

I. SUMMARY OF 1987 OCEAN SALMON MANAGEMENT

This chapter provides a brief summary of the coastwide ocean salmon seasons and landings for 1987. A chronological summary of ocean salmon management events for 1987 is contained in Appendix C.

Troll Fishing Regulations

A summary of the actual 1987 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 Delgada

The May 1 through September 30 troll season for chinook south of Point Delgada was of the same duration as it has been since 1984 except for two three-day closures during June in the Point Delgada to Point Arena area. The all-species fishery in the area was opened on June 1 and closed July 21 upon attainment of the fishery coho quota of 26,800. The season continued for all-salmon-except coho through September 30.

Point Delgada to Cape Blanco

The general area troll fishery for all species in the KMZ lasted 19 days between June 1 and June 25. The fishery was conducted under a chinook quota with coho landings limited to two coho for every chinook in possession. Special area fisheries were provided off the Rogue River during May, the Eel River during September, and the Elk River (in state waters only) during October through November.

Cape Blanco to Cape Falcon

Between Cape Blanco and Cape Falcon special landing restrictions were implemented to balance fishing opportunity among the ports and to maximize fishery benefits for day-boat fishermen targeting primarily on coho north of Cape Perpetua, and trip-boat fishermen targeting mainly on chinook in the area south of Cape Perpetua. Fish distribution and weather significantly reduced achievement of this goal.

North of Cape Falcon

Nontreaty

The coho harvest quota for the nontreaty troll fishery operating north of Cape Falcon was nearly identical to the 1986 season quota. The chinook quota for 1987 was approximately 20 percent greater than for 1986. A high rate of chinook harvest prevented full harvest of the coho quota and led to inseason cancellation of the planned pink salmon directed fishery in August. Duration of both the May chinook season and the July all-species season was shorter in 1987 than in 1986.

Table I-1. Summary of actual ocean nontreaty troll salmon fishing regulations for 1987. ^{a/}

Area and Season	Salmon Species	Actual Quota ^{b/}		Special Restrictions ^{c/}
		Chinook	Coho	
U.S.-Canada Border to Cape Falcon, OR May 1-10 (10 days) May 14-15 (2 days)	All except coho	42,400 (39,800)	-	Conservation Zone 2 (Columbia River mouth) closed.
Queets River to Cape Falcon, OR July 25-26 (2 days)	All	15,000 (17,600)	121,200	Conservation Zone 2 (Columbia River mouth) closed; nearshore area closure 0 to 3 miles from Tillamook Head to Red Buoy Line and 0 to 10 miles between Red Buoy Line and Queets River.
Cape Falcon to Cape Perpetua, OR May 1-July 14 (75 days) July 15-28 (14 days) Aug. 1-Sept. 15 (46 days) Sept. 16-Oct. 31 (46 days)	All except coho All, with restrictions All, with restrictions All except coho	None	d/	Landing and species ratio restrictions apply in this area for the all-species seasons.
Cape Perpetua to Cape Blanco, OR May 1-June 30 (61 days) July 1-28 (28 days) Aug. 1-Sept. 15 (46 days) Sept. 16-Oct. 31 (46 days)	All except coho All, with restrictions All, with restrictions All except coho	None	d/	For the all-species season, 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. From September 16-18, the fishery is closed between Cape Arago and Cape Blanco.
Cape Blanco to Pt. Delgada, CA June 1-3 (3 days) June 7-10 (4 days) June 14-25 (12 days)	All, with restrictions All, with restrictions All, with restrictions	115,000 (113,800)	d/	At least 1 chinook must be possessed or landed for each coho, except that 1 coho may be possessed or landed without the ratio requirement; Conservation Zone 3 (Klamath River mouth) closed; no more than 6 lines per boat off California.
Sisters Rocks to Chetco Pt., OR May 1-14 (14 days)	All except coho	7,500	-	Open only within 6 nautical miles of shore.

Table I-1. Summary of actual ocean nontreaty troll salmon fishing regulations for 1987 (continued).

Area and Season	Salmon Species	Actual Quota		Special Restrictions
		Chinook	Coho	
Trinidad Head to Punta Gorda, CA Sept. 8-30 (23 days)	All	15,000	None	Open only within 6 nautical miles of shore; no more than 6 lines per boat.
Pt. Delgada to Pt. Arena, CA				
May 1-31 (31 days)	All except coho	None	d/	Not more than 6 lines per boat.
June 1-3 (3 days)	All			
June 7-10 (4 days)	All			
June 14-July 21 (38 days)	All			
July 22-Sept. 30 (71 days)	All except coho			
Pt. Arena to U.S.-Mexico Border				
May 1-31 (31 days)	All except coho	None	d/	Not more than 6 lines per boat.
June 1-July 21 (51 days)	All			
July 22-Sept. 30 (71 days)	All except coho			

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

b/ Final quotas at the end of the season are given in parentheses. Inseason quota changes are reported under "Ocean Fisheries" in Chapters II and III.

c/ 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 Cape Blanco, Oregon and 22 inches for coho caught south of Cape Blanco.

d/ The overall troll catch quota south of Cape Falcon was 401,700 coho and revised inseason to 436,700. On August 22, a roll-over of 35,000 coho was made from the south of Cape Falcon recreational to the Cape Falcon to Pt. Delgada troll fishery. The coho catch quota from Pt. Delgada to the U.S.-Mexico border was 26,800.

e/ From July 15 through July 28 a single daily possession and landing per vessel of 100 coho was permitted. At least 1 chinook was required for each 2 coho over 100. From August 1 through August 28 south of Cascade Head at least 1 chinook was required for each 2 coho possessed or landed, except a single daily possession and landing per vessel of 2 coho was allowed without the chinook requirement. Within the entire area from August 29 through September 15 a single daily possession and landing per vessel of 200 coho was permitted. At least 1 chinook was required for each 2 coho over 200.

f/ From August 29 through September 15, a single daily possession and landing per vessel of 200 coho was permitted. At least 1 chinook was required for each 2 coho over 200.

Table I-2. Summary of actual treaty Indian troll salmon seasons for 1987.

Tribe and Area	Species	Seasons		Minimum Size Limit (Inches)		Coho to Chinook Landing Ratio
		Dates	Days	Chinook	Coho	
Quinault, Hoh, and Quileute Tribes	Chinook	May 1-26	26	26	-	-
	All	July 19-31	12	26	16	19:1
	All	Aug. 1-9	9	26	16	10:1
	All	Aug. 17-25	9	26	16	5:1
	All	Aug. 26	1	26	16	5:1 ^{a/}
Makah Tribe Inside 3 Miles, Areas 3N, 4, 4A	All	Jan. 1-Apr. 30	120	22	20	-
	Chinook	May 1-26	26	26	-	-
	All	July 19-31	12	26	16	19:1
	All	Aug. 1-9	9	26	16	10:1
	All	Aug. 17-25	9	26	16	5:1
3-200 Miles, Areas 3N, 4, 4A	All	Aug. 26	1	26	16	-
	Chinook	May 1-26	26	26	-	-
	All	July 19-31	12	26	16	19:1
	All	Aug. 1-9	9	26	16	10:1
	All	Aug. 17-25	9	26	16	5:1
Area 4B	All	Aug. 26	1	26	16	-
	All	Jan. 1-Apr. 30	120	22	20	-
	Chinook	May 1-26	26	26	-	-
	All	July 19-31	12	26	16	19:1
	All	Aug. 1-9	9	26	16	10:1
	All	Aug. 17-25	9	26	16	5:1
Klallam Tribes (Area 4B)	All	Aug. 26	1	26	16	-
	All	Nov. 1-Dec. 31	61	22	20	-
	All	Jan 1-Apr. 11	101	22	16	-
	All	Apr. 12-June 15	64	24 ^{b/}	16	-
	All	June 16-Aug. 31	76	24	16	-
	All	Sept. 27-Oct. 6	10	24	16	-
Klallam Tribes (Area 4B)	Chinook	Nov. 1-28	28	24	-	-
	All	Nov. 29-Dec. 31	33	24	16	-

a/ The Quinault Indian Nation retained 5 to 1 coho to chinook landing restriction. The Quileute and Hoh tribes rescinded this landing ratio.

b/ Maximum size limit 30 inches.

Treaty Indian

Treaty troll fisheries operating in ocean areas (including Area 4B) in 1987 were constrained by a coho quota that was identical to the 1986 quota (86,000). Chinook harvest and fishery impact was controlled by a quota of 15,800 for the period May through September which was approximately 26 percent greater than for 1986. Treaty trollers operated under tribal imposed landing schedules. During a chinook only fishery in May, unusually high chinook availability forced the fishery to close on May 26. The fishery was reopened in mid-July with a minimum landing ratio of 19 coho per chinook. The species landing ratio reduced the actual allowable chinook harvest because of hook-and-release mortality. The treaty troll fishery was closed on August 26 (1 p.m.) upon attainment of the chinook quota. Season duration for 1987 was generally less than for 1986.

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. Even with special measures to slow the sport harvest rate of chinook, the seasons north of Cape Falcon ended well before the Labor Day target date. Sport seasons south of Cape Falcon attained their planned duration. A summary of recreational fishing regulations since 1978, for each of the three Pacific coast states, is provided in Appendix C, Tables C-2, C-4, and C-6.

South of Point Delgada

The 1987 recreational fishery off California south of Point Delgada operated from mid-February to mid-November.

Point Delgada to Cape Blanco

The fishery between Point Delgada and Cape Blanco was managed as a unit to protect Klamath River fall chinook. The season was continuous and encompassed the Memorial and Labor day weekends. The fishery had quotas for both chinook and coho, but the recreational fishery would not close if the coho quota were reached.

Cape Blanco to Cape Falcon

The 1987 all-salmon season between Cape Blanco and Cape Falcon was able to achieve its regulatory season length, closing on September 13. In addition, sufficient coho quota remained to allow for some transfer (i.e., rollover) to the troll fishery.

North of Cape Falcon

The total of coho quotas for subareas north of Cape Falcon in 1987 was nearly identical to the 1986 total. The total chinook quota for 1987 was 20 percent greater than for the 1986 season. High availability of chinook relative to coho in all subareas led to numerous and frequent inseason bag limit changes and area closures implemented to increase season duration. Seasons in 1987 were generally shorter than for 1986 and terminated on the basis of chinook impact allowance which included hook-and-release mortality associated with the northern subarea (Neah Bay and La Push).

Table I-3. Summary of actual ocean recreational salmon fishing regulations for 1987. ^{a/}

Area and Season	Salmon Species	Actual Quota ^{b/}		Daily Limit and Special Restrictions ^{c/}
		Chinook	Coho	
U.S.-Canada Border to Queets River, WA June 28-Aug. 20 noon (39.5 days) Sunday thru Thursday only	All (June 28-July 16) All except chinook (July 19-Aug. 20)	2,500 (3,550)	26,100 (35,000)	Two fish, only 1 of which may be a chinook thru July 16; nearshore area closures enacted on July 12 and 15. ^{d/}
Queets River to Leadbetter Pt., WA June 28-Aug. 6 (30 days) Sunday thru Thursday only	All	28,000 (27,375)	74,300 (33,000)	Two fish; modified to 2 fish only 1 of which may be a chinook (July 8); closed within 3 miles of shore until area closure modifications enacted on July 5, 8, and 26. ^{e/}
Leadbetter Pt. to Klipsan Beach and Red Buoy Line to Cape Falcon, OR June 28-Aug. 20 noon (39.5 days) Sunday thru Thursday only	All	14,100 (13,675)	100,500 (123,550)	Two fish; closed within 3 miles of shore from Leadbetter Pt. to Klipsan Beach; closed within 3 miles of shore south of Red Buoy Line July 19-Aug. 9.
Cape Falcon to Cape Blanco, OR June 13-Sept. 13 (93 days)	All	None	f/	First 2 fish per day; no more than 6 fish in 7 consecutive days.
Cape Blanco to Pt. Delgada, CA May 23-Sept. 13 (114 days)	All	70,000	f/	Two salmon of any species; no more than 6 fish in 7 consecutive days; Conservation Zone 3 (Klamath River mouth) closed Aug. 1-31.
Trinidad Head to Punta Gorda Sept. 14-30 (17 days)	All	None	None	Two salmon of any species; no more than 6 fish in 7 consecutive days; open only within 6 nautical miles of shore.
Pt. Delgada to U.S.-Mexico Border Feb. 14-Nov. 15 (275 days)	All	None	f/	Two fish.

Table I-3. Summary of actual ocean recreational fishing regulations for 1987 (continued).

- a/ In addition to the seasons listed here, ODPW established limited late season all-salmon-except coho fishery inside state waters near the mouths of the Elk, Sixes, and Chetco rivers and at the mouth of Tillamook Bay. Details of these seasons are provided in Appendix C, Table C-4.
- b/ Final quotas at the end of the season are given in parentheses. Inseason quota changes are reported under "Ocean Fisheries" in Chapters II and III.
- c/ Barbless hooks required from U.S.-Canada border to Cape Falcon, Oregon and from Cape Blanco, Oregon to Pt. Conception, California. Minimum size limits north of Cape Falcon, Oregon were 24 inches for chinook and 16 inches for coho. There were no minimum size limits between Cape Falcon and Cape Blanco. A 20-inch minimum size limit was implemented for both chinook and coho caught south of Cape Blanco.
- d/ Effective July 12, the area from 0 to 1 mile offshore was closed from Kaitlah Pt. west to Tatoosh Island and inside state waters south to Cape Alava. Effective July 15, the area closure within EEZ waters was modified as follows: closed within a line projected true north 1 mile from the mouth of the Sekiu River, thence westerly meandering 1 mile offshore to the Tatoosh line, thence north on the Bonilla-Tatoosh line 1 mile (Duncan Rock), thence true west 5 miles, thence southerly meandering 5 miles offshore to intersect a line projected true west from Cape Alava and southerly at a distance of 1 mile offshore from the Cape Alava line meandering along the shoreline at 1 mile to intersect a true west line projected from the mouth of the Queets River.
- e/ Effective July 5, the nearshore area closure was modified by increasing it to 6 miles between Pt. Brown and Cape Shoalwater. Effective July 8, the nearshore area closure was increased to 10 miles between Queets River and Leadbetter Pt. Effective July 26, the nearshore area closures were modified to (1) close the entire area from the Grays Harbor Buoy north to the Queets River and (2) open the area outside of 6 miles from the Grays Harbor Buoy south to Leadbetter Pt.
- f/ The coho quota south of Cape Falcon was 269,200. Only the area between Cape Falcon and Cape Blanco would have closed if the quota had been reached in 1987. The preseason quota was revised downward to 234,200 following a rollover of 35,000 coho to the troll fishery as per allocation plan.

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 1987 commercial troll ocean salmon fisheries of California, Oregon, and Washington amounted to 1,484,000 chinook; 537,000 coho; and 39,000 pinks. The recreational fleet harvested 290,000 chinook; 346,000 coho; and 3,000 pinks.

The commercial troll chinook harvest in the Council area was 120 percent of the 1986 landings and 141 percent of the 1971-1975 average. Recreational chinook harvest was 114 percent of the 1986 catch, but only 67 percent of the 1971-1975 average. The combined California troll and sport landings of 1,070,000 chinook was the largest recorded for the state since 1962, when statewide fishery monitoring began.

The commercial troll coho harvest in the Council area was 85 percent of the 1986 landings, and 24 percent of the 1971-1973 average. Recreational coho harvest was 86 percent of the 1986 catch and 38 percent of the 1971-1973 average.

The commercial troll pink harvest in the Council area was 24 percent of 1985. Recreational pink harvest was 27 percent of 1985.

Historical effort and harvest statistics for each state and for treaty Indian troll fisheries is provided in tabular form in Appendix A.

Quota Attainment

The 1987 ocean fishing regulations contained nine chinook and nine coho quotas, with subarea breakdowns of some overall quotas (Table I-9).

The nontreaty ocean fisheries north of Cape Falcon (recreational and troll) were managed under combined quotas of 106,000 chinook and 342,100 coho (or equivalent impacts on Skagit River natural coho). The treaty Indian troll fishery was managed separately under quotas of 15,800 chinook and 86,000 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.

Chinook quotas for nontreaty troll, treaty troll, and recreational fisheries north of Cape Falcon were all exceeded. The combined nontreaty troll and recreational chinook quota north of Cape Falcon was exceeded by 2,000 fish. The subarea quota for the May troll fishery from Sisters Rocks to Chetco Point also was exceeded.

All recreational fishery coho catches were less than quotas. Coho catches for nontreaty troll fisheries north of Cape Falcon and troll fisheries operating

Table I-4. Coastwide chinook landings in thousands of fish for the ocean troll and sport fisheries, 1971-1987 with five-year averages.

Year	California ^{a/}		Oregon ^{b/}		Washington ^{c/}		Council Area		Canadian		Southeast Alaska		Grand Total				
	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport					
Averages																	
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	632	272	217	23	2,018
1986	786	134	920	402	22	424	50	21	71	1,238	177	1,415	637	202	236	21	2,511
1987	879	191	1,070	529	59	588	85	40	125	1,484	290	1,774	665	153	242	22	2,867

a/ California troll catches are preliminary for 1985-1987.

b/ Includes troll catches from Alaska, Washington, and California landed in Oregon. Preliminary data for 1987.

c/ Includes troll catches from Area 4B, Alaska, Oregon, and California landed in Washington. Preliminary data for 1986-1987.

Table I-5. Coastwide coho landings in thousands of fish for the ocean troll and sport fisheries, 1971-1987 with three-year averages.

Year	California ^{a/}		Oregon ^{b/}		Washington ^{c/}		Council Area		Canadian		Southeast Alaska		Grand Total				
	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport	Troll	Sport			
	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total			
Averages																	
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 ^{d/}
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 ^{d/}
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 ^{d/}
1972	158	45	203	825	248	1,073	575	542	1,117	1,558	835	2,393	2,369	335	792	NA	5,889 ^{d/}
1973	348	32	380	796	232	1,028	702	472	1,174	1,846	736	2,582	2,483	373	540	NA	5,978 ^{d/}
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 ^{d/}
1975	204	21	225	657	252	909	774	481	1,255	1,635	754	2,389	1,404	454	214	NA	4,461 ^{d/}
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 ^{d/}
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	35	17	52	440	212	652	159	173	332	633	402	1,035	4,118	574	2,126	40	7,893
1987	44	46	90	355	177	532	137	123	261	537	346	883	2,812	665	1,041	40	5,441

a/ California troll catches are preliminary for 1985-1987.

b/ Includes troll catches from Alaska, Washington, and California landed in Oregon. Preliminary data for 1987.

c/ Includes troll catches from Area 4B, Alaska, Oregon, and California landed in Washington. Preliminary data for 1986-1987.

d/ Incomplete.

Table I-6. Coastwide pink salmon landings in thousands of fish for the ocean troll and sport fisheries, 1971-1987.

Year	California		Oregon		Washington		Council Area		Canadian		Southeast Alaska		Grand Total
	Troll	Troll	Sport	Total	Troll	Sport	Troll	Sport	Troll	Total	Troll	Total	
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	1,295	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 ^{c/}	2	18	1	19	19	2	21	39	3	42	3,409	487	3,938

a/ Incomplete.
b/ Less than 500 fish.
c/ Data for 1987 are preliminary.

Table I-7. Ocean salmon troll effort and landings for California, Oregon, and Washington for 1981-1987 with 1971-1975 and 1976-1980 averages.

Year	Effort in Thousands		Catch					
	Number of Deliveries	Days Fished ^{b/}	Numbers (thousands)			Pounds ^{a/} (thousands)		
			Chinook	Coho	Pink	Chinook	Coho	Pink
<u>CALIFORNIA</u>								
<u>Averages</u>								
1971-1975	45.2	NA	562.7	361.6	7.8 ^{c/}	5,742.8	2,211.3	37.0 ^{c/}
1976-1980	59.1	NA	618.7	243.4	1.3 ^{c/}	5,867.2	1,184.4	6.6 ^{c/}
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 ^{e/}	32.4	53.3	360.3	11.1	7.0	4,506.2	81.2	39.7
1986 ^{e/}	31.6	53.3	785.7	34.5	0	7,145.6	190.6	0
1987 ^{e/}	38.9	58.5	878.9	43.8	0.8	8,984.0	245.1	3.1
<u>OREGON^{f/}</u>								
<u>Averages</u>								
1971-1975	45.6	NA	208.5	981.0	1.8 ^{c/}	2,127.9	6,015.4	8.0 ^{c/}
1976-1980	56.0	NA	232.6	792.3	54.2 ^{c/}	2,406.3	4,251.5	251.2 ^{c/}
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 ^{e/}	30.9	39.6	528.9	355.3	17.7	5,179.7	1,916.7	87.3
<u>WASHINGTON^{g/}</u>								
<u>Averages</u>								
1971-1975	NA	53.8 ^{h/}	279.5	869.0	50.3 ^{c/}	3,211.2	4,804.1	240.6 ^{c/}
1976-1980	NA	46.2	214.4	750.5	423.1 ^{c/}	2,412.7	3,675.4	1,959.3 ^{c/}
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 ^{e/}	NA	5.9	50.0	158.8	0.2	583.6	620.4	0.4
1987 ^{e/}	NA	5.3	85.3	135.2	19.0	763.4	567.9	70.9

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 1981-1987 with 1971-1975 and 1976-1980 averages.

Year	Angler Trips (thousands)		Catch (thousands of fish)				Salmon
	Salmon	Total					Per Angler
	Trips	Trips	Chinook	Coho	Pinks	Total	Trip
<u>CALIFORNIA</u>							
<u>Averages</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	181.7		133.7	16.8		150.5	0.83
1987 ^{a/}	257.7		191.0	45.9		236.9	0.92
<u>OREGON^{b/}</u>							
<u>Averages</u>							
1971-1975	NA	345.8	49.4	271.8	1.1 ^{c/}	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	249.7	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 ^{a/}	255.0	284.2	58.6	177.4	0.9	236.9	0.92
<u>WASHINGTON</u>							
<u>Averages</u>							
1971-1975	482.9		210.4	567.4	10.1 ^{c/}	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 ^{d/}	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 ^{a/}	100.0		40.4	123.1	1.6	165.1	1.65

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.

Table I-9. Coho and chinook quotas for 1987 compared with actual harvest in thousands of fish by management area and fishery. (Numbers in parentheses are for inseason adjusted quotas.)

Fishery Management Area	Chinook			Coho		
	Quota	Harvest	Percent of Quota	Quota	Harvest	Percent of Quota
<u>NONTREATY</u>						
<u>Troll</u>						
North of Cape Falcon						
May Season	42.4 (39.8)	40.0	94	-	-	-
August (Cape Flattery)	4.0 (0.0)	0.0	0	20.0	0.0	0
July (Queets River to Cape Falcon)	15.0 (17.6)	22.7	151 (128)	121.2	60.7	50
Subtotal	61.4 (57.4)	62.7	102 (109)	141.2	60.7	43
South of Cape Falcon						
Cape Falcon to Pt. Delgada	-	-	-	374.9 (409.9)	358.7	96 (88)
Cape Blanco to Pt. Delgada	145.0	123.7	85	-	-	-
May (Sister Rocks to Chetco Pt.)	7.5	9.6	128	-	-	-
After May	115.0 (113.3)	109.1	95 (96)	-	-	-
Aug. (Sisters Rocks to Mack Arch)	7.5 (0.0)	0.0	0	-	-	-
Sept. (Trinidad Head to Punta Gorda)	15.0	5.0	33	-	-	-
South of Pt. Delgada	-	-	-	26.8	26.9	100
Subtotal	145.0	123.7	85	401.7 (436.7)	385.6	96 (88)
<u>Recreational</u>						
North of Cape Falcon						
North of Queets River	2.5 (3.55)	3.5 ^{b/}	140 (99)	26.1 (35.0)	27.7	106 (77)
Queets River to Leadbetter Pt.	28.0 (27.375)	27.4	98 (100)	74.3 (33.0)	33.0	44 (100)
Leadbetter Pt. to Klipsan Beach and Red Buoy Line to Cape Falcon	14.1 (13.675)	14.3	101 (105)	100.5 (123.55)	87.7	87 (71)
Subtotal	44.6 (44.6)	45.2	101 (101)	200.9 (191.55)	148.4	74 (77)
South of Cape Falcon						
Cape Blanco to Pt. Delgada	-	-	-	269.2 (234.2)	198.1	73 (84)
<u>TREATY INDIAN</u>						
<u>Troll</u>	15.8	19.3	122	86.0	88.6 ^{c/}	103
<hr/>						
Grand Total	336.8 (332.8)	305.8	93 (95)	1,099.8 (1,089.65)	881.4	80 (81)

a/ Preseason overall area quota of 130,000 was evaluated July 29 for Klamath River chinook landings and no additional commercial fishing in the area through September 7 allowed.

b/ Includes 707 hooking mortality under chinook release regulations.

c/ Includes 910 hooking mortality impact of coho to chinook ratio fisheries conducted under tribal regulations.

between Cape Falcon and Point Delgada were less than quotas. The treaty troll fishery coho catch was 2,600 fish greater than the quota and the troll fishery coho quota south of Point Delgada was exceeded by 100 fish.

California Troll Fishery

Troll effort for California totaled 58,500 days fished (Table I-7). This was 10 percent higher than comparative 1986 effort (53,300), but only 61 percent of the 1978-1980 average of 95,300 days. Chinook landings of 878,900 fish were 12 percent above 1986 landings of 785,700 chinook and were the second highest chinook landings for the state since troll fishery species composition sampling/reporting began in 1952. Coho landings of 43,800 were higher than 1986 landings of 34,500 coho, but were only 12 percent of the 1971-1975 average (361,600).

California Recreational Fishery

California recreational fishery effort totaled 257,700 angler trips (Table I-8). This compares to 181,700 trips in 1986 and an average of 242,200 trips for the 1971-1975 period. Chinook landings totaled 191,000 fish compared to 133,700 in 1986 and an average of 169,600 for the 1971-1975 period. Coho landings totaled 45,900 fish compared to 16,800 coho in 1986 and an average of 48,300 for the 1971-1975 period.

Oregon Troll Fishery

Oregon's ocean troll fishery effort totaled 39,600 days fished for the 1987 season, an increase of 7,100 days (22 percent) over 1986 (Table I-7). Chinook landings of 528,900 fish set another historic record for the second year in a row and were 126,900 chinook (32 percent) above the previous 1986 record landings of 402,000. The previous record catch prior to 1986 was 363,300 in 1973 (Table I-4). Coho landings decreased in 1987 to 355,300 fish; 84,300 fish (19 percent) less than in 1986 and well below the 1971-1976 average of 981,000 (Table I-7). Coho quotas off Oregon were not met in 1987 fisheries. Pink salmon landings were 17,700 fish compared to 44,900 fish landed in 1985 (last odd-year run) and a high of 88,000 landed in 1977 (Table I-6).

Oregon Recreational Fishery

Oregon recreational fishery effort for the 1987 season totaled 255,000 salmon angler trips compared to 186,100 trips in 1985 (Table I-8). This 37 percent increase in effort reflects the longer season resulting from the revised ocean troll/recreational allocation plan south of Cape Falcon for 1987. Continuous windy weather reduced catch success which increased season length. Chinook landings in 1987 were 58,600 fish, 161 percent above the 22,400 fish landed in 1986 and 44 percent above the average catch of 40,700 during the period 1976-1980. July had the highest catch (25,100) followed by August (16,000 fish). The port of Brookings led chinook landings with 24,400 fish followed by Winchester Bay with 11,600 and Astoria with 4,000 chinook. Coho landings in 1987 were 177,400 fish, 16 percent below the 1986 landings of 211,600 and 39 percent below the average of 292,200 coho landed for the 1976-1980 period. Newport was the leading port with 38,900 coho landed,

followed by Winchester Bay (28,300) and Depoe Bay (25,400). Pink salmon landings were 900 fish compared to the record 7,700 fish landed in 1985 and an average of 2,300 fish for odd years during the period 1976-1980 (Table I-8).

Washington Troll Fishery

Nontreaty

Nontreaty troll effort for Washington totaled 3,100 days fished (Appendix A, Table A-12). This effort was 28 percent less than total effort of 1986 (4,300) and just 7 percent of the average number of days fished during the period 1976-1980 (43,400). Chinook landings of 54,600 were 66 percent greater than landings for the 1986 season (32,800), but were only 30 percent of the 1976-1980 average landings (183,400). Coho landings of 47,400 (33 percent of the quota) were only 63 percent of 1986 landings (75,000) and 7 percent of the average total landings for the 1976-1980 period (704,500). Pink salmon landings in 1987 of 2,700 were only 3 percent of 1985 landings (101,700) and less than 1 percent of the 1976-1980 odd year average landings (413,000). There was no nontreaty, pink salmon directed troll fishery in 1987.

Treaty Indian

Total deliveries by 1987 treaty Indian ocean (including Area 4B) troll fisheries were 2,100; approximately 130 percent of the number of deliveries in 1986 (Appendix A, Table A-13). Deliveries in the Strait of Juan de Fuca (Area 4B) chinook fishery accounted for 49 percent of all deliveries, and were 29 percent greater than 1986. The total chinook harvest in ocean management areas was 28,400 in 1987, compared to 16,400 in 1986. Approximately 35 percent of the total ocean chinook catch was taken in the Strait of Juan de Fuca during the winter season. The treaty troll catch in the Strait of Juan de Fuca east of Area 4B increased to 35,200, more than 50 percent above the previous high of 23,500 observed in 1986. Chinook catch in ocean management areas during the May to September period was 19,300 (including shaker mortality loss of 900 fish resulting from ratio fisheries). The treaty troll fishery harvested 88,600 coho in ocean areas and Area 4B compared to 84,500 coho taken in 1986. Additional, 3,600 coho were caught in catch areas of the Strait of Juan de Fuca east of the Sekiu River. The treaty troll fishery catch of pink salmon in 1987 was 16,300 fish, compared to a catch of 6,600 pinks salmon for the 1985 season.

Washington Recreational Fishery

Washington recreational fishery effort for the 1987 season totaled 100,000 angler trips, 7 percent less than 1986 season angler trips (107,800) and only 23 percent of the average number of angler trips for the period 1976-1980 (428,300). Chinook total catch of 40,400 was nearly double the 1986 level (21,000) but was far less than the average catch of 114,500 for the 1976-1980 period. Coho total catch of 123,100 was approximately 30 percent less than for 1986 (173,000) and compares to the average coho catch of 510,900 for the 1976-1980 period. Pink salmon catch was 1,600 fish, about half the level of catch for the 1985 season.

Pacific Salmon Commission

The Pacific Salmon Treaty between the U.S. 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 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 and 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; similarly, an increase in minimum size limits for all 1987 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 depressed naturally spawning chinook stocks, saved as a result of harvest ceilings in the northern area, 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 1987. The actual 1987 catch by this fishery was approximately 1.8 million coho. The only coho management actions for U.S. fisheries specified in the treaty concerned continuation of net fishery restriction for certain northern Puget Sound and Strait of Juan de Fuca areas. The coho catch by U.S. net fisheries in management Areas 6, 7, and 7A totaled 81,500; compared to 102,300 taken in 1986. Approximately 29,800 coho were taken incidentally during fisheries under Fraser River Panel control while directed commercial coho fisheries in these areas harvested 51,700 coho. The Fraser River Panel is responsible for inseason management of Fraser River sockeye and pink stocks and is required to directly consider management of stocks and species other than Fraser River sockeye and pink salmon.

Table I-10. Preliminary catches in thousands of fish compared to PSC harvest ceilings for 1987.

Area and Fishery	Chinook (thousands of fish)		Difference Between Catch and Ceiling	
	Ceilings	Catch	Numbers	Percent
Southeast Alaska (T, N, S) ^{a/}	263 ^{b/}	280	+ 0.7	0.3
North and Central BC (T, N, S)	263	288	+ 24.5	9.3
West Coast Vancouver Island (T)	360	377	+ 17.0	4.7
Georgia Strait (T, S)	275	159	-116.0	42.2

a/ T = troll; N = net; S = sport.

b/ Plus hatchery add-on of 16,000.