

## I. SUMMARY OF 1988 OCEAN SALMON MANAGEMENT

This chapter provides a brief summary of the coastwide ocean salmon seasons and landings for 1988. A chronological summary of ocean salmon management events for 1988 is contained in Appendix C.

### Troll Fishing Regulations

A summary of the actual 1988 nontreaty and treaty troll fishing regulations for both the EEZ and state territorial waters (zero to three miles) is provided in Tables I-1 and I-2, respectively. A historical summary of troll fishing regulations for each of the three Pacific coast states and for treaty Indian troll fisheries is provided in Appendix C, Tables C-1, C-3, C-5, and C-7.

#### California South of Point Arena

The May 1 through September 30 troll season for chinook south of Point Arena was of the same duration as it has been since 1984. After a chinook-only season from May 1 through May 31, the all-species fishery in the area opened June 1 and was closed August 19 upon attainment of the coho quota for the area south of Cape Falcon. The season continued for all-salmon-except coho through September 30.

#### Point Arena to Horse Mountain

The troll chinook salmon season for the area between Point Arena and Horse Mountain was continuous from May 1 through September 30, except salmon fishing was not permitted on June 1 or Thursday through Saturday of each week between June 2 and July 17. No fishing was to be permitted between Cape Vizcaino and Horse Mountain (Shelter Cove area) during the month of May, but the State of California permitted commercial fishing for all-species-except coho in territorial waters under an 8,000 chinook quota. The special territorial waters fishery took place from May 1 through May 31, except fishing was not permitted on Thursday through Saturday of each week and on May 24 and May 25. The fishery was conducted in contravention to the 1988 salmon management measures recommended by the Council. The all-species fishery between Point Arena and Horse Mountain opened June 5 with fishing permitted only from Sunday through Wednesday until July 13. Beginning July 17, all-species fishing was permitted every day until August 19 when the coho quota for the area south of Cape Falcon was attained. All-species-except coho fishing between Point Arena and Horse Mountain resumed August 20 and closed September 30.

#### Horse Mountain to Orford Reef Red Buoy

The general area troll fishery for all species in the KMZ lasted three days, opening June 5 and closing June 7. The fishery was conducted under a 40,400 inseason revised chinook quota. Special area quota fisheries for chinook were provided off the Rogue River during May and September, the Eel River during September, and the Elk River (in state waters only) during October through November.

Table 1-1. Summary of actual ocean nontreaty troll salmon fishing regulations for 1988.<sup>a/</sup>

Area and Season	Salmon Species	Actual Quota <sup>b/</sup>		Special Restrictions <sup>c/</sup>
		Chinook	Coho	
U.S.-Canada Border to Cape Falcon, OR				Conservation Zone 1 <sup>1</sup> (Columbia River mouth) is closed.
May 1-31 (31 days)	All except coho	55,300	-	
June 1-14 (14 days)	All except coho	18,400	-	
Cape Falcon to Cascade Head, OR				None.
May 1-June 30 (61 days)	All except coho	None	-	
July 1-Aug. 19 (50 days)	All	None	d/	
Aug. 20-Oct. 31 (73 days)	All except coho	None	-	
Cascade Head to Cape Arago, OR				From July 1-13, at least 1 chinook must be possessed or landed for each 2 coho; except that 2 coho may be possessed or landed without the ratio requirement.
May 1-June 30 (61 days)	All except coho	None	-	
July 1-13 (13 days)	All, with restrictions	None	d/	
July 16-Aug. 19 (35 days)	All	None	d/	
Aug. 20-Oct. 31 (73 days)	All except coho	None	-	
Cape Arago to Orford Reef Red Buoy, OR				None.
May 1-June 30 (61 days)	All except coho	None	-	
July 16-Aug. 19 (35 days)	All	None	d/	
Aug. 20-31 (12 days)	All except coho	None	-	
Sept. 16-Oct. 31 (46 days)	All except coho	None	-	
Humbug Mt. to Punta Gorda, CA				Conservation Zone 3 (Klamath River mouth) closed; not more than 6 lines per boat off California.
June 5-7 (3 days)	All except coho	48,000 (40,400)	-	
Sisters Rocks to Chetco Pt., OR				Open only within 6 nautical miles of shore.
May 1-4 (4 days)	All except coho	7,500	-	
Sisters Rocks to Mack Arch, OR				Open only within 6 nautical miles off shore.
Sept. 1-14 (14 days)	All except coho	7,500	-	
Trinidad Head to Punta Gorda, CA				Open only within 6 nautical miles of shore. Not more than 6 lines per boat.
Sept. 1-8 (8 days)	All	15,000	None	

Table I-1. Summary of actual ocean nontreaty troll salmon fishing regulations for 1988 (continued).

Area and Season	Salmon Species	Actual Quota <sup>b/</sup>		Special Restrictions <sup>c/</sup>
		Chinook	Coho	
Horse Mt. to Pt. Arena, CA				Not more than 6 lines per boat.
May 1-31 (31 days) <sup>e/</sup>	All except coho	None	-	
June 5-July 13 (24 days)	All	None	d/	
Sunday thru Wednesday only				
July 17-Aug. 19 (34 days)	All	None	d/	
Aug. 20-Sept. 30 (42 days)	All except coho	None	-	
Pt. Arena to U.S.-Mexico Border				Not more than 6 lines per boat.
May 1-31 (31 days)	All except coho	None	-	
June 1-Aug. 19 (80 days)	All	None	d/	
Aug. 20-Sept. 30 (42 days)	All except coho	None	-	

a/ In addition to the seasons listed here, ODFW established limited late season all-salmon-except coho fisheries inside state waters between Cape Blanco and Humbug Mt. Details of these seasons are provided in Appendix C, Table C-3.

b/ Inseason adjusted quotas are given in parentheses. Inseason quota changes are reported under "Ocean Fisheries" in Chapters II and III.

c/ Single point, single shank barbless hooks required coastwide. Minimum size limits north of Cape Falcon, Oregon were 28 inches for chinook and 16 inches for coho. Minimum size limits south of Cape Falcon were 26 inches for chinook and 16 inches for coho caught north of Orford Reef Red Buoy, Oregon and 22 inches for coho caught south of Orford Reef Red Buoy.

d/ For the entire area south of Cape Falcon, the preseason catch quota was 625,300 coho. From Florence South Jetty to Orford Reef Red Buoy, the impact was limited to 198,600 coho with a 153,900 catch quota. The entire troll coho fishery south of Orford Reef Red Buoy was limited to a combined catch quota and hooking mortality of 100,000 coho and a catch quota of 89,000. On August 15, a transfer of 45,000 coho was made from the south of Cape Falcon recreational fishery to the troll fishery between Cape Falcon and Horse Mt.

e/ Between Horse Mt. and Cape Vizcaino this season was closed within the EEZ but open in state waters, on Sunday through Wednesday of each week from May 1 through May 23 and May 29 through May 31 (a total of 17 days), under an 8,000 chinook quota. This season was in contravention of the Council's recommended seasons.

Table I-2. Summary of actual treaty Indian ocean and Area 4B troll salmon seasons for 1988.

Tribe and Area	Species	Seasons <sup>a/</sup>		Minimum Size Limit (Inches)	
		Dates	Days	Chinook	Coho
Quinault, Hoh, and Quileute Tribes Areas 2 and 3	Chinook	May 1-July 9	70	26	-
	All	July 10-19 <sup>b/</sup>	10	26	16
	All	July 20-Aug. 21	33	26	16
	All	Sept. 1-3	3	26	16
Makah Tribe, Areas 3N, 4, 4A	Chinook	May 1-July 9	70	26	-
	All	July 10-19 <sup>b/</sup>	10	26	16
	All	July 20-Aug. 21	33	26	16
	All	Sept. 1-3	3	26	16
Area 4B	All	Jan. 1-Apr. 14	105	22	20
	All	Apr. 15-30	16	24	22
	Chinook	May 1-July 9	70	26	-
	All	July 10-19 <sup>b/</sup>	10	26	16
	All	July 20-Aug. 21	33	26	16
	All	Sept. 1-3	3	26	16
	All	Nov. 1-Dec. 31	61	22	20
Klallam Tribes (Area 4B)	All	Jan. 1-Apr. 30	121	24	16
	All	May 1-Sept. 3	126	24	20
	All	Nov. 1-Dec. 31	61	22	16

a/ Overall quotas for these fisheries were 60,000 chinook and 68,000 coho.

b/ A minimum of 1 chinook for every 2 coho catch ratio was instituted.

### Central Oregon (Orford Reef Red Buoy to Cape Falcon)

In the central Oregon area, special time/area and landing restrictions in the coho fishery were implemented to balance fishing opportunity among the ports and to improve fishery benefits for small (day) boat fishermen targeting primarily on coho. Chinook fishery regulations provided approximately a six month season (May through October), but established two-week block closures in July and September for Cape Arago to Orford Reef Red Buoy to reduce impacts on Klamath River fall chinook.

### North of Cape Falcon

#### Nontreaty

No all-species fishery opportunity was provided to the nontreaty troll fishery in the area north of Cape Falcon during 1988. The nontreaty troll chinook quota for 1988 (73,700) was approximately 20 percent greater than for 1987. This increase resulted from a trade of coho for chinook between the troll and recreational fisheries. The chinook directed season, planned for May 1 through June 15, was closed June 14 to prevent catches exceeding the quota. Total boat days fished in 1988 (5,900) exceeded total effort levels for the 1986 and 1987 seasons.

#### Treaty Indian

Treaty troll fisheries operating in ocean areas (including Area 4B) in 1988 were constrained by a 68,000 coho quota, below the 1987 quota of 86,000. Chinook harvest and fishery impact for the period May through September 1 was controlled by a quota of 60,000 which was approximately 280 percent greater than for 1987. Treaty trollers operated under tribal imposed landing schedules. A chinook-only fishery was conducted from May 1 through July 9. The fishery operated under a landing ratio restriction of at least one chinook for each two coho during July 10 through July 19. The species landing ratio reduced the actual allowable coho harvest because of hook-and-release mortality. All-species fisheries, without landing ratio restrictions, were conducted from July 20 through August 21 and from September 1 through September 3. The treaty troll fishery was closed on September 3 upon attainment of the coho quota. Season duration for 1988 was substantially longer than for 1987. Total deliveries by treaty troll fisheries from May 1 through September 3 were 2,600, approximately double the 1987 level.

### Recreational Fishing Regulations

A summary of the actual recreational fishing regulations for both the EEZ and state territorial waters is provided in Table I-3. Given the extreme low level of allowable harvest for the recreational fishery in the area north of Cape Falcon for 1988, short seasons were expected. Sport seasons south of Cape Falcon attained their quotas or planned season durations. A historical summary of recreational fishing regulations, for each of the three Pacific coast states is provided in Appendix C, Tables C-2, C-4, and C-6.

Table I-3. Summary of actual ocean recreational salmon fishing regulations for 1988.<sup>a/</sup>

Area and Season	Salmon Species	Actual Quota or Guideline (*) <sup>b/</sup>		Daily Limit and Special Restrictions <sup>c/</sup>
		Chinook	Coho	
U.S.-Canada Border to Queets River, WA				
July 3-Aug. 2 (23 days)	All	2,800*	20,000	Two salmon, only 1 of which may be a chinook; modified to 2 salmon of any species on July 24. Closed 6 to 200 nautical miles from shore.
Sunday thru Thursday only				
Aug. 19 (1 day)	All			
Sept. 2 (1 day)	All			
Queets River to Leadbetter Pt., WA				
July 3-31 (21 days)	All	17,800*	50,000	Two salmon, only 1 of which may be a chinook; modified to 2 salmon of any species on July 24. Closed 6 to 200 nautical miles from shore.
Sunday thru Thursday only				
Aug. 18 (1 day)	All			
Leadbetter Pt. to Cape Falcon, OR				
July 11-24 (10 days)	All	9,200*	30,000	Two salmon, only 1 of which may be a chinook. Conservation Zone 2 (Columbia River mouth) 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.
Sunday thru Thursday only				
Cape Falcon to Orford Reef Red Buoy, OR				
May 1-27 (27 days)	All	None	d/	Two salmon, no more than 6 fish in 7 consecutive days.
Within the 27 fathom curve				
May 28-Sept. 11 (107 days)	All	None	d/	
Orford Reef Red Buoy to Horse Mt., CA				
May 28-Sept. 11 (107 days)	All	55,000	d/	Two salmon thru July 9, then 1 salmon thru Sept. 11; no more than 6 fish in 7 consecutive days. Conservation Zone 3 (Klamath River mouth) closed Aug. 1-31. <sup>e/</sup>

Table I-3. Summary of actual ocean recreational salmon fishing regulations for 1988. <sup>a/</sup>

Area and Season	Salmon Species	Actual Quota or Guideline ( <sup>a/</sup> )		Daily Limit and Special Restrictions <sup>c/</sup>
		Chinook	Coho	
Trinidad Head to Punta Gorda Sept. 12-30 (19 days)	All	None	None	Two salmon, no more than 6 fish in 7 consecutive days. Open only within 6 nautical miles of shore.
Horse Mt. to U.S.-Mexico Border Feb. 13-Nov. 13 (275 days)	All	None	d/	Two fish.

a/ In addition to the seasons listed here, ODFW established limited late season all-salmon-except coho fisheries inside state waters near the mouths of the Elk and Sixes rivers and at the mouth of Tillamook Bay. Details of these seasons are provided in Appendix C, Table C-4.

b/ Inseason adjusted quotas are given in parentheses. Inseason quota changes are reported under "Ocean Fisheries" in Chapters II and III.

c/ Single point, single shank barbless hooks were required from U.S.-Canada border to Pt. Conception, California. Minimum size limits were (1) 24 inches for chinook and 16 inches for coho north of Cape Falcon, Oregon; (2) 20 inches for chinook and 16 inches for coho from Cape Falcon to Orford Reef Red Buoy, Oregon; and (3) 20 inches for both chinook and coho south of Orford Reef Red Buoy.

d/ The overall recreational impact was limited to a preseason catch quota south of Cape Falcon of 298,400 coho. Only the area between Cape Falcon and Orford Reef Red Buoy would have closed if the quota had been reached in 1988. The preseason coho quota was revised downward to 253,400 on August 15 following a transfer of 45,000 coho to the troll fishery as provided in the allocation plan.

e/ Federal regulations decreasing the bag limit to 1 fish were not implemented until 0001 hours July 12.

### South of Horse Mountain

The 1988 recreational fishery off California south of Horse Mountain operated from mid-February to mid-November, as in past years.

### Horse Mountain to Orford Reef Red Buoy

This fishery had a quota for chinook through September 11 and was under the overall coho quota south of Cape Falcon, but the recreational fishery would not close if the coho quota was reached. The fishery between Horse Mountain and Orford Reef Red Buoy was managed as a unit to protect Klamath River fall chinook. The season was continuous and encompassed the Memorial and Labor Day weekends, but the bag limit was reduced to one fish from July 10 through September 11 to extend the season length.

### Central Oregon (Orford Reef Red Buoy to Cape Falcon)

The 1988 recreational fishery south of Cape Falcon did not reach its coho quota and was closed as scheduled on September 11. Sufficient coho quota remained to allow a 45,000 transfer (i.e., rollover) to the troll fishery in mid-August.

### North of Cape Falcon

The total chinook quota for 1988 was half the 1987 season quota. Seasons in 1988 were extremely short, terminating on the basis of coho quotas for all subareas.

### Fishing Effort and Harvest

#### Coastwide Summary

A coastwide summary of ocean fishing effort and harvest is provided in Tables I-4 through I-8 for chinook, coho, and pink salmon. The combined harvest by the 1988 commercial troll ocean salmon fisheries off California, Oregon, and Washington amounted to 1,887,000 chinook; 746,000 coho; and only a few pinks. The recreational fleet harvested 229,000 chinook; 350,000 coho; and 0 pinks.

The commercial troll chinook harvest in the Council area was 27 percent above the 1987 landings and 80 percent above the 1971-1975 average. The 1988 troll chinook catch and combined troll and recreational catch appear to have set all-time record highs for the Council management area. Recreational chinook harvest was 78 percent of the 1987 catch, and only 53 percent of the 1971-1975 average. The combined California troll and sport landings of 1,476,000 chinook were the largest recorded for the state since statewide fishery monitoring began in 1962. The combined Oregon troll and sport landings were the second largest on record.

The commercial troll coho harvest in the Council area was 39 percent above the 1987 landings, but only 34 percent of the 1971-1973 average. Recreational coho harvest was 1 percent above the 1987 catch but only 39 percent of the 1971-1973 average.

Table 1-4. Coastwide chinook landings in thousands of fish for the ocean troll and sport fisheries, 1971-1988 with five-year averages.

Year or Average	California <sup>a/</sup>			Oregon <sup>b/</sup>			Washington <sup>c/</sup>			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	169	732	208	41	258	280	211	490	1,051	430	1,481	1,173	238	299	16	3,206
1976-1980	619	93	711	234	41	275	214	115	329	1,067	248	1,315	1,078	446	303	18	3,160
1981-1985	461	108	569	151	33	184	86	55	141	699	196	894	812	285	243	23	2,258
1971	434	188	622	103	30	133	252	160	412	789	378	1,167	1,270	134	334	15	2,920
1972	492	200	692	127	44	171	203	212	415	822	456	1,278	1,223	175	242	15	2,933
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	72	710	192	23	215	166	96	262	996	191	1,187	1,033	486	376	17	3,099
1979	727	122	849	245	21	266	147	77	224	1,119	220	1,339	997	440	338	17	3,131
1980	589	84	673	209	19	228	135	54	189	933	157	1,090	1,002	414	300	20	2,826
1981	588	82	670	160	29	189	117	84	201	865	195	1,060	868	285	248	21	2,482
1982	765	144	909	233	39	272	160	107	267	1,158	290	1,448	994	196	242	26	2,906
1983	294	63	357	79	25	104	75	48	123	449	136	585	759	228	271	22	1,865
1984	300	89	389	64	17	81	28	7	35	392	113	505	811	443	236	22	2,017
1985	360	161	521	217	56	273	52	28	80	629	245	874	626	268	217	25	2,010
1986	826	142	967	402	22	424	50	21	71	1,278	185	1,463	592	217	236	21	2,483
1987	876	193	1,069	529	59	588	85	40	125	1,490	292	1,782	0	177	242	24	2,895
1988	1,305	171	1,476	468	38	506	114 <sup>d/</sup>	19	133	1,887	229	2,115	597	172	231	23	3,138

a/ California troll catches are preliminary for 1988.

b/ Includes troll catches from Alaska, Washington, and California landed in Oregon. Preliminary data for 1988.

c/ Includes troll catches from Area 4B, Alaska, Oregon, and California landed in Washington. Preliminary data for 1986-1988.

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

Table I-5. Coastwide coho landings in thousands of fish for the ocean troll and sport fisheries, 1971-1988 with three-year averages.

Year or Average	California <sup>a/</sup>			Oregon <sup>b/</sup>			Washington <sup>c/</sup>			Council Area			Canadian		Southeast Alaska		Grand Total
	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Troll	Sport	
1971-1973	316	48	364	1,037	264	1,301	847	587	1,434	2,200	899	3,099	2,770	236	574	NA	6,679 <sup>d/</sup>
1974-1976	494	52	546	1,207	356	1,563	1,063	673	1,736	2,764	1,081	3,845	2,327	547	528	NA	7,246 <sup>d/</sup>
1977-1979	182	23	205	591	212	803	662	417	1,079	1,435	652	2,087	2,575	733	842	36	6,273
1980-1982	75	19	94	508	234	742	389	269	658	973	521	1,494	2,439	501	964	38	5,435
1983-1985	39	21	60	139	151	290	117	143	260	296	314	610	2,948	525	1,334	57	5,473
1971	442	67	509	1,490	312	1,802	1,264	747	2,011	3,196	1,126	4,322	3,457	NA	391	NA	8,170 <sup>d/</sup>
1972	158	45	203	825	248	1,073	575	542	1,117	1,558	835	2,393	2,369	335	792	NA	5,889 <sup>d/</sup>
1973	348	32	380	796	232	1,028	702	472	1,174	1,846	736	2,582	2,483	373	540	NA	5,978 <sup>d/</sup>
1974	656	77	733	1,137	314	1,451	1,038	595	1,633	2,831	986	3,817	2,700	772	845	NA	8,134 <sup>d/</sup>
1975	204	21	225	657	252	909	774	481	1,255	1,635	754	2,389	1,404	454	214	NA	4,461 <sup>d/</sup>
1976	622	58	680	1,827	501	2,328	1,377	943	2,320	3,826	1,502	5,328	2,876	415	525	NA	9,144 <sup>d/</sup>
1977	45	14	59	446	195	641	710	490	1,200	1,201	699	1,906	2,248	682	507	36	5,373
1978	316	41	357	612	260	872	610	470	1,080	1,538	771	2,309	2,570	1,103	1,101	49	7,132
1979	184	15	199	715	181	896	667	290	957	1,566	486	2,052	2,906	414	919	23	6,314
1980	50	21	71	383	326	709	389	362	751	822	709	1,531	2,695	642	707	33	5,608
1981	84	9	93	620	200	820	400	238	638	1,104	447	1,551	2,112	406	862	28	4,959
1982	92	26	118	522	175	697	379	206	585	993	407	1,400	2,509	454	1,322	53	5,738
1983	60	28	88	320	147	467	68	209	277	448	384	832	3,456	404	1,280	55	6,027
1984	47	19	66	14	123	137	67	40	107	128	182	310	3,148	443	1,133	60	5,094
1985	11	15	26	84	182	266	216	179	395	311	376	687	2,239	728	1,589	55	5,298
1986	36	17	52	440	212	652	159	173	332	633	402	1,035	4,118	574	2,126	40	7,894
1987	44	46	90	355	177	532	137	123	261	537	346	883	2,812	665	1,041	50	5,451
1988	51	35	86	623	226	849	72 <sup>e/</sup>	89	93	746	350	1,095	2,257	1,100	500	33	4,985

a/ California troll catches are preliminary for 1988.

b/ Includes troll catches from Alaska, Washington, and California landed in Oregon. Preliminary data for 1988.

c/ Includes troll catches from Area 4B, Alaska, Oregon, and California landed in Washington. Preliminary data for 1986-1988.

d/ Incomplete.

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

Table 1-6. Coastwide pink salmon landings in thousands of fish for the ocean troll and sport fisheries, 1971-1988.

Year	California	Oregon			Washington			Council Area			Canadian	Southeast Alaska	Grand Total
	Troll	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total	Troll	Troll	Total
1971	1	2	NA	2	21	9	30	24	9	33 <sup>a/</sup>	1,284	105	1,422 <sup>a/</sup>
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 <sup>a/</sup>	428	618	1,050 <sup>a/</sup>
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	1,295	268	1,564
1981	7	60	2	62	237	10	247	304	12	316	4,440	580	5,336
1982	b/	b/	0	b/	b/	0	b/	1	0	1	194	504	699
1983	b/	b/	b/	b/	106	4	110	106	4	110	2,990	498	3,598
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	968	5,048
1986	0	b/	b/	b/	b/	b/	b/	b/	b/	b/	902	182	1,084
1987	1	18	1	19	19	2	21	39	3	42	3,409	487	3,938
1988 <sup>c/</sup>	0	0	0	0	0	0	0	0	0	0	3,254	520	3,774

a/ Incomplete.

b/ Less than 500 fish.

c/ Preliminary.

Table I-7. Ocean salmon troll effort and landings for California, Oregon, and Washington for 1981-1988 with 1971-1975 and 1976-1980 averages.

Year or Average	Effort in Thousands		Catch					
	Number of Deliveries	Days Fished <sup>b/</sup>	Numbers (thousands)			Pounds <sup>a/</sup> (thousands)		
			Chinook	Coho	Pink	Chinook	Coho	Pink
<u>CALIFORNIA</u>								
1971-1975	45.2	NA	562.7	361.6	7.8 <sup>c/</sup>	5,742.8	2,211.3	37.0 <sup>c/</sup>
1976-1980	59.1	95.3	618.7	243.4	1.3 <sup>c/</sup>	5,867.2	1,184.4	6.6 <sup>c/</sup>
1981	47.8	69.0	588.1	83.9	7.0	5,534.8	477.2	28.3
1982	57.7	92.6	765.2	91.9	d/	7,448.6	551.9	d/
1983	30.4	43.1	294.0	59.9	d/	2,144.4	266.4	d/
1984	25.0	42.5	299.8	47.0	0	2,620.6	348.7	0
1985	32.4	53.3	360.3	11.1	7.0	4,506.2	81.2	39.7
1986	34.0	54.4	825.6	36.4	0	7,396.7	201.6	0
1987	39.5	58.7	876.3	43.7	0.9	9,047.1	245.6	3.4
1988 <sup>e/</sup>	52.7	75.7	1,304.8	50.9	0	14,351.6	319.8	0
<u>OREGON<sup>f/</sup></u>								
1971-1975	45.6	NA	208.5	981.0	1.8 <sup>c/</sup>	2,127.9	6,015.4	8.0 <sup>c/</sup>
1976-1980	56.0	NA	232.6	792.3	54.2 <sup>c/</sup>	2,406.3	4,251.5	251.2 <sup>c/</sup>
1981	35.1	45.2	160.4	620.3	60.2	1,573.4	3,324.3	324.0
1982	26.5	33.8	232.6	521.9	<0.1	2,351.3	2,708.4	<0.1
1983	17.4	22.1	79.6	319.8	<0.1	654.8	1,098.0	0.2
1984	5.6	7.9	64.3	14.1	0	549.7	71.0	0
1985	15.7	21.1	216.6	84.0	44.9	2,029.8	483.8	258.6
1986	25.8	32.5	402.0	439.6	<0.1	3,362.5	1,905.1	<0.1
1987	30.9	39.6	529.4	355.5	17.7	5,182.3	1,916.0	87.3
1988 <sup>e/</sup>	40.7	50.8	468.2	623.0	<0.1	4,367.8	3,331.9	<0.1
<u>WASHINGTON<sup>g/</sup></u>								
1971-1975	NA	53.8 <sup>h/</sup>	279.5	869.0	50.3 <sup>c/</sup>	3,211.2	4,804.1	240.6 <sup>c/</sup>
1976-1980	NA	46.2	214.4	750.5	423.1 <sup>c/</sup>	2,412.7	3,675.4	1,959.3 <sup>c/</sup>
1981	NA	28.7	117.1	400.4	236.6	1,237.8	1,751.5	928.5
1982	NA	20.1	160.3	378.9	0.3	1,650.2	1,935.2	0.9
1983	NA	13.5	75.4	67.8	106.4	686.9	193.1	374.1
1984	NA	3.1	27.5	66.8	0	192.2	212.8	0
1985	NA	8.1	52.4	216.4	108.3	524.2	1,053.3	487.3
1986 <sup>e/</sup>	NA	5.9	50.0	158.8	0.2	583.6	620.4	0.4
1987 <sup>e/</sup>	NA	5.3	85.3	135.2	19.0	763.4	567.9	70.9
1988 <sup>e/</sup>	NA	9.9	113.6	71.8	-	1,122.0	295.0	-

a/ Dressed weight.

b/ For Washington, days fished includes treaty Indian deliveries which represent a minimum estimate of days fished.

c/ Odd-year average.

d/ Under 50.

e/ Preliminary.

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

g/ Includes treaty Indian landings (ocean and Area 4B only) and catches made off Oregon, California, and Alaska and landed in Washington.

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

Table I-8. Ocean salmon recreational effort and catch off California, Oregon, and Washington for 1981-1988 with 1971-1975 and 1976-1980 averages.

Year or Average	Angler Trips (thousands)		Catch (thousands of fish)				Salmon Per Angler Trip
	Salmon Trips	Total Trips	Chinook	Coho	Pinks	Total	
<u>CALIFORNIA</u>							
1971-1975	242.2	-	169.6	48.3	-	217.9	0.90
1976-1980	166.5	-	92.6	29.9	-	122.5	0.74
1981	128.0	-	82.3	9.3	-	91.6	0.72
1982	170.4	-	144.3	26.1	-	170.4	1.00
1983	111.6	-	63.2	27.7	-	90.9	0.81
1984	123.6	-	88.6	19.0	-	107.6	0.87
1985	185.6	-	160.6	15.2	-	175.8	0.95
1986	195.6	-	141.6	18.7	-	160.3	0.82
1987	268.3	-	192.5	47.3	-	239.8	0.89
1988 <sup>a/</sup>	242.9	-	171.4	34.7	-	206.1	0.85
<u>OREGON<sup>b/</sup></u>							
1971-1975	NA	345.8	49.4	271.8	1.1 <sup>c/</sup>	321.8	0.93
1976-1980	395.9	410.1	40.7	292.2	2.3	335.2	0.85
1981	311.0	346.7	29.2	199.8	1.6	230.6	0.74
1982	226.0	275.9	38.7	175.1	-	213.8	0.95
1983	226.0	261.5	24.7	146.9	<0.1	171.7	0.76
1984	153.1	203.6	17.0	123.3	<0.05	140.3	0.92
1985	251.6	270.9	55.9	182.5	7.7	246.1	0.98
1986	186.1	212.6	22.4	211.6	<0.05	234.0	1.26
1987	255.1	279.5	58.6	177.5	0.9	237.0	0.93
1988 <sup>a/</sup>	250.6	282.8	38.3	226.2	0	264.5	1.06
<u>WASHINGTON</u>							
1971-1975	482.9	-	210.4	567.4	10.1 <sup>c/</sup>	787.9	1.60
1976-1980	428.3	-	114.5	510.9	26.5	651.9	1.45
1981	234.7	-	84.4	237.6	10.2	332.2	1.42
1982 <sup>d/</sup>	218.1	-	106.7	206.0	-	312.7	1.43
1983	209.5	-	48.3	209.3	4.5	262.0	1.25
1984	36.8	-	6.9	40.4	-	47.3	1.29
1985	114.8	-	26.6	167.9	3.1	194.5	1.69
1986	107.8	-	21.0	173.0	-	194.0	1.80
1987 <sup>a/</sup>	100.0	-	40.4	123.1	1.6	165.1	1.65
1988 <sup>a/</sup>	68.9	-	19.0	88.6	-	107.6	1.56

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 pink average for 1971-1975.

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

Recent years' effort and harvest statistics for each state and for treaty Indian troll fisheries are provided in tabular form in Appendix A.

### Quota Attainment

The 1988 ocean fishing regulations contained 5 overall chinook and 5 overall coho quotas, with subarea or fishing time breakdowns of some overall quotas into 13 separate chinook and 8 separate coho quotas or harvest guidelines (Table I-9).

The nontreaty ocean fisheries north of Cape Falcon (recreational and troll) were managed under combined quotas of 103,500 chinook and 100,000 coho. The treaty Indian troll fishery was managed separately under quotas of 60,000 chinook and 68,000 coho. A historical summary of treaty and nontreaty quotas north of Cape Falcon is provided in Appendix C, Table C-8.

Several quotas were changed inseason, reflecting overages or underages in estimated catches as well as revisions of hooking mortality estimates and transfer of allowable impacts between subareas.

The chinook quota for nontreaty troll north of Cape Falcon was exceeded. However, the combined nontreaty troll and recreational chinook catch north of Cape Falcon was under the overall nontreaty chinook quota by 9,000 fish. The chinook quota for the treaty Indian troll fishery was not reached. The overall area commercial chinook quota for the area between Orford Reef Red Buoy and Horse Mountain (63,000 chinook) was exceeded by 11,000 chinook (19 percent). This was primarily due to high fishing effort and high fish availability during the general area fishery which opened June 5 and closed June 7 upon chinook quota attainment. The subarea quota for the May troll fishery from Sisters Rocks to Chetco Point (7,500) was exceeded by 17 percent. The special September chinook fisheries off the Eel and Rogue river mouths produced mixed results; the Eel River fishery exceeded its quota (15,000) by 23 percent while the Rogue River fishery (7,500 quota) harvested only 123 chinook.

All recreational fishery coho catches were less than quotas. The coho quota for troll fisheries operating south of Cape Falcon was met. The treaty troll fishery coho catch plus incidental mortality during the species ratio fishery, which was not anticipated preseason, was 2,100 fish greater than the quota.

### California Troll Fishery

California troll effort of 75,700 days-fished greatly exceeded comparative effort levels since 1983, but was only 79 percent of the 1978-1980 average of 95,300 days (Table I-7). Chinook landings of 1,304,800 fish were the highest for the state since troll fishery species composition sampling/reporting began in 1952. Coho landings of 50,900 fish were higher than 1987 landings, but only 21 percent of the 1976-1980 average and 14 percent of the 1971-1975 average.

The combined California commercial chinook and coho landing of 16,872,000 pounds, round weight (14,671,400 dressed weight), was the largest for the state since 1916. That was the year commercial fish buyers were required to begin submitting landing receipts to the state. The previous

Table I-9. Coho and chinook quotas for 1988 compared with actual harvest in thousands of fish by management area and fishery. (Numbers in parentheses are inseason adjusted quotas.)

Fishery Management Area	Chinook			Coho		
	Quota	Catch	Percent	Quota	Catch	Percent
<u>NORTH OF CAPE FALCON</u>						
Treaty Troll	60.0	32.0	53.3	68.0	67.6 <sup>a/</sup>	99.4
Nontreaty Troll						
May 1-31	55.3	-	-	-	-	-
June 1-14	18.4	-	-	b/	b/	-
Subtotal Nontreaty Troll	73.7	75.1	101.9	b/	b/	-
Recreational						
North of Queets River	2.8 <sup>c/</sup>	4.5	160.7	20.0	19.3	96.5
Queets River to Klipsan Beach	17.8 <sup>c/</sup>	13.5	75.8	50.0	50.2	100.4
Klipsan Beach to Cape Falcon	9.2 <sup>c/</sup>	1.5	16.3	30.0	28.9	96.3
Subtotal Recreational	29.8	19.5	65.4	100.0	98.4	98.4
Total						
Nontreaty	103.5	94.5	91.3	100.0	98.4	98.4
All	163.5	126.6	77.4	168.0	166.0	98.8
<u>SOUTH OF CAPE FALCON</u>						
Troll	-	-	-	625.3 (670.3)	676.1	100.9
Florence South Jetty to Orford Reef Red Buoy	-	-	-	153.9 (167.0)	162.4	97.2
South of Orford Reef Red Buoy KMZ	-	-	-	89.0	52.3	58.8
May 1-Aug. 31	63.0	74.0 <sup>d/</sup>	117.5	-	-	-
Sisters Rocks to Chetco Pt.	7.5	8.9	118.7	-	-	-
Orford Reef Red Buoy to Punta Gorda	48.0 (40.4)	65.1 <sup>d/</sup>	135.6	-	-	-
Sisters Rocks to Mach Arch (Aug.)	7.5	e/	-	-	-	-
Sisters Rocks to Mach Arch (Sept.)	7.5	0.1	1.3	-	-	-
Trinidad Head to Punta Gorda (Sept.)	15.0	18.5	123.3	-	-	-
Horse Mt. to Cape Vizcaino	8.0	8.8	110.0	-	-	-
Subtotal Troll	85.5	92.6	108.3	625.3 (670.3)	676.1 <sup>f/</sup>	100.9
Recreational				298.4 (253.4)	249.0	98.3
KMZ	55.0	53.0	96.4			
Total	140.5	145.6	103.6	983.1 (923.7)	925.1	100.2
Grand Total	304.0	272.2	89.5	1,151.1 (1,091.7)	1,091.1	99.9

a/ In addition, there was a hooking mortality of about 2,500 coho.

b/ Hooking mortality of 2,800.

c/ Harvest guidelines only for chinook.

d/ Shelter Cove state-waters fishery harvest of 6,200 KMZ equivalents added to the KMZ catch.

e/ No fishery.

f/ In addition, a hooking mortality of 112,700 coho is estimated for all troll fisheries south of Cape Falcon.

state salmon record was set in 1946 and included 8,276,000 pounds, round weight, of ocean-caught salmon and 6,463,000 pounds, round weight, of river-caught salmon; 14,739,000 pounds total.

#### California Recreational Fishery

California recreational fishery effort totaled 242,900 angler trips (Table I-8). Effort was down nine percent from 1987, but was very similar to the 1971-1975 average. Chinook landings totaled 171,400 fish compared to 192,500 in 1987 and an average of 169,600 for the 1971-1975 period. Coho landings totaled 34,700 fish compared to 47,300 coho in 1987 and an average of 48,300 for the 1971-1975 period.

#### Oregon Troll Fishery

Oregon's ocean troll fishery effort totaled 50,800 boat days fished for the 1988 season, an increase of 11,200 days (28 percent) over 1987 (Table I-7). Landings of 468,200 chinook were 61,200 chinook (12 percent) below the record 1987 landings of 529,400 (Table I-7). Coho landings increased in 1988 to 623,000 fish; 267,500 fish (75 percent) above 1987 and only 11 percent below the 1976-1980 average of 792,300. The overall south of Cape Falcon coho catch was similar to the inseason revised quota (Table I-9). Pink salmon landings were less than 100 fish during the 1988 season, an off-cycle year.

#### Oregon Recreational Fishery

Oregon recreational fishery effort for the 1988 season totaled 250,600 salmon angler trips compared to 255,100 in 1987 (Table I-8), a 2 percent decrease in effort. The 1988 recreational fishery between Cape Falcon and the Orford Reef Red Buoy was the longest (134 days) since 1980. This reflected, in part, Council adoption of the revised salmon framework troll/recreational allocation schedule in 1987. Chinook landings in 1988 were 38,300 fish, 35 percent below the 58,600 fish landed in 1987 and 6 percent below the 1976-1980 average catch of 40,700. June was the highest catch month (15,000) followed by July (12,400 fish), (Appendix A, Table A-10). Coho landings in 1988 were 226,200 fish, 27 percent above the 1987 landings of 177,500 and 29 percent below the 1976-1980 average catch of 292,200 coho. No pink salmon landings were recorded compared to 900 fish in 1987 (Table I-8).

#### Washington Troll Fishery

##### Nontreaty

Nontreaty troll effort for Washington totaled 5,900 days fished (Appendix A, Table A-12). This effort was nearly double the total effort of 1987 (3,100) but was just 14 percent of the average number of days fished during the period 1976-1980 (43,400). Chinook landings of 71,900 were 32 percent greater than landings for the 1987 season (54,600), but were only 39 percent of the 1976-1980 average landings (183,400). No coho were landed by nontreaty trollers off Washington during the 1988 season as their all-species fishery was eliminated. The average total coho landings for the 1976-1980 period were 704,500.

### Treaty Indian

Total deliveries by 1988 treaty Indian ocean (including Area 4B) troll fisheries were 3,500; approximately 67 percent above the 1987 season (Appendix A, Table A-14). Deliveries during the May through September period were 2,600, approximately twice the number reported in 1987. Deliveries in the Strait of Juan de Fuca (Area 4B) chinook fishery accounted for 54 percent of all deliveries, and were 90 percent greater than 1987. The total chinook troll harvest in ocean management areas was 40,300 in 1988, compared to 28,400 in 1987. Approximately 21 percent of the total chinook catch in ocean management areas was taken in the Strait of Juan de Fuca (Area 4B) during the winter season. The treaty troll catch in the Strait of Juan de Fuca east of Area 4B increased to 41,500, 18 percent above the previous high of 35,200 observed in 1987. Chinook catch in ocean management areas during the May to September period was 32,000. The treaty troll fishery harvested 67,600 coho in ocean areas and Area 4B (plus 2,500 incidental mortality during a July ratio fishery) compared to 88,600 coho taken in 1987. An additional 600 coho were caught by treaty troll fisheries in catch areas of the Strait of Juan de Fuca east of the Sekiu River.

### Washington Recreational Fishery

Washington ocean area recreational fishery effort for the 1988 season totaled 68,900 angler trips (Table I-8), 31 percent less than 1987 season angler trips (100,000) and only 16 percent of the average number of angler trips for the period 1976-1980 (428,300). The recreational fishery total chinook catch of 19,000 was less than half the 1987 level (40,400) and just 17 percent of the average catch for the 1976-1980 period (114,500). Coho total catch of 88,600 was approximately 28 percent less than for 1987 (123,100) and was only 17 percent of the average coho catch for the 1976-1980 period (510,900).

### Pacific Salmon Commission

The Pacific Salmon Treaty between the U.S. and Canada which became effective in March 1985 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 new commission 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 northern Oregon coastal chinook stocks. The ceilings for west coast Vancouver Island troll and Georgia Strait troll and sport 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. Actual catches, compared to PSC harvest ceilings, are summarized in Table I-10. These catch statistics do not reflect changes in incidental mortality losses associated with the regulation of these fisheries. For example, increased abundance and resulting shortened seasons have led to the use of chinook nonretention regulations;

Table I-10. Preliminary catches in thousands of fish compared to PSC harvest ceilings for 1988.

Area and Fishery	Chinook (thousands of fish)		Difference Between Catch and Ceiling	
	Ceilings	Catch	Numbers	Percent
Southeast Alaska (T, N, S) <sup>a/</sup>	279 <sup>b/</sup>	282.0	3.0	+1.1
North and Central BC (T, N, S)	263	283.0	20.0	+7.6
West Coast Vancouver Island (T)	360	378.9	18.9	+5.3
Georgia Strait (T, S)	275	159.7	-115.3	-41.9

a/ T = troll; N = net; S = sport.  
b/ Plus hatchery add-on of 16,000.

similarly, beginning in 1987, an increase in minimum size limits for all Canadian troll fisheries, except Georgia Strait, significantly increased incidental mortality losses.

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.

The PSC also established a 1.8 million coho harvest ceiling for the Canadian troll fishery off the west coast of Vancouver Island for 1988. The actual 1988 catch by this fishery was approximately 1.5 million coho.