,600	18,700	15,400	24,600	61,800	0	200	300	64,300
1985	5,500	3,300	41,700	155,600	6,100	212,200	0	3,600	800	216,600
1986	6,000	14,000	88,700	238,900	53,500	401,200	0	400	500	402,000
1987	4,600	41,400	87,700	350,400	39,900	524,000	0	3,700	1,800	529,400
1988	1,600	32,800	129,000	268,200	31,600	463,200	500	1,400	4,600	469,700
1989	2,900	30,400	70,600	232,400	17,000	353,200	0	200	100	353,400
1990	2,200	12,400	40,800	174,400	2,300	232,200	0	300	<100	232,500
1991	900	9,500	33,300	30,500	200	74,500	0	<100	100	74,600
Coho										
1979	48,700	77,900	211,800	263,100	101,200	702,700	0	11,300	600	714,600
1980	23,500	80,600	137,300	99,200	33,500	374,200	1,800	7,200	40	383,300
1981	41,900	160,400	192,400	161,400	53,500	609,600	0	10,400	300	620,300
1982	24,100	114,800	117,800	227,900	22,300	506,800	0	14,100	1,200	522,200
1983	4,900	63,300	118,000	109,700	22,500	318,400	0	100	1,300	319,800
1984	13,900	0	0	0	0	13,900	0	200	0	14,000
1985	18,300	1,600	12,600	29,400	200	62,100	0	21,900	<100	84,100
1986	45,800	95,600	193,800	85,300	19,100	439,600	0	0	0	439,600
1987	7,400	74,700	83,000	177,000	4,100	346,200	0	7,500	300	354,000
1988	0	172,200	252,500	196,400	1,200	622,300	<100	0	800	623,100
1989	21,100	136,300	137,800	159,500	1,000	455,700	0	0	<100	455,700
1990	10,800	53,200	14,000	43,000	0	121,100	0	900	<100	122,000
1991	26,700	89,000	89,700	101,100	0	306,400	0	300	100	306,800

Appendix Table 5. Oregon commercial troll effort and landings of chinook and coho in number of fish by month, 1979-91^a.

	April	May	June	July	Aug	Sept	Oct	Nov ^b	Total
EFFORT (Boat Days)									
1979	-	1,400	<100 ^c	21,500	21,700	1,300	200	800	48,000
1980	-	2,100	3,700 ^d	12,100	14,600	4,600	2,300	500	39,900
1981	-	3,300 ^e	-	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	25,900
1991	-	800	3,900	4,000	2,400	2,000	1,700	-	14,700
Chinook									
1979	-	11,000	200 ^c	73,600	119,500	13,200	25,200	2,600	245,500
1980	-	25,800	29,700 ^d	47,700	64,000	25,200	16,000	1,000	209,400
1981	-	28,600 ^e	-	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	-	37,200	50,000	138,500	115,100	33,900	26,500	800	402,000
1987	-	43,400	56,500	264,200	87,600	60,800	15,100	1,900	529,400
1988	-	62,600	100,100	100,500	133,800	26,600	44,300	1,700	469,700
1989	-	100,300	62,500	71,200	75,200	25,100	16,400	2,800	353,400
1990	-	15,500	33,000	106,000	64,700	9,000	4,200	<100	232,500
1991	-	3,600	12,700	11,300	16,300	18,300	12,400	-	74,600
Coho									
1979	-	-	400 ^c	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	-	-	12,000	381,800	45,800	-	-	-	439,600
1987	-	-	4,400	266,200	63,700	19,800	-	-	354,000
1988	-	-	1,600	387,800	233,800	-	-	-	623,100
1989	-	-	1,000	374,800	70,000	9,900	-	-	454,200
1990	-	-	-	82,300	33,100	6,200	300	-	122,000
1991	-	-	91,100	188,700	21,500	5,500	-	-	306,800

^a Catch statistics 1987-89 are reported by calendar months; monthly effort totals for 1987-89 and catch and effort for 1979-86 are the sum of statistical weeks with closest fit to calendar months. Includes catches made off California, Washington, and Alaska and landed in Oregon.

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

^c Caught off California and landed in Oregon.

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

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

Appendix Table 6. Oregon commercial troll salmon chinook catch, in number of fish, by statistical week^a and area of catch, 1991.

Stat. Week	Area of Catch						OR Subtotal	Alaska	Wash.	Calif.	Total
	Col. R. 2	Tillamook 3	Newport 4	Coos Bay 5	Brookings 6						
18	30	13	825	19	-	887	-	-	-	887	
19	127	7	485	8	-	627	-	4	-	631	
20	102	75	757	6	-	940	-	-	-	940	
21	11	71	456	57	-	595	-	-	-	595	
22	55	54	426	17	-	552	-	3	-	555	
23	7	77	1,916	7	-	2,007	-	-	3	2,010	
24	20	27	1,290	2	-	1,339	-	19	-	1,358	
25	-	59	952	148	-	1,159	-	-	-	1,159	
26	-	11	3,149	5,044	-	8,204	-	-	-	8,204	
27	-	151	495	987	-	1,633	-	-	-	1,633	
28	-	2,335	1,517	4,125	-	7,977	-	-	-	7,977	
29	-	523	581	174	-	1,278	-	-	-	1,278	
30	-	31	338	-	-	369	-	-	-	369	
31	-	63	507	3,686	-	4,256	-	-	-	4,256	
32	299	97	1,057	2,606	-	4,059	-	-	-	4,059	
33	118	362	1,836	597	-	2,913	-	-	-	2,913	
34	-	1,118	2,497	402	-	4,017	-	2	-	4,019	
35	21	359	421	267	1	1,069	-	-	21	1,090	
36	115	196	758	2,845	150	4,064	-	1	113	4,178	
37	-	540	2,225	3,908	21	6,694	-	7	7	6,708	
38	-	478	2,098	1,563	-	4,139	-	-	-	4,139	
39	-	898	1,833	540	-	3,271	-	-	-	3,271	
40	-	763	1,586	280	-	2,629	-	-	-	2,629	
41	-	600	970	1,986	-	3,556	-	-	-	3,556	
42	-	351	488	674	-	1,513	-	-	-	1,513	
43	-	78	2,446	415	-	2,939	-	-	-	2,939	
44	-	198	1,430	135	-	1,763	-	-	-	1,763	
Total	905	9,535	33,339	30,498	172	74,449	0	36	144	74,629	

^a Refer to Appendix Table 19 for 1991 statistical week calendar.

Appendix Table 7. Oregon commercial troll salmon coho catch, in number of fish, by statistical week^a and area of catch, 1991.

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	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-
26	-	-	58,127	32,967	-	91,094	-	-	-	91,094
27	-	12,770	10,935	8,387	-	32,092	-	-	-	32,092
28	-	66,652	20,600	59,763	-	147,015	-	-	-	147,015
29	-	9,544	-	-	-	9,544	-	-	-	9,544
30	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-
32	14,168	-	-	-	-	14,168	-	-	-	14,168
33	2,425	-	-	-	-	2,425	-	-	-	2,425
34	-	-	-	-	-	-	-	9	-	9
35	4,858	-	-	-	-	4,858	-	32	-	4,890
36	5,240	-	-	-	-	5,240	-	-	55	5,295
37	-	-	-	-	-	-	-	239	-	239
38	-	-	-	-	-	-	-	-	-	-
39	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-	-	-
Total	26,691	88,966	89,662	101,117	0	306,436	0	280	55	306,771

^a Refer to Appendix Table 19 for 1991 statistical week calendar.

Appendix Table 8. Estimates of nominal ex-vessel value^a for Oregon troll salmon landings and average price per pound, 1971-91.

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	5,976,000	1.77	1,978,000	1.04	7,954,000
1987	13,324,000	2.57	3,264,000	1.70	16,588,000
1988	13,923,000	3.17	7,614,000	2.28	21,537,000
1989	7,868,000	2.22	2,130,000	1.06	9,999,000
1990	5,453,000	2.50	1,008,000	1.59	6,461,000
1991	1,703,000	2.45	1,394,000	0.98	3,097,000

^a Dressed weight value

Appendix Table 9. Recreational ocean salmon sampling rates at Oregon ports, 1977-90.

Port	Percent of Catch Sampled ^a													
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Astoria	29	35	20	40	42	44	31	57	38	39	49	44	42	50
Garibaldi	33	43	39	36	55	61	35	47	37	40	32	37	46	34
Pacific City	41	-	-	82	87	82	71	72	75	75	79	70	72	69
Depoe Bay	49	47	45	50	68	60	65	60	55	57	50	56	45	48
Newport	15	31	39	40	31	34	48	36	35	33	39	35	35	28
Florence	-	-	-	30	37	44	27	29	41	38	46	51	46	33
Winchester Bay	22	35	33	26	32	33	27	34	33	31	36	44	42	26
Coos Bay	51	47	49	57	63	47	54	48	50	54	46	46	41	30
Gold Beach	23	42	50	48	62	43	47	43	63	64	-	-	-	-
Brookings	20	29	22	21	30	36	42	49	62	57	51	65	47	34
Coastwide percentage	27	37	34	39	44	42	42	47	44	44	43	43	42	35
Number of samplers	11	13	14	16	16	19	20	23	23	23	20	20	22	21
Sampler months	36	47	54	62	51	60	55	47	62	79	79	70	80	62

^a Percentage of total catch observed by samplers = number of salmon observed/estimated catch of salmon.

Appendix Table 10. Summary of Oregon's recreational ocean salmon regulations, 1946-90.

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 ^a	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 ^b	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 ^b	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 ^c	South of Cape Blanco--as above.
	6/12 - 8/1 ^c	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	South of Cape Blanco; first 2 chinook taken/day.
	11/1-30	State waters off Elk River; first 2 chinook taken/day.
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.

Appendix Table 10 continued.

Year	Season	Regulations
(1984 cont.)	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 ^d	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.
	9/15 - 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.
	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.

Appendix Table 10 continued.

Year	Season	Regulations
(1987 cont.)	10/1 - 31	Bird Island to OR/CA Border east of 124° 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 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; 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; 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.
	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.

Appendix Table 10 continued.

Year	Season	Regulations
(1990 cont.)	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.

- a Federal waters (3-200 miles) closed to coho fishing effective September 1.
- b Federal waters closed August 26-September 20 for all species of salmon.
- c Federal waters closed to coho fishing on July 21, north of Cape Falcon and July 25 south of Cape Falcon.
- d Pacific Ocean between 45 degrees 38 minutes N. Latitude and 45 degrees 29 minutes 45 seconds N. latitude and seaward 3 miles.

Appendix Table 11. Summary of actual Oregon ocean recreational salmon fishing regulations for 1991.

Area and Season	Actual Quota or Guideline ^(*)		Daily Limit and Special Restrictions ^a
	Chinook	Coho	
Leadbetter Point, WA to Cape Falcon 6/24-8/12 (50 days) Sunday through Thursday only 9/15-18 and 9/26 (5 days)	40,000 as above	116,500 as above	Two salmon per day. Conservation Zone 1 (Columbia River mouth) is closed.
Cape Falcon to Humbug Mountain 5/1-26 (26 days) Within the 27 fathom curve ^b 5/27-7/28 (63 days)	none as above	259,000 as above	Two salmon per day, not more than 6 salmon in 7 consecutive days. as above
Humbug Mountain to Horse Mountain, CA 5/25-7/28 (47 days), Thursday through Monday only. 8/31-9/2 (3 days), Thursday through Monday only. 9/6-29 (12 days), Friday through Sunday only.	20,000*	as above except coho quota not binding.	Two salmon per day except only one may be a chinook; not more than 6 fish in 7 consecutive days. Conservation Zone 2 (Klamath River mouth) is closed 8/1-31.
Twin Rocks to Pyramid Rock, state waters only. 9/16-10/31 (47 days)	none		Two salmon except coho per day; not more than 6 fish in 7 consecutive days.

^a 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, OR; (2) 20 inches for chinook and 16 inches for coho from Cape Falcon to Humbug Mountain, OR; and (3) 20 inches for both chinook and coho south of Humbug Mountain. There were no size limits on pink salmon.

^b The 27 fathom curve is defined as follows: Within an area bounded by a line from 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°12'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°17'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 12. Oregon ocean recreational salmon angler effort, by port and statistical week^a for 1991.

Stat. Week	Astoria	Garibaldi	Pacific City	Depoe Bay	Newport	Florence	Winchester Bay	Coos Bay	Brookings	Total
18	-	-	-	4	82	-	17	62	-	165
19	-	6	-	6	58	-	15	8	-	93
20	-	0	14	4	59	4	2	12	-	95
21	-	159	12	33	132	37	171	115	556	1,215
22	-	215	20	162	308	13	388	170	554	1,830
23	-	759	81	251	534	119	531	468	874	3,617
24	-	384	14	436	866	81	888	994	865	4,528
25	-	795	239	795	2,305	687	3,262	1,865	3,895	13,843
26	1,496	1,362	356	1,630	5,020	1,717	3,956	2,712	5,947	24,196
27	1,530	1,231	92	1,828	3,528	259	689	201	3,619	12,977
28	1,982	2,686	651	2,886	6,167	2,731	5,546	2,563	5,897	31,109
29	2,288	4,097	757	3,135	7,758	2,549	5,545	3,059	4,817	34,005
30	3,159	6,110	984	4,440	10,812	4,319	7,943	3,984	3,515	45,266
31	4,225	0	0	0	10	0	0	0	4	4,239
32	4,049	0	-	0	0	0	-	0	0	4,049
33	1,148	0	-	0	6	0	-	0	0	1,154
34	-	0	-	0	0	-	-	0	0	0
35	-	0	-	0	0	-	-	0	1,907	1,907
36	-	0	-	0	0	-	-	0	1,616	1,616
37	652	-	-	-	-	-	-	-	895	1,547
38	931	-	-	-	-	-	-	-	500	1,431
39	194	-	-	-	-	-	-	-	986	1,180
Total	21,654	17,804	3,220	15,610	37,645	12,516	28,953	16,213	36,447	190,062

^a Refer to Appendix Table 19 for 1991 statistical week calendar.

Appendix Table 13. Oregon recreational effort in salmon angler trips by area and month for 1979-91.^a

Area	May	June	July	August	Sept.	Oct.	Nov.	Season ^b
<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
<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 ^c	-	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	2,400	-	-	33,200
1989	300	3,000	15,400	9,500	3,100	-	-	31,300
1990	100	1,200	12,000	16,300	6,000	1,500	-	35,000
1991	400	3,990	16,600	-	-	-	-	21,000
<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
<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

Appendix Table 13 continued.

Area	May	June	July	August	Sept.	Oct.	Nov.	Season ^b
<u>Coos Bay cont.</u>								
1990	600	8,800	24,300	24,900	6,400	-	-	65,000
1991	1,000	17,300	39,400	-	-	-	-	57,700
<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
<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	31,900	98,700	94,300	18,800	-	-	246,500
1991	3,400	46,200	123,400	11,300	5,800	-	-	190,100

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

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

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

Appendix Table 14. Summary of Oregon recreational ocean salmon effort and catch by area, 1976-91.

Year	Area ^a					Total
	Columbia R.	Tillamook	Newport	Coos Bay	Brookings	
EFFORT (Salmon Angler Trips)^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	35,000	71,400	65,000	51,100	248,000
1991 ^c	21,700	21,000	53,300	57,700	36,400	190,100
Chinook						
1976	44,600	2,300	4,600	14,600	13,200	79,300
1977	22,600	1,500	2,600	22,700	11,800	61,400
1978	7,900	800	2,100	4,800	7,300	22,800
1979	7,500	1,000	1,400	4,500	6,400	20,900
1980	5,500	1,600	1,800	5,300	4,800	19,000
1981	11,500	1,900	2,400	4,500	8,900	29,200
1982	8,200	1,400	3,500	10,100	15,500	38,700
1983	3,400	700	1,600	6,600	12,400	24,700
1984	<100	1,100	2,000	4,900	9,000	17,000
1985	3,600	2,600	4,100	9,500	36,100	55,900
1986	1,900	500	2,200	5,900	11,800	22,400
1987	4,000	3,500	6,400	18,900	25,800	58,600
1988	500	2,700	5,300	8,100	22,000	38,600
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 ^c	1,000	700	900	5,100	6,800	14,400
Coho						
1976	116,700	50,000	118,100	164,800	51,800	501,300
1977	55,300	15,600	34,000	76,300	14,000	195,300
1978	60,200	8,500	61,200	82,800	47,100	259,800
1979	38,000	9,400	36,300	79,000	18,200	180,800
1980	55,600	28,900	72,400	135,900	33,000	325,800
1981	54,300	17,700	61,900	57,600	8,300	199,800
1982	35,500	23,100	44,000	55,600	16,900	175,100
1983	37,200	8,800	21,800	62,700	16,300	146,900
1984	10,900	20,300	41,200	39,400	11,500	123,300
1985	31,000	31,000	61,900	51,200	7,400	182,500
1986	36,900	23,500	78,500	61,100	11,700	211,700
1987	25,300	16,300	64,400	54,000	17,500	177,400
1988	9,800	29,600	100,700	71,000	15,200	226,200
1989	34,200	30,100	101,800	86,200	33,000	272,200
1990	36,100	22,800	64,000	62,100	15,300	200,300
1991 ^c	39,400	25,600	81,100	90,800	22,200	259,100

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

^b 1976-1978 effort includes a small number of bottomfishing trips.

^c Preliminary.

Appendix Table 15. Oregon ocean recreational chinook catch (number of fish) by catch area and month, 1979-91.

Area ^a	Chinook							Season ^b
	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	1,800	-	-	-	4,000
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
<u>Tillamook</u>								
1979	<50	<50	600	300	<50	-	-	1,000 ^c
1980	<50	200	300	800	200	-	-	1,600 ^c
1981	<50	<50	600	900	400	-	-	1,900 ^c
1982	-	100	1,300	-	-	-	-	1,400
1983	-	<100	400	200	100	-	-	700
1984	-	-	600	500	<100	-	-	1,100
1985	-	-	1,100	1,400	<100	<100	-	2,600
1986	0	<50	200	200	-	-	-	500
1987	-	<100	800	2,000	600	-	-	3,500
1988	<50	100	300	1,300	1,000	-	-	2,700
1989	<50	100	300	400	<50	-	-	900
1990	0	<50	500	400	300	100	-	1,300
1991	<50	300	400	-	-	-	-	700
<u>Newport</u>								
1979	200	300	500	400	<50	-	-	1,400 ^d
1980	100	600	600	400	200	-	-	1,800 ^d
1981	<50	100	1,100	1,000	200	-	-	2,400 ^d
1982	-	600	2,900	-	-	-	-	3,500
1983	-	400	800	300	200	-	-	1,600
1984	-	-	1,100	900	100	-	-	2,000
1985	-	-	1,400	2,600	100	-	-	4,100
1986	100	100	1,800	100	-	-	-	2,200
1987	-	200	2,300	2,100	1,700	-	-	6,400
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	-	-	-	-	1,700
<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
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	-	-	18,900

Appendix Table 15 continued.

Area ^a	Chinook							Season ^b
	May	June	July	August	Sept.	Oct.	Nov.	
Coos Bay cont.								
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
Brookings								
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	-	25,800
1988	100	12,400	6,500	2,800	200	-	-	22,000
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
All Areas								
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	-	58,600
1988	400	15,000	12,400	8,900	2,000	-	-	38,600
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

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

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

c Includes Nehalem Bay.

d Includes Salmon and Siletz Rivers and Alsea Bay.

Appendix Table 16. Oregon ocean recreational chinook catch, by port and statistical week^a for 1991.

Stat. Week	Astoria	Garibaldi	Pacific City	Depoe Bay	Newport	Florence	Winchester Bay	Coos Bay	Brookings	Total
18	-	-	-	3	1	-	2	5	-	11
19	-	0	-	0	13	-	2	0	-	15
20	-	0	0	0	8	0	0	0	-	8
21	-	23	1	4	21	0	6	6	16	77
22	-	1	0	10	21	0	20	8	32	92
23	-	117	4	10	79	34	21	73	17	355
24	-	41	0	12	70	4	96	158	16	397
25	-	44	6	23	74	78	418	243	2,275	3,161
26	81	62	11	24	113	206	522	272	1,772	3,063
27	86	12	2	34	24	22	42	41	346	609
28	93	62	30	30	44	176	284	341	1,444	2,504
29	58	81	12	43	55	234	343	279	451	1,556
30	98	159	18	36	128	278	678	164	80	1,639
31	159	0	0	0	0	0	0	0	0	159
32	295	0	-	0	0	0	-	0	0	295
33	96	0	-	0	0	0	-	0	0	96
34	-	0	-	0	0	-	-	0	0	0
35	-	0	-	0	0	-	-	0	64	64
36	-	0	-	0	0	-	-	0	45	45
37	14	-	-	-	-	-	-	-	38	52
38	0	-	-	-	-	-	-	-	70	70
39	3	-	-	-	-	-	-	-	145	148
Total	983	602	84	229	651	1,032	2,434	1,590	6,811	14,416

^a Refer to Appendix Table 19 for 1991 statistical week calendar.

Appendix Table 17. Oregon ocean recreational coho catch (number of fish) by catch area and month, 1979-91.

Area ^a	May	June	July	Coho August	Sept.	Oct.	Season ^b
<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	12,200	12,200	-	-	25,300
1988	-	-	9,800	-	-	-	9,800
1989	-	1,600	17,500	15,100	-	-	34,200
1990	-	3,500	14,700	16,600	1,300	-	36,100
1991	-	2,400	16,400	17,200	3,400	-	39,400
<u>Tillamook</u>							
1979	100	1,100	2,600	5,600	<50	-	9,400 ^c
1980	100	7,100	10,800	10,300	600	-	28,900 ^c
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	-	16,300
1988	100	1,800	8,000	14,100	5,700	-	29,641
1989	<50	3,400	19,600	6,900	100	-	30,100
1990	0	900	8,700	12,400	-	-	22,870
1991	<50	2,500	23,100	-	-	-	25,650
<u>Newport</u>							
1979	200	3,700	18,700	13,600	<50	-	36,300 ^d
1980	200	18,500	41,500	10,800	1,400	-	72,400 ^d
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	45,700	1,400	-	61,900
1986	1,500	7,300	56,100	13,600	-	-	78,500
1987	-	1,300	42,500	14,300	6,300	-	64,400
1988	200	6,400	45,800	42,900	5,600	-	100,700
1989	800	24,000	47,100	29,300	600	-	101,800
1990	200	5,800	37,800	18,900	1,200	-	64,000
1991	<100	15,200	65,800	-	-	-	55,500
<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
1984	-	-	19,600	19,700	100	-	39,400
1985	-	-	30,900	19,700	500	-	51,200
1986	1,000	7,700	46,300	6,000	-	-	61,100
1987	-	1,000	44,500	6,400	2,100	-	54,000

Appendix Table 17 continued.

Area ^a	May	June	July	Coho August	Sept.	Oct.	Season ^b
<u>Coos Bay cont.</u>							
1988	100	10,700	42,100	17,200	1,000	-	71,000
1989	700	22,300	38,500	11,600	<50	-	73,100
1990	<50	12,200	23,600	23,200	2,100	-	61,800
1991	800	23,400	66,500	-	-	-	24,300
<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	12,400	3,100	1,400	<50	17,500
1988	<50	1,000	12,100	1,900	100	-	15,200
1989	200	4,200	20,300	7,500	800	-	33,000
1990	100	8,400	5,000	1,800	100	-	15,300
1991	0	10,200	10,600	500	900	-	22,200
<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	108,300	2,300	-	182,500
1986	4,000	22,200	144,700	40,800	-	-	211,700
1987	<50	4,300	121,700	41,000	10,500	<50	177,400
1988	300	19,900	117,900	76,000	12,300	-	226,400
1989	1,600	55,700	143,000	70,400	1,500	-	272,200
1990	300	30,900	89,700	72,900	6,500	-	200,300
1991	900	53,800	182,400	17,700	4,300	-	259,100

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

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

^c Includes Nehalem Bay.

^d Includes Salmon and Siletz Rivers and Alsea Bay.

Appendix Table 18. Oregon ocean recreational coho catch, by port and statistical week^a for 1991.

Stat. Week	Astoria	Garibaldi	Pacific City	Depoe Bay	Newport	Florence	Winchester Bay	Coos Bay	Brookings	Total
18	-	-	-	0	0	-	0	0	-	0
19	-	0	-	0	0	-	0	0	-	0
20	-	0	0	0	0	0	0	0	-	0
21	-	5	1	0	0	0	0	4	0	10
22	-	7	0	50	9	1	604	185	0	856
23	-	214	36	169	95	32	720	547	0	1,813
24	-	86	16	318	697	10	1,367	1,209	2	3,705
25	-	391	247	855	4,014	962	5,258	2,795	2,815	17,337
26	2,409	1,041	490	2,544	6,524	2,379	4,699	3,465	7,419	30,970
27	2,366	854	113	2,820	3,545	102	820	118	1,568	12,306
28	3,732	3,396	913	5,084	10,257	4,820	9,869	3,875	2,761	44,707
29	4,325	6,200	1,431	5,788	12,991	3,988	9,586	5,301	4,935	54,545
30	5,945	8,568	1,641	7,959	17,344	7,516	13,755	6,793	1,318	70,839
31	8,090	0	0	0	0	0	0	0	0	8,090
32	7,181	0	-	0	0	0	-	0	0	7,181
33	1,951	0	-	0	4	0	-	0	0	1,955
34	-	0	-	0	0	-	-	0	0	0
35	-	0	-	0	0	-	-	0	513	513
36	-	0	-	0	0	-	-	0	802	802
37	1,243	-	-	-	-	-	-	-	66	1,309
38	1,834	-	-	-	-	-	-	-	15	1,849
39	320	-	-	-	-	-	-	-	12	332
Total	39,396	20,762	4,888	25,587	55,480	19,810	46,678	24,292	22,226	259,119

^a Refer to Appendix Table 19 for 1991 statistical week calendar.

Appendix Table 19. Statistical week calendar for 1991.

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

Appendix Table 20. Summary of 1991 Oregon lower estuary recreational salmon fishery landings and .95 confidence intervals, and effort. Data is for the listed ports only, and for the time period of July 29 through September 2, 1991. ("ALL DATA" is the estimation of effort and catch without breaking the sample data out by week; NA = not available, and ND = no data)

	7/28-8/4	8/5-11	8/12-18	8/19-25	8/26-9/1	9/2	SUM	All Data
Tillamook Bay								
Private Boats								
Boat Trips	236	335	783	1,291	1,155	306	4,106	4,061
Angler Trips	606	909	1,997	3,292	3,014	795	10,613	10,517
Coho Adults	349 ± 84	408 ± 109	1,539 ± 207	2,071 ± 271	1,633 ± 306	889 ± 187	6,889	6,866 ± 534
Coho Jacks	5 ± 7	3 ± 6	26 ± 20	3 ± 7	0	0	37	43 ± 26
Chinook Adults	39 ± 27	31 ± 26	42 ± 22	88 ± 34	59 ± 42	4 ± 8	263	276 ± 72
Chinook Jacks	0	0	10 ± 11	0	0	0	10	11 ± 12
Charter Boats								
Boat Trips	1	3	13	24	28	6	75	75
Angler Trips	6	21	88	199	200	44	558	563
Coho Adults	9 $\pm NA$	12 $\pm NA$	91 ± 54	233 ± 84	300 ± 115	24 ± 31	669	685 ± 162
Coho Jacks	0	0	4 ± 7	0	0	0	4	3 ± 6
Chinook Adults	3 $\pm NA$	0	2 ± 4	6 ± 8	3 ± 5	0	14	19 ± 18
Chinook Jacks	0	0	0	0	0	0	0	0
Yaquina Bay								
Private Boats								
Boat Trips	147	237	642	783	518	70	2,397	2,394
Angler Trips	294	560	1,645	1,973	1,310	176	5,958	5,960
Coho Adults	6 ± 11	433 ± 104	1,146 ± 200	969 ± 181	305 ± 97	49 ± 25	2,908	3,064 ± 335
Coho Jacks	0	15 ± 15	155 ± 60	17 ± 17	39 ± 34	11 ± 11	237	247 ± 77
Chinook Adults	0	13 ± 11	12 ± 17	4 ± 8	4 ± 9	3 ± 5	36	43 ± 28
Chinook Jacks	0	0	0	0	4 ± 8	0	4	4 ± 8
Charter Boats								
Boat Trips	6	22	87	68	40	2	225	225
Angler Trips	32	154	560	537	216	12	1,511	1,494
Coho Adults	2 ± 3	207 ± 201	513 ± 175	471 ± 264	51 ± 50	4 $\pm NA$	1,248	1,167 ± 377
Coho Jacks	0	9 ± 12	81 ± 53	7 ± 13	0	0	97	101 ± 68
Chinook Adults	0	0	0	0	0	0	0	0
Chinook Jacks	0	0	0	0	0	0	0	0

Appendix Table 20 continued.

	7/28-8/4	8/5-11	8/12-18	8/19-25	8/26-9/1	9/2	SUM	All Data
Siuslaw Bay								
Private Boats								
Boat Trips	170	228	396	569	200	22	1,585	1,532
Angler Trips	340	562	1,092	1,417	521	61	3,993	3,937
Coho Adults	199 ±134	388 ±98	1,180 ±188	687 ±165	120 ±63	7 ±8	2,581	2,577 ±321
Coho Jacks	0	4 ±8	21 ±18	8 ±12	6 ±11	0	39	40 ±26
Chinook Adults	28 ±34	0	8 ±11	8 ±12	6 ±11	2 ±3	52	36 ±24
Chinook Jacks	0	0	0	0	0	0	0	0
Charter Boats								
Boat Trips	5	1	11	7	6	0	30	30
Angler Trips	25	6	51	33	30	0	145	148
Coho Adults	9 ±6	1 ±NA	46 ±24	9 ±2	0	ND	65	54 ±30
Coho Jacks	0	0	0	0	0	ND	0	0
Chinook Adults	2 ±4	0	0	0	0	ND	2	2 ±4
Chinook Jacks	0	0	0	0	0	ND	0	0
Winchester Bay								
Private Boats								
Boat Trips	603	650	638	1,005	253	94	3,243	3,180
Angler Trips	1,545	1,665	1,539	2,502	425	216	7,892	7,822
Coho Adults	1,786 ±298	1,682 ±381	2,115 ±375	2,010 ±461	93 ±67	111 ±59	7,797	8,180 ±723
Coho Jacks	44 ±45	116 ±58	244 ±94	80 ±61	13 ±24	11 ±14	508	590 ±160
Chinook Adults	210 ±91	62 ±54	69 ±35	20 ±23	13 ±25	0	374	376 ±115
Chinook Jacks	25 ±24	0	16 ±16	13 ±18	0	6 ±10	60	66 ±38
Charter Boats								
Boat Trips	60	66	93	80	15	4	318	318
Angler Trips	388	439	647	560	90	25	2,149	2,146
Coho Adults	734 ±186	743 ±169	1,090 ±191	921 ±121	83 ±52	30 ±4	3,601	3,619 ±298
Coho Jacks	11 ±10	31 ±33	105 ±62	61 ±43	0	3 ±2	211	203 ±80
Chinook Adults	17 ±15	7 ±9	16 ±16	18 ±16	0	3 ±4	61	67 ±34
Chinook Jacks	0	0	18 ±16	8 ±10	0	0	26	23 ±18

Appendix Table 20 continued.

	7/28-8/4	8/5-11	8/12-18	8/19-25	8/26-9/1	9/2	SUM	All Data
Coos Bay								
Private Boats								
Boat Trips	281	563	669	728	587	128	2,956	2,968
Angler Trips	683	1,266	1,499	1,777	1,427	303	6,955	6,974
Coho Adults	464 ± 123	760 ± 141	1,619 ± 317	1,793 ± 282	1,419 ± 243	200 ± 71	6,255	5,948 ± 490
Coho Jacks	25 ± 21	60 ± 29	95 ± 52	113 ± 63	110 ± 53	18 ± 17	421	412 ± 100
Chinook Adults	83 ± 47	35 ± 22	25 ± 30	27 ± 23	0	3 ± 5	173	180 ± 69
Chinook Jacks	0	3 ± 6	0	16 ± 18	0	0	19	18 ± 17
Charter Boats								
Boat Trips	1	8	11	17	23	2	62	62
Angler Trips	ND	28	ND	119	152	12	311	365
Coho Adults	ND	14 ± 33	ND	221 $\pm NA$	260 ± 85	8 $\pm NA$	503	490 ± 250
Coho Jacks	ND	0	ND	0	8 ± 10	0	8	11 ± 15
Chinook Adults	ND	0	ND	0	5 ± 9	0	5	7 ± 13
Chinook Jacks	ND	0	ND	0	0	0	0	0
Total								
Private Boats								
Boat Trips	1,437	2,013	3,128	4,376	2,713	620	14,287	14,135
Angler Trips	3,468	4,962	7,772	10,961	6,697	1,551	35,411	35,210
Coho Adults	2,804	3,671	7,599	7,530	3,570	1,256	26,430	26,635
Coho Jacks	74	198	541	221	168	40	1,242	1,332
Chinook Adults	360	141	156	147	82	12	898	911
Chinook Jacks	25	3	26	29	4	6	93	99
Charter Boats								
Boat Trips	73	100	215	196	112	14	710	710
Angler Trips	451	648	1,346	1,448	688	93	4,674	4,716
Coho Adults	754	977	1,740	1,855	694	66	6,086	6,015
Coho Jacks	11	40	190	68	8	3	320	318
Chinook Adults	22	7	18	24	8	3	82	95
Chinook Jacks	0	0	18	8	0	0	26	23
Combined								
Angler Trips	3,919	5,610	9,118	12,409	7,385	1,644	40,085	NA
Coho Adults	3,558	4,648	9,339	9,385	4,264	1,322	32,516	NA
Coho Jacks	85	238	731	289	176	43	1,562	NA
Chinook Adults	382	148	174	171	90	15	980	NA
Chinook Jacks	25	3	44	37	4	6	119	NA

Appendix Table 21. Effort levels, numbers of vessels sampled, and sampling rates by boat type, port, and statistical week for the 1991 lower estuary fishery.

	7/28-8/4	8/5-11	8/12-18	8/19-25	8/26-9/1	9/2	Total
Tillamook Bay							
Pleasure Craft							
Percent Sampled	38%	32%	31%	30%	20%	26%	28%
AUC Boat Hours	822	1,206	2,762	5,329	3,898	1,094	15,092
Avg. Hours per Boat	3.48	3.60	3.53	4.14	3.38	3.58	3.70
No. of Boats Sampled	90	107	243	382	233	78	1,133
Charter Boats							
Percent Sampled	100%	33%	31%	54%	46%	50%	47%
Total Boat Trips	1	3	13	24	28	6	75
No. of Boats Sampled	1	1	4	13	13	3	35
Yaquina Bay							
Pleasure Craft							
Percent Sampled	17%	40%	26%	23%	23%	37%	26%
AUC Boat Hours	329	783	2,136	3,049	1,708	219	8,223
Avg. Hours per Boat	2.24	3.30	3.32	3.89	3.30	3.11	3.43
No. of Boats Sampled	25	95	166	181	119	26	612
Charter Boats							
Percent Sampled	50%	18%	18%	15%	12%	50%	17%
Total Boat Trips	6	22	87	68	40	2	225
No. of Boats Sampled	3	4	16	10	5	1	39
Siuslaw Bay							
Pleasure Craft							
Percent Sampled	7%	24%	24%	24%	17%	55%	22%
AUC Boat Hours	454	860	1,610	2,248	604	91	5,867
Avg. Hours per Boat	2.67	3.79	4.06	3.95	3.01	4.21	3.82
No. of Boats Sampled	12	55	94	135	35	12	343
Charter Boats							
Percent Sampled	40%	100%	27%	57%	50%	--	43%
Total Boat Trips	5	1	11	7	6	0	30
No. of Boats Sampled	2	1	3	4	3	0	13
Winchester Bay							
Pleasure Craft							
Percent Sampled	16%	14%	24%	15%	8%	18%	17%
AUC Boat Hours	1,579	1,676	2,090	3,427	594	253	9,618
Avg. Hours per Boat	2.61	2.57	3.28	2.24	2.35	2.69	3.02
No. of Boats Sampled	95	95	157	151	19	17	534
Charter Boats							
Percent Sampled	32%	26%	24%	26%	13%	75%	26%
Total Boat Trips	60	66	93	80	15	4	318
No. of Boats Sampled	19	17	22	21	2	3	84
Coos Bay							
Pleasure Craft							
Percent Sampled	24%	32%	16%	18%	24%	39%	23%
AUC Boat Hours	891	2,021	2,396	2,638	2,233	410	10,590
Avg. Hours per Boat	3.17	3.59	3.57	3.63	3.80	3.20	3.57
No. of Boats Sampled	68	179	106	135	139	50	677
Charter Boats							
Percent Sampled	0%	25%	0%	6%	22%	50%	14%
Total Boat Trips	1	8	11	17	23	2	62
No. of Boats Sampled	0	2	0	1	5	1	9



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