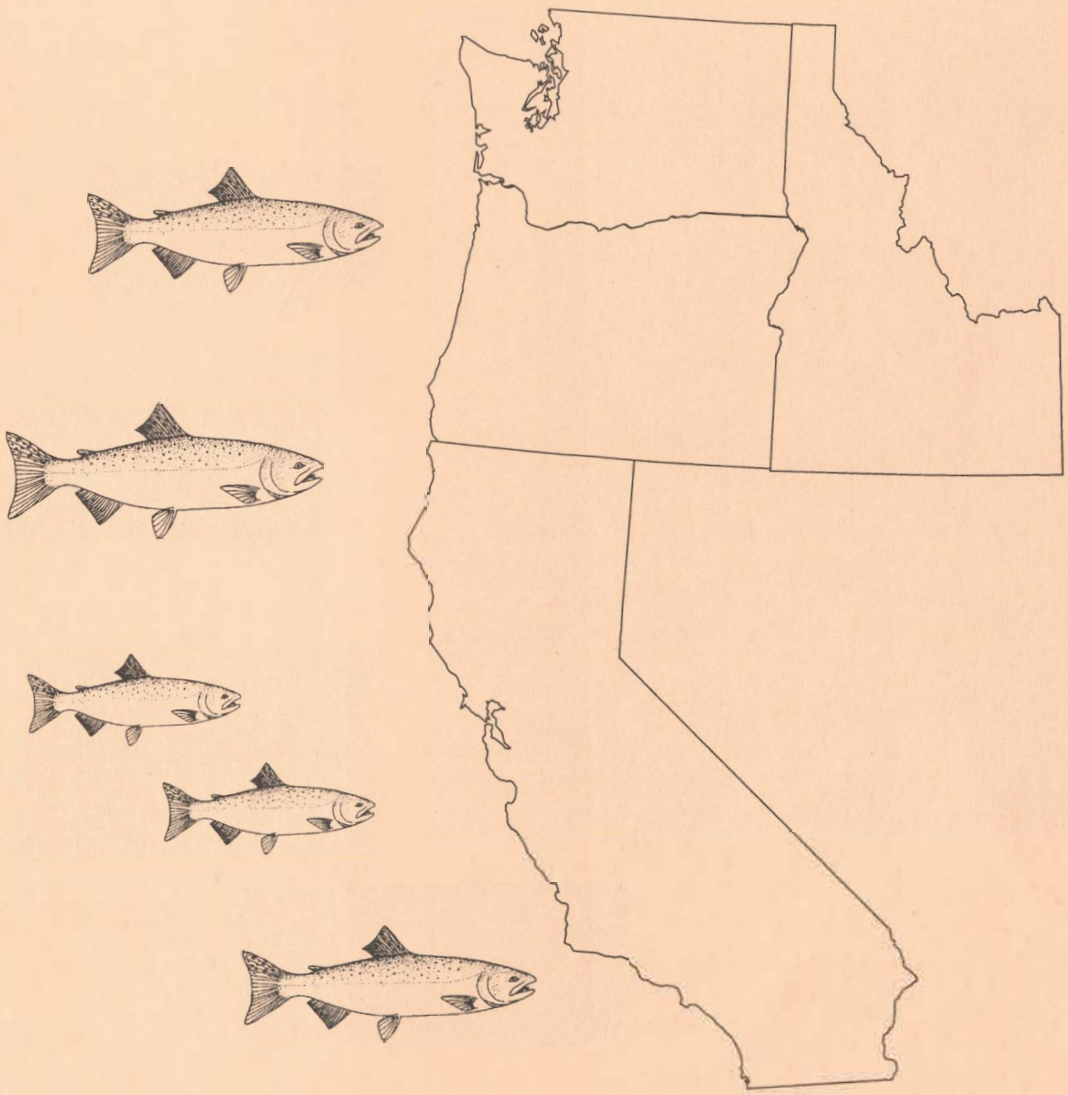
Review of 1998 Ocean Salmon Fisheries



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LIST OF ACRONYMS AND ABBREVIATIONS

ADFG	Alaska Department of Fish and Game
CDFG	California Department of Fish and Game
Council	Pacific Fishery Management Council
CRFMP	Columbia River Fishery Management Plan
CRTAC	Columbia River Technical Advisory Committee
CVI	Central Valley Index
CWT	coded-wire tag
EEZ	exclusive economic zone (from 3-200 miles from shore)
ESA	Endangered Species Act
FMP	fishery management plan
FRAM	Fisheries Regulatory Assessment Modeling
GSI	genetic stock identification
HRM	Harvest Rate Model
KMZ	Klamath management zone (ocean zone between Humbug Mountain and Horse Mountain where management emphasis is on Klamath River fall chinook)
KRTAT	Klamath River Technical Advisory Team
LFI	Lyons Ferry age three/four fall chinook index
LRH	lower Columbia River hatchery (tule fall chinook returning to hatcheries below Bonneville Dam)
LRW	lower Columbia River wild (bright fall chinook spawning naturally below Bonneville Dam)
MCB	mid-Columbia River brights (bright hatchery fall chinook released in the Mid-Columbia River)
MOC	mid-Oregon coast
NA	not available
NMFS	National Marine Fisheries Service
NOC	north Oregon coast
ODFW	Oregon Department of Fish and Wildlife
OCN	Oregon coastal natural (coho)
OPI	Oregon Production Index (coho salmon stock index south of Leadbetter Point)
PSC	Pacific Salmon Commission
SCH	Spring Creek Hatchery (tule fall chinook returning to Spring Creek Hatchery)
SRS	Stratified Random Sampling
STT	Salmon Technical Team (formerly the Salmon Plan Development Team)
TAC	total allowable catch
URB	upper river brights (naturally spawning bright fall chinook normally migrating past McNary Dam)
USFWS	U.S. Fish and Wildlife Service
VSI	visual stock identification
WCVI	West Coast Vancouver Island
WDFW	Washington Department of Fish and Wildlife
WFMP	Willamette Fish Management Plan

INTRODUCTION

The Salmon Technical Team has prepared this postseason review of the 1998 ocean salmon fisheries off the coasts of Washington, Oregon and California in accordance with Chapter 11.0 of the Pacific Coast Salmon Plan (1997). The salmon team will provide the remaining information to assist the Council in its development of management recommendations in three preseason reports for 1999. These reports will provide estimates of stock abundance and analyze the impacts of the Council's proposed and adopted management recommendations.

Pacific Coast fisheries in Council-managed waters (ocean fisheries south of the Canadian border to Mexico from 3 to 200 miles offshore) are directed toward and harvest primarily chinook or king salmon *Oncorhynchus tshawytscha* and coho or silver salmon *Oncorhynchus kisutch*. Small numbers of pink salmon *Oncorhynchus gorbuscha* also are harvested, especially in odd numbered years. There are no directed fisheries for other Pacific salmon species and they occur rarely (sockeye) or in very limited numbers (steelhead and chum) in Council-managed harvests.

The Council's annual review of ocean fisheries provides a summary of important biological and socioeconomic data from which to assess the impacts of past management actions, determine how well management objectives are being met and improve regulations for the future. The Council will formally review this report at its March meeting prior to the development of management options for the approaching fishing season.

Chapter I of this review summarizes ocean salmon fisheries by gear type and management area. The summary includes management objectives, regulations, effort and harvest, fishery goal assessment, and management actions under the Pacific Salmon Treaty. Appendix A includes tables which detail historical harvest data by state and by management area.

Chapters II and III review inside catch and escapement data for chinook and coho salmon, respectively. Chapters on other salmon species are not included since Council fisheries have very minor impacts on pink salmon escapements and no measurable impacts on sockeye or chum salmon. The status of salmon species listed under the Endangered Species Act (ESA) is also reported in Chapter II for listed chinook and Chapter III for listed coho. Snake River Sockeye salmon, listed as endangered, also pass through the Council management area. However, as noted above, impacts on sockeye salmon in the Council management area are believed to be insignificant.

Socioeconomic impacts of the regulations are discussed in Chapter IV. Appendices B through D provide historical data on inland landings and escapements, ocean regulations and fishery related socioeconomics, respectively.

COMMON TABLE CONVENTIONS

All 1998 data provided in this report are preliminary at this time. Tables containing Oregon historical ocean fishery data reflect recent statistical modifications to earlier estimates which were first applied in the 1995 report. The following conventions apply with respect to the report's tables:

1. Totals may not precisely equal the sum of individual years due to rounding of numbers.

2. A dash indicates that there are no data appropriate for a particular table cell, or in the case of fishing effort or landings, that the season was closed.

3. A double dash indicates no records are available.

4. Zeros indicate no landings or activity even though the season was open.

5. "NA" indicates that data are not available at the time of publication.

CHAPTER I
THE 1998 OCEAN SALMON FISHERIES

COASTWIDE FISHERY SUMMARY

Summaries of the actual 1998 non-Indian troll, treaty Indian troll and recreational salmon fishing regulations for both the exclusive economic zone (3 to 200 miles from shore) and state territorial waters (0 to 3 miles from shore) are 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 1998 season.

Coastwide ocean salmon landings of chinook, coho, and pink salmon for recreational and troll fisheries in each state 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 1998 coho and chinook quotas for each fishery and compares them with actual harvests. Historic records 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 chapter sections which follow contain detailed assessments of management objectives, regulations, fishing effort and harvest, and fishery goal assessment by management area. The final section in the chapter contains a summary of management under the Pacific Salmon Treaty with Canada. In 1998, no agreement was reached by the Pacific Salmon Commission (PSC) on catch ceilings for Alaskan and Canadian fisheries. However, the U.S. and Canada agreed to abide by general obligations of the Pacific Salmon Treaty, particularly with respect to a commitment not to intentionally increase interceptions and to manage consistently with resource conservation concerns.

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, California) were based on: (1) the escapement goal range for Sacramento River fall chinook of 122,000 to 180,000 hatchery and natural adults combined; (2) an exploitation rate on age-4 Klamath River fall chinook (for fisheries from September 1, 1997, through August 31, 1998) of 9% to accommodate inriver recreational and tribal subsistence and commercial fisheries, as well as a minimum adult natural spawning escapement of 35,000; and (3) a 31% increase in escapement of Sacramento River winter chinook. The preseason estimated troll harvest south of Horse Mountain was 493,600 fish. The anticipated spawning escapement in the Sacramento River was 316,100 fall chinook adults.

Coho

Coho are managed as a unit south of Cape Falcon and are discussed more fully in the Cape Falcon to Humbug Mountain section. No troll harvest of coho was allowed south of Horse Mountain in 1998.

TABLE I-1. Summary of actual ocean **non-Indian troll** salmon fishing regulations for 1998. (Page 1 of 1)

Area and Season	Salmon Species	Actual Quota		Special Restrictions[b/]
		Chinook	Coho[a/]	
U.S.-Canada Border to Cape Falcon, Oregon May 1-12; 20-23; June 2-4 (19 days)	All except coho	6,500	-	Fishers must land and deliver fish within 48 hours of any closure; Columbia River Control Zone closed. Chinook landing limit per vessel per opening: 75 (May 20-23); 50 (June 2-4).
Cape Falcon to 43°58'00" N (Heceta Banks,Oregon) Apr. 15-June 30; Aug. 1-28; Sept. 1-Oct.. 31 (166 days)	All except coho	None	-	Closed June 1-Sept. 15 at mouth of Tillamook Bay.
Twin Rocks to Pyramid Rock, Oregon Nov. 1-15 (15 days)	Chinook only	None	-	Open 0-3 nautical miles.
43°58'00" N (Heceta Banks) to Humbug Mt., Oregon Apr. 15-June 30; Aug. 1-26; Sept. 1-Oct. 31 (164 days)	All except coho	None	-	-
Humbug Mt. to Oregon-California Border Apr. 15-May 31 (47 days)	All except coho	3,600	-	-
Cape Blanco to Humbug Mt., Oregon (off Elk R.) Nov. 1-30 (30 days)	Chinook only	None	-	Open 0-3 nautical miles. Landings restricted to Port Orford.
Sisters Rocks to Mack Arch, Oregon (off Rogue R.) Aug. 1-2; 5-6; 9-10; 13-31 (25 days)	All except coho	1,400	-	Open 0-4 nautical miles. Salmon must be landed in Port Orford, Gold Beach or Brookings within 24 hours of each closure. Closed within 1 mi of the Rogue River mouth.
Goat Isl. to 42°01'20" N, Oregon (off Chetco R.) Oct. 15-31 (17 days)	Chinook only	1,000	-	Open 0-3 nautical miles. Single daily landing limit of 20 chinook into the port of Brookings.
Oregon-California Border to Humboldt S. Jetty Sept 1-30 (30 days)	All except coho	6,000	-	All fish must be landed in the area under a limit of 30 fish per day. Klamath River Mouth Control Zone closed. Open only inside 6 nautical miles.
Horse Mt., California to Pt. Arena, California Sept. 1-30 (30 days)	All except coho	None	-	-
Pt. Arena to Pt. Reyes Aug. 1-Sept. 30 (61 days)	All except coho	None	-	-
Fort Ross to Pt. Reyes July 5-31 (27 days)	All except coho	3,000	-	Test fishery open 0-6 nautical miles; landing limit of 30 fish per day; all fish must be landed in the area.
Pt. Reyes to Pt. San Pedro July 1-Sept. 30 (92 days)	All except coho	None	-	-
Pt. San Pedro to Pt. Sur May 1-31; June 16-Sept. 30 (138 days)	All except coho	None	-	-
Pt. Sur to U.S.-Mexico Border May 1-Sept. 30 (153 days)	All except coho	None	-	-

a/ The overall hook-and-release mortality impact for all ocean commercial fisheries south of Cape Falcon was projected preseason to be 4,400 coho.

b/ Single-point, single-shank barbless hooks required in all open areas coastwide. Minimum size limits: 28 inches for chinook north of Cape Falcon and 26 inches for chinook south of Cape Falcon, unless otherwise noted. No more than 4 spreads per line off Oregon south of Cape Falcon. No more than 6 lines per boat allowed off California.

TABLE I-2. Summary of actual **treaty Indian ocean and Area 4B troll** salmon seasons for 1998. (Page 1 of 1)

Tribe and Area	Seasons[a/] Salmon Species	Dates	Days	Minimum Size Limit (Inches) Chinook	Coho
Quinault					
Areas 2 and 3	All except coho	May 1-June 6	37	24	-
	All	Aug. 3-Sept. 4; Sept. 8-12	38	24	16
Hoh and Quileute					
Area 3	All except coho	May 1-June 6	37	24	-
	All	Aug. 3-Sept. 4	33	24	16
Makah					
Areas 3N, 4 and 4A	All except coho	May 1-June 6	37	24	-
	All	Aug. 3-21; Sept. 1-4; 6-9; 11-12; 14-15[b/]	28	24	16
Area 4B	All except coho	Jan. 1-Apr. 15; May 1-June 6; Nov. 1-30	172	24[c/]	-
	All	Aug. 3-21; Sept. 1-4; 6-9; 11-12; 14-15;[b/] Dec. 1-31	59	24[c/]	16
S'Klallam					
Area 4B	All except coho	Jan. 1-Apr. 15; May 1-June 6; Nov. 1-30	172	24[c/]	-
	All	Aug. 3-Sept. 4; Dec. 1-31	64	24[c/]	16

a/ The overall quotas for these fisheries during the May 1-Sept. 30 ocean management period were 15,000 chinook and 10,000 coho. These quotas include troll catches by the S'Klallam and Makah tribes in Washington State Statistical Area 4B from May 1-Sept. 30. The overall chinook quota was divided to provide 10,000 chinook for the May 1-Jun. 30 chinook-directed season and 5,000 chinook for the Aug.-Sept. all-salmon season. Transfer of any unused chinook quota from the May-June season to the Aug.-Sept. season was not allowed. Barbless hooks were required in all ocean fisheries.

b/ The specific openings after Sept. 4 were: noon on Sept. 6 through noon on Sept. 9; 6 a.m. on Sept. 11 through noon on Sept. 12; and noon on Sept. 14 through midnight on September 15.

c/ Minimum length limit 22 inches prior to May 1 and after September 30.

TABLE I-3. Summary of actual ocean **recreational** salmon fishing regulations for 1998. (Page 1 of 1)

Area and Season	Salmon Species	Actual Quota (*Guideline) Chinook	Coho[a/]	Daily Limit and Special Restrictions[b/]
U.S.-Canada Border to Cape Alava, Washington Closed (by port agreement; see page I-29)	-	-	-	State managed Area 4B add-on fishery open Aug. 3-19 (17 days); all salmon except chinook; 2 salmon; 8,000 coho quota.
Cape Alava to Queets River, Washington Aug. 3 - 9 (7 days)	All salmon	100*	600	2 salmon.
Queets River to Leadbetter Pt., Washington Sun.-Thurs.: Aug. 3-16; Sept. 3 (11 days)	All salmon	2,350*	7,400	2 salmon, but no more than 1 chinook. No more than 4 fish per calendar week (Sun.-Sat.). Closed 0-3 nautical miles, except on Sept. 3.
Leadbetter Pt. to Cape Falcon, Oregon Sun.-Thurs.: Aug. 3-9; Sept. 3 (6 days)	All salmon	1,050*	8,000[c/]	2 salmon, but no more than 1 chinook and all coho must have a healed adipose fin clip. No more than 4 fish per calendar week (Sun.-Sat.). Closed in Columbia Control Zone.
Cape Falcon to Humbug Mt., Oregon Apr. 15-July 5; Aug. 1-Oct. 31 (174 days)	All except coho	None	-	2 salmon; no more than 6 fish in 7 consecutive days. Special gear restriction.[d/]
Twin Rocks to Pyramid Rock (off Tillamook Bay) Aug. 1-Nov. 15 (107 days)	Chinook only	None	-	2 salmon; no more than 4 fish in 7 consecutive days; open 0-3 nautical miles. Same gear restriction as required from Cape Falcon to Humbug Mt., except flashers are totally prohibited.
Cape Blanco to Humbug Mt., Oregon (off Elk R.) Nov. 1-30 (30 days)	Chinook only	None	-	1 salmon; no more than 4 fish in 7 consecutive days; open 0-3 nautical miles.
Humbug Mt., Oregon to Horse Mt., California May 23-June 10; June 21-July 5; Aug. 11-Sept. 13 (68 days)	All except coho	None	-	1 salmon; no more than 4 fish in 7 consecutive days. Klamath Control Zone closed in Aug.
Goat Is. to 42°01'20" N, Oregon (off Chetco R.) Oct. 5-14 (10 days)	Chinook only	None	-	1 salmon; no more than 4 fish in 7 consecutive days. Open 0-3 nautical miles.
Horse Mt. to Pt. Arena, California Feb. 14-July 5; Aug. 1-Nov. 15 (249 days)	All except coho	None	-	2 salmon. Gear restricted when fishing by means other than trolling.[e/]
Pt. Arena to Pigeon Pt. Mar. 28-Nov. 1 (219 days)	All except coho	None	-	2 salmon. From July 1-Sept. 7, daily bag limit of first 2 fish (no minimum size restriction). Gear restricted when fishing by means other than trolling.[e/] Sacramento Control Zone closed Mar. 28-31.
Pigeon Pt. to U.S.-Mexico Border Mar. 14-Sept. 7 (178 days)	Al except coho	None	-	2 salmon. Gear restricted when fishing by means other than trolling.[e/]

a/ Overall recreational hook-and-release mortality between Cape Falcon and the U.S.-Mexico border was projected preseason to be 6,800 coho.

b/ No more than one rod and single-point, single-shank barbless hooks required north of Pt. Conception, California. Unless otherwise noted: minimum size limits are (1) 24 inches for chinook and 16 inches for coho north of Cape Falcon, (2) 20 inches for chinook from Cape Falcon to Horse Mt. and (3) 24 inches for chinook in openings south of Horse Mt.

c/ Implementation of a selective fishery requires 1,000 coho of the 8,000 coho quota to be allocated to hook-and-release mortality.

d/ Gear limited to artificial lures or plugs of any size or bait no less than 6 inches long (excluding hooks and swivels) with no more than 2 single point, single shank, barbless hooks; divers prohibited; flashers prohibited except for use with downriggers; flashers totally prohibited inside state waters between Twin Rocks and Pyramid Rock beginning Aug. 1.

e/ If angling by any other means than trolling between Horse Mt. and Pt. Conception, no more than 2 single point, single shank, barbless circle hooks shall be used. The distance between the 2 hooks must not exceed 5 inches when measured from the top of the eye of the top hook to the inner base of the curve of the lower hook, and both hooks must be permanently tied in place (hard tied). A circle hook is defined as a hook with a generally circular shape and a point which turns inwards, pointing directly to the shank at a 90° angle. ***Trolling defined:*** Angling from a boat or floating device that is moving forward by means of a source of power, other than drifting by means of the prevailing water current or weather conditions, except when landing a fish.

TABLE I-4. **Chinook landings** in thousands of fish for the Washington, Oregon, and California ocean commercial **troll and recreational** fisheries (totals from rounded numbers). A double dash ("--") indicates no records are available. (Page 1 of 1)

	California			Oregon[a/]			Washington[b/]			Council Area		
Year	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total
1950	--	--	--	--	--	--	257	62	319	--	--	--
1951	--	--	--	--	--	--	326	155	481	--	--	--
1952	474	--	--	248	--	--	407	68	475	--	--	--
1953	492	--	--	151	--	--	419	38	457	--	--	--
1954	771	--	--	197	--	--	384	57	441	--	--	--
1955	763	--	--	310	--	--	385	80	465	--	--	--
1956	958	--	--	343	--	--	295	119	414	--	--	--
1957	474	--	--	257	--	--	361	93	454	--	--	--
1958	375	--	--	175	--	--	270	75	345	--	--	--
1959	514	--	--	54	--	--	202	71	273	--	--	--
1960	540	--	--	128	--	--	122	89	211	--	--	--
1961	774	--	--	116	--	--	182	75	257	--	--	--
1962	556	120	676	53	--	--	159	87	246	--	--	--
1963	662	84	746	152	--	--	204	94	298	--	--	--
1964	687	101	788	67	--	--	164	107	271	--	--	--
1965	705	60	765	58	--	--	96	129	225	--	--	--
1966	554	74	628	95	37	132	167	144	311	816	255	1,071
1967	338	73	411	100	43	143	132	160	292	570	276	846
1968	472	154	626	110	25	135	163	144	307	745	323	1,068
1969	551	156	707	140	32	172	187	154	341	878	342	1,220
1970	517	148	665	165	43	208	214	161	375	896	352	1,248
1971	434	188	622	103	30	133	252	160	412	789	378	1,167
1972	492	201	693	127	44	171	203	212	415	822	457	1,279
1973	817	198	1,015	363	61	424	317	204	521	1,497	463	1,960
1974	492	157	649	223	35	258	353	215	568	1,068	407	1,475
1975	579	104	683	225	75	300	274	262	536	1,078	441	1,519
1976	540	81	621	184	79	263	359	171	530	1,083	331	1,414
1977	600	104	704	340	58	398	265	175	440	1,205	337	1,542
1978	638	73	711	192	23	215	166	96	262	996	192	1,188
1979	727	120	847	245	21	266	147	77	224	1,119	218	1,337
1980	589	85	674	209	19	228	135	54	189	933	158	1,091
1981	588	84	672	161	29	190	103	84	187	852	197	1,049
1982	765	139	904	232	39	271	142	107	249	1,139	285	1,424
1983	294	64	358	80	25	105	58	48	106	432	137	569
1984	300	88	388	64	17	81	14	7	21	378	112	490
1985	366	171	537	217	56	273	47	27	74	630	254	884
1986	826	142	968	403	23	426	46	21	67	1,275	186	1,461
1987	876	193	1,069	529	59	588	75	41	116	1,480	293	1,773
1988	1,317	171	1,488	470	38	508	106	19	125	1,893	228	2,121
1989	531	187	718	353	32	385	73	20	93	957	239	1,196
1990	423	140	563	232	27	259	63	30	93	718	197	915
1991	295	81	376	75	14	89	50	13	63	420	108	528
1992	163	74	237	110	13	123	66	18	84	339	105	444
1993	280	110	390	82	6	88	55	13	68	417	129	546
1994	296	183	479	25	6	31	5	-	5	326	189	515
1995	679	397	1,076	215	7	222	12	1	13	906	405	1,311
1996	381	164	545	177	11	188	12	c/	13	554	175	729
1997	488	228	715	150	8	158	20	4	24	658	240	898
1998[d/]	216	121	337	125	4	129	20	2	22	361	127	488

a/ Includes troll catches from Alaska, Washington, and California landed in Oregon.
b/ Includes (1) troll catches from Area 4B (May 1-Sept. 30); (2) troll catches from Alaska, Oregon, and California landed in Washington; (3) treaty Indian troll catches (May 1-Sept. 30); and (4) beginning in 1989, includes catch from Washington state-waters Area 4B recreational fishery.
c/ Less than 500 fish.
d/ Preliminary.

TABLE I-5. **Coho landings** in thousands of fish for the Washington, Oregon and California ocean commercial **troll and recreational** fisheries (totals from rounded numbers). A double dash ("--") indicates no records are available. (Page 1 of 1)

	California			Oregon[a/]			Washington[b/]			Council Area		
Year	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total	Troll	Sport	Total
1950	--	--	--	--	--	--	649	6	655	--	--	--
1951	--	--	--	--	--	--	637	7	644	--	--	--
1952	92	--	--	356	--	--	843	22	865	--	--	--
1953	102	--	--	275	--	--	665	45	710	--	--	--
1954	64	--	--	227	--	--	403	65	468	--	--	--
1955	56	--	--	256	--	--	494	64	558	--	--	--
1956	66	--	--	443	--	--	706	154	860	--	--	--
1957	89	--	--	551	--	--	733	188	921	--	--	--
1958	13	--	--	197	--	--	574	131	705	--	--	--
1959	35	--	--	175	--	--	577	163	740	--	--	--
1960	18	--	--	112	--	--	181	78	259	--	--	--
1961	79	--	--	329	--	--	542	183	725	--	--	--
1962	48	13	61	292	--	--	633	296	929	--	--	--
1963	162	33	195	457	--	--	602	275	877	--	--	--
1964	247	40	287	557	--	--	603	253	856	--	--	--
1965	217	21	238	666	--	--	967	500	1,467	--	--	--
1966	446	32	478	646	228	874	885	341	1,226	1,977	601	2,578
1967	414	50	464	1,004	351	1,355	779	455	1,234	2,197	856	3,053
1968	362	40	402	825	266	1,091	714	447	1,161	1,901	753	2,654
1969	193	28	221	557	233	790	464	403	867	1,214	664	1,878
1970	183	15	198	990	257	1,247	744	493	1,237	1,917	765	2,682
1971	442	67	509	1,490	312	1,802	1,264	747	2,011	3,196	1,126	4,322
1972	158	45	203	825	248	1,073	575	542	1,117	1,558	835	2,393
1973	348	32	380	785	232	1,017	702	472	1,174	1,835	736	2,571
1974	656	77	733	1,137	306	1,443	1,038	595	1,633	2,831	978	3,809
1975	204	21	225	657	250	907	774	481	1,255	1,635	752	2,387
1976	622	58	680	1,827	500	2,327	1,377	943	2,320	3,826	1,501	5,327
1977	45	14	59	446	180	626	710	490	1,200	1,201	684	1,885
1978	316	41	357	612	259	871	610	470	1,080	1,538	770	2,308
1979	184	21	205	715	181	896	667	290	957	1,566	492	2,058
1980	50	21	71	383	326	709	389	362	751	822	709	1,531
1981	84	11	95	622	200	822	401	238	639	1,107	449	1,556
1982	92	27	119	564	175	739	380	206	586	1,036	408	1,444
1983	60	27	87	320	147	467	70	209	279	450	383	833
1984	47	19	66	14	123	137	67	40	107	128	182	310
1985	11	16	27	84	182	266	218	168	386	313	366	679
1986	36	19	55	440	219	659	160	175	335	636	413	1,049
1987	44	47	91	354	181	535	138	124	262	536	352	888
1988	51	35	86	623	227	850	73	89	162	747	351	1,098
1989	42	50	92	456	273	729	145	213	358	643	536	1,179
1990	61	52	113	122	201	323	190	225	415	373	478	851
1991	82	69	151	307	259	566	136	208	344	525	536	1,061
1992	2	12	14	50	186	236	92	124	216	144	322	466
1993	-	30	30	2	58	60	75	126	201	77	214	291
1994	-	c/	c/	-	c/	c/	-	-	-	-	c/	c/
1995	-	1	1	-	12	12	57	68	125	57	81	138
1996	-	1	1	c/	7	7	36	51	87	36	59	95
1997	-	c/	c/	-	6	6	14	25	39	14	31	45
1998[d/]	-	c/	c/	-	2	2	8	21	29	8	23	31

a/ Includes troll catches from Alaska, Washington, and California landed in Oregon.

b/ Includes (1) troll catches from Area 4B (May 1-Sept. 30); (2) troll catches from Alaska, Oregon, and California landed in Washington; (3) treaty Indian troll catches (May 1-Sept. 30); and (4) beginning in 1989, includes catch from Washington state-waters Area 4B recreational fishery.

c/ Less than 500 fish, including illegal catch.

d/ Preliminary.

TABLE I-6. **Pink salmon landings** in thousands of fish for the Washington, Oregon and California ocean commercial **troll and recreational** fisheries. (Page 1 of 1)

Year	California	Oregon			Washington			Council Area		
	Troll	Troll	Sport	Total	Troll	Sport[a/]	Total	Troll	Sport	Total
1971	1	2	NA	2	21	9	30	24	9	33[b/]
1972	c/	c/	c/	0	4	c/	4	4	0	4
1973	19	3	2	5	55	8	63	77	10	87
1974	c/	c/	c/	0	1	c/	1	1	0	1
1975	3	c/	1	1	77	14	91	80	15	95
1976	c/	0	0	0	2	0	2	2	0	2
1977	1	88	4	92	286	29	315	375	33	408
1978	NA	c/	0	0	4	0	4	4	0	4[b/]
1979	c/	21	1	22	561	18	579	582	19	601
1980	c/	c/	0	0	1	0	1	1	0	1
1981	7	60	2	62	237	10	247	304	12	316
1982	c/	c/	0	0	c/	0	0	0	0	0
1983	c/	c/	c/	0	106	4	110	106	4	110
1984	c/	0	c/	0	c/	c/	0	0	0	0
1985	7	44	8	52	108	3	111	159	11	170
1986	0	0	c/	0	c/	c/	0	0	0	0
1987	1	18	1	19	19	2	21	38	3	41
1988	0	0	0	0	0	0	0	0	0	0
1989	1	4	1	5	47	2	49	52	3	55
1990	0	0	0	0	c/	0	0	0	0	0
1991	c/	2	c/	2	48	2	50	50	2	52
1992	0	c/	c/	0	c/	c/	0	0	0	0
1993	0	c/	c/	c/	6	2	8	6	2	8
1994	0	0	0	0	-	-	-	0	0	0
1995	0	c/	c/	c/	42	3	45	42	3	45
1996	0	c/	0	c/	0	c/	c/	c/	c/	c/
1997	0	c/	0	c/	2	1	3	2	1	3
1998[d/]	0	c/	0	c/	c/	c/	c/	c/	c/	c/

a/ Beginning in 1989, includes pinks landed in the Washington state-waters Area 4B recreational fishery.
b/ Incomplete.
c/ Less than 500 fish.
d/ Preliminary.

TABLE I-7. Ocean salmon commercial **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/]
1981-1985	59.8	462.7	58.7	4.7	4,453.6	344.9	22.7
1986-1990	58.5	794.7	46.8	0.8	8,097.4	262.2	4.0
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	35.3	294.9	82.3	e/	3,237.9	459.2	e/
1992	20.3	163.4	2.5	0.0	1,632.1	11.3	0.0
1993	25.9	279.6	-	0.0	2,536.9	-	0.0
1994	21.2	295.6	-	0.0	3,103.1	-	0.0
1995	25.8	679.3	-	0.0	6,633.5	-	0.0
1996	21.1	380.6	-	0.0	4,113.4	-	0.0
1997	18.6	487.7	-	0.0	5,247.8	-	0.0
1998[f/]	12.0	216.2	-	0.0	1,745.5	-	-
OREGON[g/]							
1971-1975	NA	239.5	882.3	1.8[c/]	2,127.9	6,015.4	8.0[c/]
1976-1980	44.4[h/]	236.6	803.7	54.2[c/]	2,406.3	4,251.5	251.2[c/]
1981-1985	26.0	151.1	321.0	21.0	1,431.8	1,537.1	116.6
1986-1990	38.3	397.6	399.1	4.3	3,728.4	1,957.2	21.0
1982	33.7	232.0	564.0	e/	2,351.3	2,708.4	0.0
1983	22.1	79.5	319.6	e/	654.8	1,098.0	0.2
1984	7.9	64.3	13.8	0.0	549.7	71.0	0.0
1985	21.0	217.0	84.2	44.0	2,029.8	483.8	258.6
1986	32.5	402.7	440.4	0.0	3,362.5	1,905.1	0.0
1987	39.5	529.3	354.0	18.0	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	42.3	353.5	455.7	4.0	3,531.9	1,995.5	17.6
1990	26.2	232.4	122.3	0.0	2,180.6	633.6	0.0
1991	14.9	74.8	306.9	2.0	693.5	1,410.2	7.6
1992	9.2	110.5	49.8	e/	1,013.2	206.2	e/
1993	9.5	81.5	1.7	e/	760.7	8.8	e/
1994	3.8	25.3	-	0.0	286.7	-	0.0
1995	7.9	214.8	-	0.1	1,940.7	-	0.4
1996	8.5	177.1	e/	e/	1,924.7	e/	e/
1997	7.8	149.7	-	e/	1,539.9	-	0.1
1998[f/]	7.2	125.0	-	e/	1,397.5	-	e/

TABLE I-7. Ocean salmon commercial **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
		WASHINGTON[i/]					
1971-1975	53.3[j/]	279.5	869.0	50.3[c/]	3,211.2	4,804.1	240.6[c/]
1976-1980	45.3	214.4	750.5	423.1[c/]	2,412.7	3,675.4	1,959.3[c/]
1981-1985	13.4	72.7	227.1	151.1[c/]	858.3	1,029.2	596.6[c/]
1986-1990	6.9	72.6	141.2	33.6[c/]	775.5	612.7	120.5[c/]
1982	18.6	142.3	379.9	0.3	1,650.2	1,935.2	0.9
1983	12.2	58.4	69.8	107.7	686.9	193.1	374.1
1984	1.9	13.8	66.6	0.0	192.2	212.8	0.0
1985	7.5	46.6	217.8	108.7	524.2	1,053.3	487.3
1986	5.5	46.0	160.4	0.2	583.6	620.4	0.4
1987	4.5	75.1[k/]	138.4[l/]	19.3	763.4	567.9	70.9
1988	8.9	106.1	72.7	0.0	1,122.0	295.0	0.0
1989	7.3	73.1	144.7	47.9	783.3	595.0	170.0
1990	8.3	62.9	189.7[m/]	0.1	625.0	985.0	0.3
1991	6.4	49.7	136.0	48.2	482.9	634.3	160.6
1992	6.0	66.2	92.3	0.0	677.8	334.8	0.0
1993	5.5	55.4	75.2	6.1	563.4	336.1	19.9
1994	0.2	5.2	-	0.0	52.8	-	0.0
1995	0.8	11.5	56.7	42.0	85.1	254.8	136.7
1996	0.8	12.4	35.8	0.0	0.0[n/]	69.8[n/]	0.0[n/]
1997	0.9	20.1	14.4	1.7	80.9[n/]	n/	e/n/
1998[f/]	0.3	20.3	7.9	0.0	227.7	43.0	0.0

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/ Days listed are for 1979-1980. Data unavailable for 1976-1978.
i/ 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.
j/ This is a 1973-1975 average; 1971 and 1972 effort data are deliveries and are not comparable.
k/ Includes 300 chinook landed from vessels fishing illegally off Washington.
l/ Includes 2,200 coho landed from vessels fishing illegally off Washington.
m/ Includes 100 coho landed from vessels fishing illegally off Washington.
n/ Non-Indian only.

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	
		CALIFORNIA				
1971-1975	247.4	169.6	48.3	0.0	217.9	0.9
1976-1980	163.5	92.4	31.2	0.0	123.6	0.8
1981-1985	147.0	109.1	19.9	0.0	129.0	0.9
1986-1990	241.3	166.5	40.3	0.0	206.8	0.9
1982	171.3	138.7	26.7	0.0	165.4	1.0
1983	122.7	63.8	27.2	0.0	91.0	0.7
1984	127.0	87.8	19.0	0.0	106.8	0.8
1985	191.9	171.1	15.8	0.0	187.1	1.0
1986	195.6	141.6	18.7	0.0	160.3	0.8
1987	268.3	192.5	47.3	0.0	239.8	0.9
1988	245.4	171.8	34.4	0.0	206.2	0.8
1989	244.9	186.6	49.6	0.0	236.2	1.0
1990	252.1	139.8	51.6	0.0	191.4	0.8
1991	196.6	80.8	69.3	0.0	150.1	0.8
1992	127.9	73.6	11.5	0.0	85.1	0.7
1993	174.9	110.0	29.8	0.0	139.8	0.8
1994	189.9	183.2	0.5	0.0	183.7	1.0
1995	378.5	397.2	0.9	0.0	398.1	1.1
1996	225.4	164.2	0.6	0.0	164.8	0.7
1997	232.3	227.5	0.5	0.0	228.0	1.0
1998[a/]	149.9	121.3	0.1	0.0	121.4	0.8
		OREGON[b/]				
1971-1975	364.5[c/]	46.8	261.4	1.5[d/]	309.7	0.9
1976-1980	387.7	40.0	289.2	2.5[d/]	331.7	0.9
1981-1985	233.5	33.1	165.4	3.3[d/]	201.8	0.9
1986-1990	241.1	35.8	220.0	0.4[d/]	256.2	1.1
1982	226.0	38.7	175.1	0.0	213.8	0.9
1983	226.0	24.7	146.9	0.1	171.7	0.8
1984	153.1	17.0	122.6	e/	139.6	0.9
1985	251.6	55.9	182.5	8.0	246.4	1.0
1986	187.0	22.8	218.9	e/	241.7	1.3
1987	255.1	59.4	180.5	1.0	240.9	0.9
1988	250.7	38.3	226.9	0.0	265.2	1.1
1989	266.3	32.0	273.3	1.3	306.6	1.2
1990	246.6	26.5	200.6	0.0	227.1	0.9
1991	190.1	14.4	259.1	0.3	273.8	1.4
1992	165.3	12.6	185.8	e/	198.4	1.2
1993	79.6	6.4	58.1	e/	64.5	0.8
1994	26.9	6.0	f/	0.0	6.0	0.2
1995	35.9	6.7	11.9	e/	18.6	0.5
1996	44.0	11.2	7.2	0.0	18.4	0.4
1997	30.2	7.7	6.0	0.0	13.7	0.5
1998[a/]	26.0	4.1	2.3	0.0	6.4	0.2

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	
WASHINGTON[g/]						
1971-1975	483.0	210.3	566.8	9.9[d/]	787.0	1.6
1976-1980	429.8	114.6	511.8	23.8[d/]	650.2	1.5
1981-1985[h/]	163.3	54.7	172.4	5.9[d/]	233.0	1.4
1986-1990	119.4	26.1	165.1	1.9[d/]	193.1	1.6
1982[h/]	218.7	106.8	206.5	0.0	313.3	1.4
1983	209.7	48.4	209.3	4.5	262.2	1.3
1984	36.8	6.9	40.4	0.0	47.3	1.3
1985	114.8	26.6	167.9	3.1	197.6	1.7
1986	109.3	21.1	174.8	0.0	195.9	1.8
1987	101.5	40.5	123.9	1.8	166.2	1.6
1988	68.9	18.9	88.9	0.0	107.8	1.6
1989	142.2	19.9	212.9	2.0	234.8	1.7
1990	175.2	30.0	224.9	0.0	254.9	1.5
1991	127.2	12.7	207.7	2.2	222.6	1.8
1992	108.9	18.4	123.6	0.0	142.0	1.3
1993	128.8	13.0	126.0	2.4	141.4	1.1
1994	-	-	-	-	-	-
1995	55.0	0.5	68.3	2.8	71.6	1.3
1996	43.3	0.2	51.4	0.0	51.6	1.2
1997	29.7	4.0	26.8	1.4	32.1	1.1
1998[a/]	19.7	2.2	20.7	e/	22.9	1.2

a/ Preliminary.
b/ Oregon fish per angler computed on total angler trips prior to 1979 and on salmon trips beginning in 1979.
c/ Angler days estimates are for 1974-1975. Data unavailable for 1971-1973.
d/ Odd-year average.
e/ Less than 50 fish.
f/ Less than 50 fish (illegal catch).
g/ Beginning in 1989, includes angler trips and catch in state-managed, late-season Area 4B fishery. See Table IV-16 for Area 4B data.
h/ Includes Washington-based effort and catch from Oregon state waters (July 26-Aug. 1) and Strait of Juan de Fuca after WDFW and NMFS ocean closures in 1982.

TABLE I-9. **Coho and chinook harvest quotas** for 1998 compared with actual harvest in thousands of fish by management area and fishery. (Page 1 of 1)

Fishery Governed by Quota	Chinook			Coho		
	Quota	Catch	Catch/Quota[a/]	Quota	Catch	Catch/Quota[a/]
NORTH OF CAPE FALCON						
TREATY INDIAN TROLL						
May 1-Jun.6	10.0	9.6	96%	Coho Retention Prohibited		
Aug. 3-Sept. 15 (time period)	5.0	4.8	96%	10.0	7.9	79%
NON-INDIAN TROLL						
U.S.-Canada Border to Cape Falcon (May 1-Jun. 4)	6.5	5.9	91%	Coho Retention Prohibited[b/]		
RECREATIONAL						
U.S.-Canada Border to Cape Alava (Closed)	[c/]	-	-	-	-	-
Cape Alava to Queets River (Aug. 3-9)	0.10[d/]	0.07	65%	0.6	0.6	100%
Queets River to Leadbetter Pt. (July 21-Sept. 4)	2.35[d/]	1.71	73%	7.4	7.7	104%
Leadbetter Pt. to Cape Falcon (July 21-Aug. 7)	1.05[d/]	0.42	40%	7.0[e/]	6.5	93%
Subtotal Recreational	3.5	2.2	63%	15.0	14.8	99%
TOTAL NORTH OF CAPE FALCON	25.0	22.5	90%	25.0	22.7	91%
SOUTH OF CAPE FALCON						
TROLL (all except coho)				Coho Retention Prohibited		
Klamath Management Zone:						
Humbug Mt. to OR-CA Border (Apr. 15-May 31)	3.6	0.07	2%			
Sisters Rocks to Mack Arch (Aug. 1-2, 5-6, 9-10, 13-31)	1.4	0.08	5%			
OR-CA Border to Humboldt S. Jetty (Sept. 1-30)	6.0	2.37	40%			
Goat Island to 42°01'20" N (Oct. 13-25; 29-30)	1.0	0.60	60%			
Fort Ross to Pt. Reyes (July 5-31)	3.0	1.20	40%			
Subtotal Troll	15.0	4.3	29%			
RECREATIONAL (all except coho)	-	-	-	Coho Retention Prohibited		
TOTAL SOUTH OF CAPE FALCON	15.0	4.3	29%	Coho Retention Prohibited		
Buoy 10 (opening Aug. 8-23)	2.7[f/]	5.8	214%	2.0[f/]	3.2	160%

a/ Percent based on actual catch, not rounded numbers.
b/ Trollers traded 4,000 coho for 1,500 chinook from the recreational fishery.
c/ State managed Area 4B add-on was utilized in place of an ocean opening to provide more fishing opportunity. The add-on season opened Aug. 3-19 (7 days per week) for all salmon except chinook under an 8,000 coho quota. The total harvest was 8,062 coho (103 chinook were landed illegally).
d/ Subarea guideline within an overall recreational quota for the area north of Cape Falcon of 3,500 chinook.
e/ This is the landed catch quota based on a total selective fishery impact of 8,000 coho.
f/ Expected catch, not a quota or guideline.

Regulations

The following commercial all-salmon-except-coho season openings were implemented to help achieve the chinook management objectives listed above: September 1-30 from Horse Mountain to Point Arena; August 1 through September 30 between Point Arena and Point Reyes; July 1 through September 30 between Point Reyes and Point San Pedro; May 1-31 and June 16 through September 30 from Point San Pedro to Point Sur; and May 1 through September 30 south of Point Sur. Between Fort Ross and Point Reyes, a trial fishery inside 6 miles was conducted from July 5-31. All seasons required a minimum length of 26 inches.

Coho harvest was not permitted at any time.

Effort and Harvest

Commercial trollers harvested 213,900 chinook salmon from ocean waters south of Horse Mountain, approximately 56% less than the 1997 harvest of 486,200 chinook and 57% below the preseason estimate of 493,600.

Effort by trollers fishing south of Horse Mountain totaled 12,000 days fished, compared to 18,600 days fished in 1997.

Fishery Goal Assessment

Indices of ocean exploitation 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 85-95% of chinook catches south of Point Arena.

The Central Valley index (CVI) has been calculated since 1970, when escapement estimates for all races of Central Valley chinook were available (Table I-10). In the 1970s and early 1980s, the ocean fishery pattern was stable, with harvest occurring both north and south of Point Arena in significant numbers. However, since the mid-1980s, harvest north of Point Arena has been progressively more restricted. This regulation structure is undoubtedly affecting the CVI, both numerically and as it relates to the ocean harvest index.

Also, the CVI can be influenced by changes in the magnitude of the inland sport harvest relative to spawning escapement. Recent basinwide angler surveys have estimated inland recreational catch at levels approaching 25% of the fish entering the basin. This may be significantly higher than inland recreational harvest in the early years of the CVI database, increasing the ocean harvest index by an unknown degree.

As a result of these factors, comparison of either the actual CVI abundance or the ocean harvest index is not a satisfactory way to evaluate population or harvest impact trends in the long term. The 1998 abundance index for Central Valley chinook was 565,300 fish, compared to 1,042,800 fish in 1997 (Figure I-1). The ocean harvest index of 57 was 9 points lower than the 1997 index, and 21 points lower than the 1995 index of 78 (Figure I-2). The fact that the 1998 index was lower than 1997 and substantially lower than 1995 reflects harvest constraints due to Sacramento River winter chinook concerns and the significant restriction (compared to previous years) on commercial fishing time south of Point Arena because of the diminished Klamath River fall chinook stock abundance.

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 Index (%)[b/]
	Troll	Sport	Total	Fall	Other[a/]	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	308.9	19.0	327.9	662.0	50
1986	502.5	114.8	617.3	259.0	30.3	289.3	906.6	68
1987	446.8	152.8	599.7	188.0	25.2	213.2	812.9	74
1988	830.5	130.4	960.9	244.9	23.3	268.2	1,229.1	78
1989	363.8	130.9	494.7	149.6	16.4	166.0	660.7	75
1990	336.2	112.6	448.8	108.3	13.5	121.8	570.6	79
1991	254.6	62.1	316.7	112.3	15.1	127.4	444.1	71
1992	163.5	66.7	230.2	85.3	7.6	92.9	323.1	71
1993	259.7	99.3	359.0	131.5	10.1	141.6	500.6	72
1994	290.4	159.9	450.3	148.8	11.2	160.0	610.3	74
1995	665.5	354.6	1,020.1	272.0	19.9[d/]	291.9	1,312.0	78
1996	348.9	129.3	478.2	255.3	8.1	263.4	741.6	64
1997	480.1	207.0	687.1	350.9	4.8	355.7	1,042.8	66
1998[e/]	209.9	113.7	323.6	198.0	43.7	241.7	565.3	57

a/ Spring run of the current calendar year and late fall and winter runs of the following calendar year.
b/ Ocean harvest landed south of Pt. Arena as a percent of the abundance index.
c/ Percent of adults in 1970 spring run assumed the same as 1971 (72%, 5,500 total).
d/ Winter run assumed to be the same as previous year.
e/ Preliminary.

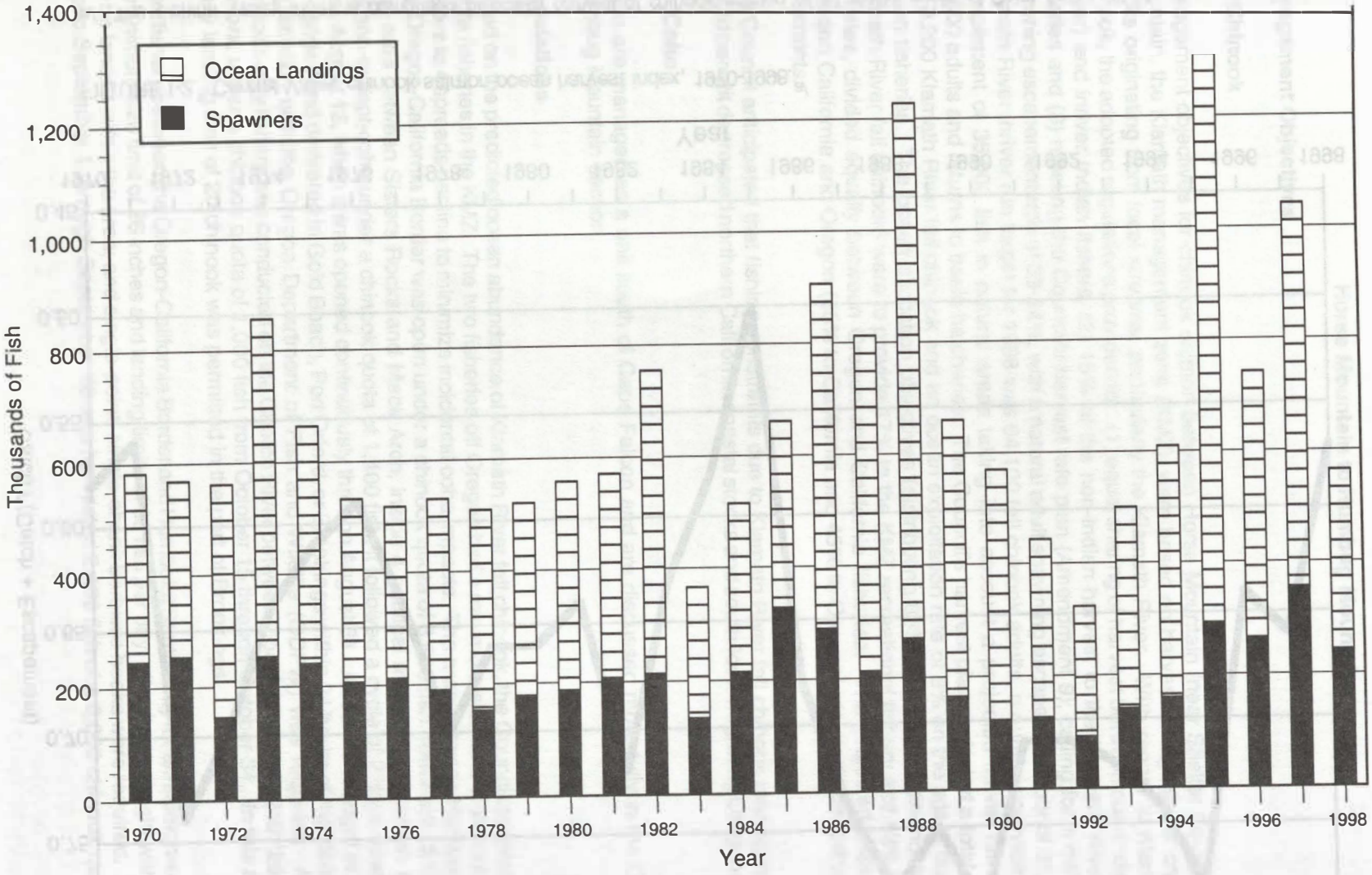


FIGURE I-1. Central Valley chinook salmon annual abundance index, 1970-1998.

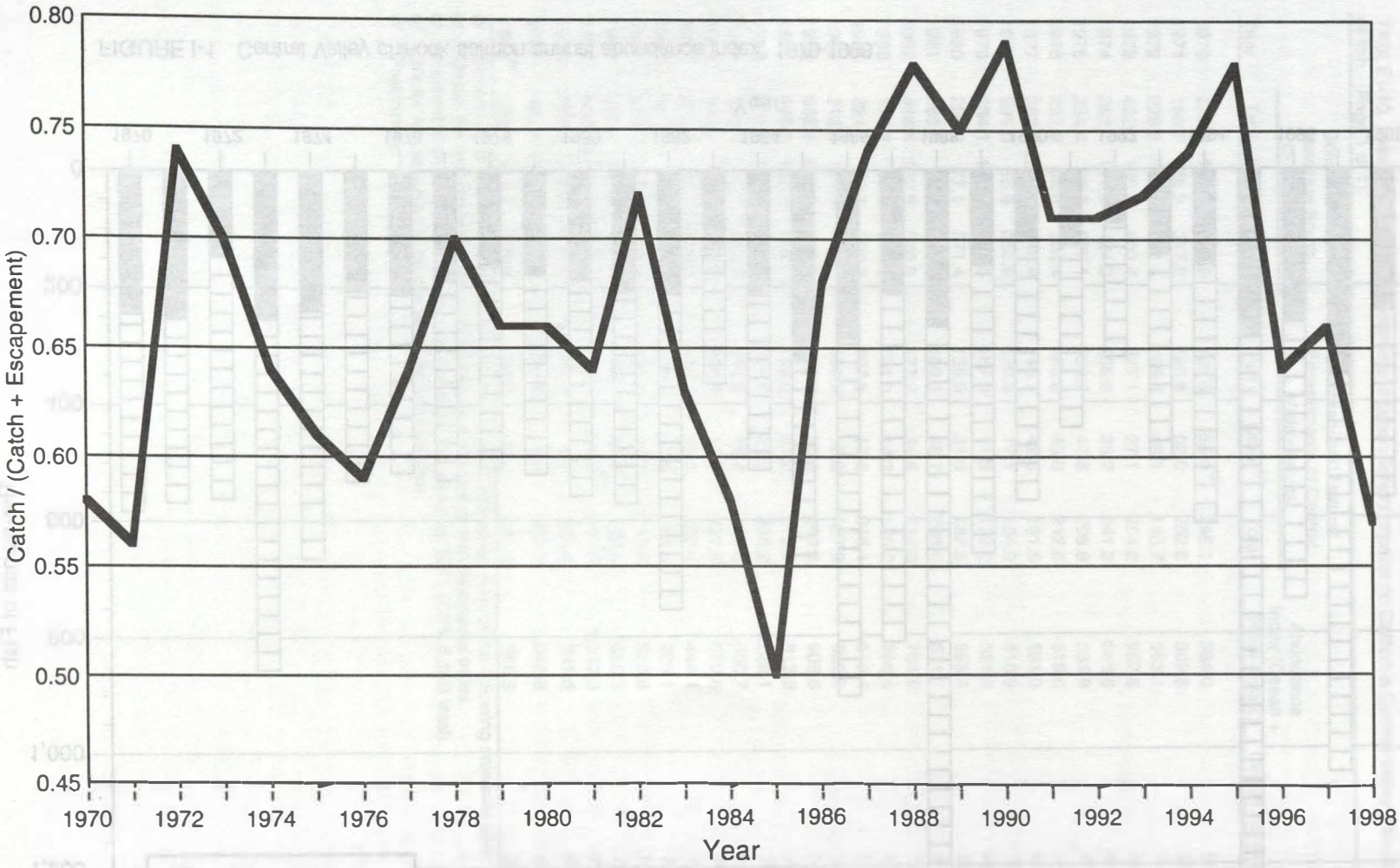


FIGURE I-2. Central Valley chinook salmon ocean harvest index, 1970-1998.[a/]

a/ The Central Valley Index is comprised of ocean harvest of chinook salmon of all stocks south of Point Arena, California, and spawning escapements of all races of chinook salmon into Central Valley, excluding inland recreational harvest. The harvest index is the ocean catch divided by the sum of ocean catch and Central Valley spawning escapement. It does not represent a true harvest rate on Central Valley chinook.

Horse Mountain to Humbug Mountain

Management Objectives

Chinook

Management objectives for chinook salmon between Horse Mountain (near Shelter Cove) and Humbug Mountain, the Klamath management zone (KMZ), were based on harvest rate goals for chinook salmon stocks originating from local streams, particularly the Klamath River. With regard to Klamath River fall chinook, the adopted regulations provided for: (1) equal sharing of harvest between non-Indian (ocean and inriver) and inriver Indian fishers, (2) 15% of the non-Indian harvest to the Klamath River recreational fisheries and (3) meeting the Council's harvest rate plan (Amendment 9), calling for a minimum natural spawning escapement rate of 33-34%, with a natural adult spawning escapement floor of 35,000 fish. The Klamath River inriver run target for 1998 was 64,100 fall chinook adults, a number providing a spawning escapement of 35,000 fish in natural areas taking into account a projected inriver harvest impact of 14,800 adults and returns to basin hatcheries. The Council's harvest plan projected a total ocean harvest of 10,200 Klamath River fall chinook and an ocean exploitation rate of 9% on the age-4 component in all ocean fisheries. The ocean allocation objectives (distributing 85% of the total non-Indian allocation of Klamath River fall chinook) were to provide 17% to the KMZ recreational fishery and 83% to other ocean fisheries, divided equally between Oregon and California fisheries. The projected sharing imbalance between California and Oregon (55% to California and 45% to Oregon) resulted from coho management constraints.

The Council anticipated that fishing constraints due to Klamath River fall chinook management objectives would benefit depressed northern California coastal stocks and south/local migrating Oregon coastal stocks.

Coho

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

Regulations

Based on the predicted ocean abundance of Klamath River fall chinook, the Council adopted three chinook quota fisheries in the KMZ. The two fisheries off Oregon had a minimum size limit of 26 inches, and limited fishers to 4 spreads per line to minimize incidental coho impacts. The area between Humbug Mountain and the Oregon-California Border was open under a chinook quota of 3,600 fish from April 15 through May 31. The area between Sisters Rocks and Mack Arch, inside 4 nautical miles, was open on August 1 to all-salmon-except-coho under a chinook quota of 1,400 fish; it followed a cycle of 2 days open/2 days closed until August 13, when it was opened continuously through August 31. All salmon caught in the area had to be landed and delivered in Gold Beach, Port Orford, or Brookings within 24 hours of the closure, and vessel registration with the Oregon Department of Fish and Wildlife (ODFW) was required. A terminal area chinook-only fishery was conducted off the Chetco River between Goat Island and 42°01'20" N, within state waters, under a chinook quota of 1,000 fish from October 15 through October 31. In this fishery, a single daily landing limit of 20 chinook was permitted in the port of Brookings.

The fishery between the Oregon-California Border and Humboldt South Jetty for all-salmon-except-coho had a minimum size limit of 26 inches and landing limits of 30 fish per day; all salmon caught within the area had to be landed within the area; and single-point, single-shank barbless hooks were required. The fishery was open September 1 through September 30 and harvested 2,400 fish of a 6,000 chinook quota.

Effort and Harvest

Troll fishery effort between Horse Mountain and Humbug Mountain totaled 400 vessel days, compared to 400 in 1997. Chinook harvest was 3,100 fish, compared to 5,000 fish in 1997. Coho retention has not been allowed since 1991. No pink salmon were landed in 1998.

Fishery Goal Assessment

Chinook

The success of the Council's harvest allocation goals and the ocean fishery exploitation rate on age-4 Klamath River fall chinook for 1998 ocean troll and recreational fisheries cannot be determined at this time because some coded-wire-tag (CWT) data are not yet available. The total inriver escapement was 88,500 adults, above the 64,100 projected preseason. The natural spawner escapement of 41,900 adults exceeded the 35,000 floor by 20%.

Harvest during April and May, between Humbug Mountain and the Oregon-California border, totaled 69 chinook, compared to the 3,600 chinook quota. Harvest during August between Sisters Rocks and Mack Arch totaled 75 chinook, compared to the 1,400 chinook quota. Harvest during September 1-30, between the Oregon-California Border and Humboldt South Jetty, was 2,400 chinook compared to the quota of 6,000 chinook. Harvest during October off the Chetco River totaled 600 chinook compared to the 1,000 chinook quota.

Coho

Goal assessment for coho is discussed in the Humbug Mountain to Cape Falcon section.

Humbug Mountain to Cape Falcon

Management Objectives

Chinook

Commercial ocean troll chinook salmon fisheries in 1998 between Humbug Mountain (near Port Orford, Oregon) and Cape Falcon (near Manzanita, Oregon) were constrained due to Oregon coastal natural (OCN) coho and Klamath River fall chinook management. South of Cape Falcon, chinook fisheries were constrained by: (1) a coastwide Klamath River fall chinook exploitation rate limited to 9% on age-4 fish (for fisheries from September 1, 1997 through August 31, 1998) and (2) a maximum OCN coho exploitation rate of 13% as allowed under Amendment 11 and required by the NMFS 1998 Biological Opinion to meet the terms of the Oregon Coastal Salmon Restoration Initiative. Fishery objectives also took into account the index escapement goal range for Oregon coastal chinook of 150,000 to 200,000 adult chinook. Closed periods during late August were necessary to meet Klamath River fall chinook management objectives. Fishery constraints due to Snake River fall chinook were not necessary in 1998 due primarily to restrictions in northern fisheries for other stock considerations.

A discussion of details leading to the adoption of the 9% ocean exploitation rate for age-4 Klamath River fall chinook was presented in the management objectives section for the area from Horse Mountain to Humbug Mountain.

It was anticipated that fishery constraints due to OCN coho and Klamath River fall chinook management objectives would benefit Oregon south coast chinook stocks. Humbug Mountain to Cape Falcon chinook fisheries have a minor impact on most of the stocks originating from the north Oregon coast which have a northerly marine distribution pattern.

Coho

For the sixth consecutive year, coho retention was not allowed in ocean commercial troll fisheries south of Cape Falcon due to projected poor Oregon Production Index (OPI) area coho abundance (both hatchery and natural production) and due to OCN coho management objectives. The OPI, which includes all fishery impacts and ocean escapements south of Leadbetter Point, Washington, has been calculated since 1970. Based on studies from 1990-1997, which indicated that the OCN spawner escapements have been overestimated, annual OPI abundances from 1990 forward also have been calculated using stratified random sampling (SRS) estimates of natural spawner escapement. The 1998 abundance estimates for OPI coho in both index and SRS accounting methods were a near record low (Table I-11 and Figure I-3).

Council-area ocean and Oregon inside fisheries in 1998 were managed for a combined 12% exploitation rate on OCN coho (11% ocean; 1% inside). Chinook directed fisheries (no coho retention) were adopted for 1998 in south of Cape Falcon ocean and most Oregon inside fisheries, while some coho directed harvest was allowed in fisheries north of Cape Falcon. To accomplish the exploitation rate goal, south of Cape Falcon fisheries between Point Arena and Cape Falcon were closed during the month of July. Based on the projected OPI area coho abundance, the Council-adopted fishery regime was expected to result in a hook-and-release mortality of 4,400 coho and an OCN spawner escapement of 24 adults per mile on standard index surveys.

Regulations

Retention of coho was not permitted south of Cape Falcon in 1998. The area between Humbug Mountain and 43° 58' 00" (Heceta Banks) was open to all-salmon-except-coho April 15 through June 30, August 1 through August 26, and September 1 through October 31. The area between Heceta Banks and Cape Falcon was open to all salmon except coho April 15 through June 30, August 1 through August 28, and September 1 through October 31. The mouth of Tillamook Bay was closed June 1 through September 15 to increase escapement of spring chinook (June) and coho (August through September). Four state-water fisheries occurred in 1998. Four fishing periods were open off the Rogue River (0-4 miles) during August with landings restricted to Port Orford, Gold Beach, or Brookings. The terminal area off the Chetco River (0-3 miles) was open during October. The Tillamook terminal area fishery (0-3 miles) was open during November. The traditional late-season chinook salmon fishery off the Elk River (0-3 miles) was open during November with landings restricted to Port Orford.

For the Humbug Mountain through Cape Falcon area, the minimum size limit for chinook was 26 inches in commercial troll fisheries. Single-point, single-shank barbless hooks were required. Also, the fishery operated under a gear restriction of no more than 4 spreads per line to reduce coho mortalities.

Effort and Harvest

Commercial troll fishery effort between Humbug Mountain and Cape Falcon totaled 7,000 vessel days, compared to 7,500 vessel days in 1997. Chinook landings totaled 124,300 fish, compared to 147,300 chinook in 1997. One pink salmon was landed in 1998 compared to 0, 1, and 129 pink salmon landed in 1997, 1996, and 1995, respectively.

Fishery Goal Assessment

Chinook

The preliminary ocean exploitation rate on Klamath River fall chinook is not available (further details are provided in the fishery goal assessment discussion for the area from Horse Mountain to Humbug Mountain). Estimates of the actual reductions in Snake River fall chinook age-3 and age-4 index exploitation rates are not available (see the discussion of listed chinook stocks at the end of Chapter II).

TABLE 1-11. Oregon production index (OPI) coho harvest , spawning and abundance estimates by index and SRS accounting in thousands of fish.[a/] (page 1 of 1)

	Ocean Fisheries[b/]		Oregon and California Coastal Returns							
			Hatcheries and Freshwater	OCN Spawners[d/]				Abundance		Ocean Exploitation Rate
Year	Troll	Sport	Harvest[c/]	Index	SRS	Private Hatcheries	Columbia River Returns	Index	SRS	Index (%)[e/]
1970	1,463.7	499.0	80.3	249.2	-	-	895.3	3,187.5	-	62
1971	2,543.5	715.8	53.8	322.4	-	-	544.5	4,180.0	-	78
1972	1,275.6	560.3	29.9	126.9	-	-	277.8	2,270.5	-	81
1973	1,320.3	443.2	42.2	161.1	-	-	291.3	2,258.1	-	78
1974	2,095.1	668.6	49.5	132.8	-	-	460.8	3,406.8	-	81
1975	1,079.2	463.7	19.2	158.6	-	-	292.5	2,013.2	-	77
1976	2,936.1	977.7	62.6	158.3	-	-	337.0	4,471.7	-	88
1977	664.4	412.1	21.4	66.8	-	4.2	93.8	1,262.8	-	85
1978	1,104.2	524.6	12.6	73.8	-	12.3	307.1	2,034.6	-	80
1979	1,056.6	334.4	27.4	173.6	-	49.2	275.1	1,916.3	-	74
1980	506.9	526.4	32.1	108.9	-	38.7	301.6	1,514.6	-	69
1981	830.9	339.9	34.1	73.0	-	117.8	170.3	1,566.0	-	79
1982	740.9	300.4	37.1	132.6	-	184.7	453.1	1,848.8	-	59
1983	429.6	275.0	18.2	58.8	-	133.9	100.5	1,016.0	-	75
1984	95.8	174.2	51.2	208.7	-	115.4	414.2	1,059.5	-	27
1985	166.4	280.4	45.4	190.9	-	332.0	366.2	1,381.3	-	38
1986	643.5	320.6	81.8	190.8	-	453.7	1,527.8	3,218.2	-	32
1987	469.1	296.2	45.3	82.5	-	119.3	307.6	1,320.0	-	57
1988	844.7	297.2	62.4	160.8	-	116.1	664.8	2,146.0	-	53
1989	646.9	425.5	62.3	144.5	-	46.9	701.6	2,027.7	-	52
1990	277.6	357.1	30.6	104.0	20.9	35.6	196.1	1,001.0	917.9	62
1991	450.6	469.9	84.0	135.5	36.4	35.1	934.3	2,109.3	2,010.2	43
1992	67.5	256.5	52.6	138.6	39.3	-	210.9	726.1	627.2	44
1993	13.2	140.8	41.5	168.0	54.5	-	113.9	477.4	363.8	32
1994	2.7	3.0	31.8	130.5	43.7	-	168.9	337.9	251.1	2
1995	5.4	43.5	39.3	131.3	52.4	-	74.0	293.4	214.6	17
1996	7.0	31.8	49.6	212.1	73.0	-	111.3	411.8	278.0	9
1997	5.5	22.4	26.3	67.6	22.7	-	145.9	267.7	222.8	10
1998[f/]	3.5	11.5	27.1	52.5	27.0	-	161.8	256.4	230.9	6

a/ The OPI includes ocean and inside harvest impacts and escapement to streams and lakes south of Leadbetter Point, Washington.

b/ Includes estimated nonretention mortality: troll fishery--hook-and-release mortality for 1982-1997 and drop-off mortality for all years; sport fishery--hook and release mortality for 1994-1998 and drop-off mortality for all years.

c/ Includes returns from STEP smolt releases.

d/ Spawners returning to rivers have historically been estimated by a nonrandom standard index. Beginning in 1990, returns have also been estimated with a stratified random sampling (SRS) method. The SRS method indicates that actual total natural spawners are less than those projected by the standard index.

e/ Ocean fishery impacts on private hatchery stock and returns to private hatcheries are excluded in calculating the OPI area stock aggregate ocean exploitation rate index. Because of uncertainties in estimates of OCN coho spawners, the Oregon production exploitation rate index does not represent a true exploitation rate on OPI coho.

f/ Preliminary.

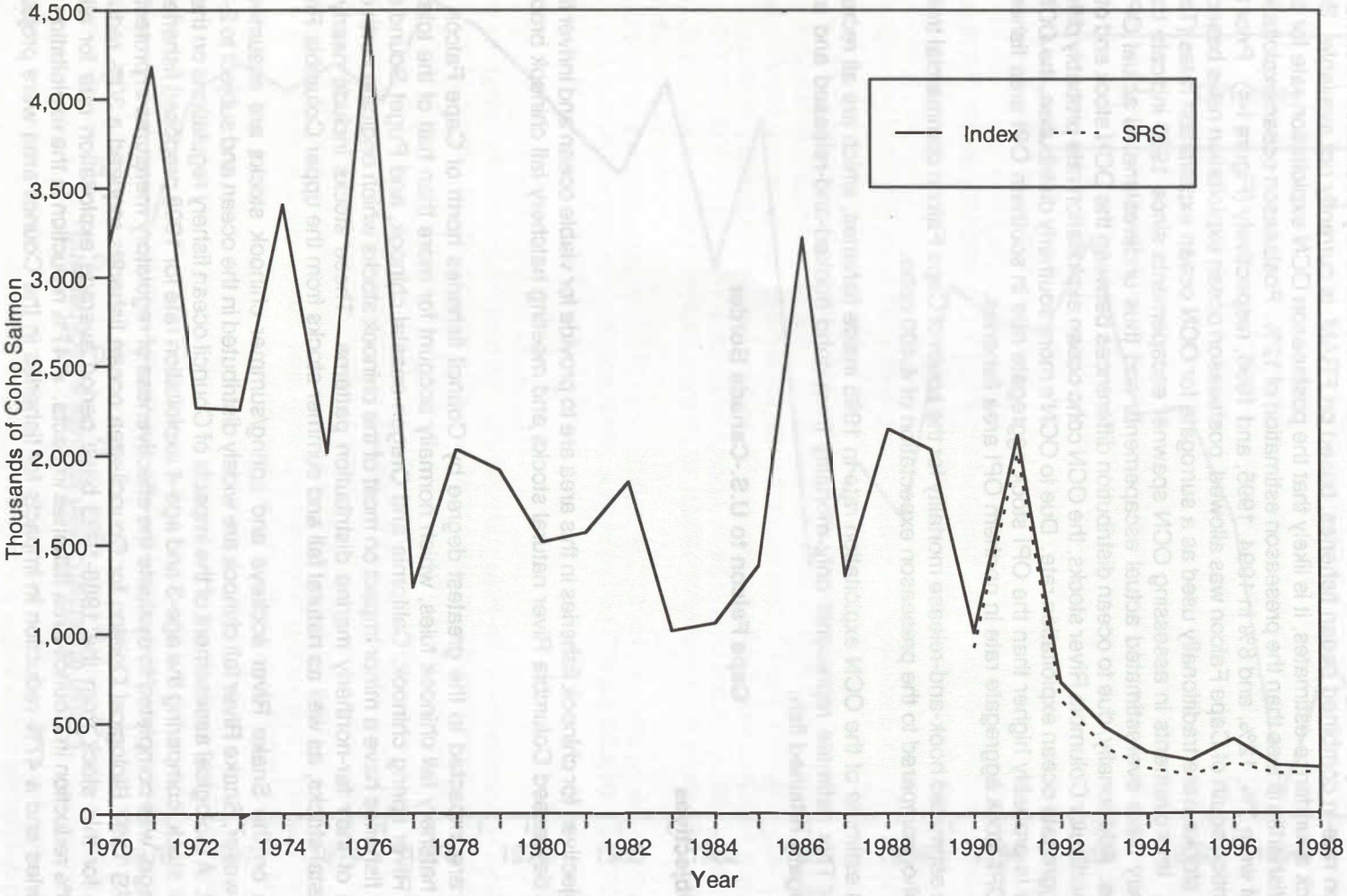


FIGURE I-3. Oregon production area coho salmon abundance estimates by index and SRS accounting methods, 1970-1998.

Coho

The preseason estimate of the OCN exploitation rate in Council-area 1998 ocean fisheries of 11%, based on the coho Fisheries Regulatory Assessment Model (FRAM), was largely a result of expected coho hook-and-release mortality during chinook-directed fisheries. The preliminary postseason estimate of the OCN exploitation rate in combined ocean fisheries, based on FRAM, is currently not available. Based on postseason stock abundance estimates, it is likely that the postseason OCN exploitation rate for all ocean and freshwater fisheries is less than the preseason estimation of 12%. Postseason ocean exploitation rates based on FRAM were 7%, 12%, and 8% in 1994, 1995, and 1996, respectively (Figure I-4). Prior to 1994, when coho retention south of Cape Falcon was allowed, postseason ocean exploitation rates based on OPI area aggregate stocks were traditionally used as a surrogate for OCN ocean exploitation rates (Table I-11 and Figure I-4). Improvements in assessing OCN spawner escapements since 1990 indicate traditional assessments may have overestimated actual escapements and thus underestimated actual OPI ocean exploitation rates. Additionally, due to ocean distribution differences between the OCN stock and other OPI area stocks, in particular Columbia River stocks, the OCN coho ocean exploitation rate probably differs from the OPI stock aggregate ocean exploitation rate. Due to OCN's more southerly distribution, the OCN ocean exploitation rate is probably higher than the OPI stock aggregate rate in southern OPI area fisheries and lower than the OPI stock aggregate rate in northern OPI area fisheries.

The postseason estimated hook-and-release mortality for the south of Cape Falcon commercial troll fishery totaled 3,500 coho, compared to the preseason expectation of 4,400 coho.

The postseason estimate of the OCN exploitation rate in 1998 inside fisheries, which are all recreational, is one percent. This estimate represents only mortality from coho hooked-and-released and excludes impacts from illegally retained fish.

Cape Falcon to U.S.-Canada Border

Management Objectives

Chinook

Management objectives for chinook fisheries 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.

The stocks that are impacted to the greatest degree by Council fisheries north of Cape Falcon include Columbia River hatchery fall chinook tules, which normally account for more than half of the total catch, lower Columbia River spring chinook, California and Oregon coastal chinook, and Puget Sound chinook stocks. Council fisheries have a minor impact on most of the chinook stocks which originate north of Cape Falcon because of their 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.

Council impacts on the Snake River sockeye and spring/summer chinook stocks are assumed to be insignificant. However, Snake River fall chinook are widely distributed in the ocean and subject to 2-3 years of ocean harvest. A biological assessment of the impacts of Council ocean fishery regulations on the Snake River fall chinook stock, comparing the age-3 and age-4 exploitation rate for 1998 proposed fisheries to the 1988-1993 average, was completed to evaluate the effectiveness of regulatory measures in protecting this stock. The NMFS 1997 Biological Opinion for Council-area ocean fisheries required a 30% reduction in exploitation rate for this stock from the 1988-1993 base period average exploitation rate for all ocean fisheries, or a 50% reduction in Council-area fisheries impacts. A 47% reduction in the exploitation rate for total ocean fisheries and a 47% reduction in impacts for fisheries in the Council area were projected for 1998.

Non-Indian commercial troll and recreational fisheries were regulated under quotas of 6,500 and 3,500 chinook, respectively. The Council adopted a treaty Indian quota of 15,000 chinook.

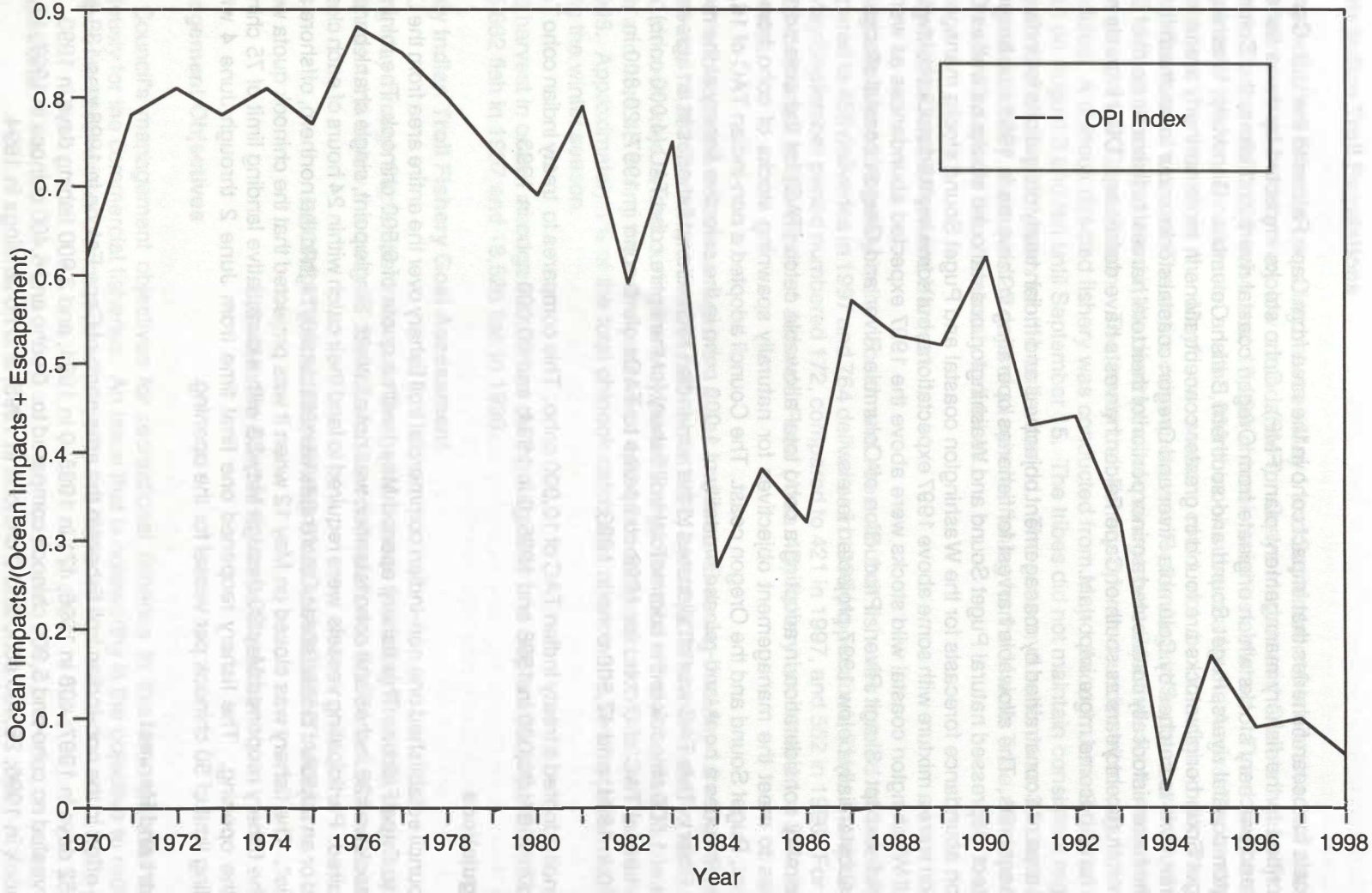


FIGURE I-4. Oregon Production coho salmon ocean exploitation rate index, 1970-1998.

Coho

Management goals for ocean fisheries that impact coho in the area from Cape Falcon to the U.S.-Canada border are described in the fishery management plan (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 increasing contributions to catches by Columbia River and Oregon coastal stocks occur in southern fishery areas. OCN coho have historically contributed a minor portion of their total harvest to fisheries north of Cape Falcon. However, in recent years as south of Cape Falcon harvests have decreased, OCN impacts north of Cape Falcon have become more important.

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 1998 was based on the need to protect depressed natural Puget Sound and Washington coastal coho stocks as well as OCN coho. Preseason abundance forecasts for the Washington coastal and Puget Sound stocks managed for natural production were a mixture with some above 1997 expectations, but some key wild stocks below 1997 expectations. All Washington coastal wild stocks were above the 1997 expected abundances as were all Puget Sound wild except Skagit River. Production of Columbia River and Oregon coastal stocks was expected to be substantially below 1997 projected levels.

The Council's primary consideration in adopting a coho total allowable catch (TAC) for the area north of Cape Falcon was to meet the management objectives for naturally spawning stocks of coho from the Washington coast, Puget Sound and the Oregon coast. The Council adopted a non-Indian TAC of 16,000 coho in April (this includes a hook-and-release mortality of 1,000 coho in the selective fishery at the mouth of the Columbia River). This TAC was all allocated to the non-Indian recreational fisheries in an agreement involving a trade of 1,500 chinook to the commercial troll fishery for the entire coho TAC (4,000 coho). The non-Indian commercial TAC of 0 coho for 1998 compares to TACs of: 0 coho in 1997; 20,800 in 1996; 25,000 in 1995; 0 in 1994; and 47,500 coho in 1993.

In April, the Council adopted a treaty Indian TAC of 10,000 coho. This compares to treaty Indian coho TACs of: 12,500 coho in 1997; 30,000 in 1996 and 1995; 0 in 1994; and 90,000 coho in 1993.

Non-Indian Regulations

For 1998, the Council established one non-Indian commercial troll fishery over the entire area from the U.S.-Canada border to Cape Falcon. This fishery opened May 1 with a quota of 6,500 chinook. The minimum size limit for chinook was 28 inches and coho retention was not allowed. Single point, single shank barbless hooks were required. Participating vessels were required to land their catch within 24 hours of each closure in the area fished or an adjacent closed area. Catch rates were extremely high in the northern, offshore area called the "prairie". The fishery was closed on May 12 when it was projected that the chinook quota would be achieved. The fishery reopened May 20 through May 23 with a cumulative landing limit of 75 chinook per vessel for the opening. The fishery reopened one final time from June 2 through June 4 with a cumulative landing limit of 50 chinook per vessel for the opening.

Non-Indian Effort and Harvest

The total fishing effort in the non-Indian troll fishery in the area north of Cape Falcon in 1998 was 139 days, compared to: 452 days in 1997; 408 in 1996; 471 in 1995; 0 in 1994; and 3,900 fishing days in 1993. The 1998 fishery harvested no coho and 5,900 chinook compared to: 0 coho and 6,400 chinook in 1997; 17,500 coho and 0 chinook in 1996; 25,400 coho and 0 chinook in 1995; and no landings in 1994.

Non-Indian Fishery Goal Assessment

The non-Indian troll fishery north of Cape Falcon harvested 91% of the 6,500 chinook TAC established for this area in 1998.

Treaty Indian Troll Regulations

Treaty Indian troll fisheries operating between May 1 and September 15 in ocean areas and Area 4B during 1998 were constrained by very low abundance for Grays Harbor and Queets naturally spawning coho stocks. Quotas of 10,000 coho and 15,000 chinook were established. There was a 10,000 chinook subquota for the May/June season and a 5,000 chinook subquota for the August/September season. Any chinook not harvested in the May/June season could not be transferred to the quota for the August/September season. The entire coho quota was for the August/September time period. The basis of the 1998 quotas is discussed in the description of management objectives for the non-Indian fisheries for the area north of Cape Falcon. The treaty troll fishery operated under tribal regulations and landing schedules. A chinook directed fishery was conducted from May 1 through June 6. An all species fishery began on August 3 and ran until September 15. The tribes did not maintain consistent regulations during this period and were not open for the entire period. The season duration was 37 days of chinook only fishing. Additionally, there was 28 days of all species fishing for the Makah Tribe, 38 days for the Quinault Nation and 33 days for the other treaty troll tribes.

Treaty Indian Troll Effort and Harvest

Fishing effort in 1998 treaty Indian ocean and Area 4B troll fisheries totaled 193 deliveries (landings) compared to 455 deliveries in 1997 and 764 deliveries in 1996 (Appendix A, Table A-14). Deliveries during the May/September period numbered 172, compared to 421 in 1997, and 552 in 1996. For the entire year, the 65 deliveries in the Strait of Juan de Fuca (Area 4B) fishery accounted for 34% of all treaty troll deliveries.

The chinook catch in ocean management areas and Area 4B during the May 1 through September 30 time period was 14,387 fish compared to 14,025 fish in 1997, and 12,307 fish harvested in 1996. Approximately 9,600 chinook were landed during the May/June fishery. The total chinook harvest in ocean management areas and Area 4B during the entire year was 14,524 fish compared to 14,480 fish in 1997 and 14,949 fish in 1996. Approximately 1% of the total chinook catch was taken in the Strait of Juan de Fuca (Area 4B) during the winter season.

Coho harvest in ocean management areas during August to mid-September totaled 7,927 fish, compared to 15,662 fish in 1997 and 18,526 fish in 1996.

Treaty Indian Troll Fishery Goal Assessment

During May through September in ocean management areas (including Area 4B), the treaty Indian chinook catch was 4.1% below the quota of 15,000 and the coho catch was 20.7% below the quota of 10,000 fish.

RECREATIONAL FISHERIES BY MANAGEMENT AREA

U.S.-Mexico Border to Horse Mountain

Management Objectives

The Council's management objectives for 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 chinook, as required by the ESA.

Regulations

Recreational fishery regulations south of Horse Mountain were similar to those in place in 1997. North of Point Conception, barbless hooks were required as in previous seasons and ocean anglers could use only one rod when fishing for salmon, or any species, from a boat with a salmon on board.

Additional gear restrictions were required of those anglers fishing by any means other than trolling (generally the other means would be mooching) in the area between Point Conception and Horse Mountain. The purpose of the gear restrictions was to reduce hook-and-release mortality for sublegal fish caught by anglers using mooching, rather than trolling techniques (see Table I-3 for the specific restrictions). Anglers not trolling were required to use only "circle" hooks. Circle hooks have generally been found to cause a lower hook-and-release mortality than "J" hooks.

The daily bag limit was two salmon of any species except coho. The minimum size limit was 24 inches for the entire season, except for the area between Point Reyes and Pigeon Point, from July 1 through September 7, where anglers were required to keep the first two salmon caught, except coho, regardless of size. The season north of Point Arena ran from February 14 through July 5 and August 1 through November 15. South of Point Arena to Pigeon Point, the season opened from March 28 through November 1. South of Pigeon Point the season ran from March 14 through September 7.

Effort and Harvest

Recreational chinook landings at ports south of Horse Mountain were 118,400 compared to 218,600 fish in 1997 (the record high was 383,600 chinook in 1995). Recreational angler effort south of Horse Mountain was 139,885 angler trips, compared to 213,400 trips in 1997. The chinook salmon catch per angler trip averaged 0.81 chinook, compared to 1.05 chinook in 1997.

Recreational coho landings south of Horse Mountain totaled 40 fish. This represents an illegal harvest by anglers unable or unaccustomed to having to differentiate between chinook and coho.

Fishery Goal Assessment

Chinook

The fishery goal for this area relating to the ocean harvest index on Central Valley stocks is discussed in the commercial section. The recreational fishery was constrained by the ESA requirement to reduce impacts on winter chinook sufficiently to increase spawning escapement 31%, since available information indicated that the recreational fishery was creating the majority of the impact on this stock. The shortened recreational fishery south of Point Arena combined with increased minimum size limits and gear restrictions were included in the regulations to accomplish this objective.

Coho

The closure of the recreational salmon fishery during July in the area between Horse Mountain and Point Arena was effective in limiting impacts on coho salmon. Few coho were observed in this area and creel census information indicated a 70% reduction in illegal coho retention in comparison with 1997.

Horse Mountain to Humbug Mountain

Management Objectives

Chinook

The Council's objective in the Horse Mountain to Humbug Mountain area (KMZ) recreational fishery centered around protection of Klamath River fall chinook, which was discussed more fully under the troll fisheries section. With regard to Klamath River fall chinook, the fisheries were structured to provide 15% of the total allowable non-Indian harvest to the recreational fishery in the Klamath River and 17% of the allowable non-Indian ocean harvest to the recreational fishery in the KMZ. For 1998, season structuring rather than quota management was used in the KMZ ocean fishery to achieve both Klamath River fall chinook management objectives and Oregon/California port allocation objectives.

Coho

Coho are managed as a unit south of Cape Falcon and are discussed more fully in the Humbug Mountain to Cape Falcon section. The KMZ area recreational chinook fishery was structured with an early July through mid-August closure to meet OCN coho management objectives.

Regulations

Retention of coho was not permitted south of Cape Falcon in 1998 due to projected poor OPI area abundance, both from hatchery and natural production, and due to OCN management objectives. The recreational fishery in this area was also shaped to help minimize incidental coho impacts.

The KMZ fishery was open May 23 through June 10, June 21 through July 5, and August 11 through September 13. A late-season, Oregon state-water chinook salmon fishery off the Chetco River occurred from October 5 through October 14 between Goat Island and 42°01'20"N.

For the Horse Mountain to Humbug Mountain area, the minimum size limit for chinook in all recreational fisheries was 20 inches and single-point, single-shank barbless hooks were required. The bag limit was 1 chinook per day, no more than 4 in 7 consecutive days. Anglers were restricted to one rod each (as in all areas north of Point Conception, California).

Effort and Harvest

Recreational fishery effort in the KMZ totaled 24,100 angler trips and included 2,800 angler trips in the late-season, state-water fishery off the Chetco River. This compares to 35,600 angler trips in 1997. Chinook landings of 4,900 fish in 1998 compare to 13,900 fish in 1997. Illegal landings of coho were estimated at approximately 100 coho in 1998 compared to 300 coho in 1997.

Fishery Goal Assessment

Chinook

Information to fully assess the Council's harvest allocation goals and ocean exploitation rate on Klamath River age-4 fall chinook is not available at this time. Klamath River natural spawner escapement was 41,900 adult chinook, compared to the expected escapement of 35,000 fish, the floor spawner objective.

Under the 1998 season structure within the KMZ, fishers landed 59% of the chinook harvest in California ports and 41% in Oregon ports. This compares to a 1997 chinook harvest distribution among ports of 64% to California and 36% to Oregon, and a 1974-1990 average distribution of 54% to California and 46% to Oregon. Although actual chinook harvest was less than preseason expectations, information is not available at this time to compare the ocean exploitation rate in the KMZ area fishery with preseason expectations.

Coho

Achievement of OCN coho management objectives is discussed in the Humbug Mountain to Cape Falcon troll fishery section.

Humbug Mountain to Cape Falcon

Management Objectives

The Council's management objectives for recreational fisheries in this area parallel those discussed previously for commercial troll fisheries. Because of near record low abundance of OPI area coho, both from hatchery and natural production, no fisheries were allowed to retain coho in ocean waters south of Cape Falcon in 1998. To meet OCN management objectives, ocean salmon fisheries between Humbug

Mountain and Cape Falcon were closed during the month of July. Coho hook-and-release mortality in the nonretention recreational fishery south of Cape Falcon was projected to be 6,800 coho.

Regulations

Retention of coho was not permitted in this area in 1998. The all-salmon-except-coho fishery in the Humbug Mountain to Cape Falcon area was open from April 15 through July 5 and August 1 through October 31. In addition, terminal area late-season, state-water (0-3 miles) chinook salmon fisheries occurred off Tillamook Bay and Elk River during November. A closure at the mouth of Tillamook Bay was in effect from June 1 through September 15 to increase escapement of spring chinook (June) and coho (August through September).

For the Humbug Mountain to Cape Falcon area, the bag limit was 2 salmon per day (1 salmon in the Elk River terminal area fishery) and no more than 6 salmon in 7 consecutive days (4 in 7 consecutive days in the Tillamook Bay and Elk River terminal area fisheries). The minimum size limit for chinook was 20 inches, except there was no minimum size in the late-season terminal area fisheries off Tillamook Bay and Elk River. Legal gear was limited to artificial lures and plugs of any size or bait no less than 6 inches long (excluding hooks and swivels) with no more than 2 single-point, single-shank, barbless hooks; divers prohibited; flashers prohibited except when used in combination with downriggers.

Effort and Harvest

Recreational fishery effort between Humbug Mountain and Cape Falcon totaled 9,700 angler trips compared to 10,000 angler trips in 1997. Chinook landings in 1998 were 2,000 fish compared to 2,400 chinook in 1997. Less than 100 coho were landed illegally in 1998 compared to less than 50 coho in 1997. No pink salmon were landed in 1998. Angler trips and chinook harvest estimates for the late-season terminal area fishery off the Elk River are not available. Due to inclement weather in November, effort and harvest in the Tillamook Bay terminal area fishery were negligible.

Fishery Goal Assessment

Preliminary information to assess attainment of chinook and coho salmon management goals is contained in the commercial troll fishery section for this area. The postseason estimated hook-and-release mortality in the south of Cape Falcon recreational fishery totaled 4,700 coho, compared to the preseason expectation of 6,800 coho.

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 total allowable catch for the ocean fishery north of Cape Falcon was constrained by lower Columbia River fall chinook in 1998. The recreational TAC of 3,500 chinook in 1998 compares to a TAC of: 5,200 chinook in 1997; 0 in 1996, 1995, and 1994; and 25,000 chinook in 1993.

Coho

Management objectives for coho stocks in this area are described in the troll fishery section. Following a trade of 1,500 chinook to the troll fishery for 4,000 coho, the 1998 recreational TAC north of Cape Falcon was set at 16,000 coho. The 1998 TAC represents a reduction of 51% from the 1997 recreational TAC of 32,300 coho and compares to a TAC of: 62,200 coho in 1996; 75,000 coho in 1995; and 0 coho in 1994.

Regulations

The overall recreational quota of 16,000 coho north of Cape Falcon was divided into four subarea quotas in accordance with the allocation schedule detailed in the salmon FMP with the following exception: the area from the U.S.-Canada border to Cape Alava was closed to recreational ocean salmon fishing in 1998 to provide more recreational fishing opportunity for the ports north of Leadbetter Point. The recreational coho harvest allocation for the ocean salmon fishery north of Cape Alava was (by agreement of port representatives) reduced to zero. In view of this agreement, the State of Washington allowed an Area 4B fishery (inside the Strait of Juan de Fuca) with an 8,000 coho quota to provide an equitable fishing opportunity for Neah Bay. Ocean salmon recreational fisheries in the area north of Cape Falcon were open 5 days per week, Sunday through Thursday south of the Queets River, and 7 days per week from Cape Alava to the Queets River. A 2-fish daily bag limit and a restriction of barbless hooks applied in all areas, however, from Queets River to Cape Falcon only one fish could be a chinook. In addition, in the area south of Leadbetter Point, all retained coho were required to have a healed adipose fin clip. Weekly bag limits of no more than 4 fish in 7 calendar days (Sunday through Saturday) were in effect in areas south of the Queets River. The area from 0-3 miles from shore from the Queets River to Leadbetter Point was closed to salmon fishing to reduce impacts on chinook salmon.

The area from Leadbetter Point to Cape Falcon (Columbia River ocean area) was allocated a subarea quota of 8,000 coho (1,000 coho of this quota were allocated to hook-and-release mortality due to the selective fishery regulation) and a guideline of 1,050 chinook. Control Zone 1, at the mouth of the Columbia River, was closed to salmon fishing. The fishery opened August 3 and ran through August 9, when it was projected to achieve the coho subarea quota. After tallying the actual catch, enough quota remained to reopen the season for one day on September 3, providing a total recreational season of six days in 1998.

Oregon and Washington conducted an on-board monitoring program for the Columbia River ocean area selective fishery. Preseason, the STT (using the coho FRAM) predicted that the mark rate for the Columbia River ocean area selective fishery would be 50% for August. A total of 568 coho were observed during on-the-water observations with a mark rate of 49%. Anecdotal reports from anglers indicated that the mark rate was much lower than that which was observed. Landed catch from port-side sampling totaled 6,500 adipose-clipped coho. Preliminary data indicates that very few coho with intact adipose fins were retained. Based on this preliminary catch data and the mark rate from the observer program, the STT estimates that 6,900 unmarked coho were landed and released. Preseason estimates were for 7,000 unmarked coho to be landed and released with an estimated hook-and-release mortality of 1,000 unmarked coho.

The area from the Queets River to Leadbetter Point opened on August 3 with a subarea quota of 7,400 coho and a guideline of 2,350 chinook. The fishery ran through August 16, when it was projected to attain the coho quota. When the actual harvest was calculated, sufficient quota remained to reopen the fishery for one day only on September 3, providing a total recreational season of 11 days in 1998.

The area from Cape Alava to the Queets River opened on August 3 with a subarea quota of 600 coho and a guideline of 100 chinook. The fishery ran through August 9, when it was projected to attain the coho quota. The area was open for recreational salmon fishing for a total of seven days in 1998.

A state-waters fishery from the Bonilla-Tatoosh Line east to the Sekiu River (Washington Area 4B) opened on August 3 on a 7 day per week schedule for all salmon except chinook with a quota of 8,000 coho. A 2-fish daily bag limit was in effect. The fishery ran through August 19, when it was projected to attain the coho quota. The area was open for recreational salmon fishing for a total of 17 days in 1998.

Effort and Harvest

Salmon catches in the Leadbetter Point to Cape Falcon recreational fishery were 6,500 coho and 400 chinook. The 1998 coho catch was 93% of the 7,000 landed coho subarea quota and a reduction of 62% from the 16,900 coho caught in 1997. The 1998 catch level compares to: 24,800 coho in 1996; 36,400 coho in 1995; and no allowed harvest in 1994.

The recreational fishery from the Queets River to Leadbetter Point caught 7,700 coho and 1,700 chinook. The coho catch was 104% of the subarea quota of 7,400 fish and a reduction of 42% from the 1997 catch of 13,200 coho. This catch level compares to: 23,100 coho in 1996; 28,900 coho in 1995; and no allowed harvest in 1994.

The recreational fishery from Cape Alava to the Queets River harvested a total of 600 coho and 65 chinook. The coho catch was 100% of the 600 coho subarea quota and a reduction of 31% from the 1997 harvest of 1,100 coho. This catch level compares to: 1,600 coho in 1996; 1,900 coho in 1995; and no allowed harvest in 1994.

The state-waters recreational fishery, which operated in the area from the Bonilla-Tatoosh line east to the Sekiu River (Washington Area 4B) from August 3 through August 19, harvested 8,100 coho.

A total of 15,400 angler trips occurred in the ocean recreational fishery north of Cape Falcon (excluding the Area 4B fishery) in 1998. This was a decrease of 51% from the 31,400 trips occurring in 1997. An additional 6,400 angler trips occurred in the Area 4B fishery, compared to 1,900 trips in 1997.

Fishery Goal Assessment

The north of Cape Falcon ocean recreational fisheries harvested 14,800 coho, 99% of the 15,000 allowable landed coho harvest for this area. These coho catches were a reduction of 52% from the 31,100 coho caught in 1997. Approximately 2,200 chinook were landed, 63% of the 3,500 overall recreational chinook quota for this area.

PACIFIC SALMON COMMISSION

The Pacific Salmon Treaty between the U.S. and Canada became effective in March 1985 and established the Pacific Salmon Commission (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 PSC can be expected at both the policy and technical levels. Actual catches for fisheries of the most relevance to the Council are summarized in Tables I-12 and I-13. Note that these catch statistics do not reflect incidental mortality losses associated with the regulation of these fisheries, except as noted.

Chinook

The treaty established a number of harvest ceilings for chinook salmon for various Canadian and Alaskan fisheries as part of a coastwide program to rebuild depressed natural chinook stocks. Ceilings for northern British Columbia and southeast Alaska fisheries affect far-north migrating stocks originating in Washington, Oregon, and Idaho. These include Washington coastal, Columbia River bright, spring, and summer; and far-north migrating Oregon coastal chinook stocks. The ceilings for West Coast Vancouver Island (WCVI) troll, and Georgia Strait troll and recreational fisheries affect far-north migrating stocks to a lesser degree, but have a major impact on more southerly distributed Columbia River tule and Puget Sound stocks.

In 1998, the U.S. and Canada failed to reach agreement on fishing regimes. However, the U.S. and Canada agreed to abide by general obligations of the Pacific Salmon Treaty, particularly with respect to a commitment not to intentionally increase interceptions and to manage consistently with resource conservation concerns.

In response to continuing conservation concerns for depressed Canadian chinook stocks, Canada implemented unilateral restrictions on all its troll fisheries for chinook salmon in 1998. Fisheries in the North/Central and WCVI areas were constrained due to concerns for fall chinook returning to river systems on the west coast of Vancouver Island. Approximately 144,650 chinook were harvested in the North/Central coast area (110,351 troll; 12,153 net, including 2,182 taken pursuant to terminal exclusion criteria; 22,146 sport).

TABLE I-12. Chinook catch by Southeast Alaska marine fisheries. (Page 1 of 1)

	Total Catches			Treaty Chinook		
Year	Troll	Net	Sport	Troll	Net	Sport
1985	216.1	34.7	24.9	212.2	34.2	23.0
1986	237.7	21.7	22.6	231.6	20.5	19.2
1987	242.6	15.5	24.3	231.1	14.0	20.5
1988	231.4	21.8	26.2	217.1	17.4	22.2
1989	235.7	24.2	31.1	224.2	18.5	26.8
1990	287.9	27.7	51.2	263.6	16.1	41.4
1991	264.1	32.8	60.5	231.6	20.0	45.1
1992	183.7	32.1	42.9	162.6	24.0	35.3
1993	226.9	28.0	49.2	212.4	16.5	42.7
1994	186.2	35.7	42.4	177.1	23.3	35.5
1995	138.1	48.0	49.7	115.3	28.6	34.9
1996	141.4	37.4	38.5	108.1	9.2	29.1
1997	246.5	25.0	67.7	221.9	13.9	55.8
1998[a/]	192.0	23.5	55.5	183.4	13.4	48.0

a/ Preliminary.

TABLE I-13. Chinook and coho catches by Canadian marine fisheries in thousands of fish. (Page 1 of 1)

Year	Northern B.C.		Central B.C.		North-Central B.C.	WCVI				Strait of Georgia		Strait of Georgia Sport		Juan de Fuca		
	Troll	Net	Troll	Net	Sport	NW Troll	SW Troll	Net	Outside Sport	Troll	Net	North	South	Troll	Net	Sport
								CHINOOK								
1985	186.7	70.7	28.8	27.3	9.9	74.3	279.8	22.0	10.2	55.7	7.6	127.8	79.2	0.0	44.6	27.8
1986	153.0	42.7	52.6	55.3	12.6	81.0	261.1	5.9	4.1	43.9	3.4	100.4	47.1	0.3	59.9	34.4
1987	177.5	41.2	64.0	21.4	13.8	113.1	265.8	0.6	26.5	38.7	2.8	52.7	43.5	0.0	11.3	24.9
1988	152.4	40.4	31.1	21.8	19.3	171.3	237.4	16.5	24.3	19.6	0.7	56.5	31.4	0.0	11.8	31.2
1989	207.7	48.9	19.1	7.5	35.7	71.5	132.2	40.8	38.0	28.5	2.4	72.1	28.2	0.0	32.0	32.5
1990	154.1	39.0	27.3	30.3	32.0	114.8	183.1	29.6	50.2	34.4	2.0	58.6	23.2	0.0	12.8	30.1
1991	194.0	56.6	27.9	18.9	32.5	74.8	128.1	61.3	42.5	32.2	2.0	75.3	21.2	0.0	11.8	19.0
1992	142.3	43.8	42.3	20.8	37.9	216.5	130.2	9.8	44.1	37.3	2.7	75.1	20.4	0.0	15.6	21.1
1993	161.8	45.0	24.8	11.2	38.2	167.8	106.9	29.4	63.1	33.4	4.1	79.0	25.9	0.0	2.8	14.0
1994	164.5	26.5	20.1	15.4	38.9	71.0	75.0	3.7	50.6	13.0	1.2	45.1	11.4	0.0	13.8	14.4
1995	56.4	28.2	4.7	9.1	30.0	28.8	52.2	0.5	28.2	0.0	0.2	38.0	9.7	0.0	1.5	14.4
1996	0.0	30.9	0.0	4.1	11.0	0.0	0.0	0.0	3.2	0.0	0.0	55.2	15.3	0.0	0.6	19.0
1997	82.1	18.9	10.5	1.8	36.5	25.9	26.6	0.2	NA	0.8	0.0	35.3	7.5	0.0	0.4	13.5
1998[a/]	109.8	0.1	3.2	0.5	22.1	10.3[b/]		0.0	NA	0.6	0.0	8.9	3.4	0.0	0.0	5.9
								COHO								
1985	527.8	176.4	135.2	96.9	18.0	377.0	1,012.0	7.5	1.6	191.2	31.8	569.7	133.2	0.3	224.7	25.3
1986	1,089.5	212.6	593.4	277.5	20.2	610.5	1,546.3	10.6	1.1	181.4	16.2	442.4	94.8	2.9	202.5	34.7
1987	595.7	100.3	214.5	93.3	24.4	525.1	1,295.9	7.2	24.6	217.5	14.0	472.1	107.9	0.2	216.4	61.6
1988	348.0	61.7	183.9	107.8	23.1	555.9	1,039.9	11.0	5.3	256.5	3.5	824.3	184.6	0.2	56.7	75.9
1989	573.4	161.4	123.2	28.9	26.3	578.8	1,373.2	39.7	44.5	73.3	5.1	332.6	75.1	0.1	342.1	89.4
1990	974.8	163.7	261.2	153.5	46.0	729.5	1,134.1	2.7	19.8	163.2	8.0	493.1	67.5	0.1	154.1	69.4
1991	982.3	196.2	105.7	47.6	43.1	664.6	1,225.3	5.2	49.8	11.6	7.2	35.0	11.5	0.0	180.4	110.6
1992	516.3	122.1	237.8	67.6	40.5	935.5	736.3	9.7	37.5	137.3	5.7	358.5	117.3	0.0	106.0	119.7
1993	337.2	134.5	72.6	37.8	31.2	422.0	531.8	3.5	13.7	276.0	7.2	552.1	177.7	0.0	6.2	108.9
1994	740.0	174.5	57.6	94.1	58.9	207.7	1,044.1	4.7	16.4	50.8	0.7	148.0	28.2	0.0	131.0	118.6
1995	295.4	111.1	18.7	28.1	37.3	276.9	1,068.5	1.4	41.2	0.0	0.0	11.2	3.5	0.0	36.7	71.5
1996	424.9	122.2	12.2	29.5	59.1	235.9	552.7	1.0	25.1	0.0	0.0	26.7	7.1	0.7	4.2	94.0
1997	158.6	28.6	8.2	12.0	37.1	0.0	0.0	0.0	NA	0.0	0.0	2.6	2.8	0.0	0.4	99.5
1998[a/]	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	NA	0.0	0.0	0.1	1.2	0.0	0.0	0.1

a/ Preliminary.
b/ Estimate for northwest and southwest troll fisheries combined.

Canada's principal management objective for the 1998 WCVI chinook troll fishery was to address concerns for WCVI stocks. Non-retention of coho and limitations on incidental coho mortalities limited the effectiveness and duration of the chinook fishery. The fishing pattern in 1998 differed substantially from previous years. Three troll openings took place off the WCVI. A winter/spring chinook fishery was conducted from April 19 to May 20. The objective of this fishery was to determine if a fishery could be directed at Southern B.C. spring stocks and the minimum size limit was reduced from 67 cm (26 inches) to 45 cm (18 inches). All participating vessels were required to carry observers on board. An early summer sockeye fishery was conducted inside the surf line of WCVI in the Barkley Sound area from July 1 through July 24 with a minimum size limit of 67 cm. Observers were randomly assigned to vessels participating in this fishery to gather information on coho and chinook. Lastly, a fall fishery directed at chum and chinook was conducted from October 7 to November 30 with a minimum size limit of 45 cm. The total WCVI troll chinook catch for 1998 was 10,284 fish, based on hail and logbook data.

Fisheries in the Strait of Georgia and Johnstone Strait areas were managed in response to concerns for Lower Georgia Strait chinook and coho stocks. There was no directed chinook troll fishery in the Strait of Georgia, but a total of 587 chinook were retained as incidental catch during fisheries directed at sockeye and chum. The recreational catch of chinook in the Strait of Georgia was estimated at 20,536 fish to the end of September.

Chinook fisheries in Southeast Alaska were managed under the terms of an agreement between the U.S. Commissioners to the PSC. The total allowable catch was 260,000 "treaty chinook" (excluding hatchery add-on catch). The total catch of treaty chinook is estimated as 244,800 fish for 1998 (183,400 troll, 13,400 net, and 48,000 sport). The total chinook catch was 192,000 troll, 23,500 net, and 55,500 sport.

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 were designed to minimize impacts on spawning escapements of these depressed stocks.

Coho

All Canadian fisheries operated under coho nonretention restrictions in 1998. Canadian WCVI fisheries significantly impact many of the coho stocks that influence the Council's management actions in the area north of Cape Falcon. In response to coho conservation concerns for WCVI, Strait of Georgia, and Fraser River stocks, Canada implemented nonretention restrictions for its WCVI and Strait of Georgia fisheries in 1998. "Red" and "yellow" zones were established for south coast B.C. fisheries. Fisheries in the "red" zone were designated off WCVI and in the Strait of Georgia with the objective of zero fishing mortality on stocks of concern. WCVI outside of the surf line, the southern Strait of Georgia and Strait of Juan de Fuca were included in the "red" zone from June through September. The mouth of the Fraser River was designated as a "red" zone from the third week of August through October. Directed fishing for salmon was prohibited in "red" zone fisheries, with the exception of experimental fisheries directed at species other than coho in a few narrow, inshore strips. Outside these dates, all tidal waters were designated as "yellow" where chinook retention was permitted. The total estimated release mortality of coho in south coast B.C. commercial and recreational fisheries combined was 18,983 (16,861 in the "red" zone and 2,122 in the "yellow" zone). The hook-and-release mortality is estimated at 1,900 coho for the 1998 WCVI troll fishery and 6,900 for the southern B.C. recreational fishery.

CHAPTER II
INSIDE CHINOOK SALMON FISHERIES AND SPAWNING ESCAPEMENTS

CENTRAL VALLEY STOCKS

Inside Harvest

Although no estimate is made for the 1998 season, recreational harvest regulations continued to allow extensive harvest of fall chinook. A comprehensive angler survey of the Sacramento River system, conducted from 1990 through 1994, showed the recreational catch averaged 25% of the river run. The river regulations, as they have since 1990, closed the mainstem Sacramento River to salmon fishing during the time winter chinook adults are present. In response to low escapements in recent years, the San Joaquin River and its tributaries (Stanislaus, Toulumne, and Merced) were closed to recreational salmon fishing.

Escapement and Goal Assessment

Sacramento River Fall Chinook

In 1998, a total of 198,000 fall chinook adults returned to spawn in the Sacramento River Basin. This was 62% of the preseason expectation of 316,100 adults. The 1998 escapement was approximately 39% less than the 1997 escapement of 323,900 fish (Table II-1, Figure II-1) and above the Council's goal range of 122,000 adult spawners 180,000 adult spawners. Sacramento River hatchery returns totaled 69,200 adults, seven percent greater than the 1997 adult escapement of 64,600 fish. Available data indicate that a majority of the Sacramento River Basin's naturally spawning fall chinook population is comprised of hatchery-produced fish.

The upper Sacramento River total escapement (above the Feather River) of 102,500 adults (59% natural) was down 49% compared to the 1997 adult escapement of 200,200 fish. The lower Sacramento River escapement of 95,500 adults (72% natural) was approximately 23% less than the 1997 escapement of 123,700 fish. Lower river hatcheries retained 28% of the lower river adult spawning escapement.

Sacramento River Late-fall, Winter and Spring Chinook

Late-fall chinook salmon escapement after 1993 through 1994 (1994 brood) has not been estimated because Red Bluff Diversion Dam gates were open over the entire time span of adult migration.

Winter chinook returns to the upper Sacramento River in 1998 were estimated using partial counts at the Red Bluff Diversion Dam fish ladders. The gates at the dam were opened during most of the winter run to facilitate salmon passage. Spawning escapement of winter chinook salmon in 1998 was estimated to be approximately 1800 adults, about 260% greater than the 1997 escapement of approximately 500 adults, eight percent of the 1971 through 1975 average of 22,900 adults (Appendix B, Table B-3), and approximately 38% greater than that of its parental brood (approximately 1,300 adults) in 1995. Adults leave the ocean (January through April) prior to the beginning of major commercial fisheries for the current year. Therefore, the primary ocean fishery impact on returns of winter chinook in 1998 were by 1997 California ocean fisheries as well as early season California ocean recreational fisheries in 1998. Since 1990, retention of salmon has been prohibited in the mainstem Sacramento River when adult winter chinook are present.

The spring chinook salmon returning to the Sacramento River totaled approximately 31,500 fish (jacks and adults), of which approximately 23,900 returned to the upper river (above the mouth of the Feather River).

TABLE II-1. **Sacramento River** natural and hatchery **adult fall chinook** escapements in thousands of fish. (Page 1 of 1)

Year	Upper River			Lower River			Total		Grand Total
	Hatchery	Natural[a/]	Subtotal	Hatchery	Natural[a/]	Subtotal	Hatchery	Natural[a/]	
1970	3.0	64.0	67.0	10.2	83.0	93.2	13.2	147.0	160.2
1971	1.5	62.6	64.1	10.2	75.3	85.5	11.7	137.9	149.6
1972	1.6	35.0	36.6	6.8	44.0	50.8	8.4	79.0	87.4
1973	3.0	48.0	51.0	18.0	151.0	169.0	21.0	199.0	220.0
1974	1.3	66.0	67.3	11.6	122.0	133.6	12.9	188.0	200.9
1975	1.8	71.0	72.8	10.8	69.0	79.8	12.6	140.0	152.6
1976	1.8	79.0	80.8	8.6	75.3	83.9	10.4	154.3	164.7
1977	4.7	46.8	51.5	13.2	83.0	96.2	17.9	129.8	147.7
1978	1.1	76.0	77.1	10.0	47.0	57.0	11.1	123.0	134.1
1979	4.7	77.0	81.7	10.6	71.0	81.6	15.3	148.0	163.3
1980	8.8	53.0	61.8	16.5	72.0	88.5	25.3	125.0	150.3
1981	5.7	51.0	56.7	25.1	91.0	116.1	30.8	142.0	172.8
1982	16.2	37.0	53.2	14.5	93.5	108.0	30.7	130.5	161.2
1983	5.4	40.6	46.0	12.5	49.5	62.0	17.9	90.1	108.0
1984	18.7	48.7	67.4	19.1	68.5	87.6	37.8	117.2	155.0
1985	13.1	107.7	120.8	12.9	101.3	114.2	26.0	209.0	235.0
1986	11.3	109.5	120.8	11.3	102.9	114.2	22.6	212.4	235.0
1987	11.3	73.4	84.7	9.9	77.0	86.9	21.2	150.4	171.6
1988	12.5	125.2	137.7	14.2	71.8	86.0	26.7	197.0	223.7
1989	10.2	65.9	76.1	15.7	54.5	70.2	25.9	120.4	146.3
1990	13.5	50.8	64.3	8.9	34.1	43.0	22.4	84.9	107.3
1991	10.0	33.6	43.6	14.7	53.1	67.8	24.7	86.7	111.4
1992	6.2	33.0	39.2	15.4	29.2	44.6	21.6	62.2	83.8
1993	7.1	54.4	61.5	17.1	48.9	66.0	24.2	103.3	127.5
1994	11.5	50.4	61.9	17.7	62.1	79.8	29.2	112.5	141.7
1995	24.8	92.8	117.6	16.8	133.4	150.2	41.6	226.2	267.8
1996	18.8	83.8	102.6	14.1	127.7	141.8	32.9	211.5	244.4
1997[b/]	45.4	154.8	200.2	19.2	104.5	123.7	64.6	259.3	323.9
1998[b/]	42.4	60.1	102.5	26.8	68.7	95.5	69.2	128.7	198.0

a/ Fish spawning in natural areas are the result of hatchery and natural production.
b/ Preliminary.

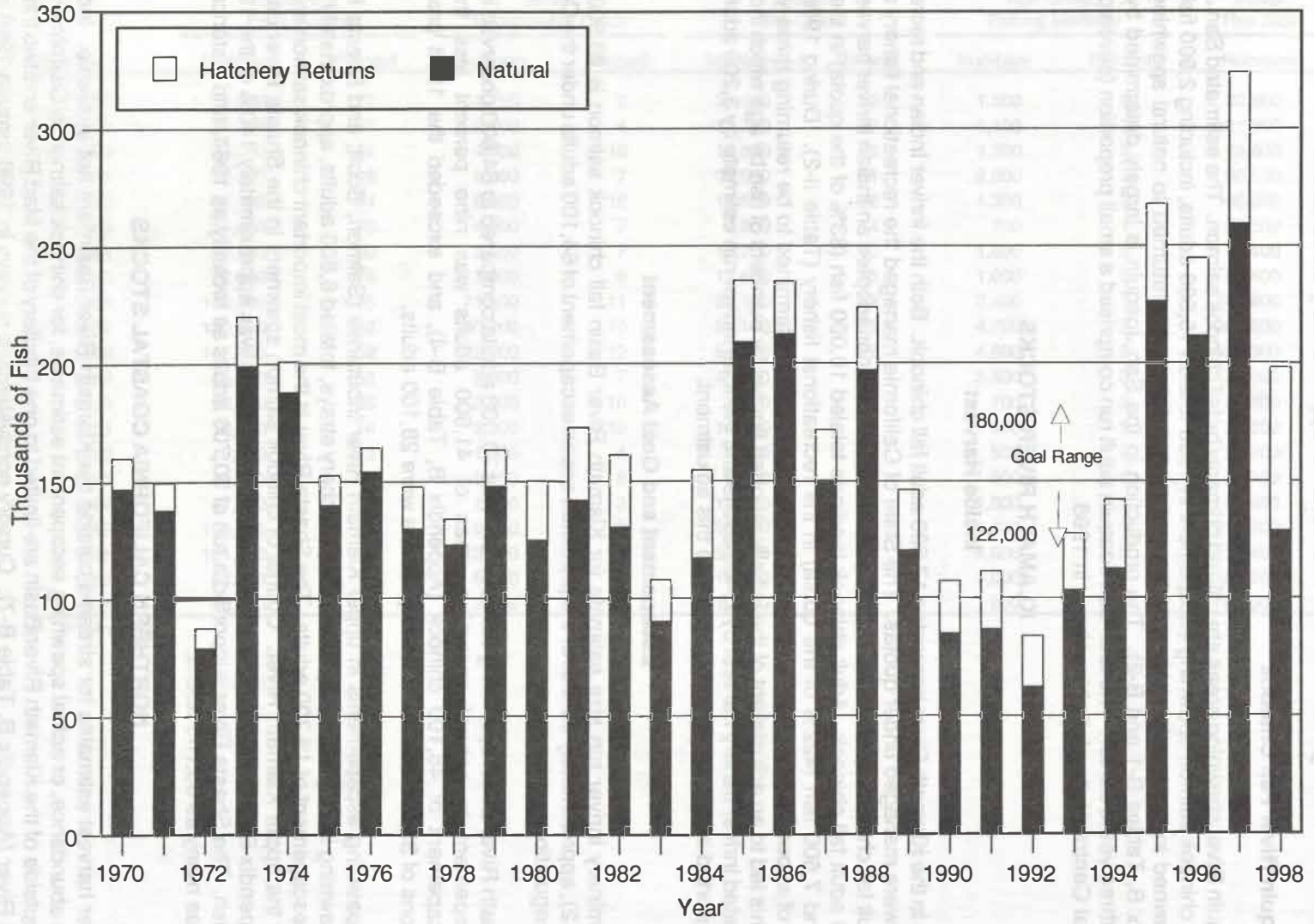


FIGURE II-1. Sacramento River fall chinook spawning escapements, 1970-1998.

The 1998 return to the upper Sacramento River was substantially higher than the 1997 return of approximately 1,600 fish (jacks and adults). The 1998 return could not be partitioned into adults and jacks due to the unavailability of age composition data. The Feather River spring chinook return of approximately 6,800 adults was 127% greater than the 1997 return of approximately 3,000 adults.

San Joaquin River Fall Chinook

San Joaquin River spawning areas are utilized primarily by fall chinook salmon. The estimated San Joaquin River fall chinook salmon spawning escapement in 1998 totaled 15,500 adults, including 2,900 fish which were spawned in the two basin hatcheries and 12,600 fish which returned to natural spawning areas (Appendix B, Tables B-1 and B-2). The production in the San Joaquin is largely determined by spring outflows three years earlier. The total San Joaquin adult run comprised a small proportion (seven percent) of the total Central Valley fall chinook run in 1998.

KLAMATH RIVER STOCKS

Inside Harvest

Fisheries in the Klamath River harvested 17,600 adult fall chinook. Both the inriver Indian and recreational fisheries were managed under quotas. The State of California managed the recreational fishery under a 1,800 adult fall chinook quota. The U.S. Department of the Interior adopted an Indian inriver harvest quota of 12,000 adult fall chinook. Adult chinook landings totaled 10,000 fish (83% of the quota) in the Indian fishery and 7,600 fish (422% of the quota) in the recreational fishery (Table II-2). During 1998, large numbers of subadult size fish (less than 24 inches) were later determined to be returning three-year old adults. This led to an adjustment of the initially reported figures for numbers of fish by age which increased the estimated inriver fishery harvest by 2,400 adults and the total inriver run estimate by 3,200 adults. The figures reported in this document incorporate this adjustment.

Escapement and Goal Assessment

The preliminary inriver run size estimate for Klamath River Basin fall chinook salmon is 88,500 adults (Figure II-2), approximately 38% over the predicted ocean escapement of 64,100 adults under the Council's adopted regulations.

The Klamath River Basin spawning escapement was 70,000 adults compared to 64,800 observed in 1997. The escapement to natural spawning areas of 41,900 adults was nine percent less than the 1997 escapement of 46,100 chinook (Appendix B, Table B-4), and exceeded the 1998 preseason expectations of 35,000 adults. Hatchery returns were 28,100 adults.

Natural spawning escapements in upper Klamath River tributaries (Salmon, Scott, and Shasta Rivers), where spawning is only minimally affected by hatchery strays, totaled 6,800 adults, approximately 43% of the 1997 escapement of 15,700 adults. The Shasta River is the most important chinook salmon spawning stream in the upper Klamath River. Counts of chinook salmon spawners in the Shasta River date from 1930 (Appendix B, Table B-6). The 1998 count of 2,400 adults was approximately 140% of the 1997 run of 1,700 fish. The Shasta River supported a run of 30,700 adults as recently as 1964, and historically has received as many as 63,700 adults.

NORTHERN CALIFORNIA COASTAL STOCKS

Inside river harvest estimates for streams outside the Klamath River Basin are not available. Indices of spawning abundance, or actual spawning escapement estimates, for chinook salmon in California coastal streams outside of the Klamath River Basin are limited to one tributary of the Mad River and two tributaries of the Eel River (Appendix B, Table B-7). Cursory nonsystematic surveys in 1998 through 1999 indicate numbers of chinook spawned in those areas were comparable to recent years. No spawning escapement goals are in place for these river systems.

TABLE II-2. **Klamath River adult inriver fall chinook** run size, spawning escapement, recreational catch, Indian net harvest, and non-landed fishing mortalities in numbers of fish and percent of the total inriver run size. (Page 1 of 1)

	Spawning Escapement		Inriver Recreational Catch		Indian Net Catch		Non-landed Fishing Mortality		Inriver Run Size
Year	Numbers	Percent	Numbers	Percent	Numbers	Percent	Numbers	Percent	Numbers
1978	71,500	77	1,700	2	18,200	20	1,500	2	92,800
1979	34,300	67	2,100	4	13,700	27	1,100	2	51,200
1980	28,000	61	4,500	10	12,000	26	1,100	2	45,600
1981	38,300	48	6,000	7	33,000	41	2,800	3	80,100
1982	42,400	64	8,300	12	14,500	22	1,300	2	66,500
1983	44,600	78	4,200	7	7,900	14	700	1	57,500
1984	23,600	50	3,300	7	18,700	40	1,600	3	47,100
1985	48,200	75	3,600	6	11,600	18	1,000	2	64,400
1986	146,300	75	21,000	11	25,100	13	2,400	1	194,800
1987	130,800	63	20,200	10	53,100	25	4,700	2	208,800
1988	112,800	59	22,200	12	51,700	27	4,600	2	191,300
1989	65,900	53	8,800	7	45,600	37	3,800	3	124,000
1990	23,600	66	3,600	10	7,900	22	700	2	35,800
1991	18,100	56	3,400	10	10,200	31	900	3	32,600
1992	19,400	73	1,000	4	5,800	22	500	2	26,700
1993	43,500	76	3,200	6	9,600	17	800	1	57,100
1994	47,100	76	1,800	3	11,700	19	1,000	2	61,600
1995	190,700	89	6,100	3	15,600	7	1,400	1	213,700
1996	101,400	58	12,800	7	56,500	32	4,800	3	175,400
1997	64,800	77	5,700	7	12,100	15	1,000	1	83,700
1998[a/]	70,000	80	7,600	9	10,000	11	800	1	88,500

a/ Preliminary.

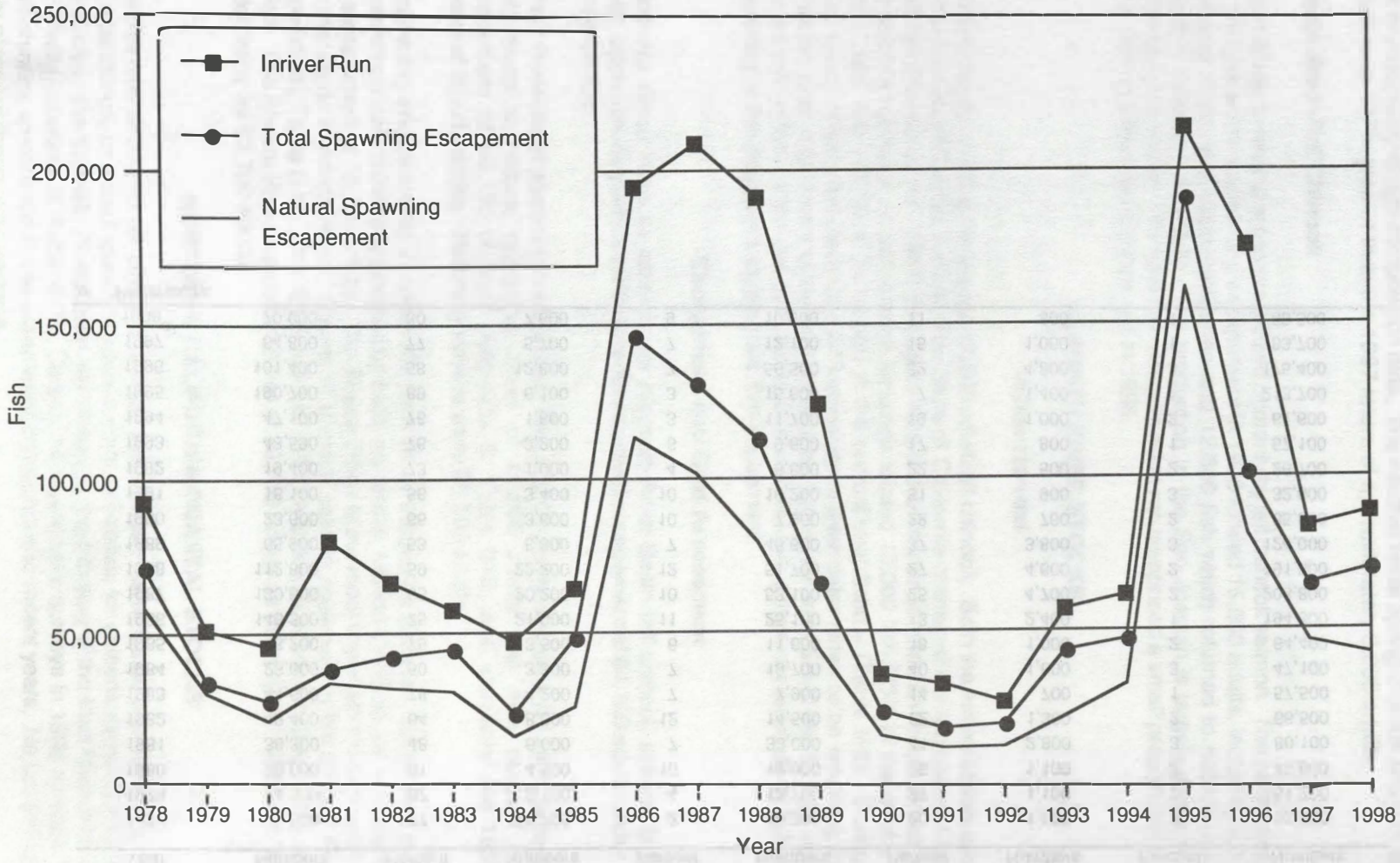


FIGURE II-2. Klamath River fall chinook salmon inriver run and spawning escapements, 1978-1998.

OREGON COASTAL STOCKS

Oregon coastal chinook stocks are commonly categorized into two major subgroups based on ocean migration patterns. Although their ocean harvest distributions somewhat overlap, they have been labeled as either north or south/local migrating.

North migrating chinook stocks include stocks north of and including the Elk River, with the exception of Umpqua River spring chinook. Based on coded-wire tag (CWT) analysis, the populations from ten major north Oregon coast (NOC) river systems from the Nehalem through the Siuslaw Rivers are harvested primarily in PSC ocean fisheries off British Columbia and southeast Alaska, and to a much lesser degree in Council area fisheries off Washington and Oregon, primarily in terminal area fisheries. Analysis of CWTs indicates that the population from five major mid-Oregon coast (MOC) systems from the Coos through the Elk Rivers are harvested primarily in ocean fisheries off British Columbia, Washington and Oregon, with minor contributions to California fisheries.

South/local migrating chinook stocks include Rogue River spring and fall chinook, and fall chinook from smaller rivers south of the Elk River. These stocks are important contributors to ocean fisheries off Oregon and northern California. Another central Oregon stock, Umpqua River spring chinook, contributes primarily to ocean fisheries off Oregon and California, and to a lesser degree off Washington, British Columbia and southeastern Alaska.

Inside Harvest

Inside recreational harvest of fall and spring chinook occurs in most Oregon coastal estuaries and rivers. Complete estimates of the 1998 recreational chinook harvest are not available at this time. Historical estimates of the recreational harvest of fall and spring chinook, derived from Oregon Department of Fish and Wildlife (ODFW) salmon and steelhead angler tag returns, are reported in Table II-3.

Escapement and Goal Assessment

Oregon coastal chinook are managed for an aggregate spawning escapement of 150,000 to 200,000 naturally spawning adults. Actual escapement is not estimated for this stock aggregate. Achievement of this goal is assessed through spawning escapement indices (e.g., stream surveys, dam counts, etc.). The escapement goal is equivalent to peak spawner index counts of 60 to 90 adults per mile for both subgroups, and includes both spring and fall chinook, as stated in the fishery management plan (FMP).

North Migrating Chinook

An index of spawning adults (peak count per index mile) in nine standard streams is used to measure natural spawning escapement trends for north migrating fall chinook stocks. Data have been collected since about 1950 for most systems. Overall peak chinook adult index spawning counts in 1998 are preliminarily estimated at 98 adults per mile, which exceeds the goal range of 60 adults to 90 adults per mile (Table II-4, Figure II-3).

South/Local Migrating Chinook

Standard fall chinook spawning index escapement data for the smaller southern Oregon coastal rivers (south of the Elk River) are available for the Winchuck, Chetco, and Pistol Rivers (Appendix B, Table B-8). Rogue River carcass counts are used as a trend indicator of escapement for naturally produced fall chinook (Table II-4). In addition, two trend indicators of escapement for naturally produced spring chinook are utilized: (1) Rogue River counts at Gold Ray Dam and (2) Umpqua River counts at Winchester Dam (Table II-4). Escapement based on these indicators peaked during the 1986 through 1988 period following several years of reduced abundance (Figures II-3 and II-4). Ocean and spawner escapement returned to low levels from 1989 through 1998.

TABLE II-3. **Oregon coastal spring and fall chinook** hatchery return and harvest in estuary and freshwater fisheries. (Page 1 of 1)

	Return to Facilities				
	Public Hatchery[a/]		Private	Estuary and Freshwater Harvest[b/]	
Year	Spring	Fall	All	Spring	Fall
			THOUSANDS OF CHINOOK		
1976	2.9	0.5	-	13.5	24.3
1977	2.4	4.2	-	13.8	35.6
1978	4.4	1.6	-	13.1	43.4
1979	7.0	2.0	0.4	16.4	31.2
1980	7.9	1.8	3.4	11.9	22.7
1981	2.5	1.8	5.1	11.2	30.0
1982	4.1	2.3	12.1	11.6	25.1
1983	3.9	4.0	6.1	4.9	21.5
1984	5.6	3.3	6.3	4.1	29.0
1985	8.7	3.5	34.6	9.0	29.5
1986	30.6	5.8	70.8	17.3	36.5
1987	22.8	7.1	38.7	20.2	54.8
1988	22.0	6.4	25.0	28.9	61.7
1989	32.7	4.3	14.7	23.7	53.7
1990	6.3	3.4	7.8	15.5	39.8
1991	5.4	3.1	4.1	11.1	47.7
1992	2.7	4.4	-	8.0	44.5
1993	10.6	2.8	-	16.4	54.8
1994	4.8	3.0	-	9.2	46.7
1995	55.0	3.3	-	31.1	62.0
1996	26.7	3.6	-	25.6	65.9
1997	29.1	2.0	-	NA	NA
1998[c/]	10.9	2.4	-	NA	NA

a/ Adults only.
b/ Freshwater harvests are derived from ODFW salmon/steelhead angler tag information and represent fish larger than 24 inches (i.e., adults). Includes both hatchery and natural fish.
c/ Preliminary.

TABLE II-4. Spawner Indices for naturally produced Oregon coastal fall chinook and south migrating/localized spring chinook.[a] (Page 1 of 2)

	Fall Chinook Spawner Indices		South/local Migrating Spring Chinook Spawner Indices	
Year	North Migrating Peak Count Adults Per Mile	Rogue River (south/local migrating) Adult Carcass Counts (thousands)	Rogue River Gold Ray Dam Counts (thousands)	Umpqua River Winchester Dam Counts (thousands)
1941	-	-	41.8	-
1942	-	-	36.1	-
1943	-	-	30.6	-
1945	-	-	32.0	-
1946	-	-	28.4	2.5
1947	-	-	22.6	3.8
1948	-	-	27.0	2.5
1949	-	-	18.8	2.6
1950	-	-	15.5	2.3
1951	-	-	19.4	3.6
1952	-	-	15.9	5.2
1953	-	-	31.5	3.9
1954	-	-	24.7	1.5
1955	-	-	15.7	6.6
1956	-	-	28.1	8.0
1957	-	-	17.7	4.0
1958	-	-	15.0	3.6
1959	-	-	14.0	3.1
1960	-	-	24.4	3.4
1961	51	-	31.8	4.4
1962	42	-	31.4	3.3
1963	56	-	40.6	8.7
1964	63	-	37.3	6.6
1965	59	-	47.6	9.0
1966	62	-	31.4	6.7
1967	50	-	14.7	6.5
1968	33	-	19.5	6.2
1969	37	-	59.0	10.7
1970	80	-	45.1	6.1
1971	43	-	28.3	6.0
1972	41	-	30.0	7.9
1973	52	-	34.7	11.4
1974	59	-	16.5	5.8
1975	55	-	20.4	5.4
1976	49	-	20.4	5.5
1977	71	1.1	14.9	6.8
1978	73	9.2	40.2	5.4
1979	81	8.0	29.3	5.5
1980	89	2.2	24.2	5.7
1981	82	4.4	12.8	4.6
1982	90	2.8	23.2	6.5
1983	42	1.6	9.8	3.0
1984	98	2.0	8.4	4.5
1985	132	5.5	27.8	7.5
1986	109	16.9	40.4	8.3
1987	121	29.1	37.4	8.3
1988	214	20.7	38.8	7.8
1989	137	7.4	7.9	7.6
1990	121	1.9	18.0	5.5
1991	150	2.8	9.3	2.4
1992	138	2.3	2.2	2.5
1993	63	5.4	12.6	3.8
1994	125	7.4	3.6	2.8
1995	101	4.0	20.7	6.2

TABLE II-4. Spawner Indices for naturally produced Oregon coastal fall chinook and south migrating/localized spring chinook.[a/] (Page 2 of 2)

	Fall Chinook Spawner Indices		South/local Migrating Spring Chinook Spawner Indices	
Year	North Migrating Peak Count Adults Per Mile	Rogue River (south/local migrating) Adult Carcass Counts (thousands)	Rogue River Gold Ray Dam Counts (thousands)	Umpqua River Winchester Dam Counts (thousands)
1996	147	1.7	10.3	4.3
1997	105	1.6	9.6	3.3
1998[b/]	98	2.6	3.7	4.0

a/ North migrating peak counts are taken on nine miles of standard index surveys over nine river systems (see Appendix B, Table B-11 for individual system counts). Complete carcass counts are listed in Appendix B, Table B-10. Complete counts for Gold Ray and Winchester dams are listed in Appendix B, Table B-9.

b/ Preliminary.

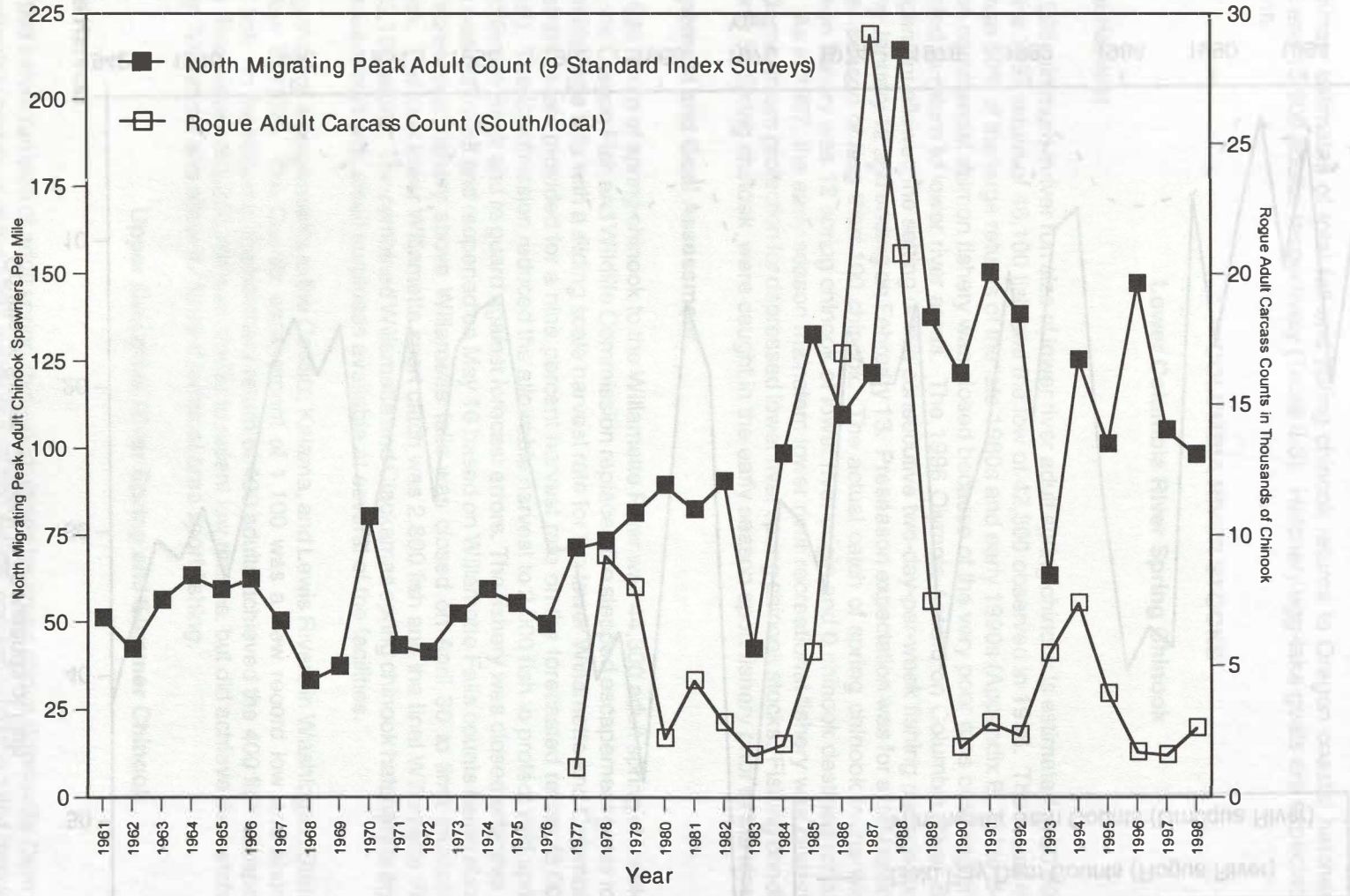


FIGURE II-3. Spawner indices for naturally produced Oregon Coastal fall chinook. (See Appendix B, Tables B-10 and B-11 for detailed counts).

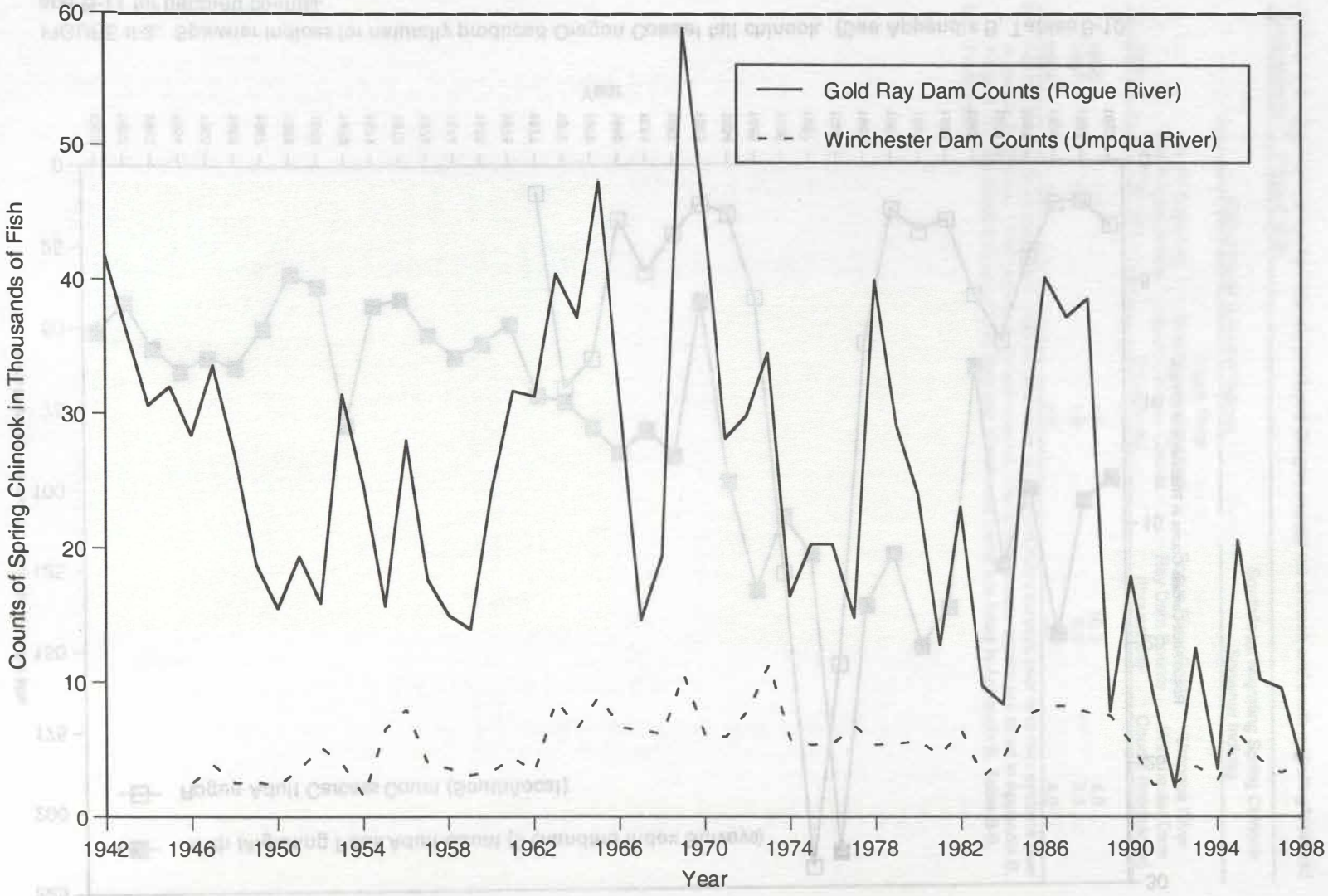


FIGURE II-4. Escapement indices for naturally produced Oregon coastal south/local migrating spring chinook, 1942-1998 (See Appendix B, TABLE B-9 for counts of hatchery produced chinook).

The aggregate Oregon coastal goal of 150,000 to 200,000 naturally spawning chinook adults was probably met in 1998.

Preliminary estimates of total fall and spring chinook returns to Oregon coastal hatcheries in 1998 are 2,400 and 10,900 adults, respectively (Table II-3). Hatchery egg-take goals are expected to be met at all stations.

COLUMBIA RIVER STOCKS

Lower Columbia River Spring Chinook

Inside Harvest

The 1998 minimum inriver run size of lower river adult spring chinook is estimated at 50,600 fish, improved over the 1997 return of 46,100 fish and the low of 42,300 observed in 1996. The lower river return is still less than 50% of the large returns of the late 1980s and early 1990s (Appendix B, Table B-12). The winter season commercial salmon fishery was closed because of the very poor runs of spring chinook that were projected to return to lower river areas. The 1996 Olympia Accord on Columbia River Sturgeon Fishery Management allowed the setting of five consecutive two-day-per-week fishing periods targeting sturgeon starting January 12 and ending on February 13. Preseason expectation was for a total spring chinook catch for the season of less than 100 chinook. The actual catch of spring chinook in the winter commercial sturgeon fishery was 12 spring chinook of lower river origin and 0 chinook destined for above Bonneville Dam. As in 1997, the early season mainstem lower river recreational fishery was closed on March 11 to provide maximum protection for depressed lower river spring chinook stocks. Fishing conditions were poor, and only 55 spring chinook were caught in the early season sport fishery prior to the closure.

Escapement and Goal Assessment

The 1998 return of spring chinook to the Willamette River was 44,300 adult spring chinook. In February of 1998, the Oregon Fish and Wildlife Commission replaced the stepped escapement goals for spring chinook over Willamette falls with a sliding scale harvest rate for the lower Willamette and Columbia river fisheries. This sliding scale provided for a nine percent harvest rate on the forecasted return (3,000 fish allowable harvest). The Commission reduced the allowable harvest to 2,000 fish to protect wild spring chinook from the McKenzie River and to guard against forecast errors. The fishery was closed effective April 8 when the quota was achieved and reopened on May 10 based on Willamette Falls counts being above expectations. The recreational fishery above Willamette falls was closed on April 30 to limit impacts on wild spring chinook. The total lower Willamette sport catch was 2,800 fish and the final Willamette Falls escapement was 33,100 adults. The combined Willamette and Clackamas spring chinook hatchery program brood stock needs were met with small surpluses available at several of the facilities.

Spring chinook escapements to the Cowlitz, Kalama, and Lewis Rivers in Washington State were generally very low in 1998. The Cowlitz escapement of 1,100 was a new record low and short of the goal of 1,700 fish. In the Kalama, the hatchery return of 400 adults achieved the 400 fish escapement goal. The Lewis River return of 1,600 fish was similar to recent low returns, but did achieve the hatchery escapement goal of 700 adults and allow for limited terminal area sport fishing.

Upper Columbia River Spring and Summer Chinook

Inside Harvest

The 1998 inriver run size of adult spring chinook destined for areas above Bonneville Dam was 38,300 fish, approximately one-third of the 1997 return of 114,100 adults, and similar to the 1994 through 1996 average of 27,600 (Appendix B, Table B-13). Of the total return to the Columbia, almost 50% (18,400 adults) were destined for the Snake River. Lower river fishery impacts on adult upriver spring chinook in 1998 were limited to incidental mortality in terminal area test fisheries and mainstem commercial fisheries targeting on shad (the commercial sturgeon fishery did not catch any spring chinook of upriver origin). A treaty Indian

commercial winter season fishery, targeting on steelhead and sturgeon, and mainstem ceremonial and subsistence fisheries also harvested limited numbers of upriver spring chinook in 1998. Total inriver catch of adult upriver spring chinook was estimated at 2,200 fish.

The Columbia River Technical Advisory Committee (CRTAC) used run reconstruction methodology to estimate impacts on adult wild Snake River spring and summer chinook for its biological assessment of Columbia River mainstem fisheries. It was estimated that the 1998 lower river and Zone 6 treaty Indian mainstem fisheries had a total harvest-related impact of 548 adult wild Snake River spring chinook, compared to 239 adults in 1997. Estimated incidental handling mortalities during lower river spring season commercial shad fisheries and test gillnet fisheries are included in these total impacts. The inriver harvest impact rate for these fisheries on adult wild Snake River spring chinook was estimated at 5.8% in 1998, compared to 7.3% in 1997. The harvest rate impact in 1998 was the result of management of Columbia River spring chinook fisheries under the 1996 through 1998 Management Agreement for Upper Columbia River Spring Chinook, Summer Chinook, and Sockeye in conjunction with the Columbia River Fishery Management Plan (CRFMP). The 1996 through 1998 Management Agreement limits total impacts on Endangered Species Act (ESA) listed Snake River stocks to minimal levels when upriver and Snake River populations are at very low levels.

The inriver run size of adult summer chinook destined for areas above Bonneville Dam in 1998 was 21,500 fish, a decrease from the 1997 return but still the third highest return since 1990. (Appendix B, Table B-14). Major fisheries targeting summer chinook in the Columbia River have been eliminated since 1964 due to the chronically depressed status of this stock. There was no incidental treaty Indian summer chinook harvest impact associated with commercial sockeye fisheries as occurred in 1985 through 1988. No treaty Indian commercial seasons targeting sockeye have occurred since 1988. Treaty Indian ceremonial and subsistence catch of adult summer chinook in 1998 was estimated at 371 fish.

Escapement and Goal Assessment

Escapement of upriver spring chinook, measured as the count of adult fish passing Bonneville Dam minus Zone 6 mainstem treaty commercial and ceremonial and subsistence harvest, was 36,100 adults (Appendix B, Table B-13), approximately one-third of the 1997 escapement of 105,800 fish. Under the CRFMP, an interim escapement goal of 115,000 adult upriver spring chinook was adopted in October 1988. This interim goal is within the 100,000 to 120,000 original adult upriver spring chinook escapement goal range at Bonneville Dam, which was developed when the composition of the run was approximately 70% natural and 30% hatchery. In recent years, the natural/hatchery split at Bonneville Dam has almost reversed, with the natural component generally comprising less than one-third of the upriver run.

Escapement of upper Columbia River summer chinook, measured as the count of adult fish passing Bonneville Dam minus Zone 6 mainstem treaty commercial and ceremonial and subsistence harvest, was 21,100 adults (Appendix B, Table B-14), compared to the 1997 escapement of 27,600 and far below the goal of 80,000 adults to 90,000 adults.

Snake River total escapement of adult hatchery and wild spring chinook at Lower Granite Dam in 1998 was 9,900 fish, less than 30% of the 1997 escapement of 33,900. The 1998 escapement of adult wild Snake River spring chinook at Lower Granite Dam, however, was estimated at 5,055 fish, a 350% increase over the 1997 escapement of 1,434 adults, but still well below the CRFMP interim management goal of 25,000 adults.

The 1998 escapement of adult wild Snake River summer chinook at Lower Granite Dam was estimated to be 3,371 fish, compared to 6,450 fish in 1997. The combined adult wild Snake River spring/summer chinook escapement at Lower Granite Dam in 1997 was estimated to be 8,400 fish, a slight increase from the 1997 return of 7,892 fish.

Inside Harvest

Columbia River mainstem fisheries that typically harvest significant numbers of fall chinook include the treaty Indian gillnet fishery operating in the area between Bonneville Dam and McNary Dam, the non-Indian gillnet fishery operating in the area below Bonneville Dam, and the recreational fishery from the river mouth (Buoy 10) to Priest Rapids Dam. Inside fishery harvest, escapement, and run size data for Columbia River fall chinook stocks are presented in Appendix B, Tables B-15 to B-19.

Mainstem fisheries in 1998 were managed based upon allowable impacts of wild Snake River fall chinook identified in the 1996 through 1998 Management Agreement for Upper Columbia River Fall Chinook in conjunction with the CRFMP. With the exception of the Spring Creek Hatchery stock, returns of upriver fall chinook, although below average, were projected to have significant harvestable numbers. Lower river commercial fisheries were closed during much of the normal chinook fishery time frame. However, mainstem sport fisheries upstream from Buoy 10 proceeded under a normal fall season schedule. The Buoy 10 sport fishery was open to the retention of chinook on August 8 to August 23. The Zone 6 treaty Indian fishery season above Bonneville Dam occurred over five weeks in late August and September.

Historically, four stocks have contributed significantly to the Columbia River fall chinook fisheries. These include two lower river stocks, lower Columbia River Hatchery (LRH) tules and lower Columbia River wild (LRW) chinook, and two upper river stocks, Spring Creek Hatchery (SCH) tules and upriver bright (URB) chinook. Since the early 1980s, large numbers of hatchery upriver bright fall chinook have been released in the mid-Columbia River area (Bonneville Dam to McNary Dam). These fish have been termed mid-Columbia River brights (MCB). Inriver returns from MCB production have increased from the 1982 through 1985 average of 10,300 adults and have improved over the recent 1991 through 1995 average of 32,400 adults. Preliminary estimates of adult ocean escapement for the five stocks, based upon preliminary CWT readings, skin color categorization of brights and tules at Bonneville Dam and in the fisheries, and hatchery chinook returns, are 19,700 SCH, 42,600 LRH, 8,100 LRW, 141,000 URB, and 40,100 MCB.

Preliminary catch estimates for the major commercial and recreational fall chinook fisheries are based upon fishery sampling and fish ticket summaries. Non-Indian early fall season (August through early September) commercial chinook fisheries below Bonneville Dam were designed to target surplus upriver stocks and sturgeon, while reducing impacts on depressed Snake River and lower river fall chinook stocks. The fishery occurred over four days (August 4-5 and 25-26)and resulted in a total catch of 1,630 fall chinook. The late fall season non-Indian commercial fishery occurred from October 6 through October 30 and targeted on sturgeon. The total salmon catch in this fishery was 300 chinook and less than 100 coho. An additional 1,600 fall chinook were harvested in selected terminal area gillnet fisheries. The treaty Indian commercial gillnet fishery above Bonneville Dam operated for five fishing periods from August 25 to September 25. Ceremonial and subsistence harvest by the treaty Indian fisheries also occurred during the fall season time frame. The combined harvest for these treaty Indian fisheries in 1998 was 47,600 fall chinook.

The 1997 inriver mainstem recreational fishery opened as scheduled on August 1 for the area above the Astoria-Megler Bridge upstream to Pasco, Washington. The Buoy 10 recreational fishery opened on August 8. The total mainstem recreational fishery catch to Pasco, including the Buoy 10 catch, was 14,500 fall chinook. The Hanford Reach recreational fishery above Pasco, Washington, opened to the retention of adult chinook as scheduled and added an additional 3,300 adults to the Columbia River mainstem sport catch.

Inriver fisheries, both above and below Bonneville Dam, were managed to be consistent with the Snake River fall chinook impact guidelines in the 1996 through 1998 Management Agreement for Upper Columbia River Fall Chinook, in conjunction with the CRFMP, and to provide substantial protection for lower river hatchery fall chinook brood stock. The Columbia River Joint Technical Staff has preliminarily estimated a 26.3% harvest rate on wild Snake River fall chinook for 1998 Columbia River fisheries, compared to the 1988 through 1993 average harvest rate of 34.9%. A final estimate of the 1998 Columbia River fisheries harvest rate on wild Snake River fall chinook will not be available until March or April.

Escapement and Goal Assessment

Total ocean escapement of SCH tules in 1998 was 19,700 adults, almost 40% above the preseason expectation of 14,200, but still one of the lowest returns in recent years. The escapement to Spring Creek Hatchery was 5,400 adults, including 1,175 trapped at Bonneville Dam, compared to the escapement goal of 7,000 fish. This escapement is expected to result in a release of 10.2 million smolts in 1999, compared to a full production release of 15.3 million smolts.

Total ocean escapement of LRH tules in 1998 was 42,600 adults, down from the 1997 return of 57,400 fish. Hatchery escapement goals for this stock were achieved.

Total ocean escapement of LRW stock in 1998 was 8,100 adults, the lowest return since at least 1971. The natural spawning escapement goal of 5,700 adults was achieved.

Total ocean escapement of URB in 1998 was 141,000 adults, similar to the returns of 161,700 fish in 1997 and 143,200 fish in 1996. The escapement of URB adults counted at McNary Dam was 63,800 fish, compared to the FMP goal of 40,000 adults over the dam. (The escapement goal for inriver management was increased by 5,000 chinook to 45,000 adults counted at McNary Dam for 1990 through 1993, by agreement of the CRFMP parties, to account for increased brood stock hatchery needs and to provide additional protection to Snake River fall chinook. The CRFMP parties revised the escapement goal to 43,500 in 1995 and retained that goal for 1996 through 1998.) However, inriver fisheries in 1994 through 1998 were managed for allowable impacts on adult wild Snake River fall chinook rather than a McNary Dam escapement goal, as in past years. The 1996 through 1998 Management Agreement for Upper Columbia River Fall Chinook, in conjunction with the CRFMP, provided the specific guidance for 1998 inriver fisheries management.

Total ocean escapement of MCB in 1998 was 40,100 adults, compared to a return of 58,900 adults in 1997. The MCB hatchery stock currently has no established overall escapement goal. Surplus eggs are shared between the various facilities that rear this stock. MCB hatchery rack returns were sufficient to meet all program production goals in 1998.

The Council's management objectives for achieving the McNary Dam FMP goal for natural URB, LRW escapement goals, and significantly reducing the exploitation rate on Snake River fall chinook were achieved in 1998.

Total ocean escapement of all Columbia River fall chinook stocks was similar to the expected 1998 return. The largest variation between preseason predictions and actual returns were for the Snake River wild fall chinook stock (1,888 adults forecast, 3000 actual return) and LRH tules (22,500 adults forecast, 42,600 actual return).

No specific escapement goal has been established for Snake River fall chinook or its wild component. Because nearly all spawning of the wild Snake River fall chinook stock occurs upstream from Lower Granite Dam, establishing a spawning escapement goal at Lower Granite Dam would be appropriate. In their Proposed Recovery Plan for Snake River Salmon, the National Marine Fisheries Service (NMFS) has proposed a delisting goal for Snake River fall chinook that provides for an eight-year (approximately two generation) geometric mean of at least 2,500 natural spawners in the mainstem Snake River annually. Historical estimates of the number of adult wild Snake River fall chinook counted at Lower Granite Dam are provided in Appendix B, Table B-18. The total adult fall chinook count at Lower Granite Dam in 1998 was 1,175 fish, compared to 1,456 fish in 1997. A very preliminary estimate of adult wild fall chinook at Lower Granite Dam in 1998 is a count of 800 fish.

WASHINGTON COASTAL STOCKS

Willapa Bay Chinook

Inside Harvest

Run size, harvest and escapement data for Willapa Bay fall chinook are presented in Appendix B, Table B-22.

The chinook non-Indian gillnet fishery in July and the first half of August has not occurred since 1993. This fishery generally harvests Columbia River tule stocks in a mix similar to adjacent ocean area catches.

An initial forecast of 20,927 fall chinook provided for only one-and-a-half directed chinook gillnet days from mid-August through September 20. The inseason update pointed to a run size equal to the preseason forecast. Due to concerns that hatchery broodstock needs would not be met, remaining harvestable chinook were set aside for the mixed species fisheries which began September 16 and ran through October 8. Chinook harvest in all commercial fisheries conducted in Willapa Bay in 1998 totaled 6,847. This is the lowest chinook catch since the 1984 season. The 1998 harvest is only slightly higher than one-fourth the 1990 through 1997 average (Table B-22).

Recreational harvest estimates are not yet available for 1998. Recreational fisheries were directed at hatchery chinook and coho. Release of wild (unmarked) coho and single point barbless hooks were required throughout the season. Freshwater sport catches were likely reduced over past years due largely to the lower than usual run size.

Escapement and Goal Assessment

Willapa Bay chinook are managed for hatchery stocks, which are the predominant component of the run. Chinook returns to hatcheries totaled just 4,700 fish, compared to an escapement goal of about 8,200. With the exception of Forks Creek, hatchery production goals were not met. Naselle Hatchery was particularly below needs with less than half the egg take goal being achieved.

The escapement goals for naturally spawning chinook in Willapa Bay tributaries total 4,350 adults. An estimate of the 1998 natural spawning escapement is not yet available.

Grays Harbor Chinook

Inside Harvest

Run size, harvest and escapement data for Grays Harbor chinook are presented in Appendix B, Table B-24.

The 1998 terminal run forecast for spring chinook, while not agreed upon, was expected to exceed the escapement goal of 1,400 natural adults indicating some harvestable spring chinook would be available. Net fisheries were scheduled by the Quinault Indian Nation and Chehalis Tribe which harvested 17 and 164 spring chinook, respectively. A recreational season was conducted on the Chehalis River. Recreational catch estimates are not yet available but the fishery in 1998 will likely result in a recreational harvest greater than the long-term average.

No summer non-Indian gillnet fishery was directed at non-local chinook stocks in 1998.

The 1998 Grays Harbor fall chinook forecast was 18,469 wild and 4,158 hatchery adults indicating limited harvest opportunity was available. This opportunity was constrained by poor run size expectations for Grays Harbor wild coho. Total fall chinook taken in net fisheries in 1998 was 4,115 treaty and 248 non-treaty. The Chehalis Tribe did not harvest any fall chinook. The total harvest of 4,363 chinook represents a sharp decrease from the 1997 harvest of 9,600 chinook.

Recreational catch estimates are not yet available.

Escapement and Goal Assessment

Chehalis River spring chinook are of natural origin and managed for an escapement goal of 1,400 adults. A final escapement estimate for 1998 is not yet available.

Grays Harbor fall chinook are managed for a natural spawning escapement goal of 14,600 adults. Final escapement estimates are not yet available. There is no management goal for Grays Harbor fall chinook hatchery production.

Quinault River Chinook

Inside Harvest

Historical terminal gillnet harvest data for Quinault River chinook stocks are presented in Appendix B, Table B-26.

A run of naturally spawning spring/summer chinook enters the river from April through July, followed by hatchery and natural fall chinook. The spring/summer chinook run is typically small. The treaty Indian gillnet catch of spring/summer chinook was 75 fish. These fish were taken incidentally during fisheries directed at sockeye and steelhead.

The 1998 harvest of Quinault River fall chinook was taken while the treaty Indian fishery targeted hatchery salmon production during August through mid-November. The treaty Indian net catch totaled 6,124 chinook.

Escapement and Goal Assessment

Natural escapement estimates are not yet available for 1998. Hatchery production egg take for fall chinook was slightly below the goal.

Queets River Chinook

Inside Harvest

Historical terminal run size, catch and escapement data for Queets River spring/summer and fall chinook are presented in Appendix B, Tables B-28 and B-29, respectively.

The treaty Indian gillnet fishery harvest of spring/summer fish was limited to a small scale-collection fishery and harvested less than 50 fish. This fishery utilized small mesh gear to increase the catch of summer steelhead while collecting the available spring/summer chinook inseason update information and age data. The nontreaty inriver recreational fishery was closed.

Fall chinook were harvested in conjunction with fall coho, beginning September 1, utilizing a fishing pattern set forth in a preseason management agreement between the Quinault Nation and the Washington Department of Fish and Wildlife (WDFW). The inriver natural run was estimated inseason to be 5,400 fish. The treaty Indian gillnet fishery harvested 800 fall chinook; the inriver recreational fishery was expected to harvest less than 100 fish from this stock. The management agreement was intended to minimize impacts on wild coho in response to the run size anticipated under the preseason forecasts and the Council's adopted regulations.

Escapement and Goal Assessment

Preliminary data indicate that the 1998 spawning escapement for the Queets River spring/summer chinook stock was below the escapement floor level of 700 fish.

Inseason run size and catch estimates suggest that spawning escapements for Queets River natural fall chinook should exceed 4,600 adults, well above the minimum goal established for this stock. Hatchery escapement should exceed 250 fish.

Hoh River Chinook

Inside Harvest

Historic terminal run size, catch, and escapement data for Hoh River spring/summer and fall chinook are presented in Appendix B, Tables B-31 and B-32, respectively.

The preseason forecast for the terminal run of Hoh spring/summer chinook was 1,901 adult fish. The terminal fishery on this run is managed on the basis of an in-river harvest rate and an escapement floor of 900 adults. The Hoh tribal fishery was managed under a schedule that was intended to harvest 20% of the terminal run. The fishery was scheduled at one day per week for the first five weeks beginning in the first week of May, two days per week until the week of July 27, and one day per week through August. The tribal fishery caught 294 chinook, below the number expected. The sport fishery for Hoh River Spring/Summer Chinook was open May 16 through August 31, Wednesday through Sunday, with a one adult fish bag limit, and was intended to achieve an inriver harvest rate of 15.5%. The preliminary estimate for the sport harvest is 286 fish.

The preseason forecast for Hoh River fall chinook was 3,494 fish. The terminal fishery on this run is managed on the basis of a 40% in-river harvest rate and an escapement floor of 1,200 adults. The tribal fishing schedule provided for a two-day per week fishery for weeks 36 through 39 with 6 inch mesh. For the remainder of the season, the tribal fishery used 8 inch mesh to minimize impacts on coho. The remaining season included one day per week during weeks 40 and 41, two days per week during weeks 42 through 44, and one day per week for weeks 45 and 46; the fishery reopened for steelhead beginning week 49. Harvest rates can vary substantially depending upon coho management, river flows, and run entry timing. The tribal gillnet fishery caught 850 fall chinook. To reduce impacts on coho, the recreational fishery operated below the Highway 101 bridge at river mile 15.2 from September 1 through November 30. The recreational fishery harvest is estimated at 200 fall chinook.

Escapement and Goal Assessment

Preliminary spawning ground survey data indicate a preliminary escapement estimate of 1,300 adults for the spring/summer run, above the escapement floor for this stock.

Spawning survey information for fall chinook indicate a preliminary estimate for fall chinook escapement of 2,300 fish, above the escapement floor established for this stock. Escapement estimates are based on routine survey estimation procedures, but spawner distribution was abnormal due to low fall lows. Good escapement levels were observed in the river's mainstem areas, but fewer than normal spawners were observed in moderate and large tributaries.

Quillayute River Chinook

Inside Harvest

Historical terminal run size, catch and escapement data for Quillayute River spring, summer and fall chinook are presented in Appendix B, Tables B-34 and B-35, respectively. Spring and summer chinook are managed separately. However, spring and summer data are combined in Table B-34, because separate data for each stock are only available back to 1988.

The recreational and tribal fisheries for spring, summer and fall chinook were established by preseason agreement between WDFW and the Quileute Tribe. The preseason terminal run size prediction for spring chinook was 706 adults. The treaty Indian gillnet spring chinook catch was 100 fish, taken during an early May to late June fishery.

The recreational spring/summer chinook fishery opened March 1 and continued through the summer season with a standard daily bag limit of 6 salmon, only 2 of which may be adults. The recreational catch estimate is not available.

The preseason summer chinook run size estimate was 1,677 adults. Total gillnet catch for the season was 199 fish, taken from early May through August. Recreational fishing effort on this stock is low during the summer period, due to low streamflows and small run size.

The preseason fall chinook run size estimate was 6,600 adults. Total catch for the treaty gillnet fishery was 758 fish. The fall recreational fishery was opened from September 1 through November 30 with a standard daily bag limit of 6 salmon, only 2 of which may be adults. A catch estimate for the recreational fishery is not available.

Escapement and goal assessment

The spring/summer management agreement called for an escapement goal of 200 hatchery spring chinook. The actual rack return was 247 adults, meeting the egg take requirements.

The summer chinook run is managed to achieve a 1,200 adult and jack escapement. The preliminary escapement of 1,553 exceeds the goal. Broodstock taken from the river for an enhancement program by the Quileute Tribe are counted as part of the natural escapement estimate.

Terminal area fisheries on fall chinook are managed for a target 40% harvest rate, with a minimum escapement of 3,000 adults. The preliminary estimate of fall chinook escapement is 6,350.

PUGET SOUND STOCKS

Inside Harvest

Commercial inside fishery harvest of Puget Sound chinook is managed on the basis of six regional stock management units: Strait of Juan de Fuca, Nooksack-Samish, Skagit, Stillaguamish-Snohomish, South Puget Sound, and Hood Canal. Harvest of chinook for each management unit is regulated according to the natural spawning escapement goal or hatchery program escapement goal for that unit. Commercial net and troll harvest (treaty Indian and non-Indian) is presented in Appendix B, Table B-37. These catches include some fish of non-Puget Sound origin. The total commercial chinook harvest in Puget Sound in 1998 was 52,600 fish, a 34% decrease from the 79,600 chinook caught in 1997. The non-Indian net catch was 11,900 chinook, a 45% decrease from the 21,600 fish caught in 1997. The treaty Indian net and troll harvest was 40,700 chinook, a 30% decrease from the 58,000 fish caught in 1997.

Historic chinook recreational catches in the Puget Sound recreational fishery for years from 1976 through 1997 are presented in Appendix B, Table B-38. Catch estimates for the 1998 Puget Sound recreational fishery are not yet available.

Escapement and Goal Assessment

Historic hatchery and natural run component escapements and net catches for summer/fall chinook for each Puget Sound region of origin are presented in Appendix B, Table B-39. Historic spring chinook escapement data are presented in Appendix B, Table B-42.

Puget Sound spring chinook hatchery escapements were close to the preseason predictions while preliminary data suggest that most Puget Sound hatcheries met their summer/fall chinook goals with two exceptions: Hood Canal and Elwha.

Puget Sound summer/fall chinook remained depressed in 1998. Estimates of 1998 natural spawning escapements for summer/fall chinook stocks are unavailable at this time. Preliminary data suggest that the Puget Sound spring chinook natural stocks did not meet their escapement goals.

STOCKS LISTED UNDER THE ENDANGERED SPECIES ACT

Sacramento River Winter Chinook

Spawning escapement of Sacramento River winter chinook salmon in 1998 was estimated at approximately 1,800 adults, about 260% greater than the 1997 escapement of approximately 500 adults, but 38% greater than that of its parental brood (approximately 1,300 adults) in 1995. This escapement remains substantially lower than historic levels, amounting to about eight percent of the 1971 through 1975 average of 23,000 adults (Appendix B, Table B-3). Adults leave the ocean (January through April) prior to the beginning of major commercial fisheries for the current year. Therefore, the primary ocean fishery impact on returns of winter chinook in 1998 were by 1997 California ocean fisheries as well as early season California ocean recreational fisheries in 1998. As in 1997, harvest impact reduction was accomplished in 1998 south of Horse Mountain, California, by shortened seasons, increased minimum sizes, and specific gear restrictions, primarily in the recreational fishery.

Concerns regarding continued low spawner escapement of this stock resulted in NMFS issuing biological opinions in 1996 and 1997 under the ESA. The February 18, 1997 Biological Opinion required that ocean fishery impacts be reduced sufficiently to target a Sacramento River winter chinook adult replacement rate of 1.77, equal to 31% above the average replacement rate observed for the 1989 through 1993 period. The estimated adult replacement rates for 1997 and 1998 were 3.14 and 1.38, respectively.

Snake River Spring/Summer Chinook

Impacts on the Snake River spring/summer chinook stock by Council fisheries are believed to be insignificant.

The CRTAC estimates that the 1998 lower river and Zone 6 treaty Indian mainstem Columbia River winter and spring season fisheries had a total harvest impact of 548 adult wild Snake River spring chinook, compared to 239 adults in 1997. These fishery impacts compare to Columbia and Snake River dam passage losses of 3,774 adults in 1998 and 1,458 adults in 1997. Estimated incidental handling mortalities of wild spring chinook during lower river spring season commercial shad fisheries and test gillnet fisheries are included in these harvest related impacts. The total inriver fishery harvest rate impact on wild Snake River spring chinook was estimated at 5.8% in 1998, compared to 7.3% in 1997. The low harvest rate impacts in 1997 and 1998 are in response to management of Columbia River fisheries under the 1996 through 1998 Management Agreement for Upper Columbia River Spring Chinook, Summer Chinook, and Sockeye in conjunction with the CRFMP. The 1996 through 1998 Management Agreement limits total Columbia River fishery impacts on the ESA listed Snake River stocks to minimal levels when upriver and Snake River populations are at very low levels.

The 1998 escapement of adult wild Snake River spring chinook at Lower Granite Dam was estimated to be 5,055 fish, compared to 1,434 fish in 1997. The 1998 escapement is the largest since 1993.

The 1998 escapement of adult wild Snake River summer chinook at Lower Granite Dam was estimated to be 3,371 fish, roughly half of the 1997 escapement of 6,458. (Appendix B, Table B-14).

The combined adult wild Snake River spring/summer chinook escapement at Lower Granite Dam was estimated to be 8,426 fish in 1998, a slight increase from the escapement of 7,892 fish in 1997.

Snake River Fall Chinook

In relation to the 1988 through 1993 index average, the 1998 adult equivalent ocean fishery exploitation rates projected preseason for age-three and age-four Lyons Ferry fall chinook (fingerling releases) were as listed below. (Fingerling releases of Lyons Ferry Hatchery stock are used to represent wild Snake River fall chinook for impact analyses.)

Total Council area fishery impacts:	47% reduction
Total ocean area fishery impact:	47% reduction

In their 1997 biological opinion for ocean fisheries, NMFS required that all ocean fisheries impacts on Snake River fall chinook, as reflected by the Lyons Ferry age-three and age-four fall chinook index (LFI), be reduced by at least 30% from the 1988 through 1993 base period average. If this did not occur, Council area fisheries would be required to reduce their impacts by 50% from the 1988 through 1993 base period average. Due to the poor survival of this stock, as well as the lack of representative tagging of the wild stock or the surrogate Lyons Ferry fall chinook, stock-specific data are not adequate to complete an annual postseason estimate of the actual LFI values.

The 1998 harvest rate on wild Snake River fall chinook for Columbia River fisheries is preliminarily estimated to be 26.3%, compared to the 1988 through 1993 average harvest rate of 34.9%. Inriver fisheries for 1998 were managed under the constraints of the 1996 through 1998 Management Agreement for Upper Columbia River Fall Chinook in conjunction with the CRFMP. Under the 1996 through 1998 Management Agreement, Columbia River fisheries are managed for a 30% harvest rate reduction from the 1988 through 1993 base period average harvest rate, consistent with the management intent for ocean fisheries harvest limits on Snake River fall chinook. A 30% reduction from the base period is equal to a harvest rate of 24.7%. The Management Agreement provides the opportunity for the CRFMP parties to have further discussions on allowable harvest rates if certain inseason contingencies occur. The total Lower Granite Dam adult fall chinook count for 1998 was 1,175 fish, compared to 1,456 fish in 1997. A very preliminary estimate of the 1998 adult wild Snake River fall chinook escapement at Lower Granite Dam is 800 fish (Appendix B, Table B-18). Lower Granite Dam is the uppermost counting station for Snake River fall chinook. Most of the natural spawning for this stock occurs above this point in the river.

COASTWIDE GOAL ASSESSMENT SUMMARY

A summary of 1998 performance for chinook stocks in relation to Council escapement goals is presented in Table II-5.

TABLE II-5. Preliminary summary of 1998 performance for chinook stocks in relation to escapement goals. (Page 1 of 1)

Stock	1998 Escapement Goal	Escapement Goal Assessment
Sacramento River		
Fall Chinook	122,000-180,000 natural and hatchery adults.	Escapement of 198,000 hatchery and natural adults exceeded the upper end of the goal range by 10%.
Winter Chinook (Endangered)	No less than a 31% increase in the adult 3-year old replacement rate above the mean rate observed for the 1989-1993 brood years. This is equivalent to a 1.77 cohort replacement rate.	Cohort replacement rate estimated at 1.38 (based on dam count) was 22% below the goal.
Klamath River		
Fall Chinook	Inriver run size target of 64,100 adults to provide an expected escapement of 35,000 naturally spawning adults.	Inriver run size of 88,500 adults exceeded the target by 38%. Natural spawner escapement of 41,900 adults exceeded the goal by 20%.
Oregon Coastal Chinook	150,000-200,000 naturally spawning adults.	Probably met the goal range.
Columbia River		
Upper River Fall Chinook (Brights)	40,000 adults above McNary Dam, plus meet treaty Indian obligations.	McNary Dam escapement of 63,800 adults exceeded the FMP goal by 60%.
Snake River Fall Chinook (threatened)	No less than a 30% reduction from the 1988-1993 base period exploitation rate for all ocean fisheries combined.	Preseason expectation of a 47% reduction. No postseason estimate can be made.
Upper River Spring Chinook	115,000 adults above Bonneville Dam plus meet treaty Indian obligations. A minimum of 35,000 adults to the Snake River (CRMP Goal).	Zone 6 escapement of 36,100 adults was 31% of the goal. Snake River escapement of 9,900 was 28% of the goal. The Bonneville Dam goal was developed when the natural component comprised about 70% of the run. In recent years, the natural component has averaged only about one-third of the return. Naturally produced upriver spring chinook remain severely depressed.
Upper River Summer Chinook	80,000-90,000 adults above Bonneville Dam (not attainable) plus meet treaty Indian obligations.	Zone 6 escapement was 21,100; 26% of the lower end of the range.
Lower River Spring Chinook (Willamette River)	No less than 30,000 adults over Willamette Falls. Goal increases by sliding scale harvest rate management to 45,000 as forecast abundance increases.	Escapement of 33,100 exceeded the escapement goal floor.
Washington Coastal Fall Chinook	Natural spawner escapement objectives as provided in state-tribal agreements; meet hatchery egg-take goals and meet treaty Indian obligations.	Escapement objectives for Queets, Hoh, and Quillayute Rivers met. Natural escapement estimate for Grays Harbor is not yet available. Hatchery egg-take goals were not achieved for Willapa Bay. Data necessary for allocation determinations are not available.
Washington North Coastal Spring/Summer Chinook	Natural spawner escapement objectives as provided in state-tribal agreements; meet hatchery egg-take goals and meet treaty Indian obligations.	Escapement estimates for Quinault are not yet available. Escapement objectives met for Hoh and Quillayute Rivers. Escapement objective not achieved for Queets. Data necessary for allocation determinations not yet available.
Puget Sound Chinook	Minor part of Washington ocean harvest and the Council's ocean management not directed toward these stocks.	Natural chinook stock escapement estimates not available. Summer/fall chinook egg-take goals not met for three facilities. For details see Chapter II text.

CHAPTER III
INSIDE COHO SALMON FISHERIES AND SPAWNING ESCAPEMENTS

CALIFORNIA STOCKS

Inside harvest estimates of coho are not available for any river system in California. Spawning escapement estimates are available for Klamath River Basin hatcheries, but not for coho spawning in natural areas. In 1998, coho returns to Iron Gate and Trinity River hatcheries totaled 4,374 adults (3,803 coho to Trinity River and 571 coho to Iron Gate), compared to a combined goal of 2,000 adult coho.

OREGON COASTAL STOCKS

Oregon coastal natural (OCN) coho stocks are managed as one stock aggregate that includes coho produced from Oregon river and lake systems south of the Columbia River. The OCN stock aggregate contributes primarily to ocean fisheries off Oregon and California, and to a lesser degree to ocean fisheries off Washington and British Columbia. As discussed in the fishery management plan (FMP), ocean fisheries within the Oregon Production Index (OPI) area (Leadbetter Point, Washington to the U.S.-Mexico border) are managed to achieve OCN coho spawner escapement goals.

Inside Harvest

The inside recreational harvest of coho in 1998, as in recent years, was very restricted and limited to areas where surplus hatchery coho returns were expected. Selective fisheries for adipose fin-clipped hatchery coho occurred in nine freshwater areas. Estimates of the 1998 inriver recreational coho harvest are not available at this time. Historical estimates of the recreational harvest of adult coho in Oregon coastal estuaries and rivers, derived from Oregon Department of Fish and Wildlife (ODFW) salmon and steelhead angler tag returns, are reported in Table III-1.

Inside commercial coho harvest in recent years has been limited to returns to private aquaculture operations. All private Oregon facilities have ceased operations; thus, there were no returns in 1998 (Table III-1).

Escapement and Goal Assessment

The preliminary assessment of OCN spawner escapement indicates about 9 adults per mile on standard index surveys compared to the predicted 24 adults per mile (Table III-2 and Figure III-1). Natural spawner escapement to Oregon coastal river and lake systems is preliminarily estimated at 27,000 adult coho in stratified random sampling (SRS) accounting, which compares to 22,700 coho in 1997. In 1998, an estimated 15,900 coho spawned in river systems from the Coquille River north and 11,100 coho spawned in lake systems. Historical spawner escapement estimates of naturally produced coho are reported in Table III-1 in terms of SRS accounting (initiated in 1990) and traditional natural spawner "index" estimates for OCN river systems since 1970. Based on the results of the SRS assessment program, historical spawner escapements into river systems are less than reported by index accounting.

Preliminary information based on SRS surveys suggests that the recent trend of disproportionate spawner distribution among coastal rivers continued in 1998. The number of adult spawners observed per mile on north and north-central coast rivers was estimated at 22% and 14%, respectively, of the densities observed on south-central rivers (Table III-3 and Figure III-2).

Preliminary estimates of total coho returns to Oregon coastal public hatcheries and STEP smolt production facilities were 15,200 and 200 adults, respectively (Table III-1). Hatchery egg-take goals are expected to be met at all public hatchery stations.

TABLE III-1. Estimated **adult** escapement in thousands of Oregon coastal hatchery and natural **coho**, 1970-1998. (Page 1 of 1)

Year	Returns to Facilities			Count at NF Umpqua Winchester Dam	OCN Spawner Escapement[a/]					Inside Harvest Impacts[b/]	Estimated Ocean Escapement to Oregon Coast[a/]	
						Rivers		Total				
	Private	Public	STEP[c/]		Lakes	Index	SRS	Index	SRS		Index	SRS
1970	-	36.2	-	0.2	20.5	228.7	-	249.2	-	39.8	325.4	-
1971	-	29.1	-	0.6	29.2	293.2	-	322.4	-	24.1	376.2	-
1972	-	12.9	-	0.3	10.0	116.9	-	126.9	-	16.6	156.7	-
1973	-	18.4	-	0.4	17.6	143.5	-	161.1	-	15.4	195.3	-
1974	-	35.1	-	0.4	6.4	126.4	-	132.8	-	13.5	181.8	-
1975	-	4.9	-	0.5	5.6	153.0	-	158.6	-	13.5	177.5	-
1976	-	38.7	-	0.3	1.5	156.8	-	158.3	-	19.6	216.9	-
1977	4.2	6.5	-	0.4	5.8	61.0	-	66.8	-	13.5	91.4	-
1978	12.3	5.6	-	0.5	1.6	72.2	-	73.8	-	4.5	96.7	-
1979	49.2	22.2	-	0.4	6.6	167.0	-	173.6	-	1.5	246.9	-
1980	38.7	21.9	-	0.2	4.7	104.2	-	108.9	-	6.3	176.0	-
1981	117.8	21.2	-	0.1	2.5	70.5	-	73.0	-	9.9	222.0	-
1982	184.7	14.8	-	2.7	7.9	124.7	-	132.6	-	14.7	349.5	-
1983	133.9	9.5	-	1.2	3.3	55.5	-	58.8	-	6.8	210.2	-
1984	115.4	28.6	-	3.2	14.7	194.0	-	208.7	-	17.4	373.3	-
1985	332.0	15.8	-	4.0	7.6	183.3	-	190.9	-	15.7	558.4	-
1986	453.7	35.8	2.5	9.6	11.8	179.0	-	190.8	-	30.3	722.7	-
1987	119.3	12.3	0.2	2.2	4.2	78.3	-	82.5	-	7.7	224.2	-
1988	116.1	33.7	1.2	1.2	5.8	155.0	-	160.8	-	13.3	326.3	-
1989	46.9	37.3	1.2	3.0	4.8	139.7	-	144.5	-	15.1	248.0	-
1990	35.6	15.4	1.6	2.3	4.4	99.6	16.5	104.0	20.9	9.5	168.4	85.3
1991	35.1	39.6	4.9	5.2	7.3	128.2	29.1	135.5	36.4	31.5	251.8	152.7
1992	-	23.3	0.6	6.0	2.0	136.6	37.7	138.6	39.7	18.7	187.2	88.3
1993	-	20.2	2.0	3.3	10.1	157.9	44.3	168.0	54.4	13.3	206.8	93.2
1994	-	23.4	1.8	2.8	5.8	124.7	37.9	130.5	43.7	3.4	161.9	75.1
1995	-	25.2	0.4	4.2	11.2	120.1	41.2	131.3	52.4	3.5	164.6	85.7
1996	-	23.8	1.0	6.2	13.5	198.6	59.5	212.1	73.0	4.4	247.5	108.4
1997	-	17.6	0.2	3.6	8.6	59.0	14.1	67.6	22.7	3.3	92.3	47.4
1998[d/]	-	15.2	0.2	5.3	11.1	41.4	15.9	52.5	27.0	2.9	76.1	50.6

a/ Spawner escapements to rivers have historically been estimated by a nonrandom standard index. A spawner escapement methodology study based on stratified random sampling (SRS) has been in effect since 1990. The SRS methodology indicates that actual escapements are probably less than indicated by the standard rivers index.

b/ Freshwater sport catch from ODFW salmon/steelhead angler tag information and represents only those fish greater than 24 inches. Includes estimated mortality from hook-and-release.

c/ Oregon coastal STEP production from hatchery smolt rearing sites only.

d/ Preliminary.

TABLE III-2. Oregon coastal natural adult coho index spawner escapements compared with the Council goal.[a/]
(Page 1 of 1)

Year of Adult Return	Spawner Goal		Spawner Escapement	
	Index Escapement[b/]	Total Adults per Mile[c/]	Index Escapement[d/]	Total Adults per Mile[c/]
1981	175,000	-	73,000	18
1982	172,000	-	132,600	32
1983	140,000	-	58,800	14
1984	135,000	-	208,700	44
1985	175,000	-	190,900	45[e/]
1986	143,000	-	190,800	42[e/]
1987	200,000	-	82,500	19[e/]
1988	200,000	-	160,800	33[e/]
1989	200,000	-	144,500	28[e/]
1990	161,000	-	104,000	15[e/]
1991	200,000	-	135,500	24[e/]
1992	135,000	-	138,600	25[e/]
1993	142,000	-	168,000	29[e/]
1994	-	26	130,500	27[e/]
1995	-	38	131,300	26[e/]
1996	-	32	212,100	43
1997	-	44	59,000	13
1998[f/]	-	24	41,400	9

a/ Council goal initially established in 1981 to rebuild OCN stocks and amended in 1987 (Amendment 7) to provide a range of 135,000 to 200,000 coho. The goal was amended again in 1993 (Amendment 11) to 42 adults per mile on standard index surveys. At low stock sizes, amendment 11 allows up to a 20% exploitation rate if it does not cause irreparable harm to the stock. In 1997, the Council adopted Amendment 13 to help ensure recovery of the OCN coho stock. Amendment 13, which is pending implementation by NMFS, utilizes information on freshwater productivity, parent abundance, and marine survival conditions to establish maximum annual exploitation rates.

b/ Salmon framework amendment rebuilding goal of 170,000 was modified by the Council for optimum yield considerations in 1986. The goals in 1990, 1992, and 1993 reflect the sliding scale portion of the Council framework amendment spawner goal in Amendment 7.

c/ Total adults per mile on standard index surveys. The total adults per mile on standard index surveys is calculated as total adults on all standard index surveys/total standard index survey miles. Based on projections of OCN abundance, the annual goals for spawner density reflect the following expected exploitation rates (largely attributable to hook-and-release and drop-off mortality in chinook directed fisheries):

1994	11.0%
1995	12.0%
1996	12.5%
1997	11.0%
1998	11.9%

d/ Spawner escapements prior to 1985 were calculated using complete OCN spawner habitat mileage (streams and lakes combined) and based on a coastwide average adult spawners per mile value observed for rivers. Estimates since 1984 are calculated by individual coastal river basins with adult spawners per mile values calculated for each basin separately. A spawner escapement methodology study based on stratified random sampling (SRS) has been in effect since 1990. The SRS methodology indicates that actual escapements are less than indicated by the standard rivers index. Changes in estimates from previous reports reflect revisions in escapements into lake systems.

e/ Adjusted to remove hatchery fish. No hatchery strays were identified in 1991.

f/ Preliminary.

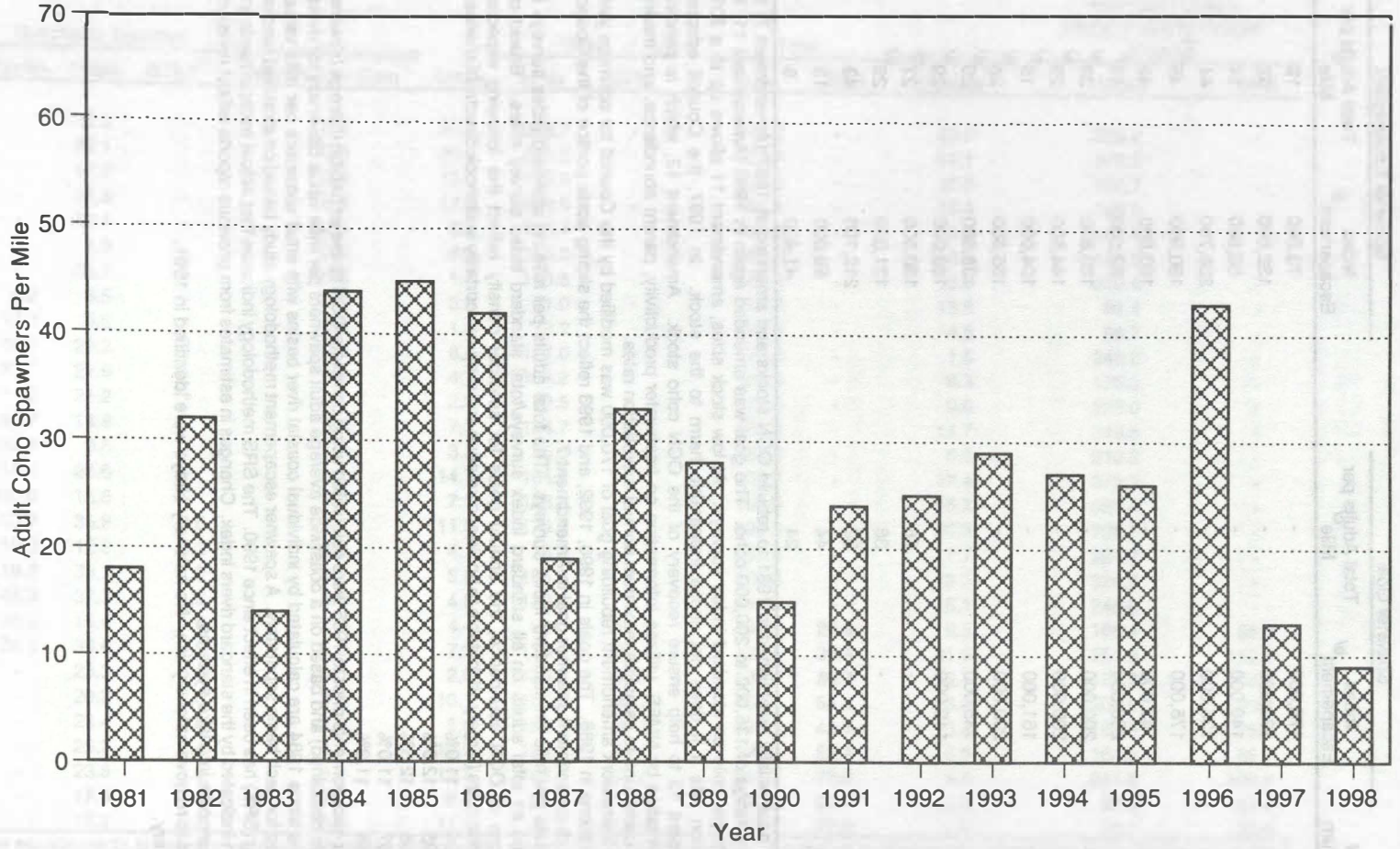


FIGURE III-1. Total Oregon Coastal Natural adult coho salmon per mile on standard index spawner surveys, 1981-1998.

TABLE III-3. Oregon coastal natural adult coho salmon spawner escapement and spawner per habitat mile by coastal region, based on stratified random sampling (SRS). (Page 1 of 1)

	Adjusted SRS Adult Coho Spawner Population Estimates (Thousands)[a/]					Adult Coho Spawners Per Spawner Habitat Mile				
Year	Northern[b/]	North Central[c/]	South Central[d/]	Southern[e/]	Coastwide	Northern[b/]	North Central[c/]	South Central[d/]	Southern[e/]	Coastwide Average
1990	2.2	5.6	13.1	2.8	23.7	2	5	8	7	6
1991	9.3	6.7	20.3	0.8	37.1	10	6	13	2	9
1992	2.4	15.4	21.9	1.9	41.6	3	13	14	5	10
1993	4.5	7.8	42.1	0.2[f/]	54.6	5	7	26	f/	13
1994	4.1	9.7	29.9	5.3	49	5	8	18	13	11
1995	3.7	13.6	34.8	4.2	56.6	4	12	21	10	13
1996	3.4	18.8	56.2	5.4	83.8	4	16	35	13	20
1997	2.1	2.8	17.7	8.3	31.0	2	2	11	20	8
1998[g/]	2.6	2.3	22.1	3.3	30.3	3	2	14	8	7

a/ A spawner escapement methodology study based on SRS has been in effect since 1990 in which coho salmon population estimates have been made for Oregon coastal river systems from the Coquille River and north. Spawner population estimates include an adjustment for observation error.
b/ Includes runs from the Necanicum through Neskowin Rivers. Total spawner habitat is estimated at 899 miles.
c/ Includes runs from the Salmon through Siuslaw Rivers. Total spawner habitat is estimated at 1,163 miles.
d/ Includes runs from the Umpqua through Coquille Rivers and Lakes. Total spawner habitat is estimated at 1,622 miles.
e/ Includes runs from the Rogue River. Total spawner habitat is estimated at 410 miles. Population estimates are based on a mark-recapture methodology.
f/ Poor estimate.
g/ Preliminary.

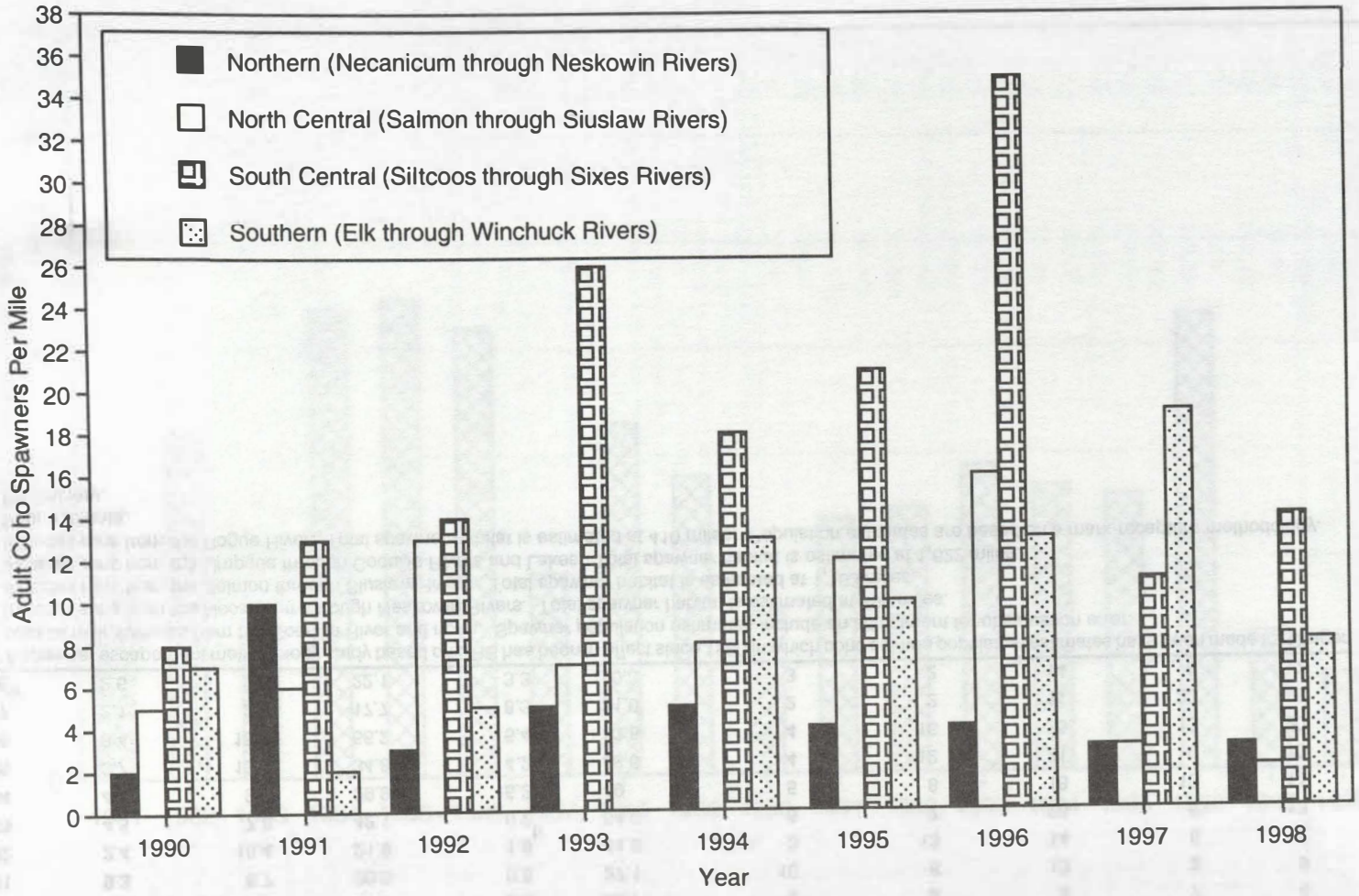


FIGURE III-2. Oregon coastal natural adult coho salmon spawners per spawner habitat mile by coastal region based on SRS, 1990-1998. Excludes spawner escapement to all Oregon coastal lake systems.

COLUMBIA RIVER STOCKS

Inside Harvest

Coho harvest statistics for Columbia River commercial and recreational fisheries are presented in Appendix B, Table B-20. The 1998 Columbia River non-Indian commercial gillnet fishery harvested 23,000 adult coho. Most of this catch occurred in the Youngs Bay terminal area gillnet fishery (18,800 coho). Other terminal area fisheries in both Oregon and Washington caught an additional 3,900 coho. The lower river mainstem commercial gillnet fishery landed coho during late September and October all-species seasons for a total mainstem catch of 300 fish. The 1998 catch of 23,000 adult coho compares to the 1997 catch of 19,400 coho. The treaty Indian mainstem commercial gillnet coho catch was 200 fish, compared to the 1997 catch of 600 coho.

The total mainstem and Buoy 10 recreational fisheries below Bonneville Dam harvested 14,000 coho compared to 29,700 adult coho caught in 1997. In 1998, Columbia River managers opened the Buoy 10 fishery for two weeks (August 8 through August 23) for both chinook and coho. Retention of coho was selective for fish with a healed adipose fin clip. Angler compliance with the adipose fin-clip requirement was generally good at 95%. The 1998 Buoy 10 catch and effort totaled 3,200 coho and 30,000 angler trips (Table III-4). Historical Buoy 10 catch and effort data are provided in Appendix B, Table B-21.

Oregon and Washington conducted an on-the-water observation program for the Buoy 10 selective fishery. Preseason the STT (using the coho Fishery Regulation Assessment Model [FRAM]) predicted that the mark rate for the Buoy 10 fishery would be 60%. On-the-water observations and dockside interview information relative to released fish have not yet been summarized but will be available at a later date.

Escapement and Goal Assessment

The 1998 ocean escapement of adult early and late Columbia River coho stocks was 161,800 fish, compared to 145,900 adults in 1997. (Appendix B, Table B-20). The 1998 Columbia River coho abundance was sufficient to meet all hatchery brood stock escapement. Even with the complete closure of Council area coho fisheries south of Cape Falcon, ocean escapement of Columbia River coho was the seventh lowest on record.

WASHINGTON COASTAL STOCKS

Willapa Bay Coho

Inside Harvest

Run size, harvest, and escapement data for Willapa Bay coho are presented in Appendix B, Table B-23.

The gillnet catch of coho in Willapa Bay in 1998 totaled 13,111 fish (7,915 hatchery and 5,296 wild). Based on the preseason forecast for a terminal run of 22,339 fish, the scheduled fisheries were expected to harvest approximately 5,838 hatchery coho.

Recreational harvest estimates are not yet available for 1998. All recreational fisheries opened at the usual time, were of normal duration, and maintained normal bag limits. Changes to the 1998 recreational fisheries included requirements to release wild (unmarked) coho and the use of barbless hooks whenever a river was open for salmon fishing. An additional section of the Naselle River was opened for salmon fishing in 1998.

Grays Harbor was open to recreational fishing from September 1 through September 30 with a daily bag limit of six salmon, one of which could be an adult. All retained coho were required to have a healed adipose fin clip. A total of 2,643 anglers were interviewed during dockside samples, and 210 coho were examined. Of these, 191 (91%) were adipose clipped fish. Anglers reported 420 released coho, 17 of which were adipose clipped fish. Total retained coho harvest is estimated at 699 fish, 629 (90%) of which were adipose clipped. Chinook harvest totaled 1,713 fish. Estimates of total released coho are not yet available.

TABLE III-4. Estimated weekly **effort** (in angler trips) and **catches** of chinook and coho in the 1998 **Buoy 10 recreational** fisheries (all data are preliminary).[a/] (Page 1 of 1)

Week Number	Ending Date of Period	Angler Trips	Catch		Catch Per Trip
			Chinook	Coho	
32	August 9	2,873	235	71	0.11
33	August 16	9,893	1,908	627	0.27
34	August 23	17,232	3,641	2,477	0.36
Total		29,998	5,784	3,175	0.30

a/ Includes boat-based and shore-based fisheries at Clatsop Spit, the South Jetty of the Columbia River and the North Jetty of the Columbia River after the ocean closed. Fishery was open August 8-23 for all species except nonfin-clipped coho and steelhead.

Willapa bay was open to recreational fishing from August 16 through January 31 with a daily bag limit of six salmon, three of which could be adults. All retained coho were required to have a healed adipose fin clip. The fishery was sampled from August 16 through October 4. A total of 1,620 anglers were interviewed during dockside samples, and 125 coho were examined. Of these, 118 (94%) were adipose clipped fish. Anglers reported 48 released coho, none of which were adipose clipped fish. Estimates of total catch are not yet available for Willapa Bay.

Escapement and Goal Assessment

Willapa Bay coho are managed for hatchery production. Escapement to Willapa Bay hatcheries in 1998 numbered 6,546 coho. The hatchery production goal was met at Nemah hatchery but fell short at both Forks Creek and Naselle Hatchery. Estimates of natural spawning escapement for 1998 are not available.

Grays Harbor Coho

Inside Harvest

Run size, harvest and escapement data for Grays Harbor coho are presented in Appendix B, Table B-25. The forecasted run size for Grays Harbor wild coho was below the escapement goal. Consequently, fisheries were structured to maximize chinook and hatchery coho harvest with only incidental catch of wild coho. A total of 14,488 coho of natural, hatchery and net-pen origin were harvested in net fisheries. This included 13,419 coho in the Quinault Indian Nation fisheries, 708 in the non-treaty net fishery, and 361 coho in the Chehalis Tribal fishery.

Recreational harvest estimates are not yet available for 1998. Recreational fisheries were subject to reduced season length, requirements for release of coho without a healed adipose fin clip (and release of all chum), and the use of barbless hooks in all local salmon fisheries. In addition to these restrictions, a number of streams, including Johns, Elk, Wishkah, and the Hoquiam Rivers, were closed throughout the fall salmon season. The Skookumchuck River was opened (Oct. 16 - Nov. 15) for the first time to salmon fishing in order to take advantage of marked hatchery coho returning to the Skookumchuck rearing facility.

Escapement and Goal Assessment

Grays Harbor coho are managed for natural production. Natural spawning escapement estimates are not yet available. Initial indications are that the escapement goal of 35,400 fish will be met.

The preliminary estimates of the total return to Grays Harbor hatcheries is 16,408 coho. This return will meet on-station as well as cooperative coho rearing project needs. Net-pen reared coho also returned to Grays Harbor in 1998 and contributed to the coho harvest, but no estimate of escapement is available.

Quinault River Coho

Inside Harvest

Historical terminal run size, harvest and escapement for Quinault River coho are presented in Appendix B, Table B-27.

Quinault River coho are managed for hatchery production. The treaty Indian gillnet fishery targeted chinook and coho from early September through mid-November. A total of 6,124 coho were harvested by the gillnet fishery in 1998.

Escapement and Goal Assessment

Quinault River coho are managed for hatchery production. Estimates of hatchery and natural escapements of Quinault River coho in 1998 are not available. Hatchery production objectives were achieved for Quinault River coho.

Queets River Coho

Inside Harvest

Historical terminal run size, harvest and escapement for Queets River coho are presented in Appendix B, Table B-30.

Queets River fisheries were established by preseason agreement, based on preseason abundance estimates and planned Council ocean fisheries. The treaty Indian gillnet fishery was structured to target returning hatchery coho during September and early October, followed by a reduced level of fishing to update natural coho and chinook run sizes through mid-October. The in-season updates indicated that the natural coho run was above the preseason forecast. The total harvest of fall coho by the net fishery was 7,400 fish. The gillnet harvest was comprised primarily of hatchery fish (roughly 500 wild and supplemental fish were taken). Recreational fisheries operated in the Queets, Clearwater, and Salmon Rivers.

Escapement and Goal Assessment

Analysis of spawning escapement survey data for Queets River coho has not yet been completed. Based on the in-season run size and in-river catch estimates, the preliminary natural and supplemental spawning escapement estimate is 6,000 adults, above the lower end of the escapement goal range of 5,800 to 14,500 natural adults.

Hoh River Coho

Inside Harvest

Historical terminal run size, harvest and escapement for Hoh River coho are presented in Appendix B, Table B-33.

The preseason terminal run size forecast was 3,190 under Council regulations, above the lower end of the spawning escapement range of 2,000 to 5,000 established for this stock, but still at a low level. Freshwater production of the 1995 brood was high, but ocean survival was anticipated to be very poor. The tribal terminal fishery opened with a normal minimum mesh size of 6 inches, then shifted to an 8 inch mesh restriction beginning in week 40 to limit wild coho impacts to 10% of the terminal run. The tribal fishery harvested 600 coho, above the expected level, given the preseason terminal run forecast.

The river sport fishery was restricted to the area below Highway 101 for the fall season to minimize impacts on coho. Below the bridge, the fishery operated with a 6-fish bag limit, only 2 of which could be adults. Estimates of recreational fishery catch are generated from punch card data and do not become available until the following year (the preliminary river sport catch is less than 300 coho).

Escapement and Goal Assessment

Preliminary escapement data suggest the 1998 coho escapement will be above 3,500 adults.

Quillayute River Coho

Inside harvest

Historical terminal run size, harvest, and escapements for Quillayute River summer and fall coho are presented in Appendix B, Table B-36.

The recreational and Tribal fisheries for summer and fall coho were established by preseason agreement between WDFW and the Quileute Tribe. The summer coho run in the Quillayute River is managed primarily for its hatchery component. The treaty gillnet fishery harvested 1,310 summer coho from mid-August through mid-September. A small recreational fishery harvested a limited number of summer coho during this period.

The fall coho preseason terminal run size prediction was 4,055 hatchery adults and 7,399 wild adults. Due to the very low returns of wild fall coho to the Quillayute River the treaty gillnet fishery required an 8-inch minimum mesh restriction during the October fishery to minimize impacts to fall coho. The recreational coho fishery was conducted from September 1 through November 30. The treaty gillnet fishery harvested 4,543 total coho during this period. A recreational harvest estimate is not available.

Escapement and goal assessment

The summer coho run in the Quillayute River is managed primarily for the hatchery component. The summer coho hatchery rack return was 1,645 adults, far in excess of the 300 adult goal.

The hatchery fall coho rack return was 14,034 adults, far in excess of the 600 adult goal. The preliminary spawner escapement estimate is 11,000, based on incomplete data; however, there are indications that the final estimate for wild escapement will be near the upper end of the 6,300 to 15,800 adult range established for this stock.

PUGET SOUND STOCKS

Inside Harvest

Commercial inside fishery harvest of Puget Sound coho is managed on the basis of six regional management stock units: Strait of Juan de Fuca, Nooksack-Samish, Skagit, Stillaguamish-Snohomish, South Puget Sound, and Hood Canal. Harvest of coho for each management unit is regulated according to the natural spawning escapement or hatchery program escapement goal for that unit. Commercial net and troll harvest (treaty Indian and non-Indian) for all coho stocks combined is presented in Appendix B, Table B-37. The 1998 total Puget Sound commercial catch of coho was 145,700 fish, a decrease of 4% from the 1997 catch of 152,000 coho. Non-Indian harvest was 12,500 coho, an increase of 30% from the 9,600 coho caught in 1997. Treaty Indian net and troll fisheries harvested 133,200 coho, a decrease of 6% from the 142,400 coho caught in 1997.

Historic coho recreational catches in the Puget Sound recreational fishery for the years from 1976-1997 are listed in Appendix B, Table B-38.

Escapement and Goal Assessment

Estimates of 1998 natural spawning escapements are unavailable at this time. Historic hatchery and natural run component escapements and net catches for each Puget Sound region of origin are presented in Appendix B, Table B-40.

In general, Puget Sound hatchery coho escapement and egg-take goals were met in all regions in 1998.

STOCKS LISTED UNDER THE ENDANGERED SPECIES ACT

Central California Coast Coho

The NMFS defined evolutionarily significant unit (ESU) of central California coast coho was listed as threatened on October 31, 1996. Retention of coho salmon has been prohibited in all California ocean fisheries beginning with the1993 commercial season and after April 30, 1995 in the recreational season. It is believed that these restrictions, coupled with closures to protect Klamath River fall chinook and OCN coho have sufficiently limited harvest impacts to a level which does not jeopardize recovery of the central California coho.

Southern Oregon/Northern California Coho

The southern Oregon/northern California coho ESU (represented primarily by Rogue/Klamath coho) was listed as threatened by NMFS on May 6, 1997. Retention of coho salmon has been prohibited in ocean fisheries south of Cape Falcon, Oregon beginning with the1993 commercial season and, except for the recreational seasons prior to May 1, 1995 south of Horse Mountain, California, retention of coho has been prohibited in the recreational fisheries beginning in 1994. It is believed that these restrictions, as well as specific limits on the allowable harvest impact rates implemented for the conservation of OCN coho in Council area fisheries, limit harvest impacts to a level which does not jeopardize recovery of the southern Oregon/northern California coho ESU.

Oregon Coast Coho

The Oregon Coast coho ESU (represented by the northern, north-central and south-central OCN coho stocks) was listed as threatened by NMFS on August 3, 1998, after the 1998 season was underway. Since 1993, coho impacts have been dramatically reduced with coho non-retention regulations, time and area closures, gear restrictions, and reduced quotas. The implementation of *The Oregon Plan for Salmon and Watersheds* and Amendment 13 to the *Pacific Coast Salmon Plan* resulted in a total exploitation rate for OCN coho of less than 12% in 1998.

COASTWIDE GOAL ASSESSMENT SUMMARY

A summary of 1998 performance for coho salmon by stock in relation to escapement goals is presented in Table III-5.

Observed ocean escapements of coho stocks were generally above expectations, except for OCN coho which remained near or below historic lows.

TABLE III-5. Summary of 1998 performance for **coho** salmon stocks in relation to escapement goals (preliminary data). (Page 1 of 1)

System and Stock	1998 Escapement Goal	Escapement Goal Assessment
Columbia River and Oregon Coastal Coho (OPI)	OCN spawner escapement of no less than 24 adults per mile on standard index surveys (12% exploitation rate).	Preliminary OCN spawner escapement is 9 adults per mile on standard index surveys. All hatchery egg-take goals were met .
Rogue/Klamath Coho	Total exploitation rate on OCN coho of no more than 13%.	Preseason estimate of a 12% exploitation rate on OCN coho and 12% on Rogue/Klamath coho. Postseason estimates are currently not available.
Central California Coho	Total exploitation rate on OCN coho of no more than 13%.	Preseason estimate of a 12% exploitation rate on OCN coho. Postseason estimate is currently not available.
Washington Coastal Coho	Natural spawner escapement objectives as provided in state-tribal agreements; meet hatchery egg-take goals; and meet treaty Indian obligations. Preseason expectation was that Grays Harbor natural escapement would be below the goal of 35,400 and Queets natural escapement would be below the lower end of the goal range (5,800 to 14,500).	Queets, Quillayute River fall, and Hoh natural escapement within the range, as expected. Grays Harbor natural escapement estimate unavailable, but initial indications are goal will be met. Hatchery egg-take goals achieved. No information available on catch allocation.
Puget Sound Coho	Natural spawner escapement objectives as provided in state-tribal agreements; meet hatchery egg-take goals; and meet treaty Indian allocation requirements and inside non-Indian fishery needs for 6 management units. Preseason expectation was that Skagit River and Strait of Juan de Fuca natural escapement goals would not be met (30,000 and 12,800 adult coho, respectively).	Data not available for natural spawning escapement. Hatchery egg-take goals met. No information available on catch allocation.

CHAPTER IV
SOCIOECONOMIC ASSESSMENT OF THE 1998 OCEAN SALMON FISHERIES

Total 1998 exvessel value for the Council-managed non-Indian commercial troll fishery was $5.2 million. In inflation-adjusted terms, exvessel value was 48% below its 1997 level and 87% below the 1976 through 1997 average. The number of vessel-based ocean salmon sport angler trips taken on the West Coast in 1998 (188,300 angler trips) decreased 35% from 1997 and was 68% less than the 1976 through 1997 average. The total state level personal income impact associated with the recreational and commercial ocean fisheries for all three states combined was $28.7 million, down 43% compared to 1997, and 79% below the 1976 through 1997 average (adjusted for inflation).

ALLOCATION OF THE SALMON RESOURCE

Salmon management by the Council involves numerous allocation issues including:

- Determination of the amount of salmon available for ocean harvest after consideration of expected harvests by inside fisheries and spawning escapement goals.
- Allocation of harvest among broad management areas and among ports within the management areas.
- Allocation of harvest between Indian and non-Indian harvesters.
- Allocation of the non-Indian harvest between troll and recreational harvesters.

The amount of fish available for harvest in Council management areas depends, in part, on harvest in Canada and Alaska. Allocation of harvest between the West Coast, Canada, and Alaska is determined within the constraints of the Pacific Salmon Treaty Act.

Figures IV-1 and IV-2 show the catches which have resulted from the Council's management of the ocean commercial troll and recreational fisheries (all tables and figures follow the completed text). The figures show that, in general, the recreational fishery has tended to have a more stable harvest than the troll fishery (in both absolute and relative terms); the majority of the annual variation in available ocean harvest is usually taken up in the troll fishery. However, both fisheries have suffered substantial declines in recent years, the effects of which are amplified when specific geographic areas are considered.

Fisheries in different areas will impact a particular stock at different rates, therefore, decisions on allowable harvests for a particular stock often have implicit allocational effects on the geographic distribution of the salmon harvest. Seasons are often shaped with an eye toward providing the needed stock protection, while balancing the often conflicting objectives of maximizing ocean harvest and fairly distributing the conservation burdens along the coast. The following briefly describes some of the major stock conservation concerns that have magnified the conflict between these objectives in recent years and presented the Council with some of its greatest season shaping challenges.

To protect Oregon coastal natural coho, a prohibition on the retention of all coho salmon south of Cape Falcon has been in continuous effect beginning in 1993 for the commercial fishery and 1994 for the recreational fishery. This restriction has had a devastating impact on the recreational fishery off central Oregon and a somewhat less but still significant impact on the troll fishery in the same area, both of which have historically depended on coho harvest. To date, the coho restrictions have had virtually no affect on California fisheries south of Point Arena, which depend primarily on chinook and have relatively minor coho impacts.

Beginning in 1996, recreational seasons south of Point Arena California were significantly restricted to reduce impacts on Sacramento River winter chinook. South of Horse Mountain California, season shaping for the 1998 commercial fishery was primarily focused on limiting impacts on Klamath River fall chinook while maximizing harvest of Sacramento River fall chinook.

Commercial and recreational fisheries in the Klamath Management Zone (KMZ) area have been restricted, because they have a high impact rate on Klamath River fall chinook--a stock which has been depressed for several years. In 1996, KMZ fisheries were allowed to expand to a small degree: there was a commercial troll fishery in the Crescent City and Eureka areas for the first time since 1991, and the first commercial Indian fishery in the river since 1989. However, 1997 and 1998 saw lower abundances which led managers to reduce fishing opportunities. While fishing opportunities were reduced, a small ocean troll fishery was provided in the area for the third year in a row, after the total absence of the commercial troll fishery from 1992-1995. Recreational seasons north of Point Arena and within the KMZ have been further shaped in some years to protect coho.

One of the recurring geographic allocation controversies is the sharing of Klamath River fall chinook impacts between Oregon and California fisheries. For 1998, Oregon and California Salmon Advisory Subpanel members worked cooperatively to shape beneficial and reasonably equitable seasons. The result was a 45/55 sharing of impacts between Oregon and California. This sharing does not represent an allocational directive by the Council.

In 1998, as in 1994 and 1997, there were no non-Indian commercial ocean troll coho fishing opportunities on the West Coast. However, for the area north of Cape Falcon this was the result of a trade made between the commercial and recreational fisheries that sent the commercial share of the non-Indian coho harvest opportunities (4,000 fish) to the ocean recreational fishery, in return for 1,500 chinook from the recreational fishery. This trade brought the total north of Cape Falcon non-Indian troll chinook quota to 6,500 fish. The 1998 coho harvest north of Cape Falcon was constrained largely in response to the weak conditions of the Queets and Grays Harbor natural coho stocks.

Success in achievement of stock management goals and objectives is evaluated in the first three chapters of this review.

COMMERCIAL SALMON FISHERIES

West Coast Non-Indian Ocean Troll Fishery

Inseason Price Trends

Monthly exvessel price data provide information on seasonal price trends (Table IV-1). The absence of a breakdown of price by size category for California makes it difficult to tell whether price changes are a function of seasonal changes in market conditions or a shift in the size category of fish landed.

Annual Trends (Seasons, Value, Prices, and Pounds)

Available information on chinook and coho exvessel price and value by species, compiled from state fish tickets and expressed both in nominal terms and real (inflation adjusted) 1998 dollars, is presented in Tables IV-2, IV-3, and IV-4. Data on pink salmon is provided in Table IV-5. The gross domestic product implicit price deflator, developed by the Bureau of Economic Analysis, is used to adjust nominal to real values (Table D-22). Weight of landings by species and port for chinook and coho is presented in Tables IV-6, IV-7 and IV-8. These tables and the following discussion refer to the non-Indian commercial troll fishery in Council management areas and associated state territorial ocean area waters.

Total exvessel value for the Council-managed non-Indian commercial ocean fishery was $5.2 million. In inflation adjusted terms this was 32% below the previous 1976 through 1997 low (1994), 48% below the 1997 level, and 87% below the 1976 through 1997 average. As in 1997, in 1998 there were no non-Indian commercial ocean coho fishing opportunities anywhere along the West Coast (see above discussion on harvest allocation); however, there were some commercial ocean chinook fisheries for all major port areas of the West Coast, though opportunities were sparse at best north of Cape Falcon, in the KMZ, and in the

Fort Bragg area. In 1996, there were also commercial fisheries coastwide with the exception of the area around Ilwaco/Astoria, and in 1995 there were no troll fisheries in ocean areas around Westport, Ilwaco/Astoria, Crescent City, and Eureka. In 1994, there were no non-Indian ocean commercial fisheries north of Cape Falcon and none in the California portion of the KMZ (Crescent City and Eureka).

The 1998 exvessel value of the California commercial ocean salmon catch ($2.8 million) was 45% below its previous low for 1976 through 1997 and 85% below the 1976 through 1997 average. The 1998 exvessel value for the Oregon commercial troll catch ($2.3 million) was three times its 1994 low, but still 82% below the 1976 through 1997 average. The 1998 exvessel value for the Washington non-Indian ocean commercial troll catch ($123,000) was similar to 1997 and 98% below the 1976 through 1997 average (all values adjusted for inflation).

Average West Coast ocean harvest chinook price per pound increased 11% in 1998 to $1.61, the first increase in the coastwide average in eight years (in inflation-adjusted terms). The continued depressed level of the salmon harvest and salmon prices is reflected in the real exvessel values depicted in Figure IV-3.

Coastwide, the non-Indian chinook harvest decreased by 46% in terms of number of fish compared to 1997 (Figure IV-1). This decrease in catch was exacerbated by a 14% decrease in average weights (Tables D-1, D-2, and D-3) and offset to some degree by the 11% increase in price. About 50% of the coastwide chinook harvest (by weight) was taken in California, from the San Francisco area south, as compared to about 75% in 1997 (Table IV-6, IV-7 and IV-8). The weight of landings in Oregon declined substantially less than for landings in the San Francisco and Monterey areas, compared to 1997 levels. The weight of Washington landings was up slightly.

Ocean Troll Salmon Harvesters

Coastwide, 1,040 vessels participated in the 1998 salmon troll fishery, down 18% to from 1997, and about 80% below the average number of vessels participating from 1986 through 1990.[1/] The active fleet in California decreased by 176 vessels (21%), the active fleet in Oregon decreased by 60 vessels (14%) and the active fleet in Washington decreased by 28 vessels (55%), all comparisons to 1997 (Tables D-4, D-5, and D-6). Coastwide, the number of salmon limited entry permits issued decreased by 308 (eight percent) to three, 381 permits. Thirty-one percent of all permits made salmon landings in 1998. From 1982 through 1990 an average of 69% of all salmon permits were active.

Average per vessel exvessel value decreased 35% as compared to 1997 (adjusted for inflation), to approximately $4,900. Per vessel, average exvessel values decreased by 52% in California, while increasing in Oregon by seven percent and more than doubling in Washington. Some caution needs to be exercised in interpreting the per vessel average. For example, the averages may be influenced as much by the entry or exit of a disproportionate number of small or large harvesters as by any change in the average revenues of those remaining in the fishery from one year to the next.

In 1998, 374 vessels participated in the area between Cape Falcon and the Oregon-California border as compared to 445 vessels in 1997 (these figures include vessels harvesting off Oregon and landing in another state). The average revenue per vessel in this area was $5,964 as compared to $5,448 in 1997. In the areas south of Point Arena, 618 vessels operated, as compared to 786 in 1997. The average revenue per vessel in this area was $4,606 as compared to $8,993 in 1997 (Table IV-9, not adjusted for inflation).

Additional historic information on landings by vessel size, percentages of the fleet responsible for the majority of harvest, and harvest by residence of those participating in the fishery off each state is provided in Appendix D.

1/ Based on state fish tickets submitted to Pacific Fishery Information Network (PacFIN). The vessel counts listed in Tables D-4, D-5, and D-6 sum to more than 1,040 vessels, because of the double counting of vessels participating in more than one state.

West Coast Treaty Indian Ocean Troll Fishery

Treaty Indian ocean troll fisheries are allocated a share of the total ocean salmon harvest. Some of the Indian harvest is for ceremonial and subsistence purposes; however, there is also a commercial harvest. Commercial Indian fisheries provide food to consumers and generate income in local and state economies through expenditures on harvesting, processing, and marketing of the catch. The treaty ocean troll fishery harvested 14,500 chinook and 7,900 coho in 1998, compared to 14,500 chinook and 15,700 coho in 1997. The nominal exvessel value of the 1998 chinook and coho fishery was $233,000 compared to $169,000 in 1997 (adjusted for inflation and based on state fish ticket data reported to PacFIN as of February 8, 1999).

Columbia River Commercial Fishery

Harvests in the ocean salmon fisheries impact inriver fisheries by their effects on the amount of fish available for inside harvest. Information is presented in Table IV-10 on the exvessel value of Columbia River commercial harvest of chinook, coho, and chum. All prices and values in the table and the following discussion are in real (inflation adjusted) dollars. Exvessel prices for inriver gillnet catches of chinook vary considerably with race (spring versus fall chinook) and stock (tules versus brights). Spring chinook generally bring the highest prices and fall chinook tules and chums the lowest.

The total 1998 exvessel value for commercial salmon harvested in the Columbia River was $564,000, down slightly from 1997. The total 1998 exvessel value for non-Indian commercial salmon harvested in the Columbia River was $281,000. This value represents a small increase from 1997 but was 96% below the 1987through 1994 average harvest. The total 1998 exvessel value for treaty Indian salmon harvested in the Columbia River was $283,000. This value was down from 1997 the value and 90% below the 1987 through 1994 average harvest. These values represent only those sales made to licensed fish buyers. Indian fisher sales to the public are accounted for in harvest monitoring but estimates of the value of such sales are not included in Table IV-10. The volume of sales to the public is reported to have increased substantially in recent years.

Other Inside Commercial Fisheries

According to PacFIN data, the 1981 through 1997 inflation adjusted average value for chinook and coho taken in the commercial non-Indian Puget Sound and Washington inside fisheries (excluding the Columbia River) was $5.4 million. The total chinook and coho exvessel value for these non-Indian fisheries in 1997 was $0.7 million (inflation adjusted). The 1981 through 1997 inflation adjusted average value for chinook and coho taken in the Indian commercial Puget Sound and Washington inside fisheries (excluding the Columbia River) was $8.7 million. The total chinook and coho exvessel value for these non-Indian fisheries in 1997 was $1.4 million (inflation adjusted). Information on the 1998 values for these fisheries is incomplete.

There was no commercial Indian gillnet fishery in the Klamath River in 1997 or 1998. In 1996 there was a commercial Indian gillnet fishery in the Klamath River for the first time since 1989. The 1996 harvest was 43,277 chinook. The value at first sale for the harvest is estimated at $525,000. The average weight of fish landed was 13.5 pounds. The 1989 harvest of 27,504 chinook had an average weight of 15.4 pounds and was sold for $852,000 (unadjusted for inflation).

CEREMONIAL AND SUBSISTENCE SALMON FISHERIES

In addition to the commercial Indian fisheries discussed above, fish are taken in Indian fisheries each year for ceremonial and subsistence purposes. The amounts of salmon used for ceremonial and subsistence purposes are documented in Appendix B.

RECREATIONAL SALMON FISHERIES

Ocean

The number of vessel-based ocean salmon sport angler trips taken on the West Coast in 1998 (188,300 angler trips) decreased 35% from 1997 and was 68% less than the 1976 through 1997 average. The number of 1998 trips decreased by 35% in California, 14% in Oregon and 55% in Washington, as compared to 1997 (Figure IV-4).

Recreational salmon fishing takes place primarily in one of two modes: (1) anglers fishing from privately owned pleasure crafts and (2) anglers employing the services of the charter boat fleet. In general, success rates on charter vessels tend to be higher than success rates on private vessels (Table IV-11). There are small amounts of shore based effort directed toward salmon, primarily fishing occurring off jetties and piers. In 1998, the proportion of angler trips taken on charter vessels remained stable in California and Washington, while decreasing in Oregon, as compared to 1997 (Figure IV-4 and Table IV-12). Tables IV-13, IV-14, and IV-15 break out effort by port area and mode for each state.

California

Ocean salmon angler effort in California (149,900 angler trips) decreased 35% in 1998 as compared to 1997 (Table IV-13) and was 23% below the 1976 through 1997 average. On a percentage basis the declines were greatest for the northern port areas, Crescent City, Eureka, and Fort Bragg, however, in terms of total numbers of trips the greatest declines were in the San Francisco and Monterey port areas. While for the state as a whole the share of trips taken on charter vessel remained stable, in Fort Bragg the share increased from 11% to 32% and in San Francisco the share declined from 61% to 54%, comparing 1998 to 1997.

Angler success rates, measured in retained fish per angler trip, decreased an average of 18% to 0.81 fish per day in 1998, compared to 0.99 fish per day in 1997. In 1998, anglers on charter vessels landed about 0.17 fish more per day than anglers fishing from private vessels (the difference in 1997 was 0.40 fish). The average differential between charter and private boat angler success rates from 1976 through 1997 was 0.34 fish per day.

Oregon

Ocean recreational salmon based angler trips in Oregon (26,100 angler trips) were down 14% compared to 1997 levels. This is the lowest effort level for the period covered by Table IV-14 (1979 through 1998). Over half the total Oregon effort came during openings off Brookings. Fishing from the Columbia River jetty when Buoy 10 is closed is not included in the estimates of ocean angler effort. Fishing opportunity and effort out of one of the primary charter vessel ports on the coast (Newport) continued to be depressed, and the charter industry share of the Oregon recreational effort continued to be below historic levels (Figure IV-4 and Table IV-14).

Over the ten years from 1984 to 1993, coho comprised over 85% of the recreational fishery catch. Since 1994, the lack of opportunity to retain coho south of Cape Falcon has continued to result in lower-than-average angler success rates. The angler success rate (0.25 fish per day) was about 46% below the rate in 1997. For Oregon, the 1998 angler success rate on charter vessels was 0.56 fish per day and that on private vessels was 0.22 fish per day. These averages are strongly influenced by the success rates in areas south of Cape Falcon (Table IV-12).

Washington

In 1998, there were 12,300 ocean angler trips taken on vessels in Washington, a decline of 55% from 1997 and the lowest effort level for 1979 through 1998 (the period covered by Table IV-12), with the exception of 1994 when no fishing was allowed. The reduction in effort reflected the decline in the recreational coho harvest quota from 32,300 fish in 1997 to 15,000 fish in 1998 (with an additional 1,000 coho for

hook-and-release mortality in a 1998 Columbia River area selective fishery). In the north of Cape Falcon areas, quotas are assigned to port areas. For 1998, representatives of the Neah Bay recreational fishery agreed to forgo an ocean harvest quota in return for an expanded Area 4B add-on fishery in state waters. The recreational ocean fishery coho quota was divided among the other three port areas in proportion to an established interport sharing agreement for the area north of Cape Falcon. The fishery out of La Push was a seven-day-a-week fishery which lasted one week. The Westport and Columbia River area fisheries were Sunday-through-Thursday fisheries which lasted 11 days in the Westport area and six days in the Columbia River area (Table IV-11). The proportion of vessel angler trips made from charter vessels remained stable at 45% in 1998 (Figure IV-4 and Table IV-15).

The average angler success rates (in terms of retained fish per angler trip) were strong for both charter and private vessels, together averaging 1.20 fish per angler trip as compared to 1.06 fish per trip in 1997. This increase occurred despite the selective fishery regulations in the Columbia River area, which would be expected to have a negative influence on success rates (in terms of retained fish per angler trip). Not included in these figures is angler effort which occurs from the ocean side of the Columbia River jetty when the Buoy 10 fishery is closed and angler effort in the state managed Area 4B add-on fishery.

Partial week closures have been used in the recreational fishery north of Cape Falcon in an attempt to encourage increased angler participation in nonsalmon recreational fishing as well as to extend the salmon season. Since 1996, the Sunday through Thursday openings have been used only in the Westport and Columbia River port areas. Table IV-16 provides data on type and target species of angler trips by port. Bottomfish trips are reported for Washington only. In 1998, bottomfish effort increased out of Westport and Neah Bay. The effort levels out of the Columbia River, Westport and La Push areas were within the previous range while for Neah Bay the range was extended with the continuation of a four-year trend of increasing bottomfish effort. The amount of sturgeon effort was up 29% in 1998, compared to 1997. Sturgeon trips represented 66% of the total 1998 recreational effort out of the Columbia River estuary area reported in Table IV-16, as compared to 46% in 1997.

Buoy 10 and Area 4B Add-on Fisheries

The 1998 Buoy 10 fishery was selective for marked hatchery fish (unmarked fish had to be discarded). Success rates in the Buoy 10 fishery were down by about half from 0.6 fish per trip in 1997 to 0.3 fish per trip in 1998, primarily due to a decline in the retained coho per angler. Some of the decline was likely due to selective fishery regulations though the timing of the season and other factors may also have significantly influenced catch rates. Effort in 1998 was down 46% compared to 1997, to 30,000 trips, (including 2,000 trips made from the jetty by bank anglers when the Buoy 10 fishery was open, Table IV-17).

In 1998, Neah Bay benefitted from 6,400 angler trips taken in Area 4B add-on fishery (Table IV-17). This was about three times the amount of trips taken in the 4B add-on fishery in 1997; however, when the combined ocean and Area 4B effort is considered, total 1998 effort increased by about one third, as compared to 1997.

There are numerous other inside recreational fishing opportunities in Puget Sound and coastal streams and estuaries which are not addressed in this chapter of the review.

SALMON FISHERY INCOME IMPACTS AND COMMUNITY DEPENDENCE

Coastal community impacts are presented in order to address concerns about the effects of regulations on local economies and small businesses. Income impact estimates per commercial pound and per recreational day were generated using the Fishery Economic Assessment Model. Reference information on the model is available from the Council.

Interpretation of State and Coastal Community Income Impacts

Estimated state and community income impacts of commercial and recreational ocean salmon fisheries and selected state-managed fisheries are shown in Tables IV-18 through IV-22. The impacts presented are estimates of total personal income associated with activity in the commercial and recreational salmon fisheries in counties and states. Income impact estimates are based on the landings in the area, an inventory of the fleet and processors, estimates of fleet and processor expenditures, surveys of the expenditure patterns of recreational fishers, and income coefficients from the U.S. Forest Service IMPLAN model. Commercial ocean harvest not landed in the coastal areas (e.g., landed in Puget Sound ports) is not included in the estimates of coastal community impacts, but is included in the estimate of state impacts.

The numbers presented here are estimates of annual trends and the possible redirection of money between nonfishing-dependent and fishing-dependent sectors; they are likely an upper bounds on the local community and state income impacts which may have been generated by West Coast ocean salmon fisheries as well as some selected inside fisheries. All income impact estimates in this review are reported in real (inflation adjusted) 1998 dollars.

West Coast Ocean Fishery Income Impacts

The total state level income impact associated with the recreational and troll ocean fisheries for all three states combined was $28.7 million, down 43% compared to 1997, and 79% below the 1976 through 1997 average (adjusted for inflation). State level income impacts related to the commercial non-Indian ocean troll fishery ($12.1 million) were down 51% compared to 1997, and were 86% below the 1976 through 1997 average; and those impacts related to the 1998 ocean recreational fishery ($16.6 million) were down 36% compared to 1997, and were 65% below the 1976 through 1997 average (all comparisons are adjusted for inflation). These coastwide values, while low compared to historic averages, do not reveal the greater reductions which have occurred in particular communities.

Selected Inside Fisheries

Columbia River Commercial Fisheries

In the past, the non-Indian and treaty Indian Columbia River commercial fisheries generated a substantial amount of community income for the Oregon and Washington communities on the Columbia River. For 1998, income impacts associated with the Columbia River commercial catch are estimated to be $1.3 million, compared to $1.5 million in 1997 and a 1987 through 1994 average of $18.3 million (Table IV-21).

Buoy 10 and Area 4B Add-On

Estimated local community income impacts associated with the 1998 Buoy 10 fishery ($1.3 million) were 48% below 1997 levels, and 69% below the 1987 through 1997 inflation adjusted average (Table IV-22). Local community income impacts associated with the 1998 Area 4B add-on fishery ($249,000) were triple the 1997 level, however, this does not reflect the reduction Neah Bay experienced from the elimination of the ocean recreational salmon fishery in the area (Tables IV-20 and IV-22).

TABLE IV-1. Average monthly **exvessel** troll salmon **price** in dollars per dressed pound for **California, Oregon, and Washington** in 1998. (Page 1 of 1)

Species/Grade	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
CALIFORNIA									
Chinook[a/]	-	1.48	1.36	1.42	2.28	2.29	-	-	1.59
Coho	-	-	-	-	-	-	-	-	-
OREGON									
Chinook									
Large (>11 Pounds)	2.06	1.80	1.51	1.58	1.77	1.92	2.22	2.35	1.77
Medium (7-11 Pounds)	1.55	1.46	1.33	1.36	1.42	1.52	2.01	2.40	1.45
Small (<7 Pounds)	1.39	1.25	1.11	1.09	1.23	1.29	1.71	2.34	1.24
Ungraded Chinook	1.98	1.64	1.52	1.49	1.65	1.95	2.18	2.45	1.70
Weighted Average	1.86	1.64	1.45	1.51	1.61	1.75	2.18	2.40	1.64
Mixed Coho	-	-	-	-	-	-	-	-	-
WASHINGTON[b/]									
Chinook									
Large (>11 Pounds)	-	1.65	1.42	-	-	-	-	-	1.60
Medium (8-11 Pounds)	-	1.37	1.23	-	-	-	-	-	1.35
Small (<8 Pounds)	-	1.33	1.00	-	-	-	-	-	1.07
Ungraded Chinook	-	-	-	-	-	-	-	-	-
Weighted Average	-	1.55	1.33	-	-	-	-	-	1.51
Mixed Coho	-	-	-	-	-	-	-	-	-

a/ Chinook salmon are typically sold in two and sometimes three size categories. Prices paid in these categories are not extracted from dealer ticket information.

b/ Non-Indian data only.

TABLE IV-2. **Troll** chinook and coho landed in **California**, estimates of **exvessel value and average price** (dollars per dressed pound). (Page 1 of 1)

	Chinook				Coho				Total[a/]	
Year	Nominal Value (thousands of dollars)	Real Value[b/] (thousands of dollars)	Nominal Price Per Pound (dollars)	Real Price Per Pound[b/] (dollars)	Nominal Value (thousands of dollars)	Real Value[b/] (thousands of dollars)	Nominal Price Per Pound (dollars)	Real Price Per Pound[b/] (dollars)	Nominal Value (thousands of dollars)	Real Value[b/] (thousands of dollars)
1979	17,356	35,416	2.53	5.16	2,303	4,699	2.19	4.47	19,659	40,115
1980	12,741	23,801	2.27	4.24	408	762	1.36	2.54	13,149	24,563
1981	13,417	22,907	2.25	3.84	905	1,545	1.94	3.31	14,322	24,452
1982	18,754	30,121	2.55	4.10	735	1,180	1.36	2.18	19,489	31,301
1983	4,290	6,609	2.09	3.22	318	490	1.25	1.93	4,608	7,098
1984	6,875	10,206	2.67	3.96	687	1,020	1.99	2.95	7,562	11,225
1985	11,390	16,346	2.56	3.67	125	179	1.57	2.25	11,515	16,525
1986	14,874	20,803	2.01	2.81	238	333	1.18	1.65	15,112	21,136
1987	25,130	34,098	2.78	3.77	493	669	2.00	2.71	25,623	34,767
1988	41,221	53,962	2.86	3.74	706	924	2.21	2.89	41,927	54,886
1989	13,095	16,449	2.39	3.00	390	490	1.69	2.12	13,485	16,939
1990	11,434	13,767	2.77	3.34	622	749	1.98	2.38	12,056	14,516
1991	8,351	9,671	2.58	2.99	696	806	1.52	1.76	9,047	10,477
1992	4,487	5,057	2.74	3.09	18	20	1.63	1.84	4,505	5,077
1993	5,707	6,266	2.25	2.47	-	-	-	-	5,707	6,266
1994	6,437	6,903	2.07	2.22	-	-	-	-	6,437	6,903
1995	11,693	12,257	1.76	1.84	-	-	-	-	11,693	12,257
1996	5,984	6,157	1.44	1.48	-	-	-	-	5,984	6,157
1997	7,288	7,362	1.38	1.39	-	-	-	-	7,288	7,362
1998[c/]	2,776	2,776	1.59	1.59	-	-	-	-	2,776	2,776

a/ Does not include pink landings.
b/ Expressed in 1998 dollars.
c/ Preliminary.

TABLE IV-3. **Troll** chinook and coho landed in **Oregon**, estimates of **exvessel value and average price** (dollars per dressed pound). (Page 1 of 1)

Year	Chinook				Coho				Total[a/]	
	Nominal Value (thousands of dollars)	Real Value[b/] (thousands of dollars)	Nominal Price Per Pound (dollars)	Real Price Per Pound[b/] (dollars)	Nominal Value (thousands of dollars)	Real Value[b/] (thousands of dollars)	Nominal Price Per Pound (dollars)	Real Price Per Pound[b/] (dollars)	Nominal Value (thousands of dollars)	Real Value[b/] (thousands of dollars)
1971-1975	2,036	6,171	0.89	2.74	3,658	11,357	0.64	1.95	5,694	17,528
1976-1980	5,366	11,576	2.16	4.73	6,407	14,417	1.51	3.29	11,773	25,993
1981	4,039	6,896	2.57	4.39	5,534	9,448	1.66	2.83	9,573	16,344
1982	6,094	9,788	2.59	4.16	3,801	6,105	1.40	2.25	9,895	15,892
1983	1,244	1,916	1.90	2.93	1,052	1,621	0.96	1.48	2,296	3,537
1984	1,477	2,209	2.74	4.10	118	184	1.66	2.58	1,595	2,392
1985	5,045	7,240	2.48	3.56	729	1,046	1.51	2.17	5,774	8,286
1986	5,976	8,358	1.77	2.48	1,978	2,766	1.04	1.45	7,954	11,125
1987	13,467	18,273	2.60	3.53	3,296	4,472	1.72	2.33	16,763	22,745
1988	13,940	18,249	3.19	4.18	7,596	9,944	2.28	2.98	21,536	28,193
1989	7,894	9,916	2.23	2.80	2,131	2,677	1.07	1.34	10,025	12,593
1990	5,627	6,775	2.58	3.11	1,014	1,221	1.60	1.93	6,641	7,996
1991	1,721	1,993	2.47	2.86	1,399	1,620	0.99	1.15	3,120	3,613
1992	2,490	2,806	2.46	2.77	222	250	1.08	1.22	2,712	3,056
1993	1,661	1,824	2.18	2.39	10	11	1.13	1.24	1,671	1,835
1994	690	740	2.40	2.57	-	-	-	-	690	740
1995	3,294	3,453	1.70	1.78	-	-	-	-	3,294	3,453
1996	3,007	3,094	1.56	1.61	-	-	-	-	3,007	3,094
1997[c/]	2,469	2,494	1.60	1.62	-	-	-	-	2,469	2,494
1998[c/]	2,297	2,297	1.64	1.64	-	-	-	-	2,297	2,297

a/ Does not include pink landings.
b/ Expressed in 1998 dollars.
c/ Preliminary.

TABLE IV-4. **Non-Indian troll** chinook and coho landed in **Washington**, estimates of **exvessel value and average price** (dollars per dressed pound).[a/] (Page 1 of 1)

Year or Average	Chinook				Coho				Total[b/]	
	Nominal Value (thousands of dollars)	Real Value[c/] (thousands of dollars)	Nominal Price Per Pound (dollars)	Real Price Per Pound[c/] (dollars)	Nominal Value (thousands of dollars)	Real Value[c/] (thousands of dollars)	Nominal Price Per Pound (dollars)	Real Price Per Pound[c/] (dollars)	Nominal Value (thousands of dollars)	Real Value[c/] (thousands of dollars)
1971-1975	2,714	8,332	0.89	2.75	3,060	9,417	0.66	2.04	5,775	17,749
1976-1980	5,313	11,878	2.39	5.18	6,086	13,572	1.67	3.63	11,399	25,450
1981	3,279	5,598	2.66	4.54	2,642	4,511	1.52	2.60	5,921	10,109
1982	4,246	6,819	2.57	4.13	2,484	3,990	1.34	2.15	6,730	10,809
1983	1,152	1,775	1.72	2.65	313	482	0.93	1.43	1,465	2,257
1984	255	379	2.78	4.13	155	230	1.48	2.20	410	609
1985	837	1,201	2.57	3.69	764	1,096	1.32	1.89	1,601	2,298
1986	808	1,130	2.35	3.29	367	513	1.16	1.62	1,175	1,643
1987	1,606	2,178	2.97	4.03	354	480	1.67	2.27	1,960	2,659
1988	2,289	2,997	2.95	3.86	48[d/]	63	2.45	3.21	2,337	3,059
1989	955	1,200	2.22	2.80	275	345	1.31	1.65	1,230	1,545
1990	890	1,072	2.57	3.09	758	913	1.52	1.83	1,648	1,984
1991	783	907	2.54	2.94	343	397	1.13	1.30	1,126	1,304
1992	1,200	1,352	2.41	2.72	99	112	1.33	1.50	1,299	1,464
1993	728	799	2.21	2.42	67	74	1.02	1.11	795	873
1994	e/	e/	e/	e/	-	-	-	e/	e/	e/
1995	e/	e/	e/	e/	91	95	0.83	0.87	91	95
1996	e/	e/	e/	e/	59	60	0.86	0.89	59	86
1997	125	126	1.55	1.57	-	-	-	-	125	126
1998	123	123	1.51	1.51	-	-	-	-	123	123

a/ All values in this table are based on preliminary information available at the start of each year's salmon review.
b/ Does not include pink landings.
c/ Expressed in 1998 dollars.
d/ There was no legal coho fishery in 1988. This value is for landings of fish caught south of Cape Falcon and seizures of illegal fish.
e/ Chinook were caught off Oregon and landed in Washington. Value information is not provided in order to preserve confidentiality.

TABLE IV-5. **NonIndian troll** caught **pink** salmon landed in **Oregon and Washington**, estimates of exvessel value and average price (dollars per dressed pound). (Page 1 of 1)

Year	Oregon				Washington				Total	
	Nominal Value (thousands of dollars)	Real Value[a/] (thousands of dollars)	Nominal Price Per Pound (dollars)	Real Price Per Pound[a/] (dollars)	Nominal Value (thousands of dollars)	Real Value[a/] (thousands of dollars)	Nominal Price Per Pound (dollars)	Real Price Per Pound[a/] (dollars)	Nominal Value (thousands of dollars)	Real Value[a/] (thousands of dollars)
1977	244	580	0.64	1.52	836	1,985	0.53	1.27	1,080	2,566
1978	b/	b/	1.40	3.10	13	28	0.82	1.82	13	28
1979	91	185	0.85	1.74	1,564	3,192	0.54	1.11	1,655	3,376
1980	1	3	0.87	1.62	7	14	0.91	1.71	9	16
1981	215	367	0.80	1.37	522	890	0.50	0.85	737	1,258
1982	b/	b/	0.75	1.20	1	1	0.56	0.90	1	1
1983	b/	b/	0.74	1.14	97	150	0.28	0.43	97	150
1984	-	-	-	-	b/	b/	0.64	0.95	0	0
1985	172	247	0.66	0.95	242	347	0.46	0.66	414	593
1986	1	1	0.56	0.78	b/	b/	0.21	0.29	1	1
1987	69	94	0.79	1.08	7	10	0.62	0.85	77	104
1988	2	2	1.64	2.15	b/	b/	0.88	1.16	2	2
1989	13	17	0.74	0.93	107	134	0.70	0.88	120	151
1990	1	1	1.28	1.55	b/	b/	0.73	0.88	1	1
1991	4	5	0.53	0.62	79	91	0.47	0.55	83	96
1992	b/	b/	1.02	1.15	b/	b/	0.54	0.60	b/	b/
1993	b/	b/	0.62	0.68	5	6	0.54	0.59	5	6
1994	-	-	-	-	-	-	-	-	-	-
1995	b/	b/	0.60	0.63	30	31	0.26	0.27	30	31
1996	-	-	-	-	b/	b/	0.90	0.93	b/	b/
1997	b/	b/	0.56	0.57	b/	b/	0.20	0.20	b/	b/
1998[c/]	-	-	-	-	-	-	-	-	-	-

a/ Expressed in 1998 dollars.
b/ Less than 500.
c/ Preliminary.

TABLE IV-6. **Pounds** of salmon **landed** by the commercial **troll** ocean fishery for major **California** port areas.[a/]
(Page 1 of 1)

Year or Average	Crescent City	Eureka	Fort Bragg	San Francisco	Monterey	State Total
			CHINOOK (thousands of dressed pounds)			
1976-1980	393	1,403	1,449	1,733	889	5,867
1981-1985	350	428	1,128	1,806	742	4,454
1986	151	457	2,147	2,751	1,891	7,397
1987	313	656	3,115	3,874	1,090	9,047
1988	188	557	4,201	7,177	2,307	14,431
1989	103	220	1,359	2,545	1,263	5,490
1990	20	133	671	1,892	1,407	4,122
1991	4	79	467	1,685	1,004	3,238
1992	b/	1	21	996	613	1,632
1993	3	11	220	1,316	987	2,537
1994	b/	6	77	2,189	831	3,103
1995	5	26	130	3,277	3,197	6,633
1996	3	92	278	1,695	2,046	4,113
1997	1	17	54	2,686	2,489	5,248
1998[c/]	1	24	43	992	686	1,746
			COHO (thousands of dressed pounds)			
1976-1980	360	391	277	109	48	1,184
1981-1985	89	104	89	54	9	345
1986	30	30	103	30	8	202
1987	32	67	140	7	1	246
1988	19	78	174	46	2	320
1989	29	24	137	38	3	231
1990	-	15	125	142	32	314
1991	1	19	55	270	115	459
1992	-	b/	b/	10	1	11
1993	-	-	-	-	-	-
1994	-	-	-	-	-	-
1995	-	-	-	-	-	-
1996	-	-	-	-	-	-
1997	-	-	-	-	-	-
1998	-	-	-	-	-	-

a/ The major port areas listed include the following ports: Crescent City includes only Crescent City; Eureka also includes Trinidad and Humboldt Bay locations; Fort Bragg also includes Shelter Cove, Noyo Harbor, Mendocino, and Pt. Arena; San Francisco also includes Bodega Bay, San Francisco Bay and Half Moon Bay; Monterey also includes Santa Cruz, Moss Landing, Monterey, Morro Bay and Santa Barbara.
b/ Less than 500 pounds.
c/ Preliminary.

TABLE IV-7. **Pounds** of salmon **landed** by the commercial **troll** ocean salmon fishery for major **Oregon** port areas.[a/]
(Page 1 of 1)

Year or Average	Astoria	Tillamook	Newport	Coos Bay	Brookings	State Total
			CHINOOK (thousands of dressed pounds)			
1976-1980	171	118	530	908	700	2,427
1981-1985	92	45	271	638	386	1,432
1986	61	119	751	1,990	449	3,370
1987	83	419	997	2,997	685	5,182
1988	37	341	1,231	2,198	580	4,387
1989	50	302	777	1,945	449	3,532
1990	28	139	388	1,452	174	2,181
1991	9	110	267	292	18	695
1992	17	108	676	206	7	1,013
1993	5	86	460	182	28	761
1994	b/	29	165	45	47	287
1995	6	96	1,330	453	55	1,941
1996	21	125	1,219	417	142	1,926
1997[c/]	3	32	1,053	381	73	1,542
1998[c/]	b/	66	953	326	52	1,398
			COHO (thousands of dressed pounds)			
1976-1980	385	660	1,190	1,661	357	4,252
1981-1985	133	293	451	550	111	1,537
1986	109	418	885	393	101	1,905
1987	57	380	517	894	67	1,916
1988	17	766	1,375	1,087	91	3,336
1989	115	530	615	672	63	1,996
1990	69	272	73	197	24	634
1991	69	431	440	464	7	1,411
1992	6	33	112	55	b/	206
1993	8	1	-	-	-	9
1994	-	-	-	-	-	-
1995	-	-	-	-	-	-
1996	-	-	-	-	-	-
1997	-	-	-	-	-	-
1998	-	-	-	-	-	-

a/ The port areas listed include landings in the following ports: Astoria also includes Gearhart/Seaside and Cannon Beach; Tillamook also includes Garibaldi, Netarts, Pacific City and Nehalem Bay; Newport also includes Depoe Bay, Siletz Bay, Salmon River and Waldport; Coos Bay also includes Florence, Winchester Bay, Charleston and Bandon; Brookings also includes Port Orford and Gold Beach.
b/ Less than 500.
c/ Preliminary.

TABLE IV-8. **Pounds** of salmon **landed** by the **non-Indian commercial troll** ocean salmon fishery for major **Washington** port areas.[a/b/] (Page 1 of 1)

Year	Neah Bay	La Push	Westport	Ilwaco	Coastal Community Total	Puget Sound	State Total
			CHINOOK (thousands of dressed pounds)				
1976-1980	288	421	919	261	1,889	426	1,543
1981-1985	88	32	370	74	564	124	689
1986	50	21	141	75	286	55	342
1987	42	20	367	65	494	51	545
1988	94	30	250	57	430	348	778
1989	20	2	277	28	327	124	451
1990	149	15	135	17	315	34	349
1991	128	7	127	14	276	32	308
1992	160	46	232	10	447	58	507
1993	122	35	132	2	291	41	332
1994[c/]	-	-	-	-	-	7	7
1995[c/]	-	-	3	-	3	12	15
1996[c/]	-	-	4	1	5	13	19
1997	20	d/	45	0	66	15	80
1998	30	0	34	0	64	18	82
			COHO (thousands of dressed pounds)				
1976-1980	600	786	1,066	678	3,130	496	3,626
1981-1985	133	63	277	142	616	128	744
1986	58	30	118	72	279	38	317
1987	9	15	135	47	206	7	213
1988	1	0	2	8	11	9	20
1989	121	2	19	79	221	24	245
1990	159	46	214	61	480	20	501
1991	87	16	126	45	274	31	304
1992	25	13	21	4	63	12	75
1993	11	7	43	2	63	3	66
1994	-	-	-	-	-	-	-
1995	84	18	7	-	109	2	111
1996	45	1	23	0	68	d/	68
1997	-	-	-	-	-	-	-
1998	-	-	-	-	-	-	-

a/ All values in this table are based on preliminary information available at the start of each year's review.

b/ The major port areas listed may include smaller ports as follows: Neah Bay includes only Neah Bay; La Push also includes Kalaloch; Westport also includes Aberdeen, Bay City, Copalis Beach, Hoquiam, Moclips, Taholah, Bay Center, Grayland Beach, Raymond, South Bend and Tokeland; Ilwaco also includes Long Beach, Nahcotta, Naselle and all Columbia River Ports; Puget Sound includes all Puget Sound ports east of Neah Bay.

c/ There was no ocean commercial fishery for chinook north of Cape Falcon, however, chinook were caught off Oregon and landed in Washington.

d/ Less than 500.

TABLE IV-9. Commercial troll fishery numbers of vessels participating, total exvessel revenue (ExV$), and average exvessels revenue per vessel by season opening (1998). [a/] [b/] (Page 1 of 2)s

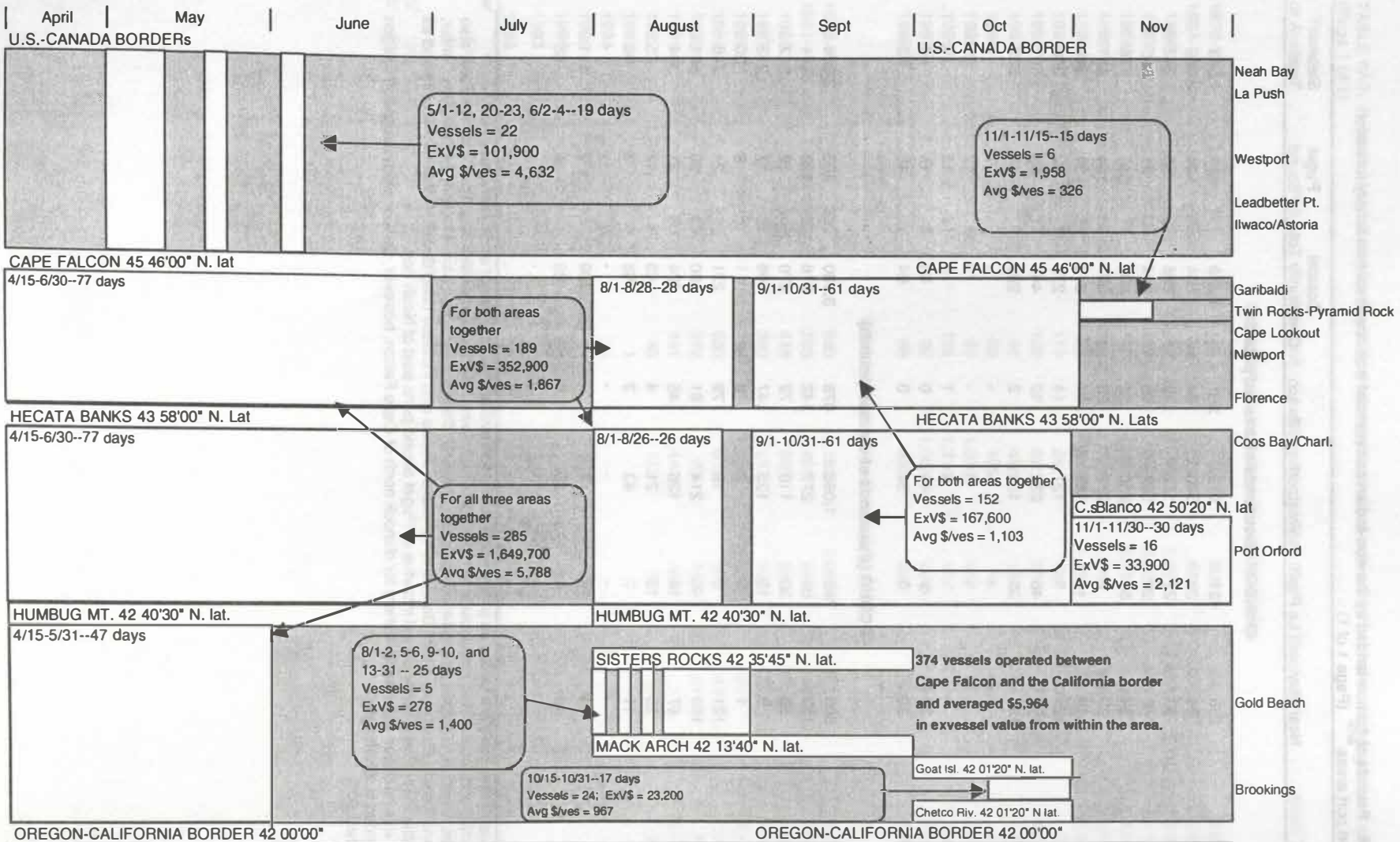
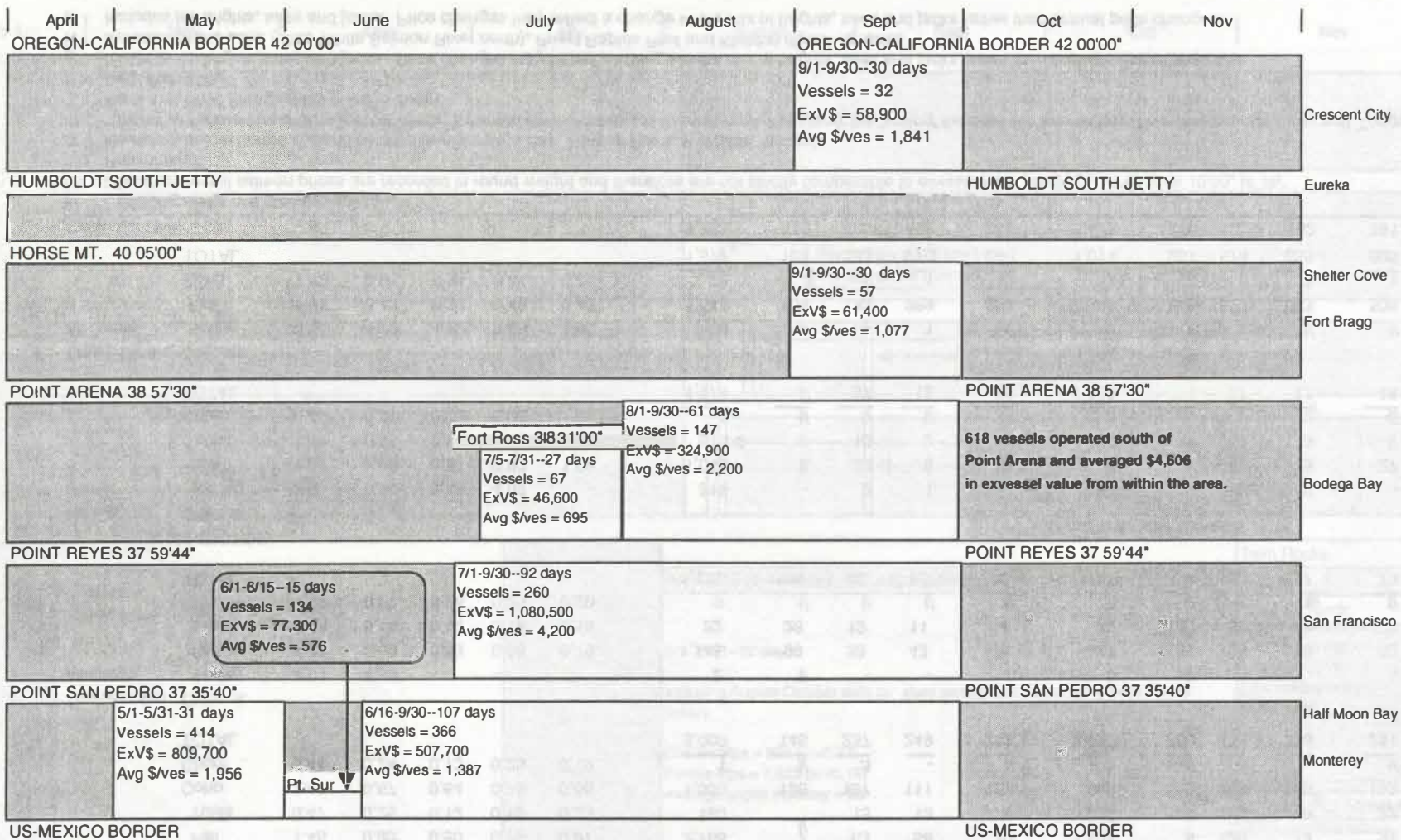


TABLE IV-9. Commercial troll fishery numbers of vessels participating (1997), total exvessel revenue (ExV$), and average exvessels revenue per vessel by season opening. [a/] [b/] (Page 2 of 2)



[a/] The Information source for this table is state fish ticket data maintained in the redefined PacFIN database. The data were retrieved January 19, 1999, and may vary somewhat from summary information presented elsewhere in the review. Catch area recorded on tickets is sometimes based on the point of landing. When there is no opening in an area for which catch is reported it was assumed that landings made during a closure came from the nearest open area.

[b/] Excludes information on 62,600 pounds of landings for which West Coast catch area was unknown or did not match an opening. Total revenue for these landings was $89,200.

TABLE IV-10. **Exvessel values** (expressed in 1998 dollars) of inriver **commercial** harvest of **Columbia River** salmon.[a/] (Page 1 of 1)

Fishery	Species	Average Price Per Landed Pound[b/] (dollars)					Exvessel Value (thousands of dollars)					Pounds (thousands)				
		1987-1994	1995	1996	1997	1998[c/]	1987-1994	1995	1996	1997	1998[c/]	1987-1994	1995	1996	1997	1998[c/]
OREGON																
Non-Indian[d/] Gillnet	Chinook															
	Spring[e/]	3.87	4.28	2.22	2.58	2.57	550	12	24	67	91	136	3	11	26	35
	Fall	1.48	0.93	0.50	0.79	0.97	2,786	7	63	58	30	1,403	8	126	73	31
	Tules	0.47	0.25	0.12	0.19	0.23	160	f/	13	13	5	236	f/	103	70	22
	Coho	1.46	0.67	0.64	0.75	0.66	1,503	126	137	111	127	898	189	215	149	193
	Chum	0.48	0.24	0.13	0.25	0.19	1	f/	f/	-	f/	3	f/	f/	-	f/
	TOTAL						5,000	146	237	249	253	2,677	200	455	318	281
Treaty Indian All Gears	Chinook															
	Spring	4.01	4.55	-	-	-	2	f/	-	-	-	f/	f/	-	-	-
	Fall	1.43	0.59	0.63	0.66	0.79	1,145	99	33	43	39	647	169	53	66	50
	Tules	0.38	0.14	0.12	0.16	0.15	22	26	12	11	4	72	189	96	70	23
	Coho	1.08	0.27	0.26	0.25	0.20	9	f/	f/	f/	f/	8	2	1	1	f/
	TOTAL						1,179	126	45	55	43	727	359	150	137	73
WASHINGTON																
Non-Indian Gillnet	Chinook															
	Spring	3.95	0.00	5.14	4.92	-	319	-	2	1	-	77	-	f/	f/	-
	Fall[g/]	1.36	0.95	0.61	0.92	1.03	1,043	f/	26	8	28	572	f/	42	9	27
	Coho	1.48	0.66	0.69	0.80	0.46	615	f/	10	2	f/	409	f/	14	3	f/
	Chum	0.42	0.37	0.38	0.30	-	1	f/	f/	f/	-	2	f/	f/	f/	0
	TOTAL						1,978	f/	37	12	28	1,060	1	57	12	28
Treaty Indian All Gears[h/]	Chinook															
	Spring	3.86	4.19	4.12	3.88	4.00	8	f/	-	1	f/	2	f/	-	f/	f/
	Fall[i/]	1.17	0.43	0.32	0.42	0.47	1,547	104	183	269	239	995	243	573	633	508
	Coho	1.12	0.31	0.31	0.41	0.43	22	3	f/	1	1	17	8	f/	2	1
	TOTAL						1,577	107	183	270	240	1,014	251	574	635	509
Columbia River Total							9,733	379	502	586	564	5,478	811	1,236	1,102	891

a/ Excluding pinks and sockeye salmon.
b/ Gill net exvessel salmon prices are recorded in round weight and therefore are not strictly comparable to exvessel troll prices.
c/ Preliminary.
d/ Mainstem below Bonneville and select areas (Youngs Bay, Tongue Point, and Blind Slough).
e/ "Spring" is the combined totals for the "winter" fishery in the mainstem (January through February): the "spring" fisheries for Youngs Bay (February through June); and Tongue Point and Blind Slough (May through June).
f/ Less than 500.
g/ Includes fall brights, tules and jacks. Price changes may reflect a change in the mix of brights, tules and jacks rather than annual price changes.
h/ Includes Drano Lake (Little White Salmon River north), Priest Rapids Pool and Klickitat dipnet fisheries.
i/ Includes fall brights, tules and jacks. Price changes may reflect a change in the mix of brights, tules and jacks rather than annual price changes.

TABLE IV-11. Recreational seasons, angler trips and angler success rates (sr) by fishing mode (1998). (Page 1 of 2)

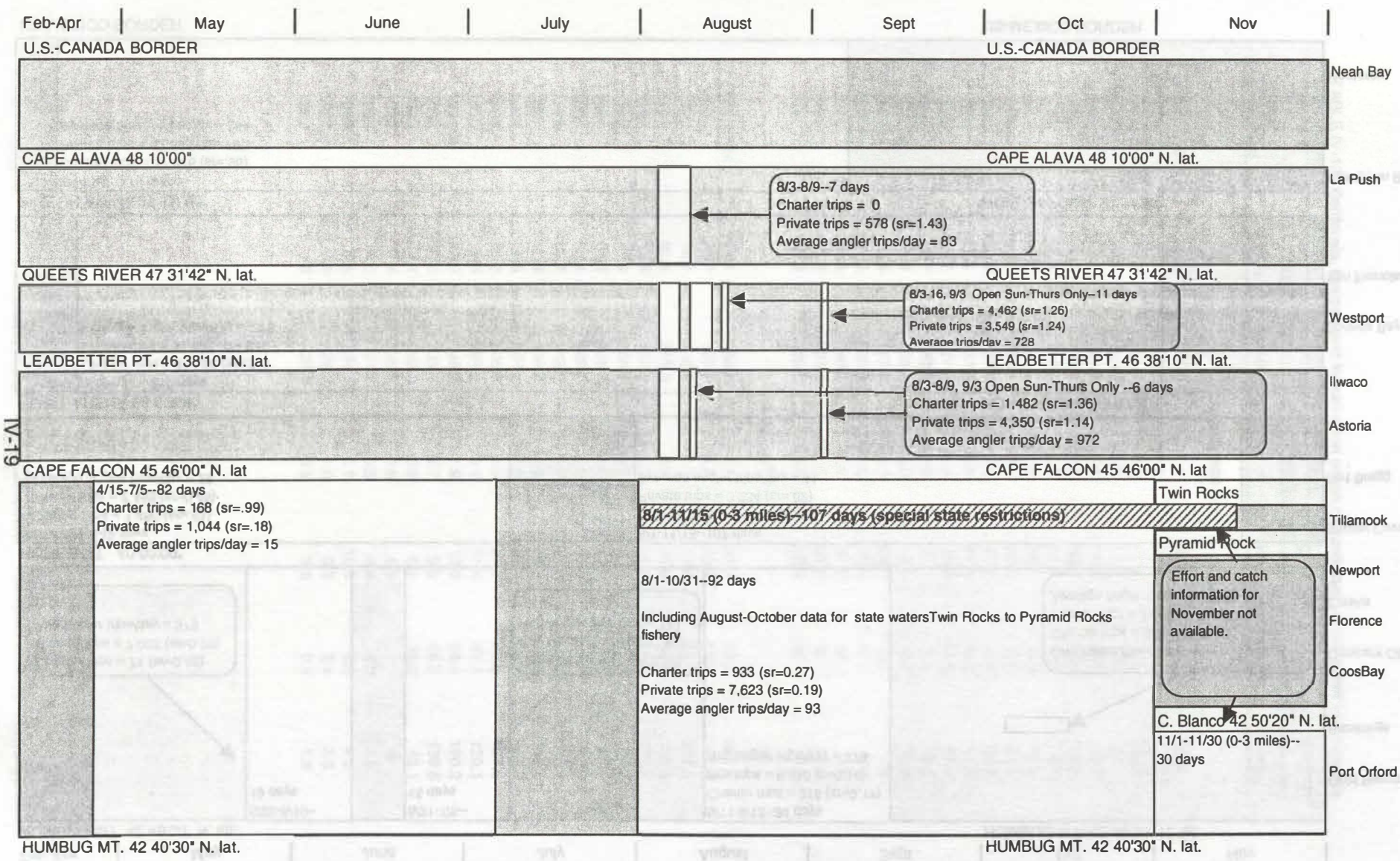


TABLE IV-11. Recreational seasons, angler trips and angler success rates (sr) by fishing mode (1998). (Page 2 of 2)

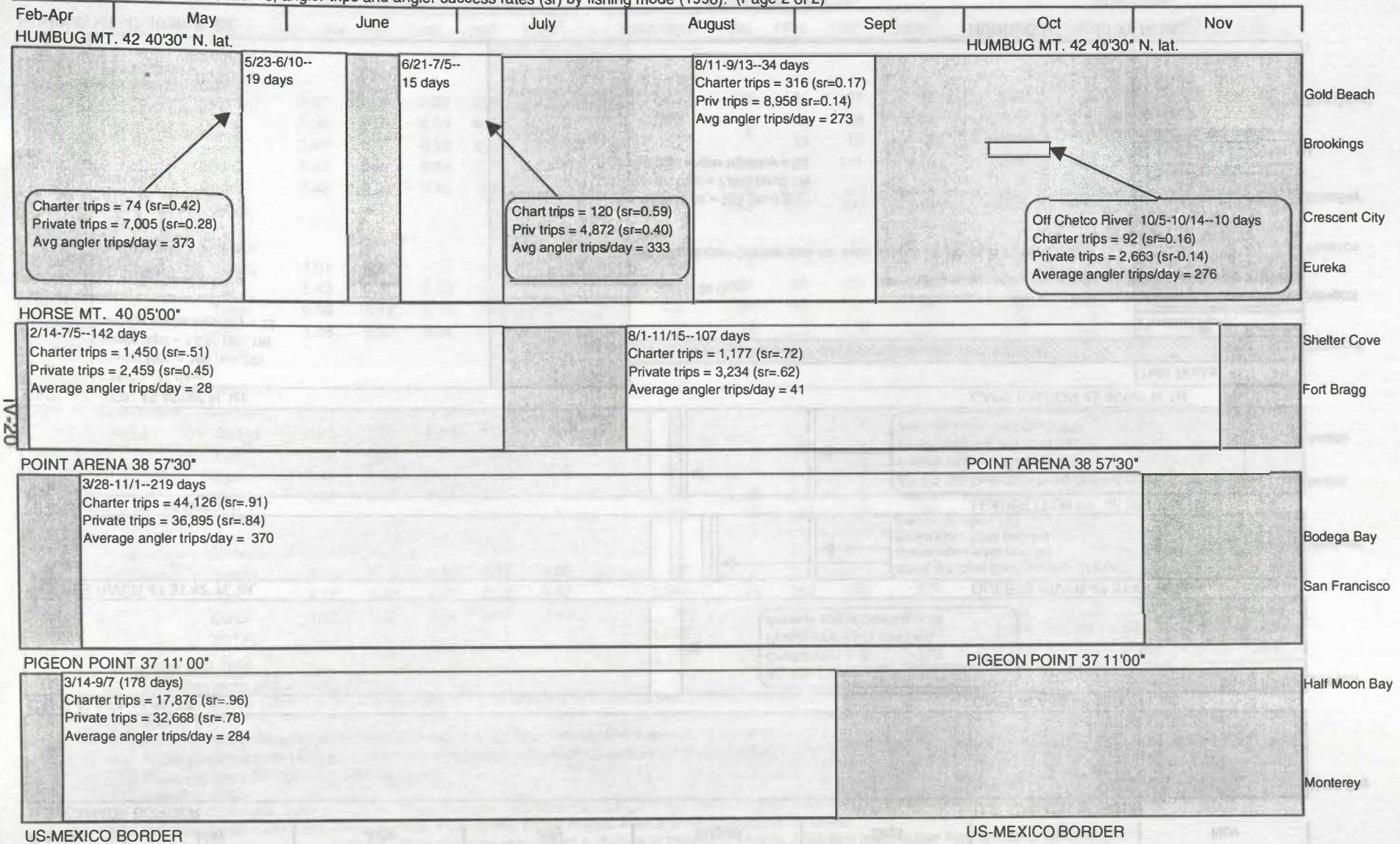


TABLE IV-12. **California, Oregon and Washington** ocean **recreational** salmon **effort** in thousands of angler trips and **catch** in thousands of fish by boat type. (Page 1 of 2)

Year or Average	Angler Trips		Chinook Catch[a/]		Coho Catch[a/]	
	Charter	Private	Charter	Private	Charter	Private
			CALIFORNIA			
1981-1990	82.4	111.4	87.4	50.4	3.4	26.7
1981	61.1	60.8	59.8	24.2	1.1	9.5
1982	79.9	91.4	91.5	47.2	3.9	22.8
1983	56.9	65.8	46.5	17.3	0.5	26.7
1984	61.5	65.5	68.2	19.6	0.8	18.2
1985	85.1	106.8	107.3	63.8	1.4	14.4
1986	86.4	109.2	86.5	55.1	2.2	16.5
1987	105.0	163.3	121.8	70.7	4.3	43.0
1988	101.7	140.7	109.1	62.3	3.5	31.2
1989	108.0	137.0	105.0	81.7	6.2	43.4
1990	78.4	173.7	78.3	61.6	10.2	41.5
1991	69.2	127.4	39.9	40.6	13.5	55.8
1992	47.7	80.2	42.4	31.1	1.0	10.5
1993	66.0	108.9	66.0	44.0	4.2	25.6
1994	72.8	117.1	99.1	84.1	b/	0.5
1995	152.9	225.6	182.0	215.2	b/	0.9
1996	84.6	140.9	72.9	91.2	b/	0.6
1997	100.6	131.7	121.0	106.6	b/	0.5
1998[c/]	65.0	85.0	59.0	62.3	b/	0.1
			OREGON[d/e/]			
1981-1990	51.1	186.2	6.6	27.8	59.3	132.6
1979	73.7	187.7	5.4	13.3	59.8	101.8
1980	79.1	218.9	5.1	11.9	98.3	207.5
1981	65.4	245.8	6.6	22.5	64.5	135.3
1982	43.3	182.7	8.2	30.6	48.5	126.7
1983	41.9	184.1	4.7	20.0	39.7	107.2
1984	24.3	128.7	2.2	14.8	27.3	96.1
1985	53.4	198.2	9.2	46.6	60.2	122.8
1986	43.7	143.3	4.2	18.7	75.0	143.9
1987	60.9	194.2	14.3	45.1	61.9	118.7
1988	62.5	188.2	7.3	31.0	73.5	153.3
1989	60.2	206.1	4.2	27.9	85.8	187.5
1990	55.3	191.2	5.1	21.5	61.6	139.1
1991	40.3	149.7	1.9	12.5	68.9	190.2
1992	30.0	135.4	2.7	9.9	46.2	139.6
1993	13.4	66.9	0.9	5.6	16.2	43.1
1994	1.4	25.5	0.5	5.5	-	b/
1995	4.6	31.2	0.3	6.4	4.0	7.9
1996	5.6	38.3	1.2	10.1	3.0	4.2
1997	3.9	26.4	1.5	6.2	2.4	3.6
1998[c/]	1.8	24.2	0.5	3.6	0.5	1.8

_E IV-12. **California, Oregon and Washington** ocean **recreational** salmon **effort** in thou gler trips and **catch** in thousands of fish by boat type. (Page 2 of 2)

ır 'erage	Angler Trips		Chinook Catch[a/]		Coho Catch[a/]	
	Charter	Private	Charter	Private	Charter	Priv
			WASHINGTON[f/g/]			
1981-1990	77.8	64.7	29.3	11.9	95.7	73.3
1979	220.8	89.8	61.1	15.7	227.9	62.4
1980	193.9	86.2	41.1	12.5	288.4	73.1
1981	162.2	74.6	62.8	21.7	182.4	55.5
1982	131.9	86.8	85.8	21.0	124.0	82.5
1983	123.0	90.4	39.1	9.5	122.6	89.2
1984	29.9	46.8	7.7	7.4	38.5	49.6
1985	62.9	49.8	17.4	9.2	99.0	69.0
1986	58.1	51.4	13.3	7.9	98.0	77.7
1987	53.7	48.3	27.7	12.9	59.9	58.6
1988	32.4	37.1	11.2	7.8	46.1	43.7
1989	58.5	65.9	11.2	8.1	95.2	94.5
1990	65.0	94.4	16.6	13.0	90.9	113.6
1991	43.7	69.6	5.0	7.3	80.2	111.6
1992	38.2	56.8	11.8	6.6	48.5	62.6
1993	40.2	68.9	5.8	6.9	52.8	62.3
1994	-	-	-	-	-	-
1995	17.9	30.0	b/	0.4	26.1	37.4
1996	15.3	23.5	b/	0.2	24.5	24.4
1997	12.5	15.1	1.7	2.3	12.5	12.8
1998[c/]	5.5	6.8	1.1	0.9	5.6	7.1

a/ Catch numbers may include some illegal harvest.
b/ Less than 50 fish.
c/ Preliminary.
d/ Salmon data from surveyed ports only. These generally include Astoria, Garibaldi, Depoe Bay, Newport, Winchester Bay, Coos Bay and Brookings. Since 1981, Pacific City and Florence have also been included. Gold Beach data are included from 1981-1987. Astoria was not included in 1994.
e/ Numbers do not include angling from the Columbia River jetty.
f/ Numbers do not include angling from the Columbia River jetty or from the late-season state waters Area 4B fishery.
g/ Values for 1982-1985 include some inriver Columbia River fishing after closure of the ocean fishery.

TABLE IV-13. Estimates of **California recreational** ocean salmon angler **trips** by port area and boat type. (Page 1 of 2)

Year	Crescent City	Eureka	Fort Bragg	San Francisco	Monterey	State Total
			CHARTER TRIPS (thousands)			
1976	0.8	2.2	4.1	66.2	7.9	81.2
1977	1.0	1.2	1.7	72.0	4.8	80.7
1978	2.4	1.3	0.9	47.3	1.3	53.2
1979	2.2	0.7	3.3	69.6	3.1	79.0
1980	1.4	0.6	2.0	62.4	2.9	69.3
1981	0.6	0.5	1.3	56.1	2.7	61.1
1982	0.5	0.4	2.4	72.2	4.4	79.9
1983	0.5	1.4	1.6	50.8	2.7	56.9
1984	0.5	0.9	1.4	56.8	1.9	61.5
1985	1.6	3.5	2.3	74.6	3.2	85.1
1986	1.1	2.8	2.8	69.6	10.1	86.4
1987	1.5	3.8	4.6	82.9	12.3	105.0
1988	0.9	2.5	5.6	81.1	11.7	101.7
1989	0.6	5.4	4.5	83.5	14.0	108.0
1990	0.8	3.2	2.7	54.3	17.4	78.4
1991	1.0	2.1	5.4	43.7	17.0	69.2
1992	0.1	0.2	1.5	38.6	7.3	47.7
1993	0.4	1.0	2.0	53.2	9.4	66.0
1994	0.2	0.2	1.3	63.9	7.2	72.8
1995	0.1	0.7	3.8	79.2	68.9	152.9
1996	a/	0.6	5.0	57.6	21.4	84.6
1997	-	0.8	2.2	67.0	30.6	100.6
1998[b/]	-	0.3	2.6	44.1	17.9	65.0
			PRIVATE TRIPS (thousands)			
1976	27.9	28.2	13.0	30.5	6.3	106.0
1977	21.8	25.5	14.0	34.2	5.1	100.7
1978	15.0	19.8	8.5	48.7	5.4	97.5
1979	9.6	17.3	6.5	34.7	6.7	74.8
1980	17.8	22.5	4.4	23.7	6.7	75.1
1981	13.4	15.8	6.8	19.0	5.7	60.8
1982	24.6	22.3	8.0	28.7	7.7	91.4
1983	21.2	21.5	6.8	9.5	6.8	65.8
1984	23.3	17.9	4.6	8.2	11.4	65.5
1985	29.5	31.4	12.6	18.7	14.6	106.8
1986	24.5	26.1	10.4	22.1	26.1	109.2
1987	50.6	42.4	9.4	25.5	35.4	163.3
1988	43.0	30.3	12.2	27.0	28.2	140.7
1989	33.0	37.7	13.0	11.5	41.7	137.0
1990	41.9	35.4	11.9	35.4	49.0	173.7
1991	24.5	25.3	17.2	26.5	33.8	127.4
1992	9.0	8.9	9.7	23.4	29.1	80.2
1993	15.0	17.3	17.4	29.6	29.7	108.9
1994	9.4	6.3	18.1	43.7	39.6	117.1
1995	11.8	12.0	25.4	62.2	114.2	225.6
1996	11.3	13.6	26.2	46.6	43.2	140.9
1997	6.6	11.6	18.0	42.1	53.5	131.7
1998[b/]	3.3	6.4	5.7	36.9	32.7	85.0

TABLE IV-13. Estimates of **California recreational** ocean salmon angler **trips** by port area and boat type. (Page 2 of 2)

Year	Crescent City	Eureka	Fort Bragg	San Francisco	Monterey	State Total
			TOTAL TRIPS (thousands)			
1976	28.7	30.5	17.0	96.8	14.2	187.2
1977	22.8	26.7	15.7	106.2	9.9	181.3
1978	17.4	21.2	9.5	96.1	6.6	150.7
1979	11.7	18.0	9.8	104.3	9.9	153.7
1980	19.2	23.1	6.4	86.1	9.6	144.4
1981	14.1	16.3	8.1	75.1	8.4	122.0
1982	25.1	22.8	10.4	100.9	12.1	171.3
1983	21.7	22.8	8.4	60.3	9.5	122.7
1984	23.8	18.8	6.0	65.0	13.3	127.0
1985	31.0	34.9	15.0	93.3	17.8	191.9
1986	25.6	28.9	13.2	91.7	36.2	195.6
1987	52.1	46.1	14.0	108.4	47.7	268.3
1988	43.9	32.8	17.8	108.1	39.9	242.4
1989	33.6	43.0	17.5	95.0	55.7	244.9
1990	42.7	38.7	14.6	89.7	66.5	252.1
1991	25.6	27.4	22.6	70.2	50.8	196.6
1992	9.1	9.1	11.2	62.0	36.4	127.9
1993	15.4	18.3	19.3	82.8	39.1	174.9
1994	9.7	6.4	19.4	107.6	46.8	189.9
1995	11.9	12.8	29.3	141.5	183.1	378.5
1996	11.3	14.2	31.3	104.2	64.5	225.4
1997	6.6	12.4	20.2	109.1	84.0	232.3
1998[b/]	3.3	6.7	8.3	81.0	50.5	149.9

a/ Less than 50.
b/ Preliminary.

TABLE IV-14. Estimates of **Oregon recreational** ocean salmon angler **trips** by port area and boat type. (Page 1 of 2)

Year	Astoria	Tillamook	Newport	Coos Bay	Brookings	State Total
			CHARTER TRIPS (thousands)			
1979	18.5	2.8	26.7	22.7	3.0	73.7
1980	26.3	3.7	26.7	19.6	2.8	79.1
1981	16.0	3.1	25.5	17.6	3.2	65.4
1982	11.8	2.1	14.6	11.4	3.4	43.3
1983	12.9	1.8	11.5	12.1	3.6	41.9
1984	2.7	2.5	11.1	5.9	2.1	24.3
1985	8.3	5.3	23.1	12.5	4.2	53.4
1986	7.7	3.0	20.0	9.6	3.4	43.7
1987	8.0	5.5	28.4	14.4	4.6	60.9
1988	2.4	7.3	34.2	15.6	3.0	62.5
1989	9.1	5.2	28.3	13.1	4.4	60.2
1990	8.5	5.5	26.6	12.2	2.5	55.3
1991	8.1	2.5	19.2	8.4	2.1	40.3
1992	4.6	2.7	14.8	7.4	0.5	30.0
1993	5.8	0.5	4.7	1.8	0.6	13.4
1994	0.0[a/]	1.2	b/	b/	0.2	1.4
1995	2.5	1.2	0.6	b/	0.3	4.6
1996	1.9	0.8	2.1	0.1	0.6	5.6
1997	1.3	0.3	1.8	0.0	0.5	3.9
1998[c/]	0.4	0.1	0.8	0.2	0.3	1.8
			PRIVATE TRIPS (thousands)			
1979	24.3	16.3	45.4	52.9	48.8	187.7
1980	20.1	29.3	56.6	65.2	47.7	218.9
1981	28.7	34.9	51.8	66.3	64.0	245.8
1982	15.4	22.5	38.8	47.9	58.0	182.7
1983	18.0	23.5	31.0	59.6	52.1	184.1
1984	4.4	21.3	32.8	34.3	35.9	128.7
1985	11.7	33.2	47.4	51.0	54.8	198.2
1986	12.8	15.0	32.2	34.0	49.3	143.3
1987	9.1	23.6	48.6	48.1	64.8	194.2
1988	3.2	26.0	55.5	53.5	50.0	188.2
1989	10.7	26.1	54.4	53.5	61.3	206.1
1990	17.0	28.0	44.8	52.8	48.6	191.2
1991	13.6	18.5	34.0	49.3	34.4	149.7
1992	8.3	23.4	38.3	48.2	17.2	135.4
1993	12.7	5.1	12.4	13.6	23.2	66.9
1994	0.0[a/]	9.1	0.1	0.4	16.0	25.5
1995	7.2	3.9	0.4	0.7	19.1	31.2
1996	3.7	7.5	0.6	3.8	22.7	38.3
1997	2.3	3.4	0.6	3.9	16.1	26.4
1998[c/]	1.7	5.9	0.5	2.2	13.8	24.2

TABLE IV-14. Estimates of **Oregon recreational** ocean salmon angler **trips** by port area and boat type. (Page 2 of 2)

Year	Astoria	Tillamook	Newport	Coos Bay	Brookings	State Total
			TOTAL TRIPS (thousands)			
1979	43.3	31.0	72.4	94.7	60.0	301.3
1980	46.3	47.8	83.9	97.4	56.0	331.4
1981	44.7	38.0	77.3	83.9	67.1	311.0
1982	27.2	24.6	53.5	59.4	61.4	226.0
1983	30.9	25.3	42.6	71.6	55.7	226.0
1984	8.3	25.0	41.5	40.2	38.0	153.1
1985	20.0	38.6	70.6	63.5	59.0	251.6
1986	20.5	17.9	52.2	43.6	52.7	187.0
1987	17.1	29.1	76.9	62.6	69.4	255.1
1988	5.7	33.3	89.6	69.0	53.1	250.7
1989	19.8	31.3	82.8	66.6	65.8	266.3
1990	25.5	33.5	71.4	65.0	51.1	246.6
1991	21.7	21.0	53.3	57.7	36.4	190.1
1992	12.9	26.1	53.1	55.6	17.7	165.3
1993	17.8	5.6	17.1	15.3	23.8	79.6
1994	0.0[a/]	10.3	0.1	0.4	16.2	26.9
1995	9.6	5.1	0.9	0.7	19.4	35.8
1996	5.6	8.3	2.8	3.9	23.3	44.0
1997	3.6	3.7	2.4	3.9	16.6	30.2
1998[c/]	2.1	6.0	1.3	2.4	14.1	26.0

a/ The fishery north of Cape Falcon was closed and it is assumed that no trips were taken out of Astoria into the south of Cape Falcon area. No samplers were stationed in Astoria.
b/ Less than 50.
c/ Preliminary.

TABLE IV-15. Estimates of **Washington recreational** ocean salmon angler **trips** by port area. (Page 1 of 1)

Year	Neah Bay[a/]	La Push	Westport	Ilwaco[b/]	Coastal Area Total
		CHARTER TRIPS (thousands)			
1984[c/]	0.3	0.0	11.6	18.0	29.9
1985[c/]	2.0	0.0	42.2	20.7	64.9
1986	2.4	0.0	36.6	19.1	58.1
1987	1.9	0.0	34.1	17.7	53.7
1988	2.0	0.0	23.5	6.9	32.4
1989	1.5	0.0	40.8	16.2	58.5
1990	2.1	0.0	43.4	19.5	65.0
1991	1.4	0.2	28.6	13.5	43.7
1992	0.7	0.2	28.1	9.2	38.2
1993	1.0	0.1	27.4	11.7	40.2
1994	-	-	-	-	-
1995	0.2	0.1	12.7	5.0	17.9
1996	0.2	d/	10.3	4.8	15.3
1997	0.1	0.1	10.0	2.4	12.5
1998[e/]	0.0	0.0	4.5	1.1	5.5
		PRIVATE TRIPS (thousands)			
1984[c/]	8.3	0.2	2.3	36.0	46.8
1985[c/]	15.2	1.5	13.7	19.4	49.8
1986	17.4	1.7	14.8	17.5	51.4
1987	17.9	2.0	9.8	18.6	48.3
1988	14.8	2.8	13.9	5.6	37.1
1989	15.0	1.6	18.7	30.6	65.9
1990	19.5	4.2	25.9	44.8	94.4
1991	14.8	3.3	24.2	27.3	69.6
1992	11.0	2.3	25.6	17.9	56.8
1993	18.4	2.8	23.5	24.2	68.9
1994	-	-	-	-	-
1995	5.3	1.4	9.0	14.2	30.0
1996	9.1	1.3	5.2	7.9	23.5
1997	2.8	0.9	7.3	4.1	15.1
1998[e/]	0.0	0.6	3.5	2.6	6.8
		TOTAL TRIPS (thousands)			
1984[c/]	8.6	0.2	13.9	54.0	76.7
1985[c/]	17.2	1.5	55.9	40.1	114.7
1986	19.8	1.7	51.4	36.6	109.5
1987	19.8	2.0	43.9	36.3	102.0
1988	16.8	2.8	37.4	12.5	69.5
1989	16.5	1.6	59.5	46.8	124.4
1990	21.6	4.2	69.3	64.3	159.4
1991	16.2	3.5	52.8	40.8	113.3
1992	11.7	2.5	53.7	27.1	95.0
1993	19.4	2.9	50.9	35.9	109.1
1994	-	-	-	-	-
1995	5.5	1.5	21.7	19.2	47.9
1996	9.3	1.3	15.5	12.7	38.8
1997	2.9	0.9	17.3	6.5	27.6
1998[e/]	0.0	0.6	8.0	3.7	12.3

a/ Does not include effort from the late-season state-water Area 4B fishery.
b/ Does not include effort from the Columbia River Jetty.
c/ Values for 1984 and 1985 include some Columbia River fishing after closure of the ocean fishery.
d/ Less than 50.
e/ Preliminary.

TABLE IV-16. **Oregon and Washington recreational** salmon, bottomfish, and sturgeon **angler trips** by ocean port area and boat type for the area north of Cape Falcon. (Page 1 of 2)

Year	Columbia River and Buoy 10					Westport			La Push			Neah Bay and Area 4B Add On		
	Charter	Private	Subtotal	Jetty	Total	Charter	Private	Total	Charter	Private	Total	Charter	Private	Total
SALMON EFFORT (thousands)														
1984	NA	NA	-	NA	54.0	11.6	2.3	13.9	0.0	0.2	0.2	0.3	8.3	8.6
1985	NA	NA	-	NA	90.3	42.2	13.7	55.9	0.0	1.5	1.5	2.0	15.2	17.2
1986	NA	NA	-	NA	144.3	36.6	14.8	51.4	0.0	1.7	1.7	2.4	17.4	19.8
1987	39.5	130.0	169.5	9.0	178.5	34.1	9.8	43.9	0.0	2.0	2.0	1.9	17.8	19.7
1988	34.5	154.4	188.9	13.0	201.9	23.5	13.9	37.4	0.0	2.8	2.8	2.0	14.8	16.8
1989	39.9	161.8	201.7	18.6	220.3	40.8	18.7	59.5	0.0	1.6	1.6	2.8	25.5	28.3
1990	32.7	125.5	158.2	11.6	169.8	43.4	25.9	69.3	0.0	4.2	4.2	3.0	30.8	33.8
1991	37.7	170.1	207.8	28.6	236.4	28.6	24.2	52.8	0.2	3.3	3.5	1.9	23.5	25.4
1992	22.3	116.6	138.9	22.3	161.2	28.1	25.6	53.7	0.2	2.3	2.5	1.1	18.6	19.7
1993	20.2	103.3	123.5	18.5	142.0	27.4	23.5	50.9	0.1	2.8	2.9	1.6	25.7	27.3
1994	0.5	6.3	6.8	2.4	9.2	-	-	-	-	-	-	-	-	-
1995	9.0	43.4	52.4	6.0	58.4	12.7	9.0	21.7	0.1	1.4	1.5	0.3	9.2	9.5
1996	7.3	26.8	34.1	5.2	39.3	10.3	5.2	15.5	c/	1.3	1.3	0.3	10.6	10.9
1997	8.4	53.0	61.3	4.7	66.0	10.0	7.3	17.3	0.1	0.9	0.9	0.2	4.6	4.8
1998[a/]	3.2	30.7	33.9	3.0	36.8	4.5	3.5	8.0	0.0	0.6	0.6	0.1	6.3	6.4
BOTTOMFISH EFFORT (thousands)[b/]														
1984	2.1	0.1	2.2	-	-	12.4	0.5	12.9	0.0	0.	0.	1.8	12.3	14.1
1985	1.9	0.2	2.1	-	-	15.3	1.0	16.3	0.0	0.1	0.1	3.0	10.6	13.6
1986	1.7	0.2	1.9	-	-	19.6	0.8	20.4	0.0	0.2	0.2	3.5	11.4	14.9
1987	1.7	0.3	2.0	0.5	2.5	21.1	1.2	22.3	0.0	0.5	0.5	5.6	16.0	21.6
1988	2.1	0.2	2.3	0.8	3.1	24.4	1.1	25.5	0.0	0.7	0.7	5.7	14.8	20.5
1989	1.2	0.6	1.8	1.5	3.3	19.3	1.0	20.3	0.0	0.6	0.6	6.8	16.3	23.1
1990	1.4	0.3	1.7	2.4	4.1	21.8	0.8	22.6	0.0	0.8	0.8	6.4	18.1	24.5
1991	1.3	0.4	1.7	1.8	3.5	23.5	1.1	24.6	0.0	0.9	0.9	5.9	18.2	24.1
1992	1.4	0.5	1.9	2.3	4.1	20.5	2.2	22.7	0.0	1.5	1.5	4.8	19.1	23.9
1993	2.2	0.6	2.8	2.6	5.4	21.5	1.8	23.0	0.1	1.1	1.2	5.1	19.2	24.3
1994	2.7	0.7	3.3	2.7	6.0	26.0	1.7	27.7	0.2	1.9	2.1	4.1	15.0	19.1
1995	1.3	0.9	2.3	2.2	4.4	21.1	1.6	22.7	c/	1.6	1.6	4.1	19.2	23.3
1996[d/e/]	1.2	0.5	1.7	1.7	3.4	21.4	1.2	22.6	0	1.6	1.6	4.8	21.0	25.8
1997	1.2	0.7	2.0	2.5	4.4	19.2	1.4	20.6	0	2.2	2.2	4.9	22.7	27.7
1998[a/]	1.8	0.5	2.3	0.9	3.2	21.5	1.3	22.8	0	1.2	1.2	5.1	23.9	29.0

TABLE IV-16. **Oregon and Washington recreational** salmon, bottomfish, and sturgeon **angler trips** by ocean port area and boat type for the area north of Cape Falcon. (Page 2 of 2)

Year	Columbia River and Buoy 10					Westport			La Push			Neah Bay and Area 4B Add On		
	Charter	Private	Subtotal	Jetty	Total	Charter	Private	Total	Charter	Private	Total	Charter	Private	Total
					STURGEON EFFORT (thousands of trips)[f/]									
1984	1.7	28.4	30.1	-	30.1	-	-	-	-	-	-	-	-	-
1985	5.0	32.9	37.9	-	37.9	-	-	-	-	-	-	-	-	-
1986	5.7	37.7	43.4	-	43.4	-	-	-	-	-	-	-	-	-
1987	6.0	45.9	51.9	-	51.9	-	-	-	-	-	-	-	-	-
1988	6.2	34.4	40.6	-	40.6	-	-	-	-	-	-	-	-	-
1989	4.3	24.3	28.6	-	28.6	-	-	-	-	-	-	-	-	-
1990	3.9	30.9	34.8	-	34.8	-	-	-	-	-	-	-	-	-
1991	3.7	28.7	32.4	-	32.4	-	-	-	-	-	-	-	-	-
1992	5.0	42.3	47.3	-	47.3	-	-	-	-	-	-	-	-	-
1993	6.1	53.2	59.3	-	59.3	-	-	-	-	-	-	-	-	-
1994	7.5	43.9	51.4	-	51.4	-	-	-	-	-	-	-	-	-
1995	7.7	59.5	67.2	-	67.2	-	-	-	-	-	-	-	-	-
1996	11.1	52.8	63.9	-	63.9	-	-	-	-	-	-	-	-	-
1997	12.2	48.4	60.7	-	60.7	-	-	-	-	-	-	-	-	-
1998[a/]	14.2	64.3	78.5	-	78.5	-	-	-	-	-	-	-	-	-

a/ Preliminary.
b/ Oregon data is a minimum estimate as the jetty is not sampled and bottomfish sampling of vessels only occurs when the ocean is open for salmon.
c/ Less than 50.
d/ No Oregon bottomfish trips are included.
e/ Includes tuna trips: Ilwaco - 9 charter, 14 private; Westport - 784 charter, 0 private.
f/ Annual sturgeon angler trips for the lower Columbia River from the western tip of Puget Island to mouth.

TABLE IV-17. **Buoy 10 and Area 4B add-on recreational** salmon **angler trips** and **catch** by boat type.[a/] (Page 1 of 2)

Year	Angler Trips			Chinook Catch			Coho Catch			Pink Catch	
	Charter	Private	Jetty	Charter	Private	Jetty	Charter	Private	Jetty	Charter	Private
OREGON BUOY 10[b/]											
1987	3,829	38,131	3,884	1,557	11,556	41	2,244	13,318	203	0	0
1988	7,318	50,992	3,917	1,255	8,525	38	7,658	35,688	979	0	0
1989[c/]	3,882	38,445	4,252	303	3,920	21	2,906	18,792	995	0	0
1990[c/]	917	21,812	4,063	52	1,482	17	343	4,260	581	0	0
1991	3,956	44,370	6,884	321	2,674	26	6,519	54,004	3,003	0	0
1992	2,496	29,610	6,055	246	2,530	33	1,219	10,716	1,842	0	0
1993	684	20,244	6,052	36	1,225	89	264	5,316	1,328	0	0
1994	210	2,732	1,244	-	-	-	34	481	211	0	0
1995	174	8,680	2,538	7	145	0	64	1,366	560	0	0
1996	179	6,122	2,285	59	419	0	66	1,361	532	0	0
1997	1,071	16,207	2,744	273	4,032	0	592	5,411	761	0	0
1998[d/]	588	9,949	631	145	2,191	0	59	1,169	31	0	0
WASHINGTON BUOY 10											
1987	9,845	63,851	5,054	3,610	25,188	148	5,651	24,607	1,147	0	9
1988	17,839	94,534	8,842	2,847	18,051	54	18,208	78,767	2,117	0	6
1989[c/]	10,708	82,803	8,367	936	10,661	59	7,790	45,624	2,613	3	30
1990[c/]	3,764	41,852	4,003	200	3,361	12	1,380	11,193	631	0	0
1991	11,780	84,867	17,064	1,098	7,422	67	20,208	117,882	5,506	0	63
1992	6,147	60,827	10,346	907	6,796	143	4,415	23,489	1,401	0	0
1993	2,035	46,151	608	290	3,648	0	912	13,090	22	0	16
1994	316	3,561	1,126	-	-	-	101	826	96	0	0
1995	516	12,921	396	37	664	0	246	2,716	103	0	0
1996	352	9,096	0	37	894	0	123	2,455	0	0	0
1997	3,614	30,334	1,755	1,125	7,701	22	2,143	11,290	160	0	0
1998[d/]	1,080	16,388	1,362	333	3,075	40	188	1,584	44	0	0

TABLE IV-17. **Buoy 10 and Area 4B add-on recreational** salmon **angler trips** and **catch** by boat type.[a/] (Page 2 of 2)

Year	Angler Trips			Chinook Catch			Coho Catch			Pink Catch	
	Charter	Private	Jetty	Charter	Private	Jetty	Charter	Private	Jetty	Charter	Private
					TOTAL BUOY 10						
1987	13,674	101,982	8,938	5,167	36,744	189	7,895	37,925	1,350	0	9
1988	25,157	145,526	12,759	4,102	26,576	92	25,866	114,455	3,096	0	6
1989[c/]	14,590	120,483	12,619	1,239	14,581	80	10,696	64,416	3,608	3	30
1990[c/]	4,681	63,664	8,066	252	4,843	29	1,723	15,453	12,129	0	0
1991	15,838	129,135	23,948	1,419	10,096	93	26,727	171,886	8,509	0	63
1992	8,643	90,437	16,401	1,153	9,326	176	5,634	34,205	3,243	0	0
1993	2,719	66,395	6,660	326	4,873	89	1,176	18,406	1,350	0	16
1994	526	6,293	2,370	-	-	-	135	1,307	307	0	0
1995	690	21,601	2,934	42	809	0	310	4,082	663	0	0
1996	531	15,218	2,285	96	1,313	0	189	3,816	532	0	0
1997	4,685	46,541	4,499	1,398	11,733	22	2,735	16,701	921	0	0
1998[d/]	1,668	26,337	1,993	478	5,266	40	247	2,753	75	0	0
					TOTAL AREA 4B ADD-ON[e/]						
1989	1,238	10,572	-	67	385	-	2,278	17,603	-	71	423
1990	962	11,283	-	57	359	-	1,974	18,312	-	0	0
1991	553	8,684	-	31	349	-	1,064	14,068	-	86	1,457
1992	406	7,589	-	0	33	-	757	10,954	-	0	0
1993	623	7,257	-	16	202	-	908	7,260	-	143	884
1994	-	-	-	-	-	-	-	-	-	0	0
1995	134	3,877	-	0	26	-	169	4,471	-	61	1,539
1996	36	1,511		0	5		61	2,266	-	0	0
1997	136	1,788	-	0	4	-	65	1,429	-	139	412
1998[d/]	71	6,296	-	5	98	-	125	7,937	-	0	3

a/ Prior to 1987, data on charter and private anglers were combined. Total Buoy 10 catch and effort data prior to 1987 are provided in Table B-21.
b/ Private effort and catch data includes the Clatsop Spit bank fishery.
c/ Does not include the Chinook/Hammond fishery.
d/ Preliminary.
e/ There was no Area 4B add-on fishery prior to 1989.

TABLE IV-18. Estimates of **California coastal community and state personal income** impacts of the troll and recreational ocean salmon fishery for major port areas.[a/] (Page 1 of 1)

Year or Average	Crescent City	Eureka	Fort Bragg	San Francisco	Monterey	Coastal Community Total[b/]	State Total
			OCEAN TROLL (thousands of dollars)[c/]				
1976-1980	5,866	14,664	14,062	18,383	8,243	61,218	78,519
1981-1985	2,702	3,259	7,610	14,370	4,898	32,839	40,887
1986	773	2,151	9,854	16,285	10,448	39,512	49,845
1987	2,294	4,506	18,858	29,481	7,285	62,425	76,822
1988	1,206	3,802	26,162	53,223	14,979	99,372	120,633
1989	624	1,151	6,931	15,682	6,931	31,319	38,462
1990	111	784	4,108	13,233	8,166	26,401	32,147
1991	17	422	2,371	11,100	5,633	19,542	23,649
1992	2	3	100	6,175	3,173	9,453	11,181
1993	7	43	860	6,580	4,340	11,830	14,354
1994	0	26	318	9,954	3,261	13,558	16,026
1995	13	85	424	13,380	10,463	24,365	29,689
1996	9	285	784	5,513	5,806	12,397	15,522
1997	3	51	164	8,807	6,421	15,447	18,968
1998[d/]	4	80	153	3,550	1,911	5,699	6,898
			RECREATIONAL (thousands of dollars)				
1976-1980	1,015	1,177	686	10,302	690	13,870	15,558
1981-1985	1,112	1,146	549	9,123	729	12,659	14,249
1986	1,245	1,505	784	10,409	2,232	16,175	18,578
1987	2,493	2,358	923	12,353	2,879	21,006	24,478
1988	2,077	1,665	1,156	12,200	2,494	19,592	22,622
1989	1,586	2,310	1,083	11,645	3,344	19,968	23,243
1990	2,018	1,979	842	9,143	4,032	18,015	21,506
1991	1,244	1,394	1,372	7,247	3,302	14,559	17,369
1992	422	433	610	6,404	2,071	9,940	11,499
1993	735	905	1,016	8,676	2,320	13,653	15,776
1994	455	312	974	10,882	2,535	15,158	17,213
1995	560	634	1,582	13,948	12,355	29,078	34,884
1996	523	688	1,750	10,214	4,179	17,353	20,299
1997	304	619	1,065	11,202	5,609	18,798	21,911
1998[d/]	152	331	543	7,894	3,342	12,262	14,144

a/ Expressed in 1998 dollars. Per pound and per day estimates of income impacts provided from output of the Fishery Economic Assessment Model. These are the income impacts associated with expenditures in the troll or recreational sectors. There is no differentiation between money new to the area and money which would otherwise have been expended in other sectors. It is assumed that all fish landed at a port is processed in the port area.

b/ Income impacts on the coastal economy. Totals do not include impacts of one coastal community on another.

c/ Excluding pink salmon.

d/ Preliminary.

TABLE IV-19. Estimates of **Oregon coastal community and state personal income** impacts of the troll and recreational ocean salmon fishery for major port areas.[a/] (Page 1 of 1)

Year or Average	Astoria	Tillamook	Newport	Coos Bay	Brookings[b/]	Coastal Community Total[c/]	State Total
				OCEAN TROLL (thousands of dollars)[d/]			
1976-1980	3,446	4,436	10,401	16,005	6,652	40,940	55,512
1981-1985	1,107	1,429	3,343	5,885	2,562	14,326	19,470
1986	600	1,572	5,321	8,713	1,826	18,031	24,424
1987	708	3,542	7,054	19,107	3,809	34,221	46,214
1988	307	5,483	13,651	18,322	3,537	41,300	55,597
1989	545	2,621	4,697	9,768	1,940	19,571	26,469
1990	358	1,486	2,024	7,399	776	12,043	16,035
1991	195	1,386	2,006	2,246	89	5,922	7,998
1992	91	563	2,991	995	27	4,667	6,294
1993	39	332	1,663	664	97	2,795	3,746
1994	1	124	616	175	180	1,096	1,503
1995	21	294	3,742	1,280	150	5,487	7,386
1996	55	353	3,138	1,064	376	4,986	6,770
1997	9	97	2,692	1,011	200	4,009	5,425
1998[e/]	0	188	2,471	863	159	3,682	4,949
				RECREATIONAL (thousands of dollars)			
1976-1980	2,918	2,226	4,139	5,474	3,607	18,364	23,774
1981-1985	1,660	1,338	3,197	3,260	2,269	11,725	15,223
1986	1,284	866	3,136	2,310	2,141	9,737	12,680
1987	1,159	1,434	4,567	3,347	2,825	13,332	17,385
1988	367	1,694	5,379	3,682	2,132	13,255	17,268
1989	1,333	1,505	4,789	3,444	2,677	13,747	17,917
1990	1,538	1,608	4,249	3,329	2,036	12,760	16,555
1991	1,357	958	3,133	2,823	1,470	9,741	12,601
1992	795	1,170	2,896	2,682	687	8,230	10,620
1993	1,095	247	929	729	920	3,921	5,076
1994	-	469	4	16	616	1,105	1,488
1995	544	264	72	29	741	1,649	2,180
1996	340	369	219	165	901	1,994	2,656
1997	223	161	191	160	646	1,381	1,830
1998[e/]	110	242	94	109	542	1,097	1,469

a/ Expressed in 1998 dollars. Per pound and per day estimates of income impacts provided by the Fishery Economic Assessment Model. These are the income impacts associated with expenditures in the troll or recreational sectors. There is no differentiation between money new to the area and money which would otherwise have been expended in other sectors. It is assumed that all fish landed at a port is processed in the port area.

b/ On average, between 1976-1991 over 50% of the troll fishery community income impacts for the Brookings port area originated from landings in Brookings and Gold Beach. For 1986-1990 an average of about 40% of the impacts for the Brookings port area originated in landings made through Brookings and Gold Beach. In 1992 and 1993, impacts originating through these two ports averaged less than 18% and 11%, respectively, of the total for the Brookings port area. Since 1994, the average has been 61%. Port Orford is the other port included in the Brookings port area.

c/ Income impacts on the coastal economy. Totals do not include impacts of one coastal community on another.

d/ Excludes pink salmon.

e/ Preliminary.

TABLE IV-20. Estimates of **Washington coastal community and state personal income** impacts of the non-Indian troll and recreational ocean salmon fishery for major port areas.[a/] (Page 1 of 1)

Year or Average	Neah Bay	La Push	Westport	Ilwaco[b/]	Coastal Community Total[c/d/]	Puget Sound	State Total
OCEAN TROLL (thousands of dollars)[e/f/]							
1976-1980	4,975	6,797	14,993	4,824	31,589	6,688	47,955
1981-1985	971	393	4,090	877	6,331	1,419	9,286
1986	386	171	1,272	490	2,319	449	3,419
1987	270	172	3,228	481	4,150	390	5,214
1988	528	148	1,631	307	2,613	2,328	5,859
1989	411	13	1,531	290	2,244	631	3,422
1990	1,045	192	1,597	237	3,070	249	4,095
1991	705	63	1,065	140	1,973	231	2,700
1992	647	202	1,237	46	2,132	296	2,935
1993	440	132	714	10	1,295	173	1,785
1994[g/]	-	-	-	-	-	26	32
1995	125	27	29	0	181	42	306
1996	63	2	65	2	132	35	214
1997	49	1	140	0	190	40	269
1998	72	0	103	0	174	45	265
RECREATIONAL (thousands of dollars)							
1976-1980	2,134	1,128	12,251	4,842	20,355	-	27,647
1981-1985	1,946	229	8,476	3,936	14,586	-	19,848
1986	886	65	3,982	2,196	7,129	-	9,661
1987	860	77	3,552	2,119	6,608	-	8,971
1988	750	108	2,732	768	4,357	-	5,824
1989	712	62	4,527	2,421	7,722	-	10,460
1990	940	162	5,054	3,196	9,352	-	12,717
1991	696	145	3,615	2,081	6,536	-	8,867
1992	486	107	3,624	1,393	5,610	-	7,542
1993	798	117	3,476	1,823	6,213	-	8,409
1994	0	0	0	0	0	-	0
1995	222	63	1,536	916	2,736	-	3,704
1996	372	50	1,160	675	2,257	-	3,061
1997	117	40	1,218	343	1,718	-	2,283
1998[h/]	0	23	556	183	762	-	1,015

a/ Expressed in 1998 dollars. Per pound and per recreational day estimates of income impacts provided by the Fishery Economic Assessment Model. These are the income impacts associated with expenditures in the troll or recreational sectors. There is no differentiation between money new to the area and money which would otherwise have been expended in other sectors. It is assumed that all fish landed at a port is processed in the port area.

b/ Excludes recreational shorebased effort from the north side of the Columbia River jetty.

c/ Income impacts on the coastal economy. Totals do not include impacts of one coastal community on another.

d/ Includes a very small amount of fish landed in other coastal Washington areas.

e/ Excludes pink salmon.

f/ All commercial values in this table are based on preliminary information available at the start of each year's salmon review.

g/ The fishery was closed north of Cape Falcon. Some commercial catch taken south of Cape Falcon was landed in the Puget Sound area.

h/ Preliminary.

TABLE IV-21. Local **personal income impacts** of the **commercial** salmon gillnet fishery on **Oregon and Washington Columbia River** communities.[a/] (Page 1 of 1)

	Species[b/]	1987-1994	1995	1996	1997	1998[c/]
				OREGON		
Non-Indian	Chinook					
Gillnet	Spring	987	23	59	132	188
	Fall Brights	5,244	15	164	119	57
	Tules	277	d/	63	57	19
	Coho	2,689	274	302	228	274
	Chum	1	d/	d/	0	0
	TOTAL	9,199	313	588	536	538
Treaty	Chinook					
All Gears	Spring	4	1	0	0	0
	Fall Brights	2,174	240	77	97	81
	Tules	71	123	58	50	0
	Coho	17	1	1	1	0
	TOTAL	2,265	364	136	148	81
				WASHINGTON		
Non-Indian	Chinook					
Gillnet	Spring	571	d/	3	2	
	Fall	2,087	d/	61	16	51
	Coho	1,115	d/	21	5	0
	Chum	2	d/	d/	d/	0
	TOTAL	3,776	d/	85	23	51
Treaty	Chinook					
All Gears	Spring	14	d/	-	2	-
	Fall	3,034	299	620	757	632
	Coho	42	8	d/	2	1
	TOTAL	3,090	307	621	761	633
Non-Indian		12,975	313	673	559	589
Treaty		5,355	671	757	909	714
Columbia River		18,329	984	1,430	1,468	1,303

a/ Expressed in 1998 dollars.
b/ See Table IV-10 footnotes for explanation of species categories.
c/ Preliminary.
d/ Less than $500.

TABLE IV-22. Local personal income impacts of the **Buoy 10 recreational** fishery in **Oregon and Washington** and the **Area 4B add-on** fishery in Washington. (Page 1 of 1)

Year	Total Angler Trips (thousands)	Income Impacts (thousands of dollars)[a/]		
		Oregon	Washington	Total
BUOY 10 (including bank fishing)				
1987	125	2,058	3,727	5,784
1988	183	2,918	5,894	8,811
1989	148	2,090	4,671	6,762
1990	76	1,125	2,205	3,330
1991	169	2,440	5,238	7,678
1992	115	1,672	3,452	5,125
1993	76	1,119	2,070	3,189
1994	9	180	219	398
1995	25	466	583	1,049
1996	18	354	398	752
1997	56	863	1,640	2,503
1998[b/]	30	481	816	1,297
AREA 4B ADD-ON[c/]				
1989	12	-	518	518
1990	12	-	519	519
1991	9	-	384	384
1992	8	-	329	329
1993	8	-	335	335
1994	-	-	-	-
1995	4	-	161	161
1996	2	-	61	61
1997	2	-	81	81
1998[b/]	6	-	249	249

a/ Expressed in 1998 dollars.
b/ Preliminary.
c/ There was no Area 4B add-on fishery prior to 1989.

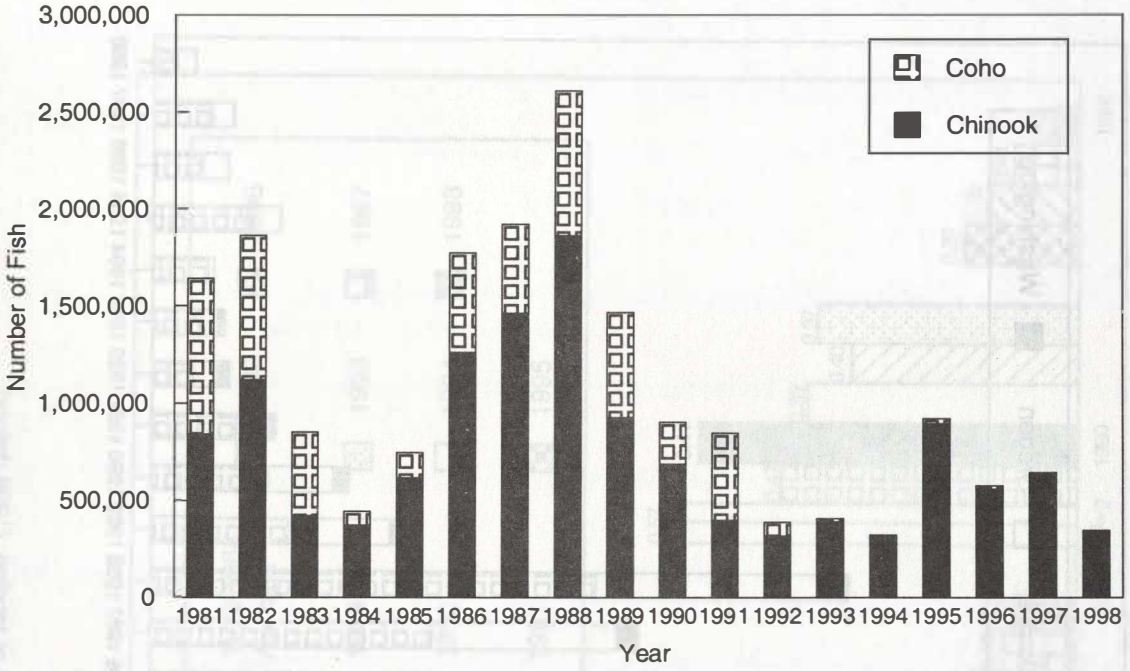


FIGURE IV-1. West Coast non-Indian ocean commercial troll chinook and coho harvest.

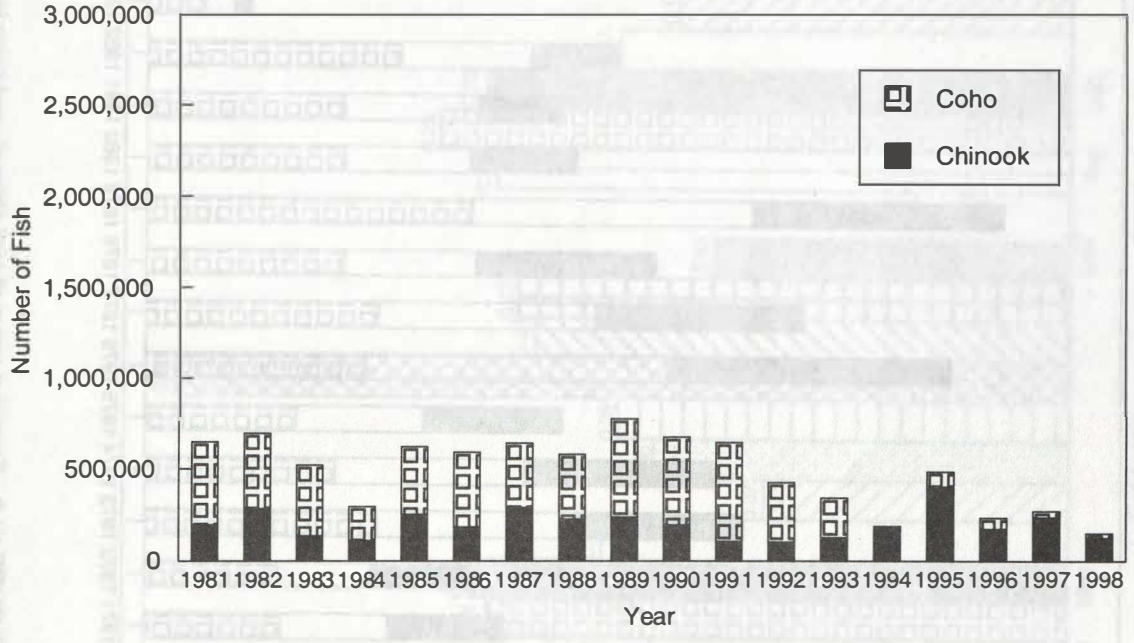


FIGURE IV-2. West Coast recreational ocean chinook and coho harvest.

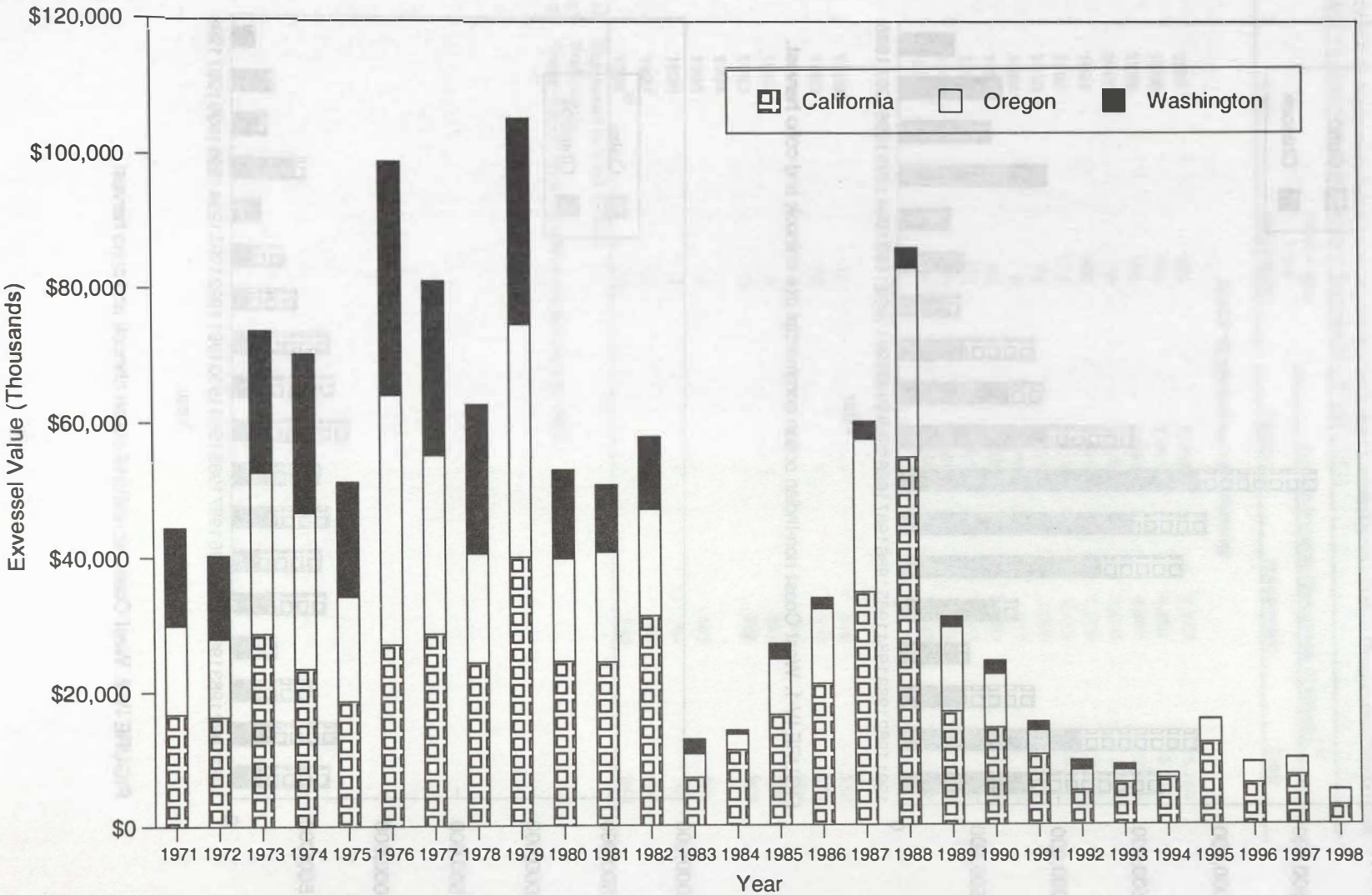


FIGURE IV-3. Exvessel value of troll chinook and coho landings by state of landing (1998 dollars).

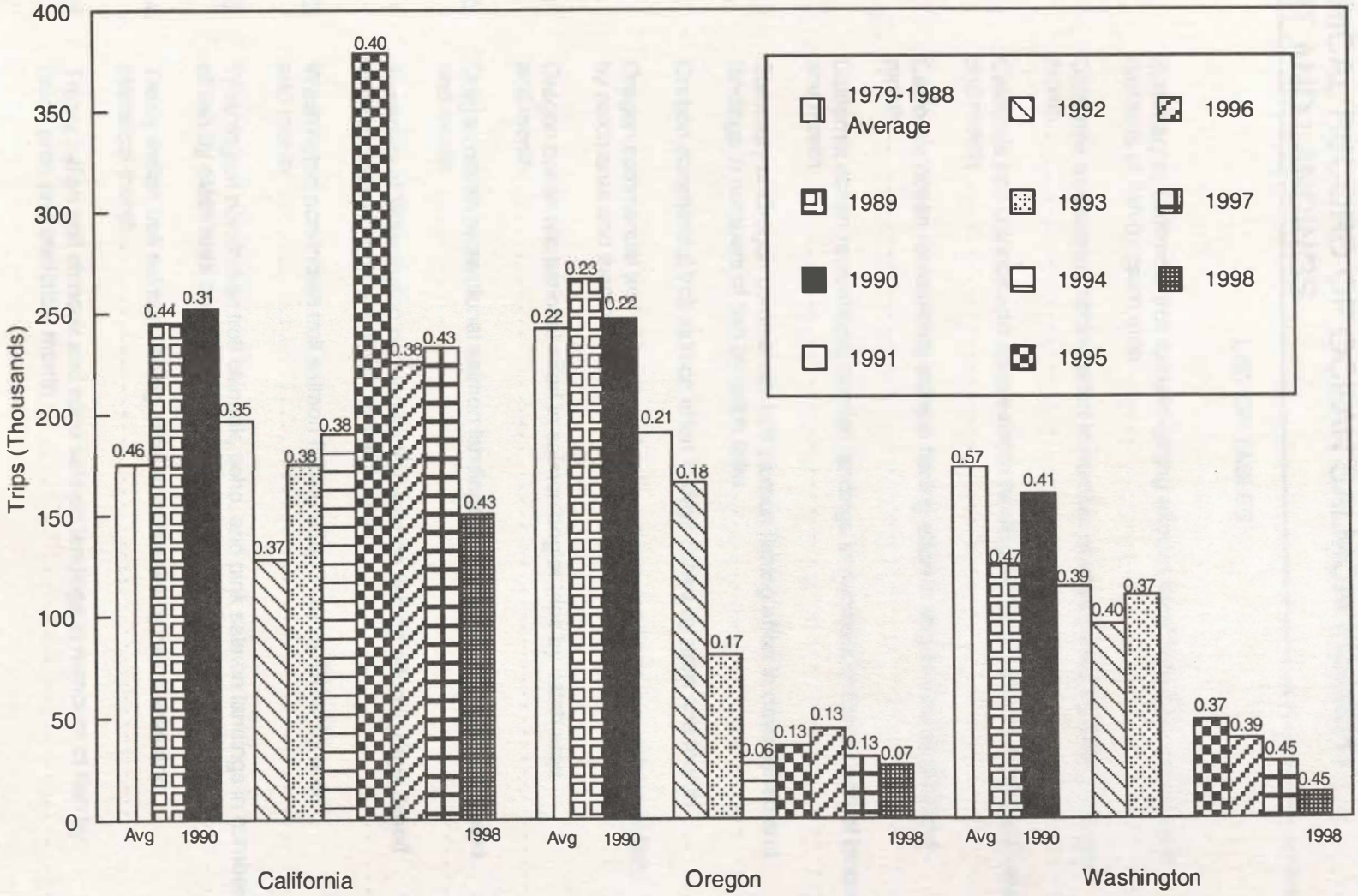


FIGURE IV-4. Total recreational ocean salmon trips by state (with proportion of charter trips shown above each bar).

APPENDIX A
HISTORICAL RECORD OF OCEAN SALMON FISHERY EFFORT AND LANDINGS

LIST OF TABLES

LIST OF TABLES (continued)

TABLE A-1. Summary of **California troll** salmon fishing **effort** in days fished and **landings** in numbers of fish by catch area. (Page 1 of 1)

Year or Avg.	Crescent City	Eureka	Fort Bragg	San Francisco	Monterey	Oregon	Season
			DAYS FISHED (thousands)				
1978-1980[a/]	17.0	18.4	21.9	21.1	16.5	-	95.0
1981-1985	5.9	6.4	13.8	22.1	11.5	-	59.8
1986-1990	0.5	1.6	16.4	25.6	14.4	b/	58.5
1986	1.1	2.6	14.5	19.1	17.4	b/	54.7
1987	0.7	2.0	20.3	24.5	11.0	b/	58.6
1988	0.3	1.5	24.0	35.7	14.2	b/	75.7
1989	0.4	1.2	14.1	26.2	15.5	b/	57.4
1990	0.3	0.7	9.0	22.3	13.9	-	46.2
1991	-	0.6	3.8	18.5	12.3	-	35.3
1992	-	-	-	7.6	12.7	-	20.3
1993	-	-	1.6	12.6	11.7	-	25.9
1994	-	-	0.8	12.4	7.9	-	21.2
1995	-	-	0.9	12.9	12.0	-	25.8
1996	b/	0.4	2.1	8.0	10.6	-	21.1
1997	b/	0.1	0.3	9.4	8.8	-	18.6
1998[c/]	b/	0.1	0.3	6.3	5.4		12.0
			CHINOOK (thousands)				
1976-1980	44.3	166.3	143.9	174.7	89.5	-	618.6
1981-1985	38.8	48.9	110.8	180.0	84.1	-	462.7
1986-1990	12.9	32.3	252.4	351.1	144.8	1.1	794.7
1986	13.8	36.7	272.4	302.3	200.2	0.2	825.6
1987	29.5	54.7	341.2	355.6	91.2	4.0	876.3
1988	14.9	46.4	424.7	642.7	187.8	0.7	1,317.2
1989	5.1	17.5	144.2	255.8	108.0	0.4	530.9
1990	1.4	6.3	79.6	199.1	137.1	-	423.4
1991	-	4.7	35.5	174.8	79.8	-	294.9
1992	-	-	-	66.5	97.0	-	163.4
1993	-	-	19.9	155.0	104.7	-	279.6
1994	-	-	5.2	219.9	70.5	-	295.6
1995	-	-	8.7	357.5	313.1	-	679.3
1996	0.3	8.5	22.9	167.4	181.5	-	380.6
1997	b/	1.4	3.7	253.3	229.0	-	487.7
1998[c/]	0.1	2.0	2.7	118.6	92.6	-	216.2
			COHO (thousands)				
1976-1980	72.1	90.0	51.0	20.8	9.4	-	243.4
1981-1985	16.1	18.9	14.6	7.7	1.4	-	58.7
1986-1990	3.8	6.0	26.0	9.4	1.6	b/	46.8
1986	4.8	4.3	20.8	5.1	1.3	-	36.4
1987	5.6	10.8	25.9	1.2	0.1	0.2	43.7
1988	2.8	10.1	30.9	6.7	0.4	-	51.0
1989	5.8	3.4	25.8	6.5	0.5	-	41.9
1990	-	1.2	26.6	27.4	5.7	-	61.0
1991	-	3.0	4.5	53.3	21.4	-	82.3
1992	-	-	-	0.4	2.1	-	2.5
1993	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-
1998[c/]	-	-	-	-	-	-	-

a/ Data not available prior to 1978.
b/ Less than 50.
c/ Preliminary.

TABLE A-2. **California troll** salmon fishing **effort** in number of days fished by catch area and month. (Page 1 of 2)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
				DAYS FISHED (thousands)				
Crescent City[a/]								
1978-1980	b/	2.0	2.8	6.3	5.0	0.8	-	17.0
1981-1985	-	1.1	0.8	1.6	2.0	0.5	-	5.9
1986-1990	-	b/	0.3	0.1	0.2	b/	-	0.5
1986	-	b/	0.2	0.4	0.4	b/	-	1.1
1987	-	b/	0.7	b/	-	b/	-	0.7
1988	-	b/	0.2	-	-	b/	-	0.3
1989	-	b/	0.3	-	0.1	-	-	0.4
1990	-	-	-	-	0.3	-	-	0.3
1991	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-
1996	-	-	-	-	b/	b/	-	b/
1997	-	-	-	-	-	b/	-	b/
1998[c/]	-	-	-	-	-	b/	-	b/
Eureka								
1978-1980	0.2	5.7	4.8	4.1	2.3	1.4	-	18.4
1981-1985	-	1.6	0.9	2.1	1.5	0.3	-	6.4
1986-1990	-	-	0.7	0.1	0.3	0.5	b/	1.6
1986	-	-	0.6	0.5	1.1	0.3	-	2.6
1987	-	-	1.5	-	-	0.5	-	2.0
1988	-	-	0.8	-	-	0.8	-	1.5
1989	-	-	0.6	-	0.1	0.5	0.1	1.2
1990	-	-	-	-	0.4	0.3	b/	0.7
1991	-	-	-	-	-	0.5	0.1	0.6
1992	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-
1996	-	-	-	-	0.1	0.3	-	0.4
1997	-	-	-	-	-	0.1	-	0.1
1998[c/]	-	-	-	-	-	0.1	-	0.1
Fort Bragg								
1978-1980	b/	2.3	3.1	10.0	4.3	2.2	-	21.9
1981-1985	0.1	2.1	2.2	5.5	2.4	1.5	-	13.8
1986-1990	-	2.8	3.9	5.2	3.8	0.8	-	16.4
1986	-	3.4	3.4	4.4	3.1	0.2	-	14.5
1987	-	3.8	4.9	6.8	4.1	0.6	-	20.3
1988	-	4.6	4.9	7.1	5.5	1.8	-	24.0
1989	-	1.1	2.7	4.4	4.9	1.1	-	14.1
1990	-	0.9	3.6	3.0	1.5	0.1	-	9.0
1991	-	-	-	-	3.5	0.3	-	3.8
1992	-	-	-	-	-	-	-	-
1993	-	0.1	-	-	-	1.5	-	1.6
1994	-	-	-	-	-	0.8	-	0.8
1995	-	-	-	-	-	0.9	-	0.9
1996	-	-	-	-	1.3	0.8	-	2.1
1997	-	-	-	-	-	0.3	-	0.3
1998[c/]	-	-	-	-	-	0.3	-	0.3

TABLE A-2. **California troll** salmon fishing **effort** in number of days fished by catch area and month. (Page 2 of 2)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
				DAYS FISHED (thousands)				
San Francisco								
1978-1980	0.2	5.8	3.5	7.1	2.4	2.0	-	21.1
1981-1985	0.2	3.9	3.0	6.8	5.2	3.0	-	22.1
1986-1990	-	6.5	7.1	5.9	4.1	1.9	-	25.6
1986	-	3.5	4.4	5.9	4.0	1.3	-	19.1
1987	-	6.7	6.4	5.1	4.1	2.3	-	24.5
1988	-	8.1	9.7	9.1	5.5	3.3	-	35.7
1989	-	7.9	7.9	4.0	4.4	2.0	-	26.2
1990	-	6.3	7.1	5.7	2.7	0.5	-	22.3
1991	-	5.2	5.4	3.3	3.2	1.4	-	18.5
1992	-	0.2	-	-	3.9	3.5	-	7.6
1993	-	4.0	1.1	3.1	3.5	0.9	-	12.6
1994	-	3.1	3.2	2.8	2.0	1.4	-	12.4
1995	-	3.4	2.4	3.1	1.8	2.2	-	12.9
1996	-	1.0	2.5	2.2	1.3	1.1	-	8.0
1997 c/	-	2.7	0.3	2.7	2.2	1.4	-	9.3
1998 c/	-	0.7	0.7	2.1	1.4	1.3	-	6.3
Monterey								
1978-1980	0.7	5.3	2.9	4.6	2.2	0.9	-	16.5
1981-1985	0.5	4.2	2.8	2.7	1.0	0.2	-	11.5
1986-1990	-	5.2	4.3	3.4	1.3	0.2	-	14.4
1986	-	7.1	5.4	3.6	1.1	0.3	-	17.4
1987	-	4.4	2.5	3.0	1.1	0.2	-	11.0
1988	-	4.2	4.6	3.7	1.6	0.1	-	14.2
1989	-	5.0	4.3	3.4	2.4	0.3	-	15.5
1990	-	5.5	4.5	3.2	0.6	0.1	-	13.9
1991	-	3.2	5.5	3.1	0.4	0.2	-	12.3
1992	-	5.7	3.3	2.8	0.7	0.1	-	12.7
1993	-	5.2	2.9	2.6	0.9	0.1	-	11.7
1994	-	3.4	1.4	2.6	0.4	0.1	-	7.9
1995	-	5.1	2.8	2.5	1.4	0.2	-	12.0
1996	-	3.7	3.4	3.1	0.3	b/	-	10.6
1997 c/	0.5	3.8	1.7	2.9	b/	b/	-	8.8
1998 c/	-	3.2	1.3	0.8	b/	b/	-	5.4
Total Statewide								
1978-1980	1.1	21.1	17.1	32.1	16.3	7.3	-	95.0
1981-1985	0.8	12.9	9.5	18.7	12.2	5.6	-	59.8
1986-1990	-	14.5	16.2	14.7	9.7	3.3	b/	58.5
1986	-	14.0	14.0	14.8	9.7	2.2	-	54.7
1987	-	14.9	16.0	14.9	9.3	3.6	-	58.6
1988	-	17.0	20.2	20.0	12.5	6.0	-	75.7
1989	-	14.1	15.8	11.8	11.8	3.9	0.1	57.4
1990	-	12.7	15.2	11.9	5.5	0.9	b/	46.2
1991	-	8.4	10.9	6.3	7.2	2.4	0.1	35.3
1992	-	5.9	3.3	2.8	4.6	3.6	-	20.3
1993	-	9.3	3.9	5.7	4.4	2.6	-	25.9
1994	-	6.5	4.6	5.4	2.4	2.3	-	21.2
1995	-	8.5	5.2	5.6	3.3	3.3	-	25.8
1996	-	4.8	5.9	5.3	3.0	2.2	-	21.1
1997 c/	0.5	6.5	2.0	5.5	2.3	1.9	-	18.6
1998 c/	-	4.0	2.0	2.9	1.4	1.8	-	12.0

a/ Includes minor effort off Oregon for fish landed in California.
b/ Less than 50 days.
c/ Preliminary.

TABLE A-3. **California troll** chinook and coho salmon **landings** in numbers of fish by catch area and month. (Page 1 of 3)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Season	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
						CHINOOK (thousands)							COHO (thousands)			
Crescent City[a/]																
1976-1980	0.3	14.1	11.0	10.3	6.5	2.0	-	44.3	-	10.0	37.3	20.4	3.5	0.9	-	72.1
1981-1985	-	8.6	5.5	7.1	14.2	3.4	-	38.8	-	2.2	3.1	5.2	5.0	0.5	-	16.1
1986-1990	-	0.4	10.4	1.2	1.5	0.5	-	14.0	-	-	3.5	0.3	b/	b/	-	3.8
1986	-	0.2	4.6	2.8	5.6	0.8	-	14.0	-	-	3.5	1.3	-	-	-	4.8
1987	-	0.8	29.2	3.2	-	0.4	-	33.5	-	-	5.5	0.2	-	0.1	-	5.8
1988	-	0.7	13.8	-	-	1.1	-	15.6	-	-	2.8	-	-	b/	-	2.8
1989	-	0.4	4.4	-	0.6	-	-	5.5	-	-	5.8	-	b/	-	-	5.8
1990	-	-	-	-	1.4	-	-	1.4	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	0.1	0.2	-	0.3	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	b/	-	b/	-	-	-	-	-	-	-	-
1998[c/]	-	-	-	-	-	0.1	-	0.1	-	-	-	-	-	-	-	-
Eureka																
1976-1980	6.5	77.9	28.6	34.6	13.0	5.7	-	166.3	b/	30.9	39.7	13.7	5.1	0.6	-	90.0
1981-1985	-	20.9	6.0	9.1	10.1	2.7	-	48.9	-	1.3	4.1	8.0	5.3	0.3	-	18.9
1986-1990	-	-	20.9	0.9	4.0	6.3	0.2	32.3	-	-	4.8	0.2	0.1	0.9	0.1	6.0
1986	-	-	15.8	4.3	13.8	2.8	-	36.7	-	-	3.2	0.8	0.2	b/	-	4.3
1987	-	-	50.3	-	-	4.5	-	54.7	-	-	9.6	-	-	1.2	-	10.8
1988	-	-	28.8	-	-	17.6	-	46.4	-	-	8.6	-	-	1.5	-	10.1
1989	-	-	9.8	-	2.0	4.7	0.9	17.5	-	-	2.4	-	0.3	0.4	0.2	3.4
1990	-	-	-	-	4.3	1.9	0.1	6.3	-	-	-	-	0.1	1.2	b/	1.2
1991	-	-	-	-	-	4.3	0.4	4.7	-	-	-	-	-	3.0	0.1	3.0
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	2.5	6.1	-	8.5	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	1.4	-	1.4	-	-	-	-	-	-	-	-
1998[c/]	-	-	-	-	-	2.0	-	2.0	-	-	-	-	-	-	-	-

TABLE A-3. **California troll** chinook and coho salmon **landings** in numbers of fish by catch area and month. (Page 2 of 3)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Season	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
					CHINOOK (thousands)							COHO (thousands)				
Fort Bragg																
1976-1980	1.3	24.8	20.9	57.0	26.8	13.0	-	143.9	b/	5.2	28.0	14.5	3.1	0.2	-	51.0
1981-1985	1.5	15.5	21.1	49.0	16.9	6.8	-	110.8	-	0.2	2.7	9.9	1.7	0.2	-	14.6
1986-1990	-	46.9	72.4	91.9	36.2	5.1	-	252.4	-	-	9.1	14.0	2.7	0.2	-	26.0
1986	-	57.0	96.5	90.2	28.1	0.6	-	272.4	-	-	6.9	12.4	1.6	b/	-	20.8
1987	-	71.5	89.4	127.6	49.2	3.4	-	341.2	-	-	9.1	16.6	-	0.2	-	25.9
1988	-	91.5	110.1	157.4	52.2	13.5	-	424.7	-	-	9.0	20.1	1.8	0.1	-	30.9
1989	-	7.4	20.5	64.4	46.3	5.6	-	144.2	-	-	3.9	13.6	7.9	0.3	-	25.8
1990	-	6.8	45.5	19.8	5.0	2.4	-	79.6	-	-	16.6	7.3	2.3	0.4	-	26.6
1991	-	-	-	-	34.3	1.3	-	35.5	-	-	-	-	4.5	-	-	4.5
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	0.4	-	-	-	19.5	-	19.9	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	5.2	-	5.2	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	8.7	-	8.7	-	-	-	-	-	-	-	-
1996	-	-	-	-	14.4	8.5	-	22.9	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	3.7	-	3.7	-	-	-	-	-	-	-	-
1998[c/]	-	-	-	-	-	2.7	-	2.7	-	-	-	-	-	-	-	-
San Francisco																
1976-1980	16.2	53.7	29.7	53.4	12.1	9.6	-	174.7	b/	5.2	10.5	3.6	1.1	0.3	-	20.8
1981-1985	4.7	44.6	25.2	60.6	35.2	9.6	-	180.0	b/	0.2	2.2	4.7	0.5	0.1	-	7.7
1986-1990	-	131.4	111.9	71.2	26.6	10.1	-	351.1	-	-	5.4	3.3	0.7	0.1	-	9.4
1986	-	72.9	119.6	79.8	27.0	3.1	-	302.3	-	-	1.7	3.2	0.1	0.1	-	5.1
1987	-	157.6	110.1	49.8	28.5	9.5	-	355.6	-	-	0.7	0.5	-	-	-	1.2
1988	-	220.7	173.7	175.4	47.1	25.8	-	642.7	-	-	2.8	3.4	0.5	b/	-	6.7
1989	-	121.3	77.8	25.6	20.9	10.3	-	255.8	-	-	3.6	2.1	0.6	0.1	-	6.5
1990	-	84.3	78.5	25.5	9.2	1.5	-	199.1	-	-	18.0	7.2	2.1	0.1	-	27.4
1991	-	58.3	52.2	30.5	28.3	5.5	-	174.8	-	-	33.1	19.7	0.6	-	-	53.3
1992	-	1.8	-	-	38.2	26.5	-	66.5	-	-	-	-	0.4	-	-	0.4
1993	-	60.8	14.8	35.5	40.3	3.6	-	155.0	-	-	-	-	-	-	-	-
1994	-	54.5	69.5	57.0	26.3	12.6	-	219.9	-	-	-	-	-	-	-	-
1995	-	157.0	78.0	84.3	17.0	21.1	-	357.5	-	-	-	-	-	-	-	-
1996	-	22.0	78.0	43.5	12.0	11.9	-	167.4	-	-	-	-	-	-	-	-
1997	-	112.0	14.2	84.3	24.8	17.9	-	253.3	-	-	-	-	-	-	-	-
1998[c/]	-	14.6	18.7	61.3	14.2	9.9	-	118.7	-	-	-	-	-	-	-	-

TABLE A-3. **California troll** chinook and coho salmon **landings** in numbers of fish by catch area and month. (Page 3 of 3)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Season	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
					CHINOOK (thousands)							COHO (thousands)				
Monterey																
1976-1980	9.9	29.5	19.1	18.1	9.4	3.5	-	89.5	b/	3.5	4.0	1.8	0.1	b/	-	9.4
1981-1985	6.1	35.0	16.9	19.4	5.6	1.1	-	84.1	b/	0.1	0.9	0.3	0.1	b/	-	1.4
1986-1990	-	61.5	42.1	30.0	9.0	2.2	-	144.8	-	-	1.0	0.5	0.1	b/	-	1.6
1986	-	93.5	56.7	38.0	10.1	1.9	-	200.2	-	-	0.6	0.6	0.1	b/	-	1.3
1987	-	35.0	22.6	24.8	6.4	2.5	-	91.2	-	-	0.1	0.1	-	b/	-	0.1
1988	-	77.8	56.4	38.2	12.6	2.8	-	187.8	-	-	0.3	b/	b/	-	-	0.4
1989	-	47.0	25.1	22.5	10.6	2.7	-	108.0	-	-	0.2	0.2	0.1	b/	-	0.5
1990	-	54.1	49.9	26.4	5.4	1.3	-	137.1	-	-	3.9	1.7	0.1	b/	-	5.7
1991	-	21.8	34.9	19.1	3.0	1.0	-	79.8	-	-	17.1	4.3	0.1	-	-	21.4
1992	-	49.7	19.0	21.1	4.5	2.6	-	97.0	-	-	1.5	0.5	b/	-	-	2.1
1993	-	49.9	25.5	20.3	8.1	0.9	-	104.7	-	-	-	-	-	-	-	-
1994	-	24.3	11.6	32.2	1.1	1.2	-	70.5	-	-	-	-	-	-	-	-
1995	-	128.4	64.2	105.4	13.9	1.3	-	313.1	-	-	-	-	-	-	-	-
1996	-	75.1	52.3	51.9	2.2	b/	-	181.5	-	-	-	-	-	-	-	-
1997	11.9	86.9	60.4	69.7	0.1	0.1	-	229.0	-	-	-	-	-	-	-	-
1998[c/]	-	57.8	21.3	12.5	0.6	0.4	-	92.6	-	-	-	-	-	-	-	-
Total Statewide																
1976-1980	34.2	200.0	109.4	173.4	67.9	33.8	-	618.6	b/	54.9	119.5	54.0	12.9	2.0	-	243.4
1981-1985	12.4	124.6	74.7	145.1	82.1	23.7	-	462.7	b/	4.0	13.0	28.2	12.5	1.1	-	58.7
1986-1990	-	240.1	257.8	195.1	77.3	24.1	0.2	794.7	-	-	23.8	18.3	3.6	1.1	0.1	46.8
1986	-	223.6	293.2	215.1	84.5	9.1	-	825.6	-	-	16.0	18.2	2.1	0.1	-	36.4
1987	-	264.9	301.6	205.4	84.1	20.2	-	876.3	-	-	24.9	17.3	-	1.4	-	43.7
1988	-	390.8	382.8	370.9	111.9	60.8	-	1317.2	-	-	23.4	23.6	2.3	1.6	-	51.0
1989	-	176.2	137.6	112.5	80.5	23.3	0.9	530.9	-	-	16.0	15.9	8.9	0.8	0.2	41.9
1990	-	145.2	174.0	71.7	25.4	7.1	0.1	423.4	-	-	38.6	16.3	4.5	1.7	b/	61.0
1991	-	80.1	87.1	49.7	65.6	12.1	0.4	294.9	-	-	50.1	24.0	5.1	3.0	0.1	82.3
1992	-	51.6	19.0	21.1	42.7	29.0	-	163.4	-	-	1.5	0.5	0.5	-	-	2.5
1993	-	111.1	40.4	55.8	48.4	24.0	-	279.6	-	-	-	-	-	-	-	-
1994	-	78.8	81.1	89.2	27.4	19.1	-	295.6	-	-	-	-	-	-	-	-
1995	-	285.5	142.2	189.6	30.9	31.1	-	679.3	-	-	-	-	-	-	-	-
1996	-	97.1	130.3	95.4	31.2	26.6	-	380.6	-	-	-	-	-	-	-	-
1997	11.9	199.0	74.6	154.0	24.9	23.2	-	487.7	-	-	-	-	-	-	-	-
1998[c/]	-	72.4	40.0	73.7	14.8	15.3	-	216.2	-	-	-	-	-	-	-	-

a/ Includes minor catches made off Oregon and landed in California.
b/ Less than 50 fish.
c/ Preliminary.

TABLE A-4. **California** ocean **recreational** salmon fishing **effort** in angler trips by port and month. (Page 1 of 2)

Year or Avg.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
					ANGLER TRIPS (thousands)						
Crescent City											
1976-1980	-	-	a/	a/	3.7	9.7	5.4	1.2	-	-	20.0
1981-1985	-	-	-	0.6	3.9	11.5	6.6	0.5	-	-	23.1
1986-1990	-	-	-	1.4	11.1	19.3	6.8	1.0	-	-	39.6
1986	-	-	-	1.1	7.3	10.6	6.4	0.2	-	-	25.6
1987	-	-	-	2.0	13.8	22.6	10.7	3.0	-	-	52.1
1988	-	-	-	2.4	13.3	20.7	6.6	0.8	-	-	43.9
1989	-	-	-	1.1	7.4	18.6	6.2	0.3	-	-	33.6
1990	-	-	-	0.6	13.8	23.9	3.8	0.6	-	-	42.7
1991	-	-	-	0.6	8.5	14.0	0.7	1.7	-	-	25.6
1992	-	-	-	-	-	7.2	-	1.8	-	-	9.1
1993	-	-	-	1.0	1.0	6.5	5.8	1.1	-	-	15.4
1994	-	-	-	5.1	2.2	-	1.6	0.9	-	-	9.7
1995	-	-	-	2.8	5.7	-	1.1	2.4	-	-	11.9
1996	-	-	-	1.0	5.1	2.4	2.1	0.8	-	-	11.3
1997[b/]	-	-	-	0.9	1.7	1.5	2.2	0.2	-	-	6.6
1998[b/]	-	-	-	0.7	1.5	0.5	0.6	0.1	-	-	3.3
Eureka											
1976-1980	-	-	a/	0.3	5.3	12.6	5.3	0.4	a/	-	23.9
1981-1985	-	-	a/	1.2	4.7	11.7	4.9	0.5	a/	-	23.1
1986-1990	-	-	-	1.6	9.5	18.7	7.1	1.0	-	-	37.9
1986	-	-	-	1.1	7.5	12.7	7.2	0.3	-	-	28.9
1987	-	-	-	1.7	9.5	23.2	9.8	1.9	-	-	46.1
1988	-	-	-	1.5	6.8	17.0	6.1	1.5	-	-	32.8
1989	-	-	-	2.4	11.1	21.4	7.8	0.3	-	-	43.0
1990	-	-	-	1.6	12.5	19.1	4.7	0.8	-	-	38.7
1991	-	-	-	0.3	13.2	13.0	0.3	0.6	a/	-	27.4
1992	-	-	-	-	-	5.8	-	3.3	-	-	9.1
1993	-	-	-	1.6	2.2	6.1	6.0	2.3	-	-	18.3
1994	-	-	-	2.6	1.8	-	1.2	0.8	-	-	6.4
1995	-	-	-	1.4	6.2	-	1.5	3.7	-	-	12.8
1996	-	-	-	2.4	6.5	1.	2.7	1.6	-	-	14.2
1997[b/]	-	-	-	2.5	3.4	2.1	4.0	0.4	-	-	12.4
1998[b/]	-	-	-	1.9	1.8	0.6	2.0	0.5	-	-	6.7
Fort Bragg											
1976-1980	-	-	a/	0.1	1.7	5.6	3.7	0.6	a/	-	11.7
1981-1985	-	-	a/	0.1	2.2	5.0	2.1	0.1	a/	-	9.6
1986-1990	-	a/	0.1	0.7	4.5	7.1	2.5	0.6	a/	-	15.5
1986	-	-	a/	0.2	3.9	6.6	2.6	a/	-	-	13.3
1987	-	a/	0.1	0.2	2.9	7.2	2.4	1.1	-	-	14.0
1988	-	-	0.2	1.5	4.6	8.1	2.8	0.8	-	-	18.0
1989	-	-	0.1	1.4	5.7	6.5	2.8	1.0	a/	-	17.5
1990	-	-	a/	0.2	5.4	7.0	1.8	0.3	-	-	14.6
1991	-	-	a/	0.9	7.0	11.6	3.0	0.1	-	-	22.6
1992	-	a/	0.3	2.2	0.3	6.3	-	1.7	0.4	a/	11.2
1993	a/	0.2	0.4	1.3	2.0	9.4	4.6	1.2	0.1	-	19.3
1994	0.1	0.5	1.2	4.0	8.1	-	4.6	0.9	a/	-	19.4
1995	0.4	0.5	1.6	1.5	13.0	-	9.0	2.6	0.6	-	29.3
1996	a/	0.9	1.9	2.9	12.0	3.0	7.0	2.8	0.7	a/	31.3
1997[b/]	-	0.4	1.1	4.0	6.8	3.5	4.1	0.3	-	-	20.2
1998[b/]	-	0.1	-	1.0	2.3	0.5	3.3	1.1	-	-	8.3

TABLE A-4. **California** ocean **recreational** salmon fishing **effort** in angler trips by port and month. (Page 2 of 2)

Year or Avg.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
					ANGLER TRIPS (thousands)						
San Francisco											
1976-1980	8.1	10.3	7.2	8.6	10.4	15.3	15.2	12.5	7.9	2.4	97.9
1981-1985	4.1	5.8	6.0	6.9	10.8	15.0	14.1	9.3	5.6	1.3	78.9
1986-1990	4.8	9.8	12.3	8.9	12.7	18.7	16.2	9.4	4.8	1.3	98.9
1986	1.9	8.2	9.1	8.6	13.5	21.0	17.9	6.6	4.0	0.9	91.7
1987	4.3	9.6	11.3	10.1	10.2	19.5	22.2	12.3	7.2	1.6	108.4
1988	6.5	10.3	12.4	12.1	16.8	22.0	16.8	7.9	4.1	0.8	109.9
1989	6.0	9.3	14.8	7.7	11.5	15.1	14.1	10.6	4.0	1.9	95.0
1990	5.4	11.6	13.7	6.0	11.2	15.6	10.1	9.6	4.8	1.6	89.7
1991	-	4.1	7.1	6.3	12.0	18.6	13.9	5.2	2.9	0.1	70.2
1992	0.8	2.4	2.5	5.9	8.6	16.1	11.8	9.4	4.3	0.2	62.0
1993	0.5	6.6	6.1	7.7	7.4	27.8	17.6	5.5	3.6	-	82.8
1994	1.2	5.7	7.2	7.0	17.8	33.5	18.9	9.7	6.5	-	107.6
1995	-	9.6	10.5	12.3	17.3	51.0	23.7	12.8	4.3	-	141.5
1996	-	19.0	13.2	9.6	12.7	28.5	13.6	5.3	2.4	-	104.2
1997[b/]	-	4.7	10.9	16.8	14.0	34.5	21.2	5.5	1.2	0.4	109.1
1998[b/]	-	0.2	7.0	5.8	13.6	23.1	20.8	6.9	3.5	-	81.0
Monterey											
1976-1980	1.8	2.2	2.0	1.2	0.9	1.1	0.5	0.2	0.1	a/	10.0
1981-1985	1.0	2.1	2.7	2.0	1.3	2.0	0.8	0.2	0.1	0.1	12.2
1986-1990	3.6	7.2	11.7	4.1	6.7	10.7	4.2	0.6	0.3	0.4	49.4
1986	0.2	5.7	9.3	3.9	5.1	7.3	2.8	1.1	0.8	a/	36.2
1987	4.3	9.3	6.2	3.3	4.7	11.4	7.1	1.2	0.2	a/	47.7
1988	4.7	5.4	6.4	5.5	6.9	9.5	2.3	a/	0.1	a/	40.9
1989	3.9	6.6	20.1	5.1	5.7	8.8	5.3	0.3	a/	a/	55.7
1990	4.7	9.0	16.5	2.5	11.1	16.6	3.4	0.5	0.3	1.8	66.5
1991	-	8.2	11.1	3.9	8.9	14.0	2.7	0.5	1.6	-	50.8
1992	1.2	7.3	7.1	3.5	4.7	6.6	3.2	1.2	1.1	0.6	36.4
1993	0.3	8.3	11.1	6.2	2.9	5.0	2.9	1.4	1.0	-	39.1
1994	1.1	8.0	10.4	5.6	6.7	9.0	2.0	1.7	2.3	-	46.8
1995	-	12.8	38.0	41.6	31.9	46.5	11.7	0.5	-	-	183.1
1996	-	15.2	15.3	9.4	7.0	11.9	5.8	-	-	-	64.5
1997[b/]	-	16.4	17.7	9.1	18.3	18.6	3.7	0.2	-	-	84.0
1998[b/]	-	5.9	9.6	10.7	12.1	10.0	1.9	0.3	-	-	50.5
Total Statewide											
1976-1980	9.9	12.5	9.2	10.3	22.0	44.3	30.1	14.8	8.0	2.4	163.5
1981-1985	5.1	7.9	8.8	10.7	23.0	45.3	28.5	10.6	5.7	1.4	147.0
1986-1990	8.4	17.0	24.0	16.7	44.4	74.4	36.8	12.6	5.1	1.7	241.3
1986	2.1	13.9	18.4	15.0	37.3	58.2	36.8	8.2	4.8	0.9	195.6
1987	8.6	18.9	17.6	17.2	41.1	84.0	52.3	19.6	7.3	1.7	268.3
1988	11.2	15.7	19.0	23.0	48.3	77.4	34.7	11.0	4.2	0.8	245.4
1989	9.8	15.9	35.0	17.7	41.4	70.4	36.2	12.5	4.0	1.9	244.9
1990	10.2	20.6	30.3	10.8	54.0	82.1	23.9	11.8	5.1	3.4	252.1
1991	-	12.3	18.2	12.0	49.6	71.2	20.7	8.1	4.5	0.1	196.6
1992	2.0	9.7	9.9	11.5	13.6	41.9	15.1	17.5	5.8	0.8	127.9
1993	0.9	15.0	17.6	17.9	15.5	54.9	36.9	11.4	4.7	-	174.9
1994	2.5	14.2	18.7	24.3	36.6	42.5	28.3	13.9	8.8	-	189.9
1995	0.4	22.9	50.2	59.5	74.0	97.5	47.0	22.0	4.9	-	378.5
1996	a/	35.2	30.3	25.2	43.2	46.8	31.1	10.4	3.1	a/	225.4
1997[b/]	-	21.5	29.7	33.3	44.2	60.2	35.3	6.5	1.2	0.4	232.3
1998[b/]	-	6.2	16.5	20.1	31.4	34.7	28.5	8.9	3.5	-	149.9

a/ Less than 50 trips.
b/ Preliminary.

TABLE A-5. **California** ocean **recreational** salmon **landings** in numbers of fish by port of landing and month. (Page 1 of 3)

Year or Avg.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
					CHINOOK (thousands)											**COHO (thousands)**						
Crescent City																						
1976-1980	-	-	-	a/	0.5	1.8	1.3	0.1	-	-	3.6	-	-	a/	a/	3.1	6.6	2.0	0.2	-	-	11.9
1981-1985	-	-	-	0.5	1.4	3.1	1.9	0.1	-	-	7.0	-	-	-	a/	1.2	4.4	1.7	0.1	-	-	7.4
1986-1990	-	-	-	0.4	4.6	7.7	1.6	0.3	-	-	14.6	-	-	-	0.1	3.6	8.4	1.6	0.1	-	-	13.8
1986	-	-	-	0.3	1.6	2.6	1.3	a/	-	-	5.8	-	-	-	0.3	2.5	3.6	1.8	-	-	-	8.1
1987	-	-	-	0.3	3.7	4.3	2.3	1.5	-	-	12.1	-	-	-	-	0.9	10.7	2.7	0.6	-	-	14.9
1988	-	-	-	1.0	7.4	7.6	1.2	a/	-	-	17.2	-	-	-	a/	0.6	10.3	1.4	a/	-	-	12.2
1989	-	-	-	0.4	3.6	18.0	3.2	0.1	-	-	25.3	-	-	-	a/	4.9	11.7	1.8	0.1	-	-	18.5
1990	-	-	-	0.1	6.5	6.0	0.2	a/	-	-	12.7	-	-	-	a/	9.0	5.9	0.5	a/	-	-	15.5
1991	-	-	-	a/	1.3	1.9	a/	0.1	-	-	3.4	-	-	-	-	8.8	9.2	0.1	0.2	-	-	18.3
1992	-	-	-	-	-	0.8	-	a/	-	-	0.9	-	-	-	-	-	2.6	-	0.2	-	-	2.8
1993	-	-	-	0.1	a/	0.5	0.4	0.2	-	-	1.3	-	-	-	a/	0.1	3.6	2.7	0.3	-	-	6.7
1994	-	-	-	4.5	1.3	-	0.4	0.1	-	-	6.3	-	-	-	a/	-	-	0.1	a/	-	-	0.1
1995	-	-	-	0.7	3.0	-	0.3	1.6	-	-	5.6	-	-	-	a/	a/	-	a/	a/	-	-	0.1
1996	-	-	-	0.3	2.3	0.8	0.3	0.2	-	-	3.8	-	-	-	-	0.1	-	a/	a/	-	-	0.1
1997[b/]	-	-	-	0.3	0.5	0.8	0.8	a/	-	-	2.5	-	-	-	a/	-	0.1	a/	-	-	-	0.1
1998[b/]	-	-	-	0.2	0.7	0.1	0.1	a/	-	-	1.1	-	-	-	-	a/	a/	a/	-	-	-	a/
Eureka																						
1976-1980	-	-	a/	0.2	1.2	3.7	1.0	0.1	a/	-	6.1	-	-	a/	0.1	4.1	7.1	1.7	0.1	a/	-	13.1
1981-1985	-	-	a/	1.3	2.2	4.9	1.1	0.1	a/	-	9.6	-	-	-	0.2	2.6	5.8	1.7	0.2	-	-	10.4
1986-1990	-	-	-	1.0	4.8	6.7	3.0	0.2	-	-	15.7	-	-	-	0.7	5.5	12.4	2.7	0.3	-	-	21.5
1986	-	-	-	0.5	2.6	3.3	4.1	a/	-	-	10.5	-	-	-	0.1	2.7	4.2	1.6	a/	-	-	8.6
1987	-	-	-	1.1	3.7	6.5	6.5	0.6	-	-	18.4	-	-	-	0.1	3.5	21.3	4.3	0.6	-	-	29.8
1988	-	-	-	0.6	5.2	6.8	0.8	0.3	-	-	13.8	-	-	-	0.7	3.3	12.0	2.0	0.5	-	-	18.3
1989	-	-	-	1.6	7.5	12.2	3.2	0.1	-	-	24.6	-	-	-	1.6	7.5	13.4	3.9	a/	-	-	26.4
1990	-	-	-	0.9	5.1	4.6	0.4	a/	-	-	11.1	-	-	-	0.9	10.6	11.2	1.7	0.2	-	-	24.6
1991	-	-	-	0.1	6.4	2.8	a/	0.3	a/	-	9.5	-	-	-	0.1	12.6	8.7	0.2	0.3	a/	-	21.8
1992	-	-	-	-	-	1.4	-	0.3	-	-	1.7	-	-	-	-	-	2.7	-	0.9	-	-	3.6
1993	-	-	-	0.3	0.2	1.5	1.2	0.4	-	-	3.6	-	-	-	0.6	0.8	3.8	1.8	0.7	-	-	7.6
1994	-	-	-	1.5	1.8	-	0.4	0.1	-	-	3.7	-	-	-	-	a/	-	a/	a/	-	-	a/
1995	-	-	-	0.7	4.0	-	1.3	2.0	-	-	8.1	-	-	-	a/	0.1	-	a/	0.1	-	-	0.2
1996	-	-	-	1.7	3.6	0.2	1.1	0.5	-	-	7.0	-	-	-	-	0.1	a/	a/	a/	-	-	0.2
1997[b/]	-	-	-	1.5	1.7	1.2	2.0	0.1	-	-	6.5	-	-	-	a/	a/	a/	0.1	a/	-	-	0.1
1998[b/]	-	-	-	0.5	0.5	0.2	0.5	0.1	-	-	1.8	-	-	-	-	a/	a/	a/	-	-	-	a/

TABLE A-5. **California** ocean **recreational** salmon **landings** in numbers of fish by port of landing and month. (Page 2 of 3)

Year or Avg.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
	CHINOOK (thousands)											**COHO (thousands)**										
Fort Bragg																						
1976-1980	-	-	a/	a/	0.4	1.7	1.2	0.1	a/	-	3.4	-	-	-	0.1	0.6	1.2	0.4	0.1	a/	-	2.4
1981-1985	-	-	a/	a/	0.6	1.6	0.3	a/	a/	-	2.5	-	-	-	-	0.2	0.6	0.1	a/	-	-	0.9
1986-1990	-	a/	0.1	0.4	2.6	3.9	0.7	0.1	a/	-	7.7	-	-	-	a/	0.9	1.9	0.3	0.1	-	-	3.1
1986	-	-	a/	0.2	3.2	6.4	0.8	-	-	-	10.6	-	-	-	a/	0.2	1.1	0.2	a/	-	-	1.6
1987	-	a/	a/	0.3	2.4	5.2	1.1	0.2	-	-	9.2	-	-	-	-	0.7	1.1	0.5	0.2	-	-	2.5
1988	-	-	0.3	1.1	3.5	3.8	0.8	a/	-	-	9.5	-	-	-	0.1	0.2	2.8	0.1	-	-	-	3.2
1989	-	-	0.1	0.2	2.5	2.4	0.6	a/	a/	-	5.8	-	-	-	a/	1.1	2.1	0.4	0.1	-	-	3.7
1990	-	-	a/	0.1	1.6	1.5	0.2	0.1	-	-	3.4	-	-	-	0.1	2.2	2.1	0.1	a/	-	-	4.5
1991	-	-	a/	0.2	1.6	3.6	0.5	a/	-	-	5.9	-	-	-	0.5	7.9	9.6	0.6	a/	-	-	18.6
1992	-	a/	0.1	1.0	0.1	2.4	-	0.7	a/	a/	4.3	-	-	-	0.3	0.2	2.5	-	0.4	a/	-	3.3
1993	a/	a/	0.2	0.3	0.5	2.6	1.9	0.2	a/	-	5.8	-	a/	a/	0.1	0.7	9.4	1.9	0.1	a/	-	12.3
1994	a/	0.2	0.7	3.2	6.9	-	1.9	0.3	a/	-	13.2	-	-	a/	-	0.2	-	a/	-	a/	-	0.2
1995	0.2	0.3	1.0	1.1	20.5	-	4.8	1.0	0.1	-	29.0	-	-	a/	a/	0.3	-	0.1	a/	a/	-	0.5
1996	a/	0.3	1.4	1.9	13.7	1.9	3.2	1.5	0.1	-	24.0	-	-	a/	-	0.2	a/	0.1	a/	-	-	0.3
1997	-	0.1	0.5	1.9	4.2	3.6	1.3	0.1	-	-	11.6	-	-	-	a/	a/	a/	a/	-	-	-	0.1
1998[b/]	a/	a/	a/	0.6	0.5	0.7	2.2	0.7	a/	a/	4.7	-	-	-	-	-	-	a/	-	-	-	a/
San Francisco																						
1976-1980	5.3	7.8	7.4	5.8	10.9	14.4	8.4	7.3	6.6	1.3	75.2	a/	a/	0.2	1.3	0.9	0.9	0.2	0.1	a/	a/	3.6
1981-1985	5.3	5.8	5.5	7.2	12.3	16.9	16.0	8.5	5.5	1.4	84.5	-	a/	a/	0.1	0.4	0.3	0.1	a/	a/	-	1.1
1986-1990	4.5	11.0	16.9	8.3	12.2	17.2	15.6	7.8	3.9	1.0	98.4	-	a/	a/	0.2	0.3	0.4	0.5	0.1	a/	-	1.5
1986	1.0	12.3	11.4	7.3	13.4	19.7	14.0	4.9	1.7	0.6	86.3	-	a/	-	0.1	0.1	0.1	a/	a/	a/	-	0.4
1987	3.8	7.4	16.8	9.3	9.8	22.4	29.7	12.3	7.1	1.1	119.5	-	-	-	a/	a/	a/	a/	a/	-	-	0.1
1988	5.4	13.7	20.9	15.6	19.0	21.8	9.6	4.8	3.8	0.5	115.1	-	-	a/	0.1	0.1	0.1	0.1	a/	-	-	0.4
1989	7.3	8.2	20.4	4.8	12.3	11.4	11.0	12.2	3.7	2.4	93.7	-	-	0.1	0.2	0.4	a/	0.1	a/	-	-	0.9
1990	5.1	13.3	15.1	4.3	6.6	10.6	13.6	4.9	3.5	0.6	77.6	-	-	0.1	0.4	1.0	1.6	2.3	0.4	0.1	-	5.8
1991	-	3.2	6.1	3.7	6.8	10.0	4.9	1.5	1.0	a/	37.3	-	a/	a/	0.1	4.2	2.8	0.5	0.1	a/	-	7.7
1992	0.1	0.8	0.8	3.9	6.6	13.8	8.9	9.0	3.1	0.1	47.2	a/	a/	a/	0.1	0.1	1.1	0.1	0.1	a/	-	1.6
1993	0.2	4.7	5.3	6.2	6.3	33.1	14.9	4.5	3.5	-	78.7	-	a/	0.1	0.2	0.7	1.8	0.1	a/	a/	-	3.0
1994	0.9	4.1	8.6	7.3	24.7	49.5	20.6	12.7	7.2	-	135.7	-	-	a/	a/	0.1	0.1	a/	a/	a/	-	0.2
1995	-	12.7	14.0	13.6	25.9	59.6	15.7	12.2	2.0	-	155.7	-	-	a/	a/	a/	0.1	a/	a/	-	-	0.2
1996	-	21.4	14.2	6.1	11.2	22.6	4.8	2.9	1.2	-	84.5	-	-	-	a/	a/	a/	a/	-	-	-	0.1
1997	-	3.0	11.0	19.7	15.1	49.0	20.8	2.8	1.0	0.1	122.5	-	-	-	a/	-	0.2	a/	0.0	-	-	0.2
1998[b/]	-	0.1	3.7	4.4	12.3	27.4	17.6	3.7	1.8	-	71.0	-	-	-		a/	a/	a/	-	-	-	a/

TABLE A-5. **California** ocean **recreational** salmon **landings** in numbers of fish by port of landing and month. (Page 3 of 3)

Year or Avg.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
								CHINOOK (thousands)										**COHO (thousands)**				
Monterey																						
1976-1980	0.5	0.7	1.3	0.5	0.5	0.4	0.1	a/	a/	a/	4.1	a/	a/	a/	a/	a/	a/	a/	-	-	-	0.1
1981-1985	0.6	1.4	1.7	0.4	0.3	0.6	0.2	a/	a/	a/	5.5	-	-	a/	a/	a/	a/	a/	-	-	-	0.1
1986-1990	1.1	4.3	9.4	1.3	4.1	7.5	1.7	0.2	0.1	0.2	30.1	-	-	a/	a/	0.1	0.1	a/	a/	-	-	0.3
1986	0.1	3.8	12.1	1.3	4.0	5.4	1.2	0.4	0.3	a/	28.6	-	-	-	-	a/	a/	a/	-	-	-	a/
1987	1.7	6.7	2.4	1.4	3.5	12.7	4.5	0.4	0.1	a/	33.3	-	-	-	-	-	a/	-	a/	-	-	a/
1988	1.5	2.4	3.9	1.8	2.9	3.5	0.2	a/	-	a/	16.2	-	-	-	a/	0.2	-	-	-	-	-	0.2
1989	0.6	4.5	22.1	1.5	2.0	4.7	1.8	a/	a/	a/	37.2	-	-	-	-	0.2	a/	a/	-	-	-	0.2
1990	1.6	4.3	6.6	0.7	8.4	11.3	0.8	a/	0.2	1.1	35.1	-	-	0.1	0.1	0.3	0.7	0.1	-	-	-	1.2
1991	-	4.8	6.9	0.9	3.7	6.9	0.4	0.1	1.2	-	24.8	-	-	-	a/	1.0	1.7	0.2	-	a/	-	2.9
1992	0.4	2.6	4.5	1.4	2.8	5.9	1.2	0.2	0.2	0.4	19.5	-	-	-	-	0.2	a/	-	-	-	-	0.2
1993	0.3	5.1	9.5	2.0	0.5	2.7	0.4	a/	0.1	-	20.6	-	-	-	a/	a/	0.1	a/	-	-	-	0.2
1994	0.3	3.0	6.3	1.9	4.1	3.8	1.4	0.8	2.5	-	24.2	-	-	-	-	a/	a/	-	-	-	-	a/
1995	-	14.3	42.9	31.1	27.0	74.1	9.3	0.1	-	-	198.9	-	-	a/	-	a/	a/	a/	-	-	-	a/
1996	-	10.3	16.1	5.2	2.3	7.8	3.2	-	-	-	44.8	-	-	-	-	-	-	-	-	-	-	-
1997 b/	-	16.9	15.4	4.2	26.4	20.0	1.5	0.1	-	-	84.4	-	-	-	-	a/	a/	-	-	-	-	a/
1998 b/	-	2.9	8.8	10.1	11.0	9.0	0.9	0.1	-	-	42.7	-	-	-	-	a/	a/	-	-	-	-	a/
Total Statewide																						
1976-1980	5.8	8.5	8.7	6.4	13.5	22.0	11.9	7.6	6.7	1.3	92.4	a/	a/	0.2	1.5	8.8	15.8	4.4	0.4	a/	a/	31.2
1981-1985	5.9	7.3	7.2	9.4	17.0	27.0	19.6	8.7	5.6	1.4	109.1	-	a/	a/	0.3	4.5	11.1	3.7	0.3	a/	-	19.9
1986-1990	5.6	15.3	26.4	11.3	28.3	42.9	22.6	8.6	4.1	1.3	166.5	-	a/	0.1	0.9	10.4	23.2	5.1	0.6	a/	-	40.3
1986	1.2	16.1	23.5	9.5	24.7	37.4	21.4	5.3	2.0	0.6	141.6	-	a/	-	0.5	5.5	9.1	3.6	a/	a/	-	18.7
1987	5.5	14.1	19.2	12.4	23.1	51.0	44.1	14.9	7.1	1.1	192.5	-	-	-	0.1	5.1	33.1	7.5	1.5	-	-	47.3
1988	6.8	16.1	25.0	20.1	38.0	43.5	12.7	5.3	3.8	0.5	171.8	-	-	a/	0.9	4.3	25.1	3.5	0.5	-	-	34.4
1989	8.0	12.7	42.6	8.6	27.8	48.7	19.7	12.4	3.7	2.4	186.6	-	-	0.1	1.8	14.1	27.2	6.2	0.2	-	-	49.6
1990	6.7	17.6	21.6	6.1	28.1	34.0	15.2	5.0	3.8	1.7	139.8	-	-	0.1	1.4	23.1	21.6	4.7	0.7	0.1	-	51.6
1991	-	8.0	13.0	4.8	19.9	25.1	5.7	2.0	2.2	a/	80.8	-	a/	a/	0.7	34.5	31.9	1.6	0.5	a/	-	69.3
1992	0.5	3.4	5.4	6.3	9.5	24.3	10.1	10.3	3.3	0.5	73.6	a/	a/	a/	0.4	0.4	9.0	0.1	1.5	a/	-	11.5
1993	0.4	9.9	15.0	8.9	7.6	40.4	18.8	5.4	3.6	-	110.0	-	a/	0.1	0.9	2.4	18.8	6.6	1.1	a/	-	29.8
1994	1.3	7.3	15.7	18.3	38.8	53.3	24.7	14.1	9.7	-	183.2	-	-	a/	a/	0.2	0.1	0.1	a/	a/	-	0.5
1995	0.2	27.3	57.9	47.2	80.3	133.7	31.4	17.0	2.1	-	397.2	-	-	a/	a/	0.5	0.1	0.1	0.1	a/	-	0.9
1996	a/	32.0	31.7	15.2	33.0	33.3	12.6	5.0	1.3	-	164.2	-	-	a/	a/	0.3	0.1	0.2	0.1	-	-	0.6
1997 b/	-	20.1	26.9	27.5	47.9	74.5	26.4	3.1	1.0	0.1	227.5	-	-	-	a/	0.1	0.3	0.1	a/	-	-	0.5
1998 b/	a/	3.0	12.6	15.9	24.9	37.5	21.2	4.6	1.8	a/	121.3	-	-	-	-	a/	a/	a/	-	-	-	0.1

a/ Less than 50 fish.
b/ Preliminary.

TABLE A-6. Summary of **Oregon commercial troll** salmon fishing **effort** in days fished and **landings** in numbers of fish by catch area. (Page 1 of 2)

Year or Average	Columbia River[a/]	Tillamook	Newport	Coos Bay	Brookings	Oregon Subtotal	Alaska	Washington	California	Total
DAYS FISHED (thousands)										
1976-1980[b/]	2.9	7.3	16.0	21.5	10.3	58.0	0.1	0.7	0.1	58.7
1981-1985	1.1	3.4	6.0	10.0	5.0	25.5	c/	0.3	0.2	26.0
1986-1990	0.7	6.9	8.7	20.3	1.7	38.2	c/	0.1	c/	38.3
1986	1.2	3.7	8.6	15.8	3.2	32.5	0.0	c/	c/	32.5
1987	0.3	7.3	8.7	21.0	2.0	39.3	0.0	0.1	c/	39.5
1988	0.2	10.5	12.5	26.3	1.4	50.8	c/	0.1	0.1	51.1
1989	0.9	7.8	9.3	22.9	1.2	42.3	0.0	c/	c/	42.3
1990	0.7	5.1	4.3	15.6	0.4	26.2	0.0	0.1	c/	26.2
1991	0.7	3.5	5.1	5.6	c/	14.9	0.0	c/	c/	14.9
1992	0.3	2.6	5.8	0.4	-	9.2	0.0	0.1	-	9.2
1993	0.2	1.8	5.9	1.6	-	9.5	0.0	c/	c/	9.5
1994	-	0.5	2.1	0.8	0.3	3.8	0.0	-	c/	3.8
1995	-	1.3	4.7	1.6	0.3	7.9	0.0	0.0	c/	7.9
1996	-	1.4	4.8	1.8	0.5	8.4	0.0	0.0	0.1	8.5
1997	c/	0.7	5.2	1.6	0.4	7.8	0.0	0.0	c/	7.8
1998[d/]	0.0	1.0	4.5	1.4	0.2	7.2	0.0	0.0	0.0	7.2
CHINOOK LANDINGS (thousands)										
1976-1980[b/]	15.3	11.2	46.6	85.6	73.9	232.6	0.3	2.8	0.9	236.6
1981-1985	5.6	5.9	27.9	63.5	42.6	145.5	0.4	3.0	2.2	151.1
1986-1990	3.5	26.2	82.9	253.4	28.8	394.9	0.1	1.2	1.4	397.6
1986	6.1	14.1	88.0	240.0	53.7	401.9	0.0	0.4	0.4	402.7
1987	4.6	41.4	87.6	350.4	39.8	523.8	0.0	3.7	1.8	529.3
1988	1.6	32.8	129.0	268.5	31.6	463.5	0.5	1.4	4.6	470.0
1989	2.9	30.4	70.7	232.5	16.8	353.2	-	0.2	0.1	353.5
1990	2.3	12.5	39.3	175.8	2.2	232.1	0.0	0.3	c/	232.4
1991	0.9	9.5	33.5	30.5	0.2	74.6	0.0	c/	0.1	74.8
1992	1.5	7.3	94.7	6.2	-	109.7	0.0	0.8	-	110.5
1993	0.4	6.3	64.2	10.5	-	81.5	0.0	0.0	c/	81.5
1994	-	1.7	18.1	4.0	1.5	25.2	0.0	-	0.1	25.3
1995	-	9.7	174.4	26.6	3.3	214.0	0.0	0.0	0.8	214.8
1996	-	13.1	127.8	25.6	8.6	175.2	0.0	0.0	2.0	177.1
1997	c/	2.4	118.7	24.8	3.6	149.6	0.0	0.0	0.1	149.7
1998[d/]	0.0	6.6	95.6	22.1	0.7	125.0	0.0	0.0	0.0	125.0

TABLE A-6. Summary of **Oregon commercial troll** salmon fishing **effort** in days fished and **landings** in numbers of fish by catch area. (Page 2 of 2)

Year or Average	Columbia River[a/]	Tillamook	Newport	Coos Bay	Brookings	Oregon Subtotal	Alaska	Washington	California	Total
					COHO LANDINGS (thousands)					
1976-1980[b/]	75.7	131.6	216.8	301.4	66.9	792.3	1.8	9.3	0.3	803.7
1981-1985	21.3	67.5	87.8	114.3	19.8	310.6	0.0	9.6	0.8	321.0
1986-1990	17.1	106.6	135.9	132.5	5.1	397.2	c/	1.7	0.2	399.1
1986	46.1	96.7	192.3	86.2	19.1	440.4	0.0	-	-	440.4
1987	7.4	74.7	83.0	177.0	4.1	346.2	0.0	7.5	0.3	354.0
1988	-	172.3	252.5	196.4	1.3	622.4	c/	-	0.8	623.2
1989	21.1	136.3	137.8	159.5	1.0	455.7	0.0	-	c/	455.7
1990	10.9	53.3	13.8	43.4	-	121.4	0.0	0.9	c/	122.3
1991	26.7	90.2	88.7	101.0	-	306.6	0.0	0.3	0.1	306.9
1992	1.4	7.9	35.0	5.3	-	49.6	0.0	0.1	-	49.8
1993	1.6	-	c/	c/	-	1.7	0.0	c/	-	1.7
1994	-	-	-	-	-	-	0.0	-	-	-
1995	-	-	-	-	-	-	0.0	0.0	-	-
1996	-	-	-	c/	-	-	0.0	0.0	-	-
1997	-	-	-	-	-	-	0.0	-	-	-
1998[d/]	-	-	-	-	-	-	0.0	-	-	-

a/ Oregon ports only.
b/ Reported by port of landing 1976-1978 and by area of catch 1979-1980.
c/ Less than 50.
d/ Preliminary.

TABLE A-7. **Oregon commercial troll** salmon **effort** in days fished by area and month (beginning in 1979, monthly totals are the sum of statistical weeks with closest fit to the calendar month).[a] (Page 1 of 3)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
				DAYS FISHED (thousands)					
Columbia River									
1976-1980	-	0.2	0.3	1.3	0.8	0.2	0.1	b/	2.9
1981-1985	-	0.4	-	0.3	0.3	b/	b/	-	1.1
1986-1990	-	0.1	b/	b/	0.3	0.1	b/	-	0.7
1986	-	0.3	-	-	0.8	-	-	-	1.2
1987	-	0.1	-	0.2	-	-	-	-	0.3
1988	-	0.1	0.1	-	-	-	-	-	0.2
1989	-	0.1	b/	-	0.6	0.2	-	-	0.9
1990	-	0.1	b/	-	0.2	0.4	b/	-	0.7
1991	-	0.1	b/	-	0.4	0.2	-	-	0.7
1992	-	0.1	0.1	b/	b/	-	-	-	0.3
1993	-	b/	b/	0.1	0.1	0.1	-	-	0.2
1994	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-
1997[c/]	-	b/	b/	-	-	-	-	-	b/
1998[c/]	-	0.0	0.0	-	-	-	-	-	0.0
Tillamook Area									
1976-1980	-	b/	1.0	3.6	2.4	0.2	0.1	-	7.3
1981-1985	-	0.1	b/	2.0	1.0	0.1	0.1	b/	3.4
1986-1990	-	0.2	0.3	3.0	1.7	1.0	0.7	b/	6.9
1986	-	b/	b/	2.7	0.3	0.5	0.1	b/	3.7
1987	-	0.1	0.3	2.6	2.1	1.2	0.9	-	7.3
1988	-	0.2	0.6	4.5	2.9	1.2	1.2	-	10.5
1989	-	0.5	0.7	3.2	1.5	1.3	0.6	-	7.8
1990	-	0.1	0.1	2.2	1.7	0.6	0.5	-	5.1
1991	-	0.1	0.1	1.7	0.4	0.5	0.7	-	3.5
1992	-	0.1	-	0.2	0.8	0.7	0.7	-	2.6
1993	-	0.1	0.1	0.2	0.2	0.8	0.5	-	1.8
1994	-	b/	0.1	-	-	-	0.4	b/	0.5
1995	-	0.1	0.1	-	0.5	0.3	0.2	-	1.3
1996	-	0.1	0.3	-	0.2	0.5	0.3	-	1.4
1997[c/]	b/	0.1	0.1	-	0.1	0.2	0.2	b/	0.7
1998[c/]	b/	0.1	0.1	-	0.2	0.3	0.3	b/	1.0
Newport Area									
1976-1980	-	0.4	1.8	6.9	5.4	1.1	0.4	-	16.0
1981-1985	-	0.6	0.3	3.0	1.7	0.2	0.2	b/	6.0
1986-1990	-	0.8	1.2	3.8	1.6	0.6	0.6	b/	8.7
1986	-	0.9	0.8	5.5	0.4	0.3	0.7	-	8.6
1987	-	1.0	0.9	3.1	1.6	1.2	0.8	-	8.7
1988	-	0.9	1.1	4.8	4.0	0.7	1.0	-	12.5
1989	-	0.9	1.8	4.1	1.4	0.6	0.4	0.1	9.3
1988	-	0.5	1.4	1.8	0.3	0.2	0.1	-	4.3
1991	-	0.6	2.0	0.9	0.6	0.5	0.4	-	5.1
1992	-	1.4	-	1.1	1.7	0.7	0.9	-	5.8
1993	-	1.4	1.1	1.5	0.8	0.7	0.5	-	5.9
1994	-	0.8	0.8	-	-	0.2	0.3	-	2.1
1995	-	0.6	1.0	-	1.6	0.8	0.7	-	4.7
1996	-	1.0	1.1	-	1.3	0.8	0.5	-	4.8
1997[c/]	0.2	1.4	1.3	-	1.3	0.7	0.2	-	5.2
1998[c/]	0.7	1.3	1.2	-	1.0	0.2	0.1	-	4.5

TABLE A-7. **Oregon commercial troll** salmon **effort** in days fished by area and month (beginning in 1979, monthly totals are the sum of statistical weeks with closest fit to the calendar month).[a/] (Page 2 of 3)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
				DAYS FISHED (thousands)					
Coos Bay Area									
1976-1980	-	0.6	2.7	10.3	6.0	1.6	0.4	b/	21.5
1981-1985	-	0.7	0.7	5.2	2.6	0.6	0.2	b/	10.0
1986-1990	-	2.7	3.0	7.3	4.7	1.5	1.0	0.1	20.3
1986	-	2.1	2.4	5.6	4.2	1.2	0.3	-	15.8
1987	-	1.7	1.7	10.3	3.5	3.1	0.7	-	21.0
1988	-	3.2	4.4	7.7	7.1	1.6	2.3	-	26.3
1989	-	4.5	4.2	6.4	4.9	1.1	1.2	0.7	22.9
1990	-	2.2	2.2	6.4	3.6	0.7	0.4	b/	15.6
1991	-	b/	1.8	1.5	1.0	0.8	0.5	-	5.6
1992	-	0.1	-	0.1	0.2	b/	0.1	-	0.4
1993	-	0.6	0.2	b/	b/	0.4	0.3	0.1	1.6
1994	-	0.1	0.3	-	-	0.1	0.3	0.1	0.8
1995	-	0.2	0.5	-	0.5	0.2	0.2	0.1	1.6
1996	-	0.3	0.5	-	0.3	0.4	0.3	0.1	1.8
1997[c/]	0.1	0.5	0.4	-	0.2	0.1	0.2	0.1	1.6
1998[c/]	0.2	0.4	0.4	-	0.2	0.1	0.2	0.1	1.4
Brookings Area									
1976-1980	-	0.2	0.7	3.5	2.6	1.5	1.1	0.7	10.3
1981-1985		0.3	0.2	1.4	1.7	0.4	0.7	0.3	5.0
1986-1990	-	0.3	0.5	0.1	0.4	0.1	0.1	0.1	1.7
1986	-	0.5	0.7	0.6	1.1	-	0.2	0.1	3.2
1987	-	0.5	0.9	-	-	-	0.3	0.3	2.0
1988	-	0.3	0.6	-	-	0.1	0.1	0.3	1.4
1989	-	0.2	0.3	-	0.4	0.3	-	-	1.2
1990	-	b/	-	-	0.4	b/	-	-	0.4
1991	-	-	-	-	-	b/	-	-	b/
1992	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-
1994	-	b/	-	-	0.1	-	0.2	-	0.3
1995	-	b/	-	b/	-	-	0.2	-	0.3
1996	-	0.1	b/	-	0.2	-	0.2	-	0.5
1997[c/]	b/	0.1	-	-	b/	-	0.2	-	0.4
1998[c/]	0.0	b/	-	-	b/	-	0.2	-	0.2
South of Cape Falcon									
1976-1980	-	1.2	6.2	24.3	16.3	4.4	2.0	0.7	55.1
1981-1985	-	1.7	1.2	11.6	7.1	1.4	1.2	0.3	24.4
1986-1990	-	4.1	5.1	14.3	8.3	3.2	2.4	0.3	37.5
1986	-	3.6	4.0	14.3	6.0	2.0	1.3	0.1	31.3
1987	-	3.3	3.9	16.1	7.3	5.5	2.7	0.3	39.0
1988	-	4.5	6.6	16.9	14.1	3.6	4.6	0.3	50.6
1989	-	6.2	7.1	13.6	8.2	3.3	2.1	0.8	41.3
1990	-	2.8	3.7	10.4	6.0	1.5	1.0	b/	25.4
1991	-	0.7	3.9	4.1	2.0	1.9	1.6	-	14.2
1992	-	1.6	-	1.5	2.7	1.5	1.7	-	8.9
1993	-	2.1	1.3	1.7	1.0	1.9	1.2	0.1	9.3
1994	-	1.0	1.2	-	0.1	0.3	1.2	0.1	3.8
1995	-	1.0	1.6	b/	2.6	1.3	1.3	0.1	7.9
1996	-	1.5	2.0	-	2.0	1.6	1.2	0.1	8.4
1997[c/]	0.4	2.1	1.9	-	1.7	1.0	0.7	0.1	7.8
1998[c/]	0.9	1.8	1.7	-	1.4	0.6	0.8	0.1	7.2

TABLE A-8. **Oregon commercial troll** chinook and coho salmon **landings** in numbers of fish by catch area and month (beginning in 1979, monthly totals are the sum of statistical weeks with closest fit to the calendar month).[a/] (Page 2 of 4)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	June	July	Aug.	Sept.	Oct.	Season
						CHINOOK (thousands)						**COHO (thousands)**			
Newport Area															
1976-1980	-	3.6	6.5	12.5	16.4	4.8	2.8	b/	46.6	36.4	110.3	63.5	5.8	0.8	216.8
1981-1985	-	6.3	2.3	11.7	5.1	1.0	1.5	-	27.9	-	60.3	26.7	0.8	-	87.8
1986-1990	-	8.8	14.1	27.8	14.4	6.9	10.9	-	82.9	b/	108.3	26.5	1.0	-	135.9
1986	-	10.2	11.9	30.9	5.5	6.9	22.5	-	88.0	-	192.3	-	-	-	192.3
1987	-	10.5	7.5	24.1	23.7	13.7	8.1	-	87.6	-	59.3	18.5	5.2	-	83.0
1988	-	8.4	15.2	46.7	32.3	8.9	17.5	-	129.0	-	146.3	106.2	-	-	252.5
1989	-	12.4	19.1	20.6	8.3	4.5	5.7	-	70.7	-	129.8	8.0	-	-	137.8
1990	-	2.5	16.5	16.6	2.3	0.6	0.8	-	39.3	0.1	13.7	-	-	-	13.8
1991	-	2.9	7.4	3.4	5.8	7.0	7.0	-	33.5	58.3	30.4	-	-	-	88.7
1992	-	19.6	-	28.5	21.9	8.5	16.2	-	94.7	-	19.0	15.9	-	-	35.0
1993	-	17.1	13.7	11.9	9.4	8.6	3.5	-	64.2	-	-	b/	-	-	b/
1994	-	7.2	7.0	-	-	1.0	2.8	-	18.1	-	-	-	-	-	-
1995	-	8.6	28.0	-	79.4	33.3	25.1	-	174.4	-	-	-	-	-	-
1996	-	22.7	20.6	-	53.6	19.4	11.5	-	127.8	-	-	-	-	-	-
1997[c/]	2.4	24.0	26.9	-	38.7	24.0	2.8	-	118.7	-	-	-	-	-	-
1998[c/]	16.5	34.0	25.0	-	16.8	2.3	0.9	-	95.6	-	-	-	-	-	-
Coos Bay Area															
1976-1980	-	3.1	11.9	30.2	28.9	7.5	3.9	b/	85.6	69.9	176.0	52.1	3.2	0.2	301.4
1981-1985	-	5.5	4.3	29.9	17.2	5.4	1.1	b/	63.5	-	101.9	12.4	b/	-	114.3
1986-1990	-	30.5	28.2	103.6	64.0	17.4	9.2	0.7	253.4	b/	103.6	26.8	2.0	-	132.5
1986	-	18.2	21.3	94.9	83.3	20.6	1.7	-	240.0	-	86.2	-	-	-	86.2
1987	-	17.8	11.4	228.6	47.4	40.4	4.8	-	350.4	b/	146.3	20.5	10.2	-	177.0
1988	-	39.4	47.3	54.2	87.6	14.0	26.0	-	268.5	-	117.1	79.3	-	-	196.4
1989	-	64.8	45.2	42.8	57.7	7.2	11.3	3.4	232.5	-	125.2	34.3	-	-	159.5
1990	-	12.1	15.5	97.3	44.1	4.7	2.1	b/	175.8	b/	43.4	-	-	-	43.4
1991	-	0.1	5.1	9.0	3.9	8.9	3.5	-	30.5	32.8	68.2	c/	-	-	101.0
1992	-	0.6	-	2.6	2.0	0.3	0.6	-	6.2	-	3.2	2.1	-	-	5.3
1993	-	2.7	0.9	0.2	0.4	4.4	1.3	0.7	10.5	-	-	-	-	b/	b/
1994	-	0.4	1.6	-	-	0.2	1.5	0.4	4.0	-	-	-	-	-	-
1995	-	1.6	7.0	-	11.9	4.1	1.6	0.3	26.6	-	-	-	-	-	-
1996	-	2.2	10.1	-	6.1	4.5	1.9	0.8	25.6	b/	-	-	-	-	b/
1997[c/]	2.0	6.7	7.9	-	5.5	1.1	1.2	0.5	24.8	-	-	-	-	-	-
1998[c/]	3.3	5.2	7.9	-	2.7	0.5	1.7	0.9	22.1	-	-	-	-	-	-

TABLE A-8. **Oregon commercial troll** chinook and coho salmon **landings** in numbers of fish by catch area and month (beginning in 1979, monthly totals are the sum of statistical weeks with closest fit to the calendar month).[a/] (Page 3 of 4)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	June	July	Aug.	Sept.	Oct.	Season
						CHINOOK (thousands)						**COHO (thousands)**			
Brookings Area															
1976-1980	-	1.8	4.2	21.3	27.1	10.5	6.6	2.4	73.9	10.6	43.1	11.7	1.6	0.1	66.9
1981-1985	-	1.7	1.9	10.4	20.1	3.9	3.5	1.1	42.6	-	12.7	7.1	-	-	19.8
1986-1990	-	5.1	13.4	1.9	5.2	1.7	0.6	0.9	28.8	3.7	1.4	-	-	-	5.1
1986	-	3.7	16.7	9.6	22.1	-	1.0	0.6	53.7	12.0	7.1	-	-	-	19.1
1987	-	8.8	28.0	-	-	-	1.1	1.9	39.8	4.1	-	-	-	-	4.1
1988	-	8.2	20.7	-	-	0.1	0.8	1.9	31.6	1.3	-	-	-	-	1.3
1989	-	4.6	1.9	-	1.9	8.4	-	-	16.8	1.0	-	-	-	-	1.0
1990	-	0.1	-	-	2.1	0.1	-	-	2.2	-	-	-	-	-	-
1991	-	-	-	-	-	0.2	-	-	0.2	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	0.2	-	-	0.2	-	1.0	-	1.5	-	-	-	-	-	-
1995	-	0.3	-	1.7	-	-	1.3	-	3.3	-	-	-	-	-	-
1996	-	2.9	2.2	-	2.7	-	0.8	-	8.6	-	-	-	-	-	-
1997[c/]	0.1	2.3	-	-	0.3	-	0.9	-	3.6	-	-	-	-	-	-
1998[c/]	0.0	0.1	-	-	0.1	-	0.6	-	0.7	-	-	-	-	-	-
South of Cape Falcon															
1976-1980	-	9.1	25.9	68.1	75.0	23.3	13.5	2.5	217.3	146.8	396.9	159.0	12.9	1.1	716.7
1981-1985	-	15.1	8.7	54.3	43.6	10.7	6.4	1.1	139.9	-	229.9	58.3	1.2	-	289.3
1986-1990	-	46.1	58.8	141.5	89.6	30.7	23.1	1.6	391.4	3.7	296.8	75.5	4.2	-	380.1
1986	-	32.4	50.0	138.1	114.0	34.0	26.7	0.6	395.8	12.0	382.3	-	-	-	394.3
1987	-	38.9	48.6	268.9	82.7	61.0	17.2	1.9	519.2	4.1	255.1	58.8	20.8	-	338.8
1988	-	56.9	88.8	110.4	128.8	27.2	47.9	1.9	461.8	1.3	387.5	233.6	-	-	622.4
1989	-	87.2	74.1	70.2	71.5	24.2	19.7	3.4	350.3	1.0	372.2	61.4	-	-	434.6
1990	-	15.1	32.6	120.1	50.8	7.1	4.2	b/	229.9	0.1	86.6	23.7	-	-	110.5
1991	-	3.3	12.6	15.5	11.6	18.2	12.4	-	73.7	91.2	188.7	b/	-	-	279.9
1992	-	20.6	-	31.5	26.1	10.7	19.3	-	108.2	-	23.1	25.1	-	b/	48.2
1993	-	20.3	14.7	12.9	10.4	15.6	6.4	0.7	81.1	-	-	b/	-	b/	b/
1994	-	7.9	8.9	-	0.2	1.2	6.6	0.4	25.2	-	-	-	-	-	-
1995	-	10.9	35.8	1.7	97.9	38.5	28.8	0.3	214.0	-	-	-	-	-	-
1996	-	28.5	41.5	-	63.5	26.0	14.9	0.8	175.2	b/	-	-	-	-	b/
1997[c/]	4.5	33.3	35.4	-	44.7	25.8	5.4	0.5	149.5	-	-	-	-	-	-
1998[c/]	19.9	39.7	33.8	-	21.8	4.9	4.0	0.9	125.0	-	-	-	-	-	-

TABLE A-8. **Oregon commercial troll** chinook and coho salmon **landings** in numbers of fish by catch area and month (beginning in 1979, monthly totals are the sum of statistical weeks with closest fit to the calendar month).[a/] (Page 4 of 4)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	June	July	Aug.	Sept.	Oct.	Season
						CHINOOK (thousands)						**COHO (thousands)**			
Total All Areas															
1976-1980	-	14.1	30.5	71.2	76.5	23.8	14.0	2.5	232.6	169.7	431.4	171.9	17.6	1.8	792.3
1981-1985	-	19.8	8.7	54.8	43.9	10.7	6.4	1.1	145.5	-	241.2	67.8	1.7	-	310.6
1986-1990	-	47.9	59.0	142.0	90.1	31.2	23.1	1.6	394.9	3.7	298.2	86.8	8.4	0.1	397.2
1986	-	36.9	50.0	138.1	115.6	34.0	26.7	0.6	401.9	12.0	382.3	46.1	-	-	440.4
1987	-	41.2	48.6	271.1	82.7	61.0	17.2	1.9	523.8	4.1	262.5	58.8	20.8	-	346.2
1988	-	57.9	89.5	110.4	128.8	27.2	47.9	1.9	463.5	1.3	387.5	233.6	-	-	622.4
1989	-	87.9	74.5	70.2	72.2	25.4	19.7	3.4	353.2	1.0	372.2	68.2	14.4	-	455.7
1990	-	15.6	32.7	120.1	51.3	8.3	4.2	b/	232.1	0.1	86.6	27.3	7.0	0.3	121.4
1991	-	3.6	12.6	15.5	12.1	18.3	12.4	-	74.6	91.2	188.7	21.6	5.2	-	306.6
1992	-	21.0	0.9	31.6	26.2	10.7	19.3	-	109.7	-	23.7	25.9	-	b/	49.6
1993	-	20.6	14.7	13.0	10.5	15.6	6.4	0.7	81.5	-	0.2	1.2	0.2	b/	1.7
1994	-	7.9	8.9	-	0.2	1.2	6.6	0.4	25.2	-	-	-	-	-	-
1995	-	10.9	35.8	1.7	97.9	38.5	28.8	0.3	214.0	-	-	-	-	-	-
1996	-	28.5	41.5	-	63.5	26.0	14.9	0.8	175.2	b/	-	-	-	-	b/
1997[c/]	4.5	33.4	35.4	-	44.7	25.8	5.4	0.5	149.6	-	-	-	-	-	-
1998[c/]	19.9	39.7	33.8	-	21.8	4.9	4.0	0.9	125.0	-	-	-	-	-	-

a/ Excludes harvests off Alaska, Washington, and California that were landed in Oregon. Landings are reported by port of landing prior to 1979 and by area of catch after 1978. Catch and landing areas include the following port areas: Columbia River includes Oregon ports from Astoria through Cannon Beach; Tillamook area includes Nehalem through Pacific City; Newport area includes Depoe Bay through Waldport; Coos Bay area prior to 1988 includes Florence through Bandon and after 1987 includes Florence through Port Orford; Brookings area prior to 1988 includes Port Orford through Brookings and after 1987 includes Gold Beach through Brookings.

b/ Less than 50 fish.

c/ Preliminary.

TABLE A-9. **Oregon** ocean **recreational effort** in salmon angler trips by catch area and month.[a/] (Page 1 of 3)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
				ANGLER TRIPS (thousands)					
Columbia River									
1976-1980	-	0.9	8.6	17.4	25.3	8.3	0.2	b/	60.7
1981-1985	-	0.2	2.6	11.8	9.9	1.7	-	-	26.2
1986-1990	-	b/	0.9	8.9	7.6	0.3	-	-	17.7
1986	-	-	0.7	12.1	7.7	-	-	-	20.5
1987	-	-	0.6	8.5	8.0	-	-	-	17.1
1988	-	-	-	5.7	-	-	-	-	5.7
1989	-	0.1	1.2	9.2	9.2	-	-	-	19.8
1990	-	-	1.9	8.9	13.2	1.4	-	-	25.5
1991	-	-	1.5	9.0	9.4	1.8	-	-	21.7
1992	-	-	-	9.8	1.8	1.3	-	-	12.9
1993	-	-	-	5.7	7.9	4.3	-	-	17.8
1994	-	-	-	-	-	-	-	-	-
1995	-	-	-	2.3	7.7	1.0	-	-	10.9
1996	-	-	-	1.0	3.8	0.9	-	-	5.6
1997[c/]	-	-	-	2.8	0.8	-	-	-	3.6
1998[c/]	-	-	-	-	1.8	0.3	-	-	2.1
Tillamook Area									
1976-1980	-	1.0	5.5	14.8	18.5	3.8	0.2	b/	43.8
1981-1985	-	0.3	1.2	14.2	11.6	2.7	0.3	-	30.3
1986-1990	-	0.1	2.0	12.1	10.7	4.1	d/	d/	29.0
1986	-	b/	1.9	13.0	3.1	-	d/	-	17.9
1987	-	-	1.8	12.4	10.9	3.8	d/	-	29.1
1988	-	0.3	2.1	9.6	13.8	7.4	d/	-	33.3
1989	-	0.3	3.0	15.4	9.5	3.1	d/	-	31.3
1990	-	0.1	1.2	9.9	16.3	6.0	d/	-	33.5
1991	-	0.4	4.0	16.6	-	-	d/	-	21.0
1992	-	1.2	3.4	11.7	7.1	2.8	d/	-	26.1
1993	-	0.8	0.2	3.1	1.5	-	d/	-	5.6
1994	-	0.6	0.9	-	-	-	8.7	b/	10.3
1995	-	0.6	0.1	-	-	1.3	1.0	0.8	3.8
1996	-	0.7	0.1	b/	0.5	3.7	3.3	-	8.3
1997[c/]	-	b/	0.1	0.1	0.3	1.4	1.8	-	3.6
1998[c/]	-	0.6	0.1	b/	0.3	2.3	2.9	-	6.0
Newport Area									
1976-1980	-	2.7	14.8	37.8	34.8	6.8	0.7	b/	97.7
1981-1985	-	0.5	3.8	29.0	20.8	3.0	-	-	57.1
1986-1990	-	0.8	7.8	37.4	23.3	5.3	-	-	74.6
1986	-	1.4	3.9	38.9	8.0	-	-	-	52.2
1987	-	-	5.2	40.0	23.2	8.6	-	-	76.9
1988	-	1.0	7.1	37.9	34.2	9.4	-	-	89.6
1989	-	0.9	17.2	37.5	22.8	4.3	-	-	82.8
1990	-	0.7	5.5	32.8	28.3	4.1	-	-	71.4
1991	-	0.8	11.8	40.6	-	-	-	-	53.3
1992	-	1.1	7.1	27.9	14.6	2.4	-	-	53.0
1993	-	0.2	0.2	11.6	5.1	-	-	-	17.1
1994	-	0.1	b/	-	-	-	-	-	0.1
1995	-	0.1	0.3	-	-	0.4	0.1	-	0.9
1996	-	0.3	0.2	b/	1.8	0.5	-	-	2.8
1997	b/	0.1	0.2	0.1	1.7	0.3	-	-	2.4
1998[c/]	-	b/	0.1	0.1	0.9	0.2	b/	-	1.3

TABLE A-9. **Oregon** ocean **recreational effort** in salmon angler trips by catch area and month.[a/] (Page 2 of 3)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
				ANGLER TRIPS (thousands)					
Coos Bay Area									
1976-1980	-	5.3	24.1	44.6	29.7	7.0	0.4	b/	111.1
1981-1985	-	1.3	8.0	34.9	16.7	2.8	d/	d/	63.7
1986-1990	-	0.7	8.7	33.1	15.3	3.5	d/	d/	61.4
1986	-	0.8	4.9	33.6	4.3	-	d/	d/	43.6
1987	-	-	3.9	40.6	12.8	5.2	d/	d/	62.5
1988	-	1.4	9.8	33.1	21.0	3.7	d/	d/	69.0
1989	-	0.8	16.2	33.9	13.6	2.1	d/	d/	66.6
1990	-	0.6	8.8	24.3	24.9	6.4	-	-	65.0
1991	-	1.0	17.3	39.4	-	-	-	-	57.7
1992	-	1.4	9.4	28.6	12.8	3.3	d/	-	55.6
1993	-	0.3	0.9	10.1	4.1	-	-	-	15.3
1994	-	0.2	0.2	-	-	-	d/	d/	0.4
1995	-	0.1	0.5	-	-	0.1	d/	d/	0.7
1996	-	0.2	0.6	0.6	1.9	0.7	d/	d/	3.9
1997[c/]	b/	0.3	0.5	0.8	2.0	0.4	d/	d/	3.9
1998[c/]	-	b/	b/	0.3	1.9	0.1	d/	d/	2.4
Brookings Area									
1976-1980	-	1.3	11.8	27.8	20.2	6.8	5.6	0.9	74.4
1981-1985	-	1.7	6.3	25.9	15.4	3.4	3.4	0.1	56.2
1986-1990	-	2.2	13.0	24.7	13.1	3.2	2.2	-	58.4
1986	-	3.6	10.4	20.1	13.0	0.6	5.0	-	52.7
1987	-	2.3	10.0	29.0	15.2	7.1	5.9	-	69.4
1988	-	0.8	14.2	25.2	11.3	1.6	-	-	53.1
1989	-	3.1	15.7	26.6	14.6	5.8	-	-	65.8
1990	-	1.4	14.5	22.8	11.5	0.8	-	-	51.1
1991	-	1.1	11.6	17.8	1.9	4.0	-	-	36.4
1992	-	-	-	8.9	-	4.9	3.9	-	17.7
1993	-	1.7	4.7	6.5	8.1	2.8	-	-	23.8
1994	-	6.3	1.3	-	1.4	2.9	4.2	-	16.2
1995	-	2.3	6.2	-	2.0	5.5	3.4	0.0	19.4
1996	-	1.7	5.9	2.2	6.0	3.2	4.3	-	23.3
1997[c/]	-	2.5	3.5	2.9	5.5	1.0	1.3	-	16.6
1998[c/]	-	1.4	2.2	1.5	4.2	2.0	2.8	-	14.1
South of Cape Falcon									
1976-1980	-	10.3	56.2	125.1	103.2	24.3	7.0	1.0	327.0
1981-1985	-	3.8	19.4	104.0	64.4	11.9	3.7	0.1	207.3
1986-1990	-	3.9	31.5	107.3	62.5	16.0	2.2	d/	223.4
1986	-	5.7	21.2	105.6	28.3	0.6	5.0	d/	166.4
1987	-	2.3	20.9	122.0	62.1	24.7	5.9	d/	237.9
1988	-	3.5	33.2	105.8	80.4	22.1	d/	d/	245.0
1989	-	5.1	52.2	113.3	60.4	15.4	d/	d/	246.4
1990	-	2.8	30.0	89.8	81.1	17.4	d/	-	221.0
1991	-	3.4	44.7	114.4	1.9	4.0	d/	-	168.4
1992	-	3.7	19.9	77.1	34.4	13.4	3.9	-	152.4
1993	-	3.0	6.0	31.3	18.7	2.8	d/	d/	61.8
1994	-	7.2	2.4	-	1.4	2.9	13.0	b/	26.9
1995	-	3.2	7.1	-	2.0	7.4	4.6	0.8	24.9
1996	-	3.0	6.8	2.8	10.2	8.0	7.5	-	38.3
1997[c/]	b/	2.9	4.2	3.8	9.5	3.1	3.1	d/	26.6
1998[c/]	-	2.0	2.4	1.9	7.3	4.6	5.7	d/	23.9

TABLE A-9. **Oregon** ocean **recreational effort** in salmon angler trips by catch area and month.[a/] (Page 3 of 3)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
				ANGLER TRIPS (thousands)					
Total All Areas									
1976-1980	-	11.2	64.8	142.5	128.5	32.7	7.2	1.0	387.7
1981-1985	-	4.0	22.0	115.8	74.3	13.6	3.7	0.1	233.5
1986-1990	-	3.9	32.4	116.2	70.1	16.3	2.2	d/	241.1
1986	-	5.7	21.9	117.7	36.0	0.6	5.0	d/	187.0
1987	-	2.3	21.5	130.5	70.2	24.7	5.9	d/	255.1
1988	-	3.5	33.2	111.5	80.4	22.1	d/	d/	250.7
1989	-	5.3	53.4	122.6	69.6	15.4	d/	-	266.3
1990	-	2.8	32.0	98.7	94.3	18.8	d/	-	246.6
1991	-	3.4	46.2	123.4	11.3	5.8	d/	-	190.1
1992	-	3.7	19.9	86.9	36.3	14.7	3.9	-	165.3
1993	-	3.0	6.0	37.0	26.5	7.1	d/	d/	79.6
1994	-	7.2	2.4	-	1.4	2.9	13.0	b/	26.9
1995	-	3.2	7.1	2.3	9.6	8.4	4.6	0.8	35.8
1996	-	3.0	6.8	3.8	13.9	8.9	7.5	-	44.0
1997	b/	2.9	4.2	6.7	10.3	3.1	3.1	d/	30.2
1998[c/]	-	2.0	2.4	1.9	9.1	4.9	5.7	d/	26.0

a/ Monthly totals are the sum of statistical weeks with closest fit to the calendar month. The 1976-1980 effort is from combined salmon/steelhead punch card and sampled port data. Since 1981, data from sampled ports only. Effort since 1979 consists of salmon angler trips only. Data prior to 1979 include combined bottomfish and salmon trips. Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

b/ Less than 50 angler trips.

c/ Preliminary.

d/ Estimates not available in late-season, state water fisheries off Tillamook Bay and Elk River.

TABLE A-10. **Oregon** ocean **recreational** salmon **landings** in numbers of fish by catch area and month.[a/] (Page 1 of 4)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	May	June	July	Aug.	Sept.	Season
						CHINOOK (thousands)						COHO (thousands)			
Columbia River															
1976-1980[b/]	-	0.3	3.2	4.1	8.0	1.5	0.1	c/	17.1	0.9	12.9	20.7	21.7	7.1	63.5
1981-1985	-	c/	0.7	2.4	1.9	0.3	-	-	5.4	0.3	3.6	16.5	11.2	2.2	33.8
1986-1990	-	c/	0.1	1.0	1.2	c/	-	-	2.3	-	2.2	16.0	10.6	0.3	29.0
1986	-	-	0.1	1.3	0.7	-	-	-	2.1	-	1.7	23.3	14.1	-	39.1
1987	-	-	0.2	2.0	1.9	-	-	-	4.1	-	0.9	12.5	12.3	-	25.6
1988	-	-	-	0.5	-	-	-	-	0.5	-	-	9.8	-	-	9.8
1989	-	c/	0.2	0.2	1.1	-	-	-	1.5	-	4.9	19.6	9.8	-	34.3
1990	-	-	0.1	0.9	2.2	0.1	-	-	3.3	-	3.5	14.7	16.6	1.3	36.1
1991	-	-	0.1	0.3	0.6	c/	-	-	1.0	-	2.4	16.4	17.2	3.4	39.4
1992	-	-	-	0.3	0.2	c/	-	-	0.5	-	-	17.9	3.0	1.4	22.3
1993	-	-	-	0.2	0.4	0.2	-	-	0.8	-	-	7.1	10.3	3.8	21.2
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	f/	0.1	f/	-	-	0.1	-	-	2.0	9.0	0.8	11.8
1996	-	-	-	f/	f/	f/	-	-	f/	-	-	1.4	4.7	0.9	7.0
1997[d/]	-	-	-	0.1	0.1	-	-	-	0.2	-	-	4.5	1.4	-	5.8
1998[d/]	-	-	-	-	0.1	c/	-	-	0.1	-	-	-	2.0	0.2	2.2
Tillamook Area															
1976-1980[b/]	-	0.1	0.2	0.4	0.7	0.1	c/	c/	1.4	0.3	3.2	6.3	11.4	1.0	22.3
1981-1985	-	c/	c/	0.8	0.6	0.1	c/	-	1.5	0.1	0.5	10.3	8.7	0.6	20.2
1986-1990	-	c/	0.1	0.4	0.8	0.4	e/	e/	1.8	c/	2.0	12.5	8.7	1.5	24.8
1986	-	-	c/	0.2	0.2	-	e/	-	0.5	-	3.4	15.8	5.1	-	24.3
1987	-	-	0.1	0.8	2.0	0.6	e/	-	3.5	-	0.6	10.2	4.9	0.7	16.4
1988	-	c/	0.1	0.3	1.3	1.0	e/	-	2.7	0.1	1.8	8.2	14.2	5.7	29.9
1989	-	c/	0.1	0.3	0.3	0.2	e/	-	0.9	c/	3.4	19.7	7.0	0.1	30.3
1990	-	-	c/	0.5	0.4	0.3	e/	-	1.2	-	0.9	8.8	12.4	0.8	22.9
1991	-	c/	0.3	0.4	-	-	e/	-	0.7	c/	2.5	23.1	-	-	25.7
1992	-	0.1	0.3	0.6	0.3	0.2	e/	-	1.5	0.1	1.8	11.3	6.1	1.4	20.8
1993	-	0.1	c/	0.2	c/	-	e/	-	0.3	c/	c/	0.9	1.4	-	2.3
1994	-	0.1	0.1	-	-	-	2.2	-	2.4	-	-	-	-	-	f/
1995	-	0.1	c/	-	-	0.1	0.3	0.1	0.5	-	-	-	-	f/	f/
1996	-	0.1	c/	c/	0.1	0.7	0.7	-	1.6	-	-	-	f/	f/	f/
1997	-	c/	c/	c/	c/	0.2	0.3	e/	0.5	-	-	f/	-	f/	f/
1998[d/]	-	0.1	c/	0.0	c/	0.5	0.5	e/	1.1	-	-	-	f/	f/	f/

TABLE A-10. **Oregon** ocean **recreational** salmon **landings** in numbers of fish by catch area and month.[a/] (Page 2 of 4)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	May	June	July	Aug.	Sept.	Season
						CHINOOK (thousands)						COHO (thousands)			
Newport Area															
1976-1980[b/]	-	0.1	0.5	0.8	0.8	0.2	c/	c/	2.5	1.3	12.7	25.3	22.8	1.8	64.0
1981-1985	-	c/	0.2	1.5	0.9	0.1	-	-	2.7	0.1	2.1	22.8	19.2	1.8	46.0
1986-1990	-	0.1	0.6	1.6	1.0	0.4	-	-	3.7	0.5	8.3	45.7	24.3	3.8	82.6
1986	-	0.1	0.1	1.9	0.1	-	-	-	2.3	1.5	7.6	57.4	13.9	-	80.4
1987	-	-	0.2	2.4	2.1	1.7	-	-	6.4	-	1.3	43.1	14.5	6.3	65.3
1988	-	0.1	1.6	1.8	1.6	0.2	-	-	5.3	c/	2.8	42.5	44.5	11.0	100.9
1989	-	0.1	0.7	0.5	0.4	c/	-	-	1.8	0.8	24.2	47.4	29.6	0.6	102.5
1990	-	c/	0.3	1.4	0.8	0.2	-	-	2.7	0.2	5.8	37.9	19.0	1.2	64.1
1991	-	0.1	0.4	0.4	-	-	-	-	0.9	0.1	15.2	65.8	-	-	81.1
1992	-	0.1	0.3	2.8	0.9	0.1	-	-	4.1	c/	9.7	34.7	16.9	2.2	63.5
1993	-	c/	0.0	0.3	0.1	-	-	-	0.4	c/	c/	9.4	7.0	-	16.4
1994	-	c/	0.0	-	-	-	-	-	c/	-	-	-	-	-	-
1995	-	c/	c/	-	-	c/	c/	-	0.1	-	-	-	-	f/	f/
1996	-	c/	c/	c/	0.4	0.1	-	-	0.6	-	-	-	f/	f/	f/
1997[d/]	0.0	c/	0.1	0.2	0.9	0.1	-	-	1.3	-	-	-	f/	-	f/
1998[d/]	-	c/	0.1	0.1	0.2	c/	-	-	0.4	-	-	f/	f/	-	f/
Coos Bay Area															
1976-1980[b/]	-	0.5	2.1	2.9	3.6	1.2	0.1	c/	10.3	7.5	31.0	44.6	20.7	2.8	106.9
1981-1985	-	c/	0.6	4.1	2.0	0.4	-	-	7.1	1.3	8.2	29.5	13.0	1.4	53.3
1986-1990	-	0.1	1.2	5.0	2.2	0.8	e/	e/	9.3	0.4	9.8	39.9	13.0	1.7	64.8
1986	-	c/	1.0	4.5	0.5	-	e/	e/	6.1	1.1	8.0	48.0	6.1	-	63.2
1987	-	-	0.9	10.7	4.6	2.8	e/	e/	19.0	-	1.0	44.6	6.4	2.1	54.1
1988	-	0.2	1.7	2.8	3.1	0.2	e/	e/	8.1	c/	5.2	45.0	17.7	3.3	71.3
1989	-	0.1	1.8	4.3	0.6	c/	e/	e/	6.7	0.7	22.3	38.5	11.6	c/	73.1
1990	-	c/	0.6	2.8	2.3	0.8	-	-	6.6	c/	12.4	23.5	23.2	3.1	62.2
1991	-	c/	2.1	2.9	-	-	-	-	5.1	0.8	23.4	66.5	-	-	90.8
1992	-	0.1	2.0	1.0	0.3	0.4	e/	-	3.8	0.5	13.1	43.9	15.8	2.7	76.0
1993	-	0.1	c/	0.6	0.4	-	e/	e/	1.1	0.1	0.1	7.6	4.4	-	12.2
1994	-	c/	c/	-	-	-	e/	e/	c/	-	-	-	-	-	-
1995	-	c/	0.2	-	-	c/	c/	-	0.2	-	-	-	-	-	-
1996	-	c/	0.1	0.3	0.3	0.1	-	e/	0.8	-	-	-	f/	f/	f/
1997	c/	c/	0.1	0.1	0.4	0.1	-	e/	0.7	-	-	f/	f/	-	f/
1998[d/]	-	0.0	c/	c/	0.4	c/	-	e/	0.5	-	-	-	0.1	-	0.1

TABLE A-10. **Oregon** ocean **recreational** salmon **landings** in numbers of fish by catch area and month.[a/] (Page 3 of 4)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	May	June	July	Aug.	Sept.	Season
					CHINOOK (thousands)							**COHO (thousands)**			
Brookings Area															
1976-1980[g/]	-	0.1	1.0	2.8	3.4	0.6	0.7	0.1	8.6	0.4	10.6	15.4	5.3	0.5	32.5
1981-1985	-	0.7	1.3	9.2	4.2	0.6	0.5	c/	16.4	0.2	1.9	7.5	2.4	0.1	12.1
1986-1990	-	0.4	5.5	7.2	4.0	1.4	0.3	-	18.8	0.4	3.4	11.4	3.3	0.5	18.9
1986	-	1.1	2.8	3.5	3.9	c/	0.6	-	12.0	1.5	2.6	5.7	2.1	-	12.0
1987	-	0.1	3.8	9.8	5.6	5.9	1.1	-	26.4	c/	0.5	14.0	3.1	1.4	19.0
1988	-	0.1	12.4	6.5	2.6	0.1	-	-	21.7	c/	1.0	12.1	1.8	0.1	15.0
1989	-	0.4	3.6	9.4	6.8	1.0	-	-	21.2	0.2	4.2	20.3	7.5	0.8	33.0
1990	-	0.4	4.6	6.5	1.2	c/	-	-	12.7	0.1	8.4	5.0	1.8	c/	15.3
1991	-	c/	4.1	2.3	0.1	0.3	-	-	6.8	-	10.2	10.6	0.5	0.9	22.2
1992	-	-	-	1.5	-	0.4	0.7	-	2.7	-	-	2.9	-	0.4	3.3
1993	-	1.1	0.2	0.6	1.3	0.5	-	-	3.8	0.1	0.1	1.9	3.4	0.5	6.0
1994	-	1.9	0.1	-	0.3	0.3	1.1	-	3.6	-	-	-	f/	f/	f/
1995	-	0.2	1.6	-	0.5	2.6	0.8	-	5.7	-	f/	-	f/	0.1	0.1
1996	-	0.5	2.7	0.3	2.8	0.6	1.3	-	8.2	-	f/	f/	f/	f/	0.1
1997[d/]	-	0.8	0.8	1.0	1.6	0.1	0.7	-	5.1	f/	f/	f/	f/	f/	0.1
1998[d/]	-	0.2	0.3	0.3	0.4	0.2	0.4	-	2.0	-	f/	f/	f/	-	f/
South of Cape Falcon															
1976-1980[h/]	-	0.8	3.8	6.9	8.4	2.0	0.8	0.1	22.8	9.5	57.5	91.6	60.1	6.1	225.7
1981-1985	-	0.7	2.1	15.5	7.7	1.2	0.5	c/	27.7	1.6	12.7	70.2	43.3	3.9	131.6
1986-1990	-	0.5	7.3	14.2	8.1	3.0	0.3	e/	33.6	1.2	23.5	109.5	49.3	7.5	191.1
1986	-	1.2	4.0	10.2	4.7	c/	0.6	e/	20.8	4.1	21.6	126.8	27.3	-	179.8
1987	-	0.1	5.1	23.8	14.3	11.0	1.1	e/	55.4	c/	3.4	111.9	29.0	10.5	154.9
1988	-	0.4	15.8	11.5	8.6	1.6	e/	e/	37.8	0.1	10.9	107.8	78.1	20.1	217.0
1989	-	0.6	6.2	14.5	8.0	1.2	e/	e/	30.6	1.6	54.2	125.9	55.7	1.5	239.0
1990	-	0.4	5.6	11.2	4.7	1.3	e/	-	23.2	0.3	27.5	75.1	56.4	5.2	164.5
1991	-	0.2	6.9	6.0	0.1	0.3	e/	-	13.4	0.9	51.4	166.0	0.5	0.9	219.7
1992	-	0.2	2.5	5.9	1.5	1.2	0.7	-	12.1	0.6	24.7	92.7	38.7	6.8	163.6
1993	-	1.3	0.2	1.7	1.9	0.5	e/	e/	5.6	0.2	0.2	19.9	16.2	0.5	36.9
1994	-	1.9	0.3	-	0.3	0.3	3.3	e/	6.0	-	-	-	f/	f/	f/
1995	-	0.3	1.8	-	0.5	2.8	1.1	0.1	6.6	-	f/	-	f/	0.1	0.1
1996	-	0.7	2.9	0.6	3.5	1.4	2.0	e/	11.2	-	f/	f/	0.1	f/	0.2
1997	c/	0.9	0.9	1.5	2.8	0.5	1.0	e/	7.5	f/	f/	f/	0.1	f/	0.2
1998[d/]	-	0.3	0.4	0.5	1.0	0.8	0.9	e/	4.0	-	f/	f/	0.1	f/	0.1

TABLE A-10. **Oregon** ocean **recreational** salmon **landings** in numbers of fish by catch area and month.[a/] (Page 4 of 4)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	May	June	July	Aug.	Sept.	Season
					CHINOOK (thousands)							**COHO (thousands)**			
Total All Areas															
1976-1980[b/]	-	1.1	7.0	11.0	16.4	3.5	0.9	0.1	40.0	10.4	70.4	112.3	81.8	13.2	289.2
1981-1985	-	0.7	2.8	17.9	9.6	1.5	0.5	c/	33.1	1.9	16.2	86.6	54.5	6.1	165.4
1986-1990	-	0.5	7.4	15.2	9.2	3.1	0.3	e/	35.8	1.2	25.7	125.5	59.8	7.7	220.0
1986	-	1.2	4.1	11.5	5.4	c/	0.6	e/	22.8	4.1	23.3	150.1	41.3	-	218.9
1987	-	0.1	5.3	25.8	16.1	11.0	1.1	e/	59.4	c/	4.3	124.4	41.2	10.5	180.5
1988	-	0.4	15.8	12.0	8.6	1.6	e/	e/	38.3	0.1	10.9	117.7	78.1	20.1	226.9
1989	-	0.6	6.4	14.7	9.1	1.2	e/	e/	32.0	1.6	59.1	145.5	65.5	1.5	273.3
1990	-	0.4	5.7	12.2	6.9	1.4	e/	-	26.5	0.3	31.0	89.8	73.0	6.5	200.6
1991	-	0.2	7.0	6.3	0.6	0.3	e/	-	14.4	0.9	53.8	182.4	17.7	4.3	259.1
1992	-	0.2	2.5	6.2	1.7	1.2	0.7	-	12.6	0.6	24.7	110.6	41.7	8.2	185.8
1993	-	1.3	0.2	1.9	2.3	0.7	e/	e/	6.4	0.2	0.2	27.0	26.5	4.3	58.1
1994	-	1.9	0.3	-	0.3	0.3	3.3	e/	6.0	-	-	-	f/	f/	f/
1995	-	0.3	1.8	f/	0.6	2.8	1.1	0.1	6.7	-	f/	2.0	9.0	0.9	11.9
1996	-	0.7	2.9	0.6	3.5	1.5	2.0	-	11.2	-	f/	1.5	4.7	1.0	7.2
1997[d/]	c/	0.9	0.9	1.4	3.0	0.5	1.0	e/	7.7	f/	f/	4.5	1.4	f/	6.0
1998	-	0.3	0.4	0.5	1.1	0.8	0.9	e/	4.1	-	f/	f/	2.1	0.2	2.3

a/ Monthly totals are the sum of statistical weeks with closest fit to the calendar month. The 1976-1980 catch is from combined salmon/steelhead punch card and sampled port data. Since 1981, data from sampled ports only. Columbia River area includes Astoria, Warrenton and Hammond; Tillamook area includes Garibaldi and Pacific City; Newport area includes Depoe Bay and Newport; Coos Bay area includes Florence, Winchester Bay and Coos Bay; Brookings area includes Gold Beach and Brookings.

b/ The 1976-1980 average includes less than 300 coho during Oct. and Nov.

c/ Less than 50 fish.

d/ Preliminary.

e/ Estimates not available in late-season, state-water fisheries off Tillamook Bay and Elk River.

f/ Illegal catch, less than 50 fish.

g/ The 1976-1980 average includes less than 600 coho during Oct. and Nov.

h/ The 1976-1980 average includes less than 900 coho during Oct. and Nov.

i/ The 1976-1980 average includes less than 1,100 coho during Oct. and Nov.

TABLE A-11. Summary of **Washington non-Indian troll** salmon fishing **effort** in days fished and **landings** in numbers of fish by catch area. (Page 1 of 2)

Year or Average	Columbia River	Grays Harbor	Quillayute	Cape Flattery[a/]	Washington Subtotal	Oregon	California	Alaska	Total
				DAYS FISHED (thousands)					
1976-1980	9.0	15.0	9.4	9.7	43.2	1.0	b/	1.0	44.9
1981-1985	2.0	5.2	1.6	3.1	11.8	0.2	b/	b/	12.1
1986-1990	0.9	2.6	0.3	0.9	4.7	0.1	0.0	b/	4.8
1986	1.4	1.6	0.3	0.9	4.3	0.1	0.0	b/	4.3
1987	0.5	2.2	0.1	0.3	3.1	0.2	0.0	0.0	3.3
1988	0.3	3.7	0.7	1.1	5.8	0.1	0.0	b/	5.9
1989	0.9	3.2	0.0	0.9	5.0	0.1	0.0	0.0	5.1
1990	1.2	2.3	0.3	1.6	5.4	b/	0.0	0.0	5.4
1991	0.6	1.8	0.2	2.3	4.9	b/	0.0	b/	5.0
1992	0.3	2.6	0.5	1.5	4.8	b/	0.0	b/	4.9
1993	0.1	1.9	0.2	1.5	3.7	b/	0.0	0.0	3.7
1994	-	-	-	-	-	b/	0.0	0.0	b/
1995	-	-	0.1	0.4	0.5	b/	-	-	0.5
1996[c/]	-	0.1	b/	0.3	0.4	0.1	-	-	0.5
1997[c/]	-	0.1	0.1	0.2	0.5	b/	-	-	0.5
1998[c/]	-	b/	b/	0.1	0.1	-	-	-	0.1
				CHINOOK (thousands)					
1976-1980	23.5	81.1	45.0	33.9	183.5	4.9	0.6	12.7	201.7
1981-1985	9.2	35.0	7.1	10.1	61.3	0.9	0.2	0.2	62.6
1986-1990	5.1	27.3	4.3	9.6	46.2	1.4	0.0	b/	47.7
1986	11.6	13.6	3.0	4.7	32.8	0.8	0.0	b/	33.7
1987	5.3	42.2	2.4	4.8	54.7	2.4	0.0	0.0	57.1
1988	3.3	32.8	14.2	21.9[d/]	72.2	1.4	0.0	0.0	73.6
1989	3.2	36.8	0.0	0.3	40.2	2.1	0.0	0.0	42.3
1990	2.1	11.1	1.7	16.3	31.1	0.4	0.0	0.0	31.5
1991	1.4	11.3	0.9	15.2	28.8	0.3	0.0	0.0	29.2
1992	2.7	18.3	5.5	17.1	43.6	0.1	0.0	0.0	43.7
1993	0.1	12.2	1.8	16.0	30.1	0.3	0.0	0.0	30.3
1994	-	-	-	-	-	0.8	0.0	0.0	0.8
1995	-	-	-	b/	b/	1.8	-	-	1.8
1996	-	-	-	-	-	1.5	-	-	1.5
1997[c/]	-	0.3	2.3	3.8	6.4	1.4	-	-	7.8
1998[c/]	-	0.1	1.7	4.2	5.9	-	-	-	5.9
				COHO (thousands)					
1976-1980	136.9	207.5	203.3	155.8	703.5	21.5	1.6	15.2	741.8
1981-1985	32.1	50.9	27.2	42.3	152.5	8.3	b/	0.9	161.7
1986-1990	19.0	12.5	3.3	19.6	54.4	1.5	0.0	0.1	56.0
1986	45.6	2.6	7.8	19.0	75.0	0.3	0.0	0.5	75.9
1987	10.8	35.0	0.4	1.2[e/]	47.4	1.4	0.0	0.0	48.8
1988	-	b/	-	2.2	2.2	2.1	0.0	b/	4.4
1989	16.0	b/	0.0	41.1	57.1	3.5	0.0	0.0	60.6
1990	22.6	24.9	8.4	34.3[f/]	90.1	0.1	0.0	0.0	90.3
1991	16.2	12.4	1.4	24.1	54.2	2.9	0.0	2.2	59.2
1992	1.1	5.2	3.8	7.7	17.7	0.1	0.0	0.3	18.0
1993	0.5	8.5	1.7	3.2	13.9	b/	0.0	0.0	13.9
1994	-	-	-	-	-	-	-	0.0	0.0
1995	-	-	4.6	20.8	25.4	-	-	-	25.4
1996	-	4.0	0.4	13.1	17.5	-	-	-	17.5
1997[c/]	-	-	-	-	-	-	-	-	-
1998[c/]	-	-	-	-	-	-	-	-	-

TABLE A-11. Summary of **Washington non-Indian troll** salmon fishing **effort** in days fished and **landings** in numbers of fish by catch area. (Page 2 of 2)

Year or Average	Columbia River	Grays Harbor	Quillayute	Cape Flattery[a/]	Washington Subtotal	Oregon	California	Alaska	Total
				PINK (thousands)					
1976-1980[g/]	3.6	27.2	143.3	238.8	412.9	1.8	0.0	2.4	417.1
1981-1985[g/]	1.3	7.6	22.9	107.6	139.4	0.3	b/	0.3	140.0
1986-1990[g/]	b/	0.4	0.4	18.9	19.7	b/	0.0	0.0	19.7
1987	0.1	0.4	0.7	1.5	2.7	1.0	0.0	0.0	2.7
1989	b/	0.4	0.0	36.3	36.7	b/	0.0	0.0	36.7
1991	0.1	b/	2.6	40.9	43.6	b/	0.0	0.0	43.6
1993	-	b/	b/	2.8	2.9	-	-	-	2.9
1995		-	2.7	28.2	30.9	-	-	-	30.9
1997[c/]	-	b/	-	b/	b/	-	-	-	b/

a/ Cape Flattery data include effort and landings from Cape Flattery Subarea 4B.
b/ Less than 50.
c/ Preliminary.
d/ Includes 300 chinook landed in illegal fishing.
e/ Includes 2,200 coho landed in illegal fishing.
f/ Includes 100 coho landed in illegal fishing.
g/ Odd-year average.

TABLE A-12. **Washington non-Indian troll** salmon fishing **effort** in days fished by area and month.[a/] (Page 1 of 2)

Year or Average	May	June	July	Aug.	Sept.[b/]	Total
			DAYS FISHED (thousands)			
Cape Flattery[c/]						
1976-1980	0.7	0.4	3.1	4.2	1.4	9.7
1981-1985	0.4	d/	1.3	1.3	d/	3.1
1986-1990	0.4	0.1	0.1	0.4	d/	0.9
1986	0.2	d/	0.3	0.3	-	0.9
1987	0.3	-	d/	d/	-	0.3
1988	0.6	0.5	d/	d/	-	1.1
1989	-	-	-	0.9	d/	0.9
1990	0.8	0.1	d/	0.7	-	1.6
1991	0.8	0.3	d/	1.0	0.2	2.3
1992	0.6	0.5	0.3	0.2	-	1.5
1993	0.6	0.4	0.3	0.1	d/	1.5
1994	-	-	-	-	-	-
1995	-	-	-	0.3	0.1	0.4
1996[e/]	-	-	0.1	0.1	-	0.3
1997[e/]	0.2	0.1	-	-	-	0.2
1998[e/]	0.1	d/	-	-	-	0.1
Quillayute						
1976-1980	0.6	0.5	3.8	3.6	0.9	9.4
1981-1985	0.2	d/	1.0	0.4	d/	1.6
1986-1990	0.1	0.1	d/	0.1	d/	0.3
1986	0.1	d/	0.1	0.1	-	0.3
1987	0.1	-	d/	-	-	0.1
1988	0.4	0.3	-	-	-	0.7
1989	-	-	-	-	-	-
1990	0.1	d/	-	0.2	d/	0.3
1991	0.1	d/	-	0.1	d/	0.2
1992	0.1	0.2	0.1	0.1	-	0.5
1993	d/	d/	0.1	d/	-	0.2
1994	-	-	-	-	-	-
1995	-	-	-	0.1	d/	0.1
1996[e/]	-	-	d/	d/	-	d/
1997[e/]	0.1	0.1	-	-	-	0.1
1998[e/]	d/	d/	-	-	-	d/
Grays Harbor						
1976-1980	2.3	1.3	5.0	4.2	2.2	15.0
1981-1985	2.1	0.2	2.2	0.7	d/	5.2
1986-1990	1.7	0.5	0.2	0.2	d/	2.6
1986	1.5	d/	d/	0.1	-	1.6
1987	1.4	-	0.9	-	-	2.2
1988	2.4	1.3	-	-	-	3.7
1989	2.2	1.1	-	d/	-	3.2
1990	1.1	0.1	d/	1.1	-	2.3
1991	0.8	0.6	-	0.2	0.2	1.8
1992	1.2	0.6	0.4	0.3	-	2.6
1993	0.6	0.5	0.3	0.2	0.4	1.9
1994	-	-	-	-	-	-
1995	-	-	-	-	-	-
1996[e/]	-	-	0.1	0.1	-	0.1
1997[e/]	0.1	d/	-	-	-	0.1
1998[e/]	d/	-	-	-	-	d/

TABLE A-12. **Washington non-Indian troll** salmon fishing **effort** in days fished by area and month.[a/] (Page 2 of 2)

Year or Average	May	June	July	Aug.	Sept.[b/]	Total
			DAYS FISHED (thousands)			
Columbia River						
1976-1980	0.7	0.5	3.2	2.9	1.7	9.0
1981-1985	0.6	0.1	0.7	0.6	0.1	2.0
1986-1990	0.2	d/	0.1	0.3	0.2	0.9
1986	0.5	-	0.3	0.6	-	1.4
1987	0.2	-	0.3	-	-	0.5
1988	0.2	0.1	-	-	-	0.3
1989	0.1	d/	-	0.3	0.5	0.9
1990	d/	d/	-	0.5	0.7	1.2
1991	0.1	d/	-	0.4	0.1	0.6
1992	0.1	d/	0.1	d/	-	0.3
1993	d/	d/	d/	d/	d/	0.1
1994	-	-	-	-	-	-
1995	-	-	-	-	-	-
1996[e/]	-	-	-	-	-	-
1997[e/]	-	-	-	-	-	-
1998[e/]	-	-	-	-	-	-
Total All Areas						
1976-1980	4.2	2.8	15.1	14.9	6.2	43.2
1981-1985	3.3	0.3	5.2	2.9	0.1	11.8
1986-1990	2.5	0.7	0.4	0.9	0.2	4.7
1986	2.4	d/	0.8	1.1	-	4.3
1987	2.0	-	1.2	d/	-	3.1
1988	3.6	2.2	d/	d/	-	5.8
1989	2.2	1.1	-	1.2	0.5	5.0
1990	2.1	0.2	d/	2.4	0.7	5.4
1991	1.7	1.0	d/	1.6	0.5	4.9
1992	2.0	1.2	0.9	0.6	-	4.8
1993	1.2	0.9	0.7	0.4	0.4	3.7
1994	-	-	-	-	-	-
1995	-	-	-	0.4	0.1	0.5
1996	-	-	0.2	0.2	-	0.4
1997[e/]	0.3	0.2	-	-	-	0.5
1998[e/]	0.1	d/	-	-	-	0.1

a/ Summary of WDFW fish receiving ticket information by statistical month, excluding Washington landings from Oregon, California and Alaska.

b/ Data for Sept. include any effort after Sept.

c/ Cape Flattery area includes effort and catches from Strait of Juan de Fuca Area 4B.

d/ Less than 50 days.

e/ Preliminary.

TABLE A-13. **Washington non-Indian troll** chinook, coho, and pink salmon **landings** in numbers of fish by catch area and month.[a/] (Page 1 of 3)

Year or Average	May	June	July	Aug.	Sept.[b/]	Total	May	June	July	Aug.	Sept.[b/]	Total	May	June	July	Aug.	Sept.[b/]	Total
	CHINOOK (thousands)						**COHO (thousands)**						**PINKS (thousands in odd years)**					
Cape Flattery[c/]																		
1976-1980	6.8	3.8	12.4	8.8	2.1	33.9	-	3.9	67.0	58.6	26.4	155.8	d/	0.2	42.0	192.2	4.3	238.8
1981-1985	3.3	0.3	5.0	1.4	d/	10.1	-	-	26.4	15.9	d/	42.3	0.1	d/	12.1	95.1	0.3	107.6
1986-1990	6.5	2.5	0.1	0.5	d/	9.6	-	-	1.5	18.1	d/	19.6	0.0	0.0	0.4	18.5	0.0	18.9
1986	3.5	0.1	0.3	0.9	-	4.7	-	-	6.1	12.9	-	19.0						
1987[e/]	4.7	-	0.1	d/	-	4.8	-	-	0.8	0.3	-	1.2	0.0	-	0.8	0.7	-	1.5
1988	10.0	11.6	0.1	0.2	-	21.9	-	-	0.4	1.8	-	2.2						
1989	-	-	-	0.3	d/	0.3	-	-	-	41.1	d/	41.1	-	-	-	36.3	0.0	36.3
1990[f/]	14.4	0.9	-	1.0	-	16.3	-	-	d/	34.3	-	34.3						
1991	8.8	5.5	d/	0.6	0.4	15.2	-	-	0.1	18.6	5.4	24.1	d/	d/	d/	40.6	0.3	40.9
1992	9.1	6.2	1.0	0.8	-	17.1	-	-	4.6	3.1	-	7.7						
1993	8.6	5.4	1.8	0.3	-	16.0	-	-	2.2	1.0	-	3.2	d/	d/	0.1	2.7	d/	2.8
1994	-	-	-	-	-	-	-	-	-	-	-	-						
1995	-	-	-	d/	-	d/	-	-	-	15.6	5.2	20.8	-	-	-	27.4	0.8	28.2
1996	-	-	-	-	-	-	-	-	5.5	7.5	-	13.1						
1997[g/]	3.2	0.5	-	-	-	3.8	-	-	-	-	-	-	d/	d/	-	-	-	d/
1998[g/]	4.0	0.1	-	-	-	4.2	-	-	-	-	-	-						
Quillayute																		
1976-1980	6.5	5.8	19.7	11.0	2.0	45.0	d/	9.4	112.6	63.4	18.0	203.3	0.3	0.4	39.3	103.0	0.3	143.3
1981-1985	1.9	0.2	4.0	1.1	-	7.1	-	-	23.7	3.5	-	27.2	d/	0.0	7.2	15.7	d/	22.9
1986-1990	2.6	1.3	0.1	0.3	d/	4.3	-	-	0.5	2.8	d/	3.3	0.0	0.0	0.4	0.0	0.0	0.4
1986	1.9	0.1	0.3	0.7	-	3.0	-	-	2.1	5.7	-	7.8						
1987	2.3	-	d/	-	-	2.4	-	-	0.4	-	-	0.4	0.0	-	0.7	-	-	0.7
1988	7.8	6.5	-	-	-	14.2	-	-	-	-	-	-						
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1990	0.9	0.2	-	0.6	d/	1.7	-	-	-	8.4	d/	8.4						
1991	0.4	0.4	-	0.1	d/	0.9	-	-	-	1.2	0.3	1.4	0.0	0.0	-	2.6	d/	2.6
1992	1.5	2.0	1.1	0.8	-	5.5	-	-	2.2	1.6	-	3.8						
1993	0.8	0.6	0.3	0.1	-	1.8	-	-	1.3	0.4	-	1.7	0.0	0.0	d/	d/	-	d/
1994	-	-	-	-	-	-	-	-	-	-	-	-						
1995	-	-	-	-	-	-	-	-	-	2.8	1.8	4.6	-	-	-	2.6	0.1	2.7
1996	-	-	-	-	-	-	-	-	0.2	0.2	-	0.4						
1997[g/]	1.0	1.3	-	-	-	2.3	-	-	-	-	-	-	-	-	-	-	-	-
1998[g/]	1.6	0.1	-	-	-	1.7	-	-	-	-	-	-						

TABLE A-13. **Washington non-Indian troll** chinook, coho, and pink salmon **landings** in numbers of fish by catch area and month.[a/] (Page 2 of 3)

Year or Average	May	June	July	Aug.	Sept.[b/]	Total	May	June	July	Aug.	Sept.[b/]	Total	May	June	July	Aug.	Sept.[b/]	Total
	CHINOOK (thousands)						**COHO (thousands)**						**PINKS (thousands in odd years)**					
Grays Harbor																		
1976-1980	28.5	15.1	18.9	13.3	5.3	81.1	d/	14.0	123.2	52.6	17.6	207.5	0.2	0.1	13.3	13.5	0.1	27.2
1981-1985	20.0	2.3	10.5	2.2	d/	35.0	-	-	44.3	6.6	d/	50.9	0.1	d/	5.0	2.5	-	7.6
1986-1990	18.0	5.2	3.5	0.6	d/	27.3	d/	-	7.1	5.4	-	12.5	0.1	0.1	0.2	d/	0.0	0.4
1986	13.2	d/	d/	0.4	-	13.6	-	-	0.4	2.1	-	2.6						
1987	24.5	-	17.6	-	-	42.2	-	-	35.0	-	-	35.0	0.0	-	0.4	-	-	0.4
1988	22.2	10.6	-	-	d/	32.8	d/	-	-	-	-	d/						
1989	22.2	14.6	-	-	-	36.8	-	-	-	d/	-	d/	0.2	0.2	-	d/	-	0.4
1990	7.7	0.8	d/	2.6	-	11.1	-	-	-	24.9	-	24.9						
1991	4.4	6.5	-	0.2	0.2	11.3	-	-	-	5.5	6.9	12.4	d/	d/	-	-	d/	d/
1992	9.0	4.4	3.1	1.8	-	18.3	-	-	2.7	2.4	-	5.2						
1993	5.0	4.6	0.5	0.6	1.5	12.2	-	-	1.2	2.1	5.2	8.5	d/	0.0	d/	d/	0.0	d/
1994	-	-	-	-	-	-	-	-	-	-	-	-						
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	1.4	2.6	-	4.0						
1997[g/]	0.2	0.1	-	-	-	0.3	-	-	-	-	-	-	-	d/	-	-	-	d/
1998[g/]	0.1	-	-	-	-	0.1	-	-	-	-	-	-						
Columbia River																		
1976-1980	8.0	5.1	3.9	3.3	3.2	23.5	d/	19.0	71.7	29.0	17.2	136.9	d/	d/	1.8	1.3	0.4	3.6
1981-1985	6.5	0.8	1.4	0.5	0.1	9.2	-	-	17.9	11.2	3.0	32.1	d/	0.0	0.6	0.6	d/	1.3
1986-1990	3.0	0.5	0.3	0.8	0.4	5.1	-	-	4.6	9.2	5.2	19.0	0.0	0.0	d/	d/	d/	d/
1986	8.1	-	0.3	3.1	-	11.6	-	-	12.2	33.4	-	45.6						
1987	4.0	-	1.3	-	-	5.3	-	-	10.8	-	-	10.8	0.0	-	0.1	-	-	0.1
1988	1.7	1.6	-	-	-	3.3	-	-	-	-	-	-						
1989	1.0	0.9	-	0.5	0.7	3.2	-	-	-	5.4	10.6	16.0	0.0	0.0	-	d/	d/	d/
1990	0.1	0.2	-	0.6	1.2	2.1	-	-	-	7.2	15.4	22.6						
1991	0.8	0.1	-	0.4	d/	1.4	-	-	-	14.6	1.7	16.2	0.0	0.0	-	0.1	-	0.1
1992	2.6	d/	0.1	d/	-	2.7	-	-	0.8	0.3	-	1.1						
1993	d/	d/	d/	d/	d/	0.1	-	-	0.2	0.2	0.2	0.5	0.0	0.0	0.0	0.0	0.0	d/
1994	-	-	-	-	-	-	-	-	-	-	-	-						
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-	-						
1997[g/]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1998[g/]	-	-	-	-	-	-	-	-	-	-	-	-						

TABLE A-13. **Washington non-Indian troll** chinook, coho, and pink salmon **landings** in numbers of fish by catch area and month.[a/] (Page 3 of 3)

Year or Average	May	June	July	Aug.	Sept.[b/]	Total	May	June	July	Aug.	Sept.[b/]	Total	May	June	July	Aug.	Sept.[b/]	Total
	CHINOOK (thousands)						**COHO (thousands)**						**PINKS (thousands in odd years)**					
Total All Areas																		
1976-1980	49.8	29.8	55.0	36.4	12.6	183.5	d/	46.2	374.5	203.6	79.2	703.5	0.6	0.7	96.4	310.0	5.2	412.9
1981-1985	31.7	3.5	20.9	5.2	0.1	61.3	-	-	112.2	37.2	3.1	152.5	0.2	d/	24.9	114.0	0.3	139.4
1986-1990	30.1	9.6	4.0	2.2	0.4	46.2	d/	-	13.6	35.5	5.2	54.4	0.1	0.1	1.0	18.5	d/	19.7
1986	26.7	0.2	0.9	5.1	-	32.8	-	-	20.8	54.2	-	75.0						
1987	35.6	-	19.1	d/	-	54.7	-	-	47.0	0.3	-	47.4	0.0	-	2.0	0.7	-	2.7
1988	41.7	30.3	0.1	0.2	d/	72.2	d/	-	0.4	1.8	-	2.2						
1989	23.3	15.5	-	0.8	0.7	40.2	-	-	-	46.5	10.7	57.1	0.2	0.2	-	36.3	d/	36.7
1990	23.1	2.0	d/	4.8	1.2	31.1	-	-	d/	74.7	15.4	90.1						
1991	14.5	12.4	d/	1.3	0.6	28.8	-	-	0.1	39.9	14.1	54.2	d/	d/	d/	43.3	0.3	43.6
1992	22.2	12.6	5.3	3.5	-	43.6	-	-	10.3	7.4	-	17.7						
1993	14.4	10.6	2.6	1.0	1.5	30.1	-	-	4.9	3.6	5.4	13.9	d/	d/	0.1	2.7	d/	2.9
1994	-	-	-	-	-	-	-	-	-	-	-	-						
1995	-	-	-	d/	-	d/	-	-	-	18.4	7.1	25.4	-	-	-	30.1	0.9	30.9
1996	-	-	-	-	-	-	-	-	7.1	10.4	-	17.5						
1997[g/]	4.5	1.9	-	-	-	6.4	-	-	-	-	-	-	d/	d/	-	-	-	d/
1998[g/]	5.7	0.2	-	-	-	5.9	-	-	-	-	-	-						

a/ Summary of WDFW fish receiving ticket information by statistical month excluding Washington landings from Oregon, California and Alaska.
b/ Data for Sept. include any catch after Sept.
c/ Cape Flattery area includes effort and catches from Strait of Juan de Fuca Area 4B.
d/ Less than 50 fish.
e/ Includes 2,200 coho and 300 chinook landed illegally.
f/ Includes 100 coho landed illegally.
g/ Preliminary.

TABLE A-14. **Treaty Indian troll** salmon fishing **effort** in deliveries by catch area and statistical month. (Page 1 of 2)

Year or Average	Jan. Thru Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Thru Dec.	Total May Thru Sept.	Year Total
					DELIVERIES					
Area 4B										
1979-1980	686	64	94	61	97	37	7	103	353	1,149
1981-1985	1,081	183	85	93	107	33	33	117	500	1,731
1986-1990	593	311	231	157	248	39	2	145	987	1,727
1986	429	146	118	92	48	2	0	65	406	900
1987	715	126	0	100	123	0	6	146	349	1,216
1988	734	590	337	67	169	4	0	144	1,167	2,045
1989	533	328	177	391	258	125	0	279	1,279	2,091
1990	556	367	522	137	644	65	2	92	1,735	2,385
1991	513	117	85	66	332	0	151	91	600	1,355
1992	390	61	231	40	155	0	1	208	487	1,086
1993	575	78	178	133	105	23	0	61	517	1,153
1994	119	41	52	0	0	0	0	8	93	220
1995	81	16	0	0	140	0	0	66	156	303
1996	204	36	83	2	39	16	0	7	176	387
1997	31	39	39	0	60	7	0	3	145	165
1998[a/]	17	13	3	0	21	7	0	4	44	65
Cape Flattery										
1976-1980	3	26	98	123	99	22	2	2	369	376
1981-1985	0	17	191	374	609	392	5	0	1,584	1,589
1986-1990	1	102	186	567	527	149	0	0	1,494	1,532
1986	0	52	169	533	129	0	0	0	883	883
1987	0	195	0	721	848	0	0	0	1,764	1,764
1988	3	31	206	548	847	178	0	0	1,810	1,813
1989	0	107	254	662	434	324	0	0	1,781	1,781
1990	0	124	116	369	379	243	0	1	1,231	1,232
1991	0	186	265	610	359	0	0	0	1,420	1,420
1992	0	203	155	274	144	0	0	7	776	783
1993	0	269	213	439	497	457	0	0	1,875	1,875
1994	0	13	85	1	0	0	0	0	99	99
1995	0	21	0	1	406	0	0	0	428	428
1996	1	28	19	0	86	167	0	0	300	301
1997	0	11	90	0	115	30	0	0	246	246
1998[a/]	0	45	17	0	22	32	0	0	116	116
Quillayute										
1976-1980	0	14	39	53	42	9	0	0	157	157
1981-1985	0	11	34	100	95	29	0	0	268	268
1986-1990	0	27	64	145	185	42	0	0	450	450
1986	0	12	164	177	52	0	0	0	405	405
1987	0	12	0	92	273	0	0	0	377	377
1988	0	63	50	89	152	15	0	0	369	369
1989	0	18	21	162	129	103	0	0	433	433
1990	0	30	20	207	321	90	0	0	668	668
1991	0	15	15	90	309	0	0	0	429	429
1992	0	0	3	109	119	0	0	0	231	231
1993	0	1	2	58	137	40	0	0	238	238
1994	0	4	16	1	0	0	0	0	21	21
1995	0	0	0	0	14	0	0	0	14	14
1996	0	0	0	0	6	12	0	0	18	18
1997	0	0	0	0	0	0	0	0	0	0
1998[a/]	0	0	0	0	0	0	0	0	0	0

TABLE A-14. **Treaty Indian troll** salmon fishing **effort** in deliveries by catch area and statistical month. (Page 2 of 2)

Year or Average	Jan. Thru Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Thru Dec.	Total May Thru Sept.	Year Total
					DELIVERIES					
Grays Harbor										
1976-1980	0	1	1	10	11	0	0	0	22	22
1981-1985	0	10	15	37	37	3	0	0	101	101
1986-1990	0	15	48	135	142	32	0	0	344	344
1986	0	9	124	71	0	0	0	0	204	204
1987	0	18	0	84	136	0	0	0	238	238
1988	0	17	31	196	324	74	0	0	642	642
1989	0	24	55	229	67	77	0	0	452	452
1990	0	9	28	95	42	10	0	0	184	184
1991	0	4	22	68	46	0	0	0	140	140
1992	0	3	3	19	4	0	0	0	29	29
1993	0	0	1	74	157	65	0	0	297	297
1994	0	0	12	0	0	0	0	0	12	12
1995	0	0	0	0	104	0	0	0	104	104
1996	0	0	1	0	36	21	0	0	58	58
1997	0	0	1	0	23	6	0	0	30	30
1998[a/]	0	4	2	0	6	0	0	0	12	12
Total Treaty Troll										
1976-1980	689	105	232	248	249	68	9	105	901	1,705
1981-1985	1,082	220	325	603	847	456	38	117	2,452	3,689
1986-1990	594	456	478	1,004	1,075	262	2	145	3,275	4,016
1986	429	219	575	873	229	2	0	65	1,898	2,392
1987	715	351	0	997	1,380	0	6	146	2,728	3,595
1988	737	701	624	900	1,492	271	0	144	3,988	4,869
1989	533	477	507	1,444	888	629	0	279	3,945	4,757
1990	556	530	686	808	1,386	408	2	93	3,818	4,469
1991	513	322	387	834	1,046	0	151	91	2,589	3,344
1992	390	267	392	442	422	0	1	215	1,523	2,129
1993	575	348	394	704	896	585	0	61	2,927	3,563
1994	119	58	165	2	0	0	0	8	225	352
1995	81	37	0	1	664	0	0	66	702	849
1996	205	64	103	2	167	216	0	7	552	764
1997	31	50	130	0	198	43	0	3	421	455
1998[a/]	17	62	22	0	49	39	0	4	172	193

a/ Preliminary.

TABLE A-15. **Treaty Indian troll** chinook and coho salmon **landings** in numbers of fish by catch area and statistical month. (Page 1 of 3)

Year or Average	Jan. Thru Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Thru Dec.	Total May Thru Sept.	Year Total	Jan. thru Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Thru Dec.	Total May Thru Sept.	Year Total
					CHINOOK										COHO					
Area 4B																				
1976-1980	8,512	360	640	98	103	26	10	776	1,228	10,525	406	22	499	191	249	148	5	61	1,109	1,582
1981-1985	13,109	1,066	248	94	49	57	151	788	1,514	15,562	42	245	184	825	1,014	222	22	6	2,489	2,560
1986-1990	6,009	2,540	1,746	284	323	63	12	2,677	4,956	13,654	9	0	65	2,150	7,765	813	7	13	10,793	10,821
1986	3,299	1,243	539	86	79	0	0	615	1,947	5,861	6	0	221	2,090	4,704	13	0	8	7,028	7,042
1987	8,410	1,044	0	87	218	0	52	1,530	1,349	11,341	31	1	0	2,136	2,970	0	33	0	5,107	5,171
1988	6,958	5,080	1,903	189	68	2	0	1,265	7,242	15,465	3	0	101	151	4,379	21	0	15	4,652	4,670
1989	4,395	2,409	1,602	580	173	109	0	8,741	4,873	18,009	1	0	0	4,559	3,941	3,085	0	32	11,585	11,618
1990	6,982	2,924	4,685	479	1,075	206	8	1,234	9,369	17,593	2	0	1	1,814	22,833	944	1	8	25,592	25,603
1991	5,203	740	418	97	327	0	147	716	1,582	7,648	8	0	0	987	6,685	0	498	15	7,672	8,193
1992	4,131	664	2,217	37	800	0	0	3,107	3,718	10,956	0	0	0	955	9,265	0	15	18	10,220	10,253
1993	6,498	545	1,250	171	41	12	0	562	2,019	9,079	1	0	0	842	1,161	153	0	0	2,156	2,157
1994	1,116	248	484	0	0	0	0	99	732	1,947	0	0	0	0	0	0	0	0	0	0
1995	1,014	158	0	0	242	0	0	834	400	2,248	0	0	0	0	3,087	0	0	0	3,087	3,087
1996	2,555	437	1,440	120	75	106	0	81	2,178	4,814	0	0	0	0	936	189	0	0	1,125	1,125
1997	439	644	410	0	213	26	0	16	1,293	1,748	0	0	0	0	3,517	279	0	0	3,796	3,796
1998[a/]	97	85	23	0	136	21	0	40	265	402	0	0	0	0	434	175	0	0	609	609
Cape Flattery																				
1976-1980	4	35	1,159	1,283	208	41	6	9	2,726	2,744	1	57	3,522	1,483	482	255	6	2	5,800	5,809
1981-1985	0	520	1,191	2,405	673	772	54	11	5,561	5,626	0	8	4,647	9,017	16,514	13,404	18	0	43,590	43,608
1986-1990	6	2,601	2,896	3,114	2,651	685	0	0	11,367	11,953	0	3	106	16,829	16,838	7,241	0	0	41,018	41,018
1986	0	1,829	1,239	1,890	250	0	0	0	5,208	5,208	0	0	517	28,025	5,089	0	0	0	33,631	33,631
1987	0	3,869	0	1,443	4,163	0	0	0	9,475	9,475	0	15	0	30,832	21,559	0	0	0	52,406	52,406
1988	32	352	3,774	3,560	4,619	952	0	0	13,257	13,289	0	0	13	3,352	23,668	6,513	0	0	33,546	33,546
1989	0	3,181	4,647	3,841	3,080	529	0	0	15,278	15,278	0	1	0	11,869	13,245	17,247	0	0	42,362	42,362
1990	0	3,773	1,923	4,837	1,143	1,943	0	1	13,619	13,620	0	0	0	10,069	20,627	12,447	0	0	43,143	43,143
1991	0	3,452	4,795	5,495	2,361	0	0	0	16,103	16,103	0	0	0	29,190	14,255	0	0	0	43,445	43,445
1992	0	8,106	3,284	3,616	2,298	0	0	80	17,304	17,384	0	2	3	30,710	16,695	0	0	5	47,410	47,415
1993	0	7,014	4,106	5,024	1,988	2,447	0	0	20,579	20,579	0	1	0	3,476	13,285	24,380	0	0	41,142	41,142
1994	0	104	1,841	1	0	0	0	0	1,946	1,946	0	0	0	0	0	0	0	0	0	0
1995	0	540	0	23	6,926	0	0	0	7,489	7,489	0	0	0	0	24,812	0	0	0	24,812	24,812
1996	6	997	534	0	4,732	3,421	0	0	9,684	9,690	0	0	0	0	2,937	12,054	0	0	14,991	14,991
1997	0	175	7,053	0	3,451	888	0	0	11,567	11,567	0	0	0	0	6,008	3,411	0	0	9,419	9,419
1998[a/]	0	5,033	4,358	0	3,333	1,127	0	0	13,851	13,851	0	0	0	0	3,132	3,942	0	0	7,074	7,074

TABLE A-15. **Treaty Indian troll** chinook and coho salmon **landings** in numbers of fish by catch area and statistical month. (Page 2 of 3)

Year or Average	Jan. Thru Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Thru Dec.	Total May Thru Sept.	Year Total	Jan. thru Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Thru Dec.	Total May Thru Sept.	Year Total
					CHINOOK										COHO					
Quillayute																				
1976-1980	0	118	243	483	141	27	203	11	1,011	1,225	0	641	3,216	1,184	473	34	1,063	20	5,548	6,631
1981-1985	0	243	321	826	500	212	0	0	2,103	2,103	0	30	2,251	5,294	6,387	2,855	0	0	16,818	16,818
1986-1990	0	1,049	944	2,044	754	259	0	0	5,050	5,050	0	0	2,694	8,430	7,021	2,250	0	0	20,395	20,395
1986	0	613	1,700	1,450	87	0	0	0	3,850	3,850	0	0	13,472	17,409	1,913	0	0	0	32,794	32,794
1987	0	1,240	0	353	1,679	0	0	0	3,272	3,272	0	0	0	8,566	13,729	0	0	0	22,295	22,295
1988	0	1,868	2,136	1,150	427	73	0	0	5,654	5,654	0	0	0	4,536	6,744	2,041	0	0	13,321	13,321
1989	0	824	649	2,502	1,089	724	0	0	5,788	5,788	0	0	0	4,439	3,020	6,455	0	0	13,914	13,914
1990	0	700	234	4,767	488	499	0	0	6,688	6,688	0	0	0	7,200	9,698	2,755	0	0	19,653	19,653
1991	0	189	212	534	1,659	0	0	0	2,594	2,594	0	0	0	4,936	15,520	0	0	0	20,456	20,456
1992	0	0	27	1,041	925	0	0	0	1,993	1,993	0	0	0	8,454	9,371	0	0	0	17,825	17,825
1993	0	19	5	473	404	112	0	0	1,013	1,013	0	0	0	926	5,487	1,005	0	0	7,418	7,418
1994	0	97	1,143	4	0	0	0	0	1,244	1,244	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	18	0	0	0	18	18	0	0	0	0	237	0	0	0	237	237
1996	0	0	0	0	6	44	0	0	50	50	0	0	0	0	105	601	0	0	706	706
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998[a/]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grays Harbor																				
1976-1980	0	30	25	6	10	0	0	0	71	71	0	0	0	35	58	0	0	0	93	93
1980-1985	0	280	123	308	103	6	0	0	820	820	0	0	353	1,252	557	199	0	0	2,361	2,361
1986-1990	0	715	945	1,309	812	241	0	0	3,832	3,882	0	0	1,391	4,899	4,221	747	0	0	11,258	11,258
1986	0	614	24	390	148	0	0	0	1,176	1,176	0	0	6,956	4,098	0	0	0	0	11,054	11,054
1987	0	2,288	0	298	1,206	0	0	0	3,792	3,792	0	0	0	4,085	5,699	0	0	0	9,784	9,784
1988	0	275	1,943	1,480	1,711	941	0	0	6,350	6,350	0	0	0	3,774	11,445	1,592	0	0	16,811	16,811
1989	0	297	747	3,188	955	220	0	0	5,407	5,407	0	0	0	10,941	3,293	1,803	0	0	16,037	16,037
1990	0	102	1,064	1,187	42	42	0	0	2,437	2,437	0	0	0	1,597	667	339	0	0	2,603	2,603
1991	0	58	565	749	150	0	0	0	1,522	1,522	0	0	0	3,830	1,551	0	0	0	5,381	5,381
1992	0	11	10	30	4	0	0	0	55	55	0	0	0	96	38	0	0	0	134	134
1993	0	0	6	159	1,285	372	0	0	1,822	1,822	0	0	0	1,763	5,526	1,141	0	0	8,430	8,430
1994	0	0	541	0	0	0	0	0	541	541	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	1,580	0	0	0	1,580	1,580	0	0	0	0	2,634	0	0	0	2,634	2,634
1996	0	39	0	304	52	0	0	0	395	395	0	0	0	0	663	1,041	0	0	1,704	1,704
1997	0	0	17	0	926	222	0	0	1,165	1,165	0	0	0	0	1,794	653	0	0	2,447	2,447
1998[a/]	0	41	61	0	169	0	0	0	271	271	0	0	0	0	244	0	0	0	244	244

TABLE A-15. **Treaty Indian troll** chinook and coho salmon **landings** in numbers of fish by catch area and statistical month. (Page 3 of 3)

Year or Average	Jan. Thru Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Thru Dec.	Total May Thru Sept.	Year Total	Jan. thru Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Thru Dec.	Total May Thru Sept.	Year Total
					CHINOOK											**COHO**				
Total Treaty Troll																				
1976-1980	8,515	543	2,067	1,870	462	94	219	796	5,036	14,566	407	720	7,237	2,893	1,261	438	1,075	83	12,550	14,115
1981-1985	13,109	2,109	1,883	3,633	1,326	1,046	205	799	9,998	24,110	42	283	7,435	16,388	24,473	16,680	41	6	65,259	65,347
1986-1990	6,015	6,905	5,762	6,751	4,540	1,248	12	2,677	25,206	33,911	9	3	4,256	32,308	35,845	11,051	7	13	83,464	83,492
1986	3,299	4,299	3,502	3,816	564	0	0	615	12,181	16,095	6	0	21,166	51,622	11,706	13	0	8	84,507	84,521
1987	8,410	8,441	0	2,181	7,266	0	52	1,530	17,888	27,880	31	16	0	45,619	43,957	0	33	0	89,592	89,656
1988	6,990	7,575	9,756	6,379	6,825	1,968	0	1,265	32,503	40,758	3	0	114	11,813	46,236	10,167	0	15	68,330	68,348
1989	4,395	6,711	7,645	10,111	5,297	1,582	0	8,741	31,346	44,482	1	1	0	31,808	23,499	28,590	0	32	83,898	83,931
1990	6,982	7,499	7,906	11,270	2,748	2,690	8	1,235	32,113	40,338	2	0	1	20,680	53,825	16,485	1	8	90,991	91,002
1991	5,203	4,439	5,990	6,875	4,497	0	147	716	21,801	27,867	8	0	0	38,943	38,011	0	498	15	76,954	77,475
1992	4,131	8,781	5,538	4,724	4,027	0	0	3,187	23,070	30,388	0	2	3	40,215	35,369	0	15	23	75,589	75,627
1993	6,498	7,578	5,367	5,827	3,718	2,943	0	562	25,433	32,493	1	1	0	7,007	25,459	26,679	0	0	59,146	59,147
1994	1,116	449	4,009	5	0	0	0	99	4,463	5,678	-	-	-	-	-	-	-	-	-	-
1995	1,014	698	0	23	8,766	0	0	834	9,487	11,335	0	0	0	0	30,770	0	0	0	30,770	30,770
1996	2,561	1,473	1,974	424	4,865	3,571	0	81	12,307	14,949	0	0	0	0	4,641	13,885	0	0	18,526	18,526
1997	439	519	7,480	0	4,590	1,136	0	16	14,025	14,480	0	0	0	0	11,319	4,343	0	0	15,662	15,662
1998[a/]	97	5,159	4,442	0	3,638	1,148	0	40	14,387	14,524	0	0	0	0	3,810	4,117	0	0	7,927	7,927

a/ Preliminary.

TABLE A-16. **Treaty Indian troll** pink salmon **landings** (odd-years only) in numbers of salmon by catch area and statistical month. (Page 1 of 1)

Year or Average	Jan. Through Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. Through Dec.	Total May Through Sept.	Year Total
					PINKS					
Area 4B										
1976-1980	1	2	267	158	649	15	0	0	1,091	1,091
1981-1985	0	23	2	108	698	7	0	0	838	838
1986-1990	0	0	0	1,395	643	142	0	0	2,179	2,179
1989	0	0	0	2,542	664	283	0	0	3,489	3,489
1991	0	0	0	0	74	1,260	0	0	1,334	1,334
1993	0	0	0	55	126	5	0	0	186	186
1995	0	0	0	0	2,317	0	0	0	2,317	2,317
1997[a/]	0	0	0	0	667	25	0	0	692	692
Cape Flattery										
1976-1980	0	42	91	632	1,339	5	0	0	2,108	2,108
1981-1985	0	0	94	1,340	6,681	302	0	0	8,417	8,417
1986-1990	0	2	4	6,553	2,891	377	0	0	9,827	9,827
1989	0	0	8	4,417	1,869	754	0	0	7,048	7,048
1991	0	0	2	999	1,643	0	0	0	2,644	2,644
1993	0	0	0	158	1,808	763	0	0	2,729	2,729
1995	0	0	0	0	8,407	0	0	0	8,407	8,407
1997[a/]	0	0	0	0	1,010	10	0	0	1,020	1,020
Quillayute										
1976-1980	0	5	1,192	259	1,032	0	0	0	2,488	2,488
1981-1985	0	7	100	653	384	12	0	0	1,156	1,156
1986-1990	0	3	6	625	667	65	0	0	1,365	1,365
1989	0	6	12	225	107	129	0	0	479	479
1991	0	0	0	75	449	0	0	0	524	524
1993	0	0	0	120	351	31	0	0	502	502
1995	0	0	0	0	32	0	0	0	32	32
1997[a/]	0	0	0	0	0	0	0	0	0	0
Grays Harbor										
1976-1980	0	0	0	0	0	0	0	0	0	0
1981-1985	0	1	18	106	6	0	0	0	132	132
1986-1990	0	0	0	419	44	16	0	0	471	471
1989	0	0	0	22	27	16	0	0	65	65
1991	0	0	0	0	4	0	0	0	4	4
1993	0	0	0	20	13	0	0	0	33	33
1995	0	0	0	0	2	0	0	0	2	2
1997[a/]	0	0	0	0	0	0	0	0	0	0
Total Treaty Troll										
1976-1980	1	49	1,550	1,049	3,019	20	0	0	5,686	5,686
1981-1985	0	32	214	2,207	7,770	320	0	0	10,543	10,543
1986-1990	0	5	10	8,991	4,244	591	0	0	13,841	13,841
1989	0	6	20	7,206	2,667	1,182	0	0	11,081	11,081
1991	0	0	2	1,074	2,170	1,260	0	0	4,506	4,506
1993	0	0	0	353	2,298	799	0	0	3,450	3,450
1995	0	0	0	0	10,758	0	0	0	10,758	10,758
1997[a/]	0	0	0	0	1,677	35	0	0	1,712	1,712

a/ Preliminary.

TABLE A-17. **Washington** ocean **recreational** salmon fishing **effort** in angler trips by port and month.[a/]
(Page 1 of 2)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
				ANGLER TRIPS (thousands)				
Neah Bay[b/]								
1976-1980	0.6	1.1	4.1	13.0	17.9	7.0	0.5	44.2
1981-1985	0.1	0.4	1.1	9.0	13.4	3.4	0.1	27.5
1986-1990	-	0.2	1.4	14.0	7.3	1.3	-	24.2
1986	-	-	0.4	10.8	7.3	-	-	18.6
1987	-	-	0.6	12.2	6.4	-	-	19.2
1988	-	c/	-	13.5	1.9	0.5	-	15.9
1989	-	0.9	0.9	14.7	6.5	5.4	-	28.3
1990	-	-	c/	18.6	14.5	0.7	-	33.8
1991	-	-	c/	16.2	9.2	c/	-	25.4
1992	0.3	1.0	-	10.4	7.9	0.1	-	19.7
1993	c/	1.1	0.1	11.1	11.2	3.8	-	27.3
1994	-	-	-	-	-	-	-	-
1995	-	-	-	-	9.3	0.1	-	9.4
1996	-	-	-	-	9.3	1.5	-	10.9
1997[d/]	-	-	-	3.0	1.8	-	-	4.8
1998[d/]	-	-	-	-	6.4	-	-	6.4
La Push								
1976-1980	c/	0.3	1.3	7.9	11.7	3.1	0.3	24.7
1981-1985	-	0.0	c/	1.1	2.1	0.1	-	3.3
1986-1990	-	c/	c/	1.8	0.6	0.1	-	2.5
1986	-	-	0.1	0.9	0.8	-	-	1.7
1987	-	-	0.1	1.2	0.8	-	-	2.0
1988	-	-	-	2.4	0.3	0.1	-	2.8
1989	-	0.1	0.1	1.5	0.0	-	-	1.6
1990	-	-	-	2.8	1.1	0.2	-	4.2
1991	-	-	-	3.5	c/	-	-	3.5
1992	-	-	-	1.7	0.5	0.3	c/	2.5
1993	-	-	-	1.6	0.8	0.5	-	2.9
1994	-	-	-	-	-	-	-	-
1995	-	-	-	-	0.9	0.5	-	1.5
1996	-	-	-	-	0.8	0.5	-	1.3
1997[d/]	-	-	-	0.9	-	-	-	0.9
1998[d/]	-	-	-	-	0.6	-	-	0.6
Westport								
1976-1980	2.3	11.9	37.4	66.5	66.3	23.1	2.8	210.3
1981-1985	-	2.6	16.4	34.2	23.5	2.1	c/	78.8
1986-1990	-	0.3	2.9	30.3	15.5	3.5	-	52.6
1986	-	-	2.0	30.1	19.3	0.9	0.1	52.4
1987	-	-	2.1	29.7	11.4	0.8	-	43.9
1988	-	-	-	35.4	1.9	-	-	37.3
1989	-	1.5	3.4	29.2	23.1	2.7	-	59.9
1990	-	-	7.2	26.8	22.0	13.3	-	69.3
1991	-	-	5.0	35.0	8.9	3.9	-	52.7
1992	-	-	-	22.9	20.7	9.4	0.7	53.7
1993	-	-	-	17.8	19.4	13.7	-	50.9
1994	-	-	-	-	-	-	-	-
1995	-	-	-	4.9	11.6	5.3	-	21.7
1996	-	-	-	4.5	9.6	1.4	-	15.5
1997[d/]	-	-	-	8.0	8.1	1.2	-	17.3
1998[d/]	-	-	-	-	7.1	0.9	-	8.0

TABLE A-17. **Washington** ocean **recreational** salmon fishing **effort** in angler trips by port and month.[a/]
(Page 2 of 2)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
				ANGLER TRIPS (thousands)				
Ilwaco[e/]								
1976-1980	0.4	4.6	20.8	42.0	62.4	18.7	1.7	150.6
1981-1985	-	0.7	6.1	23.2	20.3	3.3	0.1	53.8
1986-1990	-	0.1	1.3	19.7	19.4	0.7	-	41.2
1986	-	-	1.1	19.6	15.9	-	-	36.6
1987	-	-	1.0	17.6	17.7	-	-	36.3
1988	-	-	-	12.2	0.6	c/	-	12.8
1989	-	0.3	0.6	22.3	29.2	-	-	52.4
1990	-	-	3.9	27.0	33.5	3.5	-	67.8
1991	-	-	3.3	26.1	11.3	4.8	-	45.5
1992	-	-	0.0	25.6	4.5	2.9	-	33.0
1993	-	-	-	12.9	19.7	15.1	-	47.7
1994	-	-	-	-	-	-	-	-
1995	-	-	-	3.8	11.6	6.9	-	22.3
1996	-	-	-	3.3	8.7	3.6	-	15.6
1997[d/]	-	-	-	4.6	2.1	-	-	6.7
1998[d/]	-	-	-	-	4.3	0.4	-	4.7
Total All Areas								
1976-1980	3.3	18.0	63.6	129.4	158.3	51.9	5.3	429.8
1981-1985	0.1	3.8	23.6	67.5	59.3	8.8	0.3	163.3
1986-1990	-	0.5	5.7	65.7	42.8	5.6	-	120.4
1986	-	-	3.6	61.4	43.2	0.9	0.1	109.3
1987	-	-	3.7	60.7	36.3	0.8	-	101.5
1988	-	c/	-	63.5	4.8	0.7	-	68.9
1989	-	2.7	5.0	67.7	58.8	8.1	-	142.2
1990	-	-	11.1	75.2	71.1	17.7	-	175.2
1991	-	-	8.3	80.8	29.4	8.7	-	127.2
1992	0.3	1.0	0.0	60.5	33.7	12.6	0.7	108.9
1993	c/	1.1	0.1	43.4	51.1	33.1	-	128.8
1994	-	-	-	-	-	-	-	-
1995	-	-	-	8.7	33.3	12.8	-	54.8
1996	-	-	-	7.7	28.5	7.0	-	43.3
1997[d/]	-	-	-	16.4	12.1	1.2	-	29.7
1998[d/]	-	-	-	-	18.3	1.4	-	19.7

a/ Summary of effort is by statistical month.
b/ Includes effort from the Washington state waters Area 4B fishery which began in 1989.
c/ Less than 50 trips.
d/ Preliminary.
e/ Ilwaco statistics do not include effort reported as occurring inside the Columbia River mouth.

TABLE A-18. **Washington** ocean **recreational** chinook and coho salmon **landings** in numbers of fish by port and month.[a/] (Page 1 of 3)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Total	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
	CHINOOK (thousands)								COHO (thousands)							
Neah Bay																
1976-1980	0.4	0.3	1.2	2.4	1.4	0.5	0.1	6.3	0.2	0.5	3.4	11.4	20.7	7.8	0.3	44.2
1981-1985	0.1	0.1	0.2	1.2	0.5	0.1	b/	2.2	b/	0.2	0.9	8.4	16.5	3.4	0.1	29.4
1986-1990	-	b/	0.1	2.5	0.3	b/	-	3.0	-	0.0	0.2	15.9	11.6	2.1	-	29.7
1986	-	b/	0.1	2.6	0.5	-	-	3.3	-	-	0.6	10.5	10.7	-	-	21.8
1987[c/]	-	-	0.1	2.4	0.1	-	-	2.6	-	-	0.2	15.0	10.1	-	-	25.4
1988	-	b/	-	3.5	0.2	b/	-	3.8	-	-	-	12.8	2.6	0.4	-	15.8
1989[d/]	-	0.1	0.2	1.8	0.3	0.1	-	2.5	-	-	0.1	20.2	11.0	8.9	-	40.1
1990[d/]	-	-	0.0	2.0	0.6	0.1	-	2.7	-	-	b/	20.9	23.7	1.1	-	45.6
1991[d/]	-	-	b/	2.4	0.4	0.0	-	2.7	-	-	-	23.3	15.1	b/	-	38.5
1992[d/]	b/	0.1	-	1.0	b/	0.0	-	1.1	-	b/	-	12.9	11.6	0.1	-	24.7
1993[d/]	b/	0.2	b/	1.0	0.4	0.1	-	1.7	-	b/	b/	10.7	12.6	3.9	-	27.2
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	0.1	-	-	0.1	-	-	-	-	12.8	b/	-	12.8
1996[e/]	-	-	-	-	0.1	b/	-	0.1	-	-	-	-	6.6	2.3	-	9.0
1997[d/e/]	-	-	-	0.5	b/	-	-	0.5	-	-	-	-	1.5	-	-	1.5
1998	-	-	-	-	0.1	-	-	0.1	-	-	-	-	8.1	-	-	8.1
La Push																
1976-1980	0.0	b/	0.2	0.9	1.3	0.3	0.1	2.8	b/	0.3	1.7	8.6	15.2	3.1	b/	28.9
1981-1985	-	0.0	b/	0.1	0.2	b/	-	0.3	-	0.0	b/	0.9	2.8	0.1	-	3.8
1986-1990	-	b/	b/	0.3	0.1	b/	-	0.4	-	0.0	b/	2.1	0.8	b/	-	3.0
1986	-	-	b/	0.1	0.2	-	-	0.3	-	-	0.1	1.1	1.0	-	-	2.2
1987[c/]	-	-	b/	0.2	b/	-	-	0.2	-	-	b/	1.5	1.2	-	-	2.7
1988	-	-	-	0.5	b/	b/	-	0.6	-	-	-	2.2	0.5	0.1	-	2.8
1989	-	b/	b/	0.2	0.0	-	-	0.2	-	0.0	b/	2.2	0.0	-	-	2.2
1990	-	-	-	0.5	0.1	b/	-	0.6	-	-	-	3.6	1.4	0.2	-	5.2
1991	-	-	-	0.4	0.0	-	-	0.4	-	-	-	5.1	b/	-	-	5.2
1992	-	-	-	0.1	b/	b/	b/	0.2	-	-	-	1.2	0.4	0.2	b/	1.8
1993	-	-	-	0.1	b/	0.1	-	0.2	-	-	-	2.0	0.7	0.4	-	3.2
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	b/	b/	-	b/	-	-	-	-	1.2	0.7	-	1.9
1996[e/]	-	-	-	-	b/	b/	-	b/	-	-	-	-	0.8	0.8	-	1.6
1997	-	-	-	0.1	-	-	-	0.1	-	-	-	1.1	-	-	-	1.1
1998[e/]	-	-	-	-	0.1	-	-	0.1	-	-	-	-	0.6	-	-	0.6

TABLE A-18. **Washington** ocean **recreational** chinook and coho salmon **landings** in numbers of fish by port and month.[a/] (Page 2 of 3)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Total	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
	CHINOOK (thousands)								COHO (thousands)							
Westport																
1976-1980	1.4	5.5	20.8	18.0	15.8	5.7	0.7	67.9	0.2	12.2	43.8	89.4	63.1	21.9	1.8	232.5
1981-1985	-	1.4	13.4	17.4	7.5	0.3	b/	40.1	-	0.5	9.4	27.7	23.0	2.7	b/	63.3
1986-1990	-	0.1	1.2	10.3	4.8	0.9	-	17.4	-	b/	1.8	40.1	22.5	5.0	b/	69.5
1986	-	-	0.5	7.9	6.9	-	-	15.3	-	-	3.1	49.7	29.3	0.9	0.1	83.1
1987	-	-	3.0	20.5	6.2	b/	-	29.7	-	-	0.4	27.6	13.5	b/	-	41.5
1988	-	-	-	12.5	0.9	-	-	13.4	-	-	-	45.9	2.6	-	-	48.5
1989	-	0.7	1.4	4.0	4.4	1.2	-	11.7	-	b/	b/	46.2	38.2	3.9	-	88.3
1990	-	-	1.3	6.8	5.4	3.4	-	16.8	-	-	5.4	31.3	29.4	20.0	-	86.1
1991	-	-	1.9	3.8	1.3	0.2	-	7.2	-	-	6.8	60.6	14.5	7.0	-	88.9
1992	-	-	-	7.1	6.0	2.4	0.2	15.7	-	-	-	16.8	25.8	7.2	0.3	50.1
1993	-	-	-	1.4	3.8	3.4	-	8.5	-	-	-	16.1	21.3	12.1	-	49.4
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	b/	b/	b/	-	0.1	-	-	-	3.2	17.6	8.0	-	28.9
1996[e/]	-	-	-	b/	b/	-	-	b/	-	-	-	6.0	14.9	2.2	-	23.1
1997[e/]	-	-	-	1.2	1.6	0.3	-	3.1	-	-	-	6.0	6.7	0.4	-	13.2
1998[e/]	-	-	-	-	1.5	0.2	-	1.7	-	-	-	-	6.6	1.1	-	7.7
Ilwaco[f/]																
1976-1980	0.2	2.5	9.1	7.5	15.8	2.3	0.1	37.5	0.2	5.6	40.4	69.2	65.2	23.9	1.8	206.3
1981-1985	-	0.1	2.7	4.5	4.3	0.4	b/	12.0	-	1.1	8.2	36.4	25.3	4.8	0.2	75.9
1986-1990	-	b/	0.2	1.8	3.3	b/	-	5.3	-	-	2.1	32.9	27.0	0.8	-	62.8
1986	-	-	0.1	1.0	1.2	-	-	2.2	-	-	2.2	36.7	28.8	-	-	67.7
1987	-	-	0.2	2.8	4.9	-	-	8.0	-	-	1.6	26.3	26.3	-	-	54.3
1988	-	-	-	1.1	0.1	b/	-	1.2	-	-	-	20.8	0.9	0.1	-	21.8
1989	-	0.1	0.5	0.7	4.1	-	-	5.4	-	-	b/	39.9	42.4	-	-	82.3
1990	-	-	0.2	3.3	6.2	0.1	-	9.9	-	-	6.7	40.5	36.5	4.2	-	87.9
1991	-	-	0.2	1.2	0.9	0.1	-	2.3	-	-	5.5	45.8	16.4	7.5	-	75.2
1992	-	-	0.0	0.9	0.5	0.1	-	1.5	-	-	0.0	37.4	6.5	3.0	-	46.9
1993	-	-	-	0.7	1.4	0.5	-	2.6	-	-	-	15.2	21.1	9.9	-	46.2
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	b/	0.2	b/	-	0.3	-	-	-	4.0	13.9	6.8	-	24.6
1996	-	-	-	b/	b/	b/	-	0.1	-	-	-	4.7	10.3	2.8	-	17.8
1997[e/]	-	-	-	0.2	0.2	-	-	0.3	-	-	-	7.3	3.7	-	-	11.1
1998[e/]	-	-	-	-	0.3	b/	-	0.3	-	-	-	-	4.0	0.3	-	4.4

TABLE A-18. **Washington** ocean **recreational** chinook and coho salmon **landings** in numbers of fish by port and month.[a/] (Page 3 of 3)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Total	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
				CHINOOK (thousands)								**COHO (thousands)**				
Total All Areas																
1976-1980	1.9	8.3	31.3	28.9	34.4	8.8	1.0	114.6	0.6	18.6	89.2	178.6	164.2	56.7	3.9	511.8
1981-1985	0.1	1.7	16.4	23.3	12.4	0.8	b/	54.7	b/	1.8	18.6	73.3	67.5	11.0	0.3	172.4
1986-1990	-	0.2	1.5	14.9	8.5	1.0	-	26.1	-	b/	4.1	91.0	62.0	7.9	b/	165.1
1986	-	b/	0.7	11.6	8.8	-	-	21.1	-	-	5.9	98.0	69.8	0.9	0.1	174.8
1987	-	-	3.3	26.0	11.2	b/	-	40.5	-	-	2.2	70.4	51.2	b/	b/	123.9
1988	-	b/	-	17.7	1.2	b/	-	18.9	-	-	-	81.8	6.6	0.6	-	88.9
1989	-	0.9	2.1	6.7	8.8	1.4	-	19.9	-	b/	0.1	108.4	91.6	12.7	-	212.9
1990	-	-	1.5	12.6	12.4	3.6	-	3	-	-	12.2	96.3	91.0	25.4	-	224.8
1991	-	-	2.1	7.7	2.6	0.3	-	12.7	-	-	12.2	134.9	46.1	14.5	-	207.7
1992	b/	0.1	0.0	9.0	6.5	2.5	0.2	18.4	-	b/	0.0	68.3	44.4	10.5	0.3	123.6
1993	b/	0.2	b/	3.2	5.6	4.1	-	13.0	-	b/	b/	44.0	55.7	26.3	-	126.0
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	0.1	0.4	0.1	-	0.5	-	-	-	7.2	45.5	15.5	-	68.3
1996[e/]	-	-	-	b/	0.1	0.1	-	0.2	-	-	-	10.6	32.6	8.2	-	51.4
1997[d/e/]	-	-	-	1.9	1.8	0.3	-	4.0	-	-	-	14.4	12.0	0.4	-	26.8
1998	-	-	-	-	1.9	0.3	-	2.2	-	-	-	-	19.3	1.4	-	20.7

a/ Summary of catch data is by statistical month. Catches do not include estimated mortality that is induced through species restriction or size limit regulation (see Appendix C, Table C-6).
b/ Less than 50 fish.
c/ Neah Bay and La Push statistics do not include estimates of 707 chinook killed during chinook nonretention fishery (July 19-Aug. 20).
d/ Includes catch from the Washington state-waters Area 4B fishery.
e/ Preliminary.
f/ Ilwaco statistics do not include catch reported as occurring inside the Columbia River mouth.

TABLE A-19. **Washington** ocean **recreational** pink salmon **landings** (odd years only) in numbers of fish by port and month.[a/] (Page 1 of 1)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
				PINKS (thousands)				
Neah Bay[b/]								
1976-1980	c/	c/	0.2	2.0	8.6	0.4	c/	11.1
1981-1985	-	c/	c/	0.8	3.4	0.2	c/	4.4
1986-1990	-	0.0	c/	1.1	0.5	0.1	-	1.7
1989	-	0.0	0.0	1.4	0.3	0.2	-	1.9
1991	-	-	-	0.5	1.5	-	-	2.0
1993	-	-	-	0.6	1.3	0.4	-	2.2
1995[d/]	-	-	-	-	2.6	c/	-	2.6
1997[d/]	-	-	-	0.1	0.5	-	-	0.6
La Push								
1976-1980	-	c/	c/	0.4	1.9	c/	-	2.4
1981-1985	-	-	-	c/	0.2	c/	-	0.2
1986-1990	-	0.0	0.0	c/	c/	0.0	-	c/
1989	-	0.0	0.0	0.0	-	-	-	0.0
1991	-	-	-	c/	-	-	-	c/
1993	-	-	-	c/	c/	c/	-	0.1
1995[d/]	-	-	-	-	0.1	c/	-	0.1
1997[d/]	-	-	-	0.2	-	-	-	0.2
Westport								
1976-1980	-	0.2	1.1	6.3	1.5	0.1	-	9.2
1981-1985	-	c/	0.1	0.5	0.5	c/	c/	1.1
1986-1990	-	0.0	0.0	0.1	c/	0.0	-	0.2
1989	-	0.0	0.0	c/	c/	-	-	0.1
1991	-	-	0.0	c/	c/	c/	-	0.1
1993	-	-	-	c/	c/	c/	-	0.1
1995[d/]	-	-	-	c/	0.1	c/	-	0.1
1997[d/]	-	-	-	0.5	0.1	C/	-	0.6
Ilwaco[e/]								
1976-1980	-	0.2	0.1	0.5	0.3	c/	-	1.1
1981-1985	-	c/	c/	c/	0.2	-	-	0.2
1986-1990	-	0.0	0.0	0.1	c/	0.0	-	0.1
1989	-	-	0.0	c/	c/	-	-	c/
1991	-	-	0.0	c/	c/	0.0	-	0.1
1993	-	-	-	c/	c/	c/	-	c/
1995[d/]	-	-	-	c/	c/	c/	-	c/
1997[d/]	-	-	-	-	-	-	-	-
Total All Areas								
1976-1980	c/	0.4	1.4	9.2	12.4	0.4	c/	23.8
1981-1985	-	c/	0.1	1.3	4.3	0.2	c/	5.9
1986-1990	-	0.0	c/	1.2	0.6	0.1	-	1.9
1989	-	0.0	0.0	1.5	0.4	0.2	-	2.0
1991	-	-	0.0	0.6	1.6	c/	-	2.2
1993	-	-	-	0.7	1.3	0.4	-	2.4
1995	-	-	-	c/	2.7	0.1	-	2.8
1997[d/]	-	-	-	0.8	0.6	c/	-	1.4

a/ Summary of catch data is by statistical month. Catches do not include estimated mortality that is induced through species restriction or size limit regulation (see Appendix C, Table C-6). Averages are odd years only.
b/ Includes catch in the Washington state-waters Area 4B fishery.
c/ Less than 50 fish.
d/ Preliminary.
e/ Ilwaco statistics do not include catch reported as occurring inside the Columbia River mouth.

TABLE A-20. **Cape Falcon to U.S.-Mexico border commercial troll** salmon fishing **effort** in days fished by area and month.[a/] (Page 1 of 2)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
				DAYS FISHED (thousands)					
Cape Falcon to Humbug Mt.									
1978-1980	-	0.9	3.5	14.9	11.5	2.1	1.6	b/	34.4
1981-1985	-	1.4	1.0	10.3	5.4	1.0	0.7	b/	19.9
1986-1990	-	3.8	4.6	14.2	8.0	3.1	2.3	0.2	36.1
1986	-	3.0	3.3	13.8	4.9	2.0	1.2	b/	28.2
1987	-	2.8	3.0	16.1	7.3	5.5	2.5	-	37.3
1988	-	4.2	6.0	17.0	14.1	3.6	4.6	-	49.5
1989	-	6.0	6.8	13.7	7.8	3.0	2.3	0.8	40.3
1990	-	2.7	3.7	10.4	5.6	1.5	1.1	b/	25.1
1991	-	0.7	4.0	4.2	2.0	1.9	1.7	-	14.4
1992	-	1.6	-	1.5	2.7	1.5	1.7	-	8.9
1993	-	2.1	1.3	1.7	1.0	1.9	1.2	0.1	9.3
1994	-	0.9	1.2	-	-	0.3	1.0	0.1	3.5
1995	-	0.9	1.6	-	2.7	1.3	1.1	0.1	7.7
1996	-	1.4	2.0	-	1.8	1.6	1.1	0.1	8.0
1997	0.4	2.0	1.9	-	1.7	1.0	0.6	0.1	7.5
1998[c/]	0.9	1.8	1.7	-	1.4	0.6	0.6	0.1	7.0
Humbug Mt. to Horse Mt. (KMZ)									
1978-1980	0.2	8.0	8.2	12.7	10.0	3.4	1.3	0.7	44.6
1981-1985	-	3.0	1.8	5.0	5.3	1.3	0.7	0.3	17.4
1986-1990	-	0.3	1.5	0.3	0.8	0.6	0.1	0.1	3.8
1986	-	0.5	1.6	1.7	2.6	0.3	0.2	0.1	6.9
1987	-	0.5	3.2	0.9	-	0.5	0.3	0.3	4.8
1988	-	0.3	1.7	0.7	-	0.8	0.1	0.3	3.3
1989	-	0.2	1.2	-	0.6	0.7	0.1	-	2.9
1990	-	b/	-	-	1.1	0.3	b/	-	1.4
1991	-	-	-	-	b/	0.6	0.1	-	0.7
1992	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-
1994	-	b/	-	-	0.1	-	0.2	-	0.3
1995	-	b/	-	b/	-	-	0.2	-	0.3
1996	-	0.1	b/	-	0.5	0.7	0.2	-	1.4
1997	b/	0.1	-	-	b/	0.1	0.2	-	0.4
1998[c/]	0.0	b/	-	-	b/	0.1	0.2	-	0.4
Horse Mt. to U.S.-Mexico Border									
1978-1980	0.9	13.4	9.5	21.7	9.0	5.1	-	-	59.6
1981-1985	0.8	10.2	7.9	15.1	8.7	4.8	b/	-	47.6
1986-1990	-	14.5	15.3	14.5	9.3	2.8	-	-	56.4
1986	-	14.0	13.2	13.9	8.2	1.8	-	-	51.0
1987	-	14.9	13.8	14.9	9.3	3.1	-	-	55.9
1988	-	17.0	19.2	20.0	12.6	5.2	-	-	74.0
1989	-	14.1	14.9	11.8	11.6	3.4	-	-	55.7
1990	-	12.7	15.2	11.9	4.8	0.7	-	-	45.2
1991	-	8.4	10.9	6.3	7.2	1.9	-	-	34.6
1992	-	5.9	3.3	2.8	4.6	3.6	-	-	20.3
1993	-	9.3	3.9	5.7	4.4	2.6	-	-	25.9
1994	-	6.5	4.6	5.4	2.4	2.3	-	-	21.2
1995	-	8.5	5.2	5.6	3.3	3.3	-	-	25.8
1996	-	4.8	5.9	5.3	2.9	1.9	-	-	20.8
1997	0.5	6.5	2.0	5.5	2.3	1.8	-	-	18.5
1998[c/]	-	4.0	2.0	2.9	1.4	1.6	-	-	11.9

TABLE A-20. **Cape Falcon to U.S.-Mexico border commercial troll** salmon fishing **effort** in days fished by area and month.[a/] (Page 2 of 2)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
				DAYS FISHED (thousands)					
Total South of Cape Falcon									
1978-1980	1.1	22.3	21.2	49.4	30.4	10.6	2.9	0.7	138.6
1981-1985	0.8	14.6	10.8	30.5	19.3	7.0	1.4	0.3	84.9
1986-1990	-	18.6	21.3	29.0	18.1	6.5	2.5	0.3	96.3
1986	-	17.6	18.0	29.3	15.7	4.2	1.4	0.1	86.1
1987	-	18.2	19.9	31.9	16.6	9.1	2.8	0.3	98.0
1988	-	21.5	26.9	37.6	26.7	9.7	4.8	0.3	126.8
1989	-	20.3	22.9	25.4	20.0	7.2	2.4	0.8	98.9
1990	-	15.4	18.9	22.3	11.5	2.4	1.1	b/	71.7
1991	-	9.1	14.8	10.5	9.2	4.3	1.8	-	49.7
1992	-	7.5	3.3	4.3	7.3	5.1	1.7	-	29.2
1993	-	11.3	5.2	7.4	5.4	4.5	1.2	0.1	35.2
1994	-	7.5	5.8	5.4	2.4	2.5	1.2	0.1	24.9
1995	-	9.4	6.9	5.6	5.9	4.6	1.3	0.1	33.8
1996	-	6.3	7.9	5.3	5.2	4.2	1.3	0.1	30.3
1997	0.9	8.6	3.9	5.5	4.0	2.8	0.8	0.1	26.4
1998[c/]	0.9	5.8	3.7	2.9	2.8	2.3	0.8	0.1	19.3

a/ The current KMZ boundaries are Humbug Mt. to Horse Mt. These have changed slightly since the early 1980s. Monthly totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month.
b/ Less than 50 days.
c/ Preliminary.

TABLE A-21. **Cape Falcon to U.S.-Mexico border commercial troll** chinook and coho salmon **landings** in numbers of fish by catch area and month.[a/] (Page 1 of 2)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
						CHINOOK (thousands)								**COHO (thousands)**				
Cape Falcon to Humbug Mt.																		
1976-1980	-	7.9	18.4	45.9	36.6	12.3	8.5	0.1	129.7	-	-	78.2	289.2	101.8	5.9	0.1	-	475.2
1981-1985	-	13.5	7.0	44.4	23.6	6.9	2.9	b/	98.4	-	b/	-	224.2	52.0	1.4	-	-	277.6
1986-1990	-	41.1	45.7	140.7	84.6	29.3	22.5	0.7	364.7	-	-	b/	296.6	75.7	4.2	-	b/	376.6
1986	-	28.7	33.3	128.7	91.9	34.6	25.7	b/	342.9	-	-	-	375.4	-	0.1	-	-	375.5
1987	-	30.1	20.6	273.0	83.6	61.6	16.1	-	485.0	-	-	b/	256.0	59.3	21.0	-	-	336.3
1988	-	48.7	68.7	110.6	129.1	27.4	47.1	-	431.6	-	-	-	389.3	234.0	-	-	-	623.3
1989	-	83.1	73.2	70.8	69.6	15.9	19.7	3.4	335.7	-	-	-	375.6	61.5	-	-	-	437.1
1990	-	15.0	32.7	120.4	48.8	7.0	4.2	b/	228.1	-	-	0.1	86.7	23.8	-	-	b/	110.6
1991	-	3.3	12.6	15.8	11.7	18.0	12.4	-	73.8	-	-	91.4	191.4	b/	-	-	-	282.7
1992	-	20.6	-	31.5	26.1	10.7	19.3	-	108.3	-	-	-	23.1	25.2	-	b/	-	48.3
1993	-	20.3	14.7	13.2	10.4	15.6	6.4	0.7	81.3	-	-	-	b/	b/	-	b/	-	b/
1994	-	7.7	9.7	-	-	1.2	5.5	0.4	24.5	-	-	-	-	-	-	-	-	-
1995	-	10.6	35.9	-	98.2	38.6	28.9	0.3	212.5	-	-	-	-	-	-	-	-	-
1996	-	25.6	40.5	-	60.8	26.0	14.1	0.8	167.8	-	-	b/	-	-	-	-	-	b/
1997[c/]	4.4	31.0	36.2	-	44.4	25.8	5.0	0.5	147.3	-	-	-	-	-	-	-	-	-
1998[c/]	19.9	39.7	33.8	-	21.7	4.9	3.4	0.9	124.3	-	-	-	-	-	-	-	-	-
Humbug Mt. to Horse Mt. (KMZ)																		
1976-1980	3.1	22.5	19.3	32.9	35.1	9.6	7.9	2.0	134.2	b/	21.2	82.2	81.2	20.4	4.1	0.1	b/	209.3
1981-1985	-	31.2	13.4	26.6	44.5	10.1	3.5	1.1	130.4	-	3.5	7.2	25.9	17.4	0.8	-	-	54.8
1986-1990	-	5.5	45.4	3.3	10.9	8.5	0.8	0.9	75.3	-	-	12.1	1.8	0.1	0.9	0.1	-	15.0
1986	-	3.9	37.1	16.7	41.9	3.6	1.0	0.6	104.8	-	-	18.8	9.2	0.2	b/	-	-	28.3
1987	-	9.6	108.8	-	-	4.8	1.1	1.9	126.2	-	-	19.4	-	-	1.3	-	-	20.7
1988	-	8.9	65.2	-	-	18.9	0.8	1.9	95.6	-	-	12.9	-	-	1.5	-	-	14.4
1989	-	5.0	16.2	-	4.6	13.1	0.9	-	39.8	-	-	9.3	-	0.3	0.4	0.2	-	10.2
1990	-	0.1	-	-	7.8	2.0	0.1	-	9.9	-	-	-	-	0.1	1.2	b/	-	1.2
1991	-	-	-	-	b/	4.6	0.4	-	5.0	-	-	-	-	-	3.0	0.1	-	3.1
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	0.2	-	-	0.2	-	1.0	-	1.5	-	-	-	-	-	-	-	-	-
1995	-	0.3	-	1.7	-	-	1.3	-	3.3	-	-	-	-	-	-	-	-	-
1996	-	2.9	2.2	-	5.3	6.2	0.8	-	17.4	-	-	-	-	-	-	-	-	-
1997[c/]	0.1	2.3	-	-	0.3	1.4	0.9	-	5.0	-	-	-	-	-	-	-	-	-
1998[c/]	-	0.1	-	-	0.1	2.4	0.6	-	3.1	-	-	-	-	-	-	-	-	-

TABLE A-21. **Cape Falcon to U.S.-Mexico border commercial troll** chinook and coho salmon **landings** in numbers of fish by catch area and month.[a/] (Page 2 of 2)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
						CHINOOK (thousands)								**COHO (thousands)**				
Horse Mt. to U.S.-Mexico Border																		
1976-1980	7.6	118.0	68.1	157.3	49.1	28.6	-	-	428.7	b/	2.0	15.4	17.1	3.6	0.5	-	38.4	38.6
1981-1985	12.4	95.4	63.4	129.3	58.5	18.0	b/	-	377.1	b/	0.5	5.8	15.3	2.5	0.3	-	23.7	24.3
1986-1990	-	239.7	226.5	193.5	71.9	17.4	-	-	749.0	-	-	15.5	17.9	3.5	0.3	-	-	37.1
1986	-	223.4	272.8	208.0	65.1	5.5	-	-	774.9	-	-	9.2	16.1	1.8	0.1	-	-	27.2
1987	-	264.1	222.2	202.7	84.1	15.4	-	-	788.5	-	-	9.9	17.2	-	0.2	-	-	27.2
1988	-	390.1	340.2	372.5	113.0	42.1	-	-	1257.8	-	-	12.1	23.9	2.5	0.1	-	-	38.5
1989	-	175.8	123.3	112.5	77.9	18.6	-	-	508.0	-	-	7.8	15.9	8.6	0.5	-	-	32.8
1990	-	145.2	174.0	71.8	19.6	5.2	-	-	415.8	-	-	38.6	16.3	4.4	0.5	-	-	59.8
1991	-	80.1	87.1	49.7	65.6	7.8	-	-	290.2	-	-	50.1	24.0	5.1	-	-	-	79.2
1992	-	51.6	19.0	21.1	42.7	29.0	-	-	163.4	-	-	1.5	0.5	0.5	-	-	-	2.5
1993	-	111.1	40.4	55.8	48.4	24.0	-	-	279.6	-	-	-	-	-	-	-	-	-
1994	-	78.8	81.1	89.3	27.4	19.1	-	-	295.7	-	-	-	-	-	-	-	-	-
1995	-	285.5	143.0	189.7	30.9	31.1	-	-	680.1	-	-	-	-	-	-	-	-	-
1996	-	97.1	130.3	95.4	28.6	20.4	-	-	371.8	-	-	-	-	-	-	-	-	-
1997	11.9	199.0	74.6	154.0	24.9	21.8	-	-	486.2	-	-	-	-	-	-	-	-	-
1998[c/]	-	72.4	40.0	73.7	14.8	12.9	-	-	213.9	-	-	-	-	-	-	-	-	-
Total South of Cape Falcon																		
1976-1980	10.7	148.4	105.7	236.1	120.8	50.5	16.4	2.1	692.6	b/	23.2	175.8	387.5	125.9	10.5	0.2	38.4	723.1
1981-1985	12.4	140.1	83.9	200.3	126.5	35.0	6.4	1.1	605.8	b/	4.0	13.0	265.4	71.9	2.4	-	23.7	356.8
1986-1990	-	286.4	317.6	337.5	167.4	55.1	23.3	1.6	1188.9	-	-	27.6	316.3	79.3	5.4	0.1	b/	428.6
1986	-	256.0	343.2	353.4	199.0	43.7	26.7	0.6	1222.6	-	-	28.0	400.7	2.1	0.3	-	-	431.0
1987	-	303.8	351.5	475.7	167.8	81.9	17.2	1.9	1399.7	-	-	29.3	273.2	59.3	22.4	-	-	384.2
1988	-	447.7	474.1	483.1	242.1	88.4	47.9	1.9	1785.0	-	-	25.0	413.1	236.5	1.6	-	-	676.3
1989	-	263.9	212.7	183.3	152.0	47.6	20.6	3.4	883.5	-	-	17.0	391.5	70.4	0.8	0.2	-	480.0
1990	-	160.3	206.6	192.2	76.3	14.2	4.2	b/	653.8	-	-	38.7	103.0	28.2	1.7	b/	b/	171.7
1991	-	83.3	99.7	65.4	77.2	30.5	12.8	-	369.0	-	-	141.5	215.3	5.2	3.0	0.1	-	365.1
1992	-	72.2	19.0	52.6	68.8	39.8	19.3	-	271.7	-	-	1.5	23.6	25.6	-	b/	-	50.7
1993	-	131.4	55.1	69.0	58.8	39.6	6.4	0.7	360.9	-	-	-	b/	b/	-	b/	-	b/
1994	-	86.7	90.8	89.3	27.6	20.3	6.6	0.4	321.7	-	-	-	-	-	-	-	-	-
1995	-	296.4	178.8	191.4	129.1	69.7	30.3	0.3	895.9	-	-	-	-	-	-	-	-	-
1996	-	125.6	173.0	95.4	94.7	52.6	14.9	0.8	557.0	-	-	b/	-	-	-	-	-	b/
1997	16.4	232.3	110.8	154.0	69.6	49.0	5.9	0.5	638.5	-	-	-	-	-	-	-	-	-
1998[c/]	19.9	112.2	73.8	73.7	36.5	20.2	4.0	0.9	341.3	-	-	-	-	-	-	-	-	-

a/ The current KMZ boundaries are Humbug Mt. to Horse Mt. These have changed slightly since the early 1980s. Monthly totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month.

b/ Less than 50.

TABLE A-22. **Cape Falcon to U.S.-Mexico border** ocean **recreational** fishing **effort** in salmon angler trips by area and month.[a/] (Page 1 of 2)

Year or Average	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
					ANGLER TRIPS (thousands)						
Cape Falcon to Humbug Mt.											
1976-1980	-	-	-	9.0	44.4	97.2	83.0	17.6	1.4	0.1	252.6
1981-1985	-	-	-	2.1	13.1	78.0	49.0	8.5	0.3	-	151.1
1986-1990	-	-	-	1.7	18.5	82.6	49.3	12.8	-	-	164.9
1986	-	-	-	2.2	10.7	85.4	15.3	-	-	-	113.7
1987	-	-	-	-	10.9	93.0	47.0	17.6	-	-	168.5
1988	-	-	-	2.7	19.0	80.6	69.0	20.5	-	-	191.9
1989	-	-	-	2.0	36.5	86.8	45.8	9.6	-	-	180.7
1990	-	-	-	1.4	15.5	67.0	69.5	16.5	-	-	169.9
1991	-	-	-	2.3	33.1	96.6	-	-	-	-	132.0
1992	-	-	-	3.7	19.9	68.2	34.4	8.5	-	-	134.7
1993	-	-	-	1.4	1.3	24.7	10.6	-	-	-	38.0
1994	-	-	-	0.9	1.1	-	-	-	8.7	b/	10.7
1995	-	-	-	0.8	0.8	-	-	1.9	1.1	0.8	5.5
1996	-	-	-	1.3	0.9	0.6	4.1	4.8	3.3	-	15.0
1997[c/]	-	-	b/	0.5	0.8	0.9	4.0	2.1	1.8	-	10.0
1998[c/]	-	-	-	0.7	0.2	0.4	3.1	2.5	2.9	-	9.7
Humbug Mt. to Horse Mt. (KMZ)											
1976-1980	-	-	b/	1.6	20.8	50.1	30.9	8.3	5.6	0.9	118.2
1981-1985	-	-	b/	3.5	14.9	49.2	26.9	4.4	3.4	0.1	102.4
1986-1990	-	-	-	5.3	33.5	62.7	27.0	5.1	2.2	-	135.9
1986	-	-	-	5.8	25.2	33.8	26.6	1.1	5.0	-	107.2
1987	-	-	-	6.0	33.3	55.8	35.7	11.9	5.9	-	167.6
1988	-	-	-	4.7	34.2	51.9	24.0	3.9	-	-	129.7
1989	-	-	-	6.5	34.2	66.6	28.6	6.4	-	-	142.4
1990	-	-	-	3.5	40.8	65.8	20.1	2.3	-	-	132.5
1991	-	-	-	2.1	33.3	44.9	2.9	6.3	b/	-	89.5
1992	-	-	-	-	-	21.9	-	10.1	3.9	-	35.8
1993	-	-	-	4.3	7.9	19.2	19.9	6.1	-	-	57.5
1994	-	-	-	14.0	5.3	-	4.2	4.6	4.2	-	32.3
1995	-	-	-	6.5	18.0	-	4.6	11.6	3.4	-	44.1
1996	-	-	-	5.1	17.5	5.6	10.8	5.6	4.3	-	48.8
1997[c/]	-	-	-	5.9	8.6	6.5	11.7	1.6	1.3	-	35.6
1998[c/]	-	-	-	4.0	5.5	2.6	6.8	2.5	2.8	-	24.1
Horse Mt. to U.S.-Mexico Border											
1976-1980	9.9	12.5	9.2	9.9	13.0	22.1	19.4	13.2	8.0	2.4	119.6
1981-1985	5.1	7.9	8.8	8.9	14.3	22.0	16.9	9.6	5.6	1.4	100.7
1986-1990	8.4	17.0	24.0	13.7	23.8	36.4	22.9	10.7	5.1	1.7	163.8
1986	2.1	13.9	18.4	12.8	22.5	34.9	23.2	7.7	4.8	0.9	141.1
1987	8.6	18.9	17.6	13.6	17.8	38.1	31.7	14.7	7.3	1.7	170.1
1988	11.2	15.7	19.0	19.1	28.3	39.6	22.0	8.7	4.2	0.8	168.7
1989	9.8	15.9	35.0	14.2	22.9	30.4	22.2	11.9	4.0	1.9	168.3
1990	10.2	20.6	30.3	8.6	27.7	39.2	15.3	10.4	5.1	3.4	170.8
1991	-	12.3	18.2	11.0	27.9	44.2	19.7	5.8	4.4	0.1	143.6
1992	2.0	9.7	9.9	11.5	13.6	28.9	15.1	12.3	5.8	0.8	109.7
1993	0.9	15.0	17.6	15.2	12.3	42.3	25.1	8.1	4.7	-	141.2
1994	2.5	14.2	18.7	16.6	32.6	42.5	25.5	12.3	8.8	-	173.7
1995	0.4	22.9	50.2	55.3	62.2	97.5	44.4	15.9	4.9	-	353.8
1996	b/	35.1	30.4	21.9	31.7	43.4	26.4	8.1	3.1	-	200.1
1997[c/]	b/	21.5	29.7	29.9	39.1	56.6	29.1	6.0	1.2	0.4	213.4
1998[c/]	b/	6.2	16.5	17.5	28.1	33.7	25.9	8.4	3.5	b/	139.9

TABLE A-22. **Cape Falcon to U.S.-Mexico border** ocean **recreational** fishing **effort** in salmon angler trips by area and month.[a/] (Page 2 of 2)

Year or Average	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
					ANGLER TRIPS (thousands)						
Total South of Cape Falcon											
1976-1980	9.9	12.5	9.2	20.6	78.2	169.3	133.3	39.2	14.9	3.4	490.5
1981-1985	5.1	7.9	8.8	14.5	42.4	149.3	92.9	22.5	9.4	1.6	354.3
1986-1990	8.4	17.0	24.0	20.6	75.9	181.7	99.2	28.7	7.3	1.7	464.6
1986	2.1	13.9	18.4	20.7	58.5	154.1	65.2	8.8	9.8	0.9	362.0
1987	8.6	18.9	17.6	19.6	62.0	186.9	114.4	44.3	13.3	1.7	506.2
1988	11.2	15.7	19.0	26.5	81.5	172.2	115.1	33.2	4.2	0.8	490.4
1989	9.8	15.9	35.0	22.8	93.6	183.8	96.6	27.9	4.0	1.9	491.4
1990	10.2	20.6	30.3	13.5	84.0	171.9	105.0	29.2	5.1	3.4	473.2
1991	-	12.3	18.2	15.4	94.3	185.6	22.6	12.1	4.5	0.1	365.0
1992	2.0	9.7	9.9	15.2	33.6	119.0	49.5	30.9	9.6	0.8	280.3
1993	0.9	15.0	17.6	20.9	21.5	86.2	55.6	14.2	4.7	-	236.7
1994	2.5	14.2	18.7	31.5	39.0	42.5	29.7	16.8	21.8	b/	216.8
1995	0.4	22.9	50.2	62.7	81.1	97.5	49.0	29.4	9.5	0.8	403.4
1996	b/	35.1	30.4	28.3	50.1	49.6	41.3	18.5	10.7	0.0	263.8
1997	b/	21.5	29.7	36.3	48.5	64.0	44.8	9.7	4.3	0.4	259.0
1998[c/]	b/	6.2	16.5	22.2	33.8	36.6	35.8	13.5	9.2	b/	173.8

a/ The current KMZ boundaries are Humbug Mt. to Horse Mt. These have changed slightly since the early 1980s. Monthly totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month.
b/ Less than 50 trips.
c/ Preliminary.

TABLE A-23. **Cape Falcon to U.S.-Mexico border** ocean **recreational** salmon **landings** in numbers of fish by catch area and month.[a/] (Page 1 of 2)

Year or Average	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
								CHINOOK (thousands)										COHO (thousands)				
Cape Falcon to Humbug Mt.																						
1976-1980	-	-	-	0.7	2.8	4.1	5.1	1.5	0.1	b/	14.2	-	-	-	9.1	46.9	76.2	54.9	5.6	0.4	b/	193.1
1981-1985	-	-	-	b/	0.8	6.3	3.5	0.6	b/	-	11.3	-	-	-	1.4	10.8	62.6	40.9	3.8	-	-	119.5
1986-1990	-	-	-	0.1	1.9	7.1	4.0	1.6	-	-	14.8	-	-	-	0.9	20.2	98.1	46.0	7.0	-	-	172.2
1986	-	-	-	0.1	1.2	6.6	0.8	-	-	-	8.8	-	-	-	2.7	19.0	121.	25.2	-	-	-	167.9
1987	-	-	-	-	1.2	13.9	8.7	5.1	-	-	29.0	-	-	-	-	2.9	98.0	25.8	9.1	-	-	135.8
1988	-	-	-	0.3	3.4	5.0	6.0	1.5	-	-	16.1	-	-	-	0.1	9.9	95.7	76.3	20.0	-	-	202.0
1989	-	-	-	0.2	2.6	5.1	1.3	0.2	-	-	9.4	-	-	-	1.5	50.0	105.	48.2	0.7	-	-	205.9
1990	-	-	-	b/	1.0	4.7	3.5	1.3	-	-	10.5	-	-	-	0.2	19.2	70.1	54.6	5.2	-	-	149.2
1991	-	-	-	0.2	2.8	3.7	-	-	-	-	6.6	-	-	-	0.9	41.2	155.	-	-	-	-	197.5
1992	-	-	-	0.2	2.5	4.4	1.5	0.7	-	-	9.4	-	-	-	0.6	24.7	89.9	38.7	6.4	-	-	160.3
1993	-	-	-	0.2	b/	1.1	0.6	-	-	-	1.8	-	-	-	0.1	0.1	18.0	12.7	-	-	-	30.9
1994	-	-	-	0.1	0.1	-	-	-	2.2	-	2.4	-	-	-	-	-	-	-	-	b/	-	b/
1995	-	-	-	0.1	0.2	-	-	0.2	0.3	0.1	0.9	-	-	-	-	-	-	-	b/	-	-	b/
1996	-	-	-	0.2	0.2	0.3	0.7	0.9	0.7	-	3.0	-	-	-	-	-	-	b/	b/	b/	-	0.1
1997	-	-	0	0.1	0.2	0.5	1.2	0.4	0.3	-	2.4	-	-	-	-	-	b/	b/	b/	-	-	b/
1998[c/]	-	-	0	0.1	0.1	0.2	0.6	0.5	0.5	-	2.0	-	-	-	-	-	-	0.1	b/	b/	-	0.1
Humbug Mt. to Horse Mt. (KMZ)																						
1976-1980	-	-	b/	0.3	2.7	8.2	5.6	0.7	0.7	0.1	18.3	-	-	b/	0.5	17.8	29.1	9.0	0.7	0.4	0.1	57.5
1981-1985	-	-	b/	2.5	4.9	17.2	7.2	0.7	0.5	b/	33.0	-	-	-	0.4	5.7	17.7	5.7	0.4	b/	-	29.8
1986-1990	-	-	-	1.8	14.8	21.5	8.6	2.0	0.3	-	49.1	-	-	-	1.1	12.4	32.3	7.6	0.9	b/	-	54.3
1986	-	-	-	1.8	6.9	9.4	9.3	0.1	0.6	-	28.2	-	-	-	1.9	7.8	13.5	5.5	b/	b/	-	28.7
1987	-	-	-	1.5	11.3	20.6	14.4	8.0	1.1	-	56.9	-	-	-	0.1	4.9	45.9	10.2	2.6	b/	-	63.7
1988	-	-	-	1.7	25.0	20.9	4.7	0.5	-	-	52.7	-	-	-	0.7	4.9	34.3	5.2	0.6	-	-	45.6
1989	-	-	-	2.5	14.7	39.6	13.2	1.2	-	-	71.1	-	-	-	1.8	16.6	45.3	13.2	0.9	-	-	77.9
1990	-	-	-	1.4	16.2	17.1	1.7	0.1	-	-	36.6	-	-	-	1.0	27.9	22.2	4.0	0.3	-	-	55.3
1991	-	-	-	0.1	11.8	7.1	0.1	0.6	b/	-	19.7	-	-	-	0.1	31.6	28.5	0.8	1.4	b/	-	62.3
1992	-	-	-	-	-	3.8	-	0.8	0.7	-	5.3	-	-	-	-	-	8.2	-	1.5	b/	-	9.7
1993	-	-	-	1.5	0.5	2.6	2.9	1.1	-	-	8.7	-	-	-	0.7	0.9	9.4	8.0	1.4	-	-	20.4
1994	-	-	-	7.8	3.2	-	1.1	0.5	1.1	-	13.7	-	-	-	b/	b/	-	0.1	b/	-	-	0.1
1995	-	-	-	1.6	8.6	-	2.1	6.2	0.8	-	19.4	-	-	-	b/	0.2	-	b/	0.2	b/	-	0.4
1996	-	-	-	2.6	8.6	1.3	4.2	1.2	1.3	-	19.1	-	-	-	-	0.2	b/	0.1	0.1	b/	-	0.4
1997	-	-	-	2.6	3.0	3.0	4.4	0.2	0.7	-	13.9	-	-	-	b/	0.1	0.1	0.1	b/	b/	-	0.3
1998[c/]	-	-	-	1.0	1.5	0.7	1.0	0.4	0.4	-	4.9	-	-	-	-	b/	b/	0.1	-	b/	-	0.1

TABLE A-23. **Cape Falcon to U.S.-Mexico border** ocean **recreational** salmon **landings** in numbers of fish by catch area and month.[a/] (Page 2 of 2)

Year or Average	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
								CHINOOK (thousands)											**COHO (thousands)**			
Horse Mt. to U.S.-Mexico Border																						
1976-1980	5.8	8.5	8.7	6.2	11.8	16.6	9.7	7.4	6.7	1.3	82.8	b/	b/	0.2	1.4	1.6	2.2	0.6	0.1	b/	b/	6.2
1981-1985	5.9	7.3	7.2	7.7	13.3	19.0	16.6	8.5	5.5	1.4	92.5	-	b/	b/	0.1	0.7	0.9	0.3	b/	b/	-	2.1
1986-1990	5.6	15.3	26.4	10.0	19.0	28.6	18.0	8.0	4.1	1.3	136.2	-	b/	0.1	0.2	1.3	2.4	0.8	0.2	b/	-	4.9
1986	1.2	16.1	23.5	8.8	20.6	31.5	16.0	5.2	2.0	0.6	125.4	-	b/	-	0.1	0.3	1.3	0.3	b/	b/	-	2.0
1987	5.5	14.1	19.2	11.0	15.7	40.3	35.3	12.9	7.1	1.1	162.0	-	-	-	b/	0.7	1.1	0.5	0.3	-	-	2.6
1988	6.8	16.1	25.0	18.5	25.3	29.1	10.6	4.9	3.8	0.5	140.8	-	-	b/	0.2	0.5	2.9	0.2	b/	-	-	3.8
1989	8.0	12.7	42.6	6.5	16.7	18.5	13.3	12.2	3.7	2.4	136.7	-	-	0.1	0.2	1.7	2.2	0.5	0.1	-	-	4.8
1990	6.7	17.6	21.6	5.0	16.5	23.4	14.7	5.0	3.8	1.7	116.0	-	-	0.1	0.6	3.5	4.4	2.5	0.4	0.1	-	11.6
1991	-	8.0	13.0	4.8	12.2	20.4	5.7	1.6	2.2	b/	68.0	-	b/	b/	0.6	13.1	14.0	1.3	0.1	b/	-	29.2
1992	0.5	3.4	5.4	6.3	9.5	22.1	10.1	9.9	3.3	0.5	71.0	b/	b/	b/	0.4	0.4	3.6	0.1	0.5	b/	-	5.1
1993	0.4	9.9	15.0	8.5	7.3	38.4	17.2	4.8	3.6	-	105.1	-	b/	0.1	0.3	1.5	11.4	2.0	0.1	b/	-	15.4
1994	1.3	7.3	15.7	12.3	35.7	53.3	23.9	13.9	9.7	-	173.1	-	-	b/	b/	0.2	0.1	b/	b/	b/	-	0.4
1995	0.2	27.3	57.9	45.8	73.4	133.7	29.8	13.4	2.1	-	383.6	-	-	b/	b/	0.3	0.1	0.1	b/	b/	-	0.7
1996	b/	32.0	31.7	13.2	27.2	32.3	11.2	4.4	1.3	-	153.3	-	-	b/	b/	0.2	b/	0.1	b/	-	-	0.4
1997	b/	20.1	26.9	25.7	45.7	72.5	23.6	3.0	1.0	0.1	218.6	-	-	b/	b/	-	0.1	0.1	b/	-	-	0.3
1998[c/]	b/	3.0	12.6	15.1	23.7	37.1	20.7	4.4	1.8	b/	118.4	-	-	-	-	b/	b/	b/	-	-	-	b/
Total South of Cape Falcon																						
1976-1980	5.8	8.5	8.7	7.2	17.3	28.9	20.4	9.6	7.5	1.4	115.3	b/	b/	0.2	11.0	66.3	107.	64.5	6.5	0.7	0.1	256.8
1981-1985	5.9	7.3	7.2	10.2	19.0	42.5	27.3	9.9	6.1	1.4	136.8	-	b/	b/	1.9	17.2	81.2	47.0	4.2	b/	-	151.5
1986-1990	5.6	15.3	26.4	11.9	35.7	57.2	30.7	11.6	4.4	1.3	200.0	-	b/	0.1	2.2	33.9	132.	54.4	8.0	b/	-	231.4
1986	1.2	16.1	23.5	10.7	28.7	47.6	26.1	5.3	2.6	0.6	162.4	-	b/	-	4.6	27.1	135.	30.9	b/	b/	-	198.6
1987	5.5	14.1	19.2	12.5	28.2	74.8	58.3	26.0	8.3	1.1	247.9	-	-	-	0.1	8.5	145.	36.5	12.0	b/	-	202.1
1988	6.8	16.1	25.0	20.5	53.7	55.0	21.3	6.8	3.8	0.5	209.7	-	-	b/	1.0	15.2	133.	81.7	20.6	-	-	251.4
1989	8.0	12.7	42.6	9.1	34.1	63.2	27.8	13.6	3.7	2.4	217.2	-	-	0.1	3.5	68.3	153.	61.9	1.7	-	-	288.6
1990	6.7	17.6	21.6	6.5	33.7	45.3	19.9	6.3	3.8	1.7	163.1	-	-	0.1	1.7	50.6	96.7	61.1	5.9	0.1	-	216.2
1991	-	8.0	13.0	5.0	26.8	31.1	5.8	2.3	2.2	b/	94.3	-	b/	b/	1.5	85.9	197.	2.1	1.4	b/	-	289.0
1992	0.5	3.4	5.4	6.6	12.0	30.2	11.6	11.5	4.0	0.5	85.6	b/	b/	b/	1.0	25.1	101.	38.9	8.3	0.1	-	175.1
1993	0.4	9.9	15.0	10.2	7.8	42.1	20.7	5.9	3.6	-	115.6	-	b/	0.1	1.0	2.5	38.7	22.8	1.6	b/	-	66.7
1994	1.3	7.3	15.7	20.2	39.1	53.3	25.0	14.4	13.0	-	189.2	-	-	b/	b/	0.2	0.1	0.1	b/	b/	-	0.6
1995	0.2	27.3	57.9	47.5	82.2	133.7	31.9	19.8	3.3	0.1	403.8	-	-	b/	b/	0.5	0.1	0.1	0.2	b/	-	1.1
1996	b/	32.0	31.7	16.0	36.0	33.9	16.0	6.5	3.4	-	175.3	-	-	b/	b/	0.4	0.1	0.2	0.1	b/	-	0.8
1997	b/	20.1	26.9	28.4	48.9	76.0	29.2	3.6	2.0	0.1	234.9	-	-	b/	b/	0.1	0.1	0.2	b/	-	-	0.4
1998[c/]	b/	3.0	12.6	16.2	25.3	38.0	22.2	5.3	2.7	b/	125.3	-	-	-	-	b/	b/	0.1	b/	b/	-	0.2

a/ The current KMZ boundaries are Humbug Mt. to Horse Mt. These have changed slightly since the early 1980s. Monthly totals for the Oregon data are the sum of statistical weeks with closest fit to the calendar month.

b/ Less than 50 fish.

c/ Preliminary.

TABLE A-24. **U.S.-Canada border to Cape Falcon commercial troll** salmon fishing **effort** in days fished by area and month.[a/] (Page 1 of 3)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season
			DAYS FISHED (thousands)				
North of Leadbetter Pt. - Non-Indian							
1976-1980	3.6	2.3	11.9	12.4	4.5	-	34.8
1981-1985	2.8	0.3	4.7	2.4	b/	b/	10.2
1986-1990	2.3	0.7	0.3	0.7	b/	-	3.9
1986	1.9	b/	0.4	0.5	-	-	2.9
1987	1.9	-	0.9	b/	-	-	2.8
1988	3.5	2.1	b/	b/	b/	-	5.6
1989	2.2	1.1	-	0.9	b/	-	4.1
1990	2.1	0.2	b/	1.9	b/	-	4.3
1991	1.6	1.0	b/	1.2	0.5	-	4.2
1992	1.9	1.3	0.9	0.6	b/	-	4.6
1993	1.2	0.9	0.7	0.4	0.4	-	3.6
1994	-	-	-	-	-	-	-
1995	-	-	-	0.4	0.1	-	0.5
1996	-	-	0.2	0.2	-	-	0.4
1997	0.3	0.2	-	-	-	-	0.5
1998[c/]	0.1	a/	-	-	-	-	0.1
North of Leadbetter Pt. - Treaty Indian[d/]							
1976-1980	b/	0.1	0.1	0.1	b/	b/	0.3
1981-1985	0.2	0.2	0.4	0.4	0.3	b/	1.4
1986-1990	0.4	0.4	0.6	0.6	0.1	b/	2.1
1986	0.2	0.3	0.5	0.1	b/	b/	1.1
1987	0.3	-	0.4	0.5	-	b/	1.3
1988	0.6	0.5	0.7	0.9	0.2	-	3.0
1989	0.4	0.5	0.6	0.3	0.4	-	2.2
1990	0.5	0.7	0.5	1.0	0.2	-	2.9
1991	0.3	0.4	0.4	0.4	-	0.1	1.5
1992	0.3	0.4	0.3	0.1	-	-	1.1
1993	0.3	0.4	0.4	0.4	0.3	b/	1.8
1994	0.1	0.2	-	-	-	-	0.2
1995	b/	-	-	0.3	-	-	0.3
1996	0.1	0.1	-	0.1	0.1	-	0.4
1997	0.1	0.1	-	0.1	b/	-	0.4
1998[c/]	0.1	a/	-	a/	a/	-	0.2
North of Leadbetter Pt. - Total[d/]							
1976-1980	3.7	2.4	12.0	12.4	4.6	b/	35.1
1981-1985	3.0	0.4	5.1	2.8	0.3	b/	11.5
1986-1990	2.7	1.1	0.8	1.2	0.2	b/	6.0
1986	2.1	0.3	1.0	0.6	b/	b/	4.0
1987	2.2	-	1.4	0.5	-	b/	4.1
1988	4.1	2.6	0.7	0.9	0.2	-	8.5
1989	2.6	1.6	0.6	1.2	0.4	-	6.3
1990	2.6	0.9	0.5	2.9	0.2	-	7.2
1991	1.9	1.4	0.4	1.6	0.5	0.1	5.7
1992	2.2	1.7	1.1	0.7	-	b/	5.7
1993	1.5	1.3	1.1	0.8	0.7	b/	5.5
1994	0.1	0.2	-	-	-	-	0.2
1995	b/	-	-	0.7	0.1	-	0.8
1996	0.1	0.1	0.2	0.3	0.1	-	0.8
1997	0.3	0.3	-	0.1	a/	-	0.8
1998[c/]	0.2	a/	-	a/	a/	-	0.3

TABLE A-24. **U.S.-Canada border to Cape Falcon commercial troll** salmon fishing **effort** in days fished by area and month.[a/] (Page 2 of 3)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season
			DAYS FISHED (thousands)				
South of Leadbetter Point - Non-Indian							
1976-1980	0.9	0.8	4.5	3.7	1.9	0.1	11.9
1981-1985	1.0	0.1	1.0	0.9	0.2	-	3.1
1986-1990	0.3	0.1	0.2	0.6	0.4	b/	1.5
1986	0.8	-	0.3	1.5	-	-	2.6
1987	0.3	-	0.5	-	-	-	0.8
1988	0.3	0.2	-	-	-	-	0.5
1989	0.2	0.1	-	0.9	0.7	-	1.8
1990	0.1	b/	-	0.7	1.1	b/	1.9
1991	0.2	b/	-	0.8	0.2	-	1.3
1992	0.2	0.1	0.1	0.1	-	-	0.5
1993	b/	b/	0.1	0.1	0.1	-	0.3
1994	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-
1997	0.1	a/	-	-	-	-	0.1
1998[c/]	-	-	-	-	-	-	-
North of Cape Falcon - Non-Indian							
1976-1980	4.5	3.2	16.4	16.1	6.5	0.1	46.7
1981-1985	3.8	0.3	5.7	3.3	0.2	b/	13.2
1986-1990	2.7	0.7	0.4	1.3	0.4	b/	5.5
1986	2.7	b/	0.8	1.9	-	-	5.4
1987	2.2	-	1.4	b/	-	-	3.6
1988	3.8	2.2	b/	b/	b/	-	6.1
1989	2.3	1.1	-	1.8	0.7	-	6.0
1990	2.2	0.2	b/	2.7	1.1	b/	6.2
1991	1.8	1.0	b/	2.0	0.7	-	5.5
1992	2.1	1.4	1.0	0.7	b/	-	5.2
1993	1.3	0.9	0.8	0.4	0.5	-	3.9
1994	-	-	-	-	-	-	-
1995	-	-	-	0.4	0.1	-	0.5
1996	-	-	0.2	0.2	-	-	0.4
1997	0.4	0.2	-	-	-	-	0.6
1998[c/]	0.1	a/	-	-	-	-	0.1
North of Cape Falcon - Treaty Indian[d/]							
1976-1980	b/	0.1	0.1	0.1	b/	b/	0.3
1981-1985	0.2	0.2	0.4	0.4	0.3	b/	1.4
1986-1990	0.4	0.4	0.6	0.6	0.1	b/	2.1
1986	0.2	0.3	0.5	0.1	b/	b/	1.1
1987	0.3	-	0.4	0.5	-	b/	1.3
1988	0.6	0.5	0.7	0.9	0.2	-	3.0
1989	0.4	0.5	0.6	0.3	0.4	-	2.2
1990	0.5	0.7	0.5	1.0	0.2	-	2.9
1991	0.3	0.4	0.4	0.4	-	0.1	1.5
1992	0.3	0.4	0.3	0.1	-	-	1.1
1993	0.3	0.4	0.4	0.4	0.3	b/	1.8
1994	0.1	0.2	-	-	-	-	0.2
1995	b/	-	-	0.3	-	-	0.3
1996	0.1	0.1	-	0.1	0.1	-	0.4
1997	0.1	0.1	-	0.1	a/	-	0.4
1998[c/]	0.1	a/	-	a/	a/	-	0.2

TABLE A-24. **U.S.-Canada border to Cape Falcon commercial troll** salmon fishing **effort** in days fished by area and month.[a/] (Page 3 of 3)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season
			DAYS FISHED (thousands)				
North of Cape Falcon - Total[d/]							
1976-1980	4.6	3.2	16.5	16.2	6.5	0.1	47.0
1981-1985	3.9	0.5	6.0	3.7	0.4	b/	14.6
1986-1990	3.1	1.1	1.0	1.8	0.5	b/	7.5
1986	2.9	0.3	1.3	2.1	b/	-	6.5
1987	2.5	-	1.8	0.5	-	-	4.8
1988	4.4	2.8	0.7	0.9	0.2	-	9.0
1989	2.7	1.7	0.6	2.1	1.1	-	8.2
1990	2.7	0.9	0.5	3.6	1.3	b/	9.1
1991	2.1	1.4	0.4	2.4	0.7	-	7.0
1992	2.4	1.9	1.3	0.8	b/	-	6.3
1993	1.6	1.3	1.2	0.8	0.8	b/	5.8
1994	0.1	0.2	-	-	-	-	0.2
1995	b/	-	-	0.7	0.1	-	0.8
1996	0.1	0.1	0.2	0.3	0.1	-	0.8
1997	0.4	0.3	-	0.1	a/	-	0.9
1998[c/]	0.2	a/	-	a/	a/	-	0.3

a/ Monthly totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month. Washington data are summarized by statistical month.
b/ Less than 50 days.
c/ Preliminary.
d/ Season totals do not include October treaty troll effort.

TABLE A-25. **U.S.-Canada border to Cape Falcon commercial troll** chinook and coho **landings** in numbers of fish by catch area and month.[a/] (Page 1 of 4)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season	May	June	July	Aug.	Sept.	Oct.	Season
				CHINOOK (thousands)							**COHO (thousands)**			
North of Leadbetter Pt. - Non-Indian														
1976-1980	43.5	24.8	51.3	33.7	9.5	-	162.7	b/	27.2	308.8	177.8	62.1	-	575.9
1981-1985	26.6	2.9	20.8	4.7	b/	b/	55.1	-	-	103.8	26.2	b/	-	130.0
1986-1990	27.8	9.1	4.0	1.3	b/	-	42.3	b/	-	10.5	26.5	b/	-	37.0
1986	18.9	0.2	0.6	2.0	-	-	21.6	-	-	8.6	20.8	-	-	29.4
1987[c/]	33.7	-	19.3	b/	-	-	53.1	-	-	43.7	0.3	-	-	44.0
1988	40.9	29.1	0.1	0.2	b/	-	70.3	b/	-	0.4	1.8	-	-	2.2
1989	22.4	14.6	-	0.3	b/	-	37.2	-	-	-	41.1	b/	-	41.1
1990	23.3	1.8	b/	4.2	b/	-	29.3	-	-	b/	68.4	b/	-	68.4
1991[d/]	13.6	12.4	b/	0.8	0.6	-	27.5	-	-	0.1	25.4	12.7	-	38.2
1992	19.7	13.3	5.2	3.5	-	-	41.7	-	-	9.5	7.2	-	-	16.7
1993	14.4	10.6	2.6	0.9	1.5	-	30.0	-	-	4.8	3.5	5.2	-	13.4
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	7.1	10.4	-	-	17.5
1997	4.5	1.9	-	-	-	-	6.4	-	-	-	-	-	-	-
1998[e/]	5.7	0.2	-	-	-	-	5.9	-	-	-	-	-	-	-
North of Leadbetter Pt. - Treaty Indian[f/]														
1976-1980	0.1	0.3	0.8	0.1	b/	b/	1.3	0.7	5.8	1.9	0.4	0.2	b/	9.0
1981-1985	2.1	1.6	4.0	1.2	1.0	0.2	10.0	0.3	5.5	19.3	22.0	18.1	0.1	65.2
1986-1990	6.3	5.4	7.6	4.4	1.3	b/	25.0	b/	3.8	34.0	34.0	12.2	b/	84.1
1986	3.8	3.5	4.8	0.3	-	b/	12.3	b/	18.8	57.4	8.3	b/	b/	84.5
1987	8.5	-	2.5	7.0	-	0.1	18.0	b/	-	49.4	40.2	-	b/	89.6
1988	7.1	7.8	8.8	6.8	1.9	-	32.5	-	0.1	11.8	46.2	10.2	-	68.3
1989	5.4	8.4	10.4	4.9	2.1	-	31.3	-	-	30.7	18.5	34.7	-	83.9
1990	6.7	7.4	11.3	2.8	2.7	-	30.8	-	b/	20.8	57.0	16.2	b/	94.1
1991	3.5	5.7	8.0	3.3	-	0.1	20.6	-	-	47.4	31.4	-	0.5	78.9
1992	8.6	5.1	6.1	2.8	-	-	22.5	b/	-	48.0	26.4	-	-	74.3
1993	7.0	5.0	6.1	3.7	3.2	0.1	25.0	-	-	6.9	24.8	29.5	1.1	61.3
1994	0.4	4.0	-	-	-	-	4.4	-	-	-	-	-	-	-
1995	0.7	-	-	9.0	-	-	9.7	-	-	-	31.3	-	-	31.3
1996	1.4	2.0	0.1	5.1	3.6	-	12.3	-	-	-	4.6	13.7	-	18.3
1997	0.8	7.5	-	4.3	1.0	-	13.6	-	-	-	10.6	3.7	-	14.4
1998[e/]	5.2	4.4	-	3.6	1.1	-	14.4	-	-	-	3.8	4.1	-	7.9

TABLE A-25. **U.S.-Canada border to Cape Falcon commercial troll** chinook and coho **landings** in numbers of fish by catch area and month.[a/] (Page 2 of 4)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season	May	June	July	Aug.	Sept.	Oct.	Season
				CHINOOK (thousands)							COHO (thousands)			
North of Leadbetter Pt. - Total[f/]														
1976-1980	43.6	25.1	52.1	33.8	9.5	-	164.1	0.7	33.0	310.6	178.2	62.3	-	584.8
1981-1985	28.7	4.6	24.8	5.9	1.0	b/	65.1	0.3	5.5	123.1	48.1	18.1	-	195.2
1986-1990	34.1	14.6	11.6	5.7	1.4	-	67.3	b/	3.8	44.6	60.5	12.2	-	121.1
1986	22.7	3.6	5.4	2.3	-	-	33.9	b/	18.8	66.1	29.1	b/	-	113.9
1987	42.3	-	21.8	7.0	-	-	71.1	b/	-	93.0	40.5	-	-	133.6
1988	48.0	37.0	8.9	7.0	1.9	-	102.8	b/	0.1	12.2	48.1	10.2	-	70.6
1989	27.8	23.0	10.4	5.2	2.1	-	68.6	-	-	30.7	59.5	34.7	-	125.0
1990	29.9	9.2	11.3	7.0	2.7	-	60.1	-	b/	20.9	125.5	16.2	-	162.5
1991	17.2	18.1	8.0	4.2	0.6	-	48.1	-	-	47.5	56.8	12.7	-	117.1
1992	28.3	18.4	11.3	6.3	-	-	64.2	b/	-	57.4	33.6	-	-	91.1
1993	21.3	15.6	8.7	4.7	4.6	-	55.0	-	-	11.7	28.3	34.7	-	74.7
1994	0.4	4.0	-	-	-	-	4.4	-	-	-	-	-	-	-
1995	0.7	-	-	9.0	-	-	9.7	-	-	-	49.6	7.1	-	56.7
1996	1.4	2.0	0.1	5.1	3.6	-	12.3	-	-	7.1	15.0	13.7	-	35.8
1997[e/]	5.3	9.4	-	4.3	1.0	-	20.1	-	-	-	10.6	3.7	-	14.4
1998[e/]	10.9	4.6	-	3.6	1.1	-	20.3	-	-	-	3.8	4.1	-	7.9
South of Leadbetter Pt. - Non-Indian														
1976-1980	13.0	9.7	7.1	4.8	3.7	0.6	38.9	b/	41.9	106.2	41.9	21.9	0.6	212.6
1981-1985	11.2	0.8	1.9	0.8	0.1	b/	14.7	-	-	29.2	20.7	3.6	-	53.4
1986-1990	4.8	0.8	0.8	1.4	0.8	b/	8.6	-	-	6.1	20.5	9.5	0.1	36.1
1986	12.6	-	0.3	4.7	-	-	17.7	-	-	12.2	79.5	-	-	91.7
1987	6.3	-	3.5	-	-	-	9.9	-	-	18.2	-	-	-	18.2
1988	2.6	2.3	-	-	-	-	4.9	-	-	-	-	-	-	-
1989	1.7	1.3	-	1.2	1.8	-	6.0	-	-	-	12.1	25.0	-	37.2
1990	0.6	0.2	-	1.1	2.3	0.1	4.3	-	-	-	10.7	22.4	0.3	33.5
1991	1.2	0.1	-	0.9	0.1	-	2.3	-	-	-	36.2	6.8	-	43.0
1992	3.0	1.0	0.2	0.1	-	-	4.2	-	-	1.4	1.1	-	-	2.5
1993	0.3	b/	0.1	b/	0.1	-	0.5	-	-	0.4	1.4	0.4	-	2.2
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1997	b/	b/	-	-	-	-	b/	-	-	-	-	-	-	-
1998[e/]	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE A-25. U.S.-Canada border to Cape Falcon commercial troll chinook and coho landings in numbers of fish by catch area and month.[a/] (Page 3 of 4)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season	May	June	July	Aug.	Sept.	Oct.	Season
				CHINOOK (thousands)							COHO (thousands)			
North of Cape Falcon - Non-Indian														
1976-1980	56.5	34.5	58.3	38.5	13.1	0.6	201.6	b/	69.1	415.0	219.7	84.0	0.6	788.5
1981-1985	37.8	3.7	22.7	5.5	0.1	b/	69.8	-	-	133.0	46.8	3.6	-	183.4
1986-1990	32.6	9.9	4.8	2.7	0.8	b/	50.9	b/	-	16.6	47.0	9.5	0.1	73.1
1986	31.6	0.2	0.9	6.7	-	-	39.3	-	-	20.8	100.3	-	-	121.1
1987	40.1	-	22.9	b/	-	-	63.0	-	-	61.9	0.3	-	-	62.2
1988[c/]	43.5	31.4	0.1	0.2	b/	-	75.2	b/	-	0.4	1.8	-	-	2.2
1989	24.1	15.9	-	1.5	1.9	-	43.3	-	-	-	53.2	25.0	-	78.3
1990	23.9	2.1	b/	5.3	2.4	0.1	33.6	-	-	b/	79.1	22.5	0.3	101.9
1991[d/]	14.8	12.5	b/	1.7	0.7	-	29.8	-	-	0.1	61.5	19.5	-	81.2
1992	22.6	14.3	5.5	3.6	-	-	45.9	-	-	10.9	8.3	-	-	19.2
1993	14.6	10.6	2.7	1.0	1.6	-	30.5	-	-	5.1	4.8	5.6	-	15.6
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	b/	-	-	b/	-	-	-	18.4	7.1	-	25.4
1996	-	-	-	-	-	-	-	-	-	7.1	10.4	-	-	17.5
1997	4.5	1.9	-	-	-	-	6.4	-	-	-	-	-	-	-
1998[e/]	5.7	0.2	-	-	-	-	5.9	-	-	-	-	-	-	-
North of Cape Falcon - Treaty Indian[f/]														
1976-1980	0.1	0.3	0.8	0.1	b/	b/	1.3	0.7	5.8	1.9	0.4	0.2	b/	9.0
1981-1985	2.1	1.6	4.0	1.2	1.0	0.2	10.0	0.3	5.5	19.3	22.0	18.1	0.1	65.2
1986-1990	6.3	5.4	7.6	4.4	1.3	b/	25.0	b/	3.8	34.0	34.0	12.2	b/	84.1
1986	3.8	3.5	4.8	0.3	-	b/	12.3	b/	18.8	57.4	8.3	b/	b/	84.5
1987	8.5	-	2.5	7.0	-	0.1	18.0	b/	-	49.4	40.2	-	b/	89.6
1988	7.1	7.8	8.8	6.8	1.9	-	32.5	-	0.1	11.8	46.2	10.2	-	68.3
1989	5.4	8.4	10.4	4.9	2.1	-	31.3	-	-	30.7	18.5	34.7	-	83.9
1990	6.7	7.4	11.3	2.8	2.7	-	30.8	-	b/	20.8	57.0	16.2	b/	94.1
1991	3.5	5.7	8.0	3.3	-	0.1	20.6	-	-	47.4	31.4	-	0.5	78.9
1992	8.6	5.1	6.1	2.8	-	-	22.5	b/	-	48.0	26.4	-	-	74.3
1993	7.0	5.0	6.1	3.7	3.2	0.1	25.0	-	-	6.9	24.8	29.5	1.1	61.3
1994	0.4	4.0	-	-	-	-	4.4	-	-	-	-	-	-	-
1995	0.7	-	-	9.0	-	-	9.7	-	-	-	31.3	-	-	31.3
1996	1.4	2.0	0.1	5.1	3.6	-	12.3	-	-	-	4.6	13.7	-	18.3
1997	0.8	7.5	-	4.3	1.0	-	13.6	-	-	-	10.6	3.7	-	14.4
1998[e/]	5.2	4.4	-	3.6	1.1	-	14.4	-	-	-	3.8	4.1	-	7.9

TABLE A-25. **U.S.-Canada border to Cape Falcon commercial troll** chinook and coho **landings** in numbers of fish by catch area and month.[a/] (Page 4 of 4)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season	May	June	July	Aug.	Sept.	Oct.	Season
	CHINOOK (thousands)							**COHO (thousands)**						
North of Cape Falcon - Total Treaty Indian and Non-Indian[f/]														
1976-1980	56.6	34.8	59.1	38.6	13.1	0.6	202.9	0.7	74.9	416.9	220.1	84.2	0.6	797.4
1981-1985	39.9	5.3	26.7	6.7	1.1	b/	79.8	0.3	5.5	152.3	68.8	21.7	-	248.6
1986-1990	38.9	15.3	12.3	7.1	2.2	b/	75.9	b/	3.8	50.7	81.0	21.7	0.1	157.2
1986	35.3	3.6	5.7	7.0	-	-	51.6	b/	18.8	78.2	108.6	b/	-	205.6
1987	48.6	-	25.4	7.0	-	-	80.9	b/	-	111.3	40.5	-	-	151.8
1988	50.6	39.2	8.9	7.0	1.9	-	107.7	b/	0.1	12.2	48.1	10.2	-	70.6
1989	29.5	24.3	10.4	6.4	4.0	-	74.6	-	-	30.7	71.7	59.8	-	162.2
1990	30.5	9.4	11.3	8.1	5.0	0.1	64.4	-	b/	20.9	136.2	38.7	0.3	196.0
1991	18.4	18.2	8.0	5.1	0.7	-	50.4	-	-	47.5	93.0	19.5	-	160.1
1992	31.2	19.3	11.5	6.4	-	-	68.4	b/	-	58.9	34.7	-	-	93.6
1993	21.6	15.6	8.8	4.7	4.7	-	55.4	-	-	12.1	29.6	35.2	-	76.9
1994	0.4	4.0	-	-	-	-	4.4	-	-	-	-	-	-	-
1995	0.7	-	-	9.0	-	-	9.7	-	-	-	49.6	7.1	-	56.7
1996	1.4	2.0	0.1	5.1	3.6	-	12.3	-	-	7.1	15.0	13.7	-	35.8
1997	5.4	9.4	-	4.3	1.0	-	20.1	-	-	-	10.6	3.7	-	14.4
1998[e/]	10.9	4.6	-	3.6	1.1	-	20.3	-	-	-	3.8	4.1	-	7.9

a/ Monthly totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month. Washington data is summarized by statistical month.
b/ Less than 50 fish.
c/ Includes 300 chinook and 2,200 coho landed illegally.
d/ Includes 100 coho landed illegally.
e/ Preliminary.
f/ Season totals do not include Oct. treaty troll catches.

TABLE A-26. **U.S.-Canada border to Cape Falcon commercial troll** pink salmon **landings** in numbers of fish by catch area and month (odd-year averages).[a/] (Page 1 of 2)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season
			PINKS (thousands)				
North of Leadbetter Pt. - Non-Indian							
1976-1980	0.6	0.7	94.6	308.7	4.7	-	409.3
1981-1985	0.2	b/	24.2	113.3	0.3	-	138.1
1986-1990	0.1	0.1	0.9	18.5	-	-	19.7
1989	0.2	0.2	-	36.3	-	-	36.7
1991	a/	a/	a/	43.2	0.3	-	43.5
1993	a/	a/	0.1	2.7	a/	-	2.9
1995	-	-	-	30.1	0.9	-	30.9
1997[c/]	a/	a/	-	-	-	-	a/
North of Leadbetter Pt. - Treaty Indian[d/]							
1976-1980	a/	0.8	0.6	1.8	a/	2.4	3.2
1981-1985	a/	0.2	2.3	7.5	0.5	9.6	10.6
1986-1990	a/	a/	9.2	3.9	0.8	11.2	13.9
1989	a/	a/	7.1	2.4	1.7	7.5	11.1
1991	-	a/	1.9	2.8	-	-	4.6
1993	-	a/	0.3	2.1	0.8	-	3.2
1995	-	-	-	11.1	-	-	11.1
1997[c/]	-	-	-	1.7	a/	-	1.7
North of Leadbetter Pt. - Total[d/]							
1976-1980	0.6	1.5	95.3	312.7	4.8	-	414.8
1981-1985	0.3	1.0	26.6	120.8	0.8	-	149.6
1986-1990	0.1	0.1	10.1	22.4	0.8	-	33.6
1989	0.2	0.2	7.1	38.7	1.7	-	47.8
1991	a/	a/	1.9	46.0	0.3	-	48.2
1993	a/	a/	0.4	4.8	0.8	-	6.1
1995	-	-	-	41.1	0.9	-	42.0
1997[c/]	a/	a/	-	1.7	a/	-	1.7
South of Leadbetter Pt. - Non-Indian							
1976-1980	a/	a/	3.0	4.1	1.1	-	8.2
1981-1985	a/	a/	0.8	2.3	a/	-	3.2
1986-1990	-	-	0.1	a/	a/	-	0.1
1989	-	-	-	a/	a/	-	a/
1991	-	-	-	0.2	-	-	0.2
1993	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-
1997[c/]	-	-	-	-	-	-	-
North of Cape Falcon - Non-Indian							
1976-1980	0.6	0.8	97.7	315.0	5.8	-	419.8
1981-1985	0.2	0.8	25.1	115.7	0.3	-	142.2
1986-1990	0.1	0.1	1.1	18.5	a/	-	19.8
1989	0.2	0.2	-	36.3	a/	-	36.7
1991	a/	a/	a/	43.4	0.3	-	43.7
1993	a/	a/	0.1	2.7	a/	-	2.9
1995	-	-	-	30.1	0.9	-	30.9
1997[c/]	a/	a/	-	-	-	-	a/

TABLE A-26. **U.S.-Canada border to Cape Falcon commercial troll** pink salmon **landings** in numbers of fish by catch area and month (odd-year averages).[a/] (Page 2 of 2)

Year or Average	May	June	July	Aug.	Sept.	Oct.	Season
			PINKS (thousands)				
North of Cape Falcon - Treaty Indian[d/]							
1976-1980	a/	0.8	0.6	1.8	a/	2.4	3.2
1981-1985	a/	0.2	2.3	7.5	0.5	9.6	10.6
1986-1990	a/	a/	9.2	3.9	0.8	11.2	13.9
1989	a/	a/	7.1	2.4	1.7	7.5	11.1
1991	-	a/	1.9	2.8	-	-	4.6
1993	-	a/	0.3	2.1	0.8	-	3.2
1995	-	-	-	11.1	-	-	11.1
1997[c/]	-	-	-	1.7	a/	-	1.7
North of Cape Falcon - Total[d/]							
1976-1980	0.6	1.6	98.3	316.7	5.8	-	423.0
1981-1985	0.3	1.0	27.5	123.1	0.8	-	152.7
1986-1990	0.1	0.1	10.2	22.4	0.8	-	33.7
1989	0.2	0.2	7.1	38.7	1.7	-	47.8
1991	a/	a/	1.9	46.2	0.3	-	48.3
1993	a/	a/	0.4	4.8	0.8	-	6.1
1995	-	-	-	41.1	0.9	-	42.0
1997[c/]	a/	a/	-	1.7	a/	-	1.7

a/ Monthly totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month. Washington data are summarized by statistical month.
b/ Less than 50 fish.
c/ Preliminary.
d/ Season totals do not include Oct. treaty troll catches.

TABLE A-27. **U.S.-Canada border to Cape Falcon** ocean **recreational** fishing **effort** in salmon angler trips by area and month.[a/] (Page 1 of 1)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
				ANGLER TRIPS (thousands)				
North of Leadbetter Pt.[b/]								
1976-1980	2.9	13.4	42.8	87.4	95.9	33.2	3.6	279.2
1981-1985	0.1	3.1	17.5	44.3	38.9	5.6	0.1	109.6
1986-1990	-	0.5	3.4	46.0	19.6	3.8	c/	73.3
1986	-	-	2.5	41.8	27.3	0.9	0.1	72.6
1987	-	-	2.7	43.1	18.6	0.8	c/	65.2
1988	-	c/	-	51.3	4.2	0.6	c/	56.1
1989	-	2.4	4.4	45.5	22.8	2.7	-	77.7
1990	-	-	7.2	48.2	25.2	14.2	-	94.9
1991	-	-	5.0	54.7	8.9	3.9	-	72.5
1992	0.3	1.0	-	34.9	21.2	9.7	0.7	67.9
1993	c/	1.1	0.1	30.5	27.3	14.2	-	73.2
1994	-	-	-	-	-	-	-	-
1995	-	-	-	4.9	18.0	5.8	-	28.6
1996	-	-	-	4.5	19.8	1.9	-	26.1
1997[d/]	-	-	-	11.8	8.1	1.2	-	21.1
1998[d/]	-	-	-	-	7.6	0.9	-	8.6
South of Leadbetter Pt.								
1976-1980	0.4	5.5	29.4	59.4	87.7	27.0	1.9	211.3
1981-1985	-	0.9	8.7	35.1	30.2	4.9	0.1	80.0
1986-1990	-	0.1	2.2	28.6	27.3	0.7	-	58.9
1986	-	-	1.8	31.8	23.6	-	-	57.2
1987	-	-	1.6	26.1	25.8	-	-	53.4
1988	-	-	-	17.9	0.6	c/	-	18.5
1989	-	0.4	1.8	31.5	38.5	-	-	72.2
1990	-	-	5.8	35.9	48.1	3.5	-	93.4
1991	-	-	4.8	35.0	20.7	6.6	-	67.1
1992	-	-	-	35.4	6.3	4.2	-	45.9
1993	-	-	-	18.6	27.5	19.3	-	65.5
1994	-	-	-	-	-	-	-	-
1995	-	-	-	6.1	19.2	7.9	-	33.2
1996	-	-	-	5.1	11.6	4.5	-	21.2
1997[d/]	-	-	-	7.3	3.0	-	-	10.3
1998[d/]	-	-	-	-	6.1	0.7	-	6.8
North of Cape Falcon[b/]								
1976-1980	3.3	18.9	72.2	146.9	183.6	60.2	5.5	490.6
1981-1985	0.1	4.0	26.2	79.4	69.1	10.5	0.3	189.6
1986-1990	-	0.6	5.6	74.6	46.9	4.6	c/	132.2
1986	-	-	4.3	73.6	50.9	0.9	0.1	129.8
1987	-	-	4.3	69.2	44.4	0.8	c/	118.6
1988	-	c/	-	69.1	4.8	0.7	c/	74.6
1989	-	2.8	6.2	77.0	61.3	2.7	-	149.9
1990	-	-	13.0	84.2	73.3	17.7	-	188.2
1991	-	-	9.8	89.8	29.6	10.4	-	139.6
1992	0.3	1.0	-	70.3	27.6	13.8	0.7	113.8
1993	c/	1.1	0.1	49.1	54.9	33.6	-	138.7
1994	-	-	-	-	-	-	-	-
1995	-	-	-	11.0	37.2	13.7	-	61.9
1996	-	-	-	9.6	31.4	6.4	-	47.4
1997[d/]	-	-	-	19.1	11.1	1.2	-	31.4
1998[d/]	-	-	-	-	13.8	1.6	-	15.4

a/ Monthly totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month. Washington data are summarized by statistical month.

b/ Does not include the late-season Washington state-waters Area 4B fishery.

c/ Less than 50 days.

d/ Preliminary.

TABLE A-28. **U.S.-Canada border to Cape Falcon** ocean **recreational** chinook and coho salmon **landings** in numbers of fish by area and month.[a/] (Page 1 of 2)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Season	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
				CHINOOK (thousands)								**COHO (thousands)**				
North of Leadbetter Pt.[b/]																
1976-1980	1.8	5.8	22.1	21.4	18.6	6.5	0.9	77.1	0.4	13.0	48.8	109.4	99.0	32.8	2.1	305.5
1981-1985	0.1	1.5	13.7	18.8	8.1	0.4	c/	42.6	c/	0.7	10.3	36.9	42.2	6.2	0.1	96.5
1986-1990	-	0.2	1.3	13.1	5.0	0.9	-	20.6	-	c/	2.0	58.1	28.8	5.3	c/	94.2
1986	-	-	0.6	10.6	7.6	-	-	18.9	-	-	3.7	61.3	41.0	0.9	0.1	107.1
1987	-	-	3.1	23.1	6.3	c/	-	32.5	-	-	0.6	44.1	24.9	c/	c/	69.6
1988	-	c/	-	16.6	1.2	c/	-	17.8	-	-	-	61.0	5.7	0.5	-	67.1
1989	-	0.8	1.6	5.9	4.4	1.2	-	14.0	-	c/	0.1	68.5	38.2	3.9	-	110.7
1990	-	-	1.3	9.2	5.7	3.4	-	19.7	-	-	5.4	55.8	34.2	21.3	-	116.7
1991	-	-	1.9	6.6	1.3	0.2	-	9.9	-	-	6.8	89.1	14.5	7.0	-	117.4
1992	c/	0.1	-	8.2	6.0	2.4	0.2	16.9	-	c/	-	30.9	26.3	7.5	0.3	65.0
1993	c/	0.2	c/	2.5	4.1	3.4	-	10.2	-	c/	c/	28.8	30.3	12.5	-	71.6
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	c/	0.2	c/	-	0.2	-	-	-	3.2	27.1	8.7	-	39.0
1996	-	-	-	c/	0.1	c/	-	0.1	-	-	-	6.0	22.3	3.0	-	31.3
1997	-	-	-	1.7	1.6	0.3	-	3.6	-	-	-	7.0	6.7	0.4	-	14.2
1998[d/]	-	-	-	-	1.5	0.2	-	1.8	-	-	-	-	7.2	1.1	-	8.3
South of Leadbetter Pt.																
1976-1980	0.2	2.8	12.4	11.6	23.8	3.8	0.2	54.6	0.2	6.5	53.3	89.9	86.9	31.0	2.0	269.8
1981-1985	-	0.1	3.5	7.0	6.2	0.6	c/	17.4	-	1.4	11.8	52.8	36.5	7.0	0.2	109.7
1986-1990	-	c/	0.3	2.8	4.5	c/	-	7.6	-	-	4.3	48.9	37.8	0.8	-	91.8
1986	-	-	0.1	2.2	1.9	-	-	4.3	-	-	3.8	60.0	42.9	-	-	106.8
1987	-	-	0.4	4.9	6.8	-	-	12.0	-	-	2.5	38.8	38.6	-	-	80.0
1988	-	-	-	1.6	0.1	c/	-	1.6	-	-	-	30.7	0.9	0.1	-	31.6
1989	-	0.1	0.6	0.9	5.2	-	-	6.9	-	-	4.9	59.5	52.2	0.0	-	116.6
1990	-	-	0.3	4.3	8.5	0.1	-	13.2	-	-	10.3	55.2	54.4	4.2	-	124.0
1991	-	-	0.3	1.5	1.5	0.1	-	3.3	-	-	7.9	62.2	33.6	10.9	-	114.6
1992	-	-	-	1.2	0.6	0.2	-	2.0	-	-	-	55.3	9.5	4.4	-	69.2
1993	-	-	-	1.0	1.8	0.7	-	3.5	-	-	-	22.3	31.4	13.6	-	67.3
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	0.1	0.3	c/	-	0.4	-	-	-	6.0	22.9	7.6	-	36.4
1996	-	-	-	c/	0.1	c/	-	0.1	-	-	-	7.2	13.9	3.8	-	24.8
1997	-	-	-	0.3	0.2	-	-	0.5	-	-	-	11.8	5.1	-	-	16.9
1998[d/]	-	-	-	-	0.4	0.1	-	0.4	-	-	-	-	6.0	0.5	-	6.5

TABLE A-28. **U.S.-Canada border to Cape Falcon** ocean **recreational** chinook and coho salmon **landings** in numbers of fish by area and month.[a/] (Page 2 of 2)

Year or Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Season	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
					CHINOOK (thousands)								**COHO (thousands)**			
North of Cape Falcon																
1976-1980	1.9	8.7	34.5	33.0	42.3	10.3	1.1	131.8	0.6	19.5	102.2	199.3	185.9	63.8	4.1	575.4
1981-1985	0.1	1.7	17.2	25.7	14.3	1.1	c/	60.0	c/	2.1	22.1	89.7	78.7	13.2	0.3	206.2
1986-1990	-	0.2	1.6	15.9	9.5	1.0	-	28.2	-	c/	6.3	107.0	66.6	6.2	c/	186.0
1986	-	-	0.8	12.9	9.5	-	-	23.2	-	-	7.6	121.3	83.9	0.9	0.1	213.8
1987	-	-	3.5	28.0	13.1	c/	-	44.6	-	-	3.1	82.9	63.5	c/	c/	149.6
1988	-	c/	-	18.2	1.2	c/	-	19.4	-	-	-	91.6	6.6	0.6	-	98.8
1989	-	0.9	2.2	6.9	9.6	1.2	-	20.9	-	c/	5.0	128.0	90.4	3.9	-	227.3
1990	-	-	1.6	13.5	14.2	3.6	-	32.9	-	-	15.7	111.0	88.6	25.4	-	240.7
1991	-	-	2.2	8.1	2.8	0.3	-	13.3	-	-	14.7	151.3	48.2	17.9	-	232.0
1992	c/	0.1	-	9.3	6.6	2.6	0.2	18.9	-	c/	-	86.2	35.8	11.8	0.3	134.1
1993	c/	0.2	c/	3.4	5.9	4.1	-	13.6	-	c/	c/	51.1	61.7	26.2	-	139.0
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	0.1	0.4	0.1	-	0.6	-	-	-	9.2	50.0	16.3	-	75.4
1996	-	-	-	c/	0.1	c/	-	0.2	-	-	-	13.1	36.2	6.8	-	56.1
1997	-	-	-	2.0	1.8	0.3	-	4.1	-	-	-	18.8	11.8	0.4	-	31.1
1998[d/]	-	-	-	-	1.9	0.3	-	2.2	-	-	-	-	13.3	1.6	-	14.8

a/ Monthly totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month. Washington data are summarized by statistical month.
b/ Does not include the late-season Washington state-waters Area 4B fishery.
c/ Less than 50 fish.
d/ Preliminary.

TABLE A-29. **U.S.-Canada border to Cape Falcon** ocean **recreational** pink salmon **landings** in numbers of fish by area and month (odd year averages).[a/] (Page 1 of 1)

Year or Average	Apr.	May	June	July	Aug.	Sept.	Oct.	Season
				PINKS (thousands)				
North of Leadbetter Pt.[b/]								
1976-1980	c/	0.2	1.3	8.8	12.0	0.4	c/	22.7
1981-1985	-	c/	0.1	1.3	4.2	0.2	c/	5.7
1986-1990	-	-	c/	1.2	0.4	-	-	1.6
1989	-	-	-	1.5	c/	-	-	1.5
1991	-	-	-	0.6	c/	c/	-	0.6
1993	-	-	-	0.7	0.7	c/	-	1.4
1995	-	-	-	c/	1.1	c/	-	1.2
1997[d/]	-	-	-	0.7	0.1	c/	-	0.9
South of Leadbetter Pt.								
1976-1980	-	0.2	0.1	0.5	0.3	c/	-	1.1
1981-1985	-	c/	c/	0.1	0.2	-	-	0.2
1986-1990	-	-	-	0.1	c/	c/	-	0.1
1989	-	-	-	c/	c/	c/	-	c/
1991	-	-	-	0.1	c/	c/	-	0.1
1993	-	-	-	c/	c/	-	-	c/
1995	-	-	-	c/	c/	c/	-	c/
1997[d/]	-	-	-	-	-	-	-	-
North of Cape Falcon								
1976-1980	c/	0.4	1.4	9.3	12.4	0.4	c/	23.8
1981-1985	-	c/	0.1	1.3	4.4	0.2	c/	6.0
1986-1990	-	-	c/	1.2	0.4	c/	-	1.7
1989	-	-	-	1.5	0.1	c/	-	1.6
1991	-	-	-	0.6	0.1	c/	-	0.7
1993	-	-	-	0.7	0.7	c/	-	1.4
1995	-	-	-	0.1	1.2	c/	-	1.2
1997[d/]	-	-	-	0.7	0.1	c/	-	0.9

a/ Monthy totals for Oregon data are the sum of statistical weeks with closest fit to the calendar month. Washington data are summarized by statistical month.
b/ Does not include the late-season Washington state-waters Area 4B fishery.
c/ Less than 50 fish.
d/ Preliminary.

APPENDIX B
HISTORICAL RECORD OF ESCAPEMENTS TO INLAND FISHERIES AND SPAWNING AREAS

LIST OF TABLES

LIST OF TABLES (continued)

LIST OF TABLES (continued)

TABLE B-1. **California** Central Valley **natural fall chinook** salmon **spawning escapements** in thousands of fish.[a/] (Page 1 of 1)

Year	Upper Sacramento River[a/]		Feather River		Yuba River		American River		Lower Sacramento Totals		Sacramento River Totals		San Joaquin River Totals		Central Valley Totals	
	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks
1970	64.0	21.0	45.0	13.0	12.0	2.0	26.0	3.0	83.0	18.0	147.0	39.0	30.0	8.0	177.0	47.0
1971	62.6	24.4	34.0	10.0	5.3	0.4	36.0	6.0	75.3	16.4	137.9	40.8	40.0	4.0	177.9	44.8
1972	35.0	20.0	27.0	16.0	4.0	5.0	13.0	4.0	44.0	25.0	79.0	45.0	12.0	2.0	91.0	47.0
1973	48.0	19.0	52.0	13.0	22.0	2.0	77.0	5.0	151.0	20.0	199.0	39.0	6.5	0.7	205.5	39.7
1974	66.0	16.0	54.0	7.0	16.0	1.0	52.0	2.0	122.0	10.0	188.0	26.0	3.7	0.7	191.7	26.7
1975	71.0	25.0	35.0	3.0	5.0	1.0	29.0	3.0	69.0	7.0	140.0	32.0	5.8	0.9	145.8	32.9
1976	79.0	14.0	50.0	6.0	3.3	0.5	22.0	1.0	75.3	7.5	154.3	21.5	3.5	0.5	157.8	22.0
1977	46.8	28.4	36.0	2.0	7.0	2.0	40.0	2.0	83.0	6.0	129.8	34.4	0.6	0.1	130.4	34.5
1978	76.0	10.0	29.0	4.0	6.0	1.0	12.0	1.0	47.0	6.0	123.0	16.0	2.3	0.3	125.3	16.3
1979	77.0	44.0	25.0	3.0	10.0	2.0	36.0	1.0	71.0	6.0	148.0	50.0	4.0	0.5	152.0	50.5
1980	53.0	5.0	30.0	2.0	10.0	2.0	32.0	2.0	72.0	6.0	125.0	11.0	5.0	1.0	130.0	12.0
1981	51.0	35.0	41.0	4.0	12.0	2.0	38.0	5.0	91.0	11.0	142.0	46.0	15.9	8.9	157.9	54.9
1982	37.0	17.0	41.0	7.0	23.5	15.9	29.0	4.0	93.5	26.9	130.5	43.9	14.0	3.0	144.5	46.9
1983	40.6	24.7	19.1	4.5	11.4	2.4	19.0	7.4	49.5	14.3	90.1	39.0	11.1	32.2	101.2	71.2
1984	48.7	27.5	36.2	6.5	7.1	2.6	25.2	2.2	68.5	11.3	117.2	38.8	40.8	16.1	158.0	54.9
1985	107.7	25.3	46.5	3.7	10.1	2.9	44.7	11.4	101.3	18.0	209.0	43.3	72.6	3.5	281.6	46.8
1986	109.5	12.5	41.0	6.4	17.0	2.4	44.9	4.4	102.9	13.2	212.4	25.7	23.2	2.8	235.6	28.5
1987	73.4	41.4	43.6	11.6	15.2	3.5	18.2	3.0	77.0	18.1	150.4	59.5	15.8	9.1	166.2	68.6
1988	125.2	20.0	51.0	3.0	6.7	1.8	14.1	1.8	71.8	6.6	197.0	26.6	20.7	1.2	217.7	27.8
1989	65.9	16.8	31.5	3.5	8.3	1.6	14.7	2.4	54.5	7.5	120.4	24.3	3.2	0.1	123.6	24.4
1990	50.8	6.2	25.0	3.0	3.5	0.5	5.6	1.1	34.1	4.6	84.9	10.8	0.9	0.1	85.8	10.9
1991	33.6	4.7	25.2	2.5	11.4	2.7	16.5	1.7	53.1	6.9	86.7	11.6	0.6	0.2	87.3	11.8
1992	33.0	7.3	19.8	4.3	4.5	1.4	4.9	2.1	29.2	7.8	62.2	15.1	1.1	0.9	63.3	16.0
1993	54.4	6.9	24.3	3.1	5.5	0.8	19.1	3.4	48.9	7.3	103.3	14.2	2.3	0.9	105.6	15.1
1994	50.4	14.5	29.6	6.7	7.0	3.9	25.5	2.2	62.1	12.8	112.5	27.3	5.3	1.6	117.8	28.9
1995	92.8	6.6[c/]	56.2	3.4	12.2	1.1	65.0	3.0	133.4	7.5	226.2	14.1	1.5	1.1	227.7	15.2
1996[b/]	83.8[c/]	10.4[c/]	46.3	10.2	18.4	4.6	63.0	4.0	127.7	18.8	211.5	29.2	8.4	7.7	219.9	36.9
1997[b/]	154.8	20.3	38.2	17.2	19.0	6.8	47.3	4.7	104.5	28.7	259.3	49.0	19.8	0.9	279.1	49.9
1998[b/]	60.1	5.3	153.0	9.0	25.7	5.1	43.0	14.3	68.7	19.5	128.7	24.8	12.6	6.0	141.3	30.7

a/ Upper Sacramento River jack estimates based on Red Bluff Diversion Dam samples. All other estimates generally are based on carcass surveys. Upper river estimates also include Tehama Colusa Spawning Channel. Adult and jack numbers generally are based on a 24-inch fork length cut-off (unpublished CDFG data).

b/ Preliminary.

c/ Total includes Butte Creek, for which a fall spawner survey was conducted in 1996.

TABLE B-2. **California** Central Valley **hatchery fall chinook** salmon **spawning escapements** in thousands of fish.[a/] (Page 1 of 1)

Year	Coleman[b/]		Feather River		Nimbus		Sacramento Hatchery Totals		Mokelumne River		Merced River		San Joaquin Hatchery Totals		Central Valley Hatchery Totals	
	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks
1970	3.0	0.5	2.4	0.9	7.8	0.8	13.2	2.2	0.3	0.2	0.0	0.0	0.3	0.2	13.5	2.4
1971	1.5	0.5	2.3	1.2	7.9	1.3	11.7	3.0	0.8	0.1	0.2	0.0	1.0	0.1	12.7	3.1
1972	1.6	1.2	1.4	2.2	5.4	1.7	8.4	5.1	0.1	0.3	0.1	0.0	0.2	0.3	8.6	5.4
1973	3.0	0.8	7.2	1.3	10.8	1.7	21.0	3.8	0.3	0.1	0.3	0.1	0.6	0.2	21.6	4.0
1974	1.3	0.3	4.3	1.1	7.3	0.7	12.9	2.1	0.1	0.1	0.9	0.1	1.0	0.2	13.9	2.3
1975	1.8	0.6	4.2	1.1	6.6	0.8	12.6	2.5	0.2	0.2	0.6	0.0	0.8	0.2	13.4	2.7
1976	1.8	0.5	4.3	0.9	4.3	0.9	10.4	2.3	0.0	0.0	0.6	0.0	0.6	0.0	11.0	2.3
1977	4.7	0.5	6.8	2.0	6.4	0.5	17.9	3.0	0.0	0.0	0.4	0.0	0.4	0.0	18.3	3.0
1978	1.1	0.8	3.9	0.9	6.1	2.1	11.1	3.8	0.5	0.0	0.0	0.0	0.5	0.0	11.6	3.8
1979	4.7	3.9	3.6	0.6	7.0	3.2	15.3	7.7	0.5	0.1	0.1	0.1	0.6	0.2	15.9	7.9
1980	8.8	0.7	3.0	0.7	13.5	2.0	25.3	3.4	0.4	0.2	0.2	0.0	0.6	0.2	25.9	3.6
1981	5.7	7.5	7.3	1.0	17.8	2.8	30.8	11.3	0.0	0.0	0.6	0.3	0.6	0.3	31.4	11.6
1982	16.2	3.3	6.4	1.2	8.1	2.8	30.7	7.3	1.8	0.9	0.2	0.0	2.0	0.9	32.7	8.2
1983	5.4	3.4	6.1	1.6	6.4	2.5	17.9	7.5	1.7	2.9	0.2	1.6	1.9	4.5	19.8	12.0
1984	18.7	2.9	8.9	0.4	10.2	2.0	37.8	5.3	0.0	0.0	1.7	0.2	1.7	0.2	39.5	5.5
1985	13.1	3.2	5.6	0.2	7.3	1.8	26.0	5.2	0.2	0.0	1.1	0.1	1.3	0.1	27.3	5.3
1986	11.3	1.2	5.7	2.8	5.6	0.1	22.6	4.1	0.3	0.2	0.5	0.2	0.8	0.4	23.4	4.5
1987	11.3	7.1	6.5	3.6	3.4	2.9	21.2	13.6	0.1	0.5	0.5	0.4	0.6	0.9	21.8	14.5
1988	12.5	1.1	6.2	0.3	8.0	0.7	26.7	2.1	0.1	0.0	0.4	0.0	0.5	0.0	27.2	2.1
1989	10.2	1.8	6.5	1.1	9.2	0.5	25.9	3.4	0.0	0.0	0.1	0.0	0.1	0.0	26.0	3.4
1990	13.5	1.2	4.3	1.9	4.6	0.3	22.4	3.4	0.0	0.0	0.1	0.0	0.1	0.0	22.5	3.4
1991	10.0	0.7	7.9	1.4	6.8	0.4	24.7	2.5	0.0	0.0	0.3	0.1	0.3	0.1	25.0	2.6
1992	6.2	1.0	10.3	6.1	5.1	1.3	21.6	8.4	0.3	0.4	0.1	0.3	0.4	0.7	22.0	9.1
1993	7.1	0.6	9.8	1.6	7.3	3.3	24.2	5.5	1.5	0.6	0.2	0.2	1.7	0.8	25.9	6.3
1994	11.5	7.4	10.1	5.0	7.6	3.3	29.2	15.7	1.2	0.8	0.6	0.3	1.8	1.1	31.0	16.8
1995	24.8	1.9	11.6	0.6	5.2	1.3	41.6	3.8	2.4	0.9	0.3	0.3	2.7	1.2	44.3	5.0
1996[c/]	18.8	2.4	6.5	1.6	7.6	0.5	32.9	4.4	1.8	2.1	0.7	0.4	2.5	2.5	35.4	6.9
1997[c/]	45.4	6.1	13.4	1.7	5.8	0.3	64.6	8.1	6.3	0.2	0.8	0.1	7.1	0.3	71.7	8.4
1998[c/]	42.4	1.9	16.8	1.0	9.9	1.8	69.2	4.8	2.5	0.6	0.4	0.4	2.9	1.0	72.1	5.7
GOALS	9.0	7.5	5.0	-	6.0	-	20.0	-	5.0	-	1.0	-	6.0	-	26.0	-

a/ Counts of less than 50 fish are shown as 0.
b/ Fall spawning fish. Some spring run are included.

TABLE B-3. **Sacramento River late-fall, winter and spring chinook** salmon **spawning escapement** estimates in thousands of fish. (Page 1 of 1)

Year or Average	Upper Sacramento River[a/]						Feather River Spring[c/]		Spring Totals		Grand Totals	
	Late Fall[b/]		Winter		Spring							
	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks
1971-1975	17.7	1.5	22.9	9.0	5.1	1.7	0.4	0.0	5.5	1.7	46.1	12.3
1976-1980	10.4	0.8	13.5	2.6	8.5	2.7	0.4	0.0	9.0	2.7	32.9	5.8
1981-1985	7.6	2.0	5.0	1.0	10.4	4.4	1.4	0.2	11.8	4.6	24.4	7.4
1986-1990	10.3	1.5	1.2	0.3	7.3	2.2	3.0	0.3	10.3	2.5	21.9	4.3
1981	6.3	0.7	18.3	1.7	12.9	8.1	0.8	0.2	13.7	8.3	38.3	10.7
1982	4.1	0.8	1.0	0.3	21.0	4.4	1.8	0.2	22.8	4.6	27.9	5.7
1983	12.9	2.3	1.4	0.4	5.3	1.0	1.6	0.1	6.9	1.1	20.9	4.1
1984	6.5	3.9	0.8	1.9	3.7	4.1	1.3	0.3	5.0	4.4	12.3	10.1
1985	8.0	2.2	3.6	0.3	8.9	4.4	1.6	0.0	10.5	4.4	22.1	7.0
1986	6.6	0.4	2.0	0.5	14.5	1.3	1.2	0.2	15.7	1.5	24.3	2.3
1987	12.6	3.1	1.8	0.2	6.8	4.4	0.9	0.3	7.7	4.7	22.1	8.1
1988	15.7	0.9	1.4	0.7	5.6	3.6	7.2	0.3	12.8	3.9	29.9	5.1
1989	10.1	1.3	0.5	0.1	4.9	0.8	4.4	0.7	9.3	1.5	19.9	2.9
1990	6.6	1.8	0.4	0.0	4.6	0.9	1.4	0.2	6.0	1.1	13.0	2.9
1991	7.4	1.2	0.1	0.1	1.3	0.2	3.3	0.2	4.6	0.4	12.1	1.7
1992	9.4	1.0	1.1	0.1	1.0	0.2	1.3	0.2	2.3	0.4	12.8	1.5
1993	5.0	1.0	0.3	0.1	1.0	0.4	3.9	3.9	4.9	4.3	10.2	5.4
1994	5.0	1.0	0.2	0.0	2.1	0.4	2.8	0.9	4.9	1.3	10.1	2.3
1995	d/	d/	1.3	0.1	8.6	0.9	5.0	0.4	13.6	1.3	19.9	2.4
1996	d/	d/	0.6	0.3	2.2	0.4	5.3	0.7	7.5	1.1	8.1	1.5
1997	d/	d/	0.5	0.4	1.4	0.2	3.0	0.7	4.3	0.9	4.8	1.2
1998[e/]	11.2	1.6	1.8	0.8	23.9[f/]	-	6.8	0.8	30.7[f/]	0.8[g/]	43.7[f/]	3.2[g/]

a/ Estimated number of jacks and adults based on sampling at Red Bluff Diversion Dam (unpublished CDFG data). Beginning in 1987, late-fall and winter estimates have been based on historical run patterns and partial counts at Red Bluff Diversion Dam due to the raising of the dam gates during the last part of late-fall run and first part of the winter run.

b/ Variable numbers of late-fall fish were trapped at Keswick Dam and spawned at Coleman Hatchery.

c/ Primarily fish spawned at Feather River Hatchery.

d/ No data are available as gates at Red Bluff Diversion Dam were raised during time period coinciding with late fall run.

e/ Preliminary.

f/ Includes Upper Sacramento River spring jacks due to the unavailability of age composition data.

g/ Does not include Upper Sacramento River spring jacks.

TABLE B-4. Summary of **Klamath River fall chinook** salmon estimates in thousands of adults and jacks. (Page 1 of 2)

Year	Category	Total Inriver Run	Inriver Harvest			Nonlanded Fishery Mortality	Spawning Escapement								
							Klamath River			Trinity River			Total		
			Indian	Sport	Total		Hatchery	Natural	Total	Hatchery	Natural	Total	Hatchery	Natural	Total
1978	Adults	92.8	18.2	1.7	19.9	1.5	6.9	27.4	34.4	6.0	31.1	37.1	13.0	58.5	71.5
	Jacks	22.7	1.8	2.1	3.9	0.2	0.9	11.7	12.7	1.3	4.7	6.0	2.2	16.4	18.7
1979	Adults	51.2	13.7	2.1	15.8	1.1	2.3	22.6	24.9	1.3	8.0	9.4	3.6	30.6	34.3
	Jacks	11.7	1.4	2.2	3.5	0.2	0.3	2.8	3.1	1.0	3.9	4.9	1.2	6.8	8.0
1980	Adults	45.6	12.0	4.5	16.5	1.1	2.4	13.8	16.2	4.1	7.7	11.8	6.5	21.5	28.0
	Jacks	36.8	1.0	5.9	6.9	0.2	0.5	10.1	10.6	2.3	16.8	19.1	2.7	27.0	29.7
1981	Adults	80.1	33.0	6.0	39.0	2.8	2.1	18.5	20.6	2.4	15.3	17.7	4.4	33.9	38.3
	Jacks	28.1	2.5	7.3	9.7	0.3	0.5	10.6	11.1	1.0	5.9	6.9	1.5	16.5	18.1
1982	Adults	66.5	14.5	8.3	22.8	1.3	8.4	22.7	31.0	2.1	9.3	11.3	10.4	32.0	42.4
	Jacks	39.4	1.8	12.5	14.3	0.4	1.8	10.5	12.3	4.2	8.1	12.4	6.1	18.6	24.7
1983	Adults	57.5	7.9	4.2	12.1	0.7	8.4	13.5	21.9	5.5	17.3	22.8	13.9	30.8	44.6
	Jacks	3.8	0.2	0.4	0.5	0.0	0.5	1.7	2.2	0.3	0.9	1.1	0.8	2.5	3.3
1984	Adults	47.1	18.7	3.3	22.0	1.6	5.3	10.4	15.7	2.2	5.7	7.8	7.5	16.1	23.6
	Jacks	8.3	0.5	1.0	1.4	0.1	0.8	1.9	2.6	0.8	3.4	4.2	1.5	5.3	6.8
1985	Adults	64.4	11.6	3.6	15.1	1.0	20.0	16.5	36.4	2.6	9.2	11.8	22.5	25.7	48.2
	Jacks	69.4	1.6	11.2	12.8	0.3	2.2	6.5	8.7	18.2	29.5	47.6	20.3	36.0	56.3
1986	Adults	194.8	25.1	21.0	46.2	2.4	17.1	20.8	37.9	15.8	92.5	108.3	32.9	113.4	146.3
	Jacks	44.5	0.9	9.4	10.3	0.3	1.5	8.5	9.9	3.6	20.5	24.1	5.1	28.9	34.0
1987	Adults	208.8	53.1	20.2	73.3	4.7	15.2	29.8	45.0	13.9	71.9	85.9	29.1	101.7	130.8
	Jacks	19.0	0.4	5.4	5.9	0.1	1.8	2.8	4.6	2.5	5.9	8.4	4.3	8.8	13.1
1988	Adults	191.3	51.7	22.2	73.9	4.6	16.1	34.8	50.9	17.4	44.6	62.0	33.5	79.4	112.8
	Jacks	24.0	0.6	5.4	6.0	0.2	0.6	1.9	2.5	4.8	10.6	15.4	5.4	12.5	17.9
1989	Adults	124.0	45.6	8.8	54.3	3.8	10.9	14.4	25.3	11.1	29.4	40.6	22.0	43.9	65.9
	Jacks	9.1	0.2	2.3	2.5	0.1	0.8	3.0	3.8	0.2	2.5	2.8	1.1	5.5	6.6
1990	Adults	35.8	7.9	3.6	11.5	0.7	6.7	7.9	14.6	1.3	7.7	9.0	8.1	15.6	23.6
	Jacks	4.4	0.2	2.1	2.3	0.1	0.3	1.1	1.4	0.4	0.2	0.6	0.7	1.4	2.0
1991	Adults	32.6	10.2	3.4	13.6	0.9	4.0	6.8	10.8	2.5	4.9	7.3	6.5	11.6	18.1
	Jacks	1.8	0.1	0.7	0.7	0.0	0.1	0.3	0.4	0.2	0.4	0.6	0.3	0.7	1.0
1992	Adults	26.7	5.8	1.0	6.8	0.5	3.6	4.9	8.5	3.8	7.1	10.9	7.4	12.0	19.4
	Jacks	13.7	0.4	4.1	4.5	0.1	3.7	2.6	6.3	0.2	2.6	2.8	3.9	5.1	9.1
1993	Adults	57.1	9.6	3.2	12.8	0.8	20.8	16.0	36.8	0.8	5.9	6.7	21.6	21.9	43.5
	Jacks	7.6	0.2	1.9	2.1	0.1	0.9	1.4	2.2	0.7	2.5	3.2	1.6	3.8	5.4
1994	Adults	61.6	11.7	1.8	13.5	1.0	11.5	21.4	32.9	3.3	10.9	14.2	14.7	32.3	47.1
	Jacks	14.4	0.3	2.6	2.8	0.1	0.8	3.7	4.5	4.4	2.5	6.9	5.2	6.2	11.4

TABLE B-4. Summary of **Klamath River fall chinook** salmon estimates in thousands of adults and jacks. (Page 2 of 2)

Year	Category	Total Inriver Run	Inriver Harvest			Nonlanded Fishery Mortality	Spawning Escapement								
							Klamath River			Trinity River			Total		
			Indian	Sport	Total		Hatchery	Natural	Total	Hatchery	Natural	Total	Hatchery	Natural	Total
1995	Adults	213.7	15.6	6.1	21.7	1.4	13.7	67.9	87.7	15.2	77.9	97.6	28.9	161.7	190.7
	Jacks	22.8	0.6	4.4	5.0	0.1	0.3	8.5	8.8	0.1	9.3	13.1	0.3	17.7	17.7
1996	Adults	175.4	56.5	12.8	69.2	4.8	13.6	38.7	52.3	6.4	42.6	49.1	20.0	81.0	101.0
	Jacks	9.5	0.2	2.3	2.5	0.1	0.5	1.7	2.2	0.2	4.5	4.7	0.8	8.1	8.9
1997	Adults	83.7	12.1	5.7	17.8	1.1	13.3	34.6	47.9	5.4	11.5	16.9	18.7	46.1	64.8
	Jacks	7.9	0.1	2.4	2.4	0.1	0.5	1.4	1.8	0.8	2.8	3.7	1.3	4.2	5.5
1998[a/]	Adults	88.5	10.0	7.6	17.6	1.0	13.8	17.5	31.3	14.3	24.4	38.7	28.1	41.9	70.0
	Jacks	6.0	0.2	1.1	1.3	0.1	1.5	1.1	2.6	0.2	2.1	2.3	1.7	3.0	4.7

a/ Preliminary.

TABLE B-5. Estimates of Yurok and Hoopa Valley reservation **Indian gillnet** harvest.[a/] (Page 1 of 2)

Year	Area	Chinook Salmon (numbers of fish)					
		Spring Run			Fall Run		
		Jack	Adult	Total	Jack	Adult	Total
1977	Total	b/	b/	b/	2,700	27,300	30,000
1978	Total	b/	b/	b/	1,800	18,200	20,000
1979	Total	b/	b/	b/	1,350	13,650	15,000
1980	Total	20	980	1,000	987	12,013	13,000
1981	Estuary	21	1,320	1,341	912	23,097	24,009
	Resighinni	0	16	16	338	4,293	4,631
	Upper Klamath	19	381	400	766	4,112	4,878
	Trinity River	17	1,090	1,107	449	1,531	1,980
	Total	57	2,807	2,864	2,465	33,033	35,498
1982	Estuary	3	172	175	290	4,547	4,837
	Resighinni	11	789	800	368	3,551	3,919
	Upper Klamath	21	1,479	1,500	827	4,873	5,700
	Trinity River	10	715	725	314	1,511	1,825
	Total	45	3,155	3,200	1,799	14,482	16,281
1983	Estuary	1	59	60	12	800	812
	Middle Klamath	3	322	325	32	2,626	2,658
	Upper Klamath	1	129	130	89	3,074	3,163
	Trinity River	5	75	80	30	1,390	1,420
	Total	10	585	595	163	7,890	8,053
1984	Estuary	2	53	55	132	11,878	12,010
	Middle Klamath	8	147	155	81	2,807	2,888
	Upper Klamath	2	47	49	102	2,815	2,917
	Trinity River	0	380	380	140	1,170	1,310
	Total	12	627	639	455	18,670	19,125
1985[c/]	Estuary	29	580	609	132	5,700	5,832
	Middle Klamath	6	184	190	283	1,731	2,014
	Upper Klamath	10	310	320	193	2,194	2,387
	Trinity River	115	1,000	1,115	947	1,941	2,888
	Total	160	2,074	2,234	1,555	11,566	13,121
1986[c/]	Estuary	1	40	41	191	15,286	15,477
	Middle Klamath	3	164	167	176	2,501	2,677
	Upper Klamath	10	488	498	201	1,532	1,733
	Trinity River	81	2,022	2,103	586	4,808	5,394
	Total	95	2,714	2,809	1,154	24,127	25,281
1987	Commercial Estuary	0	0	0	0	29,040	29,040
	Subsistence: Estuary	23	786	809	36	10,938	10,974
	Middle Klamath	5	171	176	30	5,079	5,109
	Upper Klamath	20	689	709	87	3,057	3,144
	Trinity River	122	4,146	4,268	262	4,982	5,244
	Total	176	5,792	5,962	415	53,096	53,511
1988	Commercial Estuary	0	0	0	0	25,782	25,782
	Subsistence: Estuary	8	1,669	1,677	138	11,132	11,270
	Middle Klamath	0	710	710	36	6,252	6,288
	Upper Klamath	0	539	539	137	3,415	3,552
	Trinity River	84	2,727	2,811	267	5,070	5,337
	Total	92	5,645	5,737	578	51,651	52,229
1989	Commercial Estuary	0	206	206	0	27,504	27,504
	Subsistence: Estuary	0	644	644	0	9,626	9,626
	Middle Klamath	0	2,008	2,008	65	3,108	3,173
	Upper Klamath	0	1,887	1,887	55	1,853	1,908
	Trinity River	20	1,978	1,998	71	3,474	3,545
	Total	20	6,723	6,743	191	45,565	45,756

TABLE B-5. Estimates of Yurok and Hoopa Valley reservation **Indian gillnet** harvest.[a/] (Page 2 of 2)

Year	Area	Chinook Salmon (numbers of fish)					
		Spring Run			Fall Run		
		Jack	Adult	Total	Jack	Adult	Total
1990	Commercial Estuary	-	-	-	-	-	-
	Subsistence: Estuary	0	388	388	13	3,536	3,549
	Middle Klamath	0	521	521	36	1,116	1,152
	Upper Klamath	0	504	504	102	2,331	2,433
	Trinity River	24	865	889	36	811	847
	Total	24	2,278	2,302	187	7,794	7,981
1991	Commercial Estuary	-	-	-	-	-	-
	Subsistence: Estuary	0	70	70	7	3,902	3,909
	Middle Klamath	0	46	46	9	1,765	1,774
	Upper Klamath	3	167	170	16	3,251	3,267
	Trinity River	0	263	263	30	1,310	1,340
	Total	3	546	549	62	10,228	10,290
1992	Commercial Estuary	-	-	-	-	-	-
	Subsistence: Estuary	0	15	15	124	1,152	1,276
	Middle Klamath	0	97	97	52	1,107	1,159
	Upper Klamath	0	284	284	148	2,580	2,728
	Trinity River	0	346	346	42	946	988
	Total	0	742	742	366	5,785	6,151
1993	Commercial Estuary	-	-	-	-	-	-
	Subsistence: Estuary	0	19	19	62	3,017	3,079
	Middle Klamath	0	320	320	33	1,632	1,665
	Upper Klamath	0	211	211	47	3,495	3,542
	Trinity River	0	228	228	33	1,492	1,525
	Total	0	778	778	175	9,636	9,811
1994	Commercial Estuary	-	-	-	-	-	-
	Subsistence: Estuary	9	152	161	80	4,341	4,421
	Middle Klamath	14	110	124	4	1,448	1,452
	Upper Klamath	3	239	242	71	3,658	3,729
	Trinity River	0	255	255	94	2,266	2,360
	Total	26	756	782	249	11,713	11,962
1995	Commercial Estuary	-	-	-	-	-	-
	Subsistence: Estuary	0	656	656	117	5,200	5,317
	Middle Klamath	0	1,312	1,312	44	2,415	2,459
	Upper Klamath	0	624	624	47	4,610	4,657
	Trinity River	93	1,175	1,268	268	3,383	3,651
	Total	93	3,767	3,860	476	15,608	16,084
1996	Commercial Estuary	16	3,113	3,129	127	40,020	40,147
	Subsistence: Estuary	1	1,851	1,852	36	9,093	9,129
	Middle Klamath	9	673	682	7	1,570	1,577
	Upper Klamath	3	268	271	12	3,023	3,035
	Trinity River	6	1,182	1,188	8	2,770	2,778
	Total	35	7,087	7,122	190	56,476	56,666
1997	Commercial Estuary	-	-	-	-	-	-
	Subsistence: Estuary	0	2,919	2,919	21	5,574	5,595
	Middle Klamath	0	1,102	1,102	3	1,479	1,482
	Upper Klamath	0	1,419	1,419	5	3,796	3,801
	Trinity River	1	1,250	1,251	6	1,238	1,244
	Total	1	6,690	6,691	35	12,087	12,122
1998[d/]	Commercial Estuary	-	-	-	-	-	-
	Subsistence: Estuary	2	616	618	16	3,448	3,464
	Middle Klamath	0	935	935	9	1,323	1,332
	Upper Klamath	0	781	781	23	3,804	3,827
	Trinity River	45	426	471	99	1,571	1,670
	Total	47	2,758	2,805	147	10,146	10,293

a/ USFWS estimates for 1977-1982 and for Klamath River portion in 1983-1993. The Fisheries Department of the Hoopa Valley Business Council has monitored the Trinity River fishery since 1982. The Yurok Tribe Fisheries Program monitored the Klamath River portion in 1994 and 1995.

b/ No estimate.

c/ Does not include fall chinook harvested under special ceremonial permit.

d/ Preliminary.

TABLE B-6. **Shasta River fall chinook** salmon **weir counts** or **spawning escapement** estimates.[a/] (Page 1 of 1)

Year	Adults	Jacks	Total	Year	Adults	Jacks	Total
1930	7,280	12,082	19,362	1965	7,136	775	7,911
1931	61,811	20,037	81,848	1966	5,573	451	6,024
1932	30,534	5,058	35,592	1967	10,478	1,836	12,314
1933[b/]	4,700	6,886	11,586	1968	13,039	1,003	14,042
1934	26,614	21,807	48,421	1969	10,576	3,049	13,625
1935	63,711	9,660	73,371	1970	12,693	712	13,405
1936	33,264	14,669	47,933	1971	4,970	1,649	6,619
1937	32,027	1,229	33,256	1972	2,802	839	3,641
1938	6,497	1,118	7,615	1973	4,516	4,902	9,418
1939	8,313	19,670	27,983	1974	7,376	2,729	10,105
1940	50,725	4,431	55,156	1975	11,821	4,211	16,032
1941	7,372	5,860	13,232	1976[c/]	4,154	1,919	6,073
1942	9,342	1,834	11,176	1977	5,478	1,969	7,447
1943	8,048	1,974	10,022	1978	12,024	6,707	18,731
1944	8,604	2,686	11,290	1979	7,111	1,040	8,151
1945	14,905	3,291	18,196	1980	3,762	4,334	8,096
1946	6,949	641	7,590	1981	7,890[d/]	4,330	12,220
1947	298	43	341	1982	6,533	1,922	8,455
1948	31	6	37	1983	3,119	753	3,872
1949	171	21	192	1984	2,362	480	2,842
1950	-- Incomplete Count --			1985	2,897	2,227	5,124
1951	1,565	459	2,024	1986	3,274	683	3,957
1952	1,488	178	1,666	1987	4,299	398	4,697
1953	1,444	161	1,605	1988[e/]	2,586	256	2,842
1954	1,768	857	2,625	1989	1,440	137	1,577
1955	1,620	197	1,817	1990	415	118	533
1956	-- No Count --			1991	716	10	726
1957	1,781	453	2,234	1992	520	66	586
1958	4,694	1,379	6,073	1993	1,341	85	1,426
1959	8,619	1,256	9,875	1994	3,363	1,840	5,203
1960	9,489	1,209	10,698	1995	12,816	695	13,511
1961	5,250	3,514	8,764	1996	1,404	46	1,450
1962	9,907	4,991	14,898	1997	1,677	334	2,011
1963	22,825	9,012	31,837	1998[f/]	2,404	138	2,542
1964	30,715	3,648	34,363				

a/ From 1930-1937, 1957-1987 and 1991-1995, the counts were made near the river mouth. From 1938-1955, they were made 6.5 miles upstream from the mouth; considerable spawning occurred downstream from the racks in these years. From 1988-1990, escapements were estimated from mark-recapture data (spawning surveys).

b/ Commercial fishing in lower Klamath River closed by the state after this season.

c/ Gillnetting resumed in lower 20 miles of Klamath River by Hoopa Valley Indian Reservation fishers.

d/ Includes 276 females taken to Iron Gate Hatchery.

e/ Low water conditions appeared to hinder entry into the river this year.

f/ Preliminary.

TABLE B-7. Summary of **California north coast** salmon **spawning** stock surveys. (Page 1 of 1)

Year	Canon Creek, Mad River[a/b/]			Sprowl Creek, Eel River[a/c/]			Tomki Creek, Eel River[d/]
	Number of Surveys	Chinook	Coho	Number of Surveys	Chinook	Coho	Chinook
1963-1964	12	70	55	-	-	-	-
1964-1965	NA	45	0	-	-	-	1,747
1965-1966	-	-	-	-	-	-	-
1966-1967	NA	334	3	3	1,189	6	-
1967-1968	-	-	-	-	-	-	-
1968-1969	-	-	-	-	-	-	-
1969-1970	-	-	-	-	-	-	-
1970-1971	NA	230	0	-	-	-	-
1971-1972	-	-	-	-	-	-	-
1972-1973	-	-	-	-	-	-	-
1973-1974	-	-	-	-	-	-	-
1974-1975	-	-	-	1	247	0	-
1975-1976	-	-	-	1	339	2	367
1976-1977	-	-	-	-	-	-	-
1977-1978	-	-	-	-	-	-	-
1978-1979	-	-	-	2	534	23	-
1979-1980	-	-	-	2	572	0	2,410
1980-1981	-	-	-	1	164	4	317
1981-1982	3	23	0	2	121	0	565
1982-1983	3	68	0	6	169	1	1,741
1983-1984[e/]	2	137	0	2	82	0	-
1984-1985	1	16	0	6	67	13	1,292
1985-1986[e/]	10	514	14	6	320	0	3,558
1986-1987	4	90	3	5	307	13	2,173
1987-1988	4	117	29	3	2,187	4	3,666
1988-1989[e/]	2	69	7	3	339	12	556
1989-1990	4	9	9	5	89	14	0
1990-1991	1	1	3	2	0	0	0
1991-1992	2	8	0	2	135	0	3
1992-1993	2	55	1	2	63	1	15
1993-1994	4	20	0	4	198	53	5
1994-1995	2	32	2	7	128	4	22
1995-1996	4	87	3	3	272	9	69
1996-1997	1	60	0	3	153	7	90
1997-1998[f/]	2	53	1	4	206	12	44
1998-1999	2	72	0	4	117	21	59

a/ Numbers reflect peak daily counts of live fish and carcasses with adults and jacks combined. Counts in years of poor visibility are not shown.
b/ Survey area was from mouth to falls (2 miles).
c/ Survey area was the main stem and West Fork (4.5 miles).
d/ Total run size estimate including jacks and adults.
e/ Low flows this season appeared to increase main stem spawning and decrease tributary spawning.
f/ Preliminary.

TABLE B-8. **Peak spawning counts** in index areas for selected **south/local** migrating **Oregon coastal fall chinook** stocks. (Page 1 of 1)

	Pistol River Deep Creek (0.4 mile)		Chetco River Big Emily Creek (1.0 mile)		Winchuck River Bear Creek (0.8 mile)		Index (fish per mile)	
Year	Adults	Jack	Adults	Jacks	Adults	Jacks	Adults	Jacks
1960	1	0	-	-	-	-	-	-
1961	4	1	-	-	-	-	-	-
1962	9	2	-	-	-	-	-	-
1963	7	0	-	-	-	-	-	-
1964	12	0	-	-	30	2	-	-
1965	0	-	-	-	14	0	-	-
1966	82	6	-	-	27	3	-	-
1967	2	1	-	-	31	0	-	-
1968	8	1	-	-	57	2	-	-
1969	-	-	-	-	29	2	-	-
1970	-	-	-	-	-	-	-	-
1971	7	0	303	28	15	0	148	13
1972	7	0	344	11	-	-	251	8
1973	6	2	98	8	46	6	68	7
1974	2	0	100	0	13	0	52	0
1975	2	0	-	-	-	-	-	-
1976	-	-	41	22	0	2	23	13
1977	3	2	-	-	29	1	27	3
1978	-	-	245	36	33	0	154	20
1979	-	-	104	30	17	3	67	18
1980	0	0	107	39	13	0	55	18
1981	14	1	75	21	10	0	45	10
1982	25	1	84	12	13	1	55	6
1983	31	3	38	4	12	1	37	4
1984	11	2	23	4	15	1	22	3
1985	37	2	91	8	13	4	64	6
1986	0[a/]	0[a/]	73	20	12	3	39	10
1987	11	2	23	6	18	2	24	5
1988	27	3	112	25	15	1	70	13
1989	6	2	54	7	4	1	29	5
1990	1	0	26	2	2	1	13	1
1991	3	2	75	5	10	1	40	4
1992	9	0	44	13	16	1	31	6
1993	10	7	69	19	7	2	39	13
1994	29	31	71	8	30	4	59	20
1995	8	4	111	7	18	1	61	5
1996	81	9	79	7	27	5	85	10
1997	17	1	60	5	41	1	41	3
1998[b/]	46	11	52	3	19	2	53	7

a/ Pistol River was subject to several "slope failures" in 1986 resulting in severe short-term alterations in gravel bars and spawning index areas. Considerable debris and siltation severely limited chinook surveys resulting in "0" counts in Deep Creek index areas through December.

b/ Preliminary.

TABLE B-9. Counts of **natural** and **hatchery spring chinook** salmon at Gold Ray Dam on the **Rogue River** and at Winchester Dam on the north **Umpqua River** in thousands of fish. (Page 1 of 1)

Year	Gold Ray Dam, Rogue River[a/]				Winchester Dam, Umpqua River[a/]			
	Natural	Hatchery	Total	Jacks[b/]	Natural	Hatchery	Total	Jacks[b/]
1942	41.8	-	41.8	6.2	-	-	-	-
1943	36.1	-	36.1	4.5	-	-	-	-
1944	30.6	-	30.6	3.7	-	-	-	-
1945	32.0	-	32.0	5.3	-	-	-	-
1946	28.4	-	28.4	4.6	2.5	-	2.5	0.5
1947	33.6	-	33.6	3.1	3.8	-	3.8	0.8
1948	27.0	-	27.0	2.9	2.5	-	2.5	0.2
1949	18.8	-	18.8	1.8	2.6	-	2.6	0.5
1950	15.5	-	15.5	2.7	2.3	-	2.3	0.3
1951	19.4	-	19.4	4.9	3.6	-	3.6	0.7
1952	15.9	-	15.9	3.8	5.2	0.1	5.3	0.6
1953	31.5	-	31.5	4.2	3.9	0.9	4.8	0.5
1954	24.7	-	24.7	5.2	1.5	1.7	3.2	1.6
1955	15.7	-	15.7	2.8	6.6	1.0	7.6	1.4
1956	28.1	-	28.1	3.9	8.0	1.3	9.3	1.4
1957	17.7	-	17.7	3.0	4.0	1.2	5.2	0.9
1958	15.0	-	15.0	1.9	3.6	0.8	4.4	0.5
1959	14.0	-	14.0	2.6	3.1	0.7	3.8	0.3
1960	24.4	-	24.4	5.5	3.4	0.7	4.1	0.5
1961	31.8	-	31.8	5.4	4.4	0.9	5.3	0.5
1962	31.4	-	31.4	5.3	3.3	0.9	4.2	0.6
1963	40.6	-	40.6	6.9	8.7	2.3	11.0	1.8
1964	37.3	-	37.3	6.2	6.6	2.2	8.8	3.0
1965	47.6	-	47.6	8.1	9.0	2.7	11.7	3.1
1966	31.4	-	31.4	3.5	6.7	0.6	7.3	1.3
1967	14.7	-	14.7	2.4	6.5	2.6	9.1	4.9
1968	19.5	-	19.5	7.5	6.2	3.1	9.3	4.3
1969	59.0	-	59.0	6.7	10.7	9.4	20.1	3.0
1970	45.1	-	45.1	7.4	6.1	6.9	13.0	2.4
1971	28.3	1.1	29.5	6.1	6.0	3.9	9.9	2.6
1972	30.0	0.8	30.8	5.7	7.9	8.5	16.4	7.4
1973	34.7	0.6	35.3	5.0	11.4	8.2	19.7	3.2
1974	16.5	0.5	17.0	3.5	5.8	5.1	10.9	2.2
1975	20.4	1.0	21.5	4.6	5.4	5.2	10.6	3.6
1976	20.4	1.2	21.6	6.9	5.5	5.2	10.7	4.3
1977	14.9	1.5	16.4	3.0	6.8	5.5	12.3	3.5
1978	40.2	7.0	47.2	11.3	5.4	2.8	8.2	2.8
1979	29.3	8.9	38.2	5.8	5.5	4.0	9.5	3.2
1980	24.2	12.7	36.9	8.0	5.7	1.9	7.6	2.1
1981	12.8	4.4	17.2	3.0	4.6	4.1	8.7	2.0
1982	23.2	6.7	29.9	10.1	6.5	2.0	8.5	3.3
1983	9.8	2.7	12.5	4.7	3.0	2.9	5.9	1.8
1984	8.4	4.3	12.7	3.8	4.5	2.4	6.9	1.9
1985	27.8	12.7	40.5	15.0	7.5	6.1	13.5	3.6
1986	40.4	49.1	89.5	30.1	8.3	5.3	13.6	4.4
1987	37.4	44.1	81.6	16.2	8.3	7.2	15.6	3.4
1988	38.8	43.8	82.6	18.4	7.8	3.8	11.6	1.6
1989	7.9	52.4	60.3	6.6	7.6	2.2	9.8	1.7
1990	18.0	6.5	24.6	3.1	5.5	2.0	7.6	1.3
1991	9.3	3.0	12.4	2.4	2.4	1.8	4.2	0.6
1992	2.2	3.6	5.8	1.3	2.5	2.5	5.0	0.9
1993	12.6	13.5	26.1	6.8	3.8	2.1	5.9	1.2
1994	3.6	10.5	14.1	2.6	2.8	2.5	5.3	1.1
1995	20.7	61.2	82.0	6.2	6.2	3.6	9.8	1.9
1996	10.3	26.3	36.6	3.4	4.3	2.2	6.5	1.0
1997	9.6	32.2	41.8	2.8	3.3	2.5	5.8	1.6
1998[c/]	3.7	12.3	16.0	2.8	4.0	2.9	7.0	1.5

a/ Jacks included in natural, hatchery and total counts.
b/ Jacks include all chinook less than 20 inches prior to 1978 and all chinook less than 24 inches beginning in 1978.
c/ Preliminary.

TABLE B-10. Rogue River fall chinook carcass counts. (Page 1 of 1)

Year	Carcass Counts		
	Adults	Jacks	Combined
1977	1,102	1,941	3,043
1978	9,174	1,019	10,193
1979	7,954	187	8,141
1980	2,222	411	2,633
1981	4,404	987	5,391
1982	2,813	708	3,521
1983	1,602	158	1,760
1984	1,997	242	2,239
1985	5,486	2,500	7,986
1986	16,886	3,169	20,055
1987	29,144	2,847	31,991
1988	20,716	886	21,602
1989	7,408	481	7,889
1990	1,868	46	1,914
1991	2,799	157	2,956
1992	2,345	460	2,805
1993	5,447	257	5,704
1994	7,366	529	7,895
1995	3,921	173	4,094
1996	1,702	84	1,786
1997	1,594	108	1,702
1998[a/]	2,617	90	2,707

a/ Preliminary.

TABLE B-11. Peak counts for far **north migrating Oregon coastal chinook** stocks on selected fall chinook spawning index stream surveys. (Page 1 of 2)

	River Tributaries																			
	Nehalem Humbug (1.0 mile)		Tillamook (1.8 mile)		Nestucca Niagara (0.4 mile)		Siletz Sunshine (1.2 mile)		Yaquina Grant (1.7 mile)		Alsea Buck (1.0 mile)		Siuslaw Lake (0.8 mile)		Coos W.F. Millicoma (0.5 mile)		Coquille Salmon (0.8 mile)		Index Fish Per Mile	
Year	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks
1961	96	8	130	36	65	4	52	11	51	1	38	8	26	22	3	3	10	14	51	12
1962	69	9	95	22	39	8	131	29	32	15	8	5	12	4	2	0	1	0	42	10
1963	96	37	128	22	88	2	63	8	67	13	39	12	27	2	0	2	3	0	56	11
1964	112	14	134	29	45	8	18	7	22	3	22	7	212	35	1	0	9	2	63	11
1965	100	43	93	18	123	2	32	8	44	34	31	14	28	11	2	0	91	49	59	19
1966	95	8	85	25	73	7	36	6	67	15	42	20	111	11	5	1	55	19	62	12
1967	64	2	117	41	55	6	39	3	35	13	12	14	110	31	7	0	17	0	50	12
1968	44	2	81	29	41	2	19	4	32	9	18	12	52	32	0	0	16	4	33	10
1969	29	2	41	13	28	8	7	3	68	20	13	2	140	52	6	2	7	0	37	11
1970	54	3	139	29	39	8	51	9	105	10	43	34	256	76	12	0	36	23	80	21
1971	84	10	35	4	35	1	40	5	78	17	38	8	49	10	21	22	17	5	43	9
1972	71	46	54	12	82	10	27	14	36	12	3	2	88	56	8	12	8	4	41	18
1973	139	28	84	1	61	4	47	0	48	4	20	4	-	-	21	1	18	0	52	5
1974	141	16	45	4	42	0	47	2	93	0	13	0	131	68	16	28	13	7	59	14
1975	72	28	-	-	-	-	-	-	-	-	9	1	106	60	22	4	18	9	55	25
1976	135	39	35	5	0	0	18	12	10	6	1	0	188	74	28	24	0[a/]	0[a/]	49	19
1977	158	12	56	2	14	2	45	2	160	20	13	2	181	60	19	8	7	7	71	13
1978	166	6	62	8	31	3	28	0	175	6	12	0	115	24	42	18	40	3	73	7
1979	168	2	45	2	50	3	98	7	144	78	40	10	128	12	35	24	33	8	81	16
1980	90	3	106	14	64	1	44	2	145	4	46	2	218	16	30	65	74	31	89	16
1981	148	1	94	6	41	1	68	2	185	13	32	3	140	43	4	4	43	8	82	9
1982	70	13	107	15	89	12	40	1	160	18	54	9	206	34	80	2	95	13	90	13
1983	61	4	45	1	60	1	29	3	86	11	25	0	28	0	9	0	43	4	42	3
1984	280	31	101	9	84	6	47	3	195	17	55	2	103	7	0	1	38	6	98	9
1985	257	40	128	14	117	9	90	3	263	59	70	15	268	70	11	2	6	4	132	23
1986	108	8	153	11	161	6	46	5	172	33	54	9	255	68	5	2	46	9	109	16
1987	219	6	255	6	127	1	14	0	173	19	51	1	207	25	19	11	46	4	121	8
1988	155	4	121	8	143	1	97	1	547	35	251	11	538	52	22	6	92	10	214	14
1989	150	2	118	4	104	4	61	3	168	12	72	5	555	34	5	3	27	7	137	8
1990	50	1	122	10	55	2	50	1	139	25	71	6	578	43	12	3	32	1	121	10
1991	43	0	135	10	91	3	58	6	187	17	36	2	701	27	4	1	123	12	150	8
1992	90	4	200	15	76	7	73	1	137	6	66	9	521	32	10	5	92	6	138	9
1993	50	0	46	1	24	1	17	0	136	7	15	1	106	7	113	10	73	2	63	3

TABLE B-11. Peak counts for far **north migrating Oregon coastal chinook** stocks on selected fall chinook spawning index stream surveys. (Page 2 of 2)

	River Tributaries																			
	Nehalem Humbug (1.0 mile)		Tillamook (1.8 mile)		Nestucca Niagara (0.4 mile)		Siletz Sunshine (1.2 mile)		Yaquina Grant (1.7 mile)		Alsea Buck (1.0 mile)		Siuslaw Lake (0.8 mile)		Coos W.F. Millicoma (0.5 mile)		Coquille Salmon (0.8 mile)		Index Fish Per Mile	
Year	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks	Adults	Jacks
1994	83	5	36	1	201	2	113	2	b/	b/	46	4	300	19	73	14	86	6	125	7
1995	57	3	41	4	124	1	41	0	b/	b/	59	4	346	5	43	6	46	1	101	3
1996	86	2	60	0	40	0	122	0	b/	b/	62	2	614	29	92	3	29	3	147	5
1997	162	1	47	1	24	1	60	0	b/	b/	49	3	325	9	12	0	108	3	105	2
1998 c/	93	2	42	1	42	0	83	3	b/	b/	78	0	176	2	29	11	191	7	98	3

a/ Flows too low to allow spawning.
b/ Survey discontinued; landowner would not allow access.
c/ Preliminary.

TABLE B-12. Estimates of minimum inriver run size, catch, and escapement in thousands of **Columbia River adult spring chinook** destined for areas **below Bonneville Dam.** (Page 1 of 1)

Year or Average	Minimum Inriver Run Size	Lower River Catch[a/]		Tributary Runs							
				Willamette							
		Commercial	Sport	Run Size	Sport Catch	Will. Falls Escapement[b/]	Sandy	Cowlitz[c/]	Lewis[c/]	Kalama	Hatchery Escapement[d/]
1971-1975	84.0	13.8	3.7	53.3	17.0	34.3	NA	11.9	0.2	1.1	20.0
1976	80.7	4.7	3.2	38.8	15.8	21.0	NA	26.6	3.1	4.3	29.9
1977	92.1	6.8	3.1	56.1	14.6	38.5	0.6	20.9	3.3	1.3	30.2
1978	106.9	13.5	5.0	69.2	20.6	45.7	0.7	13.8	3.7	1.0	25.2
1979	68.9	5.5	1.7	43.1	13.9	25.5	0.8	13.4	2.5	1.9	19.2
1980	73.1	0.4	0.8	41.6	10.0	26.4	1.8	23.7	2.3	2.5	28.4
1981	93.9	6.8	3.5	46.6	12.5	28.6	2.8	27.9	3.0	3.3	33.8
1982	110.1	4.6	2.2	70.3	20.6	45.1	1.4	19.3	3.9	8.4	31.1
1983	93.3	7.0	2.4	52.1	17.8	28.7	1.8	21.4	3.7	4.9	27.0
1984	115.6	9.1	1.8	72.9	23.4	42.4	2.3	21.3	6.4	1.8	33.1
1985	83.3	11.5	1.1	55.0	17.6	33.1	1.4	9.9	4.1	0.3	19.2
1986	90.6	8.6	4.4	59.6	18.1	37.3	1.3	7.3	8.3	1.1	19.9
1987	133.2	10.6	2.4	80.9	21.6	52.8	2.4	18.0	16.5	2.4	33.1
1988	145.9	13.2	3.2	101.8	27.0	68.7	2.9	12.3	10.6	1.9	34.9
1989	136.9	12.4	2.5	97.7	26.4	65.9	2.0	8.3	12.0	2.0	35.5
1990	151.2	16.2	9.1	103.5	27.3	69.1	3.5	7.6	9.3	2.0	38.9
1991	130.2	11.7	4.1	90.9	33.9	48.7	3.7	8.9	8.3	2.6	30.2
1992	102.5	5.2	4.1	65.6	16.1	39.7	9.2	10.4	5.6	2.4	29.8
1993	89.7	2.1	1.5	60.7	23.0	29.7	6.4	9.5	6.6	2.9	26.7
1994	60.6	1.6	1.6	46.5	12.9	25.5	3.5	3.1	3.0	1.3	16.6
1995	50.1	0.2	0.0	40.8	16.0	19.3	2.5	2.2	3.7	0.7	15.2
1996[e/]	42.3	0.9	0.0	33.2	7.8	20.4	4.1	1.8	1.7	0.6	15.9
1997[e/]	46.1	1.9	0.0	34.3	3.6	26.2	5.2	1.9	2.2	0.6	18.1
1998[e/]	50.6	0.0	0.0	43.3	4.0	33.1	4.2	1.1	1.6	0.4	23.0

a/ Includes some upriver origin spring chinook through 1980. Beginning in 1981, the lower river catch of lower river spring chinook is based on mark recoveries rather than timing of the catch as in previous years. Since 1986, GSI and VSI techniques have been used for stock composition analysis. Includes Youngs Bay fisheries.

b/ Prior to 1988, the escapement goal at Willamette Falls was 30,000 to 35,000. Beginning in 1988, the goal is dependent on run size under the Willamette Basin Fish Management Plan. Under this plan, the escapement target is 30,000 adults above Willamette Falls at Willamette River run sizes (run entering the Columbia River) of 70,000 or less and increases linearly (500 per each 1,000 of increased run size) to 45,000 at Willamette River run sizes of 100,000 or greater.

c/ Includes hatchery escapement, tributary recreational catch, and natural spawning escapement for 1975 to present. The years 1971-1973 are based on using the 1975-1976 Cowlitz River recreational fishery adult harvest rates.

d/ Includes hatcheries operated by all agencies. Values are included in the totals for the tributary runs.

e/ Preliminary.

TABLE B-13. Estimates of inriver run size, catch, and escapement in thousands of **Columbia River adult spring chinook** destined for areas **above Bonneville Dam.** (Page 1 of 1)

Year or Average	Inriver Run Size	Lower River Catch[a/]		Bonneville Dam Count	Mainstem			Snake River Escapement[c/]		Upper Columbia River Escapement[d/]	Hatchery Escapement[e/]
		Commercial	Sport		Commercial Treaty Catch	Treaty Ceremonial/ Subsistence	Zone 6 Escapement[b/]	Total	Wild		
1971-1975	167.5	31.4	16.0	120.1	21.3	NA	98.8	28.9	NA	8.2	13.4
1976	63.9	0.0	0.0	63.9	0.4	NA	63.5	15.9	NA	11.5	14.8
1977	138.4	8.6	14.2	115.6	17.0	1.8	96.8	36.2	NA	20.6	20.1
1978	127.0	0.0	0.0	127.0	2.6	4.9	119.5	40.7	NA	21.2	14.4
1979	48.7	0.1	0.0	48.6[f/]	0.5	1.6	46.5	6.8	2.573	7.4	9.3
1980	<53.2	0.1	0.0	<53.1[f/]	g/	1.8	<51.2	5.5	3.478	8.5	11.2
1981	<63.8	0.7	0.2	<62.8[f/]	1.6	1.8	<59.4	13.1	7.941	14.5	15.2
1982	71.3	0.7	0.6	70.0	3.3	2.0	64.7	12.4	7.117	8.7	15.7
1983	57.8	2.4	0.5	54.9	g/	2.5	52.4	9.5	6.181	10.4	16.4
1984	48.7	1.5	0.3	46.9	0.1	3.4	43.4	6.5	3.199	12.1	13.7
1985	86.5	3.0	0.4	83.2	0.1	3.0	80.1	25.2	5.245	24.1	30.6
1986	120.6	1.3	1.3	118.1	0.4	7.1	110.6	31.7	6.895	21.3	37.2
1987	100.2	1.2	0.4	98.6	0.3	6.4	91.9	28.8	7.883	18.5	33.8
1988	97.2	5.3	1.4	90.5	0.2	6.8	83.5	29.5	8.581	13.1	28.1
1989	83.4	1.6	0.5	81.3	0.1	6.6	74.5	13.0	3.029	11.7	23.3
1990	99.5	2.2	3.1	94.2	g/	6.9	87.2	17.3	3.216	12.2	34.9
1991	59.9	1.0	1.5	57.3	g/	3.9	53.5	6.6	2.206	7.7	17.5
1992	90.0	0.4	1.2	88.4	g/	5.7	82.7	21.4	11.285	19.6	30.9
1993	111.8	0.5	0.4	110.8	0.0	7.3	103.6	21.0	6.008	29.3	36.4
1994	21.1	0.5	0.4	20.2	g/	1.1	19.0	3.1	1.416	3.1	7.2
1995	10.2	g/	0.0	10.2	g/	0.6	9.6	1.1	0.745	1.1	4.9
1996	51.5	g/	0.0	51.5	0.0	2.8	48.7	4.2	1.358	2.4	17.8
1997	114.1	g/	g/	114.1	g/	8.3	105.8	33.9	1.434	6.8	29.6
1998[h/]	38.3	0.0	0.0	38.3	g/	2.2	36.1	9.9	5.055	4.1	12.1
GOAL							115.0	35.0	25.0		

a/ Includes some lower river origin spring chinook through 1980. Beginning in 1981, the lower river catch of upriver spring chinook is based on mark recoveries rather than timing of the catch as in previous years. Since 1986, GSI techniques have been used for stock composition analysis. Commercial catch includes estimated miscellaneous fishery related impacts from test fisheries, commercial shad fisheries, and terminal area commercial gillnet fisheries beginning in 1979.
b/ Bonneville Dam count minus Zone 6 mainstem commercial and ceremonial/subsistence treaty Indian harvest.
c/ Count at uppermost Snake River Dam (Little Goose in 1971-1974 and Lower Granite after 1974).
d/ Priest Rapids Dam count.
e/ Includes hatcheries operated by all agencies.
f/ Maximum figure not adjusted for fallback at the dam.
g/ Less than 50 fish.
h/ Preliminary.

TABLE B-14. Estimates of inriver run size, catch, and escapement in thousands of **Columbia River adult summer chinook** destined for areas above Bonneville Dam. (Page 1 of 1)

Year or Average	Inriver Run Size	Lower River Catch		Bonneville Dam Count	Mainstem			Snake River Escapement[c/]		Upper Columbia River Escapement[d/]
		Commercial[a/]	Sport		Commercial Treaty Catch	Treaty Ceremonial/ Subsistence	Zone 6 Escapement[b/]	Total	Wild	
1971-1975	47.8	1.1	1.4	45.4	2.1	NA	43.3	13.4	13.429	14.6
1976	26.7	0.0	0.0	26.7	<0.1	NA	26.7	7.0	6.965	17.2
1977	34.3	0.2	0.0	34.1	<0.1	0.8	33.3	7.7	7.710	16.3
1978	38.7	0.2	0.0	38.5	0.1	0.8	37.6	11.6	11.649	19.2
1979	28.0	0.3	0.0	27.7	f/	1.0	26.8	2.7	2.712	20.3
1980	27.0	f/	0.0	27.0	0.1	1.1	25.8	2.7	2.688	16.0
1981	22.4	f/	0.0	22.4	f/	1.3	21.0	3.3	3.326	11.6
1982	20.4	0.2	0.0	20.1	f/	1.3	18.8	4.2	3.529	8.8
1983	18.2	0.2	0.0	18.0	0.0	0.3	17.7	3.9	3.233	8.5
1984	22.5	f/	0.0	22.4	0.1	0.3	22.0	5.4	4.200	16.2
1985	24.3	0.1	0.0	24.2	1.3	0.1	22.8	5.1	3.196	15.9
1986	26.4	0.2	f/	26.2	0.7	0.4	25.1	6.2	3.934	16.2
1987	33.3	0.3	f/	33.0	1.4	0.3	31.3	5.9	2.414	14.1
1988	31.5	0.2	f/	31.3	1.5	f/	29.8	6.1	2.263	13.4
1989	28.8	f/	f/	28.8	0.0	0.1	28.7	3.2	2.350	19.7
1990	25.0	f/	f/	25.0	0.0	0.1	24.9	5.1	3.378	15.6
1991	18.9	f/	f/	18.9	0.0	0.2	18.7	3.8	2.814	14.8
1992	15.1	0.1	f/	15.1	0.0	0.1	15.0	3.0	1.148	8.5
1993	22.2	0.2	f/	22.0	0.0	0.4	21.7	7.9	3.959	16.4
1994	17.7	f/	f/	17.6	0.0	0.2	17.4	0.8	0.305	14.9
1995	15.0	f/	f/	15.0	0.0	0.4	14.6	0.7	0.371	12.2
1996	16.1	f/	f/	16.0	0.0	0.5	15.5	2.6	2.129	10.9
1997[e/]	28.0	f/	f/	27.9	0.0	0.3	27.6	10.7	6.458	13.1
1998[e/]	21.5	f/	0.1	21.4	0.0	0.4	21.1	4.4	3.371	14.0
GOAL							80.0-90.0			

a/ Includes estimated miscellaneous fishery related impacts from test fisheries, commercial shad fisheries, and terminal area commercial gillnet fisheries beginning in 1979.
b/ Bonneville Dam count minus Zone 6 mainstem commercial and ceremonial/subsistence treaty Indian harvest.
c/ Count at uppermost Snake River Dam (Little Goose in 1971-1974 and Lower Granite after 1974).
d/ Priest Rapids Dam count.
e/ Preliminary.
f/ Less than 50 fish.

TABLE B-15. Estimates of inriver run size, catch, and escapement in thousands of **Columbia River adult SCH stock fall chinook.**[a/] (Page 1 of 1)

Year or Average	Inriver Run Size	Bonneville Dam Count	Harvest			Escapement	
			Treaty Commercial and Subsistence	Non-Indian			
				Commercial	Sport	Natural	Hatchery[b/]
1971-1975	105.7	67.6	29.0	37.9	0.3	2.9	17.0
1976	182.2	142.1	65.6	40.0	0.2	3.1	24.6
1977	107.7	66.1	19.4	41.5	0.1	1.3	21.5
1978	99.7	76.2	25.5	23.4	0.2	2.4	18.0
1979	95.2	72.8	28.8	22.3	0.1	1.9	18.8
1980	97.8	57.8	23.4	31.8	0.1	2.6	27.0
1981	86.3	75.6	33.1	3.4	0.0	1.5	25.1
1982	120.7	80.7	48.9	35.7	0.3	2.5	29.4
1983	28.9	24.6	7.9	3.6	0.1	1.0	10.1
1984	47.5	38.1	19.2	5.9	2.3	0.7	9.6
1985	33.2	29.9	14.1	0.1	0.2	0.5	5.6
1986	16.6	8.7	5.7	4.1	0.4	0.9	4.1
1987	9.1	4.5	1.7	1.6	1.2	1.3	2.7
1988	12.0	6.0	2.9	3.2	0.3	1.6	3.7
1989	26.8	18.3	12.7	4.6	1.8	2.7	4.3
1990	18.9	13.5	7.4	1.1	0.4	1.0	8.2
1991	52.4	41.6	21.0	4.3	3.3	1.3	12.4
1992	29.5	24.7	9.7	1.0	1.5	1.3	8.8
1993	16.8	13.4	5.1	0.9	1.0	1.4	7.9
1994	18.5	15.8	5.0	0.0	0.2	1.9	10.3
1995	33.8	32.3	16.0	0.0	0.4	1.4	9.1
1996	33.1	30.3	21.1	1.7	0.9	1.3	7.7
1997	27.4	23.3	10.3	0.0	3.0	3.2	8.7
1998[c/]	19.7	17.1	4.8	0.0	1.4	2.7	5.4
GOAL							7.0[d/]

a/ Based on Columbia River fall chinook database, WDFW, unpublished.
b/ Does not include strays to hatcheries below Bonneville Dam. Includes fall chinook tules trapped at Bonneville Dam, 1986-1994 and 1998.
c/ Preliminary.
d/ Escapement goal was changed from 8,200 to 7,000 fish in 1994.

TABLE B-16. Estimates of inriver run size, catch, and escapement in thousands of **Columbia River adult LRH stock fall chinook.**[a/] (Page 1 of 1)

Year or Average	Inriver Run Size	Harvest			Escapement	
		Treaty Commercial	Non-Indian Commercial	Non-Indian Sport[b/]	Natural	Hatchery[c/]
1971-1975	175.9	0.0	78.1	5.4	49.2	43.2
1976	171.0	0.0	63.3	5.3	50.8	51.6
1977	165.1	0.0	74.5	3.9	44.5	42.2
1978	166.5	0.0	58.3	5.8	43.2	59.2
1979	118.7	0.0	43.9	4.0	25.3	45.5
1980	105.6	0.1	57.0	2.9	20.9	24.6
1981	94.9	1.0	21.5	2.9	26.5	42.5
1982	139.5	1.0	47.3	3.9	44.0	42.6
1983	88.1	0.8	14.9	1.5	33.7	36.5
1984	102.4	1.4	26.7	8.8	32.0	27.4
1985	111.0	0.1	17.6	5.3	52.4	35.2
1986	154.8	0.7	75.3	10.8	26.5	41.3
1987	344.1	0.6	179.8	32.6	49.6	80.5
1988	309.9	1.8	178.4	22.0	53.0	53.8
1989	130.9	0.0	31.0	15.3	45.1	39.3
1990	60.0	0.2	4.4	6.4	19.4	29.2
1991	62.7	0.4	7.0	8.3	19.0	27.7
1992	62.6	0.2	2.7	8.6	24.2	26.5
1993	52.3	0.2	4.0	6.0	19.6	22.0
1994	53.6	0.0	0.0	0.2	22.6	30.6
1995	46.3	0.4	0.0	1.8	13.8	30.3
1996	75.5	0.4	3.9	4.6	23.9	42.7
1997	57.4	0.0	2.4	8.0	22.7	24.7
1998[d/]	42.6	0.0	0.8	3.2	14.9	23.6

a/ Based on Columbia River fall chinook database, WDFW, unpublished.
b/ Includes tributary catches.
c/ Does not include strays to hatcheries above Bonneville Dam or fish trapped at Bonneville Dam.
d/ Preliminary.

TABLE B-17. [a/] Estimates of inriver run size, catch, and escapement in thousands of **Columbia River adult LRW stock fall chinook**. (Page 1 of 1)

Year or Average	Inriver Run Size	Harvest			Escapement	
		Treaty Commercial	Non-Indian Commercial	Non-Indian Sport [b/]	Natural	Hatchery
1971-1975	59.7	0.0	27.9	2.1	29.4	0.1
1976	14.9	0.0	6.1	0.6	8.2	0.0
1977	29.8	0.0	14.4	1.1	14.2	0.1
1978	18.5	0.0	7.1	1.1	10.1	0.2
1979	32.8	0.0	12.6	2.0	17.9	0.3
1980	38.8	0.1	18.4	1.3	18.2	0.6
1981	25.0	0.0	1.4	1.1	21.5	0.9
1982	13.0	0.0	1.2	1.0	10.4	0.3
1983	16.8	0.0	0.6	1.5	14.1	0.6
1984	13.3	0.0	2.9	1.7	8.5	0.2
1985	13.3	0.0	3.6	1.3	7.9	0.4
1986	24.5	0.0	10.1	2.0	12.2	0.0
1987	37.9	0.2	16.4	3.6	17.5	0.2
1988	41.7	0.1	19.3	3.4	18.7	0.2
1989	38.6	0.0	6.7	4.9	26.7	0.3
1990	20.3	0.0	0.9	2.4	16.8	0.2
1991	19.9	0.0	6.4	2.1	11.2	0.0
1992	12.5	0.0	2.3	2.3	7.9	0.0
1993	13.4	0.0	1.6	2.8	8.9	0.1
1994	12.2	0.0	0.3	0.9	10.9	0.0
1995	16.0	0.0	0.0	4.0	11.8	0.1
1996	14.6	0.0	0.3	0.2	13.9	0.1
1997	12.3	0.0	0.0	1.1	11.2	0.0
1998 [c/]	8.1	0.0	0.0	0.0	8.0	0.0
GOAL					5.7	

a/ Based on Columbia River fall chinook database, WDFW, unpublished.
b/ Includes tributary catches.
c/ Preliminary.

TABLE B-18. Estimates of inriver run size, catch, and escapement in thousands of **Columbia River adult URB stock fall chinook** destined for areas above McNary Dam and the Deschutes River.[a/] (Page 1 of 1)

Year or Average	Inriver Run Size	Bonneville Dam Count	Harvest: Treaty Commercial and Subsistence	Harvest: Non-Indian Commercial	Harvest: Non-Indian Sport[b/]	Escapement: Natural	Escapement: Hatchery	McNary Dam Count	Ice Harbor Dam Count	Total Lower Granite Count	Wild Snake River Lower Granite Count[c/]
1971-1975	110.5	80.4	35.1	29.3	3.1	36.8	2.6	39.5	5.6	-	-
1976	115.1	86.6	55.9	28.0	2.1	27.7	1.1	28.8	1.1	0.470	0.470
1977	95.1	65.9	29.0	28.8	0.7	37.0	2.0	37.6	1.2	0.600	0.600
1978	85.3	68.7	32.6	16.3	0.7	25.2	2.1	27.3	1.1	0.640	0.640
1979	89.2	71.2	32.5	17.7	0.5	28.7	2.5	31.2	1.2	0.500	0.500
1980	76.8	69.4	10.8	5.1	0.9	28.8	2.2	29.9	1.2	0.450	0.450
1981	66.6	62.8	14.2	2.4	0.7	23.9	3.0	21.1	0.8	0.340	0.340
1982	79.0	71.8	7.0	4.5	0.2	34.1	3.7	31.1	1.6	0.720	0.720
1983	86.1	78.0	18.1	4.3	0.7	48.3	5.9	48.7	1.8	0.540	0.428
1984	131.4	101.4	35.1	23.7	4.4	47.3	13.9	61.0	1.7	0.640	0.324
1985	196.4	156.6	59.1	34.5	9.1	76.7	14.0	93.3	2.0	0.691	0.438
1986	281.5	214.1	95.8	58.9	11.0	95.8	17.2	113.3	3.1	0.784	0.449
1987	420.7	304.0	125.0	104.3	18.1	126.4	24.8	154.1	6.8	0.951	0.253
1988	339.9	249.7	127.7	79.9	16.6	98.9	11.5	114.7	3.8	0.627	0.368
1989	261.1	211.9	101.0	42.8	12.8	82.8	7.9	96.5	4.6	0.706	0.295
1990	153.4	132.0	60.8	20.8	4.9	48.8	4.8	57.6	3.5	0.385	0.078
1991	102.7	87.3	26.0	13.7	5.9	38.9	3.6	46.6	4.5	0.630	0.318
1992	81.0	74.0	13.9	5.6	4.0	38.8	9.1	51.2	4.6	0.855	0.549
1993	102.9	95.5	20.3	5.3	5.3	49.8	9.9	54.9	2.8	1.170	0.742
1994	132.9	132.8	24.1	0.0	4.8	68.5	14.2	85.9	2.1	0.791	0.406
1995	106.5	105.6	18.7	0.0	5.4	58.5	10.2	68.2	2.8	1.067	0.350
1996	143.2	135.5	29.8	3.7	8.9	59.6	15.9	73.9	3.8	1.308	0.639
1997	161.7	152.9	42.6	1.4	11.5	68.9	13.1	66.8	2.6	1.175	0.796
1998[d/]	141.0	134.8	35.0	1.0	6.2	60.5	14.0	63.8	4.0	1.000	0.800
GOAL								40.0[e/]			

a/ Based on Columbia River fall chinook data base, WDFW, unpublished data. Does not include hatchery URB chinook which were reared and released below McNary Dam.

b/ Includes tributary and main stem catches.

c/ Adjusted for stray hatchery fish.

d/ Preliminary.

e/ FMP goal. In 1990-1993, the CRFMP parties managed for an escapement of 45,000 at McNary Dam to account for increased hatchery brood stock needs and concern for the Snake River wild fall chinook stock in 1991-1993. In 1994 and 1995, inriver fisheries were based on allowable adult wild Snake River fall chinook impacts rather than a McNary Dam escapement goal.

TABLE B-19. Estimates of inriver run size, catch, and escapement in thousands of **Columbia River adult MCB stock fall chinook** destined for areas below McNary Dam, not including the Deschutes River.[a/] (Page 1 of 1)

			Harvest				
				Non-Indian		Escapement	
Year	Inriver Run Size	Bonneville Dam Count	Treaty Commercial and Subsistence	Commercial	Sport[b/]	Natural	Hatchery
1982	8.8	4.8	2.0	0.7	0.0	0.0	2.9
1983	14.4	8.1	2.7	1.1	0.1	0.0	4.9
1984	11.8	5.1	1.6	3.2	0.2	0.0	3.2
1985	6.1	1.7	1.2	1.7	0.1	0.0	2.8
1986	17.4	8.4	5.9	6.5	0.4	0.3	2.3
1987	57.0	26.1	16.0	24.4	1.4	4.7	6.5
1988	78.0	30.9	21.9	37.9	2.8	5.9	8.5
1989	93.3	32.0	21.9	46.2	3.7	5.0	14.1
1990	59.1	26.5	15.4	17.7	3.1	4.8	14.6
1991	35.9	18.3	6.0	9.1	1.1	4.0	10.3
1992	31.1	16.8	5.1	5.5	1.8	5.8	9.6
1993	27.4	16.7	6.8	4.8	1.4	3.1	7.9
1994	33.7	21.5	4.4	1.2	0.9	10.5	11.4
1995	34.1	23.5	6.2	0.1	2.8	5.6	14.0
1996	59.7	38.1	11.9	5.3	3.4	14.0	15.9
1997	58.9	36.6	11.6	3.3	6.5	13.8	15.8
1998[c/]	40.1	29.9	7.8	1.3	3.7	13.1	8.8

a/ Based on Columbia River fall chinook database, WDFW, unpublished data. Does not include URB chinook destined for areas above McNary Dam or the Deschutes River.

b/ Includes tributary and mainstem catches.

c/ Preliminary.

TABLE B-20. Estimates of minimum inriver run size, catch, and escapement in thousands of adult **coho** entering the Columbia River.[a/] (Page 1 of 1)

Year or Average	Minimum Inriver Run Size	Below Bonneville Dam					Above Bonneville Dam			
		Lower River Catch[b/]			Lower River Escapement					
			Recreational							
		Commercial	Buoy 10	Mainstem	Hatchery[d/]	Tributary Dam Counts[e/]	Bonneville Dam Counts[c/]	Mainstem Commercial Treaty Catch	Zone 6 Escapement[f/]	Hatchery Escapement
1971-1975	373.4	199.4	-	11.8	117.1	9.5	35.6	9.1	26.6	11.6
1976	337.0	168.4	-	11.1	117.3	3.5	36.7	4.0	32.7	14.4
1977	93.8	39.0	-	6.2	37.1	2.2	9.3	1.0	8.3	2.0
1978	307.1	132.7	-	9.7	131.4	2.9	30.3	3.7	26.6	7.8
1979	275.1	127.6	-	12.3	101.2	4.4	29.6	3.9	25.7	7.5
1980	301.6	150.1	-	11.2	122.2	5.1	13.0	0.3	12.7	3.4
1981	170.3	59.8	-	7.7	77.9	2.8	21.9	1.8	20.1	9.2
1982	453.1	201.7	18.9	17.6	154.1	5.0	55.8	4.3	51.5	32.4
1983	100.5	7.1	3.6	5.2	73.6	2.5	13.6	0.2	13.4	2.2
1984	414.2	201.5	74.4	15.6	101.6	4.2	25.5	1.6	23.9	7.1
1985	366.2	190.0	25.4	10.5	94.2	7.5	38.6	5.2	33.4	11.5
1986	1,527.8	981.0	120.4	24.9	284.1	8.9	129.0	16.8	112.2	29.4
1987	307.6	165.2	47.2	6.9	66.1	4.2	20.3	2.3	18.0	8.6
1988	664.8	361.4	143.4	12.3	113.6	6.9	30.0	5.1	24.8	4.9
1989	701.6	387.3	78.7	18.5	183.3	6.4	32.3	2.5	29.8	11.4
1990	196.1	66.2	18.4	10.1	87.8	2.0	11.6	1.0	10.6	3.0
1991	934.3	407.5	207.5	31.6	223.3	5.5	58.9	6.7	53.7	18.0
1992	210.9	54.1	43.1	9.0	85.1	5.2	14.4	1.0	14.4	5.2
1993	113.9	35.6	20.9	6.9	39.1	0.8	10.6	0.9	9.3	1.7
1994	168.9	60.7	1.8	5.7	77.7	4.1	20.3	1.0	19.3	3.9
1995	74.0	21.4	5.0	2.9	31.5	2.9	10.4	0.3	10.1	1.5
1996	111.3	26.0	4.5	4.1	60.1	0.6	15.7	0.1	15.6	1.4
1997	145.9	19.4	20.4	9.3	69.8	2.8	24.2	0.6	23.3	4.4
1998[g/]	161.8	23.0	3.2	10.8	76.9	1.3	46.6	0.2	44.7	11.3

a/ These numbers match OPI databases. Adjustments were made to the escapement figures and catches.
b/ Includes some upriver origin coho. Mainstem recreational catches listed in this table include tributary catches and catches in the Chinook/Hammond area of 3,200 in 1989 and 1,200 in 1991.
c/ Includes additional small adults counted as jacks for 1983-1984 and 1986-1989.
d/ Includes hatcheries operated by all agencies.
e/ Willamette Falls, Clackamas River (North Fork Dam) and Sandy River (Marmot Dam).
f/ Bonneville Dam count minus Zone 6 mainstem commercial treaty Indian harvest.
g/ Preliminary.

TABLE B-21. Estimated **catch and effort** in the **Buoy 10** fishery.[a/] (Page 1 of 1)

Year	Angler Trips	Catch		Catch Per Trip
		Chinook	Coho	
1982	17,336	723	18,857	1.13
1983	7,128	604	3,574	0.59
1984	67,365	12,177	74,370	1.28
1985	32,156	2,655	25,387	0.87
1986	102,190	15,600	120,422	1.33
1987	124,594	42,100	47,170	0.72
1988	186,051	30,770	143,417	0.94
1989[b/]	160,692	16,884	85,110	0.63
1990[c/]	79,636	5,179	18,429	0.30
1991[d/]	171,680	11,647	208,638	1.28
1992	115,481	10,655	43,082	0.47
1993	75,774	5,288	20,932	0.35
1994[e/]	9,253	0	1,795	0.19
1995[f/]	25,186	853	5,026	0.23
1996[g/]	18,034	1,409	4,537	0.33
1997	55,725	13,153	20,357	0.60
1998[h/]	29,998	5,784	3,175	0.30

a/ Prior to 1982, Buoy 10 area catches were not estimated separately and are included in the Columbia River marine area (Cape Falcon to Leadbetter Pt.) recreational catches. Estimates include bank anglers fishing from Clatsop Spit in Oregon and from the north jetty in Washington. Effort and catch for the North Jetty fishery applied to the ocean quota for the Columbia River area until the ocean fishery closed.

b/ Includes catch and effort data for the Chinook/Hammond fishery occurring during weeks 32 and 33. A total of 7,922 angler trips produced catches of 492 chinook and 3,195 coho and a catch rate of 0.47 fish per trip. Catches in this fishery were counted against the Buoy 10 quota.

c/ Includes catch and effort data for the Chinook/Hammond fishery occurring during weeks 31 and 32. A total of 3,225 angler trips produced catches of 54 chinook and 28 coho and a catch rate of 0.03 fish per trip.

d/ Includes catch and effort data for the Chinook/Hammond fishery occurring during weeks 31 and 32. A total of 2,759 angler trips produced catches of 39 chinook and 1,151 coho and a catch rate of 0.43 fish per trip.

e/ Buoy 10 fishery did not open until September 17 and the fishery was closed to the retention of chinook through October 7.

f/ Buoy 10 fishery was closed to the retention of chinook through September 4. Over 246 chinook were caught illegally.

g/ Buoy 10 fishery was closed to the retention of chinook through August 29.

h/ Buoy 10 fishery was open August 8-23. Retention of non-adipose fin-clipped coho was prohibited.

TABLE B-22. **Willapa Bay fall chinook** terminal run size, catch, and spawning escapement in numbers of fish. (Page 1 of 1)

Year or Average	Non-local Stocks Gillnet Catch[a/]	Terminal Catch		Spawning Escapement		Terminal Run Size[b/]
		Gillnet	Sport[c/]	Natural[d/]	Hatchery	
		CHINOOK (thousands)				
1976-1980	8.1	14.7	0.4	3.2	5.6	23.9
1981-1985	0.9	7.4	0.6	3.4	6.1	17.5
1986-1990	2.4	18.2	1.6	13.2	14.6	47.6
1981	3.2	13.7	0.3	2.8	4.2	21.0
1982	0.7	8.8	0.6	2.7	4.6	16.7
1983	0.1	2.3	0.9	3.1	6.2	12.5
1984	0.4	3.7	0.2	5.4	9.5	18.7
1985	0.2	8.6	0.9	3.2	6.1	18.8
1986	0.5	7.1	1.0	3.0	7.7	18.8
1987	0.5	7.6	1.2	5.9	21.7	36.4
1988	5.6	33.0	2.6	18.0	17.4	71.0
1989	3.6	24.6	2.0	26.4	17.6	70.4
1990	1.9	18.9	1.1	12.5	8.7	41.2
1991	1.7	25.6	1.9	7.5	11.5	46.2
1992	1.2	36.7	2.2	13.1	12.2	64.1
1993	0.6	31.2	4.8	6.3	12.5	54.9
1994	0.0	21.9	2.8	4.8	11.1	40.6
1995	0.0	25.5	2.9	10.2	10.4	49.0
1996	0.0	37.1	2.0	6.3	7.7	53.1
1997[e/]	0.0	12.3	2.4	11.0	6.0	32.2
1998[e/]	0.0	6.8	NA	NA	4.7	NA
GOAL				4.4	8.2	

a/ Non-local gillnet is catch in Area 2G prior to Aug. 16.
b/ Does not include non-local stocks catch.
c/ Adults. Sport catch since 1991 includes marine areas within Willapa Bay (e.g., Washaway Beach).
d/ Includes hatchery strays to natural spawning areas. Escapement estimates after 1984 are based on revised spawning habitat estimates.
e/ Preliminary.

TABLE B-23. **Willapa Bay coho** terminal run size, catch, and spawning escapement in numbers of fish. (Page 1 of 1)

Year or Average	Gillnet	Sport[a/]	Natural[b/]	Hatchery[c/]	Terminal Run Size[d/]
			COHO (thousands)		
1976-1980	15.0	1.5	4.8	12.2	33.6
1981-1985	39.0	2.2	2.1	26.6	69.9
1986-1990	69.6	2.6	e/	36.1	108.3
1981	30.0	0.7	7.5	22.9	61.1
1982	70.0	3.6	2.1	33.4	109.1
1983	9.0	2.1	1.1	18.6	30.8
1984	50.7	2.9	e/	33.4	87.0
1985	35.3	1.5	e/	24.9	61.7
1986	118.6	5.7	e/	73.5	197.8
1987	63.8	2.0	e/	21.8	87.6
1988	49.4	2.4	e/	30.3	82.1
1989	68.4	1.7	e/	31.0	101.1
1990	48.0	1.2	e/	23.7	72.9
1991	95.5	6.3	e/	62.3	164.2
1992	10.8	2.0	e/	15.4	28.1
1993	19.8	1.9	e/	12.4	34.1
1994	11.7	2.3	e/	15.6	29.6
1995	33.6	1.7	e/	30.1	65.4
1996	38.3	2.3[f/]	30.2	48.9	89.5
1997[g/]	1.5	0.8	6.7	6.5	15.6
1998[g/]	13.1	NA	NA	6.5	NA
GOAL			Hatchery Production		

a/ Adults. Sport catch since 1991 includes marine areas within Willapa Bay (e.g., Washaway Beach).
b/ Natural spawning escapement estimates in 1996 and 1997 include adult fish released upstream of hatchery racks.
c/ Hatchery rack number includes fish put upstream.
d/ Does not include natural spawning escapement after 1983.
e/ Estimates of natural spawning escapement were not made 1984 - 1995.
f/ Marine catch estimate not included, data not yet available.
g/ Preliminary.

TABLE B-24. **Grays Harbor chinook** terminal run size, catch, and spawning escapement in numbers of fish. (Page 1 of 2)

Year or Average	Terminal Catch					Spawning Escapement		Terminal Run Size[d/]
	Early Non-local Catch	Gillnet Non-Indian	Gillnet Treaty	Chehalis Tribal Gillnet	Sport[a/]	Natural[b/]	Hatchery[c/]	
SPRING CHINOOK (thousands)								
1976-1980	-	-	-	0.6	e/	0.6	-	1.2
1981-1985	-	-	-	0.1	e/	0.9	-	1.0
1986-1990	-	-	-	0.2	e/	2.0	-	2.2
1981	-	-	-	0.3	e/	0.6	-	0.9
1982	-	-	-	0.1	e/	0.6	-	0.7
1983	-	-	-	0.1	-	0.8	-	0.9
1984	-	-	-	-	e/	1.1	-	1.1
1985	-	-	-	-	e/	1.2	-	1.2
1986	-	-	-	e/	e/	2.0	-	2.0
1987	-	-	e/	0.2	e/	0.9	-	1.1
1988	-	-	-	0.1	e/	3.5	-	3.6
1989	-	-	e/	0.3	e/	2.1	-	2.4
1990	-	-	-	0.1	e/	1.5	-	1.6
1991	-	-	-	0.2	e/	1.3	-	1.5
1992	-	-	-	e/	e/	1.7	-	1.7
1993	-	-	-	0.1	e/	1.3	-	1.4
1994	-	-	-	0.1	e/	1.4	-	1.5
1995	-	-	-	0.1	-	2.1	-	2.2
1996	-	-	f/	0.1	e/	4.5[g/]	-	4.6
1997[h/]	-	-	f/	0.2	0.2	4.4	-	4.8
1998[h/]	-	-	f/	0.2	NA	NA	-	NA
GOAL						1.4		

TABLE B-24. **Grays Harbor chinook** terminal run size, catch, and spawning escapement in numbers of fish. (Page 2 of 2)

Year or Average	Early Non-local Catch	Terminal Catch				Spawning Escapement		Terminal Run Size[d/]
		Gillnet Non-Indian	Gillnet Treaty	Chehalis Tribal Gillnet	Sport[a/]	Natural[b/]	Hatchery[c/]	
				FALL CHINOOK (thousands)				
1976-1980	4.4	1.8	3.1	1.0	1.1	6.5	0.3	13.9
1981-1985	0.6	0.8	3.5	0.5	0.3	9.8	0.8	15.7
1986-1990	0.4	4.6	10.4	0.6	1.5	20.7	0.9	38.7
1981	1.6	0.6	3.5	0.7	0.2	7.6	0.8	13.4
1982	0.6	3.1	4.6	0.7	0.2	5.6	0.4	14.6
1983	0.1	0.1	3.3	0.3	0.1	5.5	0.6	9.9
1984	0.5	0.2	0.9	0.3	0.4	21.0	0.9	23.7
1985	0.1	0.1	5.3	0.3	0.6	9.5	1.1	16.9
1986	0.2	2.2	5.4	0.3	0.4	13.7	1.3	23.3
1987	0.3	3.1	9.7	0.2	0.8[i/]	18.8	2.0	34.6[i/]
1988	0.7	3.5	4.9	0.8	2.0[i/]	28.2	0.3	39.7[i/]
1989	0.4	8.0	18.5	1.0	2.1[i/]	25.7	0.7	56.0[i/]
1990	0.3	6.3	13.5	0.6	2.0[i/]	17.0	0.5	39.8[i/]
1991	0.2	6.0	8.0	0.6	3.7[i/]	14.4	0.5	33.2[i/]
1992	0.2	5.6	6.6	0.9	2.1[i/]	16.9	1.1	33.2[i/]
1993	e/	5.8	8.8	1.6	3.5[i/]	13.3	0.9	33.9[i/]
1994	-	3.7	7.9	0.7	3.6[i/]	14.3	0.8	31.0[i/]
1995	-	5.1	7.4	0.7	5.4[i/]	12.7	0.4	31.8[i/]
1996	-	1.4	7.1	e/	5.7[i/]	20.2	0.7	35.2[i/]
1997[h/]	-	2.7	6.6	0.3	2.7	18.2	0.4	30.9
1998[h/]	-	0.2	4.1[j/]	-	NA	NA	NA	NA
GOAL						14.6		

a/ Age-3 and older.
b/ Age-3 and older, including hatchery fish spawning naturally.
c/ Includes naturally spawning fish taken for broodstock.
d/ Minimum estimate due to incomplete estimates of river recreational catch. Not including non-local catch.
e/ Less than 50 fish.
f/ WDFW does not include July catches in spring chinook total while the Quinault Indian Nation does. For 1996, the WDFW estimate of spring chinook catch is 12; the Quinault estimate is 151. For 1997, WDFW estimate is 38; the Quinault estimate is 72. For 1998, the Quinault catch is 17.
g/ WDFW believes this includes a significant number of fall chinook.
h/ Preliminary.
i/ Recreational catch estimates by WDFW reflect application of punch card bias correction factor of 0.833. Quinault Indian Nation does not believe this factor is appropriate for this fishery. Unadjusted catch estimates are 1,000 for 1987; 2,400 for 1988; 2,500 for 1989; 2,400 for 1990; 4,500 for 1991; 2,600 for 1992; 4,200 for 1993; 4,300 for 1994; 6,500 for 1995 and 6,800 for 1996; terminal run sizes would be adjusted accordingly.
j/ Ceremonial and subsistence catch is about 75% of the reported catch of last opener. Therefore, the expanded catch would be equal to 4,970.

TABLE B-25. **Grays Harbor coho** terminal run size, catch, and spawning escapement estimates in numbers of fish. (Page 1 of 1)

Year or Average	Gillnet Catch			Sport Catch (Adults)	Spawning Escapement		Terminal Run Size
	Non-Indian	Treaty	Chehalis River Tribal		Natural[a/]	Hatchery[a/]	
				COHO (thousands)			
1976-1980	5.2	9.8	3.5	2.5	29.5	9.4	59.9
1981-1985	5.2	15.6	2.9	4.9	36.7	14.4	79.7
1986-1990	7.7	30.1	1.8	5.3	44.8	26.4	116.2
1981	3.0	24.8	3.2	0.9	13.0	19.9	64.7
1982	17.4	26.0	6.0	3.9	18.1	10.1	81.7
1983	1.8	11.5	0.8	1.8	25.3	12.2	54.0
1984	3.2	6.6	3.4	16.3	105.2	24.4	159.1
1985	0.5	9.2	0.9	1.4	22.0	5.2	39.2
1986	12.5	36.6	1.9	6.2[b/]	36.9	33.9	128.0
1987	17.3	30.6	3.5	3.2[b/]	23.0	11.7	89.4
1988	3.5	20.1	0.5	5.7[b/]	61.9	39.4	131.1
1989	1.3	23.3	1.7	4.8[b/]	56.7	25.4	113.3
1990	4.0	40.0	1.5	6.7[b/]	45.6	21.7	119.3
1991	47.8	68.9	8.1	23.8[b/]	64.3	76.1	289.0
1992	0.7	14.1	1.1	4.3[b/]	32.9	8.7	61.8
1993	4.4	15.9	1.3	6.4[b/]	25.5	14.1	67.6
1994	0.7	8.6	0.9	1.8[b/]	12.4	14.4	38.8
1995	9.5	38.4	2.1	9.7[b/]	47.4	35.4	142.5
1996	10.1	51.8	2.9	5.8[b/]	63.6	46.6	180.7
1997[c/]	0.1	5.4	0.1	1.5	22.4	12.6	42.1
1998[c/]	0.7	13.4	0.3	NA	NA	NA	NA
GOAL					35.4		

a/ "Natural" includes hatchery fish spawning in wild. "Hatchery" includes wild fish taken for broodstock.

b/ Beginning in 1987, estimates provided by WDFW for recreational catch reflect punch card bias correction factor. Quinault Indian Nation does not believe this factor is appropriate. Unadjusted estimates are 3,900 for 1987; 6,800 for 1988; 5,800 for 1989; 8,000 for 1990; 28,600 for 1991; 5,100 for 1992; 7,600 for 1993; 2,100 for 1994; 11,700 for 1995; and 2,142 for 1996. Terminal run sizes would be adjusted accordingly.

c/ Preliminary.

TABLE B-26. Treaty **Indian gillnet** catch of chinook, chum, and sockeye in the Quinault River in numbers of fish. (Page 1 of 1)

Year or Average	Spring/Summer Chinook[a/]	Fall Chinook[a/]	Chum	Sockeye
1976-1980	149	4,320	7,960	17,560
1981-1985	114	5,100	4,720	12,600
1986-1990	338	8,822	4,686	11,218
1976	98	6,293	2,505	9,523
1977	52	3,200	7,400	14,800
1978	51	600	3,600	30,500
1979	163	6,900	13,700	21,000
1980	299	6,500	3,200	4,700
1981	178	4,400	11,900	16,800
1982	148	5,300	4,500	21,700
1983	146	5,500	7,400	15,300
1984	45	4,400	3,700	400
1985	118	5,500	4,300	900
1986	115	4,800	3,700	24,700
1987	115	6,700	7,100	1,900
1988	346	12,220	3,486	24,347
1989	437	9,801	8,623	18,186
1990	530	10,108	2,563	2,691
1991	260	5,282	1,660	8,965
1992	109	6,304	2,565	5,566
1993	142	7,512	2,566	8,801
1994	126	6,695	5,259	32,077
1995	85	6,878	1,449	963
1996	26	4,076	687	207
1997	41	2,625	1,033	2,532
1998[b/]	75	6,124	4,700	3,440

a/ Preliminary. Stock separation under review.
b/ Preliminary.

TABLE B-27. Estimated inriver run size, catch, and escapement for **Quinault River coho** in numbers of fish. (Page 1 of 1)

Year or Average	Terminal Catch[a/]			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport	Natural	Hatchery	Natural	Hatchery	Total
1977-1980	9,750	NA	NA	3,425	2,875	8,475	7,475	15,950
1981-1985	10,700	NA	NA	4,220	6,300	7,800	13,420	21,220
1986-1989	13,777	NA	NA	3,177	4,239	7,101	13,206	20,307
1990-1995	7,963	NA	NA	4,319	8,046	6,205	13,472	19,678
1977	1,900	-	-	1,500	300	3,000	600	3,600
1978	6,900	-	-	2,500	1,600	6,600	4,200	10,800
1979	17,800	-	-	7,200	4,700	18,000	11,700	29,700
1980	12,400	-	-	2,500	4,900	6,300	13,400	19,700
1981	10,400	-	-	2,200	7,300	4,500	15,400	19,900
1982	11,000	-	-	7,200	4,900	14,400	8,700	23,100
1983	3,700	-	-	7,000	6,400	9,000	8,100	17,100
1984	21,100	-	-	3,200	9,800	7,800	26,200	34,000
1985	7,300	-	-	1,500	3,100	3,300	8,700	12,000
1986	24,382	-	-	4,780	4,907	11,483	21,332	32,815
1987	13,987	-	-	2,167	1,431	8,419	8,801	17,220
1988	12,757	-	-	1,194	6,156	2,282	16,582	18,864
1989	8,989	-	-	4,443	3,964	7,993	8,526	16,519
1990	8,770	-	-	3,301	4,738	5,329	10,787	16,116
1991	21,506	-	-	9,250	22,531	13,166	38,517	51,683
1992	5,214	-	-	4,617	4,855	6,682	7,771	14,453
1993	6,020	-	-	1,940	5,688	3,077	10,057	13,134
1994	1,564	-	-	820	1,299	1,278	2,047	3,325
1995	5,513	-	-	4,969	5,858	6,824	8,970	15,794
1996	10,087	-	-	6,024	9,524	9,330	16,111	25,441
1997	365	-	-	3,150	1,054	3,339	1,118	4,457
1998[b/]	6,124	-	-	NA	NA	NA	NA	NA
GOAL				Hatchery Production				

a/ Ceremonial, subsistence, and recreational catch negligible. Includes dip-in fish destined for other river systems.
b/ Preliminary.

TABLE B-28. Estimated inriver run size, catch, and escapement for **Queets River spring/summer chinook** in numbers of fish. (Page 1 of 1)

Year or Average	Terminal Catch			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[a/]	Natural[b/]	Hatchery	Natural	Hatchery	Total
1976-1980	267	18	53	851	24	1,176	37	1,213
1981-1985	243	20	27	890	31	1,164	44	1,209
1986-1990	646	46	673	1,527	0	2,287	0	2,287
1991-1995	64	5	108	610	0	689	0	688
1976	160	11	61	505	0	737	0	737
1977	364	25	34	732	0	1,155	0	1,155
1978	229	16	51	1,110	0	1,406	0	1,406
1979	475	31	60	870	118	1,369	185	1,554
1980	108	8	59	1,038	0	1,213	0	1,213
1981	299	20	22	988	0	1,329	0	1,329
1982	495	35	6	781	119	1,244	180	1,424
1983	104	9	20	1,044	38	1,173	42	1,215
1984	150	18	63	958	0	1,189	0	1,189
1985	165	19	25	677	0	886	0	886
1986	201	22	45	925	0	1,193	0	1,193
1987	858	59	284	598	0	1,543	0	1,543
1988	391	34	774	1,765	0	2,267	0	2,267
1989	1,181	76	1,291	2,568	0	3,954	0	3,954
1990	601	41	582	1,780	0	2,480	0	2,480
1991	112	9	104	630	0	761	0	761
1992	104	11	154	375	0	505	0	5,056
1993	46	3	26	713	0	788	0	788
1994	21	1	0	705	0	727	0	725
1995	35	2	0	625	0	662	0	662
1996	43	3	23	758	0	827	0	827
1997	72	10	18	540	0	640	0	640
1998[c/]	18	27	0	553	0	598	0	598
GOAL				700[d/]				

a/ Recreational catch of adults.
b/ Natural escapement includes hatchery strays.
c/ Preliminary.
d/ Minimum. Terminal run managed at 30% harvest rate.

TABLE B-29. Estimated inriver run size, catch, and escapement for **Queets River fall chinook** in numbers of fish.
(Page 1 of 1)

Year or Average	Terminal Catch			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[a/]	Natural[b/]	Hatchery	Natural	Hatchery	Total
1976-1980	1,540	100	36	2,820	0	4,320	0	4,320
1981-1985	2,104	20	135	3,720	360	5,691	591	6,282
1986-1990	2,428	20	214	8,298	619	10,677	861	11,538
1991-1995	1,848	20	109	3,849	407	5,511	708	6,219
1976	1,300	NA	20	1,200	0	2,500	0	2,500
1977	2,000	NA	20	3,600	0	5,500	0	5,500
1978	900	NA	100	2,200	0	3,100	0	3,100
1979	900	100	20	3,900	0	4,700	0	4,700
1980	2,600	NA	20	3,200	0	5,800	0	5,800
1981	3,800	NA	100	4,300	100	8,000	200	8,200
1982	2,300	NA	200	4,100	200	6,200	400	6,600
1983	1,300	20	200	2,600	300	3,800	600	4,400
1984	1,600	20	100	3,900	600	5,300	1,000	6,300
1985	1,518	20	74	3,702	598	5,153	757	5,910
1986	965	20	194	7,805	239	8,890	290	9,180
1987	3,851	20	175	6,504	203	10,045	593	10,638
1988	2,556	20	333	8,390	1,254	11,000	1,505	12,505
1989	2,519	20	200	8,689	785	11,154	1,059	12,213
1990	2,247	20	169	10,103	616	12,297	858	13,155
1991	1,511	20	116	4,486	459	5,888	705	6,593
1992	1,693	20	106	4,695	366	6,338	542	6,880
1993	1,787	20	253	3,383	230	5,107	560	5,667
1994	2,441	20	18	3,805	578	5,866	988	6,854
1995	1,809	20	54	2,876	401	4,357	746	5,103
1996	1,308	20	109	4,163	672	5,340	906	6,246
1997	1,708	20	100	2,673	350	4,228	610	4,838
1998[c/]	803	20	101	4,592	282	5,404	385	5,789
GOAL						2,500[d/]		

a/ Recreational catch of three-year olds and older.
b/ Includes fish taken for hatchery brood stock.
c/ Preliminary.
d/ Minimum. Terminal run managed at 40% harvest rate.

TABLE B-30. Estimated inriver run size, catch, and escapement for **Queets River coho** in numbers of fish. (Page 1 of 1)

Year or Average	Terminal Catch[a/]			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[b/]	Natural[c/]	Hatchery	Natural	Hatchery	Total
1976-1980	2,440	60	140	3,460	1,000	5,100	1,640	6,740
1981-1985	2,385	20	104	5,457	2,654	6,414	3,794	10,208
1986-1990	8,453	20	241	4,772	4,607	6,319	11,099	17,418
1991-1995	4,416	50	312	5,019	4,114	5,888	7,802	13,690
1976	2,900	NA	100	1,200	100	4,100	300	4,400
1977	1,000	NA	100	1,900	300	2,600	500	3,100
1978	2,400	NA	100	2,700	600	4,100	900	5,000
1979	2,700	100	200	6,800	1,600	8,700	2,100	10,800
1980	3,200	20	200	4,700	2,400	6,000	4,400	10,400
1981	4,200	NA	200	4,800	2,400	6,100	4,500	10,600
1982	1,610	NA	100	7,000	4,500	7,800	5,400	13,200
1983	1,017	20	20	2,282	1,100	2,438	1,800	4,238
1984	1,314	20	20	9,200	4,042	9,748	4,400	14,148
1985	3,782	20	180	4,001	1,228	5,984	2,868	8,852
1986	9,885	20	49	5,160	3,654	5,826	11,441	17,267
1987	12,413	20	140	4,747	2,401	8,892	9,774	18,666
1988	5,400	20	255	4,288	8,644	4,530	13,659	18,189
1989	5,900	20	247	4,501	2,565	5,478	7,636	13,114
1990	8,667	20	514	5,163	5,769	6,868	12,984	19,852
1991	10,342	20	709	6,525	4,129	8,574	12,441	21,015
1992	2,049	20	363	6,266	2,324	6,999	3,921	10,920
1993	3,896	150	367	5,020	8,146	5,350	12,145	17,495
1994	1,611	30	18	1,105	2,996	1,242	4,398	5,640
1995	4,184	30	102	6,181	2,977	7,273	6,105	13,378
1996	16,035	20	623	6,530	5,208	8,271	19,690	27,961
1997	3,087	30	222	1,851	2,256	2,047	5,382	7,429
1998[d/]	7,379	20	264	5,971	2,408	6,518	9,432	15,950
GOAL				5,800-14,500				

a/ Includes dip-in fish from other systems.
b/ Recreational catch of adults (coho over 20 inches).
c/ Natural escapement and run size estimates include fish taken for hatchery brood stock.
d/ Preliminary.

TABLE B-31. Estimated inriver run size, catch, and escapement for **Hoh River spring/summer chinook** in numbers of fish. (Page 1 of 1)

Year or Average	Terminal Catch			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[a/]	Natural[b/]	Hatchery	Natural	Hatchery	Total
1976-1980	640	52	84	1,040	0	1,835	0	1,835
1981-1985	448	30	124	1,431	50	1,944	128	2,073
1986-1990	1,072	33	328	2,829	34	4,052	257	4,309
1991-1995	432	22	286	1,268	0	1,971	164	2,135
1976	500	20	100	600	0	1,300	0	1,300
1977	900	20	20	1,000	0	2,000	0	2,000
1978	1,000	100	100	1,400	0	2,472	0	2,472
1979	700	100	100	1,400	0	2,326	0	2,326
1980	100	20	100	800	0	1,079	0	1,079
1981	432	63	20	1,498	22	2,005	47	2,052
1982	569	15	100	1,553	87	2,125	202	2,327
1983	458	36	100	1,696	67	2,233	131	2,364
1984	444	21	300	1,430	50	2,005	139	2,144
1985	336	15	100	978	22	1,353	123	1,476
1986	554	15	138	1,248	0	1,912	43	1,955
1987	676	38	227	1,710	0	2,480	171	2,651
1988	1,008	38	341	2,605	10	3,712	294	4,006
1989	1,735	38	565	4,697	119	6,863	334	7,197
1990	1,387	38	371	3,886	40	5,294	442	5,736
1991	600	13	155	1,078	0	1,693	153	1,846
1992	445	26	84	1,018	0	1,406	167	1,573
1993	509	25	373	1,411	0	2,077	242	2,319
1994	378	20	419	1,699	0	2,361	155	2,516
1995	230	25	397	1,132	0	2,319	102	2,421
1996	471	40	400	1,371	16	1,792	116	1,908
1997	416	57	350	2,600	0	3,325	98	3,423
1998[c/]	294	20	286	1,287	0	1,847	40	1,887
GOAL				900[d/]				

a/ Recreational catch of adults (at least 24 inches total length).
b/ Includes fish taken for hatchery brood stock.
c/ Preliminary.
d/ Minimum. Terminal run managed at 31% harvest rate.

TABLE B-32. Estimated inriver run size, catch, and escapement for **Hoh River fall chinook** in numbers of fish. (Page 1 of 1)

Year or Average	Terminal Catch			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[a/]	Natural[b/]	Hatchery	Natural	Hatchery	Total
1976-1980	760	36	37	2,080	0	2,960	0	2,960
1981-1985	849	36	59	2,745	16	3,684	80	3,764
1986-1990	1,979	32	200	4,500	20	6,800	88	6,888
1991-1995	871	27	220	2,774	3	3,843	65	3,908
1976	500	20	45	2,500	0	3,100	0	3,100
1977	1,600	20	40	2,100	0	3,800	0	3,800
1978	800	100	51	1,900	0	2,900	0	2,900
1979	400	20	28	1,700	0	2,200	0	2,200
1980	500	20	21	2,200	0	2,800	0	2,800
1981	800	20	0	3,100	0	4,000	0	4,000
1982	1,200	20	12	4,500	20	5,800	100	5,900
1983	500	20	134	2,500	20	3,300	100	3,400
1984	800	20	118	1,900	20	2,600	100	2,700
1985	946	100	30	1,725	20	2,720	100	2,820
1986	900	20	178	4,981	20	6,000	100	6,100
1987	1,800	20	299	4,006	20	6,147	89	6,236
1988	2,600	20	188	4,128	20	6,873	100	6,973
1989	2,700	50	187	5,148	20	8,682	100	8,782
1990	1,893	50	149	4,236	20	6,298	50	6,348
1991	1,076	15	113	1,420	13	2,611	13	2,624
1992	940	30	181	4,003	0	5,136	18	5,154
1993	1,148	30	399	2,280	0	3,766	91	3,857
1994	687	30	228	3,967	0	4,806	179	4,985
1995	502	30	180	2,202	0	2,898	22	2,920
1996	836	30	151	3,022	0	3,939	100	4,039
1997	1,114	35	159	1,773	0	3,059	22	3,081
1998[c/]	846	30	200	2,260	0	3,300	36	3,336
GOAL				1,200[d/]				

a/ River recreational catch of adults (three-year olds and older).
b/ Includes fish taken for hatchery brood stock.
c/ Preliminary.
d/ Minimum. Terminal run managed at 40% harvest rate through 1996; for 1997 and 1998, fishing regimes were designed to target a range near 40%.

TABLE B-33. Estimated inriver run size, catch, and escapement for **Hoh River coho** in numbers of fish. (Page 1 of 1)

Year or Average	Terminal Catch[a/]			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[b/]	Natural[c/]	Hatchery	Natural	Hatchery	Total
1976-1980	1,960	74	28	2,700	39	4,683	259	4,942
1981-1985	1,604	48	22	3,371	92	4,655	452	5,107
1986-1990	2,507	30	162	3,145	238	5,218	760	5,979
1991-1995	801	26	167	3,078	122	3,815	379	4,194
1976	1,800	50	44	2,300	0	4,200	0	4,200
1977	1,000	30	6	2,400	0	3,400	0	3,400
1978	2,800	125	20	2,100	0	5,100	0	5,100
1979	2,900	100	47	5,000	93	8,200	593	8,793
1980	1,300	65	23	1,700	100	2,515	700	3,215
1981	2,073	40	7	1,900	100	3,245	875	4,120
1982	2,000	100	6	3,600	100	5,351	319	5,670
1983	152	10	9	1,735	260	1,810	346	2,156
1984	351	46	9	7,400	0	7,690	116	7,806
1985	3,444	43	79	2,218	0	5,178	606	5,784
1986	2,800	42	385	4,270	0	6,400	795	7,195
1987	3,917	50	239	3,516	46	7,165	557	7,722
1988	350	20	39	2,350	611	2,639	731	3,370
1989	2,350	20	106	3,497	351	5,428	720	6,148
1990	3,119	20	42	2,094	184	4,460	999	5,459
1991	1,254	20	276	4,129	14	5,370	323	5,693
1992	1,420	30	107	4,045	594	5,007	1,189	6,196
1993	709	30	90	1,345	0	1,874	300	2,174
1994	144	20	123	1,161	0	1,404	44	1,448
1995	478	30	241	4,710	0	5,419	40	5,459
1996	972	50	102	4,858	0	5,836	146	5,982
1997[d/]	77	25	4	1,386	0	1,421	71	1,492
1998[e/]	618	20	281	5,500	0	6,169	250	6,419
GOAL				2,000 to 5,000				

a/ Includes dip-in fish from other systems.
b/ Recreational catch of adults (coho over 20 inches).
c/ Natural escapement and run size estimates include fish taken for hatchery brood stock.
d/ Recreational fishermen were limited to chinook only. Release of adult coho required.
e/ Preliminary.

TABLE B-34. Estimated inriver run size, catch, and escapement for **Quillayute River spring/summer chinook** in numbers of fish. (Page 1 of 1)

Year or Average	Terminal Catch			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[a/]	Natural[b/]	Hatchery	Natural	Hatchery[c/]	Total
1976-1980	2,520	20	380	2,080	800	3,020	2,780	5,800
1981-1985	700	20	124	920	260	1,580	480	2,060
1986-1990	1,657	22	256	1,278	1,003	2,094	2,096	4,191
1991-1995	894	25	264	1,113	827	1,319	1,804	3,123
1976	2,400	20	800	1,300	1,800	1,700	4,600	6,300
1977	3,200	20	400	3,800	900	5,300	3,000	8,300
1978	3,400	20	400	2,300	700	2,700	4,100	6,800
1979	2,600	20	200	2,100	200	3,900	1,200	5,100
1980	1,000	20	100	900	400	1,500	1,000	2,500
1981	1,000	20	100	800	300	1,700	600	2,300
1982	1,700	20	100	1,200	100	2,700	500	3,200
1983	400	20	100	1,400	200	1,800	400	2,200
1984	300	20	300	600	400	1,000	500	1,500
1985	100	20	20	600	300	700	400	1,100
1986	400	20	70	600	300	1,000	400	1,400
1987	1,800	20	100	600	1,500	1,600	2,200	3,800
1988	2,100	20	509	1,300	1,200	2,600	2,600	5,200
1989	2,255	25	300	2,407	1,150	3,445	2,702	6,147
1990	1,731	25	300	1,483	867	1,826	2,580	4,406
1991	1,271	25	300	1,190	781	1,507	2,060	3,567
1992	918	25	300	1,008	1,540	1,291	2,500	3,791
1993	1,237	25	367	1,292	866	1,531	2,256	3,787
1994	570	25	79	974	537	998	1,187	2,185
1995	472	25	341	1,333	412	1,501	1,082	2,583
1996	136	50	257	1,170	226	1,351	436	1,787
1997	106	50	263	890	198	1,092	415	1,507
1998[d/]	199	50	250	1,553	247	1,896	403	2,299
GOAL				1,200[e/]				

a/ Recreational catch of adults (coho over 20 inches).
b/ Natural escapement includes hatchery strays.
c/ Hatchery escapement and terminal run size exclude hatchery strays.
d/ Preliminary.
e/ WDFW goal for summer chinook only. Includes jacks.

TABLE B-35. Estimated inriver run size, catch, and escapement for **Quillayute River fall chinook** in numbers of fish.
(Page 1 of 1)

Year or Average	Terminal Catch			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[a/]	Natural[b/]	Hatchery[c/]	Natural	Hatchery[c/]	Total
1976-1980	2,640	20	220	4,220	144	6,540	640	7,180
1981-1985	2,075	50	131	6,282	77	8,219	305	8,525
1986-1990	5,475	50	640	12,238	112	18,079	379	18,459
1991-1995	713	50	258	5,341	11	6,343	29	6,372
1976	2,300	20	300	2,500	100	4,700	400	5,100
1977	5,400	20	100	3,300	200	7,600	1,400	9,000
1978	1,500	20	300	4,700	300	6,200	500	6,700
1979	2,700	20	200	3,900	100	6,600	200	6,800
1980	1,300	20	200	6,700	20	7,600	700	8,300
1981	1,328	50	109	5,963	127	7,102	428	7,530
1982	2,765	50	97	7,107	76	9,651	330	9,981
1983	2,539	50	120	3,069	83	5,530	296	5,826
1984	1,384	50	124	9,128	80	10,447	330	10,777
1985	2,360	50	204	6,145	20	8,367	142	8,509
1986	2,990	50	800	10,006	94	13,529	257	13,786
1987	7,996	50	700	12,352	172	20,663	453	21,116
1988	6,241	50	1,000	15,168	171	22,166	502	22,668
1989	7,288	50	300	9,951	108	17,102	586	17,688
1990	2,860	50	400	13,711	14	16,937	98	17,035
1991	951	50	400	6,292	13	7,655	51	7,706
1992	1,208	50	300	6,342	14	7,850	62	7,912
1993	407	50	26	5,254	28	5,735	30	5,765
1994	448	50	262	4,932	0	5,692	0	5,692
1995	552	50	300	5,532	0	6,434	0	6,434
1996	1,245	100	500	7,316	0	9,161	0	9,161
1997[d/]	262	50	310	5,564	0	6,186	0	6,186
1998[d/]	758	100	469	6,350	0	7,677	0	7,677
GOAL				3,000[e/]				

a/ River recreational catch of 3-year olds and older.
b/ Includes fish taken for hatchery brood stock and hatchery strays.
c/ Hatchery escapement and terminal run size exclude hatchery strays.
d/ Preliminary.
e/ Minimum. Terminal run managed at 40% harvest rate.

TABLE B-36. Estimated inriver run size, catch, and escapement for **Quillayute River coho** stocks in numbers of fish. (Page 1 of 2)

Year or Average	Terminal Catch[a/]			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[b/]	Natural[c/]	Hatchery[d/]	Natural[c/]	Hatchery[d/]	Total
				SUMMER COHO				
1976-1980	5,038	53	266	1,192	4,565	1,960	9,153	11,113
1981-1985	4,062	50	172	946	2,635	2,177	5,748	7,925
1986-1990	3,204	50	214	723	4,033	1,616	6,628	8,244
1991-1995	1,286	50	181	830	6,413	1,050	7,709	8,759
1976	499	20	43	1,200	1,239	1,477	1,524	3,001
1977	1,304	20	39	1,000	1,847	1,479	2,731	4,210
1978	837	20	137	1,500	1,000	2,087	1,407	3,494
1979	10,563	100	580	1,460	9,720	2,928	19,495	22,423
1980	11,985	120	530	800	9,018	1,830	20,623	22,453
1981	2,104	30	114	800	500	2,366	1.479	3,845
1982	11,712	100	193	900	3,667	3,266	13,306	16,572
1983	391	20	159	784	4,010	877	4,487	5,364
1984	4,022	50	303	1,573	4,000	2,808	7,140	9,948
1985	2,082	50	91	674	1,000	1,569	2,328	3,897
1986	5,745	50	235	700	8,932	1,138	14,524	15,662
1987	7,520	50	500	600	895	3,839	5,726	9,565
1988	1,404	50	133	900	1,912	1,408	2,991	4,399
1989	797	50	100	950	3,631	1,168	4,464	5,632
1990	554	50	100	465	4,795	527	5,437	5,964
1991	2,661	50	300	1,001	9,913	1,278	12,647	13,925
1992	1,254	50	376	921	15,238	1,016	16,818	17,834
1993	396	50	63	256	1,654	324	2,095	2,419
1994	974	50	51	683	1,643	999	2,402	3,401
1995	1,144	50	29	1,288	3,619	1,609	4,521	6,130
1996	2,552	50	189	574	3,400	977	5,788	6,765
1997[e/]	70	50	14	792	1,509	839	1,596	2,435
1998[e/]	1,310	50	63	1,000	1,645	1,541	2,527	4,068
GOAL				Hatchery Production				

TABLE B-36. Estimated inriver run size, catch, and escapement for **Quillayute River coho** stocks in numbers of fish. (Page 2 of 2)

Year or Average	Terminal Catch[a/]			Escapement		Terminal Run Size		
	Gillnet	Ceremonial & Subsistence	River Sport[b/]	Natural[c/]	Hatchery[d/]	Natural[c/]	Hatchery[d/]	Total
				FALL COHO				
1976-1980	5,985	53	70	9,002	2,435	13,971	3,574	17,545
1981-1985	3,789	49	119	7,464	2,102	10,974	2,549	13,523
1986-1990	5,794	100	324	8,766	1,771	14,120	2,634	16,754
1991-1995	3,599	100	327	6,791	4,736	9,310	6,242	15,553
1976	8,527	75	109	3,900	391	11,817	1,185	13,002
1977	2,809	30	18	3,526	109	6,297	195	6,492
1978	4,187	45	86	10,344	3,473	13,577	4,558	18,135
1979	7,384	60	101	20,224	4,984	26,277	6,476	32,753
1980	7,018	53	36	7,017	3,220	11,889	5,455	17,344
1981	3,734	50	119	6,268	624	9,818	977	10,795
1982	5,420	48	207	10,400	2,140	15,107	3,108	18,215
1983	674	48	69	2,660	675	3,291	835	4,126
1984	595	50	61	10,508	6,633	10,941	6,906	17,847
1985	8,520	50	141	7,484	438	15,713	920	16,633
1986	6,408	100	421	10,687	1,062	16,990	1,688	18,678
1987	13,849	100	400	11,416	751	23,781	2,735	26,516
1988	2,240	100	100	7,218	2,149	9,105	2,702	11,807
1989	2,492	100	400	8,995	3,591	11,208	4,370	15,578
1990	3,980	100	300	5,512	1,300	9,516	1,676	11,192
1991	2,078	100	600	9,532	7,168	10,891	8,587	19,478
1992	7,069	100	322	8,170	3,858	13,533	5,986	19,519
1993	1,318	100	60	4,165	3,746	4,704	4,685	9,389
1994	2,143	100	307	4,882	3,090	6,400	4,122	10,522
1995	5,386	100	991	10,035	5,819	14,209	8,122	22,331
1996	7,742	100	1,333[e/]	11,009	11,515	18,771	12,927	31,698
1997[f/]	436	50	38[e/]	4,726	2,645	4,972	2,923	7,895
1998[f/]	4,543	50	900	11,000	14,034	15,487	15,040	30,527
GOAL				6,300-15,800				

a/ Includes dip-in fish from other systems.
b/ Recreational catch of adults (coho over 20 inches).
c/ Natural escapement and run size estimates include fish taken for hatchery brood stock.
d/ Hatchery escapement and terminal run size exclude hatchery strays.
e/ Regulations required nonretention of coho.
f/ Preliminary.

TABLE B-37. Puget Sound **commercial net and troll** fishery salmon catches.[a/] (Page 1 of 1)

Year or Average	Fishery	Chinook	Coho	Pink	Chum	Sockeye
			THOUSANDS OF FISH			
1971-1975	Non-Indian	103.9	523.6	1,942.9[b/]	331.1	2,159.0
	Treaty Indian	54.0	224.7	114.4[b/]	78.2	37.8
	Total	157.9	748.3	2,057.3[b/]	409.3	2,196.8
1976-1980	Non-Indian	103.5	413.4	2,626.1[b/]	408.0	1,095.6
	Treaty Indian	126.1	488.5	464.4[b/]	294.9	277.8
	Total	229.6	901.9	3,090.5[b/]	702.9	1,373.4
1981-1985	Non-Indian	71.1	344.1	1,917.1[b/]	368.7	924.6
	Treaty Indian	144.4	606.6	1,377.8[b/]	388.0	912.6
	Total	215.5	950.7	3,294.9[b/]	756.7	1,837.2
1986-1990	Non-Indian	57.6	470.5	1,273.6[b/]	540.9	965.4
	Treaty Indian	177.0	811.6	1,475.1[b/]	661.8	1,034.9
	Total	234.6	1,282.1	2,748.8[b/]	1,202.6	2,000.2
1986	Non-Indian	73.5	493.5	0.0	505.7	1,394.0
	Treaty Indian	150.4	863.6	0.1	650.1	1,357.4
	Total	223.9	1,357.1	0.1	1,155.8	2,751.3
1987	Non-Indian	57.3	664.0	963.3	597.3	974.7
	Treaty Indian	155.8	1,118.2	1,106.4	704.3	971.3
	Total	213.1	1,782.2	2,069.8	1,301.6	1,946.1
1988	Non-Indian	50.4	459.8	0.0	706.3	348.0
	Treaty Indian	181.1	777.7	0.1	862.4	501.4
	Total	231.4	1,237.5	0.1	1,568.7	849.4
1989	Non-Indian	54.1	344.4	1,583.9	368.1	1,127.8
	Treaty Indian	199.8	621.1	1,843.8	518.4	1,124.0
	Total	253.9	965.4	3,427.7	886.5	2,251.7
1990	Non-Indian	52.5	390.9	0.0	526.9	982.4
	Treaty Indian	197.7	676.9	0.3	573.6	1,184.4
	Total	250.2	1,067.7	0.3	1,100.5	2,166.7
1991	Non-Indian	21.6	196.4	1,578.4	476.8	983.4
	Treaty Indian	121.6	401.8	1,710.0	545.0	844.7
	Total	143.3	598.2	3,288.5	1,021.8	1,828.1
1992	Non-Indian	19.5	98.9	0.1	617.6	316.1
	Treaty Indian	94.0	300.0	0.1	763.6	292.1
	Total	113.5	398.9	0.2	1,381.2	608.2
1993	Non-Indian	18.1	27.7	974.9	588.6	1,328.5
	Treaty Indian	64.2	162.0	1,117.2	539.4	1,364.5
	Total	82.3	189.7	2,092.1	1,128.0	2,693.0
1994	Non-Indian	19.8	20.0	<50	579.9	878.4
	Treaty Indian	61.5	427.8	1.7	772.4	956.1
	Total	81.3	447.8	1.7	1,352.3	1,834.5
1995	Non-Indian	6.7	24.5	1,366.9	373.9	170.6
	Treaty Indian	74.1	278.3	1,340.4	382.0	243.7
	Total	80.8	302.7	2,707.3	755.9	414.3
1996	Non-Indian	9.2	20.0	0.0	530.5	50.5
	Treaty Indian	69.0	145.3	0.0	261.5	286.1
	Total	78.2	165.3	0.0	792.1	336.6
1997[c/]	Non-Indian	21.6	9.6	868.9	234.9	681.7
	Treaty Indian	58.0	142.4	985.2	186.3	660.6
	Total	79.6	152.0	1,854.1	421.2	1,342.3
1998[c/]	Non-Indian	11.9	12.5	0.3	509.0	229.2
	Treaty Indian	40.7	133.2	0.3	218.6	293.3
	Total	52.6	145.7	0.6	727.6	522.5

a/ Data do not reflect treaty Indian allocations. Includes U.S. and Canadian-origin salmon and fish caught in test fisheries.
b/ Odd-year average.
c/ Preliminary.

TABLE B-38. Summary of Puget Sound **marine recreational** salmon catches.[a/] (Page 1 of 1)

Year or Average	Chinook	Coho	Pink
	THOUSANDS OF FISH		
1971-1975	225.6	119.3	14.8[b/]
1976-1980	252.4	200.2	47.0[b/]
1981-1985	160.2	197.6	24.8[b/]
1986-1990	128.5	248.3	39.9[b/]
1976	307.2	223.9	0.2
1977	196.1	177.3	24.4
1978	228.7	223.6	0.1
1979	285.7	258.2	69.6
1980	244.5	118.2	0.2
1981	164.4	177.4	25.5
1982	120.2	209.7	0.0
1983	194.5	274.1	16.5
1984	174.6	140.7	0.1
1985	147.3	186.2	28.0
1986	170.0	261.0	0.0
1987[c/]	102.9	247.5	30.9
1988[c/]	108.3	195.0	d/
1989[c/]	135.7	220.6	48.8
1990[c/]	125.5	317.2	d/
1991[c/]	90.6	252.4	44.9
1992[c/]	97.7	189.4	0.4
1993[c/]	80.2	136.0	67.6
1994	48.2	31.7	d/
1995	67.7	74.3	100.5
1996	70.7	85.4	d/
1997[e/]	58.5	130.2	28.5

a/ WDFW Statistical Areas 5 through 13, which include the Strait of Juan de Fuca, San Juan Islands and inner Puget Sound.
b/ Odd years only.
c/ Punch card estimates adjusted for results of 1987-1990 WDFW/tribal sports emphasis study.
d/ Less than 50 fish.
e/ Preliminary.

TABLE B-39. Puget Sound **commercial net** fishery catches and spawning escapements in numbers of fish for hatchery and natural Puget Sound chinook stocks.[a/] (Page 1 of 3)

Year or Average	Commercial Net Catches			Spawning Escapement			Puget Sound Run Size[b/]		
	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total
				ALL CHINOOK (thousands)					
Strait of Juan de Fuca									
1981-1985	0.1	0.1	0.2	0.8	1.4	2.3	0.9	1.6	2.4
1986-1990	0.1	0.4	0.6	1.3	4.5	5.8	1.4	5.0	6.4
1981	0.0	0.1	0.2	0.4	0.9	1.3	0.5	1.0	1.5
1982	0.1	0.3	0.4	0.9	2.2	3.1	1.0	2.5	3.5
1983	0.1	0.1	0.2	0.7	1.6	2.3	0.8	1.7	2.5
1984	0.1	0.0	0.1	1.4	1.1	2.5	1.4	1.1	2.6
1985	0.0	0.1	0.1	0.6	1.5	2.1	0.6	1.5	2.2
1986	0.1	0.2	0.2	1.3	2.7	4.0	1.4	2.8	4.2
1987	0.1	0.5	0.6	1.3	5.2	6.5	1.4	5.7	7.1
1988	0.3	0.9	1.2	2.1	6.6	8.7	2.4	7.5	9.9
1989	0.1	0.3	0.3	1.1	5.2	6.3	1.2	5.5	6.7
1990	0.1	0.4	0.5	0.6	3.1	3.7	0.7	3.5	4.1
1991	0.1	0.3	0.4	1.0	3.5	4.5	1.1	3.8	4.9
1992	0.0	0.2	0.2	0.1	4.5	4.6	0.1	4.7	4.8
1993	0.0	0.1	0.1	0.2	2.3	2.5	0.2	2.4	2.6
1994	0.0	0.1	0.1	0.4	1.6	2.0	0.4	1.7	2.1
1995	0.0	0.0	0.0	0.1	2.8	2.9	0.1	2.8	2.9
1996	0.0	e/	e/	0.2	3.1	3.3	0.2	3.1	3.3
1997[d/]	0.0	0.0	0.0	0.3	3.4	3.7	0.3	3.5	3.8
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL						5.3			
Nooksack-Samish									
1981-1985	54.0	33.5	87.5	16.1	6.5	22.6	70.1	40.1	110.1
1986-1990	38.0	26.3	64.3	10.7	4.1	14.9	48.8	30.4	79.2
1981	48.1	28.2	76.3	10.2	3.6	13.8	58.4	31.7	90.1
1982	54.6	36.1	90.7	15.0	5.6	20.6	69.6	41.7	111.3
1983	33.0	22.3	55.3	19.7	7.4	27.1	52.8	29.7	82.4
1984	69.7	33.7	103.4	18.8	9.6	28.4	88.5	43.2	131.7
1985	64.4	47.5	111.9	16.7	6.5	23.2	81.1	54.0	135.1
1986	50.3	42.9	93.2	10.7	5.3	16.0	60.9	48.3	109.2
1987	31.4	23.2	54.6	5.8	2.7	8.6	37.2	26.0	63.2
1988	19.4	19.6	39.0	5.2	2.7	8.0	24.7	22.4	47.0
1989	43.7	9.1	52.7	18.0	1.9	20.0	61.7	11.0	72.7
1990	45.5	36.5	81.9	13.9	7.9	21.8	59.4	44.4	103.7
1991	27.1	3.3	30.4	9.6	0.7	10.3	36.7	4.0	40.7
1992	15.9	1.6	17.6	8.4	0.5	9.0	24.3	2.2	26.5
1993	18.2	1.6	19.9	12.1	1.0	13.1	30.3	2.6	32.9
1994	18.2	2.6	20.8	6.4	0.9	7.3	24.6	3.6	28.1
1995	12.5	1.2	13.7	8.1	0.5	8.6	20.6	1.7	22.3
1996	17.5	1.9	19.4	9.0	0.9	10.0	26.6	2.9	29.4
1997[d/]	0.0	0.0	0.0	9.2	4.4	13.6	24.0	11.4	35.4
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL				8.7					

TABLE B-39. Puget Sound **commercial net** fishery catches and spawning escapements in numbers of fish for hatchery and natural Puget Sound chinook stocks.[a/] (Page 2 of 3)

Year or Average	Commercial Net Catches			Spawning Escapement			Puget Sound Run Size[b/]		
	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total
				ALL CHINOOK (thousands)					
Skagit									
1981-1985	0.6	9.2	9.8	0.8	11.5	12.3	1.4	20.7	22.1
1986-1990	0.2	4.1	4.3	0.8	12.7	13.6	1.1	16.8	17.9
1981	0.7	13.1	13.7	0.4	8.7	9.1	1.1	21.7	22.8
1982	1.1	13.7	14.8	0.8	10.4	11.3	2.0	24.1	26.1
1983	0.6	6.7	7.3	0.8	9.1	9.9	1.4	15.8	17.2
1984	0.3	2.8	3.1	1.6	13.2	14.8	1.9	16.0	17.9
1985	0.1	9.7	9.9	0.2	16.3	16.5	0.4	26.0	26.4
1986	0.2	4.5	4.7	0.8	18.1	18.9	1.0	22.6	23.6
1987	0.1	4.0	4.1	0.3	9.6	10.0	0.4	13.6	14.0
1988	0.4	3.4	3.8	1.3	12.0	13.2	1.7	15.3	17.0
1989	0.4	6.3	6.6	0.4	6.8	7.2	0.8	13.0	13.8
1990	0.2	2.2	2.3	1.3	17.2	18.5	1.5	19.4	20.8
1991	0.4	2.6	2.9	0.9	6.0	6.9	1.3	8.6	9.9
1992	0.5	1.6	2.1	2.2	7.7	9.9	2.7	9.3	12.0
1993	0.2	1.0	1.2	1.2	5.9	7.1	1.4	7.0	8.3
1994	0.3	0.4	0.7	4.0	6.2	10.3	4.3	6.6	10.9
1995	0.8	2.4	3.2	2.5	7.2	9.6	3.3	9.6	12.9
1996	e/	0.2	0.2	1.2	12.0	13.2	1.2	12.2	13.5
1997[d/]	0.0	0.0	0.0	0.0	5.0	5.0	0.0	6.2	6.2
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL					14.9				
Hood Canal									
1981-1985	4.9	3.6	8.6	3.8	2.0	5.8	8.7	5.7	14.4
1986-1990	10.5	4.9	15.4	6.2	2.0	8.2	16.7	6.9	23.7
1981	8.4	2.3	10.6	3.0	0.3	3.2	11.3	2.6	13.9
1982	3.5	2.5	6.0	5.0	0.4	5.4	8.5	2.9	11.4
1983	1.8	2.7	4.6	2.0	1.8	3.8	3.8	4.5	8.3
1984	5.7	4.3	10.0	4.8	2.5	7.3	10.5	6.8	17.2
1985	5.1	6.4	11.6	4.2	5.2	9.5	9.4	11.7	21.0
1986	8.8	6.5	15.4	4.7	2.8	7.5	13.6	9.3	22.9
1987	12.1	6.3	18.4	6.6	2.3	8.8	18.7	8.6	27.3
1988	11.8	4.8	16.6	10.3	2.9	13.2	22.1	7.7	29.8
1989	12.9	5.1	18.0	6.1	1.4	7.5	19.0	6.5	25.5
1990	6.9	1.9	8.7	3.4	0.7	4.1	10.3	2.6	12.9
1991	8.0	3.8	11.8	5.6	1.8	7.5	13.6	5.6	19.2
1992	0.3	0.6	0.8	1.2	0.9	2.2	1.5	1.5	3.0
1993	0.6	0.5	1.0	2.6	1.2	3.8	3.2	1.6	4.8
1994	0.2	0.2	0.4	2.4	1.1	3.4	2.6	1.3	3.8
1995	0.2	0.0	0.2	7.2	2.0	9.2	7.4	2.0	9.4
1996	e/	e/	e/	7.1	1.0	8.1	7.1	1.0	8.2
1997[d/]	0.0	0.0	0.0	7.3	0.5	7.8	7.4	0.5	7.9
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL				3.4					

TABLE B-39. Puget Sound **commercial net** fishery catches and spawning escapements in numbers of fish for hatchery and natural Puget Sound chinook stocks.[a] (Page 3 of 3)

Year or Average	Commercial Net Catches			Spawning Escapement			Puget Sound Run Size[b]		
	Hatchery[c]	Wild	Total	Hatchery[c]	Wild	Total	Hatchery[c]	Wild	Total
				ALL CHINOOK (thousands)					
Stillaguamish-Snohomish									
1981-1985	3.9	6.9	10.8	2.0	4.9	6.9	5.9	11.8	17.7
1986-1990	3.4	4.2	7.6	1.1	5.2	6.4	4.5	9.4	14.0
1981	8.5	8.8	17.3	3.7	4.0	7.7	12.2	12.8	25.0
1982	2.9	7.2	10.2	2.3	5.2	7.5	5.3	12.4	17.6
1983	2.6	7.1	9.6	1.2	4.9	6.1	3.7	12.0	15.7
1984	3.3	5.6	8.9	1.4	4.1	5.5	4.7	9.7	14.4
1985	2.1	5.8	7.9	1.4	6.3	7.7	3.5	12.1	15.6
1986	5.5	5.4	10.9	0.9	5.8	6.7	6.4	11.2	17.6
1987	1.3	2.9	4.3	1.2	6.0	7.2	2.5	8.9	11.5
1988	2.6	3.7	6.3	1.1	5.2	6.4	3.7	9.0	12.7
1989	4.4	4.0	8.4	1.5	3.9	5.4	5.9	7.9	13.8
1990	3.1	5.1	8.2	1.0	5.1	6.0	4.1	10.2	14.3
1991	2.6	3.6	6.2	0.6	4.4	5.0	3.1	8.0	11.1
1992	1.8	2.2	3.9	1.0	3.5	4.5	2.7	5.7	8.4
1993	2.2	2.1	4.3	1.9	4.9	6.9	4.1	7.0	11.2
1994	3.3	1.7	5.0	3.9	4.6	8.5	7.2	6.3	13.5
1995	6.2	2.8	9.0	3.9	4.5	8.4	10.1	7.3	17.4
1996	7.5	4.0	11.5	5.7	6.2	11.9	13.1	10.2	23.4
1997[d]	0.0	0.0	0.0	2.6	5.5	8.1	11.3	5.6	16.9
1998[d]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL					7.3				
South Puget Sound									
1981-1985	23.1	11.2	34.4	23.3	10.2	33.5	46.5	21.4	67.9
1986-1990	22.8	23.0	45.8	33.6	21.6	55.3	56.4	44.6	101.0
1981	23.9	4.6	28.5	26.1	8.6	34.7	50.0	13.2	63.2
1982	14.1	7.2	21.3	19.1	8.8	27.8	33.2	16.0	49.2
1983	24.2	18.7	42.9	21.8	11.3	33.1	45.9	30.1	76.0
1984	28.8	13.7	42.5	27.8	11.9	39.7	56.5	25.7	82.2
1985	24.7	11.9	36.6	22.0	10.3	32.3	46.6	22.3	68.9
1986	15.1	9.7	24.8	23.8	13.2	37.0	38.8	22.9	61.8
1987	18.9	22.3	41.2	29.7	23.3	53.0	48.7	45.6	94.2
1988	23.4	27.6	51.0	26.9	18.6	45.6	50.3	46.2	96.5
1989	25.0	24.6	49.5	47.4	24.9	72.3	72.4	49.5	121.9
1990	31.7	30.6	62.3	40.3	28.1	68.4	72.0	58.8	130.8
1991	17.0	14.1	31.1	22.4	17.7	40.0	39.4	31.8	71.1
1992	16.3	12.1	28.5	18.3	12.8	31.1	34.6	24.9	59.5
1993	16.3	10.4	26.7	20.4	9.4	29.8	36.8	19.8	56.5
1994	20.0	16.0	35.9	28.9	14.0	42.9	48.9	29.9	78.8
1995	23.5	14.3	37.8	51.0	20.2	71.2	74.5	34.5	109.0
1996	18.8	11.4	30.2	39.5	24.3	63.8	58.3	35.8	94.1
1997[d]	0.0	0.0	0.0	36.3	16.3	52.7	46.5	20.6	67.1
1998[d]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL						34.9			

a/ Includes treaty Indian and non-Indian net commercial catches during the adult accounting period. Source: Puget Sound run reconstruction model.

b/ Puget Sound run size is defined as the run available to Puget Sound net fisheries. Does not include fish caught by troll and recreational fisheries.

c/ Includes estimated off-station returns.

d/ Preliminary.

e/ Less than 50.

TABLE B-40. Puget Sound **commercial net** fishery catches and spawning escapements in numbers of fish for hatchery and natural Puget Sound coho stocks.[a/] (Page 1 of 3)

Year or Average	Commercial Net Catches			Spawning Escapement			Puget Sound Run Size[b/]		
	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total
				COHO (thousands)					
Strait of Juan de Fuca									
1981-1985	17.4	3.4	20.8	9.0	5.1	14.1	26.4	8.5	34.9
1986-1990	6.3	2.6	8.8	3.0	6.0	9.0	9.2	8.6	17.8
1981	11.7	1.5	13.3	16.0	3.2	19.2	27.7	4.7	32.5
1982	37.7	11.0	48.7	11.5	10.1	21.6	49.2	21.1	70.3
1983	20.7	2.7	23.4	6.7	4.4	11.1	27.4	7.1	34.5
1984	6.1	0.8	6.9	3.6	5.3	8.9	9.7	6.1	15.8
1985	10.9	1.1	12.0	7.1	2.6	9.7	18.0	3.7	21.7
1986	5.9	3.4	9.3	4.4	10.3	14.7	10.3	13.7	24.0
1987	10.2	4.8	15.1	2.7	5.8	8.5	13.0	10.6	23.6
1988	3.9	1.3	5.1	2.4	4.2	6.6	6.2	5.5	11.7
1989	7.0	2.1	9.1	2.5	6.6	9.1	9.5	8.7	18.2
1990	4.3	1.3	5.7.	2.7	3.3	6.0	7.1	4.6	11.7
1991	2.7	1.0	3.7	2.7	4.1	6.8	5.4	5.1	10.6
1992	2.4	0.3	2.7	3.5	6.1	9.5	5.9	6.4	12.3
1993	0.3	0.1	0.3	4.0	3.3	7.4	4.3	3.4	7.7
1994	1.4	0.3	1.7	2.3	2.4	4.6	3.7	2.6	6.3
1995	1.0	2.3	3.4	7.2	5.7	12.9	8.2	8.0	16.3
1996	4.3	0.1	4.3	7.5	2.4	10.0	11.8	2.5	14.3
1997[d/]	NA	NA	NA	13.9	5.8	19.7	NA	NA	NA
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL						14.8			
Nooksack-Samish									
1981-1985	131.0	18.9	149.9	24.4	7.2	31.6	155.4	26.1	181.5
1986-1990	146.9	22.8	169.7	21.1	7.4	28.5	168.0	30.2	198.2
1981	91.4	14.1	105.5	34.3	7.5	41.8	125.7	21.6	147.3
1982	160.4	15.3	175.7	22.0	4.4	26.4	182.4	19.7	202.1
1983	133.7	26.2	159.8	15.2	8.9	24.1	148.9	35.1	183.9
1984	118.9	18.9	137.8	18.6	9.5	28.1	137.5	28.4	165.9
1985	150.4	20.0	170.5	32.0	5.7	37.7	182.4	25.7	208.2
1986	172.3	17.6	189.9	22.0	6.7	28.7	194.4	24.3	218.7
1987	187.0	49.4	236.5	33.3	12.6	45.9	220.4	62.0	282.4
1988	158.0	15.4	173.4	21.2	6.9	28.1	179.2	22.3	201.5
1989	106.0	12.6	118.6	15.8	3.6	19.4	121.8	16.2	138.0
1990	111.0	19.1	130.1	13.1	7.3	20.4	124.1	26.4	150.5
1991	51.9	18.8	70.7	9.7	11.5	21.2	61.6	30.3	91.9
1992	61.5	9.4	70.9	19.6	8.4	28.0	81.1	17.8	98.9
1993	40.5	15.7	56.2	23.0	10.8	33.8	63.6	26.5	90.0
1994	43.9	20.5	64.4	12.1	13.8	25.9	56.0	34.3	90.3
1995	44.5	11.7	56.2	12.0	7.1	19.1	56.5	18.8	75.3
1996	51.0	1.6	52.5	38.2	2.0	40.3	89.2	3.6	92.8
1997[d/]	NA	NA	NA	34.4	6.7	41.1	NA	NA	NA
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL				17.9					

TABLE B-40. Puget Sound **commercial net** fishery catches and spawning escapements in numbers of fish for hatchery and natural Puget Sound coho stocks.[a/] (Page 2 of 3)

Year or Average	Commercial Net Catches			Spawning Escapement			Puget Sound Run Size[b/]		
	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total
				COHO (thousands)					
Skagit									
1981-1985	9.2	11.6	20.8	21.7	19.8	41.5	30.9	31.4	62.3
1986-1990	6.4	13.8	20.2	13.9	25.8	39.7	20.3	39.6	59.9
1981	18.1	6.4	24.5	42.1	15.0	57.1	60.2	21.4	81.6
1982	12.0	23.0	35.0	4.7	9.0	13.7	16.7	32.0	48.7
1983	4.9	11.1	15.9	10.6	24.0	34.6	15.5	35.1	50.5
1984	5.6	4.2	9.9	44.1	33.0	77.1	49.7	37.2	87.0
1985	5.3	13.3	18.6	7.2	18.0	25.2	12.5	31.3	43.8
1986	9.8	28.4	38.2	15.4	45.0	60.4	25.2	73.4	98.6
1987	7.5	8.2	15.7	30.0	33.0	63.0	37.5	41.2	78.7
1988	5.9	10.9	16.8	10.3	19.0	29.3	16.2	29.9	46.1
1989	4.2	10.6	14.8	6.8	17.0	23.8	11.0	27.6	38.6
1990	4.9	10.9	15.7	6.7	15.0	21.7	11.6	25.9	37.5
1991	1.8	4.0	5.8	3.5	7.8	11.3	5.3	11.8	17.1
1992	3.1	2.0	5.1	11.6	7.5	19.1	14.7	9.5	24.2
1993	0.7	1.1	1.9	8.8	13.4	22.2	9.5	14.5	24.0
1994	1.2	1.4	2.6	24.9	29.1	54.0	26.1	30.5	56.6
1995	1.4	2.8	4.2	6.6	13.4	20.0	8.0	16.2	24.2
1996	0.7	0.4	1.2	18.0	8.3	26.2	18.7	8.7	27.4
1997[d/]	NA	NA	NA	3.1	32.6	35.7[e/]	NA	NA	NA
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL					30.0				
Hood Canal									
1981-1985	40.5	24.3	64.8	19.0	23.6	42.6	59.5	47.9	107.4
1986-1990	45.2	23.5	68.7	14.7	18.3	33.0	59.9	41.8	101.8
1981	29.9	13.2	43.1	36.6	23.8	60.4	66.5	37.0	103.5
1982	59.2	41.2	100.4	13.8	28.3	42.1	73.0	69.5	142.5
1983	38.2	23.2	61.4	11.3	13.9	25.2	49.5	37.1	86.6
1984	41.5	20.5	62.0	25.4	37.0	62.4	66.9	57.5	124.4
1985	33.7	23.6	57.3	8.0	14.9	22.9	41.7	38.5	80.2
1986	72.8	42.3	115.1	24.8	39.9	64.7	97.5	82.2	179.7
1987	79.1	53.7	132.8	10.1	18.0	28.1	89.3	71.7	160.9
1988	9.2	3.9	13.1	9.5	11.6	21.1	18.7	15.5	34.2
1989	29.1	10.2	39.4	18.6	15.3	33.9	47.8	25.5	73.3
1990	35.9	7.4	43.3	10.5	6.8	17.3	46.4	14.2	60.7
1991	21.6	2.8	24.4	6.4	12.5	18.9	28.0	15.3	43.2
1992	3.7	0.7	4.4	5.4	19.2	24.6	9.1	19.9	29.0
1993	3.2	0.8	4.0	12.3	15.9	28.2	15.5	16.7	32.2
1994	31.5	0.9	32.3	24.8	56.1	80.9	56.2	57.0	113.2
1995	9.5	0.8	10.3	25.2	40.3	65.5	34.7	41.1	75.8
1996	4.2	0.2	4.4	27.3	37.1	64.3	31.5	37.3	68.7
1997[d/]	NA	NA	NA	41.5	96.4	137.9	NA	NA	NA
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL					21.5				

TABLE B-40. Puget Sound **commercial net** fishery catches and spawning escapements in numbers of fish for hatchery and natural Puget Sound coho stocks.[a/] (Page 3 of 3)

Year or Average	Commercial Net Catches			Spawning Escapement			Puget Sound Run Size[b/]		
	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total
				COHO (thousands)					
Stillaguamish-Snohomish									
1981-1985	22.4	56.5	79.0	12.9	88.0	100.9	35.4	144.5	179.9
1986-1990	61.9	94.8	156.7	26.1	110.4	136.5	88.0	205.2	293.2
1981	38.6	64.8	103.5	11.9	46.0	57.9	50.5	110.8	161.4
1982	19.9	41.8	61.7	3.7	65.0	68.7	23.6	106.8	130.4
1983	9.2	54.6	63.8	9.0	160.0	169.0	18.2	214.6	232.8
1984	9.7	35.6	45.3	25.9	89.0	114.9	35.6	124.6	160.2
1985	34.8	85.7	120.5	14.2	80.0	94.2	49.0	165.7	214.7
1986	36.3	113.6	149.9	26.2	140.0	166.2	62.5	253.6	316.0
1987	93.4	126.5	219.9	34.0	105.0	139.0	127.4	231.5	358.8
1988	51.0	74.3	125.3	25.0	96.0	121.0	76.1	170.3	246.3
1989	55.5	67.5	123.0	25.5	99.0	124.5	81.0	166.5	247.5
1990	73.2	92.3	165.4	20.0	112.0	132.0	93.1	204.3	297.4
1991	60.3	56.3	116.6	19.2	45.0	64.2	79.5	101.3	180.9
1992	42.8	36.8	79.6	26.4	97.5	123.9	69.2	134.3	203.4
1993	23.7	10.9	34.5	15.2	62.8	78.0	38.8	73.7	112.5
1994	48.1	32.7	80.8	24.8	182.6	207.4	72.9	215.3	288.2
1995	34.0	15.6	49.6	32.3	109.7	142.0	66.3	125.3	191.6
1996[d/]	23.5	7.3	30.8	23.6	59.2	82.8	47.1	66.5	113.6
1997[d/]	NA	NA	NA	25.0	69.1	94.1	NA	NA	NA
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL					87.0				
South Puget Sound									
1981-1985	354.8	154.9	509.7	76.6	38.7	115.2	431.4	193.6	624.9
1986-1990	527.7	224.5	752.2	69.2	29.7	98.9	569.9	254.2	851.0
1981	245.1	65.0	310.1	73.3	34.0	107.3	318.4	99.0	417.4
1982	419.2	160.5	579.8	87.4	51.2	138.6	506.6	211.7	718.4
1983	401.3	132.3	533.6	93.5	31.1	124.6	494.8	163.4	658.2
1984	367.3	138.9	506.2	80.0	37.4	117.4	447.3	176.3	623.6
1985	341.0	277.7	618.7	48.6	39.6	88.2	389.6	317.3	706.9
1986	547.8	180.2	728.0	72.0	26.9	98.9	619.8	207.1	826.9
1987	706.0	359.4	1065.4	85.2	42.6	127.8	791.2	402.0	1193.2
1988	553.4	267.0	820.3	80.6	37.4	118.0	634.0	304.3	938.3
1989	421.3	110.8	532.1	57.3	14.5	71.8	478.6	125.3	603.9
1990	410.0	205.1	615.1	50.8	27.0	77.8	460.8	232.1	692.9
1991	223.0	78.1	301.1	54.7	15.0	69.7	277.7	93.1	370.8
1992	162.1	51.5	213.6	102.7	16.0	118.7	264.8	67.5	332.3
1993	66.6	9.4	76.0	101.2	18.4	119.6	167.8	27.8	195.6
1994	168.6	102.1	270.7	122.9	39.0	161.8	291.4	141.1	432.5
1995	115.6	50.6	166.2	103.5	32.4	135.9	219.1	83.0	302.1
1996[d/]	56.4	13.6	70.0	107.5	22.0	129.5	163.9	35.6	199.5
1997[d/]	NA	NA	NA	53.1	50.0	103.1	NA	NA	NA
1998[d/]	NA	NA	NA	NA	NA	NA	NA	NA	NA
GOAL				52.0					

a/ Includes treaty Indian and non-Indian net commercial catches during the adult accounting period. Source: Puget Sound run reconstruction model.

b/ Puget Sound run size is defined as the run available to Puget Sound net fisheries. Does not include fish caught by troll and recreational fisheries.

c/ Includes estimated off-station returns.

d/ Preliminary.

e/ Calculated using different method than 1981-1996 estimates.

TABLE B-41. Puget Sound **commercial net** fishery catches and spawning escapements in numbers of fish for hatchery and natural Puget Sound pink stocks.[a/] (Page 1 of 2)

Year or Average	Commercial Net Catches			Spawning Escapement			Puget Sound Run Size[b/]		
	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total
				PINK (thousands)					
Strait of Juan de Fuca									
1981-1985	0.0	2.1	2.1	0.0	4.3	4.3	0.0	6.4	6.4
1986-1990	0.0	7.4	7.4	0.0	6.4	6.5	0.1	13.8	13.9
1981	0.0	1.7	1.7	0.0	3.1	3.1	0.0	4.8	4.8
1983	0.0	1.1	1.1	0.0	5.1	5.1	0.0	6.2	6.2
1985	0.0	3.5	3.5	0.0	4.8	4.8	0.0	8.3	8.3
1987	0.1	2.4	2.5	0.0	2.0	2.0	0.1	4.3	4.4
1989	0.0	12.3	12.3	0.0	10.9	10.9	0.0	23.3	23.3
1991	0.0	32.1	32.1	0.0	9.9	9.9	0.0	42.0	42.0
1993	0.0	2.4	2.4	0.0	1.7	1.7	0.0	4.1	4.1
1995	0.0	0.0	0.0	0.0	8.3	8.3	0.0	8.3	8.3
1997[d/]	NA	NA	NA	0.1	5.0	5.0	0.1	11.0	11.1
GOAL				Not Agreed Upon					
Nooksack-Samish									
1981-1985	0.0	29.4	29.4	0.0	32.7	32.7	0.0	62.1	62.1
1986-1990	0.8	114.8	115.6	0.6	87.1	87.7	1.4	201.9	203.3
1981	0.0	35.3	35.3	0.0	15.0	15.0	0.0	50.3	50.3
1983	0.0	25.8	25.8	0.0	60.0	60.0	0.0	85.8	85.8
1985	0.0	27.1	27.1	0.0	23.0	23.0	0.0	50.1	50.1
1987	0.0	49.9	49.9	0.0	36.6	36.6	0.0	86.5	86.5
1989	1.6	179.7	181.3	1.2	137.6	138.8	2.8	317.3	320.1
1991	0.0	93.5	93.5	0.0	24.0	24.0	0.0	117.5	117.5
1993	0.0	83.6	83.6	0.0	56.5	56.5	0.0	140.1	140.1
1995	0.0	6.6	6.6	0.0	207.1	207.1	0.6	213.7	213.7
1997[d/]	NA	NA	NA	0.0	26.0	26.0	0.0	60.2	60.2
GOAL					50.0				
Skagit									
1981-1985	0.1	121.9	122.0	0.1	426.7	426.8	0.3	548.5	548.8
1986-1990	0.5	463.2	463.6	0.8	496.7	497.4	1.2	959.8	961.0
1981	0.4	133.4	133.7	0.3	100.0	100.3	0.6	233.4	234.0
1983	0.0	8.0	8.0	0.1	470.0	470.1	0.1	478.0	478.2
1985	0.0	224.2	224.2	0.0	710.0	710.0	0.0	934.2	934.2
1987	0.9	351.3	352.2	1.5	592.0	593.5	2.4	943.3	945.7
1989	0.0	575.0	575.0	0.0	401.3	401.3	0.0	976.3	976.3
1991	0.0	144.7	144.7	0.0	351.0	351.0	0.0	495.7	495.7
1993	0.0	145.5	145.5	0.0	530.0	530.0	0.0	675.5	675.5
1995	0.0	857.0	857.0	0.0	527.4	527.4	0.0	1,384.4	1,384.4
1997[d/]	NA	NA	NA	0.0	60.0	60.0	0.0	106.6	106.6
GOAL					330.0				

TABLE B-41. Puget Sound **commercial net** fishery catches and spawning escapements in numbers of fish for hatchery and natural Puget Sound pink stocks.[a/] (Page 2 of 2)

Year or Average	Commercial Net Catches			Spawning Escapement			Puget Sound Run Size[b/]		
	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total	Hatchery[c/]	Wild	Total
				PINK (thousands)					
Hood Canal									
1981-1985	0.1	1.1	1.2	1.2	32.0	33.1	1.3	33.1	34.4
1986-1990	4.1	11.0	15.1	5.3	61.6	66.9	9.3	72.6	81.9
1981	0.2	0.6	0.9	1.6	6.6	8.1	1.8	7.2	9.0
1983	0.0	0.2	0.3	0.5	25.2	25.7	0.5	25.4	26.0
1985	0.1	2.4	2.6	1.5	64.1	65.6	1.6	66.5	68.1
1987	1.2	2.2	3.4	8.1	62.2	70.3	9.2	64.4	73.6
1989	7.0	19.8	26.8	2.5	61.0	63.5	9.5	80.8	90.3
1991	0.8	1.5	2.3	3.3	118.5	121.8	4.1	119.9	124.0
1993	0.0	0.1	0.1	11.5	35.4	46.9	11.5	35.5	47.0
1995	1.9	0.0	1.9	24.6	31.3	55.9	26.5	31.3	57.8
1997[d/]	NA	NA	NA	21.5	8.4	30.0	21.5	8.4	29.9
GOAL				Not Agreed Upon					
Stillaguamish-Snohomish									
1981-1985	0.1	86.1	86.2	0.2	311.4	311.6	0.3	397.5	397.7
1986-1990	0.4	199.4	199.8	0.2	210.8	211.0	0.6	410.2	410.7
1981	0.0	38.7	38.7	0.1	108.0	108.1	0.1	146.7	146.8
1983	0.0	48.9	48.9	0.3	324.1	324.4	0.3	373.0	373.3
1985	0.1	170.8	171.0	0.2	502.0	502.2	0.3	672.8	673.2
1987	0.7	84.9	85.6	0.4	271.0	271.4	1.1	355.9	357.0
1989	0.0	313.9	313.9	0.0	150.5	150.5	0.0	464.4	464.5
1991	0.1	50.6	50.7	0.4	260.0	260.4	0.5	310.6	311.2
1993	7.0	2.9	9.9	0.1	210.0	210.1	7.1	212.9	220.0
1995	46.6	6.5	51.0	0.0	309.6	309.6	44.6	316.1	360.6
1997[d/]	NA	NA	NA	0.0	192.1	192.1	31.1	195.4	226.5
GOAL - Stillaguamish					155.0				
GOAL - Snohomish					120.0				
South Puget Sound									
1981-1985	1.1	22.6	23.8	0.3	19.7	20.0	1.4	42.3	43.7
1986-1990	0.7	97.0	97.6	0.2	52.1	52.3	0.9	149.1	149.9
1981	2.6	18.6	21.1	0.8	12.1	12.9	3.4	30.7	34.0
1983	0.6	15.3	15.9	0.1	12.2	12.3	0.8	27.5	28.3
1985	0.2	34.0	34.2	0.0	34.7	34.7	0.2	68.7	68.9
1987	0.0	64.1	64.1	0.0	42.2	42.2	0.0	106.3	106.3
1989	1.3	129.9	131.2	0.5	62.0	62.4	1.7	191.8	193.6
1991	2.4	64.8	67.2	0.3	16.0	16.3	2.7	80.8	83.5
1993	0.1	19.0	19.0	0.0	10.6	10.6	0.1	29.6	29.6
1995	0.0	4.5	4.5	0.1	17.9	18.0	0.1	22.4	22.5
1997[d/]	NA	NA	NA	21.5	294.4	316.0	0.0	6.8	6.8
GOAL					25.0				

a/ Includes treaty Indian and non-Indian net commercial catches during the adult accounting period. Source: Puget Sound run reconstruction model.

b/ Puget Sound run size is defined as the run available to Puget Sound net fisheries. Does not include fish caught by troll and recreational fisheries.

c/ Includes estimated off-station returns.

d/ Preliminary. Nisqually escapement estimate incomplete in 1993.

TABLE B-42. Puget Sound spring chinook spawning escapement estimates in numbers of adult fish.
(Page 1 of 1)

	Stock						
Year	Skagit Hatchery	Skagit Natural	NF Nooksack Natural[a/]	NF Nooksack Hatchery	SF Nooksack Hatchery/ Natural	White River Hatchery[b/]	Quilcene Hatchery
1981	9	1,250	NA	NA	NA	197	NA
1982	33	965	NA	NA	NA	43	NA
1983	14	710	NA	NA	NA	49	NA
1984	6	747	13	183	188	51	NA
1985	12	3,249	74	62	445	60	149
1986	27	1,978	65	42	170	192	197
1987	21	1979	52	285	248	261	115
1988	120	2,064	131	837	233	631	119
1989	298	1,515	87	470	606	438	120
1990	307	1,592	3	109	142	517	76
1991	386	1,411	31	278	365	430	23
1992	249	1,001	143	1,016	103	1,156	20
1993	1,574	788	129	1,364	235	1,029	27
1994	881	899	13	549	118	1,227	10
1995	984	2,010	66	769	290	1,822	16
1996	856	1,728	156	1,070	203	1,972	12
1997	823	581	180	1,667	180	1,655	16
1998	364	1,050	157	1,280	336	1,173	5
GOAL		3,000					

a/ Natural escapement estimates based on carcass counts which are conservative. Redd counts have been made in 2 years and escapement estimates from redd counts are 3 to 4 times higher than the carcass counts.

b/ This estimate includes adult chinook returns to Hupp Springs, White River Hatchery and to the Buckley Trap.

APPENDIX C
HISTORICAL RECORD OF OCEAN SALMON FISHERY REGULATIONS AND A CHRONOLOGY OF 1998 EVENTS

LIST OF TABLES

TABLE C-1. Summary of actual **California troll** salmon seasons in state and federal (EEZ) waters. (Page 1 of 4)

Year/Area/Species[a/]	Season Dates	Days	Area, Minimum Size, Gear and Other Restrictions[b/]
1971-1978			
Statewide			
All except coho	Apr. 15-May 14	30	
All	May 15-Sept. 30	139	
1979 Statewide			
All except coho	Apr. 15-May 14	30	State waters.
All except coho	May 1-23	23	EEZ.
All	May 15-Sept. 30	139	State waters.
All	May 24-June 15; July 1-Sept. 30	115	EEZ.
1980 Statewide			
All except coho	May 1-15	15	
All	May 16-31; July 1-Sept. 30	108	Closed north of Cape Vizcaino July 1-15, except open in state waters July 4-12.
1981 Statewide			
All except coho	May 1-15	15	
All	June 1-30	30	State waters.
All	May 16-31; July 1-Sept. 30	108	
1982 Statewide			
All except coho	May 1-15	15	Open in state waters south of Pt. Arena Apr. 22-30 (approval of 1982 federal regulations was delayed).
All	May 16-June 15; July 1-Sept. 30	123	Closed north of Pt. Arena June 9-15.
1983 Oregon-California Border to Cape Vizcaino			
All except coho	May 16-31	16	
All	June 1-15; July 1-Aug. 31	77	Klamath River mouth 12 mi square closed in Aug.
All	June 17-27	11	State waters.
Cape Vizcaino to Pt. Arena			
All except coho	May 1-31	31	
All	June 1-15; July 1-Sept. 30	107	
South of Pt. Arena			
All except coho	Apr. 22-May 31	40	
All	June 1-15; July 1-Sept. 30	107	
1984 Oregon-California Border to Pt. Delgada			
All except coho	May 16-June 6; July 16-Aug. 22	60	Klamath River mouth 12 mi square closed in Aug.
All	Aug. 16-22	7	State waters opened by California Legislature; Klamath River mouth 12 mi square closed.
Pt. Delgada to Pt. Arena			
All except coho	May 1-Sept. 30	153	
All	Aug. 16-Sept. 30	46	State waters opened by California Legislature.
South of Pt. Arena			
All except coho	May 1-31	31	
All	June 1-Sept. 30	122	
1985 Oregon-California Border to Pt. Delgada			
All except coho	Closed		
South of Pt. Delgada			
All except coho	May 1-31	31	
All	June 1-Sept. 30	122	
1986 Oregon-California Border to Pt. Delgada			
All	June 16-19; 23-26; June 30-July 5; July 17-24	22	Klamath River mouth 12 mi square closed; no more than 2 coho per chinook.
All except coho	July 25-Aug. 26	33	Klamath River mouth 12 mi square closed.
All	Sept. 8-30	23	Open from south jetty of Humboldt Bay to Punta Gorda 0-6 mi.
South of Pt. Delgada			
All except coho	May 1-31; Aug. 21-Sept. 30	72	
All	June 1-Aug. 20	81	

TABLE C-1. Summary of actual **California troll** salmon seasons in state and federal (EEZ) waters. (Page 2 of 4)

Year/Area/Species[a/]	Season Dates	Days	Area, Minimum Size, Gear and Other Restrictions[b/]
1987 Oregon-California Border to Pt. Delgada			
All	June 1-3; 7-10; 14-25	19	Klamath River mouth 12 mi square closed; 2 coho, then no more than 1 coho per chinook.
All	Sept. 8-30	23	Open from Trinidad Head to Punta Gorda 0-6 mi.
Pt. Delgada to Pt. Arena			
All except coho	May 1-31	31	
All	June 1-3; 7-10; June 14-July 21	45	
All except coho	July 22-Sept. 30	71	
South of Pt. Arena			
All except coho	May 1-31; July 22-Sept. 30	102	
All	June 1-July 21	51	
1988 Oregon-California Border to Horse Mt.			
All	June 5-7	3	Klamath River mouth 12 mi square closed.
All	Sept. 1-8	8	Open from Trinidad Head to Punta Gorda 0-6 mi.
Horse Mt. to Pt. Arena			
All except coho	May 1-31; Aug. 20-Sept. 30	73	In May north of Cape Vizcaino: open 0-3 mi under state imposed 8,000 chinook quota; closed in EEZ.
All	June 5-8; 12-15; 19-22; 26-29; July 3-6; 10-13; July 17-Aug. 19	58	
South of Pt. Arena			
All except coho	May 1-31; Aug. 20-Sept. 30	42	
All	June 1-Aug. 19	80	
1989 Oregon-California Border to Punta Gorda			
All	June 5-8	4	Klamath River mouth 12 mi square closed.
All except coho	Aug. 18-20; 22-31	13	Klamath River mouth 12 mi square closed.
All	Sept. 15-Oct. 31	47	Open from Trinidad Head to Punta Gorda 0-6 mi.
Horse Mt. to Pt. Arena			
All except coho	May 1-17	17	
All	June 5-17; July 2-14; July 29-Sept. 30	90	
South of Pt. Arena			
All except coho	May 1-31	31	
All	June 1-Sept. 30	122	
1990 Oregon-California Border to Punta Gorda			
All except coho	Aug. 1-6; 8-31;	30	Klamath River mouth 12 mi square closed.
All	Sept. 3-Oct. 31	59	Open from Trinidad Head to Punta Gorda 0-6 mi.
Horse Mt. to Pt. Arena			
All except coho	May 1-29; Sept. 22-30	38	
All	June 6-11; 20-25; July 4-9; 18-23; Aug. 1-Sept. 21	76	
South of Pt. Arena			
All except coho	May 1-31; Sept. 22-30	40	
All	June 1-Sept. 21	113	
1991 Oregon-California Border to Punta Gorda			
All	Sept.1-Oct. 31	61	Open from Trinidad Head to Punta Gorda 0-6 mi.
Horse Mt. to Pt. Arena			
All	Aug. 1-2; 12-27;	18	
All except coho	Aug. 3-11; Aug. 28-Sept. 30	43	
Pt. Arena to Pt. San Pedro			
All except coho	May 1-31; July 12-15; Aug. 3-11; Aug. 28-Sept. 30	78	
All	June 8-12; June 26-July 2; July 11; Aug. 1-2; Aug. 12-27;	31	
South of Pt. San Pedro			
All except coho	May 1-31; July 12-31; Aug. 3-11; Aug. 28-Sept. 30	60	
All	June 1-July 11; Aug. 1-2; Aug. 12-27	59	

TABLE C-1. Summary of actual **California troll** salmon seasons in state and federal (EEZ) waters. (Page 3 of 4)

Year/Area/Species[a/]	Season Dates	Days	Area, Minimum Size, Gear and Other Restrictions[b/]
1992 Oregon-California Border to Horse Mt.			
	Closed		
Horse Mt. to Pt. Arena			
	Closed		
Pt. Arena to Pt. San Pedro			
All except coho	May 1-10; Aug. 8-Sept. 30	64	May 1-10, open only south of Pt. Reyes.
All	Aug. 1-7	7	
South of Pt. San Pedro			
All except coho	May 1-31; Aug. 8-Sept. 30	85	
All	June 1-Aug. 7	68	
1993 Oregon-California Border to Horse Mt.			
	Closed		
Horse Mt. to Pt. Arena			
All except coho	May 1-6; Sept. 1-30	36	May 1-6, open only 0-3 mi.
Pt. Arena to Pt. San Pedro			
All except coho	May 1-31; July 26-Aug. 31; Sept. 6-30	93	
South of Pt. San Pedro			
All except coho	May 1-Aug. 31; Sept. 6-30	148	
1994 Oregon-California Border to Horse Mt.			
	Closed		
Horse Mt. to Pt. Arena			
All except coho	Sept. 1-30	30	
Pt. Arena to Pt. Reyes			
All except coho	Aug. 1-Sept. 30	61	
Pt. Reyes to Pt. San Pedro			
All except coho	June 15-Sept. 30	108	
South of Pt. San Pedro			
All except coho	May 1-June 11; July 1-Sept. 30	134	
1995 Oregon-California Border to Horse Mt.			
	Closed		
Horse Mt. to Pt. Arena			
All except coho	Sept. 1-30	30	
Pt. Arena to Pt. Reyes			
All except coho	July 5-Sept. 30	88	
Pt. Reyes to Pt. San Pedro			
All except coho	May 24-July 4; July 19-Sept. 30	86	
South of Pt. San Pedro			
All except coho	May 1-June 15; July 19-Sept. 30	120	
1996 Oregon-California Border to Humboldt South Jetty			
All except coho	Aug. 15-22	8	No more than 4 spreads per line; minimum size limit 27 in; 30 fish daily landing limit; Klamath River mouth 12 mi square closed.
All except coho	Sept. 1-14	14	No more than 4 spreads per line; minimum size limit 27 in; 30 fish daily landing limit; Klamath River mouth 12 mi square closed.
Horse Mt. to Pt. Arena			
All except coho	Aug.1-Sept.30	61	Minimum size limit 27 in.
Pt. Arena to Pt. Reyes			
All except coho	June 1-30; Aug 1-Sept.15	76	Minimum size limit 26 in thru 6/30 and 27 in thereafter.
Bodega Head to Pt. San Pedro			
All except coho	Sept. 16-30	15	Minimum size limit 27 in.
Pt. Reyes to U.S.-Mexico Border			
All except coho	May 1-June 30; July 3-Sept. 15	136	Minimum size limit 26 in thru 6/30 and 27 in thereafter.

TABLE C-1. Summary of actual **California troll** salmon seasons in state and federal (EEZ) waters. (Page 4 of 4)

Year/Area/Species[a/]	Season Dates	Days	Area, Minimum Size, Gear and Other Restrictions[b/]
1997	Oregon-California Border to Humboldt South Jetty		
	All except coho	Sept. 1-30	30	Landing limit 30 fish per day; all fish must be landed in the area; Klamath River mouth 12 mi square closed.
	Horse Mt. to Pt. Arena		
	All except coho	Sept.1-30	30	
	Pt. Arena to Pt. Reyes		
	All except coho	July 16-Sept. 30	77	
	Pt. Reyes to Pt. San Pedro		
	All except coho	July 1-Sept. 30	92	
	Pt. San Pedro to U.S.-Mexico Border		
	All except coho	May 1-31; June 23-July 18; Sept. 1-30	87	
	Pt. Lopez to Pt. Mugu		
	All except coho	Apr. 15-22	8	All fish must be landed within the area.
1998	Oregon-California Border to Humboldt South Jetty		
	All except coho	Sept. 1-30 (6,000 chinook quota)	30	Landing limit 30 fish per day; all fish must be landed in the area; Klamath River mouth 12 mi square closed.
	Horse Mt. to Pt. Arena		
	All except coho	Sept.1-30	30	
	Pt. Arena to Pt. Reyes		
	All except coho	Aug. 1-Sept. 30	61	
	Fort Ross to Pt. Reyes		
	All except coho	July 5-31	27	Overall quota of 3,000 chinook; open only inside 6 nautical miles; landing limit of 30 fish per day; all fish must be landed in the area.
	Pt. Reyes to Pt. San Pedro		
	All except coho	July 1-Sept. 30	92	
	Pt. San Pedro to Pt. Sur		
	All except coho	May 1-31; June 16-Sept. 30	138	
	Pt. Sur to U.S.-Mexico Border		
	All except coho	May 1-Sept. 30	153	

a/ Major ports located as follows: Oregon-California border to Horse Mt. includes Crescent City and Eureka; Horse Mt. to Pt. Arena includes Shelter Cove and Fort Bragg; Pt. Arena to Pt. Reyes includes Bodega Bay; Pt. Reyes to Pt. San Pedro includes San Francisco and Half Moon Bay; South of Pt. San Pedro includes Santa Cruz, Monterey and Morrow Bay.

b/ Unless otherwise noted: (1) minimum sizes (total length) are chinook 26 in., coho 22 in; (2) single barbless hooks required and (3) no more than 6 lines per vessel.

TABLE C-2. Summary of actual **California recreational** ocean salmon regulations. (Page 1 of 2)

Year	Area	Season	Bag Limit	Minimum Size Limit (inches) All Salmon
1977	North of Tomales Pt.	All Year	3	22[a/]
	South of Tomales Pt.	Feb. 12-Nov. 13	3	22[a/]
1978	North of Tomales Pt.	All Year	3	22[a/]
	South of Tomales Pt.	Feb. 18-Nov. 12	3	22[a/]
1979	Statewide	Feb. 17-Oct. 14	2	22[a/]
1980	Statewide	Feb. 17-Oct. 13	2	22[a/]
1981	Statewide	Feb. 14-Nov. 15	2	22[a/]
1982	Statewide	Feb. 13-Nov. 14	2	22[a/]
1983	Statewide	Feb. 12-Nov. 13	2	22[a/]
1984[b/]	North of Cape Vizcaino[c/]	Feb. 18-June 15; July 1-Nov. 18	2	20
	South of Cape Vizcaino	Feb. 18-Nov. 18	2	20
1985[b/]	Statewide[d/]	Feb. 16-Nov. 17	2	20
1986[b/]	North of Pt. Delgada[c/]	Feb. 16-Mar. 28; May 24-Sept. 7	2[e/f/]	20
	South of Pt. Delgada	Feb. 15-Nov. 16	2	20
1987[g/]	North of Pt. Delgada[c/]	May 23-Sept. 13	2[f/]	20
	South of Pt. Delgada	Feb. 14-Nov. 15	2	20
1988[g/]	North of Horse Mt.[c/]	May 28-Sept. 11	2[f/]	20
		Sept. 12-30[h/]	2[f/]	20
	South of Horse Mt.	Feb. 13-Nov. 13	2	20
1989[g/]	North of Horse Mt.[c/]	May 1-Sept. 30	2[f/]	20
	South of Horse Mt.	Feb. 18-Nov. 12	2	20
1990[g/]	North of Horse Mt.	May 1-Sept. 9	2[f/i/]	20
		Sept. 10-Oct. 31[h/]	2[f/]	20
	South of Horse Mt.[j/]	Feb. 17-Nov. 18	2	20
1991[g/]	North of Horse Mt.[c/]	May 25-July 28[k/]	2[f/m/]	20
		Aug. 31-Sept. 30[l/]	2[f/m/]	20
		Oct. 1-31[h/]	2[f/]	20
	Horse Mt. to Pt. Arena	Feb. 16-Nov. 17	2	20
	South of Pt. Arena[n/]	Mar. 2-Nov. 3	2	20
1992[g/]	North of Horse Mt.	July 6-8; July 13-15; July 20; Sept. 1-7	1	20
	Horse Mt. to Pt. Arena	Feb. 15-May 31; June 30-July 16; Sept 1-Nov. 15	2	20
	Pt. Arena to Pt. San Pedro[o/]	Feb. 29-May 31; June 30-Nov. 1	2	20
		June 1-29[p/]	2	20
	South of Pt. San Pedro	Feb. 29-Nov. 1	2	20
1993[g/]	North of Horse Mt.[c/]	May 1-June 19; July 14-Aug. 28[q/]	1	20
		Sept. 1-6	1	20
	Horse Mt. to Pt. Arena	Feb. 13-Nov. 14	2	20
	South of Pt. Arena[r/]	Feb. 27-Oct. 31	2[s/]	20
1994[g/]	North of Horse Mt.[c/t/]	May 1-June 7; Aug. 27-31; Sept. 1-5	2	20
	Horse Mt. to Pt. Arena[u/]	Feb. 12-June 30; Aug. 1-Nov. 13	2	20
	South of Pt. Arena[u/v/]	Feb. 26-Oct. 30	2	20

TABLE C-2. Summary of actual **California recreational** ocean salmon regulations. (Page 2 of 2)

Year	Area	Season	Bag Limit	Minimum Size Limit (inches) All Salmon
1995[g/]	North of Horse Mt.[c/t]	May 17-July 1; Aug. 16-18[q/]	1[f/]	20
		Sept. 1-9	1	20
	Horse Mt. to Pt. Arena[u/]	Feb. 18-June 30; Aug. 1-Nov. 12	2	20
	South of Pt. Arena[u/v/]	Mar. 4-Oct. 29	2	20
1996[g/]	North of Horse Mt.[c/t/w/]	May 12-July 7; Aug. 18-Sept. 21	1	20
	Horse Mt. to Pt. Arena[t/w/x/]	Feb. 17-July 7; Aug. 1-Nov.17	2	24
	Pt. Arena to Pt. San Pedro[t/w/]	Mar. 2-Oct. 14[y/]	2	24[z/]
	South of Pt. San Pedro[t/w/]	Mar. 2-Aug. 25[y/]	2	24[z/]
1997[g/]	North of Horse Mt.[c/t/w/]	May 24-30; June 17-July 6; Aug. 12-Sept. 14	1	20
	Horse Mt. to Pt. Arena[t/w/]	Feb. 15-July 6; Aug. 1-Nov.16	2	24
	Pt. Arena to Pigeon Pt.[t/w/x/]	Mar. 29-Nov. 2	2	24[aa/]
	South of Pigeon Pt.[t/w/x/]	Mar. 15-Oct. 19	2	24
1998[g/]	North of Horse Mt.[c/t/w/]	May 23-June 10; June 21-July 5; Aug. 11-Sept. 13	1	20
	Horse Mt. to Pt. Arena[t/w/]	Feb. 14-July 5; Aug. 1-Nov.15	2	24
	Pt. Arena to Pigeon Pt.[t/w/x/]	Mar. 28-Nov. 1	2	24[aa/]
	South of Pigeon Pt.[t/w/x/]	Mar. 14-Sept. 7	2	24

a/ Except that 1 salmon per day could be less than 22 inches, but not less than 20 inches.
b/ Only single-point barbless hooks.
c/ The 12-mile square off the Klamath River mouth closed during the month of Aug.
d/ Closed to salmon fishing north of Pt. Delgada on Mondays and Tuesdays, July 19-Aug. 31 by action of the California Fish and Game Commission; 12-mile square closed off Klamath River mouth Aug. 1-31.
e/ Prior to June 23, not more than 1 coho and 1 chinook.
f/ Beginning in May, not more than 6 salmon in any 7 consecutive days.
g/ Only single-point barbless hooks north of Pt. Conception. In 1993, only one rod could be used per angler north of Pt. Conception (see footnote w for similar restriction on the number of rods in 1996-1998).
h/ Open only from Trinidad Head to Punta Gorda inside 6 miles.
i/ Only 1 could be a chinook, June 30-Aug. 15.
j/ A control zone near the mouth of San Francisco Bay closed Mar. 1-Apr. 30 and Nov. 1-18.
k/ Closed Tuesdays and Wednesdays each week.
l/ Closed Monday through Thursday each week except open Monday, Sept. 2.
m/ Only 1 could be a chinook.
n/ A control zone near the mouth of San Francisco Bay closed Mar. 2-31.
o/ A control zone (at the mouth of San Francisco Bay) closed Feb. 29-Apr. 3.
p/ Open inside conservation zone near the mouth of San Francisco Bay.
q/ Open Wednesday through Saturday only.
r/ Control zone at the mouth of San Francisco Bay closed Feb. 27-Apr. 2.
s/ Sept. 1 through end of season only 1 fish of the 2-fish bag limit could be 26 inches or longer.
t/ All salmon except coho.
u/ All salmon through Apr. 30, then all salmon except coho.
v/ Control zone at mouth of San Francisco Bay closed from opening of season through Mar. 31.
w/ All persons fishing for salmon, and all persons fishing from a boat with salmon on board, may use no more than one rod per angler north of Point Conception.
x/ The following special gear restrictions were in effect to reduce hook-and-release mortality from mooching. Beginning July 1, 1996 from Point Conception to Horse Mt., when fishing with bait and 1 pound or less of weight, the size, number and spacing of hooks were restricted. In 1997 from Pt. Conception to Pt. Arena, when fishing with bait and 1 pound or less of weight, the size, number and spacing of hooks were restricted and circle hooks were required beginning Sept. 2. In 1998 from Pt. Conception to Pt. Arena, when fishing by any means other than trolling, the size, number and spacing of hooks were restricted and circle hooks were required.
y/ Closed in federal waters July 2-14 to reduce impacts on Sacramento winter chinook to account for a delay in increasing the size limit within state waters during this same time.
z/ After July 1, minimum size limit 26 inches; except the 24 inch limit remained in effect within state waters thru July 14.
aa/ Except no minimum size limit at the following times and locations: in 1997, Pt. Reyes to Pigeon Pt. from July 1-Sept. 1; in 1998, Pt. Arena to Pigeon Pt. from July 1-Sept. 7.

TABLE C-3. Summary of actual **Oregon troll** salmon seasons in state and federal (EEZ) waters. (Page 1 of 6)

Year	Area	Seasons		Number of Days		Minimum Size Limit	
		All-Salmon-Except-Coho	All Salmon	All Except Coho	All Salmon	Chinook	Coho
1979	North of Cape Falcon	May 1-31	July 1-24; Aug. 4-31[a/]	31	52	28	16
	Cape Falcon to OR/CA Border	May 1-31; Sept. 4-Oct. 31	July 1-Sept. 3[b/]	89	65	26	16
	Cape Blanco to Humbug Mt. and Goat Island to OR/CA Border	Nov. 1-30[c/]	-	30	-	26	-
1980	North of Cape Falcon	May 1-31	July 15-Sept. 8	31	56	28	16
	Cape Falcon to Cape Blanco	May 1-31; June 16-30; Sept. 9-Oct. 31	July 15-Sept. 8	99	56	26	16
	Cape Blanco to OR/CA Border	May 1-31; Sept. 9-Oct. 31	July 15-Sept. 8	84	56	26	16
	Cape Blanco to Humbug Mt. and Goat Island to OR/CA Border	Nov. 1-30[c/]	-	30	-	26	-
1981	North of Cape Falcon	May 1-31	July 15-Aug. 21[d/e/]	31	38	28	16
	Cape Falcon to OR/CA Border	May 1-31; Aug. 22-Sept. 8;[f/] Sept. 9-Oct. 31	July 1-Aug. 21[e/]	102	52	26	16
	Cape Blanco to Humbug Mt. and Goat Island to OR/CA Border	Nov. 1-30[c/]	-	30	-	26	-
1982	North of Cape Falcon	May 1-31	July 1-8	31	8	28	16
	Cape Falcon to Cape Blanco	May 1-June 15; July 13-Oct. 31	July 1-12	157	12	26	16
	Cape Blanco to OR/CA Border	May 1-June 8; July 13-Oct. 31	July 1-12	150	12	26	16
	Cape Blanco to Humbug Mt. and Goat Island to OR/CA Border	Nov. 1-30[c/]	-	30	-	26	-
1983	North of Cape Falcon	May 1-31	July 1-31;[g/] Aug. 10-Sept. 8[h/]	31	61	28	16
	Cape Falcon to Cape Kiwanda	May 1-31	Aug. 1-Sept. 4	103	35	26	16
	Cape Kiwanda to Heceta Head	May 1-31; June 1-15; Sept. 5-Oct. 31	July 1-25; Aug. 1-Sept. 4	103	60	26	16
	Heceta Head to Cape Blanco	May 1-31; June 1-15; July 26-Oct. 31[i/]	July 1-25	144	25	26	16
	Cape Blanco to OR/CA Border	May 16-31; June 1-15; July 26-Sept. 15;[j/] Oct. 1-31	July 1-25	114	25	26	16
	Cape Blanco to Humbug Mt.	Nov. 1-30[c/]	-	30	-	26	-
1984	North of Cape Falcon	May 1-7	-	7	-	28	-
	Columbia River to Cape Falcon	-	Aug. 4-6	-	3	28	16
	Cape Falcon to Cape Blanco	May 1-June 15; July 1-Sept. 21[k/]	-	129	-	26	-
	Manhattan Beach to Pyramid Rock	Oct. 1-31[c/]	-	31	-	26	-
	Cape Blanco to OR/CA Border	May 16-June 6; July 16-Aug. 22	-	60	-	26	-
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 30[c/]	-	61	-	26	-

TABLE C-3. Summary of actual **Oregon troll** salmon seasons in state and federal (EEZ) waters. (Page 2 of 6)

Year	Area	Seasons		Number of Days		Minimum Size Limit	
		All-Salmon-Except-Coho	All Salmon	All Except Coho	All Salmon	Chinook	Coho
1985	North of Cape Falcon	May 1-14; May 21-31	Aug. 21	25	1	28	16
	Cape Falcon to Cape Blanco	May 1-June 30; July 27-Oct. 31	July 1-26[l/]	158	26	26	16
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 30[c/]	-	61	-	26	-
	Tower Rock to Cape Blanco	Nov. 1-30[c/]	-	30	-	26	-
1986	North of Cape Falcon	May 1-10; 14-17; 24-27; 30-31	Aug. 2-3; Aug. 7-9	20	5	28	16
	Cape Falcon to Cape Perpetua	May 1-June 30; July 25-Oct. 31	July 1-20; July 23-24[m/]	160	22	26	16
	Cape Perpetua to Cape Blanco	May 1-June 30; July 25-Oct. 31	July 1-20; July 23-24[n/]	160	22	26	16
	Twin Rocks to Pyramid Rock	Nov. 1-15	-	15	-	26	-
	Sisters Rocks to Chetco Pt.[o/]	May 1-June 6	-	37	-	26	-
	Cape Blanco to OR/CA Border	July 25-Aug. 26	June 16-19; 23-26; June 30-July 5; July 17-24[p/]	24	22	26	22
	Sisters Rocks to Mack Arch	Aug. 29	-	1	-	26	-
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 26	-	57	-	26	-
1987	North of Cape Falcon	May 1-10; May 14-15	July 25-26	12	2	28	16
	Cape Falcon to Cascade Head	May 1-July 14; Sept. 16-Oct. 31	July 15-28; Aug. 1-Sept. 15[q/r/]	121	60	26	16
	Cascade Head to Cape Perpetua	May 1-July 14; Sept. 16-Oct. 31	July 15-28;[q/] Aug. 1-Sept. 15[r/s/]	121	60	26	16
	Cape Perpetua to Cape Blanco	May 1-June 30; Sept. 16-Oct. 31[t/]	July 1-28; Aug. 1-Sept. 15[r/u/]	107	74	26	16
	Sisters Rocks to Chetco Pt.[o/]	May 1-14	-	14	-	26	-
	Cape Blanco to OR/CA Border	-	June 1-3; June 7-10; June 14-25[l/]	-	19	26	22
	Cape Blanco to Humbug Mt.[c/]	Oct. 1-Nov. 30	-	61	-	26	-
1988	North of Cape Falcon	May 1-June 14	-	45	-	28	-
	Cape Falcon to Cascade Head	May 1-June 30; Aug. 20-Oct. 31	July 1-Aug. 19	134	50	26	16
	Cascade Head to Cape Arago	May 1-June 30; Aug. 20-Oct. 31	July 1-13; July 16-Aug. 19[t/]	134	48	26	16
	Cape Arago to Orford Reef Red Buoy	May 1-June 30; Aug. 20-31; Sept. 16-Oct. 31	July 16-Aug. 19	119	35	26	16
	Sisters Rocks to Chetco Pt.[o/]	May 1-4	-	4	-	26	-
	Orford Reef Red Buoy to OR/CA Border	-	June 5-7	-	3	26	22
	Sisters Rocks to Mack Arch[o/]	Sept. 1-14	-	14	-	26	-
	Orford Reef Red Buoy to Humbug Mt.[c/]	Oct. 1-31	-	31	-	26	-
	Cape Blanco to Humbug Mt.[c/]	Nov. 1-30	-	30	-	26	-

TABLE C-3. Summary of actual **Oregon troll** salmon seasons in state and federal (EEZ) waters. (Page 3 of 6)

Year	Area	Seasons		Number of Days		Minimum Size Limit	
		All-Salmon-Except-Coho	All Salmon	All Except Coho	All Salmon	Chinook	Coho
1989	North of Cape Falcon	May 1-June 8; June 13-15	Aug. 21; Aug. 24-Sept. 10[v/w/]	42	19	28	16
	Cape Falcon to Cascade Head	May 1-July 11; Aug. 18-Oct. 31	July 12-14; July 18-Aug. 17[x/]	147	34	26	16
	Cascade Head to Cape Arago	May 1-June 23; Aug. 18-Oct. 31	July 1-14; July 18-Aug. 17[y/]	129	45	26	16
	Cape Arago to Orford Reef Red Buoy	May 1-June 23; Sept. 1-Oct. 31	July 1-14; Aug. 1-Aug. 17[y/]	115	31	26	16
	Orford Reef Red Buoy to Humbug Mt.[c/]	Oct. 1-31	-	31	-	26	-
	Cape Blanco to Humbug Mt.[c/]	Nov. 1-30	-	30	-	26	-
	Humbug Mt. to OR/CA Border	Aug. 18-20; Aug. 22-31[z/]	June 5-8[z/]	13	4	26	22
	Sisters Rocks to House Rock[o/]	May 1-2	-	2	-	26	-
	Sisters Rocks to Mack Arch[o/]	Sept. 1-14	-	14	-	26	-
1990	North of Cape Falcon	May 1-14; 18-27; May 31-June 2; June 8-11; June 14	Aug. 18-21; 25-26; Aug. 30-Sept. 14; Sept. 18-19; Sept. 22-Oct. 15[aa/]	32	48	28	16
	Cape Falcon to Cascade Head	May 1-June 25; July 4-15; Sept. 1-Oct. 31	July 16-Aug. 31[bb/]	129	47	26	16
	Cascade Head to Cape Arago	May 1-June 25; Aug. 1-Oct. 31	July 4-31[cc/]	148	28	26	16
	43°30'00"N to Cape Arago[c/]	-	Nov. 1-14[dd/]	-	14	26	16
	Cape Arago to Humbug Mt.	May 1-June 25; Aug. 1-6; Aug. 15-Oct. 31	July 4-9; July 18-23[cc/]	140	12	26	16
	Sisters Rocks to House Rock[o/]	May 1-24	-	24	-	26	-
	Sisters Rocks to OR/CA Border	Aug. 1-6; Aug. 8-31	-	30	-	26	-
	Sisters Rocks to Mack Arch[o/]	Sept. 3-16	-	14	-	26	-
1991	North of Cape Falcon	May 1-June 15	Aug. 10-11[ee/]; Sept. 1-2[ff/]	46	4	28	16
	Cape Falcon to Cascade Head	May 1-June 30;[gg/] July 15-23; Aug. 1-Oct. 31	July 1-14	162	14	26	16
	Cascade Head to Florence South Jetty	May 1-June 23;[gg/] July 12-23; Aug. 1-Oct. 31	June 24-July 11	158	18	26	16
	Florence South Jetty to Cape Arago	July 12-14; Aug. 1-9	June 24-July 11	12	18	26	16
	Florence South Jetty to Humbug Mt.	Sept. 1-Oct. 31	-	61	-	26	-
	Sisters Rocks to Mack Arch	Sept. 1-15[c/]	-	15	-	26	-
1992	North of Cape Falcon	May 1-June 15	July 20-21; 25-27; July 31-Aug. 2; Aug. 6-8; 12-14; Aug. 20-22[gg/hh/ii/]	46	17	28	16
	Cape Falcon to Cascade Head	May 1-31;[gg/] Sept. 1-Oct. 31	July 22-Aug. 21;[p/] Aug. 22-31[ii/]	92	41	26	16
	Cascade Head to Florence South Jetty	May 1-31;[gg/] Aug. 8-Oct. 31	July 22-Aug. 7[p/]	116	17	26	16
	Cape Blanco to Humbug Mt.	Oct. 24-26[c/]	-	3	-	26	-

TABLE C-3. Summary of actual **Oregon troll** salmon seasons in state and federal (EEZ) waters. (Page 4 of 6)

Year	Area	Seasons		Number of Days		Minimum Size Limit	
		All-Salmon-Except-Coho	All Salmon	All Except Coho	All Salmon	Chinook	Coho
1993	North of Cape Falcon	May 1-June 15	July 14-17; 21-24; 28-31; Aug. 4-6; 27-28; Sept. 1-4; 9-12; 16-19[kk/]	46	29	28	16
	Cape Falcon to Florence South Jetty	May 1-Oct. 31[gg/]	-	184	-	26	-
	Florence South Jetty to Cape Arago	May 1-June 30; Sept. 1-Oct. 31[gg/]	-	122	-	26	-
	Cape Arago to Humbug Mt.	May 1-31; Sept. 1-Oct. 31[gg/]	-	92	-	26	-
	Cape Blanco to Humbug Mt.	Nov. 1-30[c/]	-	30	-	26	-
1994	North of Cape Falcon	-	-	-	-	-	-
	Cape Falcon to Cascade Head	May 1-June 30; Oct. 1-31[gg/]	-	92	-	26	-
	Twin Rocks to Pyramid Rock	Nov. 1-15[c/gg/]	-	15	-	26	-
	Cascade Head to Florence South Jetty	May 1-June 30; Sept. 1-Oct. 31[gg/]	-	122	-	26	-
	Florence South Jetty to Humbug Mt.	May 1-June 30; Sept. 1-Oct. 31[gg/]	-	122	-	26	-
	Cape Blanco to Humbug Mt.	Nov. 1-7[c/gg/]	-	7	-	26	-
	Sisters Rocks to House Rock	May 1-2; 5-6; 10-11; 14-15; 18-31[o/gg/]	-	22	-	26	-
	Sisters Rocks to Mack Arch	Aug. 8-31[o/gg/]	-	24	-	26	-
	Goat Island to Red Pt.	Oct. 10-25; 30-31[c/z/gg/]	-	18	-	26	-
1995	North of Cape Falcon	-	-	-	-	-	-
	Cape Falcon to Cape Arago	May 1-June 30; Aug. 1-Oct. 31[gg/ll/]	-	153	-	26	-
	Cape Arago to Humbug Mt.	May 1-June 30; Sept. 1-Oct. 31[gg/]	-	122	-	26	-
	Cape Blanco to Humbug Mt.	Nov. 1-7[mm/nn/]	-	7	-	26	-
	Sisters Rocks to House Rock	May 1-2; 5-6; 10-11; 14-15; 18-31[oo/]	-	22	-	26	-
	Sisters Rocks to Mack Arch	July 24-25[oo/]	-	2	-	26	-
	Goat Isl. to 42°01'20" N	Oct. 10-20[pp/nn/]	-	11	-	26	-
1996	North of Cape Falcon	-	-	-	-	-	-
	Cape Falcon to Cape Arago	May 1-Jun. 30; Aug. 7-Oct. 31[gg/qq/]	-	147	-	26	-
	Cape Arago to OR/CA Border	May 1-4; May 8-11; May 15-June 4[gg/]	-	29	-	26	-
	Cape Arago to Humbug Mtn.	Aug. 7-Oct. 31[gg/]	-	86	-	26	-
	Cape Blanco to Humbug Mtn.	Nov. 1-30[mm/nn/]	-	30	-	26	-
	Sisters Rocks to Mack Arch	Aug. 3-4; 7-8; 11-12; 15-31[rr/]	-	23	-	26	-
	Goat Island to 42°01'20"N	Oct. 14-31[nn/pp/]	-	18	-	26	-

TABLE C-3. Summary of actual **Oregon troll** salmon seasons in state and federal (EEZ) waters. (Page 5 of 6)

Year	Area	Seasons: All-Salmon-Except-Coho	Seasons: All Salmon	Number of Days: All Except Coho	Number of Days: All Salmon	Minimum Size Limit: Chinook	Minimum Size Limit: Coho
1997	North of Cape Falcon	May 1-June 15	-	46	-	28	-
	Cape Falcon to Cape Arago	Apr. 15-June 27; Aug. 1-31; Sept. 4-Oct. 31[gg/ss/]	-	163	-	26	-
	Twin Rocks to Pyramid Rock	Nov. 1-15[c/gg/]	-	15	-	26	-
	Cape Arago to OR/CA Border	Apr. 15- May 28	-	44	-	26	-
	Cape Arago to Humbug Mtn.	Aug. 1-Oct. 31[gg/]	-	92	-	26	-
	Cape Blanco to Humbug Mtn.	Nov. 1-30[mm/nn/]	-	30	-	26	-
	Sisters Rocks to Mack Arch	Aug. 1-2; 5-6; 9-10; 13-31[rr/]	-	25	-	26	-
	Goat Island to 42°01'20"N	Oct. 13-25; 29-30[nn/pp/]	-	15	-	26	-
1998	North of Cape Falcon	May 1-12; 20-23; June 2-4	-	19	-	28	-
	Cape Falcon to Heceta Banks (43°58'00")	Apr. 15-June 30; Aug. 1-28; Sept. 1-Oct. 31[gg/qq/]	-	166	-	26	-
	Twin Rocks to Pyramid Rock	Nov. 1-15[c/gg/]	-	15	-	26	-
	Heceta Banks (43°58'00") to Humbug Mt.	Apr. 15-June 30; Aug. 1-26; Sept. 1-Oct 31[gg/]	-	164	-	26	-
	Humbug Mtn. to OR/CA Border	Apr. 15-May 31[gg/]	-	47	-	26	-
	Cape Blanco to Humbug Mtn.	Nov. 1-30[mm/nn/]	-	30	-	26	-
	Sisters Rocks to Mack Arch	Aug. 1-2; 5-6; 9-10; 13-31[rr/]	-	25	-	26	-
	Goat Island to 42°01'20"N	Oct. 15-31[nn/pp/]	-	17	-	26	-

a/ Closed early in response to court order to meet Columbia River fall chinook treaty Indian obligations.
b/ Closed in Oregon waters Sept. 3 for coho. EEZ closed on Sept. 15.
c/ State waters only.
d/ Special lottery-selected, 10-boat only experimental troll fishery off Columbia River mouth out to 12 miles for coho only from Sept. 20-Oct. 9.
e/ State waters open until Aug. 24.
f/ From Aug. 25 in state waters, Cape Falcon to Cape Sebastian, whole bait or ≥5 inch plugs.
g/ Incidental coho allowance ≤33 percent per trip; 20,000 coho total. Conservation zone closure off Columbia River mouth, May 1-31 and July 1-31.
h/ Limited to area of Columbia River (south jetty) to Cape Falcon out to 10 miles only.
i/ From July 26-31, chinook fishing allowed from Cape Perpetua south.
j/ From Sept. 1-15, fishery limited to 12 by 24 mile area off Rogue River mouth.
k/ Sept. 1-21 state waters only.
l/ At least 1 chinook must be possessed or landed for each coho possessed or landed.
m/ A single daily possession or landing of 50 coho is permitted without chinook restrictions. Over 50 coho, at least 1 chinook must be possessed or landed for each 2 coho possessed or landed.
n/ July 1-20, at least 1 chinook must be possessed or landed for each 2 coho possessed or landed. July 23-24, see footnote m/.
o/ Open from 0 to 6 nautical miles only.
p/ At least 1 chinook must be possessed or landed for each 2 coho possessed or landed during the all salmon season.
q/ July 15-Aug. 28, a single daily possession limit of 100 coho is permitted without chinook restrictions. Over 100 coho, at least 1 chinook must be possessed or landed for each 2 coho possessed or landed.
r/ Aug. 29-Sept. 15, no more than 200 coho may be possessed or landed without chinook restrictions. Over 200 coho, at least 1 chinook must be possessed or landed for each 2 coho possessed or landed.

TABLE C-3. Summary of actual **Oregon troll** salmon seasons in state and federal (EEZ) waters. (Page 6 of 6)

s/ Aug. 1-28, at least 1 chinook must be possessed or landed for each 2 coho possessed or landed, except that 1 coho may be possessed or landed without having chinook.
t/ Sept. 16-18 closed to all commercial salmon fishing from Cape Arago to Cape Blanco.
u/ One chinook must be possessed or landed for each 2 coho possessed or landed, except that the first 2 coho may be landed without a chinook.
v/ Open from Columbia River to Cape Falcon on Aug. 21, open area extended north to Leadbetter Pt. from Aug. 24-Sept. 10.
w/ A single daily limit of 40 coho and 4 chinook in effect Aug. 21 and Aug. 24-27. Daily landing limit of 40 coho and 8 chinook in effect from Aug. 28-Sept. 10.
x/ A single daily landing of 50 coho in effect from July 18-Aug. 13. From Aug. 14-17, at least 1 chinook must be landed for each 2 coho landed, except that a single daily landing of 2 coho without any chinook is permitted.
y/ A single daily landing of 50 coho plus 3 coho for each chinook landed in effect from July 1-14. For the remainder of the season, at least 1 chinook must be landed for each 2 coho landed, except that a single daily landing of 2 coho without any chinook is permitted.
z/ A single daily landing of 20 chinook was permitted.
aa/ Vessel landing limits of not more than 20 chinook and 200 coho for Aug. 18-21 opening and not more than 200 coho for Aug. 25-26 opening. Single daily landing limits of 50 coho during Aug. 30-Sept. 24 and 100 coho after Sept. 25.
bb/ Single daily landing limit per vessel of 50 coho without landing chinook. Above 50 coho, at least 1 chinook must be landed for each coho.
cc/ At least 1 chinook must be landed for each coho landed, except 1 coho may be landed without having chinook.
dd/ Special test fishery restricted to 10 lottery selected vessels.
ee/ Open period restriction of not more than 100 coho per vessel.
ff/ Open period restriction of not more than 75 coho per vessel.
gg/ Gear restriction of not more than 4 spreads per line. In 1991 this restriction applied only in June. In 1992 and 1993 the restriction applied in May and June. Beginning in 1993, the restriction applied to the entire season.
hh/ Open period restriction of not more than 30 coho per vessel from July 20-21 and not more than 44 coho per vessel for each of the remaining open periods.
ii/ Gear restricted to 6 inch plugs or larger.
jj/ Single daily landing limit of 25 coho without landing chinook. Above 25 coho, at least 1 chinook must be landed for each 2 coho.
kk/ Gear restriction of not more than 4 spreads per line for all open periods. From July 14 through Aug. 6, gear restriction of plugs and/or whole bait 6 inches or larger. Coho landing restriction per open period as follows: not more than 50 per period from July 14 through Aug. 6; not more than 35 coho per period from Aug. 27-28; and not more than 70 per period from Sept. 1-19.
ll/ Closed at mouth of Tillamook Bay in June, Aug. and Sept.; open only 0-3 miles north of Cape Lookout in Sept.
mm/ No more than 4 spreads per line. Open 0-3 miles. Landings restricted to Port Orford.
nn/ Chinook only.
oo/ No more than 4 spreads per line. Open 0-6 nautical miles in May and 0-4 nautical miles in July. Landings restricted to Port Orford, Gold Beach and Brookings. Closed within 1 mile of Rogue River mouth.
pp/ No more than 4 spreads per line. Open 0-3 miles. Single daily landing limit of 20 chinook into the port of Brookings.
qq/ Closed at mouth of Tillamook Bay from June 1 through Sept. 15.
rr/ No more than 4 spreads per line. Open 0-4 miles. Landings restricted to Port Orford, Gold Beach, and Brookings. Closed within 1 mile of Rogue River mouth.
ss/ Closed at mouth of Tillamook Bay from April 15 through Sept. 15.

TABLE C-4. Summary of actual **Oregon recreational** ocean salmon seasons, size limits and bag limits in state and federal (EEZ) waters. (Page 1 of 4)

Year	Area	Season[a/]	Days	Bag Limit	Minimum Size Limit (inches) Chinook	Coho
1980	North of Cape Falcon	May 10-July 15	67	3	24	16
		July 16-Sept. 1	48	2	24	16
		Sept. 2-14[b/]	13	2[c/]	24	-
	South of Cape Falcon	May 10-July 15	67	3	22	16
		July 16-Sept. 1	48	2	22	16
		Sept. 2-14[b/]	13	2	22	16
		Sept. 15-Oct. 31	60	2[d/]	22	-
	Cape Blanco to Humbug Mt.	Nov. 1-30[b/]	30	2[c/]	22	-
	Goat Island to OR/CA Border	Nov. 1-30[b/]	30	2[c/]	22	-
1981	North of Cape Falcon	May 23-Aug. 26	108	2	24	16
		Aug. 27-Sept. 7[b/]	12	2	24	16
	South of Cape Falcon	May 15-Aug. 13	115	2	22	16
		Aug. 14-26	13	3	22	16
		Aug. 27-Sept. 20[b/]	25	3	22	16
	South of Cape Blanco	Sept. 21-Oct. 31	41	2[c/]	22	-
	Cape Blanco to Humbug Mt.	Nov. 1-30[b/]	30	2[c/]	22	-
	Goat Island to OR/CA Border	Nov. 1-30[b/]	30	2[c/]	22	-
1982	Leadbetter Pt. to Cape Falcon	June 12-July 24	43	2	24	16
	Columbia River South Jetty to Cape Falcon	July 25-Aug. 1[b/]	8	2[e/]	24	16
	Cape Falcon to Cape Blanco	May 29-July 21	54	2[f/]	None	None
		July 22-Aug. 1[b/]	11	2[f/]	None	None
		Aug. 2-Oct. 31	91	2[c/f/]	None	-
	Cape Blanco to Humbug Mt.	Nov. 1-30[b/]	30	2[c/f/]	None	-
	Goat Island to OR/CA Border	Nov. 1-30[b/]	30	2[c/f/]	None	-
1983	Klipsan Beach to Cape Falcon	June 18-July 29[g/h/]	42	2	24	16
		July 30-Aug. 15	17	2	24	16
	Columbia River South Jetty to Cape Falcon	Aug. 16-Sept. 11[h/i/]	44	2	24	16
	Cape Falcon to Cape Blanco	June 18-Sept. 18	93	2[f/]	None	None
	Twin Rocks to Pyramid Rock	Sept. 19-Oct. 31[b/]	43	2[c/]	24	-
	South of Cape Blanco	May 28-Sept. 18	114	2[f/]	None	None
		Sept. 19-Oct. 31	43	2[c/f/]	None	None
	Cape Blanco to Humbug Mt.	Nov. 1-30[b/]	30	2[c/f/]	None	-
1984	Columbia River South Jetty to Cape Falcon	July 28-Aug. 8[h/i/j/]	12	2[k/]	None	16
	Cape Falcon to Cape Blanco	July 9-Aug. 7	30	2	20	20
		Aug. 25-Sept. 3[b/]	10	1	20	20
	Manhattan Beach to Pyramid Rock	Sept. 15-21[b/]	7	2[c/]	20	-
	South of Cape Blanco	July 9-Aug. 7	30	2	20	20
		Aug. 8-24	17	2[c/]	20	-
		Aug. 25-Sept. 3[b/l/]	10	2[e/]	20	20
		Sept. 4-Oct. 31	58	2[c/]	20	-
	Cape Blanco to Humbug Mt.	Nov. 1-30[b/]	30	2[c/]	20	-
1985	Leadbetter Pt. to Cape Falcon	June 30-Aug. 22[h/j/m/]	40	2	24	16
	Cape Falcon to Cape Blanco	July 1-Sept. 2	64	2[f/n/]	None	None
	Twin Rocks to Pyramid Rock	Sept. 15-Oct. 31[b/]	47	2[c/n/]	None	-
	South of Cape Blanco	May 25-31; July 1-Sept. 2	71	2[f/n/]	None	None
		Sept. 3-Oct. 31	59	2[c/f/n/]	None	-
	Tower Rock to Humbug Mt.	Oct. 1-Nov. 30[b/]	61	2[c/n/]	None	-

TABLE C-4. Summary of actual **Oregon recreational** ocean salmon seasons, size limits and bag limits in state and federal (EEZ) waters. (Page 2 of 4)

Year	Area	Season[a/]	Days	Bag Limit	Minimum Size Limit (inches) Chinook	Coho
1986	Columbia River South Jetty to Cape Falcon	June 29-Aug. 19[t/n/]	37	2	24	16
	Cape Falcon to Cape Blanco	May 24-26; June 28-July 26	32	2[f/n/]	None	None
		July 27-Aug. 13[o/]	9	2[f/p/]	None	None
	Twin Rocks to Pyramid Rock	Sept. 15-Nov. 15[b/]	62	2[c/n/]	None	-
	South of Cape Blanco	May 24-June 22	30	2[q/n/]	20	20
		June 23-Sept. 7	77	2[n/]	20	20
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 26[b/]	57	2[c/n/]	20	-
	Bird Isl. to OR/CA Bdr. East of 124°20'W	Oct. 1-31[b/]	31	2[c/n/]	20	-
1987	North of Cape Falcon	June 29-Aug. 19[h/j/m/r/]	39	2	24	16
	Cape Falcon to Cape Blanco	June 13-Sept. 13	93	2[f/n/]	None	None
	Twin Rocks to Pyramid Rock	Sept. 15-Oct. 31[b/]	46	2[f/n/]	None	-
	South of Cape Blanco	May 23-Sept. 13	114	2[n/]	20	20
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 30[b/]	61	2[c/n/]	20	-
	Bird Isl. to OR/CA Bdr. East of 124°20'W	Oct. 1-31[b/]	31	2[c/n/]	20	-
1988	Klipsan Beach to Cape Falcon	July 11-24[h/m/s/]	10	2[t/]	24	16
	Cape Falcon to Orford Reef Red Buoy	May 1-27[b/u/]	27	2[n/]	20	16
		May 28-Sept. 11	107	2[n/]	20	16
	Twin Rocks to Pyramid Rock	Sept. 12-Oct. 31[b/]	50	2[c/n/]	None	-
	South of Orford Reef Red Buoy	May 28-July 9	43	2[n/]	20	20
		July 10-Sept. 11	64	1[n/]	20	20
	Orford Reef Red Buoy to Humbug Mt.	Oct. 1-31[b/]	31	2[c/n/]	None	-
	Cape Blanco to Humbug Mt.	Nov. 1-30[b/]	30	2[c/n/]	None	-
1989	North of Cape Falcon	May 28-June 12[h/v/]	10	2[c/]	24	-
	Leadbetter Pt. to Cape Falcon	June 26-Aug. 17[h/m/]	39	2	24	16
	Cape Falcon to Orford Reef Red Buoy	May 1-26[u/]	26	2[n/]	20	16
		May 27-July 27	62	2[n/]	20	16
		July 28-Aug. 20[m/]	16	2[n/]	20	16
		Sept. 2-4	3	2[n/]	20	16
	Twin Rocks to Pyramid Rock	Sept. 16-Oct. 31[b/]	46	2[c/n/]	24	-
	South of Orford Reef Red Buoy	May 1-Sept. 30	153	2[n/]	20	20
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 30[b/]	61	2[c/n/]	20	-
1990	Leadbetter Pt. to Cape Falcon	June 24-Aug. 30[h/m/]	50	2	24	16
	Cape Falcon to Humbug Mt.	May 1-27[u/]	27	2[n/]	20	16
		May 28-June 22;	26	2[n/]	20	16
		June 30-July 31;	32	2[n/]	20	16
		Aug. 8-Sept. 16	98	2[n/]	20	16
	Twin Rocks to Pyramid Rock	Sept. 17-Oct. 31[b/]	45	2[c/n/]	None	-
	South of Humbug Mt.	May 1-Sept. 9	132	2[w/n/]	20	20
1991	North of Cape Falcon	June 24-Aug. 12[h/m/]	36	2	24	16
		Sept. 15-18; Sept. 26[x/]	5	2	24	16
	Cape Falcon to Humbug Mt.	May 1-26[u/]	26	2[n/]	20	16
		May 27-July 28	62	2[n/]	20	16
	Twin Rocks to Pyramid Rock	Sept. 16-Oct. 31[b/]	47	2[c/n/]	None	-
	South of Humbug Mt.	May 25-July 28[y/]	47	2[t/n/]	20	20
		Aug. 31-Sept. 2	3	2[t/n/]	20	20
		Sept. 6-29[z/]	12	2	20	20

TABLE C-4. Summary of actual **Oregon recreational** ocean salmon seasons, size limits and bag limits in state and federal (EEZ) waters. (Page 3 of 4)

Year	Area	Season[a/]	Days	Bag Limit	Minimum Size Limit (inches) Chinook	Coho
1992	North of Cape Falcon	June 29-July 30[b/h/m/]	24	2[aa/]	24	16
		Aug. 2-6[h/m/]	5	2[aa/]	24	16
		Sept. 14-17; Sept. 27[h/]	5	2[aa/]	24	16
	Cape Falcon to Heceta Head	May 3-June 11[m/u/]	30	2[aa/bb/]	20	16
		June 14-Sept. 10[m/]	65	2[aa/bb/]	20	16
	Twin Rocks to Pyramid Rock	Sept. 16-Oct. 31[b/]	46	2[c/n/bb/]	None	-
	Heceta Head to Humbug Mt.	May 3-June 11[m/u/]	30	2[aa/bb/]	20	16
		June 14-July 2[m/]	15	2[aa/bb/]	20	16
		July 5-Aug. 31[m/cc/]	42	2[aa/bb/]	-	16
		Sept. 1-Sept. 10[m/]	8	2[aa/bb/]	20	16
	Cape Blanco to Humbug Mt.	Oct. 24-26[b/]	3	1[c/aa/bb/]	20	-
	South of Humbug Mt.	July 6-20[dd/]	7	1	20	20
		Sept. 1-7	7	1	20	20
	Goat Island to Red Pt.	Oct. 15-26[b/]	12	1[c/n/]	20	-
1993	North of Cape Falcon	July 5-Sept. 9[h/m/]	49	2[aa/aa/]	24	16
		Sept. 12-23	12	2	24	16
	Cape Falcon to Humbug Mt.	May 1-June 6[m/u/]	37	2[p/ff/]	20	16
		July 13-Aug. 10[ee/]	13	2[p/ff/]	20	16
	Twin Rocks to Pyramid Rock	Sept. 16-Oct. 31[b/]	46	2[c/n/ff/]	None	-
	Cape Blanco to Humbug Mt.	Oct. 1 - Nov. 30[b/]	61	1[c/n/ff/]	20	-
	South of Humbug Mt.	May 5-June 19[gg/]	28	1[n/]	20	20
		July 14-Aug. 28[gg/]	28	1[n/]	20	20
		Sept. 1-6	6	1[n/]	20	20
1994	North of Cape Falcon	-	-	-	-	-
	Cape Falcon to Humbug Mt.	May 1-June 5[u/]	36	2[c/p/ff/]	20	-
	Twin Rocks to Pyramid Rock	June 6-19 and Oct. 1-Nov. 15[b/]	60	2[c/p/ff/]	20	-
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 7[b/]	38	1[d/aa/]	20	-
	South of Humbug Mt.	May 1-June 7; Aug. 27-31; Sept. 1-5	48	2[c/n/]	20	-
	Goat Island to Red Pt.	Oct. 10-20[b/]	11	1[d/aa/]	20	-
1995	North of Cape Falcon	July 24-Sept. 5; Sept. 10-11[m/]	37	2[aa/cc/hh/]	-	16
	Cape Falcon to Humbug Mt.	May 1-June 30	61	2[c/ii/]	20	-
	Twin Rocks to Pyramid Rock	Sept. 16-Nov. 15[b/]	61	2[d/ii/]	20	-
	Cape Foulweather to Seal Rock	Sept. 16-Oct. 31[b/]	46	2[d/ii/]	20	-
	3 Miles North of North Coos Bay Jetty to Cape Arago	Sept. 16-Oct. 31[b/]	46	2[d/ii/]	20	-
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 7[b/]	38	2[d/aa/ii]	20	-
	South of Humbug Mt.	May 17-July 1; Aug. 16-18[gg/]	31	1[c/]	20	-
		Sept. 1-9	9	1[c/n/]	20	-
	Goat Isl. to 42°01'20" N	Oct. 10-15; 21-22[b/]	8	1[d/aa/]	20	-
1996	North of Cape Falcon	July 22-Sept. 26[m/]	49	2[aa/cc/]	-	16
	Cape Falcon to Humbug Mt.	May 1-July 7; Aug. 16-Sep. 30	114	2[c/n/jj/]	20	-
	Twin Rocks to Pyramid Rock	Oct. 1-31[b/]	31	2[aa/d/jj]	20	-
	Cape Blanco to Humbug Mt.	Oct. 1-Nov. 30[b/]	61	1[d/aa/]	20	-
	South of Humbug Mt.	May 12-July 7; Aug. 18-Sept. 21	92	1[c/aa/]	20	-
	Goat Isl. to 42°01'20"	Oct. 5-13[b/]	9	1[d/aa/]	20	-

TABLE C-4. Summary of actual **Oregon recreational** ocean salmon seasons, size limits and bag limits in state and federal (EEZ) waters. (Page 4 of 4)

Year	Area	Season[a/]	Days	Bag Limit	Minimum Size Limit (inches) Chinook	Coho
1997	North of Cape Falcon	July 21-Aug. 7[m/]	14	2[aa/]	24	16
	Cape Falcon to Humbug Mt.	Apr. 15-July 6; Aug. 1-Oct. 31	175	2[c/n/kk/]	20	-
	Twin Rocks to Pyramid Rock	Aug. 1-Nov. 15[b/]	107	2[aa/d/kk/]	20	-
	Cape Blanco to Humbug Mt.	Nov. 1-30[b/]	30	1[d/aa/]	20	-
	South of Humbug Mt.	May 24-30; June 17-July 6; Aug. 12-Sept. 14	61	1[c/aa/]	20	-
	Goat Isl. to 42°01'20"	Oct. 4-12[b/]	9	1[d/aa/]	20	-
1998	North of Cape Falcon	Aug. 3-9; Sept. 3[m/]	6	2[aa/]	24	16
	Cape Falcon to Humbug Mt.	Apr. 15-July 5; Aug. 1-Oct. 31	174	2[c/n/ll/]	20	-
	Twin Rocks to Pyramid Rock	Aug. 1-Nov. 15[b/]	107	2[aa/d/ll/]	20	-
	Cape Blanco to Humbug Mt.	Nov. 1-30[b/]	30	1[d/aa/]	20	-
	South of Humbug Mt.	May 23-June 10; June 21-July 5; Aug. 11-Sept. 13	68	1[c/aa/]	20	-
	Goat Isl. to 42°01'20"	Oct. 5-14[b/]	10	1[d/aa/]	20	-

a/ Dates are inclusive.
b/ Open in state waters only.
c/ Open for all-salmon-except-coho.
d/ Open for chinook only.
e/ Only 1 coho allowed in bag limit.
f/ Must retain the first 2 salmon caught.
g/ Open inside of 6 miles from Cape Falcon north to 46°06'00" and inside of 3 miles from 46°06'00" to the south jetty of the Columbia River.
h/ Mouth of the Columbia River is closed.
i/ Open inside of 10 miles from Cape Falcon north to the Lightship Buoy then on a line to the south jetty of the Columbia River.
j/ Closed inside 3 miles from Leadbetter Pt. to Klipsan Beach and 0 to 200 miles from Klipsan Beach to Red Buoy Line.
k/ Open for all-salmon-except-chinook.
l/ Federal waters (3 to 200 miles) open for all-salmon-except-coho.
m/ Open Sunday through Thursday only.
n/ No more than 6 fish in 7 consecutive days.
o/ Open Tuesday through Saturday only.
p/ No more than 2 fish in 7 consecutive days.
q/ Only 1 coho and 2 chinook allowed in bag limit.
r/ Closed inside of 3 miles between Cape Falcon and Columbia River (Red Buoy Line).
s/ Open inside of 3 miles from Cape Falcon to the Red Buoy Line and inside of 5 miles from North Head to Klipsan Beach.
t/ Only 1 chinook allowed in bag limit.
u/ Open only inside the 27 fathom curve.
v/ Open Sundays and Mondays only.
w/ Only 1 chinook allowed in bag limit of 2 salmon from June 30-Aug. 15.
x/ Open from Red Buoy Line south to Cape Falcon.
y/ Open Thursday through Monday only.
z/ All-salmon fishery with 1 chinook allowed and open on Fridays, Saturdays and Sundays only.
aa/ No more than 4 fish in 7 consecutive days.
bb/ No more than 20 fish per year.
cc/ Open for all salmon except chinook.
dd/ Open Monday through Wednesday only.
ee/ Open Sunday through Tuesday only.
ff/ No more than 10 fish per year.
gg/ Open Wednesday through Saturday only.
hh/ Closed inside 3 miles.
ii/ No more than 6 fish in 7 consecutive days, except no more than 4 fish in 7 consecutive days in Sept. 16-Nov. 15 fishery between Twin Rocks and Pyramid Rock. Gear limited to artificial plugs or whole bait, no less than 6 inches long; no more than 2 hooks; nonpainted weights; all attractors prohibited (clear divers are legal). Plug cut bait allowed between Twin Rocks and Pyramid Rock Sept. 16-Nov. 15. Closed in Tillamook Bay mouth control zone June 1-30 and Sept. 16-30.
jj/ Legal gear was limited to artificial lures, plugs or bait no less than 6 inches long (excluding hooks and swivels) with no more than 2 single-point, single-shank, barbless hooks; flashers and divers prohibited.
kk/ Legal gear was limited to artificial lures, plugs or bait no less than 6 inches long (excluding hooks and swivels) with no more than 2 single-point, single-shank, barbless hooks. Divers were prohibited. Flashers were prohibited until May 1 and then could only be used with downriggers. Flashers were totally prohibited inside state waters between Twin Rocks and Pyramid Rock beginning August 1.
ll/ Legal gear was limited to artificial lures or plugs of any size or bait no less than 6 inches long (excluding hooks and swivels) with no more than 2 single-point, single shank, barbless hooks. Divers were prohibited. Flashers were prohibited except for use with downriggers. Flashers were totally prohibited inside state waters between Twin Rocks and Pyramid Rock beginning Aug. 1.

TABLE C-5. Summary of actual **Washington non-Indian troll** salmon fishing seasons. (Page 1 of 2)

Year	Area	Seasons		Number of Days		Size Limit[a/]	
		All Salmon Except Coho	All Salmon	All Except Coho	All Salmon	Chinook	Coho
1971-1975	Statewide	Apr. 15-June 14	June 15-Oct. 31	61	139	26	16[b/]
1976	Statewide	May 1-June 14	June 15-22; July 1-Oct. 31	45	131	26	16[b/]
1977	North of Pt. Grenville	May 1-June 14	July 1-Sept. 15	45	77	28[c/]	16[b/]
	South of Pt. Grenville	May 1-June 14	July 1-Oct. 9	45	101	28[c/]	16
1978	North of Pt. Grenville	May 1-June 14	July 1-Sept. 15	45	77	28	16
	South of Pt. Grenville	May 1-June 14	July 1-Oct. 31	45	123	28	16
1979	Statewide	May 1-31	July 1-24; Aug. 4-31[d/]	31	52	28	16
1980	North of Leadbetter Pt.	May 1-31	July 15-Aug. 25	31	42	28	16
	South of Leadbetter Pt.	May 1-31	July 15-Sept. 8	31	56	28	16
1981	Statewide	May 1-31	July 15-Aug. 21	31	38	28	16
1982	North of Leadbetter Pt.	May 1-31	July 15-30	31	16	28	16
	South of Leadbetter Pt.	May 1-31	July 1-8	31	8	28	16
1983	Statewide	May 1-31	July 1-31[e/]	31	31	28	16
1984	Statewide	May 1-7	-	8	-	28	-
	North of Cape Alava	-	Aug. 4-6	-	3	-	16
1985	Statewide	May 1-14; May 21-31	-	25	-	28	-
	Cape Alava to Leadbetter Pt.	-	July 15-18	-	4	28	16
	Carroll Island to U.S.-Canada Border	Aug. 3-31[f/]	-	-	29	28	-
1986	Statewide	May 1-10; 14-17; 24-27;30-31	-	20	-	28	-
	Carroll Island to U.S.-Canada Border	-	Aug. 2-3; 8-9	-	4	28	16
	South of Leadbetter Pt.	-	Aug. 2-3; 7-9	-	5	28	16
1987	Statewide	May 1-10; May 14-15	-	12	-	28	-
	Cape Alava to Cape Falcon	-	July 25-26	-	2	28	16
1988	Statewide	May 1-June 14	No Fishery	45	0	28	-
1989	South of Queets River	May 1-June 8; June 13-15	-	42	-	28	16
	Carroll Island to U.S.-Canada Border	-	Aug. 7-10; Aug. 10-18	-	7	28	16
	Columbia River Red Buoy Line to Cape Falcon	-	Aug. 21[g/]	-	1	28	16
	Leadbetter Pt. to Cape Falcon	-	Aug. 24-Sept. 10[g/]	-	18	28	16
1990	Statewide	May 1-14; 18-27; May 31-June 2; June 8-11; June 14	-	32	-	28	-
		-	Aug. 18-21; 25-26[h/]	-	6	28	16
	South of Leadbetter Pt.	-	Aug. 30-Sept. 14; Sept. 18-19; Sept. 22-Oct. 15[i/]	-	42	28	16
	Cape Alava to South End of Destruction Island	-	Sept. 15-16; Sept. 19-Oct. 31[j/]	-	45	28	16

TABLE C-5. Summary of actual **Washington non-Indian troll** salmon fishing seasons. (Page 2 of 2)

Year	Area	Seasons		Number of Days		Size Limit[a/]	
		All Salmon Except Coho	All Salmon	All Except Coho	All Salmon	Chinook	Coho
1991	Statewide	May 1-June 15		46	-	28	-
	Carroll Island to U.S.-Canada Border	-	Aug. 16-19; 23-26; Aug. 30-Sept. 2; Sept. 6-9; Sept. 13-15[k/]	-	19	28	16
	Copalis Head to Cape Falcon	-	Sept. 1-2[l/]	-	2	28	16
	Leadbetter Pt. to Cape Falcon	-	Aug. 10-11[m/]	-	2	28	16
1992	Statewide	May 1-June 15	-	46	-	2	16
			July 20-21;[n/] July 25-27; July 31-Aug. 2; Aug. 6-8; Aug. 12-14; Aug. 20-22	-	17	28	16
1993	Statewide	May 1-June 15	-	46	-	28	-
	Statewide	-	July 14-17; 21-24; 28-31; August 4-6[p/]	-	15	28	16
	Carroll Island to U.S.-Canada Border	Aug. 8-25[o/]	-	18[o/]	-	-	-
	Queets River to Cape Falcon, OR	-	Aug. 27-28; Sept. 1-4; 9-12; Sept. 16-19[q/]	-	14	28	16
1994	Statewide	-	-	-	-	-	-
1995	Carroll Island to U.S.-Canada Border	-	Aug. 5-8; 12-15; 19-22; 26-29; Sept. 2-3[r/]	-	18[r/]	-	16
1996	Leadbetter Pt. to U.S.-Canada Border	-	July 26-28; Aug. 2-4; 9-11, 16-18; 23-24[s/]	-	14[s/]	-	16
1997	U.S.-Canada Border to Cape Falcon	May 1-June 15	-	46	-	28	-
1998	U.S.-Canada Border to Cape Falcon	May 1-12; 20-23; June 2-4[t/]	-	19	-	28	-

a/ Inches total length.
b/ Effective annually beginning on Aug. 1.
c/ Only partial compliance in 1977.
d/ U.S. District Court ordered 10-day closure of all-species season July 25-Aug. 3.
e/ No more than 1 coho could be retained for every 2 chinook retained. North of Carroll Island it was illegal to retain sockeye or pink salmon except during a special season to take only sockeye and pink salmon from Aug. 7-20. Gear in this special Aug. fishery was restricted to bare, blued hooks and flashers.
f/ Pink and chinook salmon only, gear restricted to barbless, bare, blued hooks and flashers. Effective Aug. 22, state landing restriction of not more than 1 chinook per 20 pinks.
g/ Daily landing limit of 40 coho and 4 chinook.
h/ Landing limit of 200 coho and 20 chinook per open period. Chinook restriction dropped Aug. 25-26.
i/ Daily landing limit of 50 coho. Increased to 100 on Sept. 25.
j/ Allowed 15 vessels, which were drawn at random by WDF, to participate in the limited participation fishery.
k/ Landing limit of 80 coho per 4-day open period. Gear restricted to barbless, bare, blued or pink hooks and flashers or pink hoochies of 3 inches or less.
l/ Landing limit of 75 coho per 2-day open period.
m/ Landing limits of 100 coho per 2-day open period.
n/ Gear restricted to 6 inch or larger plugs only and no more than 4 spreads per line during the entire all-salmon season. Landing limit of 30 coho per 2-day open period through July 21. Landing limit changed to 44 coho per 3-day open period starting July 25.
o/ All-salmon-except chinook or coho salmon. Gear restricted to flashers with barbless, bared blue hooks only.
p/ Gear restricted to plugs or whole bait 6 inches or longer and no more than 4 spreads per line. Possession limit of 50 coho per 4-day open period.
q/ Possession limit of 35 coho Aug. 27-28, then modified to 70 coho for remaining periods. Fishery restricted to area south of Leadbetter Pt. for Sept. 16-19.
r/ All except chinook. Possession and landing limit per opening: 80 coho August 5-8; 200 coho August 12-15; 375 coho for remaining 3 openings.
s/ All except chinook. Season to follow a cycle of 3 days open/4 days closed, no more than 75 coho per open period for July 26-28 opening; 200 coho for remaining openings.
t/ Chinook landing limit per vessel per opening: 75 (May 20-23) and 50 (June 2-4).

TABLE C-6. Summary of actual **Washington recreational** ocean salmon regulations.[a/] (Page 1 of 3)

Year	Season	Days	Bag	Minimum Size Limit (Inches) Chinook	Coho
1971-1973	Apr. 15-Oct. 31	200	3	20	20
1974	Apr. 13-Oct. 31	202	3	20	20
1975	Apr. 12-Oct. 31	203	3	20	20
1976	May 1-Oct. 31	184	3	24	16
1977	Apr. 30-Oct. 9	163	3	24	16
1978	Apr. 29-Oct. 31	186	3	24	16
1979	May 12-Sept. 3	115	2+1[b/]	24	16
1980	May 10-Aug. 25 North	108	3/2[c/]	24	16
	May 10-Sept. 1 South	115	3/2[c/]	24	16
1981	May 23-Aug. 26	96	2+1[d/]	24	20
1982[e/]	May 29-June 11 (Chinook Only)	14	2	24	-
	June 12-Aug. 19 North	69	2	24	16
	June 12-July 25 South	44	2	24	16
1983	May 8-June 17 (Chinook Only)[f/]	21	2	24	-
	June 18-July 29[g/]	42	2	24	16
	July 1-29[h/]	29	2	24	16
	July 30-Aug. 15[i/]	17	2	24	16
	July 30-Sept. 11[j/]	44	2	24	16
	Aug. 16-Sept. 11[k/]	27	2	24	16
1984	May 26-28 (Chinook Only)[f/]	3	2	24	-
	June 25-July 27 (Chinook Only)[l/]	33	1	34	-
	July 28-Aug. 8 (Coho Only)[m/]	12	2	-	16
	July 28-Aug. 15[n/]	19	1	24	16
1985	June 30-Aug.22[o/]	40	2	24	16
	June 30-Sept. 1[p/]	46	2/1[o/]	24	16
	June 30-Sept. 8[q/]	51	2	24	16
1986	June 29-Aug. 14[r/]	35	2	24	16
	June 29-Aug. 18[s/]	37	2	24	16
1987	June 28-Aug. 20[t/]	40	2/1[s/]	24	16
	June 28-Aug. 6[u/]	30	2[t/]	24	16
	June 28-Aug. 20[v/]	40	2	24	16
1988	July 3-Aug. 2, Aug. 19, Sept. 2[w/]	25	2/1[v/]	24	16
	July 3-31, Aug. 18[x/]	22	2/1[w/]	24	16
	July 11-24[y/]	10	2/1[x/]	24	16
1989	May 28-June 12[z/]	6	2	24	-
	July 2-26[aa/]	19	2	24	16
	June 26-Aug. 30[bb/]	48	2	24	16
	June 26-Aug. 17[cc/]	39	2	24	16
1990	July 2-Aug. 12, Sept. 8-9[dd/]	32	2	24	16
	July 2-Sept. 3, Sept. 8-9[ee/]	48	2	24	16
	June 18-Sept. 20[ff/]	75	2	24	16
	June 24-Aug. 30, Sept. 8-9[gg/]	52	2	24	16
1991	July 1-24[hh/]	17.5	2	24	16
	July 1-30[ii/]	22	2	24	16
	June 24-Aug. 12, Sept. 3-4[jj/]	38	2	24	16
	June 24-Aug. 12[kk/]	36	2	24	16
	Sept. 15-18, Sept. 26[ll/]	5	2	24	16
1992	May 1-31[mm/]	31	2	24	16
	July 6-22[nn/]	13	2	24	16
	July 13-Aug. 20[oo/]	29	1	24	16
	Aug. 23-Oct. 1[pp/]	30	2	24	16
	July 6-Oct. 1[qq/]	64	2	24	16
	June 29-Aug. 6	29	2	24	16
	Sept. 14-17, Sept. 27[qq/]	5	2	24	16

TABLE C-6. Summary of actual **Washington recreational** ocean salmon regulations.[a/] (Page 2 of 3)

Year	Season	Days	Bag	Minimum Size Limit (Inches) Chinook	Coho
1993	May 1-31[rr/]	31	2	24	16
	July 12-Aug. 22[ss/]	30	2	24	16
	July 5-Sept. 23[tt/]	59	2	24	16
	July 5-Sept. 23[uu/]	59	2	24	16
	July 5-Sept. 9[vv/]	49	2	24	16
	Sept. 12-23[ww/]	12	2	24	16
1994	Closed	0	-	-	-
1995	Aug. 1-4[xx/]	4	2	-	16
	Aug. 1-Sept. 10[yy/]	29	2	-	16
	July 24-Sept. 17[zz/]	40	2	-	16
	July 24-Sept. 5; Sept. 10-17[aaa/]	38	2	-	16
1996	Aug. 5-31[xx/]	27	1	-	16
	Aug. 5-Sept. 26[bbb/]	53	2	-	16
	July 22-Sept. 5[zz/]	34	2	-	16
	July 22-Sept. 26[aaa/]	49	2	-	16
1997	July 21-23[ccc/]	3	2	24	-
	July 21-Aug. 3[ddd/]	14	2	24	16
	July 21-Sept. 4[eee/]	34	2	24	16
	July 21-Aug. 7[fff/]	14	2	24	16
1998	Aug. 3-19[ggg/]	17	2	-	16
	Aug. 3-9[ddd/]	7	2	24	16
	Aug. 3-16; Sept. 3[hhh/]	11	2	24	16
	Aug. 3-9; Sept. 3[iii/]	6	2	24	16

a/ All dates inclusive; minimum size measured as total length; no minimum size for species other than chinook and coho.
b/ Bag limit only 2 chinook/coho; third salmon confined to other 3 species to take advantage of large pink abundance.
c/ Seasons differed in 1980 north and south of Leadbetter Pt.; initial 3-fish bag limit reduced to 2 fish on July 16.
d/ Bag limit only 2 chinook/coho; north of Queets River a third salmon of other species allowed (Neah Bay/La Push).
e/ Seasons differing north and south of Leadbetter Pt.; some Ilwaco and Chinook based effort continued through Aug. 1 inside Oregon state waters and from Aug. 16-Sept. 30 inside Buoy 10 to the Astoria/Megler Bridge. The Aug. 25-Sept. 30 period was restricted to coho only, with barbless hooks required after Aug. 31. The easterly portion of Neah Bay (inside Koitlah Pt.) remained open after Aug. 19.
f/ Queets River to Klipsan Beach inside 6 miles.
g/ Queets River to North Head inside 6 miles and south jetty of the Columbia River to Cape Falcon inside a line approximately due south of the south jetty.
h/ U.S.-Canada border to Queets River inside 3 miles.
i/ Klipsan Beach to Cape Falcon.
j/ U.S.-Canada border to Queets River and Pt. Brown to Klipsan Beach. Ocean waters north of Leadbetter Pt. and west of the Bonilla/Tatoosh Line closed Sept. 6 in anticipation of quota achievement.
k/ South jetty of the Columbia River to Cape Falcon inside special fishery zone 1.
l/ Limited area adjacent to Neah Bay; size limit changed to 24 inches July 17.
m/ Cape Shoalwater to Klipsan Beach (also off Oregon from the south jetty of the Columbia River to Cape Falcon inside the special fishery zone).
n/ Leadbetter Pt. to Cape Falcon. Waters from Leadbetter Pt. to Klipsan Beach closed inside 3 miles. From 0 to 200 miles between Klipsan Beach and Red Buoy Line of Columbia River closed. Fishing allowed Sunday through Thursday only.
o/ U.S.-Canada border to Queets River. Bag limit 2 salmon only 1 of which may be a chinook. Effective July 24, fishing closed inside a line approximately 1 mile offshore from Sekiu River to the Umatilla Reef Light. Bag limit changed to not allow retention of chinook salmon, effective Aug. 15. Fishing allowed Sunday through Thursday only.
p/ Queets River to Leadbetter Pt., except closed inside 3 miles through Aug. 29. Fishing allowed Sunday through Thursday only through Aug. 29. Fishing closed by state regulations Sept. 3-6 and reopened Sept. 7 and Sept. 8.
q/ U.S.-Canada border to Queets River. Fishing allowed Sunday through Thursday only.
r/ Queets River to Klipsan Beach. Fishing allowed Sunday through Thursday only. Closed inside 3 miles June 29-Aug. 7.
s/ U.S.-Canada border to Queets River. Fishing allowed Sunday through Thursday only. Bag limit 2 salmon, only 1 of which may be a chinook. Inseason (July 12) closure of waters beyond 1 mile of coastline between Sekiu River and Tatoosh Island, and closure (July 15) of waters beyond 5 miles of coastline between Duncan Rock and Cape Alava. No retention of chinook July 19-Aug. 20 (noon).
t/ Queets River to Leadbetter Pt. Fishing allowed Sunday through Thursday only. Closed to fishing inside 3 miles throughout entire season; additional area closure 3 to 6 miles from coastline between Pt. Brown and Cape Shoalwater July 5-25; additional area closure 6 to 10 miles from coastline between Pt. Brown and Cape Shoalwater July 8-25; adjusted area closure July 26 season end 3 to 6 miles from Grays Harbor buoy to Leadbetter Pt. and 0 to 200 miles north of Grays Harbor Buoy to Queets River. Bag limit changes from 2 salmon, all species to 2 salmon only 1 of which may be a chinook.

TABLE C-6. Summary of actual Washington recreational ocean salmon regulations.[a/] (Page 3 of 3)

u/ Leadbetter Pt. to Cape Falcon, Oregon. Fishing allowed Sunday through Thursday only. Closed 0 to 3 miles from Leadbetter Pt. to Klipsan Beach; closed 0 to 200 miles from Klipsan Beach to Red Buoy Line of the Columbia River; closed 0 to 3 miles from the Red Buoy Line to Cape Falcon June 28-Aug. 8.

v/ U.S.-Canada border to Queets River. Fishing allowed Sunday through Thursday only. Bag limit initially 2 salmon, but only 1 chinook; changed to 2 fish, all species beginning July 24. Fishery reopened Aug. 19 and Sept. 2 to harvest quota shortfall.

w/ Queets River to Klipsan Beach. Southern boundary changed to Leadbetter Pt. prior to season opening date. Fishing allowed Sunday through Thursday only. Bag limit initially 2 salmon, but only 1 chinook; changed to 2 fish, all species beginning July 24. Fishery reopened Aug. 18 to harvest quota shortfall.

x/ Klipsan Beach to Cape Falcon. Fishing allowed Sunday through Thursday only.

y/ U.S.-Canada border to Cape Falcon. Fishing allowed Sunday through Monday only. 2 fish, all-salmon-except-coho.

z/ U.S.-Canada border to Queets River. Fishing allowed Sunday through Thursday only. 2 fish.

aa/ Queets River to Leadbetter Pt. Fishing allowed Sunday through Thursday only. 2 fish.

bb/ Leadbetter Pt. to Cape Falcon. Fishing allowed Sunday through Thursday only. 2 fish.

cc/ U.S.-Canada border to Cape Alava. Fishing allowed Sunday through Thursday only. 2 fish.

dd/ Cape Alava to Queets River. Fishing allowed Sunday through Thursday only. 2 fish.

ee/ Queets River to Leadbetter Pt. Fishing allowed Sunday through Thursday only through Aug. 30. Open 7 days per week starting Aug. 31. 2 fish.

ff/ Leadbetter Pt. to Cape Falcon. Fishing allowed Sunday through Thursday only. 2 fish.

gg/ U.S.-Canada to Cape Alava. Fishing allowed Sunday through Thursday only. 2 fish.

hh/ Cape Alava to Queets River. Fishing allowed Sunday through Thursday only. 2 fish.

ii/ Queets River to Leadbetter Point. Fishing allowed Sunday through Thursday. 2 fish.

jj/ Leadbetter Point to Cape Flacon. Fishing allowed Sunday through Thursday. 2 fish.

kk/ South of the Red Buoy Line to Cape Falcon. Fishing allowed 7 days per week. 2 fish.

ll/ U.S.-Canada border to Cape Alava. East of Bonilla-Tatoosh Line only. All-salmon-except-coho. 2 fish.

mm/ U.S.-Canada border to Cape Alava. Open 0 to 1/2 mile from shore only. Fishing allowed Sunday through Thursday. 2 fish. No more than 4 fish in 7 consecutive days.

nn/ Cape Alava to Queets River. Open 0 to 6 miles from shore only through July 30. Fishing allowed Sunday through Thursday. 1 fish. No more than 4 fish in 7 consecutive days.

oo/ Cape Alava to Queets River. Fishing allowed Sunday through Thursday. 2 fish. No more than 4 fish in 7 consecutive days.

pp/ Queets River to Leadbetter Pt. Open 0 to 6 miles from shore only through July 30. Fishing allowed Sunday through Thursday. 2 fish. No more than 4 fish in 7 consecutive days.

qq/ Leadbetter Pt. to Cape Falcon. Open 0 to 3 miles from shore only through July 30. Fishing allowed Sunday through Thursday. 2 fish. No more than 4 fish in 7 consecutive days.

rr/ U.S.-Canada border to Cape alava. East of Bonilla-Tatoosh line only. All-salmon except coho. 2 fish.

ss/ U.S.-Canada border to Cape Alava. Fishing allowed Sunday through Thursday. 2 fish. No more than 6 fish in 7 consecutive days.

tt/ Cape Alava to Queets River. Fishing allowed Sunday through Thursday. 2 fish. No more than 6 fish in 7 consecutive days.

uu/ Queets River to Leadbetter Pt. Fishing allowed Sunday through Thursday. 2 fish. No more than 4 fish in 7 consecutive days.

vv/ Leadbetter Pt. to Cape Falcon. Fishing allowed Sunday through Thursday. 2 fish. No more than 4 fish in 7 consecutive days.

ww/ Leadbetter Pt. to Cape Falcon. 2 fish. No more than 4 fish in 7 consecutive days.

xx/ U.S.-Canada border to Cape Alava. All salmon except chinook. Closed 0-3 miles of shore south of Skagway Rock.

yy/ Cape Alava to Queets River. All except chinook. Open Sunday through Thursday only. Closed 0-3 miles.

zz/ Queets River to Leadbetter Pt. All except chinook. Sunday through Thursday only. Closed 0-3 miles. No more than 4 fish in 7 consecutive days.

aaa/ Leadbetter Pt. to Cape Falcon. All salmon except chinook. Sunday through Thursday only. Closed 0-3 miles and in Columbia River mouth control zone. No more than 4 fish in 7 consecutive days.

bbb/ Cape Alava to Queets River. All except chinook. Closed 0-3 miles.

ccc/ U.S.-Canada border to Cape Alava. All salmon except coho (7 days per week).

ddd/ Cape Alava to Queets River. All salmon (7 days per week).

eee/ Queets River to Leadbetter Pt. All salmon (Sun. thru Thurs.). Daily bag limit 2 fish; except from July 21-Aug. 12, daily bag limit 2 fish, no more than 1 chinook. No more than 4 fish in 7 consecutive days. Closed 0-3 miles from shore from July 21-Aug. 12.

fff/ Leadbetter Pt. to Cape Falcon. All salmon (Sun. thru Thurs.). No more than 4 fish in 7 consecutive days. Closed 0-3 miles offshore north of Columbia Control Zone and closed within the Zone.

ggg/ State managed Area 4B add-on fishery in place of ocean opening as agreed to by ports. All except chinook.

hhh/ Queets River to Leadbetter Pt. All salmon (Sun. thru Thurs.). Daily bag limit 2 fish but no more than 1 chinook. No more than 4 fish per calendar week (Sun.-Sat.). Closed 0-3 miles from shore, except Sept. 3.

iii/ Leadbetter Pt. to Cape Falcon. All salmon (Sun. thru Thurs.). Daily bag limit 2 fish except no more than 1 chinook and all coho must have a healed adipose fin clip. No more than 4 fish per calendar week (Sun.-Sat.). Closed in Columbia Control Zone.

TABLE C-7. Summary of actual **treaty Indian ocean and Area 4B troll** regulations. (Page 1 of 5)

Year	Species	Season	Days	Minimum Size, Area, Gear, and Other Restrictions[a/]
				QUINAULT, QUILEUTE AND HOH TRIBES
Statistical Areas 2 and 3 (Ocean Waters 3-200 miles)				
1977-1981	All	May 1-Oct. 31	184	Chinook 28 in., coho 16 in.; except chinook 26 in. during 1977.
1982	All	May 1-Sept. 7	129	Chinook 26 in., coho 16 in. Six-mi. radius closed at mouths of Hoh and Queets rivers when Area 4A closed to non-Indian salmon fishing.
1983	All	May 1-Sept. 15	137	Chinook 26 in., coho 16 in.
1984	All except coho	May 1-June 30	61	Chinook 26 in. Barbless hooks.
	All	July 1-Aug. 16	47	Chinook 26 in., coho 16 in. Barbless hooks.
1985	All except coho	May 1-22	22	Chinook 26 in. b/.
	All	June 15-July 22; Aug. 1-10; Sept. 1-4	52	Chinook 26 in., except 28 in. June 15-30; coho 16 in. b/. Landing ratio of at least 1 chinook/10 coho June 15-July 22 and 1 chinook/13 coho Aug. 1-10.
	Pink	Aug. 16-31	16	b/.
1986	All except coho	May 1-31	31	Chinook 26 in. b/.
	All	June 1-Aug. 8	69	Chinook 26 in., coho 16 in. b/. Landing ratio of at least 1 chinook/20 coho July 11-Aug. 8; 2-mile radius closed at Quinault River mouth; Quinault fishery closed on July 18.
1987	All except coho	May 1-26	26	Chinook 26 in. b/.
	All	July 19-Aug. 9; Aug. 17-26	32	Chinook 26 in., coho 16 in. b/. Chinook to coho landing ratios 1:19 July 19-31; 1:10 Aug. 1-9 and 5:1 Aug. 17-26 (Quileute and Hoh rescinded Aug. 26).
1988	All except coho	May 1-July 9	70	Chinook 26 in. b/.
	All	July 10-19; July 20-Aug. 21; Sept. 1-3	46	Chinook 26 in., coho 16. b/. Landing ratio of at least 1 chinook/2 coho July 10-19.
1989	All except coho	May 1-June 30	61	Chinook 26 in. b/.
	All	July 15-Aug. 8; Aug. 30-Sept. 5	32	Chinook 26 in., coho 16 in. b/.
1990	All except coho	May 1-June 30	61	Chinook 26 in. b/.
	All	July 10-27; Aug. 12-31; Sept. 4-7	42	Chinook 26 in., coho 16 in. b/. Landing ratio of at least 1 chinook/15 coho Aug. 12-31.
1991	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	July 7-19; Aug. 3-8; 10-13 and 19	24	Chinook 24 in., coho 16. Barbless hooks. Part day fishery on Aug. 19.
1992	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	July 15-21; Aug. 1-5	12	Chinook 24 in., coho 16. Barbless hooks.
1993	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
		July 1-Sept. 23	85	Chinook 24 in., coho 16. Barbless hooks.
1994	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
1995	All except coho	May 1-31	31	Chinook 24 in. Barbless hooks.
	All	Aug. 1-24	24	Chinook 24 in., coho 16 in. Barbless hooks.
1996	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	Aug. 5-Aug. 13; Sept. 1-11	20	Chinook 24 in., coho 16 in. Barbless hooks.
1997	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	Aug. 4-29;	26	Chinook 24 in., coho 16 in. Barbless hooks.
	All	Sept. 3-7 (Quinault only)	5	Chinook 24 in., coho 16 in. Barbless hooks.

TABLE C-7. Summary of actual **treaty Indian ocean and Area 4B troll** regulations. (Page 2 of 5)

Year	Species	Season	Days	Minimum Size, Area, Gear, and Other Restrictions[a/]
1998	All except coho	May 1-June 6	37	Chinook 24 in. Barbless hooks.
	All	Aug. 3-Sept 4	33	Chinook 24 in., coho 16 in. Barbless hooks.
	All	Sept. 8-12 (Quinault only)	5	Chinook 24 in., coho 16 in. Barbless hooks.
				MAKAH TRIBE
Statistical Areas 3N, 4 and 4A (Ocean Waters 3-200 miles)				
1977-1983	All	May 1-Oct. 31	184	Chinook: 26 in. during 1977; 28 in. during 1978-1979; 24 in. during 1980-1983. Coho: 16 in., except in 1983 changed to 20 in. May 11-June 5 and 22 in. June 6-July 25.
1984	All except coho	May 1-June 30	61	Chinook 24 in.; barbless hooks.
	All	July 1-Aug. 18	49	Chinook 24 in., coho 16 in.; barbless hooks.
1985	All except coho	May 1-20	20	Chinook 24 in. b/.
	All	June 15-30; July 1-20; Aug. 1-10; Sept. 1-4; 10-11	52	Chinook 28 in. except 24 in. from July 1-20, coho 20 in. b/. Landing ratio of at least 1 chinook/13 coho Aug. 1-10.
	Pink	Aug. 15-31	17	b/.
1986	All except coho	May 1-31	31	Chinook 26 in. b/.
	All	June 1-Aug. 8	69	Chinook 26 in. Coho 20 in. b/. Landing ratio of at least 1 chinook/20 coho July 13-Aug. 8.
1987	All except coho	May 1-26	26	Chinook 26 in. b/.
	All	July 19-Aug. 9; Aug. 17-26	32	Chinook 26 in., coho 16 in. b/. Chinook to coho landing ratios 1:19 July 19-31; 1:10 Aug. 1-9 and 5:1 Aug. 17-25.
1988	All except coho	May 1-July 9	70	Chinook 26 in. b/.
	All	July 10-Aug. 21; Sept. 1-3	46	Chinook 26 in., coho 16 in. b/. Landing ratio of at least 1 chinook/2 coho July 10-19.
1989	All except coho	May 1-June 30	61	Chinook 26 in. b/.
	All	July 15-Aug. 8; Aug. 30-Sept. 5	32	Chinook 26 in., coho 16 in. b/.
1990	All except coho	May 1-June 30	61	Chinook 26 in. b/.
	All	July 10-27; Aug. 12-31; Sept. 4-7	42	Chinook 26 in., coho 16 in. b/. Landing ratio of at least 1 chinook/15 coho Aug. 12-31.
1991	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	July 7-19; Aug. 3-8; 10-13 and 19	24	Chinook 24 in., coho 16. Barbless hooks. Part day fishery on Aug. 19.
1992	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	July 15-21; Aug. 1-5	12	Chinook 24 in., coho 16. Barbless hooks.
1993	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	July 1-Sept. 30	92	Chinook 24 in., coho 16. Barbless hooks.
1994	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
1995	All except coho	May 1-31	31	Chinook 24 in. Barbless hooks.
	All	Aug. 1-24	24	Chinook 24 in., coho 16 in. Barbless hooks.
1996	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	Aug. 5-13; Sept.1-11	20	Chinook 24 in., coho 16 in. Barbless hooks.
1997	All except coho	May 1-June 30	61	Chinook 24 in. Barbless hooks.
	All	Aug. 4-31; Sept. 3-6	32	Chinook 24 in., coho 16 in. Barbless hooks.
1998	All except coho	May 1-June 6	37	Chinook 24 in. Barbless hooks.
	All	Aug. 3-21; Sept. 1-4; 6-9; 11-12; 14-15[c/]	28	Chinook 24 in., coho 16 in. Barbless hooks.

TABLE C-7. Summary of actual **treaty Indian ocean and Area 4B troll** regulations. (Page 3 of 5)

Year	Species	Season	Days	Minimum Size, Area, Gear, and Other Restrictions[a/]
Statisical Area 4B (Inside Waters) Makah Fishery				
1977-1981	All	Jan. 1-Dec. 31	365	Chinook 22 in., coho 20 in.; except May 1-Sept. 15 chinook 24 in., coho 16 in.
1982	All	Jan. 1-Dec. 31	365	Chinook 22 in., coho 20 in.; except May 1-Sept. 15 chinook 24 in., coho 16 in. Maximum 30 in. chinook size limit Apr. 15-June 15 to protect Puget Sound spring chinook.
1983	All	Jan. 1-Dec. 31	365	Chinook 22 in. except 24 in. May 1-Sept. 15. Coho 20 in. except 16 in. May 1-10 and July 26-Sept. 15.; 22 in. June 6-July 25. Maximum 30 in. chinook size limit Apr. 15-June 15 to protect Puget Sound spring chinook.
1984	All	Jan. 1-Dec. 31	366	Chinook 22 in., coho 20 in.; except chinook 24 in., coho 16 in. May 1-Sept. 15. Maximum 30 in. chinook size limit Apr. 15-June 15 to protect Puget Sound spring chinook.
1985	Chinook	May 1-20	20	Chinook 24 in.
	All	June 15-July 20; Aug. 1-10; Sept. 1-4; Sept. 10-11; Oct. 1-31	83	Chinook 28 in. except 24 in. July 1-20; 22 in. Oct. 1-31. Coho 20 in. Maximum 30 in. chinook size limit Apr. 15-June 15. Landing ratios of at least 1 chinook/13 coho Aug. 1-10 and at least 1 chinook/20 coho Sept. 10-11.
	Pink	Aug. 15-31	17	
	Coho	Sept. 7-10; Sept. 11-30	24	Ceremonial and subsistence fishery.
1986	All	Jan. 1-Apr. 30; June 1-Aug. 9; Nov. 1-Dec. 31	251	Chinook 24 in. prior to May; 26 in. June 1-Aug. 9; 22 in. Nov. 1-Dec. 31. Coho 16 in. prior to May and 20 in. thereafter. Landing ratio of at least 1 chinook/10 coho on Aug. 9.
	Chinook	May 1-31	31	Chinook 26 in.
	Coho	Aug. 10-12	3	Coho 20 in.
1987	All	Jan. 1-Apr. 30; July 19-Aug. 9; Aug. 17-26; Nov. 1-Dec. 31	213	Chinook 22 in., coho 20 in.; except chinook 26 in., coho 16 in. May-Sept. Landing ratios of at least 1 chinook: per 19 coho in July; per 10 coho Aug. 1-9 and per 5 coho Aug. 17-25.
	Chinook	May 1-26	26	Chinook 26 in.
1988	All	Jan. 1-Apr. 30; July 10-Aug. 21; Sept. 1-3; Nov. 1-Dec. 31	228	Chinook 22 in. prior to Apr. 15 and after Sept. 30; 24 in. Apr. 15-30; 26 in. May-Sept. Coho 20 in. prior to Apr. 15 and after Sept. 30; 22 in. Apr. 15-30; 16 in. July-Sept. Landing ratio of at least 1 chinook/2 coho July 10-19.
	Chinook	May 1-July 9	70	Chinook 26 in.
1989	All	Jan. 1-Apr. 30; July 15-Aug. 8; Aug. 30-Sept. 5; Nov. 1-Dec. 23	205	Chinook 24 in. except 26 in. May-Sept. Coho 22 in. except 16 in. July-Sept.
	Chinook	May 1-June 30	61	Chinook 26 in.
1990	All	Jan. 1-Apr. 30; July 10-27; Aug. 12-31; Sept. 4-7; Nov. 1-Dec. 31	223	Chinook 24 in. prior to May and 26 in. after May. Coho 22 in. except 16 in. July-Sept. Landing ratio of at least 1 chinook/15 coho in Aug.
	Chinook	May 1-June 30	61	Chinook 26 in.
1991	All	Jan. 1-Apr. 30; July 7-19; Aug. 3-8; Aug. 10-13; Aug. 19; Oct. 7-Dec. 31	230	Chinook 24 in., coho 22 in. except 16 in. July-Sept. Part day fishery on Aug. 19.
	Chinook	May 1-June 30	61	Chinook 24 in.
1992	All	Jan. 1-Apr. 30; July 15-21; Aug. 1-5; Nov. 1-Dec. 1-31	194	Chinook 22 in. except 24 in. July and Aug. Coho 22 in. except 16 in. July and Aug.
	Chinook	May 1-June 30	61	Chinook 24 in.
1993	All	Jan. 1-Apr. 15; July 1-Oct. 31	228	Chinook 22 in., coho 22 in. except 16 in. July-Oct.
	Chinook	May 1-June 30; Nov. 1-Dec. 31	122	Chinook 24 in. May-June, 22 in. Nov. -Dec.
1994	Chinook	Jan. 1-Apr. 15; May 1-June 30; Nov. 15-Dec. 31	213	Chinook 22 in. except 24 in. May-June.

TABLE C-7. Summary of actual **treaty Indian ocean and Area 4B troll** regulations. (Page 4 of 5)

Year	Species	Season	Days	Minimum Size, Area, Gear, and Other Restrictions[a/]
1995	Chinook	Jan. 1-Apr. 15; May 1-31; Nov. 1-30	166	Chinook 22 in. except 24 in. in May.
	All	Aug. 1-24; Dec. 1-31	55	Chinook 22 in. except 24 in. in Aug. Coho 16 in.
1996	Chinook	Jan. 1-Apr. 15; May 1-June 30; Nov. 1-30	197	Chinook 22 in. except 24 in. May-June.
	All	Aug. 5-13; Sept. 1-11; Dec. 1-31	51	Chinook 22 in. except 24 in. Aug.-Sept. Coho 16 in.
1997	Chinook	Jan. 1-Apr. 15; May 1-June 30; Nov. 1-30	196	Chinook 22 in. except 24 in. May-June.
	All	Aug. 4-31; Sept. 3-6; Dec. 1-31	63	Chinook 22 in. except 24 in. Aug.-Sept. Coho 16 in.
1998	Chinook	Jan 1-Apr. 15; May 1-June 6; Nov. 1-30[c/]	172	Chinook 22 in. except 24 in. May-June.
	All	Aug. 3-21; Sept. 1-4; 6-9; 11-12; 14-15; Dec 1-31	59	Chinook 22 in. except 24 in. Aug.-Sept. Coho 16 in.
		S'KLALLAM TRIBES		
Statistical Area 4B (Inside Waters)				
1977-1979	All	Jan. 1-Dec. 20	354	Chinook 24 in., coho 16 in.; except chinook 26 in. during 1979.
1980	All	Jan. 1-Dec. 31	366	Chinook 28 in.; coho 20 in., except 16 in. early June to first week in Sept.
1981	All	Jan. 1-Dec. 31	365	Chinook 20 in. except 28 in. early May to first week in Sept. Coho 20 in. except 16 in. early June to first week in Sept.
1982	All	Jan. 1-Dec. 31	365	Chinook 22 in. except 24 in. early May to first week in Sept. Coho 20 in. except 16 in. early June to first week in Sept. Maximum 30 in. chinook size limit Apr. 15-June 15 to protect Puget Sound spring chinook.
1983	All	Jan. 1-Apr. 14; June 16-Dec. 31	303	Chinook 22 in., coho 20 in; except June 16 to first week in Sept. chinook 24 in., coho 16 in. Apr. 15-June 15 closure to protect Puget Sound spring chinook.
1984	All	Jan. 1-Apr. 14; June 17-Dec. 31	303	Chinook 22 in. except 24 in. June 17-Sept. 3. Coho 16 in.
1985	All	Jan. 1-Dec. 31	365	Chinook 22 in. Coho 16 in. Maximum 30 in. chinook size limit Apr. 14-June 15.
1986	All	Jan 1-Aug. 8; Oct. 1-Dec. 31	312	Chinook 22 in. except 30 in. Apr. 14-June 15. Coho 16 in. Closed within 600 ft. of stream mouths.
1987	All	Jan 1-Aug. 31; Sept. 27-Oct. 6; Nov. 29-Dec. 31	286	Chinook 22 in. except 24 in. after Apr. 11; maximum size limit 30 in. Apr. 12-June 15. Coho 16 in.
	Chinook	Nov. 1-28	28	Chinook 24 in.
1988	All	Jan 1-Sept. 3; Nov. 1-Dec. 31	307	Chinook 24 in. except 22 in. after Sept. Coho 16 in. except 20 in. May-Sept.
1989	All	Jan. 1-Sept. 6; Nov. 1-Dec. 31	310	Chinook 24 in., coho 16 in.
1990	All	Jan. 1-Sept. 7; Nov. 1-Dec. 31	311	Chinook 24 in., coho 16 in.
1991	All	Jan. 1-Apr. 30; July 1-Aug. 13; Nov. 1-Dec. 31	225	Chinook 24 in., coho 16 in.
	Chinook	May 1-June 30	61	Chinook 24 in.
1992	All	Jan. 1-Apr. 30; July 1-Aug. 6; Nov. 1-30; Dec. 7-31	213	Chinook 22 in. except 24 in. July-Aug. Coho 16 in.
	Chinook	May 1-June 30	61	Chinook 24 in.
1993	All	Jan. 1-Apr. 15; July 1-Sept. 30; Nov. 1-Dec. 31	258	Chinook 22 in. except 24 in. July-Sept. Coho 16 in.
	Chinook	May 1-June 30	61	Chinook 24 in.

TABLE C-7. Summary of actual **treaty Indian ocean and Area 4B troll** regulations. (Page 5 of 5)

Year	Species	Season	Days	Minimum Size, Area, Gear, and Other Restrictions[a/]
1994	All	Jan. 1-Apr. 15; Nov. 15-Dec. 31	152	Chinook 22 in., coho 16 in.
	Chinook	May 1-June 30	61	Chinook 24 in.
1995	Chinook	Jan. 1-Apr. 15; May 1-31; Nov. 1-30	166	Chinook 22 in. except 24 in. in May.
	All	Aug. 1-24; Dec. 1-31	55	Chinook 22 in. except 24 in. in Aug. Coho 16 in.
1996	Chinook	Jan. 1-Apr. 15; May 1-June 30; Nov. 1-30	197	Chinook 22 in. except 24 in. May-June.
	All	Aug. 5-13; Sept. 1-11; Dec. 1-31	51	Chinook 22 in. except 24 in. Aug.-Sept. Coho 16 in.
1997	Chinook	Jan. 1-Apr. 15; May 1-June 30; Nov. 1-30	196	Chinook 22 in. except 24 in. May-June.
	All	Aug. 4-29; Sept. 3-7; Dec. 1-31	62	Chinook 22 in. except 24 in. Aug.-Sept. Coho 16 in.
1998	Chinook	Jan. 1-Apr. 15; May 1-June 6; Nov. 1-30	172	Chinook 22 in. except 24 in. May-June.
	All	Aug. 3-Sept. 4; Dec. 1-31	64	Chinook 22 in. except 24 in. Aug.-Sept. Coho 16 in.

a/ Ceremonial and subsistence harvest restrictions for ocean fisheries are as follows. Makah Tribe: none. Quinault, Quileute and Hoh tribes: 1983-1988, no more than 2 chinook between 24-26 in. per day; beginning in 1989, no restriction on chinook less than 24 in., but no more than 2 chinook longer than 24 in. per day. Beginning in 1985, restrictions on fishing lines have been: no more than 8 fixed lines per boat for Quinault, Quileute and Hoh tribes; no more than 8 fixed lines per boat or no more than 4 hand-held lines per person for the Makah Tribe. Beginning in 1985, the following closure has been in effect for Quinault, Quileute and Hoh fisheries: the area within a 6-mile radius of the mouths of the Hoh, Queets and Quillayute rivers is closed.

b/ Barbless hooks required except on whole bait and plugs.

c/ The specific openings after Sept. 4 were: noon on Sept. 6 through noon on Sept. 9; 6 a.m. on Sept. 11 through noon on Sept. 12; and noon on Sept. 14 through midnight on September 15.

TABLE C-8. Council preseason adopted catch quotas for ocean fisheries north of Cape Falcon and critical stocks driving management in thousands of fish. (Page 1 of 1)

	Chinook				Coho			
Year	Critical Stocks	Treaty Troll	Non-Indian Troll	Sport	Critical Stocks	Treaty Troll	Non-Indian Troll	Sport
1979	None	-	-	-	None	-	-	-
1980	None	-	-	-	Washington Coastal Coho	-	-	-
1981	None	-	-	-	Hoh and Skagit[a/]	-	372	248
1982	None	-	-	-	Washington Coastal Coho	-	293	215
1983	Columbia River Hatchery and Depressed Upriver Stocks	-	114	88	Queets and Skagit[b/]	-	164	318
1984	LRH and SCH	8.3	16.7	10.3	Grays Harbor	38.5	24.8	50.2
1985	SCH	10.5	47.5[c/]	37.2	Skagit	75	91.5	198.4
1986	SCH	12.5	51	37.1	Quillayute and Queets	86	140.6	207.5
1987	SCH	15.8	58.2[d/]	44.6	Skagit	86	141.2	200.9
1988	Columbia River Upriver Stocks	60	73.7	29.8	Washington Coastal and Puget Sound	68	0.0[e/]	100
1989	Columbia River Upriver Stocks	32	47.5	47.5	Queets and Skagit	77	75	225
1990	Columbia River LRH	31.2	37.5	37.5	Queets and Skagit	90	105	245
1991	Columbia River LRH	33	40	40	Hood Canal and Skagit	80	87	233
1992	Columbia River tules and Snake River falls	33	47	33	Hood Canal and Stillaguamish	68	19	141
1993	Columbia River tules and Snake River falls	33	35	25	Skagit	90	47.5	202.5
1994	Columbia River LRH and Snake River falls	16.4	0	0	Washington Coastal and Puget Sound	0	0	0
1995	Columbia River LRH and Snake River falls	12	0	0	Washington Coastal and Puget Sound	30	25	75
1996	Columbia River LRH and Snake River falls	11	0	0	Washington Coastal and Puget Sound	30	20.8	62.2
1997	Snake River Falls	15	11.5	5.2	Washington Coastal and Puget Sound	12.4	0	32.3[f/]
1998	Columbia River LRH	15	6.5	3.5	Washington Coastal and OCN	10	0	16

a/ Although the Skagit River escapement goal would not be achieved, management was based on meeting WDFW's escapement goal for Hoh River coho and allocation based on aggregation to Washington coastal tribes.

b/ The Council management regime was not expected to meet equitable adjustment requirements for Skagit River coho.

c/ Plus 7,430 hooking mortality for pink fishery.

d/ Plus 3,250 hooking mortality for pink fishery.

e/ Hooking mortality of 2,800 coho for June 1-15 fishery not included.

f/ Plus 1,200 hook-and-release mortality for the Neah Bay all-salmon-except-coho fishery.

TABLE C-9. Sequence of events in ocean salmon fishery management, 1998.[a/] (Page 1 of 5)

GENERAL MANAGEMENT ACTIONS AND INSEASON CONFERENCES

Feb. 26	National Marine Fisheries Service (NMFS) announces proposed listings under the Endangered Species Act (ESA) of 8 evolutionarily significant units (ESUs) of salmon and steelhead. Final determinations on the actual listings will not occur for a least one year. The proposal includes Central Valley spring and fall chinook runs, and the Oregon-California coastal, Puget Sound, lower Columbia River, upper Willamette River, and upper Columbia Lriver spring chinook ESUs.
Mar. 4	NMFS provides the Council with a letter outlining the 1998 management guidance for stocks listed under the Endangered Species Act (ESA).
Mar.13	Council adopts three troll and three recreational ocean salmon fishery management options for public review. NMFS Inseason Conference number one at the Council meeting results in two recommendations: (1) Open the commercial fishery off Oregon from Cape Falcon to the Oregon-California border and the recreational fishery from Cape Falcon to Humbug Mt on April 15 for all salmon except coho. (2) Defer the April 1998 commercial fishery between Point Lopez and Point Mugu due to potentially high impacts on Sacramento River winter chinook. Consider opening this fishery in April of 1999 as a limited experimental fishery.
Mar. 18-19	North of Cape Falcon Salmon Forum meets in Portland, Oregon to initiate consideration of recommendations for treaty Indian and non-Indian salmon management options.
Apr. 1-2	North of Cape Falcon Salmon Forum meets in Seattle, Washington to further consider recommendations for treaty Indian and non-Indian salmon management options.
Mar. 30 thru, April 1 and Apr. 7	Council holds public hearings on proposed 1998 management options in six locations within the three Pacific coast states. In addition, the state of California holds an additional hearing in Moss Landing.
Apr. 10	Council adopts final ocean salmon fishery management recommendations for approval and implementation by the U.S. Secretary of Commerce. The proposed measures comply with the salmon FMP and the current biological opinions for listed species. An emergency rule is not required for implementation.
May 1	Ocean salmon seasons implemented as recommended by the Council and published in the *Federal Register* on May 6 (87 FR 24973).
May 11	NMFS inseason conference number two results in closing the all-salmon-except-coho, non-Indian troll fishery north of Cape Falcon on May 12 to avoid exceeding the 6,500 chinook quota.
May 15	NMFS inseason conference number three results in reopening the all-salmon-except-coho, non-Indian troll fishery north of Cape Falcon. With approximately 900 chinook remaining in the quota, NMFS opens the fishery from May 20-23 with a limit of 75 chinook per vessel for the open period.
May 29	NMFS inseason conference number four results in a second reopening of the all-salmon-except-coho, non-Indian troll fishery north of Cape Falcon. With approximately 560 chinook remaining in the quota, NMFS opens the fishery from June 2-4 with a limit of 50 chinook per vessel for the open period.
Aug 6	NMFS inseason conference number five results in closure of the recreational fisheries from Cape Alava to the Queets River (La Push) and from Leadbetter Point to Cape Falcon (Columbia River area) on Aug. 9 to avoid exceeding the subarea quotas.
Aug. 10	NMFS announces final rule in the *Federal Register* listing Oregon Coast coho as threatened under the ESA (effective October 9, 1998) as a result of an order by the Oregon District Court.

GENERAL MANAGEMENT ACTIONS AND INSEASON CONFERENCES (continued)

Aug. 11	NMFS inseason conference number six results in continued closure of the recreational fishery at the mouth of the Columbia River (Leadbetter Pt. to Cape Falcon), no change for the continuing Westport fishery, and the scheduling of future conferences to determine any needed action on these fisheries. The Columbia River has a sizeable amount of coho quota remaining, but further consideration is necessary to determine how it can be utilized.
Aug. 14	NMFS inseason conference number seven results in a continuous opening of the troll fishery between Sisters Rocks and Mack Arch beginning on Aug. 15. The fishery, under a 1,400 chinook quota, started the season on Aug. 1 with a cycle of two days open and two days closed to assure the quota is not exceeded. The fishery is progressing very slowly and can be effectively monitored without the periodic closures.
Aug. 14	NMFS inseason conference number eight results in closure of the Westport recreational fishery on Aug. 16 to avoid exceeding the coho quota and the scheduling of another conference to consider any future reopening for the Columbia River area.
Aug. 17	NMFS inseason conference number nine results in reopening of the recreational fisheries in the Westport and Columbia River areas for one day on Sept. 3 to utilize the remaining coho quota.

NON-INDIAN COMMERCIAL TROLL SEASONS

Apr. 15	Cape Falcon, Oregon to the Oregon-California border all-salmon-except-coho fishery opens (the area from Humbug Mt. south to the border is under a quota of 3,600 chinook).
May 1	All-salmon-except-coho fisheries open between (1) the U.S.-Canada border and Cape Falcon and (2) Pt. San Pedro and the U.S.-Mexico border.
May 12	U.S.-Canada border to Cape Falcon, all-salmon-except-coho fishery closes as the 6,500 chinook quota is projected to be met.
May 20-23	U.S.-Canada border to Cape Falcon, all-salmon-except-coho fishery reopens with a cumulative landing limit of 75 chinook per vessel for the opening. The remaining quota is projected at 900 chinook at the time of the opening.
May 31	Humbug Mt. to Oregon-California border and Pt. San Pedro to Pt. Sur, all-salmon-except-coho fisheries close as scheduled. The area between Pt. San Pedro and Pt. Sur is scheduled to reopen June 16.
June 2-4	U.S.-Canada border to Cape Falcon, all-salmon-except-coho fishery reopens for a final period with a cumulative landing limit of 50 chinook per vessel for the opening. The remaining quota is projected at 560 chinook.
June16	Pt. San Pedro to Pt. Sur, all-salmon-except-coho fishery reopens.
June 30	Cape Falcon to Humbug Mt. all-salmon-except-coho fishery closes as scheduled. The fishery will reopen Aug. 1.
July 1	Pt. Reyes to Pt. San Pedro, all-salmon-except-coho fishery opens.
July 5-11	Fort Ross to Pt. Reyes, all-salmon-except-coho test fishery inside 6 nautical miles opens for the first fishing period under a 1,000 chinook quota. The test fishery will open for three or four periods in July under an overall quota of 3,000 chinook.
July 12-18	The second period of the Fort Ross to Pt. Reyes, all-salmon-except-coho test fishery inside 6 nautical miles opens under a 1,000 chinook quota.
July 19-25	The third period of the Fort Ross to Pt. Reyes, all-salmon-except-coho test fishery inside 6 nautical miles opens under a 1,000 chinook quota.

NON-INDIAN COMMERCIAL TROLL SEASONS (continued)

July 26-31	The fourth and final period of the Fort Ross to Pt. Reyes, all-salmon-except-coho test fishery inside 6 nautical miles opens under the remainder of the 3,000 chinook quota.
Aug. 1	All-salmon-except-coho fisheries open between (1) Cape Falcon and Humbug Mt., (2) Sisters Rocks and Mack Arch (under a 1,400 chinook quota), and (3) Pt. Arena to Pt. Reyes.
Aug. 2	Sisters Rocks to Mack Arch, all-salmon-except-coho fishery closes after the first two-day opening.
Aug. 5-6	Second, two-day opening of the Sisters Rocks to Mack Arch all-salmon-except-coho fishery.
Aug. 9-10	Third, two-day opening of the Sisters Rocks to Mack Arch all-salmon-except-coho fishery.
Aug. 13	Sisters Rocks to Mack Arch, all-salmon-except-coho fishery reopens to run continuously through the earlier of Aug. 31 or the 1,4000 chinook quota.
Aug. 26	Heceta Banks to Humbug Mt., all-salmon-except-coho fishery closes for five days.
Aug. 28	Cape Falcon to Heceta Banks, all-salmon-except-coho fishery closes for three days.
Aug. 31	Sisters Rocks to Mack Arch, all-salmon-except-coho season closes as scheduled.
Sept. 1	All-salmon-except-coho fisheries open between (1) Cape Falcon and Humbug Mt. (following a short closure), (2) the Oregon-California border and Humboldt South Jetty under a 6,000 chinook quota and (3) Horse Mt. and Pt. Arena.
Sept. 30	All-salmon-except-coho fisheries close for the season from the Oregon-California border to Humboldt South Jetty and from Horse Mt. to the U.S.-Mexico border.
Oct. 15	Goat Island to 42°01'20" N latitude (Chetco River), chinook only fishery opens inside Oregon territorial waters under a 1,000 chinook quota. Landings are restricted to Brookings with a single daily landing limit of no more than 20 chinook.
Oct. 31	Cape Falcon to Humbug Mt., all-salmon-except-coho fishery closes for the season.
	Chetco River, chinook only fishery inside Oregon territorial waters closes as scheduled.
Nov. 1	Oregon State territorial waters, chinook only fisheries open from (1) Twin Rocks to Pyramid Rock (Tillamook Bay mouth) and (2) Cape Blanco to Humbug Mt. (Elk River). All landings in the Elk River fishery must be made in Port Orford.
Nov. 15	Twin Rocks to Pyramid Rock (Tillamook Bay mouth), chinook only fishery inside Oregon territorial waters closes.
Nov. 30	Cape Blanco to Humbug Mt., chinook only fishery inside Oregon territorial waters closes.

TREATY INDIAN TROLL SEASONS

May 1	All-salmon-except-coho fisheries open under an overall 10,000 chinook quota for the May-June season (any remainder of the quota is not transferable to the Aug.-Sept. season).
June 6	All-salmon-except-coho fisheries are closed as the 10,000 chinook quota is projected to be reached.
Aug. 3	All-salmon fisheries open under overall quotas of 5,000 chinook and 10,000 coho.
Aug. 21	The Makah all-salmon fishery closes temporarily.
Sept. 1	The Makah all-salmon fishery reopens.

TABLE C-9. Sequence of events in ocean salmon fishery management, 1998.[a/] (Page 4 of 5)

TREATY INDIAN TROLL SEASONS (continued)

Sept. 4	All-salmon fishery closes to assess achievement of overall chinook quota. This is the end of the summer season for the Hoh, Quileute and S'Klallam tribes.
Sept. 6-15	All-salmon fisheries reopen as follows:
	Quinault tribe reopens all-salmon fishery from Sept. 8-12.
	Makah tribe reopens all salmon fishery from noon, Sept. 6 through noon, Sept. 9; 6 a.m., Sept 11 through noon, Sept. 12; noon, Sept. 14 through midnight, Sept. 15.

RECREATIONAL SEASONS

Feb. 14	Horse Mt. to Pt. Arena, all-salmon-except-coho fishery opens.
Mar. 14	Pigeon Point to the U.S.-Mexico border, all-salmon-except-coho fishery opens.
Mar. 28	Point Arena to Pigeon Point, all-salmon-except-coho fishery opens.
Apr. 15	Cape Falcon to Humbug Mountain, all-salmon-except-coho fishery opens.
May 23	Humbug Mt. to Horse Mt., all-salmon-except-coho fishery opens for 19 days with a daily bag limit of one fish.
June 10	Humbug Mt. to Horse Mt., all-salmon-except-coho fishery closes for 10 days.
June 21	Humbug Mt. to Horse Mt., all-salmon-except-coho fishery reopens for 15 days.
July 1	Between Pt. Arena to Pigeon Pt., the daily bag limit changes to first two fish with no minimum size limit (remains in effect through Sept. 7).
July 5	All-salmon-except-coho fisheries between Cape Falcon and Pt. Arena close (to limit coho impacts). Reopenings are scheduled for Aug. 1 from Cape Falcon to Humbug Mt. and Horse Mt. to Pt. Arena, and Aug. 11 from Humbug Mt. to Horse Mt.
Aug. 1	All-salmon-except-coho fisheries reopen between (1) Cape Falcon and Humbug Mt. and (2) Horse Mt. and Pt. Arena. In Oregon territorial waters off the mouth of Tillamook Bay between Twin Rocks and Pyramid Rock, the regulations differ slightly from that of the overall area in that the bag limit allows no more than four (rather than six) fish in seven consecutive days and flashers are totally prohibited.
Aug. 3	Cape Alava to Cape Falcon, all-salmon fisheries open. North of Cape Alava (Neah Bay), the season is closed by agreement of port representatives in lieu of a fishery inside Area 4B from Aug. 3-19 for all salmon except chinook. Between Cape Alava and Queets River (La Push), the fishery is open seven days per week. South of Queets River, the season is open Sunday-Thursday and the daily bag limit allows two fish, but only one chinook, and no more than four fish per calendar week (Sunday through Saturday). In addition, between Leadbetter Pt. and Cape Falcon (Columbia River area), a selective fishery is instituted which requires that all retained coho must have a healed adipose fin clip (1,000 of the 8,000 coho quota are assigned to hook-and-release mortality in the selective fishery).
Aug. 9	Cape Alava to Queets River, all-salmon fishery closes upon projection of achieving its 600 coho quota. Leadbetter Pt. to Cape Falcon, all-salmon selective coho fishery closes to avoid exceeding the 8,000 coho quota.
Aug. 11	Humbug Mt. to Horse Mt., all-salmon-except-coho fishery reopens.
Aug. 16	Queets River to Leadbetter Pt. (Westport), all-salmon-except-coho fishery closes to assure the 7,400 coho quota is not exceeded.
Sept. 3	Queets River to Cape Falcon all-salmon fisheries open for one final day.

TABLE C-9. Sequence of events in ocean salmon fishery management, 1998.[a/] (Page 5 of 5)

RECREATIONAL SEASONS (continued)

Sept. 7	Pigeon Pt. to U.S.-Mexico border, all-salmon-except-coho fishery closes for the season.
Sept. 8	Between Pt. Arena and Pigeon Pt., the standard two fish bag and minimum size restriction of 24 inches. replaces the bag limit of the first two fish with no minimum size limit which was in effect since July 1.
Sept. 13	Humbug Mt. to Horse Mt., all-salmon-except-coho fishery closes for the season.
Oct. 5	Goat Island to 42°01'20" N latitude (Chetco River), chinook only fishery inside Oregon territorial waters opens.
Oct. 14	Chetco River, chinook only fishery inside Oregon territorial waters closes.
Oct. 31	Cape Falcon to Humbug Mt., all-salmon-except-coho fishery closes for the season.
Nov. 1	Pt. Arena to Pigeon Pt., all-salmon-except-coho fishery closes for the season.
	Cape Blanco to Humbug Mt. (Elk River), all-salmon-except-coho fishery inside Oregon territorial waters opens.
	Twin Rocks to Pyramid Rock (Tillamook Bay mouth), chinook only fishery remains open inside Oregon territorial waters.
Nov. 15	Horse Mt. to Pt. Arena, all-salmon-except-coho fishery closes for the season.
	Twin Rocks to Pyramid Rock (Tillamook Bay mouth), chinook only fishery inside Oregon territorial waters closes for the season.
Nov. 30	Elk River, chinook only fishery inside Oregon territorial waters closes.

a/ Unless stated otherwise, season openings or modifications of restrictions are effective at 0001 hours of the listed date. Closures are effective at midnight.

APPENDIX D
HISTORICAL ECONOMIC DATA

LIST OF TABLES

LIST OF TABLES (continued)

TABLE D-1. **California** monthly **troll** chinook and coho **average dressed weights** (pounds) by area of landing. (Page 1 of 3)

Year	Apr.	May	June	July	Aug.	Sept.	Oct.	Season	May	June	July	Aug.	Sept.	Season[a/]
					CHINOOK							COHO		
Crescent City														
1976-1980	9.1	8.5	8.6	9.1	9.8	8.9	-	8.9	3.9	4.3	6.4	7.1	7.1	5.0
1981-1985	-	8.5	8.1	9.1	9.4	9.1	-	8.9	3.9	4.5	5.6	6.7	6.9	5.5
1986-1990	-	10.0	9.1	9.7	8.8	9.2	-	9.2	-	5.0	5.1	4.5	5.6	5.0
1981	-	8.9	9.7	8.8	9.4	9.1	-	9.2	3.9	4.4	6.0	6.8	7.1	5.6
1982	-	8.0	8.8	9.9	9.7	9.3	-	9.4	3.9	4.9	5.9	6.5	6.5	5.9
1983	-	6.8	7.6	7.6	7.2	-	-	7.5	-	4.4	4.3	4.5	-	4.4
1984	-	7.1	7.2	7.9	8.4	-	-	7.9	-	-	-	7.7	-	7.7
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	9.1	8.3	9.5	8.6	9.1	-	8.7	-	4.7	5.0	-	-	4.8
1987	-	10.2	8.8	9.9	-	10.2	-	8.9	-	5.3	5.5	-	5.5	5.4
1988	-	9.0	9.1	-	-	9.0	-	9.1	-	5.4	-	-	5.6	5.4
1989	-	11.7	12.2	-	9.2	-	-	11.8	-	4.6	-	4.5	-	4.6
1990	-	-	-	-	9.7	-	-	9.7	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	8.3	10.6	-	9.6	-	-	-	-	-	-
1997[b/]	-	-	-	-	-	10.5	-	10.5	-	-	-	-	-	-
1998[b/]	-	-	-	-	-	9.1	-	9.1	-	-	-	-	-	-
Eureka														
1976-1980	7.8	8.1	8.4	8.6	9.8	9.5	-	8.4	3.1	4.3	6.2	7.1	6.8	4.3
1981-1985	-	7.6	8.3	9.3	9.7	9.6	-	8.6	3.8	4.5	5.6	6.4	6.6	5.4
1986-1990	-	-	8.8	10.1	10.5	9.2	11.8	9.2	-	5.3	5.6	5.3	6.1	5.5
1981	-	7.6	8.9	9.5	9.4	10.0	-	8.5	3.7	4.6	5.9	6.7	6.7	5.7
1982	-	7.8	9.4	9.6	10.9	9.2	-	9.0	5.1	5.3	5.8	6.6	6.4	5.9
1983	-	7.2	7.6	8.0	7.9	-	-	7.6	5.0	4.3	4.3	5.0	-	4.4
1984	-	7.2	7.0	8.7	8.4	-	-	7.9	-	-	7.6	6.6	-	6.8
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	8.1	10.1	10.8	10.9	-	9.6	-	5.1	5.6	5.9	6.9	5.2
1987	-	-	8.9	-	-	8.2	-	8.8	-	5.2	-	-	6.5	5.3
1988	-	-	8.7	-	-	9.1	-	8.8	-	5.6	-	-	6.1	5.7
1989	-	-	10.3	-	9.9	9.6	9.5	10.0	-	4.7	-	4.9	6.3	4.9
1990	-	-	-	-	9.9	8.4	9.7	9.5	-	-	-	5.7	5.3	5.3
1991	-	-	-	-	-	9.5	17.7	10.1	-	-	-	-	6.2	6.2
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	11.9	10.3	-	10.7	-	-	-	-	-	-
1997[b/]	-	-	-	-	-	10.1	-	10.1	-	-	-	-	-	-
1998[b/]	-	-	-	-	-	8.9	-	8.9	-	-	-	-	-	-

TABLE D-1. **California** monthly **troll** chinook and coho **average dressed weights** (pounds) by area of landing. (Page 2 of 3)

Year	Apr.	May	June	July	Aug.	Sept.	Oct.	Season	May	June	July	Aug.	Sept.	Season[a/]
					CHINOOK							COHO		
Fort Bragg														
1976-1980	9.1	8.6	9.4	10.8	10.2	10.5	-	10.1	3.9	4.9	6.7	6.9	7.6	5.4
1981-1985	7.6	9.5	10.6	10.1	11.3	10.3	-	10.3	3.8	5.2	6.4	6.3	7.6	6.2
1986-1990	-	9.2	9.9	9.4	10.1	10.4	-	9.6	-	5.3	5.9	6.2	6.1	5.7
1981	-	8.5	10.5	9.6	9.8	10.5	-	9.7	3.7	5.0	6.1	6.2	7.5	5.8
1982	7.6	9.7	10.8	10.0	11.6	9.9	-	10.1	4.2	6.2	6.1	6.5	7.1	6.2
1983	-	7.1	7.6	7.7	8.4	8.2	-	7.7	6.0	4.2	4.7	5.3	5.5	4.6
1984	-	7.1	10.0	8.8	8.9	9.7	-	9.0	-	7.4	7.3	7.8	8.6	7.4
1985	-	12.5	13.0	11.7	12.9	12.0	-	12.3	-	7.1	7.5	7.3	7.6	7.4
1986	-	8.6	8.4	7.9	9.2	9.3	-	8.4	-	4.9	5.9	6.4	6.1	5.6
1987	-	9.2	10.2	9.6	9.7	10.2	-	9.7	-	5.7	5.8	-	6.4	5.8
1988	-	9.6	10.8	10.1	11.5	10.5	-	10.3	-	5.9	6.6	7.3	6.8	6.4
1989	-	9.7	12.0	9.8	9.3	10.9	-	10.0	-	5.3	5.6	6.0	5.4	5.7
1990	-	9.4	9.5	9.0	10.9	9.5	-	9.4	-	4.8	5.1	6.0	6.4	5.0
1991	-	-	-	-	10.5	9.5	-	10.5	-	-	-	6.4	-	6.4
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	8.2	-	-	-	9.4	-	9.4	-	-	-	-	-	-
1994	-	-	-	-	-	11.0	-	11.0	-	-	-	-	-	-
1995	-	-	-	-	-	11.7	-	11.7	-	-	-	-	-	-
1996	-	-	-	-	11.0	11.7	-	11.2	-	-	-	-	-	-
1997[b/]	-	-	-	-	-	9.3	-	9.3	-	-	-	-	-	-
1998[b/]	-	-	-	-	-	12.1	-	12.1	-	-	-	-	-	-
San Francisco														
1976-1980	8.5	8.9	9.9	10.8	11.4	11.6	-	9.9	4.2	5.0	6.8	6.8	7.7	5.2
1981-1985	7.5	9.0	10.3	10.6	10.4	10.5	-	10.0	4.5	6.5	7.4	6.7	7.5	7.0
1986-1990	-	9.4	10.5	11.0	12.5	12.1	-	10.4	-	5.3	6.0	6.5	6.1	5.6
1981	-	8.6	9.8	11.3	11.3	9.9	-	10.4	4.0	6.7	7.0	5.6	10.2	6.4
1982	7.5	9.0	10.1	10.4	11.0	11.2	-	9.9	4.4	5.6	6.6	7.2	7.9	6.2
1983	6.1	6.3	6.9	7.5	8.5	8.3	-	7.1	5.5	3.8	4.6	5.1	4.3	4.6
1984	-	8.0	8.5	9.2	8.8	8.6	-	8.9	-	6.9	7.9	7.6	8.7	7.6
1985	-	10.9	11.8	14.2	12.9	12.4	-	12.2	-	6.6	7.4	7.4	7.9	6.9
1986	-	8.3	8.8	9.4	11.0	13.6	-	9.1	-	5.4	6.2	6.6	5.5	6.0
1987	-	10.1	11.4	11.3	12.3	11.5	-	10.9	-	5.7	5.9	-	-	5.8
1988	-	9.5	11.9	11.7	13.5	12.5	-	11.2	-	6.4	7.2	7.6	7.1	6.9
1989	-	9.1	10.0	11.7	11.9	11.2	-	10.0	-	5.7	5.9	6.1	5.8	5.8
1990	-	9.1	9.1	10.5	13.5	11.9	-	9.5	-	5.0	5.4	6.4	6.5	5.2
1991	-	9.4	10.4	10.8	11.8	10.8	-	10.4	-	5.3	5.9	6.4	-	5.6
1992	-	8.2	-	-	11.0	12.4	-	11.5	-	-	-	4.8	-	4.8
1993	-	7.7	7.8	9.8	9.7	11.3	-	8.8	-	-	-	-	-	-
1994	-	9.1	10.1	10.5	10.4	11.7	-	10.1	-	-	-	-	-	-
1995	-	8.4	8.8	9.8	13.5	12.8	-	9.3	-	-	-	-	-	-
1996	-	9.4	9.4	10.8	12.5	12.9	-	10.3	-	-	-	-	-	-
1997[b/]	-	9.9	10.2	10.9	12.4	12.3	-	10.7	-	-	-	-	-	-
1998[b/]	-	7.2	7.5	8.0	10.6	11.8	-	8.4	-	-	-	-	-	-

TABLE D-1. **California** monthly **troll** chinook and coho **average dressed weights** (pounds) by area of landing. (Page 3 of 3)

Year	Apr.	May	June	July	Aug.	Sept.	Oct.	Season	May	June	July	Aug.	Sept.	Season[a/]
					CHINOOK							COHO		
Monterey														
1976-1980	8.5	9.3	9.2	10.9	13.2	10.0	-	9.9	4.4	4.9	6.7	7.2	5.6	5.1
1981-1985	8.2	8.1	8.9	9.4	10.7	11.4	-	8.8	5.8	6.1	7.2	7.5	7.6	6.4
1986-1990	-	10.0	11.1	12.3	12.9	11.8	-	11.0	-	5.3	6.5	6.6	6.1	5.8
1981	-	7.2	9.3	8.5	11.8	8.7	-	8.0	5.0	4.0	6.9	5.5	10.0	5.7
1982	8.3	9.1	10.1	10.8	10.8	11.9	-	9.7	6.7	5.5	5.8	8.7	10.4	6.9
1983	6.3	6.4	7.0	7.9	8.4	9.5	-	7.1	4.4	3.9	5.0	5.9	5.3	4.2
1984	-	7.8	8.3	9.8	9.5	8.6	-	8.4	-	6.7	7.9	10.7	-	7.0
1985	-	12.5	13.5	15.0	14.8	12.3	-	13.1	-	5.9	6.9	7.4	7.5	6.5
1986	-	8.8	9.7	10.1	11.5	11.0	-	9.4	-	5.0	7.4	6.8	8.0	6.3
1987	-	11.6	12.3	12.3	11.1	11.4	-	11.9	-	5.6	5.6	-	5.2	5.6
1988	-	10.1	12.5	15.0	16.6	12.5	-	12.3	-	5.8	5.1	6.1	-	5.8
1989	-	11.1	11.9	12.4	12.4	12.1	-	11.7	-	6.1	5.8	6.7	6.2	6.1
1990	-	9.8	10.2	11.3	9.7	11.8	-	10.3	-	5.3	6.4	6.3	6.3	5.6
1991	-	9.7	14.2	13.0	12.1	13.0	-	12.6	-	5.2	6.0	6.6	-	5.4
1992	-	8.6	9.3	9.1	9.9	9.7	-	9.0	-	4.3	5.2	4.4	-	4.5
1993	-	8.7	9.2	11.0	10.7	10.9	-	9.4	-	-	-	-	-	-
1994	-	10.9	11.6	12.5	12.8	10.0	-	11.8	-	-	-	-	-	-
1995	-	9.2	10.2	11.0	12.9	12.0	-	10.2	-	-	-	-	-	-
1996	-	10.4	11.3	12.6	11.7	11.2	-	11.3	-	-	-	-	-	-
1997	10.6	10.7	10.5	11.6	11.0	9.9	-	10.9	-	-	-	-	-	-
1998[b/]	-	7.5	7.3	7.4	11.1	7.9	-	7.4	-	-	-	-	-	-
Total Statewide														
1976-1980	8.4	8.6	9.1	10.3	10.7	10.5	-	9.5	3.5	4.5	6.5	7.0	7.1	4.9
1981-1985	7.9	8.6	9.8	10.1	10.3	10.2	-	9.6	3.9	5.1	6.2	6.5	7.0	5.9
1986-1990	-	9.5	10.2	10.5	11.2	10.9	11.8	10.2	-	5.2	6.0	6.2	6.0	5.6
1981	-	8.0	10.1	10.3	10.0	9.7	-	9.4	3.8	4.6	6.0	6.7	7.1	5.7
1982	7.9	8.8	10.0	10.2	10.7	10.4	-	9.7	4.9	5.4	6.0	6.6	6.8	6.0
1983	6.2	6.5	7.4	7.7	8.3	8.4	-	7.3	5.0	4.3	4.4	5.0	4.8	4.4
1984	-	7.5	8.5	9.1	8.8	9.3	-	8.7	-	6.8	7.7	7.2	8.6	7.4
1985	-	11.6	12.4	12.7	13.0	12.2	-	12.3	-	7.0	7.5	7.3	7.6	7.3
1986	-	8.6	8.8	8.9	10.3	11.6	-	9.0	-	5.0	6.0	6.4	6.1	5.5
1987	-	10.1	10.4	10.3	10.7	10.5	-	10.3	-	5.4	5.8	-	6.4	5.6
1988	-	9.7	11.3	11.3	12.9	11.0	-	11.0	-	5.8	6.6	7.4	6.2	6.3
1989	-	9.7	10.7	10.7	10.4	10.9	9.5	10.3	-	5.1	5.7	5.9	5.9	5.5
1990	-	9.4	9.5	10.4	11.3	10.1	9.7	9.7	-	4.9	5.4	6.2	5.6	5.1
1991	-	9.5	11.9	11.6	11.2	10.4	17.7	11.0	-	5.3	5.9	6.4	6.2	5.6
1992	-	8.6	9.3	9.1	10.9	12.1	-	10.0	-	4.3	5.2	4.8	-	4.5
1993	-	8.2	8.7	10.2	9.9	9.7	-	9.1	-	-	-	-	-	-
1994	-	9.7	10.3	11.2	10.5	11.4	-	10.5	-	-	-	-	-	-
1995	-	8.8	9.5	10.5	13.2	12.4	-	9.8	-	-	-	-	-	-
1996	-	10.2	10.2	11.8	11.7	11.9	-	10.8	-	-	-	-	-	-
1997	10.6	10.3	10.4	11.2	12.3	11.7	-	10.8	-	-	-	-	-	-
1998[b/]	-	7.4	7.4	7.9	10.7	11.6	-	8.0	-	-	-	-	-	-

a/ Season average includes minor catches for Oct. where appropriate.
b/ Preliminary.

TABLE D-2. **Oregon** monthly **troll** chinook and coho salmon **average dressed weights** (pounds). (Page 1 of 1)

Year or Average	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Season
				CHINOOK					
1971-1975	-	9.4	10.8	10.4	10.1	9.2	11.0	16.3	10.2
1976	-	10.2	10.3	10.8	10.5	9.7	10.6	11.7	10.4
1977	-	8.8	10.5	10.5	10.0	9.4	11.0	14.1	10.2
1978	-	9.6	9.8	9.9	9.2	9.5	12.0	18.5	9.9
1979	-	11.9	9.9	11.0	10.2	10.9	9.0	16.3	10.5
1980	-	10.7	10.5	10.6	10.3	9.8	9.9	16.4	10.4
1981	-	9.2	9.1	10.7	9.8	8.6	10.5	14.4	9.8
1982	-	9.4	10.4	10.4	10.0	8.8	9.8	12.9	10.1
1983	-	8.8	8.0	7.9	7.8	8.8	10.1	11.7	8.2
1984	-	8.6	8.5	8.5	8.2	9.2	16.6	15.4	8.5
1985	-	9.1	9.3	10.0	9.0	8.6	10.6	19.3	9.4
1986	-	9.4	8.7	8.5	8.0	7.8	7.5	13.1	8.4
1987	-	9.3	9.7	10.2	9.4	8.4	10.8	14.2	9.8
1988	-	8.6	9.5	9.5	9.3	10.0	9.3	14.6	10.1
1989	-	9.8	9.4	10.5	9.6	10.9	10.5	16.8	10.0
1990	-	9.4	10.0	9.4	8.7	9.6	13.8	10.5	9.4
1991	-	10.4	9.9	9.7	8.3	8.9	10.4	-	9.3
1992	-	9.7	10.3	8.7	8.5	9.7	9.9	-	9.2
1993	-	9.5	8.9	9.5	8.2	9.2	10.9	12.5	9.3
1994	-	10.6	10.6	8.7	13.0	9.6	13.3	15.6	11.3
1995	-	9.5	9.3	9.5	9.1	8.7	8.9	8.9	9.0
1996	-	9.8	11.3	12.3	11.2	10.5	10.2	11.1	10.9
1997	11.8	11.3	11.0	11.9	9.3	9.1	12.4	15.8	10.3
1998[a/]	11.1	10.8	11.5	12.7	10.8	10.0	14.4	15.6	11.2
				COHO					
1971-1975	-	-	5.1	6.1	7.0	7.2	7.9	-	6.2
1976	-	-	4.1	5.0	5.8	5.7	6.2	-	5.0
1977	-	-	4.6	6.0	7.1	6.6	7.6	-	5.9
1978	-	-	4.4	4.5	5.1	4.9	5.2	-	4.5
1979	-	-	-	6.3	6.8	6.2	-	-	6.4
1980	-	-	-	5.5	5.9	6.1	-	-	5.7
1981	-	-	-	4.8	6.0	-	-	-	5.4
1982	-	-	-	5.2	5.6	-	-	-	5.2
1983	-	-	-	3.4	3.8	3.6	-	-	3.4
1984	-	-	-	-	5.1	-	-	-	5.1
1985	-	-	-	5.7	5.9	-	-	-	5.8
1986	-	-	4.3	4.4	3.9	-	-	-	4.3
1987	-	-	5.0	5.3	5.6	5.9	-	-	5.4
1988	-	-	5.2	5.1	5.9	-	-	-	5.4
1989	-	-	4.6	4.3	4.7	4.7	-	-	4.4
1990	-	-	-	5.1	5.3	5.5	7.2	-	5.2
1991	-	-	4.2	4.8	5.1	4.8	-	-	4.6
1992	-	-	-	4.0	4.2	-	-	-	4.2
1993	-	-	-	3.3	5.2	6.0	-	-	5.4
1994	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-	-	-
1998[a/]	-	-	-	-	-	-	-	-	-

a/ Preliminary.

TABLE D-3. **Washington** monthly **troll** chinook and coho salmon **average dressed weights** (pounds).[a/b/] (Page 1 of 2)

Year	May		June		July		Aug.		Sept.		Oct.		Season[c/]	
	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian
CHINOOK														
1980	10.9	12.0	12.6	-	12.5	13.2	14.2	13.5	10.9	13.1	6.7	-	7.3	13.0
1981	7.3	10.2	9.8	-	10.4	12.8	11.0	13.0	8.1	-	5.7	-	6.7	11.4
1982	8.9	9.7	8.0	-	10.2	12.9	8.4	14.0	5.9	13.6	5.5	-	7.0	11.2
1983	7.1	9.9	8.5	-	9.6	11.8	7.8	12.3	7.2	11.7	5.1	-	6.1	10.5
1984	6.6	9.1	8.8	-	8.1	-	8.6	10.7	8.0	-	4.4	-	5.3	9.4
1985	6.5	9.7	8.9	-	9.8	11.5	10.8	11.1	9.5	-	4.9	-	6.9	10.4
1986	8.3	10.1	7.3	-	8.8	-	8.3	10.3	5.9	-	4.5	-	6.0	10.2
1987	8.2	9.0	6.0	-	10.1	10.6	10.0	-	6.1	-	-	-	6.3	9.5
1988	8.2	10.3	9.6	11.1	10.1	-	9.8	-	8.4	-	5.1	-	7.0	10.6
1989	8.8	10.1	7.7	10.1	9.0	-	9.3	13.2	7.8	12.6	5.1	-	7.1	10.6
1990	7.0	8.0	9.7	12.0	10.1	13.6	8.2	12.7	6.0	11.7	6.2	12.6	7.0	11.1
1991	7.4	10.1	7.9	10.9	8.9	-	8.7	12.7	4.3	12.0	7.9	-	6.5	10.6
1992	6.4	11.3	7.3	12.3	8.3	12.1	8.4	11.5	7.5	-	4.8	-	6.1	11.6
1993	6.3	10.7	7.3	10.8	8.5	12.0	8.3	11.4	8.4	12.1	8.5	-	7.0	11.0
1994	9.6	-	9.9	9.3[d/]	11.9	-	-	-	-	-	-	-	8.1	9.3[d/]
1995	5.7	-	6.7	-	6.0	-	7.7	9.1[d/]	6.2	9.4[d/]	4.2	8.3[d/]	6.9	8.4[d/]
1996	5.8	-	6.2	12.9[d/]	-	12.6[d/]	7.8	-	6.7	-	-	-	6.9	12.4[d/]
1997	7.3	10.4	6.7	10.9	-	-	8.4	-	9.3	-	-	-	7.4	10.6
1998	11.1	11.4	11.7	12.9	7.4	-	11.0	-	8.2	-	-	-	10.8	11.4

TABLE D-3. **Washington** monthly **troll** chinook and coho salmon **average dressed weights** (pounds).[a/b/] (Page 2 of 2)

Year	May		June		July		Aug.		Sept.		Oct.		Season[c/]	
	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian	Treaty Indian	Non-Indian
						COHO								
1980	2.5	-	3.4	-	4.3	4.8	5.7	6.0	6.9	5.7	-	-	3.7	5.2
1981	1.7	-	2.9	-	3.9	4.2	4.7	4.7	5.9	5.9	-	5.8	4.5	4.3
1982	2.2	-	3.5	-	4.2	4.7	5.3	4.1	6.5	4.9	-	-	5.3	5.0
1983	3.0	-	3.4	-	3.6	5.0	4.0	4.0	4.8	-	-	-	4.1	4.2
1984	-	-	-	-	3.1	-	5.0	4.5	5.1	-	6.5	-	4.2	4.5
1985	-	-	3.1	-	4.4	4.5	5.5	5.8	5.7	-	-	-	5.0	4.6
1986	-	-	3.0	-	3.5	-	3.9	4.2	-	-	5.8	-	3.4	4.1
1987	-	-	-	-	3.9	4.3	4.3	-	4.6	-	4.6	-	4.1	4.3
1988	-	-	2.6	-	4.1	-	3.9	-	4.4	-	5.0	-	4.0	-
1989	-	-	-	-	4.0	-	4.2	3.8	4.6	4.9	5.0	-	4.3	3.9
1990	-	-	2.9	-	4.6	5.5	4.8	5.2	5.8	6.0	6.2	7.0	4.8	5.6
1991	-	-	-	-	4.1	-	4.8	5.0	3.9	5.6	6.0	-	4.4	5.1
1992	-	-	2.7	-	3.5	3.8	3.4	4.5	2.9	-	3.9	-	3.5	4.1
1993	-	-	-	-	3.4	3.6	4.6	5.0	4.9	5.8	5.7	-	4.6	4.8
1994	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	3.8	-	4.6	4.2	3.9	4.7	8.0	-	4.6	4.4
1996	-	-	-	-	-	3.8	3.5	4.0	5.3	-	-	-	5.0	4.0
1997	-	-	-	-	-	-	3.4	-	3.9	-	-	-	3.6	-
1998	-	-	-	-	4.6	-	5.0	-	5.8	-	-	-	5.4	-

a/ Split between treaty Indian and non-Indian beginning in 1979. Treaty Indian statistics include landings from Puget Sound.
b/ All values in this table are based on preliminary information available at the start of each year's review.
c/ Season totals include additional winter treaty Indian troll.
d/ The fishery for chinook was closed north of Cape Falcon, however chinook were caught off Oregon and landed in Washington.

TABLE D-4. **California troll** salmon **landings**[a/] in dressed weight, value of landings and **number of registered vessels** making commercial salmon landings.[b/] (Page 1 of 1)

Year	Dressed Pounds Landed (thousands)	Nominal Exvessel Value ($ thousands)	Vessels Landing Salmon	Vessels with Permits	Nominal Average Exvessel Value/Vessel (dollars)	Real Average Exvessel Value/Vessel (dollars)[c/]
1960	6,221	3,339	1,365	-	2,446	11,847
1961	8,638	4,698	1,615	-	2,909	13,927
1962	6,673	4,023	1,563	-	2,574	12,168
1963	7,849	3,959	1,611	-	2,457	11,483
1964	9,481	5,013	1,774	-	2,826	13,009
1965	9,674	4,989	2,001	-	2,493	11,258
1966	9,447	4,845	1,929	-	2,512	11,027
1967	7,402	3,945	2,137	-	1,846	7,854
1968	6,952	4,014	2,249	-	1,785	7,277
1969	6,151	3,843	2,125	-	1,808	7,043
1970	6,629	5,101	2,065	-	2,470	9,134
1971	8,117	4,757	2,221	-	2,142	7,529
1972	6,423	4,830	2,392	-	2,019	6,809
1973	9,669	8,991	2,848	-	3,157	10,079
1974	8,749	8,013	3,185	-	2,516	7,370
1975	6,925	6,972	3,150	-	2,213	5,926
1976	7,788	10,707	3,526	-	3,037	7,682
1977	5,920	12,074	3,797	-	3,180	7,556
1978	6,788	11,001	4,919	-	2,236	4,953
1979	8,746	19,659	4,593	-	4,280	8,734
1980	6,017	13,149	4,738	-	2,775	5,184
1981	6,012	14,322	4,102	-	3,491	5,961
1982	8,000	19,489	4,013	5,964	4,856	7,800
1983	2,411	4,608	3,223	4,617	1,430	2,202
1984	2,970	7,562	2,569	4,180	2,944	4,370
1985	4,600	11,515	2,308	3,869	4,989	7,160
1986	7,598	15,112	2,582	3,753	5,853	8,186
1987	9,293	25,623	2,442	3,533	10,493	14,237
1988	14,750	41,927	2,571	3,493	16,308	21,348
1989	5,720	13,485	2,534	3,464	5,322	6,685
1990	4,436	12,056	2,115	3,372	5,700	6,863
1991	3,697	9,047	1,769	3,242	5,114	5,922
1992	1,643	4,505	1,085	2,974	4,152	4,679
1993	2,537	5,707	1,240	2,740	4,602	5,054
1994	3,103	6,437	1,024	2,470	6,286	6,741
1995	6,633	11,693	1,104	2,333	10,591	11,103
1996	4,113	5,984	985	2,222	6,075	6,251
1997	5,248	7,288	835	2,069	8,729	8,848
1998[d/]	1,746	2,776	656	1,905	4,232	4,232

a/ Includes only chinook and coho salmon landings.
b/ Derived from vessel registrations and fish landing tickets.
c/ Expressed in 1998 dollars.
d/ Preliminary.

TABLE D-5. **Oregon troll** salmon **landings**[a/] [b/] in dressed weight, value of landings and number of registered vessels making commercial salmon landings. (Page 1 of 1)

Year	Dressed Pounds Landed (thousands)	Nominal Exvessel Value ($ thousands)	Vessels Landing Salmon	Vessels with Permits	Nominal Average Exvessel Value/Vessel (dollars)	Real Average Exvessel Value/Vessel (dollars)[c/]
1974	-	7,937	2,253	-	3,523	10,320
1975	-	5,808	2,304	-	2,521	6,750
1976	10,983	14,868	2,770	-	5,368	13,407
1977	6,209	11,484	3,108	-	3,695	8,564
1978	4,673	7,340	3,158	-	2,324	5,147
1979	7,166	16,989	3,114	-	5,456	11,133
1980	4,362	8,185	3,875[d/]	4,314	2,112	3,946
1981	4,897	9,573	3,615	3,926	2,648	4,521
1982	5,060	9,895	3,269	3,646	3,027	4,862
1983	1,753	2,296	2,951	3,439	778	1,199
1984	621	1,595	771[e/]	3,203	2,069	3,103
1985	2,514	5,774	2,050[f/]	2,993	2,817	4,042
1986	5,275	7,954	2,288	2,739	3,476	4,862
1987	7,098	16,763	2,111	2,626	7,941	10,774
1988	7,723	21,536	2,061	2,597	10,449	13,679
1989	5,528	10,025	1,937	2,569	5,176	6,501
1990	2,815	6,641	1,557	2,528	4,265	5,136
1991	2,106	3,120	1,217	2,044[g/]	2,564	2,969
1992	1,219	2,712	649	2,111	4,179	4,709
1993	770	1,671	612	1,814	2,735	2,998
1994	287	690	371	1,569	1,859	1,995
1995	1,941	3,294	476	1,465	6,920	7,254
1996	1,926	3,007	455	1,377	6,609	6,800
1997[h/]	1,542	2,469	433	1,295	5,701	5,760
1998[h/]	1,398	2,297	373	1,195	6,159	6,159

a/ Includes only chinook and coho salmon landings.
b/ Derived from vessel registrations and fish landing tickets.
c/ Expressed in 1998 dollars.
d/ The establishment of a restricted vessel permit system drew a number of historically active vessels back into the fishery in 1980.
e/ Vessels were not required to land one salmon in 1984 to be eligible for a permit in 1985. The Oregon Fish and Wildlife Commission waived this requirement because of the elimination of the coho fishery south of Cape Falcon.
f/ Vessels traditionally landing salmon south of Cape Blanco and north of Cape Falcon were not required to land one salmon in 1985 to be eligible for a permit in 1986. The Oregon Fish and Wildlife Commission waived this requirement because of the complete salmon closure south of Cape Blanco and a limited one-day coho season between the Columbia River and Cape Blanco.
g/ Legislation passed during the 1991 season of the Oregon Legislature **waived** the requirement that troll permit holders must buy a 1991 permit to be able to renew for 1992. This was a **one-time** exemption for 1991 only.
h/ Preliminary.

TABLE D-6. **Washington non-Indian troll salmon landings** in dressed weight, value of landings and number of registered vessels making commercial salmon landings.[a/] (Page 1 of 1)

Year	Dressed Pounds Landed (thousands)	Nominal Exvessel Value ($ thousands)	Vessels Landing Salmon	Vessels with Permits	Nominal Average Exvessel Value/Vessel (dollars)	Real Average Exvessel Value/Vessel (dollars)[b/]
1978	4,746	10,025	3,041	3,291	3,297	7,301
1979	5,262	15,091	2,778	3,068	5,432	11,085
1980	3,398	7,114	2,626	2,797	2,709	5,061
1981	2,678	5,921	2,439	2,603	2,428	4,145
1982	2,671	6,730	2,253	2,512	2,987	4,798
1983	653	1,465	2,045	2,328[c/]	716	1,104
1984	197	410	381	2,071[d/]	1,076	1,597
1985	964	1,601	1,259	1,650	1,272	1,825
1986	659	1,175	1,252	1,531	938	1,313
1987	758	1,960	883	1,401	2,220	3,011
1988	798	2,337	650	1,337	3,596	4,707
1989	696	1,230	883	1,306	1,393	1,750
1990	850	1,648	897	1,170	1,837	2,212
1991	612	1,126	811	1,013	1,388	1,608
1992	583	1,299	604	806	2,151	2,424
1993	398	795	474	668	1,677	1,842
1994	7[e/]	f/	1	7[g/]	f/	f/
1995	126	91	96	435[h/]	948	994
1996	87	85	90	333	943	951
1997	81	126	51	325[i/]	2,470	2,475
1998	82	123	23	281[j/]	5,345	5,345

a/ Includes only chinook and coho landings and is derived from vessel registrations and fish landing tickets. All values in this table are based on preliminary information available at the start of each year's salmon review.
b/ Expressed in 1997 dollars.
c/ 312 licenses and delivery permits purchased by buyback program.
d/ 118 licenses and delivery permits purchased by buyback program.
e/ Chinook were caught off Oregon and landed in Puget Sound.
f/ Value information is not provided in order to preserve confidentiality.
g/ Vessels were not required to purchase a permit in 1994 to maintain their eligibility for a permit in 1995.
h/ 190 licenses and delivery permits purchased by buyback program.
i/ 72 licenses and delivery permits purchased by buyback program at the end of 1996 and early 1997.
j/ 100 licenses and delivery permits purchased by buyback program at the end of 1997 and early 1998.

TABLE D-7. **California** salmon **troll boat-size catch** statistics in pounds of dressed salmon.[a/] (Page 1 of 2)

Year	Vessels: Length Category (feet)	Vessels: Number[c/]	Vessels: Percentage	Catch[b/]: Average Per Boat (pounds)	Catch[b/]: Total (pounds)	Catch[b/]: % of Total
1998[d/]	≤20	40	6	637	25,469	1
	21-25	153	23	1,344	205,589	12
	26-30	100	15	2,177	217,676	12
	31-35	117	18	2,489	291,226	17
	36-40	127	19	4,029	511,646	29
	41-45	64	10	4,289	274,528	16
	46-50	40	6	4,466	178,622	10
	51-55	11	2	3,234	35,571	2
	>56	4	1	2,596	5,192	e/
	Unknown	0	-	-	-	-
	TOTAL	656	100	25,261	1,745,519	
1997	≤20	53	6	1,128	59,776	1
	21-25	198	24	2,777	549,807	10
	26-30	126	15	4,462	562,209	11
	31-35	144	17	6,358	915,507	17
	36-40	159	19	8,603	1,367,849	26
	41-45	78	9	11,281	879,912	17
	46-50	54	6	13,156	710,418	14
	51-55	13	2	11,806	153,476	3
	>56	10	1	10,384	48,801	1
	Unknown	0	-	-	-	-
	TOTAL	835		69,955	5,247,755	
1996	≤20	66	7	1,500	99,021	2
	21-25	221	22	1,793	396,205	10
	26-30	163	16	2,648	431,620	11
	31-35	161	16	4,315	694,793	17
	36-40	176	18	5,945	1,046,274	25
	41-45	97	10	7,311	709,120	17
	46-50	73	7	7,984	582,826	14
	51-55	14	2	7,751	108,511	3
	>56	14	2	5,508	45,032	1
	Unknown	0	-	-	-	-
	TOTAL	985		4,176	4,113,403	
1995	≤20	88	7	1,478	130,074	2
	21-25	295	25	2,905	856,987	13
	26-30	188	16	4,542	853,887	13
	31-35	176	15	6,636	1,167,899	18
	36-40	210	18	8,147	1,710,765	26
	41-45	105	9	8,748	918,546	14
	46-50	82	7	8,480	695,374	10
	51-55	21	2	10,708	224,861	3
	>56	14	1	10,724	75,068	1
	Unknown	0	-	-	-	-
	TOTAL	1,179		5,626	6,633,463	
1994	≤20	78	8	584	45,530	1
	21-25	254	25	1,425	362,007	12
	26-30	170	17	2,085	354,515	11
	31-35	151	15	3,340	504,287	16
	36-40	188	18	4,719	887,232	29
	41-45	94	9	5,878	552,514	18
	46-50	69	7	4,001	276,100	9
	51-55	13	1	8,541	111,033	4
	>56	7	1	1,704	9,887	e/
	Unknown	0	-	-	-	-
	TOTAL	1,024		3,030	3,103,104	

TABLE D-7. **California** salmon **troll boat-size catch** statistics in pounds of dressed salmon.[a/] (Page 2 of 2)

Year	Vessels: Length Category (feet)	Vessels: Number[c/]	Vessels: Percentage	Catch[b/]: Average Per Boat (pounds)	Catch[b/]: Total (pounds)	Catch[b/]: % of Total
1993	≤20	101	8	447	45,103	2
	21-25	321	26	1,028	330,110	13
	26-30	218	18	1,538	335,333	13
	31-35	167	13	2,467	411,989	16
	36-40	216	17	3,103	670,209	26
	41-45	103	8	3,859	397,525	16
	46-50	78	6	3,050	237,930	9
	51-55	22	2	4,205	92,500	4
	>56	14	1	1,156	16,185	1
	Unknown	0	-	-	-	-
	TOTAL	1,240		2,046	2,536,884	
1992	≤20	98	9	347	33,962	2
	21-25	279	26	838	233,894	14
	26-30	190	18	1,178	223,847	14
	31-35	158	15	1,535	242,532	15
	36-40	180	17	2,579	464,288	28
	41-45	87	8	2,842	247,249	15
	46-50	64	6	1,720	110,058	7
	51-55	19	2	3,719	70,668	4
	>56	10	1	2,194	16,906	1
	Unknown	0	-	-	-	-
	TOTAL	1,085		1,515	1,643,403	
1991	≤20	196	11	540	105,895	3
	21-25	427	24	944	403,026	11
	26-30	300	17	1,489	446,841	12
	31-35	219	12	2,284	500,112	14
	36-40	309	17	3,194	987,011	27
	41-45	148	8	4,315	638,649	17
	46-50	118	7	3,814	450,025	12
	51-55	27	2	4,852	130,991	4
	56-60	13	1	1,514	19,681	1
	>60	9	1	1,594	14,349	e/
	Unknown	3	e/	226	677	e/
	TOTAL	1,769		24,766	3,697,257	

a/ Derived from vessel registrations and fish landing tickets.
b/ Excludes pink salmon landings.
c/ Number of boats includes only those recording pounds greater than 0.
d/ Preliminary.
e/ Less than 0.5%.

TABLE D-8. **Oregon** salmon **troll boat-size catch** statistics in pounds of dressed salmon. (Page 1 of 1)

Year	Vessels: Length Category (Feet)	Vessels: Number[b/]	Vessels: Percentage	Catch[a/]: Average Per Boat (pounds)	Catch[a/]: Total (pounds)	Catch[a/]: Percent of Total
1998[c/]	<20	5	1	1,536	7,679	1
	20-29	65	17	1,036	67,332	5
	30-39	163	44	3,673	598,702	43
	40-49	110	30	5,395	593,433	43
	≥50	30	8	4,351	130,537	9
	TOTAL	373			1,397,683	
1997	<20	5	1	1,149	5,743	d/
	20-29	98	23	838	82,089	5
	30-39	185	43	3,976	735,478	48
	40-49	114	26	5,401	615,756	40
	≥50	31	7	3,322	102,982	7
	TOTAL	433		2,937	1,542,048	
1996	<20	6	1	2,088	12,530	1
	20-29	117	26	1,009	118,069	6
	30-39	186	41	5,010	931,895	48
	40-49	115	25	6,466	743,584	39
	≥50	32	7	3,720	119,048	6
	TOTAL	456		4,222	1,925,126	
1995	<20	8	2	1,561	12,486	1
	20-29	142	30	1,190	168,999	9
	30-39	185	39	4,573	845,647	44
	40-49	111	23	6,884	764,118	39
	≥50	30	6	4,995	149,846	8
	TOTAL	476		4,078	1,941,096	
1994	<20	7	2	968	6,776	2
	20-29	114	31	435	49,573	17
	30-39	153	41	824	126,188	44
	40-49	85	23	1,080	91,834	32
	≥50	12	3	1,032	12,382	4
	TOTAL	371		773	286,753	
1993	<20	10	2	662	6,619	1
	20-29	206	34	558	115,029	15
	30-39	236	39	1,549	365,597	48
	40-49	128	21	1,888	241,663	31
	≥50	32	5	1,282	41,029	5
	TOTAL	612		1,258	769,937	
1992	<20	7	1	706	4,945	d/
	20-29	242	37	849	205,466	17
	30-39	245	38	2,384	584,162	48
	40-49	134	21	2,911	390,040	32
	≥50	21	3	1,630	34,231	3
	TOTAL	649		1,878	1,218,844	
1991	<20	22	2	622	13,672	1
	20-29	568	47	1,266	719,071	34
	30-39	365	30	2,138	780,386	37
	40-49	209	17	2,468	515,790	24
	≥50	53	4	1,583	84,279	4
	TOTAL	1217		1,736	2,113,198	

a/ Excludes pink salmon landings.
b/ Number of boats includes only those recording pounds greater than 0.
c/ Preliminary.
d/ Less than 0.5%.

TABLE D-9. **Washington non-Indian** salmon **troll boat-size** catch statistics in pounds of dressed salmon.[a/] (Page 1 of 1)

Year	Vessels: Length Category (Feet)	Vessels: Number[c/]	Vessels: Percentage	Catch[b/]: Average Per Boat (pounds)	Catch[b/]: Total (pounds)	Catch[b/]: % of Total
1998	≤25	3	13	545	1,634	2
	26-36	6	26	2,842	17,050	21
	>36	13	57	4,799	62,385	76
	Unknown	1	4	522	522	1
	TOTAL	23		3,547	81,591	
1997	≤25	7	14	322	2,253	3
	26-36	16	31	1,468	23,491	29
	>36	26	51	2,096	54,500	67
	Unknown	2	4	352	703	1
	TOTAL	51		1,587	80,947	
1996	≤25	39	43	709	27,664	31
	26-36	24	27	868	20,826	23
	>36	20	22	1,372	27,440	31
	Unknown	7	8	1,861	13,029	15
	TOTAL	90		988	88,959	
1995	≤25	45	47	1,864	83,901	36
	26-36	30	31	2,936	88,083	38
	>36	17	18	2,950	50,144	22
	Unknown	4	4	2,351	9,403	4
	TOTAL	96		2,412	231,531	
1994	≤25	0	-	-	-	-
	26-36	0	-	-	-	-
	>36	1	100	7,263[d/]	7,263	100
	Unknown	0	-	-	-	-
	TOTAL	1		7,263	7,263	
1993	≤25	174	37	235	40,879	10
	26-36	134	28	627	84,005	21
	>36	145	31	1,832	265,684	65
	Unknown	21	4	924	19,406	5
	TOTAL	474		904	409,974	
1992	≤25	241	40	276	66,617	11
	26-36	167	28	727	121,416	21
	>36	170	28	2,176	369,833	64
	Unknown	26	4	956	24,848	4
	TOTAL	604		4,135	582,714	
1991	≤25	292	36	426	124,397	16
	26-36	204	25	729	148,643	19
	>36	212	26	1,859	394,075	51
	Unknown	103	13	1,006	103,637	14
	TOTAL	811		950	770,752	

a/ All values in this table are based on preliminary information available at the start of each year's review.
b/ Excludes pink salmon landings.
c/ Number of boats includes only those recording pounds greater than 0.
d/ The fishery was closed north of Cape Falcon, however, chinook were caught off Oregon and landed in Puget Sound.

TABLE D-10. Preliminary **California** salmon **landings (in pounds of dressed salmon) and exvessel values** by vessel size categories and ports from Crescent City to Santa Barbara, 1998. (Page 1 of 2)

Port	Vessel Length (feet)	Number of Deliveries	Total Dressed Pounds Landed	Total Exvessel Value (dollars)	% Total Exvessel Value Landed In Port
Crescent City	<26	-	-	-	
	26-36	a/	a/	a/	a/
	>36	a/	a/	a/	a/
	Unknown	-	-	-	
Trinidad	<26	a/	a/	a/	a/
	26-36	-	-	-	
	>36	-	-	-	
	Unknown	-	-	-	
Eureka	<26	a/	a/	a/	a/
	26-36	a/	a/	a/	3
	>36	50	10,901	18,117	96
	Unknown	-	-	-	
Shelter Cove	<26	a/	a/	a/	a/
	26-36	-	-	-	
	>36	-	-	-	
	Unknown	-	-	-	
Fort Bragg	<26	123	10,093	17,412	22
	26-36	77	15,848	26,377	34
	>36	73	21,284	33,899	44
	Unknown	-	-	-	
Mendocino	<26	a/	a/	a/	a/
	26-36	a/	a/	a/	a/
	>36	-	-	-	
	Unknown	-	-	-	
Bodega Bay	<26	722	75,309	136,244	18
	26-36	811	171,706	281,537	36
	>36	537	243,214	357,058	46
	Unknown	-	-	-	
San Francisco	<26	175	19,359	41,484	3
	26-36	407	277,876	425,473	29
	>36	497	718,906	979,394	68
	Unknown	-	-	-	
Half Moon Bay	<26	425	107,420	163,863	9
	26-36	862	473,959	706,504	40
	>36	670	598,726	901,329	51
	Unknown	-	-	-	
Santa Cruz	<26	259	68,430	91,350	15
	26-36	412	212,862	280,495	47
	>36	176	171,106	223,468	38
	Unknown	-	-	-	

TABLE D-10. Preliminary **California** salmon **landings (in pounds of dressed salmon) and exvessel values** by vessel size categories and ports from Crescent City to Santa Barbara, 1998. (Page 2 of 2)

Port	Vessel Length (feet)	Number of Deliveries	Total Dressed Pounds Landed	Total Exvessel Value (dollars)	% Total Exvessel Value Landed In Port
Moss Landing	<26	809	168,363	209,750	
	26-36	724	379,248	437,099	
	>36	411	728,683	841,165	
	Unknown	-	-	-	
Monterey	<26	562	120,312	146,668	28
	26-36	551	195,802	241,647	45
	>36	154	109,530	142,307	27
	Unknown	-	-	-	
Santa Barbara	<26	301	32,191	54,746	10
	26-36	430	139,527	223,696	40
	>36	230	163,084	280,646	50
	Unknown	-	-	-	

a/ Value not provided to preserve confidentiality.

TABLE D-11. Preliminary **Washington non-Indian troll** salmon **landings** (in pounds of dressed salmon) and **exvessel value** by vessel size categories and port areas, 1998.[a] (Page 1 of 1)

Port	Vessel Length (Feet)	Number of Boats	Boat Days Fished	Total Dressed Pounds Landed	Total Exvessel Value (dollars)	% Total Exvessel Value Landed by Port (dollars)
Neah Bay	≤25	3	8	1,634	2,240	5
	26-36	-	-	-	-	-
	>36	6	12	22,777	35,006	73
	Unknown	1	5	5,9850	10,556	22
	TOTAL	10	25	30,396	47,802	
La Push	≤25	-	-	-	-	
	26-36	-	-	-	-	
	>36	-	-	-	-	
	Unknown	-	-	-	-	
	TOTAL					
Grays Harbor	≤25	-	-	-	-	-
	26-36	5	9	7,434	14,276	28
	>36	6	12	25,628	36,639	71
	Unknown	1	1	522	688	1
	TOTAL	12	22	33,584	51,603	
Columbia River Ports	≤25	-	-	-	-	
	26-36	-	-	-	-	
	>36	-	-	-	-	
	Unknown	-	-	-	-	
	TOTAL	-	-	-	-	
Puget Sound	≤25	b/	b/	b/	b/	b/
	26-36	b/	b/	b/	b/	b/
	>36	b/	b/	b/	b/	b/
	Unknown	b/	b/	b/	b/	b/
	TOTAL	b/	b/	b/	b/	

a/ Preliminary.
b/ Values not provided to preserve confidentiality.

TABLE D-12. **California number of vessels** landing 50% and 90% of total pounds of salmon troll catch each year. (Page 1 of 1)

Year	Total Vessels	50% of Pounds Landed		90% of Pounds Landed	
		Number of Vessels	% of Fleet	Number of Vessels	% of Fleet
1978	4,919	542	11.0	2,024	41.1
1979	4,594	373	8.1	1,641	35.7
1980	4,738	431	9.1	1,733	36.6
1981	4,102	395	9.6	1,599	39.0
1982	4,013	438	10.9	1,602	40.0
1983	3,223	353	11.0	1,268	39.4
1984	2,569	213	8.3	918	35.7
1985	2,308	241	10.4	898	38.9
1986	2,582	302	11.8	1,151	45.1
1987	2,442	320	13.2	1,080	44.5
1988	2,571	409	15.9	1,285	50.0
1989	2,534	363	14.3	1,244	49.1
1990	2,115	295	14.0	976	46.2
1991	1,769	224	12.7	791	44.7
1992	1,085	131	12.1	485	44.7
1993	1,240	163	13.1	554	44.7
1994	1,024	141	13.8	459	44.8
1995	1,179	190	16.1	581	49.3
1996	985	128	13.0	434	44.1
1997	832	116	13.9	375	45.1
1998[a/]	656	89	13.6	316	48.1

a/ Preliminary.

TABLE D-13. **Oregon number of vessels** landing 50% and 90% of **total pounds** of salmon troll catch each year.[a/] (Page 1 of 1)

Year	Total Vessels	50% of Pounds Landed		90% of Pounds Landed	
		Number of Vessels	% of Fleet	Number of Vessels	% of Fleet
1974	1,914	326	17.0	1,032	53.9
1975	1,979	329	16.6	1,054	53.3
1976	2,770	453	16.4	1,460	52.7
1977	3,108	473	15.2	1,597	51.4
1978	3,157	446	14.1	1,576	49.9
1979	3,114	423	13.6	1,449	46.5
1980	3,875	372	9.6	1,375	35.5
1981	3,615	420	11.6	1,391	38.5
1982	3,269	359	11.0	1,249	38.2
1983	2,951	294	10.0	1,082	36.7
1984	771	88	11.4	333	43.2
1985	2,050	132	6.4	514	25.1
1986	2,284	238	10.4	851	37.3
1987	2,111	292	13.8	928	44.0
1988	2,061	337	16.4	1,069	51.9
1989	1,937	303	15.6	959	49.5
1990	1,557	221	14.2	709	45.5
1991	1,217	206	16.9	651	53.5
1992	649	87	13.4	286	44.1
1993	612	67	10.9	235	38.4
1994	371	43	11.6	152	41.0
1995	476	52	10.9	184	38.7
1996	456	62	13.6	202	44.3
1997	433	60	13.9	184	42.5
1998[b/]	373	51	13.7	165	44.2

a/ Includes licensed (permitted for 1980 on) and properly identified vessels only. Total poundage on which the numbers are based is not equal to total aggregate troll landings because of landings by unlicenced or misidentified vessels. Percentages of total pounds not credited to licensed (permitted) vessels were 1974 -19%, 1975 - 19%, 1976 - 9.4%, 1977 - 8%, 1978 - 1.4%, 1979 - 0.2%, 1980 - 1.7%, 1981 - 0.11% and 1982-1998 - less than 0.05%.

b/ Preliminary.

TABLE D-14. **Washington number of vessels** landing 50% and 90% **(by numbers of fish)** of non-Indian troll salmon catch.[a/] (Page 1 of 1)

		50% of Fish Landed		90% of Fish Landed	
Year	Total Vessels	Number of Vessels	% of Fleet	Number of Vessels	% of Fleet
1978	3,041	223	7.3	1,040	34.2
1979	2,778	253	9.1	946	34.1
1980	2,626	206	7.8	883	33.6
1981	2,439	214	8.8	810	33.2
1982	2,253	181	8.0	703	31.2
1983	2,056	75	3.6	409	19.9
1984	374	55	14.7	180	48.1
1985	1,259	104	8.3	443	35.2
1986	1,252	100	8.0	387	30.9
1987	883	97	11.0	385	43.6
1988	650	51	7.8	239	36.8
1989	883	70	7.9	268	30.4
1990	897	111	12.4	373	41.6
1991	811	84	10.4	344	42.4
1992	604	59	9.8	193	32.0
1993	474	47	9.9	162	34.2
1994	1	NA	NA	NA	NA
1995	96	13	13.5	41	42.7
1996	90	14	15.6	45	50.0
1997	51	7	13.7	23	45.1
1998	23	5	21.7	12	52.2

a/ All values in this table are based on preliminary information available at the start of each year's review.

TABLE D-15. Preliminary **California, Oregon, and Washington troll fleet** by home state and salmon landings, 1998.[a/] (Page 1 of 1)

Home State	Number of Vessels	Percent	Landings (Pounds)	Percent	Total Value (Dollars)	Percent
			CALIFORNIA			
California	617	94	1,637,009	94	2,622,324	94
Oregon	16	2	60,654	3	71,609	3
Washington	6	1	17,711	1	29,437	1
Unknown/Other	17	3	30,145	2	52,148	2
TOTAL	656	100	1,745,519	100	2,775,517	100
			OREGON			
Oregon	307	82.3	996,250	71.3	NA	-
California	3	0.8	8,202	0.6	NA	-
Washington	62	16.6	392,870	28.1	NA	-
Unknown/Other	1	0.3	361	0.0	NA	-
TOTAL	373	100	1,397,683	100	NA	-
			WASHINGTON			
Washington	22	96	81,069	99	120,063	99
Oregon	0	0	0	0	0	0
California	0	0	0	0	0	0
Unknown/Other	1	4	522	1	688	1
TOTAL	23	100	81,591	100	120,751	100

a/ Preliminary.

TABLE D-16. **Vessels landing** salmon in **California** by vessel skipper's state of residence and length. (Page 1 of 1)

	Home State[a/]															
	California (length)				Oregon (length)				Washington (length)				Total (length)			Grand
Year	<26	26-36	>36	Subtotal	<26	26-36	>36	Subtotal	<26	26-36	>36	Subtotal	<26	26-36	>36	Total[b/]
1978	2,325	1,165	1,006	4,496	97	176	262	535	5	16	85	106	2,462	1,365	1,378	5,205
1979	2,243	1,152	980	4,375	68	158	210	436	3	20	59	82	2,338	1,338	1,266	4,942
1980	2,069	1,248	1,138	4,455	97	163	228	488	6	25	90	121	2,189	1,447	1,478	5,114
1981	1,611	1,052	865	3,528	64	126	204	394	2	11	66	79	1,717	1,224	1,159	4,100
1982[c/]	1,535	1,051	873	3,459	59	117	196	372	2	16	64	82	1,631	1,223	1,157	4,011
1983	1,223	891	733	2,847	41	82	125	248	0	13	34	47	1,292	1,020	909	3,221
1984	909	805	620	2,334	25	47	84	156	2	10	34	46	951	871	745	2,567
1985	769	731	630	2,130	6	23	66	95	2	7	15	24	795	784	726	2,305
1986	866	815	658	2,339	22	60	98	180	1	8	27	36	898	891	790	2,579
1987	831	759	641	2,231	11	42	85	138	2	4	34	40	854	816	769	2,439
1988	834	788	670	2,292	12	42	92	146	1	7	35	43	895	855	817	2,567
1989	865	771	652	2,288	11	46	94	151	4	4	42	50	880	821	788	2,489
1990	744	653	553	1,950	6	31	63	100	2	5	20	27	752	689	636	2,077
1991	615	548	465	1,628	3	34	57	94	2	6	13	21	620	588	535	1,743
1992	374	369	304	1,047	2	12	10	24	0	2	1	3	376	383	315	1,074
1993	414	422	347	1,183	2	11	22	35	0	3	4	7	421	440	379	1,240
1994	323	341	286	950	4	18	24	46	0	3	9	12	327	362	319	1,024
1995	372	395	326	1,093	4	21	38	63	0	2	8	10	376	418	372	1,179
1996	275	340	283	898	3	9	27	39	0	4	17	21	278	353	327	985
1997	245	297	241	783	1	8	19	28	0	1	4	5	250	315	270	835
1998[d/]	186	236	195	617	0	5	11	16	2	2	2	6	192	252	212	656

a/ "Home state" refers to the declared state of residence of vessel skipper, who, in most cases, is also the vessel owner.
b/ Includes vessels with home states other than California, Oregon and Washington and vessels of unknown length.
c/ Length category for 1982 is ≥36.
d/ Preliminary.

TABLE D-17. Percentages of **vessels landing** troll salmon in **Oregon** by license holder's state of residence. (Page 1 of 1)

Year	Oregon	California	Washington	Other/Unknown
1977	83.8	6.9	8.7	0.6
1978	83.6	5.9	10.0	0.5
1979	82.5	6.5	10.3	0.7
1980	80.4	8.5	9.6	1.5
1981	81.2	7.4	9.9	1.6
1982	82.1	6.3	10.2	1.4
1983	85.0	3.9	10.1	1.0
1984	85.2	2.9	11.0	0.9
1985	86.9	4.0	8.0	1.1
1986	84.5	5.2	9.1	1.2
1987	81.7	6.8	10.2	1.2
1988	78.7	6.4	13.5	1.3
1989	80.0	5.6	12.9	1.4
1990	81.1	6.7	10.7	1.5
1991	83.8	2.5	12.1	1.6
1992	83.4	3.4	12.5	0.8
1993	85.8	2.5	11.1	0.6
1994	86.5	1.1	12.1	0.3
1995	85.5	2.7	10.7	1.1
1996	83.5	2.0	13.8	0.7
1997	85.0	1.2	12.5	1.4
1998[a/]	82.3	0.8	16.6	0.3

a/ Preliminary.

TABLE D-18. Percentages of **vessels landing non-Indian** troll salmon in **Washington** by license holder's state of residence.[a/] (Page 1 of 1)

Year	Washington	Oregon	California	Alaska	Other/Unknown
1978	90.8	4.6	0.3	0.2	4.1
1979	90.9	3.8	0.3	0.3	4.7
1980	93.7	3.6	0.3	0.3	2.1
1981	92.6	3.0	0.4	0.2	3.8
1982	92.6	4.1	0.6	0.0	2.8
1983	92.7	2.8	0.2	0.1	4.2
1984	94.8	1.6	0.0	0.0	3.7
1985	92.7	3.3	0.2	0.2	3.6
1986	93.1	1.7	0.0	0.1	5.1
1987	90.4	1.3	0.0	b/	8.0
1988	88.0	1.8	0.2	1.5	8.5
1989	92.2	0.9	0.0	1.0	5.9
1990	92.7	0.7	0.0	b/	6.5
1991	85.8	0.7	0.0	0.0	13.5
1992	92.7	2.0	0.7	0.3	4.3
1993	93.3	0.8	0.8	0.0	5.1
1994[c/]	100.0	0.0	0.0	0.0	0.0
1995	95.8	0.0	0.0	0.0	4.2
1996	93.3	0.0	0.0	0.0	6.7
1997	96.1	0.0	0.0	0.0	3.9
1998	95.7	0.0	0.0	0.0	4.3

a/ All values in this table are based on preliminary information available at the start of each year's review.
b/ Less than 0.5%.
c/ The fishery was closed north of Cape Falcon, however, Chinook were caught off Oregon and landed in Washington.

TABLE D-19. Number of **California charter boats** participating in the ocean **recreational** salmon fishery, by port area and activity level.[a/] (Page 1 of 1)

Year	Activity Level[a/]	Port Area: Monterey	San Francisco	Fort Bragg	Eureka	Crescent City	Unknown[b/]	Total
1987	Active	20	62	6	4	4	0	96
	Casual	11	30	1	6	1	4	53
	TOTAL	31	92	7	10	5	4	149
1988	Active	19	58	8	6	3	1	95
	Casual	13	24	4	5	1	24	71
	TOTAL	32	82	12	11	4	25	166
1989	Active	16	53	5	11	1	3	89
	Casual	31	35	18	5	0	4	93
	TOTAL	47	88	23	16	1	7	182
1990	Active	19	50	7	8	4	5	93
	Casual	26	30	3	5	0	3	67
	TOTAL	45	80	10	13	4	8	160
1991	Active	18	42	7	7	3	1	78
	Casual	71	29	1	2	1	4	108
	TOTAL	89	71	8	9	4	5	186
1992	Active	11	33	4	0	0	1	49
	Casual	42	37	4	4	2	2	91
	TOTAL	53	70	8	4	2	3	140
1993	Active	13	36	2	2	2	11	66
	Casual	37	14	3	3	0	4	61
	TOTAL	50	50	5	5	2	15	127
1994	Active	12	34	3	0	1	10	60
	Casual	17	18	3	3	1	0	42
	TOTAL	29	52	6	3	2	10	102
1995	Active	40	47	5	1	0	0	93
	Casual	51	15	0	3	1	1	71
	TOTAL	91	62	5	4	0	0	164
1996	Active	19	46	8	2	0	0	75
	Casual	27	18	3	2	1	0	51
	TOTAL	46	64	11	4	1	0	126
1997	Active	27	44	7	4	0	0	82
	Casual	18	15	2	3	0	0	38
	TOTAL	45	59	9	7	0	0	120
1998	Active							
	Casual							
	TOTAL	NA	NA	NA	NA	NA	NA	NA

a/ Active vessels landed over 100 salmon; casual vessels landed one to 100 salmon.
b/ Unknown vessels did not report port of landing or landed in two or more port areas during the season.

TABLE D-20. Number of **charter boats** licensed in **Oregon**. (Page 1 of 1)

Year	Total Number Licensed Charter Boats[a/]	Licensed By Oregon Residents	Licensed By Washington Residents	Licensed By Residents of Other States
1980	194	192	2	0
1981	248	213	34	1
1982	253	212	40	1
1983	255	206	47	2
1984	218	185	31	2
1985	226	198	25	3
1986	247	216	26	5
1987	254	226	23	5
1988	313	266	42	5
1989	322	273	44	5
1990[b/]	170	157	9	4
1991	171	161	7	3
1992	157	150	4	3
1993	148	144	2	2
1994	145	137	6	2
1995	134	NA	NA	NA
1996	127	121	6	0
1997	122	119	3	0
1998[c/]	129	125	4	0

a/ Legislation which created the license expired in 1987. Fees were between $25 and $100 from 1980-1987. License was reinstituted by rule in 1988 and 1989 with a $10 fee.

b/ In 1990, responsibility for licensing of charter vessels was transferred to the Marine Board and fees for Oregon residents were increased from $10 to between $50 and $100.

c/ Preliminary.

TABLE D-21. Number of salmon **charter boats** licensed in **Washington** (including Puget Sound). (Page 1 of 1)

Year	Number of Licenses Issued	Licensed by Washington Residents	Licensed by Residents of Other States	Buyback
1975	404	351	53	-
1976	427	362	65	-
1977[a/]	569	NA	NA	-
1978	535	483	52	-
1979	516	473	43	-
1980	510	465	45	16
1981	478	443	35	3
1982	415	387	28	25
1983	375	354	21	19
1984	334	313	21	21
1985	288	268	20	19
1986	308	286	22	15
1987	280	269	11	-
1988	281	268	13	-
1989	276	263	13	-
1990	273	258	15	-
1991	267	251	16	-
1992	269	252	17	-
1993	265	250	15	-
1994	260	245	15	-
1995	231	217	14	23
1996	210	199	9	18
1997	209	196	13	0
1998[b/]	187	177	10	20

a/ First year moratorium in effect.
b/ Preliminary.

TABLE D-22. Price index.[a/] (Page 1 of 1)

Year	Price Index
1960	20.6
1961	20.9
1962	21.2
1963	21.4
1964	21.7
1965	22.1
1966	22.8
1967	23.5
1968	24.5
1969	25.7
1970	27.0
1971	28.4
1972	29.7
1973	31.3
1974	34.1
1975	37.3
1976	39.5
1977	42.1
1978	45.2
1979	49.0
1980	53.5
1981	58.6
1982	62.3
1983	64.9
1984	67.4
1985	69.7
1986	71.5
1987	73.7
1988	76.4
1989	79.6
1990	83.1
1991	86.4
1992	88.7
1993	91.1
1994	93.2
1995	95.4
1996	97.2
1997	99.0
1998[b/]	100.0

a/ Based on gross domestic product implicit price deflator.
b/ Preliminary estimate of annual change based on the second and third quarters of the year.


Cape Flattery
Cape Alava
Carroll Island
Destruction Island
Queets River
Copalis Head
WASHINGTON
Leadbetter Point
Westport
Willapa Bay
Columbia River
Astoria
Cape Falcon
Garibaldi
Cascade Head
Newport
Heceta Head
Heceta Banks
Florence
Coos Bay
Cape Arago
OREGON
Cape Blanco
Humbug Mountain
Port Orford
Sisters Rocks
Gold Beach
Mack Arch
House Rock
Brookings
KMZ AREA
Crescent City
Klamath River
Humboldt South Jetty
Eureka
Horse Mountain
Fort Bragg
Point Arena
Fort Ross
Bodega Head
Bodega Bay
Point Reyes
San Francisco
Point San Pedro
Pigeon Pt.
Santa Cruz
Monterey
Point Sur
CALIFORNIA
Point Lopez
Morro Bay
Point Conception
Santa Barbara
Point Mugu
Los Angeles
San Diego