
CHAPTER I

THE 1991 OCEAN SALMON FISHERIES

COASTWIDE SUMMARY

A summary of the actual 1991 non-Indian troll, treaty Indian troll and recreational salmon fishing regulations for both the EEZ and state territorial waters (zero to three miles from shore) is provided in Tables I-1, I-2 and I-3, respectively. Historical summaries of the regulations for each of the three Pacific coast states and for treaty Indian troll fisheries are provided in Appendix C, Tables C-1 through C-7. Table C-9 provides a summary of inseason regulatory actions and events during the 1991 season.

Coastwide ocean salmon landings of chinook, coho and pink salmon, since 1971, for recreational and troll fisheries in each state, as well as southeast Alaskan and Canadian troll fishery landings, are summarized in Tables I-4 through I-6. Further harvest details for each of the three Pacific coast states are displayed in Table I-7 for commercial fisheries and Table I-8 for recreational fisheries. Historical harvest data, by state, are provided in Appendix A, Tables A-1 through A-19. Historical harvest data, by management area, are provided in Appendix A, Tables A-20 through A-29.

Table I-9 lists the 1991 coho and chinook quotas for each fishery and compares them with actual harvests. An historic record of the annual preseason catch quotas for the area north of Cape Falcon, as well as the stocks that were critical for ocean fishery management actions, are provided in Appendix C, Table C-8.

The sections which follow contain detailed assessments of management objectives, regulations, fishing effort and harvest, and fishery goal assessment by management area. The final section of this chapter outlines management under the Pacific Salmon Treaty with Canada, including the 1991 catch ceilings for Alaskan and Canadian fisheries and a comparison with actual harvests.

TROLL FISHERIES BY MANAGEMENT AREA

U.S./Mexico Border to Horse Mountain

Management Objectives

Chinook

Ocean troll management objectives for chinook salmon fisheries south of Horse Mountain (near Shelter Cove) were based on (1) the escapement goal range for Sacramento River fall-run chinook of 122,000 to 180,000 hatchery and natural adults combined; (2) the limitation of the harvest rate on Klamath River fall-run chinook to 16 percent; and (3) the Sacramento River winter-run chinook impacts being no greater than those occurring in 1990. The preseason estimated troll harvest south of Horse Mountain was 240,300 fish. The anticipated spawning escapement in the Sacramento River was 132,400 fall-run chinook adults.

TABLE I-1. Summary of actual ocean non-Indian troll salmon fishing regulations for 1991. (Page 1 of 2)

Area and Season	Salmon Species	Actual Quota or Guideline(*)		Special Restrictions ^{a/}
		Chinook	Coho	
U.S.-Canada Border to Cape Falcon, Oregon May 1-June 15 (46 days)	All except coho	31,200*	-	Conservation Zone 1 (Columbia River mouth) is closed.
U.S.-Canada Border to Carroll Island, Washington Aug. 16-19; Aug. 23-26; Aug. 30-Sept. 2; Sept. 6-9; Sept. 13-15 (19 days)	All	3,500 ^{b/}	35,000*	Possession and landing limit per vessel of 80 coho per open period. Vessels must land and deliver in the area, or adjacent closed area, within 24 hours of each closure. Harvest guideline of 160,000 pink salmon. Open only outside 100 fathoms, except Sept. 13-15 opening. Flashers with barbless, bare, blued or pink hooks or pink hoochies of 3 inches or less only.
Copalis Head, Washington to Cape Falcon, Oregon Sept. 1-2 (2 days)	All	3,300	32,500 (22,900) ^{c/}	Possession and landing limit per vessel of 75 coho for the 2-day opening. Vessels must land and deliver in the area, or adjacent closed area, within 24 hours of the closure. Conservation Zone 1 (Columbia River mouth) is closed.
Leadbetter Pt., Washington to Cape Falcon, Oregon Aug. 10-11 (2 days)	All	2,000 ^{b/}	19,500*	Possession and landing limit per vessel of 100 coho for the 2-day opening. Vessels may land and deliver south of Cape Falcon, or in the closed adjacent area to the north, but must land within 24 hours of the closure. Conservation Zone 1 (Columbia River mouth) is closed.
Cape Falcon to Cascade Head, Oregon May 1-June 30 (61 days)	All except coho	None	-	No more than 4 spreads per line in June.
July 1-14 (14 days)	All	None	d/	
July 15-23; Aug. 1-Oct. 31 (101 days)	All except coho	None	-	
Cascade Head to Florence South Jetty, Oregon May 1-June 23 (54 days)	All except coho	None	-	No more than 4 spreads per line in June.
June 24-July 11 (18 days)	All	None	d/	
July 12-23; Aug. 1-Oct. 31 (104 days)	All except coho	None	-	
Florence South Jetty to Cape Arago, Oregon June 24-July 11 (18 days)	All	None	d/	
July 12-14; Aug. 1-9; (12 days)	All except coho	None	-	
Florence South Jetty to Humbug Mt., Oregon Sept. 1-Oct. 31 (61 days)	All except coho	15,000*	-	
Sisters Rocks to Mack Arch, Oregon Sept. 1-15 (15 days)	All except coho	7,500	-	Closed beyond 6 nautical miles from shore.

TABLE I-1. Summary of actual ocean non-Indian troll salmon fishing regulations for 1991. (Page 2 of 2)

Area and Season	Salmon Species	Actual Quota or Guideline(*)		Special Restrictions ^{d/}
		Chinook	Coho	
Trinidad Head to Punta Gorda, California Sept. 1-Oct. 31 (61 days)	All	15,000	-	Closed beyond 6 nautical miles from shore; no more than 6 lines per boat.
Horse Mt. to Pt. Arena, California Aug. 1-2; Aug. 12-27 (18 days)	All	None	d/	No more than 6 lines per boat.
Aug. 3-11; Aug. 28-Sept. 30 (43 days)	All except coho	None	-	
Pt. Arena to Pt. San Pedro, California May 1-31; July 12-15; Aug. 3-11; Aug. 28-Sept. 30 (78 days)	All except coho	None	-	No more than 6 lines per boat.
June 8-12; June 26-July 2; July 11; Aug. 1-2; Aug. 12-27 (32 days)	All	None	d/	
Pt. San Pedro, California to U.S.-Mexico Border May 1-31; July 12-31; Aug. 3-11; Aug. 28-Sept. 30 (94 days)	All except coho	None	-	No more than 6 lines per boat.
June 1-July 11; Aug. 1-2; Aug. 12-27 (59 days)	All	None	d/	

- a/ Single-point, single-shank barbless hooks required coastwide. Minimum size limits north of Cape Falcon were 28 inches for chinook and 16 inches for coho. South of Cape Falcon minimum size limits were 26 inches for chinook, 16 inches for coho caught north of Humbug Mt. and 22 inches for coho caught south of Humbug Mt.
- b/ In addition, about 3,900 chinook unharvested in the May/June fishery were made available to the Aug. fisheries.
- c/ Quota reduced inseason due to harvest in excess of coho guideline in the Leadbetter Pt. to Cape Falcon Aug. 10-11 fishery.
- d/ For the entire area south of Cape Falcon, the preseason catch quota was 361,000 coho. A 75 percent subarea impact ceiling (catch plus hook-and-release mortality) within the overall impact allowed a catch of no more than 271,000 coho south of Cascade Head. A separate subarea catch quota of 5,000 coho was reserved within the 271,000 catch ceiling to allow the troll fishery south of Horse Mt. to continue after the ceiling was met.

TABLE I-2. Summary of actual treaty Indian ocean and Area 4B troll salmon seasons for 1991.
(Page 1 of 1)

Tribe and Area	Salmon Species	Seasons ^{a/}		Minimum Size Limit (Inches)	
		Dates	Days	Chinook	Coho
Quinault, Hoh, and Quileute Tribes					
Areas 2 and 3					
	Chinook	May 1-June 30	61	24	-
	All	July 7-19	13	24	16
	All	Aug. 3-8	6	24	16
	All	Aug. 10-13	4	24	16
	All	Aug. 19	1 ^{b/}	24	16
Makah Tribe					
Areas 3N, 4 and 4A					
	Chinook	May 1-June 30	61	24	-
	All	July 7-19	13	24	16
	All	Aug. 3-8	6	24	16
	All	Aug. 10-13	4	24	16
	All	Aug. 19	1 ^{b/}	24	16
Area 4B					
	All	Jan. 1-Apr. 30	120	24	22
	Chinook	May 1-June 30	61	24	-
	All	July 7-19	13	24	16
	All	Aug. 3-8	6	24	16
	All	Aug. 10-13	4	24	16
	All	Aug. 19	1 ^{b/}	24	16
	All	Oct. 7-Dec. 31	86	24	22
Klallam Tribes (Lower Elwha, Port Gamble and Jamestown)					
Area 4B					
	All	Jan. 1- Apr. 30	120	24	16
	Chinook	May 1-June 30	61	24	16
	All	July 1-Aug. 13	44	24	16
	All	Nov. 1-Dec. 31	61	24	16

a/ Overall quotas for these fisheries were 33,000 chinook and 80,000 coho for the May 1-Sept. 30 ocean management period.

b/ The Aug. 19 fishery was open 6 hours for the Quinault and Hoh tribes and 12 hours for the Quileute and Makah tribes.

TABLE I-3. Summary of actual ocean recreational salmon fishing regulations for 1991.^{a/} (Page 1 of 1)

Area and Season	Salmon Species	Actual Quota or Guideline(*)		Daily Limit and Special Restrictions ^{b/}
		Chinook	Coho	
U.S.-Canada Border to Cape Alava, Washington July 1-24 (noon); (17.5 days) Sunday-Thursday only	All	2,000*	23,300	2 salmon.
Cape Alava to Queets River, Washington July 1-30 (22 days) Sunday-Thursday only	All	200*	4,800	2 salmon.
Queets River to Leadbetter Pt., Washington June 24-Aug. 12; Sept. 3-4 (38 days) Sunday-Thursday only	All	21,200*	88,400	2 salmon.
Leadbetter Pt., Washington to Cape Falcon, Oregon June 24-Aug. 12; (36 days) Sunday-Thursday only	All	16,600*	109,500	2 salmon. Conservation Zone 1 (Columbia River mouth) is closed.
South of Red Buoy Line, Oregon Sept. 15-18 and Sept. 26 (5 days)	All	c/	c/	2 salmon.
Cape Falcon to Humbug Mt., Oregon May 1-26 (26 days) Within the 27 Fathom Curve May 27-July 28 (62 days)	All	None	d/	2 salmon, no more than 6 salmon in 7 consecutive days.
Humbug Mt., Oregon to Horse Mt., California May 25-July 28; Thursday-Monday only (47 days); Aug. 31-Sept. 2 (3 days); Sept. 6-29; Friday-Sunday only (12 days)	All	20,000*	d/	2 salmon; except only 1 may be a chinook; no more than 6 salmon in 7 consecutive days. Conservation Zone 2 (Klamath River mouth) closed Aug. 1-31.
Trinidad Head to Punta Gorda, California Oct. 1-31 (31 days)	All	None	d/	2 salmon, no more than 6 salmon in 7 consecutive days. Closed beyond 6 nautical miles from shore.
Horse Mt. to Pt. Arena, California Feb. 16-Nov. 17 (275 days)	All	None	d/	2 salmon.
Pt. Arena to U.S./Mexico Border Mar. 2-Nov. 2 (246 days)	All	None	d/	2 salmon. Conservation Zone 3 (near mouth of San Francisco Bay) closed Mar. 2-31.

- a/ In addition to the seasons listed here, ODFW established an all-salmon-except-coho fishery inside 3 nautical miles of shore at the mouth of Tillamook Bay from Sept. 16-Oct. 31.
- b/ Single-point, single-shank barbless hooks required from the U.S.-Canada border to Pt. Conception. Minimum size limits were (1) 24 inches for chinook and 16 inches for coho north of Cape Falcon; (2) 20 inches for chinook and 16 inches for coho from Cape Falcon to Humbug Mt.; and (3) 20 inches for both chinook and coho south of Humbug Mt.
- c/ This fishery was originally scheduled to open Sept. 16 with a preseason quota of 7,000 coho. Enough chinook were to be reserved from the entire subarea guideline (16,600) in Aug. to assure access to the coho. Low chinook harvest rates made setting a chinook guideline unnecessary. Approximately 5,600 coho (inseason estimate) not harvested in the June 24-Aug. 12 fishery were used to open the fishery on Sept. 15, 1 day earlier than scheduled.
- d/ Overall recreational catch between Cape Falcon and the U.S.-Mexico border limited by a preseason catch quota of 259,000 coho. Only the area north of Humbug Mt. closes upon projected attainment of the quota.

TABLE I-4. Coastwide chinook landings in thousands of fish for the ocean troll and recreational fisheries. (Page 1 of 1)

Year or Average	California ^{a/}			Oregon ^{b/}			Washington ^{c/}			Council Area			Canadian		Southeast Alaska		Grand Total
	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Troll	Sport	
1971-1975	563	170	733	208	41	249	280	211	491	1,051	422	1,473	1,173	238	299	16	3,199
1976-1980	619	92	711	234	40	274	214	115	329	1,067	247	1,314	1,078	446	303	18	3,159
1981-1985	463	109	572	151	33	184	86	55	141	700	197	897	812	285	243	23	2,260
1986-1990	795	166	961	397	36	433	80	26	106	1,272	228	1,500	567	152	239	24	2,482
1971	434	188	622	103	30	133	252	160	412	789	378	1,167	1,270	134	334	15	2,920
1972	492	201	693	127	44	171	203	212	415	822	457	1,279	1,223	175	242	15	2,934
1973	817	198	1,015	363	61	424	317	204	521	1,497	463	1,960	1,091	223	308	17	3,599
1974	492	157	649	224	37	261	353	215	568	1,069	409	1,478	1,178	271	322	17	3,266
1975	579	104	683	225	76	301	274	262	536	1,078	442	1,520	1,103	386	287	17	3,313
1976	540	81	621	184	79	263	359	171	530	1,083	331	1,414	1,249	506	231	17	3,417
1977	600	104	704	340	61	401	265	175	440	1,205	340	1,545	1,111	382	272	17	3,327
1978	638	73	711	192	23	215	166	96	262	996	192	1,188	1,033	486	376	17	3,100
1979	727	120	847	245	21	266	147	77	224	1,119	218	1,337	997	440	338	17	3,129
1980	589	85	674	209	19	228	135	54	189	933	158	1,091	1,023	414	302	20	2,850
1981	588	84	672	160	29	189	117	84	201	865	197	1,062	868	285	252	16	2,483
1982	765	139	904	233	39	272	160	107	267	1,158	285	1,443	971	196	250	19	2,879
1983	294	64	358	79	25	104	75	48	123	448	137	585	759	228	273	22	1,867
1984	300	88	388	64	17	81	28	7	35	392	112	504	811	443	236	21	2,015
1985	366	171	537	217	56	273	52	27	79	635	254	889	625	268	203	24	2,009
1986	826	142	968	403	22	425	50	21	71	1,279	185	1,464	592	217	220	21	2,514
1987	876	193	1,069	530	59	589	85	40	125	1,491	292	1,783	659	177	269	23	2,911
1988	1,317	171	1,488	470	38	508	114 ^{d/}	19	133	1,901	228	2,129	612	119	231	25	3,116
1989	531	187	718	354	32	386	86	20 ^{e/}	106	971	239	1,210	459	133	236	29	2,067
1990	423	140	563	232	27	259	63	30 ^{f/}	93	718	197	915	509	112	287	38	1,861
1991	295	81	376	75	14	89	50	13 ^{g/}	63	420	108	528	456	118	263	68	1,433

a/ California troll catches are preliminary for 1991.

b/ Includes troll catches from Alaska, Washington and California landed in Oregon. Preliminary for 1991.

c/ Includes troll catches from Area 4B (May 1-Sept. 30), Alaska, Oregon and California landed in Washington. Includes treaty Indian troll. Preliminary for 1991.

d/ Includes 300 chinook landed from vessels fishing illegally off Washington.

e/ Includes 452 chinook landed in the Washington state-managed late-season Area 4B recreational fishery.

f/ Includes 418 chinook landed in the Washington state-managed late-season Area 4B recreational fishery.

g/ Includes 380 chinook landed in the Washington state-managed late-season Area 4B recreational fishery.

TABLE I-6. Coastwide pink salmon landings in thousands of fish for the ocean troll and recreational fisheries.
(Page 1 of 1)

Year	California	Oregon			Washington			Council Area			Canadian	Southeast	Grand Total
	Troll	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total	Troll	Troll	
1971	1	2	NA	2	21	9	30	24	9	33 ^{a/}	1,284	105	1,422 ^{a/}
1972	b/	b/	b/	b/	4	b/	4	4	b/	4	1,033	167	1,204
1973	19	3	2	5	55	8	63	77	10	87	1,232	135	1,454
1974	b/	b/	b/	b/	1	b/	1	1	0	1	609	265	875
1975	3	b/	1	1	77	14	91	80	15	95	1,288	77	1,460
1976	b/	0	0	0	2	0	2	2	0	2	781	194	977
1977	1	88	4	92	286	29	315	375	33	408	2,677	281	3,366
1978	NA	b/	0	b/	4	0	4	4	0	4 ^{a/}	428	618	1,050 ^{a/}
1979	b/	21	1	22	561	18	579	582	19	601	4,036	629	5,266
1980	b/	b/	0	b/	1	0	1	1	0	1	1,343	268	1,612
1981	7	60	2	62	237	10	247	304	12	316	4,440	577	5,333
1982	b/	b/	0	b/	b/	0	b/	0	0	0	193	503	696
1983	b/	b/	b/	b/	106	4	110	106	4	110	2,990	499	3,599
1984	b/	0	b/	b/	b/	b/	b/	b/	b/	b/	1,521	573	2,094
1985	7	45	8	53	108	3	111	160	11	171	3,909	969	5,049
1986	0	b/	b/	b/	b/	b/	b/	b/	b/	b/	921	182	1,103
1987	1	18	1	19	19	2	21	38	3	41	3,384	487	3,912
1988	0	0	0	0	0	0	0	0	0	0	3,402	507	3,909
1989	1	4	0	0	47	2 ^{c/}	49	48	2	50	5,001	1,771	6,822
1990	0	0	0	0	b/	0	b/	b/	0	b/	2,707	772	3,479
1991 ^{d/}	b/	2	b/	2	48	2 ^{e/}	50	50	2	52	3,862	427	4,341

a/ Incomplete.

b/ Less than 500 fish.

c/ Includes 494 pinks landed in the Washington state-managed late-season Area 4B recreational fishery.

d/ Preliminary.

e/ Includes 1,543 pinks landed in the Washington state-managed late-season Area 4B recreational fishery.

TABLE I-7. Ocean salmon troll effort and landings for California, Oregon and Washington.
(Page 1 of 2)

Year or Average	Days Fished ^{a/} (thousands)	Catch					
		Numbers (thousands)			Pounds (thousands) ^{b/}		
		Chinook	Coho	Pink	Chinook	Coho	Pink
CALIFORNIA							
1971-1975	NA	562.7	361.6	7.8 ^{c/}	5,743.0	2,211.3	37.0 ^{c/}
1976-1980	95.0 ^{d/}	618.6	243.4	1.3 ^{c/}	5,867.2	1,184.3	6.6 ^{c/}
1981	68.5	588.1	83.9	7.0	5,534.8	477.2	28.3
1982	93.1	765.2	91.9	e/	7,448.6	551.9	e/
1983	43.5	294.0	59.9	e/	2,144.4	266.4	e/
1984	42.2	299.8	47.0	0.0	2,621.2	348.4	0.0
1985	51.6	366.3	11.0	7.0	4,519.2	80.4	39.7
1986	54.7	825.6	36.4	0.0	7,396.8	201.6	0.0
1987	58.6	876.3	43.7	0.9	9,047.1	245.6	3.4
1988	75.7	1,317.2	51.0	0.0	14,430.8	319.5	0.0
1989	57.4	530.9	41.9	0.7	5,489.8	230.6	4.5
1990	46.2	423.4	61.0	0.0	4,122.4	313.7	0.0
1991 ^{f/}	34.1	294.7	83.9	e/	3,216.4	458.9	e/
OREGON^{g/}							
1971-1975	NA	209.2	981.0	1.8 ^{c/}	2,127.9	6,015.4	8.0 ^{c/}
1976-1980	NA	234.1	744.3	54.2 ^{c/}	2,406.3	4,251.5	251.2 ^{c/}
1981	45.2	160.4	620.3	60.2	1,573.4	3,324.3	324.0
1982	33.9	232.6	522.2	0.0	2,351.3	2,708.4	0.0
1983	22.2	79.6	319.8	0.1	654.8	1,098.0	0.2
1984	7.9	64.3	14.0	0.0	549.7	71.0	0.0
1985	21.1	216.6	84.1	44.9	2,029.8	483.8	258.6
1986	32.6	402.9	439.6	0.0	3,362.5	1,905.1	0.0
1987	39.6	529.9	354.5	17.6	5,182.3	1,915.9	87.3
1988	51.1	470.0	623.2	0.0	4,384.7	3,335.9	0.0
1989	42.2	353.9	454.2	3.8	3,531.9	1,995.5	17.6
1990	25.9	232.4	122.0	0.0	2,180.6	633.6	0.0
1991 ^{f/}	14.7	74.6	306.8	1.8	693.5	1,410.2	7.6

TABLE I-7. Ocean salmon troll effort and landings for California, Oregon and Washington.
(Page 2 of 2)

Year or Average	Days Fished ^{a/} (thousands)	Catch					
		Numbers (thousands)			Pounds (thousands) ^{b/}		
		Chinook	Coho	Pink	Chinook	Coho	Pink
<u>WASHINGTON^{h/}</u>							
1971-1975	53.8 ^{i/}	279.5	869.0	50.3 ^{c/}	3,211.2	4,804.1	240.6 ^{c/}
1976-1980	46.2	214.4	750.5	423.1 ^{c/}	2,412.7	3,675.4	1,959.3 ^{c/}
1981	28.7	117.1	400.4	236.6	1,237.8	1,751.5	928.5
1982	20.1	160.3	378.9	0.3	1,650.2	1,935.2	0.9
1983	13.5	75.4	67.8	106.4	686.9	193.1	374.1
1984	3.1	27.5	66.8	0.0	192.2	212.8	0.0
1985	8.1	52.4	216.4	108.3	524.2	1,053.3	487.3
1986	5.9	50.0	159.5	0.2	583.6	620.4	0.4
1987	5.3	85.3	136.9	19.0	763.4	567.9	70.9
1988	9.9	113.6	72.6 ^{j/}	-	1,122.0	295.0	-
1989	8.0	86.5	142.1	47.2	783.3	595.0	170.0
1990 ^{f/}	8.8	62.8	189.0	0.1	625.0	985.0	0.3
1991 ^{f/}	6.4	49.7	136.0 ^{k/}	48.2	482.9	634.3	160.6

a/ For Washington, days fished includes treaty Indian deliveries.

b/ Dressed weight.

c/ Odd-year average.

d/ Days fished estimates are for 1978-1980. Data unavailable for 1976-1977.

e/ Less than 50.

f/ Preliminary.

g/ Includes catches made off California, Washington and Alaska and landed in Oregon.

h/ Includes treaty Indian landings (ocean and Area 4B only from May 1-Sept. 30) and catches made off Oregon, California and Alaska and landed in Washington.

i/ This is a 1973-1975 average; 1971 and 1972 effort data are deliveries and are not comparable.

j/ Includes 2,200 coho landed from vessels fishing illegally off Washington.

k/ Includes 100 coho landed from vessels fishing illegally off Washington.

TABLE I-8. Ocean salmon recreational effort and catch off California, Oregon and Washington.
(Page 1 of 2)

Year or Average	Thousands of Salmon Angler Trips	Catch (thousands of fish)				Salmon Per Angler Trip
		Chinook	Coho	Pinks	Total	
<u>CALIFORNIA</u>						
1971-1975	247.4	169.6	48.3	-	217.9	0.88
1976-1980	163.5	92.4	31.2	-	123.6	0.76
1981	122.0	84.0	10.6	-	94.6	0.78
1982	171.3	138.7	26.7	-	165.4	0.97
1983	122.7	63.8	27.2	-	91.0	0.74
1984	127.0	87.8	19.0	-	106.8	0.84
1985	191.9	171.1	15.8	-	187.1	0.97
1986	195.6	141.6	18.7	-	160.3	0.82
1987	268.3	192.5	47.3	-	239.8	0.89
1988	242.4	171.4	34.7	-	206.1	0.85
1989	244.9	186.6	49.6	-	236.2	0.96
1990	252.1	139.8	51.6	-	191.4	0.76
1991 ^{a/}	195.9	80.5	69.1	-	149.6	0.76
<u>OREGON^{b/}</u>						
1971-1975	NA	49.4	271.8	1.1 ^{c/}	321.8	0.93
1976-1980	395.9	40.0	289.2	2.3 ^{c/}	335.2	0.85
1981	311.0	29.2	199.8	1.6	230.6	0.74
1982	226.0	38.7	175.1	-	213.8	0.95
1983	226.0	24.7	146.9	0.1	171.7	0.76
1984	153.1	17.0	123.3	0.0	140.3	0.92
1985	251.6	55.9	182.5	7.7	246.1	0.98
1986	186.5	22.4	211.7	0.0	234.0	1.26
1987	255.0	58.6	177.4	0.9	236.9	0.93
1988	250.6	38.3	226.2	0.0	265.0	1.05
1989	266.6	32.0	272.3	1.3	305.6	1.15
1990	246.2	26.5	200.5	0.0	226.8	0.92
1991 ^{a/}	190.0	14.4	259.1	0.3	273.8	1.44

TABLE I-8. Ocean salmon recreational effort and catch off California, Oregon and Washington.
(Page 2 of 2)

Year or Average	Thousands of Salmon Angler Trips	Catch (thousands of fish)				Salmon Per Angler Trip
		Chinook	Coho	Pinks	Total	
<u>WASHINGTON</u>						
1971-1975	483.0	210.3	566.8	9.9 ^{c/}	787.0	1.63
1976-1980	429.8	114.6	511.8	23.8 ^{c/}	650.2	1.51
1981	231.4	84.4	232.1	10.2	326.7	1.41
1982 ^{d/}	218.7	106.8	206.5	-	313.3	1.43
1983	209.7	48.4	209.3	4.5	262.2	1.25
1984	36.8	6.9	40.4	-	47.3	1.29
1985	114.8	26.6	167.9	3.1	197.6	1.72
1986	109.3	21.1	174.8	-	195.9	1.79
1987	101.5	40.5	123.9	1.8	166.2	1.64
1988	68.9	18.9	88.9	-	107.8	1.56
1989 ^{e/}	142.2	19.9	212.9	2.0	234.8	1.65
1990 ^{a/f/}	172.1	30.0	224.8	-	254.8	1.48
1991 ^{a/g/}	127.2	12.7	207.7	2.2	222.6	1.75

a/ Preliminary.

b/ Oregon fish per angler computed on total angler trips prior to 1979 and on salmon trips beginning in 1979.

c/ Odd-year average.

d/ Includes Washington-based effort and catch from Oregon state waters (July 26-Aug. 1) and Strait of Juan de Fuca after WDF and NMFS ocean closures.

e/ Includes 11,810 angler trips, 452 chinook, 19,881 coho and 494 pinks in the Washington state-managed late-season Area 4B fishery.

f/ Includes 12,239 angler trips, 418 chinook and 20,351 coho in the Washington state-managed late-season Area 4B fishery.

g/ Includes 9,237 angler trips, 380 chinook, 15,132 coho and 1,543 pinks in the Washington state-managed late-season Area 4B fishery.

TABLE I-9. Coho and chinook quotas for 1991 compared with actual harvest in thousands of fish by management area and fishery. (Numbers in parentheses are revised quotas; percent shown is of original quota.) (Page 1 of 1)

Fishery	Chinook			Coho		
	Quota	Catch	Percent	Quota	Catch	Percent
<u>NORTH OF CAPE FALCON</u>						
<u>Treaty Indian Troll</u>	33.0	20.6	62.4	80.0	78.9	98.6
<u>Non-Indian Troll</u>						
North of Cape Falcon (May 1-June 15)	31.2 ^{a/}	27.3	87.5	-	-	-
North of Carroll Island (Aug. 16-Sept. 15)	3.5 ^{a/b/}	1.1	31.4	35.0 ^{a/}	25.8	73.7
Leadbetter Pt. to Cape Falcon (Aug. 10-11)	2.0 ^{a/}	0.8	40.0	19.5 ^{a/}	29.3	150.3
Copalis Head to Cape Falcon (Sept. 1-2)	3.3 ^{a/}	0.5	15.2	32.5 (22.9)	26.0	80.0
Subtotal Non-Indian Troll	40.0	29.7	74.2	87.0	81.1	93.2
<u>Recreational</u>						
North of Cape Alava (July 1-24)	2.0 ^{a/}	2.4	120.0	23.3	23.3	100.0
Cape Alava to Queets River (July 1-30)	0.2 ^{a/}	0.4	200.0	4.8	5.2	108.3
Queets River to Leadbetter Pt. (June 24-Sept. 4)	21.2 ^{a/}	7.2	34.0	88.4	88.9	100.6
Leadbetter Pt. to Cape Falcon (June 24-Aug. 12) and South of Red Buoy Line (Sept. 15-26)	16.6 ^{a/}	3.2 0.1	19.9	109.5 7.0 (12.4)	103.7 10.9	94.7 155.7
Subtotal Recreational	40.0	13.3	33.2	233.0	232.0	99.6
<u>Total North of Cape Falcon</u>						
Non-Indian	80.0	43.0	53.8	320.0	313.1	97.8
All	113.0	64.2	56.8	400.0	391.9	98.0
<u>SOUTH OF CAPE FALCON</u>						
<u>Troll</u>						
Cape Falcon to Cascade Head (Trigger)	-	-	-	361.0	366.6	101.6
Cascade Head to Mexico (Ceiling)	-	-	-	90.0	91.9	-
Florence S. Jetty to Humbug Mt. (Sept. 1-Oct. 31)	15.0 ^{a/}	12.0	80.0	-	-	-
<u>Klamath Management Zone</u>						
Sisters Rocks to Mack Arch (Sept. 1-15)	7.5	0.2	2.7	-	-	-
Trinidad Head to Punta Gorda (Sept. 1-Oct. 31)	15.0	4.7	31.3	-	-	-
South of Horse Mt. Coho Reserve	-	-	-	5.0	5.2	104.0
Subtotal Troll	37.5	16.9	45.6	361.0	366.6	101.6
<u>Recreational</u>						
Cape Falcon to U.S.-Mexico Border	-	-	-	259.0	288.8	111.5
<u>Total South of Cape Falcon</u>						
Buoy 10	-	11.4	-	100.0 ^{c/}	208.7	208.7

a/ Harvest guideline.

b/ Pink salmon harvest guideline of 160,000 fish.

c/ Expected catch, not a quota or guideline.

Coho

Coho are managed as a unit south of Cape Falcon and are discussed more fully in the Cape Falcon to Humbug Mountain section. The area south of Horse Mountain did have a separate reservation of 5,000 fish within the south of Cape Falcon overall quota, which were to be harvested upon attainment of the rest of the overall quota.

Regulations

In attempting to achieve the above objectives, a total of 45 days of closure in June and July was imposed within the May 1 through September 30 season in the area between Point San Pedro and Point Arena. The opening of the fishery between Point Arena and Horse Mountain was delayed until August 1. The area south of Point San Pedro opened May 1 and ran continuously until September 30.

Within these time frames, fishing for coho was permitted from June 1 through July 11 under the general south of Cape Falcon quota, and from August 1 through August 2 and August 12 through August 27 under the 5,000 coho reserve.

Effort and Harvest

Commercial trollers harvested 289,900 chinook salmon from ocean waters south of Horse Mountain, 70 percent of the 1990 harvest of 415,800 chinook. Trollers harvested 80,900 coho south of Horse Mountain, including 5,200 fish, after the general coho quota south of Cape Falcon closed. This compares to 59,800 coho landed in the same area in 1990. The Horse Mountain to U.S./Mexico border troll fishery landed 5,200 coho in August, 4 percent above the 5,000 fish reserve.

Effort by trollers fishing south of Horse Mountain totaled 33,600 days fished compared to 45,200 days fished in 1990.

Fishery Goal Assessment

Indices of ocean harvest rate and population size of Central Valley chinook have been developed based on ocean troll and recreational harvests south of Point Arena and Central Valley adult chinook salmon spawning escapements. Central Valley chinook stocks probably comprise 85 to 95 percent of chinook catches south of Point Arena. The 1991 abundance index for Central Valley chinook was 440,600 fish (Table I-10, Figure I-1) compared to 571,100 fish in 1990. The harvest rate index of 0.72 was 7 points lower than the 1990 index (Figure I-2).

Horse Mountain to Humbug Mountain

Management Objectives

Chinook

Management objectives for chinook salmon between Horse Mountain (near Shelter Cove) and Humbug Mountain (KMZ) were based on harvest rate goals for chinook salmon stocks originating from local streams, particularly the Klamath and Rogue rivers. The adopted regulations took into

TABLE I-10. Indices of annual abundance and ocean fishery impacts on California Central Valley chinook in thousands of fish. (Page 1 of 1)

Year	Ocean Chinook Landings South of Pt. Arena			Hatchery and Natural Escapements of Central Valley Adults			Abundance Index (Ocean + River Totals)	Ocean Harvest Rate Index (Percent) ^{a/}
	Troll	Sport	Total	Fall	Other ^{b/}	Total		
1970	226.8	111.1	337.9	190.5	55.6 ^{c/}	246.1	584.0	58
1971	150.7	166.3	317.0	190.6	62.0	252.6	569.6	56
1972	229.8	187.6	417.4	99.6	46.1	145.7	563.1	74
1973	422.5	180.9	603.4	227.1	27.1	254.2	857.6	70
1974	282.7	141.6	424.3	205.6	35.7	241.3	665.6	64
1975	234.4	92.7	327.1	159.2	47.6	206.8	533.9	61
1976	237.9	68.6	306.4	168.8	43.8	212.6	519.0	59
1977	263.8	76.6	340.4	148.7	42.8	191.5	531.9	64
1978	291.0	65.9	356.9	136.9	17.1	154.0	510.9	70
1979	234.1	108.5	342.6	167.9	11.3	179.2	521.8	66
1980	294.3	77.1	371.4	155.9	31.6	187.5	558.9	66
1981	289.9	73.8	363.7	189.3	18.7	208.0	571.7	64
1982	418.4	122.5	540.9	177.2	36.8	214.0	754.9	72
1983	178.2	53.0	231.2	121.0	14.2	135.2	366.4	63
1984	221.7	78.7	300.3	197.5	17.6	215.1	515.4	58
1985	212.3	121.8	334.1	304.7	19.0	323.7	657.8	51
1986	502.5	114.8	617.3	259.0	30.3	289.3	906.6	68
1987	446.8	152.8	599.7	184.9	25.2	210.1	809.8	74
1988	830.5	130.4	960.9	244.9	23.3	268.2	1229.1	78
1989	363.8	130.9	494.7	149.6	16.4	166.0	660.7	75
1990	336.2	112.7	448.9	108.3	13.9	122.2	571.1	79
1991	254.4	61.7	316.1	110.4	14.1 ^{d/}	124.5	440.6	72

a/ Ocean harvest landed south of Pt. Arena as a percent of the abundance index.

b/ Spring run of the current calendar year and late-fall and winter runs of the following calendar year.

c/ Percent of adults in 1970 spring run assumed the same as 1971 (72 percent, 5,500 total).

d/ Winter run assumed to be the same as previous year.

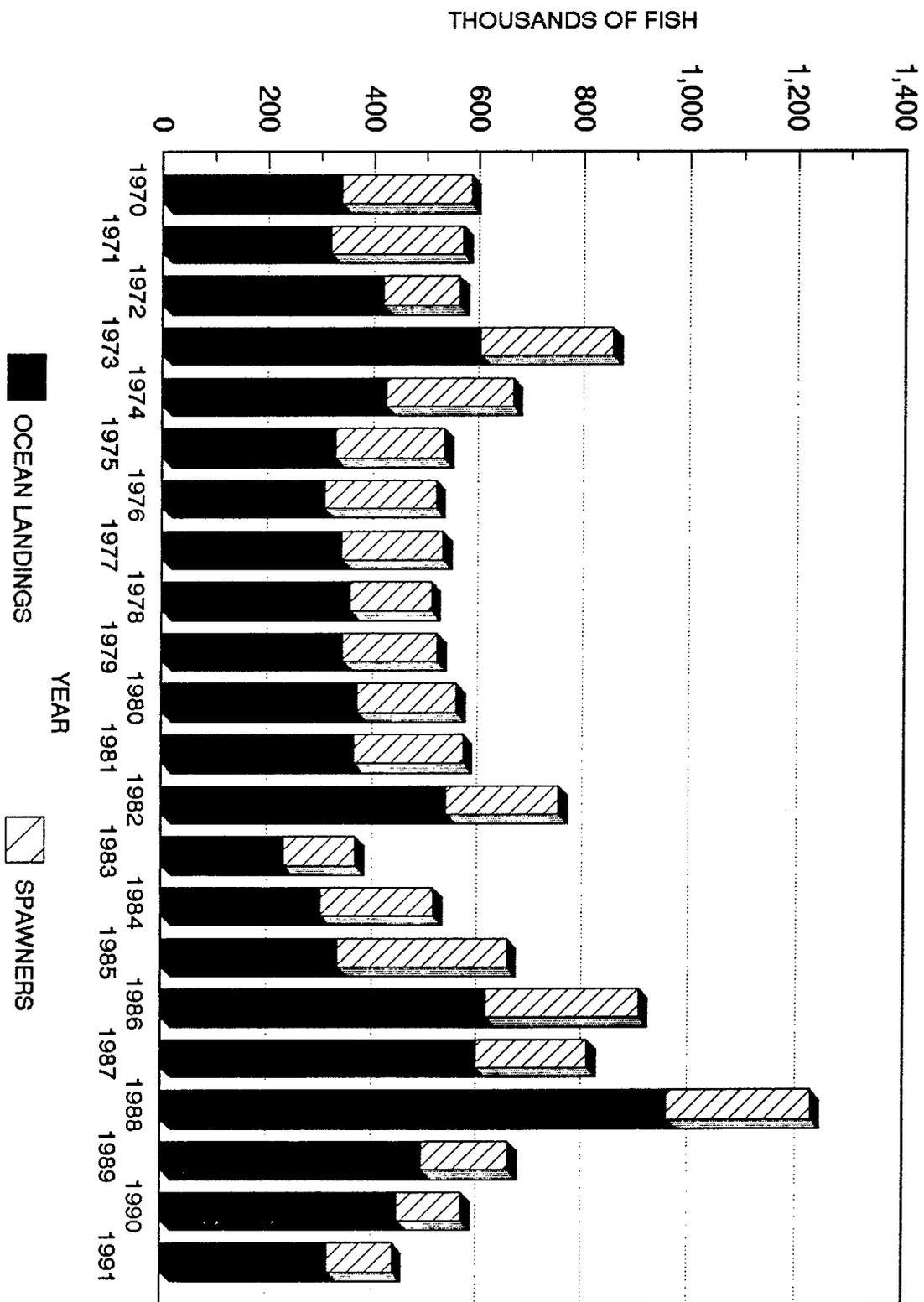


Figure I-1. Central Valley chinook salmon annual abundance index, 1970-1991.

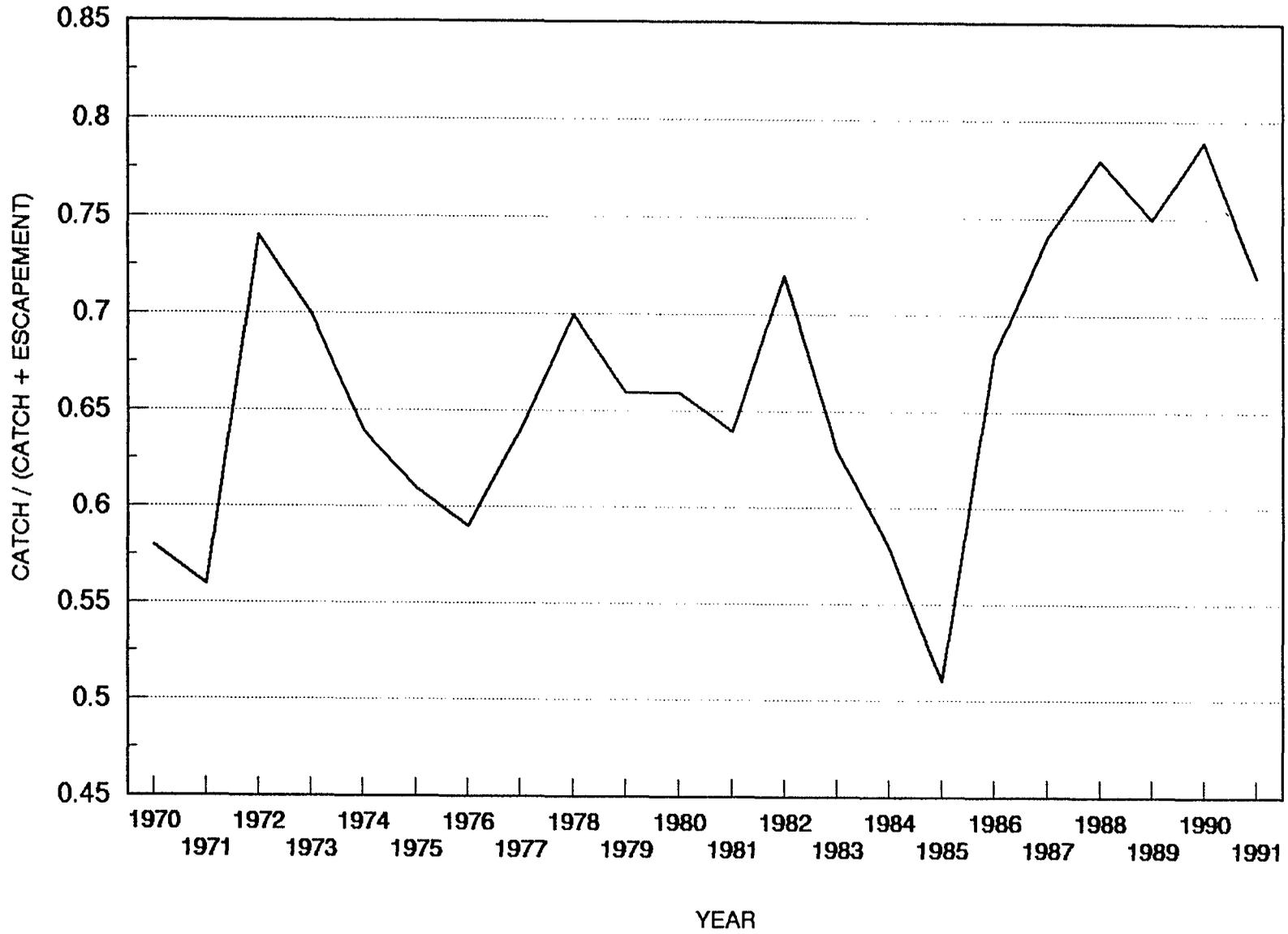


Figure I-2. Central Valley chinook salmon harvest rate index, 1970-1991.

consideration the Council's harvest rate plan (Amendment 9) calling for a spawning escapement rate for Klamath River fall chinook of 33 to 34 percent, with a natural adult spawning escapement floor of 35,000 fish. The Council's Klamath River inriver run target for 1991 was 60,300 fall-run adults, the minimum number meeting the escapement floor taking into account an inriver harvest of 13,000 adults and returns to basin hatcheries. The Council's harvest rate plan projected a total ocean harvest of 15,900 Klamath River fall chinook and an ocean harvest rate of 16 percent on the age-4 component in all ocean fisheries.

It was anticipated that reduced harvest rates in 1991 would also benefit other depressed northern California coastal stocks and depressed south/localized migrating Oregon coastal stocks.

Coho

Coho are managed as a unit south of Cape Falcon and discussed more fully in the Cape Falcon to Humbug Mountain section.

Regulations

The low harvest projected for Klamath River fall-run chinook of 16 percent, compared to an ocean harvest rate objective of 37.5 percent in 1990, precluded general area troll fisheries in the KMZ. Two late-season special area fisheries were adopted by the Council: (1) the area from Sisters Rocks to Mack Arch inside 6 nautical miles from September 1 through September 15 with a 7,500 chinook quota, and (2) the area from Trinidad Head to Punta Gorda inside 6 nautical miles from September 1 through October 31 with a 15,000 chinook quota. The Sisters Rocks to Mack Arch fishery was an all-salmon-except-coho fishery while the Trinidad Head to Punta Gorda fishery was an all-salmon fishery.

Effort and Harvest

Trollers landed 4,700 chinook and 3,000 coho in the Trinidad Head to Punta Gorda fishery, compared to 1,900 chinook and 1,200 coho in 1990. Trollers landed 200 chinook in the Sisters Rocks to Mack Arch fishery (Table I-11), compared with 100 chinook in 1990.

Fishery Goal Assessment

The ocean harvest rate goal of 16 percent on age-4 Klamath River fish was expected to be attained in all ocean troll and recreational fisheries prior to September 1 in the area between northern Oregon and the U.S./Mexico border. Based on CWT recoveries in ocean and inriver fisheries and spawning escapements (a method used in the past, but currently being reviewed by the KRTAT), the overall ocean harvest rate on age-4 fish in 1991 (20 percent) exceeded the goal. A more complete analysis will be provided in preseason report I, based on the KRTAT review.

Humbug Mountain to Cape Falcon

Management Objectives

Season determinations for the area between Humbug Mountain and Cape Falcon, as for most areas between Cape Falcon and the U.S./Mexico border, were driven by impacts on Klamath River fall

TABLE I-11. Summary of 1991 chinook landings and recreational effort in the KMZ. (Page 1 of 1)

Fishery	Chinook Landings ^{a/}						Total	Sport Angler Trips		
	Troll			Sport				California	Oregon	Total
	California	Oregon	Subtotal	California	Oregon	Subtotal				
General Area ^{b/}	-	-	-	12,500	6,800	19,300	19,300	50,800	36,400	87,200
Rogue River (Sept.)	-	200	200	-	-	-	200	-	-	-
Eel River (Sept.-Oct.)	4,700	-	4,700	400	-	400	5,100	2,300	-	2,300
TOTAL	4,700	200	4,900	12,900	6,800	19,700	24,600	53,100	36,400	89,500

a/ Landings are preliminary and are shown by state where landed.

b/ Recreational fishery May 25-July 28 and Aug. 31-Sept. 30.

chinook and OCN coho stocks. The combined troll and recreational season structures were designed to target a coastwide 46 percent total harvest rate (ocean and inland) on OCN coho and 16 percent ocean harvest rate on Klamath River fall chinook. Preseason objectives called for an OCN coho ocean harvest rate of 44 percent. These rates reflect a reduction from the 1990 preseason harvest rate goal of 37.5 percent (ocean) on Klamath River fall chinook and 50 percent (ocean and inland) on OCN coho (the OCN coho harvest rate fluctuates with stock abundance of less than 400,000).

Adopted regulations for fisheries between Cape Falcon and the U.S./Mexico border incorporated season structuring to achieve the desired Klamath River fall chinook ocean harvest rate goal. Achieving this goal, together with management objectives of providing opportunity to harvest the available coho, resulted in the adoption of troll fisheries which were extremely restricted between Point San Pedro, California and the Florence, Oregon south jetty.

Chinook

A discussion of details leading to the adoption of the Klamath River fall chinook 16 percent ocean harvest rate was presented in the management objectives section for the area from Horse Mountain to Humbug Mountain.

It was anticipated that reduced ocean harvest rates in 1991 would also benefit depressed Oregon south coast chinook stocks and Snake River fall chinook, the latter of which has been proposed for listing as threatened under the ESA. For the Snake River fall chinook, the combined south of Cape Falcon chinook harvest was estimated to represent a 26 percent reduction in adult equivalent ocean exploitation rate compared to the 1990 observed levels.

Coho

The Council took emergency action to reduce the targeted harvest rate (ocean and inland combined) on OCN coho from 52 percent to 46 percent. Preseason abundance estimation methodology used for this stock has consistently overestimated stock abundance for the past three years, and the spawning escapements have been far short of the annual goal for the past four years. Until the estimation procedure is improved, the Council opted to purposely reduce harvest impacts to help assure that permanent damage is not done to the OCN stocks. The reduction in harvest rate was anticipated to result in a spawning escapement level that met or exceeded the floor goal of 135,000 adult coho.

Sharing of allowable coho impacts between ocean recreational and commercial troll fisheries, in the area between Cape Falcon and the U.S./Mexico border, was guided by the Council framework amendment schedule. The framework amendment also provided for an inseason reallocation of a portion of the total ocean recreational quota to the troll fishery about August 1, if the projected total ocean recreational fishery harvest was less than the preseason harvest allocation.

A troll coho harvest ceiling was established for the area between Cascade Head and the U.S./Mexico border. The coho ceiling was designed to address port equity concerns in the Cascade Head to Cape Falcon area. It also was designed to prevent geographical shifts in coho impacts that differ substantially from those anticipated preseason.

Regulations

The 1991 troll coho fishery between Cape Falcon and the U.S./Mexico border was constrained by an overall impact of 390,000 coho, based on preseason estimates of troll harvest and hook-and-release mortality by catch area. An estimated 29,000 coho were projected preseason to be lost to hook-and-release mortality. The remaining 361,000 coho were established as the harvest quota for the entire area from Cape Falcon to the U.S./Mexico border. Within this overall quota, the area between Cascade Head and the U.S./Mexico border was constrained under a 271,000 coho harvest ceiling.

The Council did not make an inseason adjustment (i.e., harvest reallocation), in the area from Cape Falcon to the U.S./Mexico border, between the recreational fishery and the troll fishery in 1991. The coho allocation was not sufficient to meet the season duration goals of the recreational fishery.

Minimum size limits for coho and chinook were 16 and 26 inches, respectively. Single-point, single-shank barbless hooks were required.

Chinook and coho salmon fishing regulations differed between subareas within the Humbug Mountain to Cape Falcon area. A summary of the regulations by subarea follows.

Humbug Mountain to Cape Arago

The fishery was open from September 1 through October 31 as an all-salmon-except-coho fishery under a 15,000 chinook guideline from Humbug Mountain to the south jetty of Florence. The fishery ran continuously through the automatic closure date of October 31. The scheduled October 1 through October 8 closure, designed as an accounting measure, was rescinded when managers determined that it was unnecessary. The traditional late-season Oregon state-water fishery off the Elk and Sixes rivers did not occur.

Cape Arago to the South Jetty of Florence

The all-salmon fishery was open from June 24 through July 11 when the coho harvest ceiling for the area from the U.S./Mexico border to Cascade Head was attained. The subarea reopened from July 12 through July 14, and from August 1 through August 9 as an all-salmon-except-coho fishery. The fishery was also open from September 1 through October 31 as an all-salmon-except-coho fishery under a 15,000 chinook guideline from Humbug Mountain to the south jetty of Florence. See the above Humbug Mountain to Cape Arago subarea for additional details on this fishery.

South Jetty of Florence to Cascade Head

The all-salmon-except-coho fishery was open from May 1 through June 23 with no more than 4 spreads per line gear restriction during June. The fishery reopened to all-salmon fishing from June 24 through July 11 when the coho harvest ceiling for the area from the U.S./Mexico border to Cascade Head was attained. The subarea reopened from July 12 through July 23 and from August 1 through October 31 as an all-salmon-except-coho fishery.

Cascade Head to Cape Falcon

The all-salmon-except-coho fishery was open from May 1 through June 30 with a no more than 4 spreads per line gear restriction during June. The fishery reopened to all-salmon from July 1 through July 14 when the south of Cape Falcon coho quota, minus the 5,000 coho reserve for the area south of Horse Mountain, was reached. The 5,000 coho reserve is discussed under the U.S./Mexico border to Horse Mountain section. The subarea reopened from July 15 through July 23 and from August 1 through October 31 as an all-salmon-except-coho fishery.

Effort and Harvest

Troll fishery effort between Humbug Mountain and Cape Falcon totaled 14,100 vessel days. This was 43 percent below the comparative 1990 effort (24,800). Total chinook landings of 73,700 fish were 68 percent less than landings from the 1990 season (228,000). Total coho landings of 282,600 fish were 2.5 times greater than landings from the 1990 season (110,300). Pink landings totaled 1,600 fish. There were no pink landings in 1990.

Fishery Goal Assessment

Preliminary information suggests that the observed 1991 coastwide ocean harvest rate on Klamath River fall chinook exceeded the 16 percent goal on age-4 fish (20 percent), and the combined ocean and inland harvest rate on OCN coho equaled the 46 percent goal. The estimated ocean harvest rate of 42 percent was below the preseason objective of 44 percent. Actual reductions in Snake River fall chinook exploitation rates cannot be estimated at this time.

The combined Cape Falcon to U.S./Mexico border troll fisheries landed 366,600 coho, 2 percent above the 361,000 harvest quota (Tables I-9 and I-12). The landings for the area between Cascade Head and the U.S./Mexico border totaled 274,700 coho, 1 percent above the 271,000 harvest ceiling. A postseason estimate of troll fishery coho hook-and-release mortality for the combined Cape Falcon to U.S./Mexico border troll fisheries is 18,500 coho, 36 percent below the 29,000 preseason estimate. This level of hook-and-release mortality is a substantial reduction from recent year levels, and is largely a result of reduction in single species (chinook) fishery effort. With the addition of coho hooking mortality, the estimate of the total Cape Falcon to U.S./Mexico border troll fishery impact is 385,100 coho. This impact is 99 percent of the adopted preseason troll impact (390,000) and 72 percent above the 1990 troll impact (223,400).

The Cascade Head to U.S./Mexico border harvest ceiling was not effective in preventing a substantial shift of coho harvest into the south of Horse Mountain area. The coho harvest south of Horse Mountain was much larger than anticipated preseason.

The south jetty of Florence to Humbug Mountain troll fishery landed 12,000 chinook during the September 1 through October 31 period, 20 percent below the 15,000 harvest guideline.

TABLE I-12. Ocean harvest of coho salmon by all fisheries in the OPI area during the 1991 season with comparable harvest for 1990, 1989, 1988 and 1987 in thousands of fish. (Page 1 of 1)

Fishery Area	1991 Ocean Harvest Quota	Percent of 1991 Quota	Ocean Harvest (thousands of fish)				
			1991 ^{a/}	1990	1989	1988	1987
<u>TROLL</u>							
Leadbetter Pt. to Cape Falcon	31.5 ^{b/}	131	41.4 ^{c/}	32.4 ^{d/}	37.1 ^{e/}	0.0 ^{f/}	18.5
South of Cape Falcon	361.0	102	366.6 ^{g/}	171.4 ^{h/}	478.5 ^{i/}	676.2 ^{j/}	384.7 ^{k/}
Cape Falcon to Humbug Mt.	-	-	282.6	110.3	435.6	623.2	336.6
Humbug Mt. to Horse Mt.	-	-	3.1	1.2	10.6	14.5	20.9
Horse Mt. to U.S./Mexico Border	-	-	80.9	59.8	32.8	38.4	27.2
Troll Total	392.5	104	408.0	203.7	515.0	676.2	403.2
<u>RECREATIONAL</u>							
Leadbetter Pt. to Cape Falcon	116.5	98	114.6	124.0	116.6	31.6	79.6
Cape Falcon to U.S./Mexico Border	259.0	112	288.8	216.0	287.6	251.1	199.4
Cape Falcon to Humbug Mt.	-	-	197.5	149.1	205.0	201.4	134.7
Humbug Mt. to Horse Mt.	-	-	62.3	55.3	77.9	46.2	62.2
Horse Mt. to U.S./Mexico Border	-	-	29.0	11.6	4.8	3.5	2.6
Recreational Total	375.5	107	403.4	340.0	404.2	282.7	279.0
Total OPI Ocean Fisheries	768.0	106	811.4^{c/g/}	543.7^{d/h/}	919.2^{e/i/}	958.9^{f/j/}	682.2^{k/}

a/ Preliminary.

b/ This quota reflects the revised Aug. quota in the Cape Falcon to Leadbetter Pt. fishery combined with the proportion of the revised Sept. quota in the Cape Falcon to Copalis Head fishery estimated by the proportion of the fishery harvest which occurred in the OPI area.

c/ Does not include the postseason hook-and-release mortality estimated at 1,500 coho in the all-salmon-except coho troll fishery.

d/ Does not include the postseason hook-and-release mortality estimated at 2,100 coho in the all-salmon-except-coho troll fishery.

e/ Does not include the postseason hook-and-release mortality estimated at 1,200 coho in the all-salmon-except-coho troll fishery.

f/ Does not include the postseason hook-and-release mortality estimated at 2,800 coho in the all-salmon-except-coho troll fishery.

g/ Does not include the postseason hook-and-release mortality estimated at 18,500 coho in the south of Cape Falcon troll fishery.

h/ Does not include the postseason hook-and-release mortality estimated at 52,200 coho in the south of Cape Falcon troll fishery.

i/ Does not include the postseason hook-and-release mortality estimated at 87,200 coho in the south of Cape Falcon troll fishery.

j/ Does not include the postseason hook-and-release mortality estimated at 112,700 coho in the south of Cape Falcon troll fishery.

k/ Does not include the postseason hook-and-release mortality estimated at 39,000 coho in the south of Cape Falcon troll fishery.

Cape Falcon to U.S./Canada Border

Management Objectives

Chinook

Chinook salmon stock management objectives for ocean fisheries from the U.S./Canada border to Cape Falcon in 1991 primarily addressed allowable impacts on lower Columbia River fall chinook stocks, while also taking into account the depressed status of Columbia River upriver springs and summers and Snake River fall chinook. The stocks which are impacted to the greatest degree by fisheries in this area include Columbia River fall hatchery tules, which normally account for more than half of the total catch; lower Columbia River spring; California and Oregon coastal chinook; and Puget Sound chinook stocks. Council chinook fisheries in the area north of Cape Falcon have a minor impact on most of the chinook stocks which originate in this area, but have far-northerly marine distribution patterns. These stocks include nearly all the Washington coastal stocks, as well as natural fall and summer stocks from the upper Columbia River. The chinook fishery management objectives in this area are to provide for viable ocean and inriver fisheries while protecting depressed Columbia River natural stocks and meeting hatchery fall chinook brood stock needs.

Preseason abundance forecasts indicated that LRH would be 26 percent greater than the record low run observed in 1990, but still at near record low levels. SCH preseason forecast, however, indicated the 1991 run would be more than double the 1990 observed level. The abundance of these two tule stocks combined was forecasted to be 67 percent greater than the levels observed in 1990. Columbia River tule abundance is a major factor in determining impacts of fisheries on weak natural stocks critical to Council area management. As the abundance of these tule stocks increases, for a given level of harvest, the expected impacts on critical weak stocks in the area are reduced. The upper Columbia River spring and summer stocks were not expected to meet their escapement goals in 1991. Additionally, Snake River fall chinook were proposed for listing under the ESA and the Council ocean fishery regulations were analyzed to determine their impacts on this stock relative to the 1990 fishery in order to assure stock protection. The continued concern for LRH, as well as the upper Columbia and Snake rivers stocks, was only partially offset by the increased SCH forecast. Based on these considerations, the Council adopted a 1991 non-Indian TAC for chinook in the area north of Cape Falcon of 80,000 chinook. This represented a slight increase over the 1990 TAC of 75,000 chinook. This TAC was allocated to the commercial and recreational fisheries according to the schedule detailed in Amendment 9 to the salmon FMP and resulted in a non-Indian commercial TAC of 40,000 chinook. This represents a 7 percent increase over the 1990 commercial non-Indian TAC of 37,500 chinook. Similarly, the Council adopted a treaty Indian chinook TAC for 1991 of 33,000, a slight increase over the 1990 TAC of 31,200 chinook.

The combined treaty Indian and non-Indian catch ceiling north of Cape Falcon of 113,000 chinook was estimated preseason to represent an 11 percent reduction in the adult equivalent ocean exploitation rate from 1990 observed levels for the Lyons Ferry stock which was used to represent Snake River fall chinook for impact analyses.

Coho

Management goals for ocean fisheries which impact coho in the area from Cape Falcon to the U.S./Canada border are described in the FMP. Coho stocks impacted by these fisheries include

natural and hatchery stocks which originate from Oregon coastal rivers and lakes, the Columbia River, Washington coastal rivers, Puget Sound and southern British Columbia. Generally, Washington coastal and Puget Sound origin stocks are found in greater concentrations in more northerly areas, while fisheries show increasing contributions to catches by Columbia River and Oregon coastal stocks in southern areas. OCN coho contribute a minor portion of their total harvest to fisheries north of Cape Falcon.

Fisheries in this area are constrained by management objectives and Indian treaty obligations for individual stock management units. The allowable harvest for fisheries operating in this area in 1991 was based on the need to protect several depressed Puget Sound natural stocks. Preseason abundance forecasts for the Hood Canal natural coho stock indicated a 60 percent reduction from the 1990 forecast. The Skagit River natural forecast indicated a 4 percent reduction from the 1990 forecast. Neither of these Puget Sound stocks were expected to meet their spawning escapement goal in 1991.

The Council's primary consideration in adopting a coho TAC for the area north of Cape Falcon was to meet the management objectives of the critical Hood Canal and Skagit River natural coho stocks. The Council adopted a non-Indian TAC of 320,000 coho, which represented a 9 percent reduction from the 1990 TAC of 350,000 coho. This TAC was allocated to the commercial and recreational fisheries according to the schedule detailed in Amendment 9 to the FMP and resulted in a non-Indian commercial TAC of 87,000 coho. This represents a 17 percent reduction from the non-Indian commercial TAC of 105,000 coho in 1990. Similarly, the Council adopted a treaty Indian TAC of 80,000 coho, a 12 percent reduction from the 1990 TAC of 90,000 coho.

Non-Indian Regulations

For 1991, four separate non-Indian commercial fisheries north of Cape Falcon were established as follows: (1) the standard all-salmon-except-coho coastwide fishery in May and June, (2) an all-salmon fishery from Leadbetter Point to Cape Falcon in August, (3) an odd-year, pink-directed, all-salmon fishery north of Carroll Island in August and September, and (4) an all-salmon fishery from Copalis Head to Cape Falcon in September. Fishing was not allowed in Conservation Zone 1, at the mouth of the Columbia River, in any 1991 commercial fisheries.

The all-salmon-except-coho fishery opened in the area from Cape Falcon to the U.S./Canada border on May 1 with a chinook guideline of 31,200 fish. The fishery ran continuously through the automatic closing date of June 15 for a total of 46 fishing days.

The all-salmon fishery from Leadbetter Point to Cape Falcon was planned preseason to open on August 10 with a 3 day on/3 day off schedule, landing limits of 150 coho and 10 chinook per open period, and harvest guidelines of 19,500 coho and 2,000 chinook. The chinook landing restriction was dropped prior to the start of the fishery due to the observed low chinook catch rates in the early all-salmon-except-coho fishery. Inseason catches in other August fisheries suggested that coho availability in the area was much higher than anticipated preseason. This caused concern that the 19,500 coho guideline might be exceeded in the first 3-day open period. This concern was exacerbated by the inseason decision to allow landings from this fishery to occur south of Cape Falcon. This action was likely to increase the number of boats participating in this fishery from the south over the level that was anticipated preseason. Because of these concerns, the fishery was opened

for two days only, August 10 and August 11, with a 100 coho landing limit for the open period. Even with these additional restrictions, the fishery exceeded the coho guideline and was not reopened.

The all-salmon, pink-directed fishery was opened on August 16 in the area from Carroll Island to the U.S./Canada border outside of a line which generally follows the 100 fathom line except in the northernmost area. The fishery operated on a 4 day on/3 day off cycle with guidelines of 35,000 coho and 3,500 chinook. A guideline of 160,000 pink salmon, established by the Fraser Panel of the PSC, was also in effect for this fishery. A landing limit of 80 coho and 10 chinook per 4-day open period was established preseason; however, the chinook restriction was dropped at the beginning of the fishery in response to low chinook catch rates in the early all-salmon-except-coho fishery. Terminal gear restrictions were in effect throughout the fishery. Only flashers with barbless, bare, blued or pink hooks or pink hoochies of three inches or less were allowed in an attempt to target harvest on pink salmon. The fishery was open on August 16 through August 19, August 23 through August 26, August 30 through September 2, September 6 through September 9, and September 13 through September 15. In response to low pink salmon catch rates, the 100 fathom restriction was dropped for the last open period. This fishery ran through the scheduled closing date of September 15 for a total of 19 fishing days.

The all-salmon fishery from Copalis Head to Cape Falcon was planned preseason to open on September 1 with a 4 day on/3 day off schedule, a 200 coho landing limit per open period, and quotas of 32,500 coho and 3,300 chinook. However, the coho quota was reduced inseason to 22,900 to compensate for an estimated overage of 9,600 coho during the August Leadbetter Point to Cape Falcon fishery. Again, in view of the high availability of coho, coupled with high effort levels, the fishery was limited to two days only, September 1 and September 2, with a 75 coho landing limit per open period. Even with these restrictions, the fishery exceeded its coho quota and did not reopen.

Non-Indian Effort and Harvest

The all-salmon-except-coho troll fishery, which was open from Cape Falcon to the U.S./Canada border from May 1 through June 15, harvested a total of 27,300 chinook. This catch was 88 percent of the 31,200 guideline. Additionally, this fishery was estimated preseason to have a coho hooking mortality impact of 3,400 coho.

The all-salmon troll fishery from Leadbetter Point to Cape Falcon, which was open on August 10 and August 11, harvested 29,300 coho, 800 chinook and 200 pink salmon. The coho catch exceeded the 19,500 guideline by 9,800 fish (estimated at 9,600 fish inseason), or 50 percent of the guideline. The chinook catch of 800 fish was only 40 percent of the 2,000 fish guideline established for this fishery.

The all-salmon, pink-directed troll fishery, which was open in the area from Carroll Island to the U.S./Canada border on a 4 day on/3 day off schedule from August 16 through September 15, harvested 25,800 coho, 1,100 chinook and 43,500 pink salmon. This fishery ran its full duration according to the adopted regulations, but did not attain its coho or pink guidelines. The catch of 25,800 coho was 74 percent of the 35,000 guideline, or a 9,200 fish underage. The catch of 43,500 pink salmon was only 27 percent of, or 116,500 fish below, the guideline of 160,000 fish established for this fishery. The catch of 1,100 chinook was 31 percent of the 3,500 guideline.

The all-salmon fishery from Copalis Head to Cape Falcon, which was open on September 1 and September 2, harvested 26,000 coho and 500 chinook. The coho quota established preseason for this fishery was 32,500 fish. However, this was reduced inseason to 22,900 coho in order to adjust for inseason estimates of the overage in the Leadbetter Point to Cape Falcon all-salmon troll fishery. The catch of 26,000 coho exceeded the revised quota by 3,100 fish. The chinook catch of 500 fish was only 15 percent of 3,300 guideline established for this fishery.

The total number of days fished for the non-Indian troll fishery in the area north of Cape Falcon in 1991 was 5,600. This was a reduction of 10 percent from the 6,200 days fished in 1990.

Non-Indian Fishery Goal Assessment

Overall, the non-Indian troll fisheries north of Cape Falcon did not exceed either the coho or chinook TACs established for this area in 1991. The troll fleet harvested a total of 81,100 coho, 93 percent of the non-Indian commercial TAC of 87,000 established for the area. This catch was a 20 percent reduction from the catch of 101,800 coho by the non-Indian fleet in 1990. The chinook catch of 29,700 was 74 percent of the 1991 non-Indian commercial TAC of 40,000 chinook. This was a 12 percent reduction from the catch of 33,600 chinook by the non-Indian fleet in 1990. This reduction in catch occurred despite an increase in the chinook TAC in 1991 over 1990. The pink salmon catch of 43,700 was only 27 percent of the guideline of 160,000 established for non-Indian fisheries in this area. This compares to a catch of 36,700 pink salmon in 1989.

Treaty Indian Troll Regulations

Treaty Indian troll fisheries operating between May 1 and September 30 in ocean areas and Area 4B during 1991 were constrained by chinook and coho quotas. The 80,000 coho quota was 12 percent below the 1990 quota (90,000) while the 33,000 chinook quota was 6 percent above the 1990 quota (31,200). The basis for 1991 quotas is discussed in the description of management objectives for the non-Indian troll fishery for the area north of Cape Falcon. The fishery operated under tribal regulations and landing schedules. An all-salmon-except-coho fishery was conducted from May 1 through June 30. All-salmon fisheries were conducted from July 7 through July 19, August 3 through August 8, August 10 through August 13, August 19, and October 7 through October 31 (Area 4B only). The May through September treaty Indian troll fishery was closed upon attainment of the coho quota. Season duration for 1990 was 84.5 days, 17.5 days shorter than the 1990 season.

Treaty Indian Troll Effort and Harvest

Total deliveries by 1991 treaty Indian ocean and Area 4B troll fisheries were 2,200, compared to 3,500 observed in the 1990 season (Appendix A, Table A-14). Deliveries during the May through September period were 1,500, compared to the 2,900 reported for 1990. For the entire year, the 1,100 deliveries in the Strait of Juan de Fuca (Area 4B) chinook fishery accounted for 50 percent of all deliveries, but were 52 percent below the 2,300 deliveries in 1990.

The total chinook troll harvest in ocean management areas and Area 4B during the entire year was 26,400 fish in 1991, compared to 39,400 fish in 1990. Approximately 21 percent of the total chinook catch was taken in the Strait of Juan de Fuca (Area 4B) during the winter season. The treaty Indian troll catch of chinook in the Strait of Juan de Fuca east of Area 4B was 34,800 fish, 8 percent below the 37,700 chinook harvested in 1990. Chinook catch in ocean management areas and Area 4B

during the May 1 to September 30 period was 20,600 fish, compared to 31,400 chinook harvested in 1990.

The treaty Indian troll fishery harvested 79,400 coho in ocean areas and Area 4B combined, compared to 99,600 coho taken in these areas in 1990. Of this total, 78,900 coho were taken during the May 1 through September 30 ocean management season and 500 were harvested during the October 7 through October 31 opening in Area 4B. An additional 4,600 coho were caught by treaty Indian troll fisheries in catch areas of the Strait of Juan de Fuca east of the Sekiu River (Statistical Areas 5 and 6C). The all-salmon-except-coho fishery was also estimated pre-season to have a hooking mortality of 4,700 coho.

The treaty Indian troll fishery harvested 4,600 pink salmon in 1991, compared to 11,100 pinks in 1989. An additional 1,100 pink salmon were harvested by the treaty Indian troll fishery in catch areas of the Strait of Juan de Fuca east of the Sekiu River (Statistical Areas 5 and 6C).

Treaty Indian Troll Fishery Goal Assessment

During May through September, the treaty Indian troll fishery harvested 20,600 chinook and 78,900 coho in ocean management areas (including Area 4B). Neither the chinook quota nor the coho quota were exceeded. The chinook catch was 38 percent below the quota (33,000 chinook) while the coho catch was 1 percent below the quota (80,000 coho).

RECREATIONAL FISHERIES BY MANAGEMENT AREA

U.S./Mexico Border to Horse Mountain

Management Objectives

The Council's management objectives in recreational fisheries in this area parallel those discussed previously for the commercial fisheries. An issue that is noteworthy is the objective to reduce impacts on Sacramento River winter-run chinook as required by the ESA.

Regulations

Recreational fishery regulations south of Horse Mountain were more restrictive than those in place in 1990; however, barbless hook requirements north of Point Conception, the daily bag limit of 2 salmon and the minimum legal size of 20 inches total length were the same as in previous years. The season north of Point Arena ran from mid-February to mid-November, while south of Point Arena it was shortened to open in early March and close in early November. In addition, an area centered on the mouth of San Francisco Bay extending out about three miles was closed during March.

Effort and Harvest

Recreational chinook landings at ports south of Horse Mountain totaled 67,600 fish. These landings were 58 percent of comparative 1990 landings (116,100). Recreational angler effort south of Horse Mountain totaled 142,900 angler trips, compared to 170,800 trips in 1990. The chinook salmon catch per angler trip averaged 0.47 chinook compared to 0.68 chinook in 1990.

Recreational coho landings south of Horse Mountain totaled 29,000 fish, nearly 3 times the 1990 landings (11,500).

Fishery Goal Assessment

If continued over several brood cycles, the shortened recreational fishery south of Point Arena, coupled with the area closure near the mouth of San Francisco Bay in March 1991, is expected to achieve reductions in impacts on Sacramento River winter-run chinook compared to previous years. No quantitative assessment of impact reductions on Sacramento River winter-run chinook is currently possible, since no marking programs for this stock are being carried out.

Horse Mountain to Humbug Mountain

Management Objectives

The Council's objective in the KMZ recreational fishery centered around providing fishing opportunity spanning the Memorial Day to Labor Day weekend periods, while limiting chinook catch to protect Klamath River fall-run chinook. Coho are managed as a unit south of Cape Falcon and are discussed more fully in the Cape Falcon to Humbug Mountain section. Coho harvest in this area did not constrain the fishery even though OCN contributions in the coho harvest are significant.

Regulations

For 1991, a chinook catch ceiling of 20,000 fish was established, salmon fishing was not allowed on Tuesdays and Wednesday each week, the 2 salmon daily bag limit could contain only 1 chinook, and no more than 6 salmon could be caught in any 7 consecutive day period. The season was scheduled to open on May 25 and close on September 30, except that the area between Trinidad Head and Punta Gorda inside six miles was scheduled to close October 31.

Effort and Harvest

Recreational landings in the KMZ totaled 19,700 chinook and 62,300 coho, compared to 36,700 chinook and 54,400 coho in 1990. Angler effort was 89,500 trips in 1991, 68 percent of the 1990 effort (132,500 trips).

Fishery Goal Assessment

The recreational fishery in the KMZ was closed from July 29 through August 30 when inseason monitoring of the catch showed that the 20,000 chinook guideline was nearly attained. Based on CWT recoveries in ocean and inriver fisheries and spawning escapements, the overall ocean harvest rate on age-4 Klamath River fall chinook in 1991 (20 percent) exceeded the 16 percent goal. A more complete analysis will be provided in preseason report I.

Humbug Mountain to Cape Falcon

Management Objectives

Seasonal duration objectives for this recreational fishery was a season from approximately May 1 through September 15. Chinook harvest in this area is minor and did not constrain the fishery. Season determination and allowable coho harvest levels for the recreational fishery between Humbug Mountain and Cape Falcon were driven by impacts on OCN coho stocks. The Council took emergency action to reduce the targeted harvest rate (ocean and inland combined) on OCN coho from 52 percent to 46 percent. A discussion of details leading to the adoption of the OCN coho 46 percent harvest rate is presented in the coho management objectives section for the Humbug Mountain to Cape Falcon troll fishery.

Sharing of allowable coho impacts between ocean recreational and commercial troll fisheries, in the area between Cape Falcon and the U.S./Mexico border, was guided by the Council framework amendment schedule. The framework amendment also provided for an inseason reallocation of a portion of the total ocean recreational quota to the troll fishery about August 1, if the projected total ocean recreational fishery harvest was less than the preseason harvest allocation.

Regulations

The 1991 recreational coho fishery between Cape Falcon and the U.S./Mexico border was constrained by an overall harvest quota of 259,000 coho. Only the area between Humbug Mountain and Cape Falcon closed for the remainder of the season upon attainment of the coho quota. The fishery in the Humbug Mountain to Cape Falcon area was open to all-salmon fishing under a two fish daily bag with a six fish in seven days restriction. Minimum size limits for coho and chinook were 16 and 20 inches, respectively. The fishery opened in waters less than 27 fathoms deep (approximately 0 to 2 miles from shore) from May 1 through May 27. After May 27, the fishery operated without the area restriction. The fishery remained open through July 28 when the 259,000 coho quota was exceeded.

The Council did not make an inseason adjustment (i.e., harvest reallocation), in the area from Cape Falcon to the U.S./Mexico border, between the recreational fishery and the troll fishery in 1991. The coho allocation was not sufficient to meet the season duration goals of the recreational fishery.

Effort and Harvest

Recreational fishery effort between Humbug Mountain and Cape Falcon totaled 132,000 angler trips. This was 22 percent below the comparative 1990 effort (169,100). Total chinook landings of 6,600 fish were 37 percent below landings from the 1990 season (10,400). Total coho landings in this area of 197,500 fish were 32 percent above landings from the 1990 season (149,100). Pink landings totaled 200 fish. There were no pink landings in 1990.

Fishery Goal Assessment

The combined Cape Falcon to U.S./Mexico border recreational fisheries landed 288,800 coho, 12 percent above the 259,000 harvest quota (Tables I-9 and I-12). The estimated ocean harvest rate on OCN coho (42 percent) was below the preseason objective of 44 percent.

The Cape Falcon to Humbug Mountain fishery season duration objectives were not met as the fishery closed July 28 when the Cape Falcon to U.S./Mexico border coho quota was exceeded.

Cape Falcon to U.S./Canada Border

Management Objectives

Chinook

Management objectives for chinook stocks in this area are described in the troll fishery section. The 1991 non-Indian TAC north of Cape Falcon of 80,000 chinook was allocated to the commercial and recreational fisheries according to the schedule detailed in Amendment 9 to the salmon FMP and resulted in a recreational TAC of 40,000 chinook for 1991. This represents a 7 percent increase over the 1990 recreational TAC of 37,500 chinook.

Coho

Management objectives for this area are described in the troll fishery section. The 1991 non-Indian TAC north of Cape Falcon of 320,000 coho was allocated to the commercial and recreational fisheries according to the schedule detailed in Amendment 9 to the salmon FMP and resulted in a recreational TAC of 233,000 coho. This represents a decrease of 5 percent from the 1990 recreational TAC of 245,000 coho. The distribution of the coho quota among the various ports north of Cape Falcon was determined by the Council.

Regulations

The overall recreational quota of 233,000 coho north of Cape Falcon was divided into four subarea quotas. As in the past few years, the bag limit was set at two fish per day; barbless hooks were required; and Conservation Zone 1, at the mouth of the Columbia River, was closed to fishing. With the exception of the mid-September south of the Red Buoy Line fishery, all ocean recreational fisheries north of Cape Falcon were open five days per week, Sunday through Thursday.

The area from Leadbetter Point to Cape Falcon was allocated a subarea quota of 116,500 coho and a guideline of 16,600 chinook by the Council. To ensure a season during mid-September at the Columbia River mouth south of the Red Buoy Line, a reserve of 7,000 coho was withheld from the area subquota, reducing the quota for the entire area to 109,500 coho. The total subarea fishery ran for 36 days from June 25 through August 12. Inseason catch estimates for this initial season indicated there were still approximately 5,600 coho remaining in the quota. These remaining coho were transferred to the south of the Red Buoy Line fishery, scheduled to open on September 16.

By early September, the recreational ocean fisheries in the ports north of Leadbetter Point had already been closed by their respective subarea coho quotas. It was decided inseason to transfer any remaining coho, along with the remaining 5,600 coho from the Leadbetter Point to Cape Falcon area, to the mid-September fishery south of the Red Buoy Line. This resulted in a revised quota for this fishery of 12,400 coho. The opening date was changed to September 15, one day before the preseason scheduled opener. This fishery was scheduled for seven days a week, but was closed after only four days on September 18. An evaluation of the catch data showed there were enough coho

remaining in the quota for one additional day of fishing, and the area was reopened for one day on September 26, for a total of five fishing days in the area south of the Red Buoy Line.

The area from the Queets River to Leadbetter Point opened on June 25 with a subarea quota of 88,400 coho and a guideline of 21,200 chinook. The fishery lasted 36 days, closing on August 12, even though there were coho still remaining in the quota. The decision was made to set aside the remaining coho for a later reopening of the area in September. Inseason catch estimates determined that enough coho remained for 2 additional days of fishing, and the area was reopened on September 3 and September 4, for a total of 38 fishing days for the port of Westport.

The area from Cape Alava to the Queets River opened on July 1 with a subarea quota of 4,800 coho and a guideline of 200 chinook. This area remained open through July 30 when the coho quota was estimated to have been attained. The port of La Push was open for a total of 22 fishing days in 1991.

The area from the U.S./Canada border to Cape Alava opened on July 1 with a subarea quota of 23,300 coho and a guideline of 2,000 chinook. This fishery remained open for 17.5 days before being closed at noon on July 24 when the coho quota was estimated to have been attained. This area did not reopen on its ocean quota.

A state-waters, all-salmon fishery from the Bonilla-Tatoosh Line east to the Sekiu River (Area 4B) opened on August 19. This fishery was open 6 days a week, Saturday through Thursday, and closed on August 25 when the 16,000 coho quota established by WDF was projected to have been attained. Evaluation of the catch data indicated that enough fish remained in the quota to allow one additional day of fishing and the area reopened for one day on September 1, for a total of seven fishing days in 1991.

Effort and Harvest

Salmon catches in the area from Leadbetter Point to Cape Falcon, which was open for recreational fishing from June 24 through August 12, were 103,700 coho, 3,200 chinook and 100 pink salmon. The coho catch of 103,700 was 95 percent of the 109,500 coho quota for this fishery. The coho remaining in the quota were transferred to the south of the Red Buoy Line fishery in September. The chinook catch of 3,200 was only 20 percent of the 16,600 chinook guideline established for the ocean and south of the Red Buoy Line fisheries combined.

The recreational fishery south of the Red Buoy Line, which was open from September 15 through September 18 and on September 26, caught 10,900 coho and 100 chinook. The preseason quota of 7,000 coho for this fishery was revised inseason to 12,400 fish, based on the transfer of any remaining coho from the three ports north of Leadbetter Point along with the coho remaining from the Leadbetter Point to Cape Falcon fishery. The catch of 10,900 coho was 88 percent of the inseason revised quota for this fishery.

Combined, the Leadbetter Point to Cape Falcon and south of the Red Buoy Line fisheries caught 114,600 coho, 98 percent of the entire area quota of 116,500 fish. This catch was a reduction of 8 percent from the 124,000 coho caught by the recreational fishery in 1990. The chinook catch in the 2 fisheries combined was 3,300 fish, 20 percent of the 16,600 chinook guideline established for the entire area. This was a 75 percent reduction from the 13,200 chinook caught in this area in 1990.

The recreational fishery from the Queets River to Leadbetter Point, which was open from June 24 through August 12 and on September 3 and September 4, caught 88,900 coho, 7,200 chinook and 100 pink salmon. The coho catch exceeded the quota of 88,400 by 500 fish, or 1 percent of the quota. This catch was a 3 percent increase over the 1990 catch of 86,100 coho in this area. The 1991 chinook catch of 7,200 was only 34 percent of the 21,200 guideline. This was a reduction of 57 percent from the 1990 catch of 16,800 fish.

The area from Cape Alava to the Queets River, which was open from July 1 through July 30, harvested a total of 5,200 coho, 400 chinook and less than 50 pink salmon. The coho catch exceeded the quota of 4,800 by 400 fish, or 8 percent of the quota. The catch was identical to the 5,200 coho caught in this area in 1990. The 1991 chinook catch of 400 was double the guideline of 200 set for this area. This overage, however, was more than compensated for by the extremely low catches of chinook in other recreational fisheries north of Cape Falcon. The chinook catch in this area was a 33 percent reduction from the 600 chinook caught in 1990.

The fishery in the area from the U.S./Canada border to Cape Alava, which was open from July 1 through July 24, caught 23,300 coho, 2,400 chinook and 500 pink salmon. The coho catch was 100 percent of the 23,300 quota established for this area. This was a reduction of 8 percent from the 1990 catch of 25,400 coho. The 1991 chinook catch exceeded the 2,000 chinook guideline by 400 fish, or 20 percent of the guideline. This was an increase of 4 percent from the 2,300 fish caught in 1990 in this area.

The state-waters recreational fishery, which operated in the area from the Bonilla-Tatoosh line east to the Sekiu River (Area 4B) from August 19 through August 25 and on September 1, harvested 15,100 coho, 400 chinook and 1,500 pink salmon. This fishery operated under a quota of 16,000 coho established by WDF. The catch of 15,100 was 94 percent of the quota for this fishery. Although there was no chinook guideline established for this fishery, all chinook impacts in this fishery counted towards the overall non-Indian TAC north of Cape Falcon.

A total of 148,800 angler trips occurred in the recreational fishery north of Cape Falcon (including the Washington state-waters Area 4B fishery) in 1991. This was a decrease of 25 percent from the 197,600 trips in 1990.

Fishery Goal Assessment

Overall, the 1991 recreational fisheries north of Cape Falcon did not exceed either the coho or chinook TACs established for this area. The combined north of Cape Falcon ocean recreational fisheries harvested 232,000 coho, nearly 100 percent of the 233,000 TAC for this area. This was a 4 percent reduction from the 240,700 coho caught in 1990. The total chinook catch (including the Area 4B fishery) was 13,700 in 1991, 34 percent of the 40,000 TAC. This was only 41 percent of the 33,300 chinook caught in this area in 1990. This reduction in catch occurred despite an increase in the chinook TAC in 1991 over 1990 levels. The total catch of pink salmon in the ocean recreational fisheries was 700 fish.

PACIFIC SALMON COMMISSION

The Pacific Salmon Treaty between the United States and Canada became effective in March 1985 and established the PSC with the responsibility for implementing the treaty. Because many of the

stocks under the jurisdiction of the Council are significantly affected by management actions taken in Canadian and Alaskan waters, considerable interaction between the Council and the PSC can be expected at both the policy and technical levels.

The treaty established a number of harvest ceilings for chinook salmon for various Canadian and Alaskan fisheries in response to a coastwide program to rebuild depressed natural stocks of chinook salmon. Ceilings for northern British Columbia and southeast Alaska fisheries affect far-northerly migrating stocks originating in Washington, Oregon and Idaho. These include Washington coastal; upper Columbia River bright, spring, and summer; and far north migrating Oregon coastal chinook stocks. The ceilings for WCVI troll and Georgia Strait troll and recreational fisheries affect far-northerly migrating stocks to a lesser degree, but have a major impact on more southerly distributed Columbia River tule and Puget Sound stocks. Ceiling management is also affected by an overage-underage policy adopted by the PSC to address imprecision in agency regulatory processes. Actual catches, compared to PSC harvest ceilings, are summarized in Table I-13. Note that these catch statistics do not reflect changes in incidental mortality losses associated with the regulation of these fisheries.

No direct management measures for chinook salmon within the Council management area were specified in the treaty except for a commitment to ensure that the bulk of depressed naturally spawning chinook stocks, saved as a result of PSC harvest ceilings, accrue principally to escapement. The Council's ocean fisheries and inside fisheries on depressed chinook stocks were designed to minimize impacts on spawning escapements of these depressed stocks.

Canadian WCVI fisheries significantly impact many of the chinook and coho stocks that influence the Council's management actions in the area north of Cape Falcon. The harvest by the 1991 WCVI troll fishery is estimated at 202,100 chinook (compared to a PSC ceiling of 360,000) and 1,877,900 coho (compared to a ceiling of 1,800,000). The WCVI recreational fishery does not operate under management regimes established by the PSC. With the exception of the Barkley Sound area in late summer, catches are not estimated for the WCVI recreational fishery.

TABLE I-13. Preliminary salmon catches compared to PSC harvest ceilings for 1991.
(Page 1 of 1)

Area and Fishery	Thousands of Salmon		Difference Between Catch and Ceiling	
	Ceiling	Catch	Numbers	Percent
<u>CHINOOK</u>				
Southeast Alaska				
Troll, Net and Recreational	273.0	364.9 ^{a/}	26.3	9.6
North and Central BC				
Troll, Net and Recreational	273.0	299.0 ^{b/}	26.0	9.5
WCVI Troll	360.0 ^{c/}	202.1	-157.9	-43.9
Georgia Strait				
Troll and Recreational	275.0	144.7	-130.3	-47.4
<u>COHO</u>				
WCVI Troll	1,800.0	1,877.9	77.9	4.2

a/ Including hatchery add on of 65,600.

b/ Includes 5,000 chinook harvested in terminal areas which Canada proposes to exclude from the ceiling.

c/ The ceiling for this fishery does not reflect the 1991 PSC management regime. Management obligations for this fishery were to achieve a fishery harvest rate equal to the 1985-1987 average.